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

Appendix F

Boring Logs

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

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

Location ID
132-P3A-MW104D-15
132-P3A-MW104D-2 ⁵
114-SS-43A ⁴
132-P3A-MW105I
132-P3A-SSI
135-MW1AR
135-MW3BR
135-P3C-MW102S
186-MW02R
DNAPL-S1
DNAPL-W1
GAR-PDI-A11B ⁴
GAR-PDI-B`2A
GAR-PDI-B`3A
GAR-PDI-C13B
GAR-PDI-D14B
114-MW45C
114-MW48C
114-MW49C
114-MW50C
114-MW51C

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

114-MW69C

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

Notes:

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

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

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

³ - 114-MW42A was installed in the same location as soil PDI boring GAR-PDI-B²A. Refer to the boring log for GAR-PDI-B²A for borehole lithology.

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

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

IRM - interim remedial measure

PDI - pre-design investigation

RI - Remedial Investigation

ΔΞϹΟΜ

	t Name: (t Number:			nedial Investig		Drilling Company: SGS North America Drilling Method: Augers	Coordinates (NLED	Page: NAD83) x: 610587.4
				9:30:00 AM		Rig Type:	Coordinates (NJSPN	
				3 3:00:00 PM		Core Size:	Boring Total Depth:	
oggeo	d By: E./	Acs			I	Project Manager: Scott Mikaelian	Depth to Water: 8.8	
hysic	al Locatio	n: Ter	<u>ו West Ap</u>	parel		l	Surface Elevation:	15.5 ft NAVD88
Depth lange t bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Surface Cover and Thic	kness:	Sample ID
_				CONCRETE		CONCRETE		
-1	3.5	0.0	dry	FILL		fine to medium silty SAND, trace gra (7.5YR 3/3) dark brown, loose, dry no	odor no staining	
-4 -5 -6 -7 -7 -8 -9 -9 -9	3.5	0.0	dry to wet	FILL		ASH, trace gravel, (5YR 6/1) gray, lo odor no staining, wet at 9'	ose, dry to wet no	
10	3	0.0		50.1		fine CAND come sile (EVD 4/2) and		
-15 -16 			wet	FILL		fine SAND, some silt, (5YR 4/3) redd dense, wet no odor no staining	ish brown, mealum	
-17 -18 -19 -20	4.5	0.0	moist	PT		organic odor. Soils consistent with M	ft, moist slight	
otes:								

Boring ID: 10W-MW102S

Project	t Number:	6050	7168			Drilling Company: SGS North America Drilling Method: Augers	Coordinates (NJSPNAD83) x: 610516.5																	
				9:30:00 AM		Rig Type:	Coordinates (NJSPN	AD83) y: 682453.4																
Date Fi	inished Dr	illing:		<u>3 1:00:</u> 00 PM		Core Size:	Boring Total Depth:																	
oggeo	d By: E./	Acs				Project Manager: Scott Mikaelian	Depth to Water: 8.1	2																
hysic	al Locatio	n: Ter	n West Ap	parel			Surface Elevation:																	
Depth Range t bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphi Log	c Surface Cover and Thic	kness:	Sample ID																
_	-			CONCRETE	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	CONCRETE																		
-1 -			dry	FILL		ASH, trace silt, (5YR 6/1) gray, loose, staining	dry no odor no																	
-2 -3 -4 -5	3	0.0	dry		fine to medium silty SAND, trace grav (7.5YR 3/4) dark brown, loose, dry no																			
-6 -7	25	0.0	dry	FILL		ASH, trace silt, (7.5YR 4/1) dark gray.	loose, dry to wet																	
8 9 10	. 3.5	0.0	0.0	0.0	0.0	0.0	0.0				to wet			no odor no staining, wet at 9'										
-11 -12 -12	. 3.5	0.0	0.0	0.0	0.0	0.0																		
-13 — -14 — -15 —	-																		wet	FILL		fine SAND, trace silt, (5YR 4/3) reddis dense, wet no odor no staining	sh brown, medium	
 -16 -17						moiet	PT		PEAT (degraded vegetated material),	60% fibers 40%														
_ -18 _ -19	3.5	0.0	moist		<u>1, 1, 1, 1</u> <u>1, 1, 1, 1</u> <u>1, 1, 1, 1</u>	organic silt, (7.5YR 3/4) dark brown, s organic odor. Soils consistent with MM	oft, moist slight																	
_ -20					<u></u>																			
otes: gs - bel IM - me	low surface geadow mat	grade	COPR - chr	omite ore proce	essing res	sidue UNDno - non-organic undisturbed native d UNDorg - organic undisturbed native depo	eposits MGP - manu sits CCPW - chro	factured gas plant mate chemical production waste																

-	nightsbridge F 732.564.32	Road, Pisc	ataway, NJ 08 telephone	3854				ID: 10W-MW10	
Project				edial Investio	gation	Drilling Company: SGS North America		Page:	
Project	Number:	6050	7168			Drilling Method: Augers/Mud Rotary	Coordinates (NJSPNAD83) x: 610626.9		
				1:30:00 AM 3 4:00:00 PM		Rig Type: Core Size:	Coordinates (NJSPN Boring Total Depth:		
	By: E. A		1/10/2010	<u>4.00.00 FIVI</u>		Project Manager: Scott Mikaelian	Depth to Water: 4.8		
			י West Ap	parel			Surface Elevation:		
Depth Range t bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graph Log	c Surface Cover and Thick	ness:	Sample ID	
				ASPHALT	××××	ASPHALT			
 2 3 4			dry	FILL		fine to coarse silty SAND, (5YR 2.5/1) moist no odor no staining, wet at 5.5' (black, loose, dry to Hand Excavated)		
-5 -6 -			wet	FILL		fine to coarse silty SAND, trace gravel black, very loose, wet no odor no stair	, (5YR 2.5/1) ing		
-7 -8	1	0.0	wet	FILL		fine to medium silty SAND, trace grave	el trace wood, very		
 	1.17	0.0				loose, wet no odor no staining			
-11 	1.17	0.0	wet	FILL		SILT, little fine to medium sand, (5YR soft, wet no odor no staining	5/1) gray, very		
-13	1.83	0.0	moist	PT	<u>v v</u>	Organic Silt, (7.5YR 4/1) dark gray, mo odor. Soils consistent with MM.	80% fibers, 20% bist slight organic		
-14 15 -	0.5	0.0			<u>v v</u> <u>v v</u>	<u>v</u> 2			
-16 -17 -18	2	0.0		ML		SILT, trace fine sand, (5YR 5/1) gray, odor no staining. Soils consistent with			
-18 -19 	0.5	0.0							
_20 21	1.67	0.0							
	ow surface o adow mat		COPR - chro GGM - gree	omite ore proce n grey mud	ssing re	sidue UNDno - non-organic undisturbed native de UNDorg - organic undisturbed native depos		l factured gas plant omate chemical production waste	



Boring ID: 10W-MW105I

Project Date St	t Number: tarted Dril	60507 l ing: 1	7168 1/3/2018 11	1:30:00 AM 4:00:00 PN		Drilling Company: SGS North America Drilling Method: Augers/Mud Rotary Rig Type: Core Size:		NAD83) x: 610626.9 NAD83) y: 682304.3 40 ft
	d By: E. /		1/10/2010	<u></u>	VI	Project Manager: Scott Mikaelian	Depth to Water: 4.	
			n West App	oarel		· · · · · · · · · · · · · · · · · · ·	Surface Elevation:	
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graph Log	ic Surface Cover and Thick	mess:	Sample ID
-23	. 1.5	0.0	wet	SP		fine to medium SAND, trace silt trace gray, medium dense, wet no odor no s consistent with UNDno.	gravel, (5YR 5/1) staining. Soils	
-24	. 1.33	0.0	wet	SP		fine to medium SAND, trace silt trace reddish brown, loose, wet no odor no s consistent with UNDno.		
-26 -27 -	. 1	0.0						
-28 -29 -30	. 1	0.0	wet	SP		fine SAND, trace silt, (5YR 4/3) reddis loose, wet no odor no staining. Soils c UNDno.		
-31 -31 -32	. 1	0.0						
-33 -33 -34	. 1.17	0.0						
-35 -36	. 1.17	0.0						
-37 -38	. 1	0.0						
	. 1	0.0						
-40								
	ow surface g adow mat		COPR - chro GGM - greer	omite ore proc n grey mud	essing re	sidue UNDno - non-organic undisturbed native de UNDorg - organic undisturbed native depos	eposits MGP - mani sits <u>C</u> CPW - chr	ufactured gas plant omate chemical production waste



Boring ID: 10W-SS101S

	t Name: _(Drilling Company: SGS		AD02)
	t Number:			12.00.00		Drilling Method: Direct Push		NAD83) x: 610641.8
				12:00:00 PM 1:30:00 PM		Rig Type:		IAD83) y: 682588.8
	d By: KW		1/10/2011	1.30.00 PM		Core Size: Project Manager: Scott Mikaelian	Boring Total Depth: Depth to Water:	2011
	al Locatio		n West An	narel				15.3 ft NAVD88
							ounde Lievation.	
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphi Log	c Surface Cover and ⁻	Thickness:	Sample ID
		0.0		CONCRETE				
-1			dry	FILL		fine to coarse silty SAND, little fill black, dry to moist no odor no sta		
-2			moist	FILL		SILT, trace fill debris, (5YR 2.5/1)) black, moist no odor	-
-3			moist	FILL		CINDERS, and ash, (5YR 4/1) da no staining	ırk gray, moist no odor	
-4 	4			NR		NO RECOVERY		
-5 -6				NR		NO RECOVERY		
-7								
	0							
_ _11								
_ -13	•							
	0		saturated	FILL		CINDERS, and ash, (5YR 6/1) gra	av saturated no odor no	1
			wet	FILL		staining fine to medium silty SAND, (5YR	_	-
-17			wet	FILL		no odor no staining SILT, (5YR 2.5/1) black, wet no o	,	-
			moist	PT		i Erri (degraded vegetated mater	rial), (50% Organic 5/1) black, moist	
_ 19					<u> </u>	moderate organic odor no staining	g	
-20	4				<u> </u>			
otes: gs - bel	ow surface g			omite ore proce	ssing res	idue UNDno - non-organic undisturbed nat	tive deposits MGP - manu	factured gas plant
IM - me	adow mat		GGM - gree	n grey mud		UNDorg - organic undisturbed native	deposits CCPW - chro	omate chemical production wast

roject ate St		60550 ling: 7	0261 7/11/2017	10:58:00 AM 7 1:45:00 PM		Drilling Company: SGS North America Drilling Method: Direct Push Rig Type: Core Size:		NAD83) x: 610568.1 NAD83) y: 682447.4	
	By: KW		//11/2017	1.45.00 FIM		Project Manager: Scott Mikaelian	Depth to Water:	1011	
			n West Ap	parel			Surface Elevation:	15.6 ft NAVD88	
Depth ange t bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphi Log	c Surface Cover and Thick	iness:	Sample ID	
				CONCRETE	P & A & A	CONCRETE			
-1 -2 -3	3.5	0.0	dry	FILL		fine to medium silty SAND, little fill det and metal), (7.5YR 5/2) brown, dry to r staining	oris (coal, brick, moist no odor no		
-4				NR		NO RECOVERY			
-5 -6				moist	FILL		SILT, trace fine sand, fill debris (coal a 4/2) brown, moist to saturated no odor	nd glass), (7.5YR no staining	-
			moist	FILL		ASH, little ash, (5YR 2.5/1) black, mois	st no odor no	1	
-/	2	0.0		NR		staining NO RECOVERY		1	
-9 -9									
-11 -12 -12 -13	0	0.0							
-14 -14 -15									



Boring ID: 10W-SS105I

Project	t Name: (t Number: tarted Dril	6055	0261	11:15:00 AM		Drilling Company: SGS North America Drilling Method: Direct Push Rig Type:	Coordinates (NJSP Coordinates (NJSP	NAD83) x: 610608 NAD83) y: 682323.4		
				1:30:00 PM		Core Size:	Boring Total Depth:			
oggeo	d By: KW	/				Project Manager: Scott Mikaelian	Depth to Water:			
hysic	al Locatio	n: Ter	n West Ap	parel	i		Surface Elevation:	11.5 ft NAVD88		
Depth ange t bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphi Log	c Surface Cover and Thick	iness:	Sample ID		
_	-			ASPHALT		ASPHALT, and Subase, (5YR 2.5/1) b	lack			
-1 -2 -	5	0.0	0.0	0.0	dry	FILL		fine to medium silty SAND, (5YR 2.5/1 moist no staining, slight napthalene lik) black, dry to e odor	-
-3 -4 -5			moist	FILL		fine to coarse SAND, little fill debris, si black, moist to wet no odor no staining	lt silt, (5YR 2.5/1) I			
-6 7 -7 -8 8	- 3.5	0.0								
-9 -10	-			NR		NO RECOVERY				
-11 -12 -13 -14 -15	0	0.0								
-16 -17 -17 -18	0	0.0								
-19 -20 -21	5	0.0	wet	FILL		fine to coarse silty SAND, (5YR 6/1) gr staining	ray, wet no odor no			
Notes: bgs - bel MM - me	low surface g adow mat	grade	COPR - chro GGM - gree	omite ore proce n grey mud	essing res	sidue UNDno - non-organic undisturbed native de UNDorg - organic undisturbed native depos	eposits MGP - man its CCPW - chi	ufactured gas plant romate chemical production wast		



Boring ID: 10W-SS105I

	t Name: _(t Number:					Drilling Company: SGS North America Drilling Method: Direct Push	Coordinates (NJSPI	
				11:15:00 AM		Rig Type:	Coordinates (NJSP)	
Date Fi	inished Dr	illina:	7/13/2017	1:30:00 PM		Core Size:	Boring Total Depth:	
ogge	d By: KW	/				Project Manager: Scott Mikaelian	Depth to Water:	
hysic	al Locatio	n: Ter	n West Ap	oarel			Surface Elevation:	11.5 ft NAVD88
Depth Range t bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphi Log	C Surface Cover and Thick	iness:	Sample ID
_	_							
-23 24 25	-		wet	SM		fine to coarse silty SAND, (5YR 3/3) d wet no odor no staining. Soils consiste	ark reddish brown, ent with UNDno.	
 	- 5	0.0						
-28								
-31 -32 -33 -34	- 5	0.0						
-35								
otes: gs - bel IM - me	low surface (eadow mat	grade	COPR - chro GGM - gree	omite ore proce n grey mud	ssing res	idue UNDno - non-organic undisturbed native de UNDorg - organic undisturbed native depos	eposits MGP - manu its CCPW - chro	factured gas plant omate chemical production waste



Boring ID: 114-BSB-01

Project	Number:	605502		oundwate	. KI	Drilling Company: SGS North America Drilling Method: Sonic	Coordinates	(NJSPNAD83) x	
Date Sta	arted Drill	ing: 7	/9/2019			Rig Type: Track-Mounted Sonic	Coordinates	(NJSPNAD83) y:	
	nished Dri					Core Size: 4 in		Depth: 68 ft	
	By: J. Ha					Project Manager: Shannon Gleason	Depth to Wat		
Physica	I Location	1: Site	114				Surface Elev	ation: 14.7 ft N	AVD88
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
	721	0	DRY	FILL		Soft dig to 5 ft bgs; Brown and gray DG medium SAND and fine to coarse GRA black material at 8', dry.	VEL, loose, little		
-8	96 /	0	WET	FILL		Black DGA (FILL) material, consisting o and GRAVEL, loose to medium dense,	of black SAND wet. - - - - - -		
-17 18	100 /		WET	ML		Light gray sandy SILT, wet.	-		
-19	120 /	0	WET	ML		Light gray sandy SILT, wet.			
10			WET	SW		Reddish brown, silty fine to medium SA GRAVEL, well graded, loose to medium	ND and i dense, wet.		



Boring ID: 114-BSB-01

Project Project	Number:					Drilling Company: SGS North America Drilling Method: Sonic	Coordinates	(NJSPNAD83) x:	plicable ft NAVD8 611145 1
	arted Drill					Rig Type: Track-Mounted Sonic		(NJSPNAD83) y:	
	nished Dri					Core Size: 4 in		Depth: 68 ft	
.ogged	I By: J.H.	arshmar	า			Project Manager: Shannon Gleason	Depth to Wat	ter:	
	al Location						Surface Elev	ation: 14.7 ft NA	VD88
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
			WET	SW			-	-	
-23			WET	SM		Gray, very fine silty SAND, loose to mediu wet.	m dense, - -		
-28 -29 -	/	0	WET	SM		Gray, very fine silty SAND, wet.			
-30 -31 -32 -			WET	SW		Reddish brown fine to medium SAND and coarse GRAVEL, well graded, loose to me trace SILT, wet.			
-33 -34 -25			WET	SP		SAND, poorly graded, loose to medium de	nse, wet.	-	
-35 -36 -37			WET	SW		Reddish brown, fine to coarse SAND and a GRAVEL, well graded, medium dense, we	subangular t. -		
-38 -39	60 /	0		NR	<u>, , , , , , , , , , , , , , , , , , , </u>	No Recovery	-		
otes:	bgs = below DGA = dens			IAD83 = Nor IAVD88 = No	th Americar orth America	I Horizontal Datum of 1983 NJSP = New Jersey State Pla an Vertical Datum of 1988 PID = photoionization detecto	ane ppm = parts per r USCS = Unified	million Soil Classification Syst	ft = feet em in = inches



30 Knightsbridge Road, Piscataway, NJ 08854 732.564.3200 office telephone

Boring ID: 114-BSB-01

Project	Number:					Drilling Company: SGS North America Drilling Method: Sonic			pplicable ft NAVD88
						Rig Type: Track-Mounted Sonic		(NJSPNAD83) x:	
	arted Drill							(NJSPNAD83) y:	683901.8
	nished Dri					Core Size: 4 in		Depth: 68 ft	
	By: J. H					Project Manager: Shannon Gleason	Depth to Wat		
hysica	I Location	n: Site	114		,		Surface Elev	ation: 14.7 ft NA	AVD88
Depth Range	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
ft bgs)	()				3				
				NR			-	-	
-43 -44 -45						Reddish brown, fine to medium silty SANE coarse GRAVEL, well graded, medium der increases after 47' with lesser water conte	nse, density		
-46 -47 -47			WET	SM/GM			-	-	
-48	108 /	0	WET	SM/GM		Reddish brown, very fine to fine/medium s and fine to coarse subangular and subrour GRAVEL, well graded, medium dense, tra- CLAY, wet.	nded ce SILT and _ -		
54 55 56			WET	SW-GW		Reddish brown, fine SAND and fine to coa GRAVEL, medium dense, with little SILT a and trace cobbles, wet.			
-57 -58			WET	SM-GM		Light brown-gray, fine silty SAND and fine GRAVEL, well graded, subangular and sul wet.	prounded,		
-59 — —	60 /	0	WET	SW-GW		Brown, fine to coarse SAND and fine to co GRAVEL, well graded, medium dense, we			
otes:	bgs = below DGA = dense			NAD83 = Nor NAVD88 = No	th Americar orth America	Horizontal Datum of 1983 NJSP = New Jersey State Pla In Vertical Datum of 1988 PlD = photoionization detecto	ne ppm = parts per r USCS = Unified	million Soil Classification Sys	ft = feet stem in = inches



Boring ID: 114-BSB-01

	Name: <u>O</u> Number:		261			Drilling Method: Sonic	Coordinates	(NJSPNAD83) x:	611145.1
	tarted Drill					Rig Type: Track-Mounted Sonic		(NJSPNAD83) y:	
	nished Dri					Core Size: 4 in		Depth: 68 ft	
	By: J.H.					Project Manager: Shannon Gleason	Depth to Wat		
hvsic	al Location	n: Site	114					ation: 14.7 ft NA	VD88
-								Well	
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Construction	Remarks
			WET	SW-GW					
· –	1			-	<u>XXX</u>	Gray/brown SAND and fine to medium GF	RAVEL	1	
-61	-		DRY	SP-GP		(angular to sub-angular), very dense, dry (
-62	_		DRY	GP		Gray, broken fragments of possible bedroo angular gravel, dry (Basal Till).	ck, some		
-63	60 /	0	DRT	GP		Black Diabase. End of boring at 68 ft.		-	
-64	-	C					-		
	-								
-65	-			BEDROCK			-	1	
-66	-						-		
-67	-						-		
							-		
							-		
							-		
							-		
							-		
							-		
							-		
							-		
							-	$\left \right $	
							-	1	
							-		
								-	
otes:	bgs = below DGA = dens			NAD83 = Nor NAVD88 = No	h American orth America	Horizontal Datum of 1983 NJSP = New Jersey State Pla n Vertical Datum of 1988 PID = photoionization detector	ane ppm = parts per or USCS = Unified	million Soil Classification Sys	ft = feet tem in = inches

Project Date State Date Fin	Number: arted Drill	605502 ing: 7 illing:	/9/2019 7/10/2019		RI	Drilling Company: SGS North America Drilling Method: Sonic Rig Type: Track-Mounted Sonic Core Size: 4 in Project Manager: Shannon Gleason	Top of PVC Elevation: Not Applicable ft NAVD8 Coordinates (NJSPNAD83) x: 611029 Coordinates (NJSPNAD83) y: 683757.3 Boring Total Depth: 73 ft Depth to Water: 73 ft			
	al Location							tion: 13.5 ft N	AVD88	
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks	
-1	0 /	0	DRY	FILL		Soft dig to 5 ft bgs. Gray fine to medium SA GRAVEL, loose, dry (DGA).	ND and			
-6 -7 -7 -	24 /	0	DRY	FILL		Gray fine to medium SAND and GRAVEL, (DGA).	oose, dry 			
- 8	120 /	0	WET	FILL		DGA (FILL) material consisting of fine to m SAND and GRAVEL, wet.	- - - - - - - - - - - - - - - 			
-14 			DRY	PT		Brown, PEAT meadow mat, highly organic,	mostly dry. 			
16 -17 -			MOIST	ML		Gray, clayey SILT with trace fine GRAVEL,	soft, moist. - - -			
-18 - -19 -	108 /	0	WET	GC-GM		Gray, fine to medium GRAVEL and fine SA some CLAY and SILT, loose, wet.	ND, with - -	-		



Boring ID: 114-BSB-02

Project Name: G Project Number:			Junuwaler	TM	Drilling Company: SGS North America Drilling Method: Sonic		Ievation: Not Ap (NJSPNAD83) x:	
Date Started Drill					Rig Type: Track-Mounted Sonic		(NJSPNAD83) y:	
Date Finished Dri					Core Size: 4 in		Depth: 73 ft	
.ogged By: J. H	arshmar	า			Project Manager: Shannon Gleason	Depth to Wat	er:	
hysical Location	n: Site	114				Surface Eleva	ation: 13.5 ft NA	VD88
Depth Range ft bgs)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
-21		WET	GC-GM				-	
_ -22		WET	SM/GM		Reddish brown, fine silty SAND and fine to GRAVEL, well graded, loose to medium de		-	
-23		WET	GP		Reddish brown, fine to medium GRAVEL SAND, poorly graded, loose, wet.	with fine silty		
-24 -25 -26 		WET	SP		Reddish brown, fine to medium SAND with fine GRAVEL, poorly graded, loose to med wet.			
-27		WET	SM		Reddish brown, fine silty SAND, medium o	lense, wet.		
-28 96 / -29 - -30 - -31 - -31 - -32 - -33 - -33 - -34 -	0	WET	SP-SM		Reddish brown, very fine to fine SAND wit silty SAND, poorly graded, loose, wet.	-		
-35 -36 -37 -37 -38		MOIST TO WET	SM/GM		GRAVEL, well graded, medium dense to d moist to wet.	ense, tight, - -		
-38 108 / 	0	MOIST TO WET	SM-SC		Dark brown, fine to medium silty and claye some fine to coarse subangular and subro GRAVEL, medium dense, trace cobbles, n	unded		

Project	Number:	605502		bundwater	RI	Drilling Company: SGS North America Drilling Method: Sonic	Coordinates	(NJSPNAD83) x	
	arted Drill nished Dri					Rig Type: Track-Mounted Sonic Core Size: 4 in	Boring Total	(NJSPNAD83) y: Depth: 73 ft	083/5/.3
ogged	I By: J.Ha	arshmar	1			Project Manager: Shannon Gleason	Depth to Wat	er:	
hysica	al Location	1: Site	114				Surface Eleva	ation: 13.5 ft N	AVD88
Depth Range t bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
-41			Moist To Wet	SM-SC			-		
-48 — -49 — -50 — -51 — -52 — -53 — -54	120 /	0	MOIST TO WET	SW-GW		Dark brown, fine to medium silty SAND wit to coarse subangular and subrounded GR/ graded, medium dense, trace cobbles, moi	VEL, well		
-54			VERY DRY	SW		Brown, SAND with rock fragments, very dr	у.		
-55 -56 -57 -57			MOIST	SM		Dark brown, fine to medium silty SAND wit to medium subangular and subrounded GF trace cobble/broken cobble, dense, moist (I	RAVEL, with		
-58 -59 -	60 /	0	MOIST TO WET	SM		Dark brown, fine to medium silty SAND wit to coarse GRAVEL (well graded), broken c medium dense, moist to wet (Basal Till).			

	ECO/	oad, Pisca	ataway, NJ 08	3854			B	oring ID	2: 114-BSB-02 Page: 4
	732.564.32	00 office t	elephone			<u> </u>			
	Name: O Number:			oundwater	RI	Drilling Company: SGS North America Drilling Method: Sonic	Top of PVC E Coordinates		Applicable ft NAVD88
	arted Drill					Rig Type: Track-Mounted Sonic		NJSPNAD83)	
Date Fi	nished Dri	illing:	7/10/2019			Core Size: 4 in	Boring Total	Depth: 73 ft	
	By: J.H.					Project Manager: Shannon Gleason	Depth to Wate	er: ation: 13.5 ft	
		1. One	114				Surface Lieva	Well	
Depth Range (ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Construction	Remarks
-61			MOIST TO WET	SM			-		
				МН		Gray, clayey SILT with angular GRAVEL, h	nighly		
-62			DRY	BEDROCK		Gray, weathered BEDROCK, with some br pieces, dry.	oken rock		
-63	60 /	0		BEDROCK		Gray to light gray, weathered BEDROCK, v small dark gray rock pieces less than 4" at	vith some 67.5' - 68'. - - -	- - -	
-66	48 /	L				Black Diabase. End of boring at 73.0 ft.			
				BEDROCK			- - - - - - - - - - - -	-	
-73							- - - - - - - - - - - -		
lotes:	bgs = below DGA = dens					n Horizontal Datum of 1983 NJSP = New Jersey State Pla an Vertical Datum of 1988 PID = photoionization detector		million Soil Classification S	ft = feet System in = inches

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

	Name: C			oundwater	RI	Drilling Company: SGS North America			pplicable ft NAVD88
	Number:					Drilling Method: Sonic		(NJSPNAD83) x	
	tarted Drill inished Dri					Rig Type: Track-Mounted Sonic Core Size: 4 in	Boring Total	(NJSPNAD83) y:	683530.4
	By: J.H					Project Manager: Shannon Gleason	Depth to Wat		
	al Location					· · · · ·		ation: 13.9 ft N	AVD88
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
-1		0	DRY TO WET	FILL		Soft dig to 5 ft bgs; Gray DGA material (FIL coarse SAND and GRAVEL, wet at 3'.	L), fine to - - -		
- 6 - 7 - 7		0		FILL		Gray, DGA material (FILL), loose, trace Fe 7.5' to 8'.	roBlack-H at	-	
- 8 - 9 - 10 - 11 - 12 - 13 - 14 - 15 - 16		0	WET	FILL		Gray, DGA material (FILL), fine to coarse S GRAVEL, cobbles, loose, wet, some clayey fine sand with gravel at 15' - 16'.	gray/brown		
 -17 -18				PT			ny organic. –		
-18 - -19	120 /	0	WET	CL		Gray CLAY, soft, wet.			
	_		WET	CL		Gray CLAY and fine to medium GRAVEL, v	vet.		



30 Knightsbridge Road, Piscataway, NJ 08854 732.564.3200 office telephone

Project	Name: C Number:	605502	261	oundwater	KI	Drilling Company: SGS North America Drilling Method: Sonic	Coordinates	(NJSPNAD83) x:	
	arted Drill					Rig Type: Track-Mounted Sonic		(NJSPNAD83) y:	683530.4
			7/11/2019			Core Size: 4 in		Depth: 81 ft	
	By: J. H					Project Manager: Shannon Gleason	Depth to Wat		
hysica	I Location	n: Site	114		,		Surface Eleva	ation: 13.9 ft NA	VD88
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
_			WET	CL				-	
-21 -22 -23 -			WET	SP		Reddish brown, fine to coarse SAND and r GRAVEL, poorly graded, loose, wet.	ounded - -		
-24			WET	SP		Reddish brown, fine to medium SAND, poo loose, wet.	orly graded, - -		
-28 -29 -30 -31 -31 -32 -33 -33 -33 -34 -35 -35 -36 -37 -37 -	120 /	0	WET	SP/SM		Reddish brown, fine SAND, poorly graded, Intervals of fine silty SAND at 32' to 33' an Yellow groundwater observed leaching out to 38'.	d 37' to 38'.		
-38	120 /	0	WET	SM		Very fine silty SAND, loose, wet. Soil satur yellow leaching material.	ated with		
	bgs = below DGA = dens			IAD83 = Nor IAVD88 = No	th Americar orth America	n Horizontal Datum of 1983 NJSP = New Jersey State Pla an Vertical Datum of 1988 PID = photoionization detecto	ne ppm = parts per r USCS = Unified	million Soil Classification Sys	ft = feet tem in = inches



30 Knightsbridge Road, Piscataway, NJ 08854 732.564.3200 office telephone

Boring ID: 114-BSB-03

Project	Name: G Number:	605502	261			Drilling Company: SGS North America Drilling Method: Sonic	Coordinates	(NJSPNAD83) x:	
	arted Drill					Rig Type: Track-Mounted Sonic		(NJSPNAD83) y:	683530.4
			7/11/2019			Core Size: 4 in		Depth: 81 ft	
	By: J. H					Project Manager: Shannon Gleason	Depth to Wat		
hysica	I Location	n: Site	114				Surface Eleva	ation: 13.9 ft NA	VD88
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
-41 -42 -42			WET	SM			-		
-43 -44 -45 -46 -47			WET	CL-ML		Reddish brown, silty CLAY with some clay to medium stiff, wet.	rey SILT, soft - -		
-47 			WET	SW-GW		Reddish brown, gravelly SAND and fine to GRAVEL, some sand and sandy gravel, tr loose to medium dense, wet.	ace cobbles,		
	48 /	0	WET TO DAMP	SM		Dark brown to reddish brown/gray, fine silt SAND and fine to coarse GRAVEL with co medium dense to dense, wet (53' to 58'). F running sands from 48' to 53'. Becoming o 57' to 58'. Subangular to angular gravel at	bbles, Possibly lamp to dry at 57' to 58'. - - - - - - - - - - - - - - -		
-58 -59 -	12 /	0	DAMP TO DRY	SM-SC		Brown, fine silty and clayey SAND with fin GRAVEL, cobbles, loose to medium dense be continuation of lithology observed at 57	e (appears to		
lotes:	bgs = below DGA = dense			NAD83 = Nor NAVD88 = No	th Americar orth America	h Horizontal Datum of 1983 NJSP = New Jersey State Pla an Vertical Datum of 1988 PID = photoionization detecto	ane ppm = parts per or USCS = Unified	million Soil Classification Sys	ft = feet tem in = inches



Boring ID: 114-BSB-03

Project Name: <u>G</u> Project Number:			Junuwater		Drilling Company: SGS North America Drilling Method: Sonic			pplicable ft NAVD8
					Rig Type: Track-Mounted Sonic		(NJSPNAD83) x	
Date Started Drill							(NJSPNAD83) y:	003330.4
Date Finished Dri					Core Size: 4 in		Depth: 81 ft	
ogged By: J.H.					Project Manager: Shannon Gleason	Depth to Wat		A) (D00
Physical Location	n: Site	114		1 1		Surface Elev	ation: 13.9 ft N	AVD88
Depth Range ft bgs)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
		DAMP TO DRY	SM-SC			-	-	
-63 - 60 / 	0		SM-SC		Brown, fine silty and clayey SAND with fine GRAVEL, cobbles, loose to medium dense.	to coarse		
68 48 / -69 - -70 - -70 - -71 - -72 - -72 -	0		SW/GW		Dark brown, fine to coarse SAND and GRA (subangular and subrounded), possible Bas broken up into fragments due to water injec	sal Till,		
-73	7	MOIST TO WET	GM-GC		Dark brown to gray, fine to coarse silty and GRAVEL with fine to coarse GRAVEL, mec moist to wet (Basal Till). Broken rock fragm to 76'.	dium dense,		
-76	0		BEDROCK		Dark gray to black siltstone (Lockatong For of boring at 81 ft.	mation). End - -		



30 Knightsbridge Road, Piscataway, NJ 08854

Page: 5 732.564.3200 office telephone Project Name: Garfield Avenue Groundwater RI Top of PVC Elevation: Not Applicable ft NAVD88 Drilling Company: SGS North America Project Number: 60550261 Drilling Method: Sonic Coordinates (NJSPNAD83) x: 611026.8 Date Started Drilling: 7/10/2019 Rig Type: Track-Mounted Sonic Coordinates (NJSPNAD83) y: 683530.4 Date Finished Drilling: 7/11/2019 Core Size: 4 in Boring Total Depth: 81 ft Project Manager: Shannon Gleason Depth to Water: Logged By: J. Harshman Physical Location: Site 114 Surface Elevation: 13.9 ft NAVD88 Well Depth Recovery PID Moisture Graphic Construction USCS Material Description Range Remarks (ft/ft) (ppm) Content Log (ft bgs) BEDROCH -81 PPG WITH WELL CONSTRUCTION - - 2/5/21 12:35 AD83 = North American Horizontal Datum of 1983 NJSP = New Jersey State Plane NAVD88 = North American Vertical Datum of 1988 PID = photoionization detector Notes: bgs = below surface grade DGA = dense graded aggregate ft = feet in = inches ppm = parts per million USCS = Unified Soil Classification System Comr nents



Boring ID: 114-MW2B1-2I

	Name: (Number:					Drilling Company: SGS Drilling Method: Sonic	Coordinates (NJSP	NAD83) x: 611639
Date Sta	arted Dril	ling: 1	10/17/2017	11:30:00 A	М	Rig Type: CRS XL Max	Coordinates (NJSP	
Date Fir	nished Dr	illing:		7 3:00:00 P	М	Core Size:	Boring Total Depth:	
	By: KW					Project Manager: Scott Mikaelian	Depth to Water:	
Physica	al Locatio	n: FS	P				Surface Elevation:	24.1 ft NAVD88
Depth Range t bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Surface Cover and T	hickness:	Sample ID
_			dry	FILL		ASPHALT MILLINGS		
-1			dry to moist	FILL		fine to medium silty SAND, little fill black, dry to moist no odor no stain	debris, (5YR 2.5/1) ning	-
	5	0.0		NR		NO RECOVERY		
-11 -12 -13 -13 -14 -15 -15 -15 -15 -15 -15 -15 -15 -15 -19	2	0.0	wet	FILL		fine to coarse silty SAND, some fir (5YR 4/3) reddish brown, wet no o	ne to coarse gravel, dor no staining	
_20 20 _21								
l otes: gs - belo <u>1M - mea</u> omments:	ow surface g adow mat	grade	COPR - chro GGM - greei	omite ore proc n grey mud	essing res	idue UNDno - non-organic undisturbed nativ UNDorg - organic undisturbed native d	ve deposits MGP - man eposits CCPW - chi	ufactured gas plant romate chemical production wast



Boring ID: 114-MW2B1-2I

	Name: (Drilling Company: SGS Drilling Method:	Coordinates (NUS	DNAD21 v. 611620
	Number:			11:30:00 A		Rig Type: Sonic		PNAD83) x: 611639 PNAD83) y: 683809
				7 3:00:00 P		Core Size:	Boring Total Dept	
	By: KW		10/20/201	<u>1 3.00.00 P</u>		Project Manager: Scott Mikaelian	Depth to Water:	
-oggeu hveica	Locatio	n. Eci	P				Surface Elevation	· 24 1 ft NA\/D88
					1			
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphi Log	C Surface Cover and Th	ickness:	Sample ID
-23								
-24	10	0.0	moist	PT		Fiber, 40% Organic Silt, (5YR 2.5/1 moderate organic odor no staining	II), (60% Organic) black, moist	
-27			wet	ОН			e organics, (5YR r no staining	_
28 29 			wet	ОН		organic clayey SILT, trace fine grav wet slight organic odor no staining	rel, (5YR 2.5/1) black,	
_ _31 _			wet	SM		fine to medium silty SAND, little fine	e to medium gravel,	_
-32	8	0.0				(5YR 4/3) reddish brown, wet no oc	lor no staining	
lotes: Igs - belo	w surface g	Irade	COPR - chro	mite ore proc	essina res	idue UNDno - non-organic undisturbed nativ	e deposits MGP - ma	nufactured gas plant
30 0000	adow mat		GGM - green			UNDorg - organic undisturbed native de		hromate chemical production waste



Boring ID: 114-MW17B

Project Numbe		-			Drilling Method: Sonic Vibration	Coordinates (NJSP)	
	rilling: 2	2/5/2018 7:0	MA 00:00		Rig Type: Sonic	Coordinates (NJSPN	
Date Finished					Core Size:	Boring Total Depth:	
Logged By: E	. Acs				Project Manager: Scott Mikaelian	Depth to Water: 7.0	8
Physical Loca		rry Lane Pa	ırk			Surface Elevation:	
Depth Range ft bgs)	ery PID	Moisture	USCS	Graphi Log	C Surface Cover and Thick	kness:	Sample ID
-1			FILL	<u>x 1_x x 1_y</u>			
-3	0	dry	FILL		fine to medium SAND, trace silt trace black, loose, dry no odor no staining	gravel, (5Y 2.5/2)	
-5	0	moist	FILL		fine to medium SAND, trace silt trace dark brown, loose, moist to wet no ode		
-9		wet	FILL		fine to medium SAND, trace silt trace black, loose, wet no odor no staining	yıaveı, (ət 2.3/1)	
	0	moist	FILL		SILT, trace fine sand, (7.5YR 4/2) bro odor no staining	wn, soft, moist no	
-14		moist	PT		organic silt, soft, moist slight organic c consistent with MM.		
-15 		moist	ML		SILT, trace clay trace fine sand, (5YR moist to wet no odor no staining. Soils UNDno.	6/1) gray, soft, s consistent with	
_17		moist	CL		silty CLAY, trace fine sand, (5Y 5/1) g moist no odor no staining. Soils consis	ray, medium stiff, stent with UNDno.	
-18 		wet	GW		fine to coarse GRAVEL, trace fine sar reddish brown, wet no odor no staining with UNDno.		
-19	0	wet	SP		fine to medium SAND, trace gravel, (5 brown, medium dense, wet no odor no consistent with UNDno.		

	nightsbridge F 732.564.3		ataway, NJ 08 telephone	3854			Borin	ig ID: 114-MW17B
Project	Name:	Ground	water Rem	nedial Investig	ation	Drilling Company: SGS North America		Page: 2
Project	Number:	60550	0261			Drilling Method: Sonic Vibration		NAD83) x: _611688.5
				:00:00 AM		Rig Type: Sonic	Coordinates (NJSPI	
	nished Dr d By: E. /		2/9/2018	3:00:00 PM		Core Size: Project Manager: Scott Mikaelian	Boring Total Depth: Depth to Water: 7.	
			ry Lane P	ark		Toject Manager. Scott Mikaenan	Surface Elevation:	
Danth								
Range (ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphi Log	Surface Cover and Thic	kness:	Sample ID
 23								
24 								
25								
 26								
L _								
—27— — — —								
28								
- 29 -								
 30	5	0						
31 								
 33								
00								
Notes								
Notes: bgs - bel MM - me	ow surface (adow mat	grade	COPR - chr GGM - gree	omite ore proce n grey mud	ssing res	idue UNDno - non-organic undisturbed native o UNDorg - organic undisturbed native depo	deposits MGP - man osits <u>C</u> CPW - chi	ufactured gas plant omate chemical production waste
Comments:								

٦



Boring ID: 114-MW24A

	t Number:			nedial Investig		Drilling Company: SGS North America Drilling Method: Hurricane	Coordinates (NJSPN	AD83) x: 611670
	tarted Drill					Rig Type:	Coordinates (NJSPN Coordinates (NJSPN	
	inished Dri					Core Size: 12 in	Boring Total Depth:	
	d By: M. I					Project Manager: Scott Mikaelian	Depth to Water:	1311
	al Locatio					riojeci manayer. Scoll Mikaelian	Surface Elevation:	
		n. r-∪l	1001 01				Surface Elevation:	
epth ange bgs)		PID (ppm)	Moisture Content	USCS	Graphi Log	c Surface Cover and Thick	ness:	Sample ID
			dry	ASPHALT	XXXX	Asphalt and Gravel	_	MW24A-0.0
			dry	FILL		Very Dark Grayish Brown (10YR 3/2) f SAND and fine to medium rounded Gr little Silt, medium dense.	îne to medium avel (5% COPR),	
-2			dry	FILL	\times	Dark Reddish Brown (5YR 3/2) fine to	medium SAND	MW24A-2.0
-3			wet	CONCRETE		and fine to medium rounded Gravel (1 Silt, medium dense. Green-stained CONCRETE, weathere	. /	
_						×		
-4 			wet	FILL		Black SILT, little fine angular Gravel, lo odor.	oose. Coal tar	
-5			wet	FILL		Black-stained medium to coarse crush coal, glass, ceramics), little fine to coa	ed FILL (gravel, rse Sand and Silt,	MW24A-5.0
-6			wet	VOID		loose. Slight coal tar odor. No Recovery.	/	
7 8 9								
-10 -11 -12 -13 -	· · ·		wet	FILL		Black-stained medium to coarse crush coal, glass, ceramics), little fine to coa loose, sheen from 13.6 to 14.0 ft. Stro	rse Sand and Silt,	MW24A-10.0
-14			moist	PEAT		Dark Reddish Brown (5YR 3/2) PEAT,	high Organics,	MW24A-14.0
			moist	SILT AND GRAVEL NULL		some Silt, stiff. Sulfur and coal tar od Reddish Brown (2.5YR 5/4) SILT and Gravel, trace fine Sand, very dense. End of boring at 15 ft. Well set at 14 f	or	
M - me	ow surface g adow mat : Same borehole		GGM - gree		ssing res	idue UNDno - non-organic undisturbed native de UNDorg - organic undisturbed native depos		actured gas plant mate chemical production was



Boring ID: 114-MW25C

Project Proiect	Number:				r	Drilling Method:	Coordinates (N.ISF	PNAD83) x: _611795.8
				:30:00 PM		Rig Type: Sonic		NAD83) y: 683600.4
			10/12/201			Core Size:	Boring Total Depth	
ogged	IBy: KW	,				Project Manager: Scott Mikaelian	Depth to Water:	
hysica	al Locatio	n: For	rest Street				Surface Elevation:	10.4 ft NAVD88
Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Surface Cover and	I Thickness:	Sample ID
· ~ 90)								
						See Log for Well 114-MW25B		
-1								
_								
-2								
_	5	0.0						
-3								
U								
.]								
-4								
-								
-5								
_								
-6								
Ĩ								
_ 7								
-7	-							
-	5	0.0						
-8								
_								
-9								
-10								
· _								
-11								
10								
-12	F	0.0						
· -	5	0.0						
-13								
-14								
7								
-15								
-16								
-17								
'']	5	0.0						
	5	0.0						
-18			wet	SM		fine to medium silty SAND, trace	e coarse sand. (5YR 4/3)	-
_				Civi		reddish brown, wet no odor no s	taining	
-19							0	
-								
-20								
-21								
lotes:	_							
gs - belo	ow surface g adow mat	grade	COPR - chro GGM - greer	mite ore proce	essing resi	due UNDno - non-organic undisturbed na UNDorg - organic undisturbed native	ative deposits MGP - man	ufactured gas plant romate chemical production wast



Boring ID: 114-MW25C

Page.	2	
гауе.	~	

	Number:		<u>undwater F</u> 0261	<u> </u>		Drilling Company: SGS Drilling Method:	Coordinates (NJSPI	NAD83) x: 611795.8
				1:30:00 PM		Rig Type: Sonic	Coordinates (NJSPN	
			10/12/201			Core Size:	Boring Total Depth:	
	By: KW					Project Manager: Scott Mikaelian	Depth to Water:	
			rest Street	ł			Surface Elevation:	
		1. 10			1		Surface Elevation.	
Depth Range t bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graph Log	c Surface Cover and	Thickness:	Sample ID
_	5	0.0						
-23			wet	SM		fine to medium silty SAND, (5YR	(4/3) reddish brown, wet	
			wet	SM		fine to medium SAND, little coars reddish brown, wet no odor no st		
-25			wet	SM		fine to medium silty SAND, (5YR no odor no staining, Green staini	4/3) reddish brown, wet ing to suspended water	
 	5	0.0	wet	SM		fine to medium silty SAND, some trace coarse sand, (5YR 4/3) red		
-28 - -29			wet	SM		Ino staining fine to medium silty SAND, trace reddish brown, wet no odor no st	coarse sand, (5YR 4/3)	
-30			wet	SM		fine to medium silty SAND, trace	clay, (5YR 4/4) reddish	
-32 	5	0.0				brown, wet no odor no staining, (light brown medium plasticity		
			wet	SM		fine to medium silty SAND, trace reddish brown, wet no odor no st		
-35 — 	5	0.00						
-38 -39 -			wet	SM		fine silty SAND, (5YR 4/3) reddis staining	h brown, wet no odor no	
-40 41 42 42 43 	5	0.0						
	ow surface g adow mat	grade	COPR - chro GGM - gree	omite ore proc n grey mud	essing re	: sidue UNDno - non-organic undisturbed na UNDorg - organic undisturbed native	ative deposits MGP - manu e deposits <u>CCPW - chro</u>	factured gas plant

	Name: (Number:		undwater F	રા		Drilling Company: SGS Drilling Method:	Coordinates (N.ISE	Page: PNAD83) x: 611795.8
				1:30:00 PM		Rig Type: Sonic		NAD83) y: 683600.4
Date Fi	nished Dr	illing:	10/12/201			Core Size:	Boring Total Depth	
oggeo	By: KW		rest Street			Project Manager: Scott Mikaelian	Depth to Water: Surface Elevation:	
		n. FUI					Surface Elevation.	
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphi Log	C Surface Cover and Th	nickness:	Sample ID
-45								
-46			wet	SM		fine to medium silty SAND, some b (5YR 4/3) reddish brown, wet no oc	lack angular gravel, dor no staining	-
-47	_		wet	GW		fine to coarse GRAVEL, little fine to	medium sand trace	-
	5	0.0				silt, (7.5YR 4/3) brown, wet no odor		
-51 -52 -53 -54 -55	5	0.0						
-55 -56 -57 -58	3	0.0	moist	BEDROCK		weathered BEDROCK, (5YR 2.5/1) no staining	black, moist no odor	
lotes: ogs - bel	ow surface g	Irade	COPR - chro GGM - gree	omite ore proces	sing res	idue UNDno - non-organic undisturbed nativ UNDorg - organic undisturbed native de	e deposits MGP - mar	ufactured gas plant romate chemical production waste

roject	t Number: tarted Dril	60550 l ing: 1	0261 10/6/2017 9	9:00:00 AM		Drilling Company: SGS North America Drilling Method: Rig Type: Sonic Core Size:		NAD83) x: 611844.2 NAD83) y: 683496.2 : 43 ft
	By: KW					Project Manager: Scott Mikaelian	Depth to Water:	
	al Locatio	n: ⊢or	rest Stree	[Surface Elevation:	11.6 ft NAVD88
epth ange bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphi Log	Surface Cover and Thio	ckness:	Sample ID
				ASPHALT		Asphalt and Subase		
-1 -2	5	0.0	dry	FILL		fine to medium silty SAND, little fill d black, dry to moist slight organic odo	ebris, (5YR 2.5/1) r no staining	
3 4		0.0	moist	FILL		CINDERS and ASH, trace fill debris, moist to wet no staining, slight fuel o	(5YR 2.5/1) black, I like odor	-
 6 7 8 9 10	5	0.0	wet	SM		fine to medium silty SAND, trace fine (5YR 4/3) reddish brown, wet no odo consistent with UNDno.	to medium gravel, r no staining. Soils	
	5	0.0	wet	SW		fine to coarse SAND, little silt trace fi	ne to coarse gravel,	_
	5	0.0				(5YR 3/4) dark reddish brown, wet no Soils consistent with UNDno.	o odor no staining.	
20— — 21— —			wet	SM		fine to coarse SAND, with silt, (5YR wet no odor no staining. Soils consis	4/4) reddish brown, tent with UNDno.	

Projec Date S Date F Logge	t Number: tarted Dril inished Dr d By: KW	60550 ling: 7 illing:	0261 10/6/2017 §	2:00:00 AM 7 4:30:00 P	M	Drilling Company: SGS North America Drilling Method: Rig Type: Sonic Core Size: Project Manager: Scott Mikaelian	Coordinates (NJSP Coordinates (NJSP Boring Total Depth: Depth to Water: Surface Elevation:	43 ft
epth ange bgs)	(ff/ff)	PID (ppm)	Moisture Content	USCS	Graphic Log	Surface Cover and Thick	mess:	Sample ID
	5	0.0	wet	SM		fine to medium silty SAND, (5YR 4/3) no odor no staining. Soils consistent v	reddish brown, wet ⁄ith UNDno.	
-26 -27 -28	- 5	0.0	wet	SM		fine silty SAND, (5YR 4/3) reddish bro	wn, wet no odor no	
-29 	-					staining. Soils consistent with UNDno.		
-31 -32 -33 -33 -34 -35	- 5	0.0						
-36 -37 -37 -38	5	0.0	wet	SM		fine to medium silty SAND, little black	sub-angular	
-39 -	-			GW		gravel, (5YR 4/3) reddish brown, wet r Soils consistent with UNDno. Fragmented GRAVEL and COBBLES		_
-40	3	0.0				Soils consistent with UNDno.	, <u>,</u>	
-42 -43]		wet	SM		fine to medium silty SAND, trace black gravel, (5YR 4/3) reddish brown, wet r Soils consistent with UNDno.	k sub-angular no odor no staining.	

Boring ID: 114-MW39B

Page:	1
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Project Name: Groundwater Remedial Investigation Project Number: 60550261 Date Started Drilling: 10/16/2017 10:00:00 AM						Drilling Method: Direct Push Rig Type:	Coordinates (NJSPNAD83) x: 611599.8 Coordinates (NJSPNAD83) y: 682533.1	
			10/16/2017			Core Size:	Boring Total Depth:	
	d By: E./		10/10/201			Project Manager: Scott Mikaelian	Depth to Water: 5.3	
hvsic	al Locatio	n: Ed	en Wood				Surface Elevation:	
)	Recovery		Moisture	USCS	Graphi Log	c Surface Cover and Thicl		Sample ID
	-			FILL		DGA		
-1 -2 -3 -3 -4 -	5		dry	FILL		CINDERS, and ash little fill debris, (7. dry to wet no odor no staining	5YR 4/3) brown,	
-5	5	0.0						
-10	5	0.0	wet	FILL		fine to medium silty SAND, trace fill d reddish brown, wet no odor no stainin	ebris, (5YR 4/3) a	
-15 -16				07			-	_
17 -18 -19 -19	5	0.0	moist	ΡΤ		vegetated material), (7.5YR 4/2) brow organic odor no staining. Soils consist	n, moist moderate	
-20 -21 -	-		moist	SM		fine to medium silty SAND, (5YR 6/1) no odor no staining. Soils consistent v	gray, moist to wet vith UNDno.	
	low surface g adow mat	grade	COPR - chro GGM - greer	mite ore proc grey mud	essing res	idue UNDno - non-organic undisturbed native d UNDorg - organic undisturbed native depo	eposits MGP - manu sits CCPW - chr	ufactured gas plant omate chemical production wast

Project Name: Groundwater Remedial Investigation Project Number: 60550261 Date Started Drilling: 10/16/2017 10:00:00 AM Date Finished Drilling: 10/16/2017 Logged By: E. Acs					M F	Drilling Company: SGS North America Drilling Method: Direct Push Rig Type: Core Size: Project Manager: Scott Mikaelian	Page Coordinates (NJSPNAD83) x: 611599.8 Coordinates (NJSPNAD83) y: 682533.1 Boring Total Depth: 50 ft Depth to Water: 5.32	
	al Locatio		en Wood				Surface Elevation:	
epth ange bgs)	Recovery (ft/ft)		Moisture Content	USCS	Graphic Log	Surface Cover and Thic		Sample ID
_	5	0.0						
23— 24— 25—	-		moist	OL		organic SILT, trace organic fibers, fin gray, moist slight organic odor no sta consistent with UNDorg.	e sand, (5YR 6/1) ining. Soils	
 27 28 29	5	0.0	wet	SM		fine to medium SAND, little silt, (5YR odor no staining. Soils consistent with		
30— 31— 32— 33— 33— 34—	5	0.0	wet	SM		fine silty SAND, (5YR 4/4) reddish bro staining. Soils consistent with UNDno	own, wet no odor no	
3 5 -			moist	ML		SILT, little fine sand, (5YR 4/4) reddis odor no staining. Soils consistent with	sh brown, moist no n UNDno.	_
36— 	5	0.0	dry	CL		CLAY, little fine sand, silt, (5YR 4/3) r plasticity, dry no odor no staining. Soi UNDno.	reddish brown, low ils consistent with	
40— 41— 42— 43—	5	0.0	wet	SM		fine silty SAND, (5YR 4/4) reddish bro staining. Soils consistent with UNDno		

Project Name: Groundwater Remedial Investigation Project Number: 60550261 Date Started Drilling: 10/16/2017 10:00:00 AM						Drilling Company: SGS North America	Pag		
						Drilling Method: Direct Push		Coordinates (NJSPNAD83) x: 611599.8 Coordinates (NJSPNAD83) y: 682533.1	
Date Finished Drilling: 10/16/2017						Core Size:	Boring Total Depth		
	By: E. /					Project Manager: Scott Mikaelian	Depth to Water: 5		
nysica	al Locatio	n: Ede	en Wood			1	Surface Elevation:	11.1 ft NAVD88	
epth ange bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Surface Cover and Thi	ckness:	Sample ID	
- 15			day	CL		CLAY, little fine sand, silt fine sand,	(5VP 4/4) roddish	_	
_ 16—			dry	UL		brown, low plasticity, dry to moist no Soils consistent with UNDno.	odor no staining.		
			dry	СН		CLAY, trace silt, (5YR 4/4) reddish t	rown, high plasticity,	_	
17	4.5				dry no odor no stàining. Soils consistent with UNDno.				
19				CLAY, little fine sand, silt, (5YR 4/3) reddish brown, low plasticity, dry to moist no odor no staining. Soils consistent with UNDno.					



Boring ID: 114-MW41A

roject N	ame: <u>F</u> umber:					Drilling Company: SGS North America Drilling Method: Sonic	Coordinates (N.ISP	NAD83) x: 611376.162
				11:45:00 A	M	Rig Type:		AD83) y: 683888.751
				7 3:00:00 P		Core Size:	Boring Total Depth:	
ogged B						Project Manager: Scott Mikaelian	Depth to Water:	
nysical I							Surface Elevation:	14.803 ft NAVD88
epth ange bgs)	ecovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphi Log	c Surface Cover and Thic	kness:	Sample ID
_				FILL		DGA		
1			moist	FILL		CINDERS and ASH, some fill debris, (5YR 2.5/1) black, loose, moist no do	trace COPR (<5%), or no staining	
2 3 4 -			wet	FILL		fine to coarse SAND, little fill debris, (brown, medium dense, wet no odor gr at 4.5 feet		
5— 6— 7— 8— 9— 	10	0.0	moist	FILL		GGM (90%), little fill debris, (10GY 5/ soft, wet no odor no staining	1) greenish gray,	
0 - 1 - 2 - 3 - 4 - 4	6	0.0	wet	FILL		CINDERS and ASH, little fill debris, (5 medium dense, wet moderate MGP-li product globules and sheen	YR 2.5/1) black, ke odor, free	
			wet	FILL		SILT, some fine sand, little fill debris, firm, wet slight organic odor no stainir	(7.5YR 4/2) brown, Ig	-
	surface g	rade	COPR - chro GGM - greer	mite ore proc	essing res	sidue UNDno - non-organic undisturbed native d UNDorg - organic undisturbed native depo	eposits MGP - manu	Ifactured gas plant



Boring ID: 114-MW41B

Project	t Name: 1 t Number:	6024	0739			Drilling Company: SGS North America Drilling Method: Sonic		NAD83) x: 611366.586												
				11:00:00 A		Rig Type:		AD83) y: 683891.626												
			10/25/201	7 3:00:00 P		Core Size:	Boring Total Depth:	28 ft												
	d By: KW al Locatio					Project Manager: Scott Mikaelian	Depth to Water: Surface Elevation:	15.118 ft NAVD88												
							Surface Elevation.	15.110 IL NAV DO0												
Depth ange t bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphi Log	c Surface Cover and Thick	iness:	Sample ID												
-1			dry	FILL		ASH and CINDERS, little fill debris, (5 medium dense, dry no odor no staining														
-2 -3 -3	-	0.0	0.0	moist	FILL		CINDERS and ASH, little fill debris, tra (5YR 2.5/1) black, medium dense, mo odor, green staining	ace COPR (<5%), ist slight MGP-like												
-4 — -5 — -6 — -7 — -8 —	10			0.0	moist	FILL		GGM (100%), (5G_/2) 4/2 grayish gre wet no odor no staining, water at 5.0 fe	en, soft, moist to eet											
-9			wet	FILL		fine to medium silty SAND, (5YR 4/3) medium dense, wet slight MGP-like oc	lor and staining	-												
-9 -10		0.0	wet	FILL		CINDERS and ASH, some fill debris, (wet, moderate MGP-like odor, free pro sheen	5YR 2.5/1) black, duct globules and													
-11 -12 -12 -13	-		10 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
-14	. 10														0.0	0.0	0.0	0.0	0.0	0.0
-18 -19 -19 -20	- - -			wet	SP		fine to coarse silty SAND, little fine to r (5YR 4/3) reddish brown, dense, wet n	medium gravel, io odor no staining												
	ow surface g adow mat	grade	COPR - chro GGM - greer	mite ore proc	essing rea	sidue UNDno - non-organic undisturbed native de UNDorg - organic undisturbed native depos	eposits MGP - manu	ufactured gas plant omate chemical production was												



Boring ID: 114-MW41B

Page:	2
raye.	~

Project Date St	Name: F Number: Number:	60240 l ing: 1	0739 0/23/2017	11:00:00 A	М	Drilling Method: Rig Type:	Sonic		NAD83) x: 611366.586 NAD83) y: 683891.626
)ate Fi	nished Dr	illing:	10/25/201	7 3:00:00 P	М	Core Size:		Boring Total Depth	28 ft
	By: KW					Project Manager:	Scott Mikaelian	Depth to Water:	
hysic	al Locatio	n:				1		Surface Elevation:	15.118 ft NAVD88
Depth lange t bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphi Log	c	Surface Cover and Thic	kness:	Sample ID
23 24 25 26 27 27 28	8	0.0							
otes: gs - bel	ow surface g eadow mat	grade	COPR - chro GGM - greer	mite ore proce	essing rec	sidue UNDno - non	-organic undisturbed native d	eposits MGP - man	ufactured gas plant romate chemical production wast



30 Knightsbridge Road, Piscataway, NJ 08854 732.564.3200 office telephone

Boring ID: 114-MW67C

	Name: <u>G</u> Number:			unuvalor	TM .	Drilling Method: Sonic Coordinates			Elevation: 14.67 ft NAVD88 (NJSPNAD83) x: 611021.9			
	arted Drill					Rig Type: Fraste XL Max 170				y: 683615.9		
			1/20/2021			Core Size: 8 in.	Boring Total					
	By: E.A					Project Manager: Shannon Gleason	Depth to Wat					
	I Location		114				Surface Elev		13 3 ft			
-									ell			
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description			ruction	Remarks		
_			MOIST	FILL		Soft dig to 5 ft bgs. Gray fine to medium trace fine sand (DGA), loose, moist.	GRAVEL,					
-1 -2 -	0 / 5	0	MOIST	FILL		Brownish gray well graded fine to coarse trace to little fine to coarse sand, trace si moist.				protective casing (stick up)		
-3 -4 -			MOIST	FILL		Brownish gray well graded fine to coarse some silty fine sand, very dense, moist.	GRAVEL,			—Riser set in grout		
-5			WET	FILL		Gray fine to coarse GRAVEL, some silty dense, wet.	fine sand, very					
-6	3/5	0	WET	FILL		Gray fine to coarse SAND, little fine to co very dense, wet.	-			 Portland-Bentonite Grout: 0-44 ft bgs 4-inch PVC riser: 0-50 ft bgs 		
-10 -11	3/5	0	WET	FILL		Gray fine to coarse SAND, little fine to co very dense, wet. Gray organic CLAY, fibrous (30%), medi	-		TXXI I			
-15			WET	PT	<u>1/ 1/ 1/</u>	Gray organic CLAY, fibrous (30%), medi	um stiff, wet.					
			WET	PT		Gray CLAY, trace silt, organics, medium						
-17 -18 -19 -	5/5	0	WET	CL		Gray OLAT, trace Silt, organics, medium						
lotes:	bgs = below					Horizontal Datum of 1983 NJSP = New Jersey State F				ft = feet		



Boring ID: 114-MW67C

1 0/2021 20/2021 14 Moisture Content USCS Graph Log WET CL WET SP	Gray CLAY, trace silt, organics, mediun Gray fine to medium SAND, little fine to loose, wet.	Coordinates Boring Total Depth to Wa Surface Elev	vation: 13.3 ft N/ Well Construction	683615.9
20/2021 14 Moisture Content USCS Graph Log WET CL WET SP	Core Size: 8 in. Project Manager: Shannon Gleason Material Description Gray CLAY, trace silt, organics, medium Gray fine to medium SAND, little fine to loose, wet.	Boring Total Depth to Wa Surface Elev n stiff, wet.	I Depth: 85 ft Iter: vation: 13.3 ft N/ Well Construction	AVD88
14 Moisture Content USCS Graph Log WET CL WET SP	Project Manager: Shannon Gleason C Material Description Gray CLAY, trace silt, organics, medium Gray fine to medium SAND, little fine to loose, wet.	Depth to Wa Surface Elev n stiff, wet.	Nater: Vation: 13.3 ft N/ Well Construction	
Moisture Content USCS Graph Log WET CL WET SP	C Material Description Gray CLAY, trace silt, organics, medium Gray fine to medium SAND, little fine to loose, wet.	Surface Elev	vation: 13.3 ft N/ Well Construction	
Moisture Content USCS Graph Log WET CL WET SP	Gray CLAY, trace silt, organics, mediun Gray fine to medium SAND, little fine to loose, wet.	n stiff, wet.	Well Construction	
WET CL WET SP	Gray CLAY, trace silt, organics, mediun Gray fine to medium SAND, little fine to loose, wet.		Construction	Remarks
WET SP	Gray fine to medium SAND, little fine to loose, wet.			
	loose, wet.	medium gravel		
WET SP	On the CANID little sile lands and			
	Gray fine SAND, little silt, loose, wet.			
WET SP	Brown fine to medium SAND, little fine subrounded gravel, trace silt, loose, sat			
WET SP	Brown fine to medium SAND, little fine subrounded gravel, trace silt, loose, sat	to coarse urated.		
WET SP	Reddish brown fine SAND, trace silt, lo		1 1000 1000 1	
WET SP	Reddish brown fine SAND, trace silt, lo	ose, wet.		
v	VET SP	VET SP		VET SP



Boring ID: 114-MW67C

roject Number:	60550	261			Drilling Method: Sonic	Coordinates	(NJSPNAD83)	x: 611021.9	
ate Started Dril					Rig Type: Fraste XL Max 170		s (NJSPNAD83) y: 683615.9		
ate Finished Dr					Core Size: 8 in.		Depth: 85 ft	000010.0	
ogged By: E. A					Project Manager: Shannon Gleason	Depth to Wat			
hysical Locatio		114					ation: 13.3 ft N	AVD88	
							Well		
Depth Range (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Construction	Remarks	
_		WET	SP		Reddish brown fine SAND, trace silt, mec wet.	lium dense,			
-41 -42 -4/5 -43 -	0	WET	SP		Reddish brown fine SAND, little silt, loose	e, wet. -			
-44		WET	SP		Reddish brown fine SAND, trace silt, loos	e, wet.			
45 	0	WET	SP		Reddish brown fine SAND, little silt, loose	, saturated. -		 Bentonite: 44-46 ft bgs #00 Filter Sand: 46-48 ft bgs #0 Filter Sand: 48-58 ft bgs 	
-49		WET	ML		Reddish brown SILT, little fine sand, med saturated.	ium stiff,			
50		WET	SP		Reddish brown fine SAND, trace silt, loos	e, saturated.			
51	0	WET	SP		Reddish brown fine SAND, little silt, loose water observed.	e, wet. Yellow -		—4-inch PVC well screen: 50-56 ft bgs	
53		WET	SP		Reddish brown fine SAND, little silt, trace wet.	clay, loose,			
54 		WET	SP		Reddish brown fine SAND, little silt, trace laminated with fine sand, wet.	clay, loose,			
55——— — 56——		WET	SP		Reddish brown fine SAND, trace silt, loos	e, saturated			
50 	0	WET	SM		Reddish brown fine to medium SAND, so fine to coarse gravel, dense, wet (Basal T			—4-inch PVC Sump: 56-58 ft bgs —#00 Filter Sand: 58-60 ft bgs	

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Boring ID: 114-MW67C

Project Number:			oundwater				/C Elevation: 14.67 ft NAVD88 tes (NJSPNAD83) x: 611021.9		
Date Started Dril					Rig Type: Fraste XL Max 170 Coordinates		es (NJSPNAD83) y: 683615.9		
Date Finished Dr					Core Size: 8 in.		Depth: 85 ft		
.ogged By: E. A					Project Manager: Shannon Gleason	Depth to Wat			
Physical Locatio		114					ation: 13.3 ft N	AVD88	
Depth Range ft bgs)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks	
	0	WET	SM		Reddish brown fine to medium SAND, some fine to coarse gravel, very dense, wet (Basal				
-65	0	WET	SM		Reddish brown fine to medium SAND, some to little fine to coarse gravel, very dense, we Till).				
70 71	0	WET	SM		Reddish brown fine to medium SAND, some to little fine to coarse gravel, very dense, wel Till).			—Bentonite: 60-85 ft bgs	
75 		WET	SM		Reddish brown fine to medium SAND, some to little fine to coarse subangular gravel, very wet (Basal Till).	e silt, trace y dense, -			
	0	NA	BEDROCK		Diabase boulder.				
78 		WET	SM		Gray fine to medium SAND, some silt, trace coarse subangular gravel, very dense, wet (f	fine to Basal Till).			



Boring ID: 114-MW67C

			oundwater		Drilling Company: ADT Drilling Method: Sonic		Elevation: 14.67	
Project Number: Date Started Dri					Rig Type: Fraste XL Max 170	es (NJSPNAD83) x: 611021.9 es (NJSPNAD83) y: 683615.9		
ate Started Dri	rillina:	1/20/2021			Core Size: 8 in.	Boring Total	Depth: 85 ft	
ogged By: E. /					Project Manager: Shannon Gleason	Depth to Wa		
hysical Locatio	n: Site	114					vation: 13.3 ft NA	VD88
Depth Range (ft/ft)		Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
	0	NA	SM		Gray fine to medium SAND, some silt, to coarse subangular gravel, very dense	trace to little fine e (Basal Till).		
-83 -84 		NA	BEDROCK		Light gray broken rock, slightly weather (Lockatong formation).	ed, hard		
						· · · ·		

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722 EC4 2200 office telephone

732.564.3200 office telephone

Boring ID: 114-MW68C

Project Name: _(Project Number:			anan		Drilling Company: _ADT Drilling Method: Sonic			.75 ft NAVD88	
Date Started Dril					Rig Type: Fraste XL Max 170		s (NJSPNAD83) y: 683321.4		
Date Finished Dr					Core Size: 8 in.		I Depth: 80 ft		
Logged By: E. A		1/13/2021			Project Manager: Shannon Gleason	Depth to Wa			
Physical Location	n Cita	11/					vation: 14.1 f		
		114				Surface Elev			
Depth Range (ft bgs)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks	
	0	DRY TO MOIST DRY TO MOIST	FILL		Soft dig to 5 ft bgs. Brownish gray well g GRAVEL, some silty sand, very dense (f moist. Gray fine to coarse GRAVEL, trace to lit trace silt, well graded, very dense (DGA) Gray fine to medium SAND, some fine to subrounded gravel, very dense (DGA), n	DGA), dry to tle fine sand,), dry to moist.		 8-inch steel protective casing (stick up) Riser set in grout Portland-Bentonite Grout: 0-45 ft bgs 4-inch PVC riser: 0-50 ft bgs 	
	0	WET	FILL		Gray fine to medium SAND, little fine to very dense (DGA), wet. Red brown fine SAND, little fine to medi (DGA), wet.				
13 		WET	FILL		Black stained wood.				
		WET	FILL		Black fine to medium GRAVEL, little fine	e to medium			
	0	WET	PT	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	 sand, dense, wet. Gray CLAY, fibrous (30%-40%), organic wet. 				
		WET	CL		Gray CLAY, trace silt, organic, medium	suπ, wet.			



Boring ID: 114-MW68C

Project Number:	60550	261			Drilling Method: Sonic	Coordinates (N	oordinates (NJSPNAD83) x: 610851.6		
ate Started Dril					Rig Type: Fraste XL Max 170	Coordinates (N			
ate Finished Dr	illing:				Core Size: 8 in.	Boring Total De	epth: 80 ft		
ogged By: E. A	lcs				Project Manager: Shannon Gleason	Depth to Water	:		
hysical Locatio	n: Site	114				Surface Elevati	on: 14.1 ft N	AVD88	
Depth lange t bgs)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks	
-21		WET	CL		Gray CLAY, trace silt, organic, medium s	tiff, wet			
23 	4/5 0		WET	SM		Reddish brown fine SAND, some silt, littl medium gravel, medium dense, wet.	e fine to		
25 		WET	SM		Reddish brown fine to medium SAND, so fine to medium, gravel, wet.	ome silt, little			
27— 4 / 5 28— 29— -	0	WET	SP		Reddish brown fine SAND, trace silt, loos	se, wet.			
30 - 31 - 32 - 5 / 5 33 - 34 - 35	0	WET	SP		Brown fine SAND, trace silt, loose, wet to				
- 36		WET	SP		Red brown fine SAND, trace silt, loose, v	vet.			
 37 4 / 5	0	WET	SP		Brown fine SAND, little silt, loose, wet.	-			
38		WET	SP		Black fine SAND, trace silt, loose, wet.	-			



Boring ID: 114-MW68C

oject Number:			oundwater		Drilling Company: ADT Drilling Method: Sonic	Coordinates	(NJSPNAD83)	5 ft NAVD88 x: 610851.6	
ate Started Dril					Rig Type: Fraste XL Max 170		(NJSPNAD83) y: 683321.4		
ate Finished Dr					Core Size: 8 in.		Depth: 80 ft		
ogged By: E. A	CS				Project Manager: Shannon Gleason	Depth to Wat	er:		
nysical Locatio	n: Site	114				Surface Eleva	ation: 14.1 ft N	IAVD88	
epth ange bgs)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks	
_		WET	CL		Red brown CLAY, trace silt, medium stiff, w	vet.			
41		WET	SM		Red brown fine SAND, some silt, little clay,	loose, wet.			
- 5/5 43	0	WET	CL		Gray CLAY, little silt, medium stiff, wet.	-			
45 	0	WET	CL		Brown CLAY, little silt, medium stiff, wet.	-		 Bentonite: 45-46 ft bgs #00 Filter Sand: 46-48 ft bgs #0 Filter Sand: 48-58 ft bgs 	
50 - 51 - 52 - 3 / 5 - 53 - 54 - 55 - 55 - -	0	WET	SM		Reddish brown SAND, some silt, trace clay, dense, wet.	-		—4-inch PVC well screen: 50-56 ft bgs	
		WET	SM	XXYWVXXX	Reddish brown fine SAND, some silt, trace medium dense, wet.				
57	0	WET	SM		Reddish brown fine to coarse SAND, some fine to coarse subrounded gravel, very dens (Basal Till).			—4-inch PVC Sump: 56-58 ft bgs —#00 Filter Sand: 58-60 ft bgs	

AECOM

Boring ID: 114-MW68C

roject Name			Touriowater		Drilling Company: ADT		levation: 15.75			
roject Num					Drilling Method: Sonic Rig Type: Fraste XL Max 170		ates (NJSPNAD83) x: 610851.6 ates (NJSPNAD83) y: 683321.4			
ate Finishe			1		Core Size: 8 in.	Boring Total Depth: 80 ft				
ogged By:		. 1/19/202	I		Project Manager: Shannon Gleason	Depth to Wat				
hysical Loc		ito 11/			Froject Manager. Shannon Gleason		ation: 14.1 ft N			
-						Ourface Liev	Well	1000		
Depth Range (ft/				Graphic Log	Material Description		Construction	Remarks		
-61	5 0	WET	SM		Reddish brown fine to coarse, SAND, some fine to coarse, subrounded gravel, very dens (Basal Till).	e silt, little se, wet - -				
65 66 67 67 68 69 	5 0	WET	SM		Reddish brown fine to coarse, SAND, some fine to coarse, subrounded gravel, very den (Basal Till).	e silt, little se, wet - -				
70 71 72 73 4 /	5 0	WET	SM		Reddish brown fine to coarse, SAND, some fine to coarse, gravel, very dense, wet (Basa			-Bentonite: 60-80 ft bgs		
 74 		NA	BEDROCK		Rock fragments, weathered, Diabase.	-	-			
75 76 77		NA	BEDROCK		Green broken rock fragments, weathered, E	Diabase.				
-77 5 / 79 -	5 0	NA	BEDROCK		Gray broken rock, unweathered, Diabase. E at 80 ft bgs.	nd of boring				

AECON	
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Boring ID: 114-MW69C

	Number:			oundwater	1.11	Drilling Company: ADT Drilling Method: Sonic	Top of PVC I Coordinates			x: 611145.2	
	arted Drill					Rig Type: Fraste XL Max 170				y: 683213.2	
			1/21/2021			Core Size: 8 in.	Boring Total				
ogged	By: E. A	cs				Project Manager: Shannon Gleason	Depth to Wa	ter:			
hysica	I Location	1: Site	114				Surface Elev	ation:	10.8 ft	NAVD88	
Depth lange t bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description			Well struction	Remarks	
-1-1	0/5	0	DRY	FILL		Soft dig to 5 ft bgs. Brown fine to mediu fine to coarse gravel, well graded, very dry.	dense (DGA),		<u> </u>	No well installed.	
-6				MOIST	FILL		Brown fine to coarse GRAVEL, trace fil sand, loose, moist. Brown fine to medium SAND, little fine				
-7			WET	FILL		trace silt, loose, wet.	-				
-8	3.5 / 5 52		WET	FILL		Gray fine to coarse SAND, some fine to stained black between approximately 7- coal tar oil, odorous, saturated.	o coarse gravel, -8 ft bgs from				
-10 -11 -12 -13	4/5	32	MOIST	FILL		Gray fine to coarse SAND, some fine to loose, moist.	o coarse gravel,				
 -14 			MOIST	PT		Gray organic CLAY, fibrous (40%), me Coal tar free product observed at 13-13	dium stiff, moist. 3.5 ft bgs.	-			
-15	4.5 / 5	10	WET	CL		Gray organic CLAY, medium stiff, wet. odor.				ft = feet	



Boring ID: 114-MW69C

Project Name: G Project Number:			Janawaler	1 M	Drilling Company: _ADT Drilling Method: Sonic		Elevation: NA ft (NJSPNAD83) x:				
ate Started Drill					Rig Type: Fraste XL Max 170		(NJSPNAD83) y:				
ate Finished Dri					Core Size: 8 in.		Depth: 75 ft				
ogged By: E. A	CS				Project Manager: Shannon Gleason	Depth to Wa	ter:				
hysical Location	n: Site	114				Surface Elev	ation: 10.8 ft NA	VD88			
Depth Range ft bgs)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks			
21		WET	SP		Gray fine to medium SAND, trace silt, tar staining and odor.	loose, wet. Coal	-				
-22 	260	260	260	WET	SM		Gray fine to coarse SAND, some silt, li gravel, dense, wet. Coal tar staining an				
-24		WET	GW		Gray fine to coarse GRAVEL, trace fine loose, wet. Coal tar staining and odor.	e to coarse sand,					
25 	3.5 / 5 5.6	WET	SM		Gray fine to coarse SAND, some silt, li subrounded gravel, medium dense, we staining and odor.	ttle fine to coarse t. Coal tar					
-28 		,				WET	SP		Reddish brown fine sand, trace silt, loo Petroleum staining from 27-27.5 ft bgs		
30 	0	WET	SP		Reddish brown fine sand, trace silt, loo						
-36	4/5 0	WET	SP		Reddish brown fine sand, trace silt, loo	se, wet.					
-38 -39 -39 		WET	CL		Reddish brown CLAY, medium stiff, wa			ft = feet			



Boring ID: 114-MW69C

roject Name: roject Numbe					Drilling Company: _ADT Drilling Method: Sonic		Elevation: NA ft s (NJSPNAD83) x:	
ate Started D					Rig Type: Fraste XL Max 170		s (NJSPNAD83) y:	
ate Finished					Core Size: 8 in.		al Depth: 75 ft	
ogged By: E	Acs				Project Manager: Shannon Gleason	Depth to W		
hysical Locat	ion: Site	114				Surface Ele	vation: 10.8 ft NA	VD88
Depth Range (ft/ft)		Moisture Content	USCS	Graphic Log	Material Description	ı	Well Construction	Remarks
_		WET	CL		Reddish brown CLAY, stiff, wet.		-	
-41 -42 -43 -43 -44 -	0	WET	CL-SP		Gray CLAY, varved with stringers of 1 SAND, medium stiff, wet.	I/8" thick fine		
-45		WET	CL-SP		Gray CLAY, varved with stringers of 1 SAND, medium stiff, wet.	I/8" thick fine		
-47	5 0	WET	SM		Reddish brown fine SAND, some silt, trace clay, medium dense, wet (Basal Till). –			
50 - 51 - 52 - 2 / 5 - 53 - 54 - 55 - - - - - - - - - - - - -	0	WET	SM		Reddish brown fine to medium SAND fine gravel, very dense, wet (Basal Til	j).		
	0 ow surface o	WET	SM		Reddish brown fine to medium SAND fine to coarse subrounded gravel, ver (Basal Till). Horizontal Datum of 1983 NJSP = New Jersey Sta	y dense, wet		ft = feet

AECOM

Boring ID: 114-MW69C

Project Project	Number:		261			Drilling Method: Sonic	Coordinator	(NJSPNAD83) x:	611145.2
	arted Drill					Rig Type: Fraste XL Max 170		(NJSPNAD83) X.	
	nished Dri					Core Size: 8 in.		Depth: 75 ft	000210.2
	By: E.A					Project Manager: Shannon Gleason	Depth to Wa		
Physica	Location	1: Site	114					vation: 10.8 ft NA	VD88
								Well	
Depth Range (ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Construction	Remarks
-61	3.5 / 5	0	WET	SM		Reddish brown fine to medium SAND, fine to coarse subrounded gravel, very (Basal Till).		-	
-65 -66 -67 -67	4 / 5	0	WET	SM		Reddish brown fine to medium SAND, fine to coarse subrounded gravel, very (Basal Till).			
-68 -69 -70			NA	BEDROCK		Broken rock, unweathered, fine sands (Stockton formation).	one, hard		
-70 -71 -72 -73 -73 -74 -75	0/5	0	NA	BEDROCK		Broken rock, unweathered, fine sands (Stockton formation). End of boring at	one, hard 75 ft bgs.		
otes:	bgs = below DGA = dense	surface g e graded a				Horizontal Datum of 1983 NJSP = New Jersey Stat an Vertical Datum of 1988 PID = photoionization de		r million d Soil Classification Sys	ft = feet tem in = inches

			Avenue Gro	oundwater	RI	Drilling Company: ADT	Top of PVC			
	Number: arted Drill					Drilling Method: Sonic Rig Type: Fraste XL Max 170	Coordinates Coordinates			x: 611331.4
	nished Dri					Core Size: 8 in.	Boring Total			
	I By: E. A					Project Manager: Shannon Gleason	Depth to Wa			
nysica	al Location	n: Site	114		1		Surface Elev			IAVD88
epth ange bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description			ruction	Remarks
- 1	0/5	0	DRY	FILL		Soft dig to 5 ft bgs, brown fine to coarse S fine to coarse gravel, very dense (DGA), c	AND, some ry.			8-inch steel protective casing (stick up)
-5 — 	3/5	0	MOIST	FILL		Gray fine to coarse GRAVEL, little fine to well graded (DGA), dense, moist.	coarse sand,			—Portland-Bentonite Grout: 0-80 ft bgs
8 — 9 — –			MOIST	FILL		Black fine to coarse GRAVEL, little fine sa graded, dense (DGA), moist.	nd, well			—4-inch PVC riser: 0-85 ft bgs
10— 11— 12— –	3/5	0	MOIST	FILL		Black fine to coarse GRAVEL, little fine sa graded, dense (DGA), moist.	nd, well		P\$\$\$	
13 			MOIST	FILL		Black fine to coarse SAND, little fine to co dense (DGA), moist.	arse gravel,			
14 			WET	FILL		Gray fine SAND, trace silt, trace fine to m (DGA), wet.	edium gravel] 📓		
15— — 16—			WET	FILL		Black fine to coarse SAND, some fine to o dense (DGA), wet.	oarse gravel,			
16 			WET	PT	<u>, , , , ,</u>	Gray organic CLAY, fibrous (60%), mediu	m stiff, wet.			
17	4/5	0	WET	CL		Gray organic CLAY, trace silt, medium sti	f, wet.			



30 Knightsbridge Road, Piscataway, NJ 08854 732.564.3200 office telephone

Boring ID: 114-MW70C

Project Proiect	Number:		261			Drilling Method: Sonic	Coordinates	(NJSPNAD83) x:	6113314	
	arted Drill					Rig Type: Fraste XL Max 170		Coordinates (NJSPNAD83) y: 682887		
	nished Dri					Core Size: 8 in.		Depth: 100 ft	002001	
	By: E.A					Project Manager: Shannon Gleason	Depth to Wat			
	al Location		114					ation: 11.1 ft NA	VD88	
								Well		
Depth Range (ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Construction	Remarks	
			WET	CL		Gray organic CLAY, trace silt, medium sti				
-21			WET	SP		Grayish brown fine sand, little silt, little fin gravel, wet.	ne to medium -			
22 23 24 24	4/5	0	WET	SM		Reddish brown fine to medium SAND, so fine to coarse gravel, dense, wet.	me silt, little -			
-25	3.5 / 5	0	WET	SP		Reddish brown fine SAND, trace silt, trace loose, wet.	e fine gravel, - -			
30 31 32 33 33 34 34 35	4/5	0	WET	SP		Reddish brown fine SAND, trace silt, trace loose, wet.	-			
		30.2	WET	SP		Reddish brown fine SAND, trace silt, trac loose, wet. Petroleum-impacted free prod at 37 ft bgs; staining from 35-37 ft bgs.	e fine gravel, uct observed			
37 38 	4/5	2.5	WET	SP		Reddish brown fine SAND, little silt, loose	-, wet. -			
Notes:	bgs = below DGA = dense					n Horizontal Datum of 1983 NJSP = New Jersey State P an Vertical Datum of 1988 PID = photoionization detect			ft = feet tem in = inches	



Boring ID: 114-MW70C

	Number:					Drilling Method: Sonic			x: 611331.4
	arted Drill nished Dri					Rig Type: Fraste XL Max 170 Core Size: 8 in.	Boring Total I	NJSPNAD83) y	. 00200/
	By: E.A		1/23/2021			Project Manager: Shannon Gleason	Depth to Wate		
	al Location		114					tion: 11.1 ft N	
		0110						Well	
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Construction	Remarks
						Reddish brown fine SAND, trace silt, loos	e, wet.		
_							-		
-41							_		
_		2.2		SP			_		
		2.2	WET	35					
-42							_		
_	4/5						-		
-43						Daddiah kenya fina CAND 1991 - 194	wet		
		3.4	WET	SP		Reddish brown fine SAND, little silt, loose	, wet.		
_1.1		3.4	VVEI	36					
-44						Reddish brown fine SAND, trace silt, loos	e, wet.		
-		4.2	WET	SP			-		
45						Reddish brown fine to medium SAND, tra	ce silt loose		
_						wet.			
-16									
46							_		
-							-		
47							-		
_	2.5/5	0.8	WET	SP			-		
-48		0.0		0					
40							_		
-							-		
49							-		
_							-		
50									
						Reddish brown fine SAND, trace silt, loos coloration to water.	e, wet. Yellow		
							-		
-51							-		
_		2.0	WET	SP			-		
-52							_		
	4.5/5						_		
-	4.07.0								
53	1					Reddish brown fine SAND, little silt, loose	, wet. Yellow		
_						coloration to water.	-		
54		0.8	WET	SP			-		
_		5.5					-		
55									
-55						Reddish brown fine SAND, little silt, loose	, wet. Yellow		
-						coloration to water.	-		
56			WET	SP			-		
_							-		
-57									
51	4515	-				Gray to reddish brown CLAY, medium stil	f to stiff, wet.		
	4.5/5	0					-		
58					<i>\//////</i>		_		
_			WET	CL	<i>\///////</i>		-		
59					<i>\///////</i>		_		
_					<i>\//////</i>				
otes:	bgs = below	surface g				h Horizontal Datum of 1983 NJSP = New Jersey State Pl		nillion	ft = feet
	DGA = dens					an Vertical Datum of 1988 PID = photoionization detect			vstem in = inches



Boring ID: 114-MW70C

Project Name: _(Project Number:					Drilling Company: ADT Drilling Method: Sonic		Top of PVC Elevation: 13.79 ft NAVD88 Coordinates (NJSPNAD83) x: 611331.4		
Date Started Drill					Rig Type: Fraste XL Max 170		(NJSPNAD83) X. (NJSPNAD83) y:		
Date Finished Dr					Core Size: 8 in.		Depth: 100 ft		
Logged By: E. A		.,_0,2021			Project Manager: Shannon Gleason	Depth to Wate			
Physical Location		114					ation: 11.1 ft N/	VD88	
							Well		
Depth Range (ft bgs)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Construction	Remarks	
	0	WET	CL		Reddish brown CLAY, trace silt, stiff, we	L			
 - 66 _ - 67 - 5 / 5	0	WET	CL		Gray CLAY, trace silt, stiff, wet.	- -			
-68		WET	CL-SP		Reddish brown CLAY, trace silt, varved v stringers of fine SAND, wet.	vith 1/8" 			
-70	0	WET	CL-SP		Reddish brown CLAY, trace silt, varved v stringers of fine SAND, wet.	- - - - - - - - - - - - - - -			
-/5 	0	WET	CL		Reddish brown CLAY, trace silt, medium	stiff, wet. 			



Boring ID: 114-MW70C

Project Name: _ (Project Number:			<u>unununu</u>		Drilling Company: ADT Drilling Method: Sonic	Top of PVC Coordinates	(NJSPNAD83)	
Date Started Dril					Rig Type: Fraste XL Max 170		(NJSPNAD83)	
Date Finished Dr					Core Size: 8 in.		I Depth: 100 ft	
ogged By: E. A					Project Manager: Shannon Gleason	Depth to Wa		
Physical Location	n: Site	114					vation: 11.1 ft N	NAVD88
							Well	
Depth Range ft bgs)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Construction	Remarks
		WET	CL		Reddish brown CLAY, trace silt, mediun	n stiff, wet.		Bentonite: 80-81 ft bgs #00 Filter Sand: 81-83 ft bgs
-82	0	WET	SM		Reddish brown fine to medium SAND, s fine to coarse subrounded gravel, mediu			—#0 Filter Sand: 83-97 ft bgs
-85		WET	SM		Reddish brown fine to medium SAND, s fine to coarse subrounded gravel, mediu			
-87 	0	WET	SP		Reddish brown fine SAND, trace to little dense, wet.	silt, medium		
90 	0	WET	SP		Reddish brown fine SAND, trace to little dense, wet.	silt, medium		—4-inch PVC well screen: 85-95 ft bgs
-93 -94 		WET	SM	KAXX /	Reddish brown fine to medium SAND, s fine to coarse subrounded gravel, mediu	m dense, wet.		
 	0	WET	SM		Reddish brown fine to medium SAND, s fine to coarse gravel, very dense, wet (B of boring at 100 ft bgs.			 4-inch PVC Sump: 95-97 ft bgs #00 Filter Sand: 97-98 ft bgs Bentonite: 98-100
-99					Horizontal Datum of 1983 NJSP = New Jersey State	Plane ppm = parts pe		ft bgs ft = feet



Boring ID: 114-P1B-MW103D

Project Nam Project Num					Drilling Method: Sonic Vibration	Coordinates (NISP	NAD83) v: 610997 0
ate Started			·00.00 0M		Rig Type: B-60/ CRS XL Max	Coordinates (NJSP	NAD83) x: 610887.2
			7 2:00:00 AM		Core Size: 6	Boring Total Depth:	
ogged By:			, 2.00.00 FI		Project Manager: Scott Mikaelian	Depth to Water:	
hysical Lo			se 1B)			Surface Elevation:	13 5 ft NAVD88
						Surfuse Elevation.	
Depth Range t bgs)	very PID (ppm)	Moisture Content	USCS	Graphi Log	c Surface Cover and Thick	ness:	Sample ID
-1	0	dry	FILL		DGA, (5YR 5/1) gray, dense, dry to we staining	et no odor no	
-3 -4 -5 -6 -7 -8	0						
-9 9 -10 -11 -12 -13 -13 -13 -14 -14 -15 -16 	0 0	moist	PT			80% fibers, 20% noist slight organic	
-17 -18 19		-		<u>vv vv</u>			_
-20) 0	moist	SP		fine to coarse SAND, trace coarse gra to wet no odor no staining. Soils consis	vel, dense, moist stent with UNDno.	
otes: gs - below sur	ace grade	COPR - chro	mite ore proce	esina ros	idue UNDno - non-organic undisturbed native de	enosits MGP - man	ufactured gas plant



Boring ID: 114-P1B-MW103D

Project Date St Date Fi	Number:	60550 ling: 1 illing:	0261 11/9/2017 7 11/13/201	7:00:00 AM 7 2:00:00 P	M	Drilling Company: SGS North America Drilling Method: Sonic Vibration Rig Type: B-60/ CRS XL Max Core Size: 6 Project Manager: Scott Mikaelian	Coordinates (NJSP Coordinates (NJSP Boring Total Depth: Depth to Water:	
			e 114 (Pha	se 1B)			Surface Elevation:	13.5 ft NAVD88
Danath	Recovery		Moisture	USCS	Graph Log	Surface Cover and Thick		Sample ID
-23								
-24			wet	SP		fine SAND, trace silt, (5YR 4/3) reddis dense, wet no odor no staining, green consistent with UNDno.	h brown, medium water at 35'. Soils	
-28 29 	10	0	moist	СН		CLAY, trace silt, (7.5R 6/6) light red, n	nedium stiff, moist	
	10	0				no odor no staining. Soils consistent w	<i>i</i> ith UNDno.	
	ow surface g adow mat	grade	COPR - chro GGM - gree	omite ore proce	essing re	sidue UNDno - non-organic undisturbed native de UNDorg - organic undisturbed native depos	eposits MGP - manu sits CCPW - chr	ufactured gas plant omate chemical production waste

30 Knightsbri	dge Road, Piso 564.3200 office	ataway, NJ 08	854			
				on Drilling Company: SGS North Ame	Prica	Page:
roject Numl			iouur invooliguu	Drilling Method: Sonic Vibration		SPNAD83) x: 610887.2
			7:00:00 AM	Rig Type: B-60/ CRS XL Max		PNAD83) y: 683237
			7 2:00:00 PM	Core Size: 6	Boring Total Dept	th: 68 ft
ogged By:	M. Forbes			Project Manager: Scott Mikaelian	Depth to Water:	
hysical Loc	ation: Site	e 114 (Pha	ise 1B)		Surface Elevation	13.5 ft NAVD88
epth ange bgs)		Moisture Content		aphic Surface Cover an	d Thickness:	Sample ID
- 45 - 46 - 47 - 48 - 49 - 50 - 50 - 51 - 52 - 10	0 0					
53— 		wet	SP	fine SAND, trace silt, medium of staining. Soils consistent with U	lense, wet no odor no JNDno.	
56		moist	SP	fine SAND, little silt little fine to moist no odor no staining, glaci UNDno.	medium gravel, dense, al till. Soils consistent with	
- 59- 60- 61- 62- 63- 63- 64- - 65- - 65- -	0 0					



Boring ID: 114-P1B-MW103D

Project Name	Ground	water Dam	nodial Invest	antion	rilling Company COC North America		
			ieulai investi		Drilling Company: SGS North America	Coordinates (NUCD	NAD23) VI 610007 0
Project Number	. 0055	UZU I	7.00.00 444		Drilling Method: Sonic Vibration		NAD83) x: 610887.2
Date Started Dr	ning:	11/9/2017	1.00:00 AM		Rig Type: B-60/ CRS XL Max	Coordinates (NJSPI	
Date Finished D			17 2:00:00 PI	VI	Core Size: 6	Boring Total Depth:	π αο
ogged By: M	. Forbes	- 114 (D)			Project Manager: Scott Mikaelian	Depth to Water:	
Physical Locati		e 114 (Pha	ISE 1B)	1		Surface Elevation:	13.5 ft NAVD88
Depth Range ft bgs)	y PID (ppm)	Moisture Content	USCS	Graphi Log	Surface Cover and Thicl	kness:	Sample ID
Notes:							
gs - below surface 1M - meadow mat	e grade	COPR - chro GGM - gree	omite ore proce n grey mud	essing res	due UNDno - non-organic undisturbed native d UNDorg - organic undisturbed native depo	eposits MGP - man sits CCPW - chr	ufactured gas plant omate chemical production waste

roject ate S ate Fi	Name: GA Groundwater RI Drilling Company: SGS Number: 60550261 Drilling Method: Direct Push Coordinates (NJS xarted Drilling: 10/16/2017 10:00:00 AM Rig Type: Coordinates (NJS nished Drilling: 10/16/2017 Core Size: Boring Total Dep By: KW Project Manager: Scott Mikaelian Depth to Water:							D83) y: 682533.1
	al Locatio		en Wood				Surface Elevation:11.	1 ft NAVD88
epth ange bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphi Log	c Surface Cover and Thic	ckness: 11.1	Sample ID
1	5	0.0	dry			DGA CINDERS, and ash little fill debris, (7 dry to wet no odor no staining	.5YR 4/3) brown,	
-14 -15 -16 -16 -17 -17 -18 -18 -19 -19 -19 -19 -19 -19 -19 -19 -19 -19	5	0.0	wet			vegetated material), (7.5YR 4/2) brov organic odor no staining	ng PEAT (degraded	
20— 21— 22— 22— 23—	5	0.0	wet			fine to medium silty SAND, (5YR 6/1) no odor no staining organic SILT, trace organic fibers, fin	e sand, (5YR 6/1)	
24 — _						gray, moist slight organic odor no sta	ining	



Boring ID: 114-SS39B

Project Date St	t Number: tarted Dril	60550 ling: 1		10:00:00 AN	M	Drilling Company: SGS Drilling Method: Direct Push Rig Type: Core Size:	Coordinates (NJSP Coordinates (NJSP Boring Total Depth:	NAD83) y:
	d By: KW		10/10/201	/		Project Manager: Scott Mikaelian	Depth to Water:	49.5 II
Physica	al Locatio	n: Ede	en Wood				Surface Elevation:	ft NAVD88
Donth	Recovery (ft/ft)		Moisture	USCS	Graph Log	Surface Cover and Thic	kness:	Sample ID
		0.0						
-26			wet			fine to medium SAND, little silt, (5YR	6/1) grove wat no	_
			wet			odor no staining	o/ r) gray, wet no	
-27	5							
~								
-29								
-30		0.0	wet			fine silty SAND, (5YR 4/4) reddish bro	wn wet no odor no	-
						staining		
-31								
-32								
	5							
-33								
-34								
-35								_
		0.0	wet			SILT, little fine sand, (5YR 4/4) reddis odor no staining	h brown, moist no	
-36			dry			CLAY, little fine sand, silt, (5YR 4/3) r	eddish brown low	_
· _			ury			plasticity, dry no odor no staining		
-37	5							
-38								
-39								
-40		0.0	wet			fine silty SAND, (5YR 4/4) reddish bro	own, wet no odor no	-
-41						staining		
-42	5							
-43								
-44								
· _								
-45		0.0				CLAY, little fine sand, silt fine sand, (5YR 4/4) reddish	-
-46	1				\/////	brown, low plasticity, dry to moist no o	odor no staining	
+0								_
-47			dry			CLAY, trace silt, (5YR 4/4) reddish br dry no odor no staining	own, high plasticity,	
	4.5					ary no oddrino otdrining		
-48			+			CLAY, little fine sand, silt, (5YR 4/3) r	eddish brown, low	-
					V////	plasticity, dry to moist no odor no stai	ning	
-9					<u> </u>			
	ow surface g	grade	COPR - chro	mite ore proce	essing re	sidue UNDno - non-organic undisturbed native d	eposits MGP - man	ufactured gas plant
IM - me omments:	adow mat		GGM - green	grey mud		UNDorg - organic undisturbed native depo	sits CCPW - chr	omate chemical production waste



Boring ID: 114-SS40B

Project Name: Project Number					Drilling Company: SGS Drilling Method: Direct Push	Coordinates (NJSP	NAD83) x. 611703 3
ate Started Dr			9.15.00 414		Rig Type:	Coordinates (NJSP	
ate Finished D					Core Size:	Boring Total Depth:	
ogged By: K		11/2/201	<u> </u>		Project Manager: Scott Mikaelian	Depth to Water:	40 11
hysical Locati	on: Ed	on Wood			Froject Manager. Scott Mikaellan	Surface Elevation:	ft NAVD88
			1			Surface Elevation.	
epth ange : bgs)	y PID (ppm)	Moisture Content	USCS	Graphi Log	Surface Cover and	Thickness:	Sample ID
_	0.0	dry	CONCRETE		ROAD GRAVEL		
-1		moist	FILL		fine to medium silty SAND, little t brown, dry to moist no odor no st	fill debris, (7.5YR 4/2) taining	
-3		wet	FILL		ASH, (5YR 2.5/1) black, moist to	wet no odor no staining	
-5	0.0	wet	SM		fine to medium silty SAND, trace reddish brown, wet no odor no st	fine gravel, (5YR 4/3) aining	
-9	0.0	-					
14	0.0						
-18		moist	OL		organic SILT, some organic fiber	s, (5YR 2.5/1) black,	-
				[moist slight organic odor no stair	ning	
20 -21	0.0	wet	OL		organic SILT, little fine sand trace gray, wet slight organic odor no s	e organics, (5YR 6/1) staining	

Project Date St	Number: arted Drill	6055 ing:	1/2/2017 9	:15:00 AM	D R	rilling Company: SGS rilling Method: Direct Push ig Type:	Coordinates (NJSF Coordinates (NJSP	NAD83) y:
			11/2/2017			ore Size:	Boring Total Depth	: 40 ft
	By: KW				P	roject Manager: Scott Mikaelian	Depth to Water: Surface Elevation:	# N(A) (D00
	al Locatio						Surface Elevation:	ft NAVD88
Depth Range t bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Surface Cover and Th	ickness:	Sample ID
_	5							
-23 -24 -25			wet	SM		fine to medium SAND, trace silt, (5 odor no staining	YR 5/1) gray, wet no	
	5	0.0						
-28 -29 -30			wet	SM		fine to medium SAND, little silt, (5Y wet no odor no staining	R 4/3) reddish brown,	_
 	5	0.0						
			moist	ML		clayey SILT, trace fine sand, (5YR moist no odor no staining		
-36	5	0.0	wet	SP		fine to medium SAND, (7.5YR 4/2) no staining	brown, wet no odor	
			moist	СН		sandy CLAY, some silt, (5YR 4/3) r no odor no staining	eddish brown, moist	-
40								



Boring ID: 132-P3A-MW104D-2

	Name: (Number:					rilling Company rilling Method:		Coordinates (NICD	Coordinates (NJSPNAD83) x: 610794.3		
Jata St	arted Dell	inc: 4	0/30/2017			ig Type:			NAD83) y: _682807.3		
			11/15/201	I		ore Size:	Coott Milroeller	Boring Total Depth:	1011		
.ogged	By: L.K	unsey	100		P	roject Manager:	Scott Mikaelian	Depth to Water:			
	al Locatio		2132					Surface Elevation:	15.2 TT NAVD88		
Depth	Recovery (ft/ft)	חום	Moisture		Graphia				Samala		
Range	(ft/ft)	(ppm)	Content	USCS	Graphic Log		Surface Cover and Thickr	ness:	Sample ID		
t bgs)	(1011)	(hhiii)			LUY						
				F 11 1		DCA					
				FILL		DGA					
-1											
_											
-2											
-3											
_											
_4											
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-5											
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-6											
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-9											
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-10											
-11											
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-12											
_10											
-13											
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-14											
4.5											
-15											
-											
-16											
-17											
4											
-18											
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-19											
~											
-20											
-											
-21											
]											
otes:			L						4		
ns - helo	ow surface g	Irade	COPR - chro	mite ore pro	cessing resid	ue UNDno - non	organic undisturbed native dep anic undisturbed native deposit	oosits MGP - manu	lfactured gas plant omate chemical production wast		
30 0010	adow mat		GGM - green								



Boring ID: 132-P3A-MW104D-2

	Ground	0261			Drilling Method:	Coordinates /NI ICE	PNAD83) x: 610794.3
Project Number: 60550261 Date Started Drilling: 10/30/2017 Date Finished Drilling: 11/15/2017					Rig Type:	NAD83) X: 610794.3 NAD83) y: 682807.3	
					Core Size:		
Logged By:		11/10/201	•		Project Manager: Scott Mikaelian	Boring Total Depth Depth to Water:	
Physical Loca		e 132				Surface Elevation:	15.2 ft NAVD88
Danath				1			
Depth Range ft bgs)	ery PID) (ppm)	Moisture Content	USCS	Graphic Log	Surface Cover and T	hickness:	Sample ID
		moist	PT	<u></u>	40% organic silt), (5YR 2.5/1) blac	al), (60% organic fibers k, moist, moderate	
-23		wet	SM		organic odor, no staining SAND, trace silt, trace gravel, (7.5	YR 5/1) gray, wet	_
-25 							
-27							
-28		wet	SP-SM		medium to coarse SAND, (5YR 5/2		-
-29		wet	SP-SM		medium to coarse SAND, (5YR 4/	3) reddish brown, wet	
-31							
-32 -33		wet	SW-SM		fine SAND, (5YR 4/3) reddish brov	vn, wet	
-34							
-35							
-36							
-37							
-38 -39		wet	SW-SM		fine SAND, (5YR 4/3) reddish brov	vn, wet	
		saturated	SW-SM		fine SAND, (5YR 4/3) reddish brov	vn, saturated	_
-42			-				
-43 							
lotes: gs - below surfa 1M - meadow m		COPR - chro GGM - greer	omite ore proce n grey mud	essing resi	due UNDno - non-organic undisturbed nativ UNDorg - organic undisturbed native d	ve deposits MGP - man leposits <u>CCPW - ch</u>	ufactured gas plant romate chemical production waste



Boring ID: 132-P3A-MW104D-2

Logged By: L. Kinsey Project Manager: Scott Mikaelian Depth to Water: Physical Location: Site 132 Surface Elevation: 15.2 ft NAVD88	Project Name: Project Number Date Started Dr Date Finished I	r: 60550261 rilling: 10/30/2	/2017	Drilling Company: SGS Drilling Method: Rig Type: Core Size:		JJSPNAD83) x: 610794.3 JSPNAD83) y: 682807.3 epth: 78 ft		
Physical Location: Site 132 Surface Elevation: 152.ft NAVD88 Depth ft rigg Recovery (Pth) (Pth) Moisture (pth) USCS Graphic Log Surface Cover and Thickness: Sample ID -46			5/2011		Depth to Water:	. <u>/on</u>		
tots um u	Physical Locati	ion: Site 132	1 1	· · · ·		15.2 ft NAVD88		
46 47 47 48 48 wet SW-SM 50 50 51 51 52 53 53 54 54 55 55 56 56 56 57 58 58 58 69 60	Depth Range ft bgs)	ry PID Moist (ppm) Conte		hic Surface Cover and Th	ickness:	Sample ID		
	-46 - -47 - -48 - -49 - -50 - -51 - -52 - -53 - -53 - -54 - -55 - -56 - -57 - -56 - -57 - -58 - -57 - -58 - -59 - -61 - -62 - -63 - -64 - -64 - -64 -	we		plasticity, wet				



Boring ID: 132-P3A-MW104D-2

Project Number: 60550261 Drilling Method: Coordinates (NJ) Date Started Drilling: 10/30/17 Rig Type: Correlates (NJ) Date Finished Drilling: 11/15/2017 Core Size: Boring Total Dep Dopth to Water: Project Manager: Scott Mikaelian Depth to Water: Surface Elevation Content USCS Graphic Log Surface Cover and Thickness: USCS Graphic Log Surface Cover and Thickness: Surface Cover and Thickness: Section: Size Section: Section: Size Section: Size Section: Section: Size Section: Section: Section: Size Section: Sec	PNAD83) x: 610794.3
Date Finished Drilling: 11/15/2017 Core Size: Boring Total Dept Logged By: L. Kinsey Project Manager: Scott Mikaelian Depth to Water: Physical Location: Site 132 Surface Elevation Surface Elevation Depth Recovery PID Moisture USCS Graphic Surface Cover and Thickness:	
orgged By: L. Kinsey Project Manager: South Mikaelian Depth to Water: Physical Location: Site 132 Surface Elevation Surface Elevation Oppth Recovery (ft/ft) PID (ppm) Moisture Content USCS Graphic Log Surface Cover and Thickness: -67 - - - - - - -67 - - - - - -67 - - - - - -70 - - - - - -70 - - - - - -70 - - - - - -71 - - - - - -71 - - - - - -72 - - - - - -73 - - - - -74 - - - - -74 - - - - -75 - - - - -76 - - - - -77 - - - - -77 - <	
Physical Location: Site 132 Surface Cover and Thickness: Depth Range Recovery (ft/ft) ppm Moisture Content USCS Graphic Log Graphic Log Surface Cover and Thickness: -67 -68 -69 -70 -71 -72 -73 -74 -74 -74 -74 -77 -77 -77 -77	I. / O IL
Perton trange Recovery (fift) PID (ppm) Moisture Content USCS Graphic Log Surface Cover and Thickness: 67- -68- -69- -70- -71- -71- -72- -74- -75- -76- -77- Image: Second Seco	
67 68 69 69 70 71 71 72 72 SP 73 wet 6W GW fine to medium SAND, with gravel and angular cobbles, (5YR 4/3) reddish brown, wet 74 60 76 60 77 60	
68 69 -70 -71 -72 -73 -74 -75 -76 -77 -77 -77	Sample ID
Iotes: gs - below surface grade COPR - chromite ore processing residue UNDno - non-organic undisturbed native deposits MGP - m IM - meadow mat GGM - green grey mud UNDorg - organic undisturbed native deposits CCPW - J	nufactured gas plant hromate chemical production was



Boring ID: 132-P3A-MW105I

Project Project	t Number:		7168			Drilling Method: Augers/Mud Rotary	Coordinates (N ISP	NAD83) x: 610676.8
				7:00:00 AM		Rig Type:		NAD83) y: 682695.3
				3:00:00 PM		Core Size:	Boring Total Depth:	
	d By: _E. /		., 10/2010	0.00.00110		Project Manager: Scott Mikaelian	Depth to Water: 7.8	
hvsic	al Locatio	n: Ter	n West Ap	oarel			Surface Elevation:	
Depth Range t bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphi Log	c Surface Cover and Thick	ness:	Sample ID
				ASPHALT		ASPHALT		
-1 -2	-			FILL		fine to coarse SAND, some silt trace g dark gray, dry no odor no staining, (Ha	nd Excavated)	
 	-		dry	FILL		ASH, (5YR 6/1) gray, very loose, dry n wet @5.5'(Hand Excavated)	o odor no staining,	
-6 -7 -8	0.5	0.0	wet	FILL		ASH, trace silt, (5YR 2.5/1) black, very odor no staining	/ loose, wet no	
_9 _9 _10	0.5	0.0						_
 11 -12	0.5	0.0	wet	FILL		ASH, trace silt, (5YR 5/1) gray, very lo no staining		
-13 -13	0.5	0.0	wet	FILL		ASH, trace silt, (5YR 2.5/1) black, very odor no staining	/ loose, wet no	
-15 -15	0.5	0.0						
-16 -17	1.67	0.0	wet	FILL		fine to coarse SAND, trace silt trace gi wet no odor no staining	-	
-18			moist	PT		organic silt, (7.5YR 4/1) dark gray, mo	80% fibers 20% ist slight organic	
-19	1.67	0.0			<u>v vv</u> : <u>vv vv</u> :	<u>.</u>		
-20 -21	0.5	0.0		ML		SILT, trace fine sand, very soft, wet sli no staining. Soils consistent with UND	ght organic odor org.	
otes: gs - bel IM - me	low surface g adow mat	grade	COPR - chro GGM - greei	omite ore proce	ssing res	sidue UNDno - non-organic undisturbed native de UNDno - organic undisturbed native depos	eposits MGP - manu	Jufactured gas plant



Boring ID: 132-P3A-MW105I

Project Name: Groundwater Remedial Investigation Project Number: 60507168 Date Started Drilling: 1/11/2018 7:00:00 AM Date Finished Drilling: 1/15/2018 3:00:00 PM				Drilling Method: Augers/Mud Rotary Rig Type:	Coordinates (NJSP	PNAD83) x: 610676.8 PNAD83) y: 682695.3		
	inished Dr d By: E. /		1/15/2018	3:00:00 PN		Core Size: Project Manager: Scott Mikaelian	Boring Total Depth: Depth to Water: 7	
hysic:	al Locatio	n: Tei	n West App	arel			Surface Elevation:	
Jonth	Recovery		Moisture	USCS	Graphi Log	c Surface Cover and Thick	ness:	Sample ID
-23	0.5	0.0	wet	SM		fine to medium SAND, some silt, (5YR loose, wet no odor no staining. Soils co UNDno.	6/1) gray, very onsistent with	
-24 	0.83	0.0	wet	SW		fine to coarse SAND, little gravel, (5YF brown, medium dense, wet no odor no consistent with UNDno.		
-26 -27 -	0.67	0.0	wet	SP		fine to medium SAND, trace silt trace of reddish brown, loose, wet no odor no s consistent with UNDno.	gravel, (5YR 4/3) taining. Soils	
-28 -29 -20	. 1	0.0	wet	SP		fine SAND, trace silt, (5YR 4/3) reddisl loose, wet no odor no staining. Soils co UNDno.	n brown, very onsistent with	-
-30 -31 -	. 1	0.0						
-32 -33 -	0.67	0.0						
-34 — -35 — -36 —	. 0.67	0.0						
-37 -37 -38	0.67	0.0						
-39 -39 -40	0.83	0.0						
-41	. 1	0.0						
-42 -43 -	1.5	0.0	slightly moist	CL		CLAY, trace fine sand, (5YR 4/3) reddi slightly moist no odor no staining. Soils	ish brown, soft, s consistent with	_
 Notes: bgs - bel	1.5 ow surface g	grade	moist	mite ore proc	essing res	slightly moist no odor no staining. Soils	posits MGP - man	ufactured gas plant

oject	Number:	6050	7168			Drilling Method:	SGS North America Augers/Mud Rotary		NAD83) x: 610676.8
				7:00:00 AM		Rig Type:			NAD83) y: 682695.3
	nisned Dr d By: E. /		1/15/2018	<u>3 3:00:</u> 00 PN		Core Size: Project Manager:	Scott Mikaelian	Boring Total Depth: Depth to Water: 7.8	
ysic	al Locatio	n: Ter	n West Ap	parel		i roject manager.		Surface Elevation:	
epth inge	Recovery		Moisture	USCS	Graphi	c	Surface Cover and Thic	kness:	Sample
bgs)	(ft/ft)	(ppm)	Content		Log	UNDno.			ID
	1.5	0.0				UNDRO.			
46									
47	1.33	0.0							
48 — — 49 —	1.5	0.0	-						
+9 									

٦



2.5

0.0

FILL

FILL

wet

wet

Boring ID: 132-P3A-SSI

30 K	nightsbridge E	Pood Disc	ataway NLO	8854				
50 K	732.564.3	200 office	ataway, NJ 08 telephone	0004				Page: 1
Project	Name: (Ground	water RI			Drilling Company: SGS North America		×
Project	Number:	60550	0261			Drilling Method: Direct Push	Coordinates (NJSPN	IAD83) x: 610750.3
Date St	tarted Dril	ling: 7	7/11/2017	7:15:00 AM		Rig Type:	Coordinates (NJSPN	
Date Fi	nished Dr	illing:	7/11/2017	7 9:45:00 AM		Core Size:	Boring Total Depth:	
	By: KW					Project Manager: Scott Mikaelian	Depth to Water:	
			n West Ap	parel			Surface Elevation:	13.7 ft NAVD88
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphie Log	c Surface Cover and Thickr	ness:	Sample ID
				ASPHALT		ASPHALT, and Subase, (5YR 2.5/1) bl	ack	
-1			dry	FILL		fine to medium SAND, little silt trace fill 4/2) brown, dry to moist no odor no stai	debris, (7.5YR ning	
_			moist	FILL		fine to medium SAND, little COPR (309	6), (5YR 3/3) dark	
-2				NR	FXXXX		ig, 30% COPR	
_	2	0.0				NO RECOVERY		
-3								
_								
4								
-4								
_								
-5			-					
_								
-6								
J								
-7	0	0.0						
_								
-8								
_								
0								
-9								
_								
-10			moist	FILL		GGM, Green, moist no odor green stair	ning	
_			moist		\otimes			
-11					\otimes			
•••						8		
-						8		
-12	5	0.0				8		
_						×		
-13						×		
_					\bigotimes	×		
-14					\bigotimes	×		
14					\bigotimes	×		
_						X		
-15				NR	$\gamma \gamma $	NO RECOVERY		
_								
-16								
		0.0						
-17	0	0.0						
			1	1	1			

14:48	18
- 6/7/18	 19
_A.GDT	 20
- LOGS	 21
RA PPO	
2012-09 RA PPG_LOGS_A.GDT - 6/7/18 14:48	Notes: bgs - belo MM - mea
- DPG	Comments:

tes: - below surface grade I - meadow mat COPR - chromite ore processing residue GGM - green grey mud UNDno - non-organic undisturbed native deposits UNDorg - organic undisturbed native deposits

no staining

GGM, Green, wet no odor green staining

fine to coarse silty SAND, (7.5YR 6/1) gray, wet no odor

MGP - manufactured gas plant CCPW - chromate chemical production waste



Boring ID: 132-P3A-SSI

Project Numb Date Started I Date Finished Logged By: Physical Loca Depth Range ft bgs) 	orilling: Drilling: (W tion: Te ery PID	7/11/2017 7 7/11/2017 n West App Moisture	9:45:00 AN	Ri 1 Ca Pr Graphic Log	rilling Method: Direct Push ig Type: ore Size: roject Manager: Scott Mikaelian Surface Cover and Thi	Coordinates (NJSPN Boring Total Depth: Depth to Water: Surface Elevation:	30 ft
Logged By: Physical Loca Depth Range (ft/ft -23	tion: Te	n West App Moisture	oarel	Graphic Log	roject Manager: Scott Mikaelian	Depth to Water: Surface Elevation:	13.7 ft NAVD88 Sample
Physical Loca Depth Range ft bgs) 23	tion: Te ery PID	Moisture		Graphic Log		Surface Elevation:	Sample
Depth Range ft bgs) 	ery PID	Moisture		Log	Surface Cover and Thi		Sample
Range Recov (ft/ft -23			USCS	Log	Surface Cover and Thi	ckness:	
· _							
-24			NR		NO RECOVERY		
-24							
-25			014/	•.•.•.•.•.			
-26		wet	SW		fine to coarse SAND, trace silt, (5YR brown, wet no odor no staining. Soils UNDno.	s consistent with	
-275	0.0						
-28							
_							
-29							
-30							

LOGS_A.GDT - 6/7/18 14:48	
PPG - 2012-09 RA PPG_LOGS	
-2012-0	Notes: bgs - be MM - me
PPG	Comments

Comments:		
MM - meadow mat	GGM - green grey mud	UNDorg - organic
hotes: bgs - below surface grade	COPR - chromite ore processing residue	UNDno - non-orga



Boring ID: 135-MW1AR

					Drilling Company: SGS	Coordinates (NUOD	NAD83) x: 610040 4
Project Number Date Started Dri			2.00.00 DM		Drilling Method: HSA Rig Type:		NAD83) x: 610949.4 NAD83) y: 682141.4
Date Finished D					Core Size:	Boring Total Depth:	
Logged By: L.		512312010	1.00.00 F IVI		Project Manager: Scott Mikaelian	Depth to Water:	10 11
Physical Location		Smith Movi	ng and Store			Surface Elevation:	10 1 ft NAVD88
				190			
Depth Range ft bgs)	PID (ppm)	Moisture Content	USCS	Graphi Log	c Surface Cover and Th	iickness:	Sample ID
it bgs) (it bgs) -1 - -1 - -2 - -3 - -3 - -4 - -5 - -6 - -7 - -8 - -9 - -10 - -11 -	(ppm)	moist moist moist	FILL FILL SM SM SM GW-GM		FILL fine to medium SAND, some gravel gravel, (7.5YR 4/2) brown, moist fine to medium silty SAND, some m 5/6) red, moist fine to medium silty SAND, some c (7.5YR 4/2) brown, moist, angular NO RECOVERY SILT, trace fine gravel, (2.5YR 4/3) no staining, no odor	, coal fragments nedium gravel, (5R	
-12		moist	SP		No data fine to medium SAND, trace fine gr reddish brown, moist no odor no sta	avel, (2.5YR 4/3) aining	
lotes: igs - below surface			mite ore proce		sidue UNDno - non-organic undisturbed nativa		ufactured gas plant



Boring ID: 135-MW3BR

	Name: (Number:				J	Drilling Method:	Coordinates (NJSP	SPNAD83) x: _611113.1		
				:00:00 AM		Rig Type:	Coordinates (NJSPI			
				2:00:00 PM		Core Size:	Boring Total Depth:			
	By: J. (2.00.0011		Project Manager: Scott Mikaelian	Depth to Water:	01 R		
	al Locatio						Surface Elevation:	11.3 ft NAVD88		
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphi Log	Surface Cover and Thic	kness:	Sample ID		
			dry	FILL		DGA, some gravel, (10YR 6/2) light b	rownish gray, dry ,			
-						no odor , no staining				
-1						×.				
_						X				
-2						X				
_						X				
						X				
-3			wet	FILL		ASH, with cinders, wet , no odor , no	staining	-		
-							0			
-4						×				
						X				
-5						X				
5			wet	SM		SILT, trace fine sand and fine to coar				
						reddish brown, wet , no odor , no stair	ning			
-6										
_										
-7				014				4		
			wet	SM		SILT, little fine sand little fine to mediu 4/3) reddish brown, wet, no odor, no				
-8							stairing			
-0										
-										
-9			wet	SM		SILT, little fine sand little fine to mediu	im gravel (2.5YR	_		
				0		4/3) reddish brown, wet , no odor , no				
-11			moist	SW-SM		 SILT, with fine gravel trace fine sand, reddish gray, moist slight organic odo 		-		
-12							,			
-13			wet	SC-SM		SILT, trace clay trace fine sand, (2.5Y	5/2) gravish	-		
_ _14			wet	30-3M		brown, wet slight organic odor , no sta organic material [roots])	aining, (some			
						No Data		-		
_										
-16		0.0		60 OM	77.47		(D, E/2) brows	4		
_ 17	2		wet	SC-SM		SILT, trace clay trace fine sand, (7.5Y loose, wet no odor, no staining		_		
		0.0	moist	PT		brown, dense, moist , no odor , no sta	ining			
		0.0	wet	OH	First and the second se	CLAY, trace silt trace organics (roots)				
-19	1.42					gray, soft, wet , moderate organic odo	or , no staining			
-					THE REAL PROPERTY AND A DECIMAL PROPERTY AND	3				
-20		0.0	wet	ОН	THE REAL PROPERTY AND A DECIMAL PROPERTY AND	CLAY, trace silt trace organics (roots)	(7 5YR 4/1) dark	-		
_			WEL	UI	Į Į	gray, soft, wet, moderate organics (1001s)	r, no stainina			
-21	2						,			
					MM	7				
lotes: as - bela	ow surface o	arade	COPR - chro	mite ore proce	essina re	sidue UNDno - non-organic undisturbed native d	eposits MGP - man	ufactured gas plant		
	adow mat		GGM - greer		5.5	UNDorg - organic undisturbed native depo		omate chemical production wast		



Boring ID: 135-MW3BR

Logged By Physical Ld Depth Range (f 23 23 23 24 25 26 27 27 28	hed Drilling: j. j. <thj.< th=""> j. j.</thj.<>	pher e 135 Moisture	USCS OH SM		Core Size: Project Manager: Scott Mikaelian C CLAY, trace silt trace organics (roots gray, soft, wet , moderate organic od SILT, trace fine sand, (7.5YR 5/1) gra odor , no staining), (7.5YR 4/1) dark or , no staining	
Depth Range Rec (f -23 1 -23 1 -24 - -25 1 -26 - -27 - -28 1	covery ft/ft) PID (ppm) 1.75 0.0 1.75 0.0 1.58 0.0 0 0.0	Moisture Content wet	OH		CLAY, trace silt trace organics (roots gray, soft, wet , moderate organic od SILT, trace fine sand, (7.5YR 5/1) gra	kness:), (7.5YR 4/1) dark or , no staining	Sample
Range Rec (f ft bgs) (f -23 1 -23 1 -24 1 -25 1 -26 1 -26 - -27 1 -27 1 -27 1 -28 1 -28 1	ft/ft) (ppm) 0.0 1.75 0.0 1.58 0.0 0.0 0	Content wet	OH		CLAY, trace silt trace organics (roots gray, soft, wet , moderate organic od SILT, trace fine sand, (7.5YR 5/1) gra), (7.5YR 4/1) dark or , no staining	
23	1.75 0.0 1.58 0.0 0 0.0 0 0.0		SM		gray, soft, wet , moderate organic od SILT, trace fine sand, (7.5YR 5/1) gra	or , no staining	_
	0.0	wet				ay, loose, wet , no	
 	0		NR				
1	1.67 0.0	1			NO RECOVERY		
-29		moist	SM		fine silty SAND, trace coarse sand, (a brown, moist , no odor , no staining, t		-
-	0.0	moist	SM		fine silty SAND, trace coarse sand, (2 brown, moist , no odor , no staining,	2.5YR 4/3) reddish tight	
	0.0	wet	SM		fine SAND, little silt trace coarse san reddish brown, loose, wet , no odor ,		
-	0.0	wet	SM		fine SAND, little silt little coarse sand reddish brown, loose, wet , no odor ,		
-34							
lotes: gs - below si /M - meadov	surface grade	COPR - chroi GGM - green	mite ore proce	ssing res	idue UNDno - non-organic undisturbed native o UNDorg - organic undisturbed native dep	deposits MGP - manu	ufactured gas plant omate chemical production wast



Boring ID: 135-P3C-MW102S

				edial Investi		Drilling Company: SGS		
	Number:					Drilling Method: HSA		NAD83) x: 611120.7
			4/3/2018 9:			Rig Type:	Coordinates (NJSP	NAD83) y: 682311.9
Date Fi	nished Dr	illing:	4/3/2018 1	<u>10:05:</u> 00 AN		Core Size:	Boring Total Depth:	15 ft
ogged	1 By: J. C	Christop	her			Project Manager: Scott Mikaelian	Depth to Water:	
	al Locatio						Surface Elevation:	11.5 ft NAVD88
Depth Range t bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphi Log	c Surface Cover and Thic	kness:	Sample ID
1 1 2	3	0.0	dry	FILL		DGA, some gravel, (10YR 6/2) light b no odor , no staining	rownish gray, dry ,	
-3 -4 -	2	0.0	wet	FILL		ASH, with cinders, wet , no odor , no s	staining	_
-5 -6 -	0.29	0.0	wet	SM		SILT, trace fine sand and fine to coars reddish brown, wet , no odor , no stair		-
-7	1.29	0.0	wet	SM		SILT, little fine sand little fine to mediu 4/3) reddish brown, wet , no odor , no		
-9 -10 -	1.21	0.0	wet	SM		SILT, little fine sand little fine to mediu 4/3) reddish brown, wet , no odor , no		
-11 -12 -	0.42	0.0	moist	SW-SM		SILT, with fine gravel trace fine sand, reddish gray, moist slight organic odo	(2.5YR 4/1) dark r , no staining	-
-13 -14 -15	0.58	0.0	wet	SC-SM		SILT, trace clay trace fine sand, (2.5Y brown, wet slight organic odor , no sta organic material [roots])	5/2) grayish ining, (some	-
-								
IM - me	ow surface (adow mat		GGM - greer	omite ore proce	essing re	sidue UNDno - non-organic undisturbed native d UNDorg - organic undisturbed native depo	eposits MGP - man sits CCPW - chı	ufactured gas plant romate chemical production waste

Project Date St	t Number: tarted Drill	60550 ing: 9)261)/30/2017 7	:00:00 AM		Drilling Company: SGS North America Drilling Method: Direct Push Rig Type:		AD83) y: 684165.2
	d By: KW		9/30/2017	1:30:00 PN	/	Core Size: Project Manager: Scott Mikaelian	Boring Total Depth: Depth to Water:	15 π
hysic	al Locatio	n: Site	2 186				Surface Elevation:	13.4 ft NAVD88
)onth	Recovery (ft/ft)		Moisture Content	USCS	Graph Log	ic Surface Cover and Thick	ness:	Sample ID
-1	4.5	0	dry	FILL		DGA		
-6 -7	4.5	0	wet	FILL		SILT, little fine to medium sand, (5YR	6/3) light reddish	-
-8			wet	FILL		brown, wet no odor no staining fine to medium silty SAND, trace fine g		-
				NR		reddish brown, wet no odor no staining NO RECOVERY]	-
_				INIX		NO RECOVERT		
-10 -11			wet	FILL		fine to medium silty SAND, trace fine of reddish brown, wet no odor no staining]	
-12 -13 -14 -15		0	wet	SM		fine to coarse silty SAND, trace fine gr reddish brown, wet no odor no staining with UNDno.		

	Name: G Number:			oundwater	RI	Drilling Company: ADT Drilling Method: Sonic/Water Rotary			5.64 ft NAVD88 33) x: 611077.5																		
	arted Drill					Rig Type: Fraste XL Max 170			3) y: 683544.4																		
ate Fi	nished Dri	lling:		0		Core Size: 6 in. sonic, 2 in. rock core	Boring Total	Depth: 105																			
	I By: E. A					Project Manager: Shannon Gleason	Depth to Wa		()) / D 0 0																		
nysica	al Location	1: Site	114				Surface Elev		IT NAVD88																		
epth ange bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Constructio	n Remarks																		
-1			DRY TO MOIST	FILL		Soft dig to 5 ft bgs. Brown-gray well grade some silty sand, very dense (Dense Grade [DGA]), dry to moist.	d GRAVEL, d Aggregate		8-inch steel protective casing (stick up)																		
-3 -4	0/5		0	0	0	0	MOIST	FILL		Gray fine to coarse GRAVEL, trace to little dense (DGA), moist.	silty sand,																
5 — –			WET	FILL		Gray fine to coarse GRAVEL, trace sand, (DGA), wet.	well graded		Crawto 0, 00 ft have																		
6 — 7 — –	3/5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	WET	FILL		Gray fine to medium SAND, trace silt, poo medium dense, micaceous (DGA), wet.	rly sorted,		Grout: 0-80 ft bgs
8 — — 9 — —												WET	FILL		Gray SILT, little coarse gravel, soft, micac wet.	eous (DGA),		6-inch steel threaded casing: 0-80 ft bgs									
10— 11— 12— 13— 13— 14— 15—	4/5	0	DAMP TO WET	FILL		Gray SILT, trace fine to coarse gravel, sof (DGA), damp to wet.		-1 10-04 10-04																			
- 16			WET	FILL		Gray SILT, trace fine to coarse gravel, sof (DGA), wet.																					
	4.5 / 5	0	MOIST	ОН		Gray organic CLAY, trace brown fibers (5 ⁴ stiff, moist.	%), trace silt,																				
tes:	bgs = below	surface d	rade N		th American	h Horizontal Datum of 1983 NJSP = New Jersey State Pla	ane ppm = parts per		ft = feet																		

AECOM



Boring ID: 114-MW52D

	Number:		Avenue Gro 261	unuwalei	T M	Drilling Company: ADT Drilling Method: Sonic/Water Rotary		Elevation: 15.64 (NJSPNAD83) >												
	arted Drill					Rig Type: Fraste XL Max 170		(NJSPNAD83) y												
			12/11/2020	<u>ר</u>		Core Size: 6 in. sonic, 2 in. rock core		I Depth: 105 ft												
	By: E.A					Project Manager: Shannon Gleason	Depth to Wa													
	al Location		114					vation: 13.9 ft N	AVD88											
								Well												
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Construction	Remarks											
			WET	GP		Gray coarse GRAVEL, little fine to coarse sorted, loose, wet.	sand, poorly													
-22 -23 -24 -	2.5/5	0	WET	SW		Red brown fine to coarse SAND, some fin gravel, trace silt, loose, wet.	e to coarse													
-25 -26 -			WET	SM		Reddish brown fine SAND, some silt, poo trace gravel, loose.	rly graded,													
-27 -28 -29 -	2.5/5	5 0	0	0	0	0	0	WET	ML		Reddish brown SILT, some fine to mediun wet. Slight yellow coloration to water.	n sand, soft,								
-30	4.5 / 5	4.5/5	0	0	0	0	0	0	0	0	0	0	0	WET	SM		Reddish brown fine SAND, some silt, poor medium dense, wet. Slight yellow coloratio	ly graded, on to water.		
-33 -34 -35			DAMP TO	CL		Reddish brown to gray CLAY, trace silt, m damp to moist. Slight yellow coloration to v	edium stiff, water.													
-36 -37			MOIST																	
-38 -39	4.5/5	0	0	0	WET	ML		Reddish brown SILT, little fine sand, medi Slight yellow coloration to water.	um stiff, wet.											
 otes:	bgs = below					1 Horizontal Datum of 1983 NJSP = New Jersey State Pi		er million	ft = feet stem in = inches											
omments:	DGA = dense RQD = rock			NAVD88 = No	orth America	an Vertical Datum of 1988 PID = photoionization detecto	or USCS = Unifie	d Soil Classification Sy	In stem In = inches											



Boring ID: 114-MW52D

Project Name: _(Project Number:					Drilling Company: ADT Drilling Method: Sonic/Water Rotary		s (NJSPNAD83) x	ft NAVD88
Date Started Dril					Rig Type: Fraste XL Max 170		s (NJSPNAD83) y:	
Date Finished Dr)		Core Size: 6 in. sonic, 2 in. rock core		I Depth: 105 ft	
.ogged By: E. A	CS				Project Manager: Shannon Gleason	Depth to Wa	ater: NA	
Physical Location		114					vation: 13.9 ft N	AVD88
Depth Beauvery							Well	
Range Recovery	PID	Moisture	USCS	Graphic	Material Description		Construction	Remarks
ft bgs) (ft/ft)	(ppm)	Content	0000	Log				Tomarito
<u> </u>								
					Reddish brown CLAY, trace silt, medium s Slight yellow coloration to water.	tiff, moist.		
					Signi yellow coloration to water.			
-41								
_								
-42								
4/5		MOIST	CL					
4/5	0						1 🖼 🖼 🗆	
-43								
4				<i>\/////</i>				
-44				<i>V//////</i>				
				<i>\//////</i>				
1		WET	GP	ra Cl	Gray coarse GRAVEL, poorly sorted, dens	e, wet.		
-45		VV 🗆 I	GP	e and the second	Reddish brown fine to coarse SAND. trace			
_				KA IS	gravel, medium dense, wet (Basal Till).			
_16			<u></u>	UNA A				
-46		WET	SW	(AL)				
-				SAM)				
-47				<u>ANA</u>		C		
4/5					Reddish brown fine to medium SAND, little	e fine to		
	0			E KA	coarse gravel, very dense, wet (Basal Till).			
-48				A A				
_		WET	SP	UST A				
-49				HAN A				
-5				(AL)				
1							1 👪 👪 🗏	
-50					Reddish brown fine to medium SAND, som	ne fine to		
_				US I A	coarse gravel, little silt, very dense, wet (Ba			
				HA A		<i>,</i> •		
-51								
-				(AL)				
-52				MALL.				
- 4/5	0		SP	THE A				
		WET	37					
-53				(SHA				
				USA B				
-54				UKA				
				(MA)				
-55					Reddish brown fine to medium SAND, som	ne fine to		
_				XXXXX	coarse angular gravel, little silt, very dense			
-56				HAD.	Till).	-		
1				SHID.			1 🗱 🛤 🗏	
-57				UNH)				
- 4.5/5	0	WET	SP	(JH)				
		''''		A KA				
-58				(SHA				
-				KA A				
-59				UNA A				
1	I			W/ K/K/X/	University Detum of 4000 MUOD			
otes: bgs = below	surface a		JAD83 = Nor	th American	Horizontal Datum of 1983 NJSP = New Jersey State Pla an Vertical Datum of 1988 PID = photoionization detector	ine ppm = parts pe	er million	ft = feet

AECOM

30 Knightsbridge Road, Piscataway, NJ 08854 732.564.3200 office telephone

Boring ID: 114-MW52D

Project Project	Number:	605502	261		Drilling Method: Sonic/Water Rotary	Coordinates (N	JSPNAD83)	c: 611077.5
	arted Drill				Rig Type: Fraste XL Max 170	Coordinates (N		
	nished Dri			0	Core Size: 6 in. sonic, 2 in. rock core	Boring Total De		
	I By: E. A				Project Manager: Shannon Gleason	Depth to Water		
hysica	al Location	n: Site	114			Surface Elevati	on: 13.9 ft N	AVD88
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS Grap			Well Construction	Remarks
-61			WET	sw	Reddish brown fine to coarse SAND, litt angular gravel, poorly graded, very dens Till).			
-62 -63 -64 -	3/5	0	WET	SP	Reddish brown fine to medium SAND, s coarse gravel, little silt, poorly graded, ve (Basal Till).			
-65 -66 -67 -67	4 / 5	0	WET	SW	Reddish brown fine to coarse SAND, so coarse gravel, little silt, very dense, wet			Tan of basics of
-68 -69 -			NA	BEDROCK	Gray mudstone. Highly weathered, rock fine-grained, laminated, weak rock, crus spacing (Lockatong formation).			—Top of bedrock: 68 ft bgs
-70	4.4 / 5	0	NA	BEDROCK	Gray mudstone (Argillite). Unweathered laminated, strong rock, moderate fractur Vertical fracture at approximately 73 to calcite-filled (Lockatong formation). Rec RQD = 75% (fair-good rock).	re spacing 75 ft bgs, overy = 83%; 		
-75	4.8 / 5	0	NA	BEDROCK	Gray mudstone (Argillite). Unweathered laminated, strong rock, moderate fractur Vertical fracture at approximately 75 to 79.5 to 80 ft bgs. Healed calcite vein at (Lockatong formation). Recovery = 97% (good rock).	re spacing. 76 ft bgs, and 77 to 78 ft bgs		
lotes:	bgs = below DGA = dens RQD = rock	e graded a	aggregate		ican Horizontal Datum of 1983 NJSP = New Jersey State rican Vertical Datum of 1988 PID = photoionization dete			ft = feet stem in = inches

Project	Name: 0	Garfield A	Avenue Gro	oundwater	RI	Drilling Company: ADT	Top of PVC E	levation: 15.6	64 ft NAVD88
	Number:							(NJSPNAD83)	
	arted Drill							NJSPNAD83)	
	nished Dri		12/11/202	0				Depth: 105 ft	
	I By: E.A		444				Depth to Wate		
Physica	al Location	1: Site	114				Surface Eleva	tion: 13.9 ft	NAVD88
Depth Range (ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
	4.6 / 5	0	NA	BEDROCK		Gray mudstone (Argillite). Unweathered, fine- laminated, strong rock, wide fracture spacing fracture throughout core. Calcite in fracture, i alteration, some fractures healed. (Lockatong formation). Recovery = 93%; RQD = 90% (go excellent rock).	. Vertical rough joint J		—5 7/8" open borehole in rock: 80-105 ft bgs
	4.8/5	0	NA	BEDROCK		Gray mudstone (Argillite). Unweathered, fine- laminated, strong rock, wide fracture spacing noticeable fractures, some healed (Lockatong formation). Recovery = 97%; RQD = 97% (ex rock).	, with few		
90 91 92 93 93 94 05	5/5	0	NA	BEDROCK		Gray mudstone (Argillite). Unweathered, fine- laminated, strong rock, wide fracture spacing (Lockatong formation). Small healed vertical 1 93 ft bgs. Recovery = 100%; RQD = 100% (e rock).	fracture at		
-95 -96 -97 -97 -98 -98 -99 -99	5/5	0	NA	BEDROCK		Gray mudstone (Argillite). Unweathered, fine- laminated, strong rock, wide fracture spacing (Lockatong formation). Vertical fracture from ft bgs. Recovery = 100%; RQD = 100% (exce rock).	99 to 100	RA AR A	

AECOM

Boring ID: 114-MW52D

Project Name: Project Number:			Canawald	1 11	Drilling Company: ADT Drilling Method: Sonic/Water Rotary		levation: 15.6 (NJSPNAD83)	
Date Started Dri					Rig Type: Fraste XL Max 170		(NJSPNAD83) y	
Date Finished D			0		Core Size: 6 in. sonic, 2 in. rock core		Depth: 105 ft	. 000011.1
Logged By: E.		,, 202	·•		Project Manager: Shannon Gleason	Depth to Wate		
Physical Location		114					ation: 13.9 ft N	AVD88
	1						Well	
Depth Range (ft bgs)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Construction	Remarks
 -101 - 102 5/5 -	0	NA	BEDROCK		Gray mudstone (Argillite). Unweathered, fi laminated, strong rock, wide fracture spac (Lockatong formation). Fractures at 103 ft deg) clay coated, and 103.4 ft bgs (at 15 c coated. Recovery = 100%; RQD = 100% (rock). End of boring at 105 ft bgs.	ing t bgs (at 5 leg) clay		
-105						- - - - - - - - - - - - - - - - - - -		
						- - - - - - - - - - -		

AECOM

Boring ID: 114-MW57D

roject Number:	60550	261			Drilling Company: _ADT Drilling Method: Sonic/Water Rotary	Coordinates	(NJSPNAD83) x: 610903.9
ate Started Dril					Rig Type: Fraste XL Max 170			y: 683215.5
ate Finished Dr				Core Size: 6 in. sonic, 2 in. rock core Boring Tota				
ogged By: E. A					Project Manager: Shannon Gleason	Depth to Wat		
hysical Locatio	n: Site	114				Surface Elev	ation: 12.7 ft	NAVD88
epth ange (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
_		DRY	FILL		Soft dig to 5 ft bgs. Gray fine to coarse G fine to coarse sand, trace silt, dense, dry.	RAVEL, some		8-inch steel
-2		WET	FILL		Gray COBBLES, some fine to coarse sar (Dense Graded Aggregate [DGA]), wet.	nd, dense		(stick up)
- 0/5 - 3	0	WET	FILL		Gray fine to coarse GRAVEL, some fine sand, trace silt, dense (DGA), wet.	to coarse -		Riser set in grout
5 	0	MOIST TO WET	FILL		Gray fine to coarse SAND, some silt, trac gravel, dense (DGA), moist to wet.	e subangular -		Grout: 0-85 ft bgs
8 — _ 9 — _		MOIST TO WET	FILL		Gray fine to coarse SAND, some gravel, (DGA), moist to wet.	ittle silt, dense		6-inch steel threaded casing: 0-85 ft bgs
10 - 11 - 12 - 4.5 / 5 13 - 14	0	WET	FILL		Gray fine SAND, some silt, little coarse g (DGA), wet.	-		
		MOIST	OH		Gray organic CLAY, some brown fibers (silt, stiff, moist.			
	0	MOIST	ОН		Gray organic CLAY, some brown fibers (silt, stiff, moist.	40%), trace - -		
18 19 		MOIST TO WET	ML		Gray SILT, little fine sand, trace fine to m dense, moist to wet.	edium gravel,		



30 Knightsbridge Road, Piscataway, NJ 08854 732.564.3200 office telephone

Boring ID: 114-MW57D

	Name: C Number:			unuvator		Drilling Company: ADT Drilling Method: Sonic/Water Rotary		Elevation: 14.70 (NJSPNAD83) x:	
	arted Drill					Rig Type: Fraste XL Max 170		(NJSPNAD83) y:	
	nished Dri					Core Size: 6 in. sonic, 2 in. rock core		Depth: 112.5 ft	
.ogged	I By: E. A	cs				Project Manager: Shannon Gleason	Depth to Wa	ter: NA	
hysica	al Location	n: Site	114				Surface Elev	vation: 12.7 ft NA	VD88
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
-			WET	SM		Reddish brown fine to coarse SAND, som fine to medium gravel, dense, wet.	e silt, little		
-21 -22 -23 -23 -24 -24	3/5	0	WET	SW		Reddish brown fine to coarse SAND, trace subrounded coarse gravel, dense, wet.	e silt, trace		
-25			WET	SW		Reddish brown fine to coarse SAND, trace coarse gravel, dense, wet.	e silt, trace		
-26 -27 -28 -28 -29 -29	4/5	0	WET	SP		Reddish brown fine SAND, trace silt, med wet.	ium dense,		
-30 -31 -			WET	SP		Reddish brown fine SAND, trace silt, med wet.	ium dense,		
-32 -33 -34	4.5/5	0	WET	SM		Reddish brown fine SAND, some silt, trac medium dense, wet.	e clay,		
			WET	SP		Reddish brown fine SAND, little silt, mediu	um dense,		
-35			WET	SM		 wet. Reddish brown fine SAND, some silt, med wet. Slight yellow coloration to water. 	lium dense,		
-38 -39 -39	3.5 / 5	0	MOIST	CL		Gray CLAY, little fine sand stringers, trace stiff, moist.	e silt, medium		
lotes:	bgs = below DGA = dense RQD = rock	e graded a	aggregate N	IAD83 = Nor IAVD88 = No	th Americar orth America	n Horizontal Datum of 1983 NJSP = New Jersey State Pl an Vertical Datum of 1988 PID = photoionization detector		r million d Soil Classification Sys	ft = feet item in = inches

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Boring ID: 114-MW57D

Project Number:	60550	261		RI	Drilling Company: ADT Drilling Method: Sonic/Water Rotary	Coordinates	(NJSPNAD83) x) ft NAVD88 :: 610903.9
Date Started Dril					Rig Type: Fraste XL Max 170		(NJSPNAD83) y:	
Date Finished Dr					Core Size: 6 in. sonic, 2 in. rock core		Depth: 112.5 ft	
Logged By: E. A		1772021			Project Manager: Shannon Gleason	Depth to Wate		
Physical Location	n Cita	114			Troject manager. Grannon Gleason		ation: 12.7 ft N	
		4				JULIACE EIEVa	1	
Depth Range ft bgs)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
-41	0	MOIST	CL		Gray CLAY, trace silt, trace fine sand string medium stiff, moist.	ers,		
-45		MOIST	CL		Gray CLAY, trace silt, trace fine sand string medium stiff, moist.	ers, 		
-48	0	MOIST	CL		Gray CLAY, interbedded with fine to mediun trace silt, medium stiff, moist.	-		
_		WET	ML		Red brown SILT, some fine sand, stiff, wet.			
-50 		WET	ML/CL		Red brown SILT and CLAY, trace fine sand,	, stiff, wet.		
-52	0	WET	CL		Gray CLAY, trace silt, stiff, wet.			
-53		WET	SM		Reddish brown fine SAND, some silt, mediu wet (Basal Till).	ım dense,		
-54		WET	SM		Reddish brown fine SAND, some silt, trace i coarse gravel, trace cobbles, very dense, we Till).			
55	0	WET	SM		Reddish brown fine to medium SAND, some fine to coarse angular gravel, trace cobbles, wet (Basal Till).			

AECOM	
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Boring ID: 114-MW57D

Project Name: _(Project Number:					Drilling Company: ADT Drilling Method: Sonic/Water Rotary	Top of PVC E Coordinates	(NJSPNAD83)	
Date Started Dril					Rig Type: Fraste XL Max 170		(NJSPNAD83)	
Date Finished Dr	illing:				Core Size: 6 in. sonic, 2 in. rock core		Depth: 112.5	
-ogged By: E. A	NCS				Project Manager: Shannon Gleason	Depth to Wat		
Physical Locatio	n: Site	114					ation: 12.7 ft 1	NAVD88
Depth Range (ft bgs)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
(ft bgs) (ft tri) 	0 0	WET	SM		Reddish brown fine to coarse SAND, some fine to coarse gravel, trace cobbles, very de (Basal Till). Reddish brown fine to coarse SAND, trace dense, wet (Basal Till). Gray mudstone (Argillite), unweathered, fir laminated, rock broken by sonic drill, strong (Lockatong formation).	ense, wet - - - - silt, medium - -		—Top of bedrock: 67 ft bgs
	0	NA	BEDROCK		Gray mudstone (Argillite), unweathered, fir laminated, medium strong, broken rock wit fracture at approximately 73.5 to 75 ft bgs formation). Recovery = 83%; RQD = 0% (v rock).	h one vertical (Lockatong _ /ery poor _ - - - - - - - - - - -		
	0	NA	BEDROCK		strong rock, very wide fracture spacing, hic and broken rock at approximately 75 to 76 competent rock at approximately 76 to 80 f mechanical fractures (Lockatong formatior = 100%; RQD = 77% (good rock).	ft bgs, t bgs with		

roiect	Name: G	arfield	Avenue Gr	oundwater	RI	Drilling Company: ADT	Top of PVC F	levation: 14.7	
	Number:					Drilling Method: Sonic/Water Rotary		(NJSPNAD83)	
	arted Drill					Rig Type: Fraste XL Max 170		(NJSPNAD83) y	
	nished Dri					Core Size: 6 in. sonic, 2 in. rock core		Depth: 112.5	
	By: E. A					Project Manager: Shannon Gleason	Depth to Wate		
	al Location		114				Surface Eleva	ation: 12.7 ft N	AVD88
anth								Well	
)epth ange t bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Construction	Remarks
-81	5/5	0	NA	BEDROCK		Gray mudstone (Argillite), unweathered, lan strong rock, very wide fracture spacing, 80 of fractures at 80.2 to 82 ft bgs, calcite-filled, 6 fractures at approximately 80 to 80.1 ft bgs, fractures at approximately 83 to 83.2 ft bgs, (Lockatong formation). Recovery = 100%; F (good rock).	degree 0 degree 60 degree calcite-filled		
85 86 -	0/2	0	NA	BEDROCK		Roller bit the boring to clear broken rock pie behind from the sonic rig casing installation.			
-87 -88 -89 	4/4	0	NA	BEDROCK		Gray mudstone (Argillite), unweathered, lan 20%, very strong rock, very wide fracture sp numerous mechanical fractures (Lockatong Recovery = 100%; RQD = 100% (excellent	acing, formation).		—5 7/8" open borehole in rock: 85-112.5 ft bgs
-90 			NA	BEDROCK		Gray mudstone (Argillite), unweathered, lan 20%, very strong rock, very wide fracture sp numerous mechanical fractures (Lockatong	acing, formation).		
-91	5.25 / 6	0	NA	BEDROCK		Recovery = 100%; RQD = 100% (excellent Gray mudstone (Argillite), unweathered, lan strong rock, weak rock at approximately 91. bgs and 93.8 to 95 ft bgs, numerous mecha fractures (possible highly fractured) (Lockat formation). Recovery = 88%; RQD = 63% (f	inated, 5 to 92 ft nical [—] ong		
-98 -98 -99 -99 	5/5	0	NA	BEDROCK		Grey mudstone (Argillite), unweathered, lan to 10 degrees, very strong rock, very wide fr spacing. 0 degree fracture at approximately ft bgs (Lockatong formation). Recovery = 10 98% (excellent rock).	acture 97.8 to 97.9		

AECOM

Boring ID: 114-MW57D

Project	Number:	60550	261			Drilling Method: Sonic/Water Rotary	COOrdinator	(N.ISPNALISSI V	6100030
	arted Drill					Rig Type: Fraste XL Max 170		(NJSPNAD83) x: NJSPNAD83) y:	
	nished Dri					Core Size: 6 in. sonic, 2 in. rock core		Depth: 112.5 ft	
	By: E.A		1/7/2021			Project Manager: Shannon Gleason	Depth to Wate		
	I Location		114					ation: 12.7 ft NA	
nysice		. one	114				JUNALE EIEVA		
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
-101	5/5	0	NA	BEDROCK			-		
-103	5/5	0	NA	BEDROCK		Grey mudstone (Argillite), unweathered, la to 10 degrees, very strong rock, very wide spacing. 10 degree fractures at approximal 103.6 ft bgs, 10 degree fractures at approx 105.2 to 105.3 ft bgs (Lockatong formation = 100%; RQD = 97% (excellent rock).	fracture tely 103.5 to timately		
-107	0/3	0	NA	BEDROCK		No recovery - core barrel lost a portion of t bit down the hole and this left the core in th Boring reamed to 112.5 ft bgs. End of borin bgs.	ne hole.	NY ARY AR	
							-		
							-		
							-		
							-		
otes:	bgs = below DGA = dense RQD = rock	e graded a	aggregate			n Horizontal Datum of 1983 NJSP = New Jersey State Pla an Vertical Datum of 1988 PID = photoionization detector		million Soil Classification Sys	ft = feet tem in = inches

A	ECO	M

Boring ID: 114-MW61D

roject Number:			oundwater		Drilling Company: ADT Drilling Method: Sonic/Water Rotary				<u>9 ft NAVD88</u> x: 610873.2
ate Started Dril					Rig Type: Fraste XL Max 170	Coordinates			
ate Finished Dr			00		Core Size: 6 in. sonic, 2 in. rock core	Boring Total			
ogged By: E. A	CS				Project Manager: Shannon Gleason	Depth to Wa	ter: NA		
hysical Locatio		114				Surface Elev			NAVD88
Depth Range ft bgs)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description			ell ruction	Remarks
-1- -2- -3- 0/5	0	DRY TO MOIST	FILL		Soft dig to 5 ft bgs, brownish gray well gra GRAVEL, some silt, fine to coarse sand (dense, dry to moist.	aded DGA), very			—8-inch steel protective casing (stick up)
- 4		WET	FILL		Brownish gray fine to coarse GRAVEL, tra silty sand (DGA), dense, wet.	ace to little			
-5		WET	FILL		Brownish gray fine to coarse GRAVEL, tra silty sand (DGA), dense, wet.	ace to little			—Grout: 0-85 ft bgs
-6	0	WET	FILL		Gray silty fine to medium SAND, little fine gravel, dense, wet.	to medium			 Globil: 0-85 it bgs 6-inch steel threaded casing: 0-85 ft bgs
-10 	0	WET	FILL		Gray silty fine to medium SAND, little fine gravel, dense, wet.		I ⊳⊛⊛	10-04 I	
-14		DAMP	PT		Gray CLAY, trace silt, organic, fibrous (20 medium stiff, damp.)% fibers),			
45		WET	SW	• • • • • • • • • • • • • • • • • • •	Gray fine to coarse SAND, trace silt, loos	e, wet.			
-15		WET	PT		Gray CLAY, trace silt, organic, fibrous (50 stiff, wet.)%), medium			
-17	0	WET	CL		Gray CLAY, some silt, little fine sand, trac coarse gravel, soft, wet.	æ fine to			



30 Knightsbridge Road, Piscataway, NJ 08854 732.564.3200 office telephone

Boring ID: 114-MW61D

Project Nu	ne: Gar				, u	Drilling Company: ADT		levation: 16.59	
						Drilling Method: Sonic/Water Rotary		(NJSPNAD83) X	
Date Starte				<u> </u>		Rig Type: Fraste XL Max 170		NJSPNAD83) y:	003409.0
Date Finish			12/28/2020			Core Size: 6 in. sonic, 2 in. rock core		Depth: 109 ft	
ogged By						Project Manager: Shannon Gleason	Depth to Wate		1/500
Physical Lo	ocation:	Site	114				Surface Eleva	tion: 14.4 ft NA	VD88
		PID opm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
	3/5	0	WET	CL		Gray CLAY, some silt, little fine sand, trac coarse gravel, soft, wet.	e fine to		
-23 24 24		-	WET	SP		Gray to black fine SAND, trace silt, loose, poorly sorted, wet.	odorous,		
-25 			WET	SP		Gray to black fine SAND, trace silt, loose, poorly sorted, wet.	odorous,		
28 29	/ 5	0	WET	SP		Reddish brown fine SAND, trace silt, loos wet.	e, well sorted, 		
-30	5/5	0	WET	SP		Reddish brown fine SAND, trace silt, loos wet. Reddish brown fine SAND, trace silt, loos	- - - - - -		
			WET	SP	·····		e, well sorted,		
	5/5	0	DAMP	CL		wet. Reddish brown CLAY, trace silt, trace fine damp.	e sand, stiff,		
lotes: bgs	= below su A = dense g	rface gr				n Horizontal Datum of 1983 NJSP = New Jersey State Pl an Vertical Datum of 1988 PID = photoionization detect			ft = feet tem in = inches



Boring ID: 114-MW61D

Project Number	: 60550	261		RI	Drilling Company: ADT Drilling Method: Sonic/Water Rotary		Elevation: 16.59 ft NAVD88 s (NJSPNAD83) x: 610873.2		
Date Started Dr					Rig Type: Fraste XL Max 170		(NJSPNAD83) y		
Date Finished D			DC		Core Size: 6 in. sonic, 2 in. rock core		Depth: 109 ft		
ogged By: E.					Project Manager: Shannon Gleason	Depth to Wat			
Physical Locati		114					ation: 14.4 ft N	AVD88	
Dawth							Well		
Depth Range ft bgs)	y PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Construction	Remarks	
		DAMP	CL		Reddish brown CLAY, trace silt, trace fine damp.	sand, stiff,			
-41 -42 -43 -43 -44 -44	0	WET	SP		Reddish brown fine SAND, trace silt, very sorted, wet. Yellow coloration to water.	loose, well - -			
-45 	0	WET	SP		Reddish brown fine SAND, trace silt, very graded, wet. Yellow coloration to water.	loose, poorly -			
-48 -49 		WET	SM		Reddish brown fine to medium SAND, sor fine to medium subrounded gravel, very de (Basal Till).				
50 -51 -51 -52 -52 -53 -54 -54 -54 -55 -55 -50 -50 -50 -51 -51 -52 -52 -52 -52 -52 -52 -52 -52	0	WET	SM		Reddish brown fine to medium SAND, sor fine to medium subrounded gravel, very do (Basal Till).	ense, wet - - -			
-56 	0	WET	SM		Reddish brown fine to medium SAND, sor fine to coarse subangular to subrounded g dense, wet (Basal Till).				

AECOM	
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Boring ID: 114-MW61D

Project Name: _ (Project Number:	60550	261			Drilling Company: ADT Drilling Method: Sonic/Water Rotary		levation: 16.5 (NJSPNAD83)	
Date Started Dril					Rig Type: Fraste XL Max 170		(NJSPNAD83)	
Date Finished Dr		12/28/202	0		Core Size: 6 in. sonic, 2 in. rock core		Depth: 109 ft	
Logged By: E A Physical Location		11/			Project Manager: Shannon Gleason	Depth to Wat	ter: NA ation: 14.4 ft N	
-	1: Sile	114				Surface Elev	Well	NAVDOO
Depth Range (ft bgs)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Construction	Remarks
	0	WET	SM		Reddish brown fine to medium SAND, sor fine to coarse subangular to subrounded g dense, wet (Basal Till).			—Top of bedrock:
		WET	BEDROCK		Gray diabase, highly weathered, friable, m size, very weak rock, wet.	edium grain -		63 ft bgs
65 66 67 5 / 5 68 69	0	WET	BEDROCK		Gray diabase, highly weathered (rock in cl friable, medium grain size, very weak rock	, wet		
		NA	BEDROCK		Gray diabase, moderately weathered, med size, very medium strong rock.	lium grain		
-70	0	NA	BEDROCK		Gray diabase, mederately weathered to hig weathered, medium grain size, weak rock, fracture spacing. 50 degree fracture at app 71.5 to 71.7 ft bgs, calcite coated, fracture approximately 72 to 72.5 ft bgs, broken cla disintegrated, 60 degree fracture at appro to 73.8 ft bgs, 60 degree fracture at appro to 74 ft bgs, fracture at approximately 74.5 bgs, broken clay disintegrated. Recovery = 38% (poor rock).	close proximately at ay imately 73.5 ximately 73.8 to 74.8 ft 93%; RQD =	1 1999 1999 1	
76 77 	0	NA	BEDROCK		Grey diabase, moderately weathered to his weathered, medium grained, weak to very close to very close fracture spacing, broke approximately 75 to 77 ft bgs, 0 degree fra approximately 77.8 to 77.9 ft bgs, 70 degre approximately 74.4 to 74.8 ft bgs, numero mechanical fractures. Recovery = 83%; R (fair rock)	weak rock, n rock at icture at ee fracture at us		

	Name: G			oundwater	RI	Drilling Company: ADT		levation: 16.5	
	Number:					Drilling Method: Sonic/Water Rotary		(NJSPNAD83)	
	arted Drill					Rig Type: Fraste XL Max 170		(NJSPNAD83) y	r: <u>683469.8</u>
	nished Dri By: E.A		12/28/202	U		Core Size: _6 in. sonic, 2 in. rock core Project Manager: Shannon Gleason	Depth to Wate	Depth: 109 ft er: NA	
	al Location		114			Project Manager. Shannon Gleason		ation: 14.4 ft N	
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
81 82 83 84 	4.83 / 5	0	NA	BEDROCK		Gray diabase, moderately weathered, medi weak to very weak rock, close to very close spacing, 70 degree fracture at approximate 80.8 ft bgs, 70 degree fracture at approxim 81.3 ft bgs, 70 degree fracture at approxim 83.0 ft bgs, 70 degree fracture at approxim 84.0 ft bgs, 80 degree fracture at approxim 85.0 ft bgs, numerous mechanical fracture = 97%; RQD = 80% (fair to good rock)	fracture ly 80.6 to ately 81.2 to ately 82.9 to ately 83.5 to ately 83.4 to		
-85 -86 -87 -88 -88 -89	0.08 / 5	0	NA	BEDROCK		Gray diabase, moderately weathered to hig weathered, medium grained, weak to very v highly fractured, washed out rock at approx 88 ft bgs, broken rock at approximately 88 Recovery = 0.02%; RQD = 0% (very poor r	veak rock, imately 85 to _ to 90 ft bgs.		—5 7/8" open borehole in rock: 85-109 ft bgs
90 -91 -92 -93 -93 -93 -93 -93 -94 -95 - -96 - -96 -	1/7	0	NA	BEDROCK		Gray diabase, highly weathered, medium g to very weak rock, highly fractured, washed approximately 90 to 96 ft bgs, broken rock a approximately 96 to 97 ft bgs. Recovery = 7 0% (very poor rock).	l out at stat		
-97 -98 -99 -99	2/3	0	NA	BEDROCK		Gray diabase, moderately to highly weather grained, weak to very weak rock, highly fra washed out at approximately 97 to 98 ft bg rock at approximately 98 to 100 ft bgs. Rec 67%; RQD = 0% (very poor rock).	ctured, s, broken		

	732.564.32 Name: O	00 office t	-		RI	Drilling Company: ADT	Top of PVC F	levation: 16.5	Page:
	Number:			Junuwater		Drilling Method: Sonic/Water Rotary		(NJSPNAD83) >	
	arted Drill					Rig Type: Fraste XL Max 170		(NJSPNAD83) y	
	nished Dr		12/28/202	0		Core Size: 6 in. sonic, 2 in. rock core		Depth: 109 ft	
	IBy: E.A al Location		111			Project Manager: Shannon Gleason	Depth to Wat	er: NA ation: 14.4 ft N	
			114				Surface Eleva	Well	AVDOO
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Construction	Remarks
	2/5	0	NA	BEDROCK		Gray diabase, moderately to highly weath grained, weak to very weak rock, highly fr washed out at approximately 100 to 103 ff rock at approximately 103 to 105 ft bgs. R 40%; RQD = 0% (very poor rock).	actured, bgs, broken		
105 — 106 — 107 — 107 — 108 — 108 —	3.5 / 5	0	NA	BEDROCK		Gray diabase, highly weathered, medium highly fractured, pitted, discolored, washe approximately 105 to 106.5 ft bgs, broken approximately 106.5 to 110 ft bgs. Recove RQD = 0% (very poor rock). End of boring	d out at rock at ery = 30%;		
							-		
otes:	bgs = below DGA = dens			NAD83 = Nort NAVD88 = No) Horizontal Datum of 1983 NJSP = New Jersey State Pl	ane ppm = parts per	million	ft = feet

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

			Avenue Gro	oundwater	RI	Drilling Company: ADT	Top of PVC E		
	Number: arted Drill					Drilling Method: Sonic/Water Rotary Rig Type: Fraste XL Max 170	Coordinates Coordinates		
			12/30/2020	0		Core Size: 6 in. sonic, 2 in. rock core	Boring Total		
ogged	I By: E.A	cs				Project Manager: Shannon Gleason	Depth to Wate	er: NA	
nysica	al Location	1: Site	114		1		Surface Eleva		NAVD88
epth ange bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Constr	Remarks
-1	0/5	0	DRY TO MOIST	FILL		Soft dig to 5 ft bgs, brown gray well graded some silty sand, very dense (DGA), dry to n	GRAVEL, noist - -		
3 4 -			WET	FILL		Gray fine to coarse GRAVEL, trace to little dense (DGA), wet.	silty sand,		
5 — 6 — 7 — 8 — 9 —	1/5	0	WET	FILL		Gray fine to coarse SAND, little silt, trace of fine to coarse gravel, loose (DGA), wet.			 Grout: 0-90 ft bgs G-inch steel threaded casing: 0-90 ft bgs
0 1 2 3 4 - 5	3/5	0	WET	FILL		Gray fine to coarse SAND, some silt, little fi angular gravel, loose to medium dense (DG			
5 6 7 8	3/5	0	WET	FILL		Gray fine to coarse SAND, some silt, little fi medium angular gravel, loose to medium de wet.	ense (DGA), -		
			DAMP	PT	<u> </u>	PEAT, fibrous, organic, 50% fibers, soft to i damp.	-		
			DAMP	CL	X///////	CLAY, organic, trace silt, medium stiff, dam	h		



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Boring ID: 114-MW66D

	Name: G Number:		261			Drilling Method: Sonic/Water Rotary	Coordinates (NJSPNAD83) x: 610941.4
	arted Drill					Rig Type: Fraste XL Max 170	Coordinates (NJSPNAD83) x: 610941.4 Coordinates (NJSPNAD83) y: 683423.4
				<u>ן</u>		Core Size: 6 in. sonic, 2 in. rock core	
			12/30/2020				Boring Total Depth: 115 ft
	By: E.A		444			Project Manager: Shannon Gleason	Depth to Water: NA
nysica	I Location	i: Site	114				Surface Elevation: 14.1 ft NAVD88
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description	Well Construction Remarks
-21			DAMP	CL		Gray CLAY, trace silt, organic, medium stiff	, damp.
-22	3/5	0	WET	SW		Reddish brown fine to coarse SAND, little fil coarse, subrounded gravel, little silt, wet.	ne to
-23 -24 -25			WET	SP		Reddish brown fine to medium SAND, trace	e silt, wet.
-25	4 / 5	0	WET	SM		Reddish brown fine SAND, some silt, poorly trace gravel, loose, wet. Yellow coloration to	; damp. ne to s silt, wet. graded, water. and, soft, e silt, poorly er.
-29			WET	ML		Reddish brown SILT, some fine to coarse sa wet.	and, soft,
-30	3/5	0	WET	SM		Reddish brown fine to medium SAND, some graded, loose, wet. Yellow coloration to wate	
			WET	ML		Reddish brown SILT, some fine sand, soft,	wet.
	4 / 5	0	WET	SM		Reddish brown fine to medium SAND, some graded, medium dense, wet. Yellow colorati	e silt, poorly on to water.
-38 39			DAMP	CL		Reddish brown to gray CLAY, trace silt, med damp.	dium stiff,
	bgs = below DGA = dense RQD = rock	e graded a	aggregate N			n Horizontal Datum of 1983 NJSP = New Jersey State Plan an Vertical Datum of 1988 PID = photoionization detector	



Boring ID: 114-MW66D

roject Name: _(roject Number:			unuvator		Drilling Company: ADT Drilling Method: Sonic/Water Rotary		Elevation: 16.20	
ate Started Dril					Rig Type: Fraste XL Max 170		(NJSPNAD83) X:	
ate Finished Dr)		Core Size: 6 in. sonic, 2 in. rock core		Depth: 115 ft	T
ogged By: E. A		_, ; ; , _ 0 _ 0 _ 0			Project Manager: Shannon Gleason	Depth to Wa		
hysical Locatio	n: Site	114					vation: 14.1 ft NA	VD88
Dauth							Well	
Recovery Range (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Construction	Remarks
_		WET	SM		Reddish brown fine to medium SAND, so graded, medium dense, wet.	me silt, poorly		
-41 -42 -42 -43 -43	0	DAMP	CL		Reddish brown CLAY, trace silt, medium	stiff, damp.		
-44		WET	ML		Reddish brown SILT, little fine sand, trace wet.	e clay soft,		
-45		WET	ML		Reddish brown SILT, little fine sand, trace wet.	e clay soft,		
-46		WET	CL		Reddish brown CLAY, trace silt, medium	stiff, wet.		
-47	0	WET	SW		Reddish brown fine to coarse SAND, som coarse angular gravel, little silt, poorly sor Till), wet.			
-50		WET	SP		Reddish Brown fine to medium SAND, tra (Basal Till), wet. Yellow coloration to wate			
-51	0	WET	SW		Reddish brown fine to coarse SAND, som coarse angular gravel, little silt, poorly sor (Basal Till), wet.	ted, dense		
-56 	0	WET	SW		Reddish brown fine to coarse SAND, som coarse subangular gravel, little silt, poorly (Basal Till), wet.			

		Avenue Gr	ounuwaler	RI	Drilling Company: ADT			20 ft NAVD88
Project Number:					Drilling Method: Sonic/Water Rotary		(NJSPNAD83)	
Date Started Drill			<u> </u>		Rig Type: Fraste XL Max 170		(NJSPNAD83)	
Date Finished Dr .ogged By: E. A		12/30/202	0		Core Size: 6 in. sonic, 2 in. rock core		Depth: <u>115 ft</u>	
ogged By: E.A		114			Project Manager: Shannon Gleason	Depth to Wat	er: NA ation: 14.1 ft	
	1. SILE	114				Surface Eleva		
bepth ange t bgs)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Rema
- -61	0	WET	SW		Reddish brown fine to coarse SAND, some coarse gravel, little silt, very dense (Basal T			
65		WET	sw		Reddish brown fine to coarse SAND, some medium gravel, little silt, medium dense (Ba wet.			
-66 -67 -68 -68 -69	0	WET	sw		Reddish brown fine to coarse SAND, some coarse subangular gravel, trace cobbles, tra dense (Basal Till), wet.	ace silt, very -		
_		WET	CL		Reddish brown CLAY, some silt, trace fine medium stiff, wet.	sand,		
-70	0	WET	SW		Reddish brown fine to coarse SAND, some coarse subangular gravel, trace silt, trace c dense (Basal Till) wet.			
-75		WET	BEDROCK		Diabase boulder within Basal Till.			
		WET	SM		Reddish brown fine to coarse SAND, little f gravel, trace to little silt, very dense (Basal			-
-// 4/5 -78	0	NA	BEDROCK		Gray mudstone (Argillite), highly weathered matrix), fine grained, laminated, weak rock formation).	(Lockatong		— Top of bedro 77 ft bgs
-78 79		NA	BEDROCK		Gray mudstone (Argillite), highly weathered matrix), fine grained, laminated, strong rock formation).			

AECOM

30 Knightsbridge Road, Piscataway, NJ 08854

Boring ID: 114-MW66D

	Α	Ξ(20)/	M
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Boring ID: 114-MW66D

Project Name: () Project Number:				N	Drilling Company: ADT Drilling Method: Sonic/Water Rotary		levation: 16.2 (NJSPNAD83)	
Date Started Dri					Rig Type: Fraste XL Max 170		(NJSPNAD83) y	
Date Finished Di			0		Core Size: 6 in. sonic, 2 in. rock core		Depth: 115 ft	
Logged By: E. /		,			Project Manager: Shannon Gleason	Depth to Wat		
Physical Locatic		114					ation: 14.1 ft N	AVD88
						,	Well	
Depth Range (ft bgs)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Construction	Remarks
	0	NA	BEDROCK		Gray mudstone (Argillite), unweathered, fii laminated, strong rock, numerous vertical fractures, moderate fracture spacing (Lock formation). 80 degree calcite coated fractu approximately 80.5 to 80.75 ft bgs, 40 deg coated fracture at approximately 80.75 to 8 60 degree calcite coated fracture at approx to 80.6 ft bgs, 60 degree calcite coated fra approximately 83.3 to 83.6 ft bgs, 60 degre coated fracture at approximately 84.5 to 8 vertical epidote coated fracture at approxim 85 ft bgs. Recovery = 100%; RQD = 67%	healed (atong		
- 85	0	NA	BEDROCK		Gray mudstone (Argillite), unweathered, pi approximately 85.6 to 87.6 ft bgs, laminate rock, moderate fracture spacing, fine grair (Lockatong formation). 70 degree quartz c fracture at approximately 85.0 to 85.6 ft bg quartz coated fracture at approximately 86 bgs, 70 degree quartz coated fracture at 87.1 to 87.3 ft bgs, 50 degree quartz coated approximately 89.6 to 89.8 ft bgs. Recover RQD = 72% (fair rock).	ed, strong oated js, 0 degree .6 to 86.8 ft pproximately ed fracture at		
90 -91 -92 -92 -92 -93 -93 -94 -94 -95	0	NA	BEDROCK		Gray mudstone (Argillite), unweathered, la strong rock, very wide fracture spacing, fir broken pieces at approximately 90-90.5 ft mechanical breaks (Lockatong formation). 100%; RQD = 88% (good rock).	e grained, bgs, several Recovery = - -		—5 7/8" open borehole in rock: 90-115 ft bgs
-96	0	NA	BEDROCK		Gray mudstone (Argillite), unweathered, la strong rock, very wide fracture spacing, fir mechanical breaks only (Lockatong forma Recovery = 100%; RQD = 100% (excellen	ie grained, tion).		

<u>roject</u>	Name: C	Garfield A	Avenue Gro	oundwater	RI	Drilling Company: ADT	Top of PVC E	levation: 16	.20 ft NAVD88
Project	Number:	60550	261			Drilling Method: Sonic/Water Rotary	Coordinates	(NJSPNAD83) x: 610941.4
	arted Drill					Rig Type: Fraste XL Max 170			y: 683423.4
	nished Dr		12/30/202	0		Core Size: 6 in. sonic, 2 in. rock core	Boring Total		ť
.ogged	By: E.A	CS	111			Project Manager: Shannon Gleason	Depth to Wat		
nysica	I LOCATIO		114				Surface Eleva		NAVD88
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
-101	5/5	0	NA	BEDROCK		Gray mudstone (Argillite), unweathered, 20 laminated, strong rock, very wide fracture s grained, 20 degree fracture at approximate 102 ft bgs, numerous mechanical fractures formation). Recovery = 100%; RQD = 95% rock).	pacing, fine y 101.8 to ; (Lockatong		
105 	4.92 / 5	0	NA	BEDROCK		Gray mudstone (Argillite), unweathered, 20 laminated, strong rock, very wide fracture s grained (Lockatong formation), 20 degree f approximately 105.7 to 105.8 ft bgs, 10 deg at approximately 107.2 to 107.4 ft bgs, nun mechanical fractures. Recovery = 98%; RC (excellent rock).	pacing, fine racture at gree fracture nerous		
110	4.17 / 5	0	NA	BEDROCK		Gray mudstone (Argillite), unweathered, 20 laminated, strong rock, very wide fracture s grained, mechanical breaks only (Lockaton Recovery = 97%; RQD = 97% (excellent ro boring at 115 ft bgs.	pacing, fine g formation).		
							-	- - - - - - -	



Boring ID: 114-MW45C

roject Nar roject Nur				unuvalo	14				22 ft NAVD88
ate Starte								(NJSPNAD83) NJSPNAD83)	x: 611411.8
									y. _003075
			10/2/2019					Depth: 76 ft	
ogged By:							epth to Wate		
hysical Lo	ocation	: Site	114		,	S	surface Eleva	tion: 11.5 ft	NAVD88
Depth								Well	
ande	covery	PID	Moisture	USCS	Graphic	Material Description		Construction	Remarks
t bgs)	(ft/ft)	(ppm)	Content		Log				
- /									
						Dark brown SAND, fine to coarse gravel, DGA,	, loose		
1						(FILL).	1		
-1							-		
-2					$\bigotimes \bigotimes \bigotimes$				
- 3									
_							-		
- 1									Riser set in grout
4									Riser set in grout
-							-		
-5-3	3/10	0	DRY	FILL			_		
	., 10	U		FILL					
-							-		
-6							_		—Grout: 0-64 ft bgs
-									5-
1							1		
-7							-		
					$\bigotimes \bigotimes \bigotimes$				
							1		
- 8							-		-2-inch Schedule
							-		40 PVC riser: 0-67 ft bgs
					\otimes				0 07 11 090
- 9					$\bigotimes \bigotimes \bigotimes$		-		
4							-		
-10									
10						Black DGA (FILL) material consisting of fine to	coarse		
-						GRAVEL, loose.	-		
-11									
-							1		
-12				FILL					
]		
-13							-		
_							-		
-14					$\left \frac{M}{M} \right $	Brown PEAT, highly organic, peat odor (meado	ow mat).		
_				PT	1, 11, 1				
-15	1/10				<u> </u>				
-15 8	8 / 10	0				Gray very fine silty SAND, medium dense, dan	np.		
						· · · · · · · · · · · · · · · · · · ·	· -		
-16									
-			DAMP	SM			-		
-17							_		
							1		
-18		ł				Reddish brown, very fine SAND (poorly graded	I) with		
						little fine to coarse gravel, medium dense, dam	ו), witti ה		
					1	inte inte to course gravel, medium dense, dam	P.		
-19			DAMP	SP			-		
_					[·····]		-		
	= below s			IAD83 = No	th American	Horizontal Datum of 1983 NJSP = New Jersey State Plane	ppm = parts per n	million	ft = feet
DGA	A = dense	graded a	iggregate N	IAVD88 = N	orth America	n Vertical Datum of 1988 PID = photoionization detector	USCS = Unified S	Soil Classification	System in = inches



30 Knightsbridge Road, Piscataway, NJ 08854 732.564.3200 office telephone

Boring ID: 114-MW45C

Project Nam Project Num			ananator	1.4	Drilling Company: _ADT Drilling Method: Sonic		Elevation: 13.22 s (NJSPNAD83) x:	
Date Started					Rig Type: Fraste XL Max 170		s (NJSPNAD83) y:	
Date Started					Core Size: 3 in		al Depth: 76 ft	000010
Logged By:					Project Manager: Shannon Gleason	Depth to W		
Physical Lo							evation: 11.5 ft NA	VD88
							Well	
	overy PID /ft) (ppm	Moisture Content	USCS	Graphic Log	Material Description		Construction	Remarks
	10 0	WET	SP		Reddish brown, very fine SAND (poor little fine to coarse sand from 20' to 22 medium dense, wet.	ly graded), with 2', loose to		
	10 0	WET	SP		Reddish brown, very fine SAND (poorl medium dense, wet. Yellow water obs core.	ly graded), erved from soil		
lotes: bqs =	below surface	grade I	AD83 = Nor	th Americar	h Horizontal Datum of 1983 NJSP = New Jersey Sta	te Plane ppm = parts n	<u> </u>	ft = feet
						$\mu = \mu =$		



Boring ID: 114-MW45C

Project M	Number:	605501	261			Drilling Method: Sonic	Coordinates	s (NJSPNAD83) x:	611411 8
	rted Drill					Rig Type: Fraste XL Max 170		s (NJSPNAD83) y:	
			10/2/2019			Core Size: 3 in		I Depth: 76 ft	000010
	By: J. Ha					Project Manager: Shannon Gleason	Depth to Wa		
	By: J. Ha					FIDECT MANAGET. SHAHHOH GREASON		vation: 11.5 ft NA	
inysical	LOCATION	I. SILE	114		1 1		Surrace Ele		V D00
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
	7 / 10	0	WET	SP		Reddish brown, very fine SAND (poorly trace silt, loose to medium dense, wet. observed in soil core.			
50 51 			DAMP	СН		Reddish brown CLAY, high plasticity, s	tiff, damp.		
-53 	- 9 / 10 - 9 / 10 	0	WET TO DAMP	SM		Reddish brown, very fine SAND/silty sa graded), medium dense, wet. Trace co fine to medium sand (slightly denser) o 59.5' to 60'.	arse gravel and		

Project Date St	Name: G Number: arted Drill nished Dri	60550 ing: 1	0/1/2019	undwater	RI	Drilling Company: ADT Drilling Method: Sonic Rig Type: Fraste XL Max 170 Core Size: 3 in	Coordinates Coordinates	Elevation: 13.22 ft NAVD88 (NJSPNAD83) x: 611411.8 (NJSPNAD83) y: 683675 I Depth: 76 ft			
_ogged	IBy: J.Ha	arshmai	n			Project Manager: Shannon Gleason	Depth to Wa				
	al Locatior	1: Site	114				Surface Elev	Well	NAVD88		
Depth Range (ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Construction	Remarks		
61 62 63 64			WET	SP		Reddish brown to brown, fine to mediun SAND, loose, wet.	n poorly graded		—Bentonite Seal: 64-66 ft bgs		
65	/ 10	0	SLIGHTLY DAMP	SW-GW		Brown, fine to coarse SAND and fine to medium dense to dense, well graded (B					
	-		DAMP	SW		Gray, tighly compressed, very dense SA gravel, some subangular pieces (Basal	ND and angular Till), damp.				
71 72 73 74 75 76	5/6	0	DRY	BEDROCK		Dark gray to black siltstone and mudsto Formation). End of boring at 76 ft.	ne (Lockatong		—Bentonite Seal: 71.5-76 ft bgs		

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Boring ID: 114-MW48C

Project	Number	60550	261			Drilling Company: ADT Top of PVC Drilling Method: Sonic Coordinates			AU831	x 611163.8
Project Number: _60550261 Date Started Drilling: 3/19/2020						Rig Type: Fraste XL Max 170			y: 683919.4	
Date Finished Drilling: 3/19/2020						Core Size: 3 in	Boring Total			
	By: V.T					Project Manager: Shannon Gleason	Depth to Wa		14	
hysica	al Location	1: Site	114				Surface Elev		15.0 ft	NAVD88
Dewth							Well			
Depth Range	Recovery	PID	Moisture	USCS	Graphic	Material Description			uction	Remarks
ft bgs)	(ft/ft)	(ppm)	Content	0303	Log				יר	INCITION INS
			Í I			Soft dig to 5 ft bgs; Grey GRAVEL, silty	sand, little fine			
		1	1			to coarse gravel (DGA), dry.		1 🔛		
- 1										
	-									
-2										
~										
_			DRY	FILL				1 🔛		
- 3	1									
_	-									
_4										Riser set in grout
-7										r toor oor in grout
_	3.6 / 10 (0.0						1		
- 5										
_					×		fine to			
-6				FILL		Yellowish Brown (10YR 5/4) silty SAND, medium sand, little fine gravel, damp.	, TINE TO			
U			DAMP			moulum sand, inde tille gravel, udilip.				
_								1		
-7					×	Brown (10YR 4/3) silty SAND, fine to co	area cand little			—Grout: 0-49 ft bgs
_						gravel, loose, damp.	aise sailu, iitile			
- 8						3,,				
0										
	-		DAMP	FILL				1 🗱		
-9								- 🚟		
-10										
10						Black (10 YR 2/1) silty SAND, fine to coa	arse sand, little			40 PVC Riser:
. —						gravel, damp.		1 🗱		0-53 ft bgs
-11										
_										
-12										
12				_					PYY I	
	1		DAMP	FILL				1		
-13	1									
_								+ 🗱		
-14	ļ									
_					$\bigotimes \bigotimes \bigotimes$			1		
-15	6.6 / 10		DAMP	OH-PT	<u> HAANA</u>	Black organic soil with brown fibers (PE/	AT), damp			
· _					HAR I		/, F	+		
-16	ļ									
			DAMP	ML		Gray (7.5YR 5/1) SILT with few brown fi	bers, grades			
_						into clayey silt, damp.		1 🗱		
-17						Gray (7.5YR 5/1) clayey SILT, grades in	to			
-						greenish-gray (10Y 5/1) clayey silt, fine s	sand, damp.	+		
-18							•			
10	-		DAMP	ML						
_								1 🗱		
-19										
_										
										20ft: 20% fines (silt/cla
otes:	bgs = below DGA = dens					n Horizontal Datum of 1983 NJSP = New Jersey State an Vertical Datum of 1988 PID = photoionization detect			ification	ft = feet System in = inches
	Jun - ucils	- 9,0000 0	-ggiogaio P	1/1 V LOO = N	Jun America	an venteal Datum of 1900 FID – photoionization detec	USUS = UNITIE	a ooli olass	meauon	System m - mones



Boring ID: 114-MW48C

Project Number: 6055	0261			Drilling Method: Sonic	Coordinates	(NJSPNAD83)	c: 611163.8
Date Started Drilling:				Rig Type: Fraste XL Max 170		NJSPNAD83) y	
Date Finished Drilling:				Core Size: 3 in	Boring Total		
ogged By: V. Thayer				Project Manager: Shannon Gleason	Depth to Wate		
Physical Location: Si	te 114					tion: 15.0 ft N	IAVD88
Depth Range ft bgs) (ft/ft) (ppm		USCS	Graphic Log	Material Description		Well Construction	Remarks
-21	WET	ML		Dark Gray (2.5Y 4/1) clayey SILT, little fin gravel, loose, wet.	e to coarse		
-22	WET	SP-SM		Dark greyish brown (10YR 4/2) to brown (poorly graded SAND with silt, fine sand, lit sand, silt, loose, wet.			25ft: 5-10% fines (silt/cl
30	WET WET WET	SP-SM GW SM	• • •	Reddish brown (5YR 4/4) to strong brown poorly graded SAND with silt, fine to medi some silt, loose, wet. Widely graded GRAVEL, fine to coarse gr	um sand, í		
		SP-SM		sand, wet. Reddish brown silty SAND, fine sand, loos Reddish brown (7.5YR 5/6) to yellowish re poorly graded SAND with silt, fine sand, lit sand, trace coarse sand, little subrounded coarse gravel, loose, wet.	se, wet. ed (5YR 4/6), ttle medium		35ft: 10-15% fines (sitt/c



Boring ID: 114-MW48C

Project Project	Number:	605503	261			Drilling Method: Sonic	Coordinates	(NJSPNAD83)	x 611163.8
	arted Drill					Rig Type: Fraste XL Max 170		(NJSPNAD83) y	
	nished Dri					Core Size: 3 in		Depth: 64 ft	000010.1
	By: V. T					Project Manager: Shannon Gleason	Depth to Wa		
	Location		114					vation: 15.0 ft N	AVD88
								Well	
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Construction	Remarks
-41	4.8 / 10		WET	SP-SM					
-48			DAMP	SW-SC		Reddish brown (5YR 5/3) clayey SAND, sand, little angular fine to coarse gravelo compacted, damp (Basal Till). Reddish brown (5YR 5/3) clayey SAND,	slay, dense,		49ft: 30% fines (silt/clay
51						sand, little subrounded to subangular fin gravel, clay, damp (becomes dry to dam 58') (Basal Till). Boulder at 52 ft bgs.	e to coarse		50ft: 20% fines (silt/cla #00 Sand: 49-51 ft bgs
54 	4.4 / 10		DAMP	SW-SC					 #0 Filter Sand: 51-58 ft bgs 2-inch Schedule 40 PVC screen: 53-57 ft bgs
58 59				BEDROCK		Grey Diabase, powdered and broken pie	ces of rock.		
lotes:	bgs = below DGA = dense					a Horizontal Datum of 1983 NJSP = New Jersey State an Vertical Datum of 1988 PID = photoionization dete		r million I Soil Classification S	ft = feet ystem in = inches



Boring ID: 114-MW48C

Project N				Junuvalo	N .	Drilling Company: ADT		evation: 16.2	
Project N						Drilling Method: Sonic		(NJSPNAD83)	
			/19/2020			Rig Type: Fraste XL Max 170		NJSPNAD83)	1: 683919.4
Date Fini	shed Dri	Iling:	3/19/2020			Core Size: 3 in	Boring Total		
.ogged E	By: V.T	hayer				Project Manager: Shannon Gleason	Depth to Wate		
Physical	Location	1: Site	114				Surface Eleva	tion: 15.0 ft	NAVD88
Depth								Well	
Range R	Recovery	PID	Moisture	USCS	Graphic	Material Description		Construction	Remarks
ft bgs)	(ft/ft)	(ppm)	Content		Log				i torriarită
					<u> </u>				
					\times	Grey Diabase (pulverized by sonic drilling).	End of		Bentonite Seal:
_					\gg	boring at 64 ft.	-		58-64 ft bgs
-61					$\langle / / \langle \rangle \rangle$		_		
_					U//XX		-		
-62				BEDROCK			_		
02				BEDROCK	Y/XX				
_					\times		-		
-63					\gg		_		
00					$\langle / / \langle \rangle \rangle$				
\neg					WX(W)		-		
-64					[///>				
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	ao - k-l-i	aunfa			A				£
	gs = below IGA = dense			NAU83 = Nort NAVD88 = No	n American	Horizontal Datum of 1983 NJSP = New Jersey State Pla n Vertical Datum of 1988 PID = photoionization detecto	r USCS = Unified S	million Soil Classification S	ft = feet system in = inches
		es (silt/clay) s							

	Name: C			oundwater	RI	Drilling Company: ADT	Top of PVC E			
	Number:					Drilling Method: Sonic	Coordinates			
	arted Drill nished Dri					Rig Type: Fraste XL Max 170 Core Size: 3 in	Coordinates Boring Total			000012
ogged	I By: V. T	hayer				Project Manager: Shannon Gleason	Depth to Wat			
nysica	al Location	1: Site	114				Surface Eleva		6 ft NAV	D88
)epth ange t bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Constructi	on	Remarks
			DRY	FILL		Soft dig to 5 ft bgs; Gray silty SAND, fine t sand, fine to coarse gravel (large gravel up inches across), highly compacted, dry (DG	to 2.5			tiser set in grout
5 — 6 — 7 — 8 — 9 —	2.6 / 10	0.0	DRY	FILL		Yellowish brown (10YR 5/4) widely gradec silt, few subrounded fine to coarse sand, k	SAND with bose, dry.		G	Grout: 0-60.5 ft gs
10	3.8 / 10	0.0	WET	FILL		Black (10YR 2/1) and dark gray (2.5Y 4/1) graded GRAVEL, fine to coarse gravel, so coarse sand, little silt, wet.	widely me fine to - -	1 PPPP PPP	1 1	-inch Schedule 0 PVC riser: -64.5 ft bgs
			WET	FILL		Black (10YR 2/1) and dark gray (2.5Y 4/1) graded GRAVEL, fine to coarse gravelsom coarse sand, little silt, wet. FILL, begins to grade into weak red (2.5Yf	e fine to -			
			**⊏1	1 166	\times			<u>, 1964 166</u>	1 1	



30 Knightsbridge Road, Piscataway, NJ 08854 732.564.3200 office telephone

Boring ID: 114-MW49C

Project						Drilling Company: ADT		Elevation: 16.5	
	Number:					Drilling Method: Sonic		(NJSPNAD83)	
	arted Drill					Rig Type: Fraste XL Max 170		(NJSPNAD83) y	003012
	nished Dri		3/20/2020			Core Size: 3 in		Depth: 75 ft	
	By: V.T		111			Project Manager: Shannon Gleason	Depth to Wat		
nysica	al Location	1: Site	114				Surface Elev	ation: 14.6 ft N	NAVD88
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
			WET	FILL		graded GRAVEL, little fine to coarse san	d, few silt, wet.		
22			WET	SW		Reddish brown (5YR 4/3) widely graded medium sand, few coarse sand and trace wet.	SAND, fine to e silt, loose,		
-23	6 / 10	0.0	WET	SM		Red (2.5YR 4/6) silty SAND, fine sand, k	JUSE, WEL.		22.5 ft: 15-20% fines (silt/c
30 31 32 33			WET	SP-SM		Red (2.5YR 4/6) poorly graded SAND wit sand, few silt, loose, wet.	-		30 ft: 15% fines (silt/clay
34 35 	5.3 / 10	0.0	WET	SP-SM		Red (2.5YR 4/6) poorly graded SAND wit sand, silt, loose, wet.	th silt, fine - -		
37 			WET	SP		Red (2.5YR 4/6) poorly graded SAND, fir silt, loose, sharp contact with underlying	ne sand, trace clay, wet.		37 ft: 5% fines (silt/clay
38 			WET	СН		Reddish brown (2.5YR 4/4) and reddish 5/1) fat CLAY, laminated layers of clay a compact, malleable, high plasticity, wet to	nd silt,		
lotes:	bgs = below DGA = dens		rade l aggregate l	NAD83 = Nori NAVD88 = No	h America rth Americ	h Horizontal Datum of 1983 NJSP = New Jersey State F an Vertical Datum of 1988 PID = photoionization detec	Plane ppm = parts per tor USCS = Unified		ft = feet ystem in = inches

Project Date St Date Fi	Name: G Number: arted Drill nished Dri	605502 ing: 3 illing:	261 /20/2020	oundwater	RI	Drilling Company: ADT Drilling Method: Sonic Rig Type: Fraste XL Max 170 Core Size: 3 in	Top of PVC E Coordinates Coordinates Boring Total	(NJSPN (NJSPN Depth:	AD83) : AD83) y	x: 611378.1
_ogged	<mark>IBy:</mark> V.⊺ alLocatio	hayer	111			Project Manager: Shannon Gleason	Depth to Wat		14640	
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Constr	ell	Remarks
-41 -42 -43 -44 -44 -45 -46 - -47	4.4 / 10	0.0	WET	СН			- - - - -			
-48	-		WET	SC		Reddish brown (2.5YR 4/4) clayey SAND	, fine sand,			
			WET	SP	****	 loose. Poorly graded SAND, fine to medium san 				
-50 -51 -52 -52 -53 -53 -54 -55 -55 -56 -57 -58 -58 -58 -58 -58 -58 -58 -59 -59 -59 -59 -50 -59 -59 -50 -59 -59 -50 -50 -50 -50 -50 -50 -50 -50 -50 -50	6 / 10	0.0	DAMP	SW-SC		Reddish brown (2.5YR 4/3) clayey SAND coarse sand, little subangular fine to coars to 2.5 inch across), very hard, dense and damp (Basal Till).	se aravel (up -			55 ft: 25% fines (silt/cla
otes:	bgs = below DGA = dens			AD83 = Nor	th America	h Horizontal Datum of 1983 NJSP = New Jersey State P	lane ppm = parts per		ification S	ft = feet vstem in = inches

nber: 60550 d Drilling: 3 ed Drilling: 3 v. Thayer cation: Site sovery PID t/ft) (ppm) / 10 0.0	/20/2020 3/20/2020	USCS C	Graphic	Drilling Method: Sonic Rig Type: Fraste XL Max 170 Core Size: 3 in Project Manager: Shannon Gleason Material Description Dark reddish gray (5YR 4/2) poorly gradd clay, fine to coarse angular sand with litt coarse gravel, varies from loose to hard, (Basal Till).	Coordinates Boring Total Depth to Wat Surface Elev ed SAND with le fine to	(NJSPNAD83)) (NJSPNAD83) y Depth: 75 ft ter: ation: 14.6 ft N Well Construction	: 683872
ed Drilling: V. Thayer cation: Site covery PID t/ft) (ppm)	3/20/2020 114 Moisture Content	SC		Core Size: 3 in Project Manager: Shannon Gleason Material Description Dark reddish gray (5YR 4/2) poorly grad clay, fine to coarse angular sand with litt coarse gravel, varies from loose to hard,	ed SAND with le fine to	Depth: 75 ft ter: ation: 14.6 ft N Well Construction	IAVD88 Remarks —#00 Sand Seal: 60.5-62.5 ft bgs
V. Thayer cation: Site covery PID t/ft) (ppm)	Moisture Content	SC		Material Description Dark reddish gray (5YR 4/2) poorly grad clay, fine to coarse angular sand with litt coarse gravel, varies from loose to hard,	Surface Elev	ation: 14.6 ft N Well Construction	Remarks —#00 Sand Seal: 60.5-62.5 ft bgs
eovery PID t/ft) (ppm)	Moisture Content	SC		Dark reddish gray (5YR 4/2) poorly grad clay, fine to coarse angular sand with litt coarse gravel, varies from loose to hard,	ed SAND with le fine to	Well Construction	Remarks —#00 Sand Seal: 60.5-62.5 ft bgs
t/ft) (ppm)	Content	SC		Dark reddish gray (5YR 4/2) poorly grad clay, fine to coarse angular sand with litt coarse gravel, varies from loose to hard,	le fine to	Construction	—#00 Sand Seal: 60.5-62.5 ft bgs
/ 10 0.0	MOIST			clay, fine to coarse angular sand with litt coarse gravel, varies from loose to hard,	le fine to		60.5-62.5 ft bgs
/ 10 0.0		SP #			-		62.5-70 ft bgs
		<u> </u>	XXXXXX	- Interbedded SAND, poorly graded sand,	fine to medium /		65 ft: 10% fines (silt/clay
	MOIST	SC		Sand (Basal Till). Dark reddish gray (5YR 4/2) poorly grad clay, fine to coarse angular sand with litt coarse gravel, varies from loose to hard, (Basal Till).	le fine to		-2-inch Schedule 40 PVC screen: 64.5-69.5 ft bgs Bentonite Seal:
(5	WET	BEDROCK		Weathered mudstone and siltstone, brok matrix, wet (Lockatong Formation).	ken rock in clay -		70-75 ft bgs
0.0	WET	BEDROCK		Weathered mudstone and siltstone, wet Formation). End of boring at 75 ft.	(Lockatong		
					-		
	5 0.0	5 0.0 WET WET	5 0.0 WET BEDROCK WET BEDROCK	5 0.0 WET BEDROCK WET BEDROCK WET BEDROCK	5 0.0 WET BEDROCK WET BEDROCK Weathered mudstone and siltstone, brokmatrix, wet (Lockatong Formation). WET BEDROCK Weathered mudstone and siltstone, wet Formation). End of boring at 75 ft. WET BEDROCK	5 0.0 WET BEDROCK Weathered mudstone and siltstone, broken rock in clay matrix, wet (Lockatong Formation). 5 0.0 WET BEDROCK Weathered mudstone and siltstone, wet (Lockatong Formation). 6 WET BEDROCK Weathered mudstone and siltstone, wet (Lockatong Formation). 6 WET BEDROCK Weathered mudstone and siltstone, wet (Lockatong Formation). 6 WET BEDROCK Weathered mudstone and siltstone, wet (Lockatong Formation). 7 WET BEDROCK Meathered mudstone and siltstone, wet (Lockatong Formation). 8 WET BEDROCK Meathered mudstone and siltstone, wet (Lockatong Formation). 9 WET BEDROCK Meathered mudstone and siltstone, wet (Lockatong Formation). 9 WET BEDROCK Meathered mudstone and siltstone, wet (Lockatong Formation). 9 WET BEDROCK Meathered mudstone and siltstone, wet (Lockatong Formation).	5 0.0 WET BEDROCK Weathered mudstone and siltstone, broken rock in clay matrix, wet (Lockatong Formation). Multiple WET BEDROCK Weathered mudstone and siltstone, broken rock in clay Multiple BEDROCK Weathered mudstone and siltstone, wet (Lockatong Formation).

AECOM

Boring ID: 114-MW50C

	3/31/2020 3/31/2020			Drilling Method: Sonic Rig Type: Fraste XL Max 170		s (NJSPNAD83) s (NJSPNAD83) y	
rilling: Thayer							
Thayer	0/01/2020			Core Size: 3 in		Il Depth: 70 ft	. 000700.0
				Project Manager: Shannon Gleason	Depth to Wa		
	114					vation: 13.4 ft l	NAVD88
					2011000 10	Well	
(PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Construction	Remarks
0	DRY	FILL		Soft dig to 5 ft bgs; Dark gray (7.5YR 4 little fine to coarse GRAVEL, dry (DGA	/1) silty SAND,).		
	DRY TO WET	FILL		Gray to black angular fine to coarse GF (Note: Gravel collapsing into borehole) Groundwater at 3.5 ft bgs.	RAVEL, dry. (FILL).		
	WET	FILL		Dark gray (7.5YR 4/1) to black silty SA coarse GRAVEL, loose, few 4" long se (FILL).	ND, little fine to ctions, wet		
0	WET	FILL		Gray (7.5YR 5/1) silty SAND, little fine GRAVEL, loose (FILL).	to coarse		
0	WET	FILL		GRĂVEL, loose (FILL).		1 10000 10000 1	—Grout 0-53 ft bgs
0	MOIST	СН		gray, sandy CLAY with few to little sub-	angular fine to		—Grout V-53 TE DGS
	0 0	0 DRY TO WET 0 WET 0 WET 0 WET 0 WET 0 WET	0 DRY TO WET FILL 0 WET FILL	0 DRY TO WET FILL 0 WET FILL	0 DRY FILL 0 DRY DRY WET FILL 0 DRY WET FILL 0 WET FILL 0 MOIST CH	0 DRY FILL 0 DRY TO TO TO WET FILL 0 DRY TO TO WET FILL 0 WET FILL 0 Gray (7.5YR 5/1) silty SAND, little fine to coarse GRAVEL, loose (FILL). 0 WET FILL 0 Gray (7.5YR 5/1) silty SAND, little fine to coarse GRAVEL, loose (FILL). 0 WET FILL 0 MOIST Gray (7.5YR 5/1) silty SAND, little fine to coarse GRAVEL, loose (FILL). 0 MOIST CH Mottled weak red (10YR 4/2) to dark gray/light greenish gray, sandy CLAY with few to little sub-angular fine to coarse GRAVEL, very firm, wet to moist. wataface graded se graded aggregate NADE3 - Noth American Hotzontal Datum of 1983 NJSP = New Jensey State Plane USCS = Unific	0 Ittle fine to coarse GRAVEL, dry (DGA). - 0 - - 0



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Boring ID: 114-MW50C

Project	Number:	605503	261			Drilling Method: Sonic	Coordinates	(NJSPNAD83)	x: 611043 1
	arted Drill					Rig Type: Fraste XL Max 170		(NJSPNAD83) y	
	nished Dri					Core Size: 3 in		Depth: 70 ft	
_ogged	I By: V.T	hayer				Project Manager: Shannon Gleason	Depth to Wat	er:	
	al Location		114				Surface Elev	ation: 13.4 ft N	IAVD88
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
			WET	SC-SM		Reddish brown (5YR 5/3) poorly grade CLAY or SILT laminae, sand is thinly b	d SAND with edded, wet.		
21 			WET	SC/SM		Reddish brown (5YR 5/3) poorly grade	d SAND, wet.		
-22 			WET	SC/SM		Reddish brown (5YR 5/3) poorly grade CLAY or SILT laminae, wet.	d SAND with		
-23 			WET	SP		Reddish brown (5YR 5/3) poorly grade SAND, trace SILT, wet.			23.3 ft: 5% fines (silt/cla
26 26 27 28 28 29 30	4.3 / 10	0	WET	SC/SM		Reddish brown (5YR 4/3) poorly grade with CLAY or SILT laminae, sand is thi			—2-inch Schedule
-31			WET	CL/ML		Reddish brown (5YR 4/3) laminated SI medium dense, wet.			40 PVC riser 0-57 ft bgs
_			WET	ML		Reddish brown (5YR 4/3) massive SIL	I, loose, wet.		
-32 -33 -34 -35	4.8 / 10	0	WET	CL/ML		Reddish brown (5YR 4/3) laminated Sl medium dense, wet. Pale yellow groun	dwater.		33 ft: 80% fines (silt/cla
_		U	MOIST	SM		Reddish brown (5YR 4/3) silty SAND w sub-angular to angular fine to coarse G			
36 37 38			MOIST	SM		Reddish brown (5YR 4/3) silty SAND w GRAVEL, medium SAND, little fine SA SAND,few sub-angular fine to coarse (ND, trace coarse		
-39 -							-		39 ft: 20% fines (silt/cla
otes:	bgs = below DGA = dens					n Horizontal Datum of 1983 NJSP = New Jersey Stat an Vertical Datum of 1988 PID = photoionization det		million Soil Classification S	ft = feet ystem in = inches



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Boring ID: 114-MW50C

Logged B Physical	ted Drill shed Dri By: V.T	ing: 3 Illing: hayer n: Site	/30/2020 3/31/2020			Drilling Method: Sonic Rig Type: Fraste XL Max 170	Coordinates	(NJSPNAD83) (NJSPNAD83)	
Date Finis Logged B Physical I Depth Range (ft bgs)	shed Dri by: V. T Locatior Recovery	illing: hayer 1: Site	3/31/2020						
Logged B Physical Depth Range (ft bgs)	By: V. T Location Recovery	hayer 1: Site				Core Size: 3 in	Boring Total	Denth: 70 ft	
Physical Depth Range ft bgs)	Location Recovery	n: Site				Project Manager: Shannon Gleason	Depth to Wat		
Depth Range ft bgs)	lecovery		114			The sector manager. Chariter Cleaser		ation: 13.4 ft	
Range ft bgs)			114				Ourface Lieve		
		PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
			MOIST	SP		Dark reddish brown (2.5YR 3/3) poorly medium SAND, loose, moist.	graded SAND, -		
-42			MOIST	SM		Dark reddish brown (2.5YR 3/3) silty S/ sub-angular fine to coarse GRAVEL, m changes to light olive gray (5Y 6/2) from	oist. Color -		43 ft: 20% fines (silt/cla
-46 -47 -47 -48	7 / 10	0	MOIST	SM		Dark reddish brown (2.5YR 3/3) silty S/ sub-angular fine to coarse GRAVEL.	AND, few to little -		
-49			MOIST	SC-SM		Light brown (7.5YR 6/4) clayey SAND o fine to coarse SAND, SILT, few to little sub-rounded fine to coarse GRAVEL, c	sub-angular to		49 ft: 20% fines (silt/cla
50 51 						(up to 2" across), moist, firm (Basal Till) Dark reddish brown (2.5YR 3/3) clayey SAND, few to little sub-angular to sub-r coarse GRAVEL, hard, moist (50' to 52 to 60') (Basal Till).	SAND or silty ounded fine to		
	5 / 10	0	DRY	SC-SM			-		Bentonite Seal 53-55 ft bgs #0 Filter sand
56 							-		55-63 ft bgs
-58							-		2-inch Schedule
-59							-		40 Screen 57-62 ft bgs
	gs = below GA = dense					Horizontal Datum of 1983 NJSP = New Jersey State an Vertical Datum of 1988 PID = photoionization dete		million Soil Classification	ft = feet System in = inches

Project Name Project Numb			oundwater	RI	Drilling Company: ADT Drilling Method: Sonic			levation: 15.3 (NJSPNAD83)	
Date Started					Rig Type: Fraste XL Max 170			(NJSPNAD83) y	
ate Finished)		Core Size: 3 in			Depth: 70 ft	
ogged By:					Project Manager: Shannon Gleason		Depth to Wat		
hysical Loc	ition: Site	<u>ə 114</u>					Surface Elev	ation: 13.4 ft N	IAVD88
Depth Range ft bgs)		Moisture Content	USCS	Graphic Log	Material Descriptic	n		Well Construction	Remarks
 -61 		MOIST	SC		Light brown (7.5YR 6/3) sandy CLA fine to coarse GRAVEL, very firm, m	Y, little sı ıoist (Bas	ub-angular sal Till). -		
62	5 0	DRY	BEDROCK		Gray diabase (pulverized by sonic dri	illing), dr	y. -		—Bentonite Seal 63-70 ft bgs
-65		WET	BEDROCK		Gray diabase (pulverized by sonic dri	illing), we	et.		
67	5 0	DRY	BEDROCK		boring at 70 ft.		-		
D tes: bgs = t DGA =							-		

	Name: G			oundwater	RI	Drilling Company: ADT	Top of PVC E			
	Number: arted Drill					Drilling Method: Sonic Rig Type: Fraste XL Max 170	Coordinates Coordinates			
	nished Dri					Core Size: 3 in	Boring Total			. 003037.4
	By: V. T					Project Manager: Shannon Gleason	Depth to Wat			
	al Location		114	i			Surface Eleva	ation:	12.2 ft	NAVD88
)epth ange t bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description			ell ruction	Remarks
			DRY	FILL		Soft dig to 5 ft bgs; Gray angular fine to coar GRAVEL, gray silty SAND with sub-angular coarse GRAVEL, dry (DGA).	rse fine to - -			
5 — 6 — 7 — 8 — 9 —	5.5 / 10	0.0	DRY	FILL		Olive brown (2.5Y 4/3) silty SAND, little sub- fine to coarse GRAVEL, dry (FILL).	-rounded 			—Grout: 0-68.5 ft bgs
10— 11— 12— 13— 14—			WET	FILL		Black to dark gray silty SAND, little sub-roun GRAVEL, loose, wet.			LAN I	2-inch Schedule 40 PVC riser: 0-71.5 ft bgs
_			MOIST	ML		Light greenish gray clayey SILT, moist.				
15	4.6 / 10	0.0	DRY	SM		Reddish yellow (7.5YR 6/6) to reddish brown silty SAND, sub-rounded fine to coarse GRA dry.				
16			MOIST	SW-SM		Reddish yellow (7.5YR 6/6) to reddish browr widely graded SAND with SILT, few sub-rou coarse GRAVEL, hard to loose, moist.	n (5YR 4/6) - nded fine to -			

AECOM

Boring ID: 114-MW51C

Project Na Project Nu					14	Drilling Company: _ADT Drilling Method: Sonic		levation: 14.13 (NJSPNAD83) x						
Date Start						Rig Type: Fraste XL Max 170		(NJSPNAD83) y:						
			3/26/2020			Core Size: 3 in		Depth: 82 ft						
_ogged By						Project Manager: Shannon Gleason	Depth to Wat							
Physical L			114				Surface Eleva	ation: 12.2 ft N/	AVD88					
	ecovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks					
			WET	SP		Reddish brown (5YR 4/6) poorly graded medium SAND, wet.	d SAND, fine to							
-21 -22 -23 -23 -24 -24	7.5/10	7.5 / 10		0.0	0.0	0.0	0.0	WET	SM		Reddish brown (5YR 4/6) silty SAND w fine to sub-rounded coarse GRAVEL, v			
	.5 / 10	0.0	WET	ML	*-* *****	SILT, wet.								
26 			WET	SP/ML		Reddish brown (2.5YR 4/4) interbeddeo fine to medium SAND, wet.	d SILT, CLAY,							
28 29			WET	SP-SM		Reddish brown (2.5YR 4/4) poorly grad SILT, fine SAND, little medium SAND, wet.								
-30				WET	SP-SM		Reddish brown (2.5YR 4/4) poorly grad SILT, fine SAND, sheen on groundwate	led SAND with er, loose, wet. - -		30 ft: 5-10% fines (silt/				
-36	4 / 10	0.0	WET	SP-SM		Reddish brown (2.5YR 4/4) poorly grad SILT, fine SAND.	led SAND with		35 ft: 15% fines (silt/cla					
-37 -38 -		-	-	_	-	WET	CL/ML		Weak red (10YR 4/3) SILT, CLAY, fine laminated.	≥ SAND, -		38 ft: 80% fines (silt/cl		
-39			WET	SM		Weak red (10YR 4/3) silty SAND, little MGP sheen and odor.	GRAVEL, hard,							

Prior Rig Type: Fraste XL Max 170 Coordinates (NUSPNAD83) y: 683637.4 ate Finished Drilling: 3/26/2020 Core Size: 3 in Boring Total Depth: 82 ft orgad By: V. Thayer Project Manager: Shannon Glesson Depth to Water: hysical Location: Site 114 Surface Elevation: 12.2 ft NAVD88 Depth trygs (r/th) Moisture Construction Core Size: 3 in Depth trygs Recovery PID Moisture USCS Graphic Log Material Description Construction Remarks	Date Sta Date Fin	Number:				RI	Drilling Company: ADT		PVC Elevation: 14.13	
late Finished Drilling: 3/26/2020 Core Size: 3 in Boring Total Depth: 8.2 it orged By: V. Thayer Project Manager: Shannon Gleason Depth to Water: Well Surface Elevation: Size 114 Surface Elevation: 12.2 ft NAVDB8 Pertor Recovery PID Moisture USCS Graphic Material Description Construction Remarks 44- -44- -44- -44- -44- -44- -44- -44-	Date Fin						Drilling Method: Sonic			
Orgget By: V. There: Project Manager: Shannon Gleason Depth to Water: hysical Location: Site 114 Surface Elevation: 12.2 ft NAVD88 Project Manager: Material Description Well Construction Well Construction Remarks 44 GW GW Reddish brown (2.5YR 4/4) sandy GRAVEL, fine to coarse GRAVEL, some SAND, loose, strong MGP H H H 44 GW GW Reddish brown (2.5YR 4/4) lean CLAY, dense. H										000037.4
Depth lange Recovery PID (ppm) Moisture Content USCS Graphic Log Material Description Construction Remarks -41 -44 <td>.oggeu i</td> <td>By: V. T</td> <td>hayer</td> <td></td> <td></td> <td></td> <td></td> <td>Depth t</td> <td>o Water:</td> <td></td>	.oggeu i	By: V. T	hayer					Depth t	o Water:	
Perturner for the second secon	hysical	Location	n: Site	114		1		Surface		VD88
-41	Depth Range ft bgs)				USCS		Material Description	n		Remarks
	_				GW		coarse GRAVEL, some SAND, loose	RAVEL, fine to , strong MGP		
	-43	6.7 / 10	0.0		CL					
MOIST SC Dark reddish brown (5YR 4/3) clayey SAND, few	-51	9 / 10	0.0				4/3) SILT and CLAY laminae, mediur	n hard, moist.		



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Boring ID: 114-MW51C

Project Project	Number:					Drilling Company: ADT Drilling Method: Sonic	Top of PVC E	(NJSPNAD83)	v : 611632.2
	arted Drill					Rig Type: Fraste XL Max 170		(NJSPNAD03)	
						Core Size: 3 in			. 003037.4
	nished Dri		JIZU/2020					Depth: 82 ft	
	By: V.T		444			Project Manager: Shannon Gleason	Depth to Wat		
nysica	al Location	1: Site	114		,		Surface Elev	ration: 12.2 ft N	NAVD88
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
	0/40		WET	SC		GRAVEL, hard, moist. Reddish brown (2YR 4/3) clayey SAND, SAND, trace coarse SAND, few to little sub-angular fine to coarse GRAVEL, me wet.	sub-rounded to		60 ft: 25% fines (silt/cla
-65	9/10	0.0				Reddish brown (2YR 4/3) SILT, wet.		┥▩▩।	
-66			WET	ML					
67 			DRY	CL		Dark reddish gray (2.5YR 4/1) sandy CL fine to coarse SAND, little fine to coarse hard, very dense, dry (Basal Till).	_AY, angular, e GRAVEL, -		68 ft: 50-60% fines (sit/cl Bentonite Seal: 68.5-70.5 ft bgs
. –			DRY	CL		Dark reddish gray (2.5YR 4/1) sandy CL	AY. angular.	1 🛍 🛍	
70 71 72 72 73 73 74 75 	4 / 10	0.0	DRY	CL		fine to coarse SAND, little fine to coarse hard, very dense, dry (Basal Till). Dark reddish gray (2.5YR 4/1) sandy CL fine to coarse SAND, little fine to coarse hard, very dense, dry (Basal Till).	e GRAVĚL,		#0 Filter Sand: 69.5-77.5 ft bgs
-76			DRY	CL		Dark reddish gray (2.5YR 4/1) sandy CL	- _AY, angular,		
-77						fine to coarse SAND, little fine to coarse			
78 79			DRY	BEDROCK		<u>hard, very dense, drý (Basal Till).</u> Gray bedrock, dry (Stockton Formation) at 82 ft.	/		
lotes:	bgs = below	surface q	rade 1	NAD83 = Nor	th American	Horizontal Datum of 1983 NJSP = New Jersey State	Plane ppm = parts per ctor USCS = Unified	million	ft = feet system in = inches



Page: 5

Project Name: Garfield Avenue Groundwater RI Top of PVC Elevation: 14.13 ft NAVD88 Drilling Company: ADT Project Number: 60550261 Drilling Method: Sonic Coordinates (NJSPNAD83) x: 611633.3 Date Started Drilling: 3/25/2020 Rig Type: Fraste XL Max 170 Coordinates (NJSPNAD83) y: 683637.4 Date Finished Drilling: 3/26/2020 Core Size: 3 in Boring Total Depth: 82 ft Project Manager: Shannon Gleason Depth to Water: Logged By: V. Thayer Surface Elevation: 12.2 ft NAVD88 Physical Location: Site 114 Well Depth Recovery PID Moisture Graphic Construction USCS Material Description Range Remarks (ft/ft) Content (ppm) Log (ft bgs) -81 DRY BEDROCH -Bentonite Seal: 77.5-82 ft bgs -82

> AD83 = North American Horizontal Datum of 1983 NJSP = New Jersey State Plane NAVD88 = North American Vertical Datum of 1988 PID = photoionization detector

ppm = parts per million USCS = Unified Soil Classification System ft = feet in = inches

PPG WITH WELL CONSTRUCTION - - 2/5/21 12:22

Notes:

bgs = below surface grade DGA = dense graded aggregate

			Avenue Gro	oundwater	RI	Drilling Company: ADT	Top of PVC E			
	Number:					Drilling Method: Sonic	Coordinates			
	arted Dril nished Dr					Rig Type: Fraste XL Max 170 Core Size: 3 in	Coordinates Boring Total			<u> </u>
	By: V. 1		110/2020			Project Manager: Shannon Gleason	Depth to Wat		1010	
	al Locatio		114			· · · · · · · · · · · · · · · · · · ·	Surface Eleva		4.0 ft N	IAVD88
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		We Constru		Remarks
-1	5/5	0	DRY	FILL		Soft dig to 5 ft bgs; Light brownish grey (10 graded GRAVEL, some silty sand (DGA), v dry.)YR 6/2) well //ery dense, - - -			Riser set in grout
- 5	4/5	0	DRY TO DAMP	FILL		Grey SILT, micaceous, little DGA, fine to c loose, dry to damp.	oarse gravel, - - -			
-10 11 			DRY	FILL		Grey SILT, micaceous, little DGA, fine to c loose, dry to damp.	oarse gravel, -	+ ma	∞ 1	
-13 -13 -14 -	4/5	0	DRY	FILL		DGA, grey SILT, micaceous, few subround subangular fine to coarse gravel, dry.	led to -			Create 0 55 th
-15 - -16	-		WET	FILL		DGA, GRAVEL with some silt, wet.				—Grout: 0 - 65 ft bgs
-17 -18 -18 -19	3/5	0	WET	ОН		Very dark grey (7.5YR 3/1) organic CLAY fibers, gravel lens from 18 ft to 18.2 ft, wet				
			WET	CL	V//////	Grey silty CLAY, loose, wet.				



Boring ID: 114-MW52C

Project	Number:	605501	261			Drilling Method: Sonic	Coordinates	(NJSPNAD83)	x: 6110347
	arted Drill					Rig Type: Fraste XL Max 170		(NJSPNAD83) y	
	nished Dri					Core Size: 3 in		Depth: 79 ft	<u> </u>
	By: V. T					Project Manager: Shannon Gleason	Depth to Wat	er:	
	al Location		114			1		ation: 14.0 ft N	AVD88
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
			WET	CL		Grey silty CLAY with few to little brown fi dense, wet.	bers, medium		
-21			WET	CL		Grey silty CLAY, very dense, wet.			
-22			WET	SM		Grey SAND with some silt, few to little su to coarse gravel, wet.	~		
	4.5 / 5	0	WET	SP		Reddish brown, poorly graded SAND, me with little silt, little subrounded fine to coa loose to medium dense, wet.	arse gravel,		
-24			WET	ML		Olive (5Y 4/3) to yellowish olive SILT, me wet.			
			WET	SP		Reddish brown poorly graded SAND, me little silt, little subrounded fine to coarse of dense, wet.			
-25 -26 -27			WET	SM		Reddish brown poorly graded sand, fine s silt, loose, wet. Yellow groundwater obse	sand, some rved at 25 ft. -		25 ft: 30% fines (silt/cla
_	3/5	0	WET	ML		Reddish brown SILT, loose, wet.		1 🔛 🔛 🗆	
			WET	SM		Reddish brown poorly graded sand, fine s silt, loose, wet. Yellow groundwater obse			—2-inch Schedule
-30 -31 -32 -33 -34 -34 -32	1/5	0	WET	SP		Reddish brown poorly graded SAND, fine Pale yellow groundwater observed.	-		40 PVC Riser: 0 - 68 ft bgs
-35 -36 -37 -38 -38	3/5	0	WET	ML		Reddish brown SILT, saturated with brigh groundwater, loose. Reddish brown poorly graded SAND with sand, loose, wet.	-		
39 			WET	SP			-		
otes:	bgs = below DGA = dense	surface gi e graded a				an Horizontal Datum of 1983 NJSP = New Jersey State F can Vertical Datum of 1988 PID = photoionization detec		million Soil Classification S	ft = feet ystem in = inches



Boring ID: 114-MW52C

	Name: G			unuvalei	I M	Drilling Company: ADT			5 ft NAVD88
	Number:					Drilling Method: Sonic		(NJSPNAD83)	
	arted Drill					Rig Type: Fraste XL Max 170		(NJSPNAD83) y	: 683527.7
	nished Dri		//9/2020			Core Size: 3 in	Boring Total		
	By: V. T					Project Manager: Shannon Gleason	Depth to Wate		
rnysica	al Location	i: Site	114				Surface Eleva	ation: 14.0 ft N	IAVD88
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
-41			WET	SP		Reddish brown poorly graded SAND, fine medium sand, wet.	e sand, little		40 ft: 10% fines (silt/cla
_			WET	CL		Reddish brown CLAY laminae, wet.		1 🔛 🖽 🗆	
-42 43 44	3/5	0	WET	ML		Reddish brown SILT, little clay, wet.	- - -		
_			WET	GW-GC		Well graded GRAVEL, fine to coarse gra	avel with little	1 🖼 🖽 🗆	
-45 -46 -47 -47 -48 -49 -50	2.5 / 5	0	WET	SW		Clay, one cobble, wet. Reddish brown well graded SAND, with I coarse sand, little subrounded to subang coarse gravel, several large pieces of gra inch in diameter), wet. Bright yellow grou observed at 48 ft.	jular fine to avel (up to 2.5 – undwater –		48 ft: 25% fines (silt/cla
			WET	SM		Reddish brown SAND with some silt, fev wet.	v gravel, loose, - -		
-52 -53 -	2.5/5	0	WET	SM		Reddish brown SAND wth some silt, little gravel, large gravel (up to 3 inch in diam dense, wet.			
-54			WET	SW-SC		Reddish brown well graded SAND with for coarse sand, wet.	ew clay, fine to		54 ft: 10% fines (silt/cla
-55			WET	SP		Reddish brown poorly graded SAND, me (grades into medium sand with some fin- gravel), wet.	dium sand e to coarse		
-56 -57 -58 -59	4/5	0	WET	SC		Reddish brown SAND with some clay, lit coarse gravel, medium dense, wet.	tle fine to		
otes:	bgs = below DGA = dense			IAD83 = Nor IAVD88 = Ni	<u>ĸ <i>∧ / ∧ i / /</i></u> th Americar orth America	h Horizontal Datum of 1983 NJSP = New Jersey State I an Vertical Datum of 1988 PID = photoionization detec	Plane ppm = parts per ctor USCS = Unified	┃ ▶♦♦ ▶♦♦ million Soil Classification S	ft = feet ystem in = inches



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Boring ID: 114-MW52C

	Name: C			unuvator	1.11	Drilling Company: ADT	Top of PVC E		
	Number:					Drilling Method: Sonic		(NJSPNAD83)	
	tarted Drill					Rig Type: Fraste XL Max 170		(NJSPNAD83)	683527.7
	inished Dri		1/9/2020			Core Size: 3 in		Depth: 79 ft	
	1 By: V.T					Project Manager: Shannon Gleason	Depth to Wat		
hysica	al Location	n: Site	114		,		Surface Elev	ation: 14.0 ft	NAVD88
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Descriptio	n	Well Construction	Remarks
_	-		WET	SW		Reddish brown well graded SAND, fir			
-61	-		WET	SP		Reddish brown SAND with little clay,	little gravel, wet.		
-62			DAMP	SC		Reddish brown well graded SAND wi			61.5 ft: 30% fines (silt/c
-63	5/5	0	DAMP TO WET	SP		\dense, damp (Basal Till). Reddish brown SAND with little clay, gravel, medium dense, damp to wet (fine to coarse		
-64	-		DAMP TO WET	CL		Reddish brown CLAY, medium stiff, a Till).	damp to wet (Basal		
-65 	-		DRY TO DAMP	SC/GC		Reddish brown well graded SAND, fir some clay, fine to coarse subangular damp (Basal Till). Seam of well grade gravel from 65-65.2.	gravel, dry to		Bentonite Seal: 65 - 67 ft bgs 66 ft: 30% fines (silt/cla
-67 -68 -69 -70	4.5/5	0	DRY	SC		Bands of grey and dark brown pieces with some clay, fine to coarse gravel, Till).			
-70 -71	-		DAMP TO WET	SC		Brown (10YR 5/3) SAND with some coarse gravel, damp to wet (Basal Til			—2-inch Schedule 40 PVC Screen: 68-73 ft bgs
-72	4.5/5	0	DRY TO DAMP	SW-SC		Well graded SAND, fine to coarse sa fine to coarse gravel embedded in sa dense, dry to damp (Basal Till).			#0 Filter Sand: 67 - 73.5 ft bgs 72.5 ft: 40% fines (silt/c
-73 -74 -						Grey mudstone and siltstone, wet (Lc Formation). Weathered from 73-74 fi in clay matrix), competent at 74 ft bgs 79 ft.	t bgs (broken rock		Destación Ocal
-75 -76 -77 -78 -	4/4	0	WET	BEDROCK			-		Bentonite Seal: 73.5 - 79 ft bgs
-79	bgs = below			VAD83 = Nor	th Americar	i Horizontal Datum of 1983 NJSP = New Jersey SI	ate Plane ppm = parts per	million	ft = feet
Notes:	bgs = below DGA = dens					Horizontal Datum of 1983 NJSP = New Jersey St an Vertical Datum of 1988 PID = photoionization of		million Soil Classification S	

AECOM	
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Boring ID: 114-MW53C

roject	Number:	605502			TN .	Drilling Company: ADT Drilling Method: Sonic		(NJSPN	AD83)	x: 611157.6	
	arted Drill					Rig Type: Fraste XL Max 170		s (NJSPNAD83) y: <u>683435.6</u>			
			7/14/2020			Core Size: 3 in	Boring Total		55 ft		
	By: V.⊺		444			Project Manager: Shannon Gleason	Depth to Wa		1204		
nysica	al Location	1: Site	114				Surface Elev			NAVD88	
Depth Range t bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Constr		Remarks	
- 1	3/5	0	DRY	FILL		Soft dig to 5 ft bgs. Grayish brown (2.5Y graded GRAVEL, some silty sand (DGA) very dense, dry.				Riser set in grout	
5			WET	FILL		Gray, well graded GRAVEL, little fine to and little silt, wet (FILL).	coarse sand				
6 — 7 — 8 —	3.8 / 5	0	WET	FILL		Dark yellowish brown (10YR 4/4) poorly with some silt, little fine to coarse gravel,					
9			DRY	FILL		Dark yellowish brown (10YR 4/4) poorly with some silt, little fine to coarse gravel,	graded SAND , dry (FILL).				
10— — 11— — 12— —	4.5 / 5	0	WET	FILL		Sandy SILT with little fine to coarse grav medium dense, wet (FILL).	el, DGA,	1 1 1 1	nn	—Grout: 0 - 43.5 ft bgs	
13 			DAMP	FILL		Brown (10YR 5/3) micaceous SILT, few to coarse gravel, loose, damp (FILL).	sand, few fine				
15— — 16—			DAMP	FILL		Micaceous SILT (DGA), few large grave medium dense, damp (FILL).	l pieces,			40 PVC Riser: 0-46 ft bgs	
	4/5	0	DAMP	FILL		Gray and brown micaceous SILT, few co loose, damp (FILL).	parse gravel,				
too:									₩¥		
tes:	bgs = below			AD83 = Nor	th American	Horizontal Datum of 1983 NJSP = New Jersey State an Vertical Datum of 1988 PID = photoionization detect	Plane ppm = parts per ctor USCS = Unified	million		ft = feet System in = inches	



Boring ID: 114-MW53C

Project Project	Number:	60550	261			Drilling Method: Sonic	Coordinates	(NJSPNAD83)	x• 611157.6
	arted Drill					Rig Type: Fraste XL Max 170		(NJSPNAD83)	
	nished Dri					Core Size: 3 in		Depth: 55 ft	
	IBy: V.TI					Project Manager: Shannon Gleason	Depth to Wa		
	al Location		114					/ation: 13.9 ft N	NAVD88
-								Well	
Depth Range (ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Construction	Remarks
- – 21 - – 22	-		DAMP	FILL		Micaceous SILT (DGA), little subrounded gravel, medium dense, damp (FILL).	d fine to coarse		
23 24 24	5/5	0	DAMP TO WET	SW		Reddish brown well graded SAND, little s coarse subrounded GRAVEL, medium d wet.			22.5 ft: 25% fines (silt/ck
25			WET	SP		Reddish brown poorly graded SAND, me	dium sand,		
 26			WET	SP		 loose, wet. Reddish brown poorly graded SAND with meetium sand, some subrounded fine to 	n few silt, coarse gravel,		
	5/5	0	WET	SP		 wet. Reddish brown fine SAND, grades into p sand with little silt, wet. 	poorly graded		
-28	-		WET	SM		Reddish brown poorly graded SAND with fine to subrounded coarse gravel, wet.	n some silt, little		28 ft: 30% fines (silt/cla
—29— - — —30— - —	-		WET	CL		Reddish brown and gray CLAY, wet.			
-31	-		WET	SP		Reddish brown poorly graded SAND with loose, wet.	n little silt,		31 ft: 25% fines (silt/cla
-32	2.7/5	0	WET	SM		Reddish brown poorly graded SAND with sand, wet.	n some silt, fine		
-33 34 			WET	SP		Reddish brown poorly graded SAND with	n few silt, wet.		
-35 			WET	CL		Reddish brown sandy CLAY, loose, wet.			
-36			WET	ML/CL		Reddish brown clayey SILT, little fine sar laminae from 36-37 ft bgs (spaced 0.5 - wet.	nd, clay 1 inch apart),		
-37 -38 -	4/5	0	WET	ML		Reddish brown sandy SILT, medium den	nse, wet.		37 ft: 60% fines (silt/cla
-39			WET	ML		Reddish brown sandy SILT, wet.			39 ft: 75% fines (silt/cla
lotes:	bgs = below DGA = dense					Horizontal Datum of 1983 NJSP = New Jersey State F an Vertical Datum of 1988 PID = photoionization detec			ft = feet system in = inches



Boring ID: 114-MW53C

Project Name: Project Number:					Drilling Company: ADT Drilling Method: Sonic	Top of PVC	(NJSPNAD83)	
Date Started Dril					Rig Type: Fraste XL Max 170		s (NJSPNAD83)	
Date Finished Dr					Core Size: 3 in		I Depth: 55 ft	J. 000400.0
Logged By: V. 1					Project Manager: Shannon Gleason	Depth to Wa		
Physical Locatio		114					vation: 13.9 ft	NAVD88
Depth Range (ft bgs)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description	1	Well Construction	Remarks
		WET	SW		Reddish brown well graded SAND, few medium sand, few coarse sand, loose			40 ft: 10-15% fines (silt/cla
-42 -43 -43	0	DAMP TO WET	SC		Reddish brown well graded SAND wit to coarse sand, few to fine to coarse o dense, damp to wet (Basal Till).			43 ft: 30% fines (silt/cla Bentonite Seal: 43.5 - 45.5 ft bgs
-44		DAMP TO WET	CL/GC		Gray sandy CLAY, fine to coarse sand coarse gravel (up to 3 inches in diame damp to wet (Basal Till).			44 ft: 60% fines (silt/cla
-45		WET	SP	9429477	Brown (7.5YR 4/3) poorly graded SAN	ND, few silt, wet		45 ft: 5-10% fines (silt/cla
-46 -47 -47 -47 -47 -48 -49 -49 -50 -51 -51 -52 -52 -52 -53 -54 -55 -55 -55	0		BEDROCK		(Basal Ťill). Grey mudstone and siltstone, wet (Lo Formation). Weathered from 45.5-48 rock in clay matrix), competent at 48 f boring at 55 ft.	ft bgs (broken		 #0 Filter sand 45.5 - 48.5 ft bgs 2-inch Schedule 40 Screen: 46 - 47.5 ft bgs Bentonite Seal: 48.5 - 55 ft bgs
lotes: bgs = below					1 Horizontal Datum of 1983 NJSP = New Jersey Sta			ft = feet



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Boring ID: 114-MW54C

Project Project	Number:		261			Drilling Company: ADT Drilling Method: Sonic		(NJSPNAD83)	71 ft NAVD88 x: 611214.9
	arted Drill					Rig Type: Fraste XL Max 170		(NJSPNAD83)	
	nished Dri					Core Size: 3 in	Boring Total	Depth: 84 ft	
	By: V. T					Project Manager: Shannon Gleason	Depth to Wa		
Physica	al Location	n: Site	114				Surface Elev	vation: 10.8 ft	NAVD88
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
	5/5	0.0	DRY	FILL		Soft dig to 5 ft bgs; Grayish brown silty and coarse gravel, dry (DGA).	SAND, little fine		
-4			DRY	FILL		Black angular GRAVEL, dry (DGA).			
- 5 — - 6 — - 7 —	10/5		DRY	FILL		Dark yellowish brown (10YR 4/4) silty S sub-angular gravel, dry (FILL).	AND, little		—Grout: 0-68 ft bgs
-8 -9 -9	1.2/5	0.0	WET	FILL		Gray (2.5Y 5/1) to black silty SAND, littl sub-angular gravel, wet (FILL).	e fine to coarse		
-10	1.9 / 10		WET	FILL		Gray (2.5Y 5/1) to black silty SAND, littl sub-angular gravel, wet (FILL).			—2-inch Schedule 40 PVC riser: 0-72 ft bgs
-15	1. <i>31</i> IU	0.0	WET	SM		Dark gray (5YR 4/1) silty SAND, strong loose, wet.	MGP odor,		
_			WET	GW		Black widely graded GRAVEL, angular		┨ 🗱 🔛 🛛	
18 			WET	SC		fine to coarse gravel (up to 2.5 inches a sheen, loose, wet. Mottled reddish brown (5YR 4/4) and da 4/1) clayey SAND, few gravel, hard, we	cross), MGP		
lotes:	bgs = below DGA = dense					Horizontal Datum of 1983 NJSP = New Jersey State n Vertical Datum of 1988 PID = photoionization dete			ft = feet System in = inches



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Boring ID: 114-MW54C

Project Proiect	Number:					Drilling Company: ADT Drilling Method: Sonic	Top of PVC E Coordinates	(NJSPNAD83)	x: 611214.9
	arted Drill					Rig Type: Fraste XL Max 170		(NJSPNAD83) y	
	nished Dri					Core Size: 3 in	Boring Total		
ogged	By: V. T	nayer				Project Manager: Shannon Gleason	Depth to Wat	er:	
Physica	I Location	n: Site	114				Surface Eleva	ation: 10.8 ft N	AVD88
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
-21 -22 -22			WET	SM		Dusky red (10YR 3/2) silty SAND, some little fine sand, trace coarse sand, little f sub-rounded coarse gravel, MGP sheer	ine to		20 ft: 25% fines (sill/cla
-23	7.8 / 10	3.7	WET	SM		Yellowish red (5YR 4/6) silty SAND, find MGP sheen (up to 28'), wet.	-		23 ft: 20% fines (silt/cla
-30	8 / 10	0.0	WET	SP-SM		Weak red (10YR 4/4) poorly graded SA loose, wet.	-		30 ft: 15% fines (silt/cla
 	., 10	0.0	WET	SM		Weak red (10YR 4/4) silty SAND, fine s	and, loose, wet.		35 ft: 30% fines (silt/cla
-37 			WET	ML		Light reddish brown (5YR 5/4) SILT, we	et.		37.5 ft: 80% fines (silt/cla
-38 -39 -			MOIST	ML/CL		Light reddish brown (5YR 5/4) interbedd CLAY laminae, firm, moist.	ded SILT and		
	bgs = below DGA = dense					h Horizontal Datum of 1983 NJSP = New Jersey State an Vertical Datum of 1988 PID = photoionization dete		<u> </u>	ft = feet ystem in = inches



Boring ID: 114-MW54C

Project Nam				Junuwaler	N		Drilling Company: ADT			71 ft NAVD88
Project Num							Drilling Method: Sonic		(NJSPNAD83)	
Date Started							Rig Type: Fraste XL Max 170		(NJSPNAD83)	y: 683276.5
Date Finishe			4/2/2020				Core Size: 3 in	Boring Total		
_ogged By:							Project Manager: Shannon Gleason	Depth to Wat		
Physical Lo	<u>cation</u>	: Site	114		1			Surface Eleva	ation: 10.8 ft	NAVD88
	overy :/ft)	PID (ppm)	Moisture Content	USCS	Grap Loç		Material Description		Well Construction	Remarks
			MOIST	SM			Light reddish brown (5YR 5/4) silty SAND, medium sand, loose, moist.	_		
41 			MOIST	ML/CL			Reddish brown (5YR 4/4) to gray (7.5YR 5 silt/clay, firm, moist.	/1) laminated _		
			MOIST	SM			Weak red (10YR 5/4) silty SAND, fine sand	d, silt, loose,		
				SIVI	hin	bił	— moist.	_		43.5 ft: 25% fines (silt/cl
-44	' 10	0.0	MOIST	ML/CL			Reddish brown (5YR 4/4) to gray (7.5YR 5, interbedded laminae of SILT, CLAY and fin moist.	e SAND, 		
-50			WET	SP-SC			Reddish brown (5YR 4/4) poorly graded SA clay, fine sand with a few thin bands of clay	y, wet.		
-51 -52 -52 -53 -53 -54	/ 10		WET	SP-SM			Reddish brown (2.5YR 4/3) poorly graded s silt, fine sand, SILT, loose, wet.	SAND with		50 ft: 15-20% fines (sitt/
-56		0.0	MOIST	SM			Reddish brown (2.5YR 4/3) silty SAND, littl sub-rounded coarse gravel, firm, moist.	e -		



Boring ID: 114-MW54C

roject Nan roject Nun				Junuwalci	I M	Drilling Company: ADT Drilling Method: Sonic		(NJSPNAD83)	1 ft NAVD88 x: 611214 9
ate Starte						Rig Type: Fraste XL Max 170		(NJSPNAD83) y	
ate Finish						Core Size: 3 in		Depth: 84 ft	
ogged By:	V. Th	nayer				Project Manager: Shannon Gleason	Depth to Wa	ter:	
hysical Lo	ocation	: Site	114				Surface Elev	ration: 10.8 ft N	IAVD88
	covery t/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
-61	9/5	0.0	MOIST	SM		Reddish brown (5YR 4/3) silty SAND, fin	e sand, moist.		60 ft: 20% fines (silt/ck
-64 			DRY	SM		Reddish brown silty SAND, few fine to co very firm, dry (Basal Till).	arse gravel,		
-66	5/5	0.0	DRY	SC-SM		Light brownish gray (10YR 6/2) clayey S/ sand, fine to sand, little fine to coarse gra across), very firm, dry (Basal Till).	AND or silty avel (up to 2.5"		Bentonite Seal: 68-70 ft bgs 69 ft: 30% fines (silt/cla
-70 -71 -72 -72 -73 -73 -74 -74 -75 -70	4 / 5	0.0	DRY	SM		Dark gray (7.5YR 4/1) silty SAND, fine to few gravel, dry (Basal Till).			70 ft: 25% fines (silt/cl #0 Filter Sand: 70-77 ft bgs —2-inch Schedule 40 PVC screen: 72-77 ft bgs
-76			MOIST	SM		Dark gray (7.5YR 4/1) silty SAND, fine to few gravel, dry (Basal Till). Clayey SILT (Basal Till).	o coarse sand,		75 ft: 25% fines (silt/cla
-77			WET	ML					
-78 -78 -79 -	4 / 5	0.0	WET	BEDROCK		Gray bedrock, wet (Stockton Formation).			



Boring ID: 114-MW54C

Project Number:	60550	261	oundwater		Drilling Company: ADT Drilling Method: Sonic		(NJSPNAD83)	1 ft NAVD88 k: 611214.9
Date Started Dril	ling: 4	/1/2020			Rig Type: Fraste XL Max 170	Coordinates	(NJSPNAD83) y	
Date Finished Dr		4/2/2020			Core Size: 3 in		Depth: 84 ft	
ogged By: V. T	hayer				Project Manager: Shannon Gleason	Depth to Wat		
hysical Locatio	n: Site	114	1	,		Surface Elev	ation: 10.8 ft N	IAVD88
Depth Range ft bgs)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description	n	Well Construction	Remarks
		WET	BEDROCK		Gray bedrock, wet (Stockton Formati	on). -		Destarite Oct
82	0.0	WET	BEDROCK		Dark reddish gray conglomerate, wet Formation). End of borehole at 84 ft.	(Stockton		—Bentonite Seal: 78-84 ft bgs
						-		
						-		



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Boring ID: 114-MW55C

			Avenue Gro	oundwater	RI	Drilling Company: ADT	Top of PVC E			
	Number: arted Drill					Drilling Method: Sonic Rig Type: Fraste XL Max 170	Coordinates			x: 611439.1
			3/27/2020			Core Size: 3 in	Boring Total			y. 003319.0
			5/21/2020						751	
	By: V. T					Project Manager: Shannon Gleason	Depth to Wat			
Physica	I Location	n: Site	114				Surface Elev	ation:	<u>11.1 ft </u>	NAVD88
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description			/ell truction	Remarks
			DRY	FILL		Soft dig to 5 ft bgs; Gray angular fine to c GRAVEL, dry (FILL).				
-2			DRY	FILL		Dark yellowish brown (10YR 3/4) to black with sub-angular fine to coarse gravel, co (FILL).				—Riser set in grout
- 5 - 6 - 7	5 / 10	0	WET	FILL		Dark grayish brown (10YR 5/2) clayey SA some sub-rounded to sub-angular fine to loose, wet (FILL).	ND, little to coarse gravel, -			—Grout: 0-65.5 ft bgs
-8			DRY	FILL		Dark grayish brown (10YR 5/2) clayey SA some sub-rounded to sub-angular fine to compacted (FILL).	coarse gravel,			
-9			DRY	FILL		Dark grayish brown (10YR 5/2) clayey SA some sub-rounded to sub-angular fine to loose, dry (FILL).				
-10	6.5 / 10	0	WET TO DRY	FILL		Dark gray (2.5Y 4/1) to black silty SAND sub-angular fine to coarse gravel, wet (10 (12' to 15') (FILL).)' to 12') to dry - - -			2-inch Schedule 40 PVC riser: 0-68 ft bgs
	2.07.10	0	DRY	PT		Brown fibers in black organic material (Pl] 🗱		
-			DRY DRY	CH SP		Dark reddish brown (10YR 5/3) fat CLAY] 🚟		
-16				35	(////	Dark reddish brown (10YR 5/3) poorly gra SAND, trace to few silt, dry.	auea meaium 🖉 -	- 🗱		
					(//////////////////////////////////////	Dark reddish brown (10YR 5/3) clayey SA] 🚟		
Π						sub-rounded to sub-angular fine to coarse				
-17 -18 -19			DRY	SC			- graver, ul y			
	hao = h-1	ourfee-	rada							4 - L1
	bgs = below DGA = dense			AD83 = Nor AVD88 = No	n Americar orth America	h Horizontal Datum of 1983 NJSP = New Jersey State P an Vertical Datum of 1988 PID = photoionization detect	lane ppm = parts per or USCS = Unified		sification S	ft = feet System in = inches



Boring ID: 114-MW55C

roject Number:		Avenue Gro	unuwaler	TM	Drilling Company: ADT Drilling Method: Sonic	Coordinates (N		3 ft NAVD88
ate Started Dril					Rig Type: Fraste XL Max 170	Coordinates (N		
ate Started Drift ate Finished Dr					Core Size: 3 in	Boring Total De		000019.0
		JIZ1/2020			Project Manager: Shannon Gleason			
ogged By: V.T		111			Froject Manager: Snannon Gleason	Depth to Water		
hysical Locatio	i: Site	114				Surface Elevati		Ανμόδ
Depth lange t bgs)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
-21		WET	SP-SM		Reddish brown (10YR 4/4) poorly graded SILT, medium SAND, few SILT, loose, w groundwater at 21.5' to 22.5'.	SAND with et. Yellowish - - - -		
-23	0	WET	SP-SM		Reddish brown (5YR 4/4) poorly graded medium sand, some sub-rounded fine to loose, wet.			
_	0	WET	ML		Yellowish red (5YR 4/6) SILT, massive, v	vet.		
-26		WET	ML/CL		Yellowish red (5YR 4/6) laminated, interb CLAY, fine SAND, compacted, wet.	vedded SILT, - - - - -		
-29		WET	ML		Reddish brown (5YR 4/4) SILT, loose, w	ət.		
-30 	0	WET	ML		Yellowish red (5YR 4/6) sandy SILT, yelle groundwater, loose, wet.		PYY PYY I	31 ft: 55% fines (silt/cl
-36- -37- -38- -39- -39-	0	WET	ML/CL		Yellowish red (5YR 4/6) interbedded fine and CLAY, compact, wet.	SAND, SILT		

AECOM

Boring ID: 114-MW55C

	Name: <u>G</u> Number:					Drilling Company: ADT Drilling Method: Sonic		(NJSPNAD83)	3 ft NAVD88 c: 611439.1
	rted Drill					Rig Type: Fraste XL Max 170		(NJSPNAD83) y	
			3/27/2020			Core Size: 3 in		Depth: 75 ft	
	By: V. T					Project Manager: Shannon Gleason	Depth to Wat		
	Location		114					ation: 11.1 ft N	AVD88
Danth								Well	
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Construction	Remarks
 - 41 - 42 - 43 			WET	SM		Yellowish red (5YR 4/6) silty SAND, fine s wet, yellowish groundwater.	-		41 ft: 20% fines (silVcla
-46	7.3 / 10	0	WET	ML		Reddish brown (5YR 5/4) SILT, loose, wel	- - -		45 ft: 90% fines (silt/cla
-47 -48 -48 -49			N/A	ML/CL		Reddish brown (5YR 5/4) laminated SILT	and CLAY. -		
-50 51 -52 -53 			WET	SM		Reddish brown (2.5YR 4/4) silty SAND, fir yellow groundwater.	ne sand, wet, - -	1 10001 10001 1	50 ft: 15-20% fines (silt/
-54	0.5 / 40		WET	SM		Reddish brown (2.5YR 4/4) silty SAND, fir yellow groundwater.	ne sand, wet,		54 ft: 20% fines (silt/cla
-55	6.5 / 10	0	WET	ML/CL		Reddish brown (2.5YR 4/4) sandy SILT, fi CLAY laminae, yellow groundwater.	ne SAND and - - -		55 ft: 70% fines (silt/cla



Boring ID: 114-MW55C

	Name: <u>G</u> Number:			Junawator		Drilling Company: ADT Drilling Method: Sonic		Elevation: 13.2 (NJSPNAD83)	
	arted Drill					Rig Type: Fraste XL Max 170		(NJSPNAD83) y	
			3/27/2020			Core Size: 3 in		I Depth: 75 ft	
	By: V.T		,_0_0			Project Manager: Shannon Gleason			
	Location		114			, yee manager. Charmon cloudoon		vation: 11.1 ft N	AVD88
Dauth	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Descripti		Well Construction	Remarks
			WET	SP-SM		Reddish brown poorly graded SANE medium sand, trace coarse sand.) with silt, fine to		61 ft: 10% fines (silt/cla
62 63			MOIST	CL/ML		Yellowish red (5YR 4/6) sandy CLA and clay laminae.	Y and sandy silt, silt		62.5 ft: 70% fines (silt/cla
64 65 66	7.5 / 10	0	MOIST	ML		Reddish brown SILT with fine sand.			63 ft: 80% fines (silt/cla Bentonite Seal: 65.5-67.5 ft bgs
67 68			DRY	SC-GC		Reddish brown (5YR 5/4) clayey SA sub-rounded to sub-angular fine to (Basal Till).			-2-inch Schedule
-70 -70 -71 -71 -72 -73 -73 -74 -75 -75	5/5	0	WET	BEDROCK		Light gray sandstone, wet (Stockton weathered from 68-70 ft bgs (broke matrix), competent from 70-75 ft bg 75 ft.	n rock in clay		40 PVC well screen: 68-69 ft bgs #0 Filter Sand: 67.5-70 ft bgs Bentonite Seal: 70-75 ft bgs

AECOM

Boring ID: 114-MW56C

Project Name: Garfield Avenue Groundwater RI Project Number: 60550261						Drilling Company: ADT Drilling Method: Sonic	(NJSPNAD83)	4 ft NAVD88 x: 610934.8	
Date Started Drilling: 7/1/2020						Rig Type: Fraste XL Max 170	Coordinates (NJSPNAD83) x: 610934.8 Coordinates (NJSPNAD83) y: 683324.4		
	nished Dri					Core Size: 3 in Boring Total Depth: 80 ft			
	By: V. T					Project Manager: Shannon Gleason	Depth to Wa		
	I Location		114					vation: 14.0 ft N	AVD88
epth ange bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
- 1 - 2 - 2	4 / 5	0	NA	FILL		Soft dig to 5 ft bgs. Gray poorly graded some silt, micaceous, little subangular coarse gravel (FILL).	Soft dig to 5 ft bgs. Gray poorly graded SAND with some silt, micaceous, little subangular to angular fine to coarse gravel (FILL).		
- 3 - 4 			WET	FILL		Liner at 3.0 ft bgs, cobbles to large GR wet (FILL).	AVEL (DGA),	- Rise	
- 5	4 / 5	0	WET	FILL		Dark gray (10YR 4/1) sandy SILT, mica angular fine to coarse gravel, medium o (FILL).			
-10 -11			DAMP	FILL		Very dark gray (5YR 3/1) to brown (10' SILT with embedded subrounded fine t medium dense, damp (FILL).	YR 5/3) sandy o coarse gravel,	1 POO POO	—Grout: 0-64 ft bgs
-12	7 6 / 40		DAMP	FILL		Very dark gray (5YR 3/1) to brown (10 SILT with embedded subrounded fine t loose, damp (FILL).			2-inch Schedule 40 PVC Riser: 0-67 ft bgs
-15 -16	7.5 / 10	0	DAMP	ОН		Black organic CLAY with brown fibers, damp.	medium dense,		
-17			DAMP	CL		Gray silty CLAY, little subrounded to su coarse gravel, medium dense, damp.	ubangular fine to		



30 Knightsbridge Road, Piscataway, NJ 08854 732.564.3200 office telephone

Boring ID: 114-MW56C

Project Name: Garfield Avenue Groundwater RI						Drilling Company: ADT Top of PVC I		(NI IODNIA DOCT	
Project Number: 60550261						Drilling Method: Sonic		(NJSPNAD83)	
Date Started Drilling: 7/1/2020 Date Finished Drilling: 7/7/2020						Rig Type: Fraste XL Max 170		(NJSPNAD83)	y: 683324.4
			////2020			Core Size: 3 in	Boring Total		
	By: V. TI					Project Manager: Shannon Gleason	Depth to Wat		
Physica	I Location	: Site	114				Surface Eleva	ation: 14.0 ft	NAVD88
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
			DAMP	CL		Gray silty CLAY, little subrounded to suba	ngular fine to		
-21			TO WET DAMP TO WET	SP	<u> </u>	coarse gravel, medium dense, damp to w Dusky red (10YR 3/3) and dark reddish g SAND with little silt, fine to coarse subang some subrounded gravel measuring up to down to with a standard st	ray (5YR 4/2) gular gravel,		
-22	6 / 10	0	DAMP TO WET	SP		damp to wet. Reddish brown poorly graded SAND, med few silt, damp to wet.	lium sand with - - -		24 ft: 10-15% fines (silt/cl
-27 -28 -29 20			DAMP TO WET	SP		Reddish brown poorly graded SAND, trac medium sand, damp to wet. Yellow tinged brown, 7.5YR 5/6) observed between 29-	soils (strong		28 ft: 5% fines (silt/clay
-30 -31 -		0	WET	SP		Reddish brown poorly graded SAND, few sand, loose, wet.	silt, medium -		
-32 -33 -34 -34	6 / 10		WET	SP		Reddish brown (with black undertones) p fine SAND, few silt, grades into more silt loose, wet.	oorly graded at 33 ft bgs, -		
-35 -36 -37 -38			WET	SM		Reddish brown poorly graded SAND with mostly fine sand, wet. Very pale yellow wa between 38-40 ft bgs.			
-39							_		39 ft: 35% fines (silt/cla
otes:	bgs = below DGA = dense					n Horizontal Datum of 1983 NJSP = New Jersey State P an Vertical Datum of 1988 PID = photoionization detect		million Soil Classification	ft = feet System in = inches



Boring ID: 114-MW56C

Project Name: Garfield Avenue Groundwater RI Project Number: 60550261						Drilling Method: Sonic	(NJSPNAD83)	K: 610934.8		
Date Started Drilling: 7/1/2020						Rig Type: Fraste XL Max 170	Coordinates (NJSPNAD83) x: 610934.8 Coordinates (NJSPNAD83) y: 683324.4			
Date Fi	nished Dri	lling:	7/7/2020			Core Size: 3 in Boring To		Depth: 80 ft		
	IBy: V.T					Project Manager: Shannon Gleason	Depth to Wa			
Physica	al Location	n: Site	114				Surface Elev	vation: 14.0 ft N	IAVD88	
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks	
41 				WET	CL/SP		Gray and very dark brown varves, silty C SAND laminae, medium stiff, wet. Yellov observed between 40-41 ft bgs.			
-42			WET	ML		Reddish brown SILT, wet.		7 🗱 🔛 🗆		
			WET	CL/ML		Gray and dark reddish brown CLAY, var SILT at 43.6 ft bgs, wet.	ves, grades into			
 	40/40		WET	ML		Reddish brown SILT, wet.				
-45 -	10 / 10	0	WET	CL		Reddish brown CLAY, wet.				
-46 -47			WET	CL/SP		Reddish brown CLAY, varves, fine SAN stiff, wet.	D laminae, very			
			WET	SM		Poorly graded fine SAND, some silt, wet			48 ft: 30% fines (silt/cla	
 49			WET	CL/SP		Reddish brown CLAY varves, fine SAND	brown CLAY varves, fine SAND laminae, wet.			
_			WET	SP		Reddish brown poorly graded SAND, we		┨ 🗱 🚟 丨		
-50			WET	SP		groundwater observed between 49-50 ft Reddish brown poorly graded SAND with medium sand, wet. Green-yellow water of	h few silt, fine to		50.5 ft: 10% fines (silt/c	
-51 -52 -	4/5	0	WET	SC		 50-52 ft bgs. Reddish brown SAND with little clay, few 	v gravel, wet.		· · · · · ·	
-53			NA	SC		Reddish brown and gray clayey SAND, coarse gravel, medium dense (Basal Til				
-54			NA SP	SP		Reddish brown SAND (Basal Till)				
-55		0	WET	SP		Reddish brown poorly graded medium S to coarse gravel, loose, wet (Basal Till).	AND, few fine			
-56 -57 	5/5		DAMP	SC		Reddish brown well graded SAND with s embedded with fine to coarse gravel, me damp (Basal Till). Yellow water from 57-	ND, few fine to sal Till). ium SAND, few fine Till). with some clay, el, medium dense, m 57-58 ft bgs. D, little fine to coarse II).		57 ft: 35% fines (silt/cla	
-58 - -59 -			DAMP	SC		Gray to reddish brown clayey SAND, littl subangular gravel, damp (Basal Till).	e fine to coarse			
lotes:	bgs = below DGA = dense					h Horizontal Datum of 1983 NJSP = New Jersey State an Vertical Datum of 1988 PID = photoionization deter		r million Soil Classification S	ft = feet ystem in = inches	



Boring ID: 114-MW56C

Project Number:			oundwater F	u	Drilling Company: ADT Drilling Method: Sonic	(NJSPNAD83)	4 ft NAVD88 x: 610934.8	
Date Started Dril					Rig Type: Fraste XL Max 170		NJSPNAD83) y	
Date Finished Dr					Core Size: 3 in	Boring Total		
ogged By: V. T					Project Manager: Shannon Gleason	Depth to Wate		
Physical Locatio		114					tion: 14.0 ft N	AVD88
Depth Range ft bgs)		Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
		WET	SP	*****	Reddish brown poorly graded SAND, loos Till).	e, wet (Basal		60 ft: 1-5% fines (silt/cla
		DAMP	SW S	THE A	Reddish brown well graded fine to coarse	SAND with		
-61 -62 4.75/5	4.75/5 0	DAMP TO WET	CL		little silt/clay, little subrounded fine to coar damp (Basal Till). Reddish brown sandy CLAY with embedd gravel (up to 2 inches in diameter), very do wet (Basal Till).	se gravel, ed large		
-63 64 		DRY TO DAMP	SC		Well graded sand with some clay, fine to o embedded fine gravel, dense, dry to damp	oarse sand, (Basal Till). 		64 ft: 30% fines (silt/cla
65	0	DAMP	CL		Dark brown (10YR 3/3) sandy CLAY with embedded fine to coarse gravel (up to 2.5 diameter), very dense, damp (Basal Till).	inches in		Bentonite Seal: 64-66 ft bgs #0 Filter Sand: 66-72.5 ft bgs
-69		DAMP	SP		Gray poorly graded SAND with little clay, f fine to coarse gravel, dense, damp (Basal			
		DRY	GP		Gray broken up GRAVEL, loose, dry (Bas	al Till). -		
-70		DAMP	CL		Brown (10YR 5/3) and gray sandy CLAY to coarse gravel, very dense, damp (Basal			-2-inch Schedule 40 PVC Well Screen: 67-72 ft bgs
-72	0				Dark grey mudstone and siltstone, wet (Lo Formation). End of boring at 80 ft bgs.	ickatong		Destacite Occlu
-75	3/5 0	WET	F BEDROCK		- - - - - - - - - - - - - - - - - - -		— Bentonite Seal: 72.5-80 ft bgs	



Boring ID: 114-MW57C

			Avenue Gro	unuwater		Drilling Company: ADT				55 ft NAVD88
roject Nu						Drilling Method: Sonic				x: 610949.9
ate Starte						Rig Type: Fraste XL Max 170				y: 683210.4
ate Finish			7/1/2020			Core Size: 3 in	Boring Total		75 ft	
ogged By						Project Manager: Shannon Gleason	Depth to Wat			
hysical Lo	ocation	: Site	114		,		Surface Elev	ation:	12.9 ft	NAVD88
Jonth								l w	/ell	
Cepth Reg	covery	PID	Moisture	USCS	Graphic	Material Description		Const	ruction	Remarks
tbgs) ((ft/ft)	(ppm)	Content	0303	Log	Material Description		"		Remarks
(bys)										
						Soft dig to 5 ft bgs. Gray coarse angular G	RAVEL. drv			
_			DRY	FILL		(FILL).	, ,	+ 🗱		
_ 1						· · ·				
						Brown (10YR 4/3) SAND with little silt, littl	e subangular			
_						to angular fine to coarse gravel, several su		1 🔛		
-2						cobbles, very dense, dry (FILL).	-			
2										
- 5	5/5	0						1 🖼		
- 3			DRY	FILL			-			
5			DRY	FILL						
-								1 🖼		
- 4							-			-Riser set in grout
-					\otimes					rasor sor in grout
-								1 🗱		
- 5										
5	T		7			Light olive brown (2.5Y 5/3) well graded G	RAVEL,			
						subrounded to subangular, silty fine to coa	rse sand, wet	1		
- 6						(FILL).	-			
0			WET	FILL						Croat. 0-00 it bys
-								1 🗱		
- 7							-	1 🚟		
'					KXXXX	Dork grov (2 EV 4/4) CAND	· · · ·	- 🗱		
- 3.	.8/5	0				Dark gray (2.5Y 4/1) SAND with little silt, f	ew	1 🔛		
- 8					\otimes	subrounded fine to coarse gravel, dry (FIL	L).			
U							-			40 PVC Riser:
			DRY	FILL				1 🔛		0-68.5 ft bgs
-9							_			-
9							-			
-10								1 🗱		
	I					Gray SILT, trace fine to coarse gravel, der	ise, dry			
-			DRY	FILL		(FILL).		1 🖼		
-11								1 🗱		
					[:::::]	Strong brown (7.5YR 4/6) fine SAND with	little silt,			
\dashv						dried plant roots, dense.		1		
-12					[::::::]		-			11.5 ft: 25% fines (silt/o
14					[:::::]					
\dashv			DAMP	SP				1		
-13					[·····		-	1 🖼		
					[·····]					
					:			1 🗱		
-14							_	1 🖼		
					Finit	Black and dark brown (10YR 3/3) organic	CLAY with			
					HANN!	brown fibers (top of meadow mat), damp.		1 🚟		
-155	5/10	0	DAMP	OH	First		-			
	, 10	U	DAIVIP	UП	HANN!					
-					FIFTH			1 🗱		
-16					<u>http://</u>					
						Gray SILT, dense, damp.				
								1 🚟		
-17							-	1 🗱		
-								1		
-18			DAMP	ML			-	1 🗱		
-								1		
-19							-			
13										
	= holow	surface gi	rade N	JAD83 = Nor	th American	Horizontal Datum of 1983 NJSP = New Jersey State Pla	ane ppm = parts per	million		ft = feet
										and the second
				AVD88 = N	orth America	n Vertical Datum of 1988 PID = photoionization detecto	r USCS = Unified	Soil Class	sification S	System in = inches



Boring ID: 114-MW57C

	Name: <u>G</u> Number:					Drilling Company: ADT Drilling Method: Sonic	Coordinates	(NJSPNAD83)	x: 610949.9
	arted Drill					 Rig Type: Fraste XL Max 170		(NJSPNAD83)	
	nished Dri					 Core Size: 3 in		Depth: 75 ft	J. 000210.4
	By: V. T		.,			Project Manager: Shannon Gleason	Depth to Wat		
	Location		114					ation: 12.9 ft	NAVD88
-					1			Well	
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Grap Loę	Material Description		Construction	Remarks
			WET	ML		Gray SILT, loose to medium dense, wet.			
			WET	SP		Grayish brown (10YR 5/2) poorly graded r SAND, little fine sand, trace coarse sand a wet.	and silt, loose,		21 ft: 1-5% fines (silt/cla
-23			WET	SP		Reddish brown (5YR 5/4) poorly graded S silt, fine sand, loose to medium dense, we Yellow-tinged soils noted in the middle of t	t.		22.5 ft: 10% fines (silt/cla
-24			WET	ML		<u>drying.</u> Reddish brown sandy SILT, wet.	/		23 ft: 60% fines (silt/cla
25 26 27 28 28 29 30	6 / 10	0.1	WET	SP		Dark reddish brown (5YR 3/4) with gray to mottling, poorly graded fine SAND, loose t dense, wet.			25.5 ft: 5% fines (silt/cla
31 32			WET	SP		Black and brown (7.5YR 4/2) and dark rec (5YR 3/2) poorly graded SAND with trace			31 ft: 5% fines (silt/clay
-33 -34 -35	6 / 10	0	WET	ML		Mottled black and reddish brown SILT, loo dense, wet.	se to medium - -		
-36		WET	CL		Reddish brown, with layers of light reddish CLAY, medium dense, wet.	i brown - -			



Boring ID: 114-MW57C

Project Name: Project Number			Junuwaler	IM	Drilling Company: _ADT Drilling Method: Sonic		(NJSPNAD83) >	5 ft NAVD88
Date Started Dr					Rig Type: Fraste XL Max 170		(NJSPNAD83) y	
Date Started Dr Date Finished D					Core Size: 3 in		Depth: 75 ft	003210.4
Logged By: V.		111/2020			Project Manager: Shannon Gleason	Depth to Wat		
Physical Locati		114					er: ation: 12.9 ft N	
							Well	
Depth Range ft bgs)	y PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Construction	Remarks
41	0	WET	CL/ML		Reddish brown and gray varves with inter layering of SILT and CLAY, wet.	bedded		
50 		WET	CL		Reddish brown CLAY, possible fracturing medium sand, soft, wet.			
-		WET	CL		Dark reddish brown and lighter reddish brown and lighter reddish brown and laminae, wet.	rown CLAY		
-52	0	WET TO DAMP	SP		Dark reddish brown with black mottling, p SAND with little silt, fine sand, trace coar to damp.	se sand, wet		53 ft: 25% fines (silt/ck
-58 -59		DAMP	SP		Reddish brown fine to medium SAND wit subrounded fine to coarse gravel, loose, o Reddish brown and greenish gray sandy	damp		
-		TO DRY	ML		embedded fine to coarse gravel, dense, d (Basal Till).		1 🗱 👹 🗎	



Boring ID: 114-MW57C

	Name: <u>G</u> Number:			unuwaler	N	Drilling Company: _ADT Drilling Method: Sonic		Elevation: 14.5 (NJSPNAD83)	
	rted Drill					Rig Type: Fraste XL Max 170		(NJSPNAD83) y	
	ished Dri					Core Size: 3 in		Depth: 75 ft	
	By: V.T					Project Manager: Shannon Gleason			
	Location		114					vation: 12.9 ft N	AVD88
Dauth	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
	4.5 / 10	0	WET	SP		Reddish brown poorly graded SAND medium grained sand, loose, wet (B	with little silt, few asal Till).		61.5 ft: 10% fines (silt/cla
- 67			WET	CL		Reddish brown CLAY with little sand gravel, loose, wet (Basal Till).			—Bentonite Seal: 66-68 ft bgs
-68			DAMP	CL	1. A.	Gray sandy CLAY with embedded pi dense, damp (Basal Till).	eces of rock, very		
-69	3.5 / 5	0	WET	BEDROCK		Formation). Weathered from 68-72. from 72.5-75 ft bgs. End of boring a	5 ft bgs. Competent t 75 ft bgs.		68-70.5 ft bgs —2-inch Schedule 40 PVC screen: 68.5-70 ft bgs —Bentonite Seal: 70.5-75 ft bgs

			Avenue Gro	oundwater	RI	Drilling Company: ADT		Elevation: 12			
	Number: arted Dril					Drilling Method: Sonic Rig Type: Fraste XL Max 170		s (NJSPNAD83) x: 611371.2 s (NJSPNAD83) y: 683296.6			
			6/18/2020			Core Size: 3 in		Depth: 80 ft			
	I By: V.T					Project Manager: Shannon Gleason	Depth to Wat				
iysica	al Locatio	n: Site	114				Surface Elev	ation: 11.2 ft	NAVD88		
epth ange bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks		
1 — 2 — 3 — 4 —	5/5	0	DRY	FILL		Soft dig to 5 ft bgs; Yellowish brown (1 SAND, little subangular fine to coarse (FILL).	OYR 5/4) silty gravel, dense, dry		Riser set in grout		
5 — 6 — 7 — 8 — 9 —	1/5	0	WET	FILL		Dark grayish brown (2.5Y 4/2) well gra fine to coarse subangular gravel with i wet (FILL).			Grout: 0-69.5 ft bgs		
10— 11— 12— 13— 14—	- - - -		WET	FILL		Very dark gray silty SAND, fine to coar wet.	· · · · · ·		2-inch Schedule 40 PVC riser: 0-72.5 ft		
_ 15 	6 / 10	0	WET	ОН		Black (5YR 2.5/1) CLAY with brown fil mat), black grades into brown (7.5YR large rounded gravel (up to 2 inches in brown fibers grade into trace to few fib	4/2), several diameter),				
			WET	SC		wet. Mottled reddish brown (2.5YR 4/2) and 4/2) with few spots of grayish green (5 SAND with little fine to coarse gravel, 1 loose, wet.	d brown (7.5YR GY 6/1) clayey				



30 Knightsbridge Road, Piscataway, NJ 08854 732.564.3200 office telephone

Boring ID: 114-MW58C

	Name: O Number:			unuwater	<u>NI</u>	Drilling Company: ADT Drilling Method: Sonic	Top of PVC E				
	arted Drill					Rig Type: Fraste XL Max 170		(NJSPNAD83) x: 611371.2 (NJSPNAD83) y: 683296.6			
	nished Dri					Core Size: 3 in		I Depth: _ 80 ft			
	By: V.T		0, 10,2020			Project Manager: Shannon Gleason	Depth to Wat				
	al Location		114			Troject manager. Onarmon Oreason		ation: 11.2 ft			
			· · ·								
Depth Range (ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks		
 21			WET	SW		Reddish brown (5YR 5/3) well graded S silt, fine to coarse sand, little to some fi gravel, loose, wet. MGP sheen and odo	ne to coarse		20.5 ft: 25% fines (silt/cla		
-22	6 / 10	5.3 (20'-5.3	WET	SP		Light reddish brown (2.5YR 3/3) poorly with few silt, medium sand, trace coars wet.	graded SAND e sand, loose, - - -		23 ft: 10% fines (silt/clay		
28 29 			WET	SP		Reddish brown (5YR 4/4) poorly gradec silt, mostly medium sand, trace coarse	sand, loose, wet. -		28 ft: 20% fines (silt/clay		
	8 / 10	0	WET	SP		Reddish brown poorly graded SAND wit medium sand, loose, wet.	-		30 ft: 10% fines (silt/cla		
 36		-	WET	SP		Reddish brown poorly graded SAND wit medium sand, loose, wet.					
						Reddish brown poorly graded SAND wit mostly fine sand, loose, wet.	th few silt,				
38 			WET	SP			-		38 ft: 10% fines (silt/cla		
lotes:	bgs = below DGA = dens	surface gr e graded a				Horizontal Datum of 1983 NJSP = New Jersey State an Vertical Datum of 1988 PID = photoionization dete			ft = feet System in = inches		



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Boring ID: 114-MW58C

Project				Janawater		Drilling Company: ADT		Elevation: 12.5	
	Number:					Drilling Method: Sonic		(NJSPNAD83) >	
	arted Drill					Rig Type: Fraste XL Max 170		(NJSPNAD83) y	683296.6
	nished Dri		6/18/2020			Core Size: 3 in		Depth: 80 ft	
	I By: V.T					Project Manager: Shannon Gleason	Depth to Wa		
hysica	al Location	n: Site	114				Surface Elev	vation: 11.2 ft N	AVD88
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
			WET	SP/ML		Reddish brown poorly graded SAND, g loose, wet.			
-42			WET	CL		Reddish brown (2.5YR 5/3) CLAY varv dense, wet.	res, laminae,		
-43 -			WET	CL/ML		Gray and reddish brown interbedded C varves, laminae, MGP odor, wet.	LAY and SILT		
-44	-		WET	SP		Reddish brown fine SAND stringer with odor, loose, wet.	n strong MGP		
-45	6.8 / 10	0	WET	SP		Reddish brown poorly graded SAND, n trace silt, loose, wet.	nostly fine sand,		45.5 ft: 5% fines (silt/cla
-46			WET	CL/ML		Reddish brown and gray CLAY and SII fine sand laminae, dense, wet.	T laminae, few		
-50	6/10	0	WET	SP		Reddish brown (5YR 4/4) poorly grade silt, mostly fine sand, wet.			50 ft: 25% fines (silt/cla
-56		U	WET	SM-SC		Reddish brown (5YR 4/4) poorly grade some silt/clay and fine gravel embedde	d SAND with d, dense, wet.		55 ft: 30% fines (silt/cla
-57 - -58			WET	SM-SC		Reddish brown SAND with some silt/cl	ay, wet.		
-59			WET TO DAMP	SM-SC		Reddish brown SAND with some silt/cl	ay, dense, wet.		
_	1		WET	SP	····	Reddish brown (5YR 4/1) poorly grade	d SAND with few	7 🔛 🔛 🗏	
otes:	bgs = below		rade N	AD83 = Nor	th America	n Horizontal Datum of 1983 NJSP = New Jersey Stat an Vertical Datum of 1988 PID = photoionization del	e Plane ppm = parts per		ft = feet in = inches



Boring ID: 114-MW58C

Project	Number:	605502	261			Drilling Method: Sonic			
	arted Drill					Rig Type: Fraste XL Max 170		(NJSPNAD83) y	
			6/18/2020			Core Size: 3 in		Depth: 80 ft	
ogged	By: V. T	hayer				Project Manager: Shannon Gleason	Depth to Wat	er:	
	I Location		114					ation: 11.2 ft N	AVD88
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
-61			WET	SP		silt, fine sand, loose, wet.	-		61 ft: 5-10% fines (silt/cl
-62 63			WET	SW		Reddish brown (5YR 4/4) well graded S silt, mostly fine sand, some subangular coarse gravel (up to 2 inches in diamete dense to loose, wet.	to subrounded		62.5 ft: 20% fines (silt/cl
64 65 66 67 68	6 / 10	0	DAMP TO WET	SM		Reddish brown well graded SAND with coarse sand, few embedded gravel, der (Basal Till).			65 ft: 35% fines (silt/cla
-69			DAMP	SC/SM		Gray clayey/silty SAND, very dense, da	-		
-70			DAMP	SM		Reddish brown (5YR 4/4) poorly gradec some silt, fine sand, loose, damp (Basa	l Till)		70 ft bgs: 70% fines (silt/
-71 -72 -72 -73 -			DAMP	SC/SM		Reddish brown and gray clayey/silty SA large pieces of gravel, damp (Basal Till)	ND with several		-Bentonite Seal: 69.5-71.5 ft bgs -#0 Filter Sand: 71.5-76.5 ft bgs
-74	5/10 0	NA	BEDROCK		Gray bedrock (Stockton Formation), we from 74-77.5 ft bgs. Competent from 7 End of boring at 80 ft bgs.			 2-inch Schedule 40 PVC well screen: 72.5-76 ft bgs Bentonite Seal: 76.5-80 ft bgs 	

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Boring ID: 114-MW59C

Project Project	Number:	605502	261			Drilling Method: Sonic	Coordinates	Elevation: 14.07 ft NAVD88 (NJSPNAD83) x: 611255.2			
	arted Drill					Rig Type: Fraste XL Max 170		s (NJSPNAD83) y: 683079.6			
Date Fir	nished Dri	lling:	6/22/2020			Core Size: 3 in	Boring Total	Depth:	100 ft		
	By: V. T					Project Manager: Shannon Gleason	Depth to Wat				
hysica	Location	n: Site	114				Surface Elev	ation:	12.1 ft	NAVD88	
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description			/ell ruction	Remarks	
	5/5	0	DRY TO WET	FILL		Soft dig to 5 ft bgs; Olive brown (2.5Y 4/4 SAND with few silt, little subangular fine gravel (DGA), dry to wet.					
- 5 - 6			WET	FILL		Gray GRAVEL, fine to coarse, with little f sand, few silt, loose, wet (FILL).	ine to coarse			—Grout: 0-86.5 ft bgs	
- 7 - 8 - 9 - 9	4 / 5	0	WET	FILL		Grayish brown well graded SAND with lit subangular to angular fine to coarse grav dense, wet (FILL).	de silt, little el, medium ·				
-10			WET	FILL		Black well graded SAND with little silt, litt to angular fine to coarse gravel, medium	dense, wet.			2-inch Schedule 40 PVC riser: 0-89.5 ft bgs	
_			WET	FILL		Dark gray (5Y 4/1) silty SAND with fine to (DGA), wet.	o coarse gravel				
-14	60140	_	WET	ОН		Black (7.5YR 2.5/1) CLAY with brown fib mat), wet.	ers (meadow				
-15	6.2 / 10	0	WET	ОН		Black (7.5YR 2.5/1) CLAY with few brow	n fibers	1 🗱			
16			WET	SP		(meadow mat), wet. Dark reddish brown (5YR 3/3) poorly gra little silt, fine to medium sand, little subro coarse gravel, loose, wet. PID = 2.8 ppm	ded SAND with unded fine to				
lotes:	bgs = below DGA = dense					an Horizontal Datum of 1983 NJSP = New Jersey State F an Vertical Datum of 1988 PID = photoionization detec			sification	ft = feet System in = inches	



Boring ID: 114-MW59C

	Number:		Avenue Gro	anawator	1.4	Drilling Company: ADT Drilling Method: Sonic		Elevation: 14.07 ft NAVD88 (NJSPNAD83) x: 611255.2																			
	arted Drill					Rig Type: Fraste XL Max 170		(NJSPNAD83)																			
			6/22/2020			Core Size: 3 in		Depth: 100 ft																			
	By: V.T		5, 22, 2020			Project Manager: Shannon Gleason	Depth to Wat																				
	al Location		114			The sector manager. Charmon Cleason		ation: 12.1 ft l																			
-								Well																			
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description	ı	Construction	Remarks																		
- – –21–– – – –22––			WET	SP		Reddish brown poorly graded SAND v subrounded fine to coarse gravel. Stro sheen. PID = 6 ppm.			20 ft: 25% fines (silt/cla																		
_23 _24 _25	4.6 / 10	Varies	- Varies -	WET	SP		Dark reddish brown poorly graded SA mostly medium sand, little fine sand, MGP odor and sheen.	ND with few silt, loose, wet. Strong - -		25 ft: 5-10% fines (silt/cl																	
-26 27 			WET	SP		Reddish brown poorly graded SAND v medium sand, wet. Strong MGP odor 36 ppm.	and sheen. PID = -																				
			WET	SP		Dark reddish brown (black staining fro graded SAND with little silt, mostly mo fine sand, trace fine subrounded grav	edium sand, little		29 ft: 10% fines (silt/cla																		
-30 			WET	SP		MGP odor and sheen. PID = 65 ppm. Reddish brown (2.5YR 4/3) poorly gra to medium sand, few medium sand, v	aded SAND, fine		30 ft: 15-20% fines (silt/c																		
	6 / 10	Varies	Varies	Varies	Varies	Varies	Varies	Varies	Varies	Varies	Varies	- Varies	- Varies -	- Varies -	- Varies	- Varies -	- Varies	Varies	Varies	Varies	WET SP	SP		Dark reddish brown (5YR 3/2) poorly few silt, fine sand, wet. PID = 63 ppm			35 ft: 10-15% fines (silVo
-36 -37 -38			WET	SP		Poorly graded SAND with little silt, mo wet.	ostly fine sand, -																				
 							-		39.5 ft: 20-25% fines (silt/																		
lotes:	bgs = below DGA = dens					Horizontal Datum of 1983 NJSP = New Jersey Sta an Vertical Datum of 1988 PID = photoionization d		million Soil Classification S	ft = feet																		



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Boring ID: 114-MW59C

Project Name Project Numb			Junuwater		Drilling Company: ADT		levation: 14.0 (NJSPNAD83)	
Date Started					Rig Type: Fraste XL Max 170		(NJSPNAD83)	
Date Started					Core Size: 3 in		Depth: 100 ft	. 000013.0
Logged By:		JILLILULU			Project Manager: Shannon Gleason	Depth to Wat		
Physical Loca		114					ation: 12.1 ft N	
							Well	
Depth Range (ft bgs)		Moisture Content	USCS	Graphic Log	Material Description		Construction	Remarks
	10 Varies	WET	SP		Reddish brown (5YR 4/3) poorly graded s silt, loose, wet. MGP odor and sheen. Pli from 50 ppm to 0.8 ppm.	D = decreases -		40 ft: 10-15% fines (silt/cl
	vanes	WET	SP		Reddish brown poorly graded SAND, trad sand, loose, wet. PID = 0.8 ppm.	e silt, fine		
-48		WET	SP		Reddish brown poorly graded SAND with wet. PID = 118 ppm.	few silt, loose, -		
50 		WET	SP/ML		Reddish brown poorly graded SAND, gra wet. PID varies from 74 to 181 ppm.	des into silt, -		
	0 Varies	WET	CL/ML		Gray and reddish brown CLAY and SILT PID = 44 ppm (at 51.5 ft bgs), reduces to 55 ft bgs.			
	elow surface g				Horizontal Datum of 1983 NJSP = New Jersey State P an Vertical Datum of 1988 PID = photoionization detec			ft = feet ystem in = inches



Boring ID: 114-MW59C

	Name: <u>G</u> Number:					Drilling Company: ADT Drilling Method: Sonic		levation: 14.07 (NJSPNAD83) >					
	arted Drill					Rig Type: Fraste XL Max 170		(NJSPNAD83) y					
			6/22/2020			Core Size: 3 in		Depth: 100 ft					
	By: V. T					Project Manager: Shannon Gleason	Depth to Wat						
	Location		114					ation: 12.1 ft N	AVD88				
	05440	0110					CULICO EICV	Well					
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Construction	Remarks				
61			WET	СН		Mottled gray and reddish brown fat CLA	Y, wet.						
-62			WET	CL		Reddish brown lean CLAY, wet.							
-63 64			WET	CL/ML		Reddish brown and gray varves, layers o few sand laminae, wet.	f CLAY, SILT,						
-04			WET	CL		Reddish brown CLAY, wet.		│ ₩ ₩ │					
	6 / 10 0	6 / 10 C	6 / 10	6 / 10	6 / 10	0	WET	CL		Reddish brown CLAY laminae, wet.	-		
		WET	ML		SILT with little subrounded to subangular gravel, medium dense, wet.								
-70	0.5 (40)		WET	CL		Reddish brown CLAY with little sand, so	ft, wet. - -		72.5 ft: 75% fines (sit/c				
-75	3.5 / 10	0	WET	SP		Reddish brown poorly graded SAND, fine coarse sand, wet.	e sand, few						
76 77 78 79 			WET	CL		Reddish brown CLAY, soft, wet.	-						



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Boring ID: 114-MW59C

Project			204			Dettiller whether the O	0	(NU IODNIA DAS)	
	Number:					Drilling Method: Sonic		(NJSPNAD83)	
	arted Drill					Rig Type: Fraste XL Max 170		(NJSPNAD83) y	: 683079.6
Date Fi	nished Dri	lling:	6/22/2020			Core Size: 3 in	Boring Total	Depth: 100 ft	
	By: V. T					Project Manager: Shannon Gleason	Depth to Wa	ter:	
	al Location		114					vation: 12.1 ft N	IAVD88
								Well	
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Construction	Remarks
			MOIST TO WET	SP		Reddish brown SAND with little silt, mea to wet.	lium stiff, moist		
-81			MOIST TO	SC		Reddish gray (5YR 5/2) SAND with som embedded with little to fine coarse grave			
-82			WET			moist to wet. Reddish brown CLAY, trace gravel, few medium stiff, moist to wet.	faint varves,		
-83 -84 -85 -86	4.5 / 10	0	MOIST TO	CL		medium sun, moist to wet.			
			WET						Bentonite Seal: 86.5-88.5 ft bgs #0 Filter Sand: 88.5-93 ft bgs
			DAMP	CL		Reddish brown CLAY with few sand and			89.5 ft: 90% fines (silt/cla
_90 _91 _92			DAMP TO MOIST	SP		 pieces, several cobbles (up to 2 inches i very dense, damp (Basal Till). Gray SAND with little silt, with embedde gravel, very dense, damp to moist, dry fr bgs (Basal Till). 	d fine to coarse		-2-inch Schedule 40 PVC well
 	5/5	0				Dark gray to greyish-brown (10YR 3/1) t (Stockton Formation), wet. End of boring	oedrock g at 100 ft bgs.		screen: 89.5-92.5 ft bgs —Bentonite Seal:
			DRY	BEDROCK					93-100 ft bgs
-97 -98 -	3 / 5	0							
-99									
otes:	bgs = below DGA = dense			IAD83 = Nor IAVD88 = No	th American orth America	Horizontal Datum of 1983 NJSP = New Jersey State an Vertical Datum of 1988 PID = photoionization deter	Plane ppm = parts per ctor USCS = Unified	r million I Soil Classification S	ft = feet ystem in = inches

	Name: G			oundwater	RI	Drilling Company: ADT		Elevation: 12.	
	Number:					Drilling Method: Sonic		(NJSPNAD83)	
	arted Drill					Rig Type: Fraste XL Max 170		(NJSPNAD83)	
	nished Dri IBy: V.⊤		6/29/2020			Core Size: 3 in Project Manager: Shannon Gleason	Depth to Wa	Depth: 125 ft	
	al Location		114			FIGECT Manager: Sharmon Gleason		ration: 11.0 ft	
Depth Range t bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
			DRY	FILL		Soft dig to 5 ft bgs; Gray angular fine to c GRAVEL (DGA), dry (FILL).	barse		
- 1 - 2 - 3 - 4 - 5	5/5	0	DRY	FILL		Light yellowish brown (10YR 6/4) poorly <u>c</u> with little silt, little fine to coarse gravel, dr	y (FILL).		
-6 -7 -8 -9	2.5 / 5	0.2	WET	FILL		Olive brown (2.5Y 4/3) silty GRAVEL with coarse subangular gravel with sand, little (FILL).	sand, fine to silt, loose, wet		Grout: 0-117 ft
-10	6 / 10	1.2	WET	FILL		Black to dark gray SAND with some silt, e angular fine to coarse gravel, wet.	mbedded little		2-inch Schedule 40 PVC riser: 0-119.5 ft bgs
-16			DAMP	OH		Mostly brown fibers embedded in black or strong odor (meadow mat), damp.	ganic CLAY,		
-17			DAMP	ML		Gray SILT with few brown fibers, damp.			
-18 -19			DAMP	CL-ML		Brown (10YR 5/3) to gray (10YR 5/1) laye CLAY, SILT and fine SAND, damp.	ers (varves),		



Boring ID: 114-MW60C

	Name: 6 Number:		Avenue Gro	unuwater	rti -	Drilling Company: ADT Drilling Method: Sonic		Ievation: 12.8 (NJSPNAD83)			
	arted Drill					Rig Type: Fraste XL Max 170		(NJSPNAD83) y			
			6/29/2020			Core Size: 3 in		Depth: 125 ft	. 002000.0		
	By: V.T		5,20,2020			Project Manager: Shannon Gleason	Depth to Wat				
	I Location		114					ation: 11.0 ft N			
	Ecoulier						Culture Liet	Well			
Depth Range t bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Construction	Remarks		
-21			WET	ML		Reddish brown to gray clayey SILT, med wet.	lium density,	-			
-22			WET	SP		Reddish brown poorly graded SAND, me coarse sand, few silt, few fine to coarse subangular gravel, 1-inch thick clay lens wet.	subrounded to -		21.5 ft: 5-10% fines (silt/cla		
-23 -24 	5 / 10 Varies		WET	SP		Reddish brown poorly graded SAND, me trace coarse sand, trace silt, wet.	edium sand,	-	23 ft: 1-5% fines (silt/clay		
-25 -26 -27 -	5 / 10	10 Varies	Varies	Varies	WET	SP		Reddish brown poorly graded SAND with medium sand, trace coarse sand, loose density, wet.	n few silt, to medium -		25 ft: 10% fines (sit/clay
-28 -29 		WET	SP		Reddish brown poorly graded SAND with sand, wet.	n few silt, fine					
30			WET	SP		Reddish brown poorly graded SAND with medium sand, trace coarse sand, wet.	n few silt,				
-31 -32			WET	SP		Reddish brown poorly graded SAND with sand, few medium sand, wet. MGP odor soils from 31.5 ft bgs, soil stained to dar	and sheen on		31 ft: 10% fines (silt/clay		
-33 33 35 35 	5.5 / 10	Varies	WET	SP		3/2). Reddish brown poorly graded SAND with sand, little medium sand, wet.	-				
_			WET	SP		Reddish brown (5YR 4/4) SAND with litt Yellow tinge on soil surface after drying.	le silt, wet.		39 ft: 20% fines (silt/clay		



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Boring ID: 114-MW60C

Project Project	Number:	605503	261			Drilling Method: Sonic	Coordinates	(NJSPNAD83)	c 611340 1
	arted Drill					Rig Type: Fraste XL Max 170		(NJSPNAD83) y	
	nished Dri					Core Size: 3 in		Depth: 125 ft	. 002000.0
	By: V.T		5,20,2020			Project Manager: Shannon Gleason	Depth to Wa		
	al Location		114			r rejeet manager. Ghannon Gleason		vation: 11.0 ft N	
nysica		. Jie	. 14				JULIACE EIEW		
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
 41 42			WET	SP		Reddish brown poorly graded SAND witl sand, few medium sand, trace coarse sa Yellow groundwater observed at 40 ft bg	and, loose, wet.		41 ft: 20% fines (silt/cla
-43 44			WET	SP/ML		Reddish brown poorly graded SAND with grades into mostly silt, loose to medium	n little silt, dense, wet.		
-45 -46 -47	5 / 10	0	WET	SP		Reddish brown poorly graded SAND with medium sand, wet.	n few silt, fine to		
_48 _49			WET	SP		Reddish brown poorly graded SAND witl medium sand, wet. Yellow tinge on soils after drying.			
-50 -51 -52 -53			WET	SP		Reddish brown poorly graded SAND witl medium sand, trace coarse sand, loose,	n few silt, wet.		
			WET	ML		Reddish brown sandy SILT, yellow grou	ndwater, wet.		53.5 ft: 30% fines (silt/cl
-54	6 / 10	0	DAMP	CL/ML		Reddish brown and gray lean CLAY, var contorted laminae, CLAY and SILT, med damp.			
lotes:	bgs = below DGA = dens					Horizontal Datum of 1983 NJSP = New Jersey State an Vertical Datum of 1988 PID = photoionization dete			ft = feet ystem in = inches

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Boring ID: 114-MW60C

Project Project	Number:	605502	261			Drilling Method: Sonic	Coordinates	s (NJSPNAD83) x:	611340.1
	arted Drill					Rig Type: Fraste XL Max 170		s (NJSPNAD83) y:	
Date Fii	nished Dri	lling:	6/29/2020			Core Size: 3 in	Boring Tota	I Depth: 125 ft	
	I By: V. T					Project Manager: Shannon Gleason	Depth to Wa		
Physica	al Location	n: Site	114		,		Surface Ele	vation: 11.0 ft NA	VD88
Depth Range (ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
			WET	CL		Reddish brown sandy CLAY, soft to firm,	wet.		
-61	8.5 / 10	0	WET	CL		Reddish brown CLAY, varves and lamina	e, firm, wet.		
-66			WET	CL		Gray and Reddish brown CLAY and SILT varves, firm, wet.	r, laminae,		
70 71 72 72			WET	CL		Reddish brown lean CLAY, wet.			
—73— - — —74—			WET	ML-CL		Reddish brown and gray interbedded SIL varves (gray clay varves are generally 1/4 with fine sand laminae, one layer up to 1 medium soft, wet.	1-inch thick),		
	8 / 10	0	WET	ML		Reddish brown SILT with few interbedde varves, wet.	d gray clay		
—76— - — —77—			WET	ML		Reddish brown SILT, wet.			
			WET	CL		Reddish brown lean CLAY with little fine	sand, wet.		
lotes:	bgs = below DGA = dense	surface g e graded a				h Horizontal Datum of 1983 NJSP = New Jersey State F an Vertical Datum of 1988 PID = photoionization detec			ft = feet tem in = inches



Boring ID: 114-MW60C

Project Num	nher:	605501	261			Drilling Method: Sonic	Coordinates (NJSPNAD83) x:	611340 1
Project Nun Date Starte						Rig Type: Fraste XL Max 170	Coordinates (NJSPNAD83) y:	
Date Finish						Core Size: 3 in	Boring Total Depth: 125 ft	002000.0
ogged By:			5,20,2020			Project Manager: Shannon Gleason	Depth to Water:	
Physical Lo			114				Surface Elevation: 11.0 ft NAV	D88
-	5400	. 0110					Well	
	overy t/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description	Construction	Remarks
			WET	ML		Reddish brown SILT, soft, wet.		
-82			WET	ML		Reddish brown SILT, medium dense, wet		
83 	5/10		WET	ML		Sandy SILT with fine to coarse gravel (up diameter), medium dense, wet.	to 3 inches in	
-85 7.5	, 10	0	WET	ML		Reddish brown SILT, medium dense, wet		
-86			WET	SP		Reddish brown SAND with little silt, fine s dense, wet.	sand, medium	
7			WET	SP		Reddish brown poorly graded SAND, fine	to medium	
-87 		WET	SP		sand, medium dense, wet. Reddish brown poorly graded SAND, fine dense, wet.	to 3 inches in to 3 inches in to medium to medium sand, medium few silt, fine c (PID = 9 few silt, fine		
-90 -91			WET	SP		Reddish brown poorly graded SAND with sand, one thin layer of medium sand, wet	few silt, fine	
-92			WET	SP		Reddish brown poorly graded SAND with sand, wet. Unidentifiable odor at 91 ft bgs ppm).	few silt, fine s (PID = 9 -	
-93			WET	SP		Reddish brown poorly graded SAND with sand, trace coarse sand, trace gravel, wel		92 ft: 10% fines (silt/c
-94	5/10	0	DAMP TO DRY	ML/GM		Gray sandy SILT, fine sand, some fine to (diameter up to 1/4-inch), very dense, dar (Basal Till).	t	



Boring ID: 114-MW60C

Project Proiect	Number:	605503	261			Drilling Method: Sonic	Coordinates	(NJSPNAD83)	x: 611340 1		
	arted Drill					Rig Type: Fraste XL Max 170		(NJSPNAD83)			
	nished Dri					Core Size: 3 in		Depth: 125 ft	0020000		
	By: V. T					Project Manager: Shannon Gleason	Depth to Wat				
	al Location		114					vation: 11.0 ft N			
								Well			
Depth Range (ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Construction	Remarks		
			DAMP	SM		Pinkish gray (7.5YR 6/1) silty SAND, fir few fine to coarse gravel, very dense, da	amp (Basal Till).				
-102-			DAMP	SM/SC		Gray silty/clayey SAND, fine sand, suba coarse gravel, very dense, damp (Basal					
	4.5 / 5	0	DRY TO DAMP	GW		Gray powder (pulverized rock) with som and subrounded fine to coarse gravel, lo damp (Basal Till).					
-103			DRY TO DAMP	GM		Angular gray rock pieces with some fine loose, dry to damp (Basal Till).	e sandy SILT,				
-104			DRY TO DAMP	ML		Gray sandy SILT, fine sand with little en subangular fine to coarse gravel, very d damp (Basal Till).					
-105			DAMP	GP-GM		Gray sandy SILT, interbedded with large dense, damp. Solid core sections of till inch, 3 inch and 6 inch in length) (Basal	sizes of up to 2				
-10 6 -			DAMP	GW		Gray powder (pulverized rock) with fine GRAVEL (up to 3 inches in diameter), k	to coarse				
-107 -108	4 / 5	0	0	0	DAMP			(Basal Till). Very dark grayish brown (10YR 4/3) sar subrounded to subangular fine to coarso dense, damp (Basal Till).			
 109 								DAMP	ML/SM		
-110			WET	GW		Black fine to coarse GRAVEL, little silt,	loose, wet				
			WET	CL		 (Basal Till). Gray sandy CLAY with little fine to coars wet (Basal Till). 	se gravel, loose,				
- – -112	4 / 5	0				Gray sandy CLAY with few subrounded very hard, dense, damp (Basal Till).	coarse gravel,				
-113			DAMP	CL			-				
-114 			DAMP	GP		Gray subrounded coarse GRAVEL, one piece (1.5 inch in diameter), little silt, loo (Basal Till).	ose, damp				
-116			WET	SP		Gray coarse SAND, fine to coarse grave clay, loose, wet (Basal Till).	·				
-110 -117		6 / 10 0	WET	SM		Fine SAND with some silt, few medium pieces, loose, soft, wet (Basal Till).			116 ft: 35% fines (silt/cla		
	6 / 10			WET	SM	Reddish gray (5YR 5/2) SAND with silt, dense, wet (Basal Till).		Bentonite seal: 117-119 ft bgs			
-118				WET	ML		Reddish brown (5YR 5/3) sandy SILT, t sand, trace gravel, medium stiff, wet (Ba	race coarse asal Till).		118 ft: 75% fines (silt/cla	
-119			DAMP	CL	<u>III</u>	Gray sandy CLAY, some fine to coarse	rock pieces,		—#0 Filter sand:		
			NA	BEDROCK		 very dense, damp (Basal Till). Gray bedrock (Stockton Formation), we 	athered with		119-122 ft bgs		
otes:	bgs = below DGA = dens					Horizontal Datum of 1983 NJSP = New Jersey State in Vertical Datum of 1988 PID = photoionization dete	Plane ppm = parts per	million Soil Classification S	ft = feet ystem in = inches		



Boring ID: 114-MW60C

Date Started Drilling: 6/25/2020 Rig Type: Fraste XL Max 170 Coordinates (NJSPNAD83) y: 682895.5 Date Finished Drilling: 6/29/2020 Core Size: 3 in Boring Total Depth: 125 ft Logged By: V. Thayer Project Manager: Shannon Gleason Depth to Water: Physical Location: Site 114 Surface Elevation: 11.0 ft NAVD88 Depth Range (ft /fg) PiD Moisture Content USCS Graphic Log Material Description Well Construction Remarks Vell Some segments of broken rock in clay matrix, wet. End Some segments of broken rock in clay matrix, wet. End Material Description	Project Numbers 605	50261		Drilling Method: Sonia	Coordinates	(NISONADO2)	v 611240 1
Date Finished Drilling: 6/29/2020 Core Size: 3 in Boring Total Depth: 125 ft Logged By: V. Thayer Project Manager: Shannon Gleason Depth to Water: Physical Location: Site 114 Surface Elevation: 11.0 ft NAVD88 Depth Range (ft/ft) PID (ppm) Moisture Content USCS Graphic Log Material Description Well Construction Remarks				Drilling Method: Sonic			
Logged By: V. Theyer Project Manager: Shannon Gleason Depth to Water: Physical Location: Site 114 Surface Elevation: 11.0 ft NAVD88 Depth Range (ft/ft) PID (pm) Moisture Content USCS Graphic Log Material Description Veil Construction Remarks							
Physical Location: Site 114 Surface Elevation: 11.0 ft NAVD88 Depth Range (ft bgs) Recovery (ft/ft) PID (ppm) Moisture Content USCS Graphic Log Material Description Vell Construction Remarks				 Droiget Managery Shannen Classer			
Depth Range ft bgs Recovery (ft/ft) PID (ppm) Moisture Content USCS Graphic Log Material Description Well Construction Remarks	Divisional Location:	to 11/		Troject Manager: Shannon Gleason			
Deptitive Range (ft/ft) PID (ppm) Moisture Content USCS Graphic Log Material Description Construction Remarks - <t< th=""><th>-</th><th></th><th></th><th></th><th>Surface Eleva</th><th></th><th></th></t<>	-				Surface Eleva		
-121	Range (ft/ft) (nnn		USCS	Material Description		Construction	Remarks
	(ft bgs) (1011) (ppn) 			some segments of broken rock in clay m	natrix, wet. End		2-inch Schedule 40 PVC screen: 119.5-121.5 ft bgs

			Avenue Gro	oundwater	RI	Drilling Company: ADT		Elevation: 16	
	Number:					Drilling Method: Sonic Rig Type: Fraste XL Max 170		(NJSPNAD83 (NJSPNAD83)	x: 610879.4
	nished Dri					Core Size: 3 in		Depth: 75 ft	J. <u>000470.0</u>
	1 By: V. T					Project Manager: Shannon Gleason	Depth to Wat		
hysica	al Location	n: Site	114		1		Surface Elev	ration: 14.0 ft	NAVD88
Depth Range t bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
- 1 - 2 - 3 - 4 -	5/5	0	WET	FILL		Soft dig to 5 ft bgs; Grayish brown (2.5Y 5/ SAND with little silt, little subangular fine to gravel (DGA), very dense, wet (FILL).	2) fine o coarse - -		Riser set in grout
- 5 - 6 - 7 - 8 - 9 - 9	3/5	0	WET TO DAMP	FILL		Gray (10YR 5/1) fine SAND with some mid little subangular fine to coarse gravel (DGA damp. Very dense between 5-6 ft bgs, loos ft bgs (FILL).), wet to		Grout: 0-60 ft bgs
-10 -11 -12 -13	3.5 / 5	0	WET	FILL		Gray (10YR 5/1) fine SAND with some mic little subangular fine to coarse gravel (DGA dense between 5-6 ft bgs, loose from 6-10 (FILL).), wet. Very		2-inch Schedule 40 PVC riser: 0-62.5 ft bgs
-14	-		DAMP	CL/OL		Brown and black CLAY with few fibers, loo medium dense, damp.	se to		
15 	-		WET	CL/OL		Brown and black organic CLAY with brown medium dense, wet.	fibers,		
			WET	СН		Gray silty fat CLAY with little brown fibers, dense, wet.			
	4/5	0	WET	CL		Gray silty CLAY, grades into weak red (2.5 medium dense, wet.	YR 4/2),		
-18		DAMP		SP		Weak red (2.5YR 4/2) to reddish brown (5' olive gray (5Y 4/2) poorly graded SAND wit embedded with fine gravel, very dense, dar	h little silt,		



30 Knightsbridge Road, Piscataway, NJ 08854 732.564.3200 office telephone

Boring ID: 114-MW61C

Project Project	Number:	60550	261			Drilling Method: Sonic	Coordinatos	(NJSPNAD83)	v : 610870 /
	arted Drill					Rig Type: Fraste XL Max 170		(NJSPNAD83)	
	nished Dri					Core Size: 3 in		Depth: 75 ft	y. 000470.0
	By: V. T		1/10/2020			Project Manager: Shannon Gleason	Depth to Wa		
	I Location		114					vation: 14.0 ft	NAVD88
ingside	Location						Currace Lie	Well	
Depth Range (ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Construction	Remarks
			WET	SP		Reddish brown and dark reddish brown SAND with little silt, some black staining dense, wet.			
22	4/5		WET	SP		Reddish brown poorly graded SAND with mostly fine sand, little medium sand, we	h little silt, t.		
23 	4 / 5	0	WET	SP		Reddish brown poorly graded SAND witt mostly fine sand, little medium sand, bla from 24-25 ft bgs, loose, wet.	h little silt, ick staining		22.5 ft: 25% fines (silt/cla
25 26 27 28 28			WET	SM		Reddish brown poorly graded SAND, so fine sand, loose, wet. Very pale yellow g 26 ft bgs.			
-29			WET	SM		Reddish brown poorly graded SAND, so fine sand, loose, medium dense, wet.	me silt, mostly		
-30			WET	SP		Dark reddish brown (5YR 3/3) poorly gra SAND, trace silt, wet.	aded fine		30 ft: 5% fines (silt/clay
-31			WET	ML		Dark reddish brown SILT with black mot	tling, wet.		
32 	4 / 5	0	WET	SP		Reddish brown poorly graded SAND with mostly fine sand, wet.	h little silt,		32.5 ft: 25% fines (silt/ck
-34			WET	SM		Reddish brown poorly graded SAND with mostly fine sand, wet.	h some silt,		
35 36 	5/5	0	WET	CL		Reddish brown CLAY with some interbe laminae, medium stiff, wet.	dded fine sand		35 ft: 30% fines (sill/cla
38 39 			WET	ML		Reddish brown SILT with little clay, stiff,	wet.		
lotes:	bgs = below DGA = dense					Horizontal Datum of 1983 NJSP = New Jersey State an Vertical Datum of 1988 PID = photoionization dete		r million d Soil Classification \$	ft = feet System in = inches



Boring ID: 114-MW61C

Project Project	Number:					Drilling Company: ADT Drilling Method: Sonic	Top of PVC I	(NJSPNAD83)	x 610870 /	
	arted Drill					Rig Type: Fraste XL Max 170		(NJSPNAD83)		
	nished Dri					Core Size: 3 in		Depth: 75 ft	. 003470.0	
	By: V.T		., 10,2020			Project Manager: Shannon Gleason	Depth to Wa			
	al Location		114			Troject manager. Onamon Oldason		/ation: 14.0 ft N		
-		0110					Surrado Elor	Well		
Depth Range (ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Construction	Remarks	
			WET	SP/CL		Reddish brown interbedded fine SAND wet. Yellow water visible from 40-45 ft				
-41 			WET	SP		Reddish brown poorly graded SAND, f sand, wet.				
	3.5 / 5	0	WET	SP		Reddish brown poorly graded SAND, f sand, loose, wet.			42.5 ft: 5% fines (silt/cla	
44			WET	SP		Reddish brown poorly graded SAND w loose, wet.	ith little silt,			
-45	4 / 5	0	WET	SP		Reddish brown poorly graded SAND w loose, wet.	ith trace silt,		47 ft: 5% fines (silt/cla)	
-49			DAMP	SW		Reddish brown well graded SAND with fine to coarse sand, few silt, little subro coarse gravel, damp. Yellowish stain o drying.	ounded fine to			
50 			WET	SP	****	Poorly graded SAND, wet. Faint yellow	/ staining on sand		50 ft: 10-15% fines (silt/c	
51 52 53 54	3.5 / 5	0	DAMP TO WET	SW-SC		Well graded SAND with some clay, fin little fine to coarse gravel, damp to wet		1 10001 10001 1	50.5 ft: 5% fines (silt/cla 54 ft: 35% fines (silt/cla	
					ett XDA	Poddich brown poorly graded CAND	nostly fing cond	- 🗱 🔛		
	5/5	0	WET	SP		Reddish brown poorly graded SAND, r few gravel, loose, wet (Basal Till). Reddish brown well graded SAND with to coarse sand, little subrounded to su medium dense to very dense, damp (B	n some clay, fine bangular gravel,			
<u>58</u> <u>-</u> 59		U	DAMP	SW-SC					57.5 ft: 30% fines (silt/cla	
lotes:	bgs = below DGA = dense					Horizontal Datum of 1983 NJSP = New Jersey States New Jersey States ND = photoionization de		<u>I P≎® P≎® I</u> r million d Soil Classification S	ft = feet ystem in = inches	

roject	Name: G	arfield A	Avenue Gro	oundwater	RI	Drilling Company: ADT	Top of PVC	Elevation: 16.6	67 ft NAVD88
Project	Number:	605502	261			Drilling Method: Sonic	Coordinates	(NJSPNAD83)	x: <u>610879.4</u>
Date Sta	arted Drill	ing: 7	/14/2020		-	Rig Type: Fraste XL Max 170	Coordinates	(NJSPNAD83)	
			7/16/2020			Core Size: 3 in		Depth: 75 ft	
	By: V.T		111			Project Manager: Shannon Gleason	Depth to Wa	iter: vation: 14.0 ft I	
	I Locatio		114				Surface Elev	Well	NAVD88
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Construction	Remarks
			DAMP TO WET	SW	• • • • • • • • • • • • • • • • • • •	Reddish brown well graded SAND with fee damp to wet (Basal Till).	v silt, loose,		60.5 ft: 10% fines (silt/cla
-61 -62 -	4 / 5	0	DAMP TO WET	CL		Reddish brown and light yellowish brown sandy CLAY embedded with little fine to s coarse gravel, medium dense, damp to we	ubrounded		Bentonite Seal: 60-62 ft bgs
-63 64 						Dark olive gray to gray Diabase. Weathere ft bgs (broken rock in clay matrix), compe- bgs. End of boring at 75 ft bgs.	ed from 63-74 ent at 74 ft		—#0 Filter sand: 62-67.5 ft bgs
-65 	5/5	0	DAMP	BEDROCK					2-inch Schedule 40 PVC well screen: 62.5-68 ft bgs
-71 -72 -73 -74 -75	4 / 5	0							Bentonite Seal: 68-75 ft bgs

Logged By: Physical Loo Physical Loo Composition Depth Range (ft bgs) Reccondition 1 2 2 3 3 4	I Drilling: ed Drilling: V. Thayer	6/15/2020 6/16/2020 te 114 Moisture	USCS	Graphic Log	Rig Type: Fraste XL Max 170 Core Size: 3 in Project Manager: Shannon Gleason	/EL, black s below - ceous _ se	IJSPNAD83) epth: 80 ft r: ion: 13.0 ft Well Construction	y: 683749.8
Date Finishe Logged By: Physical Loo Physical Loo Chysical Loo Depth Range Record (ft	ed Drilling V. Thayer cation: Si overy PID /ft) (ppr	6/16/2020 te 114 Moisture Content DAMP TO	USCS		Core Size: 3 in 1 Project Manager: Shannon Gleason 1 Material Description 3 Soft dig to 5 ft bgs. Gray fine to coarse GRAV fabric/black plastic encountered several inche surface. Dark grayish brown (10YR 4/2) mica sand with little silt, fine sand, few fine to coarse	Boring Total Do Depth to Water Surface Elevati /EL, black s below ceous	epth: 80 ft r: ion: 13.0 ft Well Construction	NAVD88
Logged By: Physical Loo Physical Loo Composition Depth Range (ft bgs) Reccondition 1 2 2 3 3 4	V. Thayer cation: Si overy PID /ft) (ppm	DAMP	USCS		Project Manager: Shannon Gleason 1 Material Description Soft dig to 5 ft bgs. Gray fine to coarse GRAV fabric/black plastic encountered several inche surface. Dark grayish brown (10YR 4/2) mica sand with little silt, fine sand, few fine to coarse	Depth to Water Surface Elevati /EL, black s below - ceous se	r: ion: 13.0 ft Well Construction	
Depth Range ft bgs) Recc (ft - 1	overy PID (ft) (ppm	DAMP			Material Description Soft dig to 5 ft bgs. Gray fine to coarse GRAV fabric/black plastic encountered several inche surface. Dark grayish brown (10YR 4/2) mica sand with little silt, fine sand, few fine to coars	/EL, black s below - ceous _ se	Well Construction	
Range (ft) $($	/ft) (ppr	DAMP			Soft dig to 5 ft bgs. Gray fine to coarse GRAV fabric/black plastic encountered several inche surface. Dark grayish brown (10YR 4/2) mica sand with little silt, fine sand, few fine to coars	/EL, black s below - ceous _ se	Construction	Remarks
- 3 5 . - 3	/5 0	ТО	FILL		fabric/black plastic encountered several inche surface. Dark grayish brown (10YR 4/2) mica sand with little silt, fine sand, few fine to coars	s below - ceous _ se		
-7						-		Riser set in grout
-8	/5 0	WET	FILL		Grayish brown (10YR 5/2) silty SAND, few fin coarse gravel, loose, with some medium dens wet (FILL).	ie to ie pieces, - - - - - - - - - - - - - - - - - - -		Grout: 0-66.5 ft bgs
-10		WET	FILL		Grayish brown (10YR 5/2) micaceous silty SA fine to coarse gravel, loose to medium dense, (FILL).	ND, few wet		2-inch Schedule 40 PVC riser: 0-69 ft bgs
-11 		WET	ОН		Black organic CLAY with brown fibers, soft, w	/et		
-13		WET	ОН		Black organic CLAY with brown fibers, decrea amount of brown fibers, wet.	asing		
-14		WET	ОН		Very dark gray (10YR 3/2) organic CLAY with increasing amount brown fibrous material, we	it. –		
_	/ 10 0	WET	ОН		Very dark gray (10YR 3/2) organic CLAY with brown fibers, wet.	few		
-16 -17		WET	ML		Dark grayish brown (5YR 4/2) sandy SILT, we	et		
-18 -19 -19		WET	SM		Dark grayish brown to dark reddish gray (5YR SAND, few fine to coarse gravel, wet.	2 4/2) silty		



Boring ID: 114-MW62C

	Name: <u>G</u> Number:		261			Drilling Company: ADT Drilling Method: Sonic	Coordinates	(NJSPNAD83)	04 ft NAVD88 x: 611139
Date Sta	rted Drill	ina: 6	/15/2020			Rig Type: Fraste XL Max 170		(NJSPNAD83)	
			6/16/2020			Core Size: 3 in		Depth: 80 ft	
	By: V. TI					Project Manager: Shannon Gleason	Depth to Wat		
	Location		114					ation: 13.0 ft N	NAVD88
Donth	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
			WET	SP		Dark reddish brown (2.5YR 3/3) poorly gr with little silt, subangular medium sand, to sand, loose, wet. Pale yellow groundwate	race coarse		20 ft: 15% fines (silt/cla
21 			WET	SP		Reddish brown (2.5YR 4/3) poorly graded little silt, fine sand, wet.			21 ft: 20% fines (silt/cla
23			WET	SP		Dark reddish brown (2.5YR 3/3) poorly gr with little silt, wet. Pale yellow groundwate 22.0 ft.	aded SAND er observed at		22 ft: 15% fines (silt/cla 22.5 ft: 40% fines (silt/cl
· –			WET	SP		Dark reddish brown (5YR 3/3) poorly grad	ded SAND with	1 🗱 🛤	
-24					$\left\{ \begin{array}{c} 1 \\ 1 \end{array} \right\}$	some silt, fine sand, loose, wet.	~	┥ 🗱 🛤 ∣	04.5.0.000/5
25 26 26 27 28 29 	6 / 10	0	DAMP	ML/CL		Reddish brown (5YR 4/4) sandy SILT, fin Dark brown (7.5YR 3/3) and gray SILT a laminated silt and clay layers, fine sand la breaks apart along horizontal laminae, so stiff, damp.	nd CLAY, ayers, easily - ft to medium - -		24.5 ft: 60% fines (silt/c
-31			WET	ML		Reddish brown (5YR 4/4) SILT with sand loose, wet.			
-32			WET	ML		Reddish brown (5YR 4/4) SILT with sand loose, wet.	, fine sand, -		31 ft: 55% fines (silt/cla
-33 -34 -35	6 / 10	0	WET	ML		Reddish brown (2.5YR 5/3) SILT with tra wet.	ce fine sand, - -		33 ft: 55% fines (silt/cla 35 ft: 95% fines (silt/cla
-36			WET	ML		Reddish brown (2.5YR 5/3) SILT with fair medium stiff, wet.	nt varves, - -		

AECOM

Boring ID: 114-MW62C

	Name: G					Duilling Mathematic Courts		Elevation: 15	
	Number:					Drilling Method: Sonic		(NJSPNAD83	
	arted Drill					Rig Type: Fraste XL Max 170			y: 683749.8
			6/16/2020			Core Size: 3 in		Depth: 80 ft	
	By: V. T					Project Manager: Shannon Gleason	Depth to Wat		
Physica	al Location	n: Site	114		,		Surface Elev	ration: 13.0 ft	NAVD88
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
			WET	SP		Reddish brown (5YR 4/3) poorly graded	SAND, fine		
-41			WET	SP		sand, loose, wet. Reddish brown (5YR 4/3) poorly graded.	SAND with few		
-42			WET	SW		silt, wet. Reddish brown (5YR 4/3) well graded SA silt, medium sand, few fine sand, few co- fine to coarse gravel (up to 2" across), gr with little silt at 45 ft bgs, wet.	arse sand, little		41 ft: 10% fines (sitt/cla
45 	5.2 / 10	0	WET	SP		Reddish brown (5YR 4/3) poorly graded silt, medium sand, few coarse sand, loos			45 ft: 20% fines (silt/cla
			DRY TO DAMP	SM		Reddish brown (2.5YR 4/4) widely grade some silt, fine to angular coarse sand, fe fine to coarse gravel, very dense, dry to o Till).	w embedded - damp (Basal -		46.5 ft: 30% fines (silt/cl
	5.7 / 10	0	DAMP	SM		Reddish brown (5YR 4/4) SAND with so coarse sand, few fine to coarse subround subangular gravel embedded in matrix, c ft), dense to very dense, damp (Basal Til	ded to ompact (at 50		50 ft: 30% fines (sit/cla
lotes:	bgs = below					Horizontal Datum of 1983 NJSP = New Jersey State R		million	ft = feet
	DGA = dens	e graded a				an Vertical Datum of 1988 PID = photoionization detect		Soil Classification	System in = inches

	Name: C			oundwater	RI	Drilling Company: ADT		Elevation: 15.0	
	Number: arted Drill					Drilling Method: Sonic Rig Type: Fraste XL Max 170		s (NJSPNAD83) x s (NJSPNAD83) y	
	nished Dri					Core Size: 3 in		I Depth: 80 ft	. 003749.0
ogged	IBy: V.T	hayer				Project Manager: Shannon Gleason	Depth to Wa		
Physica	al Location	n: Site	114				Surface Ele	vation: 13.0 ft N	IAVD88
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
-61	7.5 / 10	0	DAMP TO DRY	SW		Reddish brown (5YR 4/4) well graded SAI silt, fine to coarse sand, little subangular t fine to coarse gravel, very dense, damp to Till).	o subrounded dry (Basal		60 ft: 25% fines (silt/cla
67 	-		DAMP	SM	*******	silt, fine to medium sand, trace gravel, loo (Basal Till).			Bentonite Seal: 66.5-68.5 ft bgs 67 ft: 25% fines (silt/cla
-69 -70			DAMP	SM		Reddish brown (5YR 4/3) widely graded S some silt, fine to coarse sand, few fine to embedded, very dense, damp (Basal Till).	AND with coarse gravel		#0 Filter sand: 68.5-73.5 ft bgs 69 ft: 30% fines (sitt/cla
-71	4 / 10	0		BEDROCł		Grey mudstone and siltstone, wet (Lockat Formation). Weathered from 71-73 ft bgs in clay matrix), competent at 73 ft bgs. En 80 ft.	(broken rock		 2-inch Schedule 40 PVC well screen: 69-73 ft bgs Bentonite Seal: 73.5-80 ft bgs
-19	-								

ogged B hysical I	ted Drill shed Dri y: V. Th	ing: 8, Iling: nayer				Drilling Method: Sonic		(NJSPNAD83)	
Pate Finis ogged B hysical I Depth Range t bgs)	shed Dri y: V. Ti Locatior ecovery	lling: nayer				Rig Type: Fraste XL Max 170	Coordinates	(NJSPNAD83) y	r 683762.5
ogged B hysical I Depth ange t bgs)	y: V. TI Location ecovery	nayer				Core Size: 3 in		Depth: 72 ft	. 000/02.0
Depth ange t bgs)	ecovery	n: Site				Project Manager: Shannon Gleason	Depth to Wat	er:	
ange ⊧bgs) - 1			114				Surface Elev	ation: 14.7 ft N	AVD88
-1		PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
- 3 <u>-</u> - 4 <u>-</u> - 4 <u>-</u>			DRY	FILL		Soft dig to 5 ft bgs; Grayish brown silty SAN to coarse gravel, dry (DGA).	D, little fine - - -		—Riser set in grout
	5.4 / 10	0	WET	FILL		Olive gray (5Y 4/2) silty SAND, fine to coars fine to coarse gravel with loose and firm sec (5' to 9') to dry (9' to 10') (FILL).	e sand, few tions. Wet - -		—Grout: 0-60.75 ft bgs
10 			MOIST	FILL		Olive gray (5Y 4/2) silty SAND, fine to coars fine to coarse gravel, firm to loose, moist (F	e sand, few ILL). -		—2-inch Schedule 40 PVC riser: 0-63.75 ft bgs
_			MOIST	FILL		Black silty SAND, few fine to coarse sand, le (FILL).	oose, moist		
14—				PT		Black (10YR 2/1) to very dark gray (10YR 3	/2) organic		
5	5.6 / 10	0		ML		 soil with brown fibers (PEAT). Dark brown (7.5YR 3/3) SILT, few organic f 	ibers.		
 16				CL/ML		Brown (7.5YR 4/3) CLAY and SILT.	-		
17				SC		Brown clayey SAND, fine sand, fine to coar	se gravel.		
18 19 				SP-SM		Dark reddish brown (5YR 3/4) poorly graded silt, medium sand, few fine sand, trace coar little gravel.			19 ft: 10% fines (silt/cla



Boring ID: 114-MW63C

r: 60550 rilling: 8 Drilling:	3/6/2020			Drilling Method: Sonic Rig Type: Fraste XL Max 170		(NJSPNAD83) > (NJSPNAD83) y	
Drilling:	8/7/2020					(
				Core Size: 3 in	Boring Total	Depth: 72 ft	
Thayer				Project Manager: Shannon Gleason	Depth to Wa		
ion: Site	114					vation: 14.7 ft N	AVD88
ry PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Construction	Remarks
	WET	SP		Reddish brown poorly graded SAND, tr medium sand, trace coarse sand, little to coarse gravel.	ace silt, fine to sub-angular fine		
0 0	WET	SP					23 ft: 1-5% fines (sil/cl
	WET	SP-SM		Reddish brown, poorly graded SAND w sand, few silt, loose, wet. Yellowish gro observed.	vith silt, fine oundwater		
0 0	WET	SP-SM					
	PID (ppm)	PID Moisture Content 0 0 WET 0 0 WET 0 0 WET	PID (ppm)Moisture ContentUSCS000 <t< td=""><td>PID (ppm) Moisture Content USCS Graphic Log 0 0 WET SP </td><td>IfV PID (ppm) Moisture Content USCS Graphic Log Reddish brown poorly graded SAND, tr medium sand, trace coarse sand, little to coarse gravel. 0 0 WET SP Reddish brown, poorly graded SAND, tr medium sand, trace coarse sand, little to coarse gravel. 0 0 WET SP Reddish brown, poorly graded SAND, tr medium sand, little sub-angular fine to wet. 0 0 WET SP Reddish brown, poorly graded SAND, tr medium sand, little sub-angular fine to wet. 0 0 WET SP Reddish brown, poorly graded SAND, tr medium sand, little sub-angular fine to wet. 0 0 WET SP Reddish brown, poorly graded SAND, tr medium sand, little sub-angular fine to wet. 0 0 WET SP Reddish brown, poorly graded SAND wet. WET SP-SM Reddish brown, poorly graded SAND we sand, few silt, loose, wet. Yellowish graded SAND we sand, few silt, loose, wet. Yellowish graded SAND we sand, few silt, loose, wet. Yellowish graded SAND we sand, few silt, loose, wet. Yellowish graded SAND we sand, few silt, loose, wet. Yellowish graded SAND we sand, few silt, loose, wet. Yellowish graded SAND we sand, few silt, loose, wet. Yellowish graded SAND we sand, few silt, loose, wet. Yellowish graded SAND we sand, few silt, loose, wet. Yellowish graded SAND we sand, few silt, loose, wet. Yellowish graded SAND we sand, few silt, loose, wet. Yellowish graded SAND we sand, fe</br></br></td><td>Implementation Moisture content USCS Graphic Log Material Description Implementation Implementation Implementation Reddish brown poorly graded SAND, trace silt, fine to medium sand, trace coarse sand, little sub-angular fine to coarse gravel. Implementation Implementation Implementation Reddish brown, poorly graded SAND, trace silt, fine to medium sand, little sub-angular fine to coarse gravel. Implementation Implementation Implementation Reddish brown, poorly graded SAND, trace silt, fine to medium sand, little sub-angular fine to coarse gravel, wet. Implementation Implementation Reddish brown, poorly graded SAND, trace silt, fine to medium sand, little sub-angular fine to coarse gravel, wet. Implementation Implementation Implementation Reddish brown, poorly graded SAND with silt, fine sand, few silt, loose, wet. Yellowish groundwater observed. Implementation Implementation Implementation Reddish brown, poorly graded SAND with silt, fine sand, few silt, loose, wet. Yellowish groundwater observed. Implementation Implementation Implementation Implementation Implementation Implementation Implementation Implementation Implementation Implementation Implementation Implementation Implementation Im</td><td>Image: PID (ppm) Moisture (ppm) USCS Graphic Log Material Description Construction Vell Feddish brown poorly graded SAND, trace silt, fine to medium sand, trace coarse sand, little sub-angular fine to coarse gravel. Image: PiD (ppm) Image: PiD (pp</td></t<>	PID (ppm) Moisture Content USCS Graphic Log 0 0 WET SP	IfV PID (ppm) Moisture Content USCS Graphic Log Reddish brown poorly graded SAND, tr medium sand, trace coarse sand, little 	Implementation Moisture content USCS Graphic Log Material Description Implementation Implementation Implementation Reddish brown poorly graded SAND, trace silt, fine to medium sand, trace coarse sand, little sub-angular fine to coarse gravel. Implementation Implementation Implementation Reddish brown, poorly graded SAND, trace silt, fine to medium sand, little sub-angular fine to coarse gravel. Implementation Implementation Implementation Reddish brown, poorly graded SAND, trace silt, fine to medium sand, little sub-angular fine to coarse gravel, wet. Implementation Implementation Reddish brown, poorly graded SAND, trace silt, fine to medium sand, little sub-angular fine to coarse gravel, wet. Implementation Implementation Implementation Reddish brown, poorly graded SAND with silt, fine sand, few silt, loose, wet. Yellowish groundwater observed. Implementation Implementation Implementation Reddish brown, poorly graded SAND with silt, fine sand, few silt, loose, wet. Yellowish groundwater observed. Implementation Implementation Implementation Implementation Implementation Implementation Implementation Implementation Implementation Implementation Implementation Implementation Implementation Im	Image: PID (ppm) Moisture (ppm) USCS Graphic Log Material Description Construction Vell Feddish brown poorly graded SAND, trace silt, fine to medium sand, trace coarse sand, little sub-angular fine to coarse gravel. Image: PiD (ppm) Image: PiD (pp



Boring ID: 114-MW63C

Project Number:			oundwater		Drilling Company: ADT Drilling Method: Sonic	Coordinates (NJSPNAD83)	Available ft NAVD88 x: 611436 6
Date Started Dri					Rig Type: Fraste XL Max 170	Coordinates (NJSPNAD83)	
Date Finished D					Core Size: 3 in	Boring Total Depth: 72 ft	
ogged By: V.					Project Manager: Shannon Gleason	Depth to Water:	
Physical Location		114				Surface Elevation: 14.7 ft	NAVD88
Depth Range ft bgs)		Moisture Content	USCS	Graphic Log	Material Description	Well Construction	Remarks
-41	0	WET	ML		Reddish brown (2.5YR 4/3) sandy SILT v wet.	vith fine sand,	40 ft: 70% fines (silt/cla
-50 -51 _		WET	ML		Reddish brown SILT with fine SAND, we groundwater at 50 ft bgs.	t, yellowish	50 ft: 90-95% fines (silt/c
-52	0	WET	CL-ML		Reddish brown clayey SILT, wet.		

AECOM

Boring ID: 114-MW63C

Project Name: Ga Project Number: 6				Drilling Company: _ADT Drilling Method: Sonic		Elevation: Not s (NJSPNAD83)	
Date Started Drillin	na: 8/6/201	20		Rig Type: Fraste XL Max 170		s (NJSPNAD83))	
Date Finished Drill				Core Size: 3 in		al Depth: 72 ft	
.ogged By: V. Tha		-		Project Manager: Shannon Gleason			
Physical Location:					Surface Ele	vation: 14.7 ft N	AVD88
	PID Mois ppm) Con		Graphic Log	Material Description	on	Well Construction	Remarks
-61	W	ET SP		Reddish brown poorly graded SAND), fine sand, wet.		61 ft: 4% fines (silt/clay
62 63	W	ET SC		Reddish brown clayey SAND, little fi little fine to coarse gravel, firm, (Bas	ne to coarse sand, al Till).		Bentonite Seal: 60.75-62.75 ft bgs 63 ft: 25% fines (sitt/cla
-64	0 MO	IST SC		Reddish brown clayey SAND, little fi little fine to coarse gravel, firm (Basa			 #0 Filter Sand: 62.75-66.5 ft bgs 2-inch Schedule 40 PVC well screen: 63.75-65.75 ft bgs
-67		BEDROC		(Lockatong Formation). End of borir	ις αι <i>τ Ζ</i> Ιι.		#00 Filter Sand: 66.5-68 ft bgs Sump: 65.75-67.75 ft bgs Bentonite Seal: 67.75-72 ft bgs
						-	
otes: bgs = below su DGA = dense g				Horizontal Datum of 1983 NJSP = New Jersey S an Vertical Datum of 1988 PID = photoionization		er million ed Soil Classificatio	on S

			Avenue Gro	oundwater	RI	Drilling Company: SGS		levation: 12.3		
	Number: arted Drill					Drilling Method: Sonic Rig Type: Fraste XL Max 170		(NJSPNAD83) (NJSPNAD83)		
	nished Drii					Core Size: 3 in		(NJSPNAD83) Depth: 100 ft		
.ogged	IBy: V.T	hayer				Project Manager: Shannon Gleason	Depth to Wat			
	al Location		114				Surface Eleva	ation: 10.8 ft	NAVD88	
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks	
	5/5	0	DRY	FILL		Soft dig to 5 ft bgs, Gray poorly graded fine little silt, little fine to coarse gravel (DGA), d	SAND with ry (FILL). - -		—Riser set in grout	
-5	2.5 / 5	0	WET	FILL		Black to dark gray DGA, poorly graded SAN silt, some fine to coarse subangular gravel, (except for one 4-inch medium dense sectio (FILL).	loose		Grout: 0-90.5 ft bgs	
-10 -11 -12 -13 -14 -14 -15	9 / 10		MOIST	MOIST	FILL		Black (10YR 2/1) silty SAND, few to little su subrounded gravel, loose to medium dense (FILL).	, moist - - -		2-inch Schedule 40 PVC riser: 0-93 ft bgs
		-		ОН		medium stiff, moist.	Black (10YR 2/1) silty CLAY with some brown fibers, medium stiff, moist.			
-17			MOIST	CL		Dark gray (10YR 4/1) silty CLAY with few b few embedded fine subrounded gravel, med moist.	dium stiff, -			
-18			DAMP	CL		Dark gray (10YR 4/1) silty CLAY with few b few embedded fine subrounded gravel, med damp. MGP sheen observed on soils.				
-19			WET TO MOIST	SP		Brown (7.5YR 5/2) poorly graded SAND, fir to moist. MGP sheen observed on soils.	ne sand, wet -			



Boring ID: 114-MW64C

Project Project						Drilling Company: SGS Drilling Method: Sonic	Coordinatos	(NJSPNAD83)	8 ft NAVD88
Project Number: 60550261 Date Started Drilling: 6/23/2020						Rig Type: Fraste XL Max 170			
			6/24/2020			Core Size: 3 in	Coordinates (NJSPNAD83) y: 683046 Boring Total Depth: 100 ft		
	By: V. T		UZ712020			Project Manager: Shannon Gleason	Depth to Wat		
	Location		114					ation: 10.8 ft l	
								Well	
Depth Range (ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Construction	Remarks
21			WET	SP		Brown (7.5YR 5/2) poorly graded SAND loose between 22.5-24.2 ft bgs, medium between 24.2-25.2 ft bgs, wet. MGP she between 20-22.5 ft bgs.	dense		23.5 ft: 10-15% fines (sil/c
	6.5 / 10	65	MOIST	SP		Brown (7.5YR 5/2) poorly graded SAND fine sand, loose to medium dense, moist			24.5 ft: 25% fines (silt/cla
30		0	WET	SP		Reddish brown (5YR 4/4) poorly graded silt, wet. Pale yellow groundwater observ	ed in core		30 ft: 25% fines (sit/clay
 	5 / 10		WET	SP		Reddish brown (5YR 4/4) poorly graded a medium sand, wet.	SAND, fine to		35 ft: 10% fines (silt/clay
lotes:	bgs = below DGA = dense	surface gr e graded a				h Horizontal Datum of 1983 NJSP = New Jersey State F an Vertical Datum of 1988 PID = photoionization detec			ft = feet System in = inches

Boring ID: 114-MW64C

oject Name: _(1.11	Drilling Company: SGS	Top of PVC E		
oject Number:					Drilling Method: Sonic	(NJSPNAD83)		
ate Started Dril					Rig Type: Fraste XL Max 170	Coordinates (NJSPNAD83) y: 683046 Boring Total Depth: 100 ft		
ate Finished Dr		0/24/2020			Core Size: 3 in			
ogged By: V. 7		444			Project Manager: Shannon Gleason	Depth to Wat		
nysical Locatio	n: Site	114		, i		Surface Elev	ation: 10.8 ft	NAVD88
epth ange bgs)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
41 42 43 44 457.5 / 10 46	0	WET	SP		Reddish brown (5YR 4/4) poorly graded silt, medium sand, trace coarse sand, tra fine to coarse gravel, wet. MGP sheen o soils.	ace subrounded		41 ft: 10% fines (sit/cla
		WET	SP		Black stained poorly graded SAND with f sand, wet.	few silt, fine - -		
50 <u> </u>		WET	SP		Reddish brown poorly graded SAND with medium sand, little fine sand, loose, wet observed on soils.	n few silt, . MGP sheen -		51 ft: 10% fines (silt/cla
52 - 53 - 54 - 55 8.8 / 10 - 56 - 57 - 58 - 59 - - 59 - -	7.1	MOIST	CL/ML		Dark reddish brown, gray and reddish br CLAY, SILT contorted laminae and varve stiff, moist.			



Boring ID: 114-MW64C

Project Number:			oundwater		 Drilling Company: SGS Drilling Method: Sonic		levation: 12.3 (NJSPNAD83) x	
Date Started Drill					 Rig Type: Fraste XL Max 170			
Date Started Drift Date Finished Dr					 Core Size: 3 in	Coordinates (NJSPNAD83) y: 683046 Boring Total Depth: 100 ft		
Logged By: V. T		JIZ-1/2020			 Project Manager: Shannon Gleason	Depth to Wat		
Physical Location		114			 - ojot munugot. Onamon Olcason		ation: 10.8 ft N	AVD88
						JUILUOG LIGVO	Well	
Depth Range (ft bgs)	PID (ppm)	Moisture Content	USCS	Grapł Log	Material Description		Construction	Remarks
	0	WET	CL/ML/SP		Reddish brown and gray CLAY, SILT and fine SAND layers (up to 0.1' layers of fine sand), varves, medium stiff, wet.			
-69		WET	ML		Reddish brown SILT, wet.			
70 		WET	CL/ML		Reddish brown and gray CLAY and SILT va	arves, wet. -		
-74	0	WET	ML		Reddish brown clayey SILT, wet.	-		



Boring ID: 114-MW64C

Project Number:	60550	261			Drilling Method: Sonic	Coordinates	(NJSPNAD83)	x: 611381.9
Date Started Dri					Rig Type: Fraste XL Max 170	Coordinates (
Date Finished D					Core Size: 3 in	Boring Total D		
ogged By: V.		0_020			Project Manager: Shannon Gleason	Depth to Wate		
Physical Locatic		114				Surface Eleva		
							Well	
Depth Range ft bgs)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Construction	Remarks
					Reddish brown poorly graded SAND, few fine sand, wet.	silt, mostly		
81 		WET	SP			 - -		81 ft: 10% fines (silt/cla
-83		WET	SC		Reddish brown clayey SAND with little fine gravel, medium dense, wet.	e to coarse		83 ft: 40% fines (silt/cla
	0	DAMP	SC		Gray clayey SAND with little embedded co subrounded gravel, very dense, damp (Ba	arse sal Till) - - - - - - - - - - - - - - - - - -		
90 _91 _		NA	SP		Reddish brown poorly graded SAND with sand (Basal Till).	few silt, fine - -		90.5 ft: 10% fines (sil/o Bentonite Seal:
-92 -		WET TO DAMP	GC/SC		Gray fine to coarse GRAVEL, with some of very dense, wet from 92-92.5 ft bgs, dam 92.5-93 ft bgs (Basal Till).			90.5-92.5 ft bgs —#0 Filter sand:
-93 -94 -95 6 / 10 -96 -96 -97 -98 -99 -99 -99	0		BEDROCK		Gray bedrock (Stockton Formation), wet. from 93-96 ft bgs (broken rock in clay mai competent at 96 ft bgs. End of boring at 1	trix), –		 92.5-96.5 ft bgs —2-inch Schedule 40 PVC well screen: 93-96 ft bgs —Bentonite Seal: 96.5-100 ft bgs

	Name: G			oundwater	RI	Drilling Company: ADT	Top of PVC E					
	Number: arted Drill					Drilling Method: Sonic Rig Type: Fraste XL Max 170	Coordinates Coordinates					
	nished Dri					Core Size: 3 in	Boring Total			000000		
	I By: V. T					Project Manager: Shannon Gleason	Depth to Wate					
iysica	al Location	1: Site	114				Surface Eleva		.4 ft N	IAVD88		
epth ange bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construc	tion	Remarks		
1 — 2 — 3 — 4 —			DRY	FILL		Soft dig to 5 ft bgs; Grayish brown silty SAI to coarse gravel, dry (DGA) (FILL).	ND, little fine		*****			
5 — 6 — 7 — 8 — 9 —	- 5.3 / 10 	0	0 -	MOIST	FILL		Dark yellowish brown, poorly graded SAND fine to coarse sand, little sub-angular grave (FILL).	I, moist		*****		
0 1 -	-	0 0			MOIST	FILL		Black and gray well graded GRAVEL, angu coarse gravel, moist (FILL).	lar, fine to - -	1 1000 100	-0- I	
2 3 4 5 6 7 8 9 -	2.4 / 10		MOIST	FILL		Black and gray well graded SAND with gravel to coarse subangular gravel, loose, moist (=ILL)		*****	—Grout 0-56 ft bgs		
_			MOIST	SW-SC		Weak red (10YR 4/4), reddish gray and da	rk grayish	1 🔛 🗄	¥			



Boring ID: 114-MW65C

Project Name: 0			unuvalor		Drilling Company: ADT		evation: 14.2		
Project Number:					Drilling Method: Sonic		(NJSPNAD83)		
Date Started Drill					Rig Type: Fraste XL Max 170		Coordinates (NJSPNAD83) y:683583Boring Total Depth:72 ft		
Date Finished Dr		3/18/2020			Core Size: 3 in				
Logged By: V. T					Project Manager: Shannon Gleason	Depth to Wate			
Physical Location		114				Surface Eleva	tion: 12.4 ft N	AVD88	
-							Well		
Depth Range (ft bgs)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Construction	Remarks	
		MOIST	SW-SC		brown (10YR 4/2) widely graded SAND coarse sand, few sub-rounded to sub-an	vith clay, fine to gular fine /			
21		WET	SM		\gravel, hard. Reddish brown (2.5YR 5/4) silty SAND, sand, some fine to coarse sub-rounded g	fine to coarse			
-22	0	WET	SP-SM		Weak red (2.5YR 4/2) poorly graded SAI fine sand, loose.	ND with slit,		26 ft: 5-10% fines (silt/cl 29.5 ft: 20% fines (silt/cl	
-30		WET	CH/ML		Weak red (2.5YR 4/2) fat CLAY with inte laminae, medium hard, wet.	erbedded silt - 		· · · · ·	
-32	0	WET	SM		Strong brown (7.5YR 4/6) silty SAND, fir wet. Yellowish groundwater at 33' to 37'.	1e sand, loose, 		—2-inch Schedule 40 PVC riser 0-60 ft bgs 35 ft: 30% fines (silt/ck	
 Notes: bgs = below	surface g	rade N	VAD83 = Nor VAVD88 = No	th American	Horizontal Datum of 1983 NJSP = New Jersey State I	- Plane ppm = parts per r		ft = feet	

roject	Name: _C	Garfield /	Avenue Gro	oundwater	RI	Drilling Company: ADT		levation: 14.2	
Project	Number:	60550	261			Drilling Method: Sonic	Coordinates	(NJSPNAD83)	c: 611291.7
	arted Drill					Rig Type: Fraste XL Max 170		(NJSPNAD83) y	: 683583
	nisned Dr I By: V.T		3/18/2020			Core Size: _3 in Project Manager: Shannon Gleason	Boring Total Depth to Wate		
	al Location		114					tion: 12.4 ft N	IAVD88
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
-41			WET	СН		Strong brown (7.5YR 4/6) fat CLAY with si wet, yellowish groundwater.	It laminae,		
-43	6 / 10	0	WET	CH/MH		Strong brown (7.5YR 4/6) fat CLAY with si silt and clay layers, medium hard, wet.	It, laminae of 		
			WET	SP-SM		Reddish brown (2.5YR 4/3) poorly graded	SAND silt,		
-50 — -51— -52— -				SP-SM		fine sand, few silt, wet. Reddish brown (2.5YR 4/3) poorly graded s silt, fine sand, little medium sand.	SAND with		52 ft: 15% fines (silt/cl
-53						Reddish brown (5YR 5/4) silty SAND, little fine to sub-rounded coarse gravel, hard, m			53 ft: 30% fines (silt/cl
-54 -55	7.2 / 10	0				ТіІІ).	- - -		
-56							-		
-57			MOIST	SM			-		Bentonite Seal
_									56-58 ft bgs
-58							-		
-59							-		—#0 Filter sand 58-66 ft bgs
otes:	bgs = below	surface a	rada N	14 D00 - No.	KAILT.	n Horizontal Datum of 1983 NJSP = New Jersey State Pla			ft = feet

	Name: C Number:			oundwater	RI	Drilling Company: ADT		Elevation: 14. (NJSPNAD83)	
	Number: arted Drill					Drilling Method: Sonic Rig Type: Fraste XL Max 170		(NJSPNAD83) (NJSPNAD83)	
	nished Dri)		Core Size: 3 in		Depth: 72 ft	y. _000000
oggeo	IBy: V.T	hayer				Project Manager: Shannon Gleason	Depth to Wa	ter:	
ysica	al Location	n: Site	114	1			Surface Elev	vation: 12.4 ft	NAVD88
epth ange bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
61 62 63			MOIST	SM					
64 - 65	5 / 10	0	MOIST	SW-SC		Reddish brown (5YR 4/3) widely graded or clay, fine to coarse sand, little fine to few large gravel (2" to 3" wide), hard, m	coarse gravel, oist (Basal Till).		64 ft: 15% fines (silt
_		0	MOIST	SM		Reddish brown (5YR 4/3) silty SAND, fil sand, few fine gravel, few coarse sub-ro (Basal Till).			65.5 ft: 20% fines (si
66 67			DRY	BEDROCK		Gray mudstone and siltstone, wet (Lock Formation).	atong		
68— 69— 70— 71— 71—	2/2		WET	BEDROCK		Formation). End of boring at 72 ft.	· · · · · · · · · · · · · · · · · · ·		Bentonite Seal 66-72 ft bgs
L									

PPG WITH WELL CONSTRUCTION - - 2/5/21 12:23

Comments: Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

Boring ID: 114-MW65C



Boring ID: DNAPL-S1

Project No Date Star				9:00:00 AM		Drilling Method: Sonic	Coordinates (NJSP Coordinates (NJSP	NAD83) y: 682918.1
				7 10:40:00 A		Core Size:	Boring Total Depth:	
Logged B						Project Manager: Scott Mikaelian	Depth to Water:	
Physical I	Location	: Site	e 137				Surface Elevation:	10.8 ft NAVD88
Depth Range ft bgs)	ecovery (ft/ft)	PID ppm)	Moisture Content	USCS	Graphi Log	c Surface Cover and Thic	kness:	Sample ID
 1 2 		0	DRY	FILL		DGA, (7.5YR 4/2) brown, medium der no staining	nse, dry, no odor,	
3 4 5 6 		0	DRY	FILL		DGA, (5Y 6/1) gray, medium dense, c staining	lry, no odor, no	
-7		0	DRY	FILL		fine to medium SAND, little silt and gr dark gray, medium dense, dry, no odd		
8		0	WET	FILL		DGA, (5YR 2.5/1) black, medium den staining		
17		0	MOIST	PT	<u>1, 1, 1,</u> <u>1, 1, 1,</u> 1, 1, 1,	organic silt), (5YR 2.5/1) black, moist, odor. Soils consistent with MM.	strong organic	
18 19 		0	MOIST	PT		Soils consistent with MM.	30% fibers, 70% ong organic odor.	
21	F	0	WET	ML		SILT, little fine to medium sand little g gray, soft, wet, no odor, no staining. S	ravel, (5YR 5/1) Soils consistent with	-
Notes: bgs - below VIM - meado	surface gr		COPR - chroi GGM - green	mite ore proce	ssing re	sidue UNDno - non-organic undisturbed native d UNDorg - organic undisturbed native depo		ufactured gas plant romate chemical production wast



Boring ID: DNAPL-S1

Proiect	t Number:	60550	JZ0 I			Drilling Method: Sonic		NAD83) x: 611097.7
Date St	tarted Dril	ling: 1	1/16/2017	9:00:00 AM		Rig Type:	Coordinates (NJSPN	
Date Fi	inished Dr	illing:	11/16/201	7 10:40:00	٩M	Core Size:	Boring Total Depth:	
oggeo	d By: E./	Acs				Project Manager: Scott Mikaelian	Depth to Water:	
hysic	al Locatio	n: Site	e 137				Surface Elevation:	10.8 ft NAVD88
Depth Range t bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graph Log	c Surface Cover and Thic	kness:	Sample ID
-23	-					UNDno.		
-24	-	0	WET	SP		SAND, little silt, (5YR 5/1) gray, medi odor, no staining. Soils consistent with		
-26		28.0	WET	SP-SM		fine to medium SAND, little gravel sor reddish brown, wet. Soils consistent v		
-27		67.0	MOIST	SP		fine SAND, some silt, (5YR 4/3) reddi dense, moist to wet. Soils consistent	sh brown, medium	
-28	-	148.0	WET	SP		fine SAND, some silt, (5YR 4/3) reddi dense, wet hydrocarbon staining. Soil	sh brown, medium s consistent with	
-29	1					UNDno.		
-30								
-31								
-32								137-S1-32.5-33.0
-33								
-34								
-35								
36 								
37 								
-38 39		122.0	WET	SP		fine SAND, some silt, (5YR 4/3) reddi dense, wet. Soils consistent with UNE	sh brown, medium Dno.	
 40	-							
 41	-							
	-							
-43	•							
Notes:								
gs - bel	low surface (adow mat	grade		omite ore proce	essing re	sidue UNDno - non-organic undisturbed native d UNDorg - organic undisturbed native depo	eposits MGP - manu	factured gas plant omate chemical production was



Boring ID: DNAPL-S1

Page:	3

Project Date St Date Fi	t Number: tarted Drill inished Dr	60550 ling: 1 illing:	0261 1/16/2017	9:00:00 AN 7 10:40:00	I AM	Drilling Company: SGS North America Drilling Method: Sonic Rig Type: Core Size:	Coordinates (NJSF Boring Total Depth	PNAD83) x: 611097.7 PNAD83) y: 682918.1 n: 48 ft
oggeo	d By: E. /	Acs	407			Project Manager: Scott Mikaelian	Depth to Water:	
	al Locatio Recovery (ft/ft)		Moisture	USCS	Graphi Log	Surface Cover and Thick	Surface Elevation:	Sample ID
45 46 47 - 48	-	67.0	WET	SP		fine SAND, some silt, (5YR 4/3) reddi dense, wet. Soils consistent with UND	sh brown, medium)no.	
lotes: gs - bel IM - me	ow surface g adow mat	grade	COPR - chro GGM - green	mite ore proce	essing res	idue UNDno - non-organic undisturbed native do UNDorg - organic undisturbed native depos	eposits MGP - mar sits CCPW - cł	nufactured gas plant promate chemical production wast



Boring ID: DNAPL-W1

Project Project Date St	Number: arted Drill	60550 ling:1	0261 1/16/2017	12:00:00 P	M	Drilling Method: Sonic Rig Type:		NAD83) x: 611066 NAD83) y: 682952.4
Date Fi	nished Dr	illing:	11/16/201	7 1:30:00 P	M	Core Size:	Boring Total Depth:	
ogged	IBy: E.A	Acs				Project Manager: Scott Mikaelian	Depth to Water:	
hysic	al Locatio	n: Site	e 137			1	Surface Elevation:	10.8 ft NAVD88
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphi Log	C Surface Cover and Thick	kness:	Sample ID
-1 -2		0.0	DRY	FILL		DGA, (7.5YR 4/2) brown, medium den	ise, dry	
-3			DRY	FILL		DGA, (5YR 4/1) dark gray (7.5YR 4/2) dense, dry	brown, medium	
-7			DRY	FILL		DGA, (5YR 2.5/1) black, medium dens	se, dry	_
-8			DRY	FILL		moist strong organic odor. Soils cons	(5YR 5/1) gray,	
18 		20.0	WET	SP-SM		SILT, fine to medium sand some grave wet. Soils consistent with UNDno.	el, (5YR 5/1) gray,	-
-20				NR		No Recovery		_
	ow surface g adow mat	grade	COPR - chro GGM - green	mite ore proc	essing re	sidue UNDno - non-organic undisturbed native de UNDno - organic undisturbed native depos	eposits MGP - man	ufactured gas plant romate chemical production wast

Boring ID: DNAPL-W1

	Page: 2	
611066		

Logged By: E. Acs Project Manager: Scott Mikaelian D	3) reddish ent with UNDno.
Physical Location: Site 137 S Depth Range (fb/fs) Recovery (fb/fs) PID (ppm) Moisture Content USCS Graphic Log Surface Cover and Thickness -23	Surface Elevation: 10.8 ft NAVD88 SS: Sample ID 3) reddish ent with UNDno. 3) reddish 3) reddish ent with UNDno. 3) reddish
Range (ft/ft) Recovery (ppm) PD Mosture Content USCS Graphic Log Surface Cover and Thickness 23 230.0 WET SP-SM fine to medium SAND, some silt, (5YR 4/3 brown, medium dense, wet. Soils consistent -24 -25 - - - -26 - - - -27 - - - -28 WET SM - -29 - - - -30 - - -	3) reddish ent with UNDno.
230.0 WEI SP-SM fine to medium SAND, some silt, (5YR 4/3 brown, medium dense, wet. Soils consistent brown, medium dense, wet. Soils consistent brown, medium SAND, some silt, (5YR 4/3 brown, medium SAND, some silt, (5YR 4/3 brown, medium dense, petroleum staining from 31.5' to 33.5', pe	ant with UNDno.
	3) reddish ent with UNDno.



Boring ID: DNAPL-W1

	Page:	3
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Physical Location: Site 137 Surface Elevation: 10.8 ft NAVD88 Depth Range (ft bgs) Recovery (ft/ft) PID (ppm) Moisture Content USCS Graphic Log Surface Cover and Thickness: Sample ID	Project N Date Star Date Finis	lumber: 6055 rted Drilling: ished Drilling:	0261 11/16/2017	12:00:00 PM		Drilling Company: SGS North America Drilling Method: Sonic Rig Type:		PNAD83) x: 611066 PNAD83) y: 682952.4 h: 48 ft
Depth Range Recovery (ft/ft) PID (ppm) Moisture Content USCS Graphic Log Surface Cover and Thickness: Sample ID 45 45 45 46 <td< th=""><th>Physical</th><th>Location: Sit</th><th>e 137</th><th></th><th></th><th>Toject Manager. Scott Mikaenan</th><th></th><th>: 10.8 ft NAVD88</th></td<>	Physical	Location: Sit	e 137			Toject Manager. Scott Mikaenan		: 10.8 ft NAVD88
- 46	Depth Range	ecovery PID	Moisture	uscs ⁽	Graphi Log	Surface Cover and Thick		Sample
	 46	10.0	WET	SW-SM		fine SAND, some silt, (5YR 4/3) reddis consistent with UNDno.	sh brown. Soils	
				* * *		o o		137-W1-47.5-48.0
Notes: Image: Notes:	ogs - below	v surface grade	COPR - chro	mite ore proces	sing res	idue UNDno - non-organic undisturbed native de	eposits MGP - ma	anufactured gas plant



Boring ID: GAR-PDI-A11B

	t Name:					Drilling Company: SGS North America					
	t Number:							AD83) x: 611057.994			
				10:50:00 AM			Coordinates (NJSPN	AD83) y: 683942.359			
Date Fi	inished Dr	illing:	2/12/2017	7 11:50:00 AN			Boring Total Depth:	21 ft			
	d By: ⊺l					Project Manager: Scott Mikaelian	Depth to Water: 5.0)			
hysic	al Locatio	n: Act	ual - GA P	DI			Surface Elevation:	11.982 ft NAVD88			
-											
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Surface Cover and Thicknes	SS:	Sample ID			
		0.0		CONCRETE		Concrete sidewalk					
-1			dry	FILL		fine to coarse SAND, little fine to coarse gra dark gray, loose, dry to moist, no odor, no s		GAR-PDI-A11B-0.5-1.0			
-	-		moist	FILL		fine to medium SAND, little silt, trace coars 3/2) dark brown, medium dense, moist, no					
-2 -3 -	4.5		moist	FILL		fine silty SAND, little coarse gravel, (7.5YR brown, medium dense, moist, no odor, no s	2.5/2) very dark	GAR-PDI-A11B-2.0-2.5			
-4	1					< < <		GAR-PDI-A11B-4.0-4.5			
-5			,t	NR		NO RECOVERY		-			
_	4	0.0	wet	FILL		fine to coarse SAND, some fine to coarse g $4/2$ brown, medium dense, wet, no odor, n	gravel, (7.5YR o staining water ∕─	GAR-PDI-A11B-5.5-6.0			
-6	1		wet	FILL	\boxtimes	↓ \at 5.0 feet.					
-7 -8	3.5				wet	OL		fine sandy SILT, little coarse gravel, (7.5YR medium stiff, wet, no odor, no staining. SILT, trace fine sand and organics, (7.5YR medium stiff, wet, no odor, no staining. Soil UNDorg.	4/2) brown,	GAR-PDI-A11B-6.0-6.5	
0 _	-							GAR-PDI-A11B-8.0-8.5			
-9	-	0.0	0.0		0.0		NR		NO RECOVERY		
-10 -11	-	0.0	0.0	0.0	0.0	wet	OL		SILT, trace fine sand and organics, (7.5YR medium stiff, wet, no odor, no staining. Soil UNDorg.	Is consistent with	GAR-PDI-A11B-10.0-10.5
-12	-				wet	ML		SILT, little coarse gravel, trace fine sand, (7 medium stiff, wet, no odor, no staining. Soil UNDno.	7.5YR 6/1) gray, Is consistent with		
-13	4.5		wet	SP		fine to medium SAND, some fine to coarse 5/1) gray, medium dense, wet, no odor, no consistent with UNDno.	gravel, (7.5YR staining. Soils	GAR-PDI-A11B-12.0-12.5			
-14			wet	SP		fine to coarse SAND, some fine to coarse g 2.5/2) very dark brown, medium dense, we		GAR-PDI-A11B-14.0-14.5			
-	-			NR	<u></u>	staining. Soils consistent with UNDno. NO RECOVERY					
-15		0.0	wet	SM		SILT, some fine to coarse gravel, (7.5YR 4) soft, wet, no odor, no staining. Soils consist	/1) dark gray, tent with UNDno.	-			
-16 -17	5		wet	SP		fine to coarse SAND, some fine to coarse g dark reddish brown, medium dense, wet, no staining. Soils consistent with UNDno.		GAR-PDI-A11B-16.0-16.5			
-18								GAR-PDI-A11B-18.0-18.5			
-19	-										
-20					 			GAR-PDI-A11B-20.0-20.5			
_	1	0.0						GAN-FUI-ATTD-20.0-20.5			
-21						1					
otes: as - be	low surface	arade	COPR - chr	omite ore proc	l essina re	sidue UNDno - non-organic undisturbed native dep	oosits MGP - manu	l Ifactured gas plant			
	eadow mat	graue		en grey mud	sooning it	UNDorg - organic undisturbed native deposit		omate chemical production wa			



Boring ID: GAR-PDI-B`2A

Page:	1

	t Name: F t Number:					Drilling Company: SGS North America Drilling Method: direct push	Coordinates (NJSPN	AD83) x: 610825.372
				5 11:35:00 AN	1	Rig Type:		AD83) y: 683625.87
ate Fi	inished Dr	illing:	12/11/201	<u>16 12:35:00 F</u>		Core Size: 3.0 in	Boring Total Depth:	
	d By: Eric					Project Manager: Scott Mikaelian	Depth to Water: 5.0	
nysic	al Locatio	n: Act	ual - GA Pl	DI	1	1	Surface Elevation:	10.319 ft NAVD88
epth ange bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphi Log	c Surface Cover and Thic	kness:	Sample ID
		0.0	- Parladh -	CONCRETE		Concrete sidewalk	_	
1			slightly moist	FILL		fine to medium SAND, little ash and fin (5YR 4/4) reddish brown, medium dens odor, no staining.		
2 3	5		moist	FILL		fine silty SAND, little brick, trace ash ar brown, medium dense, moist, no odor,	d coal, (7.5YR 4/3) no staining.	
4 5		0.0	moist	FILL		SILT, little concrete debris, trace fine gr (7.5YR 4/3) brown, soft, moist to wet, r water at 5.0 feet.		
6—						X		GAR-PDI-B'2A-6.0-6.5
_						Ä		GAR-PDI-B'2A-6.5-7.0
7	. 5		wet	SM		 fine to medium silty SAND, some fine to (5YR 4/4) reddish brown, medium dens 		GAR-PDI-B'2A-7.0-7.5
8 9						staining. Soils consistent with UNDno.	_,,,	GAR-PDI-B'2A-8.0-8.5
0		0.0	wot	ML		SILT, (7.5YR 4/3) brown, soft, wet, no	adar no ataining	GAR-PDI-B'2A-10.0-10.5
		0.0	wet			Soils consistent with UNDno.	· •	
2			wet	SM		fine to medium silty SAND, little fine gra reddish brown, medium dense, wet, no Soils consistent with UNDorg.		
	5		wet	SP		fine to coarse SAND, some fine to med (5YR 4/4) reddish brown, dense, wet, n		
3						Soils consistent with UNDno.		GAR-PDI-B'2A-13.0-13.5
15		0.0			[·····			GAR-PDI-B'2A-15.0-15.5
6 7	5							
8			wet	SM		fine silty SAND, (5YR 4/4) reddish brov wet, no odor, no staining. Soils consiste		GAR-PDI-B'2A-18.0-18.5
- -								
_								
20								
	low surface adow mat			romite ore proc	essing r	esidue UNDno - non-organic undisturbed native UNDorg - organic undisturbed native der	deposits MGP - manu	ifactured gas plant omate chemical production w



Boring ID: GAR-PDI-B`3A

Page.	1
ruge.	

roject	t Name: F t Number:	60240)739			Drilling Company: SGS North America Drilling Method: direct push	Coordinates (NJSPN	AD83) x: 610814.856								
				1:15:00 PM		Rig Type:		AD83) y: 683606.098								
				16 2:30:00 PN		Core Size: 3.0 in	Boring Total Depth:									
	d By: Eric					Project Manager: Scott Mikaelian	Depth to Water: 5.0									
hysic	al Locatio	n: Act	ual - GA Pl	וכ			Surface Elevation:	10.352 ft NAVD88								
Depth lange t bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Surface Cover and Thick	ness:	Sample ID								
		0.0		CONCRETE	PAAR	Concrete sidewalk										
_			dry	FILL		fine to medium SAND, some ash, little fi	ne gravel. (2.5Y 4/2)	GAR-PDI-B'3A-0.5-1.0								
-1			dry	FILL		dark grayish brown, medium dense, dry,										
_	-		,			 staining. fine to medium SAND, some fine to medium 	lium grouol little oilt									
-2 -3 -	5					and ash, trace coal, (7.5YR 4/3) brown, no odor, no staining.		GAR-PDI-B'3A-2.0-2.5								
-4			moist	FILL		SILT, little brick, trace coal, (7.5YR 4/3)	brown soft moist to									
_						wet, no odor, no staining, water at 5.0 ft										
-5		0.0				Š.										
_		0.0				8										
-6					\bigotimes	8										
_					\bigotimes	X		GAR-PDI-B'3A-6.5-7.0								
-7—					XXXX											
· _	5		wet	SP		fine to coarse SAND, some fine to mediu reddish brown, medium dense, wet, no c		GAR-PDI-B'3A-7.0-7.5								
-8 -9	-	0.0				Soils consistent with UNDno.	doi, no staining.									
–																
10		0.0						GAR-PDI-B'3A-10.0-10.5								
_			-													
-11	-						wet	GW	. – –	fine to coarse GRAVEL, some fine to me	adium cand (5VP					
_	-		Wei	000		4/4) reddish brown, dense, wet, no odor,	no staining. Soils									
-12	-					consistent with UNDno.	, C	GAR-PDI-B'3A-12.0-12.5								
-13	5															0.000 1000 12.0 12.0
-14					\											
						7		GAR-PDI-B'3A-14.0-14.5								
-15						4										
15		0.0			2.7.9											
10																
-16 -17	5		wet	SP		fine to coarse SAND, some fine to mediu reddish brown, medium dense, wet, no c Soils consistent with UNDno.		GAR-PDI-B'3A-16.0-16.5								
-						.]										
-18	1				[::::::			GAR-PDI-B'3A-18.0-18.5								
	1					.}										
-19	1															
_																
20		0.0						GAR-PDI-B'3A-20.0-20.5								
_	1	0.0														
-21						٩] 										
otes:	low surface	arada		omite ero proc	occina	esidue UNDno - non-organic undisturbed native	denosite MCD manu	factured gas plant								
,∍-ue	eadow mat	graue		in grey mud	essing le	UNDorg - organic undisturbed native depo	acto CCDW obr	production was plant								



Boring ID: GAR-PDI-C13B

	t Number:		17.59		11	Drilling Method: Direct Push	Coordinates IN ISON	IAD83) x: 611144.3
				9:20:00 AM		Rig Type:	Coordinates (NJSPN	
	inished Dr					Core Size: 3.0 in	Boring Total Depth:	
	d By: Kyle		12,10,20			Project Manager: Scott Mikaelian	Depth to Water: 3.5	
	al Locatio		ual - GA P	וח		Toject manager. Ocon minacian	Surface Elevation:	
Hysic							ounace Lievation.	12.03 11 11 12.00
Depth Range 't bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Surface Cover and Thickn	ess:	Sample ID
_ 1		0.0		ASPHALT		ASPHALT		
-2				CONCRETE		Concrete slab		
-3	5		moist	FILL		CINDERS, little ash, (5YR 2.5/1) black, lo odor, no staining.	ose, moist, no	GAR-PDI-C13B-2.0-2.5
-1			wet	FILL		fine to coarse GRAVEL, little cobbles, (5Y dense, wet, no odor, no staining, water at		
-5	_		wet	FILL		SILT, trace wood and fill debris, (5YR 2.5, no odor, no staining.	(1) black, soft, wet,	GAR-PDI-C13B-4.0-4.5
-6		0.0	wet	FILL		SILT, little ash, trace fill debris, (5YR 2.5/ no odor, no staining.	1) black, soft, wet,	
-7								GAR-PDI-C13B-6.0-6.5
-8	4		wet	FILL		fine to medium SAND, little fill debris, trac dark reddish brown, medium dense, wet, staining.		
-	4				×××××			GAR-PDI-C13B-8.0-8.5
-9			wet	SW NR	******** ******	fine to coarse SAND, little fine to coarse contraction for the second se	ravel, (5YR 4/3) lor, no staining.	GAR-PDI-C13B-8.5-9.0
-10						NO RECOVERY	/	
		0.0	wet	SM		fine to coarse silty SAND, little fine to coa	rse gravel, (5YR	GAR-PDI-C13B-10.0-10.5
-11				OL		3/2) dark reddish brown, medium dense, v staining. Soils consistent with UNDno.	wet, no odor, no	
-12 -13 -14	4.5		wet	SM		Organic SILT, 90% organic silt, 10% orga 3/2) dark brown, firm, wet, slight organic of Soils consistent with UNDorg. fine silty SAND, (10G 7/1) light greenish of dense, wet, no odor, no staining. Soils cor UNDno.	odor, no staining.	GAR-PDI-C13B-12.0-12.5
						•		GAR-PDI-C13B-14.0-14.5
-15				NR		NO RECOVERY		
		0.0	wet	SM		fine to coarse silty SAND, little fine to coa		
-16 - -17 -	5					4/3) reddish brown, dense, wet, no odor, r consistent with UNDno.	no staining. Soils	GAR-PDI-C13B-16.0-16.5
-18 - -19 -	-							GAR-PDI-C13B-18.0-18.5
20	5	0.0				4		GAR-PDI-C13B-20.0-20.5
-21								
-22								
-23								
-24	-							
-25]		
otes: as - be	lelow surface	grade	COPR - chr	omite ore proce	essina re	sidue UNDno - non-organic undisturbed native de	eposits MGP - manu	factured gas plant
ĬM - m	eadow mat	•	GGM - gree	en grey mud	Ū.	UNDorg - organic undisturbed native depos present in any interval of this boring 3) MM/UND confirmed to be 1 ft thick.	sits CCPW - chr	omate chemical production wa



Boring ID: GAR-PDI-D14B

	t Name: F					Drilling Company: SGS North America	Coordinates (NUCD)	AD23) v. 611172 200						
	t Number:			9:45:00 AM		Drilling Method: _ direct push		AD83) x: 611173.388 AD83) y: 683976.164						
				<u>9:45:00 AM</u> 16 11:20:00 Al		Core Size: 3.0 in	Boring Total Depth:							
	d By: Eric			10 11.20.00 A		Project Manager: Scott Mikaelian	Depth to Water: 5.0							
	al Locatio			DI			Surface Elevation:							
epth ange bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphi Log	c Surface Cover and Thickr	ness:	Sample ID						
		0.0		CONCRETE	P. G. S.	Concrete sidewalk								
_			dry	FILL		DGA, fine to coarse SAND, little asphalt,	(2.5Y 5/2) gravish							
1			dry	FILL		brown, loose, drv. no odor, no staining.								
2 3 4	5	0.0							,			DGA, fine to coarse SAND, some fine to (7.5YR 6/4) light brown, medium dense, o staining.	to medium gravel,	
5—		0.0	wet	FILL		fine to coarse SAND, some fine to coarse	aravel (7.5VR	GAR-PDI-D14B-5.0-5.5						
		0.0	wet	FILL		4/3) brown, medium dense, wet, no odor, at 5.0 feet.								
	4.5		wet FILL	FILL		ASH, some fine to coarse sand, little fill d grayish brown, medium dense, wet, no or		GAR-PDI-D14B-7.0-7.5						
	-					8		GAR-PDI-D14B-8.5-9.0						
9—	-		wet	GW		fine to coarse GRAVEL, some fine to me	dium cand (5VD	GAR-PDI-D14B-9.0-9.5						
/l - me	low surface eadow mat	-	GGM - gree	en grey mud		esidue UNDno - non-organic undisturbed native d UNDorg - organic undisturbed native depo	eposits MGP - manu sits CCPW - chr	factured gas plant omate chemical production w						



Boring ID: MW-CR-3D

Project Project	t Number:	60550	J261		1	Drilling Method: Sonic Vibration	Coordinates (N.ISP	NAD83) x: 611443.5
				7:00:00 AM		Rig Type: Sonic	Coordinates (NJSPI	NAD83) y: 683987.8
				3:00:00 PM		Core Size:	Boring Total Depth:	48 ft
oggeo	d By: E./	Acs				Project Manager: Scott Mikaelian	Depth to Water: 5.	94
Physic	al Locatio	n: Bei	ry Lane Pa	ark	-	1	Surface Elevation:	15.2 ft NAVD88
Depth Range t bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphie Log	Surface Cover and Thick	ness:	Sample ID
	-			FILL				_
3 4 5	-	0		FILL		DGA, (5Y 7/1) light gray, fine to corase coarse gravel, dry to wet, medium den no odor or staining, wet at 8'	sand, little fine to se to very dense,	
-6 -7 -8	3	0						
-9	8	0						
 -17 - -18	2	0						
-19 -20	2	0						
 	-		wet	GW		fine to medium GRAVEL, trace fine sa gray, medium dense, wet no odor no s	nd, (5YR 4/1) dark taining. Soils	_
lotes: gs - bel IM - me	low surface g	grade	COPR - chro	omite ore proce	essing res	idue UNDno - non-organic undisturbed native de UNDorg - organic undisturbed native depos	posits MGP - man	ufactured gas plant romate chemical production wast

Project Date St Date Fin Ogged	Number: arted Dril nished Dr By: E.	60550 ling: 1 rilling: Acs	0261 1/29/2018 7 2/2/2018 3	edial Invest 7:00:00 AM 3:00:00 PM	F C	Orilling Company: SGS North America Orilling Method: Sonic Vibration Rig Type: Sonic Core Size: Oroject Manager: Scott Mikaelian	Coordinates (NJSP Boring Total Depth Depth to Water: 5	.94
	al Locatio	n: Bei	ry Lane Pa	агк	1		Surface Elevation:	15.2 ft NAVD88
epth ange bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Surface Cover and Thick	iness:	Sample ID
_						consistent with UNDno.		
23 24 	8	0	wet	SW		fine to coarse SAND, some fine to coa 4/3) reddish brown, medium dense, wa staining. Soils consistent with UNDno.	et no odor no	_
25— 26— 27—								
	10	0	wet	SP		fine SAND, trace silt, (5YR 4/3) reddis dense, wet no odor no staining. Soils o UNDno.	h brown, medium consistent with	
38 39 40 41 41 42 42	10	0						
43— —			wet	SW		fine to coarse SAND, little fine to coars 4/3) reddish brown, medium dense, we	se gravel, (5YR et no odor no	_



Boring ID: MW-CR-3D

Project Name.	Ground	water Reme	ediai investic		Drilling Company: SGS North America	u	
Project Numbe				0	Drilling Method: Sonic Vibration		NAD83) x: 611443.5
Date Started Dr			:00:00 AM		Rig Type: Sonic		NAD83) y: 683987.8
Date Finished I					Core Size:	Boring Total Depth:	
Logged By: E					Project Manager: Scott Mikaelian	Depth to Water: 5.	
Physical Locat	on: Po	my Lano Po	rk	I r		Surface Elevation:	
						Surface Lievation.	
Depth Range ft bgs)	ry PID (ppm)	Moisture Content	USCS	Graphic Log	Surface Cover and T	hickness:	Sample ID
 45 					staining. Soils consistent with UNL		
-40 47 		moist	SM		fine silty SAND, trace gravel, (5YR dense, moist no odor no staining, (consistent with UNDno.	t 4/3) reddish brown, (glacial till). Soils	
lotes: gs - below surface /M - meadow mat	grade	COPR - chroi GGM - green	mite ore proces	ssing resi	due UNDno - non-organic undisturbed nativ UNDorg - organic undisturbed native d	ve deposits MGP - man	ufactured gas plant omate chemical production waste



Boring ID: 132-P3-MW001D

Project Numbe					Drilling Company: ADT Drilling Method: Sonic	Coordinates	(NJSPN		80 ft NAVD88 x: 610786.4
Date Started D					Rig Type: Fraste XL Max 170				/: 682809.4
Date Finished		2021-06-0	ა		Core Size: 3 inch	Boring Total		100 ft	
ogged By: J		120			Project Manager: Carey Letts	Depth to Wa		15 04 5	
hysical Loca		132				Surface Elev			INAVUÖÖ
Depth Range ft bgs)	ery PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Constr		Remarks
ft bgs) ((14) - 1	0 0	moist	FILL		DGA [FILL] - 10YR 4/2 (dark grayish brown / dark brown), moist - no odor, no staining	< yellowish			 annular seal (bent-cement grout) (0-74 ft bgs) Riser (Schedule 40 PVC) (0-78 ft bgs)



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Boring ID: 132-P3-MW001D

Project Project	Number:	60658	620			Drilling Method: Sonic	Coordinates (N ISI	PNAD83) x: 610786.4
			021-06-03			Rig Type: Fraste XL Max 170		NAD83) y: 682809.4
			2021-06-03	3		Core Size: 3 inch	Boring Total Depth	
	By: J. Pa					Project Manager: Carey Letts	Depth to Water:	
	al Location		132				Surface Elevation:	15.04 ft NAVD88
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well struction Remarks
			moist	PT	<u> </u>	Peat [MEADOW MAT] - 10BG 3/1 (very dark greenish gray), m - peaty odor, no staining	{	
			moist	CL		Lean clay (CL), <10% subangular, fine s silt [NATIVE] - 10R 7/1 (light gray), moist - no odor, no staining	and, 10-20%	
-23	4 / 10					Silty sand (SM), fine to medium, well-gra silt [NATIVE] - 10R 3/4 (dusky red / dark reddish brow - no odor, no staining		
-30	5 / 10		wet	SM				
-38			wet	MH		Elastic silt (MH) [NATIVE] - 10R 3/4 (dusky red / dark reddish brow - no odor, no staining	n), wet	
lotes:	bgs = below DGA = dense			IAD83 = Nor IAVD88 = No	th Americar orth America	Horizontal Datum of 1983 NJSP = New Jersey State F an Vertical Datum of 1988 PID = photoionization detec	Plane ppm = parts per million tor USCS = Unified Soil Cla	ft = feet ssification System in = inches



Boring ID: 132-P3-MW001D

Project						Drilling Company: ADT		levation: 18.30	
	Number:					Drilling Method: Sonic		(NJSPNAD83) x:	
	arted Drill					Rig Type: Fraste XL Max 170		NJSPNAD83) y:	682809.4
	nished Dri		2021-06-0	3		Core Size: 3 inch		Depth: 100 ft	
	By: J. Pa					Project Manager: Carey Letts	Depth to Wate		
hysica	I Location	n: Site	132				Surface Eleva	tion: 15.04 ft N	AVD88
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
-41	10 / 10		wet	МН			- - - - - - - - - - - - - - - - - - -		
50	10 / 10								
- 55	10710		moist	CL-ML-SP		Varved sands, silts, and clays [Transition 2 [NATIVE] - 10YR 5/2 (grayish brown), moist - no odor, no staining	Zone]		
lotes:	bgs = below	surface g	rade I	NAD83 = Nor	th America	n Horizontal Datum of 1983 NJSP = New Jersey State Pla	ane ppm = parts per	nillion	ft = feet
		- 9	aggregate i		with Amaguia	an Vertical Datum of 1988 PID = photoionization detector	r USCS = Unified	Soil Classification Sys	



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Boring ID: 132-P3-MW001D

Project Number: 60 Date Started Drilling Date Started Drilling Date Finished Drilling Date Finished Drilling Logged By: J. Patel Physical Location: Image: Control of the second sec	g: 2021-06-03 ng: 2021-06-03 Site 132 PID Moisture pm) Content	3	Graphic Log	Drilling Method: Sonic Rig Type: Fraste XL Max 170 Core Size: 3 inch Project Manager: Carey Letts Material Description	Coordinates Boring Total Depth to Wat	(NJSPNAD83) ; (NJSPNAD83) y Depth: 100 ft er: ation: 15.04 ft Well Construction	y: 682809.4
Date Finished Drillin Logged By: J. Patel Physical Location: Physical Second	ng: 2021-06-03	USCS C		Core Size: 3 inch Project Manager: Carey Letts	Boring Total Depth to Wat	Depth: 100 ft er: 15.04 ft well Well	NAVD88
Logged By: J. Patel Physical Location: Physical Location: Depth Range (ft/ft) Physical (ft/ft) -61	Site 132 PID Moisture pm) Content	USCS		Project Manager: Carey Letts	Depth to Wat	er: ation: 15.04 ft Well	NAVD88
Physical Location: Depth Range ft bgs) Recovery (ft/ft) P (pp -61 - -61 - -62 - -63 - -64 - -65 10 / 10 -66 - -67 - -68 - -69 -	Site 132 PID Moisture pm) Content				Depth to Wat	ation: 15.04 ft Well	
Depth Range ft bgs) Recovery (ft/ft) P (pr -61	PID Moisture pm) Content			Material Description	Surface Eleva	Well	
Range ft bgs) (ft/ft) (pr -61	pm) Content			Material Description			Remarks
-62	moist	CL-ML-SP					
-70					-	1 📓 📓	
71 72 72 73 74 75 10 / 10	moist	SW-SM		Well-graded sand with silt (SW-SM), subro 5-15% silt, 15-25% cobbles [NATIVE] - 10R 2.5/2 (very dusky red), moist - no odor, no staining Fine to coarse SAND and fine to coarse gra and clay, medium dense to dense [Basal Ti - 10R 2.5/2 (very dusky red), moist - no odor, no staining	avel with silt		—Annular seal (bentonite slurry) (74-76 ft bgs)
	moist	SW-GW			-		Sand Pack (#0 Sand Pack) (76-88 ft bgs) Screen (Schedule 40 PVC) (78-88 ft bgs)



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Project						Drilling Company: ADT		levation: 18.3	
	Number:					Drilling Method: Sonic		(NJSPNAD83)	
Jate St	arted Drill	ing: 2	021-06-03			Rig Type: Fraste XL Max 170		(NJSPNAD83) y	682809.4
			2021-06-0	3		Core Size: 3 inch		Depth: 100 ft	
	By: J. Pa					Project Manager: Carey Letts	Depth to Wat		
Physica	al Location	n: Site	132				Surface Elev	ation: 15.04 ft	NAVD88
Depth Range (ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
	3 / 10		moist	SW-GW		Bedrock, Diabase [NATIVE] - 10YR 3/1 (very dark gray), dry - no odor, no staining	-		—Sand Pack (#00 Sand Pack) (88-89 ft bgs) —annular seal (bent-cement
90 -91 -92 -93 -93 -94 -94 -96 -96 -97 -98 -98 -99 -99	4 / 10		dry	BEDROCK		Bedrock, Metamorphosed shale (Banded [Lockatong Formation] - 10YR 3/1 (very dark gray), dry - no odor, no staining	Hornfels)		ġrout) (89-100 ft bgs)
lotes:	bgs = below	surface g	rade M aggregate M			h Horizontal Datum of 1983 NJSP = New Jersey State F			ft = feet
						an Vertical Datum of 1988 PID = photoionization detec		Soil Classification S	



Boring ID: HAL-P3-IRM-003I-B

	Name: P			ter IRM		Drilling Company: ADT	Top of PVC E			
	Number:					Drilling Method: Sonic				x: 611406.3
			021-05-19			Rig Type: Fraste XL Max 170	Coordinates			y: 682918.3
			2021-05-1	9		Core Size: 3 inch	Boring Total		80 ft	
	By: J. HI					Project Manager: Carey Letts	Depth to Wat			
hysical	Location	n: Halla	aday Street		1		Surface Eleva	ation:	10.91 f	t NAVD88
Depth Range	Recovery	PID	Moisture	USCS	Graphic	Material Description			/ell truction	Remarks
t bgs)	(ft/ft)	(ppm)	Content		Log	· · · · · · · · · · · · · · · · · · ·				
_						DGA, <10% subrounded, medium gravel - 7.5YR 4/2 (brown), dry	[FILL]			
- 1						- no odor, no staining	_	1 🗐	K-	—annular seal
									\bigotimes	(bent-cement
_								1 🖾	K	grout) (0-56 ft bgs)
2 —							-	- 🕅	\otimes	bys)
								1 🕅	K	
									Ň	
3							-	1 🕅		Riser (Schedule 40 PVC) (0-60 ft
4								∭	\bowtie	40 PVC) (0-60 π bgs)
1] 🕅	V/	
4							-	1 💥	\otimes	
-								1 ≫	\triangleright	
5	5/10	0					_	1 💥	\mathbb{K}	
v	0,10	U							\bigotimes	
\dashv								1 🛛	\mathbb{K}	
6—			dry	FILL			-	🕅	\bigotimes	
_			,] 🕅	\mathbb{K}	
								1 💥	Š	
7 —							-	1 🕅	K.	
								1 🕅	Ň	
									\bigvee	
8							-	1 💥	\mathbb{X}	
4								≫	\bowtie	
9							-	1 💥	\mathbb{K}	
3							-		\bigotimes	
\neg								1 💥	\mathbb{K}	
10							-	≫	\bigotimes	
								1 🕅	\mathbb{K}	
									\bigotimes	
11							-	1 🛛	\mathbb{K}	
\neg								1 🕅	\bigotimes	
12—						Peat [MEADOW MAT]		🕅	K	
_			moist	PT	<u>1/ 1/ 1/ 1/</u>			🕅		
13					+ $+$ $+$ $+$ $+$ $+$ $+$ $+$ $+$	- cohesive, soft	_	1 🕅	\bigotimes	
_						Sandy silt (ML), 25-35% subrounded, fin	e sand, 5-15%	1 🕅	\mathbb{K}	
14_						subangular, fine to medium gravel [NATI	VE]] 🖏	Ň	
14						- 10YR 7/1 (light gray), wet	-		K/	
\dashv						 organics odor, no staining cohesive, medium stiff 		1 🚿	Ň	
15—	4.2 / 10	2.9					-	🏹	K.	
	,	2.3							\otimes	
\neg			wet	ML				1 🕅	\bigvee	
16—							-	≫	\mathbb{X}	
								1 🕅		
Γ									\mathbb{K}	
17—							-	1 🕅	\bigotimes	
								1 🕅	\mathbb{K}	
									\bigotimes	
18						Well-graded sand (SW), fine to medium,	subrounded.	1 🕅	K/	
4						<10% subrounded, medium gravel [NAT	IVE]	1 🕅	\bigotimes	
10			14/54	CIA/		- 10R 5/1 (reddish gray), wet		1 🕅	Ž	
19			wet	SW		- no odor, no staining	_		Ň	
4								1 🕅	V,	
1					6.0.0.0.0			1	К.	
1001							Name works			
tes: b	bgs = below DGA = dense	surface gi	rade N aggregate N	NAD83 = No NAVD88 = N	rth America	n Horizontal Datum of 1983 NJSP = New Jersey State F an Vertical Datum of 1988 PID = photoionization detec	Plane ppm = parts per stor USCS = Unified		sification	ft = feet System in = inches



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Boring ID: HAL-P3-IRM-003I-B

Date Finis Dogged B Physical I Depth Range	ted Drilli shed Dri by: J. Hi Location ecovery	i ng: 2 Iling: avaty	021-05-19 2021-05-19 2021-05-19 aday Street Moisture Content wet	9	Graphic Log	Drilling Method: Sonic Rig Type: Fraste XL Max 170 Core Size: 3 inch Project Manager: Carey Letts Material Description	Coordinates Boring Total Depth to Wa	(NJSPNAD83) x: (NJSPNAD83) y: Depth: 80 ft ter: vation: 10.91 ft N Well Construction	682918.3
Pate Finis ogged B hysical I Depth Range -21	shed Dri by: J. Hi Location ecovery	Iling: avaty i: Halla PID	aday Street Moisture Content	9 USCS		Core Size: 3 inch Project Manager: Carey Letts	Boring Total Depth to Wa	Depth: 80 ft ter:	AVD88
Logged B Physical I Physical I Comparison Com	by: J. Hi Location	avaty i: Halla PID	aday Street Moisture Content	USCS		Project Manager: Carey Letts	Depth to Wa	ter: vation: 10.91 ft N Well	
Physical I Depth Range ft bgs) -21	Location ecovery	i: Halla PID	Moisture Content	USCS				vation: 10.91 ft N Well	
Depth Range ft bgs) -21	ecovery	PID	Moisture Content	USCS		Material Description	U III UU IIIUU	Well	
-21	ecovery (ft/ft)	PID (ppm)	Content			Material Description			Remarks
 22 23			wet	SW					
 22 23			wei						
-23					*****				
24		21.8	wet	SW		Well-graded sand (SW), fine to medium, [NATIVE] - 10YR 5/1 (gray), wet - no odor, no staining	subrounded		
25 8	3.5 / 10	21.8				Well-graded sand (SW), fine to medium,			
- – 26 - – 27						[NATIVE] - 10R 4/8 (red), dry - no odor, no staining	subiounaea		
- – 28 - – 29			dry	SW					
						Well-graded sand (SW), fine to medium,	 subrounded		
31 32						- 10BG 4/1 (dark greenish gray), moist - solvent odor, some DNAPL staining - cohesive, soft			
33			moist	SW					
-35 1	10 / 10	82.8				Well-graded sand (SW), fine to medium, [NATIVE]	subrounded		
-36						- 10R 3/3 (dusky red), dry - solvent odor, no staining			
-37			dry	SW					
-38 									
lotes: ba	gs = below :	surface o	rade •			Horizontal Datum of 1983 NJSP = New Jersey State P	ano nom - parte po		ft = feet



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Boring ID: HAL-P3-IRM-003I-B

	Name: P					Drilling Company: ADT		Elevation: 14.76	
	Number:					Drilling Method: Sonic		(NJSPNAD83) x	
			021-05-19			Rig Type: Fraste XL Max 170		(NJSPNAD83) y	682918.3
			2021-05-1	9		Core Size: 3 inch		Depth: 80 ft	
	By: J. H					Project Manager: Carey Letts	Depth to Wa		
nysica	Location	n: Halla	aday Street				Surface Elev	<u>/ation: 10.91 ft l</u>	NAVD88
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
-41	10 / 10	322.4	dry	SW		Well-graded sand (SW), fine to medium <10% subrounded, fine to medium grav - 10R 3/6 (dark red), dry - solvent odor, heavy DNAPL staining - cohesive, soft	a, subrounded, el [NATIVE]		
-48 -49 -			dry	SW	• • • • • • • • • • • • • • • • • • •	Well-graded sand (SW), fine to medium [NATIVE] - 10R 3/3 (dusky red), dry - solvent odor, no staining	, subrounded		
-50 -51 -			wet	SW	• • • • • • • • • • • • • • • • • • •	Well-graded sand (SW), fine to medium <10% silt [NATIVE] - 10R 3/3 (dusky red), wet - no odor, no staining	, subrounded,		
-52 -53 -54 -			moist	SW		Well-graded sand (SW), fine to medium <10% silt [NATIVE] - 10R 3/3 (dusky red), moist - no odor, no staining	, subrounded,		
-55 — -56 — -57 — -58 — -	9 / 10	0.5	moist	CL-ML-SP		Varved sands, silts, and clays [Transitio [NATIVE] - 10R 3/4 (dusky red / dark reddish bro - no odor, no staining	-		—Annular seal (bentonite slurry) (56-58 ft bgs) —Sand Pack (#0 Sand Pack) (58-80 ft bgs)
-59 -									
otes:	bgs = below DGA = dense	surface g e graded a				n Horizontal Datum of 1983 NJSP = New Jersey State an Vertical Datum of 1988 PID = photoionization dete		r million d Soil Classification Sy	ft = feet stem in = inches



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Boring ID: HAL-P3-IRM-003I-B

Project Name: Ph			<u>r IR</u> M		Drilling Company: ADT		levation: 14.7	
Project Number:					Drilling Method: Sonic		(NJSPNAD83)	
Date Started Drilli					Rig Type: Fraste XL Max 170		(NJSPNAD83) y	682918.3
Date Finished Dril		21-05-19			Core Size: 3 inch		Depth: 80 ft	
.ogged By: J. Hla		-			Project Manager: Carey Letts	Depth to Wat	er:	
Physical Location	: Halladay	y Street				Surface Elev	ation: 10.91 ft	NAVD88
Depth Range ft bgs)		oisture ontent		aphic .og	Material Description		Well Construction	Remarks
-61	8.4 n	noist C	L-ML-SP		Varved sands, silts, and clays [Transition [NATIVE] - 10R 3/1 (dark reddish gray), moist - no odor, no staining	Zone] -		—Screen (Stainless Steel) (60-80 ft bgs)
-70 -71 -72 -72 -73 -73 -74 -74 -74 -75 - 8.5 / 10		wet C	L-ML-SP		Varved sands, silts, and clays [Transition [NATIVE] - 10R 3/3 (dusky red), wet - no odor, no staining	-		
-75 - 8.37 10 -76	0n	moist C	L-ML-SP		Varved sands, silts, and clays [Transition [NATIVE] - 10R 3/3 (dusky red), moist, no odor, no ft.			



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Boring ID: HAL-P3-IRM-004I-B

roject Name:					Drilling Company: ADT				7 ft NAVD88
roject Number: Date Started Dri					Drilling Method: Sonic Rig Type: Fraste XL Max 170	Coordinates Coordinates			x: 611455.5
ate Started Dri ate Finished D					Core Size: 3 inch	Boring Total			. 002902.0
.ogged By: J. H		2021-00-2	<u> </u>		Project Manager: Carey Letts	Depth to Wat		3111	
hysical Locatio		aday Street	ł		Troject manager. Oarey Letts	Surface Eleva		11 10 fi	NAVD88
						Ourface Liev		ell	NAV DOO
Depth Recovery	PID	Moisture	USCS	Graphic	Material Description			ruction	Remarks
Range (ft/ft)	(ppm)	Content	0303	Log	Material Description			- 1	Remarks
5 / 10	0				DGA, 10-20% subrounded, fine to med	lium gravel			
_					[FILL]		1 💥		
-1					- 10ŸR 5/1 (gray), dry - no odor, no staining	-	1 💥		—annular seal
_							1 🕅		(bent-cement grout) (0-56 ft
-2						-			bgs)
-									
1							1 🚿		
- 3						-	1 🕅		Riser (Schedule 40 PVC) (0-60 ft
_							1 🚿		bgs)
- 4						-	1 🕅		C /
r								\otimes	
1							1 🕅		
- 5						-	1 💥	\otimes	
4							- 1		
- 6						-	1 💥	\otimes	
~									
							1 🚿		
-7						-	1 🖄		
· _		dry	FILL				1 🕅		
- 8		-				-	1 🛛		
								\otimes	
0									
- 9						-	1 🕅		
-							1 🛞	\mathbb{K}	
-10	0					-	┨ ≫		
							1 💥		
-11						_			
							1 🛛		
-12						-	1 💥		
-							1 🕅		
-13						-	1 💥		
_11									
14						-			
1							1 🚿		
-15					Peat [MEADOW MAT]		🕅		
_				<u> </u>	- 10YR 4/3 (brown), dry		🕅		
-16					- peaty odor, no staining	-	1 🕅		
								\bigotimes	
7		dry	PT	<u>// \// \/</u>			1 🛞		
-17				<u> 11</u> <u>11</u>		-	1 🕅		
4				1/ 1/ 1/			∭		
-18				N/2 N/2			🕅		
					Silt (ML), 5-15% roots [NATIVE]		1 💥		
					- 10YR 3/3 (dark brown), moist - no odor, no staining				
-19		moist	ML		no ousi, no otaning	-	1 ∭		
-							1 🕅		
								\mathbb{K}	
lotes: bgs = belov	v curfoca -	rado •	IA DOG - N	rth Amaria	h Horizontal Datum of 1983 NJSP = New Jersey State	Diama monthe	million		ft = feet



Boring ID: HAL-P3-IRM-004I-B

Project Name: P					Drilling Company: ADT		Elevation: 15.17	
roject Number:					Drilling Method: Sonic		s (NJSPNAD83) x:	
ate Started Drill					Rig Type: Fraste XL Max 170		s (NJSPNAD83) y:	682962.6
ate Finished Dr		2021-05-2	0		Core Size: 3 inch		I Depth: 91 ft	
.ogged By: J. H					Project Manager: Carey Letts	Depth to Wa		
hysical Location	n: Halla	aday Street		· · · ·		Surface Ele	vation: 11.10 ft N	AVD88
Depth Range ft bgs)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
5 / 10 21	0	wet	ML		Silt (ML), 5-15% subrounded, fine to me [NATIVE] - 10YR 5/1 (gray), wet, no odor, no stai			
-22 -23 -24		wet	SW		Well-graded sand, fine to medium, subr silt [NATIVE] - 10YR 5/1 (gray), wet, no odor, no stai			
-25 26 		moist	SW		Well-graded sand (SW), fine to medium [NATIVE] - 10R 3/3 (dusky red), moist - no odor, no staining	, subrounded		
-30 7 / 10 -31 -32 -32 -33 -33 -33 -35 -36 -37 -38	96.1	moist	SW		Well-graded sand, fine to medium, subr [NATIVE] - 10R 3/3 (dusky red), moist, solvent or DNAPL staining at 30 ft			
38 		moist	ML		Silt (ML) [NATIVE] - 10R 3/3 (dusky red), moist - solvent odor, some DNAPL staining			



Boring ID: HAL-P3-IRM-004I-B

Project I Project I	Number:					Drilling Company: ADT Drilling Method: Sonic		Elevation: 15.17 s (NJSPNAD83) x	
			021-05-20			Rig Type: Fraste XL Max 170	s (NJSPNAD83) y:		
			2021-05-20 2021-05-2			Core Size: 3 inch		al Depth: 91 ft	002902.0
	By: J. H		2021-00 - 2	<u> </u>		Project Manager: Carey Letts	Depth to W		
bysical	L ocation	uvary 1. Halla	aday Street	ł		Troject manager. Cardy Letts		vation: 11.10 ft l	
	0000101							Well	
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description	1	Construction	Remarks
-41 -	8 / 10	379.1	wet	SW		Well-graded sand (SW), fine to mediu [NATIVE] - 10R 3/3 (dusky red), wet - solvent odor, trace DNAPL staining			
-42 -43 -44 			moist	SW		Well-graded sand, fine to medium, su [NATIVE] - 10R 3/3 (dusky red), moist, solvent DNAPL staining at 42 ft			
-45 -46			moist	ML		Silt (ML), 5-15% clay [NATIVE] - 10R 3/3 (dusky red), moist solvent odor, no staining			
 			dry	ML		Silt (ML), <10% subrounded, fine to n [NATIVE] - 10R 3/3 (dusky red), dry - solvent odor, no staining	nedium sand		
-49 -50 	10 / 10	94.9	moist	SW		Well-graded sand (SW), fine to mediu [NATIVE] - 10R 2/2 (very dusky red), moist - solvent odor, trace DNAPL staining			
51— -52— -53— -53— -54— -55— - -56— - -56— - -57— - -58— - -58— - -50—	moist CL-M	CL-ML-SP		Varved sands, silts, and clays [Transit [NATIVE] - 10R 3/4 (dusky red / dark reddish b - no odor, no staining	-		Annular seal (bentonite slurry) (56-58 ft bgs) Sand Pack (#0 Sand Pack) (58-80 ft bgs)		
-59 -									
	bgs = below DGA = dense					n Horizontal Datum of 1983 NJSP = New Jersey Sta an Vertical Datum of 1988 PID = photoionization de		er million ed Soil Classification Sy	ft = feet stem in = inches



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Boring ID: HAL-P3-IRM-004I-B

	Number:	606586	620			Drilling Company: ADT Drilling Method: Sonic	(NJSPNAD83) x: 611455.5			
			021-05-20					(NJSPNAD83) y: 682962.6		
			2021-05-2	0		Core Size: 3 inch		Depth: 91 ft		
	By: J.H					Project Manager: Carey Letts	Depth to Wat			
hysica	Location	n: Halla	aday Stree	 			Surface Elev	ation: 11.10 ft	NAVD88	
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks	
_	10 / 10	0	moist	CL-ML-SP		Varved sands, silts, and clays [Transitior [NATIVE] - 10R 3/3 (dusky red), moist, no odor, n	-			
-61						∏ ∖ ft				
-						Varved sands, silts, and clays [Transitior [NATIVE]	n Zone]			
-62				, V		- 10R 3/4 (dusky red / dark reddish brov	vn). moist. no	╡┋══┥┥	-Screen (Stainless	
_						odor, no staining at 61 ft	,,,		Steel) (60-80 ft bgs)	
-63							-		~30)	
00				· ·						
-								1		
-64							-			
_										
65							-			
			moist	CL-ML-SP						
66							-	1		
-										
67							-			
~										
68							-	1		
-								1		
69							-			
_										
-70										
, ,	8 / 10	0				Varved sands, silts, and clays [Transition	n Zone]			
-						[NATIVE] - 10r 3/4 (dusky red / dark reddish brow	n) wet no			
-71						odor, no staining, cohesive, medium stiff	at 70 ft			
-						-				
-72							-			
70										
-73							-			
-								1		
-74							-			
_										
-75			wot				-			
			wet	CL-ML-SP						
1										
-76							-	1		
4										
-77							-			
-78							-	1		
-										
-79							-			
_										
	bgs = below DGA = dense				America	n Horizontal Datum of 1983 NJSP = New Jersey State an Vertical Datum of 1988 PID = photoionization detect	Plane ppm = parts per	million Soil Classification S	ft = feet vstem in = inches	
			JJ J I						,	



Boring ID: HAL-P3-IRM-004I-B

Project Number: 6065	II Groundwa			Drilling Company: ADT Drilling Method: Sonic		Ievation: 15.1		
Date Started Drilling:				Rig Type: Fraste XL Max 170	Coordinates (NJSPNAD83) x: 611455.5 Coordinates (NJSPNAD83) y: 682962.6			
Date Finished Drilling:				Core Size: 3 inch		Depth: 91 ft	. 002002.0	
.ogged By: J. Hlavaty				Project Manager: Carey Letts	Depth to Wat			
hysical Location: Ha	Iladav Stree	t				ation: 11.10 ft	NAVD88	
Depth Range ft bgs)	Moisture		Graphic Log	Material Description		Well Construction	Remarks	
	wet	CL-ML-SP		Varved sands, silts, and clays [Transitic [NATIVE] - 10r 3/4 (dusky red / dark reddish brov odor, no staining, cohesive, medium str	wn), wet, no	-	—Sand Pack (#0 Sand Pack) (80-83 ft bgs)	
82 	wet	SM		Silty sand, fine to medium, well-graded, 10-20% silt [NATIVE] - 10R 3/3 (dusky red), wet, no odor, no			—Annular seal (bentonite slurry) (83-91 ft bgs)	
85 86 87 	moist	SM		Silty sand (SM), fine to medium, well-gr subrounded, 20-30% silt, 5-15% suban medium gravel [NATIVE] - 10R 3/3 (dusky red), moist - no odor, no staining	aded, gular, fine to - -			
90 / 0 	dry	SW-GW		Gravelly silt with sand, 20-30% subrour medium sand, 20-30% subangular, fine gravel [Basal Till] - 10YR 5/1 (gray), dry - no odor, no staining				
					-	-		
					-			



Boring ID: HAL-P3-IRM-010I-B

roject Numb	er: 6065	II Groundwa 8620 2021-05-25			Drilling Company: ADT Drilling Method: Sonic Rig Type: Fraste XL Max 170	Coordinat	es (NJSPN	AD83)	3 ft NAVD88 x: 611460.5 r: 682906.5
ate Starteu					Core Size: 3 inch		tal Depth:		. 002000.0
ogged By:	J. Hlavaty				Project Manager: Carey Letts	Depth to V	Vater:		
hysical Loc			t			Surface E	levation:	10.70 ft	NAVD88
Depth lange t bgs)		Moisture) Content	USCS	Graphic Log	Material Description		Constr		Remarks
-1	10 0	dry	FILL		DGA, 25-35% subrounded, fine to med 5-15% subangular, fine to medium gra - 10YR 5/3 (brown), dry - no odor, no staining	dium sand, avel [FILL]			 annular seal (bent-cement grout) (0-56 ft bgs) Riser (Schedule 40 PVC) (0-60 ft bgs)
-10 -11 -12 -12 -13 -13 -13 -13 -13 -14 -13 -14 -15 -15 -15 -15 -17 -18 -18 -19 -19 -19 -11 -12 -11 -12 -12 -12 -12 -12	10 0	dry	ML		Silt (ML), <10% subangular, fine to me [NATIVE] - 10R 4/1 (dark reddish gray), dry - no odor, no staining	edium gravel			



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Boring ID: HAL-P3-IRM-010I-B

Project Name:							PVC Elevation: 14.83 ft NAVD88			
Project Number:					Rig Type: Fraste XL Max 170 Coordinate		ates (NJSPNAD83) x: 611460.5 ates (NJSPNAD83) y: 682906.5			
ate Started Dri			5							
Date Finished Di .ogged By: J. H		2021-05-2	J		Core Size: 3 inch Project Manager: Carey Letts	Depth to Wa	I Depth: 90 ft			
hysical Locatio		adav Straat			FIDJECT Manager. Carey Letts		vation: 10.70 ft N			
inysical LUCALIC						Juilace Ele	Well			
Depth Range ft bgs)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Construction	Remarks		
21 22		moist	ML		Silt (ML), <10% subangular, fine to med [NATIVE] - 10YR 5/1 (gray), moist - no odor, no staining	lium gravel				
-23 -24 		moist	SW		Well graded sand, fine to medium, subro [NATIVE] - 10YR 5/1 (gray), moist, no odor, no st					
-26	8 / 10 0 moist	moist	SW		Well graded sand (SW), fine to medium, <10% subangular, fine to medium grave - 10R 3/3 (dusky red), moist - no odor, no staining	, subrounded, i [NATIVE]				
-30 	8 / 10 6.1	wet	SW		Well graded sand (SW), fine to medium, <10% subangular, fine to medium grave - 10R 3/3 (dusky red), wet - no odor, no staining	1 [NATIVE]				
		8/10 6.1	3 / 10 6.1		SW		Well graded sand, fine to medium, subro subangular, fine to medium gravel [NAT - 10r 3/3 (dusky red), dry, no odor, no s	ATIVE] 💥 🕅		
		dry	ML		Silt (ML) [NATIVE] - 10R 3/3 (dusky red), dry - no odor, no staining					



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Boring ID: HAL-P3-IRM-010I-B

Project								Elevation: 14.83 ft NAVD88		
	Number:					Drilling Method: Sonic		s (NJSPNAD83) x: 611460.5 s (NJSPNAD83) y: 682906.5		
	arted Drill					Rig Type: Fraste XL Max 170			682906.5	
	nished Dri		2021-05-2	25		Core Size: _3 inch		Depth: 90 ft		
	By: J.H					Project Manager: Carey Letts	Depth to Wat			
rnysica	I Location	1: Halla	aday Stree	et			Surface Elev	ation: 10.70 ft I	NAVD88	
Depth Range ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content		Graphic Log	Material Description		Well Construction	Remarks	
-41			wet	SW		Well-graded sand, fine to medium, subr [NATIVE] - 10R 3/3 (dusky red), wet, solvent odo				
_ -42 _				dry	ML		40 ft Silt with sand (ML), 10-20% subrounded medium sand [NATIVE] - 10R 3/3 (dusky red), dry - solvent odor, no staining	d, fine to		
-43	8.5 / 10	507	dry	SM		Silty sand (SM), fine to medium, well-gra subrounded, 15-25% silt [NATIVE] - 10R 3/3 (dusky red), dry - solvent odor, trace DNAPL staining	aded, - - - -			
-50 — -51— -52— -52— -52			moist	SW		Well-graded sand, fine to medium, subr [NATIVE] - 10R 3/3 (dusky red), moist, solvent oc staining at 50 ft				
-53 — -54 — -55 — -56 — -57 —	10 / 10	635.1	wet	ML		Silt (ML), 5-15% subrounded, fine to me 5-15% clay [NATIVE] - 10R 3/3 (dusky red), wet - solvent odor, trace DNAPL staining	edium sand, - -		–Annular seal (bentonite slurry) (56-58 ft bgs)	
58 			moist	CL-ML-SP		Varved sands, silts, and clays [Transition [NATIVE] - 10R 3/3 (dusky red), moist - no odor, no staining	n Zone]		–Sand Pack (#0 Sand Pack) (58-80 ft bgs)	
otes:	bgs = below DGA = dense	surface gi e graded a				n Horizontal Datum of 1983 NJSP = New Jersey State an Vertical Datum of 1988 PID = photoionization dete		million Soil Classification Sy	ft = feet stem in = inches	



Boring ID: HAL-P3-IRM-010I-B

Project Number: Date Started Dril Date Finished Dr	60658 ling: 2	620 021-05-25			Drilling Method: Sonic Coordina Rig Type: Fraste XL Max 170 Coordina Core Size: 3 inch Boring To		C Elevation: 14.83 ft NAVD88 es (NJSPNAD83) x: 611460.5 es (NJSPNAD83) y: 682906.5 tal Depth: 90 ft			
	ogged By: J. Hlavaty				Project Manager: Carey Letts	Depth to W				
Physical Locatio	n: Hall	aday Stree	t				evation: 10.70 ft	NAVD88		
Depth Range (ft bgs)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks		
	1.5		CL-ML-SP		Varved sands, silts, and clays [Transition [NATIVE] - 10R 3/4 (dusky red / dark reddish bro odor, no staining at 60 ft	own), moist, no		Screen (Stainless Steel) (60-80 ft bgs)		



Boring ID: HAL-P3-IRM-010I-B

	Name: P					Drilling Company: ADT	- · ·	() · · · · · · · · · · · · · · · · · · ·	
	Number:					Drilling Method: Sonic		(NJSPNAD83) >	
	arted Drill					Rig Type: Fraste XL Max 170		(NJSPNAD83) y	682906.5
	nished Dri		2021-05-2	.5		Core Size: 3 inch		Depth: 90 ft	
	By: J. HI					Project Manager: Carey Letts	Depth to Wat		
hysica	Location	n: Halla	aday Stree	t			Surface Elev	ation: 10.70 ft	NAVD88
)epth ange t bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Material Description		Well Construction	Remarks
-81 -82 -82			moist	CL-ML-SP		Varved sands, silts, and clays [Transit [NATIVE] - 10R 3/4 (dusky red / dark reddish bi odor, no staining	-		-Sand Seal (#00 Sand) (80-82 ft bgs) -Annular seal (bentonite slurry) (80-90 ft bgs)
-83 -84 -85	8.5 / 10	0				Well-graded sand (SW), fine to mediu	m, subrounded,	-	
-86 -87 -87 -88 - -88 -			wet	sw		5-15% subangular, finé to medium gra [NATIVE] - 10R 3/4 (dusky red / dark reddish bi - no odor, no staining			
-89 -90			moist	SW-GW		Silty sand with gravel, fine to medium, subrounded, 10-20% silt, 25-35% sub medium gravel [Basal Till] - 10R 4/1 (dark reddish gray), moist	well-graded, angular, fine to		
						- no odor, no staining	/		
otes:	bgs = below DGA = dense			NAD83 = Nori NAVD88 = Nc	h Americar rth America	n Horizontal Datum of 1983 NJSP = New Jersey Sta an Vertical Datum of 1988 PID = photoionization de	te Plane ppm = parts per stector USCS = Unified	million Soil Classification Sy	ft = feet stem in = inches