ATTACHMENT 13

SPLP CALCULATIONS



State of New Jersey

CHRIS CHRISTIE

Governor

KIM GUADAGNO Lt. Governor DEPARTMENT OF ENVIRONMENTAL PROTECTION

Division of Enforcement, Technical and Financial Support Bureau of Environmental Evaluation and Risk Assessment P.O. Box 420, Mail Code 401-05W Trenton, NJ 08625-0420 Phone: (609) 633-7413 Fax:(609) 633-1454 BOB MARTIN Commissioner

MEMORANDUM

TO: David Doyle, Office of the Assistant Commissioner

FROM: Diane Groth, Research Scientist, BEERA/ETRA

SUBJECT: Hudson County Chrome Site 63: Alternative Soil Remediation Standard

for Vanadium PI# G000008691

DATE: May 11, 2017

As requested, ETRA has evaluated an Alternative or New Soil Remediation Standard (ARS) Application Form (dated April 21, 2017) submitted to the Department for the above Hudson County Chrome Site 63 at 1 Burma Road, Jersey City, New Jersey. An alternative ingestion-dermal residential soil standard for vanadium that required Departmental pre-approval was requested for the above property. The concentration of vanadium detected onsite ranged up to 87.6 mg/kg, which exceeds the current vanadium residential soil standard (78 mg/kg). The submittal requested that an ARS for vanadium is appropriate based on toxicity information found in EPA's *Integrated Risk Information System (IRIS)* and recorded in EPA's *Regional Screening Level (RSL) Tables (May 2016)*. The submittal was reviewed and an ARS for vanadium of 390 mg/kg for residential use is approved on a site-specific basis using DEP standard exposure assumptions.

If you have questions on the above, please contact Diane Groth at (609) 984-9782.

C: Kevin Schick, BEERA

Leavey, Crystal L.

From:

Sent: Tuesday, May 16, 2017 5:32 PM To: Leavey, Crystal L. Cc: David Doyle (David.Doyle@dep.nj.gov) Subject: RE: PPG Site 63 - Alternative Remediation Standard Application Form Crystal, Weston evaluated the ARS application package for nickel and informed the NJDEP that it is acceptable and in accordance with NJDEP guidance. We understand that Dave Doyle will be reaching out to you shortly regarding the vanadium. Thanks. Prabal Prabal N. Amin, P.E., LSRP Weston Solutions, Inc. 205 Campus Drive Edison, NJ 08837 prabal.amin@westonsolutions.com Office: 732-417-5857 Cell: 609-240-5289 Fax: 732-417-5801 From: Leavey, Crystal L. [mailto:crystal.leavey@cbi.com] Sent: Monday, May 15, 2017 4:57 PM To: Amin, Prabal < Prabal. Amin@Weston Solutions.com> Cc: David Doyle (David.Doyle@dep.nj.gov) <David.Doyle@dep.nj.gov> Subject: PPG Site 63 - Alternative Remediation Standard Application Form Prabal, Following up on the request I had this afternoon on the call regarding the ARS approvals for Site 63, Dave called me a little while ago. He asked that I forward the ARS package for nickel to you for input. The attached has both vanadium and nickel.

Amin, Prabal < Prabal. Amin@WestonSolutions.com>



Thanks,

Crystal

for use. I'll call you in the morning as a reminder.

Dave can fill you in tomorrow on what we're trying to achieve, since SPLP ARS don't require Department pre-approvals

Crystal L. Leavey, LSRP Project Manager II Capital Services Facilities & Plant Services Tel: +1 609 588 6154 Cell: +1 609 680 4982 Fax: +1 609 588 6300 crystal.leavey@cbi.com

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NJDEP SPLP Spreadsheet, V3.1, November 2013

Case name/area of concern:
Case number:
Sampling date:

Hudson County Chrome Site 63

G000008691

10/4/2013

Contaminant: Nickel (total) NOTE:

CAS No: 7440-02-0

Water solubility (mg/L) NA

Aqueous reporting limit (µg/L): 4.00E+00

Soil reporting limit (mg/kg): 4.00E+00

Health-based GWQC (µg/L) 1.00E+02

DAF (20, or site-specific if approved): 20

Leachate Criterion (µg/L): 2.00E+03

Henry's law constant (dimensionless): 0.00E+00

USE ONE PAGE PER CONTAMINANT, do not leave empty rows between samples Do not enter samples with soil concentrations at or below the reporting limit When leachate concentration is non-detect, enter the aqueous reporting limit Enter site-specific dilution-attenuation factor (DAF) if desired

Data entry cells (do not skip rows)
Optional data entry
Calculated or locked cells

Indicates that Alternative Remediation Standard needs to be recalculated

	Soil	Leachate	Total Soil Concentration (mg/kg)	SPLP Leachate Concentration (µg/L)	Final pH of		Option	nal data			%	Field leachate	
Sample ID	sample weight (kg)	Volume (L)			l eachate	Sampling Depth (ft)	Soil Type	Organic Carbon (mg/kg)	Organic Carbon (%)		Contaminant in Leachate	concentration (µg/L)	Pass or fail?
B013R 0.0'-0.5'	0.0811	2.008	205	10	7.87					20475.2	0.12	10.01	PASS
C013R 0.0'-0.5'	0.081	2	162	10	8.13					16175.3	0.15	10.02	PASS
C005R 2.5'-3.0'	0.0748	2.004	193	17.8	10.67					10815.9	0.25	17.84	PASS

SPLP RESULTS for

OPTION 1a: All adjusted leachate concentrations are below the leachate criterion

REMEDIATION STANDARD = 205 mg/kg

OPTION 1b: Simple inspection of tabulated results to find highest acceptable standard EVERYTHING PASSED, OPTION 1b NOT VALID

OPTION 2: Remediation standard using site-specific Kd value

Kd ratio = 1.89, AVERAGING Kds OK

Kd USED FOR CALCULATING STANDARD = 15822.15 L/kg

result before rounding = 31644.6095 mg/kg

REMEDIATION STANDARD = 200 mg/kg (controlled by maximum soil concentration)

OPTION 3: Remediation standard using linear regression

Number of points = 3

Soil concentration midrange = 183.5

Number of points above midrange = 2

Enough points above midrange? YES

R-Square high enough? NO

Leachate criterion within range of leachate concentrations? NO

OPTION 3 NOT VALID

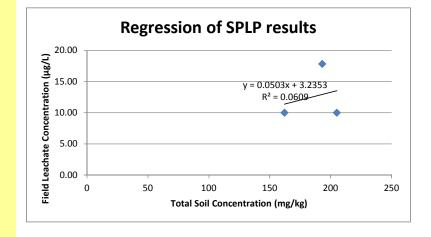


Table 1
Soil Leachate Procedure Analytical Summary Table
Site 63-65, Jersey City, NJ

Sample Location:						B005R	B011R	F010R	F010R - DUP	B013R	C005R	C013R
Sample Depth (ft bgs):						1.3'-1.8'	0.5'-1.0'	0.0'-0.5'	0.0'-0.5'	0.0'-0.5'	2.5'-3.0'	0.0'-0.5'
Client Sample ID:		RDC	Non DES	SCC (C4)	IGW	B005R 1.3'-1.8'	B011R 0.5'-1.0'	F010R 0.0'-0.5'	DUP	B013R 0.0'-0.5'	C005R 2.5'-3.0'	C013R 0.0'-0.5'
Lab Sample ID:		RDC	Non-RES	SCC (CI)	IGW	JB49550-5	JB49550-4	JB49550-3	JB49550-7	JB49550-1	JB49550-6	JB49550-2
Date Sampled:						10/4/2013	10/4/2013	10/4/2013	10/4/2013	10/4/2013	10/4/2013	10/4/2013
Matrix:						Soil	Soil	Soil	Soil	Soil	Soil	Soil
Metals Analysis												
Antimony	mg/kg	31	450	N/A	6	10.2 ^a	<2.4	<2.3	2.2	-	-	-
Nickel	mg/kg	1,600	23,000	N/A	205**	-	-			205	193	162
General Chemistry												
pH, SPLP Leachate	su					10.07	8.24	8.61	8.61	7.87	10.67	8.13
Volume, SPLP Leachate						2	2.002	2	2.01	2.008	2.004	2
Weight, SPLP Leachate	kg					0.1	0.1001	0.1	0.1005	0.1004	0.1002	0.1
Dry Weight, SPLP Leachate	kg					0.0813	0.0862	0.0912	0.0929	0.0811	0.0748	0.081
Solids, Percent	%					81.3	86.1	91.2	92.4	80.8	74.7	81
SPLP Analysis												
Antimony	ug/L					<50	<50	<50	<50	-	-	-
Nickel	ug/L					-	-	-	-	<10	17.8	<10

Footnotes:

^a Elevated detection limit due to dilution required for high interfering element.



New Jersey Department of Environmental Protection Site Remediation Program

ALTERNATIVE OR NEW REMEDIATION STANDARD AND/OR SCREENING LEVEL APPLICATION FORM

Date Stamp (For Department use only)

NOTE: This form shall be completed for all contaminants for which a direct contact exposure pathway alternative or new remediation standard, alternative impact to ground water soil remediation standard, alternative vapor intrusion screening level, ecological risk-based remediation goal, and/or ecological risk management decision goal is being implemented and/or requested for a site or area of concern. The form shall be used regardless of whether Department pre-approval is required.

requested for a site of area of conferm. The form shall be asea	regardess of whether bepartment pre-approval is required.
SECTION A. SITE NAME AND LOCATION	
Site Name: Hudson County Chrome Site 63	
List all AKAs:	
Street Address: 1 Burma Road	
Municipality: Jersey City (To	ownship, Borough or City)
County: Hudson Zip	p Code:
Program Interest (PI) Number(s): G000008691	
Case Tracking Number(s):	
SECTION B. REMEDIATION STANDARD NOTIFICATION SE	PREADSHEET
Complete and attach the Remediation Standard Notification Spi	readsheet which can be found at:
http://www.nj.gov/dep/srp/srra/forms/. This form will not be proc	
SECTION C. PURPOSE FOR SUBMISSION	
Pre-Approval Required:	No Pre-Approval Required:
☑ Ingestion/Dermal Alternative Soil Remediation Standard	☐ Inhalation Alternative Soil Remediation Standard
☐ Inhalation Alternative Soil Remediation Standard	(Calculation Spreadsheet)
(New Toxicity Data, New Modeling, etc.)	
Development of New Remediation Standard	Standard
☐ Ecological Risk Based Remediation Goal☐ Ecological Risk Management Decision Goal	
SECTION D. PERSON RESPONSIBLE FOR CONDUCTING T	
Full Legal Name of the Person Responsible for Conducting the	
	Representative Last Name: Terril
Title: Corporate Director, Environmental Affairs	
	Fax:
Mailing Address: 440 College Park Drive	
City/Town: Monroeville State:	PA Zip Code: 15164
Email Address: terril@ppg.com	
This certification shall be signed by the person responsible for c in accordance with Administrative Requirements for the Remedi	
I certify under penalty of law that I have personally examined an including all attached documents, and that based on my inquiry the information, to the best of my knowledge, I believe that the saware that there are significant civil penalties for knowingly submam committing a crime of the fourth degree if I make a written faware that if I knowingly direct or authorize the violation of any same committed.	of those individuals immediately responsible for obtaining submitted information is true, accurate and complete. I am mitting false, inaccurate or incomplete information and that I alse statement which I do not believe to be true. I am also
Signature: Value E pi	Date: Could, 2017
Namo/Titlo: Mark F Terril/Corporate Director	No abanca to act of information since last submitted [V]

SECTION E. LICENSED SITE REME	DIATION PROFESSIONAL INFORM	ATION AND STATEMENT
LSRP ID Number:		
First Name:	Last Name	·
Phone Number:	Ext:	Fax:
Mailing Address:		
City/Town:	State:	Zip Code:
Email Address:		
This statement shall be signed by the LN.J.S.A. 58:10B-1.3b(1) and (2).	SRP who is submitting this notification	on in accordance with N.J.S.A. 58:10C-14, and
I certify that I am a Licensed Site Remo New Jersey. As the Licensed Site Rem		uant to N.J.S.A. 58:10C to conduct business in is remediation, I:
[SELECT ONE OR BOTH OF TH	E FOLLOWING AS APPLICABLE]:	
directly oversaw and supervise	ed all of the referenced remediation, a	and\or
personally reviewed and acce	oted all of the referenced remediation	presented herein.
I believe that the information contained	l herein, and including all attached do	ocuments, is true, accurate and complete.
It is my independent professional judgi submission to the Department, conform	ment and opinion that the remediation ns to, and is consistent with, the reme	n conducted at this site, as reflected in this ediation requirements in N.J.S.A. 58:10C-14.
the knowledge and skill ordinarily exer	cised by licensed site remediation pro	asonable care and diligence, and by applying ofessionals practicing in good standing, in I performed these professional services.
I am aware pursuant to N.J.S.A. 58:10 representation or certification in any do significant civil, administrative and crin by imprisonment for conviction of a crid	ocument or information submitted to to initial penalties, including license revo	recklessly submitting false statement, he board or Department, etc., that there are cation or suspension, fines and being punished
LSRP Signature:		Date:
LODD N. T.II.		
Company Name:		

Completed forms should be sent to:

Bureau of Case Assignment & Initial Notice Site Remediation Program NJ Department of Environmental Protection 401-05H PO Box 420 Trenton, NJ 08625-0420

New Jersey Department of Environmental Protection Site Remediation Program

Instructions

Clear Form

REMEDIATION STANDARD NOTIFICATION SPREADSHEET

Site Name: Hudson County Chrome Site 63

Program Interest Number: G000008691

	ALTERNATIVE	STANDARDS OF	R SCREENING I	LEVELS	REQUESTED/I	MPLEMENTED
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Chemical Name	CAS	Concentration Range on Site (include units)	ARS / Screening Level	Scenario	Type of Standard	Default Remediation Standard / Screening level (include units)	Proposed Remediation Standard / Screening level (include units)
Nickel	7440-02-0	7.8 - 96.3 mg/kg	Impact to Ground Water – SPLP	NA	Alternative	48 mg/kg	205 mg/kg
Vanadium	7440-62-2	8 - 87.6 mg/kg	Ingestion-Dermal Exposure Pathway	Residential	Alternative	78 mkg/kg	390 mg/kg
		78					
,					***		

					-		
					011		

					WE-1		



CB&I Environmental & Infrastructure, Inc.

200 Horizon Center Trenton, NJ 08691 Tel: +1 609.584.8900 Fax: +1 609.588.6300

www.CBI.com

MEMORANDUM

To: Crystal L. Leavey, LSRP From: Marshall E. King, PE, LSRP

Alternative Remediation Standard for Nickel and Vanadium Subject:

Project: PPG, Site 63/65, 1 Burma Road, Jersey City, Hudson County, New Jersey

PI G000008691

Report Date: March 10, 2017

Site Background

The Site was identified as a Non-Residential Hudson County Chrome (HCC) site by the New Jersey Department of Environmental Protection (NJDEP) and is designated as HCC Site 63 in the July 19, 1990 Administrative Consent Order (ACO) between the NJDEP and PPG. The majority of the Site is currently used for temporary parking of tractor trailers, but had formerly been occupied by a light industrial building that was razed as part of earlier remedial efforts in 1998-1999. Soil investigations completed between 1987 and 2013 documented the presence of chromate chemical production waste (CCPW) or CCPW-impacted materials and analytical exceedances of the NJDEP's Soil Remediation Standards (SRS) and/or the Chromium Soil Cleanup Criteria (CrSCC). The recommended Remedial Action (RA) for soils at the Site included the excavation and removal of visible CCPW and soils with concentrations of Hexavalent Chromium and Total Chromium above the CrSCC and Antimony, Nickel, Thallium, and Vanadium above the SRS or default IGW SSLs.

Site-Specific Impact to Groundwater Soil Remediation Standard (IGWSRS) for Nickel

A site-specific IGWSRS was calculated for nickel using the Synthetic Precipitation Leaching Procedure (SPLP) methodology and the NJDEP's SPLP Spreadsheet (V3.1, November 2013). Three soil samples were collected from the Site on October 4, 2013 and submitted for total nickel analysis and SPLP nickel analysis.

Based on the NJDEP's guidance, the Default Leachate Criterion for Class II Ground Water for nickel is 2,000 micrograms per liter (ug/l). Option 1 of the NJDEP's guidance allows for the determination of a site-specific IGWSRS from a direct comparison of field leachate concentrations against the Default Leachate Criterion. The results of the total and SPLP nickel analyses were entered into the NJDEP SPLP Spreadsheet for the calculation of field leachate concentrations. Calculated field leachate concentrations were observed to be below the Default Leachate Criterion of 2,000 ug/l and ranged from 10 ug/l to 17.8 ug/l. Option 1 allows the highest total contaminant concentration to be used as the site-specific IGWSRS. The highest total nickel concentration was observed in sample B013R 0.0'-0.5'. As a result, the site-specific IGWSRS for nickel is 205 milligrams per kilogram (mg/kg).

Soil samples used for the calculation of a site-specific IGWSRS for nickel, including B013R 0.0'-0.5', were removed during soil excavation activities. Following the completion of RA activities for soil, nickel concentrations remaining on the site range from 7.8 mg/kg to 96.3 mg/kg.

Ingestion/Dermal Alternative Soil Remediation Standard for Vanadium

In correspondence dated July 15, 2016, the NJDEP indicated that a change in the Technical Regulations for Site Remediation (N.J.A.C. 7:26E) that required analysis for metals using the Target Analyte List (TAL) rather than Priority Pollutant (PP) metals, has resulted in the NJDEP receiving a larger data set for vanadium than in the past. Background soil studies conducted in NJ have typically shown vanadium concentrations of 25 mg/kg, and the NJDEP has indicated that recent data sets are indicating a wide range of naturally elevated vanadium with no use or discharges of vanadium at sites within the Site Remediation Program.

Prior to RA activities, vanadium concentrations in soil ranged from non-detect to 718 mg/kg. Following the completion of RA activities for soil, vanadium concentrations remaining on the site range from 8 mg/kg to 87.6 mg/kg.

The USEPA has developed Regional Soil Screening Level of 390 mg/kg for residential exposure for vanadium and compounds (https://www.epa.gov/risk/regional-screening-levels-rsls-users-guide-november-2015) as listed in the Generic Tables (May 2016 - https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables-may-2016) with a target cancer risk (TR) of 1E-06 and a target hazard quotients (THQ) of 1.0. PPG proposes to use 390 mg/kg as the Ingestion Alternative Soil Remediation Standard for vanadium for this site.

NJDEP SPLP Spreadsheet, V3.1, November 2013

Case name/area of concern:
Case number:
Sampling date:

Hudson County Chrome Site 63

G000008691

10/4/2013

Contaminant: Nickel (total) NOTE:

CAS No: 7440-02-0

Water solubility (mg/L) NA

Aqueous reporting limit (µg/L): 4.00E+00

Soil reporting limit (mg/kg): 4.00E+00

Health-based GWQC (µg/L) 1.00E+02

DAF (20, or site-specific if approved): 20

Leachate Criterion (µg/L): 2.00E+03

Henry's law constant (dimensionless): 0.00E+00

USE ONE PAGE PER CONTAMINANT, do not leave empty rows between samples Do not enter samples with soil concentrations at or below the reporting limit When leachate concentration is non-detect, enter the aqueous reporting limit Enter site-specific dilution-attenuation factor (DAF) if desired

Data entry cells (do not skip rows)
Optional data entry
Calculated or locked cells

Indicates that Alternative Remediation Standard needs to be recalculated

	Soil	Leachate	Total Soil	SPLP Leachate	Final pH of		Option	nal data			%	Field leachate	Pass or fail? PASS PASS
Sample ID	sample weight (kg)	Volume (L)	Concentration (mg/kg)	Concentration (µg/L)	Leachate (except VOCs)	Sampling Depth (ft)	Soil Type	Organic Carbon (mg/kg)	Organic Carbon (%)	115 (1.5)	Contaminant in Leachate	concentration (µg/L)	Pass or
B013R 0.0'-0.5'	0.0811	2.008	205	10	7.87					20475.2	0.12	10.01	PASS
C013R 0.0'-0.5'	0.081	2	162	10	8.13					16175.3	0.15	10.02	PASS
C005R 2.5'-3.0'	0.0748	2.004	193	17.8	10.67					10815.9	0.25	17.84	PASS

SPLP RESULTS for

OPTION 1a: All adjusted leachate concentrations are below the leachate criterion

REMEDIATION STANDARD = 205 mg/kg

OPTION 1b: Simple inspection of tabulated results to find highest acceptable standard EVERYTHING PASSED, OPTION 1b NOT VALID

OPTION 2: Remediation standard using site-specific Kd value

Kd ratio = 1.89, AVERAGING Kds OK

Kd USED FOR CALCULATING STANDARD = 15822.15 L/kg

result before rounding = 31644.6095 mg/kg

REMEDIATION STANDARD = 200 mg/kg (controlled by maximum soil concentration)

OPTION 3: Remediation standard using linear regression

Number of points = 3

Soil concentration midrange = 183.5

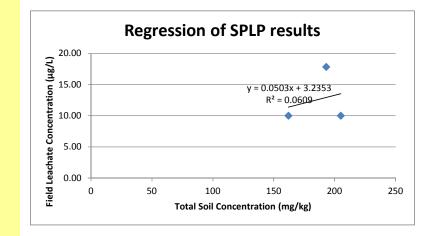
Number of points above midrange = 2

Enough points above midrange? YES

R-Square high enough? NO

Leachate criterion within range of leachate concentrations? NO

OPTION 3 NOT VALID



Key: I = IRIS		for Ar	senic notice) ;	c = cancer; n =			be FAQ #27); H = HEAST; F = See FAQ; J = New Jersey; O = EPA Office of Water re: n SL < 100X c SL; ** = where n SL < 10X c SL; SSL values are based on DAF=												9)		
	Tox	kicity and Chen	nical-specific In	formation			Contaminant						Screenin	g Level	S				Protection of		
SFO	k UR k	C DED	k RfC _i k	٧ .		0							Resident Air		dustria l Ai				Risk-based		MCL-based
	0	RfD _o		o muta-	DO 4 DO	C _{sat}	A A	OAG NI:	Resident So		Industrial Soi	'L				'LI'	apwater	MCL	SSL		SSL
(mg/kg-day)	y (ug/m ³) ⁻¹ y	(mg/kg-day)	y (mg/m³) y	I gen GIA		(mg/kg)	Analyte	CAS No.	(mg/kg)	key	(mg/kg)	key	(ug/m³)	key	(ug/m ³)	key	(ug/L) key	(ug/L)	(mg/kg)	key	(mg/kg)
7.0E-03	X	3.0E-05	X	. 1	0.1		Trichloroaniline, 2,4,6-	634-93-5	1.9E+00	n	2.5E+01	n					4.0E-01 n		3.6E-03	n	
			X	V 1			Trichlorobenzene, 1,2,3-	87-61-6	6.3E+01	n	9.3E+02	n					7.0E+00 n		2.1E-02	n	
2.9E-02	Р	1.0E-02	I 2.0E-03 P			4.0E+02		120-82-1	2.4E+01	C**	1.1E+02	C**	2.1E+00		8.8E+00		1.2E+00 c**	7.0E+01	3.4E-03	C**	2.0E-01
F 7F 00			I 5.0E+00 I				Trichloroethane, 1,1,1	71-55-6	8.1E+03	ns	3.6E+04	ns	5.2E+03		2.2E+04		8.0E+03 n	2.0E+02	2.8E+00	n	7.0E-02
	I 1.6E-05 I		I 2.0E-04 X					79-00-5	1.1E+00	C**	5.0E+00	C**			7.7E-01		2.8E-01 c**	5.0E+00	8.9E-05	C**	1.6E-03
4.6E-02	I 4.1E-06 I	5.0E-04	1 2.0E-03 I	V M 1		6.9E+02		79-01-6	9.4E-01	C**	6.0E+00	C**	4.8E-01	C**	3.0E+00		4.9E-01 c**	5.0E+00	1.8E-04	C**	1.8E-03
		3.0E-01	!	V 1	0.4	1.2E+03	Trichlorofluoromethane Trichlorophenol, 2,4,5-	75-69-4 95-95-4	2.3E+04	ns	3.5E+05	nms					5.2E+03 n 1.2E+03 n		3.3E+00 4.0E+00	n	
4.45.00	1 0 45 00	1.0E-01	D	1	0.1				6.3E+03	n	8.2E+04	n	0.45.04		4.05.00					n	
1.1E-02	I 3.1E-06		P .	1	0.1		Trichlorophenol, 2,4,6-	88-06-2	4.9E+01	C**	2.1E+02	C**	9.1E-01	С	4.0E+00		4.1E+00 c**		4.0E-03	c**	
		1.0E-02 8.0E-03	!	1	0.1 0.1		Trichlorophenoxyacetic Acid, 2,4,5- Trichlorophenoxypropionic acid, -2,4,5	93-76-5 93-72-1	6.3E+02	n n	8.2E+03 6.6E+03	n					1.6E+02 n 1.1E+02 n	E 0E : 04	6.8E-02 6.1E-02	n n	2.8E-02
		5.0E-03		1/ 4	0.1	1.25100	Trichloropropionic acid, -2,4,5 Trichloropropane, 1,1,2-	598-77-6	5.1E+02 3.9E+02	- 11	5.8E+03	11					3.8E+01 n	5.0E+01	3.5E-02	n n	2.0E-02
3.0E+01			3.0E-04	V M 1			Trichloropropane, 1,1,2- Trichloropropane, 1,2,3-	598-77-6 96-18-4	5.1E-03	n c	5.8E+03 1.1E-01	ns c	3.1E-01	_	1.3E+00		7.5E-04 c		3.5E-02 3.2E-07	n c	
3.05701			X 3.0E-04 P				Trichloropropene, 1,2,3-	96-18-4	7.3E-03	n	3.1E+00	n	3.1E-01		1.3E+00 1.3E+00		6.2E-04 c		3.2E-07 3.1E-04	C n	
			A 3.0E-04 P	v 1	0.1	J.1E+02	Tricresyl Phosphate (TCP)	1330-78-5	1.3E+03	n	1.6E+04	n	3.1E-01	"	1.3E+00		1.6E+02 n		1.5E+01	n	
		3.0E-02		1	0.1		Tridiphane	58138-08-2	1.9E+02	n	2.5E+03	n					1.8E+02 n		1.3E+01	n n	
		3.0E-03	7.0E-03	V 1	0.1	2.8E±04	Triethylamine	121-44-8	1.9E+02 1.2E+02	n n	4.8E+02	n n	7.3E+00	n	3.1E+01				4.4E-03	n n	
		2.0E+00	7.0L-03	v 1	0.1	2.0L+04	Triethylene Glycol	112-27-6	1,3E+05	nm	1.6E+06	nm	7.3L+00		U. IL TU I		1.0E+04 n		8.8E+00	n	
		2.00+00	2.0E+01 P	V 1	0.1	4 0E±03	Trifluoroethane, 1,1,1-	420-46-2	1.5E+05 1.5E+04	ns	6.2E+04	ns	2.1E+04	n	8.8E+04		4.2E+04 n		1.3E+02	n	
7.7E-03	1	7.5E-03	2.0E+01 F	V 1		4.00-03	Trifluralin	1582-09-8	9.0E+01	C**	4.2E+02	C*	2.1E+04		0.05-04		2.6E+00 c*		8.4E-02	c*	
2.0E-02	D	1.0E-02	D	1	0,1			512-56-1	2.7E+01	C*	1.1E+02	c*					3.9E+00 c*		8.6E-04	c*	
2.0E-02	P	1.0E-02	5.0E-03 P	V 1	0.1	3 0E±03	Trimethylbenzene, 1,2,3-	526-73-8	4.9E+01	n	2.1E+02	n	5.2E+00	n	2.2E+01		1.0E+01 n		1.5E-02	n	
			7.0E-03 P				Trimethylbenzene, 1,2,4-	95-63-6	5.8E+01	n	2.4E+02	ns	7.3E+00		3.1E+01		1.5E+01 n		2.1E-02	n	
		1.0E-02	V 7.0L-03 1	V 1			Trimethylbenzene, 1,3,5-	108-67-8	7.8E+02	ns	1.2E+04	ns	7.52.00		J. IL . U I		1.2E+02 n		1.7E-01	n	
		1.0E-02	Ŷ	V 1				25167-70-8	7.8E+02	ns	1.2E+04	ns					6.5E+01 n		2.2E-01	n	
		3.0E-02	î	1	0.019		Trinitrobenzene, 1,3,5-	99-35-4	2.2E+03	n	3.2E+04	n					5.9E+02 n		2.1E+00	n	
3.0E-02	_	5.0E-04	1	1	0.032		Trinitrotoluene, 2.4.6-	118-96-7	2.1E+01	C**	9.6E+01	C**					2.5E+00 c**		1.5E-02	C**	
3.0L-02	•	2.0E-02	P	1	0.032		Triphenylphosphine Oxide	791-28-6	1.3E+03	n	1.6E+04	n					3.6E+02 n		1.5E+00	n	
		2.0E-02	Δ	1	0.1		Tris(1,3-Dichloro-2-propyl) Phosphate	13674-87-8	1.3E+03	'n	1.6E+04	'n					3.6E+02 n		8.0E+00	n	
		1.0E-02	X	1	0.1		Tris(1-chloro-2-propyl)phosphate	-13674-84-5	6.3E+02	n	8.2E+03	n					1.9E+02 n		6.5E-01	n	
2.3E+00	C 6.6E-04 C		^	V 1	0.1	4 7F+02	Tris(2,3-dibromopropyl)phosphate	126-72-7	2.8E-01		1.3E+00	c	4.3E-03	C	1.9E-02		6.8E-03 c		1.3E-04	c	
2.0E-02	P 0.02 01 0	7.0E-03	P	1	0.1	1.72.02	Tris(2-chloroethyl)phosphate	115-96-8	2.7E+01	c*	1.1E+02	c*	1.02 00	•	1.02 02		3.8E+00 c*		3.8E-03	c*	
3.2E-03	P	1.0E-01	P	1	0.1		Tris(2-ethylhexyl)phosphate	78-42-2	1.7E+02	c*	7.2E+02	C					2.4E+01 c*		1.2E+02	c*	
5.22 00	·	8.0E-04	P	1	0		Tungsten U U U U C C C C C C C C C C C C C C C	7440-33-7	6.3E+01	n	9.3E+02	n					1.6E+01 n		2.4E+00	n	
			I 4.0E-05 A	1			Uranium (Soluble Salts)	NA	2.3E+02	n	3.5E+03	n	4.2E-02	n	1.8E-01		6.0E+01 n	3.0E+01	2.7E+01	n	1.4E+01
1.0E+00	C 2.9E-04 C			M 1	0.1		Urethane	51-79-6	1.2E-01	С	2.3E+00	С	3.5E-03		4.2E-02		2.5E-02 c		5.6E-06	С	
	0.05.00	0.05.00	1 7 AF AA D	2.00	00		Wanding Barbaid	1011 00 1	4.05.00	-**	0.05.00	**	0.45.04	-	1 55 00	-	1 55.00				
		5.0E-03	S 1.0E-04 A	0.02	26		Vanadium and Compounds	7440-62-2	3.9E+02	n	5.8E+03	n	1.0E-01	n	4.4E-01	n 8	3.6E+01 n		8.6E+01	n	
		4.05.00	•	· /			Vanas laka	4000 77 7	7.05.04		105.00						45.04		0.05.00		
		2.5E-02		1	0.1		Vinclozolin	50471-44-8	1.6E+03	n	2.1E+04	n					4.4E+02 n		3.4E-01	n	
			H 2.0E-01 I				Vinyl Acetate	108-05-4	9.1E+02	n	3.8E+03	ns	2.1E+02		8.8E+02		4.1E+02 n		8.7E-02	n	
	3.2E-05 H		3.0E-03				Vinyl Bromide	593-60-2	1.2E-01	C*	5.2E-01	C*	8.8E-02		3.8E-01		1.8E-01 c*		5.1E-05	C*	
7.2E-01	4.4E-06		I 1.0E-01 I	V M 1		3.9E+03	Vinyl Chloride	75-01-4	5.9E-02	С	1.7E+00	С	1.7E-01	С	2.8E+00		1.9E-02 c	2.0E+00	6.5E-06	С	6.9E-04
		3.0E-04	I	1	0.1		Warfarin	81-81-2	1.9E+01	n	2.5E+02	n					5.6E+00 n		5.9E-03	n	
			S 1.0E-01 S				Xylene, P-	106-42-3	5.6E+02	ns	2.4E+03	ns	1.0E+02		4.4E+02		1.9E+02 n		1.9E-01	n	
			S 1.0E-01 S				Xylene, m-	108-38-3	5.5E+02	ns	2.4E+03	ns	1.0E+02		4.4E+02		1.9E+02 n		1.9E-01	n	
			S 1.0E-01 S				Xylene, o-	95-47-6	6.5E+02	ns	2.8E+03	ns	1.0E+02		4.4E+02		1.9E+02 n		1.9E-01	n	
		2.0E-01	I 1.0E-01 I	V 1		2.6E+02		1330-20-7	5.8E+02	ns	2.5E+03	ns	1.0E+02	n	4.4E+02		1.9E+02 n	1.0E+04	1.9E-01	n	9.9E+00
		3.0E-04	!	1			Zinc Phosphide	1314-84-7	2.3E+01	n	3.5E+02	n					6.0E+00 n			n	
		3.0E-01		1			Zinc and Compounds	7440-66-6	2.3E+04	n	3.5E+05	nm					3.0E+03 n		3.7E+02	n	
		5.0E-02	I	1	0.1		Zineb	12122-67-7	3.2E+03	n	4.1E+04	n					9.9E+02 n		2.9E+00	n	
		8.0E-05	Х	1			Zirconium	7440-67-7	6.3E+00	n	9.3E+01	n					1.6E+00 n		4.8E+00	n	