



State of Oregon
Department of
Environmental
Quality

Application for a

Solid Waste Beneficial Use Determination

DEPT OF ENVIRONMENTAL QUALITY
RECEIVED

APR 30 2012

NORTHWEST REGION

DEQ USE ONLY – BUSINESS OFFICE

Date Received: _____

Amount Received: _____

Check No.: _____

Deposit No.: _____

Forward confirmation of fee payment for:
Eastern Region to DEQ, The Dalles
Northwestern Region to DEQ-NWR, Portland
Western Region to DEQ, Salem

A. REFERENCE INFORMATION *(Please type or print clearly.)*

Canby Utility Board	Canby Utility
Legal name of applicant	Business name of applicant if different
PO Box 1070	Canby OR 97013
Mailing address	City State Zip
503-266-1156 971-563-6299	bbenson@canbyutility.org 503-263-8621
Phone Mobile	E-mail Fax

Canby Utility	Canby Utility
Generator of solid waste (may be same as applicant)	Business name of applicant if different
PO Box 1070	Canby OR 97013
Mailing address	City State Zip
503-266-1156 971-563-6299	bbenson@canbyutility.org 503-263-8621
Phone Mobile	E-mail Fax

B. TYPE OF BENEFICIAL USE DETERMINATION REQUESTED

Beneficial Use Determination applications are categorized based on the type of information and potential amount of work required by DEQ staff to review application materials and render a decision. A tiered review and fee system has been established in rule. The tiers are:

- Tier 1 For a beneficial use of a solid waste that does not contain hazardous substances significantly exceeding the concentration in a comparable raw material or commercial product and that will be used in a manufactured product;
- Tier 2 For a beneficial use of a solid waste that contains hazardous substances significantly exceeding the concentration in a comparable raw material or commercial product, or involves application on the land;
- Tier 3 For a beneficial use of a solid waste that requires research, such as a literature review or risk assessment, or for a demonstration project to demonstrate compliance with this rule.

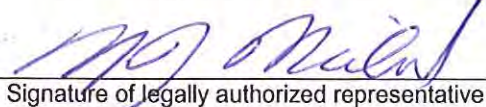
I am applying for a ☐ Tier 1 ☒ Tier 2 ☐ Tier 3 determination.

C. DOES THIS PROPOSED BENEFICIAL USE INVOLVE LAND APPLICATION OF ANY MATERIAL?

☒ Yes ☐ No

D. SIGNATURE

I hereby certify by my signature below that the information contained in this application, and the documents I have attached, are true and correct to the best of my knowledge and belief.


Signature of legally authorized representative

Matt Michel
Print name

General Manager 4/26/12
Title Date

E. REQUIRED ATTACHMENTS TO THIS APPLICATION *(For an application to be complete, it must provide the required information for each listed item of the tier which is being applied for.)*

Tier 1

- ☒ A description of the material, manner of generation, and estimated quantity to be used each year;
- ☒ A description of the proposed use;
- ☒ A comparison of the chemical and physical characteristics of the material proposed for use with the material it will replace;
- ☒ A demonstration of compliance with the performance criteria in OAR 340-093-0280 based on knowledge of the process that generated the material, properties of the finished product, or testing; and
- ☒ Any other information that DEQ may require to evaluate the proposal.

Tier 2

- ☒ The information required for a Tier 1 application;
- ☒ Sampling and analysis that provides chemical, physical, and biological characterization of the material and that identifies potential contaminants in the material or the end product, as applicable;
- ☒ A risk screening comparing the concentration of hazardous substances in the material to existing, DEQ approved, risk-based screening level values, and demonstrating compliance with acceptable risk levels;
- ☒ Location or type of land use where the material will be applied, consistent with the risk scenarios used to evaluate risk;
- ☒ Contact information of property owner(s) if this is a site-specific land application proposal, including name, address, phone number, e-mail, site address and site coordinates (latitude and longitude); and
- ☒ A description of how the material will be managed to minimize potential adverse impacts to public health, safety, welfare, or the environment.

Tier 3

- ☐ The information required for a Tier 1 & 2 application;
- ☐ A discussion of the justification for the proposal;
- ☐ An estimate of the expected length of time that would be required to complete the project, if it is a demonstration; and
- ☐ If it is a demonstration project, the methods proposed to ensure safe and proper management of the material.

F. PERFORMANCE CRITERIA *(For all tiers - An application for a beneficial use determination must demonstrate satisfactory compliance with the following performance criteria.)*

The use is productive, including:

- ♦ There is an identified or reasonably likely use for the material that is not speculative;
- ♦ The use is a valuable part of a manufacturing process, an effective substitute for a valuable raw material or commercial product, or otherwise authorized by DEQ, and does not constitute disposal; and
- ♦ The use is in accordance with applicable engineering standards, commercial standards, and agricultural or horticultural practices.

The use will not create an adverse impact to public health, safety, welfare, or the environment, including:

- ♦ The material is not a hazardous waste under ORS 466.005;
- ♦ Until the time the material is used in accordance with a beneficial use determination, the material will be managed, including any storage, transportation, or processing, to prevent releases to the environment or nuisance conditions;
- ♦ Hazardous substances in the material do not significantly exceed the concentration in a comparable raw material or commercial product, or do not exceed naturally occurring background concentrations, or do not exceed acceptable risk levels, including evaluation of persistence and potential bioaccumulation, when the material is managed according to a beneficial use determination.

The use will not result in the increase of a hazardous substance in a sensitive environment.

The use will not create objectionable odors, dust, unsightliness, fire, or other nuisance conditions.

The use will comply with all applicable federal, state, and local regulations.

G. FEES *(Must accompany the application for it to be considered complete)*

☐	Tier 1 beneficial use determination	\$1,000
☒	Tier 2 beneficial use determination	\$2,000
☐	Tier 3 beneficial use determination	\$5,000

Make checks out to: **Oregon DEQ**Total fees included: 2000.00**H. APPLICATION PROCEDURE**Step 1

Contact a DEQ staff person for assistance with the preparation of the application. DEQ staff will help with: 1) Determination of the eligibility for a beneficial use determination of a particular waste or process; and, 2) If eligible, establish the tier of beneficial use determination review required and associated fee to submit with the application.

Step 2

Mail the original signed application, all attachments, including the fee payment plus one extra copy to the appropriate regional office (see listing below.) Note that DEQ review work will not begin until a complete application packet is received. Incomplete applications may be returned. DEQ recommends the applicant keep a full copy of all application materials to guard against possible loss in transit.

Step 3

DEQ will contact the applicant, acknowledging receipt of the application, and will identify the staff person assigned to carryout the review. This staff person will contact the applicant if any additional information is needed.

Region	Counties Served	Address & Phone
Eastern Region	Baker, Crook, Deschutes, Gilliam, Grant, Harney, Hood River, Jefferson, Klamath, Lake, Malheur, Morrow, Sherman, Umatilla, Union, Wallowa, Wasco, and Wheeler	Eastern Region Department of Environmental Quality 400 E Scenic Drive, Ste 2.307 The Dalles, OR 97058 (541) 298-7255 ext. 221
Northwest Region	Clatsop, Clackamas, Columbia, Multnomah, Tillamook, and Washington	Northwest Region DEQ Solid Waste Programs 2020 SW Fourth Ave. Ste 400 Portland, OR 97201 (503) 229-5353
Western Region	Benton, Coos, Curry, Douglas, Jackson, Josephine, Lane, Lincoln, Linn, Marion, Polk, and Yamhill	Western Region DEQ Solid Waste Programs 750 Front St. NE Suite 120 Salem, OR 97301 (503) 378-5047

Tier 1

A Description of the material, manner of generation, and estimated quantity to be used each year:

The material is comprised of mostly river sediment. The material is generated through chemical coagulation at the drinking water plant. The solids are a result of back washing collected sediment from Canby Utility's eight (8) water treatment filters. Canby Utility estimates 250-300 tons of sediment will be generated annually.

A description of the proposed use:

The material will be used as a soil amendment for residential and municipal use. An agricultural exclusion for land application was previously granted on February 2, 2012. (See attached letter).

A comparison of the chemical and physical characteristics of the material proposed for use with the material it will replace:

The material will not be replacing any other material. The material will be used as a soil amendment. It is a brown to black solid consisting of natural soil erosion compounds with traces of aluminum, ammonia and nitrates from the coagulant. (See attached chemical analysis)

A demonstration of compliance with the performance criteria in OAR 340-093-0280 based on knowledge of the process that generated the material, properties of the finished product, or testing:

The process generating the material is from creating drinking water for human consumption. An expanded metals analysis has been performed, demonstrating no hazardous metal levels to humans, animals or the environment. The solid materials also include ammonia and nitrogen making it beneficial to ornamental plant or agricultural use. Materials tested to EPA / ISM01.3 Metals and Cyanide Target Analyte List and Corresponding CRQLs, Ammonia per Standard Method 4500-NH3 per EPA Method, and Calculated Total Nitrogen per EPA Methods, and EPA 351.2 and 353.2 (See attached chemical analysis).

Any other information that DEQ may require to evaluate the proposal:

Per discussions with Bill Mason, Western Region- Eugene of the Department of Environmental Quality, no additional information is expected to be requested.

Tier 2

The information required for a Tier 1 Application

See above.

Sampling and analysis that provides chemical, physical, and biological characterization of the material and that identifies potential contaminants in the material or the end product, as applicable:

See attached 15-page Analytical Report by Test America, dated April 19, 2012

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April 2012

A risk screening comparing the concentration of hazardous substances in the material to existing, DEQ approved, risk-based screening level values, and demonstrating compliance with acceptable risk levels:

Sample ID: BW3, Sample 01/04/12, Lab: TestAmerica ORLAP# OR100021

Analyte	Method	Results (mg/kg)	RL (mg/kg)	Qualifier	RBC _{SS} (mg/kg)	RSL Residential soil (mg/kg)	CFV (mg/kg)
Aluminum	EPA 6010B	47800	172		-	7.70E+04	98,000
Antimony	EPA 6010B	ND	172	RL1	-	3.10E+01	0.446
Arsenic	EPA 6010B	ND	172	RL1	0.39	3.90E-01	14.08
Barium	EPA 6010B	117	68.8		15000	1.50E+04	686.6
Beryllium	EPA 6010B	0.405	68.8	RL1 J	160	1.60E+02	1.634
Cadmium	EPA 6010B	ND	68.8	RL1	39	7.00E+01	1.796
Calcium	EPA 6010B	4060	1720		-	-	-
Chromium, Total	EPA 6010B	30.2	68.8	RL1 J	CR3:120,000 CR6: 0.29	CR3:1.2E+05 CR6: 2.9E-01	CR3:90.2 CR6: 130
Cobalt	EPA 6010B	13.4	68.8	RL1 J	-	2.30E+01	29
Copper	EPA 6010B	41.4	68.8	RL1 J	3100	3.10E+03	43.11
Iron	EPA 6010B	29700	688		-	5.50E+04	81,000
Lead	EPA 6010B	ND	172	RL1	400	4.00E+02	18.46
Magnesium	EPA 6010B	3640	688		-	-	-
Manganese	EPA 6010B	317	172		1800	1.80E+03	1158
Nickel	EPA 6010B	24.6	172	RL1 J	1500	1.50E+03	303.1
Potassium	EPA 6010B	669	1720	RL1 J	-	-	-
Selenium	EPA 6010B	ND	172	RL1	-	3.90E+02	95.11
Silver	EPA 6010B	ND	172	RL1	390	3.90E+02	1.965
Sodium	EPA 6010B	472	1720	RL1 J	-	-	-
Thallium	EPA 6010B	ND	172	RL1	-	7.80E-01	2.076
Vanadium	EPA 6010B	112	68.8		-	3.90E+02	249.1
Zinc	EPA 6010B	65.6	344	RL1 J	-	2.30E+04	95.74

% Solids	ASTM D2216-80	29.1	0.0100		-	-	
pH	EPA 9045C	6.27			-	-	

Total Nitrogen	[CALC]	14700	1800		-		
Nitrate/Nitrite-Nitrogen	EPA 353.2	6.45	0.343		-	1.30E+05	130,000
Total Kjeldahl Nitrogen	EPA 351.2	14700	1800		-		

Ammonia-Nitrogen	SM 4500-NH3, H	9.28	1.71	H	-	-	
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Results in **BOLD** are below reporting limits / "J flags"

RBC_{SS}: Risk Based Concentrations, Residential Direct Contact, Oregon DEQ November 15, 2011

RSL: Regional Screening Level (RSL) Summary Table, EPA November 2011

CFV: Clean Fill Value, Preliminary Clean Fill Table for Metals and Organics, proposed values; DEQ 9-27-2011

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Location or type of land use where the material will be applied, consistent with the risk scenarios used to evaluate risk:

Based on the regional screening levels and background values, the material will be used as soil amendment for residential and municipal applications.

Contact information of property owner(s) if this is a site-specific land application proposal, including name, address, phone number, e-mail, site address and site coordinates (latitude and longitude):

Property Owners:

*Canby Utility Board
PO Box 1070
154 NW 1st Avenue
Canby, OR 97013
503-266-1156
bbenson@canbyutility.org*

Technical Contact for Project:

*Brian Hutchins
Veolia Water North America
503-266-6400
brian.hutchins@veoliawaterna.com*

Site Address:

*1310 NW 3rd Avenue
Canby, OR 97013
Lat: 45.262299
Long: -122.710027*

A description of how the material will be managed to minimize potential adverse impacts to public health, safety, welfare, or the environment:

No potential adverse impacts expected from this material.

Attached:

*February 2, 2012, DEQ, Agricultural Exclusion Letter
April 19, 2012, TestAmerica, Analytical Report
September 27, 2011, Canby Utility, Clean Fill Table for Uplands (metals)
November 15, 2011, DEQ, Risk-Based Concentrations Table
November 2011, EPA, Regional Screening Level (RSL) Summary Table*

ATTACHMENT

February 2, 2012, DEQ, Agricultural Exclusion Letter



Oregon

John A. Kitzhaber, MD, Governor

Department of Environmental Quality

Western Region Eugene Office

165 East 7th Avenue, Suite 100

Eugene, OR 97401

(541) 686-7838

FAX (541) 686-7551

TTY 711

February 2, 2012

Brian Hutchins
Veolia Water NA
PO Box 670
Canby, OR 97013

RE: Agricultural exclusion for land application of
water treatment plant solids

Dear Brian:

DEQ has evaluated whether the Veolia Water's water treatment plant solids material qualifies for the agricultural exclusion from the definition of "solid waste." The solids contain agronomically significant concentrations of ammonia and nitrogen, which productively can be used for growing crops. To be considered a productive purpose, the solid waste must provide a net benefit in the agricultural operation and cannot create an adverse impact to human health or the environment. For growing crops, the material must be used at or below agronomic rates.

You have proposed to provide this material to farmers growing crops on agricultural lands for use as a waste-derived fertilizer. You provided us with laboratory analytical results for this material, and material safety data sheets for the flocculants and/or coagulants you use in your treatment process. Based on DEQ's review of this information and on our understanding that you will be providing the material to farmers applying it to agriculturally zoned lands at agronomic rates, we find that your water treatment plant solids material qualifies for the agricultural exclusion in OAR 340-093-0030(85)(b).

This exclusion will no longer apply if your treatment process changes significantly, if you plan to use the material on non-agricultural lands, or if it is applied above agronomic application rates. The solids would then be subject to solid waste regulations.

If you have not already done so, please register this material with the Department of Agriculture under their rules as a waste-derived agricultural product.

If you have any questions or would like to discuss this matter further, please contact Bill Mason at 541-687-7427 or via email at mason.bill@deq.state.or.us.

Sincerely,

Bill Mason, RG
Western Region - Eugene

enc: Agricultural Use Exclusion Internal Management Directive

ATTACHMENT

April 19, 2012, TestAmerica, Analytical Report

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Portland
9405 SW Nimbus Ave.
Beaverton, OR 97008
Tel: (503) 906-9200

TestAmerica Job ID: PVA0116
Client Project/Site: PWS #4100157
Client Project Description: Drinking Water Monitoring

For:
Veolia Water North America -Canby
PO Box 670
Canby, OR 97013

Attn: Brian Hutchins

[Handwritten signature]

Authorized for release by:
4/19/2012 3:21:52 PM
Doug McKenzie
Client Service Manager
doug.mckenzie@testamericainc.com
Designee for
Vanessa Frahs
Project Manager
Vanessa.Frahs@testamericainc.com

LINKS

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Expert**

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www.testamericainc.com

The test results in this report meet all 2003 NELAP and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Sample Summary

Client: Veolia Water North America -Canby
Project/Site: PWS #4100157

TestAmerica Job ID: PVA0116

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
PVA0116-01	BW3	Soil	01/04/12 15:00	01/05/12 10:35
PVA0116-02	1511 NE Laurelwood Circle	Water	01/05/12 08:25	01/05/12 10:35
PVA0116-03	1709 SE 11th Pl.	Water	01/05/12 08:50	01/05/12 10:35
PVA0116-04	Raw	Water	01/05/12 08:02	01/05/12 10:35
PVA0116-05	Fin	Water	01/05/12 08:02	01/05/12 10:35

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Definitions/Glossary

Client: Veolia Water North America -Canby
Project/Site: PWS #4100157

TestAmerica Job ID: PVA0116

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
MHA	Due to high levels of analyte in the sample, the MS/MSD calculation does not provide useful spike recovery information. See Blank Spike (LCS).
M8	The MS and/or MSD were below the acceptance limits. See Blank Spike (LCS).
RL1	Reporting limit raised due to sample matrix effects.

Wet Chem

Qualifier	Qualifier Description
P7	Sample filtered in lab.
MHA	Due to high levels of analyte in the sample, the MS/MSD calculation does not provide useful spike recovery information. See Blank Spike (LCS).
M2	The MS and/or MSD were below the acceptance limits due to sample matrix interference. See Blank Spike (LCS).
R2	The RPD exceeded the acceptance limit.
M1	The MS and/or MSD were above the acceptance limits due to sample matrix interference. See Blank Spike (LCS).
H	Sample analysis performed past method-specified holding time.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample Results

Client: Veolia Water North America -Canby
Project/Site: PWS #4100157

TestAmerica Job ID: PVA0116

Method: EPA 6010B - Total Metals per EPA 6000/7000 Series Methods

Client Sample ID: BW3

Date Collected: 01/04/12 15:00

Date Received: 01/05/12 10:35

Lab Sample ID: PVA0116-01

Matrix: Soil

Percent Solids: 29.1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	47800		172	20.4	mg/kg dry	*	01/09/12 14:51	01/10/12 23:50	10.0
Antimony	ND	RL1	172	16.7	mg/kg dry	*	01/09/12 14:51	01/10/12 23:50	10.0
Arsenic	ND	RL1	172	14.8	mg/kg dry	*	01/09/12 14:51	01/10/12 23:50	10.0
Barium	117		68.8	5.61	mg/kg dry	*	01/09/12 14:51	01/10/12 23:50	10.0
Beryllium	0.405	RL1 J	68.8	0.138	mg/kg dry	*	01/09/12 14:51	01/10/12 23:50	10.0
Cadmium	ND	RL1	68.8	0.413	mg/kg dry	*	01/09/12 14:51	01/10/12 23:50	10.0
Calcium	4060		1720	881	mg/kg dry	*	01/09/12 14:51	01/10/12 23:50	10.0
Chromium	30.2	RL1 J	68.8	4.64	mg/kg dry	*	01/09/12 14:51	01/10/12 23:50	10.0
Cobalt	13.4	RL1 J	68.8	1.82	mg/kg dry	*	01/09/12 14:51	01/10/12 23:50	10.0
Copper	41.4	RL1 J	68.8	8.22	mg/kg dry	*	01/09/12 14:51	01/10/12 23:50	10.0
Iron	29700		688	161	mg/kg dry	*	01/09/12 14:51	01/10/12 23:50	10.0
Lead	ND	RL1	172	9.22	mg/kg dry	*	01/09/12 14:51	01/10/12 23:50	10.0
Magnesium	3640		688	52.0	mg/kg dry	*	01/09/12 14:51	01/10/12 23:50	10.0
Manganese	317		172	20.5	mg/kg dry	*	01/09/12 14:51	01/10/12 23:50	10.0
Nickel	24.6	RL1 J	172	1.82	mg/kg dry	*	01/09/12 14:51	01/10/12 23:50	10.0
Potassium	669	RL1 J	1720	174	mg/kg dry	*	01/09/12 14:51	01/10/12 23:50	10.0
Selenium	ND	RL1	172	21.5	mg/kg dry	*	01/09/12 14:51	01/10/12 23:50	10.0
Silver	ND	RL1	172	3.82	mg/kg dry	*	01/09/12 14:51	01/10/12 23:50	10.0
Sodium	472	RL1 J	1720	152	mg/kg dry	*	01/09/12 14:51	01/10/12 23:50	10.0
Thallium	ND	RL1	172	17.0	mg/kg dry	*	01/09/12 14:51	01/10/12 23:50	10.0
Vanadium	112		68.8	1.86	mg/kg dry	*	01/09/12 14:51	01/10/12 23:50	10.0
Zinc	65.6	RL1 J	344	35.8	mg/kg dry	*	01/09/12 14:51	01/10/12 23:50	10.0

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Client Sample Results

Client: Veolia Water North America -Canby
Project/Site: PWS #4100157

TestAmerica Job ID: PVA0116

Method: ASTM D2216-80 - Percent Dry Weight (Solids) per ASTM D2216-80

Client Sample ID: BW3

Date Collected: 01/04/12 15:00

Date Received: 01/05/12 10:35

Lab Sample ID: PVA0116-01

Matrix: Soil

Percent Solids: 29.1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
% Solids	29.1		0.0100	0.0100	% by Weight		01/10/12 12:04	01/11/12 07:35	1.00

5

Client Sample Results

Client: Veolia Water North America -Canby
Project/Site: PWS #4100157

TestAmerica Job ID: PVA0116

Method: [CALC] - Conventional Chemistry Parameters per APHA/EPA Methods

Client Sample ID: BW3

Date Collected: 01/04/12 15:00

Date Received: 01/05/12 10:35

Lab Sample ID: PVA0116-01

Matrix: Soil

Percent Solids: 29.1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Nitrogen	14700		1800		mg/kg dry	✖	01/12/12 11:58	01/12/12 14:04	10.0

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Client Sample Results

Client: Veolia Water North America -Canby
Project/Site: PWS #4100157

TestAmerica Job ID: PVA0116

Method: EPA 351.2 - Conventional Chemistry Parameters per APHA/EPA Methods

Client Sample ID: BW3

Date Collected: 01/04/12 15:00

Date Received: 01/05/12 10:35

Lab Sample ID: PVA0116-01

Matrix: Soil

Percent Solids: 29.1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Kjeldahl Nitrogen	14700	P7	1800	561	mg/kg dry	XX	01/06/12 14:53	01/10/12 10:29	10.0

5

Client Sample Results

Client: Veolia Water North America -Canby
Project/Site: PWS #4100157

TestAmerica Job ID: PVA0116

Method: EPA 353.2 - Conventional Chemistry Parameters per APHA/EPA Methods

Client Sample ID: BW3

Date Collected: 01/04/12 15:00

Date Received: 01/05/12 10:35

Lab Sample ID: PVA0116-01

Matrix: Soil

Percent Solids: 29.1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate/Nitrite-Nitrogen	6.45		0.343	0.0685	mg/kg dry	✱	01/12/12 11:58	01/12/12 14:04	1.00

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Client Sample Results

Client: Veolia Water North America -Canby
Project/Site: PWS #4100157

TestAmerica Job ID: PVA0116

Method: EPA 9045C - Conventional Chemistry Parameters per APHA/EPA Methods

Client Sample ID: BW3

Date Collected: 01/04/12 15:00

Date Received: 01/05/12 10:35

Lab Sample ID: PVA0116-01

Matrix: Soil

Percent Solids: 29.1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.27	H			pH Units		01/12/12 16:10	01/12/12 17:10	1.00

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Client Sample Results

Client: Veolia Water North America -Canby
Project/Site: PWS #4100157

TestAmerica Job ID: PVA0116

Method: SM 2120B - Conventional Chemistry Parameters per Standard Methods

Client Sample ID: Raw

Date Collected: 01/05/12 08:02

Date Received: 01/05/12 10:35

Lab Sample ID: PVA0116-04

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Color	15.0		5.00		Color Units		01/05/12 12:20	01/05/12 17:34	1.00

Client Sample ID: Fin

Date Collected: 01/05/12 08:02

Date Received: 01/05/12 10:35

Lab Sample ID: PVA0116-05

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Color	ND		5.00		Color Units		01/05/12 12:20	01/05/12 17:34	1.00

5

Client Sample Results

Client: Veolia Water North America -Canby
Project/Site: PWS #4100157

TestAmerica Job ID: PVA0116

Method: SM 4500-NH3, H - Conventional Chemistry Parameters per APHA/EPA Methods

Client Sample ID: BW3

Date Collected: 01/04/12 15:00

Date Received: 01/05/12 10:35

Lab Sample ID: PVA0116-01

Matrix: Soil

Percent Solids: 29.1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia-Nitrogen	9.28		1.71	0.417	mg/kg dry	✱	01/09/12 07:16	01/09/12 11:46	1.00

5

Client Sample Results

Client: Veolia Water North America -Canby
Project/Site: PWS #4100157

TestAmerica Job ID: PVA0116

Method: SM 9223 - Microbiological Parameters per APHA Standard Methods

Client Sample ID: 1511 NE Laurelwood Circle

Date Collected: 01/05/12 08:25

Date Received: 01/05/12 10:35

Lab Sample ID: PVA0116-02

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Coliforms	ND		1.00	1.00	/100 ml		01/05/12 13:45	01/06/12 14:15	1.00
E. Coli	ND		1.00	1.00	/100 ml		01/05/12 13:45	01/06/12 14:15	1.00

Client Sample ID: 1709 SE 11th Pl.

Date Collected: 01/05/12 08:50

Date Received: 01/05/12 10:35

Lab Sample ID: PVA0116-03

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Coliforms	ND		1.00	1.00	/100 ml		01/05/12 13:45	01/06/12 14:15	1.00
E. Coli	ND		1.00	1.00	/100 ml		01/05/12 13:45	01/06/12 14:15	1.00

5

QC Sample Results

Client: Veolia Water North America -Canby
Project/Site: PWS #4100157

TestAmerica Job ID: PVA0116

Method: EPA 6010B - Total Metals per EPA 6000/7000 Series Methods

Lab Sample ID: 12A0183-BLK1

Matrix: Soil

Analysis Batch: 12A0183

Client Sample ID: Method Blank

Prep Type: Total

Prep Batch: 12A0183_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		5.00	0.592	mg/kg wet		01/09/12 14:51	01/10/12 23:35	1.00
Antimony	ND		5.00	0.484	mg/kg wet		01/09/12 14:51	01/10/12 23:35	1.00
Arsenic	ND		5.00	0.429	mg/kg wet		01/09/12 14:51	01/10/12 23:35	1.00
Barium	ND		2.00	0.163	mg/kg wet		01/09/12 14:51	01/10/12 23:35	1.00
Beryllium	ND		2.00	0.00400	mg/kg wet		01/09/12 14:51	01/10/12 23:35	1.00
Cadmium	ND		2.00	0.0120	mg/kg wet		01/09/12 14:51	01/10/12 23:35	1.00
Calcium	ND		50.0	19.8	mg/kg wet		01/09/12 14:51	01/10/12 23:35	1.00
Chromium	ND		2.00	0.135	mg/kg wet		01/09/12 14:51	01/10/12 23:35	1.00
Cobalt	ND		2.00	0.0530	mg/kg wet		01/09/12 14:51	01/10/12 23:35	1.00
Copper	ND		2.00	0.239	mg/kg wet		01/09/12 14:51	01/10/12 23:35	1.00
Iron	4.93	J	20.0	4.69	mg/kg wet		01/09/12 14:51	01/10/12 23:35	1.00
Lead	ND		5.00	0.268	mg/kg wet		01/09/12 14:51	01/10/12 23:35	1.00
Magnesium	ND		20.0	1.51	mg/kg wet		01/09/12 14:51	01/10/12 23:35	1.00
Manganese	ND		5.00	0.596	mg/kg wet		01/09/12 14:51	01/10/12 23:35	1.00
Nickel	ND		5.00	0.0530	mg/kg wet		01/09/12 14:51	01/10/12 23:35	1.00
Potassium	ND		50.0	5.06	mg/kg wet		01/09/12 14:51	01/10/12 23:35	1.00
Selenium	ND		5.00	0.625	mg/kg wet		01/09/12 14:51	01/10/12 23:35	1.00
Silver	ND		5.00	0.111	mg/kg wet		01/09/12 14:51	01/10/12 23:35	1.00
Sodium	ND		50.0	4.41	mg/kg wet		01/09/12 14:51	01/10/12 23:35	1.00
Thallium	ND		5.00	0.494	mg/kg wet		01/09/12 14:51	01/10/12 23:35	1.00
Vanadium	ND		2.00	0.0540	mg/kg wet		01/09/12 14:51	01/10/12 23:35	1.00
Zinc	ND		10.0	1.04	mg/kg wet		01/09/12 14:51	01/10/12 23:35	1.00

6

Lab Sample ID: 12A0183-BS1

Matrix: Soil

Analysis Batch: 12A0183

Client Sample ID: Lab Control Sample

Prep Type: Total

Prep Batch: 12A0183_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	248	248		mg/kg wet		100	80 - 120
Antimony	49.5	47.7		mg/kg wet		96.4	80 - 120
Arsenic	49.5	49.0		mg/kg wet		99.0	80 - 120
Barium	248	248		mg/kg wet		100	80 - 120
Beryllium	24.8	24.2		mg/kg wet		98.0	80 - 120
Cadmium	24.8	24.9		mg/kg wet		101	80 - 120
Calcium	990	998		mg/kg wet		101	80 - 120
Chromium	49.5	50.3		mg/kg wet		102	80 - 120
Cobalt	49.5	50.6		mg/kg wet		102	80 - 120
Copper	49.5	51.0		mg/kg wet		103	80 - 120
Iron	248	262		mg/kg wet		106	80 - 120
Lead	49.5	52.2		mg/kg wet		105	80 - 120
Magnesium	990	988		mg/kg wet		99.8	80 - 120
Manganese	248	282		mg/kg wet		106	80 - 120
Nickel	49.5	50.4		mg/kg wet		102	80 - 120
Potassium	990	954		mg/kg wet		96.4	80 - 120
Selenium	49.5	48.2		mg/kg wet		97.3	80 - 120
Silver	24.8	24.7		mg/kg wet		99.7	80 - 120
Sodium	990	984		mg/kg wet		99.3	80 - 120
Vanadium	49.5	50.2		mg/kg wet		101	80 - 120
Zinc	49.5	50.3		mg/kg wet		102	80 - 120

QC Sample Results

Client: Veolia Water North America -Canby
Project/Site: PWS #4100157

TestAmerica Job ID: PVA0116

Method: EPA 6010B - Total Metals per EPA 6000/7000 Series Methods (Continued)

Lab Sample ID: 12A0183-BS1

Matrix: Soil

Analysis Batch: 12A0183

Client Sample ID: Lab Control Sample

Prep Type: Total

Prep Batch: 12A0183_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Thallium	248	252		mg/kg wet		102	80 - 120

6

Lab Sample ID: 12A0183-MS1

Matrix: Soil

Analysis Batch: 12A0183

Client Sample ID: BW3

Prep Type: Total

Prep Batch: 12A0183_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Unit	D	%Rec	Limits
Aluminum	47800		852	63400	MHA	mg/kg dry	*	1830	75 - 125
Antimony	ND	RL1	170	107	M8 J	mg/kg dry	*	62.9	75 - 125
Arsenic	ND	RL1	170	166	J	mg/kg dry	*	97.7	75 - 125
Barium	117		852	901		mg/kg dry	*	92.1	75 - 125
Beryllium	0.405	RL1 J	85.2	73.2		mg/kg dry	*	85.5	75 - 125
Cadmium	ND	RL1	85.2	77.2		mg/kg dry	*	90.6	75 - 125
Calcium	4060		3410	9390	MHA	mg/kg dry	*	158	75 - 125
Chromium	30.2	RL1 J	170	191		mg/kg dry	*	94.4	75 - 125
Cobalt	13.4	RL1 J	170	172		mg/kg dry	*	93.1	75 - 125
Copper	41.4	RL1 J	170	207		mg/kg dry	*	97.2	75 - 125
Iron	29700		852	36200	MHA	mg/kg dry	*	771	75 - 125
Lead	ND	RL1	170	164	J	mg/kg dry	*	96.2	75 - 125
Magnesium	3640		3410	8020	MHA	mg/kg dry	*	129	75 - 125
Manganese	317		852	1270		mg/kg dry	*	112	75 - 125
Nickel	24.6	RL1 J	170	185		mg/kg dry	*	94.1	75 - 125
Potassium	669	RL1 J	3410	3840		mg/kg dry	*	93.0	75 - 125
Selenium	ND	RL1	170	150	J	mg/kg dry	*	88.2	75 - 125
Silver	ND	RL1	85.2	75.4	J	mg/kg dry	*	88.6	75 - 125
Sodium	472	RL1 J	3410	4000		mg/kg dry	*	103	75 - 125
Thallium	ND	RL1	852	771		mg/kg dry	*	90.6	75 - 125
Vanadium	112		170	280		mg/kg dry	*	98.3	75 - 125
Zinc	65.6	RL1 J	170	232	J	mg/kg dry	*	97.9	75 - 125

Lab Sample ID: 12A0183-MSD1

Matrix: Soil

Analysis Batch: 12A0183

Client Sample ID: BW3

Prep Type: Total

Prep Batch: 12A0183_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Dup Result	Matrix Spike Dup Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Aluminum	47800		843	49800	MHA	mg/kg dry	*	240	75 - 125	24.0	40
Antimony	ND	RL1	169	111	M8 J	mg/kg dry	*	65.8	75 - 125	3.55	40
Arsenic	ND	RL1	169	159	J	mg/kg dry	*	94.0	75 - 125	4.78	40
Barium	117		843	849		mg/kg dry	*	86.8	75 - 125	6.00	40
Beryllium	0.405	RL1 J	84.3	71.9		mg/kg dry	*	84.8	75 - 125	1.78	40
Cadmium	ND	RL1	84.3	75.5		mg/kg dry	*	89.5	75 - 125	2.20	40
Calcium	4060		3370	6950		mg/kg dry	*	85.6	75 - 125	29.8	40
Chromium	30.2	RL1 J	169	177		mg/kg dry	*	87.3	75 - 125	7.35	40
Cobalt	13.4	RL1 J	169	162		mg/kg dry	*	88.4	75 - 125	5.70	40
Copper	41.4	RL1 J	169	193		mg/kg dry	*	89.9	75 - 125	6.91	40
Iron	29700		843	24800	MHA	mg/kg dry	*	-577	75 - 125	37.5	40
Lead	ND	RL1	169	157	J	mg/kg dry	*	92.8	75 - 125	4.58	40
Magnesium	3640		3370	6170		mg/kg dry	*	75.0	75 - 125	28.1	40
Manganese	317		843	1040		mg/kg dry	*	85.5	75 - 125	20.0	40
Nickel	24.6	RL1 J	169	173		mg/kg dry	*	87.8	75 - 125	6.86	40

QC Sample Results

Client: Veolia Water North America -Canby
Project/Site: PWS #4100157

TestAmerica Job ID: PVA0116

Method: EPA 6010B - Total Metals per EPA 6000/7000 Series Methods (Continued)

Lab Sample ID: 12A0183-MSD1							Client Sample ID: BW3				
Matrix: Soil							Prep Type: Total				
Analysis Batch: 12A0183							Prep Batch: 12A0183_P				
Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Potassium	669	RL1 J	3370	3540		mg/kg dry	*	85.0	75 - 125	8.11	40
Selenium	ND	RL1	169	141	J	mg/kg dry	*	83.4	75 - 125	6.61	40
Silver	ND	RL1	84.3	75.4	J	mg/kg dry	*	89.4	75 - 125	0.030	40
Sodium	472	RL1 J	3370	3680		mg/kg dry	*	95.0	75 - 125	8.34	40
Thallium	ND	RL1	843	759		mg/kg dry	*	90.0	75 - 125	1.67	40
Vanadium	112		169	256		mg/kg dry	*	84.8	75 - 125	9.13	40
Zinc	65.6	RL1 J	169	207	J	mg/kg dry	*	84.0	75 - 125	11.4	40

6

Method: ASTM D2216-80 - Percent Dry Weight (Solids) per ASTM D2216-80

Lab Sample ID: 12A0199-DUP1							Client Sample ID: BW3				
Matrix: Soil							Prep Type: Total				
Analysis Batch: 12A0199							Prep Batch: 12A0199_P				
Analyte	Sample Result	Sample Qualifier	Duplicate Result	Duplicate Qualifier	Unit	D				RPD	Limit
% Solids	29.1		29.2		% by Weight					0.372	20

Lab Sample ID: 12A0199-DUP2							Client Sample ID: Duplicate				
Matrix: Soil							Prep Type: Total				
Analysis Batch: 12A0199							Prep Batch: 12A0199_P				
Analyte	Sample Result	Sample Qualifier	Duplicate Result	Duplicate Qualifier	Unit	D				RPD	Limit
% Solids	71.4		67.7		% by Weight					5.26	20

Method: EPA 351.2 - Conventional Chemistry Parameters per APHA/EPA Methods

Lab Sample ID: 12A0140-BLK1							Client Sample ID: Method Blank				
Matrix: Other dry							Prep Type: Total				
Analysis Batch: 12A0140							Prep Batch: 12A0140_P				
Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed		Dil Fac	
Total Kjeldahl Nitrogen	ND		48.8	15.2	mg/kg wet		01/06/12 14:53	01/10/12 10:29		1.00	

Lab Sample ID: 12A0140-BS1							Client Sample ID: Lab Control Sample				
Matrix: Other dry							Prep Type: Total				
Analysis Batch: 12A0140							Prep Batch: 12A0140_P				
Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits				
Total Kjeldahl Nitrogen	509	470		mg/kg wet		92.4	90 - 110				

Lab Sample ID: 12A0140-MS1							Client Sample ID: BW3				
Matrix: Other dry							Prep Type: Total				
Analysis Batch: 12A0140							Prep Batch: 12A0140_P				
Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Kjeldahl Nitrogen	14700	P7	1880	13800	P7 MHA	mg/kg dry	*	-47.0	75 - 125		

QC Sample Results

Client: Veolia Water North America -Canby
Project/Site: PWS #4100157

TestAmerica Job ID: PVA0116

Method: EPA 351.2 - Conventional Chemistry Parameters per APHA/EPA Methods (Continued)

Lab Sample ID: 12A0140-DUP1

Matrix: Other dry

Analysis Batch: 12A0140

Client Sample ID: BW3

Prep Type: Total

Prep Batch: 12A0140_P

Analyte	Sample	Sample	Duplicate		Unit	D	RPD		Limit
	Result	Qualifier	Result	Qualifier					
Total Kjeldahl Nitrogen	14700	P7	17100	P7	mg/kg dry	✖		15.2	40

6

Method: EPA 353.2 - Conventional Chemistry Parameters per APHA/EPA Methods

Lab Sample ID: 12A0277-BLK1

Matrix: Soil

Analysis Batch: 12A0277

Client Sample ID: Method Blank

Prep Type: Total

Prep Batch: 12A0277_P

Analyte	Blank	Blank	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Nitrate/Nitrite-Nitrogen	ND		0.0995	0.0199	mg/kg wet		01/12/12 11:58	01/12/12 14:04	1.00

Lab Sample ID: 12A0277-BS1

Matrix: Soil

Analysis Batch: 12A0277

Client Sample ID: Lab Control Sample

Prep Type: Total

Prep Batch: 12A0277_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	
Nitrate/Nitrite-Nitrogen	1.00	1.06		mg/kg wet		106	85 - 115	

Lab Sample ID: 12A0277-MS1

Matrix: Soil

Analysis Batch: 12A0277

Client Sample ID: BW3

Prep Type: Total

Prep Batch: 12A0277_P

Analyte	Sample	Sample	Spike	Matrix Spike	Matrix Spike	Unit	D	%Rec	%Rec. Limits	
	Result	Qualifier	Added	Result	Qualifier					
Nitrate/Nitrite-Nitrogen	6.45		3.43	14.1	M1	mg/kg dry	✖	223	75 - 125	

Lab Sample ID: 12A0277-MSD1

Matrix: Soil

Analysis Batch: 12A0277

Client Sample ID: BW3

Prep Type: Total

Prep Batch: 12A0277_P

Analyte	Sample	Sample	Spike	Matrix Spike	Matrix Spike	Unit	D	%Rec	%Rec. Limits		RPD	Limit
	Result	Qualifier	Added	Result	Qualifier							
Nitrate/Nitrite-Nitrogen	6.45		3.45	11.9	M1	mg/kg dry	✖	158	75 - 125		16.9	40

Lab Sample ID: 12A0277-DUP1

Matrix: Soil

Analysis Batch: 12A0277

Client Sample ID: BW3

Prep Type: Total

Prep Batch: 12A0277_P

Analyte	Sample	Sample	Duplicate		Unit	D	RPD		Limit
	Result	Qualifier	Result	Qualifier					
Nitrate/Nitrite-Nitrogen	6.45		9.11		mg/kg dry	✖		34.1	40

Method: EPA 9045C - Conventional Chemistry Parameters per APHA/EPA Methods

Lab Sample ID: 12A0276-DUP1

Matrix: Soil

Analysis Batch: 12A0276

Client Sample ID: BW3

Prep Type: Total

Prep Batch: 12A0276_P

Analyte	Sample	Sample	Duplicate		Unit	D	RPD		Limit
	Result	Qualifier	Result	Qualifier					
pH	6.27	H	6.18		pH Units			1.45	25

QC Sample Results

Client: Veolia Water North America -Canby
Project/Site: PWS #4100157

TestAmerica Job ID: PVA0116

Method: SM 2120B - Conventional Chemistry Parameters per Standard Methods

Lab Sample ID: 12A0094-BLK1

Matrix: Water

Analysis Batch: 12A0094

Client Sample ID: Method Blank

Prep Type: Total

Prep Batch: 12A0094_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Color	ND		5.00		Color Units		01/05/12 12:20	01/05/12 17:34	1.00

6

Lab Sample ID: 12A0094-BS1

Matrix: Water

Analysis Batch: 12A0094

Client Sample ID: Lab Control Sample

Prep Type: Total

Prep Batch: 12A0094_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Color	20.0	20.0		Color Units		100	80 - 120

Lab Sample ID: 12A0094-DUP1

Matrix: Water

Analysis Batch: 12A0094

Client Sample ID: Duplicate

Prep Type: Total

Prep Batch: 12A0094_P

Analyte	Sample Result	Sample Qualifier	Duplicate Result	Duplicate Qualifier	Unit	D	RPD	Limit
Color	0.00		ND		Color Units			20

Method: SM 4500-NH3, H - Conventional Chemistry Parameters per APHA/EPA Methods

Lab Sample ID: 12A0151-BLK1

Matrix: Soil

Analysis Batch: 12A0151

Client Sample ID: Method Blank

Prep Type: Total

Prep Batch: 12A0151_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia-Nitrogen	ND		0.500	0.122	mg/kg wet		01/09/12 07:16	01/09/12 11:48	1.00

Lab Sample ID: 12A0151-BS1

Matrix: Soil

Analysis Batch: 12A0151

Client Sample ID: Lab Control Sample

Prep Type: Total

Prep Batch: 12A0151_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia-Nitrogen	19.8	22.0		mg/kg wet		111	85 - 115

Lab Sample ID: 12A0151-MS1

Matrix: Soil

Analysis Batch: 12A0151

Client Sample ID: BW3

Prep Type: Total

Prep Batch: 12A0151_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia-Nitrogen	9.28		68.9	7.88	M2	mg/kg dry	✱	-2.03	75 - 125

Lab Sample ID: 12A0151-MSD1

Matrix: Soil

Analysis Batch: 12A0151

Client Sample ID: BW3

Prep Type: Total

Prep Batch: 12A0151_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Ammonia-Nitrogen	9.28		67.9	80.5	R2	mg/kg dry	✱	105	75 - 125	164	20

QC Association Summary

Client: Veolia Water North America -Canby
Project/Site: PWS #4100157

TestAmerica Job ID: PVA0116

Metals

Analysis Batch: 12A0183

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
12A0183-BLK1	Method Blank	Total	Soil	EPA 6010B	12A0183_P
12A0183-BS1	Lab Control Sample	Total	Soil	EPA 6010B	12A0183_P
12A0183-MS1	BW3	Total	Soil	EPA 6010B	12A0183_P
12A0183-MSD1	BW3	Total	Soil	EPA 6010B	12A0183_P
PVA0116-01	BW3	Total	Soil	EPA 6010B	12A0183_P

Prep Batch: 12A0183_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
12A0183-BLK1	Method Blank	Total	Soil	EPA 3050	
12A0183-BS1	Lab Control Sample	Total	Soil	EPA 3050	
12A0183-MS1	BW3	Total	Soil	EPA 3050	
12A0183-MSD1	BW3	Total	Soil	EPA 3050	
PVA0116-01	BW3	Total	Soil	EPA 3050	

Sample Control

Analysis Batch: 12A0199

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
12A0199-DUP1	BW3	Total	Soil	ASTM D2216-80	12A0199_P
12A0199-DUP2	Duplicate	Total	Soil	ASTM D2216-80	12A0199_P
PVA0116-01	BW3	Total	Soil	ASTM D2216-80	12A0199_P

Prep Batch: 12A0199_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
12A0199-DUP1	BW3	Total	Soil	Dry Weight	
12A0199-DUP2	Duplicate	Total	Soil	Dry Weight	
PVA0116-01	BW3	Total	Soil	Dry Weight	

Wet Chem

Analysis Batch: 12A0094

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
12A0094-BLK1	Method Blank	Total	Water	SM 2120B	12A0094_P
12A0094-BS1	Lab Control Sample	Total	Water	SM 2120B	12A0094_P
12A0094-DUP1	Duplicate	Total	Water	SM 2120B	12A0094_P
PVA0116-04	Raw	Total	Water	SM 2120B	12A0094_P
PVA0116-05	Fin	Total	Water	SM 2120B	12A0094_P

Analysis Batch: 12A0140

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
12A0140-BLK1	Method Blank	Total	Other dry	EPA 351.2	12A0140_P
12A0140-BS1	Lab Control Sample	Total	Other dry	EPA 351.2	12A0140_P
12A0140-DUP1	BW3	Total	Other dry	EPA 351.2	12A0140_P
12A0140-MS1	BW3	Total	Other dry	EPA 351.2	12A0140_P
PVA0116-01	BW3	Total	Soil	EPA 351.2	12A0140_P

Analysis Batch: 12A0151

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
12A0151-BLK1	Method Blank	Total	Soil	SM 4500-NH3, H	12A0151_P
12A0151-BS1	Lab Control Sample	Total	Soil	SM 4500-NH3, H	12A0151_P
12A0151-MS1	BW3	Total	Soil	SM 4500-NH3, H	12A0151_P
12A0151-MSD1	BW3	Total	Soil	SM 4500-NH3, H	12A0151_P

QC Association Summary

Client: Veolia Water North America -Canby
Project/Site: PWS #4100157

TestAmerica Job ID: PVA0116

Wet Chem (Continued)

Analysis Batch: 12A0151 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
PVA0116-01	BW3	Total	Soil	SM 4500-NH3, H	12A0151_P

Analysis Batch: 12A0276

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
12A0276-DUP1	BW3	Total	Soil	EPA 9045C	12A0276_P
PVA0116-01	BW3	Total	Soil	EPA 9045C	12A0276_P

7

Analysis Batch: 12A0277

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
12A0277-BLK1	Method Blank	Total	Soil	EPA 353.2	12A0277_P
12A0277-BS1	Lab Control Sample	Total	Soil	EPA 353.2	12A0277_P
12A0277-DUP1	BW3	Total	Soil	EPA 353.2	12A0277_P
12A0277-MS1	BW3	Total	Soil	EPA 353.2	12A0277_P
12A0277-MSD1	BW3	Total	Soil	EPA 353.2	12A0277_P
PVA0116-01	BW3	Total	Soil	EPA 353.2	12A0277_P

Prep Batch: 12A0094_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
12A0094-BLK1	Method Blank	Total	Water	General Preparation	
12A0094-BS1	Lab Control Sample	Total	Water	General Preparation	
12A0094-DUP1	Duplicate	Total	Water	General Preparation	
PVA0116-04	Raw	Total	Water	General Preparation	
PVA0116-05	Fin	Total	Water	General Preparation	

Prep Batch: 12A0140_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
12A0140-BLK1	Method Blank	Total	Other dry	General Preparation	
12A0140-BS1	Lab Control Sample	Total	Other dry	General Preparation	
12A0140-DUP1	BW3	Total	Other dry	General Preparation	
12A0140-MS1	BW3	Total	Other dry	General Preparation	
PVA0116-01	BW3	Total	Soil	General Preparation	

Prep Batch: 12A0151_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
12A0151-BLK1	Method Blank	Total	Soil	General Preparation	
12A0151-BS1	Lab Control Sample	Total	Soil	General Preparation	
12A0151-MS1	BW3	Total	Soil	General Preparation	
12A0151-MSD1	BW3	Total	Soil	General Preparation	
PVA0116-01	BW3	Total	Soil	General Preparation	

Wet Chem (Continued)

Prep Batch: 12A0276_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
12A0276-DUP1	BW3	Total	Soil	General Preparation	
PVA0116-01	BW3	Total	Soil	General Preparation	

Prep Batch: 12A0277_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
12A0277-BLK1	Method Blank	Total	Soil	General Preparation	
12A0277-BS1	Lab Control Sample	Total	Soil	General Preparation	
12A0277-DUP1	BW3	Total	Soil	General Preparation	
12A0277-MS1	BW3	Total	Soil	General Preparation	
12A0277-MSD1	BW3	Total	Soil	General Preparation	
PVA0116-01	BW3	Total	Soil	General Preparation	

7

Microbiology

Analysis Batch: 12A0103

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
PVA0116-02	1511 NE Laurelwood Circle	Total	Water	SM 9223	12A0103_P
PVA0116-03	1709 SE 11th Pl.	Total	Water	SM 9223	12A0103_P

Prep Batch: 12A0103_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
PVA0116-02	1511 NE Laurelwood Circle	Total	Water	Aqueous Micro	
PVA0116-03	1709 SE 11th Pl.	Total	Water	Aqueous Micro	

Certification Summary

Client: Veolia Water North America -Canby
Project/Site: PWS #4100157

TestAmerica Job ID: PVA0116

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Portland	Alaska	State Program	10	OR00040
TestAmerica Portland	Alaska (UST)	State Program	10	UST-012
TestAmerica Portland	California	State Program	9	2597
TestAmerica Portland	Oregon	NELAC	10	OR100021
TestAmerica Portland	USDA	Federal		P330-11-00092
TestAmerica Portland	Washington	State Program	10	C586

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

THE LEADER IN ENVIRONMENTAL TESTING

425-420-9200 FAX 420-9210
509-924-9200 FAX 924-9290
503-906-9200 FAX 906-9210
907-563-9200 FAX 563-9210

Work Order #: P04/0116

4/19/2012

Portland Sample Control Checklist

Work Order #: PVA0116 Date/Time Received: 1/5/12 @ 1035
Client Name: VWNA
Project Name: CANBY
Time Zone:
☐ EDT/EST ☐ CDT/CST ☐ MDT/MST ☒ PDT/PST ☐ AK ☐ HI ☐ OTHER

Unpacking Checks:

Cooler (s): _____
Temperature (s): 3.5

Digi #1 ☐ Digi #2 ☐ IR Gun ☒ (☐ Plastic ☐ Glass)
IR Gun- Degree ☐ (☐ Plastic)

Ice used: (circle one) GEL LOOSE BLUE NONE OTHER: _____ Initials: PS

N/A Yes No

- ☒ ☐ ☐ 1. If BSI client, were temp blanks received? If no, document on NOD.
- ☒ ☐ ☐ 2. Custody seals intact? If ESI client and no is checked, document on NOD.
- ☒ ☐ ☐ 3. Chain of Custody present? If no, document on NOD. Along with "received by" & "relinquished by" signatures with date & time?
- ☒ ☐ ☐ 4. Bottles received intact? If no, document on NOD.
- ☒ ☐ ☐ 5. Sample is not multiphasic? If no, document on NOD.
- ☒ ☐ ☐ 6. Sampler name/signature documented on COC?
- ☒ ☐ ☐ 7. Proper container and preservatives used? If no, document on NOD.
- ☒ ☐ ☐ 8. pH for ESI samples checked and meets requirements? If no, document on NOD.
- ☒ ☐ ☐ 9. Cyanide samples checked for sulfides and meets requirements? If no, notify PM.
- ☒ ☐ ☐ 10. HF Dilution required?
- ☒ ☐ ☐ 11. Sufficient volume provided for all analysis and requested MS/MSD? If no, document on NOD and consult PM before proceeding.
- ☒ ☐ ☐ 12. Did Chain of Custody agree with samples received? If no, document on NOD.
- ☒ ☐ ☐ 13. Were VOA vial samples received without headspace?
- ☒ ☐ ☐ 14. Did samples require preservation with sodium thiosulfate?
- ☒ ☐ ☐ 15. If yes to #14, was the residual chlorine test negative? If no, document on NOD.
- ☒ ☐ ☐ 16. Are dissolved/field filtered metals bottles sediment-free? If no, document on NOD.
- ☐ ☒ ☐ 17. Are analyses with short holding times received in hold?
- ☐ ☒ ☐ 18. Were special log-in instructions read and followed?
- ☐ ☒ ☐ 19. Were lab sample labels verified against the client sample labels?

Checklist Reviewed: _____ Log-in initials: PS Labcler initials: PS

ATTACHMENT

***September 27, 2011, Canby Utility,
Clean Fill Table for Uplands (metals)***

Clean Fill Table for Uplands

	Clean Fill Value	Note	Value could change in the near future to approximately	Note
INORGANICS				
Aluminum	50	b	~98000	d
Antimony and compounds	4	a	~0.253 to ~0.446	c
Arsenic III	7	a	~5.156 to ~14.08	c
Barium and compounds	85	b	~536.7 to ~686.6	c
Beryllium and compounds	10	b	~1.370 to ~1.634	c
Bismuth	20	b		
Boron	0.5	b	~30	e
Bromine	10	b		
Cadmium and compounds	1	a	~0.314 to ~1.796	c
Chromium III	42	a	~86.47 to ~90.2	c
Chromium VI	410	b	130	f
Cobalt	20	b	~29	d
Copper and compounds	36	a	~39.11 to ~43.11	c
Fluorine (soluble fluoride)	30	b	~483	e
Iron	10	b	~81000	d
Iodine	4	b	~6.68	e
Lanthanum	50	b		
Lead	17	a	~13.47 to ~18.46	c
Lithium	2	b	~27	d
Manganese and compounds	100	b	~1083 to ~1158	c
Mercury (elemental, total)	0.07	a	~1.233 to ~2.173	c
Mercury (methyl)	0.0002	b		
Molybdenum	2	b	~3.46	e
Nickel	38	a	~48.56 to ~303.1	c
Niobium	9	b	~18	d
Selenium	2	a	~5.885 to ~95.11	c
Silver and compounds	1	a	~0.139 to ~1.965	c
Strontium	32875	b	~317	d
Technetium	0.2	b		
Tellurium	2	b		
Thallium	1	b	~0.586 to ~2.076	c
Tin (inorganic)	50	b		
Titanium	1000	b	~8459	e
Tungsten	400	b		
Uranium	5	b		
Vanadium	2	b	~160.2 to ~249.1	c
Zinc	86	a	~94.92 to ~95.74	c
Zirconium	97	b	~187	e

Notes:

a - Table 1, Human Health Risk Assessment Guidance, DEQ (2010)

<http://www.deq.state.or.us/lq/pubs/docs/cu/HumanHealthRiskAssessmentGuidance.pdf>

b - Table 1, Guidance for Ecological Risk Assessment, Level II Screening Level Values, DEQ (2001).
<http://www.deq.state.or.us/lq/pubs/docs/cu/GuidanceEcologicalRisk.pdf>

c - Oregon Background Metals Evaluation, GeoEngineers under contract to DEQ (2010 and 2011)

d - Ames and Hawkins, 1997. Statistical Analysis and Areal Trends of Background Concentrations of Metals in Soils of Clark County, Washington. USGS Water-Resources Investigations Report 96-4252.

e - Mean plus one standard deviation, Boerngen and Shacklette, 1981. Geochemical analysis of soils and other surficial materials of the conterminous United States. USGS open-file report 81-197.

f - EPA, 2008. Ecological Soil Screening Levels for Chromium, Interim Final.
http://www.epa.gov/ecotox/ecossl/pdf/eco-ssl_chromium.pdf

September 27, 2011, as provided by Bill Mason, DEQ

ATTACHMENT

***November 15, 2011, DEQ,
Risk-Based Concentrations Table***

[illegible]

Contaminated Medium Exposure Pathway	SOIL mg/Kg (ppm)										SOIL mg/Kg (ppm)										SOIL mg/Kg (ppm)										GROUNDWATER (µg/L (ppb))																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
	Soil Ingestion, Dermal Contact, and Inhalation (RBC _{soil})										Volatilization to Outdoor Air (RBC _{soil})										Vapor Intrusion into Buildings (RBC _{soil})										Leaching to Groundwater (RBC _{soil})										Ingestion & Inhalation from Tapwater (RBC _{soil})																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
	Residential		Urban Residential		Occupational		Construction Worker		Excavation Worker		Residential		Urban Residential		Occupational		Residential		Urban Residential		Occupational		Residential		Urban Residential		Occupational		Residential		Urban Residential		Occupational		Residential		Urban Residential		Occupational																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
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ATTACHMENT

***November 2011, EPA;
Regional Screening Level (RSL) Summary Table***

[illegible]

Toxicity and Chemical-Specific Information														
SFO (mg/kg-day) ¹	IR ($\mu\text{g}/\text{m}^3$) ²	LOEL ($\mu\text{g}/\text{m}^3$) ³	LOEL ($\mu\text{g}/\text{m}^3$) ³	LOEL ($\mu\text{g}/\text{m}^3$) ³	LOEL ($\mu\text{g}/\text{m}^3$) ³	LOEL ($\mu\text{g}/\text{m}^3$) ³	LOEL ($\mu\text{g}/\text{m}^3$) ³	LOEL ($\mu\text{g}/\text{m}^3$) ³	LOEL ($\mu\text{g}/\text{m}^3$) ³	LOEL ($\mu\text{g}/\text{m}^3$) ³	LOEL ($\mu\text{g}/\text{m}^3$) ³	LOEL ($\mu\text{g}/\text{m}^3$) ³	LOEL ($\mu\text{g}/\text{m}^3$) ³	LOEL ($\mu\text{g}/\text{m}^3$) ³
8.0E-03	X	1.0E-04	1.0E-04	1.0E-04	1.0E-04	1.0E-04	1.0E-04	1.0E-04	1.0E-04	1.0E-04	1.0E-04	1.0E-04	1.0E-04	1.0E-04
7.0E-02	H	1.0E-05	H	4.0E-02	P	1.0E-03	P	1.0E-03	P	1.0E-03	P	1.0E-03	P	1.0E-03
1.1E-00	I	3.3E-04	I	3.0E-03	P	1.0E-03	P	1.0E-03	P	1.0E-03	P	1.0E-03	P	1.0E-03
1.4E-02	I	2.4E-06	I	2.0E-02	I	5.0E-02	I	5.0E-02	I	5.0E-02	I	5.0E-02	I	5.0E-02
2.2E-02	I	6.2E-02	I	5.0E-02	I	5.0E-02	I	5.0E-02	I	5.0E-02	I	5.0E-02	I	5.0E-02
7.0E-01	I	1.0E-01	I	2.0E-02	H	1.0E-02	H	1.0E-02	H	1.0E-02	H	1.0E-02	H	1.0E-02
2.0E-00	X	6.0E-04	X	8.0E-03	I	6.0E-02	I	6.0E-02	I	6.0E-02	I	6.0E-02	I	6.0E-02
6.2E-02	I	3.7E-05	I	2.0E-02	I	4.0E-02	I	4.0E-02	I	4.0E-02	I	4.0E-02	I	4.0E-02
7.9E-03	I	1.1E-06	I	1.4E-03	I	5.0E-03	I	5.0E-03	I	5.0E-03	I	5.0E-03	I	5.0E-03
2.0E-04	C	5.7E-08	C	5.0E-02	P	1.0E-04	P	1.0E-04	P	1.0E-04	P	1.0E-04	P	1.0E-04
3.4E-00	C	3.0E-05	C	1.0E-01	I	2.0E-03	I	2.0E-03	I	2.0E-03	I	2.0E-03	I	2.0E-03
1.9E-03	P	2.0E-01	P	2.0E-01	I	2.0E-01	I	2.0E-01	I	2.0E-01	I	2.0E-01	I	2.0E-01
2.0E-04	C	5.7E-08	C	5.0E-02	P	1.0E-04	P	1.0E-04	P	1.0E-04	P	1.0E-04	P	1.0E-04
1.5E-01	C	4.3E-03	C	2.0E-03	I	1.3E-01	I	1.3E-01	I	1.3E-01	I	1.3E-01	I	1.3E-01
2.3E-03	C	6.6E-07	C	1.0E-01	I	1.0E-01	I	1.0E-01	I	1.0E-01	I	1.0E-01	I	1.0E-01
7.0E-02	I	6.0E-06	I	4.0E-03	I	1.9E-01	I	1.9E-01	I	1.9E-01	I	1.9E-01	I	1.9E-01
4.0E-01	H	1.0E-04	H	5.0E-04	I	7.0E-04	I	7.0E-04	I	7.0E-04	I	7.0E-04	I	7.0E-04
3.5E-01	C	4.3E-03	C	2.0E-03	I	1.3E-01	I	1.3E-01	I	1.3E-01	I	1.3E-01	I	1.3E-01
1.0E-01	I	4.6E-03	I	2.0E-04	A	9.0E-04	A	9.0E-04	A	9.0E-04	A	9.0E-04	A	9.0E-04
4.6E-01	H	1.0E-04	H	5.0E-04	I	7.0E-04	I	7.0E-04	I	7.0E-04	I	7.0E-04	I	7.0E-04
1.0E-01	I	4.6E-03	I	2.0E-04	A	9.0E-04	A	9.0E-04	A	9.0E-04	A	9.0E-04	A	9.0E-04
2.7E-01	X	7.7E-05	X	3.0E-03	X	1.0E-01	X	1.0E-01	X	1.0E-01	X	1.0E-01	X	1.0E-01
2.0E-01	P	4.0E-03	P	3.0E-05	I	3.0E-05	I	3.0E-05	I	3.0E-05	I	3.0E-05	I	3.0E-05
1.1E-01	C	3.1E-05	C	2.0E-02	I	7.8E-02	I	7.8E-02	I	7.8E-02	I	7.8E-02	I	7.8E-02
4.6E-01	H	1.0E-04	H	5.0E-04	I	7.0E-04	I	7.0E-04	I	7.0E-04	I	7.0E-04	I	7.0E-04
2.0E-02	I	6.2E-02	I	5.0E-02	I	5.0E-02	I	5.0E-02	I	5.0E-02	I	5.0E-02	I	5.0E-02
3.0E-03	P	3.0E-03	P	3.0E-03	P	3.0E-03	P	3.0E-03	P	3.0E-03	P	3.0E-03	P	3.0E-03

Key: I = IRIS; P = PPRVTY; A = ATSDR; C = Cal; X = PPRVTY Appendix; H = HEAST; J = New Jersey; O = Environmental Criteria and Assessment Office; S = see user guide on lead; M = mutagen; V = volatile; F = see FAQ; C = cancer; * = where n SL < 100X c SL; ** = where n SL < 10X c SL; n = noncancer; m = Concentration may exceed ceiling limit (See User Guide); SSL values are based on DAF=5	Toxicity and Chemical-specific Information										Screening Levels										Protection of Ground														
	Contaminant										Screening Levels										Protection of Ground														
	Analyte										Screening Levels										Protection of Ground														
	SFO (mg/kg-day) ⁻¹	e	k	IUR (μg/m ³) ⁻¹	e	k	RfD _a (mg/kg-day)	e	k	RI _{CS} (mg/m ³) ⁻¹	e	k	mul _a	V	C	gen	GIABS	ABS	C _{SL} (mg/kg)	Resident Soil (mg/kg)	key	Industrial Soil (μg/m ³)	key	Resident Air (μg/m ³)	key	Industrial Air (μg/m ³)	key	Topwater (μg/L)	key	MCL (μg/L)	Risk-based SSL (mg/kg)	MCL-based SSL (mg/kg)			
4.0E-02	P		5.0E-01	V		1		1	1.7E+02	Chlorobutane, 1- Chlorodifluoromethane	109-69-3 75-45-6	3.1E+03 5.3E+04	ns ns	4.1E+04 2.2E+05	ns nms	5.2E+04	n	2.2E+05	n	1.0E+05	n	4.8E+02 4.3E+01													
3.1E-02	C	2.3E-05	I	1.0E-02	I	9.8E-02	A	V	1	2.5E+03	Chloroform	67-66-3	2.9E-01	c	1.5E+00	c	1.1E+01	c	5.8E-01	c	1.9E-01	c	8.0E-01(F)												
2.4E+00	C	6.9E-04	C			9.0E-02	V		1	1.8E+02	Chloromethyl Methyl Ether	74-87-3	1.9E-02	c	9.4E-02	c	3.5E-03	c	1.8E-02	c	5.5E-03	c													
3.0E-01	P	3.0E-03	P	1.0E-05	X		V		1	0.1	Chloromethylphenylene, Beta-	91-58-7	6.3E+03	ns	8.2E+04	ns																			
6.3E-03	P	1.0E-03	P	6.0E-04	P		V		1	0.1	Chloronitrobenzene, o-	88-73-3	1.6E+00	c	5.7E+00	c	1.0E-02	n	4.4E-02	n	2.0E-01	c													
											Chloronitrobenzene, p-	100-00-5	6.1E-01	n	2.7E-02	c**	6.3E-01	n	2.6E-00	n	9.4E+00	c**													
3.1E-03	C	8.9E-07	C	1.5E-02	I	4.0E-04	C	V	1	0.1	Chlorophenol, 2-	95-57-8	3.9E+02	n	5.1E+03	n																			
											Chloropicrin	76-06-2	2.1E+00	n	8.8E+00	n	4.2E-01	n	1.8E+00	n	8.3E-01	n													
											Chlorobutanol	1897-45-6	1.6E+02	c**	5.6E+02	c*	2.7E+00	c	1.4E+01	c	1.9E+01	c*													
2.4E+02	C	6.9E-02	C			2.0E-02	X		1	0.1	Chlorobutene, o-	95-49-8	1.6E+03	ns	7.0E+04	ns																			
											Chloroaceton	106-43-4 54749-90-5	2.0E+03	c	7.2E+03	c	3.5E-05	c	1.8E-04	c	2.8E-04	c													
											Chloropropane	101-21-3	1.2E+04	n	1.2E+05	nm																			
											Chloropyrifos	2921-88-2	6.1E-01	n	6.2E-02	n																			
											Chlorpyrifos Methyl	5598-13-0	6.1E-02	n	6.2E-03	n																			
											Chlorosulfuron	64902-72-3	3.1E+03	n	3.1E+04	n																			
											Chlorothios	60238-56-4	4.9E-01	n	4.9E-02	n																			
											Chromium(III), Insoluble Salts	16065-83-1	1.5E+06	nm	1.5E+06																				

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Toxicity and Chemical-specific Information														Screening Levels										Protection of Ground		
SFO	Q	U	R	R	R	R	R	R	R	R	R	R	R	Contaminant	CAS No.	Resident Soil (mg/kg)	Industrial Soil (mg/kg)	Resident Air (ug/m ³)	Industrial Air (ug/m ³)	Topwater (ug/L)	MCL (ug/L)	Risk-based SSL (mg/kg)	SSL (mg/kg)			
(mg/kg-day) ⁻¹	(ug/m ³) ⁻¹	(ug/m ³) ⁻¹	(ug/m ³) ⁻¹	(ug/m ³) ⁻¹	(ug/m ³) ⁻¹	(ug/m ³) ⁻¹	(ug/m ³) ⁻¹	(ug/m ³) ⁻¹	(ug/m ³) ⁻¹	(ug/m ³) ⁻¹	(ug/m ³) ⁻¹	(ug/m ³) ⁻¹	(ug/m ³) ⁻¹													
1.0E-04	P	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	Dinitrobenzene, 1,2-	528-29-0	6.1E+00	6.2E+01	n	n	1.5E+00	n	1.4E+03	1.4E+03			
1.0E-04	P	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	Dinitrobenzene, 1,3-	99-05-0	6.1E+00	6.2E+01	n	n	1.5E+00	n	1.4E+03	1.4E+03			
1.0E-04	P	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	Dinitrobenzene, 1,4-	51-28-5	6.1E+00	6.2E+01	n	n	1.5E+00	n	1.4E+03	1.4E+03			
2.0E-03	P	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	Dinitrophenol, 2,4-	51-28-5	1.2E+02	1.2E+03	n	n	3.0E+01	n	3.4E+02	3.4E+02			
6.8E-01	I	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	Dinitrobenzene Mixture, 2,4/2,6-	25321-14-6	7.2E+01	2.5E+00	c	2.7E+02	c	2.7E+02	2.7E+02	2.7E+02	2.7E+02		
3.1E-01	C	8.9E-05	C	2.0E-03	I	1	0.102	1.2E+02	1.2E+02	1.2E+02	1.2E+02	1.2E+02	1.2E+02	Dinitrobenzene, 2,4-	121-14-2	1.6E+00	5.5E+00	c	2.7E+02	c	2.7E+02	2.7E+02	2.7E+02	2.7E+02		
1.0E-01	I	7.7E-06	C	3.0E-02	I	3.0E+00	C	1	0.1	1	0.1	1	0.1	Dinitrobenzene, 2,6-	606-20-2	6.1E+01	6.2E+02	n	n	1.5E+01	n	2.3E+02	2.3E+02			
2.0E-03	S	1	0.006	1	0.006	1	0.006	1	0.006	1	0.006	1	0.006	Dinitrobenzene, 2-Amino-4,6-	35572-78-2	1.5E+02	1.5E+03	n	n	3.0E+01	n	2.3E+02	2.3E+02			
2.0E-03	S	1	0.009	1	0.009	1	0.009	1	0.009	1	0.009	1	0.009	Dinitrobenzene, 4-Amino-2,6-	19406-51-0	1.5E+02	1.5E+03	n	n	3.0E+01	n	2.3E+02	2.3E+02			
1.0E-01	I	7.7E-06	C	3.0E-02	I	3.0E+00	C	1	0.1	1	0.1	1	0.1	Dinitrobenzene, 2,4,6-	88-85-7	6.1E+01	6.2E+02	n	n	1.5E+01	n	2.3E+02	2.3E+02			
6.2E+03	I	1.3E+00	I	1	0.03	1	0.03	1	0.03	1	0.03	1	0.03	Dioxane, 1,4-	123-91-1	4.9E+00	3.2E+01	c	3.2E+01	c	6.7E+01	c	1.4E+04	1.4E+04		
1.3E+05	C	3.8E+01	C	1.0E-09	A	4.0E-08	C	1	0.03	1	0.03	1	0.03	Heachlorodibenzo-p-dioxin, Mixture	NA	9.4E-05	3.9E-04	c	1.9E-06	c	1.1E-05	c	1.5E-05	1.5E-05		
1.0E-04	P	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	TCDD, 2,3,7,8-	1746-01-6	4.5E-06	1.8E-05	c*	6.4E-08	c	3.2E-07	c	5.2E-07	c*	3.0E-05	3.0E-05
1.0E-04	P	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	Dibenzodioxin	957-51-7	1.8E+04	1.8E+04	n	n	4.7E+02	n	4.6E+00	4.6E+00			
1.0E-04	P	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	Dibenzodioxin	127-63-9	4.9E+01	4.9E+02	n	n	1.1E+01	n	2.8E+02	2.8E+02			
8.0E-01	I	2.2E-04	I	2.2E-03	I	1	0.1	1	0.1	1	0.1	1	0.1	Diphenylamine	122-39-4	1.5E+03	1.5E+04	n	n	2.4E+02	n	4.4E+01	4.4E+01			
7.4E+00	C	2.1E-03	C	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	Diphenylhydrazine, 1,2-	122-66-7	1.3E+02	1.3E+03	n	n	3.4E+01	n	2.0E+01	2.0E+01			
7.4E+00	C	2.1E-03	C	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	Diquat	85-00-7	1.3E+02	1.3E+03	n	n	3.4E+01	n	2.0E+01	2.0E+01			
6.7E+00	C	1.9E-03	C	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	Direct Black 38	1937-37-7	6.6E-02	2.3E-01	c	1.2E-03	c	5.8E-03	c	9.1E-03	9.1E-03		
7.4E+00	C	2.1E-03	C	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	Direct Blue 6	2602-46-2	6.6E-02	2.3E-01	c	1.2E-03	c	5.8E-03	c	9.1E-03	9.1E-03		
6.7E+00	C	1.9E-03	C	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	Direct Brown 95	16071-86-6	7.3E-02	2.8E-01	c	1.3E-03	c	6.5E-03	c	1.0E-02	1.0E-02		
4.0E-05	I	1.0E-02	I	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	Dithionite	298-04-4	2.4E+00	2.5E+01	n	n	3.8E+01	n	7.1E+04	7.1E+04			
1.0E-02	I	1.0E-02	I	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	Dithionite, 1,4-	505-29-3	6.1E+02	6.2E+03	n	n	1.5E+02	n	7.6E+02	7.6E+02			
2.0E-03	I	1.0E-02	I	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	Duron	330-54-1	1.2E+02	1.2E+03	n	n	2.8E+01	n	1.3E+02	1.3E+02			
4.0E-03	I	1.0E-02	I	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	Duron	2439-10-3	2.4E+02	2.5E+03	n	n	6.2E+01	n	3.2E+01	3.2E+01			
2.5E-02	I	1.0E-02	I	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	Endosulfan	759-94-4	2.0E+03	2.0E+04	ns	2.6E+04	ns	2.9E+02	n	1.5E+01	1.5E+01		
2.0E-02	I	1.0E-02	I	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	Endosulfan	115-29-7	3.7E+02	3.7E+03	n	n	7.8E+01	n	1.1E+00	1.1E+00			
3.0E-04	I	1.0E-02	I	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	Endosulfan	145-72-3	1.2E+03	1.2E+04	n	n	3.0E+02	n	1.0E+02	1.0E+02			
3.0E-04	I	1.0E-02	I	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	Endosulfan	72-20-8	1.8E+01	1.8E+02	n	n	1.7E+00	n	2.0E+00	2.0E+00			
1.0E-04	P	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	Epichlorohydrin	106-88-7	1.7E+02	1.7E+03	n	n	4.2E+01	n	9.2E+03	9.2E+03			
5.0E-03	I	1.0E-02	I	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	Epichlorohydrin	16672-87-0	3.1E+02	3.1E+03	n	n	7.8E+01	n	1.6E+02	1.6E+02			
5.0E-04	I	1.0E-02	I	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	Ethion	503-12-2	3.1E+01	3.1E+02	n	n	3.2E+00	n	6.3E+03	6.3E+03			
1.0E-01	P	6.0E-02	P	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	Ethoxyethanol Acetate, 2-	111-15-9	6.1E+03	6.2E+04	n	n	1.5E+03	n	3.2E+01	3.2E+01			
4.0E-01	H	2.0E-01	H	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	Ethoxyethanol Acetate, 2-	110-80-5	2.4E+03	2.5E+05	nm	2.1E+02	n	8.8E+02	n	1.3E+00	1.3E+00		
9.0E-01	I	1.0E-01	I	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	Ethyl Acetate	141-78-6	7.0E+04	7.0E+05	nm	9.2E+05	nms	1.4E+04	n	2.9E+00	2.9E+00		
4.8E-02	H	1.0E-01	I	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	Ethyl Acrylate	140-88-5	1.3E+01	6.0E+01	c	6.0E+01	c	1.4E+00	c	3.0E+04	3.0E+04		
2.0E-01	I	1.0E-01	I	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	Ethyl Chloride	75-00-3	1.5E+04	6.1E+04	n	1.0E+04	n	2.1E+04	n	5.9E+00	5.9E+00		
2.0E-01	I	1.0E-01	I	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	Ethyl Ether	60-29-7	1.6E+04	2.0E+05	nms	n	3.1E+03	n	6.8E+01	6.8E+01			
9.0E-02	H	3.0E-01	P	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	Ethyl Methacrylate	97-63-2	1.5E+03	7.5E+03	ns	3.1E+02	n	4.2E+02	n	9.9E+02	9.9E+02		
1.0E-05	I	1.0E-05	I	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	Ethyl p-nitrophenyl Phosphonate	2104-64-5	6.1E+01	6.2E+00	n	n	6.6E+02	n	2.1E+03	2.1E+03			
1.0E-01	I	1.0E-01	I	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	Ethylbenzene	100-41-4	5.4E+00	2.7E+01	c	9.7E+01	c	1.3E+00	c	1.5E+03	1.5E+03		
3.0E-02	P	1.0E-02	P	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	Ethylene Glycol	109-78-4	1.8E+03	1.8E+04	n	n	4.7E+02	n	9.5E+02	9.5E+02			
9.0E-02	P	1.0E-02	P	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	Ethylene Glycol	107-15-3	5.5E+03	5.5E+04	n	n	1.4E+03	n	3.2E+01	3.2E+01			
2.0E-01	P	1.0E-01	P	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	Ethylene Glycol	107-21-1	1.2E+05	1.2E+06	nm	4.2E+02	n	1.8E+03	n	6.3E+00	6.3E+00		
1.0E-01	I	1.0E-01	I	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	Ethylene Glycol Monobutyl Ether	111-76-2	6.1E+03	6.2E+04	n	n	1.5E+03	n	3.2E+01	3.2E+01			
3.1E-01	C	8.8E-05	C	3.0E-02	C	1	0.1	1	0.1	1	0.1	1	0.1	Ethylene Glycol Monobutyl Ether	75-21-8	1.7E+01	8.3E+01	c	2.8E+02	c	1.4E+01	c	9.1E+06	9.1E+06		
4.5E-02	C	1.3E-05	C	8.0E-05	I	1	0.1	1	0.1	1	0.1	1	0.1	Ethylene Oxide	96-45-7	4.9E+00	3.8E+01	c**	1.9E+01	c	1.2E+00	c	2.8E+04	2.8E+04		
6.5E+01	C	1.9E-02	C	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	Ethylene Thioether	151-56-4	7.5E+03	7.5E+04	c	1.3E+04	c	6.5E+04	c	2.7E+07	2.7E+07		
3.0E+00	I	1.0E+00	I	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	Ethyleneamine	84-72-0	1.8E+05	1.8E+06	nm	n	4.5E+04	n	1.0E+02	1.0E+02			
8.0E-03	I	1.0E-03	I	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	Ethylphenyl Ethyl Glycolate	101200-48-0	4.9E+02	4.9E+03	n	n	1.3E+02	n	4.9E+02	4.9E+02			
2.5E-04	I	1.0E-04	I	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	Express	22224-92-6	1.5E+01	1.5E+02	n	n	3.4E+00	n	3.3E+03	3.3E+03			
2.5E-02	I	1.0E-02	I	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	Express	39515-41-8	1.5E+03	1.5E+04	n	n	4.6E+01	n	2.1E+00	2.1E+00			
1.3E-02	I	1.0E-02	I	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	Express	2164-17-2	7.9E+02	8.0E+03	n	n	1.6E+02	n	1.4E+01	1.4E+01			
4.0E-02	C	1.3E-02	C	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	Express	1698											

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Key: I = IRIS; P = PPRIV; A = ATSDR; C = G1 EPA; X = PPRIV Appendix; H = HEAST; J = New Jersey; O = EPA Office of Water; E = Environmental Criteria and Assessment Office; S = see user guide Section 5.1; L = see user guide on lead; M = mutagen; V = volatile; F = See FAD; c = cancer; * = where: n SL < 1000 c SL; ** = where: n SL < 100 c SL; *** = where: n SL < 100 c SL; **** = where: n SL < 100 c SL; ***** = where: n SL < 100 c SL; n = noncancer; m = Concentration may exceed ceiling limit (See User Guide); s = Concentration may exceed CGL (See User Guide); SSL values are based on DAF=1