DEQ
State of Oregon Department of Environmental Quality

Application for a

Solid Waste Beneficial Use Determination

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.)*

	Tapani Inc. Attn. Aaron Halling		
Legal name of applicant	Business name of applicant if different		
PO Box 1900	Battle Ground	WA	98604
Mailing address	City	State	Zip
(360)687-1148	(360)624-1332	aaronh@tapani.com	(360)687-7968
Phone	Mobile	E-mail	Fax

Paul Kelly - United States Postal Service			
Generator of solid waste (may be same as applicant)			
PO Box 2250	Seal Beach	CA	90740-1250
Mailing address	City	State	Zip
(562)430-4754	(526)618-0093	paul.kelly@usps.gov	
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]	Aaron Halling	Project Manager	12/8/2016
Signature of legally authorized representative	Print name	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: $2,000.00

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 700 NE Multnomah Street, Suite 600 Portland, OR 97232 (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

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Regents Bank 96-4332/1222 112539

Tapani Inc.
PO Box 1900 (360) 687-1148
Battle Ground, WA 98604

Check No.	Check Date
112539	12/09/16

Two thousand and xx / 100 Dollars*******

$2,000.00

Pay **Dept of Environmental Quality**
700 NE Multnomah Street, Suite 600
Portland OR 97232

HEAT SENSITIVE FADES WITH TOUCH

⑈000112539⑈ ⑆122244566⑆ 00310367 8⑈

MAUL FOSTER ALONGI
400 East Mill Plain Blvd., Suite 400 | Vancouver, WA 98660 | 360 694 2691 | www.maulfoster.com

December 12, 2016
Project No. 0968.03.01

Ms. Heather Kuoppamaki, PE
Oregon Department of Environmental Quality
700 NE Multnomah Street, #600
Portland, Oregon 97204

Re: Beneficial Use Determination Application
USPS Development
Colwood Industrial Park
7350 NE Cornfoot Road
Portland, Oregon

Dear Ms. Kuoppamaki:

Tapani, Inc. (Tapani) is applying for a Solid Waste Beneficial Use Determination (BUD) for approximately 50,000 cubic yards of soil which are stockpiled in Surcharge Area 2 at the U.S. Postal Service (USPS) redevelopment at the Colwood Industrial Park (the Site; Figures 1 and 2). The Site is located at the intersection of NE Alderwood Road and NE Cornfoot Road. Tapani is requesting to transfer the soil to the Port of Portland (Port) Troutdale Reynolds Industrial Park (TRIP) property for use as fill and/or surcharge material. The required attachments for the Tier 2 BUD application are included in the sections below. This application has been prepared by Maul Foster & Alongi, Inc. (MFA) on behalf of Tapani.

1. DESCRIPTION OF THE MATERIAL, MANNER OF GENERATION, AND ESTIMATED QUANTITY

Tapani proposes to place approximately 50,000 cubic yards of soil at the Port's TRIP property for use as fill and/or surcharge material. This volume assumes an excavated swell factor of 20 percent. The soil was generated from the Site as part of the redevelopment activities and is currently being use as surcharge for a future building (Surcharge Area 2; Figure 2). The Site reportedly was first developed in 1930 as Colwood National Golf Course and was used as a golf course until redevelopment began in 2014.

2. DESCRIPTION OF THE PROPOSED USE

History of TRIP Property. The Reynolds Aluminum reduction plant was developed for the U.S. government in 1941 to support wartime production of aluminum. The plant operated at varying production capacities through 1991, when operations were temporarily curtailed. Plant operations were restarted in 1998, but were curtailed again in 2000 after Alcoa acquired the Facility. The Troutdale plant was closed permanently in July 2002.

Plant operations (including past waste disposal, spills, leaks, and other releases) caused soil and groundwater contamination at the Facility. The historical releases included process and non-process wastes and residues. Process wastes were primarily associated with the former aluminum reduction plant. Non-process wastes included demolition debris, scrap equipment, and construction materials. Contaminants that were associated with these wastes included fluoride, cyanide, antimony, arsenic, beryllium, chromium, lead, nickel, polycyclic aromatic hydrocarbons (PAHs), total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), and polychlorinated biphenyls (PCBs).

The Troutdale plant was placed on the EPA National Priorities List (Superfund) in 1994 and investigation and sampling activities at the site began in June 1994. A significant number of removal and remedial actions independent of and prior to the plant demolition process were completed. These actions (resulting in the removal of more than 230,000 tons of material) were conducted prior to July 2002, when the closure of the plant was announced. The demolition of the plant occurred between 2003 and 2005, and resulted in the removal of 116,000 tons of additional material from the site. The material removed was the major source of contamination to the underlying groundwater zones and its removal significantly reduced the potential for contaminant migration.

TRIP Property Redevelopment. The Port acquired the approximate 693-acre TRIP property in 2007 (located within the city of Troutdale). Phase I development improvements led to tenancy by FedEx Ground. The soil from the Site will be used for Phase II development improvements (which are underway), such as building infrastructure and bringing the lots up to grade. This phase of development is supported and being fast-tracked by the Governor's Regional Solutions Team. This fill is part of the initiative to ensure readily available industrial sites in East Multnomah County as soon as possible. To that end, and in order to prepare the land for development, the Port must raise the grade to create 'shovel-ready' lots suitable for industrial development. It is proposed to use the excavated soil from the Site, along with soil from other sources, to meet these needs. All soil entering the TRIP property will be managed in accordance with the Contaminated Media Management Plan (CMMP) for the former Reynolds Metals Company Facility (RMCF; Attachment A).

3. COMPARISON OF THE CHEMICAL AND PHYSICAL CHARACTERISTICS OF THE MATERIAL PROPOSED FOR USE WITH THE MATERIAL IT WILL REPLACE

Chemical Characteristics. The chemical characteristics of the soil stockpiled in Surcharge Area 2 was evaluated by the Port. The report of results is presented in Attachment B. Following is a summary of the sampling and results.

Incremental sampling methodology (ISM) was used to collect a representative sample from the Surcharge Area 2 soil stockpile. Figure 2 presents the locations of the 50 soil increments collected from the Surcharge Area 2 soil stockpile (i.e., the ISM decision unit). No indications

of chemical impacts (e.g., staining representative of petroleum hydrocarbons) were observed during sample collection.

The soil samples will be analyzed for the following TRIP-specific compounds:

- Priority pollutant 13 metals by U.S. Environmental Protection Agency (USEPA) Method 6020
- Organochlorine pesticides by USEPA Method 8081
- Organophosphorus pesticides by USEPA Method 8270
- Chlorinated herbicides by USEPA Method 8151
- Polychlorinated biphenyls by USEPA Method 8082
- Polycyclic aromatic hydrocarbons by USEPA Method 8270D (SIM)
- Total cyanide by USEPA Method 9013M/9014
- Fluoride by USEPA Method 9056A

The analytical data were screened against the following criteria:

- DEQ risk-based concentrations (RBCs) from Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites (DEQ, 2003). Potentially applicable exposure scenarios are occupational direct contact and construction/excavation worker direct contact.
- DEQ Clean Fill Criteria (DEQ, 2014).

The laboratory analytical results are presented in the attached Table. The reported concentration for benzo(a)pyrene from the Surcharge Area 2 soil stockpile exceeded the DEQ clean fill criterion (0.0579 milligrams per kilogram [mg/kg] versus 0.015 mg/kg) but is well below the RBC for occupational, construction, and excavation receptors (0.29 mg/kg; 2.4 mg/kg; and 67 mg/kg, respectively). None of the other detected concentrations from the Surcharge Area 2 soil stockpile exceeded the DEQ Clean Fill Criteria.

Physical Characteristics. Based on physical characteristics, the soil from the Site is similar to soil the at the TRIP property. As per the Port's requirements, Tapani will segregate and manage separately any strippings, organic material or other putrescible material; asphalt or asphalt debris, construction debris, and any concrete over four inches in diameter.

4. DEMONSTRATION OF COMPLIANCE WITH THE PERFORMANCE CRITERIA IN OAR 340-093-0280

The proposed use is considered productive since the material is equivalent to fill that is needed to raise the grade for future development. Raising the grade is necessary at this site due to levels set by the Sandy Drainage District for Base Flood Evaluation. Compliance with the Sandy

Drainage District standards will allow for the future development of the property which, in turn, will stimulate local economy.

The intended use of the material will not create an adverse impact to public health, safety, welfare or the environment. The material is not classified as a hazardous waste under ORS 466.005. The Site is fenced off to prevent public access. Soil will be loaded directly from the soil stockpile to haul trucks. The material needs to be transported to the TRIP property in February 2017. Based on seasonal conditions, dust generation is not expected. Once it arrives at TRIP, the material will be managed in accordance with the RMCF CMMP, as approved by DEQ and EPA, and with the Stormwater General Permit 1200-CA. Stockpiles will be managed to properly contain soil and avoid erosion by wind or stormwater in accordance with the RMCF CMMP (CH2M Hill and Alcoa, 2007). Overall, the soil at the Site is not expected to pose an unacceptable risk to humans or the environment.

The intended use will not result in the increase of a hazardous substance in a sensitive environment because it will be managed properly to avoid movement of soils offsite, in accordance with the RMCF CMMP (CH2M Hill and Alcoa, 2007). Also, the soil meets the necessary screening levels for use at TRIP and is similar to soils containing residual contamination from Reynolds Metals Company's former operations. Because the soil from the Site does not contain constituents at levels greater than what is present across the TRIP superfund site, placement of the material will not result in a significant increase of hazardous substances at the facility. Sensitive environments within one mile of the proposed stockpile location include the Sandy River, Salmon Creek and several jurisdictional wetlands. The stockpile area at TRIP is over 2,000 feet from the Sandy River and 3,300 feet from Salmon Creek. The nearest jurisdictional wetland at TRIP is approximately 400 feet away from the stockpile location. The material will be managed according to the RMCF CMMP and the General Stormwater Permit 1200-CA, to minimize the potential for soil from entering the nearby sensitive areas by wind or in runoff.

The intended use of soil from the Site is not anticipated to create objectionable odors, dust, unsightliness, fire, or other nuisance conditions. No odor has been observed in association with the placement or sampling of the Surcharge Area 2 soil stockpile, therefore no objectionable odors are anticipated. Dust control will be implemented during soil handling and any stockpiles will be managed to avoid release of fugitive dust into the environment. The material is similar in appearance to soils used at the TRIP property and does not pose any fire or other nuisance condition risks.

The intended use will comply with applicable federal, state, and local regulations. The transport and placement of material will be conducted in accordance with Oregon Department of Transportation regulations and the RMCF CMMP (CH2M Hill and Alcoa, 2007).

5. ANY OTHER INFORMATION THAT DEQ MAY REQUIRE TO EVALUATE THE PROPOSAL

The attachments to this letter as referenced above are submitted for DEQ evaluation of the requested BUD.

6. SAMPLING AND ANALYSIS OF THE MATERIAL

The attached table presents the laboratory analytical results for the ISM sample collected from the Surcharge Area 2 soil stockpile.

7. COMPARISON OF ANALYTICAL RESULTS TO OCCUPATIONAL RISK-BASED SCREENING LEVELS (OR REGIONAL BACKGROUND LEVEL)

The attached table presents the screening of the laboratory analytical results for the ISM sample collected from the Surcharge Area 2 soil stockpile. None of the detected concentrations exceed the occupational RBCs.

8. LOCATION/TYPE OF LAND USE WHERE THE MATERIAL WILL BE APPLIED

The TRIP property is located within the city of Troutdale in Multnomah County, Oregon. The facility lies just north of the Troutdale Airport and Interstate 84, south of the Columbia River levee, east of 223rd, and west of the Sandy River. The Port will initially place the soil in the area noted as Stockpile E on the plan presented in Attachment C. The soil is proposed to be stored at this location along with soil from other sources. Final placement of the soil will occur within the TRIP property boundaries, at the discretion of the Port and in compliance with the RMCF CMMP. According to the Port and based on City of Troutdale zoning, future land use will be General Industrial (GI). Based on the future use of the site, the occupational worker standards were selected by DEQ and EPA as the relevant screening levels for all contaminants except for selected metals which will be compared to regional background levels, see the attached Table for details. Attachment D provides additional detail regarding land use approvals and future development of the TRIP property.

9. CONTACT INFORMATION OF PROPERTY OWNER

Stan Jones, RG
Land Quality Manager
Stan.Jones@portofportland.com
Phone: 503-415-6679

Port of Portland
7200 NE Airport Way
Portland, OR 97208

Placement Site Address: Troutdale Reynolds Industrial Park, Troutdale, Oregon
Approximate Coordinates: 45° 33’ 13” N, 122° 23’ 56” W

10. DESCRIPTION OF HOW MATERIAL WILL BE MANAGED TO MINIMIZE POTENTIAL ADVERSE IMPACTS TO PUBLIC HEATLH, SAFETY, WELFARE, OR THE ENVIRONMENT

The Site is fenced off to prevent public access. Soil will be loaded directly from the soil stockpile to haul trucks. The material needs to be transported to the TRIP property in February 2017. Based on seasonal conditions, dust generation is not expected. Once it arrives at TRIP, the material will be managed in accordance with the RMCF CMMP, as approved by DEQ and EPA, and with the Stormwater General Permit 1200-CA. Stockpiles will be managed to properly contain soil and avoid erosion by wind or stormwater in accordance with the RMCF CMMP (CH2M Hill and Alcoa, 2007). The Port will follow standard operating procedures for preventing erosion. When necessary to prevent soil from becoming airborne, the Port will employ best management practices such as covering stockpiles with tarps or misting water over the soil. The placement site at the TRIP property is not easily accessible to the public and residential use of the site is prohibited through an Easement and Equitable Servitude (DEQ, 2007). As demonstrated in above, the material does not pose an unacceptable risk to human health or the environment.

Sincerely,

Maul Foster & Alongi, Inc.

Michael J. Pickering, RG
Senior Geologist

Attachments: Limitations
References
Figures
Table
A—Contaminated Media Management Plan for the Former Reynold's Metals Company Facility in Troutdale, Oregon
B—Soil Surcharge Stockpile Assessment, USPS Development, Colwood Industrial Park
C—TRIP Material Placement Site
D—TRIP Land Use Approvals, Existing Conditions and Zoning Description (provided by the Port of Portland)

cc: Aaron Halling, Tapani, Inc.
PJ Christopher, Port of Portland
Stan Jones, Port of Portland

LIMITATIONS

The services undertaken in completing this plan were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This plan is solely for the use and information of our client unless otherwise noted. Any reliance on this plan by a third party is at such party's sole risk.

Opinions and recommendations contained in this plan apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, or the use of segregated portions of this plan.

REFERENCES

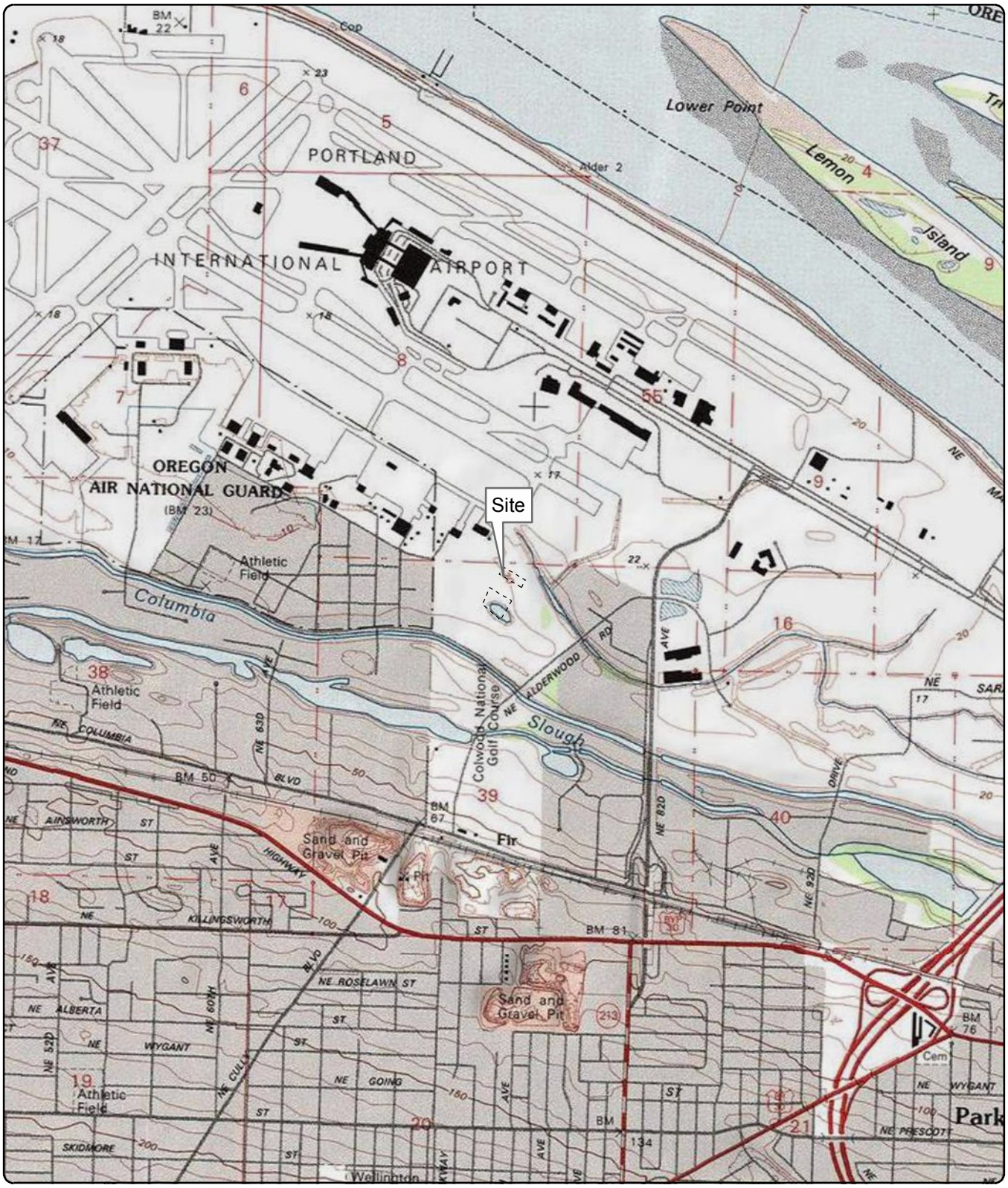
CH2M Hill and Alcoa. 2007. Contaminated Media Management Plan for the Former Reynolds Metals Company Facility in Troutdale, Oregon. October 2007.

DEQ. 2003. Risk-based decision making for the remediation of petroleum-contaminated sites. Oregon Department of Environmental Quality. September 22 (RBC spreadsheet updated November 1, 2015).

DEQ 2007. Easement and Equitable Servitude. Troutdale Reynolds Industrial Park, Port of Portland.

DEQ. 2014. Internal management directive (re: clean fill determinations). Prepared by W. Mason. Oregon Department of Environmental Quality Solid Waste Program, Eugene, Oregon. July 23.

FIGURES



Source: US Geological Survey (1990) 7.5-minute topographic quadrangle: Mount Tabor
Section 8, Township 1 North, Range 2 East

Figure 1
Site Location

USPS Development
Colwood Industrial Park
7350 NE Cornfoot Road
Portland, Oregon

0 1,000 2,000
Feet

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Project: 0232.17 Produced By: jschane Approved By: mpickering Print Date: 10/27/2016 Path: X:\0232.17 Portland Airport\Fig1_Site Location_Colwood.mxd

Path: X:\0232.17 Portland Airport\Fig2_Exploration Plan_Colwood.mxd

Figure 2
Exploration Plan

USPS Development
Colwood Industrial Park
7350 NE Cornfoot Road
Portland, Oregon

Legend

- Soil Increment Location
- Approximate Stockpile Extent

0 100 200
Feet

Source: Aerial photograph obtained from Esri ArcGIS Online

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Project: 0232.17 Produced By: jschane Approved By: Print Date: 10/27/2016

TABLE

Table
ISM Soil Analytical Results
USPS Colwood
Port of Portland
Portland, Oregon

				Location	SA2
				Sample Name	SA2-ISM-AFTER PROCESSING
				Date Collected	10/31/2016
Analyte	DEQ Soil RBC Direct Contact, Occupational	DEQ Soil RBC Direct Contact, Construction Worker	DEQ Soil RBC Direct Contact, Excavation Worker	DEQ Upland Clean Fill	
Fluoride (mg/kg)					
Fluoride	NV	NV	NV	NV	10.3 U
Cyanide (mg/kg)					
Cyanide, Total	700	210	5900	NV	0.0995 U
Metals (mg/kg)					
Antimony	NV	NV	NV	0.56	1.1 U
Arsenic	1.9	15	420	8.8	**5.03**
Beryllium	2300	700	19000	21	**0.794**
Cadmium	1100	350	9700	0.63	**0.529**
Chromium	NV[a]	530000[a]	NV[a]	76	**28.9**
Copper	47000	14000	390000	34	**30.1**
Lead	800	800	800	28	**13.1**
Mercury	350	110	2900	0.23	**0.206**
Nickel	22000	7000	190000	47	**21.7**
Selenium	NV	NV	NV	0.71	1.1 U
Silver	5800	1800	49000	4.2	0.221 U
Thallium	NV	NV	NV	5.2	0.221 U
Zinc	NV	NV	NV	180	**81.1**
PCB Aroclors (mg/kg)					
Aroclor 1016	NV	NV	NV	NV	0.00921 U
Aroclor 1221	NV	NV	NV	NV	0.00921 U
Aroclor 1232	NV	NV	NV	NV	0.00921 U
Aroclor 1242	NV	NV	NV	NV	0.00921 U
Aroclor 1248	NV	NV	NV	NV	0.00921 U
Aroclor 1254	NV	NV	NV	NV	0.00921 U
Aroclor 1260	NV	NV	NV	NV	0.00921 U
Total PCBs	0.59	4.9	140	0.20	0.00921 U

Table
ISM Soil Analytical Results
USPS Colwood
Port of Portland
Portland, Oregon

				Location	SA2
				Sample Name	SA2-ISM-AFTER PROCESSING
				Date Collected	10/31/2016
Analyte	DEQ Soil RBC Direct Contact, Occupational	DEQ Soil RBC Direct Contact, Construction Worker	DEQ Soil RBC Direct Contact, Excavation Worker	DEQ Upland Clean Fill	
Organochlorine Pesticides (mg/kg)					
4,4'-DDD	12	94	2600	0.021	0.00196 U
4,4'-DDE	8.2	66	1800	0.021	0.00196 U
4,4'-DDT	8.5	66	1800	0.021	0.00196 U
Aldrin	0.13	1.1	30	0.011	0.00196 U
alpha-BHC	0.36	3	83	0.07	0.00196 U
alpha-Chlordane	NV	NV	NV	NV	0.00196 U
beta-BHC	NV	NV	NV	0.27	0.00196 U
Chlordane (Technical)	7.4	61	1700	1.3	0.0589 U
delta-BHC	NV	NV	NV	NV	0.00295 U
Dieldrin	0.14	1.2	33	0.0049	0.00196 U
Endosulfan I	4900	1600	45000	20	0.00196 U
Endosulfan II	4900	1600	45000	20	0.00196 U
Endosulfan sulfate	NV	NV	NV	NV	0.00196 U
Endrin	250	80	2200	0.04	0.00196 U
Endrin aldehyde	NV	NV	NV	NV	0.00196 U
Endrin ketone	NV	NV	NV	NV	0.00196 U
gamma-Chlordane	NV	NV	NV	NV	0.00196 U
Heptachlor	0.45	4	110	0.1	0.00196 U
Heptachlor epoxide	0.24	2	56	0.053	0.00196 U
Lindane	2.1	17	470	0.38	0.00196 U
Methoxychlor	NV	NV	NV	310	0.00589 U
Toxaphene	2.1	17	470	0.44	0.0589 U

Table
ISM Soil Analytical Results
USPS Colwood
Port of Portland
Portland, Oregon

				Location	SA2
				Sample Name	SA2-ISM-AFTER PROCESSING
				Date Collected	10/31/2016
Analyte	DEQ Soil RBC Direct Contact, Occupational	DEQ Soil RBC Direct Contact, Construction Worker	DEQ Soil RBC Direct Contact, Excavation Worker	DEQ Upland Clean Fill	
Chlorinated Herbicides (mg/kg)					
2,4,5-T	NV	NV	NV	4.362	0.022 U
2,4-D	8200	2700	74000	4.8	0.027 U
2,4-DB	NV	NV	NV	3.072	0.066 U
Dalapon	NV	NV	NV	2.448	0.073 U
Dicamba	NV	NV	NV	5.694	0.035 U
Dichlorprop	NV	NV	NV	NV	0.027 U
Dinoseb	NV	NV	NV	61	0.015 U
MCPA	410	130	3700	0.24	3 U
MCPP	NV	NV	NV	0.2256	2.6 U
Pentachlorophenol	4	34	960	0.14	0.024 U
Picloram	NV	NV	NV	17.46	0.028 U
Silvex	NV	NV	NV	4.776	0.028 U
Semivolatile Organic Compounds (mg/kg)					
1-Methylnaphthalene	NV	NV	NV	0.738	0.00542 U
2-Methylnaphthalene	NV	NV	NV	310	0.00542 U
Acenaphthene	70000	21000	590000	29	0.00272 U
Acenaphthylene	NV	NV	NV	NV	**0.00904**
Anthracene	350000	110000	NV	29	**0.0082**
Benzo(a)anthracene	2.9	24	660	0.15	**0.0294**
Benzo(a)pyrene	0.29	2.4	67	0.015	**0.0579**
Benzo(b)fluoranthene	2.9	24	670	0.15	**0.0598 J**
Benzo(ghi)perylene	NV	NV	NV	NV	**0.059**
Benzo(k)fluoranthene	29	240	6700	1.1	**0.018 J**
Chrysene	290	2400	67000	14	**0.0447 J**
Dibenzo(a,h)anthracene	0.29	2.4	67	0.015	**0.00592**
Dibenzofuran	NV	NV	NV	0.002	0.00272 U
Fluoranthene	30000	10000	280000	29	**0.0923 J**
Fluorene	47000	14000	390000	29	**0.00495**

Table
ISM Soil Analytical Results
USPS Colwood
Port of Portland
Portland, Oregon

				Location	SA2
				Sample Name	SA2-ISM-AFTER PROCESSING
				Date Collected	10/31/2016
Analyte	DEQ Soil RBC Direct Contact, Occupational	DEQ Soil RBC Direct Contact, Construction Worker	DEQ Soil RBC Direct Contact, Excavation Worker	DEQ Upland Clean Fill	
Indeno(1,2,3-cd)pyrene	2.9	24	670	0.15	**0.0438**
Naphthalene	23	580	16000	0.087	**0.0112**
Phenanthrene	NV	NV	NV	NV	**0.0764 J**
Pyrene	23000	7500	210000	1700	**0.119**
Organophosphorus Pesticides (mg/kg)					
Coumaphos	NV	NV	NV	NV	0.0499 U
Demeton-O	NV	NV	NV	2.4	0.0249 U
Demeton-S	NV	NV	NV	2.4	0.0249 U
Diazinon	NV	NV	NV	43	0.0249 U
Dichlorvos	NV	NV	NV	0.0048	0.0249 UJ
Dimethoate	NV	NV	NV	0.0252	0.0249 U
Disulfoton	NV	NV	NV	0.0972	0.0249 U
Dursban	NV	NV	NV	61	0.0249 U
Ethoprop	NV	NV	NV	NV	0.0249 U
Fensulfothion	NV	NV	NV	NV	0.0249 U
Fenthion	NV	NV	NV	NV	0.0249 U
Guthion	NV	NV	NV	0.852	0.0249 U
Merphos	NV	NV	NV	1.8	0.0249 U
Methyl parathion	NV	NV	NV	15	0.0249 U
Mevinphos	NV	NV	NV	NV	0.0249 U
Monocrotophos	NV	NV	NV	NV	0.0249 UJ
Naled	NV	NV	NV	1.308	0.0249 U
Parathion	NV	NV	NV	370	0.0249 U
Phorate	NV	NV	NV	0.327	0.0249 U
Ronnel	NV	NV	NV	NV	0.0249 U
Santox	NV	NV	NV	0.61	0.0249 U
Sulfotepp	NV	NV	NV	0.4446	0.0249 U
Sulprofos	NV	NV	NV	NV	0.0249 U
Sumitox	NV	NV	NV	4.086	0.0249 U

Table
ISM Soil Analytical Results
USPS Colwood
Port of Portland
Portland, Oregon

				Location	SA2
				Sample Name	SA2-ISM-AFTER PROCESSING
				Date Collected	10/31/2016
Analyte	DEQ Soil RBC Direct Contact, Occupational	DEQ Soil RBC Direct Contact, Construction Worker	DEQ Soil RBC Direct Contact, Excavation Worker	DEQ Upland Clean Fill	
Tetrachlorovinphos	NV	NV	NV	1.002	0.0249 U
Tetraethylpyrophosphate	NV	NV	NV	NV	0.0998 R
Tokuthion	NV	NV	NV	NV	0.0249 U
Trichloronate	NV	NV	NV	NV	0.0249 U

NOTES:

-- = not analyzed

DEQ = Oregon Department of Environmental Quality.

J = Result is an estimated value.

mg/kg = milligrams per kilogram.

NV = no value or value exceeds 1,000,000 mg/kg.

R = the result is rejected.

RBCs = Risk Based Concentrations for Individual Chemicals.

Result values in bold font indicate a detection.

Shaded result values indicate exceedance of Oregon clean fill criteria. DEQ RBC criteria are applied only to results with clean fill exceedances. Non-detect results are not evaluated against clean fill or RBC criteria.

Total PCBs = the sum of PCB Aroclors.

TPH = total petroleum hydrocarbons

U = Result is not detected at or above method detection limit.

UJ = The result is non-detect and an estimated value.

[a]Value is for trivalent chromium.

ATTACHMENT A

CONTAMINATED MEDIA MANAGEMENT PLAN FOR THE FORMER REYNOLD'S METALS COMPANY FACILITY IN TROUTDALE, OREGON

Final Report

Contaminated Media Management Plan (CMMP)

for the Former Reynolds Metals Company Facility in Troutdale, Oregon

October 2007

Prepared by

CH2MHILL
and Alcoa, Inc.

Printed on Recycled and Recyclable Paper

Contents

Section **Page**

1 Introduction 1-1
1.1 Purpose 1-1
1.2 Limitations 1-1
1.3 Organization 1-1
2 Site Overview 2-1
2.1 Project Area Setting and History 2-1
2.2 Geology 2-1
2.3 Groundwater 2-1
2.4 Soil Conditions 2-2
2.5 Groundwater Conditions 2-2
3 South Wetlands 3-1
3.1 Description and History of South Wetlands 3-1
3.2 Environmental Activities in South Wetlands 3-1
3.3 Contaminants of Concern 3-2
3.3.1 South Wetlands 3-2
3.3.2 Visual Description of Process Residue 3-3
3.3.3 Railroad Embankment 3-3
3.4 Management of Contaminated Soil 3-3
3.5 Management of Groundwater and Surface Water 3-4
4 Former East Potliner Area 4-1
4.1 Description and History of the Former East Potliner Area 4-1
4.2 Environmental Activities in the Former EPL Area 4-1
4.2.1 Former East Potliner Area Removal Action 4-1
4.2.2 Exception: Natural Gas Pipelines 4-2
4.3 Contaminants of Concern 4-2
4.3.1 Visual Description of Spent Potliner 4-3
4.4 Management of Contaminated Soil 4-3
4.5 Management of Groundwater and Surface Water 4-4
5 Procedures for Unanticipated Materials 5-1
5.1 General 5-1
5.2 Future Discoveries of Furnace Brick 5-1
5.3 Future Discovery of Spent Potliner 5-2

Appendixes

A DEQ Contained In Determination for Soil
B DEQ Contained In Determination for Groundwater

Tables (located at the end of the text)

1 Analytical Results for Soil and Sediment Samples Taken from the South Wetlands
2 Analytical Results for Sediment Samples Normalized for PAHs and Pesticides
3 Pipeline Soil Samples in the East Potliner Area

Figures (located at the end of the text, after the tables)

1 Site Map
2 South Wetlands
3 East Potliner
4 Fluoride Concentration Contour Map (August 1997, June and August 1998), Silt Unit
5 Fluoride Concentration Contour Map (August 1997, June and August 1998), Upper Gray Sand
6 Fluoride Concentration Contour Map (August 1997, June and August 1998), Intermediate-Depth Sand
7 Fluoride Concentration Contour Map (August 1997, June and August 1998), Deep Sand/Gravel

SECTION 1

Introduction

Although significant remediation efforts have taken place, contaminated soil or groundwater (contaminated media) remains at the former Reynolds Metals Company (RMC) facility in Troutdale, Oregon. This Contaminated Media Management Plan (CMMP) summarizes the proper management of any contaminated media in the event that they are encountered during future development of the site. This CMMP is intended to communicate methods and practices to future developers that are (a) consistent with recent remediation efforts employed to protect human health and the environment and (b) approved by the Oregon Department of Environmental Quality (DEQ) and the U.S. Environmental Protection Agency (EPA). This CMMP will become part of the institutional controls for the site.

The environmental media management procedures set forth in this CMMP do not prevent any party from seeking pre-approval of an alternative procedure allowed by law for managing environmental media on the property. Such pre-approval shall be obtained from the appropriate governmental agency after consultation with the DEQ and EPA project coordinators identified in paragraph 107 of the Final Consent Decree.

1.1 Purpose

This CMMP has been developed to ensure that future developers at the site manage contaminated media consistent with approved handling and disposal methods for the RMC-Troutdale facility. This CMMP presents the processes and procedures that are required to handle contaminated material encountered during construction or future use of the site. The final version of this CMMP will be referenced in the approved institutional controls for the site.

1.2 Limitations

This document is intended only to provide procedures for identification and handling of contaminated media encountered during redevelopment of the former RMC-Troutdale facility. It is not intended to suggest or provide health and safety level information for the protection of construction workers. Individuals and parties who are tasked with conducting construction activities at this site should read this document and the documents referenced herein. They should also consult an Industrial Hygienist and/or Environmental Professional regarding performance of their own hazard assessments to determine appropriate health and safety measures.

1.3 Organization

Subsequent sections of this CMMP are organized as follows:

- **Section 2** provides site description and background information on the facility. It also identifies general soil and groundwater conditions in the project area.
- **Section 3** describes contaminated media management for the South Wetlands area.
- **Section 4** describes contaminated media management for the east potliner area.
- **Section 5** describes procedures for unanticipated materials that might be discovered during construction.

Tables and figures (located at the end of the text) present a summary of analytical data and show the site layout, as well as the locations of the areas of concern.

SECTION 2

Site Overview

2.1 Project Area Setting and History

The RMC-Troutdale facility, consisting of approximately 693 acres, is located just north of the city of Troutdale, in Multnomah County, Oregon (see Figure 1). The facility was originally constructed in 1941 for wartime operations as an aluminum reduction plant. Environmental investigation and sampling started in 1994. Since that time, RMC has undertaken a number of remedial actions to address the environmental concerns at this facility. In 2006, the demolition of the plant was completed and a final risk assessment was conducted to ensure that contaminants that have been left onsite do not present an elevated risk to future tenants or the environment. Two specific areas of concern on this site are the South Wetlands and the east potliner area. These areas are described in more detail in Sections 3 and 4, respectively.

2.2 Geology

Situated in a historic flood plain and river delta, the site is relatively flat. The general site geologic profile consists of well-graded sands with layers or lenses of silt, silty sands, and sandy silts to approximately 40 feet below ground surface (bgs), followed by well-graded sands to about 170-feet bgs. Layers of silt and sands are found below this area of well-graded sands. Well-graded gravels have been encountered at approximately 281 feet bgs to more than 400-feet bgs.

2.3 Groundwater

During the course of the investigations conducted since 1994, the facility was divided into four water-bearing zones. The four zones are defined by the site stratigraphy and the depths at which monitoring wells have been constructed. These four zones and their nomenclature are as follows:

- **Silt Unit.** Where present, the silt unit extends from ground surface to between 20 and 40 feet bgs.
- **Upper Gray Sand (UGS).** The UGS extends to a depth of approximately 50 feet bgs. It is present at the ground surface north of the U.S. Army Corps of Engineers flood control dike and lies beneath the silt unit south of the dike.
- **Intermediate Sand.** The intermediate sand extends from the base of the UGS to a depth of about 100 feet bgs.
- **Deep Sand/Gravel.** The deep sand/gravel extends from the base of the intermediate sand to a depth of 200 feet bgs.

Groundwater can be encountered at approximately 12 to 18 feet bgs throughout the site.

2.4 Soil Conditions

Potentially developable areas where contaminants in waste and soil remain onsite include the South Wetlands and the east potliner area (described in Sections 3 and 4, respectively). The site cleanup process that was approved by EPA and DEQ for this facility was based on both cleanup goals and a visual cleanup standard, followed by confirmation sampling and a sitewide risk assessment. The results of the risk assessment show that the remaining soils currently onsite may contain contaminants but do not pose an unacceptable risk to construction workers or for industrial use and, in general, can be reused at the site as needed, except that soils that exceed ecological criteria may not be placed in areas outside the U.S. Army Corps of Engineers levee. Unless otherwise specified in this document, soils across the entire site can be reused at the site without further testing.

2.5 Groundwater Conditions

Environmental investigations show that groundwater in some areas of this site has elevated levels of fluoride (see Figures 4 through 7 for the approximate locations of contaminated groundwater). Groundwater within or near the identified contaminated areas must be characterized for proper management**.** A groundwater focused extraction system is currently operating in the southeast quarter of the facility. This system is designed to capture and dispose of groundwater containing high concentrations of fluoride in the UGS beneath a former soil source area.

For the majority of the site, the groundwater could in the future be disposed of in (a) the city of Troutdale's sanitary sewer system, under the terms of a City of Troutdale Industrial Batch Discharge Permit (provided the facility is first annexed into the city of Troutdale), or (b) the Columbia River, under the terms of a National Pollutant Discharge Elimination System (NPDES) permit, which is being renewed and modified under an application pending before DEQ, or (c) in any other manner allowable under applicable laws, after obtaining approval from the appropriate government agency and in consultation with the DEQ and EPA project coordinators identified in Section 1.

The groundwater around the former east potliner area may require special handling and is discussed in Section 4.5.

SECTION 3

South Wetlands

3.1 Description and History of South Wetlands

South Wetlands is located south of the former RMC reduction plant and is shown on Figure 2. The approximately 23-acre South Wetlands area includes a small portion to the northwest that is covered by sand from the former Building 97 wet scrubber subarea and the railroad embankment that traverses the northern third of the wetlands from east to west.

Between 1941 and 1965, the South Wetlands area was used as a settling pond for discharged wastewater from the processing facilities. According to aerial photographs, the former discharge pond extended just south of the current Graham Road and north into the existing Building 97 subarea. After 1965, the discharge water was diverted and sand fill was placed in the Building 97 subarea so that a wet scrubber system could be installed. The wet scrubber and its foundations have since been removed.

Currently, the South Wetlands supports primarily wetland-type plants, such as reed canary grass, and is densely vegetated. The U.S. Fish and Wildlife Service (USFWS) has classified South Wetlands as a Palustrine Emergent Wetland as part of its National Wetland Inventory (NWI). The U.S. Army Corps of Engineers (COE) has made no jurisdictional determination of South Wetlands. Surface water forms ponds in this area only during the rainy season, when groundwater elevations are high. The primary sources of water flowing into South Wetlands are listed below:

- Direct precipitation
- Groundwater discharge
- Stormwater/groundwater flows from the overflow of the old Salmon Creek channel east of the wetlands
- Stormwater from the culvert connected to the ditch south of Graham Road
- Stormwater from a street catch basin near the eastern edge of the wetlands, north of Graham Road
- Stormwater from South Ditch via an overflow weir (prior to plant demolition, these waters were pumped to Company Lake)

Surface water currently discharges from South Wetlands through the west drainage into Salmon Creek and ultimately to the Columbia River.

3.2 Environmental Activities in South Wetlands

This section summarizes the environmental investigations and removals conducted at South Wetlands from 1994, when RMC began its pre- Remedial Investigation/Feasibility Study

(RI/FS) evaluations, through 2006. These investigations are documented in the following reports:

- *Removal Site Assessment Report, Volume 1, Technical Report, and Volume 2, Technical Appendixes* (CH2M HILL, January 1995)
- *Technical Memorandum DS No. 8: South Wetlands Study Area Supplemental Data-Gathering Summary* (CH2M HILL, January 3, 1996)
- Draft Current Situation Summary (CH2M HILL, April 5, 1996)
- *Technical Memorandum DS No. 14: Data Summary for the South Wetlands Addendum to the RI/FS Work Plan, Part 1 – Soil, Surface Water, and Groundwater Quality* (CH2M HILL, February 12, 1997)
- *Technical Memorandum No. 8: South Wetlands PCB Area Excavation Final Summary* (CH2M HILL, January 4, 2000)
- *Draft Final Focused Feasibility Study* (CH2M HILL, June 2000)
- *Technical Memorandum No. 21: Data Report – South Plant RR Fill Embankment Investigation, Post-Demolition RI/RA* (CH2M HILL, January 10, 2005)
- *Post-Demolition Residual Risk Assessment* (CH2M HILL, June 2006)

Figure 2 shows the locations of all representative samples of remaining soils collected in the South Wetlands.

3.3 Contaminants of Concern

Environmental investigations in the South Wetlands over the years have included collection and analysis of surface and subsurface soil samples in South Wetlands, the railroad embankment, and the Building 97 subarea. Table 1 presents a summary of the analytical results representative of the soils remaining within the South Wetlands area. Sections 3.3.1 and 3.3.3 focus on the contaminants of concern in the wetlands proper and in the railroad embankment, respectively. Remedial actions within the South Wetlands area have been limited and focused solely on hot spots.

3.3.1 South Wetlands

The primary source of contaminants in the main South Wetlands area is process residue solids deposited from past wastewater discharges. Because wastewater flows consisted of varying concentrations of contaminants, the contaminants are widely distributed with variable concentrations. The process residue exists in a layer approximately 4 to 17 inches thick in near-surface soil, except in the Building 97 subarea and the southern portion of South Wetlands, where it is thinner or nonexistent. The estimated volume of process residue is approximately 48,000 cubic yards. The contaminant distribution is generally within the elevation line of the historical operating water level in the old discharge pond (approximately 18 feet National Geodetic Vertical Datum [NGVD] 29), with high concentrations in the historical "low" spots and lower concentrations and thinner layers at the perimeters.

Four soil layers were noted in the shallow subsurface soil: process residue, a silt layer, organically rich material, and silt with clay. Constituent concentrations were greatest in the top (process residue) layer. The silt layer underlying the process residue was not consistently analyzed; therefore, it is uncertain how much leaching into this layer may have occurred. The two bottom layers showed low to nondetectable concentrations of contaminants. However, in areas with no visible process residue, there were still low but detectable concentrations of some constituents (such as cyanide, polychlorinated biphenyls [PCBs], and polynuclear aromatic hydrocarbons [PAHs]) in surface soils.

Constituents detected at elevated levels in South Wetlands include the following:

- Fluoride
- PCBs
- PAHs
- Metals (copper, mercury, vanadium)
- Cyanide

3.3.2 Visual Description of Process Residue

Process residue in this area is a fine material that has a bluish-gray to black coloration, often with streaks or thin lenses of lighter gray material running through it. The process residue is distinctly darker than the native silty soils in this area.

3.3.3 Railroad Embankment

The railroad embankment is a fill area constructed primarily of used refractory brick, which was staged with other waste on the south landfill prior to use as fill in the wetlands. The fines in the fill materials contain constituents similar to those found in the South Wetlands. The west portion of the railroad embankment was removed in January 2006; this removed portion is outside the South Wetlands boundary indicated in Figure 2. The rest of the embankment remains in place. A summary of the results of samples collected along the remaining portion of the railroad embankment is included in Table 1.

Constituents detected at elevated levels along the railroad embankment include the following:

- Fluoride
- PAHs

3.4 Management of Contaminated Soil

Any activities conducted within the South Wetlands that disturb soil could affect contaminated soils. All soil-disturbing activities (for example, constructing utilities, buildings, or foundations) shall follow the management practices below:

- Clean, cut vegetation may be removed from the South Wetlands at the owner's discretion. Grubbed vegetation materials containing contaminated soil from within the wetlands may be stockpiled and allowed to decompose within the wetland provided the decomposed stockpiled materials are finish graded to an elevation no higher than 18 feet NGVD.

- Excavated contaminated surface soil may be disposed of offsite in a Subtitle D landfill.
- Excavated contaminated surface soil may be placed back into the South Wetlands if placed adjacent to the excavation and finish graded to an elevation no higher than 18 feet NGVD.
- Excavated contaminated surface soil may be backfilled into the same excavation from which it was taken, provided the excavation has not penetrated through the layer of contaminated soil into the clean subsurface soil such that contaminated soil would end up at a lower elevation than currently exists or be mixed with clean soil. If an excavation penetrates the contaminated surface layer into the clean subsurface layer, then backfill may be accomplished only with clean backfill materials or with material taken from other areas of the former RMC facility. (See last bullet item.)
- Excavated contaminated surface soil from the South Wetlands may not be placed back into the wetlands in any area that has been covered with a layer of clean soil or in other areas of the property that are known to be free of contamination.
- The former railroad embankment may be graded into the wetlands area provided that the finished elevation of such materials does not exceed 18 feet NGVD.
- Before occupational use of South Wetlands may occur, the wetlands must be covered by a minimum of one foot of clean backfill or backfill material from other areas of the former RMC facility. Prior to such backfilling, Oregon DEQ shall be notified of the source of the backfill material and confirmation shall be made that the requirements of the Record of Decision, including this CMMP, will be followed.

3.5 Management of Groundwater and Surface Water

Any surface water or groundwater that must be managed due to construction or redevelopment activities within the South Wetlands boundary may be impounded within the South Wetlands boundary and allowed to reinfiltrate or, after evaluation for proper management, may be discharged under either a future DEQ-issued NPDES permit or a future City of Troutdale Industrial Batch Discharge Permit. The NPDES permit renewal application submitted to DEQ requests the addition of construction dewatering water to allow for this type of discharge, provided it is performed within the constraints of the permit. The renewed permit is expected to be finalized before the end of 2007. This permit is transferable to a new owner.

SECTION 4

Former East Potliner Area

4.1 Description and History of the Former East Potliner Area

The former east potliner area ("Former EPL Area") lies east of the former RMC-Troutdale plant and inside the COE flood control dike (see Figure 3). The area encompasses about 3 acres, and it is bisected by a Northwest Pipeline Corporation right-of-way containing two buried 18-inch-diameter, high-pressure natural gas pipelines. A former railroad spur passed along the southern perimeter of this area.

Aerial photographs indicate that, from the early days of plant operation, this area was used for temporary storage of plant solid waste. This waste is believed to have consisted primarily of spent potliner, but it also may have included rodding room waste, carbon plant waste, cryolite, demolition waste, and used refractory brick.

4.2 Environmental Activities in the Former EPL Area

This section summarizes the environmental investigations and removals conducted in the Former EPL Area from 1994 (when RMC began its pre-RI/FS evaluations) through 1997.

These investigations are documented in the following reports:

- *Removal Site Assessment Report, Volume 1, Technical Report, and Volume 2, Technical Appendixes* (CH2M HILL, January 1995)
- *Technical Memorandum DS No. 3: East Potliner Area: Supplemental Data-Gathering Summary* (CH2M HILL, June 15, 1995)
- *Final East Potliner Removal Action Report* (CH2M HILL, April 3, 1997)

4.2.1 Former East Potliner Area Removal Action

The objective of the removal action was to excavate spent potliner, a listed hazardous waste (Waste Code K088) per 40 *Code of Federal Regulations* (CFR) 261.32 (a). The cleanup goal for the EPL removal action was visual removal of "primary source materials" (spent potliner materials and mixed wastes). After receiving a favorable "contained in" determination from DEQ, RMC successfully screened a significant amount of spent potliner waste from soil by running the material through a 1-inch screen. Material retained by the 1-inch screen was considered to be K088 waste and was disposed of in a Subtitle C landfill. Material passing the 1-inch screen that also contained cyanide levels of less than 590 milligrams per kilogram (mg/kg) was considered to be solid waste and was disposed of in a Subtitle D landfill. If material passing the 1-inch screen also contained cyanide levels greater than 590 mg/kg, these materials would have been considered to be K088 waste and disposed of at a subtitle C landfill.

RMC completed the removal of spent potliner and other waste material from the Former

EPL Area in March 1996 and disposed of this material in an offsite landfill.

4.2.2 Exception: Natural Gas Pipelines

An exception to the remedial action described above was the natural gas pipeline trench that bisected the site. The initial electromagnetic conductivity (EM) survey indicated the presence of spent potliner material near the existing high-pressure natural gas pipelines. Excavation activities near the pipelines found spent potliner in the material used to backfill the eastern pipeline trench. The western pipeline trench appeared to be backfilled primarily with soil; however, there is a chance some spent potliner may be found mixed in this backfill as well. EPA approved RMC's request to leave potliner in place in the pipeline trench because the risk of excavation adjacent to the high-pressure pipelines was not justified by the amount of potliner remaining in the trench. Excavation along the length of the pipelines was limited to removal of material within about 1.5 to 2 feet of either pipeline. The pipeline trench area potentially containing spent potliner wastes is depicted on Figure 3 and is referred to herein as the "Pipeline Trench in the Former EPL Area."

Portions of the pipeline trench were backfilled immediately after excavation, at the request of the Northwest Pipeline Corporation, to maintain minimum cover over the pipes. Samples of the remnant spent potliner were collected, and measurements were taken to estimate the nature and extent of material that was left in place, as described in Section 4.3.

4.3 Contaminants of Concern

Characterization and quantification of remnant spent potliner left in the pipeline trench were performed in accordance with *Memorandum No. 14: East Potliner Remediation Revised Sampling Plan* (CH2M HILL, November 1, 1995). The mass of remnant spent potliner left in the pipeline trench in the Former EPL Area was estimated by observation and measurement of the contaminated areas of the pipeline trench in the Former EPL Area while it was open. On the basis of this work, it was determined that the remnant spent potliner existed primarily in concentrated pockets but was also found mixed with soil. EPA and RMC agreed to estimate the quantities of each material and to collect representative samples of the spent potliner, the potliner mixed with soil, and the soil itself.

Concentrated spent potliner was sampled directly. Samples of the potliner mixed with soil and the soil itself were collected, and the mix of soil and potliner was then screened with a 1-inch soil sieve. The screened fines (1-inch-minus) and the oversized material (1-inch-plus) were collected and analyzed separately. From this information, it was estimated that approximately 90 cubic yards of spent potliner with the characteristics of samples EP-PIPE-HIGH01 and EP-PIPE-PLUS01 remain in the trench. It was also estimated that the pipeline trench contains approximately 500 cubic yards of soil with the characteristics of the Sample EP-PIPE-MINUS01. The locations of these samples are shown in Figure 3. The test results for these samples are presented in Table 2. A favorable "contained in" determination now requires that the soils meet the current land disposal restrictions (LDRs), where none existed at the time of DEQ's 1995 "contained in" determination. On the basis of the test results presented in Table 2, it is believed that the soil with the characteristics of Sample EP-PIPE-MINUS01 would support a determination that it is no longer a K088 waste and could be managed as nonhazardous waste. RMC received confirmation from DEQ in a letter dated July 17, 2006, that the 1995 DEQ-approved "contained in" determination is still valid for

waste encountered in the pipeline trench in the Former EPL Area subject to meeting current LDRs. Copies of the 1995 DEQ-approved "contained in" determination and the July 17, 2006, letter are provided in Appendix A.

Constituents detected at elevated levels in the Former EPL Area are as follows:

- Fluoride
- PAHs
- Metals (aluminum, arsenic, iron)
- Cyanide
- Spent potliner (K088)

4.3.1 Visual Description of Spent Potliner

Spent potliner in this area is a hard, dense, carbon-based material that occurs in chunks and/or granular size. It has a dark-gray to black coloration, often with thin marbling of lighter gray/white material running through the chunks. The spent potliner is distinctly darker than the native brown sands and silty soils in this area.

4.4 Management of Contaminated Soil

As part of the agreement with EPA and DEQ, clean soil was placed over the contaminated fill inside the pipeline trench. Any activities that are conducted within the pipeline trench in the Former EPL Area that are expected to result in removal of the clean soil and to penetrate into the contaminated soil shall be managed in the following manner:

- Clean overburden shall be set aside and may be reused as backfill in the pipeline trench in the Former EPL Area.
- Materials removed from the pipeline trench in the Former EPL Area that are mixed with spent potliner shall be disposed of offsite by either of the following options:
  - All materials may be managed and disposed of as spent potliner, a K088 listed hazardous waste. These materials may be excavated and loaded directly into containers or transport trucks, or they may be stockpiled prior to loading. If the latter, they shall be stockpiled in a lined and covered cell designed to prevent stormwater run-on and runoff.
  - Alternatively, the materials may be screened using a 1-inch screen to separate K088 waste from the soil media. The soil passing a 1-inch screen may be disposed of offsite in a Subtitle D landfill as nonhazardous waste, provided that representative samples of the screened soil contain constituent levels below the maximum level for land disposal restrictions as a K088 waste. Materials retained by the 1-inch screen shall be disposed of offsite in a Subtitle C landfill as K088 listed hazardous waste.
  - The pipeline trench in the Former EPL Area shall be backfilled with clean imported materials or other backfill materials from elsewhere on the former RMC facility.

4.5 Management of Groundwater and Surface Water

RMC has received a favorable "contained in" determination for all groundwater beneath the Former EPL Area. This determination letter is provided in Appendix B. Groundwater extracted from beneath the Former EPL Area has been determined not to contain Resource Conservation and Recovery Act (RCRA) K088 waste. Thus, any groundwater that is encountered or removed from beneath the Former EPL Area will not require management as K088 waste, provided the free cyanide level is below the maximum contaminant level (MCL) for safe drinking water (0.2 milligram per liter [mg/L]), and may be discharged under either a future NPDES permit (issued by DEQ) or a future City of Troutdale Industrial Batch Discharge Permit. The NPDES permit renewal application submitted to DEQ requests the addition of construction dewatering water to allow for this type of discharge, provided it is performed within the constraints of the permit. The renewed permit is expected to be finalized before the end of 2007. This permit is transferable to a new owner.

Additional "contained in" waste profiling may be required for the management of stormwater runoff if derived from the removal of the spent potliner remaining in place in the natural gas pipeline trench. A "contained in" determination for such media will be made on the basis of risk for the intended use. Appropriate risk-based human health and ecological exposure criteria appropriate for the site for free cyanide include: MCL of 0.2 mg/L, EPA Region 6 preliminary remediation goal for tap water of 0.730 mg/L, and direct contact for industrial workers of 62 mg/L.

SECTION 5

Procedures for Unanticipated Materials

5.1 General

In the event that materials that appear to be contaminated are encountered in areas of the site where they were not anticipated, the practices identified below shall apply:

- A representative sample of the materials shall be collected and analyzed, at a minimum, for the following constituents: fluoride, cyanide, PAHs, and PCBs. Other constituents may be added to the analyte list based on observation of the encountered material. Such additional constituents include total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), and semivolatile organic compounds (SVOCs).
- Materials with concentrations less than DEQ's risk-based concentrations (RBCs) (Oregon Administrative Rule [OAR] 340-122-0205 through 340-122-0360) for residential cleanup standards may be managed and disposed of as clean fill onsite or offsite.
- Materials with concentrations that exceed ecological criteria may not be placed in areas outside the COE levee.
- Materials with concentrations less than DEQ's RBCs (OAR 340-122-0205 through 340-122-0360) for construction workers may be managed onsite.
- Materials with concentrations greater than DEQ's RBCs (OAR 340-122-0205 through 340-122-0360) for construction workers shall be managed onsite if the exposure pathway is effectively eliminated through site development, or if it can be demonstrated that future exposure to these materials will not exceed DEQ's RBCs (OAR 340-122-0205 through 340-122-0360) for excavation workers. If these conditions cannot be met, the material shall be disposed of in an appropriate offsite landfill.

5.2 Future Discoveries of Furnace Brick

Spent furnace brick from the former reduction facility has been used extensively as fill material, riprap, and road base aggregate. Known brick locations include but are not limited to the following: along the COE levee south of Company Lake, along portions of the Company Lake outfall ditch and the Columbia and Sandy Rivers, along backfill in the South Ditch stormwater pump forebay, and along several former facility aggregate roads. RMC has demonstrated to EPA's and DEQ's satisfaction that the brick does not pose an unacceptable risk and, consequently, no special management requirements will be applicable to future discoveries onsite of buried furnace brick.

5.3 Future Discovery of Spent Potliner

In the event that spent potliner is discovered outside the Former EPL Area, note that the current DEQ "contained in" determinations referenced in Section 4 will not apply. In this event, the spent potliner (K088) must be managed as a hazardous waste. Any soil, groundwater, or stormwater associated with the K088 waste is subject to the requirements of 40 CFR Part 262.

A "contained in" determination for soil will be made on the basis of the LDR treatment standards for total cyanide, because the risk-based level for residential soil ingestion is higher. The LDR for total cyanide is 590 mg/kg. There are currently 25 LDR constituents for K088 waste that also apply in the management of these soils.

A "contained in" determination for such water will be made on the basis of risk for the intended use. Appropriate risk-based human health and ecological exposure criteria appropriate for the site for free cyanide include: MCL of 0.2 mg/L, EPA Region 6 preliminary remediation goal for tap water of 0.730 mg/L, and direct contact for industrial workers of 62 mg/L.

A visual description of spent potliner is provided in Section 4.3.1. However, there are several other carbon-based waste materials originating from past smelter operations, the remnants of which look very similar to spent potliner. These materials include: carbon anodes, carbon anode butt returns, carbon anode butt cleaning scrap, green mill carbon scrap, and graphite elements such as flux tubes, arc furnace electrodes, and molten metal filter elements. Several of the examples provided may also contain low levels of cyanide. Therefore, unless it is known that spent potliner once existed in an area, such as the Former EPL Area, it should not be assumed that material matching the description in 4.3.1 is spent potliner. If the cyanide level in the carbon material matching the description in 4.3.1 is greater than 590 mg/kg, then the material is most likely spent potliner.

Tables

Table 1
Analytical Results for Soil and Sediment Samples Taken from the South Wetlands
RMC/Alcoa - Troutdale, OR

Station	Sample ID	Date Sampled	Depth	General Chemistry (mg/Kg)					Total Metals (mg/Kg)								
				Cyanide, Total	Fluoride by 340.1/340.2	Fluoride by 340.2 Mod	Fluoride, GI Extraction	Total Organic Carbon	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt
BLD971	BLD971-0035-0	07/25/95	3.5	1.0 U	1,100			50 U	6,270	2.5 U	0.91	18	0.50 U	0.50 U	4,500	22	7.0
	BLD971-0090-0	07/25/95	9	1.0 U	1,700			50 U	8,150	2.5 U	2.3	44	0.50 U	0.50 U	3,230	7.8	3.0
	BLD971-0110-0	07/25/95	11	1.0 U	1,200			50 U	11,900	2.5 U	0.98	41	0.50 U	0.50 U	5,360	8.0	3.8
BLD972	BLD972-0090-0	07/25/95	9	1.0 U	880			50 U	8,130	2.5 U	0.89	22	0.50 U	0.50 U	4,410	6.2	2.6
	BLD972-0110-0	07/25/95	11	1.0 U	820			60	9,230	2.5 U	1.6	21	0.50 U	0.50 U	4,810	6.6	4.5
MW04-019	RM-MW04-10.0	07/12/94	10	0.10 L		200											
	RM-MW04-7.5	07/12/94	7.5	0.10 L		210											
MW36-006	MW36S-0035-0	10/22/96	3.5					32,500									
	MW36S-0060-0	10/22/96	6					12,200									
	MW36S-0080-0	10/22/96	8					15,000									
MW37-012	MW37S-0040-0	10/23/96	4					18,100									
	MW37S-0055-0	10/23/96	5.5					79,100									
	MW37S-0075-0	10/23/96	7.5					2,780									
	MW37S-0100-0	10/23/96	10					4,560									
SA1	SP5-SA1-C	07/26/94	0.1 - 3	0.10 U		5.0 U				2.5 U	1.0 U		1.0 U	1.0 U		6.1	
SA2	SP5-SA2-C	07/26/94	0.1 - 3	0.10 U		500 RC				2.5 U	5.7		1.0 U	1.0 U		10	
SD27	WD-SD27-0001-0 [2]	02/23/95	0.1	0.057 U	3,600 J			26,000 RC	13,000 RC	1.3 U	10	130	1.0 U	1.0 U	4,300 LRC	25	23
SD28	WD-SD28-0001-0 [2]	02/23/95	0.1	0.24	1,600 J			20,000 RC	19,000 RC	1.3 U	5.9	120	1.0 U	1.0 U	6,300 LRC	24	14
	WD-SD28-0001-1 [1,2]	02/23/95	0.1	0.39	2,200 J			18,000 RC	11,000 RC	1.3 U	5.9	110	1.0 U	1.0 U	4,500 LRC	16	9.5
SW2	SW2-C	07/26/94	0.1 - 3	0.10 U		500 RC				2.5 U	14		2.6	1.0 U		12	
SW3	SW3-C	07/26/94	0.1 - 3	0.10 U		500 RC				2.5 U	8.6		3.0	1.0 U		11	
SW4	SW4-C	07/26/94	0.1 - 3	2.9 RC		500 RC				2.5 U	13		2.3	1.0 U		56	
SW5	SW5-C	07/26/94	0.1 - 3	0.17		600 RC				2.5 U	5.9		1.0 U	1.0 U		44	
SW-6	SW-6-S	08/04/94	0.1	0.36		450											
SW-SB03	SW-SB03-0005-0	07/24/95	0.3 - 0.5	11	29,000			63	76,800	4.0	32	139	4.4	0.53	22,300	159	61
	SW-SB03-0010-0	07/24/95	0.9 - 1.2	1.0 U	2,300			110	14,400	2.5 U	3.9	75	0.50 U	0.50 U	5,240	18	8.4
	SW-SB03-0020-0	07/24/95	2 - 2.2	1.0 U	270			55	7,820	2.5 U	1.7	23	0.50 U	0.50 U	4,930	6.1	3.8
SW-SB05	SW-SB05-0005-0	07/24/95	0.3 - 0.5	52	14,000			120	44,000	4.0	26	110	1.1	0.50 U	14,600	105	70
	SW-SB05-0015-0	07/24/95	1.4 - 1.6	1.0 U	830			150	15,100	2.5 U	4.2	106	0.98	0.50 U	5,940	19	12
	SW-SB05-0020-0	07/24/95	2 - 2.2	1.0 U	550			106	14,700	2.5 U	2.3	89	0.50 U	0.50 U	4,740	12	6.5
SW-SB06	SW-SB06-0005-0	07/24/95	0.3 - 0.5	1.0 U	16,000			50 U	83,700	2.5 U	21	70	2.3	0.50 U	11,300	90	46
	SW-SB06-0015-0	07/24/95	1.5 - 1.7	1.0 U	1,300			400	23,600	2.5 U	4.9	145	0.83	0.50 U	7,900	23	8.4
	SW-SB06-0020-0	07/24/95	2 - 2.2	1.0 U	590			250	19,100	2.5 U	2.9	108	0.50 U	0.50 U	5,390	15	5.7
SW-SB07	SW-SB07-0005-0	07/24/95	0.3 - 0.5	55	8,400			50 U	118,000	2.5 UL	24	63	3.1	0.50 U	7,810	65	43
	SW-SB07-0015-0	07/24/95	1.4 - 1.6	1.0 U	1,000			50 U	15,300	2.5 UL	5.8	129	0.81	0.50 U	6,890	20	11
	SW-SB07-0015-1 [1]	07/24/95	1.4 - 1.6	1.0 U	1,400			50 U	15,800	2.5 UL	6.5	137	0.99	0.50 U	7,730	21	12
	SW-SB07-0020-0	07/24/95	2 - 2.2	1.0 U	370			50 U	14,300	2.5 UL	2.0	84	0.50 U	0.50 U	5,090	11	4.0
SW-SB08	SW-SB08-0005-0	07/24/95	0.3 - 0.5	1.0 U	13,000			50 U	66,400	2.5 UL	17	48	2.2	0.50 U	8,120	173	30
	SW-SB08-0015-0	07/24/95	1.3 - 1.5	1.0 U	700			57	16,100	2.5 UL	4.3	97	0.52	0.50 U	6,150	16	6.0
	SW-SB08-0020-0	07/24/95	2 - 2.2	1.0 U	330			50 U	16,100	2.5 UL	2.8	99	0.50 U	0.50 U	4,870	16	5.2
SW-SB09	SW-SB09-0005-0	07/24/95	0.4 - 0.6	1.0 U	12,000			50 U	179,000	2.5 UL	9.8	31	3.6	0.50 U	4,830	18	25
	SW-SB09-0020-0	07/24/95	2 - 2.2	1.0 U	1,400			101	11,000	2.5 UL	3.7	92	1.1	0.50 U	7,010	16	12
	SW-SB09-0030-0	07/24/95	2.8 - 3	1.0 U	630			66	19,200	2.5 UL	3.0	112	0.50 U	0.50 U	5,120	14	5.7
SW-SB10	SW-SB10-0005-0	07/24/95	0.3 - 0.5	20	35,000			50 U	111,000	2.5 UL	29	167	5.8	0.50 U	23,700	50	69
	SW-SB10-0020-0	07/24/95	2 - 2.2	1.0 U	370			480	16,200	2.5 UL	3.5	125	0.92	0.50 U	6,440	19	5.8
	SW-SB10-0030-0	07/24/95	3 - 3.2	1.0 U	170			160	23,300	2.5 UL	3.9	136	0.50 U	0.50 U	4,360	19	6.5
SW-SB11	SW-SB11-0005-0	07/24/95	0.3 - 0.5	9.2	150 U			50 U	16,200	2.5 UL	4.2	97	0.50 U	0.50 U	5,490	17	4.4
	SW-SB11-0015-0	07/24/95	1.3 - 1.5	2.0	150 U			115	13,700	2.5 UL	3.0	99	0.64	0.50 U	4,040	18	3.1
	SW-SB11-0020-0	07/24/95	2 - 2.2	1.0 U	220			97	21,800	2.5 UL	3.3	130	0.50 U	0.50 U	3,980	13	4.7
SW-SB12	SW-SB12-0005-0	07/24/95	0.3 - 0.5	9.5	3,800			270	43,500	2.5 UL	19	85	1.5	0.53	6,950	85	48
	SW-SB12-0015-0	07/24/95	1.3 - 1.5	1.0 U	380			600	15,200	2.5 UL	3.6	108	0.71	0.50 U	7,900	20	9.2
	SW-SB12-0020-0	07/24/95	2 - 2.2	1.0 U	200			410	22,900	2.5 UL	3.8	136	0.50 U	0.50 U	5,120	16	8.2

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RMC/Alcoa - Troutdale, OR

				General Chemistry (mg/Kg)					Total Metals (mg/Kg)								
Station	Sample ID	Date Sampled	Depth	Cyanide, Total	Fluoride by 340.1/340.2	Fluoride by 340.2 Mod	Fluoride, GI Extraction	Total Organic Carbon	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt
SW-SB13	SW-SB13-0005-0	07/24/95	0.2 - 0.4	**2.7**	**740**			**210**	**44,200**	2.5 UL	**9.6**	**92**	**1.7**	0.50 U	**5,230**	**94**	**15**
	SW-SB13-0015-0	07/24/95	1.4 - 1.6	**1.2 L**	**650 L**			**640**	**8,720**	2.5 UL	**3.7**	**91**	**0.75**	0.50 U	**5,570**	**14**	**5.1**
	SW-SB13-0020-0	07/24/95	1.9 - 2.1	**1.0 R**	**450 L**			**230**	**8,310**	2.5 UL	**2.2**	**87**	0.50 U	0.50 U	**3,430**	**9.1**	**3.7**
SW-SB14	SW-SB14-0002-0	08/04/95	0.1 - 0.3	**12**	**3,300 L**			**110**	**20,000**	2.5 UR	**7.8**	**108**	**0.62**	0.50 U	**7,840**	**66**	**27**
	SW-SB14-0007-0	08/04/95	0.6 - 0.8	**1.0**	**690 L**			50 U	**12,700**	2.5 UR	**5.1**	**89**	0.50 U	0.50 U	**4,780**	**14**	**4.2**
	SW-SB14-0014-0	08/04/95	1.3 - 1.5	1.0 U	**480 L**			50 U	**21,500**	2.5 UL	**5.2**	**135**	**0.54**	0.50 U	**5,590**	**23**	**6.0**
	SW-SB14-0020-0	08/04/95	1.9 - 2.1	1.0 U	**310 L**			50 U	**19,400**	2.5 UL	**4.3**	**120**	0.50 U	0.50 U	**5,080**	**21**	**5.2**
SW-SB15	SW-SB15-0002-0	08/04/95	0.1 - 0.2	**3.9**	**1,800 L**			50 U	**23,500**	2.5 UR	**5.6**	**110**	**1.1**	**11**	**3,670**	**75**	**14**
	SW-SB15-0006-0	08/04/95	0.5 - 0.7	1.0 U	**550 L**			**66**	**14,800**	2.5 UR	**4.1**	**86**	0.50 U	0.50 U	**5,460**	**15**	**5.5**
	SW-SB15-0015-0	08/04/95	1.4 - 1.6	1.0 U	**700 L**			**130**	**11,900**	2.5 UR	**3.5**	**82**	**0.73**	**1.1**	**5,610**	**18**	**5.4**
	SW-SB15-0020-0	08/04/95	1.9 - 2.1	1.0 U	**530 L**			**160**	**14,100**	2.5 UR	**2.4**	**117**	0.50 U	0.50 U	**4,120**	**15**	**4.0**
SW-SB16	SW-SB16-0003-0	08/04/95	0.1 - 0.3	**114 R**	**1,200 L**			**100**	**13,500**	2.5 UR	**5.2**	**81**	**0.52**	0.50 U	**5,950**	**41**	**14**
	SW-SB16-0008-0	08/04/95	0.6 - 0.8	1.0 UR	**400 L**			**71**	**16,100**	2.5 UR	**2.9**	**96**	0.50 U	0.50 U	**5,350**	**15**	**3.4**
	SW-SB16-0012-0	08/04/95	1.1 - 1.3	1.0 UR	**1,000 L**			**260**	**9,550**	2.5 UR	**2.3**	**58**	0.50 U	0.50 U	**2,910**	**12**	2.5 U
	SW-SB16-0018-0	08/04/95	1.7 - 1.9	1.0 UR	**370 L**			**260**	**18,200**	2.5 UR	**2.8**	**83**	0.50 U	0.50 U	**3,770**	**13**	**3.9**
SW-SB17	SW-SB17-0004-0	08/04/95	0.1 - 0.3	1.0 UR	**390 L**			**130**	**15,300**	2.5 UR	**3.1**	**92**	0.50 U	**0.59**	**4,390**	**22**	**5.8**
	SW-SB17-0008-0	08/04/95	0.6 - 0.8	**1.3 R**	**940 L**			**105**	**17,700**	2.5 UR	**4.9**	**95**	0.50 U	**0.96**	**5,490**	**57**	**8.9**
	SW-SB17-0012-0	08/04/95	1.1 - 1.3	1.0 UR	**530 L**			**78**	**15,800**	2.5 UR	**3.6**	**95**	0.50 U	0.50 U	**5,610**	**16**	**5.0**
	SW-SB17-0015-0	08/04/95	1.5 - 1.7	1.0 UR	**1,000 L**			**270**	**15,200**	2.5 UR	**2.6**	**105**	**0.66**	0.50 U	**5,000**	**20**	**4.7**
	SW-SB17-0020-0	08/04/95	1.9 - 2.1	1.0 UR	**420 L**			**98**	**12,200**	2.5 UR	**3.6**	**76**	0.50 U	0.50 U	**2,230**	**9.1**	**2.8**
SW-SB18	SW-SB18-0003-0	08/04/95	0.2 - 0.4	1.0 U	**460 L**			50 U	**11,500**	2.5 UR	**2.7**	**64**	0.50 U	0.50 U	**3,880**	**13**	**5.4**
	SW-SB18-0005-0	08/04/95	0.4 - 0.6	**4.7**	**1,300 L**			50 U	**9,340**	2.5 UR	**4.4**	**95**	0.50 U	0.50 U	**4,520**	**23**	**8.0**
	SW-SB18-0010-0	08/04/95	0.9 - 1.1	1.0 U	**620 L**			50 U	**10,800**	2.5 UR	**4.7**	**87**	0.50 U	0.50 U	**4,690**	**13**	**4.3**
	SW-SB18-0015-0	08/04/95	1.4 - 1.6	1.0 U	**780 L**			**150**	**16,100**	2.5 UR	**3.4**	**96**	**0.60**	0.50 U	**4,870**	**18**	**3.9**
	SW-SB18-0018-0	08/04/95	1.8 - 2	1.0 U	**650 L**			**230**	**13,500**	2.5 UR	**2.0**	**72**	0.50 U	0.50 U	**3,640**	**12**	**3.4**
SW-SB19	SW-SB19-0007-0	07/22/96	0.7 - 0.9														
	SW-SB19-0020-0	07/22/96	2 - 2.2														
	SW-SB19-0030-0	07/22/96	3 - 3.2														
SW-SB20	SW-SB20-0005-0	07/22/96	0.5 - 0.7														
	SW-SB20-0020-0	07/22/96	1 - 1.2														
	SW-SB20-0030-0	07/22/96	3 - 3.2														
SW-SB21	SW-SB21-0005-0	07/22/96	0.5 - 0.7														
	SW-SB21-0020-0	07/22/96	2 - 2.2														
	SW-SB21-0030-0	07/22/96	3 - 3.2														
SW-SB22	SW-SB22-0005-0	07/22/96	0.5 - 0.7														
	SW-SB22-0013-0	07/22/96	1.3 - 1.5														
	SW-SB22-0024-0	07/22/96	2.4 - 2.6														
SW-SB23	SW-SB23-0007-0	07/22/96	0.7 - 0.9														
	SW-SB23-0020-0	07/22/96	2 - 2.2														
	SW-SB23-0030-0	07/22/96	3 - 3.2														
SW-SB24	SW-SB24-0008-0	07/22/96	0.8 - 1														
	SW-SB24-0014-0	07/22/96	1.2 - 1.4														
	SW-SB24-0030-0	07/22/96	2.8 - 3														
SW-SB25	SW-SB25-0006-0	07/22/96	0.6 - 0.8														
	SW-SB25-0015-0	07/22/96	1.5 - 1.7														
	SW-SB25-0026-0	07/22/96	2.6 - 2.8														
SW-SB26	SW-SB26-0010-0	07/22/96	1 - 1.2														
	SW-SB26-0017-0	07/22/96	1.7 - 1.9														
	SW-SB26-0033-0	07/22/96	3.3 - 3.5														
SW-SB27	SW-SB27-0007-0	07/23/96	0.5 - 0.7		**660**	**41**											
	SW-SB27-0007-1 [1]	07/23/96	0.5 - 0.7		**700**	**42**											
SW-SB28	SW-SB28-0003-0	07/23/96	0.2 - 0.4		**320**	**5.3**											
SW-SB29	SW-SB29-0003-0	07/23/96	0.2 - 0.4		**820**	**39**											
	SW-SB29-0007-0	07/23/96	0.7 - 0.8		**350**	**24**											

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				General Chemistry (mg/Kg)					Total Metals (mg/Kg)								
Station	Sample ID	Date Sampled	Depth	Cyanide, Total	Fluoride by 340.1/340.2	Fluoride by 340.2 Mod	Fluoride, GI Extraction	Total Organic Carbon	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt
SW-SB30	SW-SB30-0004-0	07/23/96	0.4 - 0.6		**10,000**	**120**											
SW-SB31	SW-SB31-0003-0	07/23/96	0.2 - 0.4		**11,000**	**440**											
SW-SB32	SW-SB32-0002-0	07/23/96	0.1 - 0.3		**14,000**	**72**											
SW-SB33	SW-SB33-0002-0	07/23/96	0.1 - 0.3		**20,000**	**62**											
	SW-SB33-0002-1 [1]	07/23/96	0.1 - 0.3		**19,000**	**410**											
SW-SB34	SW-SB34-0004-0	07/23/96	0.3 - 0.5		**1,200**	**100**											
SW-SB35	SW-SB35-0001-0	07/23/96	0.1 - 0.3		**16,000**	**350**											
SW-SB36	SW-SB36-0003-0	07/23/96	0.2 - 0.4		**13,000**	**140**											
SW-SB37	SW-SB37-0040-0	07/24/96	3.8 - 4														
	SW-SB37-0050-0	07/24/96	4.8 - 5														
	SW-SB37-0060-0	07/24/96	6 - 6.2														
SW-SB38	SW-SB38-0009-0	07/24/96	0.9 - 1.1														
	SW-SB38-0020-0	07/24/96	2 - 2.2														
	SW-SB38-0028-0	07/24/96	2.8 - 3														
SW-SB39	SW-SB39-0050-0	08/26/96	5 - 5.3														
	SW-SB39-0060-0	08/26/96	6 - 6.3														
SW-SB40	SW-SB40-0050-0	08/26/96	4.7 - 5														
	SW-SB40-0070-0	08/26/96	7 - 7.3														
SW-SB41	SW-SB41-0003-0	08/26/96	0.3 - 0.5														
SW-SB42	SW-SB42-0005-0	08/26/96	0.5 - 0.7														
SW-SB49	SW-SB49-0005-0	11/19/97	0			**2,880**	**1,570**		**25,800**								
SW-SB50	SW-SB50-0005-0	11/19/97	0			**17,000**	**6,360**		**96,500**								
SW-SB51	SW-SB51-0005-0	11/19/97	0			**6,720**	**1,580**		**32,200**								
SW-SB52	SW-SB52-0005-0	11/19/97	0			**16,000**	**2,710**		**56,300**								
SW-SB53	SW-SB53-0005-0	11/19/97	0			**893**	**1,340**		**20,900**								
	SW-SB53-0005-0-R2	11/19/97	0			**1,070**	**697**										
SW-SB54	SW-SB54-0005-0	11/19/97	0			**15,500**	**2,960**		**40,400**								
SW-SB55	SW-SB55-0005-0	11/19/97	0			**16,200**	**3,910**		**48,200**								
SW-SB56	SW-SB56-0005-0	11/19/97	0			**26,900**	**8,080**		**65,800**								
SW-SB57	SW-SB57-0005-0	11/19/97	0			**12,700**	**4,940**		**96,400**								
SW-SB58	SW-SB58-0005-0	11/19/97	0			**12,100**	**2,160**		**41,100**								
SW-SC01	SW-SC01-0002-0	09/20/99	2														
SW-SC02	SW-SC02-0001-0	09/20/99	1														
SW-SC03	SW-SC03-0001-0	09/20/99	1														
SW-SC04	SW-SC04-0002-0	09/20/99	2														
SW-SC05	SW-SC05-0002-0	09/20/99	2														
SW-SC05	SW-SC05-0002-1 [1]	09/20/99	2														
SW-SC06	SW-SC06-0002-0	09/20/99	2														

Notes:
Bold values indicate analyte detected.
[1] Duplicate Sample
[2] Sediment Sample
J = Indicates an estimated value.
K = The analyte concentration is biased high; the result may actually be lower.
L = The analyte concentration is biased low; the result may actually be higher.
R = The analyte concentration is rejected due to serious deficiencies in the ability to anlayze the analyte and meet quality control criteria. The presence or absence of the analyte cannot be verified.
RC =
U = Indicates the compound was analyzed for, but not detected.

Table 1
Analytical Results for Soil and Sediment Samples Tak
RMC/Alcoa - Troutdale, OR

Station	Sample ID	Date Sampled	Depth	Total Metals (mg/Kg)												
				Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
BLD971	BLD971-0035-0	07/25/95	3.5	**9.9**	**20,100**	5.0 U	**1,560**	**155**	0.20 U	**25**	**322**	1.0 U	1.0 U	**1,540**	1.0 U	**87**	**36**
	BLD971-0090-0	07/25/95	9	**15**	**11,000**	5.0 U	**1,100**	**71**	**0.84 K**	**7.9**	**293**	1.0 U	1.0 U	**2,300**	1.0 U	**35**	**16**
	BLD971-0110-0	07/25/95	11	**29**	**8,830**	5.0 U	**1,660**	**80**	0.20 U	**7.8**	**465**	1.0 U	1.0 U	**3,630**	1.0 U	**33**	**21**
BLD972	BLD972-0090-0	07/25/95	9	**16**	**6,430**	5.0 U	**987**	**70**	**1.3 K**	**6.8**	**247**	1.0 U	1.0 U	**2,450**	1.0 U	**27**	**18**
	BLD972-0110-0	07/25/95	11	**25**	**6,240**	5.0 U	**1,110**	**61**	0.20 U	**6.1**	**295**	1.0 U	1.0 U	**3,040**	1.0 U	**41**	**20**
MW04-019	RM-MW04-10.0	07/12/94	10														
	RM-MW04-7.5	07/12/94	7.5														
MW36-006	MW36S-0035-0	10/22/96	3.5														
	MW36S-0060-0	10/22/96	6														
	MW36S-0080-0	10/22/96	8														
MW37-012	MW37S-0040-0	10/23/96	4														
	MW37S-0055-0	10/23/96	5.5														
	MW37S-0075-0	10/23/96	7.5														
	MW37S-0100-0	10/23/96	10														
SA1	SP5-SA1-C	07/26/94	0.1 - 3	**7.8**		10 U			0.25 U	**5.8**		1.0 U	1.0 U		1.0 U		**17**
SA2	SP5-SA2-C	07/26/94	0.1 - 3	**15**		10 U			0.25 U	**72**		1.0 U	1.0 U		1.0 U		**28**
SD27	WD-SD27-0001-0 [2]	02/23/95	0.1	**390**	**11,000 RC**	**36**	**1,500 L**	**110 L**	0.23 U	**190**	**3,600 RC**	1.0 U	1.0 U	**780**	0.20 U	**140 L**	**96**
SD28	WD-SD28-0001-0 [2]	02/23/95	0.1	**610 RC**	**14,000 RC**	**35**	**2,100 L**	**120 L**	0.23 U	**220 RC**	**590 RC**	1.0 U	1.0 U	**1,400**	1.0 U	**150 L**	**80**
	WD-SD28-0001-1 [1,2]	02/23/95	0.1	**590 RC**	**8,900 RC**	**34**	**1,400 L**	**91 L**	0.14 U	**150**	**320 RC**	1.0 U	1.0 U	**680**	1.0 U	**130 L**	**73**
SW2	SW2-C	07/26/94	0.1 - 3	**96**		**46**			0.25 U	**830 RC**		1.0 U	1.0 U		1.0 U		**56**
SW3	SW3-C	07/26/94	0.1 - 3	**190**		**46**			0.25 U	**780 RC**		1.0 U	1.0 U		1.0 U		**64**
SW4	SW4-C	07/26/94	0.1 - 3	**400**		**49**			**0.68**	**670 RC**		1.0 U	1.0 U		1.0 U		**70**
SW5	SW5-C	07/26/94	0.1 - 3	**19**		**29**			0.25 U	**590 RC**		1.0 U	1.0 U		1.0 U		**47**
SW-6	SW-6-S	08/04/94	0.1														
SW-SB03	SW-SB03-0005-0	07/24/95	0.3 - 0.5	**1,010**	**15,600**	**65**	**691**	**138**	**1.5 K**	**1,940**	**255**	**9.0**	**3.8**	**1,950**	1.0 U	**702**	**110**
	SW-SB03-0010-0	07/24/95	0.9 - 1.2	**37**	**17,200**	**6.7**	**2,370**	**179**	0.20 U	**28**	**717**	1.0 U	1.0 U	**1,110**	1.0 U	**69**	**92**
	SW-SB03-0020-0	07/24/95	2 - 2.2	**20**	**6,500**	5.0 U	**956**	**61**	0.20 U	**9.1**	**238**	1.0 U	1.0 U	**1,570**	1.0 U	**28**	**22**
SW-SB05	SW-SB05-0005-0	07/24/95	0.3 - 0.5	**599**	**12,800**	**70**	**331**	**102**	**2.1 K**	**3,240**	**180**	1.0 U	**1.8**	**933**	1.0 U	**1,450**	**60**
	SW-SB05-0015-0	07/24/95	1.4 - 1.6	**37**	**9,840**	**22**	**1,620**	**140**	0.20 U	**339**	**728**	1.0 U	1.0 U	**622**	1.0 U	**86**	**50**
	SW-SB05-0020-0	07/24/95	2 - 2.2	**23**	**7,990**	5.0 U	**2,200**	**96**	0.20 U	**57**	**562**	1.0 U	1.0 U	**1,260**	1.0 U	**33**	**42**
SW-SB06	SW-SB06-0005-0	07/24/95	0.3 - 0.5	**419**	**8,000**	**43**	**302**	**60**	**1.1 K**	**1,920**	**140**	1.0 UJ	**1.3**	**844**	1.0 U	**894**	**59**
	SW-SB06-0015-0	07/24/95	1.5 - 1.7	**35**	**16,100**	5.0 U	**3,190**	**120**	0.20 U	**135**	**660**	1.0 UJ	1.0 U	**1,450**	1.0 U	**96**	**39**
	SW-SB06-0020-0	07/24/95	2 - 2.2	**32**	**9,860**	5.0 U	**2,910**	**95**	**0.26 K**	**31**	**787**	1.0 U	1.0 U	**1,740**	1.0 U	**46**	**45**
SW-SB07	SW-SB07-0005-0	07/24/95	0.3 - 0.5	**457**	**8,140**	**33**	**257**	**69**	**0.54**	**1,800**	**110**	**7.1 K**	**1.4**	**1,040**	1.0 U	**1,010**	**99**
	SW-SB07-0015-0	07/24/95	1.4 - 1.6	**51**	**12,900**	**5.9**	**1,930**	**149**	0.20 U	**267**	**643**	**1.2 K**	1.0 U	**766**	1.0 U	**121**	**58**
	SW-SB07-0015-1 [1]	07/24/95	1.4 - 1.6	**53**	**14,000**	5.0 U	**1,900**	**163**	0.20 U	**298**	**666**	**1.5 K**	1.0 U	**853**	1.0 U	**126**	**60**
	SW-SB07-0020-0	07/24/95	2 - 2.2	**21**	**7,660**	5.0 U	**1,960**	**84**	0.20 U	**16**	**551**	1.0 U	1.0 U	**1,460**	1.0 U	**29**	**33**
SW-SB08	SW-SB08-0005-0	07/24/95	0.3 - 0.5	**356**	**6,830**	**31**	**307**	**61**	**0.47**	**1,320**	**87**	**3.7 K**	**1.7**	**737**	1.0 U	**718**	**70**
	SW-SB08-0015-0	07/24/95	1.3 - 1.5	**30**	**13,700**	5.0 U	**1,860**	**81**	0.20 U	**75**	**348**	1.0 U	1.0 U	**430**	1.0 U	**71**	**16**
	SW-SB08-0020-0	07/24/95	2 - 2.2	**33**	**8,330**	5.0 U	**2,610**	**80**	0.20 U	**37**	**623**	1.0 U	1.0 U	**936**	1.0 U	**41**	**47**
SW-SB09	SW-SB09-0005-0	07/24/95	0.4 - 0.6	**456**	**3,290**	**12**	**214**	**28**	0.20 U	**1,190**	**97**	**12 K**	**1.0**	**1,330**	1.0 U	**366**	**115**
	SW-SB09-0020-0	07/24/95	2 - 2.2	**29**	**8,710**	5.0 U	**1,200**	**108**	0.20 U	**446**	**465**	**1.1 K**	1.0 U	**1,090**	1.0 U	**82**	**24**
	SW-SB09-0030-0	07/24/95	2.8 - 3	**43**	**9,510**	5.0 U	**2,970**	**88**	0.20 U	**18**	**766**	1.0 U	1.0 U	**1,520**	1.0 U	**40**	**40**
SW-SB10	SW-SB10-0005-0	07/24/95	0.3 - 0.5	**359**	**12,000**	**60**	**659**	**132**	**3.2**	**2,960**	**307**	**6.7 K**	**1.5**	**1,550**	1.0 UJ	**1,000**	**70**
	SW-SB10-0020-0	07/24/95	2 - 2.2	**31**	**11,000**	5.0 U	**1,960**	**110**	0.20 U	**64**	**563**	**1.0 K**	1.0 U	**1,420**	1.0 U	**73**	**35**
	SW-SB10-0030-0	07/24/95	3 - 3.2	**39**	**11,700**	5.0 U	**3,480**	**100**	0.20 U	**39**	**868**	1.0 U	1.0 U	**1,540**	1.0 U	**46**	**50**
SW-SB11	SW-SB11-0005-0	07/24/95	0.3 - 0.5	**35**	**13,700**	**13**	**3,420**	**95**	0.20 U	**16**	**720**	1.0 UJ	1.0 U	**1,270**	1.0 U	**54**	**46**
	SW-SB11-0015-0	07/24/95	1.3 - 1.5	**44**	**7,330**	5.0 U	**1,670**	**56**	0.20 U	**15**	**415**	1.0 U	1.0 U	**459**	1.0 U	**48**	**22**
	SW-SB11-0020-0	07/24/95	2 - 2.2	**27**	**9,750**	5.0 U	**2,710**	**72**	0.20 U	**15**	**504**	1.0 U	1.0 U	**1,090**	1.0 U	**30**	**36**
SW-SB12	SW-SB12-0005-0	07/24/95	0.3 - 0.5	**474**	**7,720**	**67**	**528**	**106**	**1.7**	**2,040**	**227**	**3.6 K**	**1.6**	**705**	1.0 U	**843**	**68**
	SW-SB12-0015-0	07/24/95	1.3 - 1.5	**41**	**9,840**	5.0 U	**1,430**	**134**	0.20 U	**119**	**598**	**1.1 K**	1.0 U	**616**	1.0 U	**70**	**29**
	SW-SB12-0020-0	07/24/95	2 - 2.2	**42**	**12,000**	5.0 U	**3,250**	**113**	0.20 U	**45**	**805**	1.0 U	1.0 U	**1,260**	1.0 U	**46**	**54**

Table 1
Analytical Results for Soil and Sediment Samples Tak
RMC/Alcoa - Troutdale, OR

Station	Sample ID	Date Sampled	Depth	Total Metals (mg/Kg)													
				Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
SW-SB13	SW-SB13-0005-0	07/24/95	0.2 - 0.4	**169**	**8,590**	**68**	**1,770**	**85**	**0.46**	**505**	**432**	1.0 UJ	1.0 U	**962**	1.0 U	**242**	**90**
	SW-SB13-0015-0	07/24/95	1.4 - 1.6	**43**	**7,340**	**9.8**	**1,030**	**76**	0.20 U	**92**	**291**	1.0 U	1.0 U	**382**	1.0 U	**72**	**48**
	SW-SB13-0020-0	07/24/95	1.9 - 2.1	**22**	**4,940**	5.0 U	**1,540**	**56**	0.20 U	**17**	**256**	1.0 U	1.0 U	**439**	1.0 U	**27**	**37**
SW-SB14	SW-SB14-0002-0	08/04/95	0.1 - 0.3	**218**	**9,720**	**259**	**1,780**	**152**	**1.9**	**1,040**	**828**	**1.2 K**	1.0 U	**969**	1.0 UJ	**354**	**59**
	SW-SB14-0007-0	08/04/95	0.6 - 0.8	**28**	**11,700**	**11**	**2,710**	**70**	0.20 U	**37**	**553**	1.0 U	1.0 U	**862**	1.0 U	**56**	**41**
	SW-SB14-0014-0	08/04/95	1.3 - 1.5	**37**	**12,300**	**5.1**	**2,850**	**89**	0.20 U	**58**	**766**	1.0 U	1.0 U	**678**	1.0 U	**71**	**46**
	SW-SB14-0020-0	08/04/95	1.9 - 2.1	**29**	**10,900**	5.0 U	**2,560**	**85**	0.20 U	**39**	**638**	1.0 U	1.0 U	**828**	1.0 UJ	**58**	**43**
SW-SB15	SW-SB15-0002-0	08/04/95	0.1 - 0.2	**146**	**7,700**	**57**	**1,580**	**147**	**0.81**	**508**	**392**	1.0 U	1.0 U	**897**	1.0 U	**237**	**274**
	SW-SB15-0006-0	08/04/95	0.5 - 0.7	**32**	**11,500**	**13**	**2,600**	**92**	0.20 U	**33**	**483**	1.0 U	1.0 U	**1,300**	1.0 UJ	**44**	**40**
	SW-SB15-0015-0	08/04/95	1.4 - 1.6	**40**	**7,770**	5.0 U	**1,020**	**66**	0.20 U	**93**	**354**	**1.0 K**	1.0 U	**519**	1.0 U	**66**	**53**
	SW-SB15-0020-0	08/04/95	1.9 - 2.1	**32**	**7,480**	5.0 U	**2,350**	**66**	0.20 U	**17**	**362**	1.0 U	1.0 U	**773**	1.0 U	**33**	**43**
SW-SB16	SW-SB16-0003-0	08/04/95	0.1 - 0.3	**210**	**7,970**	**103**	**1,640**	**61**	**1.1**	**602**	**448**	**1.3 K**	1.0 U	**926**	**1.3**	**205**	**91**
	SW-SB16-0008-0	08/04/95	0.6 - 0.8	**30**	**10,100**	**11**	**3,180**	**67**	0.20 U	**15**	**532**	1.0 U	1.0 U	**1,230**	1.0 U	**43**	**39**
	SW-SB16-0012-0	08/04/95	1.1 - 1.3	**25**	**4,160**	5.0 U	**1,080**	**19**	0.20 U	**16**	**253**	1.0 U	1.0 U	**426**	1.0 U	**31**	**11**
	SW-SB16-0018-0	08/04/95	1.7 - 1.9	**18**	**6,650**	5.0 U	**1,970**	**46**	0.20 U	**15**	**359**	1.0 U	1.0 U	**1,060**	1.0 U	**23**	**27**
SW-SB17	SW-SB17-0004-0	08/04/95	0.1 - 0.3	**40**	**10,200**	**10**	**2,240**	**90**	0.20 U	**66**	**396**	1.0 U	1.0 U	**1,020**	1.0 U	**63**	**50**
	SW-SB17-0008-0	08/04/95	0.6 - 0.8	**60**	**13,300**	**23**	**3,780**	**126**	**0.21**	**181**	**529**	1.0 U	1.0 U	**1,350**	1.0 UJ	**118**	**72**
	SW-SB17-0012-0	08/04/95	1.1 - 1.3	**33**	**12,200**	**9.1**	**2,980**	**92**	0.20 U	**34**	**542**	1.0 U	1.0 U	**1,240**	1.0 U	**51**	**40**
	SW-SB17-0015-0	08/04/95	1.5 - 1.7	**44**	**9,070**	5.0 U	**1,800**	**63**	0.20 U	**31**	**463**	1.0 U	1.0 U	**761**	1.0 U	**50**	**28**
	SW-SB17-0020-0	08/04/95	1.9 - 2.1	**14**	**5,800**	5.0 U	**1,380**	**40**	0.20 U	**10**	**223**	1.0 U	1.0 U	**563**	1.0 U	**18**	**20**
SW-SB18	SW-SB18-0003-0	08/04/95	0.2 - 0.4	**28**	**12,100**	**12**	**1,970**	**127**	0.20 U	**43**	**460**	1.0 U	1.0 U	**911**	1.0 U	**55**	**36**
	SW-SB18-0005-0	08/04/95	0.4 - 0.6	**88**	**6,340**	**69**	**1,490**	**86**	**0.66**	**273**	**325**	1.0 U	1.0 U	**670**	1.0 U	**134**	**37**
	SW-SB18-0010-0	08/04/95	0.9 - 1.1	**28**	**11,000**	**9.6**	**2,450**	**78**	0.20 U	**22**	**316**	1.0 U	1.0 U	**713**	1.0 U	**51**	**34**
	SW-SB18-0015-0	08/04/95	1.4 - 1.6	**32**	**10,300**	5.0 U	**1,870**	**59**	0.20 U	**19**	**365**	1.0 U	1.0 U	**638**	1.0 U	**58**	**17**
	SW-SB18-0018-0	08/04/95	1.8 - 2	**19**	**5,900**	5.0 U	**1,570**	**47**	0.20 U	**14**	**230**	1.0 U	1.0 U	**763**	1.0 U	**24**	**16**
SW-SB19	SW-SB19-0007-0	07/22/96	0.7 - 0.9														
	SW-SB19-0020-0	07/22/96	2 - 2.2														
	SW-SB19-0030-0	07/22/96	3 - 3.2														
SW-SB20	SW-SB20-0005-0	07/22/96	0.5 - 0.7														
	SW-SB20-0020-0	07/22/96	1 - 1.2														
	SW-SB20-0030-0	07/22/96	3 - 3.2														
SW-SB21	SW-SB21-0005-0	07/22/96	0.5 - 0.7														
	SW-SB21-0020-0	07/22/96	2 - 2.2														
	SW-SB21-0030-0	07/22/96	3 - 3.2														
SW-SB22	SW-SB22-0005-0	07/22/96	0.5 - 0.7														
	SW-SB22-0013-0	07/22/96	1.3 - 1.5														
	SW-SB22-0024-0	07/22/96	2.4 - 2.6														
SW-SB23	SW-SB23-0007-0	07/22/96	0.7 - 0.9														
	SW-SB23-0020-0	07/22/96	2 - 2.2														
	SW-SB23-0030-0	07/22/96	3 - 3.2														
SW-SB24	SW-SB24-0008-0	07/22/96	0.8 - 1														
	SW-SB24-0014-0	07/22/96	1.2 - 1.4														
	SW-SB24-0030-0	07/22/96	2.8 - 3														
SW-SB25	SW-SB25-0006-0	07/22/96	0.6 - 0.8														
	SW-SB25-0015-0	07/22/96	1.5 - 1.7														
	SW-SB25-0026-0	07/22/96	2.6 - 2.8														
SW-SB26	SW-SB26-0010-0	07/22/96	1 - 1.2														
	SW-SB26-0017-0	07/22/96	1.7 - 1.9														
	SW-SB26-0033-0	07/22/96	3.3 - 3.5														
SW-SB27	SW-SB27-0007-0	07/23/96	0.5 - 0.7	**60**					0.20 U							**63**	
	SW-SB27-0007-1 [1]	07/23/96	0.5 - 0.7	**62**					0.20 U							**55**	
SW-SB28	SW-SB28-0003-0	07/23/96	0.2 - 0.4	**25**					0.20 U							**48**	
SW-SB29	SW-SB29-0003-0	07/23/96	0.2 - 0.4	**294**					**0.22**							**79**	
	SW-SB29-0007-0	07/23/96	0.7 - 0.8	**211**					0.20 U							**91**	

Table 1
Analytical Results for Soil and Sediment Samples Tak
RMC/Alcoa - Troutdale, OR

Station	Sample ID	Date Sampled	Depth	Total Metals (mg/Kg)													
				Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
SW-SB30	SW-SB30-0004-0	07/23/96	0.4 - 0.6	**505**					0.20 U							**364**	
SW-SB31	SW-SB31-0003-0	07/23/96	0.2 - 0.4	**194**					**0.21**							**58**	
SW-SB32	SW-SB32-0002-0	07/23/96	0.1 - 0.3	**568**					**0.66**							**458**	
SW-SB33	SW-SB33-0002-0	07/23/96	0.1 - 0.3	**651**					**1.2**							**359**	
	SW-SB33-0002-1 [1]	07/23/96	0.1 - 0.3	**689**					**1.1**							**409**	
SW-SB34	SW-SB34-0004-0	07/23/96	0.3 - 0.5	**86**					0.20 U							**123**	
SW-SB35	SW-SB35-0001-0	07/23/96	0.1 - 0.3	**662**					**1.5**							**259**	
SW-SB36	SW-SB36-0003-0	07/23/96	0.2 - 0.4	**442**					**1.0**							**748**	
SW-SB37	SW-SB37-0040-0	07/24/96	3.8 - 4														
	SW-SB37-0050-0	07/24/96	4.8 - 5														
	SW-SB37-0060-0	07/24/96	6 - 6.2														
SW-SB38	SW-SB38-0009-0	07/24/96	0.9 - 1.1														
	SW-SB38-0020-0	07/24/96	2 - 2.2														
	SW-SB38-0028-0	07/24/96	2.8 - 3														
SW-SB39	SW-SB39-0050-0	08/26/96	5 - 5.3														
	SW-SB39-0060-0	08/26/96	6 - 6.3														
SW-SB40	SW-SB40-0050-0	08/26/96	4.7 - 5														
	SW-SB40-0070-0	08/26/96	7 - 7.3														
SW-SB41	SW-SB41-0003-0	08/26/96	0.3 - 0.5														
SW-SB42	SW-SB42-0005-0	08/26/96	0.5 - 0.7														
SW-SB49	SW-SB49-0005-0	11/19/97	0	**155**												**143**	
SW-SB50	SW-SB50-0005-0	11/19/97	0	**621**												**1,340**	
SW-SB51	SW-SB51-0005-0	11/19/97	0	**328**												**672**	
SW-SB52	SW-SB52-0005-0	11/19/97	0	**700**												**2,260**	
SW-SB53	SW-SB53-0005-0	11/19/97	0	**202**												**435**	
	SW-SB53-0005-0-R2	11/19/97	0														
SW-SB54	SW-SB54-0005-0	11/19/97	0	**325**												**533**	
SW-SB55	SW-SB55-0005-0	11/19/97	0	**880**												**1,960**	
SW-SB56	SW-SB56-0005-0	11/19/97	0	**581**												**1,230**	
SW-SB57	SW-SB57-0005-0	11/19/97	0	**576**												**1,120**	
SW-SB58	SW-SB58-0005-0	11/19/97	0	**744**												**1,970**	
SW-SC01	SW-SC01-0002-0	09/20/99	2														
SW-SC02	SW-SC02-0001-0	09/20/99	1														
SW-SC03	SW-SC03-0001-0	09/20/99	1														
SW-SC04	SW-SC04-0002-0	09/20/99	2														
SW-SC05	SW-SC05-0002-0	09/20/99	2														
SW-SC05	SW-SC05-0002-1 [1]	09/20/99	2														
SW-SC06	SW-SC06-0002-0	09/20/99	2														

Notes:

Bold values indicate analyte detected.

[1] Duplicate Sample

[2] Sediment Sample

J = Indicates an estimated value.

K = The analyte concentration is biased high; the result may actually be lower.

L = The analyte concentration is biased low; the result may actually be higher.

R = The analyte concentration is rejected due to serious deficiencies in the ability to anlayze the analyte and meet quality control criteria. The presence or absence of the analyte cannot be verified.

RC =

U = Indicates the compound was analyzed for, but not detected.

Table 1
Analytical Results for Soil and Sediment Samples Tak
RMC/Alcoa - Troutdale, OR

Station	Sample ID	Date Sampled	Depth	Polunuclear Aromatic Hydrocarbons (mg/Kg)													
				Acenaphthene	Acenaphthylene	Anthracene	Benzo (a) anthracene	Benzo (a) pyrene	Benzo (b) fluoranthene	Benzo (g,h,i) perylene	Benzo (k) fluoranthene	Chrysene	Dibenzo (a,h) anthracene	Fluoranthene	Fluorene	Indeno (1,2,3-cd) pyrene
BLD971	BLD971-0035-0	07/25/95	3.5	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
	BLD971-0090-0	07/25/95	9	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
	BLD971-0110-0	07/25/95	11	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
BLD972	BLD972-0090-0	07/25/95	9	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
	BLD972-0110-0	07/25/95	11	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
MW04-019	RM-MW04-10.0	07/12/94	10													
	RM-MW04-7.5	07/12/94	7.5													
MW36-006	MW36S-0035-0	10/22/96	3.5													
	MW36S-0060-0	10/22/96	6													
	MW36S-0080-0	10/22/96	8													
MW37-012	MW37S-0040-0	10/23/96	4													
	MW37S-0055-0	10/23/96	5.5													
	MW37S-0075-0	10/23/96	7.5													
	MW37S-0100-0	10/23/96	10													
SA1	SP5-SA1-C	07/26/94	0.1 - 3													
SA2	SP5-SA2-C	07/26/94	0.1 - 3													
SD27	WD-SD27-0001-0 [2]	02/23/95	0.1	**0.22**	0.034 U	**0.30**	**2.4 RC**	**3.1 RC**	**5.0 RC**	**2.2 JRC**	**1.4**	**3.1 RC**	**0.61**	**3.6 RC**	0.034 U	**1.8 RC**
SD28	WD-SD28-0001-0 [2]	02/23/95	0.1	**0.41**	0.034 U	**0.61**	**5.4 RC**	**6.1 RC**	**8.9 RC**	**3.9 JRC**	**3.0 RC**	**6.1 RC**	**1.1**	**6.5 RC**	**0.21**	**3.5 RC**
	WD-SD28-0001-1 [1,2]	02/23/95	0.1	**0.45**	0.034 U	**0.64**	**5.9 RC**	**6.6 RC**	**9.3 RC**	**3.9 JRC**	**3.2 RC**	**7.3 RC**	**0.98**	**7.0 RC**	**0.23**	**3.4 RC**
SW2	SW2-C	07/26/94	0.1 - 3													
SW3	SW3-C	07/26/94	0.1 - 3													
SW4	SW4-C	07/26/94	0.1 - 3													
SW5	SW5-C	07/26/94	0.1 - 3													
SW-6	SW-6-S	08/04/94	0.1													
SW-SB03	SW-SB03-0005-0	07/24/95	0.3 - 0.5	0.30 U	0.30 U	0.30 U	**2.3**	**0.40**	**2.0**	0.30 U	**0.50**	**4.9**	0.30 U	**12**	0.30 U	0.30 U
	SW-SB03-0010-0	07/24/95	0.9 - 1.2	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
	SW-SB03-0020-0	07/24/95	2 - 2.2	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
SW-SB05	SW-SB05-0005-0	07/24/95	0.3 - 0.5	0.30 U	0.30 U	0.30 U	**1.0**	0.30 U	**2.1**	**0.40**	**0.50**	**5.0**	0.30 U	**5.0**	0.30 U	0.30 U
	SW-SB05-0015-0	07/24/95	1.4 - 1.6	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
	SW-SB05-0020-0	07/24/95	2 - 2.2	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
SW-SB06	SW-SB06-0005-0	07/24/95	0.3 - 0.5	0.30 U	0.30 U	0.30 U	**0.40**	0.30 U	**0.60**	0.30 U	0.30 U	**2.8**	0.30 U	**4.4**	0.30 U	0.30 U
	SW-SB06-0015-0	07/24/95	1.5 - 1.7	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
	SW-SB06-0020-0	07/24/95	2 - 2.2	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
SW-SB07	SW-SB07-0005-0	07/24/95	0.3 - 0.5	0.30 U	0.30 U	0.30 U	**0.80**	0.30 U	**1.3**	0.30 U	**0.40**	**4.9**	0.30 U	**5.4**	0.30 U	0.30 U
	SW-SB07-0015-0	07/24/95	1.4 - 1.6	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
	SW-SB07-0015-1 [1]	07/24/95	1.4 - 1.6	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
	SW-SB07-0020-0	07/24/95	2 - 2.2	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
SW-SB08	SW-SB08-0005-0	07/24/95	0.3 - 0.5	0.30 U	0.30 U	0.30 U	**0.70**	0.30 U	**1.3**	0.30 U	**0.30**	**4.5**	0.30 U	**3.1**	0.30 U	0.30 U
	SW-SB08-0015-0	07/24/95	1.3 - 1.5	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
	SW-SB08-0020-0	07/24/95	2 - 2.2	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
SW-SB09	SW-SB09-0005-0	07/24/95	0.4 - 0.6	0.30 U	0.30 U	0.30 U	**0.60**	0.30 U	**0.70**	0.30 U	0.30 U	**2.5**	0.30 U	**1.2**	0.30 U	0.30 U
	SW-SB09-0020-0	07/24/95	2 - 2.2	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
	SW-SB09-0030-0	07/24/95	2.8 - 3	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
SW-SB10	SW-SB10-0005-0	07/24/95	0.3 - 0.5	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	**0.70**	0.30 U	0.30 U	**4.7**	0.30 U	**5.0**	0.30 U	0.30 U
	SW-SB10-0020-0	07/24/95	2 - 2.2	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
	SW-SB10-0030-0	07/24/95	3 - 3.2	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
SW-SB11	SW-SB11-0005-0	07/24/95	0.3 - 0.5	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
	SW-SB11-0015-0	07/24/95	1.3 - 1.5	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
	SW-SB11-0020-0	07/24/95	2 - 2.2	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
SW-SB12	SW-SB12-0005-0	07/24/95	0.3 - 0.5	0.30 U	0.30 U	0.30 U	**2.3**	**0.70**	**5.1**	**0.60**	**1.2**	**7.8**	0.30 U	**8.2**	0.30 U	**0.50**
	SW-SB12-0015-0	07/24/95	1.3 - 1.5	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
	SW-SB12-0020-0	07/24/95	2 - 2.2	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U

Table 1
Analytical Results for Soil and Sediment Samples Tak
RMC/Alcoa - Troutdale, OR

Station	Sample ID	Date Sampled	Depth	Polunuclear Aromatic Hydrocarbons (mg/Kg)												
				Acenaphthene	Acenaphthylene	Anthracene	Benzo (a) anthracene	Benzo (a) pyrene	Benzo (b) fluoranthene	Benzo (g,h,i) perylene	Benzo (k) fluoranthene	Chrysene	Dibenzo (a,h) anthracene	Fluoranthene	Fluorene	Indeno (1,2,3-cd) pyrene
SW-SB13	SW-SB13-0005-0	07/24/95	0.2 - 0.4	0.30 U	0.30 U	0.30 U	**0.70**	**0.50**	**1.7**	**0.50**	**0.50**	**2.6**	0.30 U	**1.3**	0.30 U	**0.30**
	SW-SB13-0015-0	07/24/95	1.4 - 1.6	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
	SW-SB13-0020-0	07/24/95	1.9 - 2.1	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
SW-SB14	SW-SB14-0002-0	08/04/95	0.1 - 0.3	0.30 U	0.30 U	0.30 U	**0.80**	**0.40**	**2.5**	0.30 U	**0.50**	**4.9**	0.30 U	**2.1**	0.30 U	0.30 U
	SW-SB14-0007-0	08/04/95	0.6 - 0.8	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
	SW-SB14-0014-0	08/04/95	1.3 - 1.5	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
	SW-SB14-0020-0	08/04/95	1.9 - 2.1	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
SW-SB15	SW-SB15-0002-0	08/04/95	0.1 - 0.2	0.30 U	0.30 U	0.30 U	**1.3**	**0.90**	**3.6**	**0.80**	**0.90**	**3.9**	0.30 U	**2.1**	0.30 U	**0.60**
	SW-SB15-0006-0	08/04/95	0.5 - 0.7	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
	SW-SB15-0015-0	08/04/95	1.4 - 1.6	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
	SW-SB15-0020-0	08/04/95	1.9 - 2.1	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
SW-SB16	SW-SB16-0003-0	08/04/95	0.1 - 0.3	0.30 U	0.30 U	**0.30**	**2.0**	**2.0**	**9.8**	**3.4**	**1.9**	**3.8**	**0.90**	**3.2**	0.30 U	**2.5**
	SW-SB16-0008-0	08/04/95	0.6 - 0.8	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
	SW-SB16-0012-0	08/04/95	1.1 - 1.3	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
	SW-SB16-0018-0	08/04/95	1.7 - 1.9	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
SW-SB17	SW-SB17-0004-0	08/04/95	0.1 - 0.3	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
	SW-SB17-0008-0	08/04/95	0.6 - 0.8	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	**0.50**	0.30 U	0.30 U	**0.60**	0.30 U	**0.40**	0.30 U	0.30 U
	SW-SB17-0012-0	08/04/95	1.1 - 1.3	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
	SW-SB17-0015-0	08/04/95	1.5 - 1.7	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
	SW-SB17-0020-0	08/04/95	1.9 - 2.1	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
SW-SB18	SW-SB18-0003-0	08/04/95	0.2 - 0.4	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
	SW-SB18-0005-0	08/04/95	0.4 - 0.6	0.30 U	0.30 U	0.30 U	**0.40**	0.30 U	**1.2**	**0.30**	0.30 U	**1.8**	0.30 U	**0.90**	0.30 U	0.30 U
	SW-SB18-0010-0	08/04/95	0.9 - 1.1	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
	SW-SB18-0015-0	08/04/95	1.4 - 1.6	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
	SW-SB18-0018-0	08/04/95	1.8 - 2	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
SW-SB19	SW-SB19-0007-0	07/22/96	0.7 - 0.9													
	SW-SB19-0020-0	07/22/96	2 - 2.2													
	SW-SB19-0030-0	07/22/96	3 - 3.2													
SW-SB20	SW-SB20-0005-0	07/22/96	0.5 - 0.7													
	SW-SB20-0020-0	07/22/96	1 - 1.2													
	SW-SB20-0030-0	07/22/96	3 - 3.2													
SW-SB21	SW-SB21-0005-0	07/22/96	0.5 - 0.7													
	SW-SB21-0020-0	07/22/96	2 - 2.2													
	SW-SB21-0030-0	07/22/96	3 - 3.2													
SW-SB22	SW-SB22-0005-0	07/22/96	0.5 - 0.7													
	SW-SB22-0013-0	07/22/96	1.3 - 1.5													
	SW-SB22-0024-0	07/22/96	2.4 - 2.6													
SW-SB23	SW-SB23-0007-0	07/22/96	0.7 - 0.9													
	SW-SB23-0020-0	07/22/96	2 - 2.2													
	SW-SB23-0030-0	07/22/96	3 - 3.2													
SW-SB24	SW-SB24-0008-0	07/22/96	0.8 - 1													
	SW-SB24-0014-0	07/22/96	1.2 - 1.4													
	SW-SB24-0030-0	07/22/96	2.8 - 3													
SW-SB25	SW-SB25-0006-0	07/22/96	0.6 - 0.8													
	SW-SB25-0015-0	07/22/96	1.5 - 1.7													
	SW-SB25-0026-0	07/22/96	2.6 - 2.8													
SW-SB26	SW-SB26-0010-0	07/22/96	1 - 1.2													
	SW-SB26-0017-0	07/22/96	1.7 - 1.9													
	SW-SB26-0033-0	07/22/96	3.3 - 3.5													
SW-SB27	SW-SB27-0007-0	07/23/96	0.5 - 0.7													
	SW-SB27-0007-1 [1]	07/23/96	0.5 - 0.7													
SW-SB28	SW-SB28-0003-0	07/23/96	0.2 - 0.4													
SW-SB29	SW-SB29-0003-0	07/23/96	0.2 - 0.4	**0.80**	**0.40**	**1.4**	**11**	**18**	**28**	**28**	**5.6**	**19**	**4.9**	**19**	**0.50**	**17**
	SW-SB29-0007-0	07/23/96	0.7 - 0.8	3.0 U	3.0 U	3.0 U	**61**	**58**	**140**	**67**	**26**	**180**	**15**	**440**	3.0 U	**42**

Table 1
Analytical Results for Soil and Sediment Samples Tak
RMC/Alcoa - Troutdale, OR

Station	Sample ID	Date Sampled	Depth	Polunuclear Aromatic Hydrocarbons (mg/Kg)												
				Acenaphthene	Acenaphthylene	Anthracene	Benzo (a) anthracene	Benzo (a) pyrene	Benzo (b) fluoranthene	Benzo (g,h,i) perylene	Benzo (k) fluoranthene	Chrysene	Dibenzo (a,h) anthracene	Fluoranthene	Fluorene	Indeno (1,2,3-cd) pyrene
SW-SB30	SW-SB30-0004-0	07/23/96	0.4 - 0.6													
SW-SB31	SW-SB31-0003-0	07/23/96	0.2 - 0.4													
SW-SB32	SW-SB32-0002-0	07/23/96	0.1 - 0.3													
SW-SB33	SW-SB33-0002-0	07/23/96	0.1 - 0.3													
	SW-SB33-0002-1 [1]	07/23/96	0.1 - 0.3													
SW-SB34	SW-SB34-0004-0	07/23/96	0.3 - 0.5													
SW-SB35	SW-SB35-0001-0	07/23/96	0.1 - 0.3													
SW-SB36	SW-SB36-0003-0	07/23/96	0.2 - 0.4													
SW-SB37	SW-SB37-0040-0	07/24/96	3.8 - 4													
	SW-SB37-0050-0	07/24/96	4.8 - 5													
	SW-SB37-0060-0	07/24/96	6 - 6.2													
SW-SB38	SW-SB38-0009-0	07/24/96	0.9 - 1.1													
	SW-SB38-0020-0	07/24/96	2 - 2.2													
	SW-SB38-0028-0	07/24/96	2.8 - 3													
SW-SB39	SW-SB39-0050-0	08/26/96	5 - 5.3													
	SW-SB39-0060-0	08/26/96	6 - 6.3													
SW-SB40	SW-SB40-0050-0	08/26/96	4.7 - 5													
	SW-SB40-0070-0	08/26/96	7 - 7.3													
SW-SB41	SW-SB41-0003-0	08/26/96	0.3 - 0.5													
SW-SB42	SW-SB42-0005-0	08/26/96	0.5 - 0.7													
SW-SB49	SW-SB49-0005-0	11/19/97	0													
SW-SB50	SW-SB50-0005-0	11/19/97	0													
SW-SB51	SW-SB51-0005-0	11/19/97	0													
SW-SB52	SW-SB52-0005-0	11/19/97	0													
SW-SB53	SW-SB53-0005-0	11/19/97	0													
	SW-SB53-0005-0-R2	11/19/97	0													
SW-SB54	SW-SB54-0005-0	11/19/97	0													
SW-SB55	SW-SB55-0005-0	11/19/97	0													
SW-SB56	SW-SB56-0005-0	11/19/97	0													
SW-SB57	SW-SB57-0005-0	11/19/97	0													
SW-SB58	SW-SB58-0005-0	11/19/97	0													
SW-SC01	SW-SC01-0002-0	09/20/99	2													
SW-SC02	SW-SC02-0001-0	09/20/99	1													
SW-SC03	SW-SC03-0001-0	09/20/99	1													
SW-SC04	SW-SC04-0002-0	09/20/99	2													
SW-SC05	SW-SC05-0002-0	09/20/99	2													
SW-SC05	SW-SC05-0002-1 [1]	09/20/99	2													
SW-SC06	SW-SC06-0002-0	09/20/99	2													

Notes:

Bold values indicate analyte detected.

[1] Duplicate Sample

[2] Sediment Sample

J = Indicates an estimated value.

K = The analyte concentration is biased high; the result may actually be lower.

L = The analyte concentration is biased low; the result may actually be higher.

R = The analyte concentration is rejected due to serious deficiencies in the ability to anlayze the analyte and meet quality control criteria. The presence or absence of the analyte cannot be verified.

RC =

U = Indicates the compound was analyzed for, but not detected.

Table 1
Analytical Results for Soil and Sediment Samples Tak
RMC/Alcoa - Troutdale, OR

Station	Sample ID	Date Sampled	Depth	Polunuclear Aromatic Hydrocarbons (mg/Kg)				Pesticides/Polychlorinated Biphenyls (mg/Kg)									
				Naphthalene	Phenanthrene	Pyrene	Total PAH	4,4-DDD	4,4-DDE	4,4-DDT	4,4-Methoxychlor	Aldrin	Alpha-BHC	Aroclor-1016	Aroclor-1221	Aroclor-1232	Aroclor-1242
BLD971	BLD971-0035-0	07/25/95	3.5	0.30 U	0.30 U	0.30 U											
	BLD971-0090-0	07/25/95	9	0.30 U	0.30 U	0.30 U											
	BLD971-0110-0	07/25/95	11	0.30 U	0.30 U	0.30 U											
BLD972	BLD972-0090-0	07/25/95	9	0.30 U	0.30 U	0.30 U											
	BLD972-0110-0	07/25/95	11	0.30 U	0.30 U	0.30 U											
MW04-019	RM-MW04-10.0	07/12/94	10				0.20 U										
	RM-MW04-7.5	07/12/94	7.5				0.20 U										
MW36-006	MW36S-0035-0	10/22/96	3.5											0.051 U	0.10 U	0.051 U	0.051 U
	MW36S-0060-0	10/22/96	6											0.046 U	0.093 U	0.046 U	0.046 U
	MW36S-0080-0	10/22/96	8											0.060 U	0.12 U	0.060 U	0.060 U
MW37-012	MW37S-0040-0	10/23/96	4														
	MW37S-0055-0	10/23/96	5.5														
	MW37S-0075-0	10/23/96	7.5														
	MW37S-0100-0	10/23/96	10														
SA1	SP5-SA1-C	07/26/94	0.1 - 3				0.20 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U				
SA2	SP5-SA2-C	07/26/94	0.1 - 3				**0.25**	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U				
SD27	WD-SD27-0001-0 [2]	02/23/95	0.1	0.034 U	**1.4**	**3.1 RC**								0.050 U	0.10 U	0.050 U	0.050 U
SD28	WD-SD28-0001-0 [2]	02/23/95	0.1	0.034 U	**2.6 RC**	**5.6 RC**								0.050 U	0.10 U	0.050 U	0.050 U
	WD-SD28-0001-1 [1,2]	02/23/95	0.1	0.034 U	**2.7 RC**	**6.1 RC**								0.050 U	0.10 U	0.050 U	0.050 U
SW2	SW2-C	07/26/94	0.1 - 3				0.20 U	**0.080**	**0.050**	**0.28**	0.025 U	0.025 U	0.025 U				
SW3	SW3-C	07/26/94	0.1 - 3				0.20 U	**0.030**	**0.013**	0.0050 U	0.0050 U	0.0050 U	0.0050 U				
SW4	SW4-C	07/26/94	0.1 - 3				0.20 U	**0.073**	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U				
SW5	SW5-C	07/26/94	0.1 - 3				0.20 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U				
SW-6	SW-6-S	08/04/94	0.1				**19**										
SW-SB03	SW-SB03-0005-0	07/24/95	0.3 - 0.5	0.30 U	**2.5**	**9.0**											
	SW-SB03-0010-0	07/24/95	0.9 - 1.2	0.30 U	0.30 U	0.30 U											
	SW-SB03-0020-0	07/24/95	2 - 2.2	0.30 U	0.30 U	0.30 U											
SW-SB05	SW-SB05-0005-0	07/24/95	0.3 - 0.5	0.30 U	**1.5**	**2.7**											
	SW-SB05-0015-0	07/24/95	1.4 - 1.6	0.30 U	0.30 U	0.30 U											
	SW-SB05-0020-0	07/24/95	2 - 2.2	0.30 U	0.30 U	0.30 U											
SW-SB06	SW-SB06-0005-0	07/24/95	0.3 - 0.5	0.30 U	**0.70**	**1.4**											
	SW-SB06-0015-0	07/24/95	1.5 - 1.7	0.30 U	0.30 U	0.30 U											
	SW-SB06-0020-0	07/24/95	2 - 2.2	0.30 U	0.30 U	0.30 U											
SW-SB07	SW-SB07-0005-0	07/24/95	0.3 - 0.5	0.30 U	**1.2**	**2.2**											
	SW-SB07-0015-0	07/24/95	1.4 - 1.6	0.30 U	0.30 U	0.30 U											
	SW-SB07-0015-1 [1]	07/24/95	1.4 - 1.6	0.30 U	0.30 U	0.30 U											
	SW-SB07-0020-0	07/24/95	2 - 2.2	0.30 U	0.30 U	0.30 U											
SW-SB08	SW-SB08-0005-0	07/24/95	0.3 - 0.5	0.30 U	**0.90**	**1.6**											
	SW-SB08-0015-0	07/24/95	1.3 - 1.5	0.30 U	0.30 U	0.30 U											
	SW-SB08-0020-0	07/24/95	2 - 2.2	0.30 U	0.30 U	0.30 U											
SW-SB09	SW-SB09-0005-0	07/24/95	0.4 - 0.6	0.30 U	**0.30**	**0.70**											
	SW-SB09-0020-0	07/24/95	2 - 2.2	0.30 U	0.30 U	0.30 U											
	SW-SB09-0030-0	07/24/95	2.8 - 3	0.30 U	0.30 U	0.30 U											
SW-SB10	SW-SB10-0005-0	07/24/95	0.3 - 0.5	0.30 U	**0.90**	**1.8**											
	SW-SB10-0020-0	07/24/95	2 - 2.2	0.30 U	0.30 U	0.30 U											
	SW-SB10-0030-0	07/24/95	3 - 3.2	0.30 U	0.30 U	0.30 U											
SW-SB11	SW-SB11-0005-0	07/24/95	0.3 - 0.5	0.30 U	0.30 U	0.30 U											
	SW-SB11-0015-0	07/24/95	1.3 - 1.5	0.30 U	0.30 U	0.30 U											
	SW-SB11-0020-0	07/24/95	2 - 2.2	0.30 U	0.30 U	0.30 U											
SW-SB12	SW-SB12-0005-0	07/24/95	0.3 - 0.5	0.30 U	**1.6**	**4.9**											
	SW-SB12-0015-0	07/24/95	1.3 - 1.5	0.30 U	0.30 U	0.30 U											
	SW-SB12-0020-0	07/24/95	2 - 2.2	0.30 U	0.30 U	0.30 U											

Table 1
Analytical Results for Soil and Sediment Samples Tak
RMC/Alcoa - Troutdale, OR

Station	Sample ID	Date Sampled	Depth	Polunuclear Aromatic Hydrocarbons (mg/Kg)				Pesticides/Polychlorinated Biphenyls (mg/Kg)									
				Naphthalene	Phenanthrene	Pyrene	Total PAH	4,4-DDD	4,4-DDE	4,4-DDT	4,4-Methoxychlor	Aldrin	Alpha-BHC	Aroclor-1016	Aroclor-1221	Aroclor-1232	Aroclor-1242
SW-SB13	SW-SB13-0005-0	07/24/95	0.2 - 0.4	0.30 U	**0.60**	**1.2**											
	SW-SB13-0015-0	07/24/95	1.4 - 1.6	0.30 U	0.30 U	0.30 U											
	SW-SB13-0020-0	07/24/95	1.9 - 2.1	0.30 U	0.30 U	0.30 U											
SW-SB14	SW-SB14-0002-0	08/04/95	0.1 - 0.3	0.30 U	**0.70**	**1.4**											
	SW-SB14-0007-0	08/04/95	0.6 - 0.8	0.30 U	0.30 U	0.30 U											
	SW-SB14-0014-0	08/04/95	1.3 - 1.5	0.30 U	0.30 U	0.30 U											
	SW-SB14-0020-0	08/04/95	1.9 - 2.1	0.30 U	0.30 U	0.30 U											
SW-SB15	SW-SB15-0002-0	08/04/95	0.1 - 0.2	0.30 U	**0.80**	**1.8**											
	SW-SB15-0006-0	08/04/95	0.5 - 0.7	0.30 U	0.30 U	0.30 U											
	SW-SB15-0015-0	08/04/95	1.4 - 1.6	0.30 U	0.30 U	0.30 U											
	SW-SB15-0020-0	08/04/95	1.9 - 2.1	0.30 U	0.30 U	0.30 U											
SW-SB16	SW-SB16-0003-0	08/04/95	0.1 - 0.3	0.30 U	**1.0**	**3.2**											
	SW-SB16-0008-0	08/04/95	0.6 - 0.8	0.30 U	0.30 U	0.30 U											
	SW-SB16-0012-0	08/04/95	1.1 - 1.3	0.30 U	0.30 U	0.30 U											
	SW-SB16-0018-0	08/04/95	1.7 - 1.9	0.30 U	0.30 U	0.30 U											
SW-SB17	SW-SB17-0004-0	08/04/95	0.1 - 0.3	0.30 U	0.30 U	0.30 U											
	SW-SB17-0008-0	08/04/95	0.6 - 0.8	0.30 U	0.30 U	0.30 U											
	SW-SB17-0012-0	08/04/95	1.1 - 1.3	0.30 U	0.30 U	0.30 U											
	SW-SB17-0015-0	08/04/95	1.5 - 1.7	0.30 U	0.30 U	0.30 U											
	SW-SB17-0020-0	08/04/95	1.9 - 2.1	0.30 U	0.30 U	0.30 U											
SW-SB18	SW-SB18-0003-0	08/04/95	0.2 - 0.4	0.30 U	0.30 U	0.30 U											
	SW-SB18-0005-0	08/04/95	0.4 - 0.6	0.30 U	**0.30**	**0.70**											
	SW-SB18-0010-0	08/04/95	0.9 - 1.1	0.30 U	0.30 U	0.30 U											
	SW-SB18-0015-0	08/04/95	1.4 - 1.6	0.30 U	0.30 U	0.30 U											
	SW-SB18-0018-0	08/04/95	1.8 - 2	0.30 U	0.30 U	0.30 U											
SW-SB19	SW-SB19-0007-0	07/22/96	0.7 - 0.9														
	SW-SB19-0020-0	07/22/96	2 - 2.2														
	SW-SB19-0030-0	07/22/96	3 - 3.2														
SW-SB20	SW-SB20-0005-0	07/22/96	0.5 - 0.7														
	SW-SB20-0020-0	07/22/96	1 - 1.2														
	SW-SB20-0030-0	07/22/96	3 - 3.2														
SW-SB21	SW-SB21-0005-0	07/22/96	0.5 - 0.7														
	SW-SB21-0020-0	07/22/96	2 - 2.2														
	SW-SB21-0030-0	07/22/96	3 - 3.2														
SW-SB22	SW-SB22-0005-0	07/22/96	0.5 - 0.7														
	SW-SB22-0013-0	07/22/96	1.3 - 1.5														
	SW-SB22-0024-0	07/22/96	2.4 - 2.6														
SW-SB23	SW-SB23-0007-0	07/22/96	0.7 - 0.9														
	SW-SB23-0020-0	07/22/96	2 - 2.2														
	SW-SB23-0030-0	07/22/96	3 - 3.2														
SW-SB24	SW-SB24-0008-0	07/22/96	0.8 - 1														
	SW-SB24-0014-0	07/22/96	1.2 - 1.4														
	SW-SB24-0030-0	07/22/96	2.8 - 3														
SW-SB25	SW-SB25-0006-0	07/22/96	0.6 - 0.8														
	SW-SB25-0015-0	07/22/96	1.5 - 1.7														
	SW-SB25-0026-0	07/22/96	2.6 - 2.8														
SW-SB26	SW-SB26-0010-0	07/22/96	1 - 1.2														
	SW-SB26-0017-0	07/22/96	1.7 - 1.9														
	SW-SB26-0033-0	07/22/96	3.3 - 3.5														
SW-SB27	SW-SB27-0007-0	07/23/96	0.5 - 0.7														
	SW-SB27-0007-1 [1]	07/23/96	0.5 - 0.7														
SW-SB28	SW-SB28-0003-0	07/23/96	0.2 - 0.4														
SW-SB29	SW-SB29-0003-0	07/23/96	0.2 - 0.4	**0.40**	**6.1**	**21**											
	SW-SB29-0007-0	07/23/96	0.7 - 0.8	3.0 U	**9.8**	**400**											

Table 1
Analytical Results for Soil and Sediment Samples Tak
RMC/Alcoa - Troutdale, OR

Station	Sample ID	Date Sampled	Depth	Polunuclear Aromatic Hydrocarbons (mg/Kg)				Pesticides/Polychlorinated Biphenyls (mg/Kg)									
				Naphthalene	Phenanthrene	Pyrene	Total PAH	4,4-DDD	4,4-DDE	4,4-DDT	4,4-Methoxychlor	Aldrin	Alpha-BHC	Aroclor-1016	Aroclor-1221	Aroclor-1232	Aroclor-1242
SW-SB30	SW-SB30-0004-0	07/23/96	0.4 - 0.6														
SW-SB31	SW-SB31-0003-0	07/23/96	0.2 - 0.4														
SW-SB32	SW-SB32-0002-0	07/23/96	0.1 - 0.3														
SW-SB33	SW-SB33-0002-0	07/23/96	0.1 - 0.3														
	SW-SB33-0002-1 [1]	07/23/96	0.1 - 0.3														
SW-SB34	SW-SB34-0004-0	07/23/96	0.3 - 0.5														
SW-SB35	SW-SB35-0001-0	07/23/96	0.1 - 0.3														
SW-SB36	SW-SB36-0003-0	07/23/96	0.2 - 0.4														
SW-SB37	SW-SB37-0040-0	07/24/96	3.8 - 4														
	SW-SB37-0050-0	07/24/96	4.8 - 5														
	SW-SB37-0060-0	07/24/96	6 - 6.2														
SW-SB38	SW-SB38-0009-0	07/24/96	0.9 - 1.1														
	SW-SB38-0020-0	07/24/96	2 - 2.2														
	SW-SB38-0028-0	07/24/96	2.8 - 3														
SW-SB39	SW-SB39-0050-0	08/26/96	5 - 5.3														
	SW-SB39-0060-0	08/26/96	6 - 6.3														
SW-SB40	SW-SB40-0050-0	08/26/96	4.7 - 5														
	SW-SB40-0070-0	08/26/96	7 - 7.3														
SW-SB41	SW-SB41-0003-0	08/26/96	0.3 - 0.5														
SW-SB42	SW-SB42-0005-0	08/26/96	0.5 - 0.7														
SW-SB49	SW-SB49-0005-0	11/19/97	0														
SW-SB50	SW-SB50-0005-0	11/19/97	0														
SW-SB51	SW-SB51-0005-0	11/19/97	0														
SW-SB52	SW-SB52-0005-0	11/19/97	0														
SW-SB53	SW-SB53-0005-0	11/19/97	0														
	SW-SB53-0005-0-R2	11/19/97	0														
SW-SB54	SW-SB54-0005-0	11/19/97	0														
SW-SB55	SW-SB55-0005-0	11/19/97	0														
SW-SB56	SW-SB56-0005-0	11/19/97	0														
SW-SB57	SW-SB57-0005-0	11/19/97	0														
SW-SB58	SW-SB58-0005-0	11/19/97	0														
SW-SC01	SW-SC01-0002-0	09/20/99	2											0.043 U	0.043 U	0.043 U	0.043 U
SW-SC02	SW-SC02-0001-0	09/20/99	1											0.043 U	0.043 U	0.043 U	0.043 U
SW-SC03	SW-SC03-0001-0	09/20/99	1											0.043 U	0.043 U	0.043 U	0.043 U
SW-SC04	SW-SC04-0002-0	09/20/99	2											0.042 U	0.042 U	0.042 U	0.042 U
SW-SC05	SW-SC05-0002-0	09/20/99	2											0.043 U	0.043 U	0.043 U	0.043 U
SW-SC05	SW-SC05-0002-1 [1]	09/20/99	2											0.043 U	0.043 U	0.043 U	0.043 U
SW-SC06	SW-SC06-0002-0	09/20/99	2											0.043 U	0.043 U	0.043 U	0.043 U

Notes:

Bold values indicate analyte detected.

[1] Duplicate Sample

[2] Sediment Sample

J = Indicates an estimated value.

K = The analyte concentration is biased high; the result may actually be lower.

L = The analyte concentration is biased low; the result may actually be higher.

R = The analyte concentration is rejected due to serious deficiencies in the ability to anlayze the analyte and meet quality control criteria. The presence or absence of the analyte cannot be verified.

RC =

U = Indicates the compound was analyzed for, but not detected.

Table 1
Analytical Results for Soil and Sediment Samples Tak
RMC/Alcoa - Troutdale, OR

Station	Sample ID	Date Sampled	Depth	Pesticides/Polychlorinated Biphenyls (mg/Kg)														
				Aroclor-1248	Aroclor-1254	Aroclor-1260	Aroclor-1262	Aroclor-1268	beta-BHC	Chlordane	delta-BHC	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Endrin	Endrin Aldehyde	Heptachlor
BLD971	BLD971-0035-0	07/25/95	3.5															
	BLD971-0090-0	07/25/95	9															
	BLD971-0110-0	07/25/95	11															
BLD972	BLD972-0090-0	07/25/95	9															
	BLD972-0110-0	07/25/95	11															
MW04-019	RM-MW04-10.0	07/12/94	10															
	RM-MW04-7.5	07/12/94	7.5															
MW36-006	MW36S-0035-0	10/22/96	3.5	0.051 U	0.051 U	0.051 U	0.051 U	0.051 U										
	MW36S-0060-0	10/22/96	6	0.046 U	0.046 U	0.046 U	0.046 U	0.046 U										
	MW36S-0080-0	10/22/96	8	0.060 U	0.060 U	0.060 U	0.060 U	0.060 U										
MW37-012	MW37S-0040-0	10/23/96	4															
	MW37S-0055-0	10/23/96	5.5															
	MW37S-0075-0	10/23/96	7.5															
	MW37S-0100-0	10/23/96	10															
SA1	SP5-SA1-C	07/26/94	0.1 - 3						0.0050 U	0.15 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
SA2	SP5-SA2-C	07/26/94	0.1 - 3						0.0050 U	0.15 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
SD27	WD-SD27-0001-0 [2]	02/23/95	0.1	0.050 U	**0.43**	**2.8 RC**												
SD28	WD-SD28-0001-0 [2]	02/23/95	0.1	0.050 U	**0.41**	**1.8 RC**												
	WD-SD28-0001-1 [1,2]	02/23/95	0.1	0.050 U	**0.48**	**2.0 RC**												
SW2	SW2-C	07/26/94	0.1 - 3						0.025 U	0.75 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U
SW3	SW3-C	07/26/94	0.1 - 3						0.0050 U	0.15 U	0.0050 U	0.0050 U	0.0050 U	**0.0078**	0.0050 U	0.0050 U	0.0050 U	0.0050 U
SW4	SW4-C	07/26/94	0.1 - 3						0.050 U	1.5 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
SW5	SW5-C	07/26/94	0.1 - 3						0.0050 U	0.15 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
SW-6	SW-6-S	08/04/94	0.1															
SW-SB03	SW-SB03-0005-0	07/24/95	0.3 - 0.5															
	SW-SB03-0010-0	07/24/95	0.9 - 1.2															
	SW-SB03-0020-0	07/24/95	2 - 2.2															
SW-SB05	SW-SB05-0005-0	07/24/95	0.3 - 0.5															
	SW-SB05-0015-0	07/24/95	1.4 - 1.6															
	SW-SB05-0020-0	07/24/95	2 - 2.2															
SW-SB06	SW-SB06-0005-0	07/24/95	0.3 - 0.5															
	SW-SB06-0015-0	07/24/95	1.5 - 1.7															
	SW-SB06-0020-0	07/24/95	2 - 2.2															
SW-SB07	SW-SB07-0005-0	07/24/95	0.3 - 0.5															
	SW-SB07-0015-0	07/24/95	1.4 - 1.6															
	SW-SB07-0015-1 [1]	07/24/95	1.4 - 1.6															
	SW-SB07-0020-0	07/24/95	2 - 2.2															
SW-SB08	SW-SB08-0005-0	07/24/95	0.3 - 0.5															
	SW-SB08-0015-0	07/24/95	1.3 - 1.5															
	SW-SB08-0020-0	07/24/95	2 - 2.2															
SW-SB09	SW-SB09-0005-0	07/24/95	0.4 - 0.6															
	SW-SB09-0020-0	07/24/95	2 - 2.2															
	SW-SB09-0030-0	07/24/95	2.8 - 3															
SW-SB10	SW-SB10-0005-0	07/24/95	0.3 - 0.5															
	SW-SB10-0020-0	07/24/95	2 - 2.2															
	SW-SB10-0030-0	07/24/95	3 - 3.2															
SW-SB11	SW-SB11-0005-0	07/24/95	0.3 - 0.5															
	SW-SB11-0015-0	07/24/95	1.3 - 1.5															
	SW-SB11-0020-0	07/24/95	2 - 2.2															
SW-SB12	SW-SB12-0005-0	07/24/95	0.3 - 0.5															
	SW-SB12-0015-0	07/24/95	1.3 - 1.5															
	SW-SB12-0020-0	07/24/95	2 - 2.2															

Table 1
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RMC/Alcoa - Troutdale, OR

Station	Sample ID	Date Sampled	Depth	Pesticides/Polychlorinated Biphenyls (mg/Kg)														
				Aroclor-1248	Aroclor-1254	Aroclor-1260	Aroclor-1262	Aroclor-1268	beta-BHC	Chlordane	delta-BHC	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Endrin	Endrin Aldehyde	Heptachlor
SW-SB13	SW-SB13-0005-0	07/24/95	0.2 - 0.4															
	SW-SB13-0015-0	07/24/95	1.4 - 1.6															
	SW-SB13-0020-0	07/24/95	1.9 - 2.1															
SW-SB14	SW-SB14-0002-0	08/04/95	0.1 - 0.3															
	SW-SB14-0007-0	08/04/95	0.6 - 0.8															
	SW-SB14-0014-0	08/04/95	1.3 - 1.5															
	SW-SB14-0020-0	08/04/95	1.9 - 2.1															
SW-SB15	SW-SB15-0002-0	08/04/95	0.1 - 0.2															
	SW-SB15-0006-0	08/04/95	0.5 - 0.7															
	SW-SB15-0015-0	08/04/95	1.4 - 1.6															
	SW-SB15-0020-0	08/04/95	1.9 - 2.1															
SW-SB16	SW-SB16-0003-0	08/04/95	0.1 - 0.3															
	SW-SB16-0008-0	08/04/95	0.6 - 0.8															
	SW-SB16-0012-0	08/04/95	1.1 - 1.3															
	SW-SB16-0018-0	08/04/95	1.7 - 1.9															
SW-SB17	SW-SB17-0004-0	08/04/95	0.1 - 0.3															
	SW-SB17-0008-0	08/04/95	0.6 - 0.8															
	SW-SB17-0012-0	08/04/95	1.1 - 1.3															
	SW-SB17-0015-0	08/04/95	1.5 - 1.7															
	SW-SB17-0020-0	08/04/95	1.9 - 2.1															
SW-SB18	SW-SB18-0003-0	08/04/95	0.2 - 0.4															
	SW-SB18-0005-0	08/04/95	0.4 - 0.6															
	SW-SB18-0010-0	08/04/95	0.9 - 1.1															
	SW-SB18-0015-0	08/04/95	1.4 - 1.6															
	SW-SB18-0018-0	08/04/95	1.8 - 2															
SW-SB19	SW-SB19-0007-0	07/22/96	0.7 - 0.9															
	SW-SB19-0020-0	07/22/96	2 - 2.2															
	SW-SB19-0030-0	07/22/96	3 - 3.2															
SW-SB20	SW-SB20-0005-0	07/22/96	0.5 - 0.7															
	SW-SB20-0020-0	07/22/96	1 - 1.2															
	SW-SB20-0030-0	07/22/96	3 - 3.2															
SW-SB21	SW-SB21-0005-0	07/22/96	0.5 - 0.7															
	SW-SB21-0020-0	07/22/96	2 - 2.2															
	SW-SB21-0030-0	07/22/96	3 - 3.2															
SW-SB22	SW-SB22-0005-0	07/22/96	0.5 - 0.7															
	SW-SB22-0013-0	07/22/96	1.3 - 1.5															
	SW-SB22-0024-0	07/22/96	2.4 - 2.6															
SW-SB23	SW-SB23-0007-0	07/22/96	0.7 - 0.9															
	SW-SB23-0020-0	07/22/96	2 - 2.2															
	SW-SB23-0030-0	07/22/96	3 - 3.2															
SW-SB24	SW-SB24-0008-0	07/22/96	0.8 - 1															
	SW-SB24-0014-0	07/22/96	1.2 - 1.4															
	SW-SB24-0030-0	07/22/96	2.8 - 3															
SW-SB25	SW-SB25-0006-0	07/22/96	0.6 - 0.8															
	SW-SB25-0015-0	07/22/96	1.5 - 1.7															
	SW-SB25-0026-0	07/22/96	2.6 - 2.8															
SW-SB26	SW-SB26-0010-0	07/22/96	1 - 1.2															
	SW-SB26-0017-0	07/22/96	1.7 - 1.9															
	SW-SB26-0033-0	07/22/96	3.3 - 3.5															
SW-SB27	SW-SB27-0007-0	07/23/96	0.5 - 0.7															
	SW-SB27-0007-1 [1]	07/23/96	0.5 - 0.7															
SW-SB28	SW-SB28-0003-0	07/23/96	0.2 - 0.4															
SW-SB29	SW-SB29-0003-0	07/23/96	0.2 - 0.4															
	SW-SB29-0007-0	07/23/96	0.7 - 0.8															

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Station	Sample ID	Date Sampled	Depth	Pesticides/Polychlorinated Biphenyls (mg/Kg)														
				Aroclor-1248	Aroclor-1254	Aroclor-1260	Aroclor-1262	Aroclor-1268	beta-BHC	Chlordane	delta-BHC	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Endrin	Endrin Aldehyde	Heptachlor
SW-SB30	SW-SB30-0004-0	07/23/96	0.4 - 0.6															
SW-SB31	SW-SB31-0003-0	07/23/96	0.2 - 0.4															
SW-SB32	SW-SB32-0002-0	07/23/96	0.1 - 0.3															
SW-SB33	SW-SB33-0002-0	07/23/96	0.1 - 0.3															
	SW-SB33-0002-1 [1]	07/23/96	0.1 - 0.3															
SW-SB34	SW-SB34-0004-0	07/23/96	0.3 - 0.5															
SW-SB35	SW-SB35-0001-0	07/23/96	0.1 - 0.3															
SW-SB36	SW-SB36-0003-0	07/23/96	0.2 - 0.4															
SW-SB37	SW-SB37-0040-0	07/24/96	3.8 - 4															
	SW-SB37-0050-0	07/24/96	4.8 - 5															
	SW-SB37-0060-0	07/24/96	6 - 6.2															
SW-SB38	SW-SB38-0009-0	07/24/96	0.9 - 1.1															
	SW-SB38-0020-0	07/24/96	2 - 2.2															
	SW-SB38-0028-0	07/24/96	2.8 - 3															
SW-SB39	SW-SB39-0050-0	08/26/96	5 - 5.3															
	SW-SB39-0060-0	08/26/96	6 - 6.3															
SW-SB40	SW-SB40-0050-0	08/26/96	4.7 - 5															
	SW-SB40-0070-0	08/26/96	7 - 7.3															
SW-SB41	SW-SB41-0003-0	08/26/96	0.3 - 0.5															
SW-SB42	SW-SB42-0005-0	08/26/96	0.5 - 0.7															
SW-SB49	SW-SB49-0005-0	11/19/97	0															
SW-SB50	SW-SB50-0005-0	11/19/97	0															
SW-SB51	SW-SB51-0005-0	11/19/97	0															
SW-SB52	SW-SB52-0005-0	11/19/97	0															
SW-SB53	SW-SB53-0005-0	11/19/97	0															
	SW-SB53-0005-0-R2	11/19/97	0															
SW-SB54	SW-SB54-0005-0	11/19/97	0															
SW-SB55	SW-SB55-0005-0	11/19/97	0															
SW-SB56	SW-SB56-0005-0	11/19/97	0															
SW-SB57	SW-SB57-0005-0	11/19/97	0															
SW-SB58	SW-SB58-0005-0	11/19/97	0															
SW-SC01	SW-SC01-0002-0	09/20/99	2	0.043 U	0.043 U	0.043 U												
SW-SC02	SW-SC02-0001-0	09/20/99	1	0.043 U	0.043 U	0.043 U												
SW-SC03	SW-SC03-0001-0	09/20/99	1	**0.036 J**	0.043 U	0.043 U												
SW-SC04	SW-SC04-0002-0	09/20/99	2	0.042 U	0.042 U	0.042 U												
SW-SC05	SW-SC05-0002-0	09/20/99	2	0.043 U	0.043 U	0.043 U												
SW-SC05	SW-SC05-0002-1 [1]	09/20/99	2	0.043 U	0.043 U	0.043 U												
SW-SC06	SW-SC06-0002-0	09/20/99	2	0.043 U	0.043 U	0.043 U												

Notes:

Bold values indicate analyte detected.

[1] Duplicate Sample

[2] Sediment Sample

J = Indicates an estimated value.

K = The analyte concentration is biased high; the result may actually be lower.

L = The analyte concentration is biased low; the result may actually be higher.

R = The analyte concentration is rejected due to serious deficiencies in the ability to anlayze the analyte and meet quality control criteria. The presence or absence of the analyte cannot be verified.

RC =

U = Indicates the compound was analyzed for, but not detected.

Table 1
Analytical Results for Soil and Sediment Samples Tak
RMC/Alcoa - Troutdale, OR

Station	Sample ID	Date Sampled	Depth	Pesticides/Polychlorinated Biphenyls (mg/Kg)				Total Petroleum Hydrocarbons (mg/Kg)			
				Heptachlor Epoxide	Lindane	Polychlorinated Biphenyls (PCBs)	Toxaphene	Diesel by HCID	Gas by HCID	Heavy Oil by HCID	TPH by 418.1
BLD971	BLD971-0035-0	07/25/95	3.5			0.30 U					
	BLD971-0090-0	07/25/95	9			0.30 U					
	BLD971-0110-0	07/25/95	11			0.30 U					
BLD972	BLD972-0090-0	07/25/95	9			0.30 U					
	BLD972-0110-0	07/25/95	11			0.30 U					
MW04-019	RM-MW04-10.0	07/12/94	10			0.20 U		50 U	20 U	100 U	
	RM-MW04-7.5	07/12/94	7.5			0.20 U		50 U	20 U	100 U	
MW36-006	MW36S-0035-0	10/22/96	3.5								
	MW36S-0060-0	10/22/96	6								
	MW36S-0080-0	10/22/96	8								
MW37-012	MW37S-0040-0	10/23/96	4								
	MW37S-0055-0	10/23/96	5.5								
	MW37S-0075-0	10/23/96	7.5								
	MW37S-0100-0	10/23/96	10								
SA1	SP5-SA1-C	07/26/94	0.1 - 3	0.0050 U	0.0050 U	0.20 U	0.15 U				
SA2	SP5-SA2-C	07/26/94	0.1 - 3	0.0050 U	0.0050 U	0.20 U	0.30 U				
SD27	WD-SD27-0001-0 [2]	02/23/95	0.1					50 U	20 U	100 U	
SD28	WD-SD28-0001-0 [2]	02/23/95	0.1					50 U	20 U	100 U	
	WD-SD28-0001-1 [1,2]	02/23/95	0.1					50 U	20 U	100 U	
SW2	SW2-C	07/26/94	0.1 - 3	0.025 U	0.025 U	0.20 U	0.75 U	50 U	20 U	100 U	
SW3	SW3-C	07/26/94	0.1 - 3	0.0050 U	0.0050 U	0.20 U	0.15 U	50 U	20 U	100 U	
SW4	SW4-C	07/26/94	0.1 - 3	0.050 U	0.050 U	0.20 U	3.0 U	50 U	20 U	**260**	
SW5	SW5-C	07/26/94	0.1 - 3	0.0050 U	0.0050 U	0.20 U	0.70 U				
SW-6	SW-6-S	08/04/94	0.1								
SW-SB03	SW-SB03-0005-0	07/24/95	0.3 - 0.5			**10**					**178**
	SW-SB03-0010-0	07/24/95	0.9 - 1.2			0.30 U					
	SW-SB03-0020-0	07/24/95	2 - 2.2			0.30 U					
SW-SB05	SW-SB05-0005-0	07/24/95	0.3 - 0.5			**5.8**					**246**
	SW-SB05-0015-0	07/24/95	1.4 - 1.6			0.30 U					
	SW-SB05-0020-0	07/24/95	2 - 2.2			0.30 U					
SW-SB06	SW-SB06-0005-0	07/24/95	0.3 - 0.5			**5.2**					
	SW-SB06-0015-0	07/24/95	1.5 - 1.7			0.30 U					
	SW-SB06-0020-0	07/24/95	2 - 2.2			0.30 U					
SW-SB07	SW-SB07-0005-0	07/24/95	0.3 - 0.5			**4.7**					**76**
	SW-SB07-0015-0	07/24/95	1.4 - 1.6			0.30 U					50 U
	SW-SB07-0015-1 [1]	07/24/95	1.4 - 1.6			0.30 U					**133**
	SW-SB07-0020-0	07/24/95	2 - 2.2			0.30 U					
SW-SB08	SW-SB08-0005-0	07/24/95	0.3 - 0.5			**3.7**					50 U
	SW-SB08-0015-0	07/24/95	1.3 - 1.5			0.30 U					50 U
	SW-SB08-0020-0	07/24/95	2 - 2.2			0.30 U					
SW-SB09	SW-SB09-0005-0	07/24/95	0.4 - 0.6			**3.0**					50 U
	SW-SB09-0020-0	07/24/95	2 - 2.2			0.30 U					
	SW-SB09-0030-0	07/24/95	2.8 - 3			0.30 U					
SW-SB10	SW-SB10-0005-0	07/24/95	0.3 - 0.5			**11**					**68**
	SW-SB10-0020-0	07/24/95	2 - 2.2			0.30 U					50 U
	SW-SB10-0030-0	07/24/95	3 - 3.2			0.30 U					
SW-SB11	SW-SB11-0005-0	07/24/95	0.3 - 0.5			0.30 U					**129**
	SW-SB11-0015-0	07/24/95	1.3 - 1.5			0.30 U					50 U
	SW-SB11-0020-0	07/24/95	2 - 2.2			0.30 U					
SW-SB12	SW-SB12-0005-0	07/24/95	0.3 - 0.5			**4.2**					
	SW-SB12-0015-0	07/24/95	1.3 - 1.5			0.30 U					
	SW-SB12-0020-0	07/24/95	2 - 2.2			0.30 U					

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RMC/Alcoa - Troutdale, OR

Station	Sample ID	Date Sampled	Depth	Pesticides/Polychlorinated Biphenyls (mg/Kg)				Total Petroleum Hydrocarbons (mg/Kg)			
				Heptachlor Epoxide	Lindane	Polychlorinated Biphenyls (PCBs)	Toxaphene	Diesel by HCID	Gas by HCID	Heavy Oil by HCID	TPH by 418.1
SW-SB13	SW-SB13-0005-0	07/24/95	0.2 - 0.4			**1.8**					50 U
	SW-SB13-0015-0	07/24/95	1.4 - 1.6			0.30 U					
	SW-SB13-0020-0	07/24/95	1.9 - 2.1			0.30 U					50 U
SW-SB14	SW-SB14-0002-0	08/04/95	0.1 - 0.3			**2.6**					**280**
	SW-SB14-0007-0	08/04/95	0.6 - 0.8			0.30 U					50 U
	SW-SB14-0014-0	08/04/95	1.3 - 1.5			0.30 U					**140**
	SW-SB14-0020-0	08/04/95	1.9 - 2.1			0.30 U					
SW-SB15	SW-SB15-0002-0	08/04/95	0.1 - 0.2			**2.0**					**130**
	SW-SB15-0006-0	08/04/95	0.5 - 0.7			0.30 U					50 U
	SW-SB15-0015-0	08/04/95	1.4 - 1.6			0.30 U					**95**
	SW-SB15-0020-0	08/04/95	1.9 - 2.1			0.30 U					
SW-SB16	SW-SB16-0003-0	08/04/95	0.1 - 0.3			**3.3**					**1,300**
	SW-SB16-0008-0	08/04/95	0.6 - 0.8			0.30 U					
	SW-SB16-0012-0	08/04/95	1.1 - 1.3			0.30 U					
	SW-SB16-0018-0	08/04/95	1.7 - 1.9			0.30 U					
SW-SB17	SW-SB17-0004-0	08/04/95	0.1 - 0.3			0.30 U					
	SW-SB17-0008-0	08/04/95	0.6 - 0.8			**0.34**					
	SW-SB17-0012-0	08/04/95	1.1 - 1.3			0.30 U					
	SW-SB17-0015-0	08/04/95	1.5 - 1.7			0.30 U					
	SW-SB17-0020-0	08/04/95	1.9 - 2.1			0.30 U					
SW-SB18	SW-SB18-0003-0	08/04/95	0.2 - 0.4			0.30 U					**820**
	SW-SB18-0005-0	08/04/95	0.4 - 0.6			**0.84**					
	SW-SB18-0010-0	08/04/95	0.9 - 1.1			0.30 U					
	SW-SB18-0015-0	08/04/95	1.4 - 1.6			0.30 U					
	SW-SB18-0018-0	08/04/95	1.8 - 2			0.30 U					
SW-SB19	SW-SB19-0007-0	07/22/96	0.7 - 0.9			**2.6**					
	SW-SB19-0020-0	07/22/96	2 - 2.2			0.30 U					
	SW-SB19-0030-0	07/22/96	3 - 3.2			0.30 U					
SW-SB20	SW-SB20-0005-0	07/22/96	0.5 - 0.7			**2.4**					
	SW-SB20-0020-0	07/22/96	1 - 1.2			0.30 U					
	SW-SB20-0030-0	07/22/96	3 - 3.2			0.30 U					
SW-SB21	SW-SB21-0005-0	07/22/96	0.5 - 0.7			**3.6**					
	SW-SB21-0020-0	07/22/96	2 - 2.2			0.30 U					
	SW-SB21-0030-0	07/22/96	3 - 3.2			0.30 U					
SW-SB22	SW-SB22-0005-0	07/22/96	0.5 - 0.7			**0.30**					
	SW-SB22-0013-0	07/22/96	1.3 - 1.5			**5.5**					
	SW-SB22-0024-0	07/22/96	2.4 - 2.6			0.30 U					
SW-SB23	SW-SB23-0007-0	07/22/96	0.7 - 0.9			**2.2**					
	SW-SB23-0020-0	07/22/96	2 - 2.2			0.30 U					
	SW-SB23-0030-0	07/22/96	3 - 3.2			0.30 U					
SW-SB24	SW-SB24-0008-0	07/22/96	0.8 - 1			**2.8**					
	SW-SB24-0014-0	07/22/96	1.2 - 1.4			0.30 U					
	SW-SB24-0030-0	07/22/96	2.8 - 3			0.30 U					
SW-SB25	SW-SB25-0006-0	07/22/96	0.6 - 0.8			**4.8**					
	SW-SB25-0015-0	07/22/96	1.5 - 1.7			0.30 U					
	SW-SB25-0026-0	07/22/96	2.6 - 2.8			0.30 U					
SW-SB26	SW-SB26-0010-0	07/22/96	1 - 1.2			**1.6**					
	SW-SB26-0017-0	07/22/96	1.7 - 1.9			0.30 U					
	SW-SB26-0033-0	07/22/96	3.3 - 3.5			0.30 U					
SW-SB27	SW-SB27-0007-0	07/23/96	0.5 - 0.7			**0.80**					
	SW-SB27-0007-1 [1]	07/23/96	0.5 - 0.7			**1.1**					
SW-SB28	SW-SB28-0003-0	07/23/96	0.2 - 0.4			0.30 U					
SW-SB29	SW-SB29-0003-0	07/23/96	0.2 - 0.4			**4.6**					**15,000**
	SW-SB29-0007-0	07/23/96	0.7 - 0.8			**6.1**					**93,000**

Table 1
Analytical Results for Soil and Sediment Samples Tak
RMC/Alcoa - Troutdale, OR

Station	Sample ID	Date Sampled	Depth	Pesticides/Polychlorinated Biphenyls (mg/Kg)				Total Petroleum Hydrocarbons (mg/Kg)			
				Heptachlor Epoxide	Lindane	Polychlorinated Biphenyls (PCBs)	Toxaphene	Diesel by HCID	Gas by HCID	Heavy Oil by HCID	TPH by 418.1
SW-SB30	SW-SB30-0004-0	07/23/96	0.4 - 0.6			**2.3**					
SW-SB31	SW-SB31-0003-0	07/23/96	0.2 - 0.4			**1.5**					
SW-SB32	SW-SB32-0002-0	07/23/96	0.1 - 0.3			**5.9**					
SW-SB33	SW-SB33-0002-0	07/23/96	0.1 - 0.3			**6.6**					
	SW-SB33-0002-1 [1]	07/23/96	0.1 - 0.3			**7.1**					
SW-SB34	SW-SB34-0004-0	07/23/96	0.3 - 0.5			**0.30**					
SW-SB35	SW-SB35-0001-0	07/23/96	0.1 - 0.3			**11**					
SW-SB36	SW-SB36-0003-0	07/23/96	0.2 - 0.4			**4.7**					
SW-SB37	SW-SB37-0040-0	07/24/96	3.8 - 4			0.30 U					
	SW-SB37-0050-0	07/24/96	4.8 - 5			0.30 U					
	SW-SB37-0060-0	07/24/96	6 - 6.2			0.30 U					
SW-SB38	SW-SB38-0009-0	07/24/96	0.9 - 1.1			**4.9**					
	SW-SB38-0020-0	07/24/96	2 - 2.2			0.30 U					
	SW-SB38-0028-0	07/24/96	2.8 - 3			0.30 U					
SW-SB39	SW-SB39-0050-0	08/26/96	5 - 5.3			**0.40**					
	SW-SB39-0060-0	08/26/96	6 - 6.3			**0.70**					
SW-SB40	SW-SB40-0050-0	08/26/96	4.7 - 5			0.30 U					
	SW-SB40-0070-0	08/26/96	7 - 7.3			0.30 U					
SW-SB41	SW-SB41-0003-0	08/26/96	0.3 - 0.5			**1.9**					
SW-SB42	SW-SB42-0005-0	08/26/96	0.5 - 0.7			**1.6**					
SW-SB49	SW-SB49-0005-0	11/19/97	0								
SW-SB50	SW-SB50-0005-0	11/19/97	0								
SW-SB51	SW-SB51-0005-0	11/19/97	0								
SW-SB52	SW-SB52-0005-0	11/19/97	0								
SW-SB53	SW-SB53-0005-0	11/19/97	0								
	SW-SB53-0005-0-R2	11/19/97	0								
SW-SB54	SW-SB54-0005-0	11/19/97	0								
SW-SB55	SW-SB55-0005-0	11/19/97	0								
SW-SB56	SW-SB56-0005-0	11/19/97	0								
SW-SB57	SW-SB57-0005-0	11/19/97	0								
SW-SB58	SW-SB58-0005-0	11/19/97	0								
SW-SC01	SW-SC01-0002-0	09/20/99	2								
SW-SC02	SW-SC02-0001-0	09/20/99	1								
SW-SC03	SW-SC03-0001-0	09/20/99	1								
SW-SC04	SW-SC04-0002-0	09/20/99	2								
SW-SC05	SW-SC05-0002-0	09/20/99	2								
SW-SC05	SW-SC05-0002-1 [1]	09/20/99	2								
SW-SC06	SW-SC06-0002-0	09/20/99	2								

Notes:

Bold values indicate analyte detected.

[1] Duplicate Sample

[2] Sediment Sample

J = Indicates an estimated value.

K = The analyte concentration is biased high; the result may actually be lower.

L = The analyte concentration is biased low; the result may actually be higher.

R = The analyte concentration is rejected due to serious deficiencies in the ability to anlayze the analyte and meet quality control criteria. The presence or absence of the analyte cannot be verified.

RC =

U = Indicates the compound was analyzed for, but not detected.

Table 2
Analytical Results for Sediment Samples Normalized for PAHs and Pesticides
RMC/Alcoa - Troutdale, OR

Class/Analyte/Units	Station:	SD27		SD28		SD28	
	Sample ID:	WD-SD27-0001-0		WD-SD28-0001-0		WD-SD28-0001-1 [1]	
	Date Sampled:	02/23/95		34753		34753	
	Depth:	0.1		0.1		0.1	
Polynuclear Aromatic Hydrocarbons - TOCN (mg/Kg):							
Acenaphthene		**8.5**		**21**		**25**	
Acenaphthylene		1.3	U	1.7	U	1.9	U
Anthracene		**12**		**31**		**36**	
Benzo (a) anthracene		**92**	**RC**	**270**	**RC**	**328**	**RC**
Benzo (a) pyrene		**119**	**RC**	**305**	**RC**	**367**	**RC**
Benzo (b) fluoranthene		**192**	**RC**	**445**	**RC**	**517**	**RC**
Benzo (g,h,i) perylene		**85**	**RC**	**195**	**RC**	**217**	**RC**
Benzo (k) fluoranthene		**54**		**150**	**RC**	**178**	**RC**
Chrysene		**119**	**RC**	**305**	**RC**	**406**	**RC**
Dibenzo (a,h) anthracene		**23**		**55**		**54**	
Fluoranthene		**138**	**RC**	**325**	**RC**	**389**	**RC**
Fluorene		1.3	U	**11**		**13**	
Indeno (1,2,3-cd) pyrene		**69**	**RC**	**175**	**RC**	**189**	**RC**
Naphthalene		1.3	U	1.7	U	1.9	U
Phenanthrene		**54**		**130**	**RC**	**150**	**RC**
Pyrene		**119**	**RC**	**280**	**RC**	**339**	**RC**
Pesticides - TOCN (mg/Kg):							
Aroclor-1016		1.9	U	2.5	U	2.8	U
Aroclor-1221		3.8	U	5.0	U	5.6	U
Aroclor-1232		1.9	U	2.5	U	2.8	U
Aroclor-1242				2.5	U	2.8	U
Aroclor-1248		1.9	U	2.5	U	2.8	U
Aroclor-1254		**17**		**21**		**27**	
Aroclor-1260		**108**	**RC**	**90**	**RC**	**111**	**RC**

Notes:

Bold values indicate analyte detected.

[1] Duplicate Sample

RC =

U = Indicates the compound was analyzed for, but not detected.

Table 3
Pipeline Soil Samples in the East Potliner Area

Sample ID:	**EP-PIPE-HIGH01**	**EP-PIPE-PLUS01**	**EP-PIPE-MINUS01**
Date Sampled:	**9/21/1995**	**9/21/1995**	**9/21/1995**
Sample Type:	**discrete**	**composite of A, B, C locations-see figure**	**composite of A, B, C locations see figure**
Sample Depth (ft.):	**0**	**0**	**0**
Inorganic Compounds (mg/Kg):			
Cyanide, Total	410 K	10.2 L	5.1 K
Fluoride by 340_1/340_2	7700	21000 K	2000
Metals (mg/Kg):			
Aluminum	56300	45900	14400
Antimony	2.5 UL	2.5 UL	2.5 UL
Arsenic	4.8	4.1	1.2
Barium	232	126	50.2
Beryllium	2.36	11.2	0.57
Cadmium	0.5 U	0.5 U	0.5 U
Chromium	29.8	17.6	8.51
Copper	43.4	23.2	13.4
Lead	16	6.9	5 U
Mercury	0.2 U	0.2 U	0.2 U
Nickel	21.8	14.5	7.34
Selenium	1 UJ	1 U	1 UJ
Silver	1 U	1 U	1 U
Thallium	1 U	1 U	1 U
Zinc	49.9	39.2	25.3
PAHs (mg/Kg):			
Acenaphthene	0.3 U	0.3 U	0.3 U
Acenaphthylene	0.3 U	0.3 U	0.3 U
Anthracene	0.3 U	0.3 U	0.3 U
Benzo (a) anthracene	1.5	0.3 U	0.3 U
Benzo (a) pyrene	0.3 U	0.3 U	0.3 U
Benzo (b) fluoranthene	1.9	0.3 U	0.3 U
Benzo (g,h,i) perylene	0.3 U	0.3 U	0.3 U
Benzo (k) fluoranthene	0.5	0.3 U	0.3 U
Chrysene	3.9	0.3 U	0.3 U
Dibenzo (a,h) anthracene	0.3 U	0.3 U	0.3 U
Fluoranthene	3	0.3 U	0.3 U
Fluorene	0.3 U	0.3 U	0.3 U
Indeno (1,2,3-cd) pyrene	0.3 U	0.3 U	0.3 U
Naphthalene	0.3 U	0.3 U	0.3 U
Phenanthrene	0.7	0.3 U	0.3 U
Pyrene	1.8	0.3 U	0.3 U
Total PCBs (mg/Kg):	0.3 U	0.3 U	0.3 U

D = Samples diluted because of matrix interference
J = Estimated value
K = Estimated value. May be biased high on the basis of spike recovery results.
L = Estimated value. May be biased low on the basis of spike recovery results.
U = Undetected

Figures

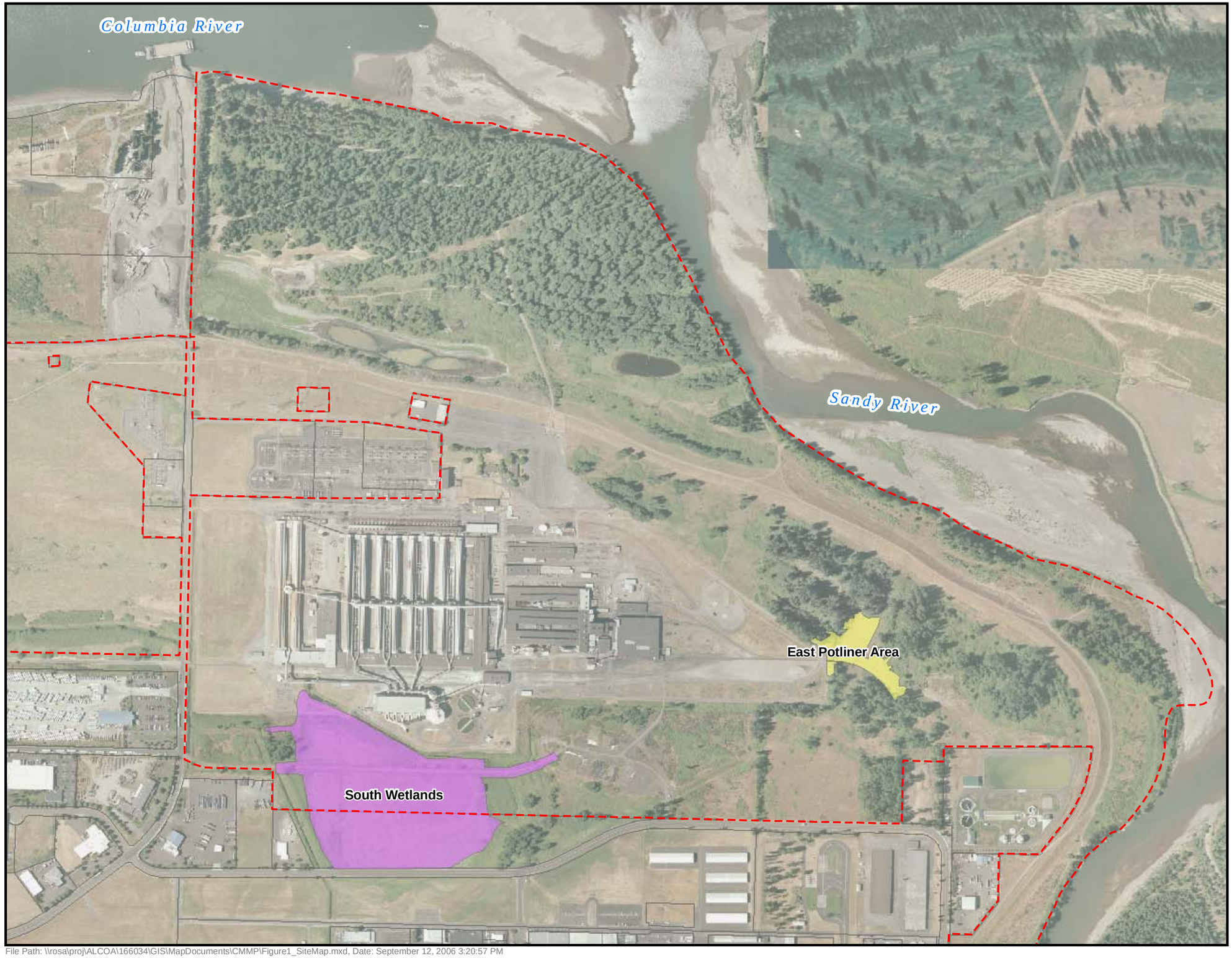

Figure 1

Site Map

RMC-Troutdale Facility
Troutdale, Oregon

Legend

- RMC-Troutdale Property Boundary
- Other Tax Lots
- East Potliner Area
- South Wetlands

N
W E
S

0 300 600 900 1,200
Feet

CH2MHILL

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Figure 2
South Wetlands

RMC-Troutdale Facility
Troutdale, Oregon

Legend

- Monitoring Well
- Sample Location
- South Wetlands

N
W E
S

0 75 150 225 300
Feet

CH2MHILL

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Figure 3

East Potliner

RMC-Troutdale Facility
Troutdale, Oregon

Legend

- Monitoring Well
- Approximate Existing Grab Sample
- East Potliner Area

N
W E
S

0 30 60 90 120
Feet

CH2MHILL

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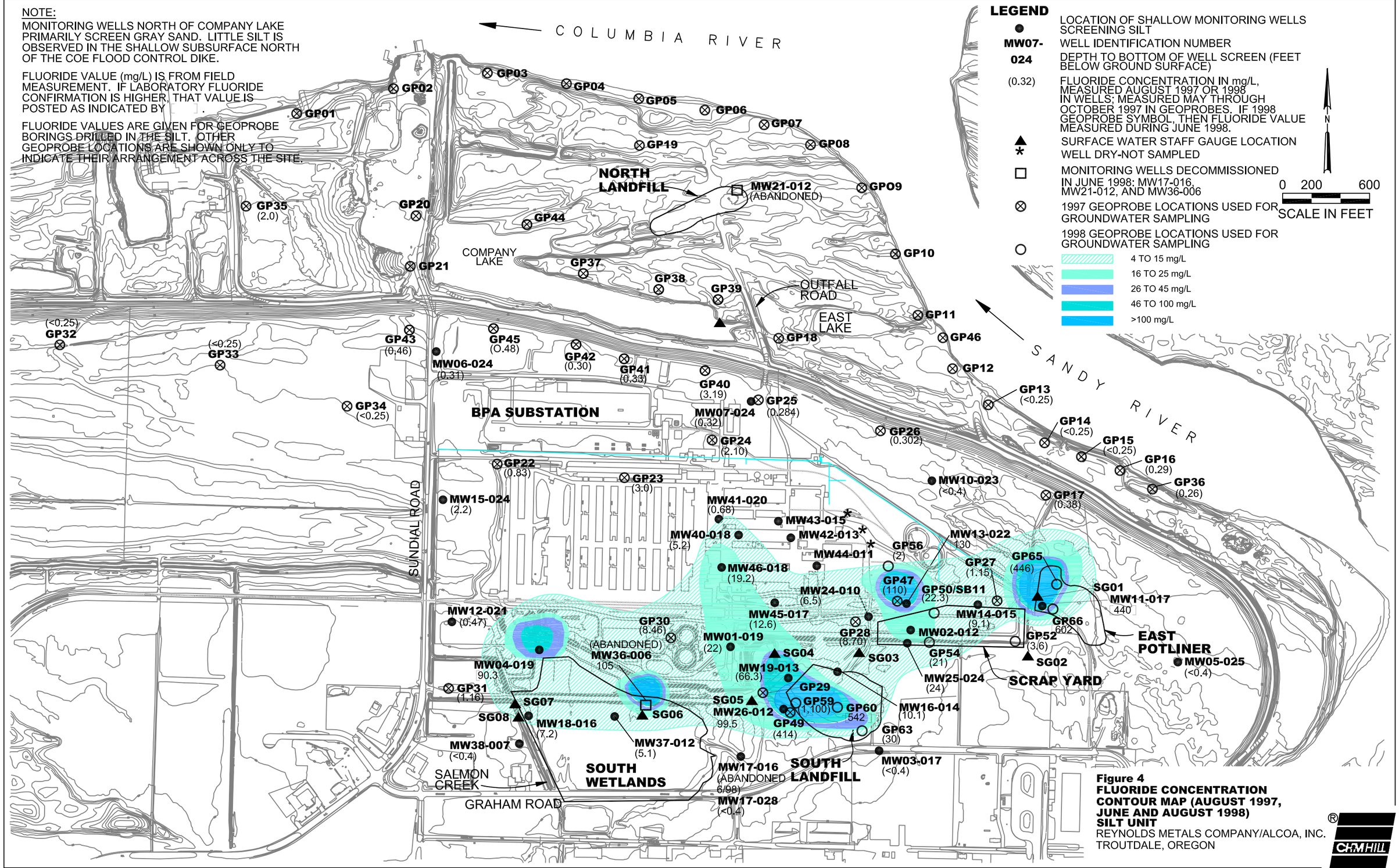
15-Mar-2004

NOTE:
MONITORING WELLS NORTH OF COMPANY LAKE PRIMARILY SCREEN GRAY SAND. LITTLE SILT IS OBSERVED IN THE SHALLOW SUBSURFACE NORTH OF THE COE FLOOD CONTROL DIKE.

FLUORIDE VALUE (mg/L) IS FROM FIELD MEASUREMENT. IF LABORATORY FLUORIDE CONFIRMATION IS HIGHER, THAT VALUE IS POSTED AS INDICATED BY [ ].

FLUORIDE VALUES ARE GIVEN FOR GEOPROBE BORINGS DRILLED IN THE SILT. OTHER GEOPROBE LOCATIONS ARE SHOWN ONLY TO INDICATE THEIR ARRANGEMENT ACROSS THE SITE.



LEGEND

- ● LOCATION OF SHALLOW MONITORING WELLS SCREENING SILT
- MW07-024 WELL IDENTIFICATION NUMBER
- DEPTH TO BOTTOM OF WELL SCREEN (FEET BELOW GROUND SURFACE)
- (0.32) FLUORIDE CONCENTRATION IN mg/L, MEASURED AUGUST 1997 OR 1998 IN WELLS; MEASURED MAY THROUGH OCTOBER 1997 IN GEOPROBES. IF 1998 GEOPROBE SYMBOL, THEN FLUORIDE VALUE MEASURED DURING JUNE 1998.
- ▲ SURFACE WATER STAFF GAUGE LOCATION
- * WELL DRY-NOT SAMPLED
- □ MONITORING WELLS DECOMMISSIONED IN JUNE 1998: MW17-016, MW21-012, AND MW36-006
- ⊗ 1997 GEOPROBE LOCATIONS USED FOR GROUNDWATER SAMPLING
- ○ 1998 GEOPROBE LOCATIONS USED FOR GROUNDWATER SAMPLING
- 4 TO 15 mg/L
- 16 TO 25 mg/L
- 26 TO 45 mg/L
- 46 TO 100 mg/L
- >100 mg/L

N

0 200 600
SCALE IN FEET

Figure 4
FLUORIDE CONCENTRATION CONTOUR MAP (AUGUST 1997, JUNE AND AUGUST 1998) SILT UNIT
REYNOLDS METALS COMPANY/ALCOA, INC.
TROUTDALE, OREGON

CH2MHILL

P:\ALCOA\166034\CAD 166034_COLOR6D.dwg

15-Mar-2004

NOTE:

FLUORIDE VALUE (mg/L) IS FROM FIELD MEASUREMENT. IF LABORATORY FLUORIDE CONFIRMATION IS HIGHER, THAT VALUE IS POSTED AS INDICATED BY [ ].

FLUORIDE VALUES ARE GIVEN FOR GEOPROBE BORINGS DRILLED IN THE UPPER GRAY SAND. OTHER GEOPROBE LOCATIONS ARE SHOWN ONLY TO INDICATE THEIR ARRANGEMENT ACROSS THE SITE.

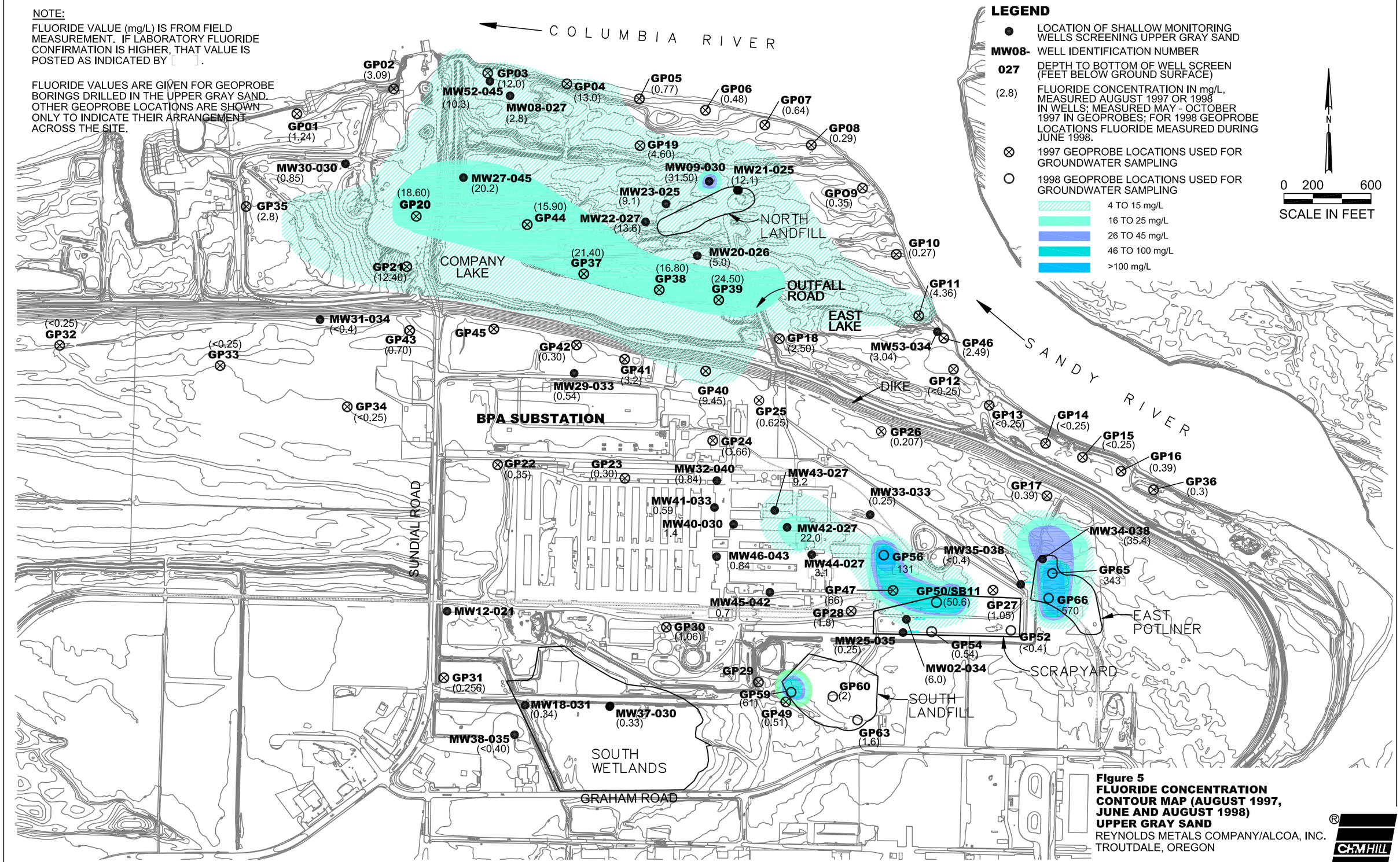


Figure 5
FLUORIDE CONCENTRATION CONTOUR MAP (AUGUST 1997, JUNE AND AUGUST 1998) UPPER GRAY SAND
REYNOLDS METALS COMPANY/ALCOA, INC.
TROUTDALE, OREGON

CH2MHILL

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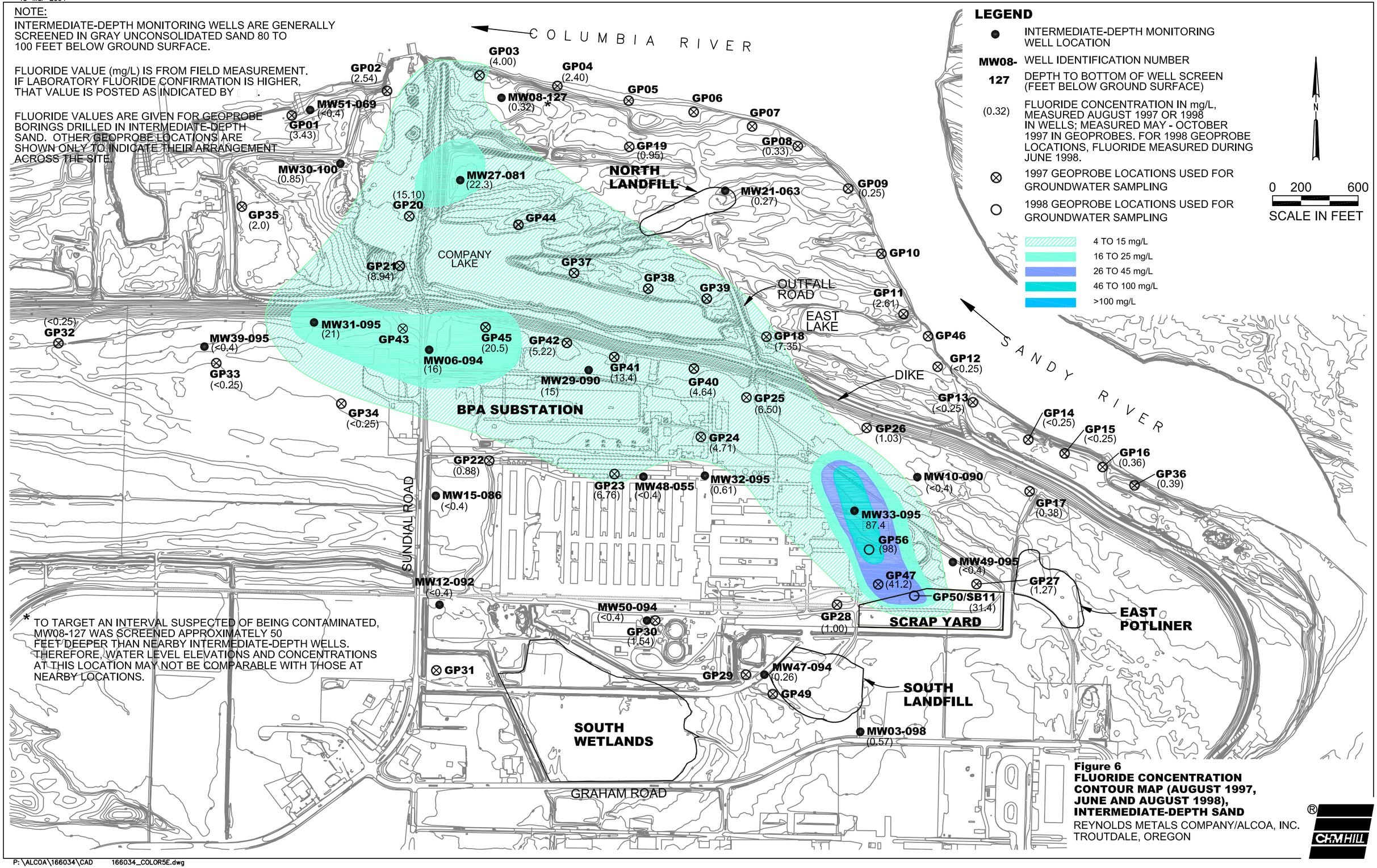
15-Mar-2004

NOTE:
INTERMEDIATE-DEPTH MONITORING WELLS ARE GENERALLY SCREENED IN GRAY UNCONSOLIDATED SAND 80 TO 100 FEET BELOW GROUND SURFACE.

FLUORIDE VALUE (mg/L) IS FROM FIELD MEASUREMENT. IF LABORATORY FLUORIDE CONFIRMATION IS HIGHER, THAT VALUE IS POSTED AS INDICATED BY [ ].

FLUORIDE VALUES ARE GIVEN FOR GEOPROBE BORINGS DRILLED IN INTERMEDIATE-DEPTH SAND. OTHER GEOPROBE LOCATIONS ARE SHOWN ONLY TO INDICATE THEIR ARRANGEMENT ACROSS THE SITE.

* TO TARGET AN INTERVAL SUSPECTED OF BEING CONTAMINATED, MW08-127 WAS SCREENED APPROXIMATELY 50 FEET DEEPER THAN NEARBY INTERMEDIATE-DEPTH WELLS. THEREFORE, WATER LEVEL ELEVATIONS AND CONCENTRATIONS AT THIS LOCATION MAY NOT BE COMPARABLE WITH THOSE AT NEARBY LOCATIONS.



LEGEND

- ● INTERMEDIATE-DEPTH MONITORING WELL LOCATION
- MW08- WELL IDENTIFICATION NUMBER
- 127 DEPTH TO BOTTOM OF WELL SCREEN (FEET BELOW GROUND SURFACE)
- (0.32) FLUORIDE CONCENTRATION IN mg/L, MEASURED AUGUST 1997 OR 1998 IN WELLS; MEASURED MAY - OCTOBER 1997 IN GEOPROBES. FOR 1998 GEOPROBE LOCATIONS, FLUORIDE MEASURED DURING JUNE 1998.
- ⊗ 1997 GEOPROBE LOCATIONS USED FOR GROUNDWATER SAMPLING
- ○ 1998 GEOPROBE LOCATIONS USED FOR GROUNDWATER SAMPLING

- 4 TO 15 mg/L
- 16 TO 25 mg/L
- 26 TO 45 mg/L
- 46 TO 100 mg/L
- >100 mg/L

N

0 200 600
SCALE IN FEET

Figure 6
FLUORIDE CONCENTRATION CONTOUR MAP (AUGUST 1997, JUNE AND AUGUST 1998), INTERMEDIATE-DEPTH SAND
REYNOLDS METALS COMPANY/ALCOA, INC.
TROUTDALE, OREGON

CH2MHILL

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15-Mar-2004

NOTE:
DEEP MONITORING WELLS ARE SCREENED 150 TO 180 FEET BELOW GROUND SURFACE. SCREENED MATERIALS ARE PRIMARILY GRAY SAND TO THE SOUTH, SAND AND GRAVEL TO THE NORTH.

FLUORIDE VALUE (mg/L) IS FROM FIELD MEASUREMENT. IF LABORATORY FLUORIDE CONFIRMATION IS HIGHER, THAT VALUE IS POSTED AS INDICATED BY [ ].

FLUORIDE VALUES ARE GIVEN FOR GEOPROBE BORINGS DRILLED IN THE DEEP SAND. OTHER GEOPROBE LOCATIONS ARE SHOWN ONLY TO INDICATE THEIR ARRANGEMENT ACROSS THE SITE.

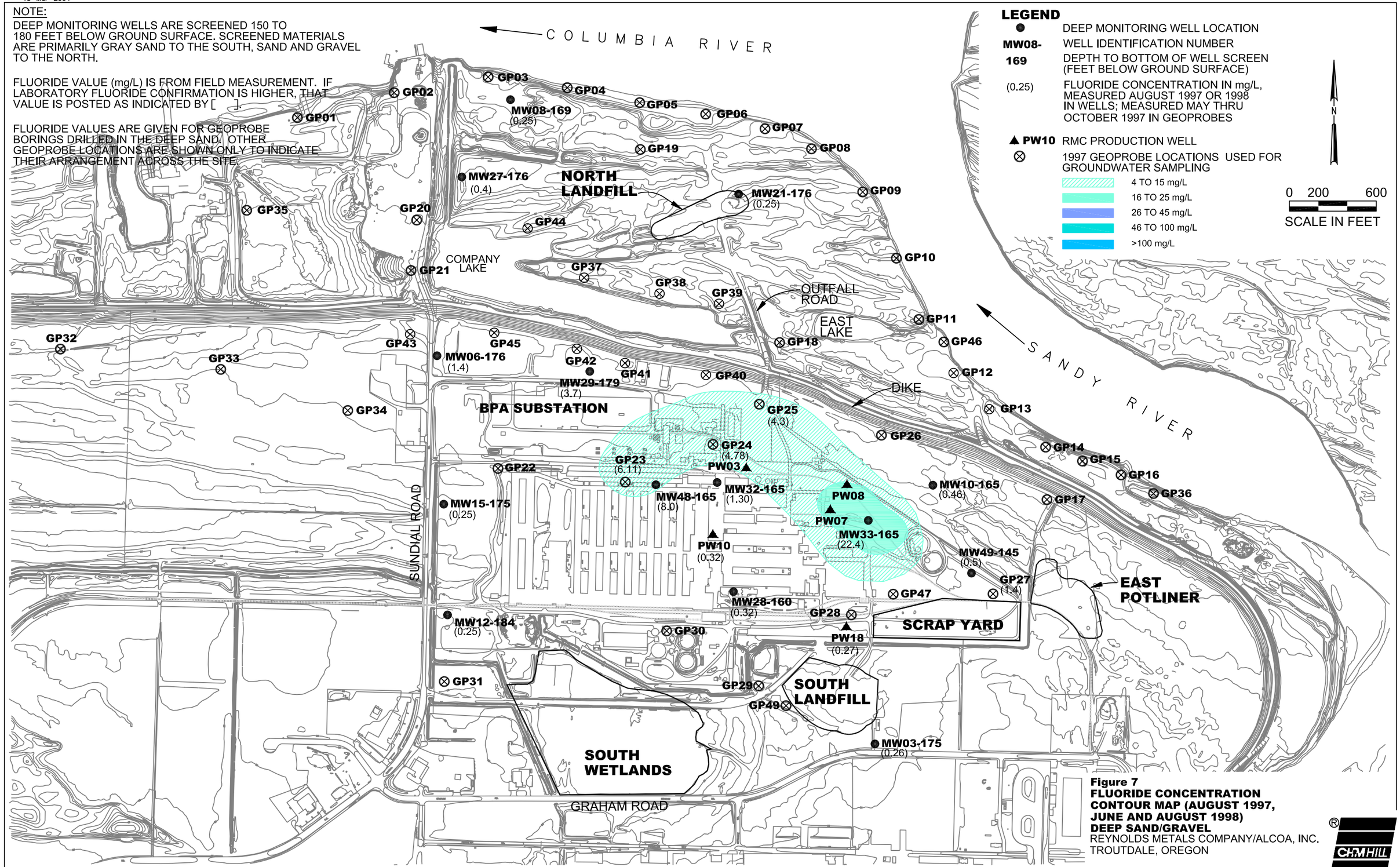

Figure 7
FLUORIDE CONCENTRATION CONTOUR MAP (AUGUST 1997, JUNE AND AUGUST 1998) DEEP SAND/GRAVEL
REYNOLDS METALS COMPANY/ALCOA, INC.
TROUTDALE, OREGON

CH2MHILL

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APPENDIX A

DEQ Contained In Determination for Soil

Oregon
Theodore Kulongoski, Governor

Department of Environmental Quality
Northwest Region-Eastside Office
1550 NW Eastman Parkway, Suite 290
Gresham, OR 97030-3832
(503) 667-8414
FAX (503)674-5148

July 17, 2006

Mr. Steve Shaw
Reynolds Metals Company/Alcoa
2240 NW Perimeter Way
Troutdale OR 97060

RE: Contaminated Media Management Plan, Contained-In Determination (1995), Reynolds Metals Company Site, Troutdale, DEQ File #154

Dear Mr. Shaw:

The Department of Environmental Quality (DEQ) has reviewed your email request dated June 7, 2006, to manage certain K088 wastes that exist in the East Potliner area of the Reynolds Metals facility using an existing contained-in determination. Reynolds is preparing a Contaminated Media Management Plan that would address management of the K088 waste left in place from a 1995 removal by reference to the contained-in determination.

The existing contained-in determination was approved by DEQ in a letter dated October 5, 1995, and referred to K088-contaminated soil in the East Potliner area. The contained-in determination was based upon a US Environmental Protection Agency (EPA), Region 10, memo dated September 8, 1995, and a letter from the EPA Region 10 RCRA Compliance Section requesting the determination. DEQ's approval of the contained-in determination also indicated that it is site, waste and media specific and should not be used for other circumstances. Further, DEQ pointed out that the Phase III Land Disposal Restrictions (LDR) would become final in January 1996 and would become effective for the 25 constituents associated with K088 waste.

DEQ concurs with your assessment that the K088 waste that remains in the East Potliner area, surrounding the existing natural gas pipeline is virtually the same as the original K088 waste that was evaluated for the existing contained-in determination. The criteria used for the K088 contained-in determination remain the same as in 1995, where the risk-based criteria for residential ingestion of soil contaminated with free cyanide is higher than the LDR treatment standard for total cyanide in K088 non-wastewaters. The 1995 contained-in determination provided that all soil passing a 1-inch screen and containing less than 590 mg/kg of total cyanide could be managed as a non-hazardous waste, or a solid waste, provided that these soils were disposed in a landfill that met RCRA Subtitle D requirements.

DEQ therefore concludes that the existing 1995 DEQ-approved contained-in determination may be used in the Contaminated Media Management Plan for management of the K088 waste that has been left in place in the East Potliner area should the natural gas pipeline ever be abandoned and removed. Be advised that this use of the 1995 contained-in determination cannot be applied elsewhere on site and that other LDR requirements may apply in management of these soils.

If you have any questions you may contact me at 503-667-8414 X55008 or by email at kent.mavis.d@deq.state.or.us.

Sincerely,

Mavis D. Kent
DEQ Project Manager

pc: Barb Puchy, Bruce Gilles, DEQ-NWR

Oregon

DEPARTMENT OF
ENVIRONMENTAL
QUALITY

NORTHWEST REGION

October 5, 1995

MR STEVE SHAW
REYNOLDS METALS COMPANY
SUN DIAL ROAD
TROUTDALE OR 97060

Re: Contained-In Determination Approval
HW - Reynolds Metals Company
Multnomah County

Dear Mr. Shaw:

The Department has received your letter dated September 18, 1995, requesting that a determination be made that certain soils at the Reynolds Metals facility in Troutdale do not need to be managed as hazardous waste. Based on the information provided by the Environmental Protection Agency (EPA) in a letter from Marcia Bailey to the Department and in a memo from Chris Field, both dated September 8, 1995 (attached), the Department is hereby granting a favorable contained-in determination for specific soils contaminated with K088 listed hazardous waste at the Reynolds Metal Company.

This determination is granted only for those soils specifically described in the EPA correspondence cited above. These soils have been determined by the Department and EPA to contain hazardous constituents at concentrations which do not warrant management of the soils as hazardous waste, provided they are managed as solid waste and are disposed of in a landfill which meets the RCRA Subtitle D requirements. Any other disposition of the soils will void this favorable contained-in determination.

Please note that this application of the contained-in policy, like any such application, is particular only to the site-, waste-, and media-specific conditions for which the determination is rendered. No inference of the explicit or implicit inclusion in this determination of other contaminated soils or other media at the Reynolds facility or any other facility would be legitimate.

You should be aware that the federal Phase III Land Disposal Restrictions rules, proposed on March 2, 1995, are due to become final in January, 1996. At that time, specific treatment standards for K008 wastes will become effective in all states. Those standards include treatment levels for 25 constituents associated with K088. Remedial actions at Reynolds Metals after the effective date of those rules may trigger treatment requirements for at least some remediation wastes at the facility.

John A. Kitzhaber
Governor

2020 SW Fourth Avenue
Suite 400
Portland, OR 97201-4987
(503) 229-5263 Voice
TTY (503) 229-5471
DEQ-1

Should you have any questions on this contained-in determination, please do not hesitate to contact me at 229-5532.

Sincerely,

Dave St. Louis

Dave St. Louis., P.E.
Manager, Hazardous Waste Permits and
Site Response

Attachments
EPA Letter of Sept. 8, 1995
EPA Memo of Sept. 8, 1995

cc: (w/o atts)
Marcia Bailey:EPA Region 10
Chris Field:EPA Region 10
Chip Humphrey:EPA Oregon Operations
Chuck Donaldson:SW Salem
Chuck Clinton:HW Northwest Region
Barbara Puchy:HW Northwest Region

cc: (w/atts)
Gerry Preston:SW The Dalles
Mavis Kent:Site Response Northwest Region

REYNOLDS ALUMINUM

PRIMARY METALS DIVISION

September 18, 1995

Mr. David St. Louis
Oregon Department of Environmental Quality
2020 SW Fourth Ave., Suite 400
Portland OR 97201-4987

Subject: Request for "Contained-In" Policy Determination

Dear Mr. David St. Louis,

In a response action taken under CERCLA, Reynolds Metals Company has proposed a plan to the U.S. EPA for managing waste soils excavated from a former potliner (listed hazardous waste K088) storage area. The proposed plan requests that soils screened from the potliner be managed as non-hazardous waste under the contained-in policy if the cyanide level is less than 590 mg/kg and the soils are not otherwise a characteristic waste.

I understand the Oregon Department of Environmental Quality has jurisdiction in determining this mater. I respectfully request a favorable determination of the contained-in policy and reference two supporting letters from Marcia L. Bailey and Chris Field of the U.S. EPA, which are enclosed.

I appreciate your attention to this mater and look forward to your response. If you have any questions, please call me at (503) 666-0201.

Sincerely,

REYNOLDS METALS COMPANY

Steven M. Shaw
Troutdale Remediation Project Manager

Enclosures

cc : Chris Field/United States EPA (w/o encl.)
Chip Humphrey/United States EPA (w/o encl.)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

Reply To
Attn Of: HW-104

September 8, 1995

Dave St. Louis
Oregon Department of Environmental Quality
2020 SW Fourth
Suite 400
Portland, Oregon 97201-4987

Re: Reynolds Metals Company
ORD 00941 2672

Dear Dave:

Enclosed is a memo that Chris Field and I put together to present a case for a contained-in decision by DEQ for soil contaminated with potliner (hazardous waste K088) at the Reynolds Metals facility in Troutdale, Oregon. Chris is the On-Scene Coordinator for the Superfund removal action at the site. Chip Humphrey will eventually take over as the Remedial Project Manager.

This demonstration is somewhat different from other contained-in determinations I have worked on, such as the soil pile at Taylor Lumber, inasmuch as the sampling was conducted while the soil was still in place, and additional sampling will occur after soil excavation. However, after reviewing the available data, I believe that the level of cyanide in the soil has been sufficiently demonstrated to exist at concentrations well below levels which would pose an unacceptable risk, assuming a human ingestion exposure scenario. In addition, as this is a removal action, the contaminated soil (if determined by DEQ not to have to be managed as hazardous waste) will be taken to a RCRA Subtitle D facility where it will pose minimal risk to human health and the environment.

For your preliminary review, I am enclosing a technical report and pertinent pages from a second report which document the levels of cyanide in the soil. (When copies of the second document are available I will forward one for your records.) I am very willing to work with you or your staff on this

determination, whether or not you decide to wait for further analytical results before rendering your decision. Please call me at (206) 553-0684 any time during the week of September 11; I plan to be on annual leave the week of September 18. Thank you in advance for your cooperation in making a determination in this matter.

Sincerely,

Marcia

Marcia L. Bailey, D.Env.
Environmental Scientist
RCRA Compliance Section

Enclosures

cc: Chris Field (w/o enc.)
Chip Humphrey, OOO (w/memo only)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

MEMORANDUM

DATE: September 8, 1995

TO: Marcia Bailey, Environmental Scientist
RCRA Compliance Section (HW-104)

FROM: Chris Field, EPA On-Scene Coordinator
Superfund

SUBJECT: Request for a "contained-in" policy determination for soil contaminated with K088 at the Reynolds Metals Superfund site, Troutdale, OR

Region 10 Superfund is currently overseeing a PRP-lead, time-critical removal action of potliner debris from an approximate three acre area on the east side of the Reynolds Metals facility. Potliner characteristically contains elevated concentrations of cyanide and is a listed hazardous waste (K088), with cyanide (complexes) as the only hazardous constituent for which it was listed (40 CFR Part 261 Appendix VII). As a consequence of temporary storage of potliner during the 1960's, there remains a thin layer of potliner debris scattered across and within the soil at the east side of the Reynolds facility.

Surficial scraping/excavation of 1 to 3 feet of the soil in the potliner area commenced on August 28, 1995, and we would like to move forward with off-site disposal at the earliest date possible. Excavated soil is screened, with potliner remnants which do not escape the 1-in. screen being accumulated for shipment as K088 hazardous waste to a commercial hazardous waste facility. After being screened, the K088-contaminated soil, which is the subject of this request, is being placed in a segregated pile which is underlain and covered by Visqueen to minimize run-off and wind dispersal.

Sampling and analysis of the contaminated soil was conducted in 1994 while the soil was still in place (see Technical Memorandum, attached). Samples were obtained from areas where cyanide would be expected to be found at maximum levels, e.g., immediately beneath potliner remnants. Nevertheless, the highest value of total cyanide (which includes free and complexed cyanide) was only 3.8 mg/kg. The maximum value found in samples of residual potliner was 35 mg/kg. Risk-based residential cleanup levels for incidental ingestion of soil contaminated with free cyanide utilized by EPA and Oregon DEQ are 1600 and 5000 mg/kg, respectively. The proposed land disposal treatment standard for total cyanide in K088 nonwastewaters is 590 ppm,

which is technology-based, not risk-based. Therefore, under both risk and LDR standards, the soil is well within acceptable levels for this constituent.

In addition to the above sampling and analysis, the soil which is being accumulated after the screening process will be additionally sampled and analyzed for fluoride, PAHs, PCBs, certain metals, and total cyanide, to provide a complete characterization of the soil, primarily to provide a profile for the receiving Subtitle D facility. Fluoride, which was found at a level of 1600 mg/kg, is of concern in the site clean-up as it has a potential to contaminate drinking water. PAHs and PCBs were found at maximum levels of 19 mg/kg and 1.1 mg/kg, respectively. The only regulated hazardous waste present, however, is K088. One three-point composite sample per 100 yd^3 of soil will be taken for analysis. It is anticipated that several thousand yd^3 of soil will ultimately be excavated in this effort.

To minimize disposal costs we request that a favorable "contained- in" determination be made at this time for the soil which has been and which will be excavated, screened and placed in the pile. All segregable potliner debris (as well as any soils found to exceed 590 ppm total cyanides) would be disposed of at the Chem Waste Management commercial hazardous waste facility in Arlington, Oregon. Soil determined not to have to be managed as hazardous waste pursuant to a contained-in decision would be disposed of at Oregon Waste Systems, a subtitle D facility also located in Arlington, OR.

Although we understand that it is somewhat unusual to request a contained-in determination prior to the completion of the overall characterization of the soil, we believe that the previous sampling and analysis of "hot spots" for cyanide was sufficient to render a contained-in determination for the K088-contaminated soil, in terms of not having to manage the soil as a regulated hazardous waste. We suggest that the contained-in determination be worded such that it excludes any soil containing total cyanide at a concentration greater than 590 mg/kg, even though we fully expect that no levels approaching that concentration will be found.

We understand that DEQ is the regulatory entity responsible for making this contained-in determination, and that you will work with DEQ in this effort. If DEQ feels that it must wait until all analyses have been conducted on the soil before a determination can be rendered, that can be arranged. However, we are confident that the evidence which is already available demonstrates that the hazardous constituent for which K088 was listed does not approach levels which present unacceptable risks. In addition, securing a favorable contained-in determination now

would expedite the clean-up process and would eliminate any potential regulatory problems associated with having a RCRA-regulated soil pile on site. In either case, DEQ will be provided with a copy of final sampling and analysis results when they become available, to complete its files on this matter.

I am available at (206) 553-1674 to discuss this matter further with you or DEQ representatives should there be any questions. Thank you for your assistance.

APPENDIX B

DEQ Contained In Determination for Groundwater

Oregon
Theodore Kulongoski, Governor

Department of Environmental Quality
Northwest Region-Eastside Office
1550 NW Eastman Parkway, Suite 290
Gresham, OR 97030-3832
(503) 667-8414
FAX (503)674-5148

November 28, 2006

Mr. Steve Shaw
Reynolds Metals Company/Alcoa
2240 NW Perimeter Way
Troutdale OR 97060

RE: Contained-In Determination, Groundwater Extracted in Final Remedy Implementation, Reynolds Metals Company Site, Troutdale, DEQ File #154

Dear Mr. Shaw:

The Department of Environmental Quality (DEQ) has reviewed your letter, dated November 7, 2006, that requested a contained-in determination for cyanide in groundwater at the Reynolds Metals site. The final site remedy requires extraction of groundwater from two focused extraction wells (FE-02 and FE-03) and other former production wells. The groundwater is transported from the well heads to a treatment unit where the groundwater is combined, then discharged to the Columbia River under an existing National Pollutant Discharge Elimination System (NPDES) Permit. The Permit established discharge limitations for cyanide in the extracted groundwater of 0.025 mg/l as a monthly average and 0.05 mg/l as a daily maximum. This contained-in determination pertains to potential spills that may occur along the transport pipeline from the well head to the treatment unit.

Potentially Listed Wastes

Groundwater extracted from well FE-03 may contain a hazardous waste because the water has been contaminated with constituents including cyanide that originate from the East Potliner Landfill that contained K-088 listed waste. Groundwater extracted from well FE-02 and the former production wells contain cyanide but the groundwater does not originate from an area that contained K-088 listed waste. Therefore, only groundwater extracted from FE-03 would be considered to be subject to applicable hazardous waste generator standards specified in 40 CFR Part 262.

The DEQ has adopted the U.S. Environmental Protection Agency's (EPA) "contained-in" policy, which requires that "soil (and other environmental media), although not wastes themselves, be managed as if they were hazardous waste if they contain hazardous waste or exhibit a characteristic of hazardous waste" (Federal Register, Volume 63, page 28621 [63 FR 28261]). EPA considers contaminated environmental media to no longer contain hazardous waste: (1) when they no longer exhibit a characteristic of hazardous waste; and (2) when concentrations of hazardous constituents from listed hazardous wastes are below health-based levels (EPA 1998).

The DEQ, as a policy, uses DEQ health-based levels for comparison with constituent concentrations in environmental media. Water containing concentrations of contaminants less than Federal and State Maximum Contaminant Levels (MCLs) for drinking water systems will be determined to not contain hazardous waste. If MCLs have not been promulgated for the hazardous substance, then DEQ applies

either EPA preliminary remediation goals (PRGs) or DEQ risk-based concentrations (RBCs). The applicable MCLs and RBCs are summarized below.

Groundwater is monitored through regular sampling of the extraction and production wells according to an approved groundwater monitoring plan for remedy performance. Groundwater is analyzed for cyanide by a variety of methods to determine an accurate measure of free cyanide for comparison to human health risk-based criteria and ecological exposure criteria appropriate for the site. Through evaluation of site cyanide analytical data, Reynolds has concluded that the cyanide present in groundwater consists mainly of non-toxic iron cyanide with very low concentrations of free cyanide. Analytical methods used to measure cyanide include method OIA 1677 for amenable cyanide which was approved by EPA in 1999, and method ASTM 4282.02 for free cyanide which is under review by EPA. Groundwater extraction from FE-03 began in January 2006.

Data from cyanide analyses indicate that groundwater from FE-03 contains cyanide at concentrations ranging from 0.0066 to 0.009 mg/l, and free cyanide at concentrations that range from 0.00076 to 0.0026 mg/l. Appropriate risk-based human health and ecological exposure criteria appropriate for the site include: maximum contaminant level (MCL) of 0.2 mg/l, EPA Region 9 preliminary remediation goal for tapwater of 0.730 mg/l, direct contact for industrial workers of 62 mg/l. Measured concentrations of amenable cyanide are below drinking water and direct contact criteria.

Based upon our application of the contained in rule, DEQ has determined that cyanide concentrations in groundwater beneath the site do not contain a K088 hazardous waste.

Limitations and Additional Conditions

This determination is limited only to the water identified in this letter. Additional waste profiling will be necessary for soil/water generated from any future site development activity.

If you have additional questions or concerns regarding the information contained in this letter, please contact me at (503) 667-8414, extension 55008.

Sincerely,

Mavis D. Kent

Mavis D. Kent, Project Manager
Cleanup & Emergency Response Section

pc: Chip Humphrey, EPA-OOO; Bruce Gilles, DEQ-NWR-ESO

ATTACHMENT B

SOIL SURCHARGE STOCKPILE ASSESSMENT, USPS DEVELOPMENT, COLWOOD INDUSTRIAL PARK

December 12, 2016
Project No. 0232.09.07

Mr. Stan Jones
Port of Portland
7200 Northeast Airport Way
Portland, Oregon 97218

Re: Soil Surcharge Stockpile Assessment
USPS Development
Colwood Industrial Park
7350 NE Cornfoot Road
Portland, Oregon

Dear Mr. Jones:

This letter presents the soil characterization of the soil surcharge stockpiles at the U.S. Postal Service (USPS) development site (the Site) in the Colwood Industrial Park located at 7350 NE Cornfoot Road in Portland, Oregon (Figure 1). The stockpiles are approximately 20,000 and 50,000 cubic yards (assumes 20 percent swell factor). The stockpiles were sampled for laboratory analytical testing and the results were screened against regulatory criteria. The screening indicates that one stockpile qualifies as clean fill and the other stockpile slightly exceeds the clean fill criteria. The Port of Portland is evaluating the stockpiles for proposed use as fill at the Troutdale Reynolds Industrial Park (TRIP).

The sampling activities were completed in general accordance with the Soil Surcharge Stockpile Assessment Work Plan (the "Work Plan"; MFA, 2016).

PREPARATORY ACTIVITIES

The following activities were completed in preparation for the fieldwork:

- **Health and Safety Plan (HASP).** MFA prepared a HASP for its personnel involved with the project.
- **Underground Utility Location.** A public utility notification request was submitted through the One-Call service.
- **Work in Tenant Areas.** The field activities were completed in coordination with the contractor (Tapani, Inc.).
- **Sample Locations.** The predetermined sample locations were marked in the field, using a high-accuracy, handheld global positioning system device (Trimble

GeoExplorer® 2005). Each location was marked with a pin flag (Photograph 1; Attachment A).

ISM SAMPLING

Incremental sampling methodology (ISM) was used to collect representative samples from the stockpiles. ISM characterizes the average concentration of contaminants in a predefined area termed the decision unit. Samples (called increments) are collected from multiple locations in a decision unit under evaluation. The increments are combined into one sample (called an ISM sample) and analyzed to obtain a representative average contaminant concentration for the entire decision unit. ISM obtains data that are more representative of average concentrations than area-wide concentrations derived from discrete or traditional composite samples.

ISM requires selection of a decision unit(s). A decision unit is the area and depth of material to be represented by the sampling process. The sampling objective was to characterize the average concentration of chemicals in the soil surcharge stockpiles. Consequently, each of the two stockpiles represented a decision unit (Figure 2).

The ISM samples were collected using the following protocols.

- Each ISM sample consisted of 50 soil increments collected from each soil surcharge stockpile (i.e., ISM decision unit).
- Sample increments were retrieved using a 1/2-inch-diameter, thin-walled, stainless steel sampling tubular sampler (Photograph 2). The target mass of each increment was approximately 30 grams in order to achieve the overall target sample mass of 1.5 kilograms.
- No indications of chemical impacts (e.g., staining representative of petroleum hydrocarbons) were observed.

The wet season stockpile construction and precipitation at the time of the sampling precluded the ability for access with a tracked push probe rig. Consequently, the soil sample increments were collected consistent with the following rationale:

- Surcharge Area 2 (approximately 50,000 cubic yards)
  - Fifty surface samples were collected with stainless steel hand tools. The sampling rationale is considered representative based on the fact that soil was excavated from the site and placed in a surcharge pile (prior to 2016) which was then excavated, hauled, and placed in the current surcharge pile in 2016. This double-handling of the soil would have allowed for mixing of the material in the current surcharge pile.

- Surcharge Area 3 (approximately 20,000 cubic yards)
  - Thirty surface samples were collected with stainless steel hand tools.
  - Twenty samples were collected from approximately 4 feet below ground surface (bgs) (Figure 3). These locations were chosen using a random number generator. The deeper samples were collected using a combination of a hand auger and jack hammer-style push probe sampler (Photographs 3 and 4). The jack hammer was initially used but retrieval of the macrocore was challenging due to the density of the soil.

LABORATORY SAMPLE PROCESSING AND ANALYTICAL RESULTS

The ISM samples collected from the above activities were submitted to Apex Tigard, Oregon, for sample processing and chemical analysis. The processing included air drying at room temperature, disaggregation, sieving (using a No. 10 sieve with a 2-millimeter sieve size), compositing into a two-dimensional slab cake; and low-temperature milling. The following table presents the sample names as submitted to the laboratory analytical and after processing.

Samples Submitted	Samples Analyzed
SA2-ISM	SA2-ISM-After Processing
SA3-ISM	SA3-ISM-After Processing

ISM triplicate analyses were not planned or completed, but the laboratory duplicate was analyzed using sample SA2-ISM-After Processing. Duplicate results are used to evaluate laboratory precision. The laboratory duplicate relative percent difference (RPD) was not assessed for results less than 5 times the MRL. Minor exceedances of the RPD acceptance criteria (30 percent) were reported for benzo(a)anthracene (32 percent), benzo(k)fluoranthene (37 percent), and indeno(1,2,3-cd)pyrene (32 percent) and consequently no results were qualified. The remaining laboratory duplicate RPDs were within the acceptance limits.

Copies of the laboratory reports, along with the data validation memorandum, are included in Attachment B.

The soil samples were analyzed for the following TRIP-specific compounds:

- Priority pollutant 13 metals by U.S. Environmental Protection Agency (USEPA) Method 6020
- Organochlorine pesticides by USEPA Method 8081
- Organophosphorus pesticides by USEPA Method 8270
- Chlorinated herbicides by USEPA Method 8151

- Polychlorinated biphenyls by USEPA Method 8082
- Polycyclic aromatic hydrocarbons by USEPA Method 8270D (SIM)
- Total cyanide by USEPA Method 9013M/9014
- Fluoride by USEPA Method 9056A

DATA EVALUATION

The analytical data were screened against the following criteria:

- DEQ risk-based concentrations (RBCs) from Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites (DEQ, 2003). Potentially applicable exposure scenarios are occupational direct contact and construction/excavation worker direct contact.
- DEQ Clean Fill Criteria (DEQ, 2014).

Metals also occur naturally in soil; therefore, metals data for soil samples were first compared to typical background concentrations represented by the DEQ Clean Fill Criteria (DEQ, 2014).

The reported concentration for benzo(a)pyrene from the Surcharge Area 2 soil stockpile exceeded the DEQ clean fill criterion (0.0579 milligrams per kilogram [mg/kg] versus 0.015 mg/kg) but is well below the RBC for occupational, construction, and excavation receptors (0.29 mg/kg; 2.4 mg/kg; and 67 mg/kg, respectively). None of the other detected concentrations from the Surcharge Area 2 soil stockpile exceeded the DEQ Clean Fill Criteria.

None of the reported concentrations for the Surcharge Area 3 soil stockpile exceeded the DEQ Clean Fill Criteria (see Table).

SUMMARY AND CONCLUSIONS

The Port evaluated the potential suitability for use of soil in two surcharge stockpiles at the Site as fill for the TRIP property. Representative samples were collected from each soil stockpile using the ISM protocol and submitted for laboratory analysis.

The laboratory analytical results indicate that the detected concentration of benzo(a)pyrene in the sample from the southern soil stockpile (Surcharge Area 2) does not meet the DEQ Clean Fill Criteria. Consequently, transfer of the soil from the southern soil stockpile to the TRIP property would require DEQ approval via a beneficial use determination (BUD).

There were no exceedances of the DEQ Clean Fill Criteria for the sample from the northern soil stockpile (Surcharge Area 3). Consequently, this material is considered clean fill and there are no limitations on the transfer of soil from this stockpile to the TRIP property.

Sincerely,

Maul Foster & Alongi, Inc.

EXPIRES: 12/31/2016
This digital seal certifies the signatory and document content.

Michael J. Pickering, RG
Senior Geologist

Attachments: Limitations
References
Figures
Table
A—Photograph Log
B—Laboratory Analytical Reports and Data Validation Memorandum

LIMITATIONS

The services undertaken in completing this plan were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This plan is solely for the use and information of our client unless otherwise noted. Any reliance on this plan by a third party is at such party's sole risk.

Opinions and recommendations contained in this plan apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, or the use of segregated portions of this plan.

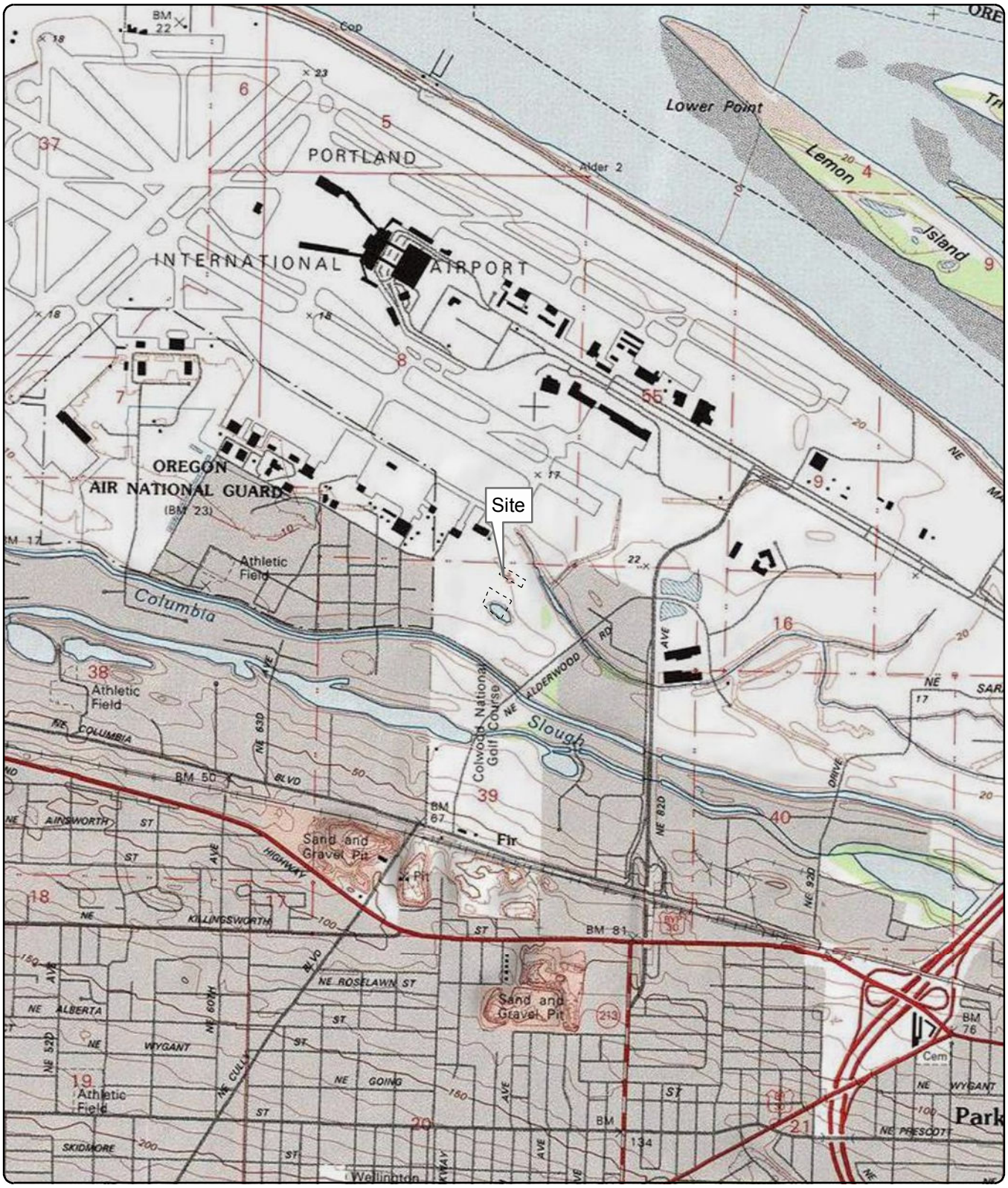
REFERENCES

DEQ. 2003. Risk-based decision making for the remediation of petroleum-contaminated sites. Oregon Department of Environmental Quality. September 22 (RBC spreadsheet updated November 1, 2015).

DEQ. 2014a. Internal management directive (re: clean fill determinations). Prepared by W. Mason. Oregon Department of Environmental Quality Solid Waste Program, Eugene, Oregon. July 23.

MFA. 2016. Soil Surcharge Stockpile Assessment Work Plan, USPS Development, Colwood Industrial Park, 7350 NE Cornfoot Road, Portland, Oregon. October 28.

FIGURES



Source: US Geological Survey (1990) 7.5-minute topographic quadrangle: Mount Tabor
Section 8, Township 1 North, Range 2 East

Figure 1
Site Location

USPS Development
Colwood Industrial Park
7350 NE Cornfoot Road
Portland, Oregon

0 1,000 2,000
Feet

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Project: 0232.17 Produced By: jschane Approved By: mpickering Print Date: 10/27/2016 Path: X:\0232.17 Portland Airport\Fig1_Site Location_Colwood.mxd

Path: X:\0232.17 Portland Airport\Fig2_Exploration Plan_Colwood.mxd

Figure 2
Exploration Plan

USPS Development
Colwood Industrial Park
7350 NE Cornfoot Road
Portland, Oregon

Legend

- Soil Increment Location
- Approximate Stockpile Extent

0 100 200
Feet

Source: Aerial photograph obtained from Esri ArcGIS Online

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Project: 0232.17 Produced By: jschane Approved By: Print Date: 10/27/2016

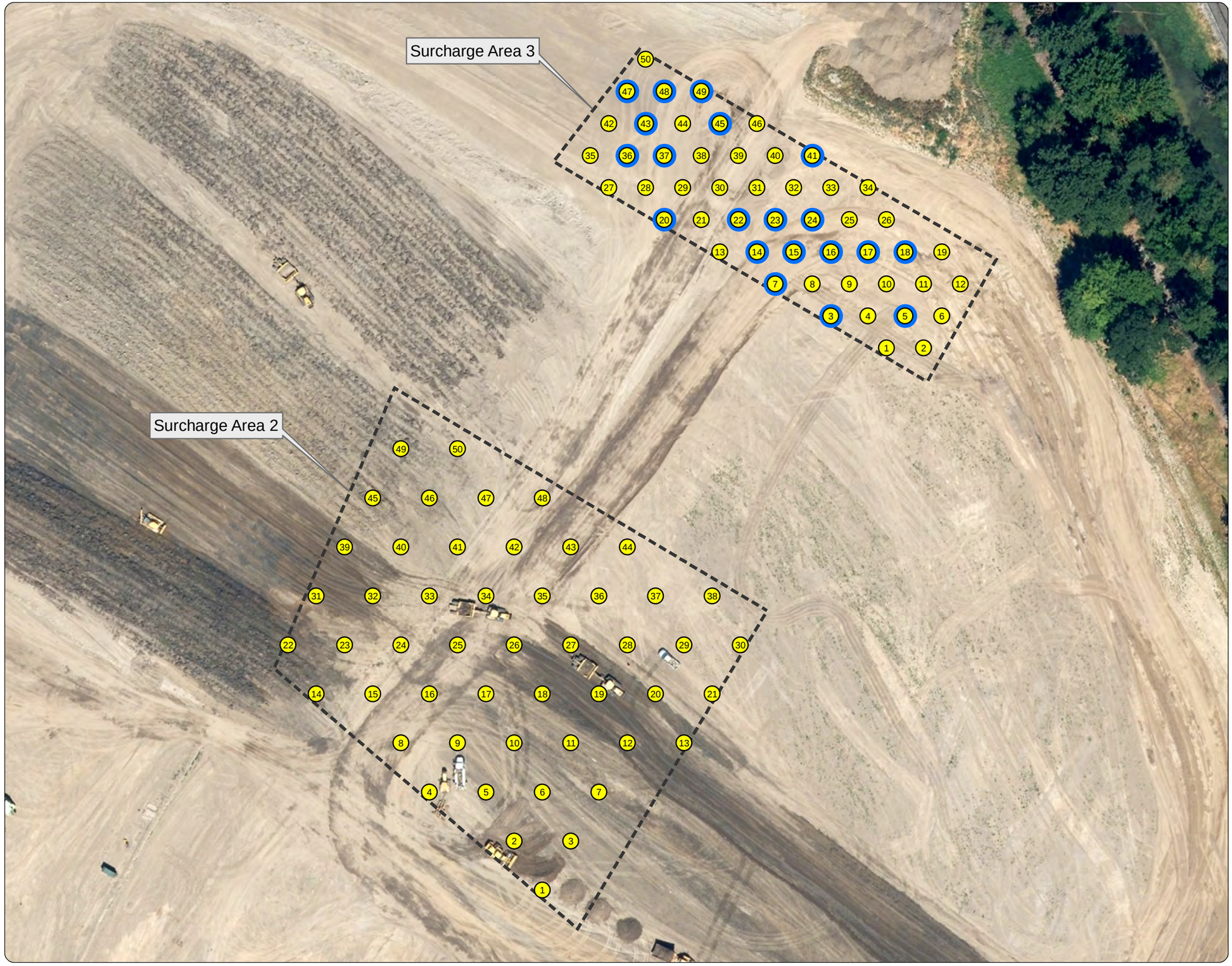

Figure 3
Soil Increment Details

USPS Development
Colwood Industrial Park
7350 NE Cornfoot Road
Portland, Oregon

Legend

- Sample Location
- Subsurface Sample Location
- Stockpile Extent

0 40 80
Feet

Source: Aerial photograph obtained from Esri ArcGIS Online

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TABLE

Table
ISM Soil Analytical Results
USPS Colwood
Port of Portland
Portland, Oregon

Analyte	DEQ Soil RBC Direct Contact, Occupational	DEQ Soil RBC Direct Contact, Construction Worker	DEQ Soil RBC Direct Contact, Excavation Worker	DEQ Upland Clean Fill	Location: SA2 Sample Name: SA2-ISM-AFTER PROCESSING Date Collected: 10/31/2016	Location: SA3 Sample Name: SA3-ISM-AFTER PROCESSING Date Collected: 11/1/2016
Fluoride (mg/kg)						
Fluoride	NV	NV	NV	NV	10.3 U	10.4 U
Cyanide (mg/kg)						
Cyanide, Total	700	210	5900	NV	0.0995 U	0.0987 U
Metals (mg/kg)						
Antimony	NV	NV	NV	0.56	1.1 U	1.07 U
Arsenic	1.9	15	420	8.8	**5.03**	**6.36**
Beryllium	2300	700	19000	21	**0.794**	**0.770**
Cadmium	1100	350	9700	0.63	**0.529**	**0.588**
Chromium	NV[a]	530000[a]	NV[a]	76	**28.9**	**29.8**
Copper	47000	14000	390000	34	**30.1**	**31.9**
Lead	800	800	800	28	**13.1**	**16.1**
Mercury	350	110	2900	0.23	**0.206**	**0.198**
Nickel	22000	7000	190000	47	**21.7**	**22.4**
Selenium	NV	NV	NV	0.71	1.1 U	1.07 U
Silver	5800	1800	49000	4.2	0.221 U	0.214 U
Thallium	NV	NV	NV	5.2	0.221 U	0.214 U
Zinc	NV	NV	NV	180	**81.1**	**104**
PCB Aroclors (mg/kg)						
Aroclor 1016	NV	NV	NV	NV	0.00921 U	0.00973 U
Aroclor 1221	NV	NV	NV	NV	0.00921 U	0.00973 U
Aroclor 1232	NV	NV	NV	NV	0.00921 U	0.00973 U
Aroclor 1242	NV	NV	NV	NV	0.00921 U	0.00973 U
Aroclor 1248	NV	NV	NV	NV	0.00921 U	0.00973 U
Aroclor 1254	NV	NV	NV	NV	0.00921 U	0.00973 U
Aroclor 1260	NV	NV	NV	NV	0.00921 U	0.00973 U
Total PCBs	0.59	4.9	140	0.20	0.00921 U	0.00973 U

Table
ISM Soil Analytical Results
USPS Colwood
Port of Portland
Portland, Oregon

Analyte	DEQ Soil RBC Direct Contact, Occupational	DEQ Soil RBC Direct Contact, Construction Worker	DEQ Soil RBC Direct Contact, Excavation Worker	DEQ Upland Clean Fill	Location: SA2 Sample Name: SA2-ISM-AFTER PROCESSING Date Collected: 10/31/2016	Location: SA3 Sample Name: SA3-ISM-AFTER PROCESSING Date Collected: 11/1/2016
Organochlorine Pesticides (mg/kg)						
4,4'-DDD	12	94	2600	0.021	0.00196 U	0.00198 U
4,4'-DDE	8.2	66	1800	0.021	0.00196 U	0.00198 U
4,4'-DDT	8.5	66	1800	0.021	0.00196 U	0.00198 U
Aldrin	0.13	1.1	30	0.011	0.00196 U	0.00198 U
alpha-BHC	0.36	3	83	0.07	0.00196 U	0.00198 U
alpha-Chlordane	NV	NV	NV	NV	0.00196 U	0.00198 U
beta-BHC	NV	NV	NV	0.27	0.00196 U	0.00198 U
Chlordane (Technical)	7.4	61	1700	1.3	0.0589 U	0.0595 U
delta-BHC	NV	NV	NV	NV	0.00295 U	0.00406 U
Dieldrin	0.14	1.2	33	0.0049	0.00196 U	0.00198 U
Endosulfan I	4900	1600	45000	20	0.00196 U	0.00198 U
Endosulfan II	4900	1600	45000	20	0.00196 U	0.00198 U
Endosulfan sulfate	NV	NV	NV	NV	0.00196 U	0.00198 U
Endrin	250	80	2200	0.04	0.00196 U	0.00198 U
Endrin aldehyde	NV	NV	NV	NV	0.00196 U	0.00198 U
Endrin ketone	NV	NV	NV	NV	0.00196 U	0.00198 U
gamma-Chlordane	NV	NV	NV	NV	0.00196 U	0.00198 U
Heptachlor	0.45	4	110	0.1	0.00196 U	0.00198 U
Heptachlor epoxide	0.24	2	56	0.053	0.00196 U	0.00198 U
Lindane	2.1	17	470	0.38	0.00196 U	0.00198 U
Methoxychlor	NV	NV	NV	310	0.00589 U	0.00595 U
Toxaphene	2.1	17	470	0.44	0.0589 U	0.0595 U

Table
ISM Soil Analytical Results
USPS Colwood
Port of Portland
Portland, Oregon

				Location	SA2	SA3
				Sample Name	SA2-ISM-AFTER PROCESSING	SA3-ISM-AFTER PROCESSING
				Date Collected	10/31/2016	11/1/2016
Analyte	DEQ Soil RBC Direct Contact, Occupational	DEQ Soil RBC Direct Contact, Construction Worker	DEQ Soil RBC Direct Contact, Excavation Worker	DEQ Upland Clean Fill		
Chlorinated Herbicides (mg/kg)						
2,4,5-T	NV	NV	NV	4.362	0.022 U	0.02 U
2,4-D	8200	2700	74000	4.8	0.027 U	0.025 U
2,4-DB	NV	NV	NV	3.072	0.066 U	0.062 U
Dalapon	NV	NV	NV	2.448	0.073 U	0.069 U
Dicamba	NV	NV	NV	5.694	0.035 U	0.033 U
Dichlorprop	NV	NV	NV	NV	0.027 U	0.026 U
Dinoseb	NV	NV	NV	61	0.015 U	0.014 U
MCPA	410	130	3700	0.24	3 U	2.9 U
MCPP	NV	NV	NV	0.2256	2.6 U	2.5 U
Pentachlorophenol	4	34	960	0.14	0.024 U	0.023 U
Picloram	NV	NV	NV	17.46	0.028 U	0.026 U
Silvex	NV	NV	NV	4.776	0.028 U	0.026 U
Semivolatile Organic Compounds (mg/kg)						
1-Methylnaphthalene	NV	NV	NV	0.738	0.00542 U	0.00556 U
2-Methylnaphthalene	NV	NV	NV	310	0.00542 U	0.00556 U
Acenaphthene	70000	21000	590000	29	0.00272 U	0.00278 U
Acenaphthylene	NV	NV	NV	NV	**0.00904**	0.00278 U
Anthracene	350000	110000	NV	29	**0.0082**	0.00278 U
Benzo(a)anthracene	2.9	24	660	0.15	**0.0294**	**0.0052**
Benzo(a)pyrene	0.29	2.4	67	0.015	**0.0579**	**0.0102**
Benzo(b)fluoranthene	2.9	24	670	0.15	**0.0598 J**	**0.0119 J**
Benzo(ghi)perylene	NV	NV	NV	NV	**0.059**	**0.0103**
Benzo(k)fluoranthene	29	240	6700	1.1	**0.018 J**	**0.00485 J**
Chrysene	290	2400	67000	14	**0.0447 J**	**0.00769 J**
Dibenzo(a,h)anthracene	0.29	2.4	67	0.015	**0.00592**	0.00278 U
Dibenzofuran	NV	NV	NV	0.002	0.00272 U	0.00278 U
Fluoranthene	30000	10000	280000	29	**0.0923 J**	**0.0117 J**
Fluorene	47000	14000	390000	29	**0.00495**	0.00278 U

Table
ISM Soil Analytical Results
USPS Colwood
Port of Portland
Portland, Oregon

				Location	SA2	SA3
				Sample Name	SA2-ISM-AFTER PROCESSING	SA3-ISM-AFTER PROCESSING
				Date Collected	10/31/2016	11/1/2016
Analyte	DEQ Soil RBC Direct Contact, Occupational	DEQ Soil RBC Direct Contact, Construction Worker	DEQ Soil RBC Direct Contact, Excavation Worker	DEQ Upland Clean Fill		
Indeno(1,2,3-cd)pyrene	2.9	24	670	0.15	**0.0438**	**0.00792**
Naphthalene	23	580	16000	0.087	**0.0112**	0.00556 U
Phenanthrene	NV	NV	NV	NV	**0.0764 J**	**0.00641 J**
Pyrene	23000	7500	210000	1700	**0.119**	**0.0146**
Organophosphorus Pesticides (mg/kg)						
Coumaphos	NV	NV	NV	NV	0.0499 U	0.0244 U
Demeton-O	NV	NV	NV	2.4	0.0249 U	0.0244 U
Demeton-S	NV	NV	NV	2.4	0.0249 U	0.0244 U
Diazinon	NV	NV	NV	43	0.0249 U	0.0244 U
Dichlorvos	NV	NV	NV	0.0048	0.0249 UJ	0.0244 UJ
Dimethoate	NV	NV	NV	0.0252	0.0249 U	0.0244 U
Disulfoton	NV	NV	NV	0.0972	0.0249 U	0.0244 U
Dursban	NV	NV	NV	61	0.0249 U	0.0244 U
Ethoprop	NV	NV	NV	NV	0.0249 U	0.0244 U
Fensulfothion	NV	NV	NV	NV	0.0249 U	0.0244 U
Fenthion	NV	NV	NV	NV	0.0249 U	0.0244 U
Guthion	NV	NV	NV	0.852	0.0249 U	0.0244 U
Merphos	NV	NV	NV	1.8	0.0249 U	0.0488 U
Methyl parathion	NV	NV	NV	15	0.0249 U	0.0244 U
Mevinphos	NV	NV	NV	NV	0.0249 U	0.0244 U
Monocrotophos	NV	NV	NV	NV	0.0249 UJ	0.0244 UJ
Naled	NV	NV	NV	1.308	0.0249 U	0.0244 U
Parathion	NV	NV	NV	370	0.0249 U	0.0244 U
Phorate	NV	NV	NV	0.327	0.0249 U	0.0244 U
Ronnel	NV	NV	NV	NV	0.0249 U	0.0244 U
Santox	NV	NV	NV	0.61	0.0249 U	0.0244 U
Sulfotepp	NV	NV	NV	0.4446	0.0249 U	0.0244 U
Sulprofos	NV	NV	NV	NV	0.0249 U	0.0244 U
Sumitox	NV	NV	NV	4.086	0.0249 U	0.0244 U

Table
ISM Soil Analytical Results
USPS Colwood
Port of Portland
Portland, Oregon

				Location	SA2	SA3
				Sample Name	SA2-ISM-AFTER PROCESSING	SA3-ISM-AFTER PROCESSING
				Date Collected	10/31/2016	11/1/2016
Analyte	DEQ Soil RBC Direct Contact, Occupational	DEQ Soil RBC Direct Contact, Construction Worker	DEQ Soil RBC Direct Contact, Excavation Worker	DEQ Upland Clean Fill		
Tetrachlorovinphos	NV	NV	NV	1.002	0.0249 U	0.0244 U
Tetraethylpyrophosphate	NV	NV	NV	NV	0.0998 R	0.0975 R
Tokuthion	NV	NV	NV	NV	0.0249 U	0.0244 U
Trichloronate	NV	NV	NV	NV	0.0249 U	0.0244 U

NOTES:

-- = not analyzed

DEQ = Oregon Department of Environmental Quality.

J = Result is an estimated value.

mg/kg = milligrams per kilogram.

NV = no value or value exceeds 1,000,000 mg/kg.

R = the result is rejected.

RBCs = Risk Based Concentrations for Individual Chemicals.

Result values in bold font indicate a detection.

Shaded result values indicate exceedance of Oregon clean fill criteria. DEQ RBC criteria are applied only to results with clean fill exceedances. Non-detect results are not evaluated against clean fill or RBC criteria.

Total PCBs = the sum of PCB Aroclors.

TPH = total petroleum hydrocarbons

U = Result is not detected at or above method detection limit.

UJ = The result is non-detect and an estimated value.

[a]Value is for trivalent chromium.

ATTACHMENT A

PHOTOGRAPH LOG

Photograph 1: Looking west across the Surcharge Area 2 stockpile. Representative pin flags marking increment locations shown in white circles.

Photograph 2: Representative soil collected in tubular sampler.

Photograph 3: Collection of deeper samples on Surcharge Area 2 stockpile using jack hammer-style push probe sampler.

Photograph 4: Collection of deeper samples on Surcharge Area 2 stockpile using hand auger.

ATTACHMENT B

LABORATORY ANALYTICAL REPORTS AND DATA VALIDATION MEMORANDUM

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Thursday, December 1, 2016

Michael Pickering
Maul Foster & Alongi, INC.
2001 NW 19th Ave, STE 200
Portland, OR 97209

RE: POP-Colwood USPS / POP-RSM

Enclosed are the results of analyses for work order A6K0135, which was received by the laboratory on 11/2/2016 at 2:59:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: ldomenighini@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories

Lisa A Domenighini

Lisa Domenighini, Client Services Manager

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Maul Foster & Alongi, INC.	Project: **POP-Colwood USPS**	
2001 NW 19th Ave, STE 200	Project Number: POP-RSM	**Reported:**
Portland, OR 97209	Project Manager: Michael Pickering	12/01/16 13:02

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SA3-ISM-After Processing	A6K0135-02	Soil	11/01/16 12:00	11/02/16 14:59
SA2-ISM-After Processing	A6K0135-04	Soil	10/31/16 13:30	11/02/16 14:59
Grind Blank	A6K0135-05	Glass Beads	11/01/16 00:00	11/02/16 14:59

Apex Laboratories

Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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Apex Labs

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Maul Foster & Alongi, INC.	Project: **POP-Colwood USPS**	
2001 NW 19th Ave, STE 200	Project Number: POP-RSM	**Reported:**
Portland, OR 97209	Project Manager: Michael Pickering	12/01/16 13:02

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
SA3-ISM-After Processing (A6K0135-02)			**Matrix: Soil**		**Batch: 6110519**			**C-07**
Aroclor 1016	ND	---	9.73	ug/kg dry	1	11/14/16 14:42	EPA 8082A	
Aroclor 1221	ND	---	9.73	"	"	"	"	
Aroclor 1232	ND	---	9.73	"	"	"	"	
Aroclor 1242	ND	---	9.73	"	"	"	"	
Aroclor 1248	ND	---	9.73	"	"	"	"	
Aroclor 1254	ND	---	9.73	"	"	"	"	
Aroclor 1260	ND	---	9.73	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 96 %*	*Limits: 72-126 %*	"	"	"	
SA2-ISM-After Processing (A6K0135-04)			**Matrix: Soil**		**Batch: 6110519**			**C-07**
Aroclor 1016	ND	---	9.21	ug/kg dry	1	11/14/16 16:32	EPA 8082A	
Aroclor 1221	ND	---	9.21	"	"	"	"	
Aroclor 1232	ND	---	9.21	"	"	"	"	
Aroclor 1242	ND	---	9.21	"	"	"	"	
Aroclor 1248	ND	---	9.21	"	"	"	"	
Aroclor 1254	ND	---	9.21	"	"	"	"	
Aroclor 1260	ND	---	9.21	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 108 %*	*Limits: 72-126 %*	"	"	"	

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Lisa Domenighini, Client Services Manager

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Maul Foster & Alongi, INC.	Project: **POP-Colwood USPS**	
2001 NW 19th Ave, STE 200	Project Number: POP-RSM	**Reported:**
Portland, OR 97209	Project Manager: Michael Pickering	12/01/16 13:02

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
SA3-ISM-After Processing (A6K0135-02RE1)			**Matrix: Soil**		**Batch: 6110544**			**C-05**
Aldrin	ND	---	1.98	ug/kg dry	1	11/15/16 15:31	EPA 8081B	Q-42
alpha-BHC	ND	---	1.98	"	"	"	"	Q-42
beta-BHC	ND	---	1.98	"	"	"	"	Q-42
delta-BHC	ND	---	4.06	"	"	"	"	Q-42, R-02
gamma-BHC (Lindane)	ND	---	1.98	"	"	"	"	Q-42
cis-Chlordane	ND	---	1.98	"	"	"	"	Q-42
trans-Chlordane	ND	---	1.98	"	"	"	"	
4,4'-DDD	ND	---	1.98	"	"	"	"	
4,4'-DDE	ND	---	1.98	"	"	"	"	
4,4'-DDT	ND	---	1.98	"	"	"	"	
Dieldrin	ND	---	1.98	"	"	"	"	
Endosulfan I	ND	---	1.98	"	"	"	"	
Endosulfan II	ND	---	1.98	"	"	"	"	
Endosulfan sulfate	ND	---	1.98	"	"	"	"	
Endrin	ND	---	1.98	"	"	"	"	
Endrin Aldehyde	ND	---	1.98	"	"	"	"	
Endrin ketone	ND	---	1.98	"	"	"	"	
Heptachlor	ND	---	1.98	"	"	"	"	Q-42
Heptachlor epoxide	ND	---	1.98	"	"	"	"	Q-42
Methoxychlor	ND	---	5.95	"	"	"	"	
Chlordane (Technical)	ND	---	59.5	"	"	"	"	
Toxaphene (Total)	ND	---	59.5	"	"	"	"	
Surrogate: 2,4,5,6-TCMX (Surr)			*Recovery: 48 %*	*Limits: 42-129 %*	"	"	"	
Decachlorobiphenyl (Surr)			*57 %*	*Limits: 65-151 %*	"	"	"	*S-03*

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Lisa Domenighini, Client Services Manager

Apex Labs

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Maul Foster & Alongi, INC.	Project: **POP-Colwood USPS**	
2001 NW 19th Ave, STE 200	Project Number: POP-RSM	**Reported:**
Portland, OR 97209	Project Manager: Michael Pickering	12/01/16 13:02

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
SA2-ISM-After Processing (A6K0135-04RE1)			**Matrix: Soil**		**Batch: 6110544**			**C-05**
Aldrin	ND	---	1.96	ug/kg dry	1	11/15/16 16:58	EPA 8081B	
alpha-BHC	ND	---	1.96	"	"	"	"	
beta-BHC	ND	---	1.96	"	"	"	"	
delta-BHC	ND	---	2.95	"	"	"	"	R-02
gamma-BHC (Lindane)	ND	---	1.96	"	"	"	"	
cis-Chlordane	ND	---	1.96	"	"	"	"	
trans-Chlordane	ND	---	1.96	"	"	"	"	
4,4'-DDD	ND	---	1.96	"	"	"	"	
4,4'-DDE	ND	---	1.96	"	"	"	"	
4,4'-DDT	ND	---	1.96	"	"	"	"	
Dieldrin	ND	---	1.96	"	"	"	"	
Endosulfan I	ND	---	1.96	"	"	"	"	
Endosulfan II	ND	---	1.96	"	"	"	"	
Endosulfan sulfate	ND	---	1.96	"	"	"	"	
Endrin	ND	---	1.96	"	"	"	"	
Endrin Aldehyde	ND	---	1.96	"	"	"	"	
Endrin ketone	ND	---	1.96	"	"	"	"	
Heptachlor	ND	---	1.96	"	"	"	"	
Heptachlor epoxide	ND	---	1.96	"	"	"	"	
Methoxychlor	ND	---	5.89	"	"	"	"	
Chlordane (Technical)	ND	---	58.9	"	"	"	"	
Toxaphene (Total)	ND	---	58.9	"	"	"	"	
Surrogate: 2,4,5,6-TCMX (Surr)			*Recovery: 40 %*	*Limits: 42-129 %*	"	"	"	*S-03*
Decachlorobiphenyl (Surr)			*50 %*	*Limits: 65-151 %*	"	"	"	*S-03*

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Maul Foster & Alongi, INC.	Project: **POP-Colwood USPS**	
2001 NW 19th Ave, STE 200	Project Number: POP-RSM	**Reported:**
Portland, OR 97209	Project Manager: Michael Pickering	12/01/16 13:02

ANALYTICAL SAMPLE RESULTS

Anions by EPA 300.0/9056A (Ion Chromatography)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
SA3-ISM-After Processing (A6K0135-02)			**Matrix: Soil**					
Batch: 6110430								
Fluoride	ND	---	10.4	mg/kg dry	1	11/10/16 10:56	EPA 9056A	
SA2-ISM-After Processing (A6K0135-04)			**Matrix: Soil**					
Batch: 6110430								
Fluoride	ND	---	10.3	mg/kg dry	1	11/10/16 12:01	EPA 9056A	

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Maul Foster & Alongi, INC.	Project: **POP-Colwood USPS**	
2001 NW 19th Ave, STE 200	Project Number: POP-RSM	**Reported:**
Portland, OR 97209	Project Manager: Michael Pickering	12/01/16 13:02

ANALYTICAL SAMPLE RESULTS

Cyanide - Total (Non-aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
SA3-ISM-After Processing (A6K0135-02)			**Matrix: Soil**		**Batch: 6110433**			
Cyanide, Total	ND	---	0.0987	mg/kg	1	11/10/16 14:25	EPA 9013M/9014	
SA2-ISM-After Processing (A6K0135-04)			**Matrix: Soil**		**Batch: 6110433**			
Cyanide, Total	ND	---	0.0995	mg/kg	1	11/10/16 12:39	EPA 9013M/9014	

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Maul Foster & Alongi, INC.	Project: **POP-Colwood USPS**	
2001 NW 19th Ave, STE 200	Project Number: POP-RSM	**Reported:**
Portland, OR 97209	Project Manager: Michael Pickering	12/01/16 13:02

ANALYTICAL SAMPLE RESULTS

Organophosphorous Pesticides (OPPs) by EPA 8270D (GC/MS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
SA3-ISM-After Processing (A6K0135-02)			**Matrix: Soil**		**Batch: 6110535**			
Azinphos methyl (Guthion)	ND	24.4	48.8	ug/kg dry	1	11/14/16 16:16	EPA 8270D	
Chlorpyrifos	ND	24.4	48.8	"	"	"	"	
Coumaphos	ND	24.4	48.8	"	"	"	"	
Demeton O	ND	24.4	48.8	"	"	"	"	
Demeton S	ND	24.4	48.8	"	"	"	"	
Diazinon	ND	24.4	48.8	"	"	"	"	
Dichlorvos	ND	24.4	48.8	"	"	"	"	Q-42
Dimethoate	ND	24.4	48.8	"	"	"	"	
Disulfoton	ND	24.4	48.8	"	"	"	"	
EPN	ND	24.4	48.8	"	"	"	"	
Ethoprophos (Prophos)	ND	24.4	48.8	"	"	"	"	
Fensulfothion	ND	24.4	48.8	"	"	"	"	
Fenthion	ND	24.4	48.8	"	"	"	"	
Malathion	ND	24.4	48.8	"	"	"	"	
Merphos	ND	48.8	48.8	"	"	"	"	
Methyl parathion	ND	24.4	48.8	"	"	"	"	
Mevinphos (Phosdrin)	ND	24.4	48.8	"	"	"	"	
Monocrotophos	ND	24.4	48.8	"	"	"	"	Q-42
Naled (Dibrom)	ND	24.4	48.8	"	"	"	"	
Parathion	ND	24.4	48.8	"	"	"	"	
Phorate	ND	24.4	48.8	"	"	"	"	
Ronnel (Fenchlorphos)	ND	24.4	48.8	"	"	"	"	
Sulfotep	ND	24.4	48.8	"	"	"	"	
Sulprofos (Bolstar)	ND	24.4	48.8	"	"	"	"	
TEPP	ND	97.5	195	"	"	"	"	Q-42
Tetrachlorvinphos (Rabon)	ND	24.4	48.8	"	"	"	"	
Tokuthion (Prothiofos)	ND	24.4	48.8	"	"	"	"	
Trichloronate	ND	24.4	48.8	"	"	"	"	
Surrogate: Tributyl phosphate (Surr)			*Recovery: 35 %*	*Limits: 55-135 %*	"	"	"	*S-04*
Triphenyl phosphate (Surr)			*53 %*	*Limits: 65-130 %*	"	"	"	*S-04*

Apex Laboratories

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503-718-0333 Fax

Maul Foster & Alongi, INC.	Project: **POP-Colwood USPS**	
2001 NW 19th Ave, STE 200	Project Number: POP-RSM	**Reported:**
Portland, OR 97209	Project Manager: Michael Pickering	12/01/16 13:02

ANALYTICAL SAMPLE RESULTS

Organophosphorous Pesticides (OPPs) by EPA 8270D (GC/MS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
SA2-ISM-After Processing (A6K0135-04RE1)			**Matrix: Soil**		**Batch: 6110535**			
Azinphos methyl (Guthion)	ND	24.9	49.9	ug/kg dry	1	11/14/16 18:39	EPA 8270D	
Chlorpyrifos	ND	24.9	49.9	"	"	"	"	
Coumaphos	ND	49.9	49.9	"	"	"	"	
Demeton O	ND	24.9	49.9	"	"	"	"	
Demeton S	ND	24.9	49.9	"	"	"	"	
Diazinon	ND	24.9	49.9	"	"	"	"	
Dichlorvos	ND	24.9	49.9	"	"	"	"	
Dimethoate	ND	24.9	49.9	"	"	"	"	
Disulfoton	ND	24.9	49.9	"	"	"	"	
EPN	ND	24.9	49.9	"	"	"	"	
Ethoprophos (Prophos)	ND	24.9	49.9	"	"	"	"	
Fensulfothion	ND	24.9	49.9	"	"	"	"	
Fenthion	ND	24.9	49.9	"	"	"	"	
Malathion	ND	24.9	49.9	"	"	"	"	
Merphos	ND	24.9	49.9	"	"	"	"	
Methyl parathion	ND	24.9	49.9	"	"	"	"	
Mevinphos (Phosdrin)	ND	24.9	49.9	"	"	"	"	
Monocrotophos	ND	24.9	49.9	"	"	"	"	
Naled (Dibrom)	ND	24.9	49.9	"	"	"	"	
Parathion	ND	24.9	49.9	"	"	"	"	
Phorate	ND	24.9	49.9	"	"	"	"	
Ronnel (Fenchlorphos)	ND	24.9	49.9	"	"	"	"	
Sulfotep	ND	24.9	49.9	"	"	"	"	
Sulprofos (Bolstar)	ND	24.9	49.9	"	"	"	"	
TEPP	ND	99.8	200	"	"	"	"	
Tetrachlorvinphos (Rabon)	ND	24.9	49.9	"	"	"	"	
Tokuthion (Prothiofos)	ND	24.9	49.9	"	"	"	"	
Trichloronate	ND	24.9	49.9	"	"	"	"	
Surrogate: Tributyl phosphate (Surr)			*Recovery: 35 %*	*Limits: 55-135 %*	"	"	"	*S-03*
Triphenyl phosphate (Surr)			*54 %*	*Limits: 65-130 %*	"	"	"	*S-03*

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Maul Foster & Alongi, INC.	Project: **POP-Colwood USPS**	
2001 NW 19th Ave, STE 200	Project Number: POP-RSM	**Reported:**
Portland, OR 97209	Project Manager: Michael Pickering	12/01/16 13:02

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
SA3-ISM-After Processing (A6K0135-02)			**Matrix: Soil**		**Batch: 6110536**			
Acenaphthene	ND	---	2.78	ug/kg dry	1	11/14/16 20:38	EPA 8270D	
Acenaphthylene	ND	---	2.78	"	"	"	"	
Anthracene	ND	---	2.78	"	"	"	"	
Benz(a)anthracene	**5.20**	---	2.78	"	"	"	"	Q-42
Benzo(a)pyrene	**10.2**	---	4.17	"	"	"	"	
Benzo(b)fluoranthene	**11.9**	---	4.17	"	"	"	"	M-02
Benzo(k)fluoranthene	**4.85**	---	4.17	"	"	"	"	M-02
Benzo(g,h,i)perylene	**10.3**	---	2.78	"	"	"	"	
Chrysene	**7.69**	---	2.78	"	"	"	"	Q-42
Dibenz(a,h)anthracene	ND	---	2.78	"	"	"	"	
Fluoranthene	**11.7**	---	2.78	"	"	"	"	Q-42
Fluorene	ND	---	2.78	"	"	"	"	
Indeno(1,2,3-cd)pyrene	**7.92**	---	2.78	"	"	"	"	
1-Methylnaphthalene	ND	---	5.56	"	"	"	"	
2-Methylnaphthalene	ND	---	5.56	"	"	"	"	
Naphthalene	ND	---	5.56	"	"	"	"	
Phenanthrene	**6.41**	---	2.78	"	"	"	"	Q-42
Pyrene	**14.6**	---	2.78	"	"	"	"	
Dibenzofuran	ND	---	2.78	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 47 %*	*Limits: 37-122 %*	"	"	"	
2-Fluorobiphenyl (Surr)			*47 %*	*Limits: 44-115 %*	"	"	"	
Phenol-d6 (Surr)			*41 %*	*Limits: 33-122 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*55 %*	*Limits: 54-127 %*	"	"	"	
2-Fluorophenol (Surr)			*40 %*	*Limits: 35-115 %*	"	"	"	
2,4,6-Tribromophenol (Surr)			*33 %*	*Limits: 39-132 %*	"	"	"	*S-04*

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Maul Foster & Alongi, INC.	Project: **POP-Colwood USPS**	
2001 NW 19th Ave, STE 200	Project Number: POP-RSM	**Reported:**
Portland, OR 97209	Project Manager: Michael Pickering	12/01/16 13:02

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
SA2-ISM-After Processing (A6K0135-04)			**Matrix: Soil**		**Batch: 6110536**			
Acenaphthene	ND	---	2.72	ug/kg dry	1	11/14/16 22:28	EPA 8270D	
Acenaphthylene	**9.04**	---	2.72	"	"	"	"	
Anthracene	**8.20**	---	2.72	"	"	"	"	
Benz(a)anthracene	**29.4**	---	2.72	"	"	"	"	Q-42
Benzo(a)pyrene	**57.9**	---	4.07	"	"	"	"	
Benzo(b)fluoranthene	**59.8**	---	4.07	"	"	"	"	M-02
Benzo(k)fluoranthene	**18.0**	---	4.07	"	"	"	"	M-02, Q-42
Benzo(g,h,i)perylene	**59.0**	---	2.72	"	"	"	"	
Chrysene	**44.7**	---	2.72	"	"	"	"	
Dibenz(a,h)anthracene	**5.92**	---	2.72	"	"	"	"	
Fluoranthene	**92.3**	---	2.72	"	"	"	"	
Fluorene	**4.95**	---	2.72	"	"	"	"	
Indeno(1,2,3-cd)pyrene	**43.8**	---	2.72	"	"	"	"	Q-42
1-Methylnaphthalene	ND	---	5.42	"	"	"	"	
2-Methylnaphthalene	ND	---	5.42	"	"	"	"	
Naphthalene	**11.2**	---	5.42	"	"	"	"	B-02
Phenanthrene	**76.4**	---	2.72	"	"	"	"	
Pyrene	**119**	---	2.72	"	"	"	"	
Dibenzofuran	ND	---	2.72	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 49 %*	*Limits: 37-122 %*	"	"	"	
2-Fluorobiphenyl (Surr)			*44 %*	*Limits: 44-115 %*	"	"	"	
Phenol-d6 (Surr)			*45 %*	*Limits: 33-122 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*55 %*	*Limits: 54-127 %*	"	"	"	
2-Fluorophenol (Surr)			*44 %*	*Limits: 35-115 %*	"	"	"	
2,4,6-Tribromophenol (Surr)			*52 %*	*Limits: 39-132 %*	"	"	"	

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Maul Foster & Alongi, INC.	Project: **POP-Colwood USPS**	
2001 NW 19th Ave, STE 200	Project Number: POP-RSM	**Reported:**
Portland, OR 97209	Project Manager: Michael Pickering	12/01/16 13:02

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
SA3-ISM-After Processing (A6K0135-02)			**Matrix: Soil**					
Batch: 6110675								
Antimony	ND	---	1.07	mg/kg dry	10	11/17/16 19:57	EPA 6020A	
Arsenic	**6.36**	---	1.07	"	"	"	"	
Beryllium	**0.770**	---	0.214	"	"	"	"	
Cadmium	**0.588**	---	0.214	"	"	"	"	
Chromium	**29.8**	---	1.07	"	"	"	"	
Copper	**31.9**	---	1.07	"	"	"	"	
Lead	**16.1**	---	0.214	"	"	"	"	
Mercury	**0.198**	---	0.0856	"	"	"	"	
Nickel	**22.4**	---	1.07	"	"	"	"	
Selenium	ND	---	1.07	"	"	11/22/16 14:07	"	
Silver	ND	---	0.214	"	"	11/17/16 19:57	"	
Thallium	ND	---	0.214	"	"	11/18/16 14:58	"	
Zinc	**104**	---	4.28	"	"	11/17/16 19:57	"	
SA2-ISM-After Processing (A6K0135-04)			**Matrix: Soil**					
Batch: 6110675								
Antimony	ND	---	1.10	mg/kg dry	10	11/17/16 20:07	EPA 6020A	
Arsenic	**5.03**	---	1.10	"	"	"	"	
Beryllium	**0.794**	---	0.221	"	"	"	"	
Cadmium	**0.529**	---	0.221	"	"	"	"	
Chromium	**28.9**	---	1.10	"	"	"	"	
Copper	**30.1**	---	1.10	"	"	"	"	
Lead	**13.1**	---	0.221	"	"	"	"	
Mercury	**0.206**	---	0.0882	"	"	"	"	
Nickel	**21.7**	---	1.10	"	"	"	"	
Silver	ND	---	0.221	"	"	"	"	
Zinc	**81.1**	---	4.41	"	"	"	"	
SA2-ISM-After Processing (A6K0135-04RE1)			**Matrix: Soil**					
Batch: 6110675								
Selenium	ND	---	1.10	mg/kg dry	10	11/22/16 14:11	EPA 6020A	
Thallium	ND	---	0.221	"	"	11/18/16 15:01	"	
Grind Blank (A6K0135-05)			**Matrix: Glass Beads**					
Batch: 6110640								
Antimony	ND	---	1.06	mg/kg	10	11/17/16 15:34	EPA 6020A	
Arsenic	ND	---	1.06	"	"	"	"	

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2001 NW 19th Ave, STE 200	Project Number: POP-RSM	**Reported:**
Portland, OR 97209	Project Manager: Michael Pickering	12/01/16 13:02

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
Grind Blank (A6K0135-05)			**Matrix: Glass Beads**					
Beryllium	ND	---	0.212	mg/kg	10	"	EPA 6020A	
Cadmium	ND	---	0.212	"	"	"	"	
Chromium	ND	---	1.06	"	"	"	"	
Copper	ND	---	1.06	"	"	"	"	
Lead	ND	---	0.212	"	"	"	"	
Mercury	ND	---	0.287	"	"	"	"	R-01
Nickel	ND	---	1.06	"	"	"	"	
Selenium	ND	---	1.06	"	"	"	"	
Silver	ND	---	0.212	"	"	"	"	
Thallium	ND	---	0.212	"	"	"	"	
Zinc	ND	---	4.25	"	"	"	"	

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2001 NW 19th Ave, STE 200	Project Number: POP-RSM	**Reported:**
Portland, OR 97209	Project Manager: Michael Pickering	12/01/16 13:02

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
SA3-ISM-After Processing (A6K0135-02)			**Matrix: Soil**		**Batch: 6110441**			
% Solids	**95.6**	---	1.00	% by Weight	1	11/11/16 08:59	EPA 8000C	
SA2-ISM-After Processing (A6K0135-04)			**Matrix: Soil**		**Batch: 6110441**			
% Solids	**96.3**	---	1.00	% by Weight	1	11/11/16 08:59	EPA 8000C	

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2001 NW 19th Ave, STE 200	Project Number: POP-RSM	**Reported:**
Portland, OR 97209	Project Manager: Michael Pickering	12/01/16 13:02

Weck Laboratories, Inc.

ANALYTICAL SAMPLE RESULTS (Subcontracted)

Chlorinated Herbicides

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
SA3-ISM-After Processing (A6K0135-02)			**Matrix: Soil**		**Batch: W6K0700**			
Batch: W6K0700								
2,4-D	ND	0.025	0.37	mg/kg dry wt dry	1	11/28/16 20:54	EPA 8151A	M-02a
2,4-DB	ND	0.062	0.37	"	"	"	"	M-02a
2,4,5-T	ND	0.020	0.37	"	"	"	"	M-02a
2,4,5-TP (Silvex)	ND	0.026	0.37	"	"	"	"	M-02a
Dalapon	ND	0.069	0.37	"	"	"	"	M-02a
Dicamba	ND	0.033	0.37	"	"	"	"	M-02a
Dichloroprop	ND	0.026	0.37	"	"	"	"	M-02a
Dinoseb	ND	0.014	0.55	"	"	"	"	M-02a
MCPA	ND	2.9	55	"	"	"	"	M-02a
MCPP	ND	2.5	55	"	"	"	"	M-02a
Pentachlorophenol	ND	0.023	0.37	"	"	"	"	M-02a
Picloram	ND	0.026	0.37	"	"	"	"	M-02a
Batch: W6K0700								
Surrogate: 2,4-DCAA			*Recovery: 89 %*	*Limits: 13-119 %*	"	"	"	M-02a
SA2-ISM-After Processing (A6K0135-04)			**Matrix: Soil**		**Batch: W6K0700**			
Batch: W6K0700								
2,4-D	ND	0.027	0.39	mg/kg dry wt dry	1	11/28/16 21:30	EPA 8151A	M-02a
2,4-DB	ND	0.066	0.39	"	"	"	"	M-02a
2,4,5-T	ND	0.022	0.39	"	"	"	"	M-02a
2,4,5-TP (Silvex)	ND	0.028	0.39	"	"	"	"	M-02a
Dalapon	ND	0.073	0.39	"	"	"	"	M-02a
Dicamba	ND	0.035	0.39	"	"	"	"	M-02a
Dichloroprop	ND	0.027	0.39	"	"	"	"	M-02a
Dinoseb	ND	0.015	0.58	"	"	"	"	M-02a
MCPA	ND	3.0	58	"	"	"	"	M-02a
MCPP	ND	2.6	58	"	"	"	"	M-02a
Pentachlorophenol	ND	0.024	0.39	"	"	"	"	M-02a
Picloram	ND	0.028	0.39	"	"	"	"	M-02a
Batch: W6K0700								
Surrogate: 2,4-DCAA			*Recovery: 90 %*	*Limits: 13-119 %*	"	"	"	M-02a

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Portland, OR 97209	Project Manager: Michael Pickering	12/01/16 13:02

Weck Laboratories, Inc.

ANALYTICAL SAMPLE RESULTS (Subcontracted)

Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
SA3-ISM-After Processing (A6K0135-02)			**Matrix: Soil**		**Batch: W6K0909**			
Batch: W6K0909								
% Solids	**95.9**	---	0.100	% by Weight	1	11/17/16 17:50	EPA 160.3M	
SA2-ISM-After Processing (A6K0135-04)			**Matrix: Soil**		**Batch: W6K0909**			
Batch: W6K0909								
% Solids	**96.1**	---	0.100	% by Weight	1	11/17/16 17:50	EPA 160.3M	

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2001 NW 19th Ave, STE 200	Project Number: POP-RSM	**Reported:**
Portland, OR 97209	Project Manager: Michael Pickering	12/01/16 13:02

QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110519 - EPA 3546							**Soil**					
Blank (6110519-BLK1)					Prepared: 11/14/16 07:20		Analyzed: 11/14/16 14:05					**C-07**
EPA 8082A												
Aroclor 1016	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1221	ND	---	8.33	"	"	---	---	---	---	---	---	
Aroclor 1232	ND	---	8.33	"	"	---	---	---	---	---	---	
Aroclor 1242	ND	---	8.33	"	"	---	---	---	---	---	---	
Aroclor 1248	ND	---	8.33	"	"	---	---	---	---	---	---	
Aroclor 1254	ND	---	8.33	"	"	---	---	---	---	---	---	
Aroclor 1260	ND	---	8.33	"	"	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)		*Recovery: 100 %*		*Limits: 72-126 %*			*Dilution: 1x*					
LCS (6110519-BS1)					Prepared: 11/14/16 07:20		Analyzed: 11/14/16 14:23					**C-07**
EPA 8082A												
Aroclor 1016	194	---	10.0	ug/kg wet	1	250	---	78	47-134%	---	---	
Aroclor 1260	220	---	10.0	"	"	"	---	88	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)		*Recovery: 103 %*		*Limits: 72-126 %*			*Dilution: 1x*					
Duplicate (6110519-DUP1)					Prepared: 11/14/16 07:20		Analyzed: 11/14/16 17:09					**C-07**
QC Source Sample: SA2-ISM-After Processing (A6K0135-04)												
EPA 8082A												
Aroclor 1016	ND	---	9.07	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1221	ND	---	9.07	"	"	---	ND	---	---	---	30%	
Aroclor 1232	ND	---	9.07	"	"	---	ND	---	---	---	30%	
Aroclor 1242	ND	---	9.07	"	"	---	ND	---	---	---	30%	
Aroclor 1248	ND	---	9.07	"	"	---	ND	---	---	---	30%	
Aroclor 1254	ND	---	9.07	"	"	---	ND	---	---	---	30%	
Aroclor 1260	ND	---	9.07	"	"	---	ND	---	---	---	30%	
Surr: Decachlorobiphenyl (Surr)		*Recovery: 112 %*		*Limits: 72-126 %*			*Dilution: 1x*					
Matrix Spike (6110519-MS1)					Prepared: 11/14/16 07:20		Analyzed: 11/14/16 15:19					**C-07**
QC Source Sample: SA3-ISM-After Processing (A6K0135-02)												
EPA 8082A												
Aroclor 1016	183	---	9.69	ug/kg dry	1	242	ND	76	47-134%	---	---	
Aroclor 1260	207	---	9.69	"	"	"	ND	86	53-140%	---	---	

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2001 NW 19th Ave, STE 200	Project Number: POP-RSM	**Reported:**
Portland, OR 97209	Project Manager: Michael Pickering	12/01/16 13:02

QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110519 - EPA 3546									**Soil**			
Matrix Spike (6110519-MS1)					Prepared: 11/14/16 07:20		Analyzed: 11/14/16 15:19					**C-07**
QC Source Sample: SA3-ISM-After Processing (A6K0135-02)												
Surr: Decachlorobiphenyl (Surr)			*Recovery: 105 %*	*Limits: 72-126 %*			*Dilution: 1x*					
Matrix Spike Dup (6110519-MSD1)					Prepared: 11/14/16 07:20		Analyzed: 11/14/16 15:55					**C-07**
QC Source Sample: SA3-ISM-After Processing (A6K0135-02)												
EPA 8082A												
Aroclor 1016	181	---	9.66	ug/kg dry	1	242	ND	75	47-134%	1	30%	
Aroclor 1260	205	---	9.66	"	"	"	ND	85	53-140%	1	30%	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 102 %*	*Limits: 72-126 %*			*Dilution: 1x*					

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2001 NW 19th Ave, STE 200	Project Number: POP-RSM	**Reported:**
Portland, OR 97209	Project Manager: Michael Pickering	12/01/16 13:02

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110544 - EPA 3546/3640A (GPC)							**Soil**					
Blank (6110544-BLK1)					Prepared: 11/11/16 11:25 Analyzed: 11/15/16 12:37							**C-05**
EPA 8081B												
Aldrin	ND	---	1.25	ug/kg wet	1	---	---	---	---	---	---	
alpha-BHC	ND	---	1.25	"	"	---	---	---	---	---	---	
beta-BHC	ND	---	1.25	"	"	---	---	---	---	---	---	
delta-BHC	ND	---	1.25	"	"	---	---	---	---	---	---	
gamma-BHC (Lindane)	ND	---	1.25	"	"	---	---	---	---	---	---	
cis-Chlordane	ND	---	1.25	"	"	---	---	---	---	---	---	
trans-Chlordane	ND	---	1.25	"	"	---	---	---	---	---	---	
4,4'-DDD	ND	---	1.25	"	"	---	---	---	---	---	---	
4,4'-DDE	ND	---	1.25	"	"	---	---	---	---	---	---	
4,4'-DDT	ND	---	1.25	"	"	---	---	---	---	---	---	
Dieldrin	ND	---	1.25	"	"	---	---	---	---	---	---	
Endosulfan I	ND	---	1.25	"	"	---	---	---	---	---	---	
Endosulfan II	ND	---	1.25	"	"	---	---	---	---	---	---	
Endosulfan sulfate	ND	---	1.25	"	"	---	---	---	---	---	---	
Endrin	ND	---	1.25	"	"	---	---	---	---	---	---	
Endrin Aldehyde	ND	---	1.25	"	"	---	---	---	---	---	---	
Endrin ketone	ND	---	1.25	"	"	---	---	---	---	---	---	
Heptachlor	ND	---	1.25	"	"	---	---	---	---	---	---	
Heptachlor epoxide	ND	---	1.25	"	"	---	---	---	---	---	---	
Methoxychlor	ND	---	3.75	"	"	---	---	---	---	---	---	
Chlordane (Technical)	ND	---	37.5	"	"	---	---	---	---	---	---	
Toxaphene (Total)	ND	---	37.5	"	"	---	---	---	---	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 71 %*	*Limits: 42-129 %*				*Dilution: 1x*				
Decachlorobiphenyl (Surr)			*81 %*	*65-151 %*				*"*				
LCS (6110544-BS1)					Prepared: 11/11/16 11:25 Analyzed: 11/15/16 12:54							**C-05**
EPA 8081B												
Aldrin	45.1	---	2.00	ug/kg wet	1	50.0	---	90	45-136%	---	---	
alpha-BHC	48.6	---	2.00	"	"	"	---	97	45-137%	---	---	
beta-BHC	43.0	---	2.00	"	"	"	---	86	50-136%	---	---	
delta-BHC	46.0	---	2.00	"	"	"	---	92	47-139%	---	---	

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Maul Foster & Alongi, INC.	Project: **POP-Colwood USPS**	
2001 NW 19th Ave, STE 200	Project Number: POP-RSM	**Reported:**
Portland, OR 97209	Project Manager: Michael Pickering	12/01/16 13:02

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110544 - EPA 3546/3640A (GPC)							**Soil**					
LCS (6110544-BS1)					Prepared: 11/11/16 11:25		Analyzed: 11/15/16 12:54					**C-05**
gamma-BHC (Lindane)	47.7	---	2.00	"	"	"	---	95	49-135%	---	---	
cis-Chlordane	46.7	---	2.00	"	"	"	---	93	54-133%	---	---	
trans-Chlordane	48.1	---	2.00	"	"	"	---	96	53-135%	---	---	
4,4'-DDD	46.1	---	2.00	"	"	"	---	92	56-139%	---	---	
4,4'-DDE	47.1	---	2.00	"	"	"	---	94	56-134%	---	---	
4,4'-DDT	60.0	---	2.00	"	"	"	---	120	50-141%	---	---	
Dieldrin	47.5	---	2.00	"	"	"	---	95	56-136%	---	---	
Endosulfan I	47.6	---	2.00	"	"	"	---	95	52-132%	---	---	
Endosulfan II	48.4	---	2.00	"	"	"	---	97	53-134%	---	---	
Endosulfan sulfate	48.8	---	2.00	"	"	"	---	98	55-136%	---	---	
Endrin	62.3	---	2.00	"	"	"	---	125	56-140%	---	---	Q-41
Endrin Aldehyde	44.3	---	2.00	"	"	"	---	89	35-137%	---	---	
Endrin ketone	51.4	---	2.00	"	"	"	---	103	55-136%	---	---	Q-41
Heptachlor	50.1	---	2.00	"	"	"	---	100	47-136%	---	---	
Heptachlor epoxide	47.2	---	2.00	"	"	"	---	94	52-136%	---	---	
Methoxychlor	60.9	---	6.00	"	"	"	---	122	52-143%	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 85 %*		*Limits: 42-129 %*		*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*87 %*		*65-151 %*		*"*					
Duplicate (6110544-DUP1)					Prepared: 11/11/16 11:25		Analyzed: 11/15/16 17:15					**C-05**
QC Source Sample: SA2-ISM-After Processing (A6K0135-04RE1)												
EPA 8081B												
Aldrin	ND	---	1.96	ug/kg dry	1	---	ND	---	---	---	30%	
alpha-BHC	ND	---	1.96	"	"	---	ND	---	---	---	30%	
beta-BHC	ND	---	1.96	"	"	---	ND	---	---	---	30%	
delta-BHC	ND	---	2.84	"	"	---	2.90	---	---	***	30%	R-02
gamma-BHC (Lindane)	ND	---	1.96	"	"	---	ND	---	---	---	30%	
cis-Chlordane	ND	---	1.96	"	"	---	ND	---	---	---	30%	
trans-Chlordane	ND	---	1.96	"	"	---	ND	---	---	---	30%	
4,4'-DDD	ND	---	1.96	"	"	---	ND	---	---	---	30%	
4,4'-DDE	ND	---	1.96	"	"	---	ND	---	---	---	30%	
4,4'-DDT	ND	---	1.96	"	"	---	ND	---	---	---	30%	

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Maul Foster & Alongi, INC.	Project: **POP-Colwood USPS**	
2001 NW 19th Ave, STE 200	Project Number: POP-RSM	**Reported:**
Portland, OR 97209	Project Manager: Michael Pickering	12/01/16 13:02

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110544 - EPA 3546/3640A (GPC)							**Soil**					
Duplicate (6110544-DUP1)					Prepared: 11/11/16 11:25	Analyzed: 11/15/16 17:15						**C-05**
QC Source Sample: SA2-ISM-After Processing (A6K0135-04RE1)												
Dieldrin	ND	---	1.96	"	"	---	ND	---	---	---	30%	
Endosulfan I	ND	---	1.96	"	"	---	ND	---	---	---	30%	
Endosulfan II	ND	---	1.96	"	"	---	ND	---	---	---	30%	
Endosulfan sulfate	ND	---	1.96	"	"	---	ND	---	---	---	30%	
Endrin	ND	---	1.96	"	"	---	ND	---	---	---	30%	
Endrin Aldehyde	ND	---	1.96	"	"	---	ND	---	---	---	30%	
Endrin ketone	ND	---	1.96	"	"	---	ND	---	---	---	30%	
Heptachlor	ND	---	1.96	"	"	---	ND	---	---	---	30%	
Heptachlor epoxide	ND	---	1.96	"	"	---	ND	---	---	---	30%	
Methoxychlor	ND	---	5.89	"	"	---	ND	---	---	---	30%	
Chlordane (Technical)	ND	---	58.9	"	"	---	ND	---	---	---	30%	
Toxaphene (Total)	ND	---	58.9	"	"	---	ND	---	---	---	30%	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 36 %*	*Limits: 42-129 %*			*Dilution: 1x*					*S-03*
Decachlorobiphenyl (Surr)			*51 %*	*65-151 %*			*"*					*S-03*
Matrix Spike (6110544-MS1)					Prepared: 11/11/16 11:25	Analyzed: 11/15/16 15:48						**C-05**
QC Source Sample: SA3-ISM-After Processing (A6K0135-02RE1)												
EPA 8081B												
Aldrin	17.3	---	2.00	ug/kg dry	1	50.0	ND	35	45-136%	---	---	Q-01
alpha-BHC	18.7	---	2.00	"	"	"	ND	37	45-137%	---	---	Q-01
beta-BHC	21.8	---	2.00	"	"	"	ND	44	50-136%	---	---	Q-01
delta-BHC	24.0	---	2.00	"	"	"	3.93	40	47-139%	---	---	Q-01
gamma-BHC (Lindane)	20.0	---	2.00	"	"	"	ND	40	49-135%	---	---	Q-01
cis-Chlordane	25.6	---	2.00	"	"	"	ND	51	54-133%	---	---	Q-01
trans-Chlordane	26.6	---	2.00	"	"	"	ND	53	53-135%	---	---	
4,4'-DDD	30.1	---	2.00	"	"	"	ND	60	56-139%	---	---	
4,4'-DDE	28.8	---	2.00	"	"	"	ND	58	56-134%	---	---	
4,4'-DDT	40.9	---	2.00	"	"	"	ND	82	50-141%	---	---	
Dieldrin	28.5	---	2.00	"	"	"	ND	57	56-136%	---	---	
Endosulfan I	26.0	---	2.00	"	"	"	ND	52	52-132%	---	---	

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Portland, OR 97209	Project Manager: Michael Pickering	12/01/16 13:02

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110544 - EPA 3546/3640A (GPC)							**Soil**					
Matrix Spike (6110544-MS1)					Prepared: 11/11/16 11:25		Analyzed: 11/15/16 15:48					**C-05**
QC Source Sample: SA3-ISM-After Processing (A6K0135-02RE1)												
Endosulfan II	29.7	---	2.00	ug/kg dry	"	"	ND	59	53-134%	---	---	
Endosulfan sulfate	31.6	---	2.00	"	"	"	ND	63	55-136%	---	---	
Endrin	36.8	---	2.00	"	"	"	ND	74	56-140%	---	---	Q-41
Endrin Aldehyde	27.8	---	2.00	"	"	"	ND	56	35-137%	---	---	
Endrin ketone	31.7	---	2.00	"	"	"	ND	63	55-136%	---	---	Q-41
Heptachlor	20.2	---	2.00	"	"	"	ND	40	47-136%	---	---	Q-01
Heptachlor epoxide	24.0	---	2.00	"	"	"	ND	48	52-136%	---	---	Q-01
Methoxychlor	39.7	---	6.00	"	"	"	ND	79	52-143%	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 32 %*	*Limits: 42-129 %*			*Dilution: 1x*					*S-03*
Decachlorobiphenyl (Surr)			*54 %*	*65-151 %*			*"*					*S-03*
Matrix Spike Dup (6110544-MSD1)					Prepared: 11/11/16 11:26		Analyzed: 11/15/16 16:05					**C-05**
QC Source Sample: SA3-ISM-After Processing (A6K0135-02RE1)												
EPA 8081B												
Aldrin	26.5	---	2.00	ug/kg dry	1	50.0	ND	53	45-136%	42	30%	Q-01
alpha-BHC	28.7	---	2.00	"	"	"	ND	57	45-137%	42	30%	Q-01
beta-BHC	29.4	---	2.00	"	"	"	ND	59	50-136%	30	30%	
delta-BHC	30.1	---	2.00	"	"	"	3.93	52	47-139%	23	30%	
gamma-BHC (Lindane)	29.6	---	2.00	"	"	"	ND	59	49-135%	39	30%	Q-01
cis-Chlordane	31.7	---	2.00	"	"	"	ND	63	54-133%	21	30%	
trans-Chlordane	32.2	---	2.00	"	"	"	ND	64	53-135%	19	30%	
4,4'-DDD	33.0	---	2.00	"	"	"	ND	66	56-139%	9	30%	
4,4'-DDE	32.8	---	2.00	"	"	"	ND	66	56-134%	13	30%	
4,4'-DDT	44.7	---	2.00	"	"	"	ND	89	50-141%	9	30%	
Dieldrin	33.6	---	2.00	"	"	"	ND	67	56-136%	16	30%	
Endosulfan I	32.2	---	2.00	"	"	"	ND	64	52-132%	21	30%	
Endosulfan II	33.1	---	2.00	"	"	"	ND	66	53-134%	11	30%	
Endosulfan sulfate	34.5	---	2.00	"	"	"	ND	69	55-136%	9	30%	
Endrin	42.9	---	2.00	"	"	"	ND	86	56-140%	15	30%	Q-41
Endrin Aldehyde	31.6	---	2.00	"	"	"	ND	63	35-137%	13	30%	

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Portland, OR 97209	Project Manager: Michael Pickering	12/01/16 13:02

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110544 - EPA 3546/3640A (GPC)							**Soil**					
Matrix Spike Dup (6110544-MSD1)					Prepared: 11/11/16 11:26		Analyzed: 11/15/16 16:05					**C-05**
QC Source Sample: SA3-ISM-After Processing (A6K0135-02RE1)												
Endrin ketone	36.3	---	2.00	ug/kg dry	"	"	ND	73	55-136%	14	30%	Q-41
Heptachlor	30.7	---	2.00	"	"	"	ND	61	47-136%	41	30%	Q-01
Heptachlor epoxide	31.2	---	2.00	"	"	"	ND	62	52-136%	26	30%	
Methoxychlor	45.6	---	6.00	"	"	"	ND	91	52-143%	14	30%	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 50 %*	*Limits: 42-129 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*57 %*	*65-151 %*			*"*					*S-03*

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QUALITY CONTROL (QC) SAMPLE RESULTS

Anions by EPA 300.0/9056A (Ion Chromatography)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110430 - Method Prep: Non-Aq								**Soil**				
Blank (6110430-BLK1)					Prepared: 11/10/16 07:24		Analyzed: 11/10/16 10:13					
EPA 9056A												
Fluoride	ND	---	10.0	mg/kg wet	1	---	---	---	---	---	---	
LCS (6110430-BS1)					Prepared: 11/10/16 07:24		Analyzed: 11/10/16 10:34					
EPA 9056A												
Fluoride	81.4	---	10.0	mg/kg wet	1	80.0	---	102	90-110%	---	---	
Duplicate (6110430-DUP1)					Prepared: 11/10/16 07:24		Analyzed: 11/10/16 11:17					
QC Source Sample: SA3-ISM-After Processing (A6K0135-02)												
EPA 9056A												
Fluoride	ND	---	10.4	mg/kg dry	1	---	ND	---	---	---	15%	
Matrix Spike (6110430-MS1)					Prepared: 11/10/16 07:24		Analyzed: 11/10/16 11:39					
QC Source Sample: SA3-ISM-After Processing (A6K0135-02)												
EPA 9056A												
Fluoride	70.9	---	10.4	mg/kg dry	1	83.0	ND	85	80-120%	---	---	

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QUALITY CONTROL (QC) SAMPLE RESULTS

Cyanide - Total (Non-aqueous)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110433 - Method Prep: Non-Aq								**Solid**				
Blank (6110433-BLK1)					Prepared: 11/10/16 08:00		Analyzed: 11/10/16 12:25					
EPA 9013M/9014												
Cyanide, Total	ND	---	0.100	mg/kg	1	---	---	---	---	---	---	
LCS (6110433-BS1)					Prepared: 11/10/16 08:00		Analyzed: 11/10/16 12:27					
EPA 9013M/9014												
Cyanide, Total	4.18	---	0.100	mg/kg	1	4.00	---	104	85-115%	---	---	
Duplicate (6110433-DUP1)					Prepared: 11/10/16 08:00		Analyzed: 11/10/16 12:35					
QC Source Sample: SA3-ISM-After Processing (A6K0135-02)												
EPA 9013M/9014												
Cyanide, Total	ND	---	0.0985	mg/kg	1	---	ND	---	---	---	10%	
Matrix Spike (6110433-MS1)					Prepared: 11/10/16 08:00		Analyzed: 11/10/16 12:37					
QC Source Sample: SA3-ISM-After Processing (A6K0135-02)												
EPA 9013M/9014												
Cyanide, Total	4.08	---	0.0984	mg/kg	1	3.93	ND	104	80-120%	---	---	

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2001 NW 19th Ave, STE 200	Project Number: POP-RSM	**Reported:**
Portland, OR 97209	Project Manager: Michael Pickering	12/01/16 13:02

QUALITY CONTROL (QC) SAMPLE RESULTS

Organophosphorous Pesticides (OPPs) by EPA 8270D (GC/MS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110535 - EPA 3546							**Soil**					
Blank (6110535-BLK1)					Prepared: 11/14/16 10:58 Analyzed: 11/14/16 14:29							
EPA 8270D												
Azinphos methyl (Guthion)	ND	8.06	16.1	ug/kg wet	1	---	---	---	---	---	---	
Chlorpyrifos	ND	8.06	16.1	"	"	---	---	---	---	---	---	
Coumaphos	ND	8.06	16.1	"	"	---	---	---	---	---	---	
Demeton O	ND	8.06	16.1	"	"	---	---	---	---	---	---	
Demeton S	ND	8.06	16.1	"	"	---	---	---	---	---	---	
Diazinon	ND	8.06	16.1	"	"	---	---	---	---	---	---	
Dichlorvos	ND	8.06	16.1	"	"	---	---	---	---	---	---	
Dimethoate	ND	8.06	16.1	"	"	---	---	---	---	---	---	
Disulfoton	ND	8.06	16.1	"	"	---	---	---	---	---	---	
EPN	ND	8.06	16.1	"	"	---	---	---	---	---	---	
Ethoprophos (Prophos)	ND	8.06	16.1	"	"	---	---	---	---	---	---	
Fensulfothion	ND	8.06	16.1	"	"	---	---	---	---	---	---	
Fenthion	ND	8.06	16.1	"	"	---	---	---	---	---	---	
Malathion	ND	8.06	16.1	"	"	---	---	---	---	---	---	
Merphos	ND	8.06	16.1	"	"	---	---	---	---	---	---	
Methyl parathion	ND	8.06	16.1	"	"	---	---	---	---	---	---	
Mevinphos (Phosdrin)	ND	8.06	16.1	"	"	---	---	---	---	---	---	
Monocrotophos	ND	8.06	16.1	"	"	---	---	---	---	---	---	
Naled (Dibrom)	ND	8.06	16.1	"	"	---	---	---	---	---	---	
Parathion	ND	8.06	16.1	"	"	---	---	---	---	---	---	
Phorate	ND	8.06	16.1	"	"	---	---	---	---	---	---	
Ronnel (Fenchlorphos)	ND	8.06	16.1	"	"	---	---	---	---	---	---	
Sulfotep	ND	8.06	16.1	"	"	---	---	---	---	---	---	
Sulprofos (Bolstar)	ND	8.06	16.1	"	"	---	---	---	---	---	---	
TEPP	ND	32.3	64.5	"	"	---	---	---	---	---	---	
Tetrachlorvinphos (Rabon)	ND	8.06	16.1	"	"	---	---	---	---	---	---	
Tokuthion (Prothiofos)	ND	8.06	16.1	"	"	---	---	---	---	---	---	
Trichloronate	ND	8.06	16.1	"	"	---	---	---	---	---	---	

Surr: Tributyl phosphate (Surr) *Recovery: 84 %* *Limits: 55-135 %* *Dilution: 1x*
Triphenyl phosphate (Surr) *95 %* *65-130 %* *"*

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Lisa Domenighini, Client Services Manager

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Maul Foster & Alongi, INC.	Project: **POP-Colwood USPS**	
2001 NW 19th Ave, STE 200	Project Number: POP-RSM	**Reported:**
Portland, OR 97209	Project Manager: Michael Pickering	12/01/16 13:02

QUALITY CONTROL (QC) SAMPLE RESULTS

Organophosphorous Pesticides (OPPs) by EPA 8270D (GC/MS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110535 - EPA 3546							**Soil**					
LCS (6110535-BS1)					Prepared: 11/14/16 10:58 Analyzed: 11/14/16 15:04							
EPA 8270D												
Azinphos methyl (Guthion)	339	50.0	100	ug/kg wet	2	400	---	85	38-156%	---	---	
Chlorpyrifos	414	50.0	100	"	"	"	---	104	47-140%	---	---	
Coumaphos	370	50.0	100	"	"	"	---	92	37-160%	---	---	
Demeton O	85.4	50.0	50.0	"	"	97.6	---	87	43-117%	---	---	
Demeton S	260	50.0	100	"	"	268	---	97	"	---	---	
Diazinon	385	50.0	100	"	"	400	---	96	42-134%	---	---	
Dichlorvos	429	50.0	100	"	"	"	---	107	39-142%	---	---	
Dimethoate	433	50.0	100	"	"	"	---	108	16-139%	---	---	
Disulfoton	403	50.0	100	"	"	"	---	101	28-144%	---	---	
EPN	438	50.0	100	"	"	"	---	109	44-137%	---	---	
Ethoprophos (Prophos)	431	50.0	100	"	"	"	---	108	47-128%	---	---	
Fensulfothion	388	50.0	100	"	"	"	---	97	27-147%	---	---	
Fenthion	431	50.0	100	"	"	"	---	108	44-134%	---	---	
Malathion	430	50.0	100	"	"	"	---	107	46-137%	---	---	
Merphos	393	50.0	100	"	"	"	---	98	0-153%	---	---	
Methyl parathion	369	50.0	100	"	"	"	---	92	49-138%	---	---	
Mevinphos (Phosdrin)	371	50.0	100	"	"	"	---	93	12-176%	---	---	
Monocrotophos	511	50.0	100	"	"	"	---	128	65-135%	---	---	
Naled (Dibrom)	324	50.0	100	"	"	"	---	81	0-174%	---	---	
Parathion	425	50.0	100	"	"	"	---	106	50-139%	---	---	
Phorate	418	50.0	100	"	"	"	---	104	23-142%	---	---	
Ronnel (Fenchlorphos)	393	50.0	100	"	"	"	---	98	45-138%	---	---	
Sulfotep	455	50.0	100	"	"	"	---	114	52-126%	---	---	
Sulprofos (Bolstar)	413	50.0	100	"	"	"	---	103	48-139%	---	---	
TEPP	212	200	200	"	"	"	---	53	30-150%	---	---	
Tetrachlorvinphos (Rabon)	393	50.0	100	"	"	"	---	98	54-129%	---	---	
Tokuthion (Prothiofos)	416	50.0	100	"	"	"	---	104	45-136%	---	---	
Trichloronate	406	50.0	100	"	"	"	---	102	37-140%	---	---	
Surr: Tributyl phosphate (Surr)				*Recovery: 90 %*	*Limits: 55-135 %*			*Dilution: 2x*				
Triphenyl phosphate (Surr)				*99 %*	*65-130 %*			*"*				

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Maul Foster & Alongi, INC.	Project: **POP-Colwood USPS**	
2001 NW 19th Ave, STE 200	Project Number: POP-RSM	**Reported:**
Portland, OR 97209	Project Manager: Michael Pickering	12/01/16 13:02

QUALITY CONTROL (QC) SAMPLE RESULTS

Organophosphorous Pesticides (OPPs) by EPA 8270D (GC/MS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110535 - EPA 3546							**Soil**					
Duplicate (6110535-DUP1)					Prepared: 11/14/16 10:58 Analyzed: 11/14/16 19:15							
QC Source Sample: SA2-ISM-After Processing (A6K0135-04RE1)												
EPA 8270D												
Azinphos methyl (Guthion)	ND	25.0	50.1	ug/kg dry	1	---	ND	---	---	---	30%	
Chlorpyrifos	ND	25.0	50.1	"	"	---	ND	---	---	---	30%	
Coumaphos	ND	50.1	50.1	"	"	---	ND	---	---	---	30%	
Demeton O	ND	25.0	50.1	"	"	---	ND	---	---	---	30%	
Demeton S	ND	25.0	50.1	"	"	---	ND	---	---	---	30%	
Diazinon	ND	25.0	50.1	"	"	---	ND	---	---	---	30%	
Dichlorvos	ND	25.0	50.1	"	"	---	ND	---	---	---	30%	
Dimethoate	ND	25.0	50.1	"	"	---	ND	---	---	---	30%	
Disulfoton	ND	25.0	50.1	"	"	---	ND	---	---	---	30%	
EPN	ND	25.0	50.1	"	"	---	ND	---	---	---	30%	
Ethoprophos (Prophos)	ND	25.0	50.1	"	"	---	ND	---	---	---	30%	
Fensulfothion	ND	25.0	50.1	"	"	---	ND	---	---	---	30%	
Fenthion	ND	25.0	50.1	"	"	---	ND	---	---	---	30%	
Malathion	ND	25.0	50.1	"	"	---	ND	---	---	---	30%	
Merphos	ND	50.1	50.1	"	"	---	ND	---	---	---	30%	
Methyl parathion	ND	25.0	50.1	"	"	---	ND	---	---	---	30%	
Mevinphos (Phosdrin)	ND	25.0	50.1	"	"	---	ND	---	---	---	30%	
Monocrotophos	ND	25.0	50.1	"	"	---	ND	---	---	---	30%	
Naled (Dibrom)	ND	25.0	50.1	"	"	---	ND	---	---	---	30%	
Parathion	ND	25.0	50.1	"	"	---	ND	---	---	---	30%	
Phorate	ND	25.0	50.1	"	"	---	ND	---	---	---	30%	
Ronnel (Fenchlorphos)	ND	25.0	50.1	"	"	---	ND	---	---	---	30%	
Sulfotep	ND	25.0	50.1	"	"	---	ND	---	---	---	30%	
Sulprofos (Bolstar)	ND	25.0	50.1	"	"	---	ND	---	---	---	30%	
TEPP	ND	100	200	"	"	---	ND	---	---	---	30%	
Tetrachlorvinphos (Rabon)	ND	25.0	50.1	"	"	---	ND	---	---	---	30%	
Tokuthion (Prothiofos)	ND	25.0	50.1	"	"	---	ND	---	---	---	30%	
Trichloronate	ND	25.0	50.1	"	"	---	ND	---	---	---	30%	
Surr: Tributyl phosphate (Surr)			*Recovery: 40 %*	*Limits: 55-135 %*		*Dilution: 1x*						*S-03*

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2001 NW 19th Ave, STE 200	Project Number: POP-RSM	**Reported:**
Portland, OR 97209	Project Manager: Michael Pickering	12/01/16 13:02

QUALITY CONTROL (QC) SAMPLE RESULTS

Organophosphorous Pesticides (OPPs) by EPA 8270D (GC/MS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110535 - EPA 3546							**Soil**					
Duplicate (6110535-DUP1)					Prepared: 11/14/16 10:58 Analyzed: 11/14/16 19:15							
QC Source Sample: SA2-ISM-After Processing (A6K0135-04RE1)												
Surr: Triphenyl phosphate (Surr)			*Recovery: 60 %*	*Limits: 65-130 %*		*Dilution: 1x*						*S-03*
Matrix Spike (6110535-MS1)					Prepared: 11/14/16 10:58 Analyzed: 11/14/16 16:52							
QC Source Sample: SA3-ISM-After Processing (A6K0135-02)												
EPA 8270D												
Azinphos methyl (Guthion)	257	48.6	97.2	ug/kg dry	2	389	ND	66	38-156%	---	---	
Chlorpyrifos	240	48.6	97.2	"	"	"	ND	62	47-140%	---	---	
Coumaphos	306	48.6	97.2	"	"	"	ND	79	37-160%	---	---	
Demeton O	57.7	48.6	48.6	"	"	94.8	ND	61	43-117%	---	---	
Demeton S	124	48.6	97.2	"	"	260	ND	48	"	---	---	
Diazinon	218	48.6	97.2	"	"	389	ND	56	42-134%	---	---	
Dichlorvos	132	48.6	97.2	"	"	"	ND	34	39-142%	---	---	Q-01
Dimethoate	189	48.6	97.2	"	"	"	ND	49	16-139%	---	---	
Disulfoton	252	48.6	97.2	"	"	"	ND	65	28-144%	---	---	
EPN	323	48.6	97.2	"	"	"	ND	83	44-137%	---	---	
Ethoprophos (Prophos)	213	48.6	97.2	"	"	"	ND	55	47-128%	---	---	
Fensulfothion	201	48.6	97.2	"	"	"	ND	52	27-147%	---	---	
Fenthion	261	48.6	97.2	"	"	"	ND	67	44-134%	---	---	
Malathion	268	48.6	97.2	"	"	"	ND	69	46-137%	---	---	
Merphos	204	48.6	97.2	"	"	"	ND	52	0-153%	---	---	
Methyl parathion	246	48.6	97.2	"	"	"	ND	63	49-138%	---	---	
Mevinphos (Phosdrin)	124	48.6	97.2	"	"	"	ND	32	12-176%	---	---	
Monocrotophos	98.6	48.6	97.2	"	"	"	ND	25	65-135%	---	---	Q-01
Naled (Dibrom)	42.7	38.9	38.9	"	"	"	ND	11	0-174%	---	---	
Parathion	267	48.6	97.2	"	"	"	ND	69	50-139%	---	---	
Phorate	242	48.6	97.2	"	"	"	ND	62	23-142%	---	---	
Ronnel (Fenchlorphos)	242	48.6	97.2	"	"	"	ND	62	45-138%	---	---	
Sulfotep	270	48.6	97.2	"	"	"	ND	69	52-126%	---	---	
Sulprofos (Bolstar)	279	48.6	97.2	"	"	"	ND	72	48-139%	---	---	
TEPP	80.6	19.4	19.4	"	"	"	41.3	10	30-150%	---	---	Q-01

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2001 NW 19th Ave, STE 200	Project Number: POP-RSM	**Reported:**
Portland, OR 97209	Project Manager: Michael Pickering	12/01/16 13:02

QUALITY CONTROL (QC) SAMPLE RESULTS

Organophosphorous Pesticides (OPPs) by EPA 8270D (GC/MS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110535 - EPA 3546								**Soil**				
Matrix Spike (6110535-MS1)					Prepared: 11/14/16 10:58		Analyzed: 11/14/16 16:52					
QC Source Sample: SA3-ISM-After Processing (A6K0135-02)												
Tetrachlorvinphos (Rabon)	239	48.6	97.2	ug/kg dry	"	"	ND	62	54-129%	---	---	
Tokuthion (Prothiofos)	285	48.6	97.2	"	"	"	ND	73	45-136%	---	---	
Trichloronate	240	48.6	97.2	"	"	"	ND	62	37-140%	---	---	
Surr: Tributyl phosphate (Surr)			*Recovery: 46 %*	*Limits: 55-135 %*			*Dilution: 2x*					*S-04*
Triphenyl phosphate (Surr)			*61 %*	*65-130 %*			*"*					*S-04*
Matrix Spike Dup (6110535-MSD1)					Prepared: 11/14/16 10:58		Analyzed: 11/14/16 17:27					
QC Source Sample: SA3-ISM-After Processing (A6K0135-02)												
EPA 8270D												
Azinphos methyl (Guthion)	273	49.0	98.0	ug/kg dry	2	392	ND	70	38-156%	6	30%	
Chlorpyrifos	251	49.0	98.0	"	"	"	ND	64	47-140%	5	30%	
Coumaphos	311	49.0	98.0	"	"	"	ND	79	37-160%	1	30%	
Demeton O	63.1	49.0	49.0	"	"	95.6	ND	66	43-117%	9	30%	
Demeton S	128	49.0	98.0	"	"	263	ND	49	"	3	30%	
Diazinon	226	49.0	98.0	"	"	392	ND	58	42-134%	4	30%	
Dichlorvos	150	49.0	98.0	"	"	"	ND	38	39-142%	13	30%	Q-01
Dimethoate	205	49.0	98.0	"	"	"	ND	52	16-139%	8	30%	
Disulfoton	257	49.0	98.0	"	"	"	ND	66	28-144%	2	30%	
EPN	333	49.0	98.0	"	"	"	ND	85	44-137%	3	30%	
Ethoprophos (Prophos)	223	49.0	98.0	"	"	"	ND	57	47-128%	5	30%	
Fensulfothion	228	49.0	98.0	"	"	"	ND	58	27-147%	13	30%	
Fenthion	273	49.0	98.0	"	"	"	ND	70	44-134%	4	30%	
Malathion	282	49.0	98.0	"	"	"	ND	72	46-137%	5	30%	
Merphos	218	49.0	98.0	"	"	"	ND	56	0-153%	7	30%	
Methyl parathion	255	49.0	98.0	"	"	"	ND	65	49-138%	4	30%	
Mevinphos (Phosdrin)	132	49.0	98.0	"	"	"	ND	34	12-176%	6	30%	
Monocrotophos	101	49.0	98.0	"	"	"	ND	26	65-135%	2	30%	Q-01
Naled (Dibrom)	42.5	19.6	19.6	"	"	"	ND	11	0-174%	0.6	30%	
Parathion	278	49.0	98.0	"	"	"	ND	71	50-139%	4	30%	
Phorate	250	49.0	98.0	"	"	"	ND	64	23-142%	3	30%	

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2001 NW 19th Ave, STE 200	Project Number: POP-RSM	**Reported:**
Portland, OR 97209	Project Manager: Michael Pickering	12/01/16 13:02

QUALITY CONTROL (QC) SAMPLE RESULTS

Organophosphorous Pesticides (OPPs) by EPA 8270D (GC/MS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110535 - EPA 3546							**Soil**					
Matrix Spike Dup (6110535-MSD1)					Prepared: 11/14/16 10:58 Analyzed: 11/14/16 17:27							
QC Source Sample: SA3-ISM-After Processing (A6K0135-02)												
Ronnel (Fenchlorphos)	253	49.0	98.0	ug/kg dry	"	"	ND	65	45-138%	4	30%	
Sulfotep	276	49.0	98.0	"	"	"	ND	70	52-126%	2	30%	
Sulprofos (Bolstar)	283	49.0	98.0	"	"	"	ND	72	48-139%	1	30%	
TEPP	82.4	19.6	19.6	"	"	"	41.3	10	30-150%		30%	Q-01
Tetrachlorvinphos (Rabon)	244	49.0	98.0	"	"	"	ND	62	54-129%	2	30%	
Tokuthion (Prothiofos)	287	49.0	98.0	"	"	"	ND	73	45-136%	0.6	30%	
Trichloronate	251	49.0	98.0	"	"	"	ND	64	37-140%	4	30%	
Surr: Tributyl phosphate (Surr)			*Recovery: 47 %*	*Limits: 55-135 %*			*Dilution: 2x*					*S-04*
Triphenyl phosphate (Surr)			*64 %*	*65-130 %*			*"*					*S-04*

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Maul Foster & Alongi, INC.	Project: **POP-Colwood USPS**	
2001 NW 19th Ave, STE 200	Project Number: POP-RSM	**Reported:**
Portland, OR 97209	Project Manager: Michael Pickering	12/01/16 13:02

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110536 - EPA 3546							**Soil**					
Blank (6110536-BLK2)					Prepared: 11/14/16 11:03 Analyzed: 11/14/16 18:12							
EPA 8270D												
Acenaphthene	ND	---	1.29	ug/kg wet	1	---	---	---	---	---	---	
Acenaphthylene	ND	---	1.29	"	"	---	---	---	---	---	---	
Anthracene	ND	---	1.29	"	"	---	---	---	---	---	---	
Benz(a)anthracene	ND	---	1.29	"	"	---	---	---	---	---	---	
Benzo(a)pyrene	ND	---	1.94	"	"	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	---	1.94	"	"	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	---	1.94	"	"	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	---	1.29	"	"	---	---	---	---	---	---	
Chrysene	ND	---	1.29	"	"	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	---	1.29	"	"	---	---	---	---	---	---	
Fluoranthene	ND	---	1.29	"	"	---	---	---	---	---	---	
Fluorene	ND	---	1.29	"	"	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	---	1.29	"	"	---	---	---	---	---	---	
1-Methylnaphthalene	ND	---	2.58	"	"	---	---	---	---	---	---	
2-Methylnaphthalene	ND	---	2.58	"	"	---	---	---	---	---	---	
Naphthalene	ND	---	2.58	"	"	---	---	---	---	---	---	B-02
Phenanthrene	ND	---	1.29	"	"	---	---	---	---	---	---	
Pyrene	ND	---	1.29	"	"	---	---	---	---	---	---	
Dibenzofuran	ND	---	1.29	"	"	---	---	---	---	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 93 %*	*Limits: 37-122 %*			*Dilution: 1x*					
2-Fluorobiphenyl (Surr)			*86 %*	*44-115 %*			*"*					
Phenol-d6 (Surr)			*93 %*	*33-122 %*			*"*					
p-Terphenyl-d14 (Surr)			*92 %*	*54-127 %*			*"*					
2-Fluorophenol (Surr)			*93 %*	*35-115 %*			*"*					
2,4,6-Tribromophenol (Surr)			*94 %*	*39-132 %*			*"*					
LCS (6110536-BS2)					Prepared: 11/14/16 11:03 Analyzed: 11/14/16 18:48							
EPA 8270D												
Acenaphthene	497	---	2.67	ug/kg wet	1	533	---	93	40-122%	---	---	
Acenaphthylene	492	---	2.67	"	"	"	---	92	32-132%	---	---	
Anthracene	508	---	2.67	"	"	"	---	95	47-123%	---	---	

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Maul Foster & Alongi, INC.	Project: **POP-Colwood USPS**	
2001 NW 19th Ave, STE 200	Project Number: POP-RSM	**Reported:**
Portland, OR 97209	Project Manager: Michael Pickering	12/01/16 13:02

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110536 - EPA 3546							**Soil**					
LCS (6110536-BS2)					Prepared: 11/14/16 11:03 Analyzed: 11/14/16 18:48							
Benz(a)anthracene	498	---	2.67	ug/kg wet	"	"	---	93	49-126%	---	---	
Benzo(a)pyrene	508	---	4.00	"	"	"	---	95	45-129%	---	---	
Benzo(b)fluoranthene	497	---	4.00	"	"	"	---	93	45-132%	---	---	
Benzo(k)fluoranthene	505	---	4.00	"	"	"	---	95	47-132%	---	---	
Benzo(g,h,i)perylene	508	---	2.67	"	"	"	---	95	43-134%	---	---	
Chrysene	470	---	2.67	"	"	"	---	88	50-124%	---	---	
Dibenz(a,h)anthracene	505	---	2.67	"	"	"	---	95	45-134%	---	---	
Fluoranthene	510	---	2.67	"	"	"	---	96	50-127%	---	---	
Fluorene	497	---	2.67	"	"	"	---	93	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	506	---	2.67	"	"	"	---	95	45-133%	---	---	
1-Methylnaphthalene	482	---	5.33	"	"	"	---	90	40-120%	---	---	
2-Methylnaphthalene	494	---	5.33	"	"	"	---	93	38-122%	---	---	
Naphthalene	468	---	5.33	"	"	"	---	88	35-123%	---	---	B-02
Phenanthrene	485	---	2.67	"	"	"	---	91	50-121%	---	---	
Pyrene	502	---	2.67	"	"	"	---	94	47-127%	---	---	
Dibenzofuran	488	---	2.67	"	"	"	---	91	44-120%	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 87 %*		*Limits: 37-122 %*		*Dilution: 1x*					
2-Fluorobiphenyl (Surr)			*87 %*		*44-115 %*		*"*					
Phenol-d6 (Surr)			*99 %*		*33-122 %*		*"*					
p-Terphenyl-d14 (Surr)			*95 %*		*54-127 %*		*"*					
2-Fluorophenol (Surr)			*98 %*		*35-115 %*		*"*					
2,4,6-Tribromophenol (Surr)			*95 %*		*39-132 %*		*"*					
Duplicate (6110536-DUP2)					Prepared: 11/14/16 11:03 Analyzed: 11/14/16 23:05							
QC Source Sample: SA2-ISM-After Processing (A6K0135-04)												
EPA 8270D												
Acenaphthene	ND	---	2.72	ug/kg dry	1	---	1.67	---	---	***	30%	
Acenaphthylene	**12.4**	---	2.72	"	"	---	9.04	---	---	31	30%	Q-05
Anthracene	**10.9**	---	2.72	"	"	---	8.20	---	---	29	30%	
Benz(a)anthracene	**40.8**	---	2.72	"	"	---	29.4	---	---	32	30%	Q-17
Benzo(a)pyrene	**77.2**	---	4.07	"	"	---	57.9	---	---	29	30%	
Benzo(b)fluoranthene	**78.3**	---	4.07	"	"	---	59.8	---	---	27	30%	M-02

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Lisa Domenighini, Client Services Manager

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Maul Foster & Alongi, INC.	Project: **POP-Colwood USPS**	
2001 NW 19th Ave, STE 200	Project Number: POP-RSM	**Reported:**
Portland, OR 97209	Project Manager: Michael Pickering	12/01/16 13:02

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110536 - EPA 3546							**Soil**					
Duplicate (6110536-DUP2)					Prepared: 11/14/16 11:03 Analyzed: 11/14/16 23:05							
QC Source Sample: SA2-ISM-After Processing (A6K0135-04)												
Benzo(k)fluoranthene	**26.1**	---	4.07	ug/kg dry	"	---	18.0	---	---	37	30%	M-02, Q-17
Benzo(g,h,i)perylene	**77.1**	---	2.72	"	"	---	59.0	---	---	27	30%	
Chrysene	**56.7**	---	2.72	"	"	---	44.7	---	---	24	30%	
Dibenz(a,h)anthracene	**6.83**	---	2.72	"	"	---	5.92	---	---	14	30%	
Fluoranthene	**122**	---	2.72	"	"	---	92.3	---	---	28	30%	
Fluorene	**6.41**	---	2.72	"	"	---	4.95	---	---	26	30%	
Indeno(1,2,3-cd)pyrene	**60.6**	---	2.72	"	"	---	43.8	---	---	32	30%	Q-17
1-Methylnaphthalene	ND	---	5.42	"	"	---	ND	---	---	---	30%	
2-Methylnaphthalene	ND	---	5.42	"	"	---	ND	---	---	---	30%	
Naphthalene	**13.9**	---	5.42	"	"	---	11.2	---	---	22	30%	
Phenanthrene	**98.9**	---	2.72	"	"	---	76.4	---	---	26	30%	
Pyrene	**159**	---	2.72	"	"	---	119	---	---	28	30%	
Dibenzofuran	ND	---	2.72	"	"	---	ND	---	---	---	30%	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 52 %*	*Limits: 37-122 %*		*Dilution: 1x*						
2-Fluorobiphenyl (Surr)			*48 %*	*44-115 %*		*"*						
Phenol-d6 (Surr)			*46 %*	*33-122 %*		*"*						
p-Terphenyl-d14 (Surr)			*60 %*	*54-127 %*		*"*						
2-Fluorophenol (Surr)			*46 %*	*35-115 %*		*"*						
2,4,6-Tribromophenol (Surr)			*56 %*	*39-132 %*		*"*						
Matrix Spike (6110536-MS2)					Prepared: 11/14/16 11:03 Analyzed: 11/14/16 21:15							
QC Source Sample: SA3-ISM-After Processing (A6K0135-02)												
EPA 8270D												
Acenaphthene	261	---	2.76	ug/kg dry	1	552	ND	47	40-122%	---	---	
Acenaphthylene	265	---	2.76	"	"	"	ND	48	32-132%	---	---	
Anthracene	275	---	2.76	"	"	"	ND	50	47-123%	---	---	
Benz(a)anthracene	268	---	2.76	"	"	"	5.20	48	49-126%	---	---	Q-01
Benzo(a)pyrene	301	---	4.14	"	"	"	10.2	53	45-129%	---	---	
Benzo(b)fluoranthene	308	---	4.14	"	"	"	11.9	54	45-132%	---	---	
Benzo(k)fluoranthene	302	---	4.14	"	"	"	4.85	54	47-132%	---	---	
Benzo(g,h,i)perylene	300	---	2.76	"	"	"	10.3	53	43-134%	---	---	

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Maul Foster & Alongi, INC.	Project: **POP-Colwood USPS**	
2001 NW 19th Ave, STE 200	Project Number: POP-RSM	**Reported:**
Portland, OR 97209	Project Manager: Michael Pickering	12/01/16 13:02

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110536 - EPA 3546									Soil			
Matrix Spike (6110536-MS2)					Prepared: 11/14/16 11:03		Analyzed: 11/14/16 21:15					
QC Source Sample: SA3-ISM-After Processing (A6K0135-02)												
Chrysene	263	---	2.76	ug/kg dry	"	"	7.69	46	50-124%	---	---	Q-01
Dibenz(a,h)anthracene	288	---	2.76	"	"	"	ND	52	45-134%	---	---	
Fluoranthene	272	---	2.76	"	"	"	11.7	47	50-127%	---	---	Q-01
Fluorene	262	---	2.76	"	"	"	ND	47	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	283	---	2.76	"	"	"	7.92	50	45-133%	---	---	
1-Methylnaphthalene	261	---	5.52	"	"	"	ND	47	40-120%	---	---	
2-Methylnaphthalene	263	---	5.52	"	"	"	ND	48	38-122%	---	---	
Naphthalene	248	---	5.52	"	"	"	ND	45	35-123%	---	---	B-02
Phenanthrene	261	---	2.76	"	"	"	6.41	46	50-121%	---	---	Q-01
Pyrene	278	---	2.76	"	"	"	14.6	48	47-127%	---	---	
Dibenzofuran	261	---	2.76	"	"	"	ND	47	44-120%	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 43 %*		*Limits: 37-122 %*		*Dilution: 1x*					
2-Fluorobiphenyl (Surr)			*44 %*		*44-115 %*		*"*					
Phenol-d6 (Surr)			*42 %*		*33-122 %*		*"*					
p-Terphenyl-d14 (Surr)			*49 %*		*54-127 %*		*"*					*S-06*
2-Fluorophenol (Surr)			*39 %*		*35-115 %*		*"*					
2,4,6-Tribromophenol (Surr)			*31 %*		*39-132 %*		*"*					*S-04*
Matrix Spike Dup (6110536-MSD2)					Prepared: 11/14/16 11:03		Analyzed: 11/14/16 21:52					
QC Source Sample: SA3-ISM-After Processing (A6K0135-02)												
EPA 8270D												
Acenaphthene	266	---	2.78	ug/kg dry	1	555	ND	48	40-122%	2	30%	
Acenaphthylene	274	---	2.78	"	"	"	ND	49	32-132%	3	30%	
Anthracene	286	---	2.78	"	"	"	ND	52	47-123%	4	30%	
Benz(a)anthracene	282	---	2.78	"	"	"	5.20	50	49-126%	5	30%	
Benzo(a)pyrene	308	---	4.16	"	"	"	10.2	54	45-129%	2	30%	
Benzo(b)fluoranthene	309	---	4.16	"	"	"	11.9	54	45-132%	0.6	30%	
Benzo(k)fluoranthene	310	---	4.16	"	"	"	4.85	55	47-132%	3	30%	
Benzo(g,h,i)perylene	305	---	2.78	"	"	"	10.3	53	43-134%	2	30%	
Chrysene	274	---	2.78	"	"	"	7.69	48	50-124%	4	30%	Q-01
Dibenz(a,h)anthracene	295	---	2.78	"	"	"	ND	53	45-134%	2	30%	

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2001 NW 19th Ave, STE 200	Project Number: POP-RSM	**Reported:**
Portland, OR 97209	Project Manager: Michael Pickering	12/01/16 13:02

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110536 - EPA 3546							**Soil**					
Matrix Spike Dup (6110536-MSD2)					Prepared: 11/14/16 11:03 Analyzed: 11/14/16 21:52							
QC Source Sample: SA3-ISM-After Processing (A6K0135-02)												
Fluoranthene	277	---	2.78	ug/kg dry	"	"	11.7	48	50-127%	2	30%	Q-01
Fluorene	269	---	2.78	"	"	"	ND	48	43-125%	3	30%	
Indeno(1,2,3-cd)pyrene	291	---	2.78	"	"	"	7.92	51	45-133%	3	30%	
1-Methylnaphthalene	272	---	5.55	"	"	"	ND	49	40-120%	4	30%	
2-Methylnaphthalene	268	---	5.55	"	"	"	ND	48	38-122%	2	30%	
Naphthalene	258	---	5.55	"	"	"	ND	46	35-123%	4	30%	B-02
Phenanthrene	274	---	2.78	"	"	"	6.41	48	50-121%	5	30%	Q-01
Pyrene	281	---	2.78	"	"	"	14.6	48	47-127%	1	30%	
Dibenzofuran	270	---	2.78	"	"	"	ND	49	44-120%	4	30%	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 52 %*		*Limits: 37-122 %*		*Dilution: 1x*					
2-Fluorobiphenyl (Surr)			*46 %*		*44-115 %*		*"*					
Phenol-d6 (Surr)			*51 %*		*33-122 %*		*"*					
p-Terphenyl-d14 (Surr)			*54 %*		*54-127 %*		*"*					
2-Fluorophenol (Surr)			*45 %*		*35-115 %*		*"*					
2,4,6-Tribromophenol (Surr)			*33 %*		*39-132 %*		*"*					*S-04*

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2001 NW 19th Ave, STE 200	Project Number: POP-RSM	**Reported:**
Portland, OR 97209	Project Manager: Michael Pickering	12/01/16 13:02

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110640 - EPA 3051A							**Solid**					
Blank (6110640-BLK1)					Prepared: 11/16/16 14:26 Analyzed: 11/17/16 15:22							
EPA 6020A												
Antimony	ND	---	1.00	mg/kg	10	---	---	---	---	---	---	
Arsenic	ND	---	1.00	"	"	---	---	---	---	---	---	
Beryllium	ND	---	0.200	"	"	---	---	---	---	---	---	
Cadmium	ND	---	0.200	"	"	---	---	---	---	---	---	
Chromium	ND	---	1.00	"	"	---	---	---	---	---	---	
Copper	ND	---	1.00	"	"	---	---	---	---	---	---	
Lead	ND	---	0.200	"	"	---	---	---	---	---	---	
Mercury	ND	---	0.0800	"	"	---	---	---	---	---	---	
Nickel	ND	---	1.00	"	"	---	---	---	---	---	---	
Selenium	ND	---	1.00	"	"	---	---	---	---	---	---	
Silver	ND	---	0.200	"	"	---	---	---	---	---	---	
Thallium	ND	---	0.200	"	"	---	---	---	---	---	---	
Zinc	ND	---	4.00	"	"	---	---	---	---	---	---	
LCS (6110640-BS1)					Prepared: 11/16/16 14:26 Analyzed: 11/17/16 15:25							
EPA 6020A												
Antimony	27.0	---	1.00	mg/kg	10	25.0	---	108	80-120%	---	---	
Arsenic	52.7	---	1.00	"	"	50.0	---	105	"	---	---	
Beryllium	27.2	---	0.200	"	"	25.0	---	109	"	---	---	
Cadmium	54.9	---	0.200	"	"	50.0	---	110	"	---	---	
Chromium	54.0	---	1.00	"	"	"	---	108	"	---	---	
Copper	54.5	---	1.00	"	"	"	---	109	"	---	---	
Lead	57.2	---	0.200	"	"	"	---	114	"	---	---	
Mercury	1.08	---	0.0800	"	"	1.00	---	108	"	---	---	
Nickel	55.0	---	1.00	"	"	50.0	---	110	"	---	---	
Selenium	29.6	---	1.00	"	"	25.0	---	119	"	---	---	
Silver	26.9	---	0.200	"	"	"	---	108	"	---	---	
Thallium	28.1	---	0.200	"	"	"	---	112	"	---	---	
Zinc	56.0	---	4.00	"	"	50.0	---	112	"	---	---	

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2001 NW 19th Ave, STE 200	Project Number: POP-RSM	**Reported:**
Portland, OR 97209	Project Manager: Michael Pickering	12/01/16 13:02

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110675 - EPA 3051A							**Soil**					
Blank (6110675-BLK1)					Prepared: 11/17/16 13:35 Analyzed: 11/17/16 19:51							
EPA 6020A												
Antimony	ND	---	1.00	mg/kg wet	10	---	---	---	---	---	---	
Arsenic	ND	---	1.00	"	"	---	---	---	---	---	---	
Beryllium	ND	---	0.200	"	"	---	---	---	---	---	---	
Cadmium	ND	---	0.200	"	"	---	---	---	---	---	---	
Chromium	ND	---	1.00	"	"	---	---	---	---	---	---	
Copper	ND	---	1.00	"	"	---	---	---	---	---	---	
Lead	ND	---	0.200	"	"	---	---	---	---	---	---	
Mercury	ND	---	0.0800	"	"	---	---	---	---	---	---	
Nickel	ND	---	1.00	"	"	---	---	---	---	---	---	
Selenium	ND	---	1.00	"	"	---	---	---	---	---	---	
Silver	ND	---	0.200	"	"	---	---	---	---	---	---	
Thallium	ND	---	0.200	"	"	---	---	---	---	---	---	
Zinc	ND	---	4.00	"	"	---	---	---	---	---	---	
LCS (6110675-BS1)					Prepared: 11/17/16 13:35 Analyzed: 11/17/16 19:54							
EPA 6020A												
Antimony	25.8	---	1.00	mg/kg wet	10	25.0	---	103	80-120%	---	---	
Arsenic	51.1	---	1.00	"	"	50.0	---	102	"	---	---	
Beryllium	24.3	---	0.200	"	"	25.0	---	97	"	---	---	
Cadmium	53.3	---	0.200	"	"	50.0	---	107	"	---	---	
Chromium	51.3	---	1.00	"	"	"	---	103	"	---	---	
Copper	52.4	---	1.00	"	"	"	---	105	"	---	---	
Lead	55.5	---	0.200	"	"	"	---	111	"	---	---	
Mercury	1.06	---	0.0800	"	"	1.00	---	106	"	---	---	
Nickel	52.5	---	1.00	"	"	50.0	---	105	"	---	---	
Selenium	29.1	---	1.00	"	"	25.0	---	116	"	---	---	
Silver	25.7	---	0.200	"	"	"	---	103	"	---	---	
Thallium	27.3	---	0.200	"	"	"	---	109	"	---	---	Q-41
Zinc	53.9	---	4.00	"	"	50.0	---	108	"	---	---	
Duplicate (6110675-DUP1)					Prepared: 11/17/16 13:35 Analyzed: 11/17/16 20:00							

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Maul Foster & Alongi, INC.	Project: **POP-Colwood USPS**	
2001 NW 19th Ave, STE 200	Project Number: POP-RSM	**Reported:**
Portland, OR 97209	Project Manager: Michael Pickering	12/01/16 13:02

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110675 - EPA 3051A							**Soil**					
Duplicate (6110675-DUP1)					Prepared: 11/17/16 13:35 Analyzed: 11/17/16 20:00							
QC Source Sample: SA3-ISM-After Processing (A6K0135-02)												
EPA 6020A												
Antimony	ND	---	1.08	mg/kg dry	10	---	0.610	---	---	***	40%	
Arsenic	**6.43**	---	1.08	"	"	---	6.36	---	---	1	40%	
Beryllium	**0.812**	---	0.217	"	"	---	0.770	---	---	5	40%	
Cadmium	**0.487**	---	0.217	"	"	---	0.588	---	---	19	40%	
Chromium	**32.3**	---	1.08	"	"	---	29.8	---	---	8	40%	
Copper	**33.4**	---	1.08	"	"	---	31.9	---	---	5	40%	
Lead	**16.2**	---	0.217	"	"	---	16.1	---	---	1	40%	
Mercury	**0.209**	---	0.0867	"	"	---	0.198	---	---	5	40%	
Nickel	**23.6**	---	1.08	"	"	---	22.4	---	---	5	40%	
Selenium	ND	---	1.08	"	"	---	0.592	---	---	***	40%	
Silver	ND	---	0.217	"	"	---	ND	---	---	---	40%	
Thallium	ND	---	0.217	"	"	---	0.150	---	---	***	40%	Q-41
Zinc	**108**	---	4.33	"	"	---	104	---	---	3	40%	
Matrix Spike (6110675-MS1)					Prepared: 11/17/16 13:35 Analyzed: 11/17/16 20:03							
QC Source Sample: SA3-ISM-After Processing (A6K0135-02)												
EPA 6020A												
Antimony	23.1	---	1.07	mg/kg dry	10	26.7	0.610	84	75-125%	---	---	
Arsenic	60.3	---	1.07	"	"	53.4	6.36	101	"	---	---	
Beryllium	27.0	---	0.214	"	"	26.7	0.770	98	"	---	---	
Cadmium	57.8	---	0.214	"	"	53.4	0.588	107	"	---	---	
Chromium	86.8	---	1.07	"	"	"	29.8	107	"	---	---	
Copper	87.5	---	1.07	"	"	"	31.9	104	"	---	---	
Lead	74.3	---	0.214	"	"	"	16.1	109	"	---	---	
Mercury	1.26	---	0.0854	"	"	1.07	0.198	99	"	---	---	
Nickel	77.4	---	1.07	"	"	53.4	22.4	103	"	---	---	
Selenium	30.4	---	1.07	"	"	26.7	0.592	112	"	---	---	
Silver	28.4	---	0.214	"	"	"	0.107	106	"	---	---	
Thallium	28.9	---	0.214	"	"	"	0.150	108	"	---	---	Q-41

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Maul Foster & Alongi, INC.	Project: **POP-Colwood USPS**	
2001 NW 19th Ave, STE 200	Project Number: POP-RSM	**Reported:**
Portland, OR 97209	Project Manager: Michael Pickering	12/01/16 13:02

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110675 - EPA 3051A							**Soil**					
Matrix Spike (6110675-MS1)					Prepared: 11/17/16 13:35 Analyzed: 11/17/16 20:03							
QC Source Sample: SA3-ISM-After Processing (A6K0135-02)												
Zinc	161	---	4.27	mg/kg dry	"	53.4	104	106	"	---	---	

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Portland, OR 97209	Project Manager: Michael Pickering	12/01/16 13:02

QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110441 - Total Solids (Dry Weight)												**Soil**

No Client related Batch QC samples analyzed for this batch. See notes page for more information.

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Portland, OR 97209	Project Manager: Michael Pickering	12/01/16 13:02

Weck Laboratories, Inc.

QUALITY CONTROL (QC) SAMPLE RESULTS

Chlorinated Herbicides

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch W6K0700 - EPA 3550C/Sonic							**Soil**					
Blank (W6K0700-BLK1)					Prepared: 11/11/16 14:53 Analyzed: 11/28/16 18:28							
EPA 8151A												
2,4-D	ND	0.0069	0.10	mg/kg dry wt wet	1	---	---	---	---	---	---	
2,4-DB	ND	0.017	0.10	"	"	---	---	---	---	---	---	
2,4,5-T	ND	0.0056	0.10	"	"	---	---	---	---	---	---	
2,4,5-TP (Silvex)	ND	0.0072	0.10	"	"	---	---	---	---	---	---	
Dalapon	ND	0.019	0.10	"	"	---	---	---	---	---	---	
Dicamba	ND	0.0090	0.10	"	"	---	---	---	---	---	---	
Dichloroprop	ND	0.0071	0.10	"	"	---	---	---	---	---	---	
Dinoseb	ND	0.0038	0.15	"	"	---	---	---	---	---	---	
MCPA	ND	0.79	15	"	"	---	---	---	---	---	---	
MCPP	ND	0.68	15	"	"	---	---	---	---	---	---	
Pentachlorophenol	ND	0.0063	0.10	"	"	---	---	---	---	---	---	
Picloram	ND	0.0072	0.10	"	"	---	---	---	---	---	---	
Surr: 2,4-DCAA			*Recovery: 67 %*	*Limits: 13-119 %*			*Dilution: 1x*					
LCS (W6K0700-BS1)					Prepared: 11/11/16 14:53 Analyzed: 11/28/16 19:05							
EPA 8151A												
2,4-D	0.0572	0.0069	0.10	mg/kg dry wt wet	1	0.333	---	17	53-130%	---	---	BS-03, J
2,4-DB	0.256	0.017	0.10	"	"	0.667	---	38	28-119%	---	---	
2,4,5-T	0.0334	0.0056	0.10	"	"	0.167	---	20	40-108%	---	---	BS-03, J
2,4,5-TP (Silvex)	0.125	0.0072	0.10	"	"	"	---	75	38-108%	---	---	
Dalapon	0.0945	0.019	0.10	"	"	0.333	---	28	17-122%	---	---	J
Dicamba	0.282	0.0090	0.10	"	"	"	---	85	48-107%	---	---	
Dichloroprop	0.246	0.0071	0.10	"	"	"	---	74	45-117%	---	---	
Dinoseb	0.0305	0.0038	0.15	"	"	0.167	---	18	0.1-83%	---	---	J
MCPA	14.2	0.79	15	"	"	33.3	---	42	33-107%	---	---	J
MCPP	27.4	0.68	15	"	"	"	---	82	34-117%	---	---	
Pentachlorophenol	0.163	0.0063	0.10	"	"	0.167	---	98	40-102%	---	---	
Picloram	0.0608	0.0072	0.10	"	"	"	---	36	22-139%	---	---	J

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2001 NW 19th Ave, STE 200	Project Number: POP-RSM	**Reported:**
Portland, OR 97209	Project Manager: Michael Pickering	12/01/16 13:02

Weck Laboratories, Inc.

QUALITY CONTROL (QC) SAMPLE RESULTS

Chlorinated Herbicides

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch W6K0700 - EPA 3550C/Sonic							**Soil**					
LCS (W6K0700-BS1)						Prepared: 11/11/16 14:53	Analyzed: 11/28/16 19:05					
Surr: 2,4-DCAA			*Recovery: 80 %*	*Limits: 13-119 %*			*Dilution: 1x*					
Matrix Spike (W6K0700-MS1)						Prepared: 11/11/16 14:53	Analyzed: 11/28/16 19:41					
QC Source Sample: A6K0135-02 (A6K0135-02)												
EPA 8151A												
2,4-D	1.08	0.026	0.37	mg/kg dry wt dry	1	1.25	ND	87	21-126%	---	---	M-02a
2,4-DB	0.982	0.064	0.37	"	"	2.49	ND	39	13-133%	---	---	M-02a
2,4,5-T	0.443	0.021	0.37	"	"	0.624	ND	71	17-123%	---	---	M-02a
2,4,5-TP (Silvex)	0.572	0.027	0.37	"	"	"	ND	92	15-126%	---	---	M-02a
Dalapon	0.780	0.071	0.37	"	"	1.25	ND	63	9.6-101%	---	---	M-02a
Dicamba	1.13	0.034	0.37	"	"	"	ND	91	11-107%	---	---	M-02a
Dichloroprop	1.01	0.027	0.37	"	"	"	ND	81	44-133%	---	---	M-02a
Dinoseb	0.0836	0.014	0.56	"	"	0.624	ND	13	0.1-72%	---	---	M-02a, J
MCPA	104	3.0	56	"	"	125	ND	83	23-123%	---	---	M-02a
MCPP	115	2.5	56	"	"	"	ND	92	24-120%	---	---	M-02a
Pentachlorophenol	0.602	0.024	0.37	"	"	0.624	ND	97	10-103%	---	---	M-02a
Picloram	0.475	0.027	0.37	"	"	"	ND	76	17-155%	---	---	M-02a
Surr: 2,4-DCAA			*Recovery: 98 %*	*Limits: 13-119 %*			*Dilution: 1x*					*M-02a*
Matrix Spike Dup (W6K0700-MSD1)						Prepared: 11/11/16 14:53	Analyzed: 11/28/16 20:17					
QC Source Sample: A6K0135-02 (A6K0135-02)												
EPA 8151A												
2,4-D	1.01	0.026	0.38	mg/kg dry wt dry	1	1.25	ND	80	21-126%	7	25%	M-02a
2,4-DB	2.14	0.064	0.38	"	"	2.51	ND	85	13-133%	74	25%	M-02a, MS-05
2,4,5-T	0.411	0.021	0.38	"	"	0.627	ND	65	17-123%	8	25%	M-02a
2,4,5-TP (Silvex)	0.512	0.027	0.38	"	"	"	ND	82	15-126%	11	25%	M-02a
Dalapon	0.698	0.072	0.38	"	"	1.25	ND	56	9.6-101%	11	25%	M-02a
Dicamba	1.04	0.034	0.38	"	"	"	ND	83	11-107%	8	25%	M-02a
Dichloroprop	0.898	0.027	0.38	"	"	"	ND	72	44-133%	12	25%	M-02a

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2001 NW 19th Ave, STE 200	Project Number: POP-RSM	**Reported:**
Portland, OR 97209	Project Manager: Michael Pickering	12/01/16 13:02

Weck Laboratories, Inc.

QUALITY CONTROL (QC) SAMPLE RESULTS

Chlorinated Herbicides

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch W6K0700 - EPA 3550C/Sonic							**Soil**					
Matrix Spike Dup (W6K0700-MSD1)						Prepared: 11/11/16 14:53	Analyzed: 11/28/16 20:17					
QC Source Sample: A6K0135-02 (A6K0135-02)												
Dinoseb	0.0504	0.014	0.56	"	"	0.627	ND	8	0.1-72%	50	25%	M-02a, MS-05, J
MCPA	112	3.0	56	"	"	125	ND	89	23-123%	8	25%	M-02a
MCPP	107	2.6	56	"	"	"	ND	85	24-120%	7	25%	M-02a
Pentachlorophenol	0.520	0.024	0.38	"	"	0.627	ND	83	10-103%	15	25%	M-02a
Picloram	0.429	0.027	0.38	"	"	"	ND	68	17-155%	10	25%	M-02a
Surr: 2,4-DCAA			*Recovery: 91 %*	*Limits: 13-119 %*		*Dilution: 1x*						*M-02a*

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Portland, OR 97209	Project Manager: Michael Pickering	12/01/16 13:02

Weck Laboratories, Inc.

QUALITY CONTROL (QC) SAMPLE RESULTS

Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch W6K0909 - General Preparation							**Solid**					
Duplicate (W6K0909-DUP1)					Prepared: 11/16/16 15:03 Analyzed: 11/17/16 17:50							
QC Source Sample: A6K0135-02 (A6K0135-02)												
EPA 160.3M												
% Solids	**96.0**	---	0.100	% by Weight	1	---	95.9	---	---	0.09	20%	

No Client related Batch QC samples analyzed for this batch. See notes page for more information.

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SAMPLE PREPARATION INFORMATION

Polychlorinated Biphenyls by EPA 8082A

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6110519							
A6K0135-02	Soil	EPA 8082A	11/01/16 12:00	11/14/16 07:20	10.75g/5mL	10g/5mL	0.93
A6K0135-04	Soil	EPA 8082A	10/31/16 13:30	11/14/16 07:20	11.28g/5mL	10g/5mL	0.89

Organochlorine Pesticides by EPA 8081B

Prep: EPA 3546/3640A (GPC)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6110544							
A6K0135-02RE1	Soil	EPA 8081B	11/01/16 12:00	11/11/16 11:25	10.56g/10mL	10g/5mL	1.89
A6K0135-04RE1	Soil	EPA 8081B	10/31/16 13:30	11/11/16 11:25	10.58g/10mL	10g/5mL	1.89

Anions by EPA 300.0/9056A (Ion Chromatography)

Prep: Method Prep: Non-Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6110430							
A6K0135-02	Soil	EPA 9056A	11/01/16 12:00	11/10/16 07:24	5.008g/50mL	5g/50mL	1.00
A6K0135-04	Soil	EPA 9056A	10/31/16 13:30	11/10/16 07:24	5.0272g/50mL	5g/50mL	1.00

Cyanide - Total (Non-aqueous)

Prep: Method Prep: Non-Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6110433							
A6K0135-02	Soil	EPA 9013M/9014	11/01/16 12:00	11/10/16 08:00	2.5338g/50mL	2.5g/50mL	0.99
A6K0135-04	Soil	EPA 9013M/9014	10/31/16 13:30	11/10/16 08:00	2.5133g/50mL	2.5g/50mL	1.00

Organophosphorous Pesticides (OPPs) by EPA 8270D (GC/MS)

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6110535							
A6K0135-02	Soil	EPA 8270D	11/01/16 12:00	11/14/16 10:58	10.73g/5mL	10g/5mL	0.93
A6K0135-04RE1	Soil	EPA 8270D	10/31/16 13:30	11/14/16 10:58	10.41g/5mL	10g/5mL	0.96

Semivolatile Organic Compounds by EPA 8270D

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SAMPLE PREPARATION INFORMATION

Semivolatile Organic Compounds by EPA 8270D

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6110536							
A6K0135-02	Soil	EPA 8270D	11/01/16 12:00	11/14/16 11:03	15.06g/2mL	15g/2mL	1.00
A6K0135-04	Soil	EPA 8270D	10/31/16 13:30	11/14/16 11:03	15.31g/2mL	15g/2mL	0.98

Total Metals by EPA 6020 (ICPMS)

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6110640							
A6K0135-05	Glass Beads	EPA 6020A	11/01/16 00:00	11/16/16 14:26	0.471g/50mL	0.5g/50mL	1.06
Batch: 6110675							
A6K0135-02	Soil	EPA 6020A	11/01/16 12:00	11/17/16 13:35	0.489g/50mL	0.5g/50mL	1.02
A6K0135-04	Soil	EPA 6020A	10/31/16 13:30	11/17/16 13:35	0.471g/50mL	0.5g/50mL	1.06
A6K0135-04RE1	Soil	EPA 6020A	10/31/16 13:30	11/17/16 13:35	0.471g/50mL	0.5g/50mL	1.06

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6110441							
A6K0135-02	Soil	EPA 8000C	11/01/16 12:00	11/10/16 10:03	1N/A/1N/A	1N/A/1N/A	NA
A6K0135-04	Soil	EPA 8000C	10/31/16 13:30	11/10/16 10:03	1N/A/1N/A	1N/A/1N/A	NA

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Weck Laboratories, Inc.

SAMPLE PREPARATION INFORMATION

Chlorinated Herbicides

Prep: EPA 3550C/Sonic

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: W6K0700							
A6K0135-02	Soil	EPA 8151A	11/01/16 12:00	11/11/16 14:53	8.56g/10ml	30g/10ml	3.50
A6K0135-04	Soil	EPA 8151A	10/31/16 13:30	11/11/16 14:53	8.09g/10ml	30g/10ml	3.71

Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods

Prep: General Preparation

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: W6K0909							
A6K0135-02	Soil	EPA 160.3M	11/01/16 12:00	11/16/16 15:03	1g/1ml	1g/1ml	NA
A6K0135-04	Soil	EPA 160.3M	10/31/16 13:30	11/16/16 15:03	1g/1ml	1g/1ml	NA

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Notes and Definitions

Qualifiers:

B-02	Analyte detected in an associated blank at a level between one-half the MRL and the MRL. (See Notes and Conventions below.)
BS-03	The recovery of this analyte in the BS/LCS was outside the control limits. The sample result was accepted based on another acceptable BS/LCS and/or MS and MSD that meet BS criteria.
C-05	Extract has undergone a GPC (Gel-Permeation Chromatography) cleanup per EPA 3640A. Reporting levels may be raised due to dilution necessary for cleanup. Sample Final Volume includes the GPC dilution factor, see the Prep page for details.
C-07	Extract has undergone Sulfuric Acid Cleanup by EPA 3665A, Sulfur Cleanup by EPA 3660B, and Florisil Cleanup by EPA 3620B in order to minimize matrix interference.
J	Estimated conc. detected <MRL and >MDL.
M-02	Due to matrix interference, this analyte cannot be accurately quantified. The reported result is estimated.
M-02a	Due to the nature of matrix interferences, sample was diluted prior to preparation. The MDL and MRL were raised due to the dilution.
MS-05	The spike recovery and/or RPD were outside acceptance limits for the MS and/or MSD due to possible matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.
Q-01	Spike recovery and/or RPD is outside acceptance limits.
Q-05	Analyses are not controlled on RPD values from sample and duplicate concentrations that are below 5 times the reporting level.
Q-17	RPD between original and duplicate sample is outside of established control limits.
Q-41	Estimated Results. Recovery of Continuing Calibration Verification sample above upper control limit for this analyte. Results are likely biased high.
Q-42	Matrix Spike and/or Duplicate analysis was performed on this sample. % Recovery or RPD for this analyte is outside laboratory control limits. (Refer to the QC Section of Analytical Report.)
R-01	The Reporting Limit for this analyte has been raised to account for matrix interference.
R-02	The Reporting Limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample.
S-03	Reextraction and analysis, or analysis of laboratory duplicate, confirms surrogate failure due to sample matrix effect.
S-04	Surrogate recovery is outside of established control limits due to a sample matrix effect.
S-06	Surrogate recovery is outside of established control limits.

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit

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NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
***	Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Apex Laboratories

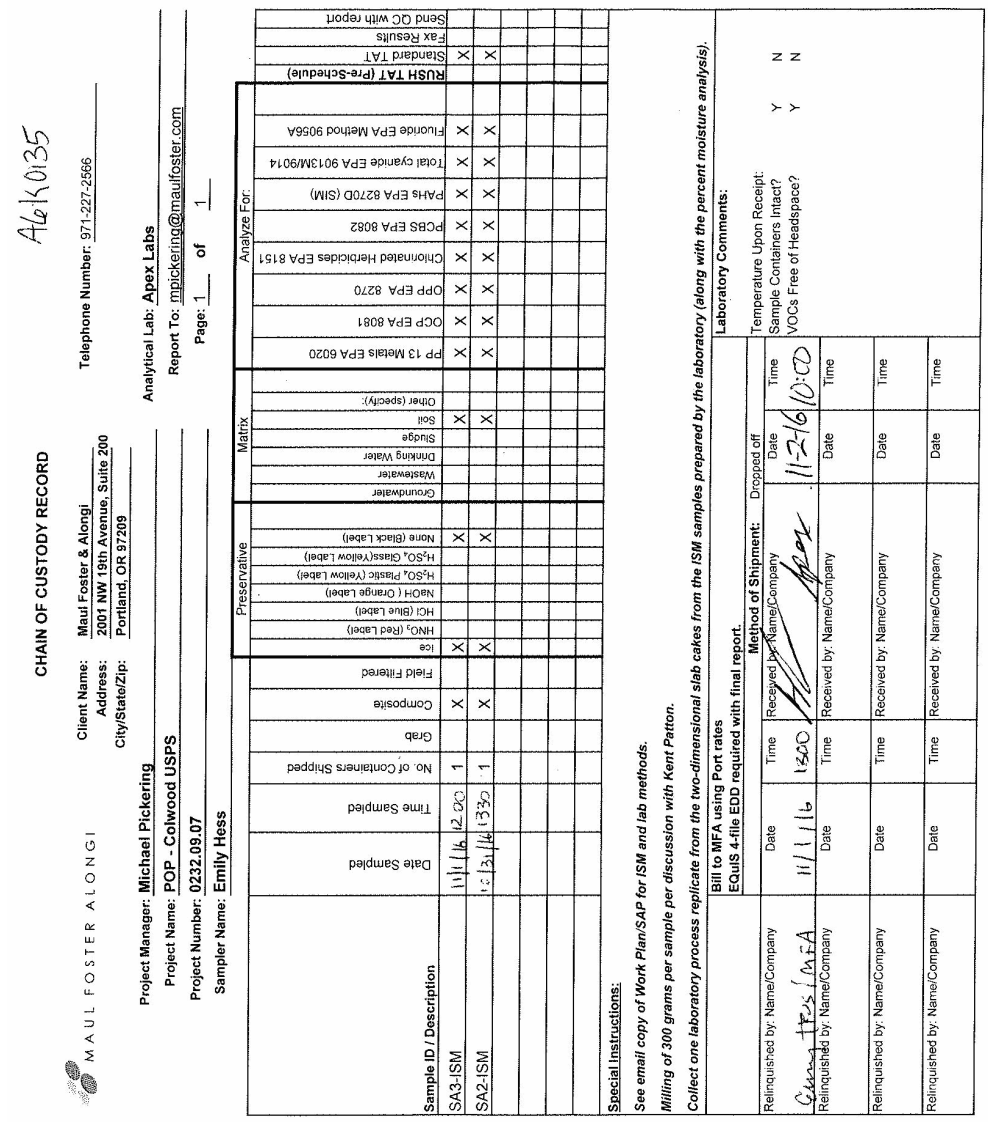
Lisa Domenighini, Client Services Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Maul Foster & Alongi, INC.	Project: **POP-Colwood USPS**	
2001 NW 19th Ave, STE 200	Project Number: POP-RSM	**Reported:**
Portland, OR 97209	Project Manager: Michael Pickering	12/01/16 13:02



CHAIN OF CUSTODY RECORD

MAUL FOSTER ALONGI

Client Name: Maul Foster & Alongi
Address: 2001 NW 19th Avenue, Suite 200
City/State/Zip: Portland, OR 97209
Telephone Number: 971-227-2666

Project Manager: Michael Pickering
Project Name: POP - Colwood USPS
Project Number: 0232.09.07
Sampler Name: Emily Hess

Analytical Lab: Apex Labs
Report To: mpickering@maulfoster.com
Page: 1 of 1

Sample ID / Description	Date Sampled	Time Sampled	No. of Containers Shipped	Grab	Composite	Field Filtered	Preservative: Ice	HNO3 (Red Label)	HCl (Blue Label)	NaOH (Orange Label)	H2SO4 Plastic (Yellow Label)	H2SO4 Glass(Yellow Label)	None (Black Label)	Matrix: Groundwater	Wastewater	Drinking Water	Sludge	Soil	Other (specify):	Analyze For: PP 13 Metals EPA 6020	OCP EPA 8081	OPP EPA 8270	Chlorinated Herbicides EPA 8151	PCBS EPA 8082	PAHs EPA 8270D (SIM)	Total cyanide EPA 9013M/9014	Fluoride EPA Method 9056A		RUSH TAT (Pre-Schedule)	Standard TAT	Fax Results	Send QC with report
SA3-ISM	11/1/16	12:00	1		X		X						X					X		X	X	X	X	X	X	X	X			X	
SA2-ISM	11/1/16	13:30	1		X		X						X					X		X	X	X	X	X	X	X	X			X	

Special Instructions:
See email copy of Work Plan/SAP for ISM and lab methods.
Milling of 300 grams per sample per discussion with Kent Patton.
Collect one laboratory process replicate from the two-dimensional slab cakes from the ISM samples prepared by the laboratory (along with the percent moisture analysis).

Bill to MFA using Port rates
EQuIS 4-file EDD required with final report.

Method of Shipment:

Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Dropped off Date	Time
Emily Hess / MFA	11/1/16	1500		11-2-16	10:00
Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time
Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time
Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time

Laboratory Comments:

Temperature Upon Receipt:
Sample Containers Intact? Y N
VOCs Free of Headspace? Y N

AK160135

Apex Laboratories

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Lisa Domenighini, Client Services Manager

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Maul Foster & Alongi, INC.	Project: **POP-Colwood USPS**	
2001 NW 19th Ave, STE 200	Project Number: POP-RSM	**Reported:**
Portland, OR 97209	Project Manager: Michael Pickering	12/01/16 13:02

APEX LABS COOLER RECEIPT FORM

Client: MFA-Vanc. Element WO#: A6K0135

Project/Project #: POP-Colwood USPS

Delivery info:

Date/Time Received: 11-2-16 @ 10:00 By: AOP

Delivered by: Apex X Client ___ ESS ___ FedEx ___ UPS ___ Swift ___ Senvoy ___ SDS ___ Other ___

Cooler Inspection Inspected by: AOP : 11-2-16 @ 10:55

Chain of Custody Included? Yes X No ___ Custody Seals? Yes ___ No X

Signed/Dated by Client? Yes X No ___

Signed/Dated by Apex? Yes Y No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)	12.3	11.4					
Received on Ice? (Y/N)							
Temp. Blanks? (Y/N)							
Ice Type: (Gel/Real/Other)	none	none					
Condition:	OOT	OOT					

Cooler out of temp? (Y/N) Possible reason why: No room for ice in ISM cooler

If some coolers are in temp and some out, were green dot applied to out of temperature samples? Yes/No/NA

Samples Inspection: Inspected by: ___ : 12/1/16 @ 1535

All Samples Intact? Yes Y No ___ Comments: ___

Bottle Labels/COCs agree? Yes Y No ___ Comments: ___

Containers/Volumes Received Appropriate for Analysis? Yes Y No ___ Comments:

Do VOA Vials have Visible Headspace? Yes ___ No ___ NA Y

Comments ___

Water Samples: pH Checked and Appropriate (except VOAs): Yes ___ No ___ NA Y

Comments: ___

Additional Information: ___

Labeled by: KF Witness: VA Cooler Inspected by: ___ See Project Contact Form: Y

Apex Laboratories

Lisa A Domenighini

Lisa Domenighini, Client Services Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

DATA QUALITY ASSURANCE/QUALITY CONTROL REVIEW

PROJECT NO. 0232.09.07 | DECEMBER 12, 2016 | PORT OF PORTLAND

Maul Foster & Alongi, Inc. (MFA) conducted an independent review of the quality of analytical results for two incremental sampling methodology (ISM) soil samples collected at the U.S. Postal Service (USPS) development site (the Site) in the Colwood Industrial Park located at 7350 NE Cornfoot Road in Portland, Oregon. The samples were collected on October 31 and November 1, 2016.

Apex Laboratories, LLC (Apex) and Weck Laboratories, Inc. (Weck) performed the analyses. Apex report number A6K0135 was reviewed. Portions of the report were subcontracted to Weck, with results appended to report A6K0135. The analyses performed and samples analyzed are listed below. An additional glass bead grind blank sample was also reported by Apex for data quality purposes.

Analysis	Reference
Chlorinated Herbicides	USEPA 8151A
Fluoride	USEPA 300.0
Organochlorine Pesticides	USEPA 8081B
Organophosphorus Pesticides	USEPA 8270D
Polychlorinated Biphenyls (PCBs) as Aroclors	USEPA 8082A
Semivolatile Organic Compounds (SVOCs)	USEPA 8270D
Total Cyanide	USEPA 9013 Modified/9014
Total Metals	USEPA 6020A

USEPA = U.S. Environmental Protection Agency.

Samples Analyzed
Report A6K0135
SA3-ISM-After Processing
SA2-ISM-After Processing

DATA QUALIFICATIONS

Analytical results were evaluated according to applicable sections of USEPA procedures (USEPA, 2016a,b) and appropriate laboratory and method-specific guidelines (Apex, 2016; USEPA, 1986; Weck, 2014).

USEPA Method 8270D SVOC benzo(b)fluoranthene and benzo(k)fluoranthene results were flagged by Apex as estimated values due to matrix interference that prevented accurate quantification. The results have been qualified by the reviewer with "J" as estimated.

Sample	Component	Original Result (ug/kg)	Qualified Result (ug/kg)
SA3-ISM-After Processing	Benzo(b)fluoranthene	11.9	11.9 J
SA3-ISM-After Processing	Benzo(k)fluoranthene	4.85	4.85 J
SA2-ISM-After Processing	Benzo(b)fluoranthene	59.8	59.8 J
SA2-ISM-After Processing	Benzo(k)fluoranthene	18.0	18.0 J

J = the result is an estimated value.
ug/kg = micrograms per kilogram.

The data are considered acceptable for their intended use, with the appropriate data qualifiers assigned.

HOLDING TIMES, PRESERVATION, AND SAMPLE STORAGE

Holding Times

Extractions and analyses were performed within the recommended holding time criteria.

Preservation and Sample Storage

The samples were preserved appropriately. Apex noted that coolers were received at the laboratory at temperatures of 12.3 degrees Celsius (°C) and 11.4 °C. The temperature exceedance was minor; thus, no results were qualified.

BLANKS

Method Blanks

Laboratory method blank analyses were performed at the required frequencies. For purposes of data qualification, the method blanks were associated with all samples prepared in the analytical batch.

If an analyte was detected in a sample and in the associated method blank, the sample result was qualified if the concentration was less than five times the method blank concentration. Method reporting limits (MRLs) were elevated to the concentration detected in the samples, and results were qualified as not detected "U" at the elevated MRL. If an analyte was detected below the method detection limit (MDL) in a sample and in the associated method blank, the sample result was qualified "U" as not detected at the MRL.

The USEPA Method 8270D SVOC method blank had a detection of naphthalene between one half the MRL and the MRL. All associated sample results were significantly higher, with detected concentrations greater than the MRL; thus, no results were qualified.

The remaining laboratory method blanks were non-detect for all target analytes.

Trip Blanks

Trip blanks were not required for this sampling event.

Equipment Rinsate Blanks

Equipment rinsate blanks were not required for this sampling event.

SURROGATE RECOVERY RESULTS

The samples were spiked with surrogate compounds to evaluate laboratory performance on individual samples. The laboratory appropriately documented and qualified surrogate outliers. Associated batch quality assurance/quality control for samples with surrogate outliers was within acceptance limits.

USEPA Method 8081B surrogate decachlorobiphenyl results were below the lower percent recovery acceptance limit of 65 percent for samples SA3-ISM-After Processing and SA2-ISM-After Processing at 57 percent and 50 percent, respectively. The 2,4,5,6-tetrachloro-m-xylene (TCMX) surrogate result for sample SA2-ISM-After Processing was also below the lower percent recovery acceptance limit of 42 percent, at 40 percent. Surrogates 2,4,5,6-TCMX and decachlorobiphenyl were also below most lower percent recovery acceptance limits for the laboratory duplicate prepared with sample SA2-ISM-After Processing and the matrix spike/matrix spike duplicate (MS/MSD) prepared with SA3-ISM-After Processing. Apex noted that the low recoveries were confirmed and were due to matrix interference. Both samples were non-detect for all target analytes. The sample surrogate percent recovery exceedances were minor; thus, associated sample results were not qualified by the reviewer.

USEPA Method 8270D organophosphorus pesticide surrogate tributyl phosphate results were below the lower percent recovery acceptance limit of 55 percent for samples SA3-ISM-After Processing and SA2-ISM-After Processing, at 35 percent for both samples. The remaining surrogate, triphenyl phosphate, had results below the lower percent recovery acceptance limit of 65 percent, at 53 percent for sample SA3-ISM-After Processing, 54 percent for sample SA2-ISM-After Processing, and 60 percent for the laboratory duplicate. The laboratory duplicate prepared with SA2-ISM-After Processing and the MS/MSD prepared with SA3-ISM-After Processing also had surrogate results below the lower percent recovery acceptance limits. Apex noted that the low recoveries of both surrogates were confirmed and were due to matrix interference. Both samples were non-detect for all target analytes. The surrogate percent recoveries were above the 30 percent minimum recommended by USEPA national functional guidelines for pesticides data review; thus, the exceedances were considered minor and results were not qualified by the reviewer.

The USEPA Method 8270D SVOC surrogate 2,4,6-tribromophenol result for sample SA3-ISM-After Processing and the MS/MSD prepared with sample SA3-ISM-After Processing was below the lower percent recovery acceptance limit of 39 percent, at 33 percent, 31 percent, and 33 percent, respectively, due to matrix interference. The MS also had a surrogate p-terphenyl-d14 result below the lower percent recovery acceptance limit of 54 percent, at 49 percent, which was considered a minor exceedance. The remaining surrogates had acceptable percent recoveries; thus, no results were qualified.

All remaining surrogate recoveries were within acceptance limits.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RESULTS

MS/MSD results are used to evaluate laboratory precision and accuracy. All MS/MSD samples were extracted and analyzed at the required frequency.

The USEPA Method 8081B MS results were below lower percent recovery acceptance limits for several analytes. The associated MSD recovery results were within acceptance limits; thus, no results were qualified. Several MS/MSD relative percent differences (RPDs) also exceeded RPD acceptance limits. The associated samples were non-detect; thus, no results were qualified. MS/MSD surrogate percent recovery exceedances are discussed in the surrogate section above.

The USEPA Method 8270D organophosphorus pesticide results for dichlorvos, monocrotophos, and tetraethyl pyrophosphate (TEPP) were below lower percent recovery acceptance limits at 34/38 percent, 25/26 percent, and 10/10 percent respectively. The associated batch LCS had acceptable percent recoveries, indicating that the low MS/MSD results are likely due to matrix interference. MS percent recovery exceedances associated with MSD results that were within percent recovery acceptance limits were not qualified. The associated samples were non-detect and have been qualified as follows:

Sample	Component	Original Result (ug/kg)	Qualified Result (ug/kg)
SA3-ISM-After Processing	Dichlorvos	24.4 U	24.4 UJ
SA2-ISM-After Processing	Dichlorvos	24.9 U	24.9 UJ
SA3-ISM-After Processing	Monocrotophos	24.4 U	24.4 UJ
SA2-ISM-After Processing	Monocrotophos	24.9 U	24.9 UJ
SA3-ISM-After Processing	TEPP	97.5 U	97.5 R
SA2-ISM-After Processing	TEPP	99.8 U	99.8 R

R = the result is rejected.
U = the result is non-detect.
ug/kg = micrograms per kilogram.
UJ = the result is non-detect and an estimated value.

The USEPA Method 8270D SVOC MS/MSD results were below the lower percent recovery acceptance limits for chrysene (46/48 percent), fluoranthene (47/48 percent), and phenanthrene (46 percent/48). The associated batch LCS had acceptable percent recoveries, indicating that the low MS/MSD results are likely due to matrix interference. MS or MSD percent recovery exceedances associated with acceptable results in the MS/MSD pair were not qualified. The associated samples have been qualified as follows:

Sample	Component	Original Result (ug/kg)	Qualified Result (ug/kg)
SA3-ISM-After Processing	Chrysene	7.69	7.69 J
SA2-ISM-After Processing	Chrysene	44.7	44.7 J
SA3-ISM-After Processing	Fluoranthene	11.7	11.7 J

Sample	Component	Original Result (ug/kg)	Qualified Result (ug/kg)
SA2-ISM-After Processing	Fluoranthene	92.3	92.3 J
SA3-ISM-After Processing	Phenanthrene	6.41	6.41 J
SA2-ISM-After Processing	Phenanthrene	76.4	76.4 J

J = the result is an estimated value.
ug/kg = micrograms per kilogram.

The USEPA Method 8151A MS/MSD RPDs for 2,4-DB and dinoseb were above the acceptance limit of 25 percent, at 74 percent and 50 percent, respectively. The associated sample results were non-detect; thus, no results were qualified.

All remaining MS/MSD results were within acceptance limits for percent recovery and RPD.

LABORATORY DUPLICATE RESULTS

Duplicate results are used to evaluate laboratory precision. All duplicate samples were extracted and analyzed at the required frequency. Laboratory duplicate RPD was not assessed for results less than 5 times the MRL.

The USEPA Method 8270D SVOC laboratory duplicate prepared with sample SA2-ISM-After Processing exceeded RPD acceptance limits for benzo(a)anthracene (32 percent), benzo(k)fluoranthene (37 percent), and indeno(1,2,3-cd)pyrene (32 percent). The exceedances were minor; thus, no results were qualified.

All remaining laboratory duplicate RPDs were within acceptance limits.

LABORATORY CONTROL SAMPLE/LABORATORY CONTROL SAMPLE DUPLICATE RESULTS

A laboratory control sample/laboratory control sample duplicate (LCS/LCSD) is spiked with target analytes to provide information on laboratory precision and accuracy. The LCS/LCSD samples were extracted and analyzed at the required frequency.

The USEPA Method 8151A LCS result for 2,4-D was below the lower percent recovery acceptance limit of 53 percent, at 17 percent. The result for 2,4,5-T was also below the lower percent recovery acceptance limit of 40 percent, at 20 percent. The associated MS/MSD had acceptable percent recoveries for both analytes; thus, no results were qualified.

All remaining LCS/LCSD analytes were within acceptance limits for percent recovery and RPD.

FIELD DUPLICATE RESULTS

Field duplicate samples measure both field and laboratory precision. Field duplicate samples were not submitted for analysis.

CONTINUING CALIBRATION VERIFICATION RESULTS

Continuing calibration verification (CCV) results are used to demonstrate instrument precision and accuracy through the end of the sample batch. Apex did not report CCV results. Batch quality control and surrogate percent recovery results flagged due to CCV exceedances were not qualified when batch quality control criteria were met.

REPORTING LIMITS

Apex used routine reporting limits for non-detect results, except for samples requiring dilutions because of high analyte concentrations and/or matrix interferences. Some MRLs were additionally raised due to interference from coeluting compounds present in the sample.

DATA PACKAGE

The data packages were reviewed for transcription errors, omissions, and anomalies. None were found.

REFERENCES

Apex. 2016. Quality systems manual. Apex Laboratories, LLC. Tigard, Oregon. April 1.

Weck. 2014. Quality assurance manual. Weck Laboratories, Inc. City of Industry, California. March 24.

USEPA. 1986. Test methods for evaluating solid waste: physical/chemical methods. EPA-530/SW-846. Update V. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. September (revision 1, July 2014).

USEPA. 2016a. USEPA contract laboratory program, national functional guidelines for inorganic Superfund methods data review. EPA 540-R-2016-001. U.S. Environmental Protection Agency, Office of Superfund Remediation and Technology Innovation. August.

USEPA. 2016b. USEPA contract laboratory program, national functional guidelines for Superfund organic methods data review. EPA 540-R-2016-002. U.S. Environmental Protection Agency, Office of Superfund Remediation and Technology Innovation. August.

ATTACHMENT C

TRIP MATERIAL PLACEMENT SITE

TRIP Material Placement Site

Sandy River

Swigert Way

Stockpile E

Graham Road

Legend

- Stockpile E
- TRIP Boundary

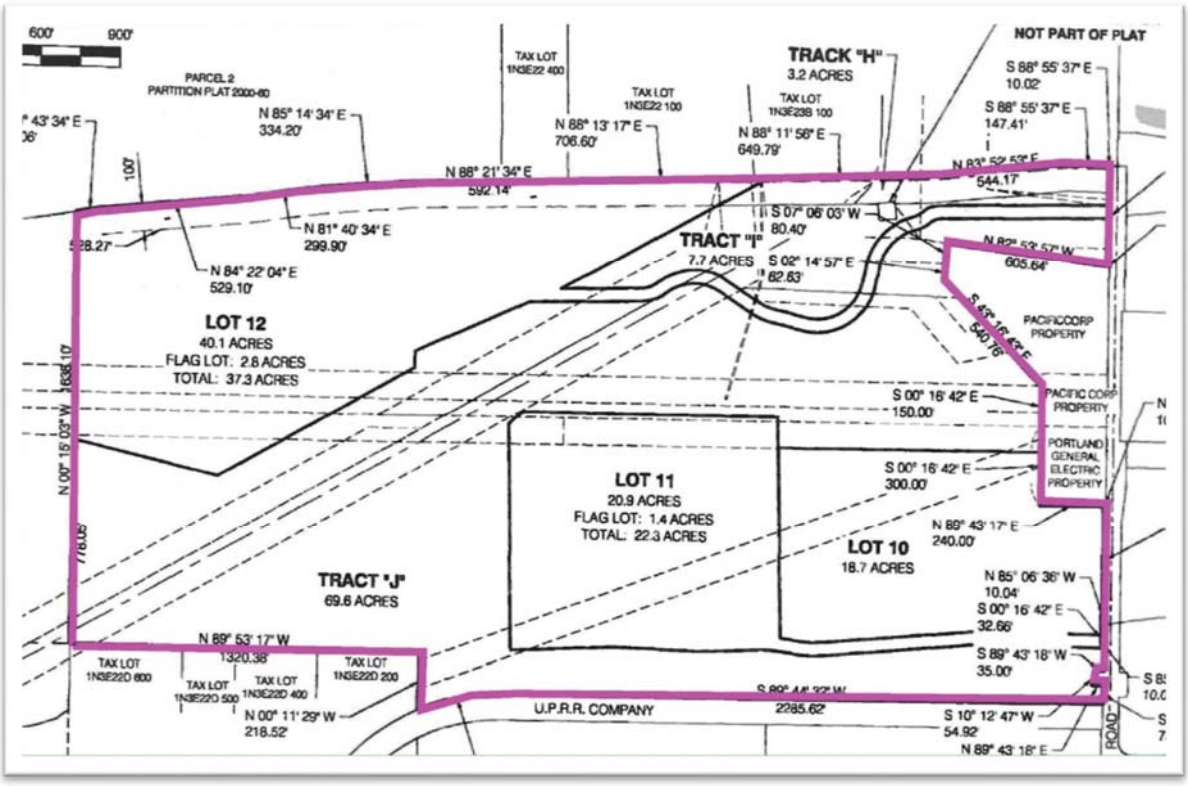
N

ATTACHMENT D

TRIP LAND USE APPROVALS, EXISTING CONDITIONS AND ZONING DESCRIPTION (PROVIDED BY THE PORT OF PORTLAND)

Attachment D:

TRIP Land Use Approvals, Existing Conditions and Zoning Description



Property Description Phase III West of Sundial Road: Multnomah County Assessor's Maps 1N-3E-23B, Tax Lot 200; 1N-3E-22, Tax Lots 200 & 302

The Port of Portland (the Port) received tentative Subdivision Plat approval on October 17, 2012 per case file number 12-032 for Phase III of Troutdale Reynolds Industrial Park (TRIP). The site is specifically identified as tax lots 200 and 400 of Multnomah County Tax Assessors Map 1N 3E 23B and tax lots 200 and 302 of Tax Assessors Map 1N 3E 22. The gross area of the project site is approximately 161+ acres. Approval allows for the creation of Lots 10, 11, 12 and Open Space Tracts H, I and J. The land area proposed for the 3rd phase of this subdivision is identified in the above graphic. It is located west of Sundial Road, and directly south of the levee. No new public streets will be created as a result of the proposed land division. All lots will have immediate public street frontage via individual driveways onto NW Sundial Road.

Property Description Phase II East of sundial Road: The Port received tentative Subdivision Plat approval for Phase II of TRIP (east of sundial Road) on October 17, 2012 per case file number 12-031. On August 5, 2016 the Port recorded the plat of Troutdale Reynolds Industrial Park No. 2 in the official records of Multnomah County as document number 2016-096859, which

created six large industrial lots (4-9).

Zoning:

The entire site is zoned General Industrial. The purpose of the GI zoning district is primarily intended for manufacturing industries, large-scale fabricators, freight and trucking firms, primary metals, and lumber, etc., that usually require highway access and/or rail service. These firms usually have a high degree of process visibility and need outdoor storage of materials and products. These industries are likely to create minor air and water pollution, as well as nuisance factors such as noise and odor, and the generation of truck, shipping, or rail traffic. Non-industrial uses of a commercial nature are permitted in compliance with Title 4 of the Metro Urban Growth Management Functional Plan.