



**CREEKSIDE ENVIRONMENTAL
CONSULTING, LLC**



**EVRENNORTHWEST
INC.**
environmental/natural resource consultants

TECHNICAL MEMORANDUM

SUPPLEMENTAL CONTAMINATED MEDIA MANAGEMENT PLAN IMPLEMENTATION REPORT (TEMPORARY SOIL STOCKPILE SP20)



Former Superior Tire Site

1409 NE Columbia Boulevard
Portland, Oregon

Agency Information

ECSI NO. 4017

Prepared for:



**OREGON
HUMANE
SOCIETY**

1067 NE Columbia Boulevard
Portland, Oregon 97211

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This

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IMPLEMENTATION REPORT
(TEMPORARY SOIL STOCKPILE SP20)

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Has been prepared for the sole benefit and use of our Client:



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Portland, Oregon 97211

Issued October 10, 2022 by:

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List of Acronyms and Abbreviations

CFSLs	Clean Fill Screening Levels
Client	Oregon Humane Society (OHS)
CMMP	Contaminated Media Management Plan
Creekside	Creekside Environmental Consulting LLC
DRO	diesel-range organics
DU	decision unit
ECSI	Environmental Cleanup and Site Information
ENW	EVREN Northwest, Inc.
F&BI	Friedman & Bruya, Inc.
GRO	gasoline-range organics
ISM	Incremental Sampling Methodology
ITRC	Interstate Technology & Regulatory Council
LC Lewis	Lease Crutcher Lewis (General Contractor)
mg/Kg	milligrams per kilogram
MRL	method reporting limit
ODEQ	Oregon Department of Environmental Quality
OHS	Oregon Humane Society (Client)
OWS	oil-water separator
PAHs	polynuclear aromatic hydrocarbons
PCBs	polychlorinated biphenyls
PR Worth	P.R. Worth Inc. (Civil Contractor)
Qal	Quaternary alluvium
RCRA	Resource Conservation and Recovery Act
RPD	relative percent difference
RRO	residual (oil)-range organics
SVOCs	semi-volatile organic constituents
TM	Tech Memo
WAM	Waste Authorization Manager

1.0 Introduction

Creekside Environmental Consulting (Creekside) prepared this Supplemental Contaminated Media Management Plan (CMMP) Implementation Technical Memorandum (TM) on behalf of the Oregon Humane Society (OHS, client) for the subject site located at 1409 NE Columbia Boulevard, Portland, Oregon (see Figures 1 and 2) pursuant to the CMMP prepared for this facility.¹ EVREN Northwest, Inc. (ENW) collaborated with Creekside with this oversight work. An Interim CMMP Implementation TM was previously prepared to document soil management for thirteen (13) soil piles (SP01 through SP13) generated on the subject site between April and August 2021², and eight (8) soil piles (SP14-SP16, SP17a and SP17b, SP18a and SP18b, and SP19) generated at the subject site between September 2021 and July 2022.³ This supplemental TM documents Creekside/ENW's oversight of CMMP implementation activities during re-development of the former Superior Tire site as OHS' New Road Ahead facility that were completed between July-August 2022 and specifically for temporary soil stockpile SP20.

1.1 Background

The subject property is located at the northwest corner of the intersection of NE 14th Place and NE Columbia Boulevard in an industrial land use area and bordered by Humane Society-owned properties to the west and north. A complete account of site use history and property description are included in previous reports prepared by Creekside/ENW and others.^{1,2,4,5,6}

2.0 CMMP Implementation and Oversight

Creekside/ENW provided oversight during re-development of site in accordance with the CMMP as follows.

- Health & Safety Planning
- Soil Management

¹ Creekside/ENW. April 29, 2020. *Contaminated Media Management Plan*, Oregon Humane Society, 1409 NE Columbia Boulevard, Portland, Oregon.

² Creekside/ENW. October 14, 2021. *Technical Memorandum, Contaminated Media Management Plan Interim Implementation Report*, Oregon Humane Society, 1409 NE Columbia Boulevard, Portland, Oregon.

³ Creekside/ENW. August 3, 2022. *Technical Memorandum, Supplemental Contaminated Media Management Plan Implementation Report (Temporary Soil Stockpiles SP14 through SP19)*, Former Superior Tire Site, 1409 NE Columbia Boulevard, Portland, Oregon.

⁴ Creekside/ENW, September 24, 2018. *Focused Phase II Environmental Site Assessment*, Superior Tire Site, 1409 NE Columbia Boulevard, Portland, Oregon.

⁵ Farallon Consulting, May 29, 2014. *Limited Subsurface Investigation*, Superior Tire Property, 1409-1411 NE Columbia Boulevard, Portland, Oregon.

⁶ Creekside/ENW, February 19, 2020. *Risk Assessment*, Superior Tire Site, 1409 NE Columbia Boulevard, Portland, Oregon.

- Pre-Construction – profiling soils, permitting for disposal, and planning unrestricted fill options
 - Construction – decommissioning oil-water separator (OWS), identifying impacted soils, sampling soil stockpiles, and
 - Reporting CMMP implementation activities
- Ongoing Management of Soil According to CMMP

A photographic log, which documents activities conducted during implementation, is included as Attachment A.

3.0 Health and Safety Planning

Creekside/ENW outlined Hazard Communications and Health and Safety Planning requirements in its CMMP (see Section 2.4 of the CMMP),¹ which representatives of OHS, their General Contractor (Lease Crutcher Lewis [LC Lewis]), and Civil Contractor (P.R. Worth, Inc. [PR Worth]) reviewed and signed on March 8, 2021. Creekside/ENW followed its own Corporate Health and Safety protocols when engaged in activities at the subject property.

4.0 Soil Management

4.1 Pre-Construction

Soil Profiling. Knife River agreed to accept at its Gresham Pit all unrestricted clean fill generated during the course of earthwork at the subject property, while impacted soils would be disposed of at Waste Management’s Hillsboro Landfill under previously approved profile #135359OR. OHS authorized Creekside/ENW to provide CMMP oversight actions, such as:

- field screening and identifying impacted in-situ and stockpiled soils,
- sampling and analyzing soil stockpiles for disposal characterization purposes,
- tabulating, validating, and evaluating laboratory analytical results,
- determining if the removed soil meets the requirements for unrestricted clean fill or requires disposal at a Resource Conservation and Recovery Act (RCRA) regulated Subtitle D or Subtitle C (hazardous waste) landfill, and
- documenting our waste determination for each soil stockpile in this TM.

4.2 Construction

Implementation oversight by Creekside/ENW began as OHS’ contractors LC Lewis and PR Worth initiated construction of its *New Road Ahead* facility at the subject property. Creekside/ENW oversaw sampling and analyzing of several soil stockpiles generated in concert with demolition, grading, foundations, and utilities earthwork at the subject property. Four (4) principal excavations generated soils placed in

temporary stockpiles SP01-SP13 at the site as described in Creekside/ENW's *Interim Implementation Report*.²

Additional excavations were subsequently completed from September 2021 through July 2022 in the central part of the site, construction entrance on the east side of the site, and at miscellaneous other locations resulting in the generation of soil piles SP14, SP15, SP16, SP17a, SB17b, SP18a, SP18b, and SP19 respectively.

In July-August 2022, a trench excavation was completed along the west side of the new community veterinary hospital and at three swales located south and east of the BMOD – rescue center, near the eastern site boundary, which were combined in temporary stockpile SP20 located north of the northeast corner of the new community veterinary hospital building.

4.2.1 Soil Stockpile Sampling and Analysis

To characterize temporary soil stockpile SP20 at the subject site, ENW staff employed Incremental Sampling Methodology (ISM) developed by the Interstate Technology & Regulatory Council (ITRC).⁷ Under this method, this stockpile is referred to as a decision unit (DU), and the compositing and subsequent laboratory processing provides a reliable estimate of the average contaminant concentration across the stockpile that can be used to make waste determination decisions. During the course of sampling, the following soil pile characteristics were noted:

- Approximate location
- Source excavation area(s)
- Soil type(s)
- Field identification of impacts
- Soil pile dimensions
- Soil pile estimated volume
- Date sampled
- Number of increments sampled

Table 1 (attached following text) summarizes for the stockpile sampled its location, source area, type soils, field evidence of impacts, dimensions, estimated volume, sampling date, and the number of increments collected from the top, middle, bottom, and perimeter of the soil pile. The approximate locations of temporary soil pile SP20 and its source area excavations are shown on Figure 3.

Field Identifying Impacted Soils. Soil materials were screened with special attention to description of staining/color, sheen, odor, and solid waste, if any. In addition to visual and olfactory screening, semi-quantitative headspace screening was periodically performed by placing selected soil samples in a Ziploc® bag, breaking the soil core to expose surface area inside the bag, and inserting a photoionization detector (PID) tip into the bag. Soils identified with staining or discoloration, a sheen, odor, and/or with inclusions of solid waste, did not qualify as unrestricted clean fill. Soil observed with such characteristics were not placed in stockpiles and were instead segregated and removed from the site to the landfill under the approved profile.

⁷ <https://ism-2.itrcweb.org/introduction/>

Soil Pile Dimensions and Volume. Areal dimensions were taped or paced. Soil pile heights were estimated. Volumes were calculated on the basis of field measurements and simple geometry of each soil pile.

Increments. The DU sample from SP20 consisted of 50 increments, collected using a decontaminated stainless-steel hand auger from upper, bottom, and side portions of the soil pile. Each sample increment consisted of an approximate 40-gram soil mass. Gravel (>1/8-inch diameter) and debris (roots, twigs, bark) were removed prior to collection.

The sample increments from SP20 were collected and placed into a laboratory-provided one-gallon glass sample jar, using clean nitrile gloves. The sample jar was sealed with a Teflon-lined lid, uniquely labelled, and preserved on ice pending transport to the laboratory under chain-of-custody procedures. A duplicate soil sample was collected using a 5035 volatile sampling kit for possible VOCs analysis.

The sample was labeled as follows: SP20-220823, indicating it came from temporary soil pile 20 and was collected on August 23, 2022.

4.2.2 Laboratory Sub-sampling, Compositing, and Analytical Methods

Sample containers were delivered to Friedman & Bruya, Inc. (F&BI) of Seattle, Washington for analysis under formal chain-of-custody protocol. F&BI processed the ISM sample in accordance with ITRC protocols, i.e., air dried, sieved, subsampled, and composited. The discrete sample collected for analysis of volatile organic constituents (VOCs) was held pending results of the gasoline-range organics (GRO), diesel-range organics (DRO), and residual (oil)-range organics (RRO) analyses of the ISM sample. A discrete soil sample was collected for VOCs analysis in lieu of analyzing the ISM sample for VOCs so that any VOCs in the ISM sample would not be volatilized and lost during ISM processing.

Samples were analyzed for select constituents using the analytical methods presented in Table 4-1. Analytical results are presented in Table 2 (attached after text). Copies of the F&BI and Fremont laboratory analytical reports and chain-of-custody documentation are provided in Attachment B.

Table 4-1. Analytical Methods

Analytical Method	Constituents	Soil
NWTPH-Gx	Northwest Total petroleum hydrocarbon gasoline-range organics (GRO)	Soil Pile DU sample
NWTPH-Dx	Northwest Total petroleum hydrocarbon diesel-range organics (DRO) and residual (oil)-range organics (RRO)	Soil Pile DU Sample
EPA 6020B	Resource Conservation and Recovery Act (RCRA 8) Total Metals	Soil Pile DU samples
EPA 8270E	Polynuclear Aromatic Hydrocarbons (PAHs)	Sample with detections of DRO and/or RRO
EPA 8260D	Volatile Organic Constituents (VOCs)	Select samples with detections of GRO, DRO and/or RRO
EPA 8021B	Benzene, toluene, ethylbenzene, and xylenes (total)	Select samples with detections of DRO and/or RRO
EPA 8082A	Polychlorinated Biphenyls (PCBs)	Samples with detections of DRO and/or RRO

4.2.3 Numeric Standards

Analytical results for this Scope of Work were compared to:

- Background concentrations established by the Oregon Department of Environmental Quality (ODEQ).⁸ ODEQ does not require cleanup for metals concentrations below default background concentrations.
- Clean fill screening levels (CFSLs) for upland sites established by the ODEQ.⁹ ODEQ does not require materials in which contaminant concentrations are less than or equal to CFSLs to be regulated as a solid waste. *CFSLs are used to determine if impacts to soil may require future management and are not used for risk screening.*

4.2.4 Findings

This section summarizes the findings of the FSI. For additional information, please reference:

- *Table 1 (following the Tables Tab after text) – summarizes soil pile disposition and number of increments sampled*
- *Table 2 (following the Tables Tab after text) – summarizes the temporary soil stockpile analytical data*
- *Figure 3 – shows temporary soil stockpile locations*
- *Attachment A – presents photographs taken during CMMP oversight work*
- *Attachment B – presents laboratory analytical reports*

Laboratory analytical results of temporary stockpile sample analyses are summarized in this section.

Petroleum Hydrocarbon Results.

- **GRO.** Gasoline-range organics (GRO) was less than the laboratory method reporting (MRL).
- **DRO.** Diesel-range organics (DRO) was less than the laboratory MRL.
- **RRO.** Residual (oil)-range organics (RRO) was detected at a concentration three to four orders of magnitude less than ODEQ's CFSL of 140,000 mg/Kg.

Since petroleum hydrocarbon ranges were detected, follow-up constituent analyses were conducted (as outlined in Table 4-1).

Volatile Organic Constituents (VOCs). None of the VOCs were detected above MRLs in the discrete sample from SP20.

Semi-Volatile Organic Constituents (SVOCs). SP20 was analyzed for PAHs and PCBs.

- Eight PAHs were detected in SP20 at concentrations less than ODEQ's CFSLs: benz[a]anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, fluoranthene, indeno(1,2,3-c,d)pyrene, and pyrene.

⁸ ODEQ. March 20, 2013, Fact Sheet: Background Levels of Metals in Soils for Cleanups.

⁹ ODEQ, 2019. Clean Fill Determinations: Internal Management Directive, last updated February 21, 2019, by Audrey O'Brien. Clean Fill Table for Uplands last updated by Heather Kuoppamaki, ODEQ, June 17, 2019.

- PCBs as Aroclors were not detected above laboratory MRLs.

RCRA 8 Metals (Totals). TP20 was analyzed for RCRA 8 total metals. Arsenic, barium, chromium (total), and lead were detected in the sample.

- **Arsenic** – Arsenic was detected at a concentration less than ODEQ’s default regional background concentration and CFSL of 8.8 mg/Kg, suggesting arsenic was not enriched in the temporary stockpiled soil.
- **Barium** – Detected at a concentration less than ODEQ’s default background concentration / CFSL, suggesting barium was not enriched in the temporary stockpiled soil.
- **Cadmium** - Not detected in any sample above the laboratory MRL.
- **Chromium (total)** – Detected at a concentration less than ODEQ’s default background concentration / CFSL, suggesting chromium was not enriched in the temporary stockpiled soil.
- **Lead** – Detected at a concentration less than ODEQ’s default regional background concentration of 28 mg/Kg for the Portland Basin, which assumes no anthropogenic influence.
- **Mercury** – Not detected in the sample above the laboratory MRL.
- **Silver** – Not detected in the sample above the laboratory MRL.

Waste Management Discussion. The analytical results suggest the following waste management considerations for SP20 (see Waste Management Matrix in Table 3):

- Only RRO was detected, though at a concentration less than ODEQ’s CFSL. Follow-up constituents analyzed were either not reported above laboratory MRLs or reported at a concentration less than ODEQ’s CFSLs or regional default background concentrations for metals.
- No field evidence of impacts was noted, other than a de minimis area exhibiting a darker color than the rest of the stockpiled soil. However, there was no accompanying odor or field detection of VOCs.
- Therefore, ENW concludes that, in the absence of staining, odor, or solid waste, soils in SP20 qualify as unrestricted clean fill.

Quality Assurance / Quality Control. Laboratory data are generally suitable for the intended use of disposal characterization. A data validation check sheet included with the analytical report in Attachment B summarizes laboratory annotations and quality control notes. None of the annotated quality control notes compromise the validity or usability of the data.

MRLs above CFSLs. In reviewing Table 2, there are instances where a constituent was not detected; however, its laboratory MRL is greater than the CFSL. These instances are noted with a “(TRUE)” in the final column of Table 2.

Such constituents are summarized in Table 4-2 along with their CFSLs, laboratory MRLs, an indication if the MRL was raised due to dilution, number of samples with an MRL that exceeded the CFSL, the relative percent difference (RPD) of the MRL and CFSL, and whether the constituent was previously detected in soils at the site.

Table 4-2 Summary of Non-Detects in Comparison to CFSLs

Constituents	CFSL	MRL		MRL Raised Due to Dilution	# Exceeded	RPD	RPD	Previously Detected?
	mg/Kg	mg/Kg	mg/Kg	(Y/N)				(Y/N)
Benzene	0.023	0.03		N	1	26%		N
Bromodichloromethane	0.002	0.05		N	1	185%		N
Bromoform	0.046	0.05		N	1	8%		N
Bromomethane	0.083	0.5		N	1	143%		N
Carbon tetrachloride	0.013	0.05		N	1	117%		N
Chlorodibromomethane	0.0024	0.05		N	1	182%		N
Chloroform	0.0034	0.05		N	1	175%		N
1,1-Dichloroethane	0.044	0.05		N	1	13%		N
Dichloromethane	0.14	0.5		N	1	113%		Y
1,2-Dibromoethane (EDB)	0.00012	0.05		N	1	199%		N
1,2-Dichloroethane (EDC)	0.0028	0.05		N	1	179%		N
1,1,2-Trichloroethane	0.0063	0.05		N	1	155%		N
Trichloroethene	0.013	0.02		N	1	42%		N
Vinyl Chloride	0.00057	0.05		N	1	195%		N
Cadmium	0.63	1		N	1	45%		Y
Mercury	0.23	1		N	1	125%		N
Silver	0.82	1		N	1	20%		N

Sample dilution was not conducted.

Analytes in Table 4-3 that were previously detected in soils at the site:

- **VOCs.** Only dichloromethane (methylene chloride), which was determined in each case to be due to laboratory contamination. Its MRL exceeded the CFSL, though was not raised by dilution.
- **Metals.** Only cadmium. Its MRL exceeded the CFSL, though was not raised by dilution.

Thus, it is possible that cadmium, though reported at concentrations less than laboratory MRLs, may have been present at concentrations greater than CFSLs. However, it should be noted that:

- Historically, cadmium was only detected at a concentration greater than its CFSL in a sample of subsurface soil collected at a depth (15-foot bgs) greater than what is being excavated at this site. And, that same sample had elevated concentrations of other metals (i.e., lead and barium) that were not observed in any of the stockpiled samples. Therefore, the elevated MRL for cadmium is not likely to impact the decision making regarding the characterization of stockpile soil.

It is less likely that any of the VOCs, though less than laboratory MRLs, were present in soils at concentrations greater than CFSLs, given the only VOC (dichloromethane) ever detected having an MRL elevated above its CFSL was a likely laboratory-introduced contaminant.

4.2.5 Waste Management

According to Waste Management’s tonnage report for WAM #135359OR, a total of 5,820.04 tons of soil that did not qualify as unrestricted clean fill were disposed of at Hillsboro Landfill between June 1, 2021 and July 22, 2022. To date, an estimated 18,000 loose cubic yards of unrestricted clean fill soil were placed at Knife River’s Gresham Pit. A copy of Waste Management’s Hillsboro Landfill tonnage report is included in Attachment C.

4.3 Post-Construction

4.3.1 Reporting CMMP Activities

This supplemental TM provides a summary of soil disposition during redevelopment efforts at the subject site. Creekside/ENW understands that no additional soil excavation is planned at the conclusion of construction of OHS' New Road Ahead facility.

Once construction activities are confirmed as complete, Creekside/ENW will prepare a summary memorandum, summarizing the final disposition of all soil exported from the subject site.

5.0 Limitations

The scope of this report is limited to observations made during on-site work; interviews with knowledgeable sources; and review of readily available published and unpublished reports and literature. As a result, these conclusions are based on information supplied by others as well as interpretations by qualified parties.

The focus of the work does not extend to the presence of the following conditions:

1. Naturally occurring toxic or hazardous substances in the subsurface soils, geology, and water,
2. Toxicity of substances common in current habitable environments, such as stored chemicals, products, building materials and consumables,
3. Contaminants or contaminant concentrations that are not a concern now but may be under future regulatory standards,
4. Unpredictable events that may occur after Creekside/ENW's site work, such as illegal dumping or accidental spillage.

There is no practice that is thorough enough to absolutely identify the presence of all hazardous substances that may be present at a given site. Creekside/ENW's investigation has been focused only on the potential for contamination that was specifically identified in the Scope of Work. Therefore, if contamination other than that specifically mentioned is present and not identified as part of a limited Scope of Work, Creekside/ENW's environmental investigation shall not be construed as a guaranteed absence of such materials. Creekside/ENW has endeavored to collect representative analytical samples for the locations and depths indicated in this report. However, no sampling program can thoroughly identify all variations in contaminant distribution.

We have performed our services for this project in accordance with our agreement and understanding with the client. This document and the information contained herein have been prepared solely for the use of the client.

Creekside/ENW performed this study under a limited scope of services per our agreement. Creekside/ENW assumes no responsibility for conditions that we did not specifically evaluate or conditions that were not generally recognized as environmentally unacceptable at the time this report was prepared.

Tables

**Table 1
Soil Pile Disposition and Sampling Summary**

Soil Pile ID	Soil Pile Location	Source Excavation Area	Type Soils	Field Identification of Impacts			Width <i>feet</i>	Length <i>feet</i>	Area <i>square feet</i>	Height <i>feet</i>	Est. Volume <i>cubic yards</i>	Date Sampled	# Increments Sampled						Place of Disposition	
				Headspace (ppmv)	Staining (Y/N)	Odor (Y/N)							<i>Top</i>	<i>Middle</i>	<i>Bottom</i>	<i>Sides</i>	<i>Total</i>	<i>Rep 1</i>		<i>Rep 2</i>
SP20	North of the NE corner of the new community veterinary hospital	Trench west of the community veterinary hospital and three swales south and east of the BMOD rescue center	SM	0.0	N ¹	N	22	50	812	4-5	2580	8/23/2022	15	---	15	20	50	---	---	Knife River / Onsite Fill

Estimated Total Volume (Includes SP01-SP20) 27650 CY

Estimated Total Volume taken to Knife River (Includes SP01-SP04, SP06-SP10, SP12, SP15, SP20) 18000 CY

Estimated Total Volume taken to Landfill and/or reused onsite (Includes SP05, SP11, SP13, SP14, SP16, SP17a, SP17b, SP18a, SP18b and SP19) 9650 CY

Transaction History (WAM # 135359OR- 6/1/21-7/22/22) 5820 Tons

Transaction History (WAM # 137599OR- 5/4/22-5/5/22) 52

1. De minimis area exhibiting a darker color than the rest of the pile. No odor, no sheen, no volatile organic constituents detected in field headspace analysis using a photoionization detector

Table 2 - Summary of Analytical Data, Soil

Location ID	Clean Fill Screening Levels (CFSLs) or Background Concentrations (as applicable)	SP20		Maximum Soil Concentration (in stockpiled soil)	Background Concentrations (Regional Default)	Clean Fill Screening Levels (CFSLs) or Background Concentrations (as applicable)	Maximum Soil Concentration Exceeds Clean Fill Screening Level
Sample ID		SP20-220823					
Date Sampled		8/23/22					
Sampled By		ENW					
Location	North of the NE corner North of the NE corner of the new community veterinary hospital			Portland Basin		TRUE OR Y FALSE OR N	
Constituent of Interest	Note	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)			
Volatile Organic Constituents							
Benzene	c, v	0.023	<0.03 (ND)	<0.03 (ND)	---	0.023	(TRUE)
Bromodichloromethane	c, v	0.002	<0.05 (ND)	<0.05 (ND)	---	0.002	(TRUE)
Bromoform	c, v	0.046	<0.05 (ND)	<0.05 (ND)	---	0.046	(TRUE)
Bromomethane	nc, v	0.083	<0.5 (ND)	<0.5 (ND)	---	0.083	(TRUE)
Carbon tetrachloride	c, v	0.013	<0.05 (ND)	<0.05 (ND)	---	0.013	(TRUE)
Chlorobenzene	nc, v	2.4	<0.05 (ND)	<0.05 (ND)	---	2.4	FALSE
Chlorodibromomethane (dibromochloromethane)	c, v	0.0024	<0.05 (ND)	<0.05 (ND)	---	0.0024	(TRUE)
Chloroethane (ethyl chloride)	nc, v	310	<0.5 (ND)	<0.5 (ND)	---	310	FALSE
Chloroform	c, v	0.0034	<0.05 (ND)	<0.05 (ND)	---	0.0034	(TRUE)
Chloromethane	nc, v	2.2	<0.5 (ND)	<0.5 (ND)	---	2.2	FALSE
1,2-Dichlorobenzene	nc, v	0.92	<0.05 (ND)	<0.05 (ND)	---	0.92	FALSE
1,4-Dichlorobenzene	c, v	0.057	<0.05 (ND)	<0.05 (ND)	---	0.057	FALSE
1,1-Dichloroethane	c, v	0.044	<0.05 (ND)	<0.05 (ND)	---	0.044	(TRUE)
1,1-Dichloroethene	nc, v	6.7	<0.05 (ND)	<0.05 (ND)	---	6.7	FALSE
cis-1,2-Dichloroethene	nc, v	0.63	<0.05 (ND)	<0.05 (ND)	---	0.63	FALSE
trans-1,2-Dichloroethene	nc, v	7	<0.05 (ND)	<0.05 (ND)	---	7	FALSE
Dichloromethane	c, v	0.14	<0.5 (ND)	<0.5 (ND)	---	0.14	(TRUE)
EDB (1,2-dibromoethane)	c, v	0.00012	<0.05 (ND)	<0.05 (ND)	---	0.00012	(TRUE)
EDC (1,2-dichloroethane)	c, v	0.0028	<0.05 (ND)	<0.05 (ND)	---	0.0028	(TRUE)
Ethylbenzene	c, v	0.22	<0.05 (ND)	<0.05 (ND)	---	0.22	FALSE
MTBE (methyl t-butyl ether)	c, v	0.11	<0.05 (ND)	<0.05 (ND)	---	0.11	FALSE
Naphthalene	c, v	0.077	<0.01 (ND)	<0.01 (ND)	---	0.077	FALSE
iso-Propylbenzene (cumene)	nc, v	96	<0.05 (ND)	<0.05 (ND)	---	96	FALSE
Tetrachloroethene (PCE)	c, v	0.18	<0.025 (ND)	<0.025 (ND)	---	0.18	FALSE
Toluene	nc, v	23	<0.05 (ND)	<0.05 (ND)	---	23	FALSE
1,1,1-Trichloroethane	nc, v	190	<0.05 (ND)	<0.05 (ND)	---	190	FALSE
1,1,2-Trichloroethane	c, v	0.0063	<0.05 (ND)	<0.05 (ND)	---	0.0063	(TRUE)
Trichloroethene	NA, v	0.013	<0.02 (ND)	<0.02 (ND)	---	0.013	(TRUE)
Trichlorofluoromethane (Freon 11)	nc, v	52	<0.5 (ND)	<0.5 (ND)	---	52	FALSE
1,2,4-Trimethylbenzene	nc, v	10	<0.05 (ND)	<0.05 (ND)	---	10	FALSE
1,3,5-Trimethylbenzene	nc, v	11	<0.05 (ND)	<0.05 (ND)	---	11	FALSE
Vinyl chloride	c, v	0.00057	<0.05 (ND)	<0.05 (ND)	---	0.00057	(TRUE)
Xylenes	nc, v	1.4	<0.15 (ND)	<0.15 (ND)	---	1.4	FALSE
Metals							
Arsenic	c, nv	8.8	3.50	3.5	8.8	8.8	FALSE
Barium	nc, nv	790	71.8	71.8	790	790	FALSE
Cadmium	nc, nv	0.63	<1 (ND)	<1 (ND)	0.63	0.63	(TRUE)
Chromium (III)	nc, nv	76	5.78	5.78	76	76	FALSE
Lead	NA, nv	28	12.3	12.3	79	28	FALSE
Mercury	nc, nv	0.23	<1 (ND)	<1 (ND)	0.23	0.23	(TRUE)
Silver	nc, nv	0.82	<1 (ND)	<1 (ND)	0.82	0.82	(TRUE)
Semivolatile Organic Constituents							
Polychlorinated biphenyls (Total PCBs)	c, v	0.23	<0.02 (ND)	<0.02 (ND)	---	0.23	FALSE
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	nc, v	0.25	<0.01 (ND)	<0.01 (ND)	---	0.25	FALSE
Anthracene	nc, v	6.8	<0.01 (ND)	<0.01 (ND)	---	6.8	FALSE
Benz[a]anthracene	c, v	0.73	0.034	0.034	---	0.73	FALSE
Benzo[a]pyrene (BaP equivalents)	c, nv	0.11	0.082	0.082	---	0.11	FALSE
Benzo[b]fluoranthene	c, nv	1.1	0.088	0.088	---	1.1	FALSE
Benzo[k]fluoranthene	c, nv	11	0.024	0.024	---	11	FALSE
Chrysene	c, nv	3.1	0.053	0.053	---	3.1	FALSE
Dibenz[a,h]anthracene	c, nv	0.11	<0.01 (ND)	<0.01 (ND)	---	0.11	FALSE
Fluoranthene	nc, nv	10	0.060	0.06	---	10	FALSE
Fluorene	nc, v	3.7	<0.01 (ND)	<0.01 (ND)	---	3.7	FALSE
Indeno[1,2,3-cd]pyrene	c, nv	1.1	0.076	0.076	---	1.1	FALSE
Pyrene	nc, v	10	0.10	0.10	---	10	FALSE
Total Petroleum Hydrocarbons							
GRO	nc, v	520	<5 (ND)	<5 (ND)	---	520	FALSE
DRO	nc, v	90	<5 (ND)	<5 (ND)	---	90	FALSE
RRO	nc, nv	140000	31	31	---	140000	FALSE

Notes:
mg/Kg = milligram per kilogram or parts per million (ppm).
<# (ND) = not detected at or above the laboratory method reporting limit shown.
--- = not analyzed or not applicable.
c = carcinogenic
nc = noncarcinogenic
v = volatile
nv = nonvolatile
GRO = gasoline-range organics.
DRO = diesel-range organics.
RRO = residual-range organics.
¹ Lowest Risk-Based Concentration for soil (screening level).
Y or TRUE = analyte concentration is greater than the screening concentration
(Y or TRUE) indicates analyte not detected, but detection limit is above screening concentration.
x = the pattern of peaks is not indicative of the fuel standard used for quantitation.

**Table 3
Soil Pile Management Matrix**

Soil Pile	Sample Name	> CFSL and/or Background (metals)?											ACBM Present?	Staining Present?	Emits Odor? (PID [ppmv])	Anthropogenic Materials (solid waste)?	Clean Fill?	
		GRO	DRO	RRO	VOCs	N	PAHs	PCBs	Arsenic	Cadmium	Lead	Mercury					Silver	Yes/No
SP20	SP20-220823	No (ND)	No (ND)	No	No (ND)	No (ND)	No	No (ND)	No	No (ND)	No	No (ND)	No (ND)	No	No ⁸	No (0.0)	No	Yes ³

Notes:

3. Provided the guidelines for end use placement in ODEQ's Clean Fill Guidance are followed.

8. De minimis area of darker color, no odor, no sheen, no VOCs detected

ACBM = Asbestos-containing building materials

CFSL = Clean Fill Screening Level

DRO = Diesel-Range Organics

GRO = Gasoline-Range Organics

ND = Not Detected

N = Naphthalene

PAHs = Polynuclear Aromatic Hydrocarbons

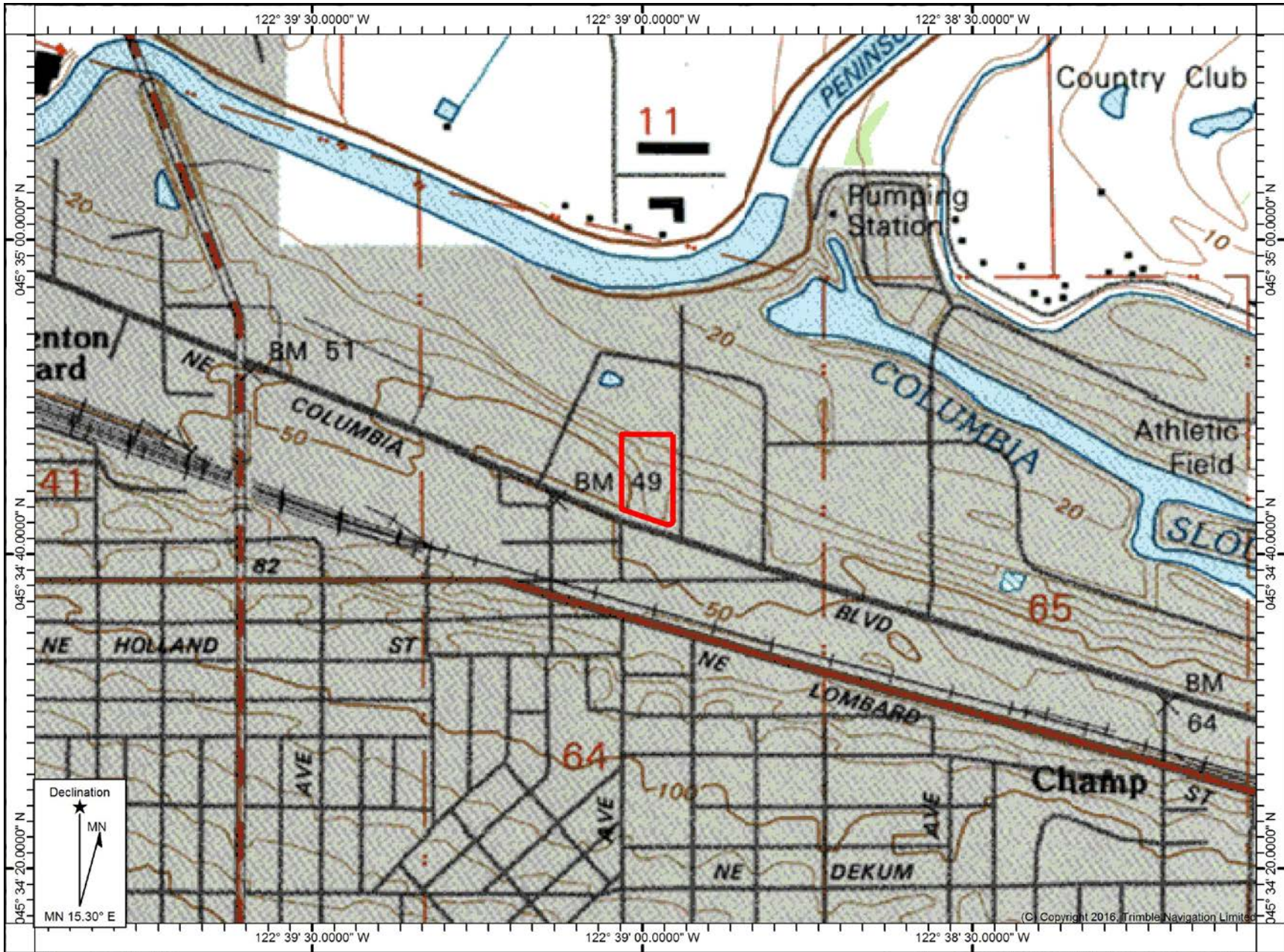
PCBs = Polychlorinated Biphenyls

ppmv = parts per million by volume

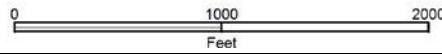
RRO = Residual (Lube Oil)-Range Organics

PID = Photoionization reading in ppmv

Figures



Name: PORTLAND
Date: Jan 1, 1990



Location: 045° 34' 44.8174" N, 122° 38' 59.7370" W
Contour Interval: 10 ft



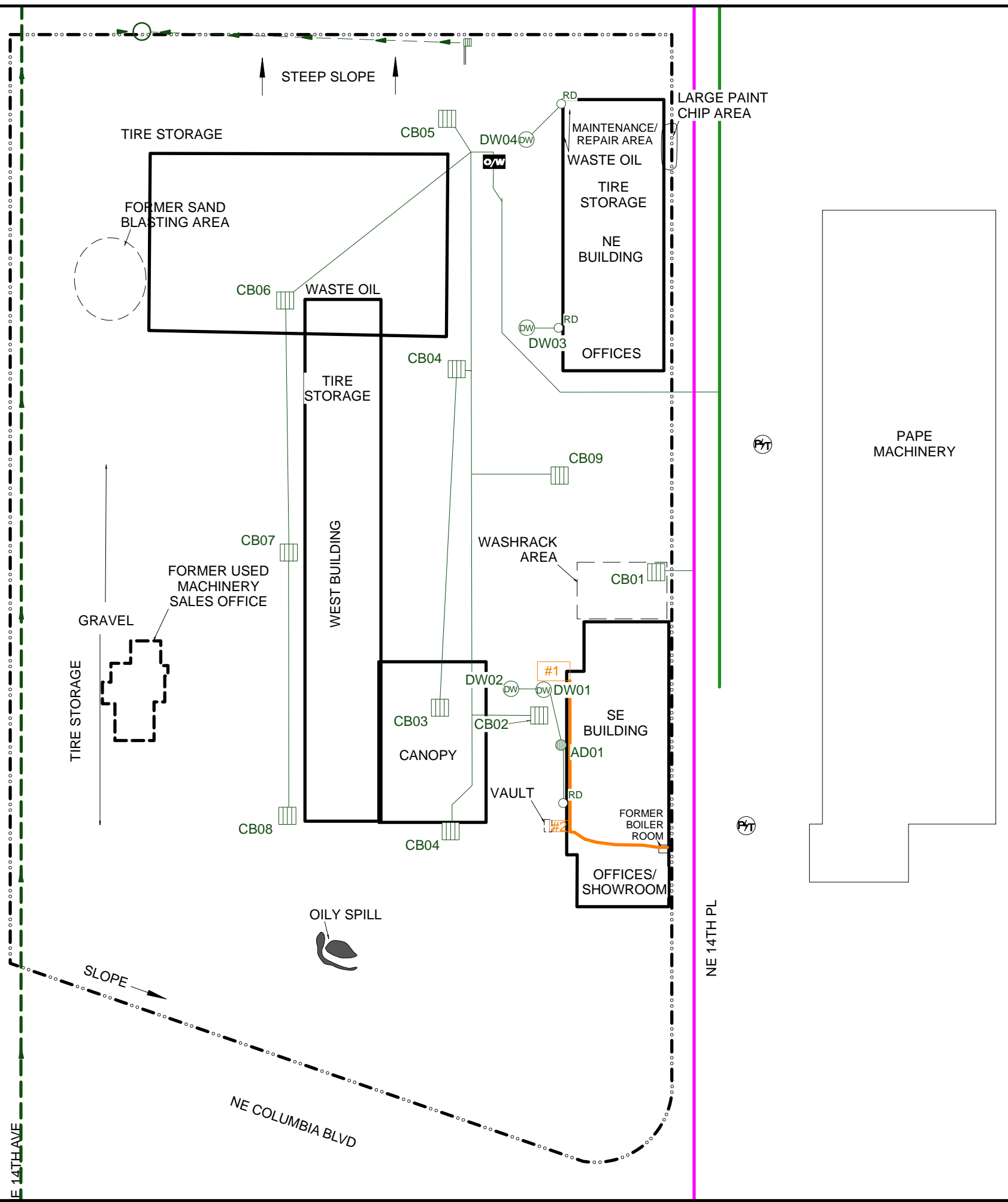
Date Drawn: 9/6/2018
CAD File Name: 351-18019-fig1sv_map(v01)
Drawn By: JOB
Approved By: LDG

Superior Tire Site
1409 NE Columbia Boulevard
Portland, Oregon

Site Vicinity Map

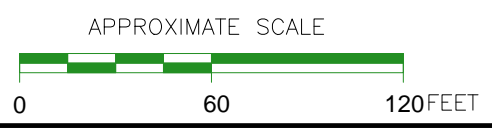
Project No.
351-18019
Figure No.
1

DRAWN BY: C. ROSEBROOK (05/14/2020) P. TRONE (07/14/2021) L. GREEN (07/14/2021)
 CHECKED BY: P. TRONE (07/14/2021) L. GREEN (07/14/2021)
 APPROVED BY: L. GREEN (07/14/2021)
 DRAWING NUMBER: 351-18019(v01)



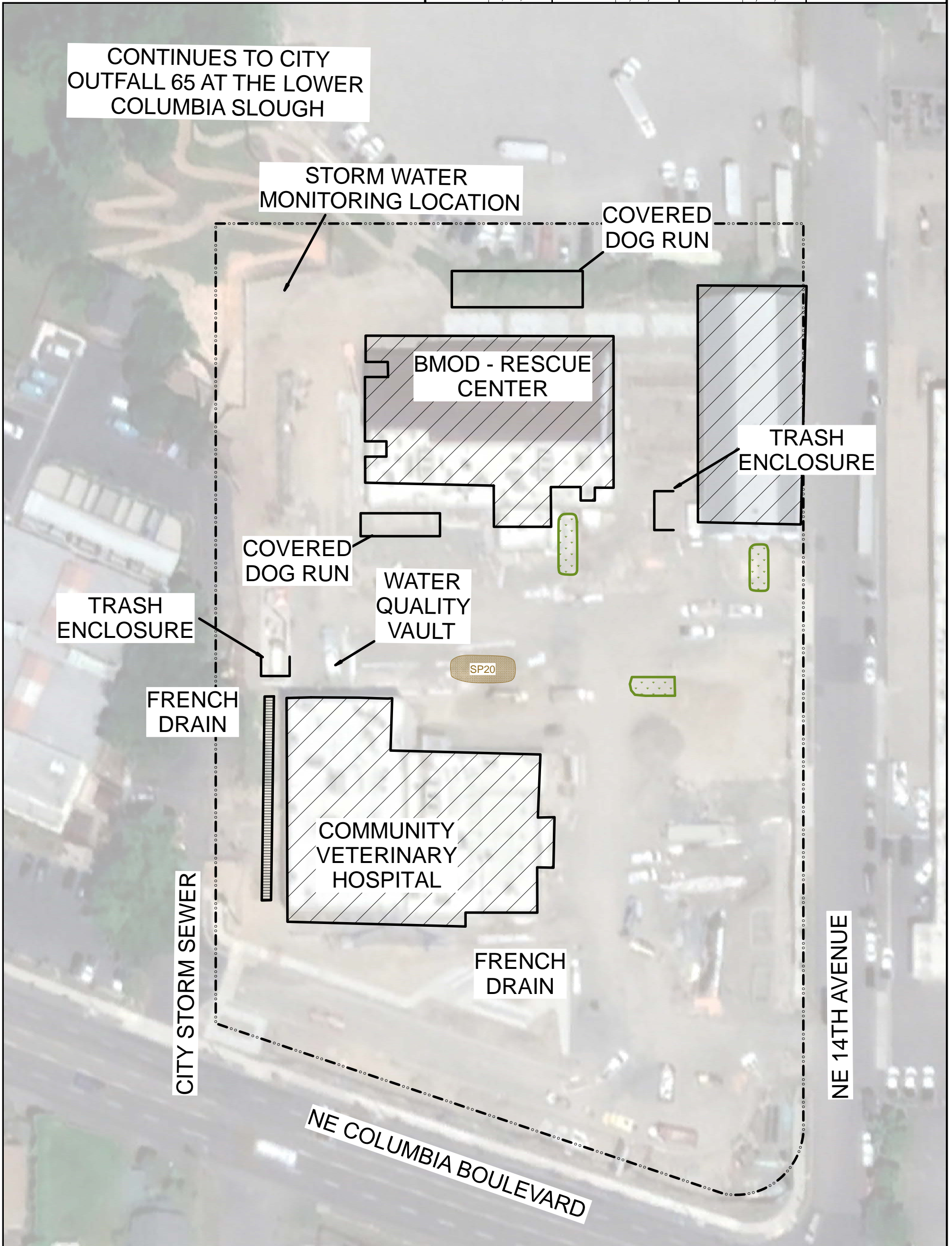
- LEGEND:**
- SUBJECT PROPERTY BOUNDARIES
 - SUBJECT BUILDINGS
 - POLE TRANSFORMER
 - CATCH BASIN
 - ROOF DOWNSPOUT
 - AREA DRAIN
 - DRYWELL
 - STORM SYSTEM
 - CITY SANITARY SEWER
 - OIL/WATER SEPERATOR
 - FORMER UNDERGROUND STORAGE TANK
 - #1 10,000-GALLON DIESEL (DECOMMISSIONED BY REMOVAL 1990)
 - #2 6,000-GALLON GASOLINE (DECOMMISSIONED BY REMOVAL 1990)
 - FORMER PRODUCT LINE
 - FORMER EXCAVATION BOUNDARIES
 - 1. SAND BLAST GRIT
2. BLACK SAND
3. PAINT CHIPS, SAND BLAST GRIT, & GARBAGE
4. WHITE SAND & GRAY SAND
5. SAND BLAST GRIT
6. PAINT CHIPS & SAND BLAST GRIT
7. PCS EXCAVATION LIMITS
 - INFERRED AREA OF RESIDUAL IMPACTED SOIL (>1000 MG/KG) BASED ON DATA COLLECTED BY SNELL ENVIRONMENTAL CONSULTING







- NOTES:**
1. BASE MAP DEVELOPED FROM AN AERIAL PHOTOGRAPH MAP DATED 2015 AND ENW FIELD NOTES.
 2. ALL BUILDING, STREET, AND FEATURE LOCATIONS ARE APPROXIMATE.
 3. SYMBOLS REPRESENT LOCATION AND DO NOT ALWAYS REPRESENT EXACT SHAPE, SIZE, OR ORIENTATION



CREEKSIDE ENVIRONMENTAL CONSULTING, LLC
 40 SE 24TH AVENUE, SUITE A
 PORTLAND, OREGON 97214
 (503) 692-8118

FIGURE 2
SITE PLAN
PRIOR TO REDEVELOPMENT
 OREGON HUMANE SOCIETY
 1409 NE COLUMBIA BOULEVARD
 PORTLAND, OREGON



<p>LEGEND:</p> <ul style="list-style-type: none">  SUBJECT PROPERTY BOUNDARIES  EXISTING BUILDINGS  TEMPORARY SOIL PILES  SWALES (SOURCE OF SP20 SOILS) 	<ol style="list-style-type: none"> 1. BASE MAP DEVELOPED FROM AN AERIAL PHOTOGRAPH MAP DATED 2021 AND ENW FIELD NOTES. 2. ALL BUILDING, STREET, AND FEATURE LOCATIONS ARE APPROXIMATE. 3. SYMBOLS REPRESENT LOCATION AND DO NOT ALWAYS REPRESENT EXACT SHAPE, SIZE, OR ORIENTATION <p>APPROXIMATE SCALE</p> 	 <p>environmental, natural resource consultants</p> <p>PO BOX 14488, PORTLAND, OREGON 97293 P: (503)452-5561, E: ENW@EVREN-NW.COM</p> <p>FIGURE 3 STOCKPILE LOCATION DIAGRAM</p> <p>OREGON HUMANE SOCIETY FACILITY 1409 NE COLUMBIA BOULEVARD PORTLAND, OREGON</p>
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Attachment A
Site Photographs



View facing east of soil pile SP20, located on NE side of veterinary hospital building.



A decontaminated stainless-steel hand auger was used to collect sample increments.



50 increments of approximately 40 grams each comprised one incremental sample. Increments were placed into a single one-gallon glass sample jar.



Soil increments were field screened for volatile organic constituents (VOCs) using a photoionization detector (PID).




Character of fine-grained sandy silt soils in SP20.



All 50 increments comprising incremental sample SP20-220823 were placed in a laboratory-prepared 1-gallon glass sample jar.



View of sample collection with stainless-steel hand auger. A de minimis area of darker soil was observed but there was no associated odor, or PID response.

 CREEKSIDE ENVIRONMENTAL CONSULTING, LLC	Former Superior Tire Facility 1409 NE Columbia Blvd. Portland, Oregon	Site Photographs	Project No. 351-18019-11
			Attachment A

Attachment B

Laboratory Analytical Reports

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

September 1, 2022

Lynn Green, Project Manager
Evren Northwest, Inc.
PO Box 14488
Portland, OR 97293

Dear Mr Green:

Included are the results from the testing of material submitted on August 24, 2022 from the 351-18019-11, F&BI 208363 project. There are 19 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures

c: Neil Woller, Paul Trone, Evan Bruggeman
ENW0901R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on August 24, 2022 by Friedman & Bruya, Inc. from the Evren Northwest 351-18019-11, F&BI 208363 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Evren Northwest</u>
208363 -01	SP20-220823

The 8260D matrix spike and matrix spike duplicate failed the relative percent difference for several compounds. The analytes were not detected therefore the data were acceptable.

The 8082A matrix spike duplicate exceeded the acceptance criteria for Aroclor 1016. The analyte was not detected therefore the data were acceptable.

All other quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/01/22
Date Received: 08/24/22
Project: 351-18019-11, F&BI 208363
Date Extracted: 08/26/22
Date Analyzed: 08/26/22

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
USING METHOD NWTPH-Gx**

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 50-150)
SP20-220823 208363-01	<5	107
Method Blank 02-1749 MB	<5	103

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/01/22
Date Received: 08/24/22
Project: 351-18019-11, F&BI 208363
Date Extracted: 08/25/22
Date Analyzed: 08/26/22

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL AND MOTOR OIL
USING METHOD NWTPH-D_x**

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C ₁₀ -C ₂₅)	<u>Motor Oil Range</u> (C ₂₅ -C ₃₆)	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 48-168)
SP20-220823 208363-01	<5	31	98
Method Blank 02-2037 MB	<5	<25	114

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	SP20-220823	Client:	Evren Northwest
Date Received:	08/24/22	Project:	351-18019-11, F&BI 208363
Date Extracted:	08/25/22	Lab ID:	208363-01
Date Analyzed:	08/26/22	Data File:	208363-01.044
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	3.50
Barium	71.8
Cadmium	<1
Chromium	5.78
Lead	12.3
Mercury	<1
Selenium	<1
Silver	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Evren Northwest
Date Received:	NA	Project:	351-18019-11, F&BI 208363
Date Extracted:	08/25/22	Lab ID:	I2-581 mb2
Date Analyzed:	08/25/22	Data File:	I2-581 mb2.113
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Barium	<1
Cadmium	<1
Chromium	<1
Lead	<1
Mercury	<1
Selenium	<1
Silver	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	SP20-220823	Client:	Evren Northwest
Date Received:	08/24/22	Project:	351-18019-11, F&BI 208363
Date Extracted:	08/30/22	Lab ID:	208363-01
Date Analyzed:	08/30/22	Data File:	083007.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	WE

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	90	109
Toluene-d8	99	89	112
4-Bromofluorobenzene	107	84	115

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	351-18019-11, F&BI 208363
Date Extracted:	08/30/22	Lab ID:	02-1958 mb
Date Analyzed:	08/30/22	Data File:	083005.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	90	109
Toluene-d8	99	89	112
4-Bromofluorobenzene	99	84	115

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	SP20-220823	Client:	Evren Northwest
Date Received:	08/24/22	Project:	351-18019-11, F&BI 208363
Date Extracted:	08/29/22	Lab ID:	208363-01 1/5
Date Analyzed:	08/29/22	Data File:	082914.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	87	10	198
2-Fluorobiphenyl	99	45	117
2,4,6-Tribromophenol	97	11	158
Terphenyl-d14	113	50	124

Compounds:	mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	0.014
Anthracene	<0.01
Fluoranthene	0.060
Pyrene	0.10
Benz(a)anthracene	0.034
Chrysene	0.053
Benzo(a)pyrene	0.082
Benzo(b)fluoranthene	0.088
Benzo(k)fluoranthene	0.024
Indeno(1,2,3-cd)pyrene	0.076
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	0.092

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	351-18019-11, F&BI 208363
Date Extracted:	08/29/22	Lab ID:	02-2048 mb 1/5
Date Analyzed:	08/29/22	Data File:	082913.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	87	10	198
2-Fluorobiphenyl	101	45	117
2,4,6-Tribromophenol	103	11	158
Terphenyl-d14	115	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	SP20-220823	Client:	Evren Northwest
Date Received:	08/24/22	Project:	351-18019-11, F&BI 208363
Date Extracted:	08/25/22	Lab ID:	208363-01 1/6
Date Analyzed:	08/25/22	Data File:	082525.D
Matrix:	Soil	Instrument:	GC9
Units:	mg/kg (ppm) Dry Weight	Operator:	MG

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	61	23	120

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	351-18019-11, F&BI 208363
Date Extracted:	08/25/22	Lab ID:	02-2028 mb2 1/6
Date Analyzed:	08/25/22	Data File:	082524.D
Matrix:	Soil	Instrument:	GC9
Units:	mg/kg (ppm) Dry Weight	Operator:	MG

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	98	23	120

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/01/22

Date Received: 08/24/22

Project: 351-18019-11, F&BI 208363

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES
FOR TPH AS GASOLINE
USING METHOD NWTPH-G_x**

Laboratory Code: 208371-01 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet Wt)	Duplicate Result (Wet Wt)	RPD (Limit 20)
Gasoline	mg/kg (ppm)	<5	<5	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	mg/kg (ppm)	20	90	71-131

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/01/22

Date Received: 08/24/22

Project: 351-18019-11, F&BI 208363

**QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL EXTENDED USING METHOD NWTPH-D_x**

Laboratory Code: 208363-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	500	<50	8.8	9.6	73-135	9

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	12	74-139

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/01/22

Date Received: 08/24/22

Project: 351-18019-11, F&BI 208363

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF SOIL SAMPLES
FOR TOTAL METALS USING EPA METHOD 6020B**

Laboratory Code: 208359-01 x5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	7.65	109	103	75-125	6
Barium	mg/kg (ppm)	50	53.1	105	99	75-125	6
Cadmium	mg/kg (ppm)	10	<5	106	102	75-125	4
Chromium	mg/kg (ppm)	50	8.88	101	97	75-125	4
Lead	mg/kg (ppm)	50	14.5	107	101	75-125	6
Mercury	mg/kg (ppm)	5	<5	113	105	75-125	7
Selenium	mg/kg (ppm)	5	<5	101	100	75-125	1
Silver	mg/kg (ppm)	10	<5	105	104	75-125	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	90	80-120
Barium	mg/kg (ppm)	50	90	80-120
Cadmium	mg/kg (ppm)	10	94	80-120
Chromium	mg/kg (ppm)	50	104	80-120
Lead	mg/kg (ppm)	50	100	80-120
Mercury	mg/kg (ppm)	5	106	80-120
Selenium	mg/kg (ppm)	5	98	80-120
Silver	mg/kg (ppm)	10	103	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/01/22

Date Received: 08/24/22

Project: 351-18019-11, F&BI 208363

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES
FOR VOLATILES BY EPA METHOD 8260D**

Laboratory Code: 208447-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	1	<0.5	15	12	10-142	22 vo
Chloromethane	mg/kg (ppm)	1	<0.5	39	31	10-126	23 vo
Vinyl chloride	mg/kg (ppm)	1	<0.05	37	31	10-138	18
Bromomethane	mg/kg (ppm)	1	<0.5	43	36	10-163	18
Chloroethane	mg/kg (ppm)	1	<0.5	39	36	10-176	8
Trichlorofluoromethane	mg/kg (ppm)	1	<0.5	38	30	10-176	24 vo
Acetone	mg/kg (ppm)	5	<5	78	58	10-163	29 vo
1,1-Dichloroethene	mg/kg (ppm)	1	<0.05	38	30	10-160	24 vo
Hexane	mg/kg (ppm)	1	0.57	37 b	19 b	10-137	64 b
Methylene chloride	mg/kg (ppm)	1	<0.5	65	48	10-156	30 vo
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	1	<0.05	69	53	21-145	26 vo
trans-1,2-Dichloroethene	mg/kg (ppm)	1	<0.05	55	45	14-137	20
1,1-Dichloroethane	mg/kg (ppm)	1	<0.05	63	49	19-140	25 vo
2,2-Dichloropropane	mg/kg (ppm)	1	<0.05	78	59	10-158	28 vo
cis-1,2-Dichloroethene	mg/kg (ppm)	1	<0.05	68	52	25-135	27 vo
Chloroform	mg/kg (ppm)	1	0.051	63	48	21-145	27 vo
2-Butanone (MEK)	mg/kg (ppm)	5	<1	81	62	19-147	27 vo
1,2-Dichloroethane (EDC)	mg/kg (ppm)	1	<0.05	68	54	12-160	23 vo
1,1,1-Trichloroethane	mg/kg (ppm)	1	<0.05	55	44	10-156	22 vo
1,1-Dichloropropene	mg/kg (ppm)	1	<0.05	52	41	17-140	24 vo
Carbon tetrachloride	mg/kg (ppm)	1	<0.05	54	44	9-164	20
Benzene	mg/kg (ppm)	1	0.14	57	43	29-129	28 vo
Trichloroethene	mg/kg (ppm)	1	<0.02	55	44	21-139	22 vo
1,2-Dichloropropane	mg/kg (ppm)	1	<0.05	64	50	30-135	25 vo
Bromodichloromethane	mg/kg (ppm)	1	<0.05	74	57	23-155	26 vo
Dibromomethane	mg/kg (ppm)	1	<0.05	68	54	23-145	23 vo
4-Methyl-2-pentanone	mg/kg (ppm)	5	<1	82	65	24-155	23 vo
cis-1,3-Dichloropropene	mg/kg (ppm)	1	<0.05	68	53	28-144	25 vo
Toluene	mg/kg (ppm)	1	1.7	59 b	15 b	35-130	119 b
trans-1,3-Dichloropropene	mg/kg (ppm)	1	<0.05	71	58	26-149	20
1,1,2-Trichloroethane	mg/kg (ppm)	1	<0.05	86	69	10-205	22 vo
2-Hexanone	mg/kg (ppm)	5	<0.5	78	60	15-166	26 vo
1,3-Dichloropropane	mg/kg (ppm)	1	<0.05	69	55	31-137	23 vo
Tetrachloroethene	mg/kg (ppm)	1	0.025	40	32	20-133	22 vo
Dibromochloromethane	mg/kg (ppm)	1	<0.05	68	54	28-150	23 vo
1,2-Dibromoethane (EDB)	mg/kg (ppm)	1	<0.05	64	51	28-142	23 vo
Chlorobenzene	mg/kg (ppm)	1	<0.05	57	46	32-129	21 vo
Ethylbenzene	mg/kg (ppm)	1	1.1	55 b	25 b	32-137	75 b
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	1	<0.05	63	50	31-143	23 vo
m,p-Xylene	mg/kg (ppm)	2	5.5	60 b	3 b	34-136	181 b
o-Xylene	mg/kg (ppm)	1	2.4	58 b	6 b	33-134	162 b
Styrene	mg/kg (ppm)	1	0.086	56	43	35-137	26 vo
Isopropylbenzene	mg/kg (ppm)	1	0.28	47 b	33 b	31-142	35 b
Bromoform	mg/kg (ppm)	1	<0.05	67	55	21-156	20
n-Propylbenzene	mg/kg (ppm)	1	1.1	50 b	21 b	23-146	82 b
Bromobenzene	mg/kg (ppm)	1	<0.05	56	42	34-130	29 vo
1,3,5-Trimethylbenzene	mg/kg (ppm)	1	3.4	66 b	9 b	18-149	152 b
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	1	<0.05	101	79	28-140	24 vo
1,2,3-Trichloropropane	mg/kg (ppm)	1	<0.05	71	55	25-144	25 vo
2-Chlorotoluene	mg/kg (ppm)	1	<0.05	138 vo	111	31-134	22 vo
4-Chlorotoluene	mg/kg (ppm)	1	<0.05	83	64	31-136	26 vo
tert-Butylbenzene	mg/kg (ppm)	1	<0.05	41	33	30-137	22 vo
1,2,4-Trimethylbenzene	mg/kg (ppm)	1	11	140 b	0 b	10-182	nm
sec-Butylbenzene	mg/kg (ppm)	1	0.32	42 b	28 b	23-145	40 b
p-Isopropyltoluene	mg/kg (ppm)	1	0.43	41 b	27 b	21-149	41 b
1,3-Dichlorobenzene	mg/kg (ppm)	1	<0.05	48	37	30-131	26 vo
1,4-Dichlorobenzene	mg/kg (ppm)	1	<0.05	51	39	29-129	27 vo
1,2-Dichlorobenzene	mg/kg (ppm)	1	<0.05	55	42	31-132	27 vo
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	1	<0.5	116	91	11-161	24 vo
1,2,4-Trichlorobenzene	mg/kg (ppm)	1	<0.25	45	34	22-142	28 vo
Hexachlorobutadiene	mg/kg (ppm)	1	<0.25	35	27	10-142	26 vo
Naphthalene	mg/kg (ppm)	1	7.4	74 b	0 b	14-157	nm
1,2,3-Trichlorobenzene	mg/kg (ppm)	1	<0.25	51	39	20-144	27 vo

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/01/22

Date Received: 08/24/22

Project: 351-18019-11, F&BI 208363

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES
FOR VOLATILES BY EPA METHOD 8260D**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	1	43	10-146
Chloromethane	mg/kg (ppm)	1	61	27-133
Vinyl chloride	mg/kg (ppm)	1	68	22-139
Bromomethane	mg/kg (ppm)	1	62	38-114
Chloroethane	mg/kg (ppm)	1	73	9-163
Trichlorofluoromethane	mg/kg (ppm)	1	82	10-196
Acetone	mg/kg (ppm)	5	98	52-141
1,1-Dichloroethene	mg/kg (ppm)	1	77	47-128
Hexane	mg/kg (ppm)	1	90	43-142
Methylene chloride	mg/kg (ppm)	1	83	10-184
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	1	90	60-123
trans-1,2-Dichloroethene	mg/kg (ppm)	1	89	67-129
1,1-Dichloroethane	mg/kg (ppm)	1	89	68-115
2,2-Dichloropropane	mg/kg (ppm)	1	124	52-170
cis-1,2-Dichloroethene	mg/kg (ppm)	1	92	72-127
Chloroform	mg/kg (ppm)	1	87	66-120
2-Butanone (MEK)	mg/kg (ppm)	5	102	30-197
1,2-Dichloroethane (EDC)	mg/kg (ppm)	1	93	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	1	93	62-131
1,1-Dichloropropene	mg/kg (ppm)	1	89	69-128
Carbon tetrachloride	mg/kg (ppm)	1	99	60-139
Benzene	mg/kg (ppm)	1	88	71-118
Trichloroethene	mg/kg (ppm)	1	92	63-121
1,2-Dichloropropane	mg/kg (ppm)	1	92	72-127
Bromodichloromethane	mg/kg (ppm)	1	96	57-126
Dibromomethane	mg/kg (ppm)	1	95	62-123
4-Methyl-2-pentanone	mg/kg (ppm)	5	102	45-145
cis-1,3-Dichloropropene	mg/kg (ppm)	1	96	67-122
Toluene	mg/kg (ppm)	1	91	66-126
trans-1,3-Dichloropropene	mg/kg (ppm)	1	96	72-132
1,1,2-Trichloroethane	mg/kg (ppm)	1	98	64-115
2-Hexanone	mg/kg (ppm)	5	101	33-152
1,3-Dichloropropane	mg/kg (ppm)	1	94	72-130
Tetrachloroethene	mg/kg (ppm)	1	90	72-114
Dibromochloromethane	mg/kg (ppm)	1	95	55-121
1,2-Dibromoethane (EDB)	mg/kg (ppm)	1	96	74-132
Chlorobenzene	mg/kg (ppm)	1	92	76-111
Ethylbenzene	mg/kg (ppm)	1	91	64-123
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	1	96	64-121
m,p-Xylene	mg/kg (ppm)	2	90	78-122
o-Xylene	mg/kg (ppm)	1	90	77-124
Styrene	mg/kg (ppm)	1	91	74-126
Isopropylbenzene	mg/kg (ppm)	1	91	76-127
Bromoform	mg/kg (ppm)	1	95	56-132
n-Propylbenzene	mg/kg (ppm)	1	92	74-124
Bromobenzene	mg/kg (ppm)	1	95	72-122
1,3,5-Trimethylbenzene	mg/kg (ppm)	1	92	76-126
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	1	101	56-143
1,2,3-Trichloropropane	mg/kg (ppm)	1	99	61-137
2-Chlorotoluene	mg/kg (ppm)	1	93	74-121
4-Chlorotoluene	mg/kg (ppm)	1	93	75-122
tert-Butylbenzene	mg/kg (ppm)	1	94	73-130
1,2,4-Trimethylbenzene	mg/kg (ppm)	1	92	76-125
sec-Butylbenzene	mg/kg (ppm)	1	94	71-130
p-Isopropyltoluene	mg/kg (ppm)	1	93	70-132
1,3-Dichlorobenzene	mg/kg (ppm)	1	92	75-121
1,4-Dichlorobenzene	mg/kg (ppm)	1	95	74-117
1,2-Dichlorobenzene	mg/kg (ppm)	1	92	76-121
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	1	102	58-138
1,2,4-Trichlorobenzene	mg/kg (ppm)	1	93	64-135
Hexachlorobutadiene	mg/kg (ppm)	1	95	50-153
Naphthalene	mg/kg (ppm)	1	96	63-140
1,2,3-Trichlorobenzene	mg/kg (ppm)	1	93	63-138

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/01/22

Date Received: 08/24/22

Project: 351-18019-11, F&BI 208363

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES
FOR SEMIVOLATILES BY EPA METHOD 8270E**

Laboratory Code: 208363-01 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	mg/kg (ppm)	0.83	<0.01	85	82	28-125	4
2-Methylnaphthalene	mg/kg (ppm)	0.83	<0.01	86	84	10-192	2
1-Methylnaphthalene	mg/kg (ppm)	0.83	<0.01	87	85	10-163	2
Acenaphthylene	mg/kg (ppm)	0.83	<0.01	92	87	45-128	6
Acenaphthene	mg/kg (ppm)	0.83	<0.01	91	85	36-125	7
Fluorene	mg/kg (ppm)	0.83	<0.01	90	86	48-121	5
Phenanthrene	mg/kg (ppm)	0.83	0.013	93	91	50-150	2
Anthracene	mg/kg (ppm)	0.83	<0.01	93	93	50-150	0
Fluoranthene	mg/kg (ppm)	0.83	0.055	95	98	50-150	3
Pyrene	mg/kg (ppm)	0.83	0.092	98	100	40-134	2
Benzo(a)anthracene	mg/kg (ppm)	0.83	0.032	99	100	50-150	1
Chrysene	mg/kg (ppm)	0.83	0.049	92	92	50-150	0
Benzo(a)pyrene	mg/kg (ppm)	0.83	0.075	104	102	50-150	2
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	0.081	108	108	50-150	0
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	0.022	106	101	50-150	5
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	0.070	98	96	41-134	2
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	<0.01	97	92	44-130	5
Benzo(g,h,i)perylene	mg/kg (ppm)	0.83	0.085	90	88	33-131	2

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Naphthalene	mg/kg (ppm)	0.83	83	58-108
2-Methylnaphthalene	mg/kg (ppm)	0.83	86	67-109
1-Methylnaphthalene	mg/kg (ppm)	0.83	86	66-107
Acenaphthylene	mg/kg (ppm)	0.83	90	70-130
Acenaphthene	mg/kg (ppm)	0.83	88	66-112
Fluorene	mg/kg (ppm)	0.83	89	67-117
Phenanthrene	mg/kg (ppm)	0.83	89	70-130
Anthracene	mg/kg (ppm)	0.83	91	70-130
Fluoranthene	mg/kg (ppm)	0.83	94	70-130
Pyrene	mg/kg (ppm)	0.83	92	70-130
Benzo(a)anthracene	mg/kg (ppm)	0.83	96	70-130
Chrysene	mg/kg (ppm)	0.83	94	70-130
Benzo(a)pyrene	mg/kg (ppm)	0.83	96	68-120
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	97	69-125
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	97	70-130
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	92	67-129
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	94	67-128
Benzo(g,h,i)perylene	mg/kg (ppm)	0.83	86	64-127

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/01/22

Date Received: 08/24/22

Project: 351-18019-11, F&BI 208363

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF SOIL SAMPLES FOR
POLYCHLORINATED BIPHENYLS AS
AROCLOR 1016/1260 BY EPA METHOD 8082A**

Laboratory Code: 208321-02 1/6 (Matrix Spike) 1/6

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Control Limits	RPD (Limit 20)
Aroclor 1016	mg/kg (ppm)	0.25	<0.02	98	120 vo	44-107	20
Aroclor 1260	mg/kg (ppm)	0.25	<0.02	97	115	38-124	17

Laboratory Code: Laboratory Control Sample 1/6

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Aroclor 1016	mg/kg (ppm)	0.25	124	47-158
Aroclor 1260	mg/kg (ppm)	0.25	120	69-147

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ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht - The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Analytical Laboratory Data Validation Check Sheet

Project Name: Superior Tire-1409 NE Columbia Blvd-PortlandProject Number: 351-18019-11Date of Review: 10/5/2022Lab. Name: F&BILab Batch ID #: 208363Chain of Custody

- 1.) Are all requested analyses reported? yes no
- 2.) Were the requested methods used? yes no
- 3.) Trip blank submitted? yes no
- 4.) Field blank submitted? yes no

Timing

- 5.) Samples extracted within holding times? yes no
If not, are all discrepancies footnoted? yes no NA
- 6.) Analysis performed within holding times? yes no
If not, are all discrepancies footnoted? yes no NA

Quality Assurance/Quality Control

- 7.) Are the required reporting limits reported? (MRLs vs MDLs/PQLs) yes no
- 8.) Are all reported values above either MRL or MDL? yes no
- 9.) Are all values between the MDL & PQL tagged as trace? yes no NA
- 10a.) Are reporting limits raised for other reason besides high analyte conc.? yes no
- 10b.) If so, are they footnoted? yes no NA
- 11.) Lab method blank completed? yes no
- 12.) Lab, Field, or Trip Blank(s) report detections? yes no
- If yes, indicate blank type, chemical(s) and concentration(s): _____

- 13.) For inorganics and metals, is there one method blank for each analyte? yes no NA
If not, are all discrepancies footnoted? yes no
- 14.) For VOCs, is there one method blank for each day of analysis? yes no NA
If not, are all discrepancies footnoted? yes no
- 15.) For SVOC's, is there one method blank for each extraction batch? yes no NA
If not, are all discrepancies footnoted? yes no

Accuracy

- 16.) Is there a surrogate spike recovery for all VOC & SVOC samples? yes no NA
Do all surrogate spike recoveries meet accepted criteria? yes no
If not, are all discrepancies footnoted? yes no NA
- 17.) Is there a spike recovery for all Laboratory Control Samples? yes no NA
Do all LCS/LCSD spike recoveries meet accepted criteria? yes no
If not, are all discrepancies footnoted? yes no NA
- 18.) Are all LCS/LCSD RPDs within acceptable limits? yes no NA
If not, are all discrepancies footnoted? yes no NA

Precision

- 19.) Are all matrix spike/matrix spike duplicate recoveries within acceptable limits? yes no NA
If not, are all discrepancies footnoted? yes no NA

Several analytes reported values that were outside of their respective control limits (vo).

Several analytes were spikes at a level that was less than five times the reporting limit; therefore, matrix spike recoveries may not be meaningful (b).

- 20.) Are all matrix spike/matrix spike duplicate RPDs within

acceptable limits?

yes no NA

If not, are all discrepancies footnoted?

yes no NA

See response from 19 (vo).

See response from 19 (b).

21.) Do all RPD calculations for Field Duplicates meet accepted criteria?

yes no NA

Comments:

Initial Review By: LP

Final Review By: PT

Attachment C

Waste Disposal Receipts

