

# TECHNICAL MEMORANDUM

## CONFIRMATION SOIL SAMPLING



### **Future Powellhurst Place Apartments**

5403 and 5413 SE 122<sup>nd</sup> Avenue  
Portland, Oregon

Prepared for:

### **Northwest Housing Alternatives Attn: Kyle Ferguson**

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Issued on:

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This

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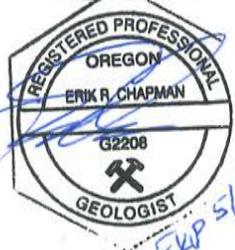
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and its assignees

Issued April 17, 2024 by:



**EVRENNORTHWEST**  
INC.  
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## *List of Acronyms and Abbreviations*

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bgs	below ground surface
CDM	construction demolition materials
CFSLs	Clean Fill Screening Levels
Client	Northwest Housing Alternatives
CMMP	Contaminated Media Management Plan
COIs	constituents of interest
DRO	diesel-range organics
ENW	EVREN Northwest, Inc.
EPA	U.S. Environmental Protection Agency
ESA	environmental site assessment
F&BI	Friedman & Bruya, Inc.
mg/Kg	milligrams per kilogram
MRL	method reporting limit
OAR	Oregon Administrative Rules
ODEQ	Oregon Department of Environmental Quality
PAHs	polynuclear aromatic hydrocarbons
PCBs	polychlorinated biphenyls
PID	photoionization detector
RBDM	Risk-Based Decision Making for Remediation of Contaminated Sites
RRO	residual (oil)-range organics
SLRBCs	screening level risk-based concentrations
VOCs	volatile organic constituents

## 1.0 Introduction

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At the request of Northwest Housing Alternatives (client - NWA), EVREN Northwest, Inc. (ENW) has prepared this Technical Memorandum documenting the collection of confirmation soil samples at the Powellhurst Place Apartments project site located at 5403 and 5413 SE 122<sup>nd</sup> Avenue in Portland, Oregon (subject property; see Figures 1 and 2). Soil sampling activities support ongoing environmental due diligence efforts in conjunction with site re-development activities at the subject property.

### 1.1 Background

The Powellhurst Place Apartments is a 65-unit new construction project underway at a former commercial and residential property in NE Portland. Historical research indicates the subject property has a history of truck and equipment parking/storage and vehicle maintenance which were present in the early 2000s. In late 2021, a Phase I Environmental Site Assessment (ESA)<sup>1</sup> and Phase II ESA<sup>2</sup> confirmed the presence of total petroleum hydrocarbons and metals in shallow soil samples collected at the subject site. Due to the identified soil contamination at the subject site, a Contaminated Media Management Plan (CMMP) was incorporated into project grading and construction plans to guide the management of contaminated soil during site redevelopment activities.<sup>3</sup>

Between October 2022 and September 2023, approximately (1) foot of soil was reportedly removed across the site during the grading phase of construction, amounting to a reported 376 tons of construction and demolition debris and approximately 180 yards of soil removed from the site.<sup>4</sup> The management of soil suggested no gross contamination was encountered during the soil removal activities, and as such, no confirmation soil samples were collected during the site grading activities. The soil impacts identified during the Phase II ESA were surficial (0.5 feet), and therefore were likely removed during grading. Nevertheless, the removal of impacted soil could not be definitively confirmed without additional sample data.

The new multi-family apartment building now covers most of the site. However, there is a small area in the northeast corner that remains uncovered where previous sampling revealed the presence of contamination at the 0.5-foot sample depth. The sample (GS01) contained diesel-range organics (DRO), residual-range organics (RRO), total lead, and total arsenic at concentration above conservative human health risk-based concentrations (RBCs) developed by the Oregon Department of Environmental Quality (ODEQ). It could not be confirmed whether impacted soils were removed during grading.

In a meeting on February 21, 2024, ODEQ agreed that additional sampling of soils near the GS01 sample location was warranted to confirm the presence or absence of residual soil impacts that could pose a

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<sup>1</sup> ENW 2021. *Phase I Environmental Site Assessment, Vacant Property, 5403 and 5413 SE 122<sup>nd</sup> Avenue, Portland, Oregon.* August 23, 2021.

<sup>2</sup> ENW 2021. *Phase II Environmental Site Assessment, Vacant Property, 5403 and 5413 SE 122<sup>nd</sup> Avenue, Portland, Oregon.* November 1, 2021.

<sup>3</sup> ENW, 2022. *Contaminated Media Management Plan, Vacant Property, 5403 and 5413 SE 122<sup>nd</sup> Avenue, Portland, Oregon.* May 27, 2022.

<sup>4</sup> ENW, 2023. *Technical Memorandum, Contaminated Media Management Plan Implementation Report, 5403 and 5413 SE 122<sup>nd</sup> Avenue, Portland, Oregon.* November 16, 2023.

possible human health risk to future residents and that might warrant remediation. NWAHA authorized the proposed sampling plan in an email dated February 26, 2024.

## 2.0 Scope of Work Completed

The purpose of this assessment was to assess residual native soil, below imported fill, remaining near the northeast corner of the subject property near where a sample of stained soils was collected during the Phase II ESA (sample GS01).

On March 4, 2024, ENW advanced four (4) soil borings (B01 through B04) and collected soil samples for laboratory analysis. Borings were sited within the approximately 4-foot-wide strip that currently exists between the new apartment building and the northern property margin at the northeast corner of the property (see Figure 2). Recovered soil cuttings from the borings were screened for the presence of contaminants using visual and olfactory inspection, and vapor headspace measurements for volatile contaminants were collected using a photoionization detector (PID).

Soil borings were advanced using a decontaminated stainless-steel hand auger. Soils to be retained for laboratory analysis were transferred directly into laboratory-prepared glass containers, sealed with a Teflon-lined cap, uniquely labeled, and preserved in a cooler on artificial ice for transport to the laboratory. Photographs of field work are included in Appendix A.

Immediately following sample collection, each of the soil borings was backfilled with bentonite and completed at the surface to match existing conditions.

### 2.1 Laboratory Analytical Methods

Soil samples were delivered to Friedman & Bruya, Inc. (F&BI) of Seattle, Washington for analysis under formal chain-of-custody protocol. All soil samples were analyzed initially for petroleum hydrocarbons, arsenic, and lead, which are the constituents of potential concern (COPC) identified in the Phase II ESA<sup>2</sup> and CMMP<sup>3</sup>. Where COPCs were detected, ENW ordered additional analysis to further characterize the impacts.

The laboratory analytical methods used for this assessment are presented in Table 2-1. Copies of the F&BI laboratory analytical report and chain-of-custody documentation are provided in Attachment C.

**Table 2-1. Analytical Methods**

Analytical Method	Constituents	Soil
NWTPH-HCID	Northwest Total petroleum hydrocarbon identification (TPH-HCID)	All samples
NWTPH-Dx	Northwest Total petroleum hydrocarbon quantification analysis for diesel- and residual-range organics (DRO and RRO, respectively)	All samples with residual range organics (RRO) detected by HCID
EPA 8260	Volatile Organic Compounds (VOCs)	Soil samples with RRO detections
EPA 8270E	Polynuclear aromatic hydrocarbons (PAHs)	Soil samples with RRO detections
EPA 8082	Polychlorinated biphenyl (PCBs)	Soil samples with RRO detection

## 2.2 Soil Assessment Criteria

Results collected during this investigation were evaluated against the following state cleanup criteria:

- 1) ODEQ Soil Matrix Level II cleanup levels provided in Oregon Administrative Rule (OAR) 340-122-0320 through 0360;
- 2) ODEQ screening level risk-based concentrations (SLRBCs) provided in Appendix A of ODEQ's *Risk-Based Decision Making for the Remediation of Contaminated Sites* (RBDM) guidance document;<sup>5</sup>
- 3) ODEQ published background metals in soil for the Portland Basin;<sup>6</sup> and,
- 4) ODEQ Clean Fill Screening Levels (CFSLs) for organic compounds for upland sites.<sup>7</sup>

## 3.0 Findings

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### 3.1 Soil Sample Locations and General Subsurface Conditions

Soil conditions at borings B01 through B04 included an upper layer of sandy gravel that appeared to be recently imported as part of site redevelopment. Below the apparent imported material, native soils consisted of sandy silt, gravely silt with coarse sand, and coarse sand and silt to the maximum explored depth of four (4) feet bgs. Soil descriptions and field screening results were recorded on soil boring logs presented as Attachment B.

No evidence of gross chemical impact was observed in underlying native soils in any of the four borings. PID headspace readings collected from the borings all registered 0.0 ppmv. However, it should be noted that borings were sited within a few feet of the new building's foundation, which appeared to have been recently treated with a potentially petroleum-based concrete sealant. Some apparent minor overspray of the sealant was evident on the gravels at the base of the treated foundation near boring B04.

In the absence of obvious impacts, ENW attempted to collect two (2) soil samples from each boring – one from first-encountered native soils, immediately below the surface gravel fill, and one from the bottom of the boring. Due to shallow refusal, only one soil sample was collected from borings B01 and B04, from apparent native soils. A description of sample locations and sample depths is presented on Table 3-1.

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<sup>5</sup> ODEQ. September 22, 2003. *Risk-Based Decision Making for the Remediation of Contaminated Sites*; RBCs last updated May 2018.

<sup>6</sup> ODEQ. March 20, 2013, Fact Sheet: Background Levels of Metals in Soils for Cleanups.

<sup>7</sup> ODEQ. July 2014. Clean Fill Determinations: Internal Management Directive, last updated February 21, 2019, by Heather Kuoppamaki.

**Table 3-1. Soil Sample Summary**

Sample Location ID	Date Sampled	Depth Sampled (feet)	PID Headspace Reading (ppmv)	Sampled By	Location
B01	3/4/2024	2	0.0	ENW	N side of Building 15 feet west of NE corner
B02	3/4/2024	2	0.0	ENW	NE corner of Building
	3/4/2024	4	0.0	ENW	
B03	3/4/2024	2	0.0	ENW	West of B01
	3/4/2024	3.5	0.0	ENW	
B04	3/4/2024	2	0.0	ENW	East side of building

### 3.2 Analytical Results

Laboratory analytical results are presented on Table 1 and described below. A copy of the F&BI analytical report is included as Attachment B.

**Petroleum Hydrocarbons.** Petroleum hydrocarbons were detected in one of the six samples analyzed by method NWTPH-HCID. Because petroleum hydrocarbons were detected, sample B04-2 was further quantified by method NWTPH-Dx and the following results were reported.

- DRO was not detected above the laboratory method reporting limit (MRL).
- RRO was detected at a concentration of 600 milligrams per kilogram (mg/Kg), which exceeds the ODEQ Soil Matrix Level II soil cleanup level of 500 mg/Kg but is below its corresponding SLRBC of 2,800 mg/Kg and CFSL of 140,000 mg/Kg.

**Select Metals.** All samples were analyzed for arsenic and lead by EPA 6020B and results were as follows:

- **Arsenic** was detected in all samples at concentrations below the published regional background concentration for the Portland Basin, suggesting arsenic is not enriched in the areas sampled. Arsenic exceeded its SLRBC in all samples; however, ODEQ does not typically require response action or cleanup for metals below their respective background concentrations.
- **Lead** was detected at concentrations ranging from 5.3 mg/kg to 36 mg/kg in all samples. Only the highest detected concentration of lead in sample B03-2 exceeded the SLRBC of 30 mg/Kg and the regional background concentration and CFSL of 28 mg/Kg. The deeper sample collected from B03 (B03-3.5) was below the SLRBC and background concentration.

**Volatile Organic Constituents.** To further characterize the RRO detection in sample B04-2, the sample was further analyzed for full list VOCs by EPA Method 8260D. No VOC compounds were detected above their respective MRLs for all analyzed constituents.

**Polynuclear Aromatic Hydrocarbons (PAHs).** Because ODEQ considers PAHs to be associated with certain petroleum (RRO) mixtures, sample B04-2 was further analyzed for PAHs using EPA Method 8270SIM. Several PAH constituents were detected in the sample; however, all concentrations were below their respective SLRBCs.

**Polychlorinated biphenyls.** ODEQ considers PCBs to be associated with transformer mineral insulating oil and used oil. Analysis of sample B04-2 for PCBs using EPA Method 8082 did not detect the presence of PCBs in the sample.

## 4.0 Discussion

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Confirmation soil samples were collected from the same general location as previous sample GS01, which was collected in October 2021, prior to site redevelopment activities. Laboratory analysis suggested low concentrations of RRO in one (1) of six (6) soil samples and total lead slightly exceeding the regional background concentration in another sample. The presence of imported material in the upper approximately 1-foot in all sample locations suggests a strong likelihood that the limited area of stained surface soil identified in 2021 was removed during grading and other earthwork.

The detected concentration of RRO at 600 mg/Kg in the sample from boring B04 is significantly lower than the original sample collected of stained surficial soils in 2021 (60,100 mg/Kg combined DRO+RRO in sample GS01). This significantly diminished concentration would suggest a high rate of attenuation with depth at this location. The RRO mixture detected in B04 did not contain RRO-related constituents above ODEQ's most conservative (residential) RBCs.

Alternatively, the source of the RRO detection in this sample may be unrelated to the former stained surficial soil as boring B04 was sited further away from the former GS01 sample location than borings B01-B03, which suggested no detections of RRO. Based on observations made during sample collection, it is possible that the RRO detection in this sample could be related to potentially petroleum-based concrete sealant applied to the foundation of the new building.

Total lead in sample B03-2 was detected slightly above its SLRBC which is based on the Leaching to Ground Water exposure pathway. Since lead did not exceed the SLRBC in the deeper sample from boring B03 at 3.5 feet bgs, this pathway appears to be incomplete. The total lead concentration does not exceed the ODEQ's RBC for direct contact for a residential occupant.

## 5.0 Conclusions and Recommendations

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The findings of this investigation have led ENW to the following conclusions:

- Residual concentrations of RRO and lead detected in soil samples collected during this investigation appear to be isolated and at a significantly reduced concentration relative to previous samples collected from this area prior to site redevelopment.
- Both RRO and lead appear to attenuate with depth and are therefore unlikely to extend to a significant depth.
- The concentrations of contaminants detected in soil do not exceed ODEQ RBCs for direct contact and appear unlikely to pose a human health risk to future residential occupants or workers.

Based on the findings of this investigation, ENW recommends no further investigation at this time.

*ENW recommends that a copy of this Technical Memorandum be retained with the property records.*

## 6.0 Limitations

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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 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. 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, ENW's environmental investigation shall not be construed as a guaranteed absence of such materials. 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.

ENW performed this study under a limited scope of services per our agreement. 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.

## *Table*

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Table 1 - Summary of Analytical Data, Soil

Location ID	B01	B02		B03		B04	Maximum Soil Concentration (remaining soil)	Soil Matrix Cleanup Level	ODEQs Screening-Level Risk-Based Concentrations SLRBCs <sup>1</sup> (Soil)	Background Concentrations (Regional Default)	Clean Fill Screening Levels or Background Concentrations (as applicable)	Exceeds ODEQs Screening-Level SLRBCs (Soil) and/or Soil Matrix Cleanup Level	
Sample ID	B01-2	B02-2	B02-4	B03-2	B03-3.5	B04-2				Portland Basin		TRUE OR Y FALSE OR N	
Date Sampled	3/4/2024	3/4/2024	3/4/2024	3/4/2024	3/4/2024	3/4/2024							
Depth Sampled (feet)	2	2	4	2	3.5	2							
Sampled By	ENW	ENW	ENW	ENW	ENW	ENW							
Location	N side of Building 15 feet west of NE corner	NE corner of Building		West of B01		East side of Building							
Constituent of Interest	Note	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)						
<b>Volatile Organic Constituents</b>													
Benzene	c, v	---	---	---	---	---	<0.03 (ND)	<0.03 (ND)	NE	0.023	---	0.023	(Y)
Bromodichloromethane	c, v	---	---	---	---	---	<0.05 (ND)	<0.05 (ND)	NE	0.002	---	0.002	(Y)
Bromoform	c, v	---	---	---	---	---	<0.05 (ND)	<0.05 (ND)	NE	0.046	---	0.046	(Y)
Bromomethane	nc, v	---	---	---	---	---	<0.5 (ND)	<0.5 (ND)	NE	0.083	---	0.083	(Y)
Carbon tetrachloride	c, v	---	---	---	---	---	<0.05 (ND) k	<0.05 (ND)	NE	0.013	---	0.013	(Y)
Chlorobenzene	nc, v	---	---	---	---	---	<0.05 (ND)	<0.05 (ND)	NE	5.8	---	2.4	N
Chlorodibromomethane (dibromochloromethane)	c, v	---	---	---	---	---	<0.05 (ND)	<0.05 (ND)	NE	0.0024	---	0.0024	(Y)
Chloroethane (ethyl chloride)	nc, v	---	---	---	---	---	<0.5 (ND)	<0.5 (ND)	NE	310	---	310	N
Chloroform	c, v	---	---	---	---	---	<0.05 (ND)	<0.05 (ND)	NE	0.0034	---	0.0034	(Y)
Chloromethane	nc, v	---	---	---	---	---	<0.5 (ND)	<0.5 (ND)	NE	2.2	---	2.2	N
1,2-Dichlorobenzene	nc, v	---	---	---	---	---	<0.05 (ND)	<0.05 (ND)	NE	36	---	0.92	N
1,4-Dichlorobenzene	c, v	---	---	---	---	---	<0.05 (ND)	<0.05 (ND)	NE	0.057	---	0.057	N
1,1-Dichloroethane	c, v	---	---	---	---	---	<0.05 (ND)	<0.05 (ND)	NE	0.044	---	0.044	(Y)
1,1-Dichloroethene	nc, v	---	---	---	---	---	<0.05 (ND)	<0.05 (ND)	NE	6.7	---	6.7	N
cis-1,2-Dichloroethene	nc, v	---	---	---	---	---	<0.05 (ND)	<0.05 (ND)	NE	0.63	---	0.63	N
trans-1,2-Dichloroethene	nc, v	---	---	---	---	---	<0.05 (ND)	<0.05 (ND)	NE	7.0	---	7	N
Dichloromethane	c, v	---	---	---	---	---	<0.5 (ND)	<0.5 (ND)	NE	0.14	---	0.14	(Y)
EDB (1,2-dibromoethane)	c, v	---	---	---	---	---	<0.05 (ND)	<0.05 (ND)	NE	0.00012	---	0.00012	(Y)
EDC (1,2-dichloroethane)	c, v	---	---	---	---	---	<0.05 (ND)	<0.05 (ND)	NE	0.0028	---	0.0028	(Y)
Ethylbenzene	c, v	---	---	---	---	---	<0.05 (ND)	<0.05 (ND)	NE	0.22	---	0.22	N
MTBE (methyl t-butyl ether)	c, v	---	---	---	---	---	<0.5 (ND)	<0.5 (ND)	NE	0.11	---	0.11	(Y)
Naphthalene	c, v	---	---	---	---	---	<0.05 (ND)	<0.05 (ND)	NE	0.077	---	0.077	N
iso-Propylbenzene (cumene)	nc, v	---	---	---	---	---	<0.05 (ND)	<0.05 (ND)	NE	96	---	96	N
Tetrachloroethene (PCE)	c, v	---	---	---	---	---	<0.025 (ND)	<0.025 (ND)	NE	0.46	---	0.18	N
Toluene	nc, v	---	---	---	---	---	<0.05 (ND)	<0.05 (ND)	NE	83	---	23	N
1,1,1-Trichloroethane	nc, v	---	---	---	---	---	<0.05 (ND)	<0.05 (ND)	NE	190	---	190	N
1,1,2-Trichloroethane	c, v	---	---	---	---	---	<0.05 (ND)	<0.05 (ND)	NE	0.0063	---	0.0063	(Y)
Trichloroethene	NA, v	---	---	---	---	---	<0.02 (ND)	<0.02 (ND)	NE	0.013	---	0.013	(Y)
Trichlorofluoromethane (Freon 11)	nc, v	---	---	---	---	---	<0.5 (ND)	<0.5 (ND)	NE	61	---	52	N
1,2,4-Trimethylbenzene	nc, v	---	---	---	---	---	<0.05 (ND)	<0.05 (ND)	NE	10	---	10	N
1,3,5-Trimethylbenzene	nc, v	---	---	---	---	---	<0.05 (ND)	<0.05 (ND)	NE	11	---	11	N
Vinyl chloride	c, v	---	---	---	---	---	<0.05 (ND)	<0.05 (ND)	NE	0.00057	---	0.00057	(Y)
Xylenes	nc, v	---	---	---	---	---	<0.15 (ND)	<0.15 (ND)	NE	23	---	1.4	N

Table 1 - Summary of Analytical Data, Soil

Location ID	B01	B02		B03		B04	Maximum Soil Concentration (remaining soil)	Soil Matrix Cleanup Level	ODEQs Screening-Level Risk-Based Concentrations SLRBCs <sup>1</sup> (Soil)	Background Concentrations (Regional Default)	Clean Fill Screening Levels or Background Concentrations (as applicable)	Exceeds ODEQs Screening-Level SLRBCs (Soil) and/or Soil Matrix Cleanup Level	
Sample ID	B01-2	B02-2	B02-4	B03-2	B03-3.5	B04-2							
Date Sampled	3/4/2024	3/4/2024	3/4/2024	3/4/2024	3/4/2024	3/4/2024							
Depth Sampled (feet)	2	2	4	2	3.5	2							
Sampled By	ENW	ENW	ENW	ENW	ENW	ENW							
Location	N side of Building 15 feet west of NE corner	NE corner of Building		West of B01		East side of Building				Portland Basin		TRUE OR Y FALSE OR N	
Constituent of Interest	Note	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)					
<b>Metals</b>													
Arsenic	c, nv	3.1	3.6	3.3	3.8	3.5	2.4	3.8	NE	0.43	8.8	8.8	BKG
Lead	NA, nv	7.8	23	14	36	12	5.3	36	NE	30	28	28	Y
<b>Semivolatile Organic Constituents</b>													
Polychlorinated biphenyls (Total PCBs)	c, v	---	---	---	---	---	<0.02 (ND)	<0.02 (ND)	NE	0.23	---	0.23	N
<b>Polycyclic Aromatic Hydrocarbons</b>													
Acenaphthene	nc, v	---	---	---	---	---	<0.05 (ND)	<0.05 (ND)	NE	770	---	0.25	N
Anthracene	nc, v	---	---	---	---	---	<0.05 (ND)	<0.05 (ND)	NE	8200	---	6.8	N
Benzo[a]anthracene	c, v	---	---	---	---	---	<0.05 (ND)	<0.05 (ND)	NE	1.1	---	0.73	N
Benzo[a]pyrene (BaP equivalents)	c, nv	---	---	---	---	---	<0.05 (ND)	<0.05 (ND)	NE	0.11	---	0.11	N
Benzo[b]fluoranthene	c, nv	---	---	---	---	---	<0.05 (ND)	<0.05 (ND)	NE	1.1	---	1.1	N
Benzo[k]fluoranthene	c, nv	---	---	---	---	---	<0.05 (ND)	<0.05 (ND)	NE	11	---	11	N
Chrysene	c, nv	---	---	---	---	---	0.064	0.064	NE	110	---	3.1	N
Dibenz[a,h]anthracene	c, nv	---	---	---	---	---	<0.05 (ND)	<0.05 (ND)	NE	0.11	---	0.11	N
Fluoranthene	nc, nv	---	---	---	---	---	0.072	0.072	NE	2400	---	10	N
Fluorene	nc, v	---	---	---	---	---	<0.05 (ND)	<0.05 (ND)	NE	770	---	3.7	N
Indeno[1,2,3-cd]pyrene	c, nv	---	---	---	---	---	<0.05 (ND)	<0.05 (ND)	NE	1.1	---	1.1	N
Pyrene	nc, v	---	---	---	---	---	0.12	0.12	NE	1800	---	10	N
<b>Total Petroleum Hydrocarbons</b>													
Generic Gasoline (GRO)	nc, v	<20 (NP)	<20 (NP)	<20 (NP)	<20 (NP)	<20 (NP)	<20 (NP)	<20 (NP)	80	31	---	520	N
Generic Diesel / Heating Oil (DRO)	nc, v	<50 (NP)	<50 (NP)	<50 (NP)	<50 (NP)	<50 (NP)	<50 (ND)	<50 (NP)	500	1100	---	90	N
Generic Mineral Insulating Oil (RRO)	nc, nv	<250 (NP)	<250 (NP)	<250 (NP)	<250 (NP)	<250 (NP)	600	600		2800	---	140,000	N

Notes:

mg/Kg = milligram per kilogram or parts per million (ppm).  
 <# (ND) = not detected at or above the laboratory method reporting limit shown.  
 NE = not established.  
 NP = not present at or above the laboratory method reporting limit shown (HCID analysis).  
 --- = 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.

Shaded concentrations exceed screening level risk-based concentrations and background concentrations, as applicable.

<sup>1</sup> Lowest Risk-Based Concentration for soil (screening level assumes residential use, from ODEQ RBCs dated May 2018).

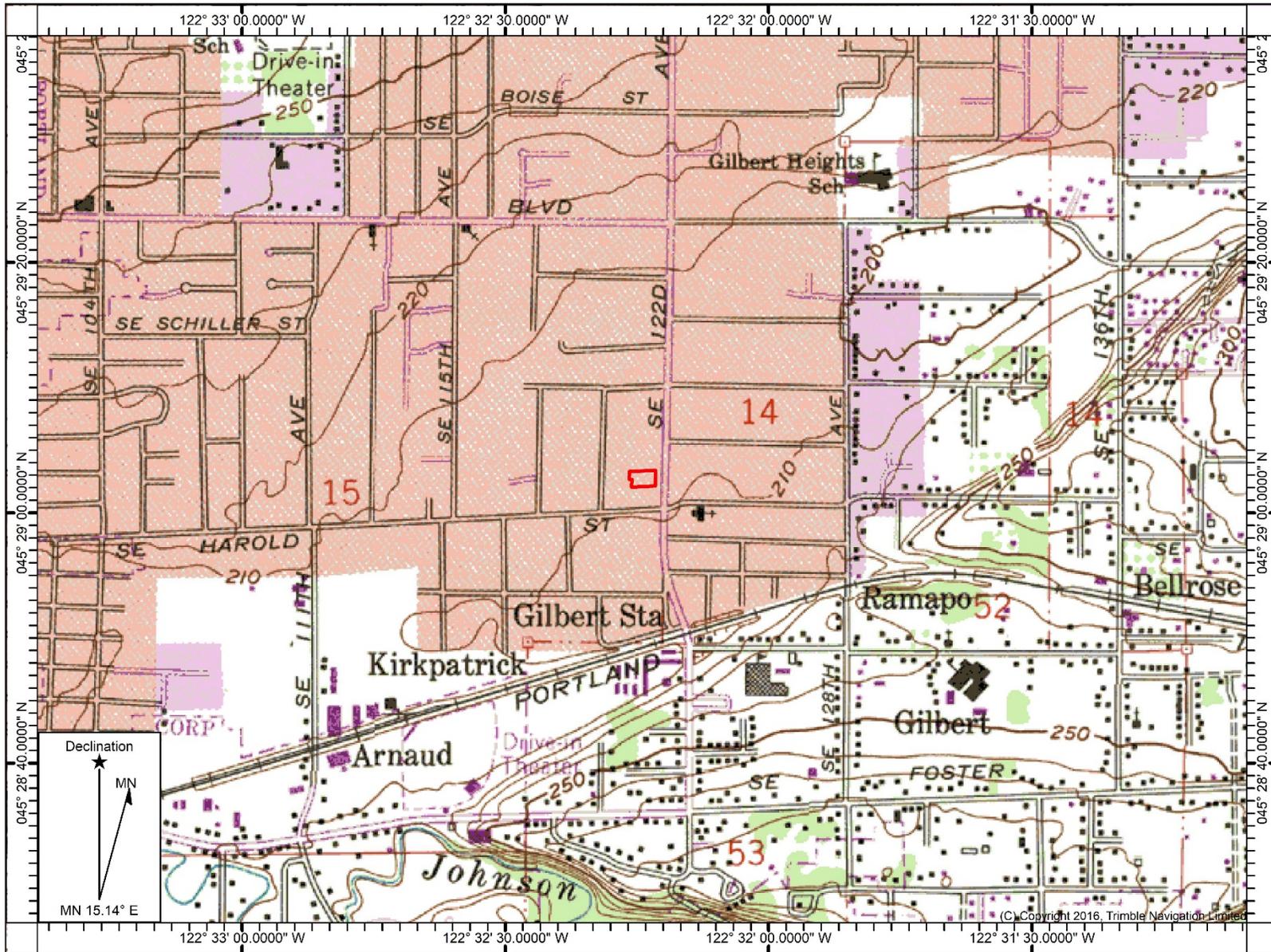
(Y) indicates analyte not detected, but detection limit is above screening concentration.

k = the calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

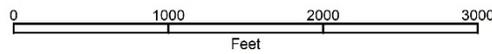
BKG = constituent exceeded its SLRBC; however, was not detected above default background concentrations in soil

## *Figures*

---



Name: GLADSTONE  
Date: 09/08/21



Location: 045° 29' 02.6868" N, 122° 32' 14.4398" W  
Contour Interval: 10 ft



Date Drawn: 9/8/2021  
CAD File Name: 1538-21003-01\_fig1sv\_map  
Drawn By: CLR  
Approved By: LDG

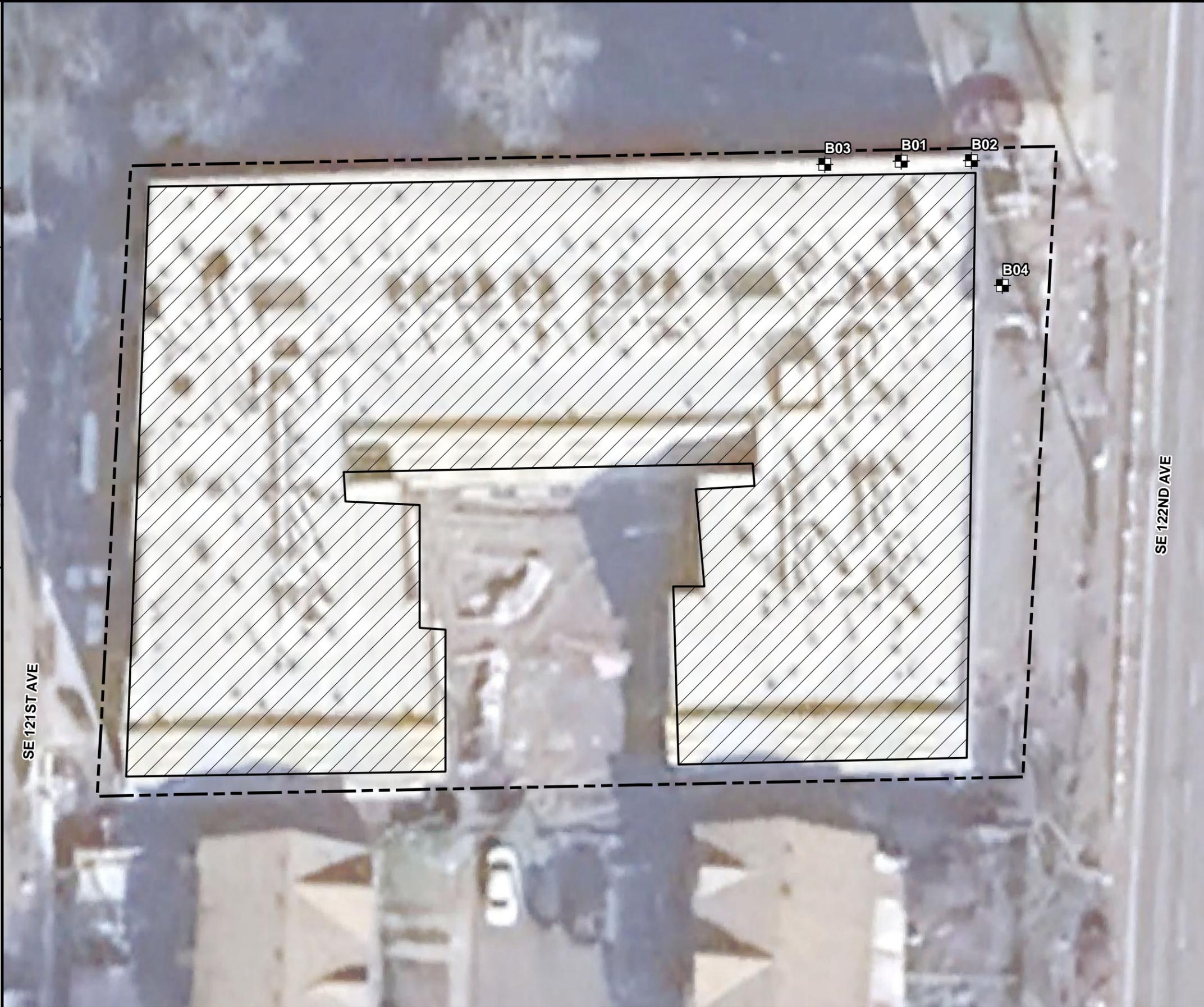
Vacant Property  
5403 & 5413 SE 122nd Avenue  
Portland, Oregon

## Site Vicinity Map

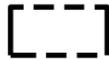
Project No.  
1538-21003  
Figure No.  
**1**

1538-21003(V01)  
 DRAWING NUMBER

DRAWN BY: H. ROMER 4/17/2024  
 CHECKED BY: E. BRUGGEMAN 4/17/2024  
 APPROVED BY: L. GREEN 4/17/2024



**LEGEND:**

-  SUBJECT PROPERTY BOUNDARY
-  SUBJECT BUILDING
-  ENW BORING LOCATION

- NOTES:**
1. BASE MAP DEVELOPED FROM AN AERIAL PHOTOGRAPH MAP DATED 2024 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




**FIGURE 2**

**SITE PLAN AND SAMPLE LOCATION DIAGRAM**

**FUTE POWELLHURST PLACE APARTMENTS**  
 5403 AND 5413 ES 122ND AVE  
 PORTLAND, OREGON

*Attachment A*  
Photographic Log



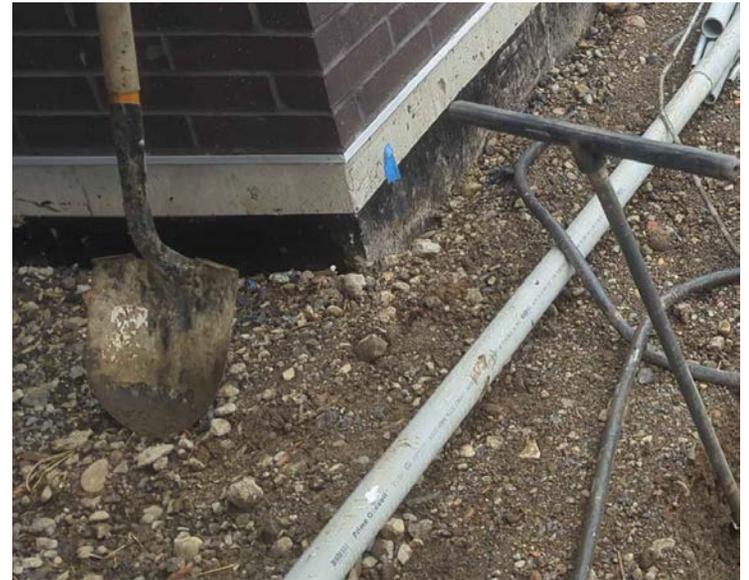
View of the space between the site building and northern property margin where borings B01-B03 were sited.



View of soil boring B04 sited within a utility trench on the east side of the site building. Note the black sealant applied to the adjacent concrete foundation.



Temporary soil borings were installed using a hand auger for the purpose of soil sample collection.



Closer view of concrete sealant on foundation.



Future Powellhurst Place Apartments  
 5403 and 5413 SE 122<sup>nd</sup> Ave  
 Portland, Oregon

## Site Photographs

Project No.  
 1538-21003-06

Appendix  
**A**

*Attachment B*  
Soil Boring Logs

<b>DRILL LOG</b>	PROJECT		PROJECT NO.		BORING NO.
	Confirmation Sampling		1538-23001-05		<b>B01</b>
SITE		BEGUN	COMPLETED	HOLE SIZE	
5403 & 5413 SE 122nd Avenue, Porland, Oregon		3/4/24	3/4/24	2-inch	
COORDINATES		DEPTH GROUND WATER	DATE SL	STATIC LEVEL	FIRST WATER
DRILLER		CORE RECOVERY (%)		# SAMPLES	# CORE BOXES
ENW					
DRILL MAKE AND MODEL		LOGGED BY:			DEPTH BOTTOM OF HOLE
		Dan Sajko			2

DEPTH	STRATA ELEVATION/ DEPTH	GRAPHIC LOG	DESCRIPTION	SAMPLE DATA				PID/OVM	REMARKS: NOTES ON WATER LEVELS, LOSSES, CAVING, CASING, DEPTH & DRILLING CONDITIONS.
				SAMPLE NO.	SAMPLE TYPE	CORE RECOVERY	MW Const./ Completion		
0			Bark chips					0.0	
1			Sandy GRAVEL (GW-SW); brown; moist; dense					0.0	
2			End of boring (refusal); backfilled with bentonite.	B01-2				0.0	
3									
4									
5									
6									
7									

<b>DRILL LOG</b>	PROJECT		PROJECT NO.		BORING NO.
	Confirmation Sampling		1538-23001-05		<b>B02</b>
SITE		BEGUN	COMPLETED	HOLE SIZE	
5403 & 5413 SE 122nd Avenue, Porland, Oregon		3/4/24	3/4/24	2-inch	
COORDINATES		DEPTH GROUND WATER	DATE SL	STATIC LEVEL	FIRST WATER
DRILLER		CORE RECOVERY (%)		# SAMPLES	# CORE BOXES
ENW					
DRILL MAKE AND MODEL		LOGGED BY:			DEPTH BOTTOM OF HOLE
		Dan Sajko			4

DEPTH	STRATA ELEVATION/ DEPTH	GRAPHIC LOG	DESCRIPTION	SAMPLE DATA				PID/OVM	REMARKS: NOTES ON WATER LEVELS, LOSSES, CAVING, CASING, DEPTH & DRILLING CONDITIONS.
				SAMPLE NO.	SAMPLE TYPE	CORE RECOVERY	MW Const./ Completion		
0			Gravel fill; brown						
1			Sandy silt (ML); stiff; moist					0.0	
2			Gravelly SILT (GW-GM); with coarse sand; moist; dense	B02-2				0.0	
3								0.0	
4				B02-4				0.0	
4			End of boring; backfilled with bentonite.						
5									
6									
7									

<b>DRILL LOG</b>	PROJECT		PROJECT NO.		BORING NO.
	Confirmation Sampling		1538-23001-05		<b>B03</b>
SITE		BEGUN	COMPLETED	HOLE SIZE	
5403 & 5413 SE 122nd Avenue, Porland, Oregon		3/4/24	3/4/24	2-inch	
COORDINATES		DEPTH GROUND WATER	DATE SL	STATIC LEVEL	FIRST WATER
DRILLER		CORE RECOVERY (%)		# SAMPLES	# CORE BOXES
ENW					
DRILL MAKE AND MODEL		LOGGED BY:			DEPTH BOTTOM OF HOLE
		Dan Sajko			3.5

DEPTH	STRATA ELEVATION/DEPTH	GRAPHIC LOG	DESCRIPTION	SAMPLE DATA				PID/OVM	REMARKS: NOTES ON WATER LEVELS, LOSSES, CAVING, CASING, DEPTH & DRILLING CONDITIONS.
				SAMPLE NO.	SAMPLE TYPE	CORE RECOVERY	MW Const./Completion		
0			Course SAND and SILT(SP-SM)					0.0	
1			Sandy silt (ML); stiff; moist					0.0	
2			Increased gravel.	B03-2				0.0	
3				B03-3.5				0.0	
4			End of boring (Hard refusal); backfilled with bentonite.						
5									
6									
7									

<b>DRILL LOG</b>	PROJECT		PROJECT NO.		BORING NO.
	Confirmation Sampling		1538-23001-05		<b>B04</b>
SITE		BEGUN	COMPLETED	HOLE SIZE	
5403 & 5413 SE 122nd Avenue, Porland, Oregon		3/4/24	3/4/24	2-inch	
COORDINATES		DEPTH GROUND WATER	DATE SL	STATIC LEVEL	FIRST WATER
DRILLER		CORE RECOVERY (%)		# SAMPLES	# CORE BOXES
ENW					
DRILL MAKE AND MODEL		LOGGED BY:			DEPTH BOTTOM OF HOLE
		Dan Sajko			2

DEPTH	STRATA ELEVATION/DEPTH	GRAPHIC LOG	DESCRIPTION	SAMPLE DATA				PID/OVM	REMARKS: NOTES ON WATER LEVELS, LOSSES, CAVING, CASING, DEPTH & DRILLING CONDITIONS.
				SAMPLE NO.	SAMPLE TYPE	CORE RECOVERY	MW Const./Completion		
0			Gravelly SILT(ML)					0.0	
1								0.0	
2			Increased gravel.	B04-2				0.0	
			End of boring; backfilled with bentonite.						
3									
4									
5									
6									
7									

*Attachment C*

Laboratory Analytical Report

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.

5500 4th Ave South  
Seattle, WA 98108-2419  
(206) 285-8282  
office@friedmanandbruya.com  
www.friedmanandbruya.com

March 18, 2024

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 March 5, 2024 from the 1538-21003-06, F&BI 403052 project. There are 26 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  
ENW0318R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on March 5, 2024 by Friedman & Bruya, Inc. from the Evren Northwest 1538-21003-06, F&BI 403052 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Evren Northwest</u>
403052 -01	B01-2
403052 -02	B02-2
403052 -03	B02-4
403052 -04	B03-2
403052 -05	B03-3.5
403052 -06	B04-2

The 8260D calibration standard exceeded the acceptance criteria for carbon tetrachloride. The compound was not detected, therefore this did not represent an out of control condition, and were qualified with a "k" qualifier.

The 8260D calibration standard did not meet the acceptance criteria for 2-hexanone. The data were flagged accordingly.

The 8260D aliquot for sample B04-2 was taken from a four ounce soil jar. The data were flagged accordingly.

The 8082A Aroclor 1260 soil laboratory control sample exceeded the acceptance criteria. PCBs were not detected, therefore the data were acceptable.

All other quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/18/24  
Date Received: 03/05/24  
Project: 1538-21003-06, F&BI 403052  
Date Extracted: 03/05/24  
Date Analyzed: 03/05/24

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR GASOLINE, DIESEL AND HEAVY OIL BY NWTPH-HCID**

Results Reported on a Dry Weight Basis  
Results Reported as Not Detected (ND) or Detected (D)

THE DATA PROVIDED BELOW WAS PERFORMED PER THE GUIDELINES ESTABLISHED BY THE WASHINGTON DEPARTMENT OF ECOLOGY AND WERE NOT DESIGNED TO PROVIDE INFORMATION WITH REGARDS TO THE ACTUAL IDENTIFICATION OF ANY MATERIAL PRESENT

<u>Sample ID</u> Laboratory ID	<u>Gasoline</u>	<u>Diesel</u>	<u>Heavy Oil</u>	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 50-150)
B01-2 403052-01	ND	ND	ND	104
B02-2 403052-02	ND	ND	ND	100
B02-4 403052-03	ND	ND	ND	100
B03-2 403052-04	ND	ND	ND	96
B03-3.5 403052-05	ND	ND	ND	101
B04-2 403052-06	ND	ND	D	92
Method Blank 04-557 MB	ND	ND	ND	97

ND - Material not detected at or above 20 mg/kg gas, 50 mg/kg diesel and 250 mg/kg heavy oil.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/18/24  
Date Received: 03/05/24  
Project: 1538-21003-06, F&BI 403052  
Date Extracted: 03/06/24  
Date Analyzed: 03/06/24

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL AND RESIDUAL RANGE  
USING METHOD NWTPH-D<sub>x</sub>**

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

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Residual Range</u> (C <sub>25</sub> -C <sub>36</sub> )	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 50-150)
B04-2 403052-06	<50	600	99
Method Blank 04-559 MB	<50	<250	104

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B01-2	Client:	Evren Northwest
Date Received:	03/05/24	Project:	1538-21003-06, F&BI 403052
Date Extracted:	03/05/24	Lab ID:	403052-01
Date Analyzed:	03/05/24	Data File:	403052-01.119
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	3.1
Lead	7.8

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B02-2	Client:	Evren Northwest
Date Received:	03/05/24	Project:	1538-21003-06, F&BI 403052
Date Extracted:	03/05/24	Lab ID:	403052-02
Date Analyzed:	03/05/24	Data File:	403052-02.120
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	3.6
Lead	23

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B02-4	Client:	Evren Northwest
Date Received:	03/05/24	Project:	1538-21003-06, F&BI 403052
Date Extracted:	03/05/24	Lab ID:	403052-03
Date Analyzed:	03/05/24	Data File:	403052-03.121
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	3.3
Lead	14

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B03-2	Client:	Evren Northwest
Date Received:	03/05/24	Project:	1538-21003-06, F&BI 403052
Date Extracted:	03/05/24	Lab ID:	403052-04
Date Analyzed:	03/05/24	Data File:	403052-04.129
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	3.8
Lead	36

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B03-3.5	Client:	Evren Northwest
Date Received:	03/05/24	Project:	1538-21003-06, F&BI 403052
Date Extracted:	03/05/24	Lab ID:	403052-05
Date Analyzed:	03/05/24	Data File:	403052-05.130
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	3.5
Lead	12

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B04-2	Client:	Evren Northwest
Date Received:	03/05/24	Project:	1538-21003-06, F&BI 403052
Date Extracted:	03/05/24	Lab ID:	403052-06
Date Analyzed:	03/05/24	Data File:	403052-06.131
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.4
Lead	5.3

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Evren Northwest
Date Received:	NA	Project:	1538-21003-06, F&BI 403052
Date Extracted:	03/05/24	Lab ID:	I4-172 mb2
Date Analyzed:	03/05/24	Data File:	I4-172 mb2.118
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Arsenic	<1
Lead	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis for SPLP Metals By EPA Method 6020B and 1312

Client ID:	B03-2	Client:	Evren Northwest
Date Received:	03/05/24	Project:	1538-21003-06, F&BI 403052
Date Extracted:	03/07/24	Lab ID:	403052-04 x0.1
Date Analyzed:	03/08/24	Data File:	403052-04 x0.1.061
Matrix:	Soil/Solid	Instrument:	ICPMS2
Units:	mg/L (ppm)	Operator:	SP

Analyte:	Concentration mg/L (ppm)
----------	-----------------------------

Lead	<0.015
------	--------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis for SPLP Metals By EPA Method 6020B and 1312

Client ID:	Method Blank	Client:	Evren Northwest
Date Received:	NA	Project:	1538-21003-06, F&BI 403052
Date Extracted:	03/07/24	Lab ID:	I4-184 mb x0.1
Date Analyzed:	03/08/24	Data File:	I4-184 mb x0.1.060
Matrix:	Soil/Solid	Instrument:	ICPMS2
Units:	mg/L (ppm)	Operator:	SP

Analyte:	Concentration mg/L (ppm)
----------	-----------------------------

Lead	<0.015
------	--------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	B04-2 pc	Client:	Evren Northwest
Date Received:	03/05/24	Project:	1538-21003-06, F&BI 403052
Date Extracted:	03/08/24	Lab ID:	403052-06
Date Analyzed:	03/08/24	Data File:	030813.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	86	114
Toluene-d8	96	86	115
4-Bromofluorobenzene	103	83	116

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 k	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 ca		

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:	1538-21003-06, F&BI 403052
Date Extracted:	03/08/24	Lab ID:	04-0506 mb
Date Analyzed:	03/08/24	Data File:	030806.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	106	86	114
Toluene-d8	102	86	115
4-Bromofluorobenzene	103	83	116

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 k	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 ca		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	B04-2	Client:	Evren Northwest
Date Received:	03/05/24	Project:	1538-21003-06, F&BI 403052
Date Extracted:	03/12/24	Lab ID:	403052-06 1/25
Date Analyzed:	03/13/24	Data File:	031321.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	102 d	10	198
2-Fluorobiphenyl	96 d	45	117
2,4,6-Tribromophenol	68 d	11	158
Terphenyl-d14	106 d	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.05
2-Methylnaphthalene	<0.05
1-Methylnaphthalene	<0.05
Acenaphthylene	<0.05
Acenaphthene	<0.05
Fluorene	<0.05
Phenanthrene	<0.05
Anthracene	<0.05
Fluoranthene	0.072
Pyrene	0.12
Benz(a)anthracene	<0.05
Chrysene	0.064
Benzo(a)pyrene	<0.05
Benzo(b)fluoranthene	<0.05
Benzo(k)fluoranthene	<0.05
Indeno(1,2,3-cd)pyrene	<0.05
Dibenz(a,h)anthracene	<0.05
Benzo(g,h,i)perylene	0.058

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:	1538-21003-06, F&BI 403052
Date Extracted:	03/12/24	Lab ID:	04-0580 mb 1/5
Date Analyzed:	03/12/24	Data File:	031218.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	107 ca	10	198
2-Fluorobiphenyl	94	45	117
2,4,6-Tribromophenol	85	11	158
Terphenyl-d14	102	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:	B04-2	Client:	Evren Northwest
Date Received:	03/05/24	Project:	1538-21003-06, F&BI 403052
Date Extracted:	03/11/24	Lab ID:	403052-06 1/30
Date Analyzed:	03/11/24	Data File:	031120.D
Matrix:	Soil	Instrument:	GC12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Tetrachlorometaxylene	73	41	139
Decachlorobiphenyl	61	48	145

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:	1538-21003-06, F&BI 403052
Date Extracted:	03/11/24	Lab ID:	04-579 mb 1/30
Date Analyzed:	03/11/24	Data File:	031106.D
Matrix:	Soil	Instrument:	GC12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Tetrachlorometaxylene	121	41	139
Decachlorobiphenyl	117	48	145

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: 03/18/24

Date Received: 03/05/24

Project: 1538-21003-06, F&BI 403052

**QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL EXTENDED USING METHOD NWTPH-D<sub>x</sub>**

Laboratory Code: 403072-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	(Wet wt) Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	102	106	64-136	4

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	106	78-121

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/18/24

Date Received: 03/05/24

Project: 1538-21003-06, F&BI 403052

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

Laboratory Code: 403025-01 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	<5	104	101	75-125	3
Lead	mg/kg (ppm)	50	<5	100	99	75-125	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	96	80-120
Lead	mg/kg (ppm)	50	98	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/18/24

Date Received: 03/05/24

Project: 1538-21003-06, F&BI 403052

**QUALITY ASSURANCE RESULTS  
FOR THE ANALYSIS OF SOIL/SOLID SAMPLES  
FOR SPLP METALS USING  
EPA METHOD 6020B AND 1312**

Laboratory Code: 403052-04 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Lead	mg/L (ppm)	1.0	<1	88	87	75-125	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Lead	mg/L (ppm)	1.0	89	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/18/24

Date Received: 03/05/24

Project: 1538-21003-06, F&BI 403052

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

Laboratory Code: 403052-06 (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)	2	<0.5	48	50	10-142	4
Chloromethane	mg/kg (ppm)	2	<0.5	73	78	10-126	7
Vinyl chloride	mg/kg (ppm)	2	<0.05	69	75	10-138	8
Bromomethane	mg/kg (ppm)	2	<0.5	86	92	10-163	7
Chloroethane	mg/kg (ppm)	2	<0.5	87	90	10-176	3
Trichlorofluoromethane	mg/kg (ppm)	2	<0.5	88	91	10-176	3
Acetone	mg/kg (ppm)	10	<5	79	90	10-163	13
1,1-Dichloroethene	mg/kg (ppm)	2	<0.05	77	82	10-160	6
Hexane	mg/kg (ppm)	2	<0.25	87	90	10-137	3
Methylene chloride	mg/kg (ppm)	2	<0.5	85	87	10-156	2
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2	<0.05	84	89	21-145	6
trans-1,2-Dichloroethene	mg/kg (ppm)	2	<0.05	80	84	14-137	5
1,1-Dichloroethane	mg/kg (ppm)	2	<0.05	84	87	19-140	4
2,2-Dichloropropane	mg/kg (ppm)	2	<0.05	85	86	10-158	1
cis-1,2-Dichloroethene	mg/kg (ppm)	2	<0.05	82	89	25-135	8
Chloroform	mg/kg (ppm)	2	<0.05	82	85	21-145	4
2-Butanone (MEK)	mg/kg (ppm)	10	<1	80	86	19-147	7
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2	<0.05	88	92	12-160	4
1,1,1-Trichloroethane	mg/kg (ppm)	2	<0.05	88	90	10-156	2
1,1-Dichloropropene	mg/kg (ppm)	2	<0.05	86	91	17-140	6
Carbon tetrachloride	mg/kg (ppm)	2	<0.05	108	109	9-164	1
Benzene	mg/kg (ppm)	2	<0.03	86	91	29-129	6
Trichloroethene	mg/kg (ppm)	2	<0.02	85	90	21-139	6
1,2-Dichloropropane	mg/kg (ppm)	2	<0.05	87	93	30-135	7
Bromodichloromethane	mg/kg (ppm)	2	<0.05	88	92	23-155	4
Dibromomethane	mg/kg (ppm)	2	<0.05	85	86	23-145	1
4-Methyl-2-pentanone	mg/kg (ppm)	10	<1	82	90	24-155	9
cis-1,3-Dichloropropene	mg/kg (ppm)	2	<0.05	83	88	28-144	6
Toluene	mg/kg (ppm)	2	<0.05	89	90	35-130	1
trans-1,3-Dichloropropene	mg/kg (ppm)	2	<0.05	88	89	26-149	1
1,1,2-Trichloroethane	mg/kg (ppm)	2	<0.05	83	87	10-205	5
2-Hexanone	mg/kg (ppm)	10	<0.5	66	68	15-166	3
1,3-Dichloropropane	mg/kg (ppm)	2	<0.05	89	91	31-137	2
Tetrachloroethene	mg/kg (ppm)	2	<0.025	89	90	20-133	1
Dibromochloromethane	mg/kg (ppm)	2	<0.05	80	81	28-150	1
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2	<0.05	81	84	28-142	4
Chlorobenzene	mg/kg (ppm)	2	<0.05	87	91	32-129	4
Ethylbenzene	mg/kg (ppm)	2	<0.05	88	91	32-137	3
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2	<0.05	88	89	31-143	1
m,p-Xylene	mg/kg (ppm)	4	<0.1	88	90	34-136	2
o-Xylene	mg/kg (ppm)	2	<0.05	80	85	33-134	6
Styrene	mg/kg (ppm)	2	<0.05	84	86	35-137	2
Isopropylbenzene	mg/kg (ppm)	2	<0.05	86	87	31-142	1
Bromoform	mg/kg (ppm)	2	<0.05	75	80	21-156	6
n-Propylbenzene	mg/kg (ppm)	2	<0.05	89	90	23-146	1
Bromobenzene	mg/kg (ppm)	2	<0.05	90	92	34-130	2
1,3,5-Trimethylbenzene	mg/kg (ppm)	2	<0.05	86	89	18-149	3
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2	<0.05	82	83	28-140	1
1,2,3-Trichloropropane	mg/kg (ppm)	2	<0.05	83	85	25-144	2
2-Chlorotoluene	mg/kg (ppm)	2	<0.05	88	87	31-134	1
4-Chlorotoluene	mg/kg (ppm)	2	<0.05	83	86	31-136	4
tert-Butylbenzene	mg/kg (ppm)	2	<0.05	88	90	30-137	2
1,2,4-Trimethylbenzene	mg/kg (ppm)	2	<0.05	85	89	10-182	5
sec-Butylbenzene	mg/kg (ppm)	2	<0.05	88	91	23-145	3
p-Isopropyltoluene	mg/kg (ppm)	2	<0.05	89	91	21-149	2
1,3-Dichlorobenzene	mg/kg (ppm)	2	<0.05	85	87	30-131	2
1,4-Dichlorobenzene	mg/kg (ppm)	2	<0.05	84	89	29-129	6
1,2-Dichlorobenzene	mg/kg (ppm)	2	<0.05	85	90	31-132	6
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2	<0.5	77	76	11-161	1
1,2,4-Trichlorobenzene	mg/kg (ppm)	2	<0.25	85	88	22-142	3
Hexachlorobutadiene	mg/kg (ppm)	2	<0.25	84	85	10-142	1
Naphthalene	mg/kg (ppm)	2	<0.05	79	82	14-157	4
1,2,3-Trichlorobenzene	mg/kg (ppm)	2	<0.25	81	85	20-144	5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/18/24

Date Received: 03/05/24

Project: 1538-21003-06, F&BI 403052

**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)	2	80	10-146
Chloromethane	mg/kg (ppm)	2	88	27-133
Vinyl chloride	mg/kg (ppm)	2	85	22-139
Bromomethane	mg/kg (ppm)	2	109	10-201
Chloroethane	mg/kg (ppm)	2	104	10-163
Trichlorofluoromethane	mg/kg (ppm)	2	107	10-196
Acetone	mg/kg (ppm)	10	90	52-141
1,1-Dichloroethene	mg/kg (ppm)	2	87	47-128
Hexane	mg/kg (ppm)	2	105	43-142
Methylene chloride	mg/kg (ppm)	2	96	10-184
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2	94	60-123
trans-1,2-Dichloroethene	mg/kg (ppm)	2	91	64-132
1,1-Dichloroethane	mg/kg (ppm)	2	95	64-135
2,2-Dichloropropane	mg/kg (ppm)	2	104	52-170
cis-1,2-Dichloroethene	mg/kg (ppm)	2	96	64-135
Chloroform	mg/kg (ppm)	2	94	61-139
2-Butanone (MEK)	mg/kg (ppm)	10	82	30-197
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2	99	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	2	97	62-131
1,1-Dichloropropene	mg/kg (ppm)	2	102	64-136
Carbon tetrachloride	mg/kg (ppm)	2	121	60-139
Benzene	mg/kg (ppm)	2	97	65-136
Trichloroethene	mg/kg (ppm)	2	93	63-139
1,2-Dichloropropane	mg/kg (ppm)	2	97	61-145
Bromodichloromethane	mg/kg (ppm)	2	97	57-126
Dibromomethane	mg/kg (ppm)	2	93	62-123
4-Methyl-2-pentanone	mg/kg (ppm)	10	90	45-145
cis-1,3-Dichloropropene	mg/kg (ppm)	2	94	65-143
Toluene	mg/kg (ppm)	2	89	66-126
trans-1,3-Dichloropropene	mg/kg (ppm)	2	91	65-131
1,1,2-Trichloroethane	mg/kg (ppm)	2	85	62-131
2-Hexanone	mg/kg (ppm)	10	63	33-152
1,3-Dichloropropane	mg/kg (ppm)	2	94	67-128
Tetrachloroethene	mg/kg (ppm)	2	90	68-128
Dibromochloromethane	mg/kg (ppm)	2	83	55-121
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2	86	66-129
Chlorobenzene	mg/kg (ppm)	2	90	67-128
Ethylbenzene	mg/kg (ppm)	2	92	64-123
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2	91	64-121
m,p-Xylene	mg/kg (ppm)	4	93	68-128
o-Xylene	mg/kg (ppm)	2	86	67-129
Styrene	mg/kg (ppm)	2	87	67-129
Isopropylbenzene	mg/kg (ppm)	2	90	68-128
Bromoform	mg/kg (ppm)	2	81	56-132
n-Propylbenzene	mg/kg (ppm)	2	91	68-129
Bromobenzene	mg/kg (ppm)	2	94	69-128
1,3,5-Trimethylbenzene	mg/kg (ppm)	2	89	69-129
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2	88	56-143
1,2,3-Trichloropropane	mg/kg (ppm)	2	85	61-137
2-Chlorotoluene	mg/kg (ppm)	2	90	69-128
4-Chlorotoluene	mg/kg (ppm)	2	87	67-127
tert-Butylbenzene	mg/kg (ppm)	2	92	69-129
1,2,4-Trimethylbenzene	mg/kg (ppm)	2	90	69-128
sec-Butylbenzene	mg/kg (ppm)	2	92	69-130
p-Isopropyltoluene	mg/kg (ppm)	2	92	69-130
1,3-Dichlorobenzene	mg/kg (ppm)	2	91	69-127
1,4-Dichlorobenzene	mg/kg (ppm)	2	90	68-126
1,2-Dichlorobenzene	mg/kg (ppm)	2	93	69-127
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2	80	58-138
1,2,4-Trichlorobenzene	mg/kg (ppm)	2	89	64-135
Hexachlorobutadiene	mg/kg (ppm)	2	88	50-153
Naphthalene	mg/kg (ppm)	2	84	62-128
1,2,3-Trichlorobenzene	mg/kg (ppm)	2	86	61-126

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/18/24

Date Received: 03/05/24

Project: 1538-21003-06, F&BI 403052

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

Laboratory Code: 403131-14 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	77	78	28-125	1
2-Methylnaphthalene	mg/kg (ppm)	0.83	<0.01	77	79	10-192	3
1-Methylnaphthalene	mg/kg (ppm)	0.83	<0.01	77	79	10-163	3
Acenaphthylene	mg/kg (ppm)	0.83	<0.01	82	82	45-128	0
Acenaphthene	mg/kg (ppm)	0.83	<0.01	82	81	36-125	1
Fluorene	mg/kg (ppm)	0.83	<0.01	82	83	48-121	1
Phenanthrene	mg/kg (ppm)	0.83	<0.01	84	85	46-122	1
Anthracene	mg/kg (ppm)	0.83	<0.01	82	82	30-144	0
Fluoranthene	mg/kg (ppm)	0.83	<0.01	84	85	50-150	1
Pyrene	mg/kg (ppm)	0.83	<0.01	83	81	40-134	2
Benz(a)anthracene	mg/kg (ppm)	0.83	<0.01	82	81	50-150	1
Chrysene	mg/kg (ppm)	0.83	<0.01	84	83	50-150	1
Benzo(a)pyrene	mg/kg (ppm)	0.83	<0.01	80	82	50-150	2
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	<0.01	84	85	50-150	1
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	<0.01	80	83	50-150	4
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	<0.01	92	91	40-140	1
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	<0.01	92	92	41-136	0
Benzo(g,h,i)perylene	mg/kg (ppm)	0.83	<0.01	91	88	29-139	3

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Naphthalene	mg/kg (ppm)	0.83	83	57-107
2-Methylnaphthalene	mg/kg (ppm)	0.83	84	63-112
1-Methylnaphthalene	mg/kg (ppm)	0.83	84	63-113
Acenaphthylene	mg/kg (ppm)	0.83	87	70-130
Acenaphthene	mg/kg (ppm)	0.83	87	66-112
Fluorene	mg/kg (ppm)	0.83	87	67-117
Phenanthrene	mg/kg (ppm)	0.83	87	70-130
Anthracene	mg/kg (ppm)	0.83	86	70-130
Fluoranthene	mg/kg (ppm)	0.83	88	70-130
Pyrene	mg/kg (ppm)	0.83	88	70-130
Benz(a)anthracene	mg/kg (ppm)	0.83	87	70-130
Chrysene	mg/kg (ppm)	0.83	89	70-130
Benzo(a)pyrene	mg/kg (ppm)	0.83	87	68-120
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	87	67-128
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	91	70-130
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	101	67-129
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	104	67-128
Benzo(g,h,i)perylene	mg/kg (ppm)	0.83	100	65-130

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/18/24

Date Received: 03/05/24

Project: 1538-21003-06, F&BI 403052

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

Laboratory Code: 403131-13 1/30 (Matrix Spike) 1/30

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	88	101	50-150	14
Aroclor 1260	mg/kg (ppm)	0.25	<0.02	96	108	50-150	12

Laboratory Code: Laboratory Control Sample 1/30

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Aroclor 1016	mg/kg (ppm)	0.25	111	70-130
Aroclor 1260	mg/kg (ppm)	0.25	138 vo	70-130

# FRIEDMAN & BRUYA, INC.

## 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, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. 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 standard reporting limit. 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.
- k - The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.
- 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.

403052

SAMPLE CHAIN OF CUSTODY

03/05/24

62 M2

Page # 1 of 1

Report To Lynn Green

Company EVREN-NW

Address 40 SE 24th Ave

City, State, ZIP Portland, Oregon 97214

Phone 503-452-5561 Email lynng@evren-nw.com

SAMPLERS (signature) *[Signature]*

PROJECT NAME

1538-21003-06

PO #

REMARKS

INVOICE TO

Project Specific RIs - Yes / No

ANALYSES REQUESTED

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED							Notes	
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	HClD Total Metals Pb and As per EB 03/06/24 ME		SPLP Pb
B01-2	01	3/04/24	10:15	Soil	1							X		A-per EB 03/06/24 ME
B02-2	02	3/04/24	10:35		1							X		B-per LG 03/07/24 ME
B02-4	03	3/04/24	10:55		1							X		
B03-2	04	3/04/24	11:15		1							X		A
B03-3.5	05	3/04/24	11:20		1							X		
B04-2	06	3/04/24	11:52	↓	1	A			B	B	B	X	X	
														Samples received at 10°C

TURNAROUND TIME

Standard Turnaround

RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

Dispose after 30 days

Archive Samples

Friedman & Bruya, Inc.

3012 16th Avenue West

Seattle, WA 98119-2029

Ph. (206) 285-8282

SIGNATURE

*[Signature]*

PRINT NAME

Dan Saffo

COMPANY

FNW

DATE

3/04/24

TIME

1730

Relinquished by:

Received by:

Relinquished by:

ANH PHAM

FB

03/05/24

10:00

## Analytical Laboratory Data Validation Check Sheet

Project Name: 5403 & 5413 SE 122nd Avenue

Project Number: 1538-21003-06

Date of Review: 4/9/24

Lab. Name: F&BI

Lab Batch ID #: 403052

### Chain of Custody

- |  |   |  |  |
|--|---|--|--|
| 1.) Are all requested analyses reported? | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no            |  |
| 2.) Were the requested methods used?     | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no            |  |
| 3.) Trip blank submitted?                | <input type="checkbox"/> yes            | <input checked="" type="checkbox"/> no |  |
| 4.) Field blank submitted?               | <input type="checkbox"/> yes            | <input checked="" type="checkbox"/> no |  |

### Timing

- |  |   |                             |  |
|--|---|-----------------------------|--|
| 5.) Samples extracted within holding times?  | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no |  |
| If not, are all discrepancies footnoted?     | <input type="checkbox"/> yes            | <input type="checkbox"/> no | <input checked="" type="checkbox"/> NA |
| 6.) Analysis performed within holding times? | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no |  |
| If not, are all discrepancies footnoted?     | <input type="checkbox"/> yes            | <input type="checkbox"/> no | <input checked="" type="checkbox"/> NA |

### Quality Assurance/Quality Control

- |  |   |  |  |
|--|---|--|--|
| 7.) Are the required reporting limits reported? (MRLs vs MDLs/PQLs)            | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no            |  |
| 8.) Are all reported values above either MRL or MDL?                           | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no            |  |
| 9.) Are all values between the MDL & PQL tagged as trace?                      | <input type="checkbox"/> yes            | <input type="checkbox"/> no            | <input checked="" type="checkbox"/> NA |
| 10a.) Are reporting limits raised for other reason besides high analyte conc.? | <input type="checkbox"/> yes            | <input checked="" type="checkbox"/> no |  |
| 10b.) If so, are they footnoted?   | <input type="checkbox"/> yes            | <input type="checkbox"/> no            | <input checked="" type="checkbox"/> NA |
| 11.) Lab method blank completed?   | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no            |  |
| 12.) Lab, Field, or Trip Blank(s) report detections?                           | <input type="checkbox"/> yes            | <input checked="" type="checkbox"/> no |  |
| If yes, indicate blank type, chemical(s) and concentration(s):                 |   |  |  |
| 13.) For inorganics and metals, is there one method blank for each analyte?    | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no            | <input type="checkbox"/> NA            |
| If not, are all discrepancies footnoted?                                       | <input type="checkbox"/> yes            | <input type="checkbox"/> no            |  |
| 14.) For VOCs, is there one method blank for each day of analysis?             | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no            | <input type="checkbox"/> NA            |
| If not, are all discrepancies footnoted?                                       | <input type="checkbox"/> yes            | <input type="checkbox"/> no            |  |
| 15.) For SVOC's, is there one method blank for each extraction batch?          | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no            | <input type="checkbox"/> NA            |
| If not, are all discrepancies footnoted?                                       | <input type="checkbox"/> yes            | <input type="checkbox"/> no            |  |

### Accuracy

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

### Precision

- |   |   |                             |  |
|---|---|-----------------------------|--|
| 19.) Are all matrix spike/matrix spike duplicate recoveries within acceptable limits? | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no | <input type="checkbox"/> NA            |
| If not, are all discrepancies footnoted?  | <input type="checkbox"/> yes            | <input type="checkbox"/> no | <input checked="" type="checkbox"/> NA |
| 20.) Are all matrix spike/matrix spike duplicate RPDs within acceptable limits?       | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no | <input type="checkbox"/> NA            |
| If not, are all discrepancies footnoted?  | <input type="checkbox"/> yes            | <input type="checkbox"/> no | <input checked="" type="checkbox"/> NA |

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

yes no NA

Comments:

**The 8260D calibration standard exceeded the acceptance criteria for carbon tetrachloride. The compound was not detected, therefore this did not represent an out of control condition, and were qualified with a "k" qualifier.**

**The 8260D calibration standard did not meet the acceptance criteria for 2-hexanone. The data were flagged accordingly. (ca)**

**The 8260D aliquot for sample B04-2 was taken from a four ounce soil jar. The data were flagged accordingly. (pc)**

**The 8082A Aroclor 1260 soil laboratory control sample exceeded the acceptance criteria. PCBs were not detected, therefore the data were acceptable. (vo)**

**For Method 8270E, sample B04-2 was diluted. Detection limits were raised and surrogate recoveries may not be meaningful. (d)**

**For the Method 8270E Method Blank surrogate spike recovery, the calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate. (ca)**

**Initial Review By: AR** \_\_\_\_\_

**Final Review By: EB** \_\_\_\_\_