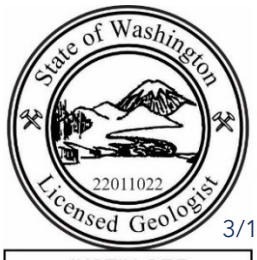
GeoEngineers

Memorandum

523 East Second Avenue, Spokane, Washington 99202, Telephone: 509.363.3125, Fax: 509.363.3126 www.geoengineers.com

To: Elizabeth Kercher, LUST Site Manager, Washington Department of Ecology

From: Justin Orr, LG, Project Manager and Scott Lathen, PE, Associate Environmental Engineer



3/18/2024

JUSTIN ORR

Date: March 18, 2024

File: 0504-199-00

Subject: Environmental Site Assessment – City of Clarkston Street Shop

1.0 INTRODUCTION

This memorandum (memo) describes soil and groundwater assessment activities conducted at the City of Clarkston Street Shop facility located at 1455 Bridge Street in Clarkston, Washington (herein referred to as "site"), as shown on the attached Figure 1, Vicinity Map.

This memo has been prepared by GeoEngineers, Inc. (GeoEngineers) for the Washington State Department of Ecology (Ecology) under Ecology Master Contract No. C1900044, task work assignment number GEI056.

This memo describes site history, field activities, observations, and chemical analytical results associated with soil and groundwater samples collected at the site. The purpose of this assessment was to determine if groundwater contamination associated with the historic release of petroleum products from the former Underground Storage Tanks (UST) system is present at the site.

2.0 SITE DESCRIPTION AND BACKGROUND

The City of Clarkston Street Shop facility is an equipment storage facility operated by the City of Clarkston (City) located on an approximately 1.02-acre parcel. Site features are shown in the attached Figure 2, Site Plan.

2.1. Previous Investigations

In 1992, the Washington State Department of Ecology (Ecology) was notified of a suspected release of petroleum products from a UST system located at the site. Three USTs including one 500-gallon gasoline, one 1,000-gallon gasoline, and one 1,000-gallon diesel tanks, product transfer lines and dispensers were removed from the site (Wyatt-Jaykim Engineers [WJE] 1993).

Following UST removal, petroleum-contaminated soil (PCS) was identified and believed to be from a failed weld at the base of the fill pipe on one of the gasoline tanks. Approximately 60 cubic yards (cy) of PCS were

excavated to the extent possible without affecting the integrity of the adjacent building. Confirmation samples collected within the excavation indicated that gasoline- and diesel-range petroleum hydrocarbons (GRPH and DRPH, respectively) were greater than the Model Toxics Control Act (MTCA) Method A cleanup levels in soil left in place on the east and south sides of the excavation, and at the bottom of the excavation at approximately 13 feet below ground surface (bgs) (WJE 1993).

Following excavation activities, one groundwater monitoring well (MW-1) was installed approximately 20 feet north of the excavation. Contaminants of concern were not detected in the soil sample from MW– 1. GRPH was detected at 1,050 micrograms per liter (µg/L), greater than the MTCA Method A cleanup level of 1,000 µg/L in the groundwater sample from MW-1 (WJE 1993). MW-1 appears to have been abandoned sometime between the last sampling event and August 2023.

The site is bounded by Bridge Street to the north and by commercial and industrial properties to the south, east and west. The Snake River is approximately 1,000 to 1,500 feet northwest and north of the site and local topography has a gradient to the north.

3.0 FIELD INVESTIGATION ACTIVITIES

GeoEngineers advanced soil borings, installed temporary well points, collected grab groundwater samples from the temporary well points, and submitted the samples for chemical analysis to assess soil and groundwater conditions for potential contamination associated with the historic release of petroleum products from the former USTs described in the Work Plan (GeoEngineers 2023).

The following sections describe field activities and a discussion of observed subsurface conditions. Based on site conditions, some modifications to the Work Plan were implemented as explained in the sections below.

3.1. Soil Assessment

Initial site reconnaissance occurred on November 27, 2023. During this site visit, site access was assessed and potential boring locations were marked. Site utilities near the boring locations were identified and marked by Utilities Plus, LLC on December 4, 2023. Boring locations are shown on Figure 2, Site Plan.

On December 5 and 6, 2023, GeoEngineers observed Walston Drilling Services Northwest (WDS) advance five borings (GEI056-B1 through GEI056-B5), using a truck mounted 15K Speedstar sonic drill rig. Borings GEI056-B1 through GEI056-B4 were advanced at the proposed locations described in the Work Plan (GeoEngineers 2023). In general, the borings were advanced around the former UST basin and in areas where contaminated soil was detected in the previous excavation. One additional boring (GEI056-B5) was advanced at the request of Ecology to attempt to delineate potential contamination observed in borings GEI056-B3 and GEI056-B4. The borings were advanced to approximately 30 feet bgs. Boring logs are included in Attachment A, Boring Logs.

Soil samples obtained from the borings were field screened for petroleum contamination. Field screening results are included in the boring logs in Appendix A. Volatile organic vapors, measured using a photoionization detector (PID), ranged between less than 1 part per million (ppm) and 1,935 ppm.

Petroleum sheens and odors were observed at depths greater than 20 feet bgs and generally corresponded with elevated PID readings. Volatile organic vapor concentrations are summarized in Table I below.

TABLE I. SUMMARY OF FIELD SCREENING RESULTS

Screened Interval (feet bgs)	Volatile Organic Vapor Concentrations (ppm)				
	GEI056-B1	GEI056-B2	GEI056-B3	GEI056-B4	GEI056-B5
0-5	<1	<1	15.6	<1	<1
5-10	3.6	--	7.2	<1	<1
10-15	--	7.4	--	<1	1.1
15-20	2.6	<1	27.7	11.5	3.1
20-25	1.3	<1	3,359	1,935	344.9
25-30	<1	<1	16.9	5.0	<1

Notes:
bgs = below ground surface; ppm = parts per million; <1 = less than 1 ppm; '—' = depth interval not screened.

WDS backfilled the borings with bentonite chips. Each boring was completed with cold patch asphalt to match the existing ground surface.

3.2. Groundwater Assessment

Grab groundwater samples were collected from temporary well points installed in the borings. The temporary well points were purged using low-flow groundwater sampling techniques and groundwater quality parameters were monitored for approximately 30 minutes prior to sampling. Groundwater quality parameters at the time of collecting the grab groundwater samples are summarized in Table II below.

TABLE II. GROUNDWATER FIELD PARAMETERS

Temporary Monitoring Well Location	Field Measured Water Quality Parameters						
	Depth to Groundwater (feet bgs)	pH (pH units)	Specific Conductivity (µS/cm)	ORP (mV)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	Temperature (degrees C)
GEI056-B1	23.99	7.89	712	-197.6	1.59	118.29	17.9
GEI056-B2	23.01	7.92	762	-76.8	3.96	261.22	18.4
GEI056-B3	22.72	8.16	557	-367.4	0.27	456.16	20.3
GEI056-B4	23.50	8.20	697	-559.4	0.13	2264.33	18.7
GEI056-B5	22.40	8.07	704	-437.3	0.33	58.61	20.3

Notes:
bgs = below ground surface; ORP = oxygen reduction potential; µS/cm = micro-Siemens per centimeter; mV = millivolts; mg/L = milligrams per liter; NTU = nephelometric turbidity unit; C = Celsius

3.1. Subsurface Conditions

Soil samples obtained from the borings consisted of a mix of silty sand and poorly graded sand from the ground surface to approximately 7 feet bgs, a mix of poorly graded gravel and silty gravel from about 7 feet bgs to 20 feet bgs and a mix of silty sand and poorly graded sand from 21 feet bgs to 30 feet bgs.

Based on the topographic gradient, the proximity to the Snake River, and measured depths to groundwater, the groundwater gradient was assumed to be to the north-northwest. Groundwater was encountered between about 22 to 24 feet bgs.

3.2. Investigation-Derived Waste

Investigation-derived waste (IDW) including soil cuttings from the borings and purge water from the temporary wells were placed in 55-gallon drums, labeled, and stored inside the street shop perimeter fence west of the facility, pending analysis and disposal. Nwestco, LLC (Nwestco) collected the IDW on February 14, 2024, and disposed the IDW at Waste Management's Graham Road landfill in Spokane, Washington on February 20, 2024. The waste disposal manifest is included in Attachment B, IDW Disposal Documentation.

3.3. Underground Utility Repair

During the initial advancement of exploration GEI056-B5, WDS struck and damaged an unlocatable polyvinyl chloride (PVC) sewer discharge line adjacent to the northeast street shop facility. The sewer line was approximately 4-inches in diameter and approximately 4 feet bgs. Representatives of Ecology and the City were immediately notified. The City temporarily shut off the water supply to the facility to prevent unnecessary effluent discharge to the borehole. McCall's Classic Construction (McCall's) was retained to complete necessary sewer line repairs at the recommendation of the City. McCall's completed sewer line repairs on December 7, 2023, to restore proper function to the damaged sewer line.

3.4. Cultural Resources Monitoring

Plateau Cultural Resources Management (PCRM) performed archeological monitoring during ground disturbing activities at the request of Ecology and the Colville Tribe (Tribe). No inadvertent discoveries were encountered during ground disturbing activities. PCRM's report is included in Attachment C.

4.0 CHEMICAL ANALYTICAL RESULTS

Five soil samples, one duplicate soil sample, five grab groundwater samples and one duplicate groundwater sample were submitted to Eurofins Environment Testing Northwest (Eurofins) for chemical analysis. The laboratory analytical report and a data validation report are included in Attachment D, Chemical Analytical Laboratory Report and Data Validation Report. The samples were analyzed for the following contaminants of concern (COCs):

- GRPH using Northwest Method Northwest Total Petroleum Hydrocarbon (NWTPH)-Gx;
- Benzene, toluene, ethylbenzene, xylenes and naphthalene (BTEXN), ethylene dichloride (EDC) and methyl tert-butyl ether (MTBE) using United States Environmental Protection Agency (EPA) Method 8260D;

- Ethylene dibromide (EDB) using EPA Method 8011;
- Diesel- and oil-range petroleum hydrocarbons (DRPH and ORPH, respectively) using Northwest Method NWTPH-Dx; and
- Total (soil and groundwater) and dissolved lead (groundwater only) using EPA Method 6010D.

4.1. Soil Chemical Analytical Results

Soil chemical analytical results are presented and compared to the MTCA Method A cleanup levels for unrestricted land use in Table 1, Chemical Analytical Results – Soil and are summarized below.

- GRPH was detected at concentrations of 200 mg/kg, 1400 mg/kg and 250 mg/kg in samples GEI056- B3 (23 – 24), GEI056-B4 (23 – 24) and GEI056-B5 (24 – 25), respectively, greater than the MTCA Method A cleanup level of 100 milligrams per kilogram (mg/kg) when benzene is not present. GRPH was not detected in the samples from GEI056-B1 and GEI056-B2.
- Benzene was not detected in the samples analyzed.
- Ethylbenzene, toluene, xylenes, naphthalene, EDB and methyl tert-butyl ether (MTBE[1]) were either not detected or were detected at concentrations less than their respective MTCA Method A cleanup levels in the samples analyzed.
- EDC was not detected in the samples analyzed.
- DRPH and ORPH were either not detected or were detected at combined concentrations less than the combined MTCA Method A clean up level of 2,000 mg/kg.
- Lead was detected at concentrations less than the MTCA Method A cleanup level of 250 mg/kg in all samples analyzed.

4.2. Groundwater Chemical Analytical Results

Groundwater chemical analytical results are presented and compared to the MTCA Method A cleanup levels in Table 2, Chemical Analytical Results—Groundwater, and are summarized below.

- GRPH was detected in the grab groundwater samples collected from borings GEI056-B3 and GEI056- B4 at concentrations of 5,000 micrograms per liter (µg/L) and 2,000 µg/L, greater than the MTCA Method A clean up level of 1,000 µg/L when benzene is not present. GRPH was either not detected or detected less than the MTCA Method A clean up levels in the samples from GEI056-B1, GEI056-B2 and GEI056-B5.
- Benzene was not detected in the samples analyzed.
- Ethylbenzene, toluene, xylenes, naphthalene, EDB and MTBE were either not detected or were detected at concentrations less than their respective MTCA Method A cleanup levels.

[1] The laboratory method detection limit (MDL) for MTBE (0.38 mg/kg) was greater than the MTCA Method A cleanup level (0.1 mg/kg) in one sample, GEI056-B4 (23 – 24). Because MTBE was not detected in the other soil or grab groundwater samples analyzed, MTBE is likely also not present in the soil sample from GEI056-B4.

- DRPH was detected in each groundwater sample at concentrations ranging from 1,200 µg/L in GEI056-B5 to 11,000 µg/L in GEI056-B4, greater than the MTCA Method A cleanup level of 500 µg/L.
- ORPH was either not detected or was detected at concentrations less than the MTCA Method A cleanup level.
- Total lead was detected at 60 µg/L in the grab groundwater sample from GEI056-B4, greater than the MTCA Method A cleanup level of 15 µg/L. However, dissolved lead was not detected in GEI056-B4. Total and dissolved lead were either not detected or were detected at concentrations less than the MTCA Method A cleanup level in the other samples analyzed.

5.0 SUMMARY AND CONCLUSIONS

Five soil borings were advanced on December 5 and 6, 2023, at the City of Clarkston Street Shop facility located at 1455 Bridge Street in Clarkston, Washington. Soil and grab groundwater samples were collected from the borings and the samples were submitted for chemical analysis.

Chemical analytical results indicate that GRPH is present in soil at concentrations greater than the MTCA Method A cleanup level for unrestricted land use at boring locations GEI056-B3, GEI056-B4 and GEI056- B5.

GRPH is present in groundwater at concentrations greater than the MTCA Method A cleanup level at boring locations GEI056-B3 and GEI056-B4. DRPH is present at concentrations greater than the MTCA Method A cleanup levels in groundwater at each location sampled.

The soil samples where GRPH was detected were collected at the soil/groundwater interface; this could indicate that GRPH contamination in soil samples near groundwater are part of a smear zone associated with the groundwater contamination. Field screening results from the soil samples collected above the smear zone do not indicate the likely presence of petroleum contamination at concentrations greater than the applicable cleanup levels.

The results of this soil and groundwater assessment indicate that soil and groundwater contamination likely related to the former USTs is still present at the site. Further investigation will be necessary to delineate the extent of contamination and develop potential remedial actions to address ecological and human health risks associated with the historical contamination. We recommend installing permanent monitoring wells and conducting quarterly groundwater monitoring for at least one year to establish variations in contaminant concentrations during seasonal fluctuations groundwater elevations. We further recommend surveying the top of casing elevations for any new monitoring wells installed at the site to accurately confirm the groundwater flow direction and gradient.

6.0 LIMITATIONS

We have prepared this report for the exclusive use of Ecology and their authorized agents. Within the limitations of scope, schedule, and budget, our services have been executed in accordance with generally accepted environmental science practices in this area at the time this report was prepared. The conclusions

and opinions presented in this report are based on our professional knowledge, judgement, and experience. No warranty or other conditions, express or implied, should be understood.

Please refer to Attachment E, Report Limitations and Guidelines for Use, for additional information pertaining to this memorandum.

7.0 REFERENCES

GeoEngineers, Inc. 2023. "Work Plan, Clarkston City Street Shop, 1455 Bridge Street, Clarkston, Washington." December 1, 2023. File No. 0504-199-00.

Washington Department of Ecology. 2013. "Model Toxics Control Act Regulation and Statute, Chapter 173-340 WAC and 70.105D RCW." Revised 2013, Publication 94-06.

Wyatt-Jaykim Engineers (WJE). 1993. "Site Characterization Report for City of Clarkston, Bridge Street Shop Site, 1455 Bridge Street, Clarkston, Washington." February 1993.

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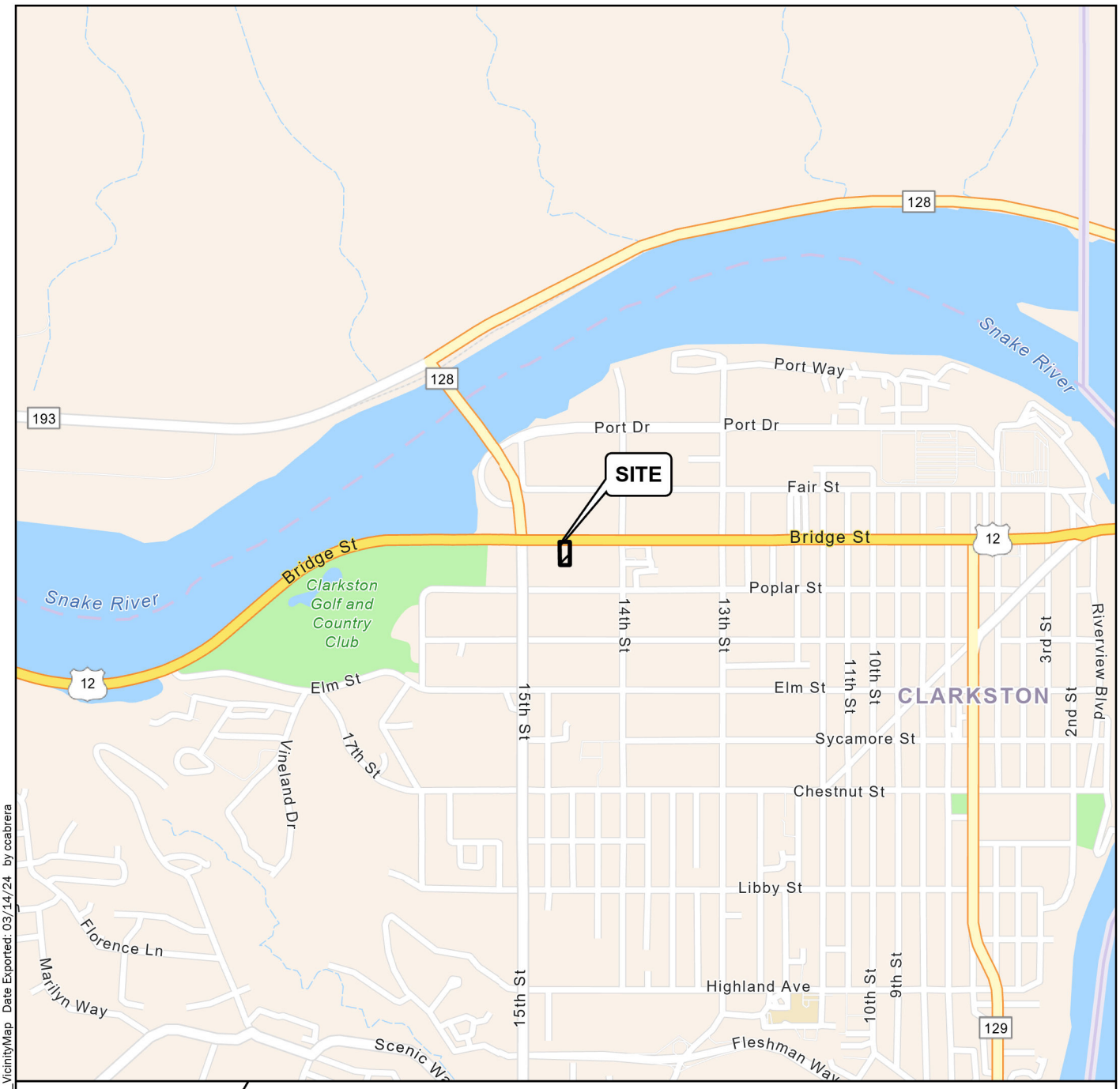
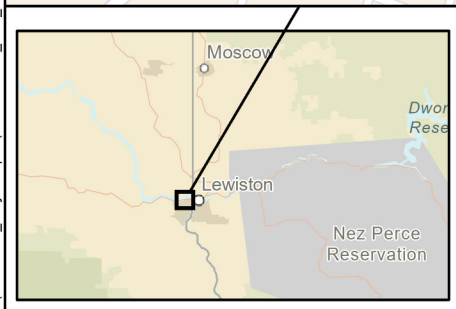
Attachments:
Figure 1. Vicinity Map
Figure 2. Site Plan
Table 1. Chemical Analytical Results – Soil
Table 2. Chemical Analytical Results - Groundwater
Attachment A. Boring Logs
Attachment B. IDW Disposal Documentation
Attachment C. Cultural Resources Monitoring Report
Attachment D. Chemical Analytical Laboratory Reports and Data Validation Report
Attachment E. Report Limitations and Guidelines for Use





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Feet

Source(s):
- ESRI

Coordinate System: NAD 1983 UTM Zone 11N

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Vicinity Map

City of Clarkston Street Shop
Clarkston, Washington

GeoEngineers

Figure 1

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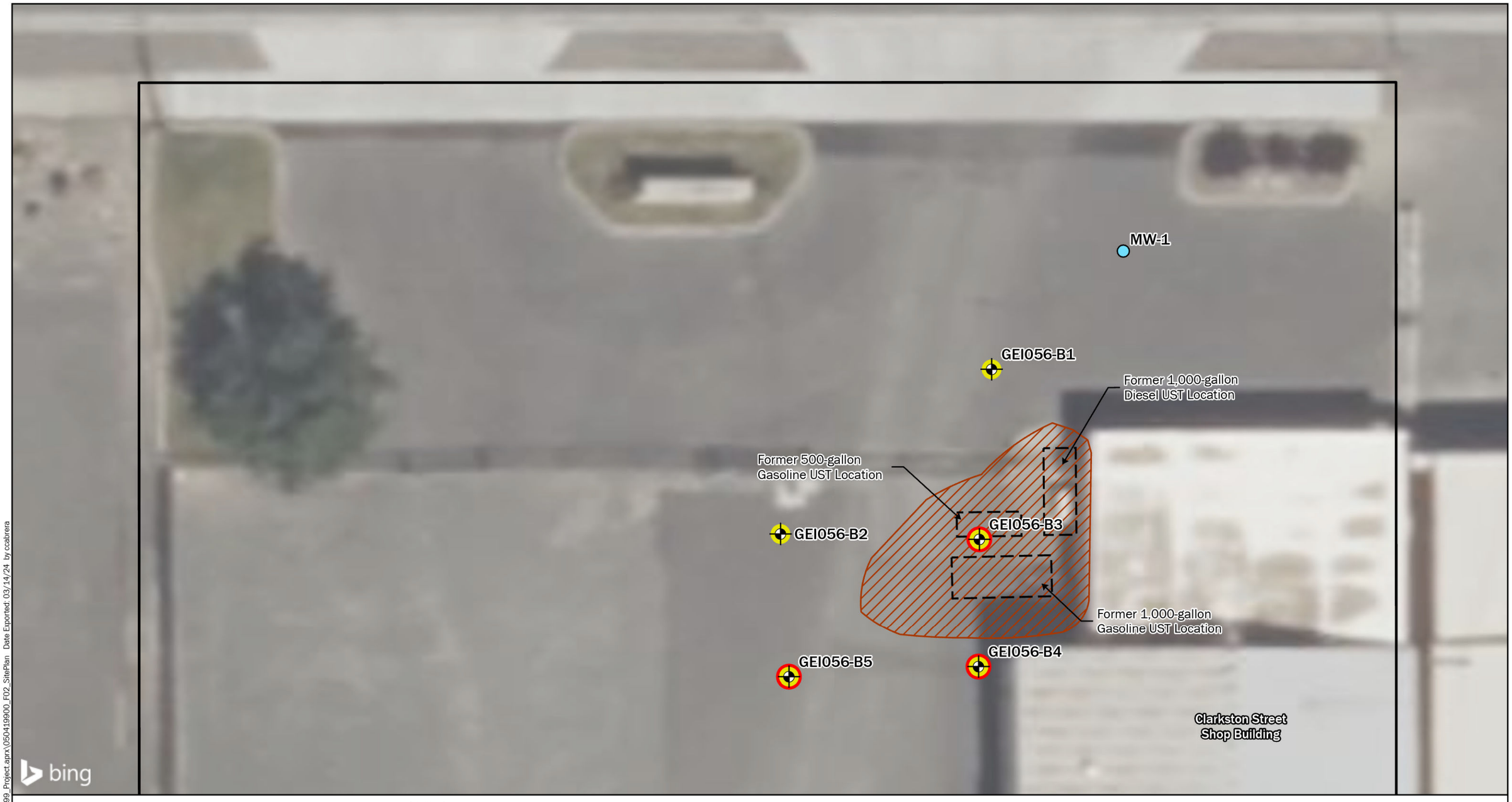

Legend

- Boring Number and Approximate Location
- Former MW-1 Location
- Contaminants of Concern Detected in Groundwater at Concentrations Greater Than MTCA Method A Clean Up Levels
- Contaminants of Concern Detected in Soil at Concentrations Greater Than MTCA Method A Clean Up Levels
- Former UST Area and 1993 Excavation
- Former UST Location
- Site Boundary

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Source(s):
- Bing Imagery

Coordinate System: NAD 1983 UTM Zone 11N

Site Plan

City of Clarkston Street Shop
Clarkston, Washington

GeoEngineers

Figure 2

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Table 1

Chemical Analytical Results - Soil[1]

City of Clarkston Street Shop
Clarkston, Washington

		Location ID	**GEI056-B1**		**GEI056-B2**		**GEI056-B3**		**GEI056-B4**		**GEI056-B5**	
		Sample Depth	**10-11**		**16-17**		**23-24**		**23-24**		**24-25**	
		Sample Date	**12/5/2023**		**12/5/2023**		**12/6/2023**		**12/5/2023**		**12/6/2023**	
Analyte	**MTCA CUL[7]**	**Units**										
Petroleum Hydrocarbons												
GRPH[2]	30/100[8]	mg/kg	2.1	U	1.9	U	**200**	**J**	**1,400**		**250**	**J**
DRPH[3]	2,000	mg/kg	4.5	U	5.9	U	**930**		**1,300**		**100**	
ORPH[3]		mg/kg	5.4	U	10.0	U	17	U	24	U	5.3	U
VOCs[4]												
Benzene	0.03	mg/kg	0.012	U	0.011	U	0.010	U	0.13	U	0.098	U
Toluene	7	mg/kg	0.053	U	0.025	U	0.047	U	0.58	U	0.044	U
Ethylbenzene	6	mg/kg	0.019	U	0.017	U	**0.058**	**J**	0.21	U	0.016	U
m, p-Xylene	NE	mg/kg	0.034	U	0.031	U	**0.76**		0.37	U	0.028	U
o-Xylene	NE	mg/kg	0.027	U	0.025	U	**0.52**		0.29	U	0.023	U
Xylenes (total)	9	mg/kg	0.061	U	0.056	U	**1.3**		0.66	U	0.051	U
Naphthalene	160	mg/kg	0.033	U	0.030	U	**1.4**		0.36	U	**0.076**	**J**
Ethylene dichloride (EDC)	NE	mg/kg	0.026	U	0.020	U	0.023	U	0.28	U	0.021	U
Methyl tert-butyl Ether (MTBE)	0.1	mg/kg	0.035	U	0.032	U	0.031	U	0.38	U	0.029	U
Ethylene dibromide (EDB)[5]	0.005	mg/kg	0.000036	U	0.000038	U	0.000037	U	0.000037	U	0.000037	U
Metals[6]												
Lead	250	mg/kg	**4.8**		**3.4**		**1.7**	**J**	**1.6**	**J**	**1.7**	**J**

Notes

[1]Samples analyzed by Eurofins Environment Testing Northwest (Eurofins) located in Spokane Valley, Washington.
[2]Gasoline-range petroleum hydrocarbons (GRPH) analyzed using Northwest Method NWTPH-Gx.
[3]Diesel- and oil-range petroleum hydrocarbons (DRPH and ORPH, respectively) analyzed using Northwest Method NWTPH-Dx.
[4]Volatile organic compounds (VOCs) analyzed using Environemntal Protection Agency (EPA) Method 8260D.
[5]Ethylene dibromide (EDB) analyzed using EPA Method 8011.
[6]Metals analyzed using EPA Method 6010D.
[7]Washington State Model Toxics Control Act (MTCA) Method A cleanup levels (CUL) for unrestricted land use.
[8]MTCA Method A clenaup level for GRPH when benzene is present / no detectable benzene.
bgs = below ground surface.
mg/kg = milligrams per kilogram.
NE = not established.
U = analyte was not detected above the laboratory method detection limit (MDL).
J = estimated concentration.
Bold indicates analyte was detected.
Bold with grey shading indicates the analyte was detected at concentrations greater than the MTCA Method A cleanup level.
Blue shading indicates the analyte was not detected but the MDL was greater than the MTCA Method A cleanup level.

Table 2

Chemical Analytical Results - Groundwater[1]

City of Clarkston Street Shop
Clarkston, Washington

		Location ID	GEI056-B1		GEI056-B2		GEI056-B3		GEI056-B4		GEI056-B5	
		Sample Date	12/5/2023		12/5/2023		12/6/2023		12/5/2023		12/6/2023	
Analyte	**MTCA CUL[7]**	**Units**										
Petroleum Hydrocarbons												
GRPH[2]	800/1,000[8]	µg/L	54	U	150	U	**5,000**		**2,000**		**290**	
DRPH[3]	500	µg/L	**2,600**	J	**1,800**	J	**2,800**	J	**11,000**	J	**1,200**	J
ORPH[3]		µg/L	**270**	J	**150**	J	**200**	J	**390**		120	U
VOCs[4]												
Benzene	5	µg/L	0.093	U	0.093	U	0.093	U	0.093	U	0.093	U
Toluene	1,000	µg/L	0.31	U	0.31	U	**0.59**	J	0.31	U	0.31	U
Ethylbenzene	700	µg/L	0.20	U	0.20	U	**11**		0.20	U	0.20	U
m, p-Xylene	NE	µg/L	0.28	U	0.28	U	**190**		**2.4**	J	**0.29**	J
o-Xylene	NE	µg/L	0.16	U	0.16	U	**140**		0.16	U	0.16	U
Xylenes (total)	1,000	µg/L	0.44	U	0.44	U	**330**		**2.4**	J	0.44	U
Ethylene dichloride (EDC)	5	µg/L	0.31	U	0.31	U	0.31	U	0.31	U	0.31	U
Methyl tert-butyl Ether (MTBE)	20	µg/L	0.16	U	0.16	U	0.16	U	0.16	U	0.16	U
Ethylene dibromide (EDB)[5]	0.02	µg/L	**0.0095**	J	0.0025	U	0.0025	U	0.0025	U	0.0025	U
Metals[6]												
Total Lead	15	µg/L	5.1	U	5.1	U	5.1	U	**60**		5.1	U
Dissolved Lead	15	µg/L	5.1	U	5.1	U	5.1	U	5.1	U	5.1	U

Notes

[1]Samples analyzed by Eurofins Environment Testing Northwest (Eurofins) located in Spokane, Washington.

[2]Gasoline-range petroleum hydrocarbons (GRPH) analyzed using Northwest Method NWTPH-Gx.

[3]Diesel- and oil-range petroleum hydrocarbons (DRPH and ORPH, respectively) analyzed using Northwest Method NWTPH-Dx.

[4]Volatile organic compounds (VOCs) analyzed using Environemntal Protection Agency (EPA) Method 8260D.

[5]Ethylene dibromide (EDB) analyzed using EPA Method 8011.

[6]Metals analyzed using EPA Method 6010D.

[7]Washington State Model Toxics Control Act (MTCA) Method A cleanup levels (CUL).

[8]MTCA Method A clenaup level for GRPH when benzene is present / no detectable benzene.

µg/L = microgram per liter.

NE = not established.

U = analyte was not detected above the laboratory method detection limit (MDL).

J = estimated concentration.

Bold indicates analyte was detected.

Bold with grey shading indicates the analyte was detected at concentrations greater than the MTCA Method A cleanup level.

ATTACHMENT A
Boring Logs

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
MORE THAN 50% RETAINED ON NO. 200 SIEVE	SAND AND SANDY SOILS	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS
				SP	POORLY-GRADED SANDS, GRAVELLY SAND
	MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS, ROCK FLOUR, CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
MORE THAN 50% PASSING NO. 200 SIEVE	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS AND SILTS OF MEDIUM TO HIGH PLASTICITY
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: Multiple symbols are used to indicate borderline or dual soil classifications

ADDITIONAL MATERIAL SYMBOLS

SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
	AC	Asphalt Concrete
	CC	Cement Concrete
	CR	Crushed Rock/ Quarry Spalls
	SOD	Sod/Forest Duff
	TS	Topsoil

Groundwater Contact

Measured groundwater level in exploration, well, or piezometer

Measured free product in well or piezometer

Graphic Log Contact

Distinct contact between soil strata

Approximate contact between soil strata

Material Description Contact

Contact between geologic units

Contact between soil of the same geologic unit

Sampler Symbol Descriptions

2.4-inch I.D. split barrel / Dames & Moore (D&M)

Standard Penetration Test (SPT)

Shelby tube

Piston

Direct-Push

Bulk or grab

Continuous Coring

Blowcount is recorded for driven samplers as the number of blows required to advance sampler 12 inches (or distance noted). See exploration log for hammer weight and drop.

"P" indicates sampler pushed using the weight of the drill rig.

"WOH" indicates sampler pushed using the weight of the hammer.

Laboratory / Field Tests

%F	Percent fines
%G	Percent gravel
AL	Atterberg limits
CA	Chemical analysis
CP	Laboratory compaction test
CS	Consolidation test
DD	Dry density
DS	Direct shear
HA	Hydrometer analysis
MC	Moisture content
MD	Moisture content and dry density
Mohs	Mohs hardness scale
OC	Organic content
PM	Permeability or hydraulic conductivity
PI	Plasticity index
PL	Point load test
PP	Pocket penetrometer
SA	Sieve analysis
TX	Triaxial compression
UC	Unconfined compression
UU	Unconsolidated undrained triaxial compression
VS	Vane shear

Sheen Classification

NS	No Visible Sheen
SS	Slight Sheen
MS	Moderate Sheen
HS	Heavy Sheen

NOTE: The reader must refer to the discussion in the report text and the logs of explorations for a proper understanding of subsurface conditions. Descriptions on the logs apply only at the specific exploration locations and at the time the explorations were made; they are not warranted to be representative of subsurface conditions at other locations or times.

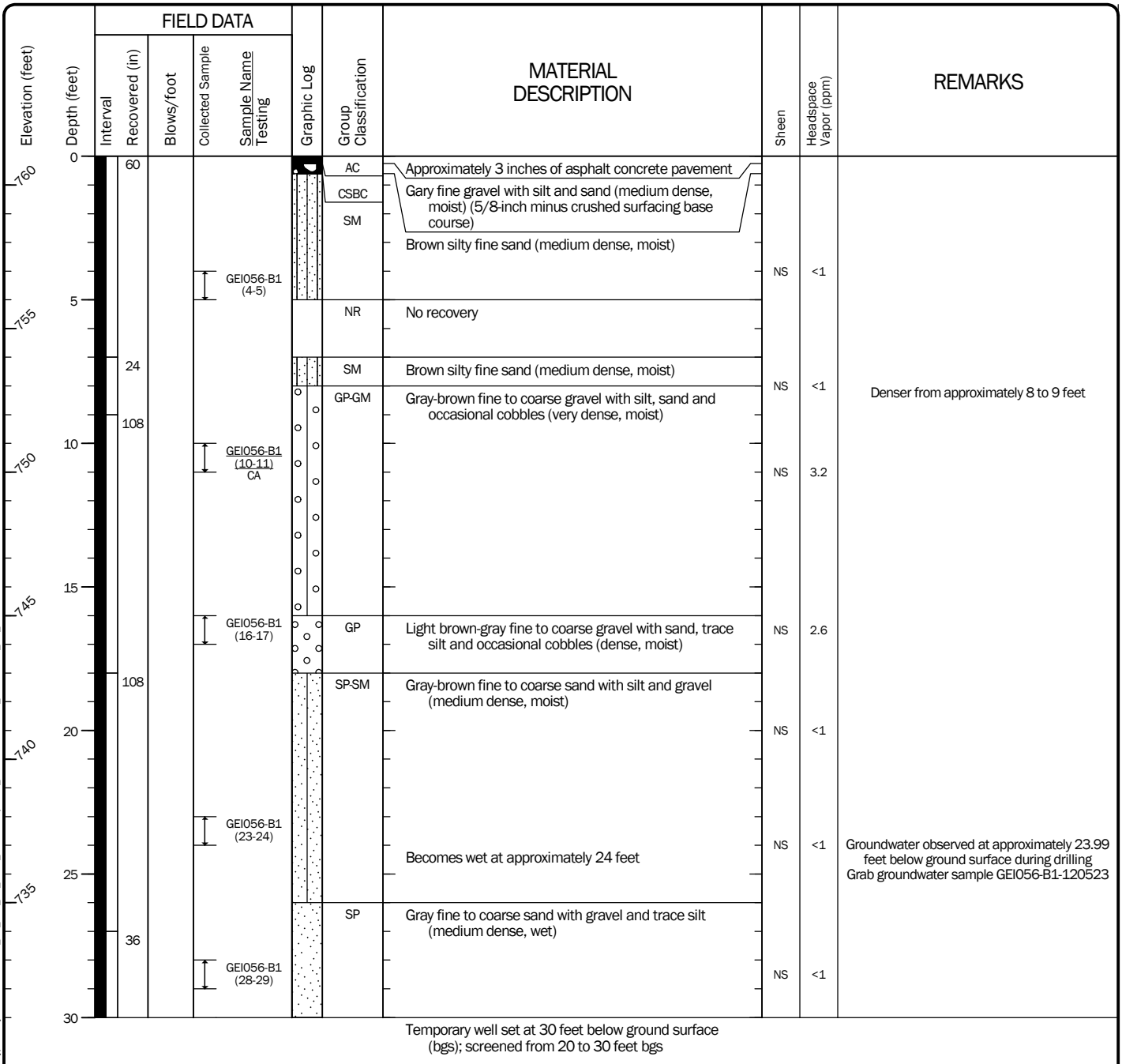
Key to Exploration Logs

GeoEngineers

Figure A-1

Drilled Start 12/5/2023 End 12/5/2023	Total Depth (ft) 30	Logged By BKH Checked By JDO	Driller WDS	Drilling Method Sonic	
Surface Elevation (ft) 761 Vertical Datum NAVD88		Hammer Data NA		Drilling Equipment 15K Speedstar truck-mount	
Latitude 46.4198 Longitude -117.0668		System Datum Decimal Degrees WGS84		See "Remarks" section for groundwater observed	

Notes:



Note: See Figure A-1 for explanation of symbols.
Coordinates Data Source: Horizontal approximated based on . Vertical approximated based on .

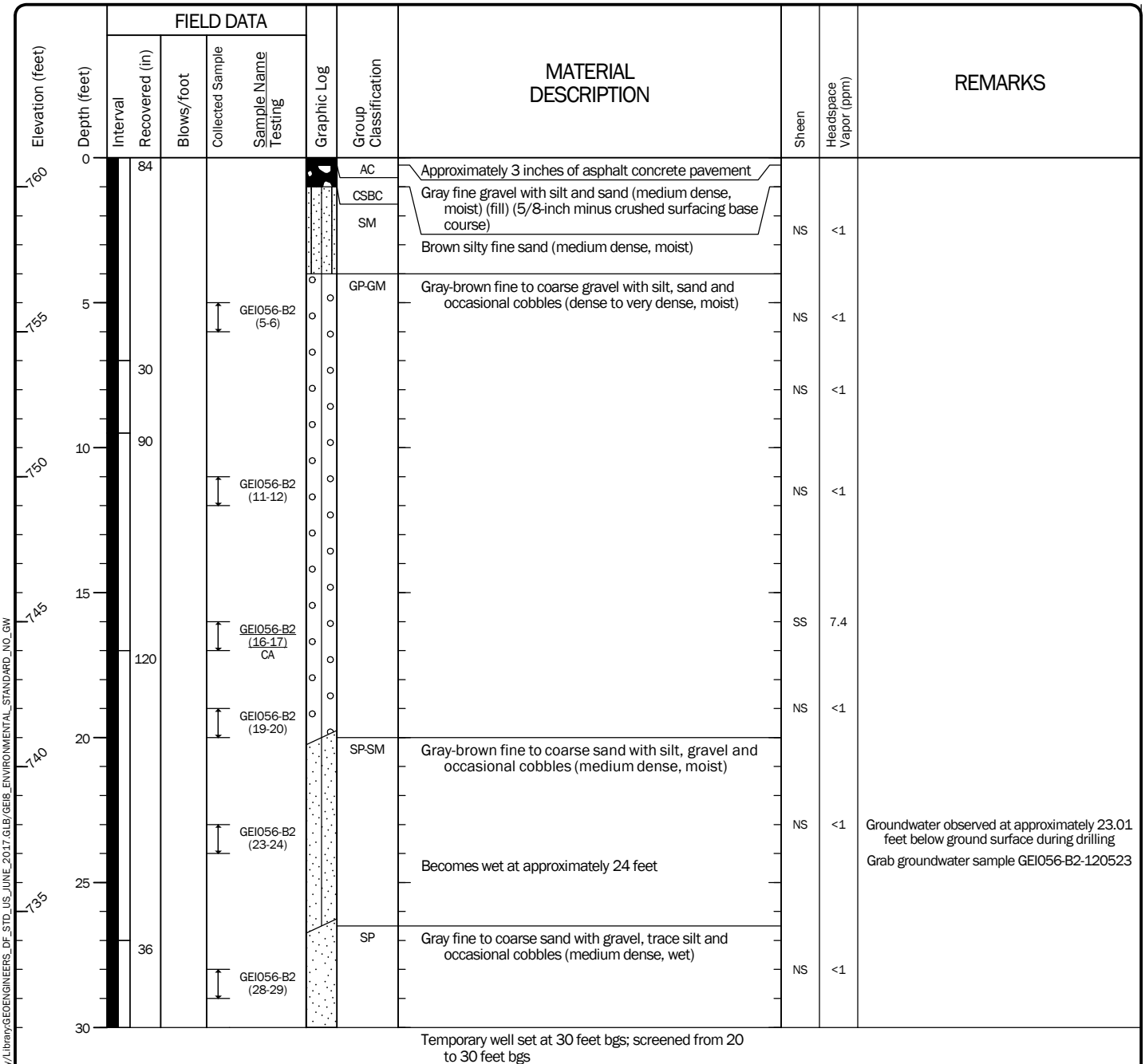
Log of Boring GEI056-B1

GeoEngineers

Project: Clarkston Street Shop
Project Location: Clarkston, Washington
Project Number: 0504-199-00

Figure A-2
Sheet 1 of 1

Drilled: Start 12/5/2023 End 12/5/2023	Total Depth (ft): 30	Logged By: BKH Checked By: JDO	Driller: WDS	Drilling Method: Sonic	
Surface Elevation (ft): 761 Vertical Datum: NAVD88	Hammer Data: NA	Drilling Equipment: 15K Speedstar truck-mount			
Latitude: 46.4197 Longitude: -117.0669	System Datum: Decimal Degrees WGS84	See "Remarks" section for groundwater observed			
Notes:					



Note: See Figure A-1 for explanation of symbols.
Coordinates Data Source: Horizontal approximated based on . Vertical approximated based on .

Log of Boring GEI056-B2

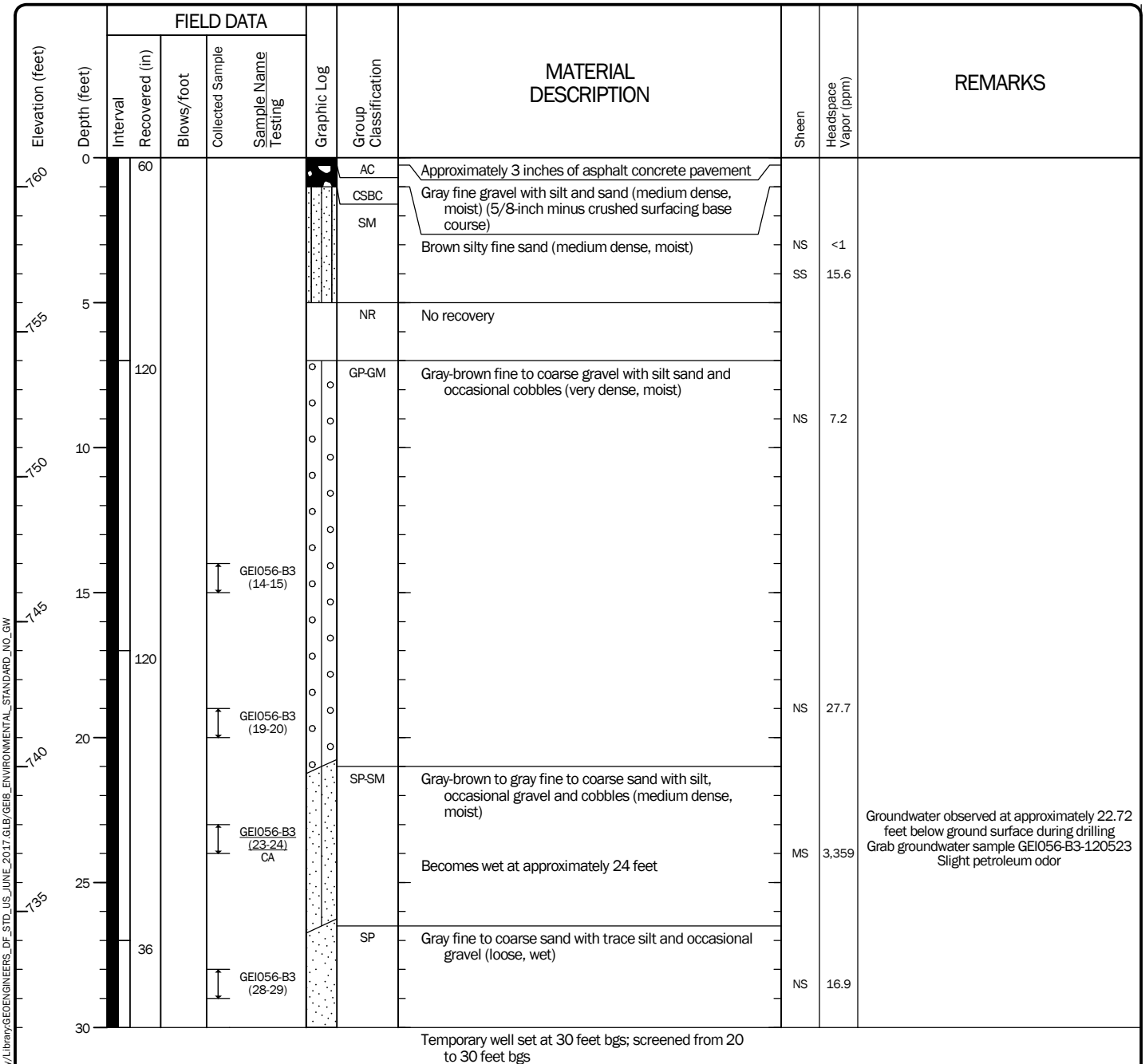
GeoEngineers

Project: Clarkston Street Shop
Project Location: Clarkston, Washington
Project Number: 0504-199-00

Figure A-3
Sheet 1 of 1

Drilled Start 12/6/2023 End 12/6/2023	Total Depth (ft) 30	Logged By BKH Checked By JDO	Driller WDS	Drilling Method Sonic	
Surface Elevation (ft) 761 Vertical Datum NAVD88		Hammer Data NA		Drilling Equipment 15K Speedstar truck-mount	
Latitude 46.4197 Longitude -117.0669		System Datum Decimal Degrees WGS84		See "Remarks" section for groundwater observed	

Notes:



Note: See Figure A-1 for explanation of symbols.
Coordinates Data Source: Horizontal approximated based on . Vertical approximated based on .

Log of Boring GEI056-B3

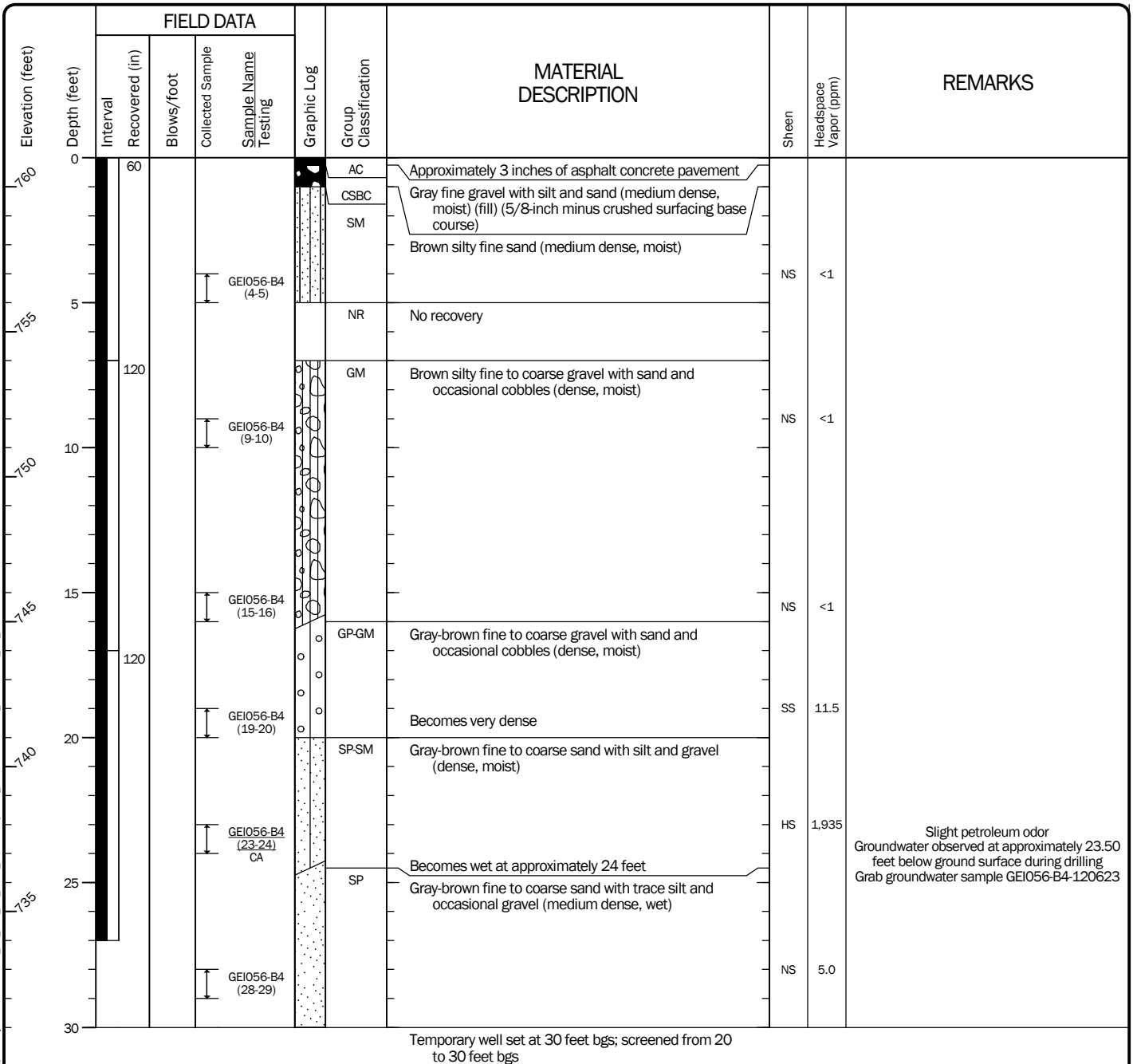
GeoEngineers

Project: Clarkston Street Shop
Project Location: Clarkston, Washington
Project Number: 0504-199-00

Figure A-4
Sheet 1 of 1

Drilled Start 12/5/2023 End 12/5/2023	Total Depth (ft) 30	Logged By BKH Checked By JDO	Driller WDS	Drilling Method Sonic	
Surface Elevation (ft) 761 Vertical Datum NAVD88		Hammer Data NA		Drilling Equipment 15K Speedstar truck-mount	
Latitude 46.4197 Longitude -117.0668		System Datum Decimal Degrees WGS84		See "Remarks" section for groundwater observed	

Notes:



Temporary well set at 30 feet bgs; screened from 20 to 30 feet bgs

Note: See Figure A-1 for explanation of symbols.
Coordinates Data Source: Horizontal approximated based on . Vertical approximated based on .

Log of Boring GEI056-B4

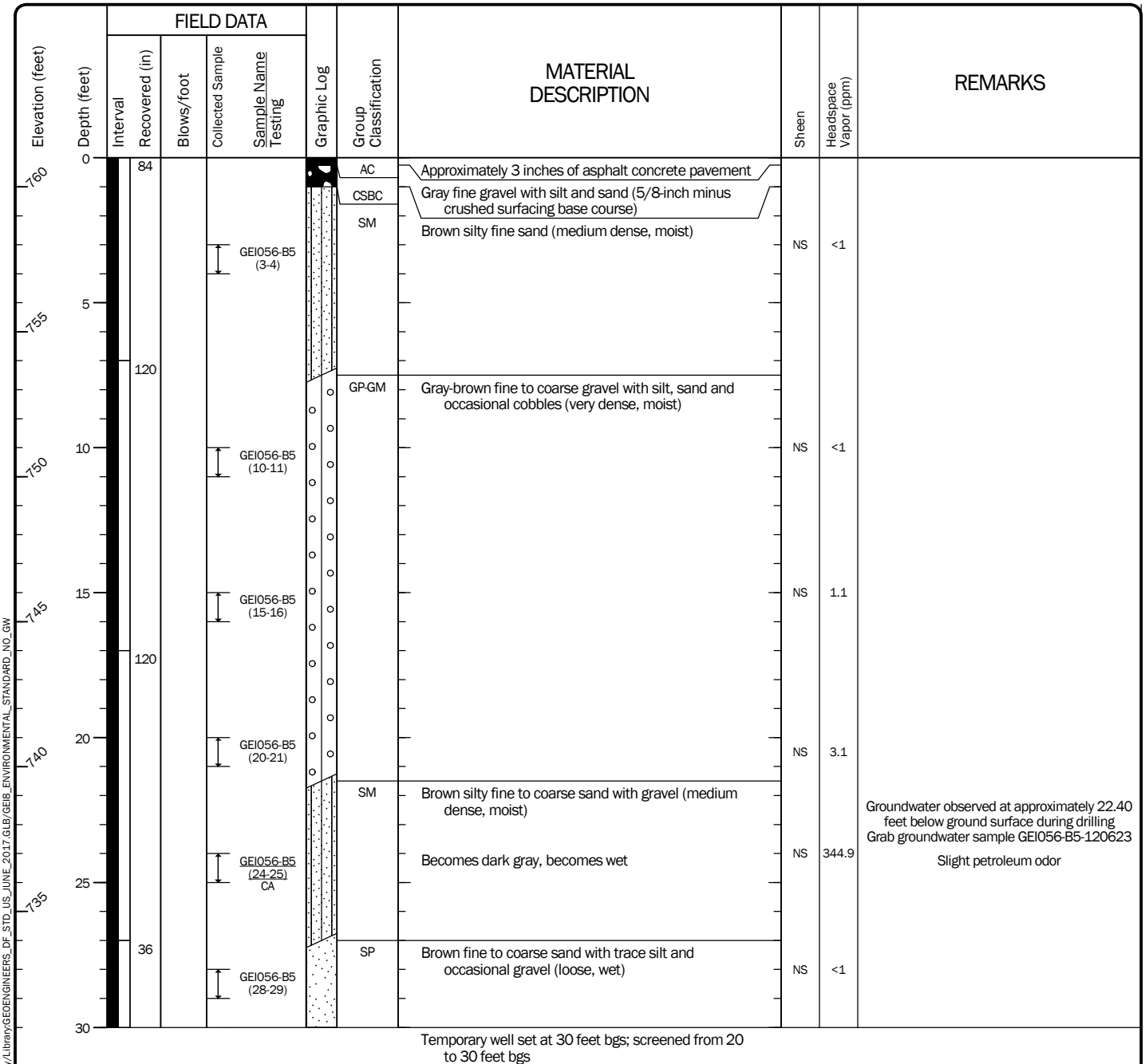
GeoEngineers

Project: Clarkston Street Shop
Project Location: Clarkston, Washington
Project Number: 0504-199-00

Figure A-5
Sheet 1 of 1

Drilled	Start 12/6/2023	End 12/6/2023	Total Depth (ft)	30	Logged By / Checked By	BKH / JDO	Driller	WDS	Drilling Method	Sonic
Surface Elevation (ft) / Vertical Datum	761 / NAVD88		Hammer Data	NA	Drilling Equipment	15K Speedstar truck-mount				
Latitude / Longitude	46.4198 / -117.0668		System Datum	Decimal Degrees / WGS84	See "Remarks" section for groundwater observed					

Notes:



Note: See Figure A-1 for explanation of symbols.
Coordinates Data Source: Horizontal approximated based on . Vertical approximated based on .

Log of Boring GEI056-B5

GeoEngineers

Project: Clarkston Street Shop
Project Location: Clarkston, Washington
Project Number: 0504-199-00

Figure A-6
Sheet 1 of 1

ATTACHMENT B
IDW Disposal Documentation

Graham Road Facility
1820 S. Graham Road
Medical Lake, WA 99022 Ph: (509)244-0151

Original
Ticket# 715862

Customer Name ABLECLEAN ABLE CLEAN-UP
Ticket Date 02/20/2024
Payment Type Credit Account
Manual Ticket#
Route
Hauling Ticket#
Destination
Manifest 116999wa
Profile 116999WA (IDW)
Generator WA-ABLE CLEANUP TECH 18838 ABLE CLEANUP TECHNOLOGIES INC_5308 N MYRTLE ST,
PO# 24018

Carrier ABLECLEANUP ABLE CLEANUP TECHNOLOGIE
Vehicle# laramie
Container
Driver
Check#
Billing# 0000726
Grid

Category:
Job# 24018 GeoEngineers
Approved:
Check#_____ Paid [_]
1455 Bridge Charleston

	Time	Scale	Operator	Inbound	Gross	19360 lb
In	02/20/2024 11:57:11	Scale1	zrichard		Tare	16380 lb
Out	02/20/2024 12:27:17	Scale1	zrichard		Net	2980 lb
					Tons	1.49

Comments

	Product	LD%	Qty	UOM	Rate	Tax/Fee	Amount	Origin
1	Cont Soil Pet-RGC-Tons-	100	1.49	Tons				SPOKANE
2	ENERGY-Energy Surcharge	100		%				SPOKANE
3	SRHD1-Spokane Regional	100	1.49	Tons				SPOKANE

24018
4Drums
83.09

Total Tax/Fees
Total Ticket

ZR
Driver`s Signature

The total amount includes fees and taxes that may not all be listed on this ticket due to technic
limitation.

ATTACHMENT C
Cultural Resources Monitoring Report

CULTURAL RESOURCES REPORT COVER SHEET

DAHP Project:

Author: Josh L. Espen, Margaret Corcoran, Emily Whistler, and David A. Harder

Title of Report: Archaeological Monitoring for the Clarkston DOE Project, Asotin County, Washington

Date of Report: February 19, 2024

County: Asotin Section: 20 Township: 11 N Range: 46 E

Quad: Clarkston 1971 Acres: 0.04

PDF of report submitted (REQUIRED) ☒ Yes

Historic Property Inventory Forms to be Approved Online? ☐ Yes ☒ No

Archaeological Site(s)/Isolate(s) Found or Amended? ☐ Yes ☒ No

TCP(s) found? ☐ Yes ☒ No

Replace a draft? ☐ Yes ☒ No

Satisfy a DAHP Archaeological Excavation Permit requirement? ☐ Yes # ☒ No

Were Human Remains Found? ☐ Yes DAHP Case # ☒ No

DAHP Archaeological Site #:

Archaeological Monitoring for the Clarkston DOE Project, Asotin County, Washington

By:
Josh L. Espen, Margaret Corcoran, Emily Whistler, and David A. Harder

PLATEAU CRM
A CULTURAL RESOURCE MANAGEMENT FIRM
P.O. Box 714
Pullman, Washington 99163
plateau-crm.com
509-332-3830

February 2024

ABSTRACT

Archaeological Monitoring for the Clarkston DOE Project, Asotin County, Washington

GeoEngineers performed a subsurface investigation using a sonic drill rig in Clarkston, Washinton. Five soil borings were excavated to 32 feet (ft) (9.7 meters [m]) deep. Due to the hardscaped environment, a cultural resource survey was not performed previously, therefore monitoring was required. As such, GeoEngineers retained Plateau Archaeological Investigations, LLC (dba Plateau CRM) to monitor all ground disturbing activities. The area of potential impact covers approximately 0.04 acres and lies in Section 20 of Township 11 North, Range 46 East, Willamette Meridian.

The area of potential impact falls within the traditional territories of the Nez Perce Tribe. The Tribe requested archaeological monitoring of the ground-disturing work.

Pre-field research included the review of known archaeological resources within a 1.0-mile radius of the area of potential impact as inventoried at the Washington State Department of Archaeology and Historic Preservation (DAHP). This review was completed using DAHP's secure electronic database known as the Washington Information System for Architectural and Archaeological Data (WISAARD). This database includes recorded archaeological resources, historic property inventories (HPIs), National Register of Historic Properties (NRHP) and Washington Heritage Register (WHR) properties, identified cemeteries, and previously conducted cultural resource surveys found throughout the state. The DAHP's predictive model places the area of potential impact in an area of "High Risk" for encountering cultural resources, stating that "survey is highly advised" for this location.

Fieldwork was completed in accordance with the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (48 FR 44716, September 29, 1983) and under the supervision of Principal Investigator, David Harder. Over the course of three days from December 5, 2023, to December 7, 2023, all ground disturbing activities were monitored by a Plateau CRM archaeologist.

KEY INFORMATION

PROJECT

Archaeological Monitoring for the Clarkston DOE Project, Asotin County, Washington

REPORT AUTHORS

Josh L. Espen, Margaret Corcoran, Emily Whistler, and David A. Harder

COUNTY

Asotin

LEGAL LOCATION OF PROJECT

Section 20 of Township 11 North, Range 46 East, Willamette Meridian

USGS QUADS

Clarkston 1971, 7.5 minute, Washington

ACREAGE

0.04 acres

PROJECT DATA

Five previously recorded historic properties
No new cultural resources located and/or recorded

DAHP PROJECT NUMBER

MANAGING AGENCY

Department of Ecology

REPORT PREPARED FOR

GeoEngineers

FIELD NOTE DISPOSITION

Archived at the office of Plateau CRM, Pullman.

PRINCIPAL INVESTIGATOR

David A. Harder, M.A.

CERTIFICATION OF RESULTS

I certify that this investigation was conducted and documented according to Secretary of Interior's Standards and Guidelines and that the report is complete and accurate to the best of my knowledge.

Signature	February 19, 2024 Date

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PROJECT DESCRIPTION

GeoEngineers performed a subsurface investigation using a sonic drill rig in Clarkston, Washinton (Figure 1). The boreholes measured 30 feet (ft) (9.1 meter [m]) in depth, 4 inches (in) (76.2 centimeters [cm]) in diameter. The project included excavation of four boreholes. Anticipated impacts include excavations, compaction of sediments, and other ground-disturbing construction activities. Due to the hardscaped environment, a cultural resource survey was not performed previously, therefore monitoring was required. As such, GeoEngineers retained Plateau Archaeological Investigations, LLC (dba Plateau CRM) to monitor all ground disturbing activities.

The area of potential impact covers approximately 0.04 acres, and lies within Section 20 of Township 11 North, Range 46 East, Willamette Meridian (Figure 2). The area of potential impact hereafter will be referred to as the "Project Area."

The Project Area falls within the traditional territories of the Nez Perce Tribe. The Tribe requested archaeological monitoring of the ground-disturing work.

PRE-FIELD RESEARCH

Pre-field research included the review of known archaeological resources within a 1.0-mile (mi) (1.6 kilometer [km]) radius of the Project Area as inventoried at the Washington State Department of Archaeology and Historic Preservation (DAHP) in Olympia, Washington. This review was completed using DAHP's secure electronic database known as the Washington Information System for Architectural and Archaeological Data (WISAARD). This database includes recorded archaeological resources, historic property inventories (HPIs), properties and districts on the National Register of Historic Places (NRHP) and the Washington Heritage Register (WHR), identified cemeteries, and previously conducted cultural resource surveys found throughout the state.

Plateau CRM also conducted cartographic analysis of landform, topography, proximity to water using topographic maps, and the United States Department of Agriculture (USDA) online soil survey. Secondary historic resources, on file at the DAHP and the Plateau CRM office in Pullman, were consulted to identify other potential historic resources. In addition, available survey and overview reports and ethnographic accounts of the region were consulted. This background review allows for the identification of previously recorded historic and archaeological resources within or near the Project Area.

ENVIRONMENTAL SETTING

The Project Area is within the Columbia Basin, situated between the Rocky Mountain and Cascade Mountain ranges. The region consists of gently rolling hills amidst the Channeled Scablands, features that were scoured by Pleistocene-era mega-floods. The resultant landforms

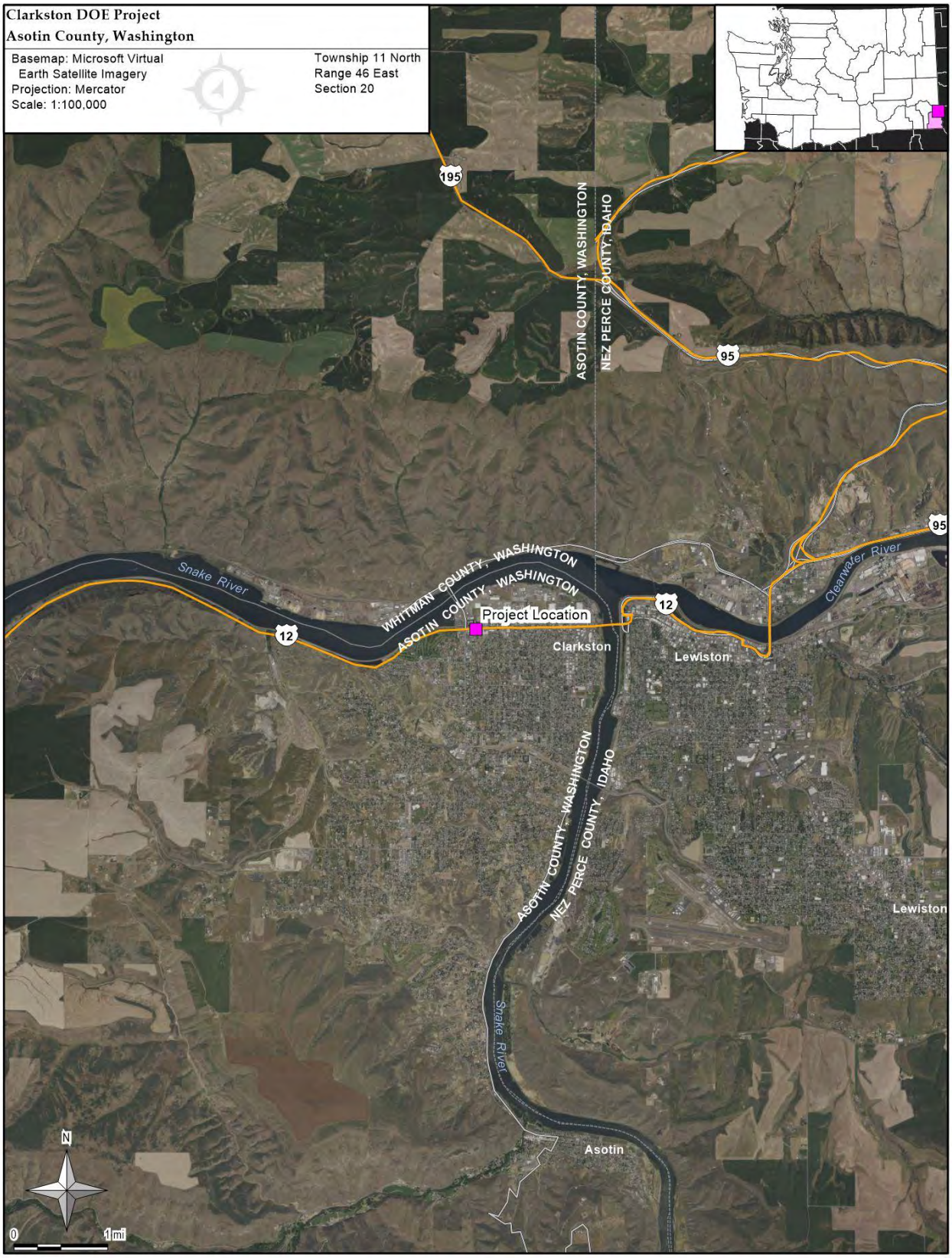

Figure 1. The location of the Project Area within Asotin County.

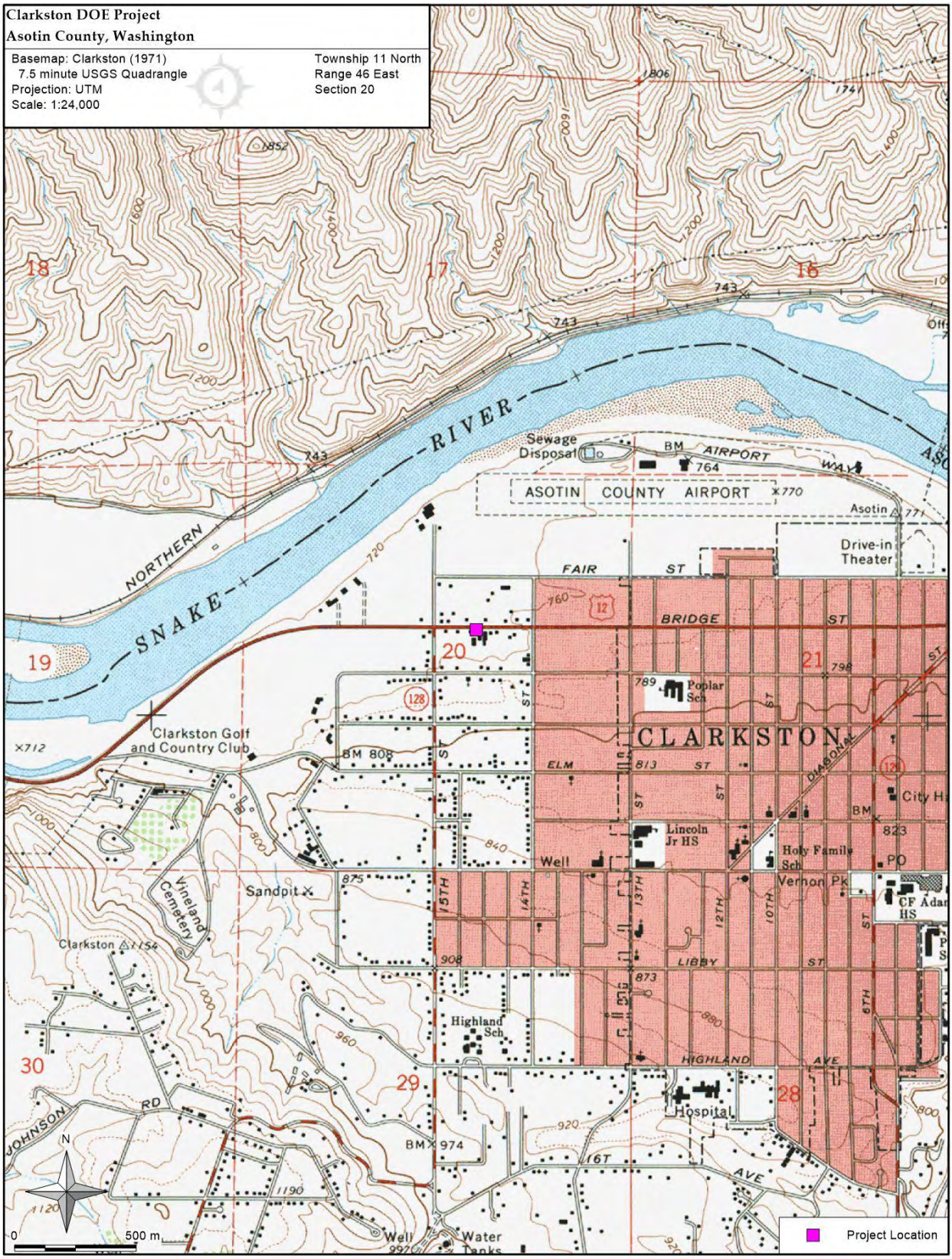

Figure 2. The Project Area shown on a portion of the Clarkston USGS map.

range in size from small stream-like trenches to large coulees measuring miles wide and hundreds of feet deep. Elevations in this region range between 200 feet (ft) (61 meters [m]) above mean sea level (AMSL) near the Columbia River to over 4,500 ft (1,372 m) AMSL in outlying ridges and low mountains (Fenneman 1946; Hunt 1967).

According to the Natural Resources Conservation Service (2023), the Project Area contains one soil type: Chard loam (Table 1).

Table 1. NRCS Soil Descriptions within Project Area.

Soil Name	Parent Material	Horizons	% P/A
Chard loam	Loess and glaciofluvial deposits	Horizon I (0–18 inches [in]): loam Horizon II (18–60 in): sandy loam	100%

The predominant draw for Native American and Euroamerican populations in this region was, and still is, the extensive river systems. The most significant environmental feature is the Columbia River, which flows for more than 1,200 mi (2,000 km) from the base of the Canadian Rockies in southeastern British Columbia to the Pacific Ocean at Astoria, Oregon. Ten major tributaries—the Cowlitz, Deschutes, Kootenay, Lewis, Okanogan, Spokane, Snake, Wenatchee, Willamette, and Yakima Rivers—complete the drainage system. The Project Area is less than 0.5 mi (0.8 km) north of the Snake River.

The vegetation around the Project Area falls within the *Agropyron spicatum-Festuca idahoensis* habitat type, characterized by a dry wheatgrass steppe (Daubenmire 1970; Taylor 1992). Bluebunch wheatgrass *(Agropyron spicatum)* and Idaho fescue (*Festuca-idahoensis*) are dominant in this environment. The plant community also includes alkali bluegrass (*Poa secunda*) and gray rabbitbrush (*Chrysothamnus nauseosus*). Sagebrush (*Artemisia*) and snowberry (*Symphoricarpos*) are absent in this zone. Many of these plants have been incorporated by Native American peoples as medicine, food, and other applications.

It is likely, though, that in the past Native Americans had access to a larger variety of species that were integrated into indigenous lifeways, settlement, and travel patterns in relation to the Project Area. Mammals include sagebrush voles (*Lemmiscus curtatus*), Great Basin pocket mice (*Perognathus parvus*), deer mice (*Peromyscus maniculatus*), bushy-tailed wood rat (*Neotoma cinerea*), Washington ground squirrel (*Spermophilus washingtoni*), northern pocket gopher (*Thomomys talpoides*), yellow bellied marmot (*Marmota flaviventris*), white-tailed hare (*Lepus townsendii*), Nuttal cottontail (*Sylvilagus nuttallii*), porcupine (*Erethizon dorsatum*), beaver (*Castor canadensis*), muskrat (*Ondatra zibethica*), Bighorn sheep (*Ovis canadensis*), coyote (*Canis latrans*), bobcat (*Lynx rufus*), badger (*Taxidea taxus*), and long-tailed weasel (*Mustela frenata*). Bison (*bison bison*) were also thought to be occasionally available in the precontact period (Burt and Grossenheider 1961; Ingles 1965; Schroedl 1973).

Many types of fowl were also prevalent including dusky grouse (*Dendragapus obscurus pallidus*), Columbian ruffed grouse (*Bonasa umbellus affinis*), Columbian sharp-tailed grouse (*Pedioecetes phasianellus*), greater sage grouse *(Centrocercus urophasianus phaios*), mallard duck (*Anas platyrhynchos platyrhynchos*), western harlequin duck (*Histrionicus histrionicus pacificus*), American common merganser *(Mergus merganser americanus*), the lesser snow goose (*Chen hyperborea hyperborea*), and the Great Basin Canada goose (*Branta canadensis moffitti*). Seasonal birds such as Gadwall (*Mareca strepera*), wood duck (*Aix sponsa*), redhead (*Aythya americana*), and the northern ruddy duck (*Oxjura jamaicensis rubida*) resided in the region in the summer. Winter game birds of the region included canvasback (*Aythya valisineria*) and American greater scaup *(Aythya marila nearctica*) (Lothson 1977).

The climate in the Columbia Basin was cool and moist at the end of the last glacial period. Climatic conditions gradually became warmer and dryer by approximately 9,000 years before present (B.P.). The warm and dry climatic trend reached its peak around 6,500 B.P. Conditions subsequently reverted to a cooler and moister regime (Fryxell and Daugherty 1962). The present climate is comparably arid with mild moist winters and hot dry summers (Meinig 1968). The mean seasonal temperature recorded at the Lewiston WSO AP, ID (#105241) between 1948 and 2005 were 52.5° Fahrenheit (F) in the winter and 63.2°F in the summer. The highest seasonal temperature in the summer was 115°F, and the lowest temperature in the winter was -22°F. Yearly precipitation averages 12.69 in (Western Regional Climate Center 2023).

REGIONAL PRECONTACT BACKGROUND

The Project Area is included in the Plateau culture area, which corresponds roughly to the geographic region drained by the Fraser, Columbia, and Snake rivers. The Plateau culture area is bordered on the west by the Cascade Mountains and on the east by the Rocky Mountains. The northern border of the culture area is in Canada where it gives way to Arctic culture patterns. The southern border of the Plateau culture area mixes gradually with the Great Basin culture area (Walker 1998a:1–3).

A cultural chronology provides a timeline describing the adaptations, material culture, subsistence, and sometimes settlement patterns of the people who inhabited a specific area. A cultural chronology for the Lower Snake River was compiled and developed by Frank Leonhardy and David Rice (1970). Leonhardy and Rice described five distinct phases within the region: the Paleoindian (11,500 to 10,000 B.P.) (Meltzer 1993), the Windust Phase (10,000 to 8,000 B.P.) (Leonhardy and Rice 1970), the Cascade Phase (8,000 to 5,000 B.P.), Tucanon Phase (5,000 to 2,500 B.P.) (Lucas 1994), and the Harder Phase (2,500 to 150 BP) (Harder 1998). The cultural chronology of the Lower Snake River has been discussed at length in Leonhardy and Rice (1970), Meltzer (1993), Lucas (1994), and Harder (1998), and, if pertinent, will be discussed further within the results of this report.

Ethnography

Ethnographic sources that depict the geographic distribution of Native American traditional territories provide a general guide for identifying the range of occupation for Indigenous groups in the precontact and historic eras. However, these boundaries are oversimplified and should not be viewed as rigid considering that they are arbitrarily defined, with sharp lines that neither depict joint or disputed occupations nor historical changes in range distributions prior to and after the early- to mid-19th century (Walker, ed. 1998b:viii). While these ethnographic sources provide a baseline for recognizing the ancestral homes of the groups that originally occupied the Project Area, it is important to recognize the variability in the geographic distribution of groups on the Plateau and the broader relationships between people and place that make these boundaries permeable (see Thom 2009:179). According to the DAHP, the Project Area is in an "area of interest" for the the Nez Perce Tribe, the Spokane Tribe of Indians, the Confederated Tribes of the Colville Reservation, and the Confederated Tribes and Bands of the Yakama Nation (DAHP 2023).

The Project Area falls within the traditional territories of the Nez Perce Tribe.

Nez Perce Tribe The Project Area is within the traditional territory of the Nez Perce, which centered on the middle Snake and Clearwater rivers and the northern Salmon River basin in central Idaho, southeast Washington, and northeast Oregon (Walker 1998c:420–421). Roughly bound by the Palouse River to the north, the Bitterroot Mountains to the east, Weiser in the south, and the Blue Mountains to the west, this area represents the most intensively occupied territory of the Nez Perce (Aoki 1994:ix). However, with their large population, frequent interactions with other groups, and extensive use of the horse, Nez Perce activities swept well beyond these territories, extending throughout Washington, Oregon, Idaho, and western Montana (Walker 1998c:425).

Depending on the season and social grouping, Nez Perce settlement layouts could vary. Permanent and semi-permanent villages were occupied during winter and summer, as well as periodic and temporary camps during the late spring, summer, and early fall. Multifamily winter villages were typically comprised of several longhouses. These lodges, some of which were temporary or seasonally moveable, were rectangular, double lean-to mat structures measuring as long as 100 ft (30.5 m) with entrances at each rounded end. Each nuclear family typically had its own fire along the centerline below the open ridge that allowed smoke to escape. Such longhouses were not only primary village living spaces of the Nez Perce, but also the centers of ceremonial and religious life (see Slickpoo and Walker 1973:39). Bison skin-covered structures became increasingly common in the late eighteenth and early nineteenth centuries as the Nez Perce became more involved with Plains cultures, as did canvas-covered structures after the material was introduced through trade. A few plank and log homes were also used during the early historic era. Temporary mat-covered, conical tents were used when hunting, fishing, or root digging on the trail (Walker 1998c:427–428).

When encountered by the Corps of Discovery in 1805, the Nez Perce were the largest Plateau culture group, with a population of approximately 6,000 (Walker 1998c:429). More than 70 permanent villages with 30–200 individuals each, depending on the season and type of social group, existed in 1800 (Slickpoo and Walker 1973:29; Walker 1998c:420). By 1970, approximately 300 historic and ethnographic settlements including villages and camps had been recorded (Slickpoo and Walker 1973:52; Walker 1998c:420). These varied sites are illustrative of the intricate use and knowledge of the landscape that the Nez Perce maintained as they made their living on the Plateau as families, villages, and bands during their annual round (Table 2).

Table 2. Nez Perce Year and Round by Month Translations (Slickpoo and Walker 1973:30).

Nez Perce Term	Month	Translation
We-lu-poop	January	Season of cold weather.
Ah-la-tah-mahl	February	Season of hard time to build fire (*Ah-lah*).
Lah-te-tahl	March	Beginning of blossoming of flowers season.
Keh-khee-tahl	April	First blossom of roots known as *keh-kheet* (wild onion).
Ah-pah-ahl	May	Season of making of Up-pa (baked loaf) made from ground Khouse
Toose-te-ma-sah-tahl	June	Season of migrating to higher elevation to dig the roots.
Heel-lul	---	Season of melting snow in the mountains.
Khoy-tsahl	July	Season of the run of the "Blue Back" salmon.
Tah-ya-ahl	August	Season of midsummer (*Ta-Yum*) hot weather. Also known as *Wa-wa-mai-kahl* ("When the salmon reach the canyon streams or upper tributaries to spawn")
Pe-khoon-mai-kahl	September	Season of the fall (*Sekh-nihm*) salmon run going up stream or when fingerlings journey down the river to the ocean.
Hope-lul	October	Season when the Tamarack needles are shedding, and the trees turn color.
Sekh-le-wahl	November	Season of shedding leaves.
Ha-oo-khoy	December	Season of the fetus in the womb of the deer.

Plateau winter villages were arranged in river valleys, which offered not only water transportation and access to salmon and other riverine resources, but also shelter from harsh elements and late-fall and winter pastures for grazing horses (Ray 1939:135). The Nez Perce began their annual round in the early spring when winter stores had been depleted. Early activities included primarily hunting by snowshoe and canoe trips to the Snake and Columbia rivers for early salmon runs (Walker 1973:56). Shortly after, early root crops were harvested at lower elevations, as the salmon began to arrive in Nez Perce territory (Walker 1998c:420).

While hunting was a continuous and essential undertaking, salmon were the most important resource on the Plateau, and certainly for the Nez Perce. Using hook and line, spears, harpoons, dip nets, traps, or communal fish weirs, which were regulated by a fish specialist who would divide the catch, Nez Perce fisheries produced thousands of pounds of fish in a day; enough to provide an estimated 500 pounds of fish per capita annually (Walker 1998c:420).

Nez Perce usually left their lower river valley villages for the highlands by midsummer, and focus shifted to gathering staple fruits and vegetables, fishing highland streams, and hunting intensified (Walker 1998c:421). Root staples included camas (*kehm-mes*), bitterroot (*thlee-than*), couse, wild carrot (*tsa-weetkh*), and wild onion (*keh-kheet*). Fruits included serviceberries, gooseberries, hawthorn berries, thornberries, huckleberries, currants, and chokeberries. Pine nuts, sunflower seeds, and black moss were also collected. All of these resources provided an abundance of vegetables and fruits (Slickpoo and Walker 1973:30; Walker 1998c:421). Some such staples ripened as early as spring in lower areas near present-day Lewiston, while others in areas such as a Weippe may not have ripened until mid-August (Slickpoo and Walker 1973:30).

Autumn brought with it the last salmon runs, late root and berry harvesting, and the final processing of food stores for the winter. Cooperative bison hunting trips into Montana over Lolo and other passes, often with Cayuse and Yakama warriors, rounded out the surplus for the winter. By the time leaves were falling in November, most travel ceased, and the Nez Perce settled into their stocked winter villages (Walker 1998c:420–421).

The ethnographic background of the Nez Perce and the Plateau region in general has been discussed at length by Aoki (1994), Anastasio (1972), Boas and Teit (1996), Ray (1939, 1942), Smith (1988), Spier (1936), Swanton (1968), Walker (1973, 1978, 1998c), and Slickpoo and Walker Jr. (1973), and, if pertinent, will be discussed further within the results of this report.

While ethnographies such as those referenced above provide a useful means of understanding the traditional lifeways of Indigenous peoples, it is important to remember that Indigenous groups were, and continue to be, markedly complex, dynamic, and diverse. Uncritical applications of the ethnographic record to representations of past lifeways have the potential to produce reductionist views of tribes and bands that portray them as homogenous or static. The above depictions of the Nez Perce people serve as generalized portrayals of the traditional lives of these groups and should be viewed in light of these complexities.

Places of Cultural Significance

Traditional Cultural Places (TCPs) are important for the "role the property plays in a community's historically rooted beliefs, customs and practices" as stated in the *National Register Bulletin 38* (U.S. Department of the Interior 1990). Although these places can be difficult to identify and evaluate from an etic perspective, an initial search of pertinent publications can be helpful toward identifying the types of properties that may be expected. The *National Register Bulletin 38* goes on to state that "examples of properties possessing such significance include:

- a location associated with the traditional beliefs of a Native American group about its origins, its cultural history, or the nature of the world;
- a rural community whose organization, buildings and structures, or patterns of land use reflect the cultural traditions valued by its long-term residents;
- an urban neighborhood that is the traditional home of a particular cultural group, and that reflects its beliefs and practices;
- a location where Native American religious practitioners have historically gone, and are known or thought to go today, to perform ceremonial activities in accordance with traditional cultural rules of practice; and
- a location where a community has traditionally carried out economic, artistic, or other cultural practices important in maintaining its historic identity."

A review of ethnographies was undertaken to help identify any known TCPs within or near the Project Area. The works of Angelo Anastasio (1972), L.V. McWhorter (1983), Verne F. Ray (1939, 1942), Robert Ruby and John Brown (1986), Stephen D. Shawley (1977), Allen Slickpoo and Deward Walker, Jr. (1973), Allan Smith (1988), Leslie Spier (1936), and Deward Walker, Jr. (1973, 1978, 1980, 1998) were consulted. Shawley (1977) identified two ethnographic locations within 2.0 mi (3.2 km) of the Project Area (Table 3, Figure 3).

Table 3. Ethnographic Locations near the Project Area.

Traditional Name	Translation	Details
not available	not available	Two suspected campsites are shown 2.0 mi (3.2 km) southeast of the Project Area (Shawley 1977:19).

Several collections of published legends were consulted to identify points of legendary significance within the Project Area. These are publications by Ella Clark (1966, 1969), Donald Hines (1984), and Deward Walker, Jr. (1980). Although many tales were found involving the general region, no folk tales were found to have direct connections to the Project Area.

It should be noted that TCPs, place names, and landscape narratives are highly sensitive and often sacred. Native American traditional knowledge and landscape narratives are extensive within their traditional territories, which extend well-beyond current reservation boundaries and include the Project Area. Due to the significance of TCPs, as well as their esoteric and sacred importance, and out of genuine and reasonable concern for their safety, tribes often do not share information regarding TCPs, and published materials often do not reveal locations of sensitive properties or narratives. If further review of TCPs is required, it is recommended that one consult with the tribes directly.

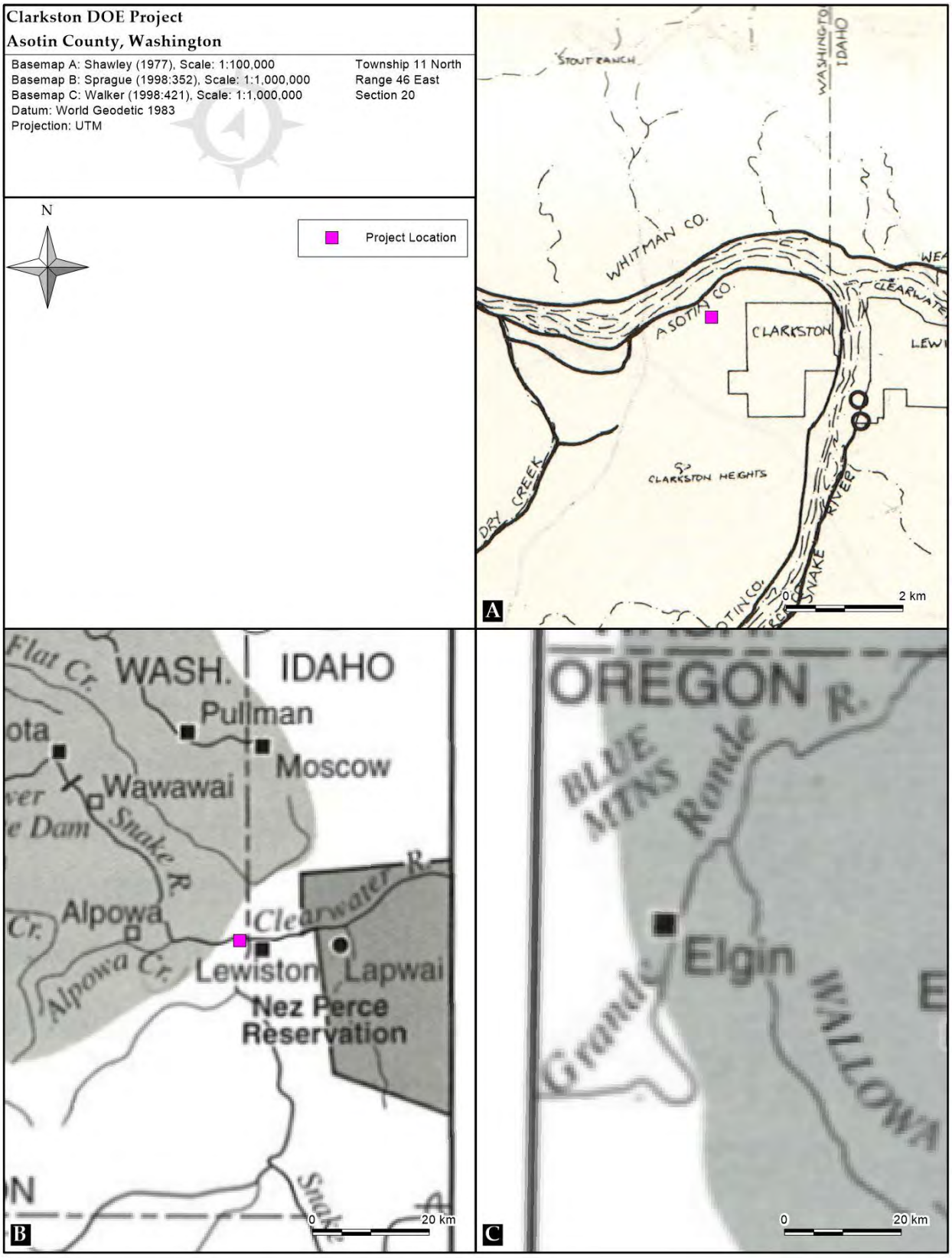

Figure 3. The Project Area shown in relation to ethnographic locations.

REGIONAL HISTORIC BACKGROUND

Contact with peoples on the west coast of the continent was well established by the end of the eighteenth century by British, Spanish, and Russian trading vessels that made regular visits to the coastline. These trading expeditions began the first contact between indiginous groups and outside cultures. Written historic accounts of the area, though, really begin when Lewis and Clark journeyed through the region in 1805.

On August 12, 1805, the Corps of Discovery (Corps) expedition led by Meriwether Lewis and William Clark traversed Lemhi Pass, crossing the Continental Divide into north Idaho and becoming the first European Americans to explore the region. The group camped near Lolo, Montana, then followed the Lolo Trail, an Indian trail used in trade and hunting across the Bitterroot Mountains, to the Clearwater River (Plamondon 2001: 308). The Nez Perce took in the starving and exhausted Corps, which at this point had total provisions of bear oil and 20 pounds of beeswax candles and offered assistance to the weakened Corps (Gunther 2010:26). Perhaps most significantly, they provided a map on antelope skin that would not only guide Lewis and Clark to the Columbia River, but all the way to the Pacific Ocean (Gunther 2010:27–28). Many, including Lewis and Clark, consider these moments of contact with the Nez Perce to have been among the most pivotal moments of the entire expedition, and an episode that depicted the Nez Perce as peaceful and accommodating hosts (Plamondon 2001: 311–312).

In 1809, the region saw an influx of trappers and fur traders beginning with the Canadian-owned North West Company as they made their way into the region and built Spokane House in 1810, located near the confluence of the Spokane River and Hangman Creek. Spokane House became the first permanent European settlement in the State of Washington (McCart and McCart 2000:213). For a time, Spokane House thrived as both a trading center and a gathering place for fur traders. Despite its successes, Spokane House was abandoned in 1816. By that time, trading routes had shifted largely to the Columbia River, leaving the Spokane House no longer logistically or economically important (Meinig 1968). In 1825, the Hudson's Bay Company closed Spokane House and moved its local operations north to Fort Colville at Kettle Falls.

Subsequent to the opening of the Oregon Trail in 1840, Euroamerican settlers flooded the area, bringing trade, religion, and disease into Native-occupied areas. In 1846, the United States took control of the Oregon territory in the Oregon Treaty. With increasing population and economic and political pressures of immigrants and the Whitman massacre, the Territory of Oregon (Oregon Territory) was officially established in 1848. By 1850, nearly 12,000 immigrants had passed through the Plateau region along the Oregon Trail (Beckham 1998; Walker and Sprague 1998). With the establishment of the Oregon Territory in 1848 and Washington Territory in 1853, federal involvement proliferated. Treaties between Native tribes and the new state and federal governments were soon underway.

Washington Governor Isaac Stevens, also appointed as Superintendent of Indian Affairs by President Pierce, worked jointly with Joel Palmer, Superintendent of Indian Affairs in Oregon, to negotiate a series of treaties between 1854 and 1855. On May 21, 1855, Isaac Stevens and Joel

Palmer arrived at Mill Creek in Walla Walla near the old Whitman Mission with 47 soldiers in anticipation of the Treaty Council. Stevens, appointed by President Pierce as the leader of a Pacific Railroad survey group, was responsible for acquiring as much land as possible for as little as possible, as well as discovering the least expensive railroad routes possible through the northwest (Nez Perce Tribe 2003:38).

Negotiations proceeded into June 1855, finally being completed on June 11. As landowners, the Nez Perce ceded approximately 5.5 million acres of land to the government for Euroamerican settlement and retained a 7.5-million-acre reservation that would be protected from European American trespassers (Nez Perce Tribe 2003:41; Slickpoo and Walker 1973). The Nez Perce, of course, reserved sovereign rights over their land, but also reserved rights to hunt, gather, and pasture livestock on open and unclaimed land, as well as to harvest fish at all "usual and accustomed places" throughout the ceded lands (Nez Perce Tribe 2003:40; Nez Perce Treaty, Article III; Beckham 1998; Walker 1998). In addition to such agreements, Stevens agreed to provide annuities, schools, mills, medical facilities and other goods, and infrastructure.

The guarantees of the Nez Perces' and others' rights afforded by the treaties were short lived. Just days after the Walla Walla Treaty Council concluded, gold was discovered east of the Cascades, and the rush was on. Governor Stevens illegally opened the reserved lands to afford miners passage and access to the newfound resources. Believing the reserved areas open to settlement, Euroamericans rushed onto the sovereign Native American lands. Euroamerican settlers and gold miners increasingly trespassed on the Nez Perce, Umatilla, and Yakama reserved lands, and Congress neglected to authorize funds and appropriations that were sorely needed by the tribes and had been guaranteed under law for four years. In the meantime, the gross violations of the treaties, trespassing, disease and the stresses introduced by the new settlers stealing reserved lands led to an era of conflict, with several battles taking place in the Palouse between 1855 and 1858. However, the militarily powerful Nez Perce maintained a pacifist policy and abstained from the violence.

Rather than stopping the illegal trespass and mining activities on the Nez Perce Reservation, the U.S. Government prompted another treaty council in 1863. Superintendent Calvin Hale and agents Charles Hutchins and S.D. Howe negotiated a supplemental treaty to the 1855 Nez Perce Treaty that reduced the 1855-established reservation by 90%, from 7.5 million acres to 750,000 acres (Beckham 1998; Nez Perce Tribe 2003; Walker 1998).

In 1875, President Ulysses S. Grant sent a commission to meet with the Joseph Band in Oregon, which expressed their grievances. Upon reviewing the case, President Grant restored Nez Perce land. However, a mapping error transposed the adjusted reservation boundary illustrated in the Executive Order, and mistakenly assigned Josephs' Band an area across the river that was inhabited by European Americans and vice-versa (Nez Perce Tribe 2003:43). This error led Grant to revoke the 1855 agreement, and instead commit troops to enforce the Treaty of 1863—a move that would spark one of the most famous and tragic conflicts in American history.

Non-treaty Nez Perce continued to refuse to move onto the reservation and by 1877 the rumblings of what would be known as the Nez Perce War (or Chief Joseph's War) were being heard. In May of 1877, General Oliver O. Howard held a meeting with non-treaty Indians at Fort Lapwai and gave them 30 days to comply or be taken onto the reservation by force (Walker 1998:434). The ultimatum may have had its intended effect, as Young Chief Joseph, White Bird, and other non-signatory headmen and bands met near present-day Tolo Lake and began making preparations to comply (Nez Perce Tribe 2003:48; Walker 1998:435). However, as they did so, three young warriors, avenging the deaths of their father and uncle, took revenge on 17 immigrants living along the Salmon River (Nez Perce Tribe 2002; Nez Perce Tribe 2003:48).

General Howard, fearing a contagious spread of Native American resistance, hastily deployed 99 cavalrymen and 11 volunteers under Colonel Perry from Fort Lapwai to quickly settle the violence (Nez Perce 2002). The headmen anticipated a response from Howard for the revenge killings and held council at White Bird's village to determine a next step. However, when Perry arrived at White Bird's village, he ignored the Nez Perce's white flag and ordered a full attack (Nez Perce Tribe 2003:48). Perry's forces were overwhelmed in the battle at White Bird Canyon on June 17, 1877, in which Nez Perce warriors killed 67 soldiers with only two wounded casualties of their own (Nez Perce 2002; Nez Perce 2003:48). In response to the alarming defeat in the first battle of the war, the U.S. Army raised a force that would consist of more than 2,000 soldiers, volunteers, and Indians, including hundreds of Civil War combat veterans. They countered an estimated force of 250 Nez Perce warriors traveling with 500 noncombatants (Nez Perce Tribe 2002; Kennaly 2011). So began the three-month, 1,300-mile flight of the Nez Perce.

In Idaho, battles were fought at White Bird Canyon; on the Middle Fork of the Clearwater River, where Young Looking Glass joined the fight after his peaceful village was massacred with Gatling guns; and near the mouth of Cottonwood Creek on the South Fork of the Clearwater River. As the Nez Perce fled and fought, they made their way to Yellowstone in Wyoming, and into Montana along Clark's Fork (Walker 1998:435). Without their former Crow allies' help (even being pursued by some Crow scouts) the Nez Perce determined that their only chance was to make it to Canada and rally with Chief Sitting Bull. Hungry, tired, and accompanied by hundreds of noncombatants, Looking Glass, White Bird, and Joseph found themselves only 40 mi (66.7 km) from the border on September 30, 1877, when they were intercepted by Colonel Nelson Miles (Walker 1998:435). Weary of his people's suffering and unwilling to leave behind any Nez Perce, Chief Joseph formally surrendered on October 5, 1877, to Colonel Nelson Miles at Bear Paw Mountain, only 40 mi (66.7 km) from the Canadian border. Of the 800 Nez Perce who had fled the Idaho Territory, only 431 had survived to that point, approximately half of whom escaped with White Bird (Nez Perce Tribe 2003:48).

After eight years in exile and captivity in Oklahoma, after all of the young had died, the Nez Perce were freed. Approximately half of the prisoners returned to the reservation in Idaho, while Joseph and others accepted Chief Moses' invitation to live on the Colville Reservation in Washington. Others lived on the Umatilla Reservation. Many of the survivors had to change their names due to threats of violence towards them and their families by the U.S. military (Nez Perce Tribe 2003:48).

Asotin County

Asotin County, located in extreme southeastern Washington, is named after the Nez Perce word *Has-shu-tin*, meaning "eel creek," as numerous eel were caught at the mouth of Asotin Creek (Phillips 1971:9). The county was formed from the eastern portion of Garfield County in 1883. It covers 636 square miles and is the sixth smallest county in the state. Its history centers on agriculture (e.g., farming and fruit orchards).

Non-Native Americans made a few tentative settlements in Asotin County during the 1860s. The first was Sam Smith, who in 1861 opened a small store and hotel for travelers near the mouth of Alpowa Creek on their way to and from the gold mines of Orofino, Idaho. By the late 1860s, only a handful of permanent homes dotted the area. These were located along Asotin Creek, in or near present-day City of Asotin, which was platted in 1881.

Cartographic Analysis of the Project Area

The Project Area is located in the SW¼ NE¼ of Section 20 of Township 11 North, Range 46 East. The 1877 cadastral map (McMicken 1877) shows no development that intersects with or is adjacent to the Project Area. The Snake River is depicted north of the Project Area and there is a road to the south (Figure 4A).

The 1945 Clarkston USGS topographic map shows more development intersecting with and adjacent to the Project Area. Multiple roads are depicted on the map, one intersects the Project Area and others are adjacent. There are multiple structures depicted on the map that are adjacent to the Project Area. The Snake River is north of the Project Area (Figure 4B).

The 1971 Clarkston USGS topographic map shows similar features to the previous map. There is still a road shown intersecting the Project Area and multiple that are adjacent to the Project Area. There are still multiple structures depicted adjacent to the Project Area. The Snake River is still shown north of the Project Area (Figure 4C).

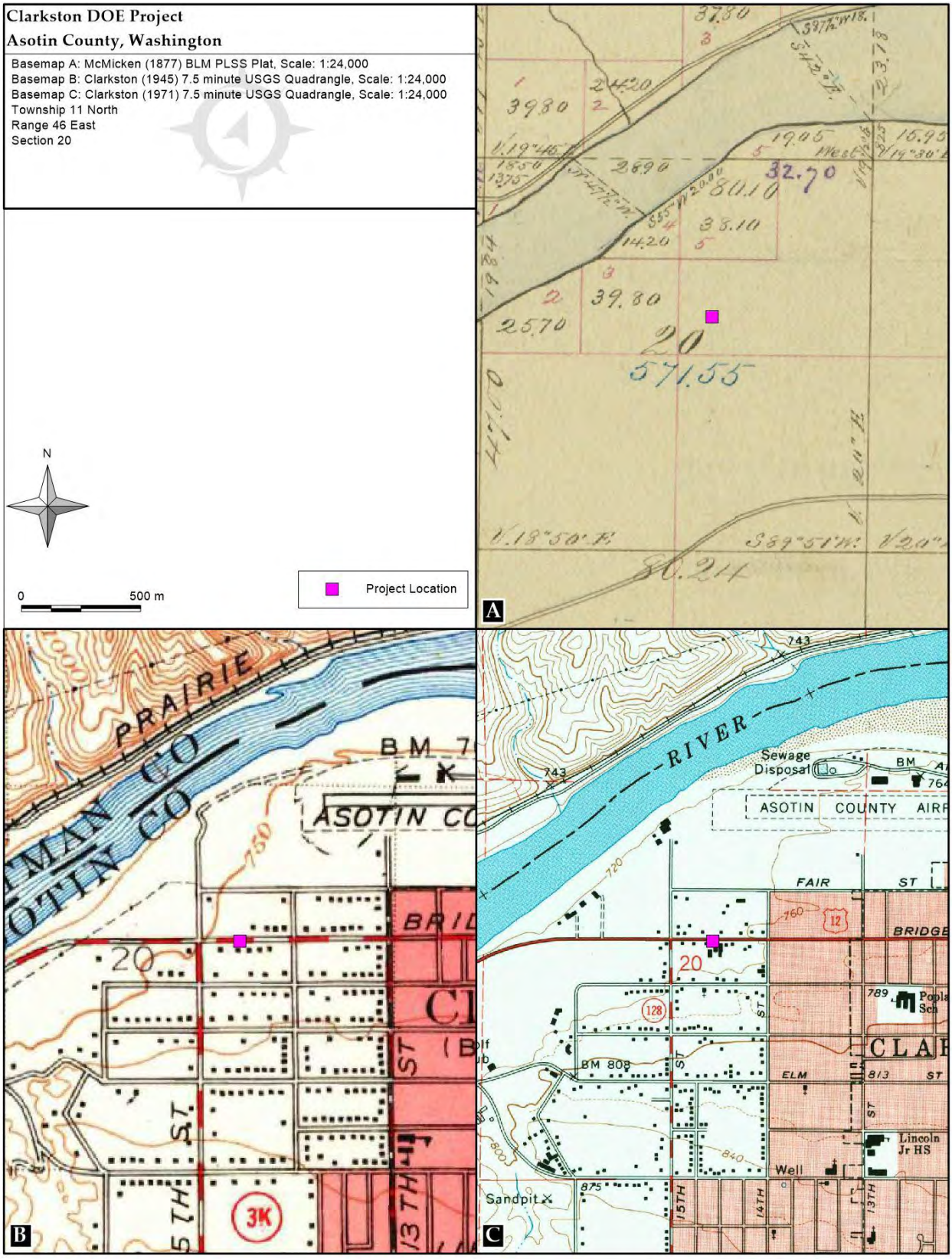

Figure 4. The Project Area shown on selected historic maps.

PREVIOUS ARCHAEOLOGY

A review of previously recorded cultural resources and archaeological surveys was completed through the WISAARD on December 6, 2023. The review covered areas within Sections 16, 17, 18, 19, 20, 21, 28, 29, and 30 of Township 11 North, Range 46 East.

There have been 17 previously conducted cultural resource surveys within 1.0 mi (1.6 km) of the Project Area (Table 4). None of these surveys intersect with the Project Area. Four of these surveys yielded newly recorded cultural resources (Bonstead 2016, Cannell 2002, Tarman et al. 2013, Willis 2006).

Table 4. Previously Conducted Cultural Resource Surveys within 1.0 mi of the Project Area.

Author	Project	Distance from P/A	Results
Baldwin 2008	Federal Transit Authority Grant Assistance	0–0.25 mi SW	Negative
Bonstead 2016	Walla Walla District Inventory	0.25–0.5 mi NE	45AS00469 + 6 sites beyond 1.0 mile
Cannell 2002	Lower Granite Reservoir	0.5–0.75	7 sites beyond 1.0 mile
Hall 2012	Clarkston Honor Wall	0.75–1.0 mi NE	Negative
Hannum et al. 2016	Workforce Center	0–0.25 mi N	Negative
Norman et al. 2010	Wastewater Facility Improvement	0.5–0.75 mi NE	Negative
Sappington and Thompson 2021	Boys & Girls Clubs of the Lewis Clark Valley	0.75–1.0 mi S	Negative
Sappington 2022	Poplar Street Stormwater Improvements	0.75–1.0 mi E	Negative
Sappington et al. 2009	Port of Clarkston Boat Dock and ADA Accessible Pathway	0.75–1.0 mi NE	Negative
Sappington et al. 2015	Renaissance Marine Group Manufacturing Facility	0.75–1.0 mi NE	Negative
Sappington et al. 2017	Pole Barn at the Port of Clarkston	0.75–1.0 mi NE	Negative
Tarman et al. 2013	Monitoring of Route SE-2	0–0.25 mi W	1 site beyond 1.0 mile
Tracy 1996a	Red Wolf Marina Expansion	0–0.25 mi NW	Negative
Tracy 1996b	Port of Clarkston Backfill and Dolphins	0.25–0.5 mi N	Negative
Tracy 1996c	Confluence Dredging, Modifications	0.25–0.5 mi NE	Negative
Tracy 1998	Additional Dredge and Disposal	0.25–0.5 mi NW	Negative
Willis 2006	Transmission Line Pole Replacement	0.75–1.0 mi N	2 sites beyond 1.0 mile

The review revealed two cultural resources within 1.0 mi (1.6 km) of the Project Area (Table 5).

Table 5. Previously Recorded Cultural Resources within 1.0 mi of the Project Area.

Site Number	Site Type	Recorder(s)	Distance from P/A	Eligibility
45WT00082	Precontact Camp	Sprague 1966	0.5–0.75 mi NW	Undetermined
45WT00099	Precontact Burial	Sprague 1974, Farrow 2000	0.5–0.75 mi NW	Undetermined

Site 45WT00099, known as the Wilma Bar Silo Burial Site, was originally recorded in 1974 (Sprague, 1974). It is located on the north side of the Snake River, around pit solo across country road from Tom Ellis home. The site lies roughly 0.5–0.75 mi (0.8–1.2 km) northwest of the Project Area. The site is undetermined for inclusion on the NRHP (Sprague 1974, Farrow 2000).

A total of five HPIs have been inventoried or derived from the Asotin County Assessor's records within 1.0 mi (1.6 km) of the Project Area (Table 6). No HPIs are located within the Project Area. All five HPIs are Eligible for inclusion on the NRHP. The Eligible HPIs are all located over a half mile away from the Project Area.

Table 6. NRHP Eligible Historic Properties Inventoried within 1.0 mi of the Project Area.

Property	Resource Name	Recorder(s)	Distance from P/A
98315	415 10th Street	DAHP 2008	0.75–1.0 mi E
98475	1200 McCarrol Street	DAHP 2001	0.75–1.0 mi S
700088	Van Arsdol, C.C., House	DAHP 1975	0.5–0.75 mi S
710481	1226 Elm Street	Holter 2017	0.5–0.75 mi SE
725998	Clarkston Smokestack	Whisenant 2021	0.5–0.75 mi SE

FIELD METHODS

Fieldwork was completed in accordance with the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (48 FR 44716, September 29, 1983) and under the supervision of Principal Investigator, David Harder. Over the course of three days from December 5, 2023, to December 7, 2023 a Plateau CRM archaeologist monitored installation of five boreholes and excavation necessitated to repair a sewer line that was struck in Borehole 4.

GeoEngineers Inc. of Spokane, Washington performed all ground disturbing work for the project using a geotechnical drill rig with a 4-in diameter auger. A CAT mini excavator with a 30-in bucket was used to excavate a pit for sewer pipe repair. Generally, the crew was busy on site from 7:00 a.m. to 4:00 p.m., and all ground disturbing activities were monitored by a Plateau CRM archaeologist during that time. During mechanical excavations, the archaeologist, outfitted with a high-visibility safety vest, a hard hat, eye protection, and gloves observed from a safe position that allowed for the best possible view of the excavated area.

Archaeologists trowel-scraped all geotechnical samples and screened six soil samples during pit excavation. Spoils were screened through ¼ inch wire mesh. Sediment characteristics (color, composition, and degree of compaction noted) were described by visual inspection of soil profiles in the trench walls.

All location data (control points, daily start and end points, cultural materials) were recorded with a handheld GPS unit, and the archaeologists took representative photographs of the Project Area, excavation trench, excavation equipment, and cultural materials. Monitoring log forms were filled out daily, and included such information as weather, time on site, construction equipment used, trench size, sediment characteristic, observed cultural materials, GPS points and photographs taken.

PROJECT RESULTS

Plateau CRM archaeologist James MacNaughton monitored ground-disturbing activities from December 5, 2023, to December 7, 2023. (Figure 5 and Figure 6).

December 5, 2023 MacNaughton monitored drilling of GEI056-B1, GEI056-B2, and GEI056-B3 (Figure 7). All boreholes measured 32 ft in depth and a diameter of 4 in. Soil from 0–7 ft (0–2.1 m) within GEI056-B1 was dark yellowish brown (10YR 4/4) loamy sand with rounded cobbles. A cobble layer was encountered from 7–9 ft (2.1–2.7 m). Soil from 9–32 ft (2.7–9.8 m) within GEI056-B1 was brown (10YR 3/2) sand with rounded cobbles. Soil from 0–4 ft (0–1.2 m) within GEI056-B2 was homogenous dark yellowish brown (10YR 3/6) loamy sand. Soil from 4–6 ft (1.2–1.8 m) within GEI056-B2 was grayish brown (10YR 5/2) sand with subangular gravels. Soil from 6–32 ft (1.8–9.7 m) was grayish brown (10YR 5/2) sand with 75% rounded cobbles. Soil from 0–4 ft (0–1.2 m) within GEI056-B3 was homogenous dark yellowish brown (10YR 3/6) loamy sand. Soil from 4–6 ft (1.2–1.8 m) within GEI056-B3 was grayish brown (10YR 5/2) sand with subangular gravels. Soil from 6–32 ft (1.8–9.7 m) was grayish brown (10YR 5/2) sand with 75% rounded cobbles. A total of 0.31 yd^3 (0.24 cubic meters m^3) of excavated soil was monitored and all geotechnical samples were trowel-sorted. No cultural materials were observed.

December 6, 2023 MacNaughton monitored auguring of GEI056-B4 and Boring 5. Both boreholes measured 32 ft in depth and a diameter of 4 in. Soil from 0–7 ft (0–2.1 m) within GEI056-B4 and Boring 5 was homogeneous dark yellowish brown (10YR 3/6) loamy sand. Soil from 7–12 ft (2.1–3.7 m) within GEI056-B4 and Boring 5 was grayish brown (10YR 5/2) sand with subangular gravel. Soil from 12–22 ft (3.7–6.7 m) was dark brown (10YR 3/3) sandy loam. Soil from 22–32 ft (6.7–9.6 m) was brown (7.5YR 5/4) sand (Figure 8). A total of A total of 0.21 yd^3 (0.16 cubic meters m^3) of excavated soil was monitored and all geotechnical samples were trowel-sorted. No cultural materials were observed.

Figure 5. The Project Area shown on an aerial photograph.

Figure 6. Overview of the Project Area. View to the south.

Figure 7. Overview of drilling activities. View to the south.

Figure 8. Oblique view of soil recovered from a borehole.

December 7, 2023 MacNaughton monitored 100% of the excavations for a pit to repair a pipe (Figure 9). The pit measured approximately 6.0 ft x 6.0 ft x 4.0 ft (1.8 m x 1.8 m x 1.2 m). Soil from 0–4 ft (0–1.2 m) within the pit was brown (10YR4/4) sandy loam with cobbles and subangular gravel. A total of 5.33 yd^3 (4.08 cubic meters m^3) of excavated soil was monitored and six soil samples were screened. No cultural materials were observed.

Soils observed throughout the Project Area were sandy loam, similar to those predicted by the NRCS soil survey.

During monitoring, archaeologists identified no isolated artifacts, observed and recorded no new archaeological sites, and added no new cultural materials to the inventory of one previously recorded site.

Figure 9. Overview of the excavated pit.

SUMMARY AND CONCLUSIONS

Over the course of three days from December 5, 2023, to December 7, 2023, all ground disturbing activities were monitored by one Plateau CRM archaeologist. This monitoring covered roughly 0.04 acres of excavations, consisting of 5.85 yd^3 (4.47 m^3) of sediment.

Archaeological monitoring resulted in the identification of no isolated artifacts, no newly recorded archaeological sites, and changes to no previously recorded archaeological sites.

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ATTACHMENT D
Chemical Analytical Laboratory Reports and Data Validation Report

GeoEngineers

523 East Second Avenue, Spokane, Washington 99202, Telephone: 509.363.3125 www.geoengineers.com

Data Validation Report

Project:	City of Clarkston Street Shop — Environmental Services December 2023 Soil and Groundwater Samples
File:	0504-199-00
Date:	January 28, 2024

This report documents the results of a United States Environmental Protection Agency (USEPA)-defined Stage 2A data validation (USEPA Document 540-R-08-005; USEPA, 2009) of analytical data from the analyses of soil and groundwater samples collected as part of the December 2023 sampling event, and the associated laboratory and field quality control (QC) samples. The samples were obtained from the City of Clarkston Street Shop facility located at 1455 Bridge Street in Clarkston, Washington.

OBJECTIVE AND QUALITY CONTROL ELEMENTS

GeoEngineers, Inc. (GeoEngineers) completed the data validation consistent with the USEPA Contract Laboratory Program National Functional for Organic Superfund Methods Data Review (USEPA, 2020a) and Inorganic Superfund Methods Data Review (USEPA, 2020b) (National Functional Guidelines) to determine if the laboratory analytical results meet the project objectives and are usable for their intended purpose. Data usability was assessed by determining if:

- The samples were analyzed using well-defined and acceptable methods that provide reporting limits below applicable regulatory criteria;
- The precision and accuracy of the data are well-defined and sufficient to provide defensible data; and
- The quality assurance/quality control (QA/QC) procedures utilized by the laboratory meet acceptable industry practices and standards.

In accordance with the Quality Assurance Project Plan (QAPP), Appendix B of the Work Plan (GeoEngineers, 2023), the data validation included review of the following QC elements:

- Data Package Completeness
- Chain-of-Custody Documentation
- Holding Times and Sample Preservation
- Surrogate Recoveries
- Method and Trip Blanks
- Matrix Spikes/Matrix Spike Duplicates
- Laboratory Control Samples/Laboratory Control Sample Duplicates
- Field Duplicates
- Miscellaneous

VALIDATED SAMPLE DELIVERY GROUPS

This data validation included review of the sample delivery group (SDG) listed below in Table 1.

TABLE 1. SUMMARY OF VALIDATED SAMPLE DELIVERY GROUPS

Laboratory SDG	Samples Validated
590-22420-1	GEI056-B1(10-11), DUP:120523, GEI056-B1-120523, DUP-120523-2, GEI056-B2(16-17), GEI056-B2-120523, GEI056-B3(23-24), GEI056-B3-120623, GEI056-B4(23-24), GEI056-B4-120523, GEI056-B5(24-25), GEI056-B5-120623, GEI056-Comp-120623, Trip Blank (soil), Trip Blank (water)

CHEMICAL ANALYSIS PERFORMED

Eurofins Spokane, Environment Testing Northwest, LLC (Eurofins), located in Spokane, Washington, performed laboratory analyses on the samples using one or more of the following methods:

- Gasoline-Range Hydrocarbons (NWTPH-Gx) by Method NWTPH-Gx;
- Petroleum Hydrocarbons (NWTPH-Dx) by Method NWTPH-Dx;
- Volatile Organic Compounds (VOCs) by Method EPA8260D;
- 1,2-Dibromoethane (EDB) by Method EPA8011; and
- Total and Dissolved Metals by Methods EPA6010D and EPA7471B

DATA VALIDATION SUMMARY

The results for each of the QC elements are summarized below.

Data Package Completeness

Eurofins provided the required deliverables for the data validation according to the National Functional Guidelines. The laboratory followed adequate corrective action processes and the identified anomalies were discussed in the relevant laboratory case narrative.

Chain-of-Custody Documentation

Chain-of-custody (COC) forms were provided with the laboratory analytical reports. The COCs were accurate and complete when submitted to the laboratory.

Holding Times and Sample Preservation

The sample holding time is defined as the time that elapses between sample collection and sample analysis. Maximum holding time criteria exist for each analysis to help ensure that the analyte concentrations found at the time of analysis reflect the concentration present at the time of sample collection. Established holding times were met for each analysis. The sample cooler arrived at the laboratory within the appropriate temperatures of between two and six degrees Celsius.

Surrogate Recoveries

A surrogate compound is a compound that is chemically similar to the organic analytes of interest, but unlikely to be found in an environmental sample. Surrogates are used for organic analyses and are added to the samples, standards, and blanks to serve as an accuracy and specificity check of each analysis. The surrogates

are added to the samples at a known concentration and percent recoveries are calculated following analysis. The surrogate percent recoveries for field samples were within the laboratory control limits.

Method and Trip Blanks

Method Blanks

Method blanks are analyzed to ensure that laboratory procedures and reagents do not introduce measurable concentrations of the analytes of interest. A method blank was analyzed with each batch of samples, at a frequency of 1 per 20 samples. For each sample batch, method blanks for the applicable methods were analyzed at the required frequency. None of the analytes of interest were detected in the method blanks, with the following exceptions:

SDG 590-22420-1: (NWTPH-Dx) There was a positive result for diesel- and lube oil-range hydrocarbons in the method blank extracted on 12/8/2023. The positive result for diesel-range hydrocarbons was qualified as non-detected (U) in Sample GEI056-B2(16-17). The positive results for lube oil-range hydrocarbons were qualified as non-detected (U) in Samples GEI056-B2(16-17), GEI056-B3(23-24), GEI056-B4(23-24), and DUP:120523.

Trip Blanks

Trip blanks are analyzed to provide an indication as to whether volatile compounds have cross-contaminated other like samples within the transportation process to the laboratory. None of the analytes of interest were detected in the trip blanks, with the following exception:

SDG 590-22420-1: (NWTPH-Gx) There was a positive result for gasoline-range hydrocarbons in Sample Trip Blank (soil). There were no positive results for this target analyte or the positive result for this target analyte was greater than 2X the concentration in the trip blank in the associated field samples; therefore, no qualifications were required.

Matrix Spikes/Matrix Spike Duplicates

Since the actual analyte concentration in an environmental sample is not known, the accuracy of a particular analysis is usually inferred by performing a matrix spike (MS) analysis on one sample from the associated batch, known as the parent sample. One aliquot of the sample is analyzed in the normal manner and then a second aliquot of the sample is spiked with a known amount of analyte concentration and analyzed. From these analyses, a percent recovery is calculated. Matrix spike duplicate (MSD) analyses are generally performed for organic analyses as a precision check and analyzed in the same sequence as a matrix spike. Using the result values from the MS and MSD, the relative percent difference (RPD) is calculated. The percent recovery control limits for MS and MSD analyses are specified in the laboratory documents, as are the RPD control limits for MS/MSD sample sets.

One MS/MSD analysis should be performed for every analytical batch or every 20 field samples, whichever is more frequent. The frequency requirements were met for each analysis and the percent recovery and RPD values were within the proper control limits, with the following exception:

SDG 590-22420-1: (VOCs) The laboratory performed an MS/MSD sample set on Sample DUP:120523. The percent recovery for 1,2-Dichloroethane was greater than the control limits in the MS extracted on 12/8/2023;

however, the percent recovery for this target analyte was within the control limits in the corresponding MSD. No action was required for this outlier.

Laboratory Control Samples/Laboratory Control Sample Duplicates

A laboratory control sample (LCS) is a blank sample that is spiked with a known amount of analyte and then analyzed. An LCS is similar to an MS, but without the possibility of matrix interference. Given that matrix interference is not an issue, the LCS/LCSD control limits for accuracy and precision are usually more rigorous than for MS/MSD analyses. Additionally, data qualification based on LCS/LCSD analyses would apply to all samples in the associated batch, instead of just the parent sample. The percent recovery control limits for LCS and LCSD analyses are specified in the laboratory documents, as are the RPD control limits for LCS/LCSD sample sets.

One LCS/LCSD analysis should be performed for every analytical batch or every 20 field samples, whichever is more frequent. The frequency requirements were met for all analyses and the percent recovery and RPD values were within the proper control limits, with the following exception:

SDG 590-22420-1: (VOCs) The percent recovery for 1,2-Dichloroethane was greater than the control limits in the LCS extracted on 12/8/2023. There were no positive results for this target analyte in the associated field samples; therefore, no qualifications were required.

Field Duplicates

In order to assess precision, field duplicate samples were collected and analyzed along with the reviewed sample batches. The duplicate samples were analyzed for the same parameters as the associated parent samples. Precision is determined by calculating the RPD between each pair of samples. If one or more of the sample analytes has a concentration less than five times the reporting limit for that sample, then the absolute difference is used instead of the RPD. The RPD control limit for water is 30 percent. The RPD control limit for soil is 40 percent.

SDG 590-22420-1: Two field duplicate sample pairs, GEI056-B1(10-11)/DUP:120523 and GEI056-B1-120523/DUP-120523-2, were submitted with this SDG. The precision criteria for the target analytes were met for these sample pairs.

Miscellaneous

SDG 590-22420-1: (NWTPH-Dx) The positive results for diesel-range hydrocarbons in Samples GEI056-B1-120523, DUP-120523-2, GEI056-B2-120523, GEI056-B3-120623, GEI056-B4-120523, and GEI056-B5-120623 appear to be due to gasoline-range hydrocarbons overlap, as well as heavily weathered diesel, in the sample concentrations. For this reason, the positive results for this target analyte were qualified as estimated (J) in these samples.

The positive results for lube oil-range hydrocarbons in Samples GEI056-B3(23-24) and GEI056-B4(23-24) appear to be due to diesel-range hydrocarbons overlap in the sample concentrations. For this reason, the positive results for this target analyte were qualified as estimated (J) in these samples.

OVERALL ASSESSMENT

As was determined by this data validation, the laboratory followed the specified analytical methods. Accuracy was acceptable, as demonstrated by the surrogate, LCS/LCSD, and MS/MSD percent recovery values, with the exceptions noted above. Precision was acceptable, as demonstrated by the LCS/LCSD, MS/MSD, and field duplicate RPD values.

The data are acceptable for the intended use, with the following qualifications listed below in Table 2.

TABLE 2. SUMMARY OF QUALIFIED SAMPLES

Sample ID	Analyte	Qualifier	Reason
DUP:120523	Lube oil-range hydrocarbons	U	Method Blank Contamination
GEI056-B1-120523	Diesel-range hydrocarbons	J	See Miscellaneous
DUP-120523-2	Diesel-range hydrocarbons	J	See Miscellaneous
GEI056-B2(16-17)	Diesel-range hydrocarbons Lube oil-range hydrocarbons	U U	Method Blank Contamination Method Blank Contamination
GEI056-B2-120523	Diesel-range hydrocarbons	J	See Miscellaneous
GEI056-B3(23-24)	Lube oil-range hydrocarbons	UJ	Method Blank Contamination/See Miscellaneous
GEI056-B3-120623	Diesel-range hydrocarbons	J	See Miscellaneous
GEI056-B4(23-24)	Lube oil-range hydrocarbons	UJ	Method Blank Contamination/See Miscellaneous
GEI056-B4-120523	Diesel-range hydrocarbons	J	See Miscellaneous
GEI056-B5-120623	Diesel-range hydrocarbons	J	See Miscellaneous

REFERENCES

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GeoEngineers, Inc. (GeoEngineers). "Work Plan, City of Clarkston Street Shop," prepared for Washington State Department of Ecology. December 1, 2023.

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ANALYTICAL REPORT

PREPARED FOR

Attn: Bryce Hanson
GeoEngineers Inc
523 East Second Ave
Spokane, Washington 99202

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JOB DESCRIPTION

Clarkston Street Shop/0504-199-00

JOB NUMBER

590-22420-1

Eurofins Spokane
11922 East 1st Ave
Spokane WA 99206

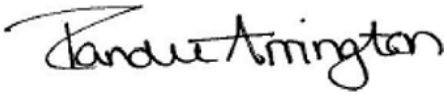
See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Northwest, LLC Project Manager.

Authorization



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Authorized for release by
Randee Arrington, Business Unit Manager
Randee.Arrington@et.eurofinsus.com
(509)924-9200

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Job Narrative
590-22420-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 12/7/2023 10:19 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.0°C

GC/MS VOA
Method 8260D: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with analytical batch 590-45078.

Method 8260D: The continuing calibration verification (CCV) associated with batch 590-45004 recovered above the upper control limit for 1,2-Dichloroethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method 8260D: The following sample was diluted due to the nature of the sample matrix: GEI056-B4(23-24) (590-22420-24). Elevated reporting limits (RLs) are provided.

Method 8260D: The laboratory control sample (LCS) for preparation batch 590-45010 and analytical batch 590-45036 recovered outside control limits for the following analytes: 1,2-Dichloroethane. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method NWTPH_Gx_MS: The following samples were diluted due to the nature of the sample matrix: GEI056-B3(23-24) (590-22420-17) and GEI056-B5(24-25) (590-22420-31). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
Method NWTPH_Dx: Detected hydrocarbons in the diesel range appear to be due to gasoline overlap as well as heavily weathered diesel.

GEI056-B1-120523 (590-22420-7), GEI056-B2-120523 (590-22420-14), GEI056-B3-120623 (590-22420-19), GEI056-B4-120523 (590-22420-26), GEI056-B5-120623 (590-22420-33) and DUP-120523 (590-22420-35)

Method NWTPH_Dx: The continuing calibration verification (CCV) associated with batch 590-44998 recovered above the upper control limit for Diesel Range Organics (DRO) (C10-C25). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: (CCVRT 590-44998/3), (590-22421-A-1-A) and (590-22421-A-1-B DU).

Method NWTPH_Dx: The method blank for preparation batch 590-44992 and analytical batch 590-44998 contained Diesel Range Organics (DRO) (C10-C25) and Residual Range Organics (RRO) (C25-C36) above the method detection limit. This target analyte concentration was less than the reporting limit (RL) in the method blank; therefore, re-extraction and/or re-analysis of samples was not performed.

Method NWTPH_Dx: Detected hydrocarbons in the oil range appear to be due to diesel overlap.

GEI056-B3(23-24) (590-22420-17) and GEI056-B4(23-24) (590-22420-24)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: GeoEngineers Inc
Job ID: 590-22420-1
Project/Site: Clarkston Street Shop/0504-199-00

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
590-22420-2	GEI056-B1(10-11)	Solid	12/05/23 08:15	12/07/23 10:19
590-22420-6	DUP:120523	Solid	12/05/23 10:00	12/07/23 10:19
590-22420-7	GEI056-B1-120523	Water	12/05/23 11:48	12/07/23 10:19
590-22420-10	GEI056-B2(16-17)	Solid	12/05/23 12:05	12/07/23 10:19
590-22420-14	GEI056-B2-120523	Water	12/05/23 15:00	12/07/23 10:19
590-22420-17	GEI056-B3(23-24)	Solid	12/06/23 08:20	12/07/23 10:19
590-22420-19	GEI056-B3-120623	Water	12/06/23 11:21	12/07/23 10:19
590-22420-24	GEI056-B4(23-24)	Solid	12/05/23 15:20	12/07/23 10:19
590-22420-26	GEI056-B4-120523	Water	12/05/23 17:06	12/07/23 10:19
590-22420-31	GEI056-B5(24-25)	Solid	12/06/23 14:50	12/07/23 10:19
590-22420-33	GEI056-B5-120623	Water	12/06/23 17:30	12/07/23 10:19
590-22420-34	GEI056-Comp-120623	Solid	12/06/23 12:10	12/07/23 10:19
590-22420-35	DUP-120523	Water	12/05/23 12:00	12/07/23 10:19
590-22420-36	Trip Blank	Water	12/05/23 00:00	12/07/23 10:19
590-22420-37	Trip Blank	Solid	12/05/23 00:00	12/07/23 10:19

Definitions/Glossary

Client: GeoEngineers Inc
Job ID: 590-22420-1
Project/Site: Clarkston Street Shop/0504-199-00

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Client Sample ID: GEI056-B1(10-11)
Lab Sample ID: 590-22420-2

Date Collected: 12/05/23 08:15
Matrix: Solid
Date Received: 12/07/23 10:19
Percent Solids: 92.3

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	ND	*+	0.12	0.026	mg/Kg	☼	12/08/23 12:15	12/08/23 19:08	1
Benzene	ND		0.024	0.012	mg/Kg	☼	12/08/23 12:15	12/08/23 19:08	1
Ethylbenzene	ND		0.12	0.019	mg/Kg	☼	12/08/23 12:15	12/08/23 19:08	1
m,p-Xylene	ND		0.47	0.034	mg/Kg	☼	12/08/23 12:15	12/08/23 19:08	1
Methyl tert-butyl ether	ND		0.059	0.035	mg/Kg	☼	12/08/23 12:15	12/08/23 19:08	1
Naphthalene	ND		0.24	0.033	mg/Kg	☼	12/08/23 12:15	12/08/23 19:08	1
o-Xylene	ND		0.24	0.027	mg/Kg	☼	12/08/23 12:15	12/08/23 19:08	1
Toluene	ND		0.12	0.053	mg/Kg	☼	12/08/23 12:15	12/08/23 19:08	1
Xylenes, Total	ND		0.71	0.061	mg/Kg	☼	12/08/23 12:15	12/08/23 19:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*118*		*79 - 124*	*12/08/23 12:15*	*12/08/23 19:08*	*1*
4-Bromofluorobenzene (Surr)	*104*		*66 - 129*	*12/08/23 12:15*	*12/08/23 19:08*	*1*
Dibromofluoromethane (Surr)	*116*		*80 - 120*	*12/08/23 12:15*	*12/08/23 19:08*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*	*12/08/23 12:15*	*12/08/23 19:08*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.9	2.1	mg/Kg	☼	12/08/23 12:15	12/08/23 19:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*41.5 - 162*	*12/08/23 12:15*	*12/08/23 19:08*	*1*

Method: SW846 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.083	0.036	ug/Kg	☼	12/11/23 10:40	12/11/23 21:11	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		11	4.5	mg/Kg	☼	12/08/23 08:38	12/08/23 15:09	1
Residual Range Organics (RRO) (C25-C36)	ND		27	5.4	mg/Kg	☼	12/08/23 08:38	12/08/23 15:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*100*		*50 - 150*	*12/08/23 08:38*	*12/08/23 15:09*	*1*
n-Triacontane-d62	*88*		*50 - 150*	*12/08/23 08:38*	*12/08/23 15:09*	*1*

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**4.8**		2.3	1.1	mg/Kg	☼	12/11/23 09:42	12/11/23 15:05	1

Client Sample ID: DUP:120523
Lab Sample ID: 590-22420-6

Date Collected: 12/05/23 10:00
Matrix: Solid
Date Received: 12/07/23 10:19
Percent Solids: 91.3

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	ND	F1 *+	0.15	0.032	mg/Kg	☼	12/08/23 12:15	12/08/23 19:51	1
Benzene	ND		0.030	0.015	mg/Kg	☼	12/08/23 12:15	12/08/23 19:51	1
Ethylbenzene	ND		0.15	0.024	mg/Kg	☼	12/08/23 12:15	12/08/23 19:51	1
m,p-Xylene	ND		0.59	0.042	mg/Kg	☼	12/08/23 12:15	12/08/23 19:51	1

Client Sample ID: DUP:120523
Lab Sample ID: 590-22420-6

Date Collected: 12/05/23 10:00
Matrix: Solid
Date Received: 12/07/23 10:19
Percent Solids: 91.3

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		0.074	0.044	mg/Kg	☼	12/08/23 12:15	12/08/23 19:51	1
Naphthalene	ND		0.30	0.041	mg/Kg	☼	12/08/23 12:15	12/08/23 19:51	1
o-Xylene	ND		0.30	0.034	mg/Kg	☼	12/08/23 12:15	12/08/23 19:51	1
Toluene	ND		0.15	0.067	mg/Kg	☼	12/08/23 12:15	12/08/23 19:51	1
Xylenes, Total	ND		0.89	0.076	mg/Kg	☼	12/08/23 12:15	12/08/23 19:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*113*		*79 - 124*	*12/08/23 12:15*	*12/08/23 19:51*	*1*
4-Bromofluorobenzene (Surr)	*103*		*66 - 129*	*12/08/23 12:15*	*12/08/23 19:51*	*1*
Dibromofluoromethane (Surr)	*112*		*80 - 120*	*12/08/23 12:15*	*12/08/23 19:51*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*	*12/08/23 12:15*	*12/08/23 19:51*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		7.4	2.7	mg/Kg	☼	12/08/23 12:15	12/08/23 19:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*41.5 - 162*	*12/08/23 12:15*	*12/08/23 19:51*	*1*

Method: SW846 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.087	0.038	ug/Kg	☼	12/11/23 10:40	12/11/23 21:27	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		11	4.6	mg/Kg	☼	12/08/23 08:38	12/08/23 15:30	1
Residual Range Organics (RRO) (C25-C36)	**6.8**	**J B**	27	5.5	mg/Kg	☼	12/08/23 08:38	12/08/23 15:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*103*		*50 - 150*	*12/08/23 08:38*	*12/08/23 15:30*	*1*
n-Triacontane-d62	*91*		*50 - 150*	*12/08/23 08:38*	*12/08/23 15:30*	*1*

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**3.8**		2.1	1.0	mg/Kg	☼	12/11/23 09:42	12/11/23 15:10	1

Client Sample ID: GEI056-B1-120523
Lab Sample ID: 590-22420-7

Date Collected: 12/05/23 11:48
Matrix: Water
Date Received: 12/07/23 10:19

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	ND		1.0	0.31	ug/L			12/11/23 20:16	1
Benzene	ND		0.40	0.093	ug/L			12/11/23 20:16	1
Ethylbenzene	ND		1.0	0.20	ug/L			12/11/23 20:16	1
m,p-Xylene	ND		2.0	0.28	ug/L			12/11/23 20:16	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			12/11/23 20:16	1
o-Xylene	ND		1.0	0.16	ug/L			12/11/23 20:16	1
Toluene	ND		1.0	0.31	ug/L			12/11/23 20:16	1
Xylenes, Total	ND		3.0	0.44	ug/L			12/11/23 20:16	1

Client Sample ID: GEI056-B1-120523
Lab Sample ID: 590-22420-7
Date Collected: 12/05/23 11:48
Matrix: Water
Date Received: 12/07/23 10:19

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*12/11/23 20:16*	*1*
4-Bromofluorobenzene (Surr)	*97*		*76 - 120*		*12/11/23 20:16*	*1*
Dibromofluoromethane (Surr)	*107*		*80 - 123*		*12/11/23 20:16*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*12/11/23 20:16*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150	54	ug/L			12/11/23 20:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*68.7 - 141*		*12/11/23 20:16*	*1*

Method: SW846 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	**0.0095**	**J**	0.010	0.0025	ug/L		12/11/23 12:35	12/11/23 15:45	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	**2.6**		0.23	0.11	mg/L		12/11/23 08:29	12/11/23 17:06	1
Residual Range Organics (RRO) (C25-C36)	**0.27**	**J**	0.39	0.12	mg/L		12/11/23 08:29	12/11/23 17:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*98*		*50 - 150*	*12/11/23 08:29*	*12/11/23 17:06*	*1*
n-Triacontane-d62	*88*		*50 - 150*	*12/11/23 08:29*	*12/11/23 17:06*	*1*

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.060	0.0051	mg/L		12/08/23 10:55	12/18/23 15:48	1

Method: SW846 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.060	0.0051	mg/L		12/18/23 17:27	12/19/23 11:06	1

Client Sample ID: GEI056-B2(16-17)
Lab Sample ID: 590-22420-10
Date Collected: 12/05/23 12:05
Matrix: Solid
Date Received: 12/07/23 10:19
Percent Solids: 91.9

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	ND	*+	0.11	0.023	mg/Kg	☼	12/08/23 12:15	12/08/23 21:16	1
Benzene	ND		0.022	0.011	mg/Kg	☼	12/08/23 12:15	12/08/23 21:16	1
Ethylbenzene	ND		0.11	0.017	mg/Kg	☼	12/08/23 12:15	12/08/23 21:16	1
m,p-Xylene	ND		0.43	0.031	mg/Kg	☼	12/08/23 12:15	12/08/23 21:16	1
Methyl tert-butyl ether	ND		0.054	0.032	mg/Kg	☼	12/08/23 12:15	12/08/23 21:16	1
Naphthalene	ND		0.22	0.030	mg/Kg	☼	12/08/23 12:15	12/08/23 21:16	1
o-Xylene	ND		0.22	0.025	mg/Kg	☼	12/08/23 12:15	12/08/23 21:16	1
Toluene	ND		0.11	0.049	mg/Kg	☼	12/08/23 12:15	12/08/23 21:16	1
Xylenes, Total	ND		0.65	0.056	mg/Kg	☼	12/08/23 12:15	12/08/23 21:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*115*		*79 - 124*	*12/08/23 12:15*	*12/08/23 21:16*	*1*

Client Sample ID: GEI056-B2(16-17)
Lab Sample ID: 590-22420-10

Date Collected: 12/05/23 12:05
Matrix: Solid
Date Received: 12/07/23 10:19
Percent Solids: 91.9

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*107*		*66 - 129*	*12/08/23 12:15*	*12/08/23 21:16*	*1*
Dibromofluoromethane (Surr)	*117*		*80 - 120*	*12/08/23 12:15*	*12/08/23 21:16*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*	*12/08/23 12:15*	*12/08/23 21:16*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.4	1.9	mg/Kg	☼	12/08/23 12:15	12/08/23 21:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*107*		*41.5 - 162*	*12/08/23 12:15*	*12/08/23 21:16*	*1*

Method: SW846 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.087	0.038	ug/Kg	☼	12/11/23 10:40	12/11/23 21:43	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	**5.9**	**J B**	11	4.4	mg/Kg	☼	12/08/23 08:38	12/08/23 15:51	1
Residual Range Organics (RRO) (C25-C36)	**10**	**J B**	26	5.3	mg/Kg	☼	12/08/23 08:38	12/08/23 15:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*98*		*50 - 150*	*12/08/23 08:38*	*12/08/23 15:51*	*1*
n-Triacontane-d62	*87*		*50 - 150*	*12/08/23 08:38*	*12/08/23 15:51*	*1*

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**3.4**		2.1	1.0	mg/Kg	☼	12/11/23 09:42	12/11/23 15:14	1

Client Sample ID: GEI056-B2-120523
Lab Sample ID: 590-22420-14

Date Collected: 12/05/23 15:00
Matrix: Water
Date Received: 12/07/23 10:19

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	ND		1.0	0.31	ug/L			12/11/23 20:37	1
Benzene	ND		0.40	0.093	ug/L			12/11/23 20:37	1
Ethylbenzene	ND		1.0	0.20	ug/L			12/11/23 20:37	1
m,p-Xylene	ND		2.0	0.28	ug/L			12/11/23 20:37	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			12/11/23 20:37	1
o-Xylene	ND		1.0	0.16	ug/L			12/11/23 20:37	1
Toluene	ND		1.0	0.31	ug/L			12/11/23 20:37	1
Xylenes, Total	ND		3.0	0.44	ug/L			12/11/23 20:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*		*12/11/23 20:37*	*1*
4-Bromofluorobenzene (Surr)	*100*		*76 - 120*		*12/11/23 20:37*	*1*
Dibromofluoromethane (Surr)	*107*		*80 - 123*		*12/11/23 20:37*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*12/11/23 20:37*	*1*

Client Sample ID: GEI056-B2-120523
Lab Sample ID: 590-22420-14
Date Collected: 12/05/23 15:00
Matrix: Water
Date Received: 12/07/23 10:19

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150	54	ug/L			12/11/23 20:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*68.7 - 141*		*12/11/23 20:37*	*1*

Method: SW846 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.010	0.0025	ug/L		12/11/23 12:35	12/11/23 16:01	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	**1.8**		0.23	0.11	mg/L		12/11/23 08:29	12/11/23 17:27	1
Residual Range Organics (RRO) (C25-C36)	**0.15**	**J**	0.39	0.12	mg/L		12/11/23 08:29	12/11/23 17:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*101*		*50 - 150*	*12/11/23 08:29*	*12/11/23 17:27*	*1*
n-Triacontane-d62	*93*		*50 - 150*	*12/11/23 08:29*	*12/11/23 17:27*	*1*

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.060	0.0051	mg/L		12/08/23 10:55	12/18/23 15:52	1

Method: SW846 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.060	0.0051	mg/L		12/18/23 17:27	12/19/23 11:30	1

Client Sample ID: GEI056-B3(23-24)
Lab Sample ID: 590-22420-17
Date Collected: 12/06/23 08:20
Matrix: Solid
Date Received: 12/07/23 10:19
Percent Solids: 91.7

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	ND	*+	0.10	0.023	mg/Kg	☼	12/08/23 12:15	12/08/23 21:37	1
Benzene	ND		0.021	0.010	mg/Kg	☼	12/08/23 12:15	12/08/23 21:37	1
Ethylbenzene	**0.058**	**J**	0.10	0.017	mg/Kg	☼	12/08/23 12:15	12/08/23 21:37	1
m,p-Xylene	**0.76**		0.42	0.030	mg/Kg	☼	12/08/23 12:15	12/08/23 21:37	1
Methyl tert-butyl ether	ND		0.052	0.031	mg/Kg	☼	12/08/23 12:15	12/08/23 21:37	1
Naphthalene	**1.4**		0.21	0.029	mg/Kg	☼	12/08/23 12:15	12/08/23 21:37	1
o-Xylene	**0.52**		0.21	0.024	mg/Kg	☼	12/08/23 12:15	12/08/23 21:37	1
Toluene	ND		0.10	0.047	mg/Kg	☼	12/08/23 12:15	12/08/23 21:37	1
Xylenes, Total	**1.3**		0.63	0.054	mg/Kg	☼	12/08/23 12:15	12/08/23 21:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*89*		*79 - 124*	*12/08/23 12:15*	*12/08/23 21:37*	*1*
4-Bromofluorobenzene (Surr)	*93*		*66 - 129*	*12/08/23 12:15*	*12/08/23 21:37*	*1*
Dibromofluoromethane (Surr)	*89*		*80 - 120*	*12/08/23 12:15*	*12/08/23 21:37*	*1*
Toluene-d8 (Surr)	*91*		*80 - 120*	*12/08/23 12:15*	*12/08/23 21:37*	*1*

Client Sample ID: GEI056-B3(23-24)
Lab Sample ID: 590-22420-17

Date Collected: 12/06/23 08:20
Matrix: Solid
Date Received: 12/07/23 10:19
Percent Solids: 91.7

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**200**	**J**	520	190	mg/Kg	☼	12/08/23 12:15	12/11/23 15:34	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*41.5 - 162*	*12/08/23 12:15*	*12/11/23 15:34*	*100*

Method: SW846 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.084	0.037	ug/Kg	☼	12/11/23 10:40	12/11/23 22:32	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	**930**	**B**	11	4.5	mg/Kg	☼	12/08/23 08:38	12/08/23 16:12	1
Residual Range Organics (RRO) (C25-C36)	**17**	**J B**	27	5.4	mg/Kg	☼	12/08/23 08:38	12/08/23 16:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*129*		*50 - 150*	*12/08/23 08:38*	*12/08/23 16:12*	*1*
n-Triacontane-d62	*93*		*50 - 150*	*12/08/23 08:38*	*12/08/23 16:12*	*1*

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**1.7**	**J**	2.5	1.2	mg/Kg	☼	12/11/23 09:42	12/11/23 15:18	1

Client Sample ID: GEI056-B3-120623
Lab Sample ID: 590-22420-19

Date Collected: 12/06/23 11:21
Matrix: Water
Date Received: 12/07/23 10:19

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	ND		1.0	0.31	ug/L			12/11/23 20:59	1
Benzene	ND		0.40	0.093	ug/L			12/11/23 20:59	1
Ethylbenzene	**11**		1.0	0.20	ug/L			12/11/23 20:59	1
m,p-Xylene	**190**		20	2.8	ug/L			12/14/23 14:48	10
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			12/11/23 20:59	1
o-Xylene	**140**		10	1.6	ug/L			12/14/23 14:48	10
Toluene	**0.59**	**J**	1.0	0.31	ug/L			12/11/23 20:59	1
Xylenes, Total	**330**		30	4.4	ug/L			12/14/23 14:48	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*12/11/23 20:59*	*1*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*		*12/14/23 14:48*	*10*
4-Bromofluorobenzene (Surr)	*87*		*76 - 120*		*12/11/23 20:59*	*1*
4-Bromofluorobenzene (Surr)	*101*		*76 - 120*		*12/14/23 14:48*	*10*
Dibromofluoromethane (Surr)	*105*		*80 - 123*		*12/11/23 20:59*	*1*
Dibromofluoromethane (Surr)	*106*		*80 - 123*		*12/14/23 14:48*	*10*
Toluene-d8 (Surr)	*102*		*80 - 120*		*12/11/23 20:59*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*12/14/23 14:48*	*10*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**5000**		150	54	ug/L			12/11/23 20:59	1

Client Sample ID: GEI056-B3-120623
Lab Sample ID: 590-22420-19
Date Collected: 12/06/23 11:21
Matrix: Water
Date Received: 12/07/23 10:19

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	*87*		*68.7 - 141*		*12/11/23 20:59*	*1*
4-Bromofluorobenzene (Surr)	*101*		*68.7 - 141*		*12/14/23 14:48*	*10*

Method: SW846 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.010	0.0025	ug/L		12/11/23 12:35	12/11/23 16:17	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	**2.8**		0.23	0.11	mg/L		12/11/23 08:29	12/11/23 17:48	1
Residual Range Organics (RRO) (C25-C36)	**0.20**	**J**	0.39	0.12	mg/L		12/11/23 08:29	12/11/23 17:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	*100*		*50 - 150*	*12/11/23 08:29*	*12/11/23 17:48*	*1*
n-Triacontane-d62	*94*		*50 - 150*	*12/11/23 08:29*	*12/11/23 17:48*	*1*

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.060	0.0051	mg/L		12/08/23 10:55	12/18/23 16:09	1

Method: SW846 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.060	0.0051	mg/L		12/18/23 17:27	12/19/23 11:35	1

Client Sample ID: GEI056-B4(23-24)
Lab Sample ID: 590-22420-24
Date Collected: 12/05/23 15:20
Matrix: Solid
Date Received: 12/07/23 10:19
Percent Solids: 90.2

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	ND	*+	1.3	0.28	mg/Kg	☼	12/08/23 12:15	12/11/23 15:56	10
Benzene	ND		0.26	0.13	mg/Kg	☼	12/08/23 12:15	12/11/23 15:56	10
Ethylbenzene	ND		1.3	0.21	mg/Kg	☼	12/08/23 12:15	12/11/23 15:56	10
m,p-Xylene	ND		5.1	0.37	mg/Kg	☼	12/08/23 12:15	12/11/23 15:56	10
Methyl tert-butyl ether	ND		0.64	0.38	mg/Kg	☼	12/08/23 12:15	12/11/23 15:56	10
Naphthalene	ND		2.6	0.36	mg/Kg	☼	12/08/23 12:15	12/11/23 15:56	10
o-Xylene	ND		2.6	0.29	mg/Kg	☼	12/08/23 12:15	12/11/23 15:56	10
Toluene	ND		1.3	0.58	mg/Kg	☼	12/08/23 12:15	12/11/23 15:56	10
Xylenes, Total	ND		7.7	0.66	mg/Kg	☼	12/08/23 12:15	12/11/23 15:56	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*105*		*79 - 124*	*12/08/23 12:15*	*12/11/23 15:56*	*10*
4-Bromofluorobenzene (Surr)	*105*		*66 - 129*	*12/08/23 12:15*	*12/11/23 15:56*	*10*
Dibromofluoromethane (Surr)	*107*		*80 - 120*	*12/08/23 12:15*	*12/11/23 15:56*	*10*
Toluene-d8 (Surr)	*105*		*80 - 120*	*12/08/23 12:15*	*12/11/23 15:56*	*10*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**1400**		64	23	mg/Kg	☼	12/08/23 12:15	12/11/23 15:56	10

Client Sample ID: GEI056-B4(23-24)
Lab Sample ID: 590-22420-24

Date Collected: 12/05/23 15:20
Matrix: Solid
Date Received: 12/07/23 10:19
Percent Solids: 90.2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*41.5 - 162*	*12/08/23 12:15*	*12/11/23 15:56*	*10*

Method: SW846 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.084	0.037	ug/Kg	☼	12/11/23 10:40	12/11/23 22:48	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	**1300**	**B**	11	4.6	mg/Kg	☼	12/08/23 08:38	12/08/23 16:33	1
Residual Range Organics (RRO) (C25-C36)	**24**	**J B**	27	5.5	mg/Kg	☼	12/08/23 08:38	12/08/23 16:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*120*		*50 - 150*	*12/08/23 08:38*	*12/08/23 16:33*	*1*
n-Triacontane-d62	*93*		*50 - 150*	*12/08/23 08:38*	*12/08/23 16:33*	*1*

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**1.6**	**J**	2.1	1.0	mg/Kg	☼	12/11/23 09:42	12/11/23 15:22	1

Client Sample ID: GEI056-B4-120523
Lab Sample ID: 590-22420-26

Date Collected: 12/05/23 17:06
Matrix: Water
Date Received: 12/07/23 10:19

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	ND		5.0	1.6	ug/L			12/08/23 20:58	5
Benzene	ND		2.0	0.47	ug/L			12/08/23 20:58	5
Ethylbenzene	ND		5.0	0.99	ug/L			12/08/23 20:58	5
m,p-Xylene	**2.4**	**J**	10	1.4	ug/L			12/08/23 20:58	5
Methyl tert-butyl ether	ND		5.0	0.80	ug/L			12/08/23 20:58	5
o-Xylene	ND		5.0	0.81	ug/L			12/08/23 20:58	5
Toluene	ND		5.0	1.6	ug/L			12/08/23 20:58	5
Xylenes, Total	**2.4**	**J**	15	2.2	ug/L			12/08/23 20:58	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*		*12/08/23 20:58*	*5*
4-Bromofluorobenzene (Surr)	*100*		*76 - 120*		*12/08/23 20:58*	*5*
Dibromofluoromethane (Surr)	*106*		*80 - 123*		*12/08/23 20:58*	*5*
Toluene-d8 (Surr)	*98*		*80 - 120*		*12/08/23 20:58*	*5*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**2000**		750	270	ug/L			12/11/23 21:20	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*68.7 - 141*		*12/11/23 21:20*	*5*

Method: SW846 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.010	0.0025	ug/L		12/11/23 12:35	12/11/23 16:34	1

Client Sample ID: GEI056-B4-120523
Lab Sample ID: 590-22420-26

Date Collected: 12/05/23 17:06
Matrix: Water
Date Received: 12/07/23 10:19

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	**11**		0.24	0.11	mg/L		12/11/23 08:29	12/11/23 18:09	1
Residual Range Organics (RRO) (C25-C36)	**0.39**		0.39	0.12	mg/L		12/11/23 08:29	12/11/23 18:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*100*		*50 - 150*	*12/11/23 08:29*	*12/11/23 18:09*	*1*
n-Triacontane-d62	*89*		*50 - 150*	*12/11/23 08:29*	*12/11/23 18:09*	*1*

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**0.060**		0.060	0.0051	mg/L		12/08/23 10:55	12/18/23 16:13	1

Method: SW846 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.060	0.0051	mg/L		12/18/23 17:27	12/19/23 12:33	1

Client Sample ID: GEI056-B5(24-25)
Lab Sample ID: 590-22420-31

Date Collected: 12/06/23 14:50
Matrix: Solid
Date Received: 12/07/23 10:19
Percent Solids: 91.3

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	ND	*+	0.098	0.021	mg/Kg	☼	12/08/23 12:15	12/08/23 22:20	1
Benzene	ND		0.020	0.0098	mg/Kg	☼	12/08/23 12:15	12/08/23 22:20	1
Ethylbenzene	ND		0.098	0.016	mg/Kg	☼	12/08/23 12:15	12/08/23 22:20	1
m,p-Xylene	ND		0.39	0.028	mg/Kg	☼	12/08/23 12:15	12/08/23 22:20	1
Methyl tert-butyl ether	ND		0.049	0.029	mg/Kg	☼	12/08/23 12:15	12/08/23 22:20	1
Naphthalene	**0.076**	**J**	0.20	0.027	mg/Kg	☼	12/08/23 12:15	12/08/23 22:20	1
o-Xylene	ND		0.20	0.023	mg/Kg	☼	12/08/23 12:15	12/08/23 22:20	1
Toluene	ND		0.098	0.044	mg/Kg	☼	12/08/23 12:15	12/08/23 22:20	1
Xylenes, Total	ND		0.59	0.051	mg/Kg	☼	12/08/23 12:15	12/08/23 22:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*112*		*79 - 124*	*12/08/23 12:15*	*12/08/23 22:20*	*1*
4-Bromofluorobenzene (Surr)	*96*		*66 - 129*	*12/08/23 12:15*	*12/08/23 22:20*	*1*
Dibromofluoromethane (Surr)	*115*		*80 - 120*	*12/08/23 12:15*	*12/08/23 22:20*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*	*12/08/23 12:15*	*12/08/23 22:20*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**250**	**J**	490	180	mg/Kg	☼	12/08/23 12:15	12/11/23 16:17	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*41.5 - 162*	*12/08/23 12:15*	*12/11/23 16:17*	*100*

Method: SW846 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.085	0.037	ug/Kg	☼	12/11/23 10:40	12/11/23 23:04	1

Client Sample ID: GEI056-B5(24-25)
Lab Sample ID: 590-22420-31
Date Collected: 12/06/23 14:50
Matrix: Solid
Date Received: 12/07/23 10:19
Percent Solids: 91.3

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	**100**	**B**	11	4.4	mg/Kg	☼	12/08/23 08:38	12/08/23 16:54	1
Residual Range Organics (RRO) (C25-C36)	ND		26	5.3	mg/Kg	☼	12/08/23 08:38	12/08/23 16:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*102*		*50 - 150*	*12/08/23 08:38*	*12/08/23 16:54*	*1*
n-Triacontane-d62	*84*		*50 - 150*	*12/08/23 08:38*	*12/08/23 16:54*	*1*

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**1.7**	**J**	2.5	1.2	mg/Kg	☼	12/11/23 09:42	12/11/23 15:26	1

Client Sample ID: GEI056-B5-120623
Lab Sample ID: 590-22420-33
Date Collected: 12/06/23 17:30
Matrix: Water
Date Received: 12/07/23 10:19

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	ND		1.0	0.31	ug/L			12/11/23 21:42	1
Benzene	ND		0.40	0.093	ug/L			12/11/23 21:42	1
Ethylbenzene	ND		1.0	0.20	ug/L			12/11/23 21:42	1
m,p-Xylene	**0.29**	**J**	2.0	0.28	ug/L			12/11/23 21:42	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			12/11/23 21:42	1
o-Xylene	ND		1.0	0.16	ug/L			12/11/23 21:42	1
Toluene	ND		1.0	0.31	ug/L			12/11/23 21:42	1
Xylenes, Total	ND		3.0	0.44	ug/L			12/11/23 21:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*12/11/23 21:42*	*1*
4-Bromofluorobenzene (Surr)	*101*		*76 - 120*		*12/11/23 21:42*	*1*
Dibromofluoromethane (Surr)	*108*		*80 - 123*		*12/11/23 21:42*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*12/11/23 21:42*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**290**		150	54	ug/L			12/11/23 21:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*68.7 - 141*		*12/11/23 21:42*	*1*

Method: SW846 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.010	0.0025	ug/L		12/11/23 12:35	12/11/23 16:50	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	**1.2**		0.23	0.11	mg/L		12/11/23 08:29	12/11/23 18:30	1
Residual Range Organics (RRO) (C25-C36)	ND		0.39	0.12	mg/L		12/11/23 08:29	12/11/23 18:30	1

Client Sample ID: GEI056-B5-120623
Lab Sample ID: 590-22420-33
Date Collected: 12/06/23 17:30
Matrix: Water
Date Received: 12/07/23 10:19

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*96*		*50 - 150*	*12/11/23 08:29*	*12/11/23 18:30*	*1*
n-Triacontane-d62	*86*		*50 - 150*	*12/11/23 08:29*	*12/11/23 18:30*	*1*

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.060	0.0051	mg/L		12/08/23 10:55	12/18/23 16:17	1

Method: SW846 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.060	0.0051	mg/L		12/18/23 17:27	12/19/23 12:37	1

Client Sample ID: GEI056-Comp-120623
Lab Sample ID: 590-22420-34
Date Collected: 12/06/23 12:10
Matrix: Solid
Date Received: 12/07/23 10:19
Percent Solids: 85.5

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**2.0**		0.91	0.36	mg/Kg	☼	12/11/23 09:42	12/11/23 15:30	1
Barium	**31**		0.91	0.24	mg/Kg	☼	12/11/23 09:42	12/11/23 15:30	1
Cadmium	ND		0.73	0.043	mg/Kg	☼	12/11/23 09:42	12/11/23 15:30	1
Chromium	**11**		0.91	0.13	mg/Kg	☼	12/11/23 09:42	12/11/23 15:30	1
Lead	**1.8**	**J**	2.2	1.1	mg/Kg	☼	12/11/23 09:42	12/11/23 15:30	1
Selenium	ND		3.6	2.2	mg/Kg	☼	12/11/23 09:42	12/11/23 15:30	1
Silver	ND		0.91	0.21	mg/Kg	☼	12/11/23 09:42	12/11/23 15:30	1

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		38	9.4	ug/Kg	☼	12/12/23 10:37	12/12/23 17:18	1

Client Sample ID: DUP-120523
Lab Sample ID: 590-22420-35
Date Collected: 12/05/23 12:00
Matrix: Water
Date Received: 12/07/23 10:19

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	ND		1.0	0.31	ug/L			12/11/23 22:04	1
Benzene	ND		0.40	0.093	ug/L			12/11/23 22:04	1
Ethylbenzene	ND		1.0	0.20	ug/L			12/11/23 22:04	1
m,p-Xylene	ND		2.0	0.28	ug/L			12/11/23 22:04	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			12/11/23 22:04	1
o-Xylene	ND		1.0	0.16	ug/L			12/11/23 22:04	1
Toluene	ND		1.0	0.31	ug/L			12/11/23 22:04	1
Xylenes, Total	ND		3.0	0.44	ug/L			12/11/23 22:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*12/11/23 22:04*	*1*
4-Bromofluorobenzene (Surr)	*100*		*76 - 120*		*12/11/23 22:04*	*1*
Dibromofluoromethane (Surr)	*107*		*80 - 123*		*12/11/23 22:04*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*12/11/23 22:04*	*1*

Client Sample ID: DUP-120523
Lab Sample ID: 590-22420-35
Date Collected: 12/05/23 12:00
Matrix: Water
Date Received: 12/07/23 10:19

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	55	J	150	54	ug/L			12/11/23 22:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*68.7 - 141*		*12/11/23 22:04*	*1*

Method: SW846 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.010	0.0025	ug/L		12/11/23 12:35	12/11/23 17:06	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	2.7		0.23	0.11	mg/L		12/11/23 08:29	12/11/23 18:51	1
Residual Range Organics (RRO) (C25-C36)	0.27	J	0.39	0.12	mg/L		12/11/23 08:29	12/11/23 18:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*100*		*50 - 150*	*12/11/23 08:29*	*12/11/23 18:51*	*1*
n-Triacontane-d62	*95*		*50 - 150*	*12/11/23 08:29*	*12/11/23 18:51*	*1*

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.060	0.0051	mg/L		12/08/23 10:55	12/18/23 16:21	1

Method: SW846 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.060	0.0051	mg/L		12/18/23 17:27	12/19/23 12:42	1

Client Sample ID: Trip Blank
Lab Sample ID: 590-22420-36
Date Collected: 12/05/23 00:00
Matrix: Water
Date Received: 12/07/23 10:19

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	ND		1.0	0.31	ug/L			12/11/23 22:47	1
Benzene	ND		0.40	0.093	ug/L			12/11/23 22:47	1
Ethylbenzene	ND		1.0	0.20	ug/L			12/11/23 22:47	1
m,p-Xylene	ND		2.0	0.28	ug/L			12/11/23 22:47	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			12/11/23 22:47	1
o-Xylene	ND		1.0	0.16	ug/L			12/11/23 22:47	1
Toluene	ND		1.0	0.31	ug/L			12/11/23 22:47	1
Xylenes, Total	ND		3.0	0.44	ug/L			12/11/23 22:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*		*12/11/23 22:47*	*1*
4-Bromofluorobenzene (Surr)	*101*		*76 - 120*		*12/11/23 22:47*	*1*
Dibromofluoromethane (Surr)	*108*		*80 - 123*		*12/11/23 22:47*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*12/11/23 22:47*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150	54	ug/L			12/11/23 22:47	1

Client Sample ID: Trip Blank
Lab Sample ID: 590-22420-36
Date Collected: 12/05/23 00:00
Matrix: Water
Date Received: 12/07/23 10:19

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	*101*		*68.7 - 141*		*12/11/23 22:47*	*1*

Client Sample ID: Trip Blank
Lab Sample ID: 590-22420-37
Date Collected: 12/05/23 00:00
Matrix: Solid
Date Received: 12/07/23 10:19

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	ND	*+	0.099	0.022	mg/Kg		12/08/23 12:15	12/08/23 22:41	1
Benzene	ND		0.020	0.0099	mg/Kg		12/08/23 12:15	12/08/23 22:41	1
Ethylbenzene	ND		0.099	0.016	mg/Kg		12/08/23 12:15	12/08/23 22:41	1
m,p-Xylene	ND		0.40	0.028	mg/Kg		12/08/23 12:15	12/08/23 22:41	1
Methyl tert-butyl ether	ND		0.050	0.030	mg/Kg		12/08/23 12:15	12/08/23 22:41	1
Naphthalene	ND		0.20	0.028	mg/Kg		12/08/23 12:15	12/08/23 22:41	1
o-Xylene	ND		0.20	0.023	mg/Kg		12/08/23 12:15	12/08/23 22:41	1
Toluene	ND		0.099	0.045	mg/Kg		12/08/23 12:15	12/08/23 22:41	1
Xylenes, Total	ND		0.60	0.051	mg/Kg		12/08/23 12:15	12/08/23 22:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*95*		*79 - 124*	*12/08/23 12:15*	*12/08/23 22:41*	*1*
4-Bromofluorobenzene (Surr)	*108*		*66 - 129*	*12/08/23 12:15*	*12/08/23 22:41*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 120*	*12/08/23 12:15*	*12/08/23 22:41*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*	*12/08/23 12:15*	*12/08/23 22:41*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**2.6**	**J**	5.0	1.8	mg/Kg		12/08/23 12:15	12/08/23 22:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	*108*		*41.5 - 162*	*12/08/23 12:15*	*12/08/23 22:41*	*1*

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 590-45001/7
Matrix: Water
Analysis Batch: 45001

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	ND		1.0	0.31	ug/L			12/08/23 12:39	1
Benzene	ND		0.40	0.093	ug/L			12/08/23 12:39	1
Ethylbenzene	ND		1.0	0.20	ug/L			12/08/23 12:39	1
m,p-Xylene	ND		2.0	0.28	ug/L			12/08/23 12:39	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			12/08/23 12:39	1
o-Xylene	ND		1.0	0.16	ug/L			12/08/23 12:39	1
Toluene	ND		1.0	0.31	ug/L			12/08/23 12:39	1
Xylenes, Total	ND		3.0	0.44	ug/L			12/08/23 12:39	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*		*12/08/23 12:39*	*1*
4-Bromofluorobenzene (Surr)	*100*		*76 - 120*		*12/08/23 12:39*	*1*
Dibromofluoromethane (Surr)	*103*		*80 - 123*		*12/08/23 12:39*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*12/08/23 12:39*	*1*

Lab Sample ID: LCS 590-45001/1004
Matrix: Water
Analysis Batch: 45001

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,2-Dichloroethane			10.0	10.3		ug/L		103	80 - 120		
Benzene			10.0	10.3		ug/L		103	80 - 120		
Ethylbenzene			10.0	10.6		ug/L		106	80 - 122		
m,p-Xylene			10.0	10.8		ug/L		108	80 - 125		
Methyl tert-butyl ether			10.0	11.9		ug/L		119	68 - 134		
o-Xylene			10.0	10.9		ug/L		109	80 - 130		
Toluene			10.0	9.84		ug/L		98	80 - 129		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*76 - 120*
Dibromofluoromethane (Surr)	*103*		*80 - 123*
Toluene-d8 (Surr)	*99*		*80 - 120*

Lab Sample ID: LCSD 590-45001/5
Matrix: Water
Analysis Batch: 45001

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2-Dichloroethane			10.0	10.1		ug/L		101	80 - 120	2	14
Benzene			10.0	9.96		ug/L		100	80 - 120	4	15
Ethylbenzene			10.0	10.2		ug/L		102	80 - 122	4	35
m,p-Xylene			10.0	10.4		ug/L		104	80 - 125	4	35
Methyl tert-butyl ether			10.0	11.9		ug/L		119	68 - 134	1	18
o-Xylene			10.0	10.5		ug/L		105	80 - 130	4	35
Toluene			10.0	9.33		ug/L		93	80 - 129	5	35

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 590-45001/5
Matrix: Water
Analysis Batch: 45001

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	100		80 - 120
4-Bromofluorobenzene (Surr)	98		76 - 120
Dibromofluoromethane (Surr)	101		80 - 123
Toluene-d8 (Surr)	98		80 - 120

Lab Sample ID: MB 590-45010/1-A
Matrix: Solid
Analysis Batch: 45004

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 45010

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	ND		0.10	0.022	mg/Kg		12/08/23 12:15	12/08/23 13:44	1
Benzene	ND		0.020	0.010	mg/Kg		12/08/23 12:15	12/08/23 13:44	1
Ethylbenzene	ND		0.10	0.016	mg/Kg		12/08/23 12:15	12/08/23 13:44	1
m,p-Xylene	ND		0.40	0.029	mg/Kg		12/08/23 12:15	12/08/23 13:44	1
Methyl tert-butyl ether	ND		0.050	0.030	mg/Kg		12/08/23 12:15	12/08/23 13:44	1
Naphthalene	ND		0.20	0.028	mg/Kg		12/08/23 12:15	12/08/23 13:44	1
o-Xylene	ND		0.20	0.023	mg/Kg		12/08/23 12:15	12/08/23 13:44	1
Toluene	ND		0.10	0.045	mg/Kg		12/08/23 12:15	12/08/23 13:44	1
Xylenes, Total	ND		0.60	0.052	mg/Kg		12/08/23 12:15	12/08/23 13:44	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		79 - 124	12/08/23 12:15	12/08/23 13:44	1
4-Bromofluorobenzene (Surr)	104		66 - 129	12/08/23 12:15	12/08/23 13:44	1
Dibromofluoromethane (Surr)	99		80 - 120	12/08/23 12:15	12/08/23 13:44	1
Toluene-d8 (Surr)	106		80 - 120	12/08/23 12:15	12/08/23 13:44	1

Lab Sample ID: LCS 590-45010/2-A
Matrix: Solid
Analysis Batch: 45004

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 45010

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2-Dichloroethane	0.500	0.687	*+	mg/Kg		137	77 - 126
Benzene	0.500	0.566		mg/Kg		113	80 - 128
Ethylbenzene	0.500	0.573		mg/Kg		115	80 - 127
m,p-Xylene	0.500	0.552		mg/Kg		110	80 - 131
Methyl tert-butyl ether	0.500	0.635		mg/Kg		127	69 - 132
Naphthalene	0.500	0.534		mg/Kg		107	57 - 131
o-Xylene	0.500	0.530		mg/Kg		106	78 - 128
Toluene	0.500	0.559		mg/Kg		112	79 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	100		79 - 124
4-Bromofluorobenzene (Surr)	94		66 - 129
Dibromofluoromethane (Surr)	96		80 - 120
Toluene-d8 (Surr)	96		80 - 120

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 590-22420-6 MS
Matrix: Solid
Analysis Batch: 45004

Client Sample ID: DUP:120523
Prep Type: Total/NA
Prep Batch: 45010

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,2-Dichloroethane	ND	F1 *+	0.740	0.967	F1	mg/Kg	☼	131	77 - 126
Benzene	ND		0.740	0.771		mg/Kg	☼	104	80 - 128
Ethylbenzene	ND		0.740	0.767		mg/Kg	☼	104	80 - 127
m,p-Xylene	ND		0.740	0.810		mg/Kg	☼	110	80 - 131
Methyl tert-butyl ether	ND		0.740	0.830		mg/Kg	☼	112	69 - 132
Naphthalene	ND		0.740	0.764		mg/Kg	☼	103	57 - 131
o-Xylene	ND		0.740	0.776		mg/Kg	☼	105	78 - 128
Toluene	ND		0.740	0.753		mg/Kg	☼	102	79 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*79 - 124*
4-Bromofluorobenzene (Surr)	*89*		*66 - 129*
Dibromofluoromethane (Surr)	*102*		*80 - 120*
Toluene-d8 (Surr)	*98*		*80 - 120*

Lab Sample ID: 590-22420-6 MSD
Matrix: Solid
Analysis Batch: 45004

Client Sample ID: DUP:120523
Prep Type: Total/NA
Prep Batch: 45010

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2-Dichloroethane	ND	F1 *+	0.740	0.927		mg/Kg	☼	125	77 - 126	4	18
Benzene	ND		0.740	0.751		mg/Kg	☼	101	80 - 128	3	17
Ethylbenzene	ND		0.740	0.739		mg/Kg	☼	100	80 - 127	4	19
m,p-Xylene	ND		0.740	0.764		mg/Kg	☼	103	80 - 131	6	19
Methyl tert-butyl ether	ND		0.740	0.779		mg/Kg	☼	105	69 - 132	6	32
Naphthalene	ND		0.740	0.750		mg/Kg	☼	101	57 - 131	2	34
o-Xylene	ND		0.740	0.758		mg/Kg	☼	102	78 - 128	2	19
Toluene	ND		0.740	0.734		mg/Kg	☼	99	79 - 130	3	21

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*106*		*79 - 124*
4-Bromofluorobenzene (Surr)	*91*		*66 - 129*
Dibromofluoromethane (Surr)	*101*		*80 - 120*
Toluene-d8 (Surr)	*99*		*80 - 120*

Lab Sample ID: 590-22420-2 DU
Matrix: Solid
Analysis Batch: 45004

Client Sample ID: GEI056-B1(10-11)
Prep Type: Total/NA
Prep Batch: 45010

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
1,2-Dichloroethane	ND	*+	ND	*+	mg/Kg	☼	NC	18
Benzene	ND		ND		mg/Kg	☼	NC	17
Ethylbenzene	ND		ND		mg/Kg	☼	NC	19
m,p-Xylene	ND		ND		mg/Kg	☼	NC	19
Methyl tert-butyl ether	ND		ND		mg/Kg	☼	NC	32
Naphthalene	ND		ND		mg/Kg	☼	NC	34
o-Xylene	ND		ND		mg/Kg	☼	NC	19
Toluene	ND		ND		mg/Kg	☼	NC	21

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 590-22420-2 DU
Matrix: Solid
Analysis Batch: 45004

Client Sample ID: GEI056-B1(10-11)
Prep Type: Total/NA
Prep Batch: 45010

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Xylenes, Total	ND			ND		mg/Kg	☼			NC	25

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*119*		*79 - 124*
4-Bromofluorobenzene (Surr)	*102*		*66 - 129*
Dibromofluoromethane (Surr)	*116*		*80 - 120*
Toluene-d8 (Surr)	*97*		*80 - 120*

Lab Sample ID: MB 590-45044/6
Matrix: Water
Analysis Batch: 45044

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	ND		1.0	0.31	ug/L			12/11/23 18:49	1
Benzene	ND		0.40	0.093	ug/L			12/11/23 18:49	1
Ethylbenzene	ND		1.0	0.20	ug/L			12/11/23 18:49	1
m,p-Xylene	ND		2.0	0.28	ug/L			12/11/23 18:49	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			12/11/23 18:49	1
o-Xylene	ND		1.0	0.16	ug/L			12/11/23 18:49	1
Toluene	ND		1.0	0.31	ug/L			12/11/23 18:49	1
Xylenes, Total	ND		3.0	0.44	ug/L			12/11/23 18:49	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*12/11/23 18:49*	*1*
4-Bromofluorobenzene (Surr)	*98*		*76 - 120*		*12/11/23 18:49*	*1*
Dibromofluoromethane (Surr)	*108*		*80 - 123*		*12/11/23 18:49*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*12/11/23 18:49*	*1*

Lab Sample ID: LCS 590-45044/1003
Matrix: Water
Analysis Batch: 45044

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,2-Dichloroethane			10.0	10.5		ug/L		105	80 - 120		
Benzene			10.0	10.5		ug/L		105	80 - 120		
Ethylbenzene			10.0	10.4		ug/L		104	80 - 122		
m,p-Xylene			10.0	10.6		ug/L		106	80 - 125		
Methyl tert-butyl ether			10.0	11.8		ug/L		118	68 - 134		
o-Xylene			10.0	10.9		ug/L		109	80 - 130		
Toluene			10.0	9.61		ug/L		96	80 - 129		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*76 - 120*
Dibromofluoromethane (Surr)	*103*		*80 - 123*
Toluene-d8 (Surr)	*97*		*80 - 120*

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 590-45044/4
Matrix: Water
Analysis Batch: 45044

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2-Dichloroethane			10.0	10.0		ug/L		100	80 - 120	4	14
Benzene			10.0	10.2		ug/L		102	80 - 120	3	15
Ethylbenzene			10.0	9.95		ug/L		100	80 - 122	5	35
m,p-Xylene			10.0	10.0		ug/L		100	80 - 125	5	35
Methyl tert-butyl ether			10.0	11.0		ug/L		110	68 - 134	7	18
o-Xylene			10.0	10.2		ug/L		102	80 - 130	7	35
Toluene			10.0	9.31		ug/L		93	80 - 129	3	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*76 - 120*
Dibromofluoromethane (Surr)	*105*		*80 - 123*
Toluene-d8 (Surr)	*99*		*80 - 120*

Lab Sample ID: MB 590-45078/8
Matrix: Water
Analysis Batch: 45078

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	ND		1.0	0.31	ug/L			12/14/23 14:26	1
Benzene	ND		0.40	0.093	ug/L			12/14/23 14:26	1
Ethylbenzene	ND		1.0	0.20	ug/L			12/14/23 14:26	1
m,p-Xylene	ND		2.0	0.28	ug/L			12/14/23 14:26	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			12/14/23 14:26	1
o-Xylene	ND		1.0	0.16	ug/L			12/14/23 14:26	1
Toluene	ND		1.0	0.31	ug/L			12/14/23 14:26	1
Xylenes, Total	ND		3.0	0.44	ug/L			12/14/23 14:26	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*12/14/23 14:26*	*1*
4-Bromofluorobenzene (Surr)	*98*		*76 - 120*		*12/14/23 14:26*	*1*
Dibromofluoromethane (Surr)	*109*		*80 - 123*		*12/14/23 14:26*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*12/14/23 14:26*	*1*

Lab Sample ID: LCS 590-45078/1005
Matrix: Water
Analysis Batch: 45078

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2-Dichloroethane			10.0	10.2		ug/L		102	80 - 120
Benzene			10.0	10.2		ug/L		102	80 - 120
Ethylbenzene			10.0	10.5		ug/L		105	80 - 122
m,p-Xylene			10.0	10.7		ug/L		107	80 - 125
Methyl tert-butyl ether			10.0	11.2		ug/L		112	68 - 134
o-Xylene			10.0	10.6		ug/L		106	80 - 130
Toluene			10.0	9.83		ug/L		98	80 - 129

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 590-45078/1005
Matrix: Water
Analysis Batch: 45078

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	98		80 - 120
4-Bromofluorobenzene (Surr)	99		76 - 120
Dibromofluoromethane (Surr)	103		80 - 123
Toluene-d8 (Surr)	100		80 - 120

Lab Sample ID: LCSD 590-45078/6
Matrix: Water
Analysis Batch: 45078

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2-Dichloroethane			10.0	10.2		ug/L		102	80 - 120	1	14
Benzene			10.0	9.86		ug/L		99	80 - 120	3	15
Ethylbenzene			10.0	9.90		ug/L		99	80 - 122	5	35
m,p-Xylene			10.0	10.3		ug/L		103	80 - 125	4	35
Methyl tert-butyl ether			10.0	12.0		ug/L		120	68 - 134	7	18
o-Xylene			10.0	10.3		ug/L		103	80 - 130	3	35
Toluene			10.0	9.46		ug/L		95	80 - 129	4	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	100		80 - 120
4-Bromofluorobenzene (Surr)	99		76 - 120
Dibromofluoromethane (Surr)	105		80 - 123
Toluene-d8 (Surr)	99		80 - 120

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Lab Sample ID: MB 590-45010/1-A
Matrix: Solid
Analysis Batch: 45005

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 45010

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.0	1.8	mg/Kg		12/08/23 12:15	12/08/23 13:44	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		41.5 - 162	12/08/23 12:15	12/08/23 13:44	1

Lab Sample ID: LCS 590-45010/3-A
Matrix: Solid
Analysis Batch: 45005

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 45010

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline			50.0	56.4		mg/Kg		113	74.4 - 124		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	94		41.5 - 162

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS) (Continued)

Lab Sample ID: 590-22420-6 MS
Matrix: Solid
Analysis Batch: 45005

Client Sample ID: DUP:120523
Prep Type: Total/NA
Prep Batch: 45010

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	89		41.5 - 162

Lab Sample ID: 590-22420-6 MSD
Matrix: Solid
Analysis Batch: 45005

Client Sample ID: DUP:120523
Prep Type: Total/NA
Prep Batch: 45010

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	91		41.5 - 162

Lab Sample ID: 590-22420-2 DU
Matrix: Solid
Analysis Batch: 45005

Client Sample ID: GEI056-B1(10-11)
Prep Type: Total/NA
Prep Batch: 45010

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Gasoline	ND			ND		mg/Kg	☼			NC	32.3

Surrogate	DU %Recovery	DU Qualifier	Limits
4-Bromofluorobenzene (Surr)	102		41.5 - 162

Lab Sample ID: MB 590-45045/6
Matrix: Water
Analysis Batch: 45045

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150	54	ug/L			12/11/23 18:49	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		68.7 - 141		12/11/23 18:49	1

Lab Sample ID: LCS 590-45045/1005
Matrix: Water
Analysis Batch: 45045

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline			1000	925		ug/L		92	80 - 120		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	99		68.7 - 141

Lab Sample ID: LCSD 590-45045/1016
Matrix: Water
Analysis Batch: 45045

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline			1000	869		ug/L		87	80 - 120	6	20

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS) (Continued)

Lab Sample ID: LCSD 590-45045/1016
Matrix: Water
Analysis Batch: 45045

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*68.7 - 141*

Lab Sample ID: MB 590-45079/8
Matrix: Water
Analysis Batch: 45079

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150	54	ug/L			12/14/23 14:26	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*68.7 - 141*		*12/14/23 14:26*	*1*

Lab Sample ID: LCS 590-45079/1007
Matrix: Water
Analysis Batch: 45079

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline			1000	916		ug/L		92	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*68.7 - 141*

Lab Sample ID: LCSD 590-45079/1018
Matrix: Water
Analysis Batch: 45079

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline			1000	870		ug/L		87	80 - 120	5	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*68.7 - 141*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Lab Sample ID: MB 590-45027/2-A
Matrix: Solid
Analysis Batch: 45038

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 45027

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.080	0.035	ug/Kg		12/11/23 10:40	12/11/23 20:38	1

Lab Sample ID: LCS 590-45027/3-A
Matrix: Solid
Analysis Batch: 45038

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 45027

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,2-Dibromoethane (EDB)			1.00	1.23		ug/Kg		123	60 - 140		

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC) (Continued)

Lab Sample ID: 590-22420-10 MS
Matrix: Solid
Analysis Batch: 45038

Client Sample ID: GEI056-B2(16-17)
Prep Type: Total/NA
Prep Batch: 45027

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,2-Dibromoethane (EDB)	ND		1.07	0.927		ug/Kg	☼	87	60 - 140

Lab Sample ID: 590-22420-10 MSD
Matrix: Solid
Analysis Batch: 45038

Client Sample ID: GEI056-B2(16-17)
Prep Type: Total/NA
Prep Batch: 45027

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2-Dibromoethane (EDB)	ND		1.08	1.03		ug/Kg	☼	95	60 - 140	11	20

Lab Sample ID: MB 590-45034/1-A
Matrix: Water
Analysis Batch: 45038

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 45034

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.010	0.0025	ug/L		12/11/23 12:35	12/11/23 14:55	1

Lab Sample ID: LCS 590-45034/2-A
Matrix: Water
Analysis Batch: 45038

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 45034

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2-Dibromoethane (EDB)	0.125	0.111		ug/L		89	60 - 140

Lab Sample ID: LCSD 590-45034/3-A
Matrix: Water
Analysis Batch: 45038

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 45034

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2-Dibromoethane (EDB)	0.125	0.0943		ug/L		75	60 - 140	16	20

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 590-44992/1-A
Matrix: Solid
Analysis Batch: 44998

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 44992

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	9.56	J	10	4.2	mg/Kg		12/08/23 08:38	12/08/23 12:02	1
Residual Range Organics (RRO) (C25-C36)	7.11	J	25	5.0	mg/Kg		12/08/23 08:38	12/08/23 12:02	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*97*		*50 - 150*	*12/08/23 08:38*	*12/08/23 12:02*	*1*
n-Triacontane-d62	*77*		*50 - 150*	*12/08/23 08:38*	*12/08/23 12:02*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: LCS 590-44992/2-A
Matrix: Solid
Analysis Batch: 44998

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 44992

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Diesel Range Organics (DRO) (C10-C25)	66.7	75.4		mg/Kg		113	50 - 150
Residual Range Organics (RRO) (C25-C36)	66.7	70.4		mg/Kg		106	50 - 150

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl	*97*		*50 - 150*
n-Triacontane-d62	*89*		*50 - 150*

Lab Sample ID: MB 590-45022/1-A
Matrix: Water
Analysis Batch: 45039

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 45022

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		0.24	0.11	mg/L		12/11/23 08:29	12/11/23 15:42	1
Residual Range Organics (RRO) (C25-C36)	ND		0.40	0.12	mg/L		12/11/23 08:29	12/11/23 15:42	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*96*		*50 - 150*	*12/11/23 08:29*	*12/11/23 15:42*	*1*
n-Triacontane-d62	*82*		*50 - 150*	*12/11/23 08:29*	*12/11/23 15:42*	*1*

Lab Sample ID: LCS 590-45022/2-A
Matrix: Water
Analysis Batch: 45039

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 45022

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Diesel Range Organics (DRO) (C10-C25)	1.60	1.55		mg/L		97	50 - 150
Residual Range Organics (RRO) (C25-C36)	1.60	1.73		mg/L		108	50 - 150

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl	*98*		*50 - 150*
n-Triacontane-d62	*92*		*50 - 150*

Lab Sample ID: LCSD 590-45022/3-A
Matrix: Water
Analysis Batch: 45039

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 45022

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Diesel Range Organics (DRO) (C10-C25)	1.60	1.30		mg/L		81	50 - 150	17	25
Residual Range Organics (RRO) (C25-C36)	1.60	1.53		mg/L		96	50 - 150	12	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
o-Terphenyl	*90*		*50 - 150*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: LCSD 590-45022/3-A
Matrix: Water
Analysis Batch: 45039

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 45022

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
n-Triacontane-d62	*78*		*50 - 150*

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 590-45025/2-A
Matrix: Solid
Analysis Batch: 45048

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 45025

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		1.3	0.50	mg/Kg		12/11/23 09:42	12/11/23 15:48	1
Barium	ND		1.3	0.34	mg/Kg		12/11/23 09:42	12/11/23 15:48	1
Cadmium	ND		1.0	0.059	mg/Kg		12/11/23 09:42	12/11/23 15:48	1
Chromium	ND		1.3	0.18	mg/Kg		12/11/23 09:42	12/11/23 15:48	1
Lead	ND		3.0	1.5	mg/Kg		12/11/23 09:42	12/11/23 15:48	1
Selenium	ND		5.0	3.0	mg/Kg		12/11/23 09:42	12/11/23 15:48	1
Silver	ND		1.3	0.29	mg/Kg		12/11/23 09:42	12/11/23 15:48	1

Lab Sample ID: LCS 590-45025/1-A
Matrix: Solid
Analysis Batch: 45048

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 45025

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	100	97.2		mg/Kg		97	80 - 120
Barium	100	96.5		mg/Kg		96	80 - 120
Cadmium	50.0	49.8		mg/Kg		100	80 - 120
Chromium	50.0	50.7		mg/Kg		101	80 - 120
Lead	50.0	50.6		mg/Kg		101	80 - 120
Selenium	100	95.9		mg/Kg		96	80 - 120
Silver	5.00	5.68		mg/Kg		114	80 - 120

Lab Sample ID: MB 590-44999/2-A
Matrix: Water
Analysis Batch: 45018

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 44999

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.060	0.0051	mg/L		12/08/23 10:54	12/08/23 14:17	1

Lab Sample ID: LCS 590-44999/1-A
Matrix: Water
Analysis Batch: 45018

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 44999

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Lead	1.00	1.06		mg/L		106	80 - 120

Lab Sample ID: MB 590-45148/2-B
Matrix: Water
Analysis Batch: 45163

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 45147

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.060	0.0051	mg/L		12/18/23 17:27	12/19/23 11:02	1

Method: 6010D - Metals (ICP)

Lab Sample ID: LCS 590-45148/1-B
Matrix: Water
Analysis Batch: 45163

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 45147

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Lead			0.500	0.556		mg/L		111	80 - 120		

Lab Sample ID: 590-22420-7 MS
Matrix: Water
Analysis Batch: 45163

Client Sample ID: GEI056-B1-120523
Prep Type: Dissolved
Prep Batch: 45147

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Lead	ND		0.500	0.550		mg/L		110	75 - 125		

Lab Sample ID: 590-22420-7 MSD
Matrix: Water
Analysis Batch: 45163

Client Sample ID: GEI056-B1-120523
Prep Type: Dissolved
Prep Batch: 45147

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Lead	ND		0.500	0.523		mg/L		105	75 - 125	5	20

Lab Sample ID: 590-22420-7 DU
Matrix: Water
Analysis Batch: 45163

Client Sample ID: GEI056-B1-120523
Prep Type: Dissolved
Prep Batch: 45147

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Lead	ND			ND		mg/L				NC	20

Method: 7471B - Mercury (CVAA)

Lab Sample ID: MB 590-45054/9-A
Matrix: Solid
Analysis Batch: 45068

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 45054

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		50	12	ug/Kg		12/12/23 10:36	12/12/23 17:05	1

Lab Sample ID: LCS 590-45054/8-A
Matrix: Solid
Analysis Batch: 45068

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 45054

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Hg			200	207		ug/Kg		104	80 - 120		

Lab Chronicle

Client: GeoEngineers Inc
Job ID: 590-22420-1
Project/Site: Clarkston Street Shop/0504-199-00

Client Sample ID: GEI056-B1(10-11)
Lab Sample ID: 590-22420-2
Date Collected: 12/05/23 08:15
Matrix: Solid
Date Received: 12/07/23 10:19

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			44987	12/07/23 14:30	MRV	EET SPK

Client Sample ID: GEI056-B1(10-11)
Lab Sample ID: 590-22420-2
Date Collected: 12/05/23 08:15
Matrix: Solid
Date Received: 12/07/23 10:19
Percent Solids: 92.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			9.871 g	10 mL	45010	12/08/23 12:15	JSP	EET SPK
Total/NA	Analysis	8260D		1	0.86 mL	43 mL	45004	12/08/23 19:08	JSP	EET SPK
Total/NA	Prep	5035			9.871 g	10 mL	45010	12/08/23 12:15	JSP	EET SPK
Total/NA	Analysis	NWTPH-Gx		1	0.86 mL	43 mL	45005	12/08/23 19:08	JSP	EET SPK
Total/NA	Prep	8011			10.40 g	2 mL	45027	12/11/23 10:40	MRV	EET SPK
Total/NA	Analysis	8011		1	1 mL	1 mL	45038	12/11/23 21:11	NMI	EET SPK
Total/NA	Prep	3550C			15.02 g	5 mL	44992	12/08/23 08:38	MRV	EET SPK
Total/NA	Analysis	NWTPH-Dx		1	1 mL	1 mL	44998	12/08/23 15:09	NMI	EET SPK
Total/NA	Prep	3050B			1.41 g	50 mL	45025	12/11/23 09:42	AMB	EET SPK
Total/NA	Analysis	6010D		1			45050	12/11/23 15:05	AMB	EET SPK

Client Sample ID: DUP:120523
Lab Sample ID: 590-22420-6
Date Collected: 12/05/23 10:00
Matrix: Solid
Date Received: 12/07/23 10:19

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			44987	12/07/23 14:30	MRV	EET SPK

Client Sample ID: DUP:120523
Lab Sample ID: 590-22420-6
Date Collected: 12/05/23 10:00
Matrix: Solid
Date Received: 12/07/23 10:19
Percent Solids: 91.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			7.919 g	10 mL	45010	12/08/23 12:15	JSP	EET SPK
Total/NA	Analysis	8260D		1	0.86 mL	43 mL	45004	12/08/23 19:51	JSP	EET SPK
Total/NA	Prep	5035			7.919 g	10 mL	45010	12/08/23 12:15	JSP	EET SPK
Total/NA	Analysis	NWTPH-Gx		1	0.86 mL	43 mL	45005	12/08/23 19:51	JSP	EET SPK
Total/NA	Prep	8011			10.08 g	2 mL	45027	12/11/23 10:40	MRV	EET SPK
Total/NA	Analysis	8011		1	1 mL	1 mL	45038	12/11/23 21:27	NMI	EET SPK
Total/NA	Prep	3550C			15.04 g	5 mL	44992	12/08/23 08:38	MRV	EET SPK
Total/NA	Analysis	NWTPH-Dx		1	1 mL	1 mL	44998	12/08/23 15:30	NMI	EET SPK
Total/NA	Prep	3050B			1.54 g	50 mL	45025	12/11/23 09:42	AMB	EET SPK
Total/NA	Analysis	6010D		1			45050	12/11/23 15:10	AMB	EET SPK

Lab Chronicle

Client: GeoEngineers Inc
Job ID: 590-22420-1
Project/Site: Clarkston Street Shop/0504-199-00

Client Sample ID: GEI056-B1-120523
Lab Sample ID: 590-22420-7
Date Collected: 12/05/23 11:48
Matrix: Water
Date Received: 12/07/23 10:19

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	43 mL	43 mL	45044	12/11/23 20:16	JSP	EET SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	45045	12/11/23 20:16	JSP	EET SPK
Total/NA	Prep	8011			80 mL	2 mL	45034	12/11/23 12:35	MRV	EET SPK
Total/NA	Analysis	8011		1	1 mL	1 mL	45038	12/11/23 15:45	NMI	EET SPK
Total/NA	Prep	3510C			257.5 mL	2 mL	45022	12/11/23 08:29	MRV	EET SPK
Total/NA	Analysis	NWTPH-Dx		1	1 mL	1 mL	45039	12/11/23 17:06	NMI	EET SPK
Dissolved	Filtration	FILTRATION			250 mL	250 mL	45148	12/18/23 17:26	AMB	EET SPK
Dissolved	Prep	3005A			50 mL	50 mL	45147	12/18/23 17:27	AMB	EET SPK
Dissolved	Analysis	6010D		1			45163	12/19/23 11:06	AMB	EET SPK
Total Recoverable	Prep	3005A			50 mL	50 mL	44999	12/08/23 10:55	AMB	EET SPK
Total Recoverable	Analysis	6010D		1			45149	12/18/23 15:48	AMB	EET SPK

Client Sample ID: GEI056-B2(16-17)
Lab Sample ID: 590-22420-10
Date Collected: 12/05/23 12:05
Matrix: Solid
Date Received: 12/07/23 10:19

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			44987	12/07/23 14:30	MRV	EET SPK

Client Sample ID: GEI056-B2(16-17)
Lab Sample ID: 590-22420-10
Date Collected: 12/05/23 12:05
Matrix: Solid
Date Received: 12/07/23 10:19
Percent Solids: 91.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			10.987 g	10 mL	45010	12/08/23 12:15	JSP	EET SPK
Total/NA	Analysis	8260D		1	0.86 mL	43 mL	45004	12/08/23 21:16	JSP	EET SPK
Total/NA	Prep	5035			10.987 g	10 mL	45010	12/08/23 12:15	JSP	EET SPK
Total/NA	Analysis	NWTPH-Gx		1	0.86 mL	43 mL	45005	12/08/23 21:16	JSP	EET SPK
Total/NA	Prep	8011			10.05 g	2 mL	45027	12/11/23 10:40	MRV	EET SPK
Total/NA	Analysis	8011		1	1 mL	1 mL	45038	12/11/23 21:43	NMI	EET SPK
Total/NA	Prep	3550C			15.44 g	5 mL	44992	12/08/23 08:38	MRV	EET SPK
Total/NA	Analysis	NWTPH-Dx		1	1 mL	1 mL	44998	12/08/23 15:51	NMI	EET SPK
Total/NA	Prep	3050B			1.56 g	50 mL	45025	12/11/23 09:42	AMB	EET SPK
Total/NA	Analysis	6010D		1			45050	12/11/23 15:14	AMB	EET SPK

Client Sample ID: GEI056-B2-120523
Lab Sample ID: 590-22420-14
Date Collected: 12/05/23 15:00
Matrix: Water
Date Received: 12/07/23 10:19

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	43 mL	43 mL	45044	12/11/23 20:37	JSP	EET SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	45045	12/11/23 20:37	JSP	EET SPK
Total/NA	Prep	8011			80 mL	2 mL	45034	12/11/23 12:35	MRV	EET SPK
Total/NA	Analysis	8011		1	1 mL	1 mL	45038	12/11/23 16:01	NMI	EET SPK

Lab Chronicle

Client: GeoEngineers Inc
Job ID: 590-22420-1
Project/Site: Clarkston Street Shop/0504-199-00

Client Sample ID: GEI056-B2-120523
Lab Sample ID: 590-22420-14
Date Collected: 12/05/23 15:00
Matrix: Water
Date Received: 12/07/23 10:19

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			256.1 mL	2 mL	45022	12/11/23 08:29	MRV	EET SPK
Total/NA	Analysis	NWTPH-Dx		1	1 mL	1 mL	45039	12/11/23 17:27	NMI	EET SPK
Dissolved	Filtration	FILTRATION			250 mL	250 mL	45148	12/18/23 17:26	AMB	EET SPK
Dissolved	Prep	3005A			50 mL	50 mL	45147	12/18/23 17:27	AMB	EET SPK
Dissolved	Analysis	6010D		1			45163	12/19/23 11:30	AMB	EET SPK
Total Recoverable	Prep	3005A			50 mL	50 mL	44999	12/08/23 10:55	AMB	EET SPK
Total Recoverable	Analysis	6010D		1			45149	12/18/23 15:52	AMB	EET SPK

Client Sample ID: GEI056-B3(23-24)
Lab Sample ID: 590-22420-17
Date Collected: 12/06/23 08:20
Matrix: Solid
Date Received: 12/07/23 10:19

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			44987	12/07/23 14:30	MRV	EET SPK

Client Sample ID: GEI056-B3(23-24)
Lab Sample ID: 590-22420-17
Date Collected: 12/06/23 08:20
Matrix: Solid
Date Received: 12/07/23 10:19
Percent Solids: 91.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			11.361 g	10 mL	45010	12/08/23 12:15	JSP	EET SPK
Total/NA	Analysis	8260D		1	0.86 mL	43 mL	45004	12/08/23 21:37	JSP	EET SPK
Total/NA	Prep	5035			11.361 g	10 mL	45010	12/08/23 12:15	JSP	EET SPK
Total/NA	Analysis	NWTPH-Gx		100	0.86 mL	43 mL	45035	12/11/23 15:34	JSP	EET SPK
Total/NA	Prep	8011			10.33 g	2 mL	45027	12/11/23 10:40	MRV	EET SPK
Total/NA	Analysis	8011		1	1 mL	1 mL	45038	12/11/23 22:32	NMI	EET SPK
Total/NA	Prep	3550C			15.26 g	5 mL	44992	12/08/23 08:38	MRV	EET SPK
Total/NA	Analysis	NWTPH-Dx		1	1 mL	1 mL	44998	12/08/23 16:12	NMI	EET SPK
Total/NA	Prep	3050B			1.31 g	50 mL	45025	12/11/23 09:42	AMB	EET SPK
Total/NA	Analysis	6010D		1			45050	12/11/23 15:18	AMB	EET SPK

Client Sample ID: GEI056-B3-120623
Lab Sample ID: 590-22420-19
Date Collected: 12/06/23 11:21
Matrix: Water
Date Received: 12/07/23 10:19

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	43 mL	43 mL	45044	12/11/23 20:59	JSP	EET SPK
Total/NA	Analysis	8260D		10	43 mL	43 mL	45078	12/14/23 14:48	JSP	EET SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	45045	12/11/23 20:59	JSP	EET SPK
Total/NA	Analysis	NWTPH-Gx		10	43 mL	43 mL	45079	12/14/23 14:48	JSP	EET SPK
Total/NA	Prep	8011			80 mL	2 mL	45034	12/11/23 12:35	MRV	EET SPK
Total/NA	Analysis	8011		1	1 mL	1 mL	45038	12/11/23 16:17	NMI	EET SPK
Total/NA	Prep	3510C			255.9 mL	2 mL	45022	12/11/23 08:29	MRV	EET SPK
Total/NA	Analysis	NWTPH-Dx		1	1 mL	1 mL	45039	12/11/23 17:48	NMI	EET SPK

Lab Chronicle

Client: GeoEngineers Inc
Job ID: 590-22420-1
Project/Site: Clarkston Street Shop/0504-199-00

Client Sample ID: GEI056-B3-120623
Lab Sample ID: 590-22420-19
Date Collected: 12/06/23 11:21
Matrix: Water
Date Received: 12/07/23 10:19

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			250 mL	250 mL	45148	12/18/23 17:26	AMB	EET SPK
Dissolved	Prep	3005A			50 mL	50 mL	45147	12/18/23 17:27	AMB	EET SPK
Dissolved	Analysis	6010D		1			45163	12/19/23 11:35	AMB	EET SPK
Total Recoverable	Prep	3005A			50 mL	50 mL	44999	12/08/23 10:55	AMB	EET SPK
Total Recoverable	Analysis	6010D		1			45149	12/18/23 16:09	AMB	EET SPK

Client Sample ID: GEI056-B4(23-24)
Lab Sample ID: 590-22420-24
Date Collected: 12/05/23 15:20
Matrix: Solid
Date Received: 12/07/23 10:19

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			44987	12/07/23 14:30	MRV	EET SPK

Client Sample ID: GEI056-B4(23-24)
Lab Sample ID: 590-22420-24
Date Collected: 12/05/23 15:20
Matrix: Solid
Date Received: 12/07/23 10:19
Percent Solids: 90.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			9.497 g	10 mL	45010	12/08/23 12:15	JSP	EET SPK
Total/NA	Analysis	8260D		10	0.86 mL	43 mL	45036	12/11/23 15:56	JSP	EET SPK
Total/NA	Prep	5035			9.497 g	10 mL	45010	12/08/23 12:15	JSP	EET SPK
Total/NA	Analysis	NWTPH-Gx		10	0.86 mL	43 mL	45035	12/11/23 15:56	JSP	EET SPK
Total/NA	Prep	8011			10.50 g	2 mL	45027	12/11/23 10:40	MRV	EET SPK
Total/NA	Analysis	8011		1	1 mL	1 mL	45038	12/11/23 22:48	NMI	EET SPK
Total/NA	Prep	3550C			15.20 g	5 mL	44992	12/08/23 08:38	MRV	EET SPK
Total/NA	Analysis	NWTPH-Dx		1	1 mL	1 mL	44998	12/08/23 16:33	NMI	EET SPK
Total/NA	Prep	3050B			1.56 g	50 mL	45025	12/11/23 09:42	AMB	EET SPK
Total/NA	Analysis	6010D		1			45050	12/11/23 15:22	AMB	EET SPK

Client Sample ID: GEI056-B4-120523
Lab Sample ID: 590-22420-26
Date Collected: 12/05/23 17:06
Matrix: Water
Date Received: 12/07/23 10:19

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		5	43 mL	43 mL	45001	12/08/23 20:58	JSP	EET SPK
Total/NA	Analysis	NWTPH-Gx		5	43 mL	43 mL	45045	12/11/23 21:20	JSP	EET SPK
Total/NA	Prep	8011			80 mL	2 mL	45034	12/11/23 12:35	MRV	EET SPK
Total/NA	Analysis	8011		1	1 mL	1 mL	45038	12/11/23 16:34	NMI	EET SPK
Total/NA	Prep	3510C			255.1 mL	2 mL	45022	12/11/23 08:29	MRV	EET SPK
Total/NA	Analysis	NWTPH-Dx		1	1 mL	1 mL	45039	12/11/23 18:09	NMI	EET SPK
Dissolved	Filtration	FILTRATION			250 mL	250 mL	45148	12/18/23 17:26	AMB	EET SPK
Dissolved	Prep	3005A			50 mL	50 mL	45147	12/18/23 17:27	AMB	EET SPK
Dissolved	Analysis	6010D		1			45163	12/19/23 12:33	AMB	EET SPK
Total Recoverable	Prep	3005A			50 mL	50 mL	44999	12/08/23 10:55	AMB	EET SPK
Total Recoverable	Analysis	6010D		1			45149	12/18/23 16:13	AMB	EET SPK

Lab Chronicle

Client: GeoEngineers Inc
Job ID: 590-22420-1
Project/Site: Clarkston Street Shop/0504-199-00

Client Sample ID: GEI056-B5(24-25)
Lab Sample ID: 590-22420-31
Date Collected: 12/06/23 14:50
Matrix: Solid
Date Received: 12/07/23 10:19

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			44987	12/07/23 14:30	MRV	EET SPK

Client Sample ID: GEI056-B5(24-25)
Lab Sample ID: 590-22420-31
Date Collected: 12/06/23 14:50
Matrix: Solid
Date Received: 12/07/23 10:19
Percent Solids: 91.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			12.398 g	10 mL	45010	12/08/23 12:15	JSP	EET SPK
Total/NA	Analysis	8260D		1	0.86 mL	43 mL	45004	12/08/23 22:20	JSP	EET SPK
Total/NA	Prep	5035			12.398 g	10 mL	45010	12/08/23 12:15	JSP	EET SPK
Total/NA	Analysis	NWTPH-Gx		100	0.86 mL	43 mL	45035	12/11/23 16:17	JSP	EET SPK
Total/NA	Prep	8011			10.30 g	2 mL	45027	12/11/23 10:40	MRV	EET SPK
Total/NA	Analysis	8011		1	1 mL	1 mL	45038	12/11/23 23:04	NMI	EET SPK
Total/NA	Prep	3550C			15.58 g	5 mL	44992	12/08/23 08:38	MRV	EET SPK
Total/NA	Analysis	NWTPH-Dx		1	1 mL	1 mL	44998	12/08/23 16:54	NMI	EET SPK
Total/NA	Prep	3050B			1.33 g	50 mL	45025	12/11/23 09:42	AMB	EET SPK
Total/NA	Analysis	6010D		1			45050	12/11/23 15:26	AMB	EET SPK

Client Sample ID: GEI056-B5-120623
Lab Sample ID: 590-22420-33
Date Collected: 12/06/23 17:30
Matrix: Water
Date Received: 12/07/23 10:19

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	43 mL	43 mL	45044	12/11/23 21:42	JSP	EET SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	45045	12/11/23 21:42	JSP	EET SPK
Total/NA	Prep	8011			80 mL	2 mL	45034	12/11/23 12:35	MRV	EET SPK
Total/NA	Analysis	8011		1	1 mL	1 mL	45038	12/11/23 16:50	NMI	EET SPK
Total/NA	Prep	3510C			258.5 mL	2 mL	45022	12/11/23 08:29	MRV	EET SPK
Total/NA	Analysis	NWTPH-Dx		1	1 mL	1 mL	45039	12/11/23 18:30	NMI	EET SPK
Dissolved	Filtration	FILTRATION			250 mL	250 mL	45148	12/18/23 17:26	AMB	EET SPK
Dissolved	Prep	3005A			50 mL	50 mL	45147	12/18/23 17:27	AMB	EET SPK
Dissolved	Analysis	6010D		1			45163	12/19/23 12:37	AMB	EET SPK
Total Recoverable	Prep	3005A			50 mL	50 mL	44999	12/08/23 10:55	AMB	EET SPK
Total Recoverable	Analysis	6010D		1			45149	12/18/23 16:17	AMB	EET SPK

Client Sample ID: GEI056-Comp-120623
Lab Sample ID: 590-22420-34
Date Collected: 12/06/23 12:10
Matrix: Solid
Date Received: 12/07/23 10:19

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			44987	12/07/23 14:30	MRV	EET SPK

Lab Chronicle

Client: GeoEngineers Inc
Job ID: 590-22420-1
Project/Site: Clarkston Street Shop/0504-199-00

Client Sample ID: GEI056-Comp-120623
Lab Sample ID: 590-22420-34
Date Collected: 12/06/23 12:10
Matrix: Solid
Date Received: 12/07/23 10:19
Percent Solids: 85.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.61 g	50 mL	45025	12/11/23 09:42	AMB	EET SPK
Total/NA	Analysis	6010D		1			45050	12/11/23 15:30	AMB	EET SPK
Total/NA	Prep	7471B			0.77 g	50 mL	45054	12/12/23 10:37	AMB	EET SPK
Total/NA	Analysis	7471B		1			45068	12/12/23 17:18	AMB	EET SPK

Client Sample ID: DUP-120523
Lab Sample ID: 590-22420-35
Date Collected: 12/05/23 12:00
Matrix: Water
Date Received: 12/07/23 10:19

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	43 mL	43 mL	45044	12/11/23 22:04	JSP	EET SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	45045	12/11/23 22:04	JSP	EET SPK
Total/NA	Prep	8011			80 mL	2 mL	45034	12/11/23 12:35	MRV	EET SPK
Total/NA	Analysis	8011		1	1 mL	1 mL	45038	12/11/23 17:06	NMI	EET SPK
Total/NA	Prep	3510C			257.1 mL	2 mL	45022	12/11/23 08:29	MRV	EET SPK
Total/NA	Analysis	NWTPH-Dx		1	1 mL	1 mL	45039	12/11/23 18:51	NMI	EET SPK
Dissolved	Filtration	FILTRATION			250 mL	250 mL	45148	12/18/23 17:26	AMB	EET SPK
Dissolved	Prep	3005A			50 mL	50 mL	45147	12/18/23 17:27	AMB	EET SPK
Dissolved	Analysis	6010D		1			45163	12/19/23 12:42	AMB	EET SPK
Total Recoverable	Prep	3005A			50 mL	50 mL	44999	12/08/23 10:55	AMB	EET SPK
Total Recoverable	Analysis	6010D		1			45149	12/18/23 16:21	AMB	EET SPK

Client Sample ID: Trip Blank
Lab Sample ID: 590-22420-36
Date Collected: 12/05/23 00:00
Matrix: Water
Date Received: 12/07/23 10:19

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	43 mL	43 mL	45044	12/11/23 22:47	JSP	EET SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	45045	12/11/23 22:47	JSP	EET SPK

Client Sample ID: Trip Blank
Lab Sample ID: 590-22420-37
Date Collected: 12/05/23 00:00
Matrix: Solid
Date Received: 12/07/23 10:19

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			10.081 g	10 mL	45010	12/08/23 12:15	JSP	EET SPK
Total/NA	Analysis	8260D		1	0.86 mL	43 mL	45004	12/08/23 22:41	JSP	EET SPK
Total/NA	Prep	5035			10.081 g	10 mL	45010	12/08/23 12:15	JSP	EET SPK
Total/NA	Analysis	NWTPH-Gx		1	0.86 mL	43 mL	45005	12/08/23 22:41	JSP	EET SPK

Laboratory References:
EET SPK = Eurofins Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

Accreditation/Certification Summary

Client: GeoEngineers Inc
Job ID: 590-22420-1
Project/Site: Clarkston Street Shop/0504-199-00

Laboratory: Eurofins Spokane

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Washington	State	C569	01-07-24

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
Moisture		Solid	Percent Moisture
Moisture		Solid	Percent Solids

Method Summary

Client: GeoEngineers Inc
Project/Site: Clarkston Street Shop/0504-199-00

Job ID: 590-22420-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET SPK
NWTPH-Gx	Northwest - Volatile Petroleum Products (GC/MS)	NWTPH	EET SPK
8011	EDB, DBCP, and 1,2,3-TCP (GC)	SW846	EET SPK
NWTPH-Dx	Northwest - Semi-Volatile Petroleum Products (GC)	NWTPH	EET SPK
6010D	Metals (ICP)	SW846	EET SPK
7471B	Mercury (CVAA)	SW846	EET SPK
Moisture	Percent Moisture	EPA	EET SPK
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET SPK
3050B	Preparation, Metals	SW846	EET SPK
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET SPK
3550C	Ultrasonic Extraction	SW846	EET SPK
5030C	Purge and Trap	SW846	EET SPK
5035	Closed System Purge and Trap	SW846	EET SPK
7471B	Preparation, Mercury	SW846	EET SPK
8011	Microextraction	SW846	EET SPK
FILTRATION	Sample Filtration	None	EET SPK

Protocol References:

EPA = US Environmental Protection Agency

None = None

NWTPH = Northwest Total Petroleum Hydrocarbon

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET SPK = Eurofins Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

Eurofins Spokane
11922 E 1st Avenue

Spokane, WA 99206-5302
phone 509.924.9200 fax 509 924.9290

Chain of Custody Record

eurofins | Environment Testing America

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other

Eurofins Environment Testing America

Client Contact	**Project Manager:** Justin Orr	**Site Contact:** Bryce Hanson	**Date** 12/7/23
GeoEngineers, Inc.	**Email** jorr@geoengineers.com	**Lab Contact.**	**Carrier:**
523 E 2nd Ave	**Tel/Fax** 509.570.0779		
Spokane, WA 99202	**Analysis Turnaround Time** ☐ CALENDAR DAYS ☐ WORKING DAYS		
509.363.3125 Phone	TAT if different from Below ____		
FAX	☒ 2 weeks		
Project Name: Division Street Shop	☐ 1 week		
Site:	☐ 2 days		
PO# 504-199-00	☐ 1 day		

COC No: 1 of 3 COCs
TALS Project #
Sampler:
For Lab Use Only: Walk-in Client. Lab Sampling
Job / SDG No.

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	NWTPH-Gx	BTEX, EDC, MTBE 8260	EDB 8011	NWTPH-Dx	Total lead 6010	dissolved lead (lab filt) 6010	BLBA8	Sample Specific Notes:
GEI056-B1(4-5)	12/5/23	0745	G	S	3										Hold (H)
GEI056-B1(16-11)		0815						X	X	X	X	X			
GEI056-B1(16-17)		0820													H
GEI056-B1(23-24)		0910													H
GEI056-B1(28 29)		0912													H
DUP: 120523		1000						X	X	X	X	X			
GEI056-B1-120523		1148		W	7			X	X	X	X	X	X		
GEI056-B2(5-6)		1130		S	3										H
GEI056-B2(11-12)		1200													H
GEI056-B2(16-17)		1205						X	X	X	X	X			
GEI056-B2(14-20)		1250													H
GEI056-B2(23 24)		1255													H

Preservation Used. 1= Ice, 2= HCl, 3= H2SO4; 4=HNO3; 5=NaOH, 6= Other

Possible Hazard Identification
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if s
☐ Return to Client ☐ Disposal by Lab

590-22420 Chain of Custody

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.		Cooler Temp. (°C): Obs'd: 3.9	Corr'd: 4.0	Therm ID No.: IR0024
Relinquished by:	Company: GEI	Date/Time: 12/7/23	Received by:	Company: EET SPO	Date/Time: 12/7/23 10:19
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Eurofins Spokane
11922 E 1st Avenue

Spokane, WA 99206-5302
phone 509.924.9200 fax 509.924 9290

Chain of Custody Record

eurofins | Environment Testing America

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other

Eurofins Environment Testing America

Client Contact	Project Manager: Justin Orr	Site Contact: Bryce Hansen	Date: 12/7/23	COC No: 2 of 3 COCs
GeoEngineers Inc.	Email: jorr@geoengineers.com	Lab Contact:	Carrier:	TALS Project #
523 E 2nd Ave	Tel/Fax: 509.570.0779			Sampler:
Spokane, WA 99202	Analysis Turnaround Time			For Lab Use Only
509.363.3125 Phone	☐ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client
FAX	TAT if different from Below			Lab Sampling:
Project Name: Clarkston Street Slip	☒ 2 weeks			Job / SDG No.
Site:	☐ 1 week			
PO # 504-199-00	☐ 2 days ☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	NWTPH-Gx	BTEX, EDC, MTBE 8260	EDB 8011	NWTPH-Dx	Total Lead 6010	Dissolved Lead (Lab Filt) 6010	RCRA 8	Sample Specific Notes.
GEI056 - B2(28-29)	12/5/23	1310	G	S	3										H
GEI056 - B2 - 120523		1500		W	7			X	X	X	X	X	X		
GEI056 - B3(14-15)	12/6/23	0755		S	3										H
GEI056 - B3(19-20)		0815													H
GEI056 - B3(23-24)		0820						X	X	X	X	X			
GEI056 - B3(28-29)		0920													H
GEI056 - B3 - 120623		1121		W	7			X	X	X	X	X	X		
GEI056 B4(4-5)	12/5/23	1425		S	3										H
GEI056 - B4(9-10)		1430													H
GEI056 - B4(15-16)		1435													H
GEI056 - B4(19-20)		1515													H
GEI056 - B4(23-24)		1520						X	X	X	X	X			

Preservation Used 1= Ice, 2= HCl, 3= H_2SO_4, 4=HNO_3, 5=NaOH, 6= Other

Possible Hazard Identification
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments.

Custody Seals Intact: ☒ Yes ☐ No	Custody Seal No.	Cooler Temp. (°C): Obs'd: 3.9 Corr'd: 4.0	Therm ID No.: IR0004
Relinquished by:	Company: GEI	Date/Time: 12/7/23	Received by:	Company: EET 580	Date/Time: 12/7/23 10 19
Relinquished by	Company	Date/Time:	Received by	Company	Date/Time:
Relinquished by	Company	Date/Time:	Received in Laboratory by	Company	Date/Time:

12/19/2023

Eurofins Spokane
11922 E 1st Avenue

Spokane WA 99206-5302
phone 509.924.9200 fax 509.924.9290

Chain of Custody Record

eurofins | Environment Testing America

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other

Eurofins Environment Testing America

Client Contact	Project Manager: Justin Orr	Site Contact: Bryce Hanson	Date: 12/7/23	COC No: 3 of 3 COCs
GeoEngineers, Inc.	Email: jorr@geoengineers.com	Lab Contact:	Carrier:	TALS Project #:
523 E 2nd Ave	Tel/Fax: 509.570.0779			Sampler:
Spokane, WA 99202	Analysis Turnaround Time			For Lab Use Only
509.363.3125 Phone	☐ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
FAX	TAT if different from Below			Lab Sampling:
Project Name: Clarkston Street Shop	☒ 2 weeks			Job / SDG No.
Site	☐ 1 week			
PO #: 504-199-00	☐ 2 days ☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	NWTPH-Dx	BTEX, EDC, MTBE 8260	EDB 8011	NWTPH-Dx	total lead 6010	dissolved lead (filtered) 6010	RCRA8	Sample Specific Notes.
GEI056-B4(28-29)	12/5/23	1545	G	S	3										H
GEI056-B4-120523	1	1706	|	W	7			X	X	X	X	X	X		
GEI056-B5(3-4)	12/6/23	1410	|	S	3										H
GEI056-B5(10-11)	|	1420	|	|	|										H
GEI056-B5(15-16)	|	1425	|	|	|										H
GEI056-B5(20-21)	|	1445	|	|	|										H
GEI056-B5(24-25)	|	1450	|	|	|			X	X	X	X	X			
GEI056-B5(28-29)	|	1555	|	|	|										H
GEI056-B5-120623	|	1730	|	W	7			X	X	X	X	X	X		
GEI056-Comp-120623	|	1210	C	S	1									X	
DUP: 120523	12/5/23	1200	G	W	7			X	X	X	X	X	X		
Trip Blank				S				X	X						
				W	3			X	X						

Preservation Used: 1= Ice, 2= HCl, 3= H_2SO_4, 4=HNO_3, 5=NaOH, 6= Other

Possible Hazard Identification Trip Blank → W
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments.

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.	Cooler Temp. (°C) Obs'd: 3.9 Corr'd: 4.0	Therm ID No.: IR Gun
Relinquished by:	Company: GEI	Date/Time: 12/7/23	Received by:	Company: EET SPO	Date/Time: 12/7/23 1019
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time

12/19/2023

Login Sample Receipt Checklist

Client: GeoEngineers Inc

Job Number: 590-22420-1

Login Number: 22420
List Number: 1
Creator: Morris, Mackenzie 1

List Source: Eurofins Spokane

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

APPENDIX E
Report Limitations and Guidelines for Use

ATTACHMENT E
REPORT LIMITATIONS AND GUIDELINES FOR USE[2]

This Appendix provides information to help you manage your risks with respect to the use of this report.

Environmental Services Are Performed for Specific Purposes, Persons and Projects

This report has been prepared for the exclusive use of the Washington State Department of Ecology (Ecology). This report is not intended for use by others, and the information contained herein is not applicable to other sites.

GeoEngineers, Inc. (GeoEngineers) structures our services to meet the specific needs of our clients. For example, an environmental site assessment study conducted for a property owner may not fulfill the needs of a prospective purchaser of the same property. Because each environmental study is unique, each environmental report is unique, prepared solely for the specific client and project site. No one except Ecology should rely on this environmental report without first conferring with GeoEngineers. This report should not be applied for any purpose or project except the one originally contemplated.

This Environmental Report is Based on a Unique Set of Project-Specific Factors

This report has been prepared for the City of Clarkston Street Shop facility located at 1455 Bridge Street in Clarkston, Washington. GeoEngineers considered a number of unique, project-specific factors when establishing the scope of services for this project and report. Unless GeoEngineers specifically indicates otherwise, do not rely on this report if it was:

- Not prepared for you,
- Not prepared for your project,
- Not prepared for the specific site explored, or
- Completed before important project changes were made.

If important changes are made after the date of this report, GeoEngineers should be given the opportunity to review our interpretations and recommendations and provide written modifications or confirmation, as appropriate.

Reliance Conditions for Third Parties

Our report was prepared for the exclusive use of Ecology. No other party may rely on the product of our services unless we agree in advance to such reliance in writing. This is to provide our firm and Ecology with reasonable protection against open-ended liability claims by third parties with whom there would otherwise be no contractual limits to their actions. Within the limitations of scope, schedule, and budget, our services have been executed in accordance with our Agreement with Ecology and generally accepted environmental practices in this area at the time this report was prepared.

[2] Developed based on material provided by ASFE, Professional Firms Practicing in the Geosciences; www.asfe.org.

Environmental Regulations are Always Evolving

Some substances may be present in the site vicinity in quantities or under conditions that may have led, or may lead, to contamination of the subject site, but are not included in current local, state, or federal regulatory definitions of hazardous substances or do not otherwise present current potential liability. GeoEngineers cannot be responsible if the standards for appropriate inquiry, or regulatory definitions of hazardous substance, change or if more stringent environmental standards are developed in the future.

Uncertainty May Remain Even After This Phase II ESA is Completed

No Environmental Site Assessment (ESA) can wholly eliminate uncertainty regarding the potential for contamination in connection with a property. Our interpretation of subsurface conditions in this study is based on field observations and chemical analytical data from widely spaced sampling locations. It is always possible that contamination exists in areas that were not explored, sampled, or analyzed.

Subsurface Conditions Can Change

This environmental report is based on conditions that existed at the time the study was performed. The findings and conclusions of this report may be affected by the passage of time, by manmade events such as construction on or adjacent to the site, by new releases of hazardous substances, or by natural events such as floods, earthquakes, slope instability or groundwater fluctuations. Always contact GeoEngineers before applying this report to determine if it is still applicable.

Most Environmental Findings are Professional Opinions

Our interpretations of subsurface conditions are based on field observations and chemical analytical data from widely spaced sampling locations at the site. Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted, or samples are taken. GeoEngineers reviewed field and laboratory data and then applied our professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ – sometimes significantly – from those indicated in this report. Our report, conclusions and interpretations should not be construed as a warranty of the subsurface conditions.

Do Not Redraw the Exploration Logs

Environmental scientists prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in an environmental report should never be redrawn for inclusion in other design drawings. Only photographic or electronic reproductions are acceptable but recognize that separating logs from the report can elevate risk.

Read These Provisions Closely

Some clients, design professionals and contractors may not recognize that the geoscience practices (geotechnical engineering, geology, and environmental science) are far less exact than other engineering and natural science disciplines. This lack of understanding can create unrealistic expectations that could lead to disappointments, claims and disputes. GeoEngineers includes these explanatory “limitations” provisions in our reports to help reduce such risks. Please confer with GeoEngineers if you are unclear how these “Report Limitations and Guidelines for Use” apply to your project or site.

Geotechnical, Geologic and Geoenvironmental Reports Should Not be Interchanged

The equipment, techniques and personnel used to perform an environmental study differ significantly from those used to perform a geotechnical or geologic study and vice versa. For that reason, a geotechnical engineering or geologic report does not usually relate any environmental findings, conclusions or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. Similarly, environmental reports are not used to address geotechnical or geologic concerns regarding a specific project.

Biological Pollutants

GeoEngineers' Scope of Work specifically excludes the investigation, detection, prevention, or assessment of the presence of Biological Pollutants. Accordingly, this report does not include any interpretations, recommendations, findings, or conclusions regarding the detecting, assessing, preventing, or abating of Biological Pollutants and no conclusions or inferences should be drawn regarding Biological Pollutants, as they may relate to this project. The term "Biological Pollutants" includes, but is not limited to, molds, fungi, spores, bacteria, and viruses, and/or any of their byproducts.

If Ecology desires these specialized services, they should be obtained from a consultant who offers services in this specialized field.