Phase II Environmental Site Assessment

A-1 Towing
King County Tax Parcel 3223049048
Des Moines, Washington

for
Washington State Department of Transportation
c/o HNTB Corporation

December 22, 2021

GeoEngineers
Earth Science + Technology

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GeoEngineers

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A-1 Towing
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Des Moines, Washington

File No. 0180-393-00

December 22, 2021

Prepared for:

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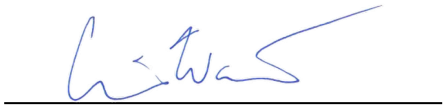
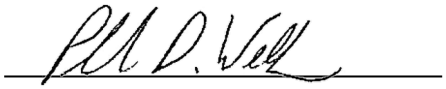


Cris Watkins
Senior Environmental Scientist



Phil Welker, PE
Principal

CJW:PW:tjh

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1.0 INTRODUCTION AND BACKGROUND

This report describes the Phase II Environmental Site Assessment (ESA) activities conducted at the property located at King County Tax Parcel 3223049048 (the provided address of 18451 12th Avenue South in Des Moines, Washington does not map accurately) as part of the expansion of SR-509 (herein referred to as "site"). The property is owned by Washington State Department of Transportation (WSDOT) but is leased by a private party and WSDOT is evaluating environmental conditions. The approximate site location is shown in the attached Vicinity Map, Figure 1.

GeoEngineers reviewed a Phase II ESA prepared for the property (known as A-1 Towing and the Foreman Property) located at 18451 12th Avenue South in Des Moines, Washington by WSDOT, dated January 24, 2019. The Phase II ESA indicated that WSDOT purchased the property in 2000. A tenant (Mr. Foreman) conducted welding activities between 2000 and 2016, and the Washington State Patrol (WSP) used a portion of the property to dismantle seized vehicles in the summer of 2016. At the time of the report (January 2019), A-1 Towing leased the property as a towing yard, which included storge of vehicles throughout the site and repairing of vehicles within an existing garage structure. The Phase II report included a summary of the following activities:

- The Phase II ESA performed by WSDOT in 2016 following the termination of the lease to Mr. Foreman included soil sampling of areas with significant staining. Areas identified as Area A, B, C and D were sampled as part of the Phase II ESA. Results indicated the presence of lube oil and arsenic exceeding the Model Toxic Control Act (MTCA) Cleanup Levels (CULs) in Area B and C, respectively.
- In April 2017, WSDOT contracted Marine Vacuum Incorporated to clean up areas of the Site with trash, debris and soils with notable detectable analytes below MTCA Method A CULs. It is unclear from this statement as to what soils were actually removed and no additional details were provided.
- In January 2018, A-1 Towing graded Site soils including some that were contaminated. The soils were displaced from previously sampled areas A and B. A new stockpile was present following these activities just north of Area D.
- On March 15, 2018, WSDOT collected four additional soil samples from areas defined as Area A, B, and a new location. WSDOT collected a sample to determine if there was an indication of grading with known or suspected soil contamination, or where displaced/graded soils appeared to be consolidated into a stockpile generated by the lessee. Areas C and D did not have these indicators and did not warrant additional sampling. Sample results did not indicate results exceeding the MTCA Method A CULs.
- On September 20 and 21, 2018, Marine Vacuum Performed excavation activities to address the previously detected lube oil concentrations exceeding the MTCA Method A CULs and an area to remediate suspected contaminated materials in Area C and D. During site excavation activities soils were field screened using sight, olfactory and photoionization detector (PID) levels above 10 parts per million. Non-suspect soils were placed off to the side on a lined area and covered. On September 21, 2018, WSDOT collected two confirmation soil samples in locations where the soils had been removed. Laboratory analytical results were either non-detect or detected at concentrations less than MTCA Method A CULs. Following sample results, the stockpiled non-suspect soils were used to fill and grade the excavation areas.
- The January 24, 2019, Phase II ESA summary indicated that the known and suspected soils with contamination (approximately 8.4 cubic yards) were removed from the site and based on the analytical

results no contamination remains on the property. WSDOT requested a no further action (NFA) determination from Washington State.

- Ecology responded to the request for a NFA determination indicating that additional information would be necessary including depth of samples, groundwater samples (if encountered) and more accurate sample location information (previous report had conflicting depictions).

The following sections describe our scope of services (prepared with approval by WSDOT), field activities, sampling results and opinions.

2.0 SCOPE OF SERVICES

Our general environmental scope of services was as follows:

- Prepared a Health and Safety Plan for use by GeoEngineers' personnel during the field activities.
- Coordinate the location of nine shallow proposed soil borings with one boring located at each historic background sample location SS-2, SS-3 and SS-4, which represent staining observed in Areas B, C and D, respectively (Area A does not appear to be of concern for additional assessment). Place two additional borings were placed in each area based on the sample location map depicting rectangular areas of staining and or remedial excavations. At least one boring in each area will be advanced to groundwater or 15 feet below ground surface (bgs) and a groundwater monitoring well installed, if water is encountered. The additional borings will be placed in a manner to bracket the depicted area of concern. A total of nine shallow borings and three monitoring wells were proposed.
- Contact the Utility Notification Center public locating service. A private locating service will also be subcontracted to locate potential utilities.
- Retain a drilling subcontractor to advance nine direct push borings to a depth of 5 to 15 feet (bgs), dependent on field screening results, presence of groundwater and depth to native soils. If groundwater is encountered (reportedly as shallow as 3 feet bgs) at the former sample locations SS-2 through SS4, a 2-inch-diameter polyvinyl chloride (PVC) casing monitoring well will be installed. Depths of the borings may be adjusted in an attempt to install a minimum of three wells to evaluate site specific groundwater flow direction. (Groundwater was not encountered during drilling activities and no wells were installed).
- Continuously sample push probes and visually classify and field screen (sheen, PID and odor) for potential laboratory analysis by a GeoEngineers representative. Visual classification of the soil samples is to be completed in general accordance with ASTM D 2488-90, the Standard Practice for Description and Identification of Soils.
- Collected two soil samples per boring for potential laboratory analysis based on field screening results and depth to groundwater.
- Submit the soil samples on a standard turnaround time (10 business days) for laboratory analysis of the following:
    - Gasoline-range petroleum hydrocarbons by Northwest Method NWTPH-Gx (Gx)
    - Diesel- and lube-oil range petroleum hydrocarbons by Northwest Method NWTPH-Dx (Dx and Ox).

- Resource Conservation and Recovery Act (RCRA) eight metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium and silver) by United States Environmental Protection Agency (EPA) Method 6020.
- Polycyclic aromatic hydrocarbons (PAHs) by EPA Method 8270.
- Volatile organic compounds (VOCs) by EPA Method 8260C.

- Coordinate disposal of investigation-derived waste (IDW) at an appropriate off-site facility. Collect one composite soil sample directly from the drum or during drilling for waste profiling purposes.
- Prepare a report including sample results tables, laboratory data, site figures and boring/sampling logs documenting results of the work performed at the site. The data will be tabulated and compared against MTCA CULs.
- Upload data to the Ecology Environmental Information Management (EIM) system as required.

3.0 SUBSURFACE CONDITIONS

Logs of borings are included in Appendix A. Soils were visually classified in general accordance with ASTM D 2488-94. Boring locations are shown in Exploration Locations, Figure 2.

3.1. Subsurface Soil Conditions

Surface conditions at the site consist primarily of fill gravel (from several inches up to 2 feet). Soils encountered during exploration activities consisted of sand, silt and varying gradations of sand and silt with occasional gravel to the maximum depth explored, 15 to 20 feet bgs.

3.2. Subsurface Groundwater Conditions

Soils observed during drilling were generally moist and groundwater was not encountered during drilling.

4.0 SOIL SAMPLING AND CHEMICAL ANALYTICAL RESULTS

A GeoEngineers' field representative collected soil samples continuously from each boring for field screening and potential laboratory analysis. Samples were field screened for evidence of petroleum and/or VOC-related impact using visual, water sheen and headspace vapor screening methods using a PID. Soil samples were collected based on field screening data. The soil samples were submitted for laboratory analysis of VOCs, Gx, Dx, Ox, PAHs and/or RCRA eight metals to Pace National. Soil chemical analytical data are presented in Tables 1 and 2. Laboratory analytical reports are attached in Appendix B.

4.1. Soil Sample Analytical Results

As previously noted, three areas of concern with previous sample results were identified for additional assessment identified as areas B, C and D (no concerns were expressed by Ecology for the need to further explore Area A). The following sections summarize the results of the additional borings and soil sampling performed in each area. Approximate locations of previous sampling performed by others and the sampling performed during this assessment are shown on Figure 2.

4.1.1. Area B

Area B is located off the southwest corner of the existing structure. Previous sample SS-2 indicated levels of arsenic (35 milligrams/kilogram [mg/kg]). Three borings (GEI-3, GEI-4 and MW-2) were performed within the identified Area B. Boring MW-2 was intended to be in the approximate location of previous sample SS-2 and planned to be installed as a monitoring well, but no groundwater was encountered to the maximum depth explored (15 feet bgs). Field screening the three boring locations did not indicate petroleum compounds or VOCs. One sample was analyzed from each boring. Soil sample results for the samples collected from each boring are as follows:

- Sample GEI-3 at 9-10 feet bgs was non-detect for Gx, Dx, Ox, VOCs and PAHs. Detected RCRA eight metals were at concentrations less than the MTCA Method A Cleanup Levels for Unrestricted Land Use.
- Sample GEI-4 at 2-3 feet bgs was non-detect for Gx, Dx and VOCs. Ox and PAHs and detected RCRA eight metals were at concentrations less than the MTCA Method A Cleanup Levels for Unrestricted Land Use.
- Sample MW-2 at 9-10 feet bgs was non-detect for Gx, Dx, Ox, VOCs and PAHs. Detected RCRA eight metals were at concentrations less than the MTCA Method A Cleanup Levels for Unrestricted Land Use.

4.1.2. Area C

Area C is located off the east side of the of the existing structure. Previous sample SS-3 indicated levels of lube oil at 31,000 mg/kg. Three borings (GEI-1, GEI-2 and MW-1) were performed within the identified Area C. Boring MW-1 was intended to be in the approximate location of previous sample SS-3 and planned to be installed as a monitoring well, but no groundwater was encountered to the maximum depth explored (20 feet bgs at boring GEI-1). Field screening the three boring locations did not indicate petroleum compounds or VOCs. One sample was analyzed from each boring. Soil sample results for the samples collected from each boring are as follows:

- Sample GEI-1 at 9-10 feet bgs was non-detect for Gx, Dx, Ox, VOCs and PAHs. Detected RCRA eight metals were at concentrations less than the MTCA Method A Cleanup Levels for Unrestricted Land Use.
- Sample GEI-2 at 9-10 feet bgs was non-detect for Gx, Dx, Ox, VOCs and PAHs. Detected RCRA eight metals were at concentrations less than the MTCA Method A Cleanup Levels for Unrestricted Land Use.
- Sample MW-1 at 2-3 feet bgs was non-detect for Gx, Dx, Ox, VOCs and PAHs. Detected RCRA eight metals were at concentrations less than the MTCA Method A Cleanup Levels for Unrestricted Land Use.

4.1.3. Area D

Area D is located off the north side of the existing structure. Previous observations indicated the presence of staining and groundwater in the exploration, which was not sampled. Three borings (GEI-4, GEI-6 and MW-3) were performed within the identified Area C. Boring MW-3 was intended to be in the approximate location of previous sample SS-4 and staining. MW-3 was planned to be installed as a monitoring well, but no groundwater was encountered to the maximum depth explored (15 feet bgs). Field screening the three boring locations did not indicate petroleum compounds or VOCs. One sample was analyzed from each boring. Soil sample results for the samples collected from each boring are as follows:

- Sample GEI-5 at 7-8 feet bgs was non-detect for Gx, Dx, Ox, VOCs and PAHs. Detected RCRA eight metals were at concentrations less than the MTCA Method A Cleanup Levels for Unrestricted Land Use.

- Sample GEI-6 at 7-8 feet bgs was non-detect for Gx, Dx, Ox, VOCs and PAHs. Detected RCRA eight metals were at concentrations less than the MTCA Method A Cleanup Levels for Unrestricted Land Use.
- Sample MW-3 at 2-3 feet bgs was non-detect for Gx, VOCs and PAHs. Detected Dx, Ox and RCRA eight metals were at concentrations less than the MTCA Method A Cleanup Levels for Unrestricted Land Use.

5.0 CONCLUSIONS

GeoEngineers performed additional sampling at three areas (Area B, C and D) located around the existing structure on the A-1 towing site to further evaluate the potential presence of contaminants related to past uses at the site. Results of the assessment did not identify concentrations of Gx, Dx, Ox, VOCs, PAHs and or RCRA eight metals at concentrations exceeding the MTCA Method A Cleanup Levels. Out of the nine soil samples analyzed, only two identified low concentrations of Dx, Ox and/or PAHs. Groundwater was not encountered at the maximum depth explored at the site of 15 to 20 feet bgs.

Based on the results of the assessment a No Further Action determination should be requested from Ecology.

6.0 LIMITATIONS

We have prepared this report for the exclusive use of WSDOT. 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, judgment, experience and discrete sample collection. Contaminants may be present in areas of the site not sampled or tested. No warranty or other conditions, express or implied, should be understood.

Please refer to Appendix C, Report Limitations and Guidelines for Use, for additional information regarding the use of this report.

TABLES

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Table 1

Soil Chemical Analytical Results - Petroleum Hydrocarbons and VOCs
A-1 Towing
SeaTac, Washington

Boring/ Well ID	Sample ID	Date Collected	Depth (Feet Below Ground Surface)	Field Screening Observation		NWTPH-Gx (mg/kg)	NWTPH-Dx (mg/kg)		VOCs EPA Method 8260 (mg/kg)									
				Sheen	PID (ppm)	Gasoline	Diesel	Heavy Oil	Various	Anthracene	Acenapthene	Acenaphthylene	Benzo (a) anthracene	Benzo (a) pyrene	Benzo (b) fluoranthene	Benzo(g,h,i)perylene	Benzo (k) fluoranthene	Chrysene
GEI-1	GE-1 (9-10')	10/25/2021	9-10	NS	<1	<3.01	< 4.4	< 10.9	ND	< 0.00654	< 0.00654	< 0.00654	< 0.00654	< 0.00654	< 0.00654	< 0.00654	< 0.00654	< 0.00654
GEI-2	GEI-2 (9-10')	10/25/2021	9-10	NS	<1	<2.99	< 4.34	< 10.80	ND	< 0.00650	< 0.00650	< 0.00650	< 0.00650	< 0.00650	< 0.00650	< 0.00650	< 0.00650	< 0.00650
GEI-3	GEI-3 (9-10')	10/25/2021	9-10	NS	<1	<3.23	< 4.50	< 11.2	ND	< 0.00675	< 0.00675	< 0.00675	< 0.00675	< 0.00675	< 0.00675	< 0.00675	< 0.00675	< 0.00675
GEI-4	GEI-4 (2-3')	10/25/2021	2-3	NS	<1	<2.97	< 21.8	**166**	ND	< 0.00655	< 0.00655	< 0.00655	**0.0298**	**0.0363**	**0.0500**	**0.0306**	**0.0150**	**0.0354**
GEI-5	GEI-5 (7-8')	10/25/2021	7-8	NS	<1	<3.02	< 4.36	< 10.9	ND	< 0.00654	< 0.00654	< 0.00654	< 0.00654	< 0.00654	< 0.00654	< 0.00654	< 0.00654	< 0.00654
GEI-6	GEI-6 (7-8')	10/25/2021	7-8	NS	<1	<2.95	< 4.33	< 10.8	ND	< 0.00649	< 0.00649	< 0.00649	< 0.00649	< 0.00649	< 0.00649	< 0.00649	< 0.00649	< 0.00649
MW-1	MW-1 (2-3')	10/25/2021	2-3	NS	<1	<3.43	< 4.69	< 11.7	ND	< 0.00703	< 0.00703	< 0.00703	< 0.00703	< 0.00703	< 0.00703	< 0.00703	< 0.00703	< 0.00703
MW- 2	MW-2 (9-10')	10/25/2021	9-10	NS	<1	<3.08	< 4.43	< 11.1	ND	< 0.00665	< 0.00665	< 0.00665	< 0.00665	< 0.00665	< 0.00665	< 0.00665	< 0.00665	< 0.00665
MW- 3	MW-3 (2-3')	10/25/2021	2-3	NS	<1	<3.35	**5.55**	**24.3**	ND	< 0.00691	< 0.00691	< 0.00691	< 0.00691	< 0.00691	< 0.00691	< 0.00691	< 0.00691	< 0.00691
MTCA Method A Cleanup Levels for Unrestricted Land Use						800/1,000	2,000		Various	--	--	--	--	--	--	--	--	--

Boring/Well ID	Sample ID	Date Collected	Depth (Feet Below Ground Surface)	Field Screening Observation		NWTPH-Gx (mg/kg)	NWTPH-Dx (mg/kg)				EPA Method 8260 (mg/kg)									Total cPAHs[1] (mg/kg)
				Sheen	PID (ppm)	Gasoline	Diesel		Heavy Oil		Various	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno (1,2,3-cd) pyrene	Naphthalene	Phenanthrene	Pyrene	1-Methyl-naphthalene	2-Methyl-naphthalene	TEQ
GEI-1	GE-1 (9-10')	10/25/2021	9-10	NS	<1	<3.01	< 4.4	<	10.9	ND	< 0.00654	< 0.00654	< 0.00654	< 0.00654	< 0.0218	< 0.00654	< 0.00654	< 0.0218	< 0.0128	ND
GEI-2	GEI-2 (9-10')	10/25/2021	9-10	NS	<1	<2.99	< 4.34	<	10.80	ND	< 0.00650	< 0.00650	< 0.00650	< 0.00650	< 0.0217	< 0.00650	< 0.00650	< 0.0217	< 0.0217	ND
GEI-3	GEI-3 (9-10')	10/25/2021	9-10	NS	<1	<3.23	< 4.50	<	11.2	ND	< 0.00675	< 0.00675	< 0.00675	< 0.00675	< 0.0225	< 0.00675	< 0.00675	< 0.0225	< 0.0225	ND
GEI-4	GEI-4 (2-3')	10/25/2021	2-3	NS	<1	<2.97	< 22		**166**	ND	**0.00660**	**0.0622**	< 0.0066	**0.0325**	< 0.0218	**0.0244**	**0.0474**	< 0.0218	< 0.0218	**0.0223**
GEI-5	GEI-5 (7-8')	10/25/2021	7-8	NS	<1	<3.02	< 4.4	<	10.9	ND	< 0.00654	< 0.00654	< 0.00654	< 0.00654	< 0.02180	< 0.00654	< 0.00654	< 0.0218	< 0.0218	ND
GEI-6	GEI-6 (7-8')	10/25/2021	7-8	NS	<1	<2.95	< 4.3	<	10.8	ND	< 0.00649	< 0.00649	< 0.00649	< 0.00649	< 0.0216	< 0.00649	< 0.00649	< 0.0216	< 0.0216	ND
MW-1	MW-1 (2-3')	10/25/2021	2-3	NS	<1	<3.43	< 4.7	<	11.7	ND	< 0.00703	< 0.00703	< 0.00703	< 0.00703	< 0.02340	< 0.00703	< 0.00703	< 0.0234	< 0.0234	ND
MW- 2	MW-2 (9-10')	10/25/2021	9-10	NS	<1	<3.08	< 4.43	<	11.1	ND	< 0.00665	< 0.00665	< 0.00665	< 0.00665	< 0.0222	< 0.00665	< 0.00665	< 0.0222	< 0.0222	ND
MW- 3	MW-3 (2-3')	10/25/2021	2-3	NS	<1	<3.35	**5.6**		**24.3**	ND	< 0.00691	< 0.00691	< 0.00691	< 0.00691	< 0.023	< 0.00691	< 0.00691	< 0.023	< 0.023	ND
MTCA Method A Cleanup Levels for Unrestricted Land Use						800/1,000	2,000			Various		--	--	--	5	--	--	--	--	0.1

Notes:

[1]Carcinogenic Polycyclic Aromatic Hydrocarbons (cPAHs) analyzed by EPA Method 8270D/SIM. Total cPAHs calculated using the toxicity equivalency (TEQ) methodology specified in Washington Administrative Code (WAC) 173-340-780(8); cPAHs that were not detected were assigned half the value of the detection limit for these calculations. Not detected (ND) is indicated for samples which no cPAHs were detected.

<3.01 = analyte not detected at or less than the presented concentration

Bold = analyte was detected at a concentration above the laboratory reported detection limit

-- = not analyzed/no cleanup level

mg/kg = milligrams per kilogram; VOCs = volatile organic compounds

NS = no sheen; ppm = parts per million

PID = Photoionization Detector

ND = Not Detected

TEQ = toxic equivalency

EPA = Environmental Protection Agency

NWTPH = Northwest Total Petroleum Hydrocarbons

MTCA = Model Toxics Control Act

Table 2

Soil Chemical Analytical Results - Metals
A-1 Towing
SeaTac, Washington

Boring/ Well ID	Sample ID	Date Collected	Depth (Feet Below Ground Surface)	Metals EPA Method 6010D/7471B (mg/kg)							
				Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
GEI-1	GE-1 (9-10')	10/25/2021	9-10	**2.26**	**41.9**	< 1.09	**23.4**	< 2.2	< 0.0436	< 2.72	< 0.545
GEI-2	GEI-2 (9-10')	10/25/2021	9-10	**2.36**	**45.2**	< 1.08	**21.5**	< 2.17	< 0.0434	< 2.71	< 0.542
GEI-3	GEI-3 (9-10')	10/25/2021	9-10	**2.93**	**25.3**	< 1.12	**11.8**	< 2.25	< 0.0450	< 2.81	< 0.562
GEI-4	GEI-4 (2-3')	10/25/2021	2-3	**6.28**	**72.2**	< 1.09	**33.9**	**27.6**	**0.0731**	< 2.73	< 0.546
GEI-5	GEI-5 (7-8')	10/25/2021	7-8	**2.58**	**39.6**	< 1.09	**21.1**	< 2.18	< 0.0436	< 2.73	< 0.545
GEI-6	GEI-6 (7-8')	10/25/2021	7-8	**2.31**	**35.1**	< 1.08	**16.3**	< 2.16	< 0.0433	< 2.71	< 0.541
MW-1	MW-1 (2-3')	10/25/2021	2-3	**3.70**	**61.0**	< 1.17	**26.7**	< 2.34	< 0.0469	< 2.93	< 0.0586
MW- 2	MW-2 (9-10')	10/25/2021	9-10	**3.17**	**44.9**	< 1.11	**24.4**	< 2.22	< 0.0443	< 2.77	< 0.554
MW- 3	MW-3 (2-3')	10/25/2021	2-3	**7.77**	**58.8**	< 1.15	**41.6**	**3.16**	< 0.0460	< 2.88	< 0.575
MTCA Method A Cleanup Levels for Unrestricted Land Use				21	--	2	2,000	250	2	400	400
MTCA Cleanup Level for the Protection of Groundwater				--	1,600	--	--	--	--	5	14

Notes:

<1.09 = analyte not detected

Bold = analyte was detected at a concentration above the laboratory method detection limit

mg/kg = milligrams per kilogram

EPA = Environmental Protection Agency

MTCA = Model Toxics Control Act

FIGURES

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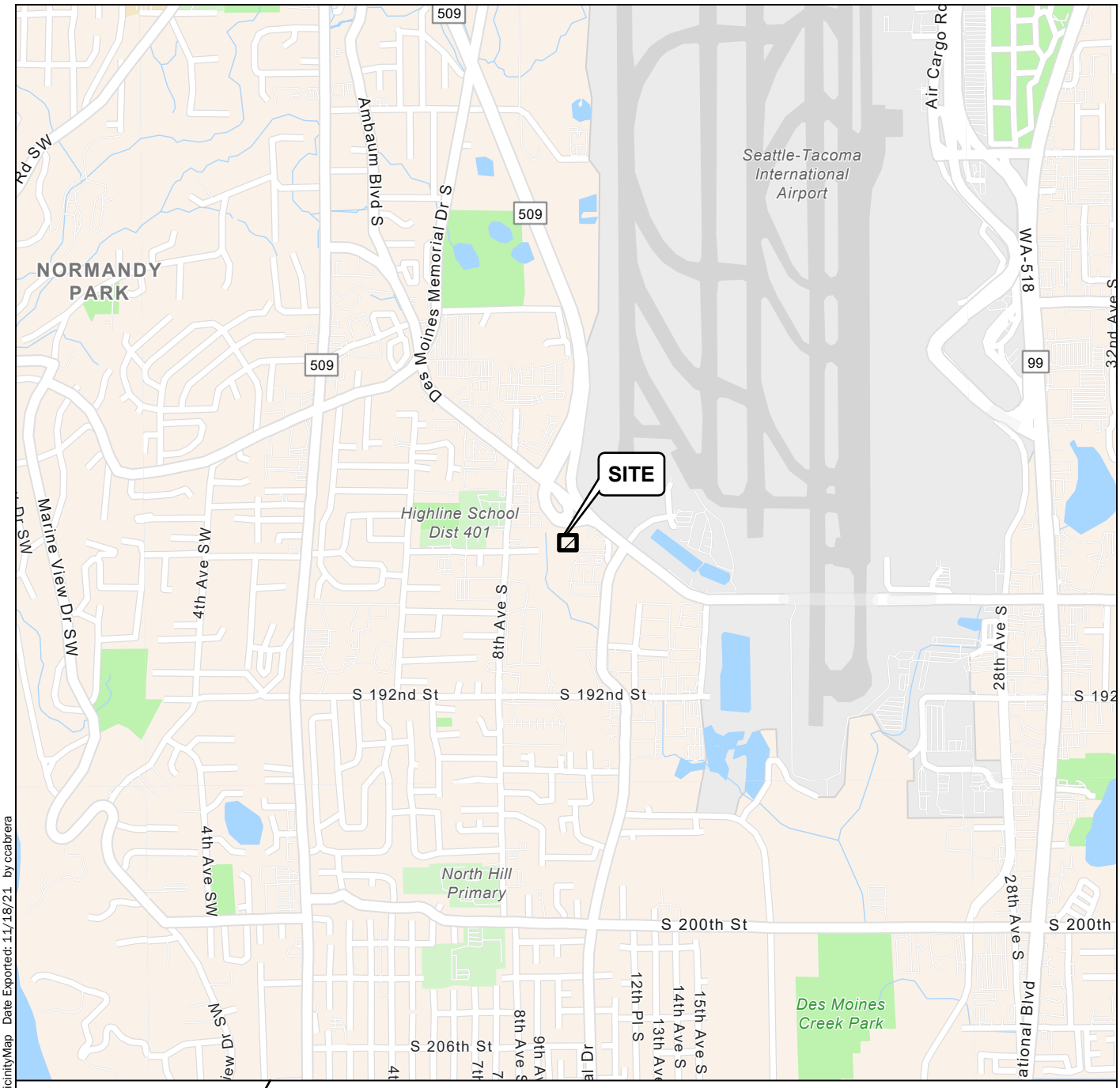

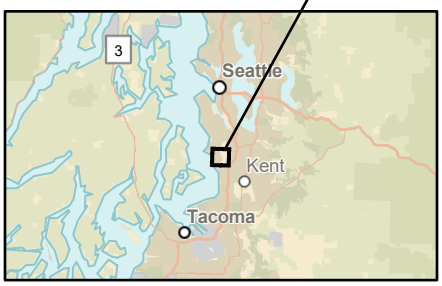

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2,000 0 2,000

Feet

Notes:

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Source: ESRI

Projection: NAD 1983 UTM Zone 10N

Vicinity Map

WSDOT - A-1 Towing
SeaTac, Washington

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Figure 1

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Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Source: ESRI Clarity

Projection: NAD 1983 UTM Zone 10N

Legend

- Boring Number and Approximate Location
- Monitoring Well Number and Approximate Location
- Previous WSDOT Explorations (2016)
- Drum Storage
- Assessment Area

N
W E
S

30 0 30
Feet

Exploration Locations

WSDOT - A-1 Towing
SeaTac, Washington

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Figure 2

P:\0_0180393\GIS\0180393Project\0180393Project.aprx\0180393300_F02_ExplorationLocations Date Exported: 12/01/21 by ccabrera

APPENDICES

GeoEngineers

APPENDIX 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

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
VS	Vane shear

Sheen Classification

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

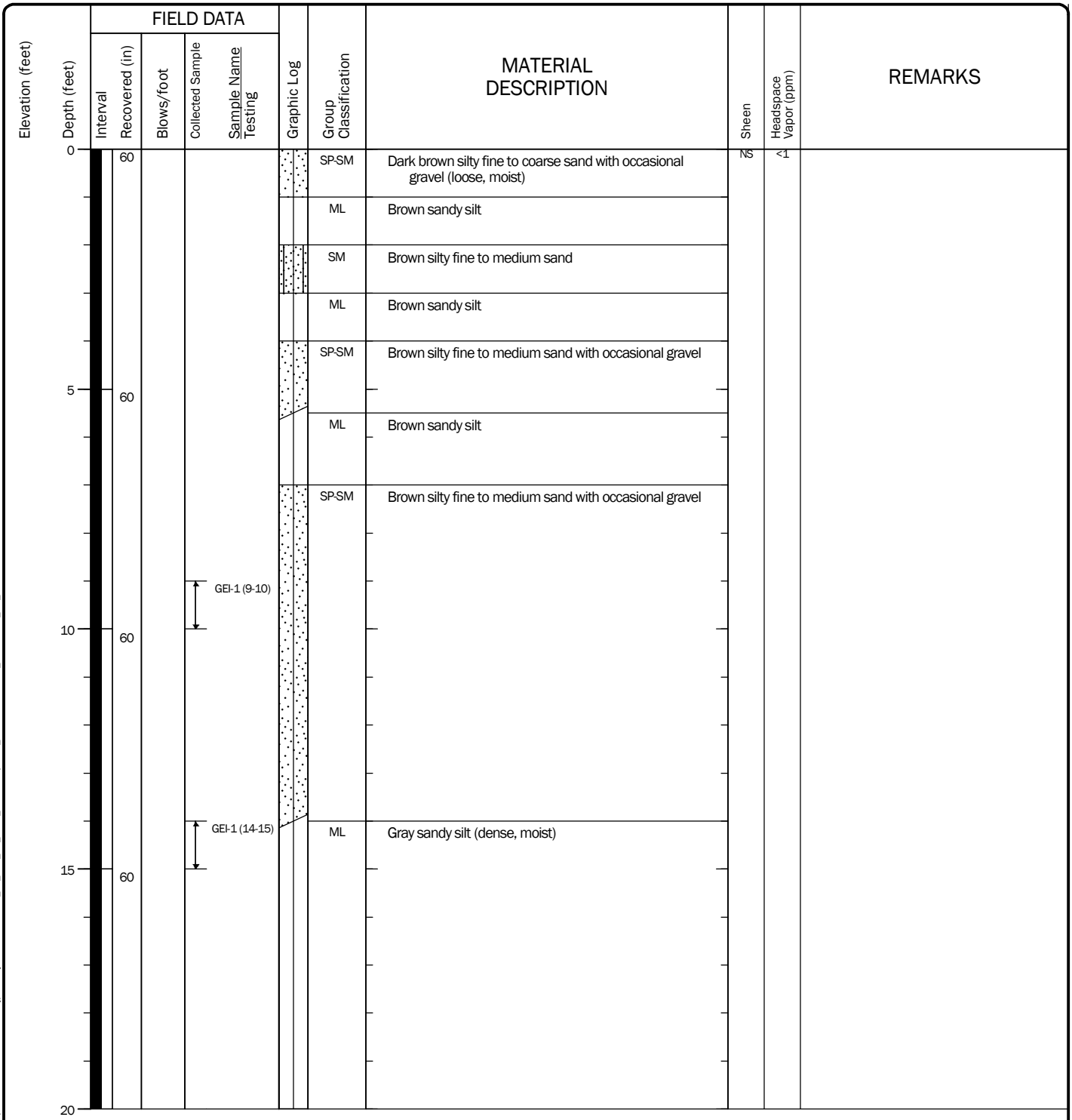
NOTE: The reader must refer to the discussion in the report text and the logs of explorations for a proper understanding of subsurface conditions. Descriptions on the logs apply only at the specific exploration locations and at the time the explorations were made; they are not warranted to be representative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

Key to Exploration Logs

GeoEngineers

Figure A-1

Drilled Start 10/25/2021 End 10/25/2021	Total Depth (ft) 20	Logged By DC Checked By CJW	Driller Holocene Drilling, Inc.	Drilling Method Direct-push	
Surface Elevation (ft) Vertical Datum Undetermined		Hammer Data		Drilling Equipment Geoprobe 7822T	
Easting (X) Northing (Y)		System Datum		Groundwater not observed at time of exploration	
Notes:					



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

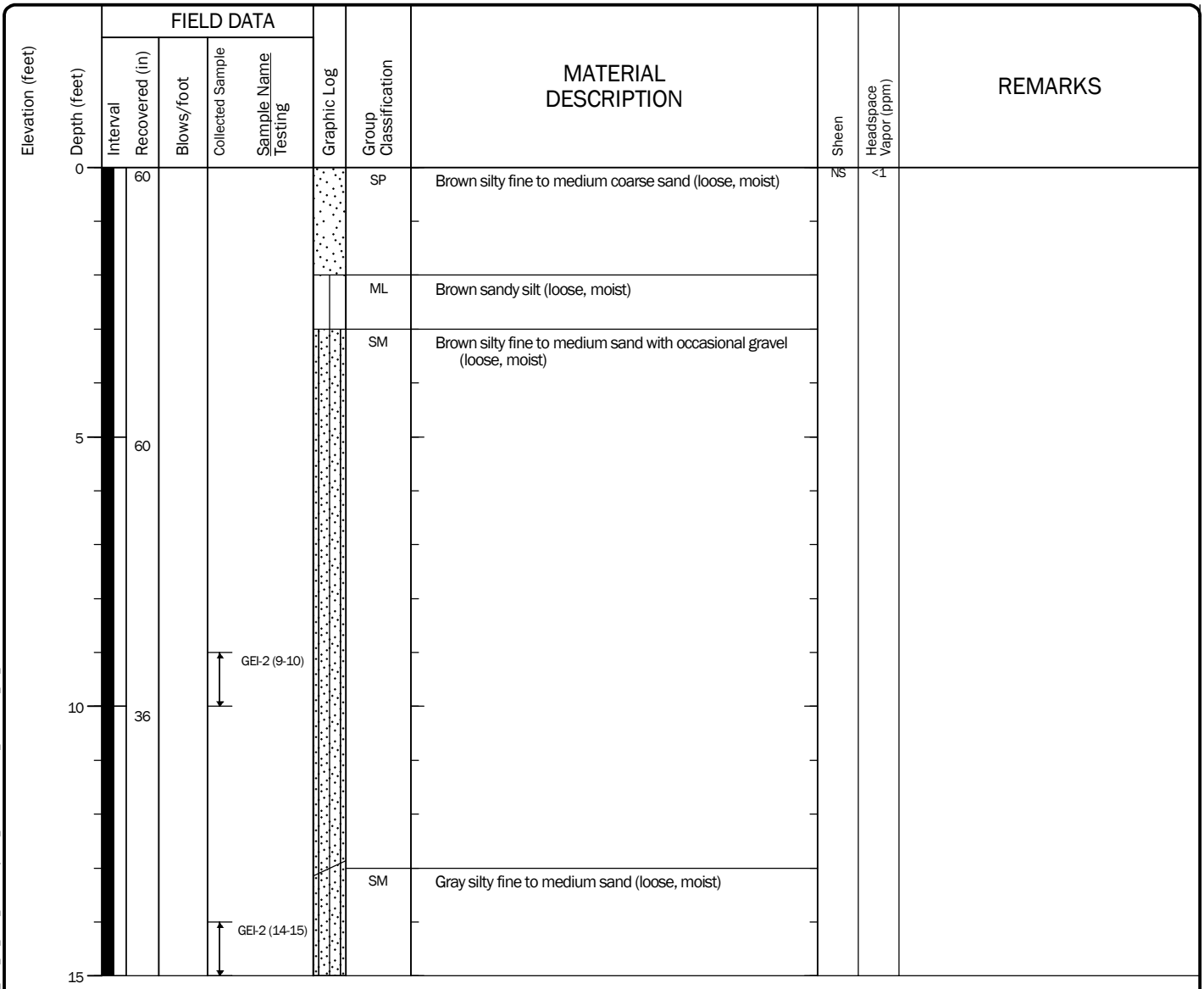
Log of Boring GEI-1

GeoEngineers

Project: A-1 Towing
Project Location: SeaTac, Washington
Project Number: 0180-393-00

Figure A-2
Sheet 1 of 1

Drilled Start 10/25/2021 End 10/25/2021	Total Depth (ft) 15	Logged By DC Checked By CJW	Driller Holocene Drilling, Inc.	Drilling Method Direct-push	
Surface Elevation (ft) Vertical Datum Undetermined		Hammer Data		Drilling Equipment Geoprobe 7822T	
Easting (X) Northing (Y)		System Datum		Groundwater not observed at time of exploration	
Notes:					



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

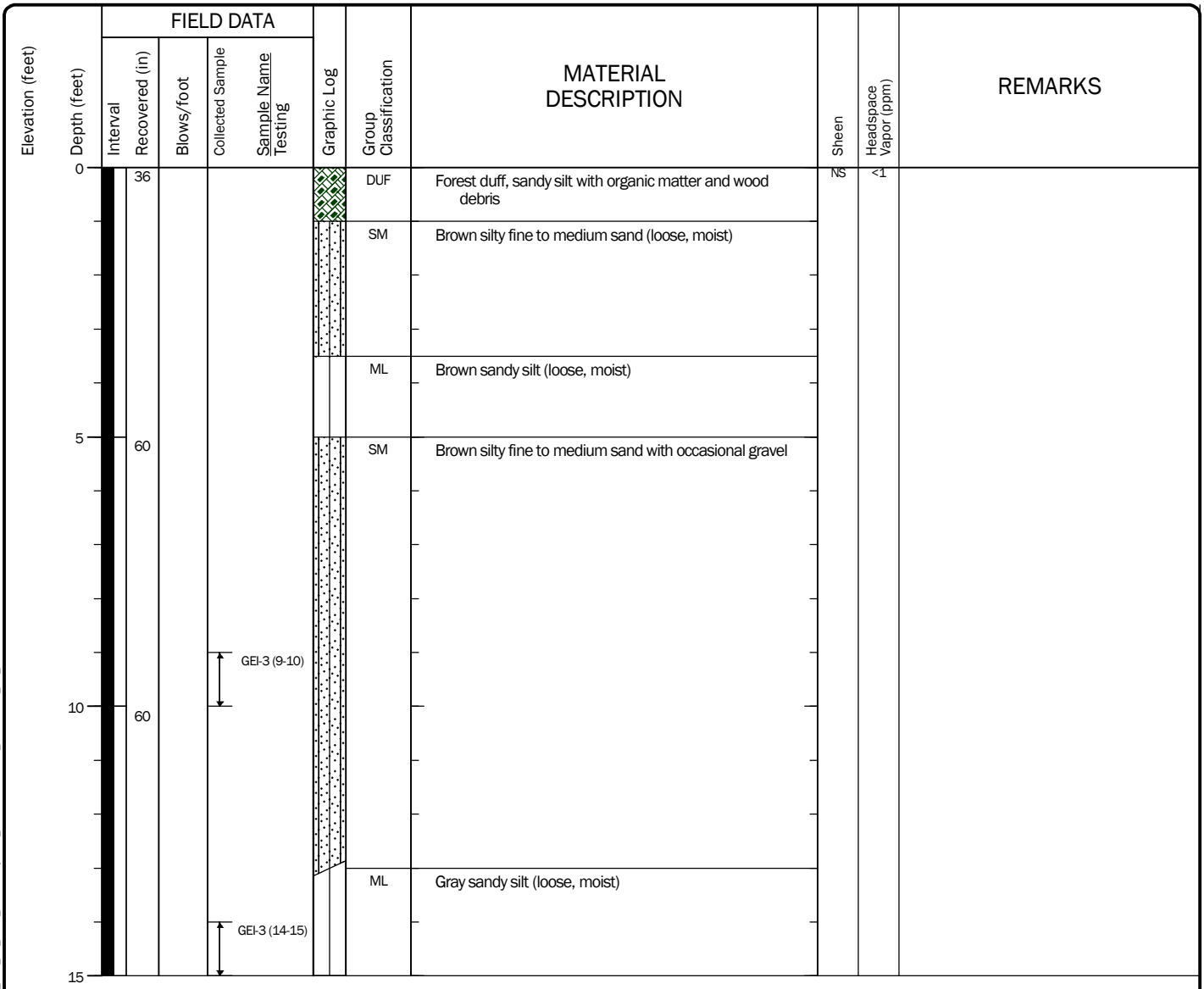
Log of Boring GEI-2

GeoEngineers

Project: A-1 Towing
Project Location: SeaTac, Washington
Project Number: 0180-393-00

Figure A-3
Sheet 1 of 1

Drilled Start 10/25/2021 End 10/25/2021	Total Depth (ft) 15	Logged By DC Checked By CJW	Driller Holocene Drilling, Inc.	Drilling Method Direct-push	
Surface Elevation (ft) Vertical Datum Undetermined		Hammer Data		Drilling Equipment Geoprobe 7822T	
Easting (X) Northing (Y)		System Datum		Groundwater not observed at time of exploration	
Notes:					



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

Log of Boring GEI-3

GeoEngineers

Project: A-1 Towing
Project Location: SeaTac, Washington
Project Number: 0180-393-00

Figure A-4
Sheet 1 of 1

Drilled	Start 10/25/2021	End 10/25/2021	Total Depth (ft)	15	Logged By	DC	Checked By	CJW	Driller	Holocene Drilling, Inc.	Drilling Method	Direct-push
Surface Elevation (ft) Vertical Datum	Undetermined				Hammer Data				Drilling Equipment	Geoprobe 7822T		
Easting (X) Northing (Y)					System Datum				Groundwater not observed at time of exploration			

Notes:

Elevation (feet)	Depth (feet)	FIELD DATA: Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0		48					SP-SM	Brown silty fine to coarse sand with occasional gravel (loose, moist)	NS	<1	
						GEI-4 (2-3)						
								ML	Brown sandy silt			
								SM	Brown silty fine to medium sand with occasional gravel			
	5		60									
						GEI-4 (9-10)						
	10		60									
						GEI-4 (14-15)						
	15							ML	Gray sandy silt (loose, moist)			

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

Log of Boring GEI-4

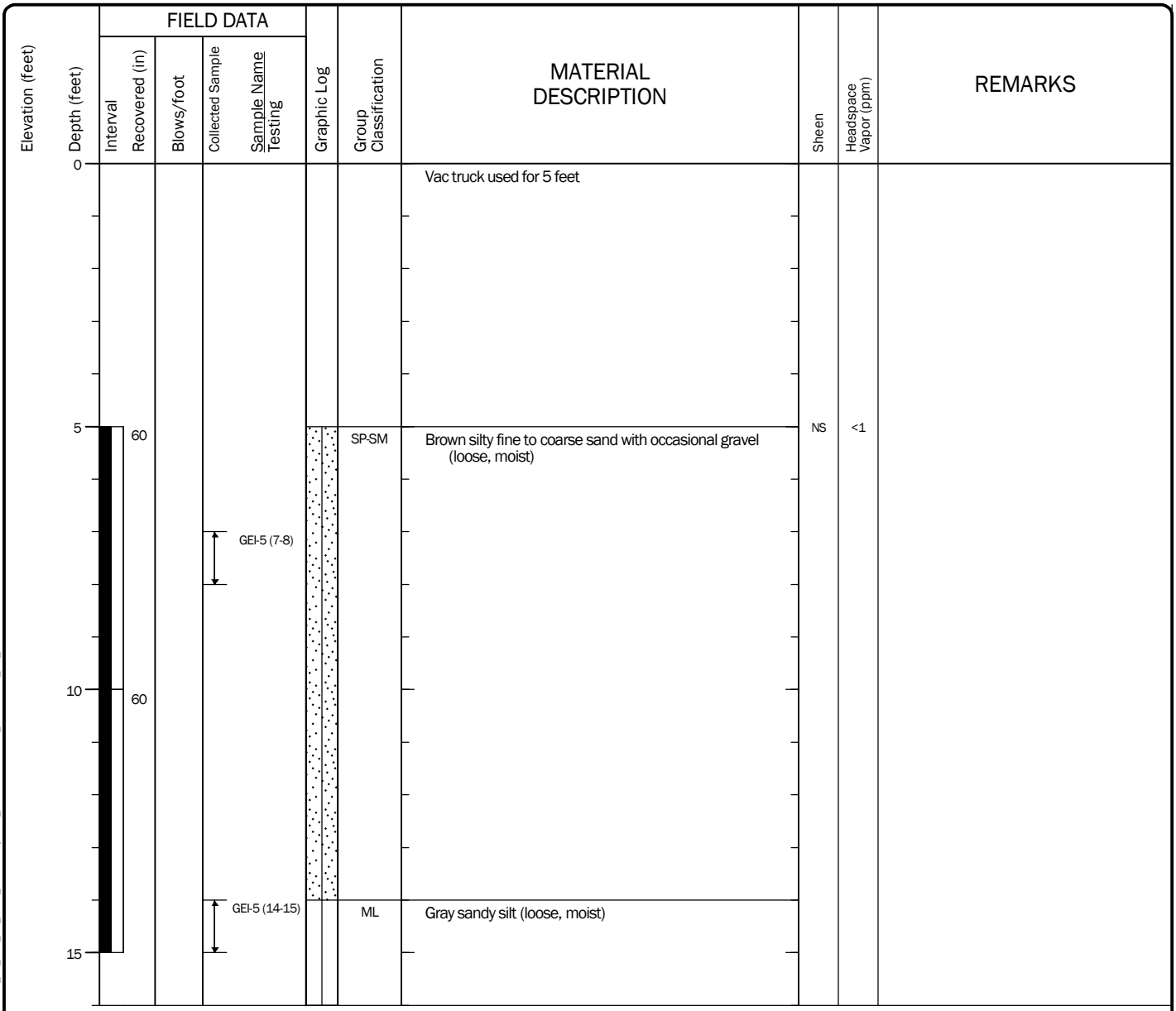
GeoEngineers

Project: A-1 Towing
Project Location: SeaTac, Washington
Project Number: 0180-393-00

Figure A-5
Sheet 1 of 1

Drilled Start 10/26/2021 End 10/26/2021	Total Depth (ft) 16	Logged By DC Checked By CJW	Driller Holocene Drilling, Inc.	Drilling Method Direct-push
Surface Elevation (ft) Vertical Datum Undetermined		Hammer Data	Drilling Equipment Geoprobe 7822T	
Easting (X) Northing (Y)		System Datum	Groundwater not observed at time of exploration	

Notes:



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

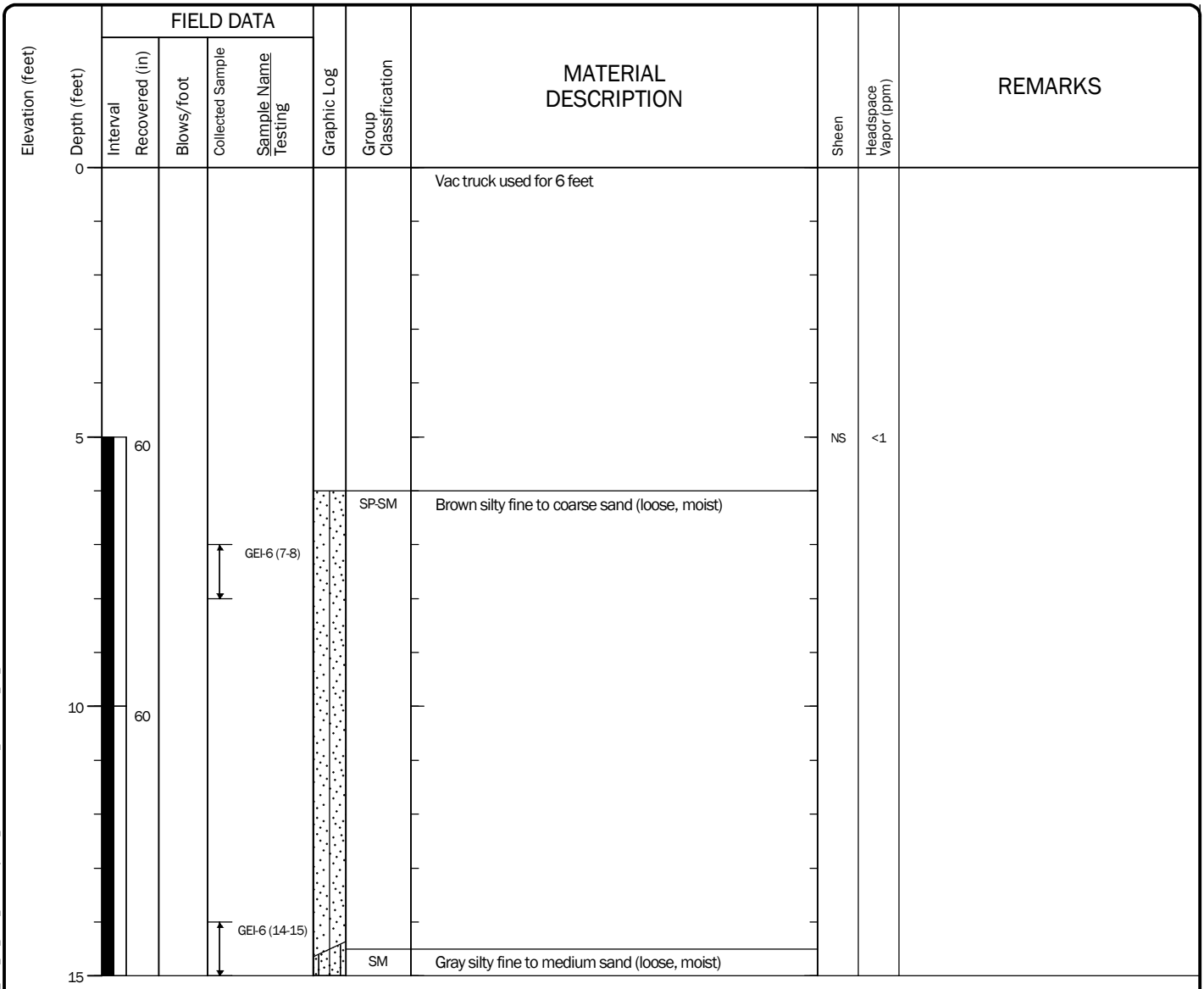
Log of Boring GEI-5

GeoEngineers

Project: A-1 Towing
Project Location: SeaTac, Washington
Project Number: 0180-393-00

Figure A-6
Sheet 1 of 1

Drilled Start 10/26/2021 End 10/26/2021	Total Depth (ft) 15	Logged By DC Checked By CJW	Driller Holocene Drilling, Inc.	Drilling Method Direct-push	
Surface Elevation (ft) Vertical Datum Undetermined		Hammer Data		Drilling Equipment Geoprobe 7822T	
Easting (X) Northing (Y)		System Datum		Groundwater not observed at time of exploration	
Notes:					



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

Log of Boring GEI-6

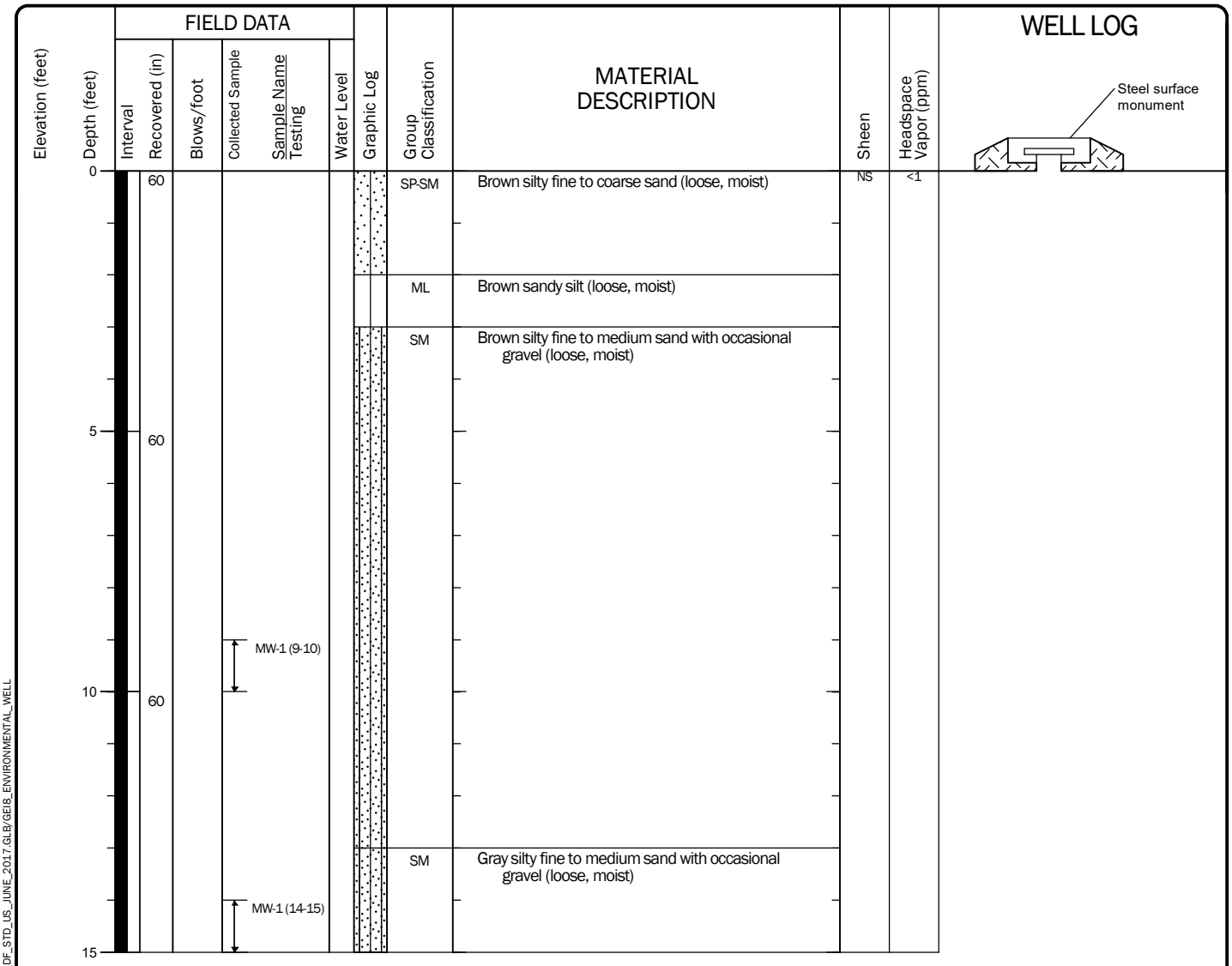
GeoEngineers

Project: A-1 Towing
Project Location: SeaTac, Washington
Project Number: 0180-393-00

Figure A-7
Sheet 1 of 1

Drilled Start 10/25/2021 End 10/25/2021	Total Depth (ft) 15	Logged By DC Checked By CJW	Driller Holocene Drilling, Inc.	Drilling Method Direct-push
Hammer Data		Drilling Equipment Geoprobe 7822T	A 2-in well was installed on 10/25/2021 to a depth of 15 ft.	
Surface Elevation (ft) Vertical Datum Undetermined		Top of Casing Elevation (ft)	Groundwater Date Measured	Depth to Water (ft) / Elevation (ft)
Easting (X) Northing (Y)		Horizontal Datum		

Notes:



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

Log of Boring MW-1

GeoEngineers

Project: A-1 Towing
Project Location: SeaTac, Washington
Project Number: 0180-393-00

Figure A-8
Sheet 1 of 1

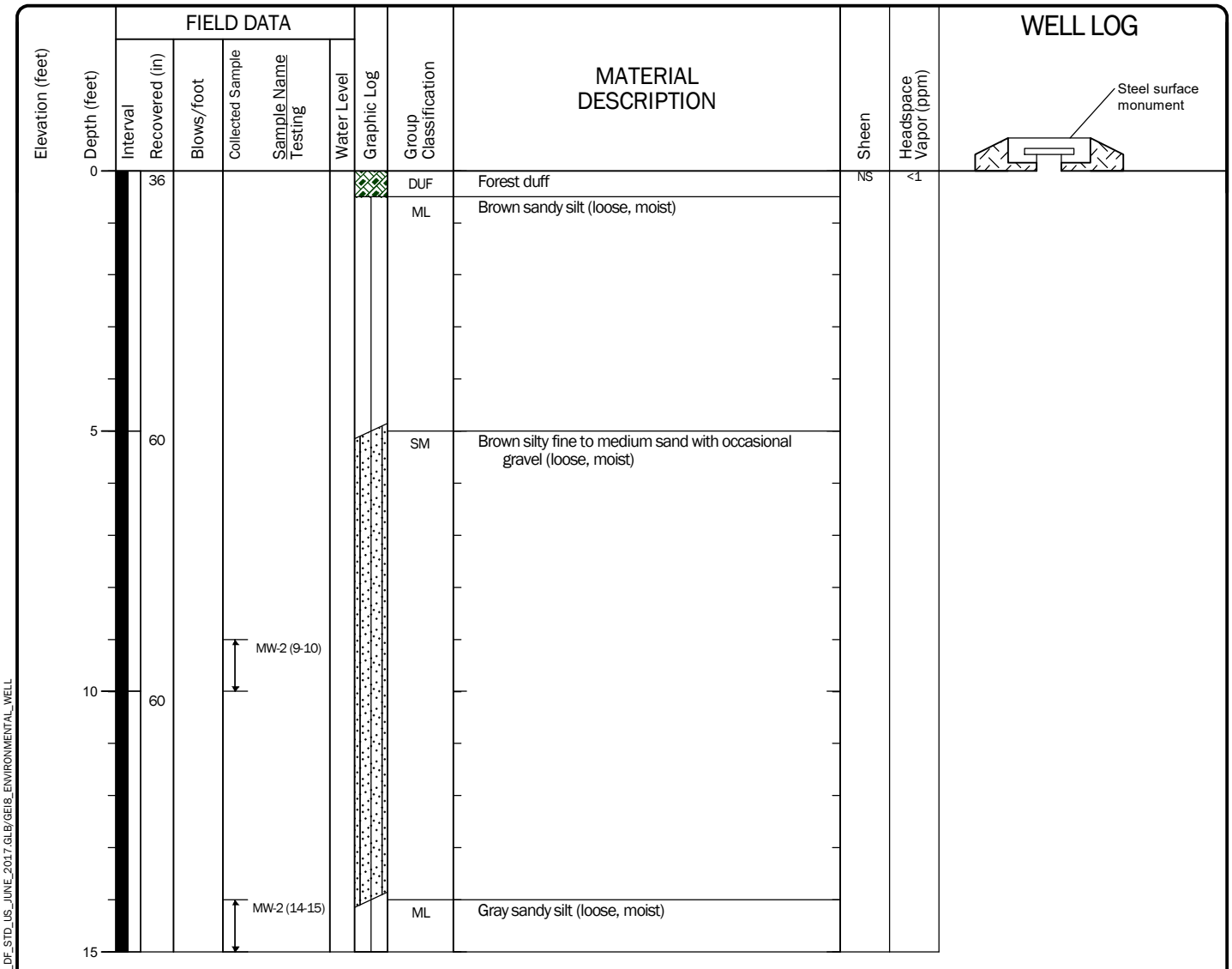
Drilled	Start	End	Total Depth (ft)	Logged By	Checked By	Driller	Drilling Method
	10/25/2021	10/25/2021	15	DC	CJW	Holocene Drilling, Inc.	Direct-push

Hammer Data		Drilling Equipment	Geoprobe 7822T
Surface Elevation (ft) Vertical Datum	Undetermined	Top of Casing Elevation (ft)	
Easting (X) Northing (Y)		Horizontal Datum	

A 2-in well was installed on 10/26/2021 to a depth of 15 ft.

Groundwater Date Measured	Depth to Water (ft)	Elevation (ft)

Notes:



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

Log of Boring MW-2

GeoEngineers

Project: A-1 Towing
Project Location: SeaTac, Washington
Project Number: 0180-393-00

Figure A-9
Sheet 1 of 1

Date:11/18/21 Path:P:\0\0180393\GINT\0180393000.GPJ DBLibrary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEI8_ENVIRONMENTAL_WELL

Drilled	Start 10/26/2021	End 10/26/2021	Total Depth (ft) 16	Logged By DC / Checked By CJW	Driller Holocene Drilling, Inc.	Drilling Method Direct-push

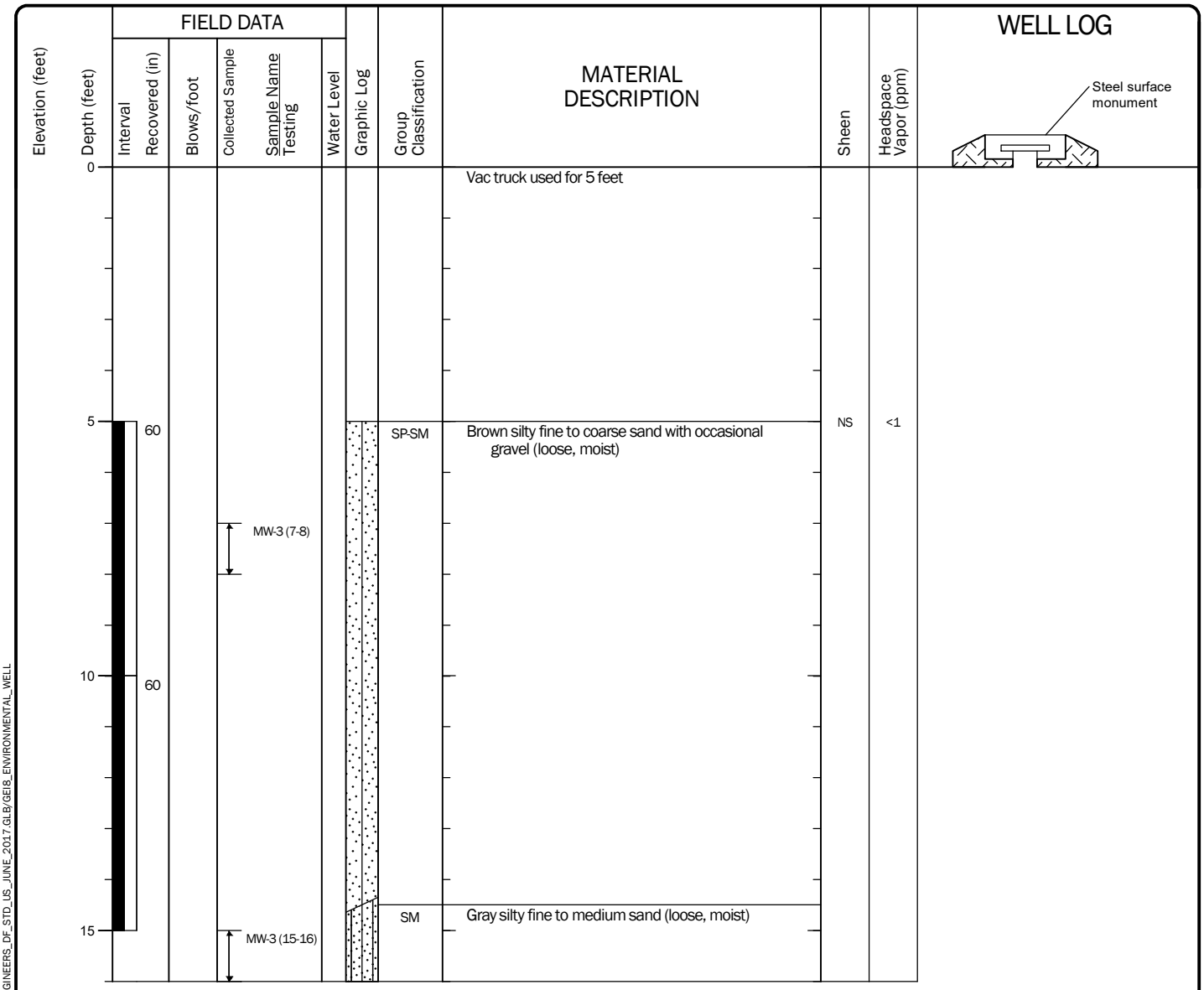
Hammer Data		Drilling Equipment	Geoprobe 7822T
Surface Elevation (ft) Vertical Datum	Undetermined	Top of Casing Elevation (ft)	
Easting (X) Northing (Y)		Horizontal Datum	

A 2-in well was installed on 10/26/2021 to a depth of 16 ft.

Groundwater

Date Measured	Depth to Water (ft)	Elevation (ft)

Notes:



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

Log of Boring MW-3

GeoEngineers

Project: A-1 Towing
Project Location: SeaTac, Washington
Project Number: 0180-393-00

Figure A-10
Sheet 1 of 1

Date:11/18/21 Path:P:\0\0180393\GINT\0180393GPJ DBLibrary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEI8_ENVIRONMENTAL_WELL

APPENDIX B
Chemical Analytical Program

APPENDIX B
CHEMICAL ANALYTICAL PROGRAM

Analytical Methods

Chain-of-custody procedures were followed during the transport of the field samples to the analytical laboratory. The samples were held in cold storage pending extraction and/or analysis. The analytical results, analytical methods reference and laboratory quality control (QC) records are included in this appendix. The analytical results are also summarized in the text and tables of this report.

Analytical Data Review

The laboratory maintains an internal quality assurance program as documented in its laboratory quality assurance manual. The laboratory uses a combination of blanks, surrogate recoveries, duplicates, matrix spike recoveries, matrix spike duplicate recoveries, blank spike recoveries and blank spike duplicate recoveries to evaluate the validity of the analytical results. The laboratory also uses data quality goals for individual chemicals or groups of chemicals based on the long-term performance of the test methods. The data quality goals were included in the laboratory reports. The laboratory compared each group of samples with the existing data quality goals and noted any exceptions in the laboratory report. Data quality exceptions documented by the accredited laboratory were reviewed by GeoEngineers and are addressed in the data quality exception section of this appendix.

Analytical Data Review Summary

Quality controls were within required limits including duplicates. The data is of acceptable quality for their intended use.

ANALYTICAL REPORT

November 09, 2021

GeoEngineers- Portland, OR

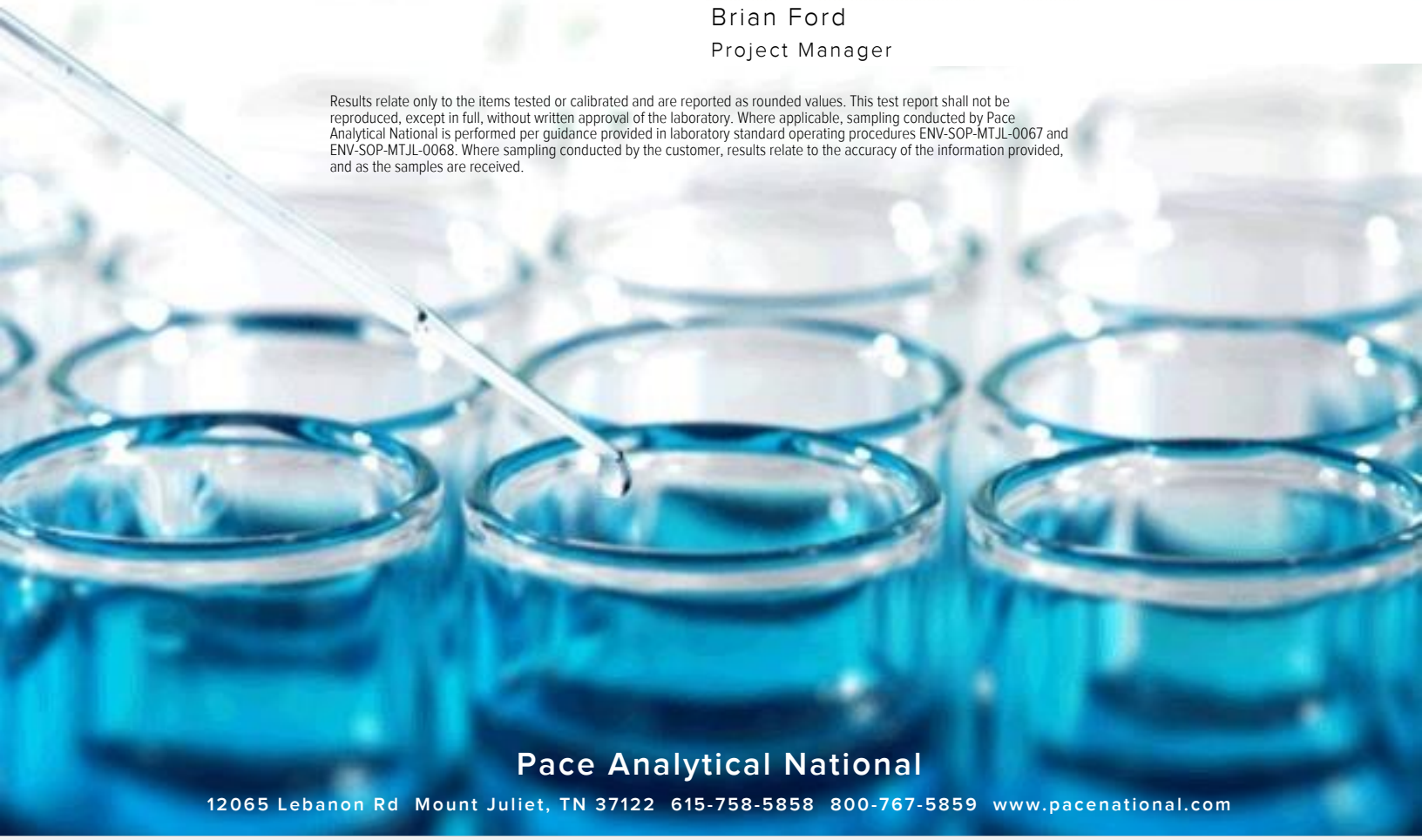
Sample Delivery Group:	L1423266
Samples Received:	10/27/2021
Project Number:	0180-393-00
Description:	WSDOT-A-1 Towing

Report To:

Cris Watkins
4000 Kruse Way Place
Bldg. 3, Suite 200
Lake Oswego, OR 97035

Entire Report Reviewed By:

Brian Ford
Project Manager



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

GEI-1-9-10 L1423266-01 Solid

Collected by: Dexter C. | Collected date/time: 10/25/21 11:20 | Received date/time: 10/27/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1765837	1	10/30/21 16:24	10/30/21 16:39	KDW	Mt. Juliet, TN
Mercury by Method 7471B	WG1766498	1	11/02/21 08:07	11/02/21 15:04	BMF	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1765966	5	11/02/21 12:22	11/03/21 18:25	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1765532	25	10/25/21 11:20	10/29/21 11:17	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1766323	1	10/25/21 11:20	10/31/21 03:56	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1766948	1	11/02/21 03:07	11/03/21 07:15	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1765811	1	10/30/21 01:41	10/30/21 13:00	AAT	Mt. Juliet, TN

GEI-2-9-10 L1423266-03 Solid

Collected by: Dexter C. | Collected date/time: 10/25/21 11:40 | Received date/time: 10/27/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1765837	1	10/30/21 16:24	10/30/21 16:39	KDW	Mt. Juliet, TN
Mercury by Method 7471B	WG1766498	1	11/02/21 08:07	11/02/21 15:07	BMF	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1765966	5	11/02/21 12:22	11/03/21 18:28	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1765532	25	10/25/21 11:40	10/29/21 11:38	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1766323	1	10/25/21 11:40	10/31/21 04:15	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1766948	1	11/02/21 03:07	11/03/21 06:11	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1765811	1	10/30/21 01:41	10/30/21 13:18	AAT	Mt. Juliet, TN

GEI-3-9-10 L1423266-05 Solid

Collected by: Dexter C. | Collected date/time: 10/25/21 13:45 | Received date/time: 10/27/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1765837	1	10/30/21 16:24	10/30/21 16:39	KDW	Mt. Juliet, TN
Mercury by Method 7471B	WG1766498	1	11/02/21 08:07	11/02/21 15:09	BMF	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1765966	5	11/02/21 12:22	11/03/21 18:32	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1765532	25	10/25/21 13:45	10/29/21 12:00	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1766323	1	10/25/21 13:45	10/31/21 04:34	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1766948	1	11/02/21 03:07	11/03/21 06:24	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1765811	1	10/30/21 01:41	10/30/21 13:35	AAT	Mt. Juliet, TN

MW-2-9-10 L1423266-11 Solid

Collected by: Dexter C. | Collected date/time: 10/25/21 14:00 | Received date/time: 10/27/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1765837	1	10/30/21 16:24	10/30/21 16:39	KDW	Mt. Juliet, TN
Mercury by Method 7471B	WG1766498	1	11/02/21 08:07	11/02/21 15:12	BMF	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1765966	5	11/02/21 12:22	11/03/21 18:35	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1765548	25	10/25/21 14:00	10/29/21 04:21	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1766323	1	10/25/21 14:00	10/31/21 04:53	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1766948	1	11/02/21 03:07	11/03/21 06:36	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1765811	1	10/30/21 01:41	10/30/21 13:52	AAT	Mt. Juliet, TN

GEI-4-2-3 L1423266-13 Solid

Collected by: Dexter C. | Collected date/time: 10/26/21 10:00 | Received date/time: 10/27/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1765837	1	10/30/21 16:24	10/30/21 16:39	KDW	Mt. Juliet, TN
Mercury by Method 7471B	WG1766498	1	11/02/21 08:07	11/02/21 15:15	BMF	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1765966	5	11/02/21 12:22	11/03/21 18:39	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1765548	25	10/26/21 10:00	10/29/21 04:43	MGF	Mt. Juliet, TN

GEI-4-2-3 L1423266-13 Solid

Collected by: Dexter C. | Collected date/time: 10/26/21 10:00 | Received date/time: 10/27/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1766323	1	10/26/21 10:00	10/31/21 05:12	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1766948	5	11/02/21 03:07	11/03/21 15:22	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1765811	1	10/30/21 01:41	10/30/21 16:11	AAT	Mt. Juliet, TN

MW-1-2-3 L1423266-14 Solid

Collected by: Dexter C. | Collected date/time: 10/26/21 10:20 | Received date/time: 10/27/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1765837	1	10/30/21 16:24	10/30/21 16:39	KDW	Mt. Juliet, TN
Mercury by Method 7471B	WG1766498	1	11/02/21 08:07	11/02/21 15:22	BMF	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1765966	5	11/02/21 12:22	11/03/21 18:42	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1765548	25	10/26/21 10:20	10/29/21 05:05	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1766323	1	10/26/21 10:20	10/31/21 05:31	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1766948	1	11/02/21 03:07	11/03/21 06:49	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1765811	1	10/30/21 01:41	10/30/21 14:27	AAT	Mt. Juliet, TN

GEI-5-7-8 L1423266-15 Solid

Collected by: Dexter C. | Collected date/time: 10/26/21 10:40 | Received date/time: 10/27/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1765837	1	10/30/21 16:24	10/30/21 16:39	KDW	Mt. Juliet, TN
Mercury by Method 7471B	WG1766498	1	11/02/21 08:07	11/02/21 15:25	BMF	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1765966	5	11/02/21 12:22	11/03/21 18:46	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1765548	25	10/26/21 10:40	10/29/21 05:27	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1766323	1	10/26/21 10:40	10/31/21 05:49	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1766948	1	11/02/21 03:07	11/03/21 07:02	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1765811	1	10/30/21 01:41	10/30/21 14:44	AAT	Mt. Juliet, TN

MW-3-2-3 L1423266-17 Solid

Collected by: Dexter C. | Collected date/time: 10/26/21 11:00 | Received date/time: 10/27/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1765837	1	10/30/21 16:24	10/30/21 16:39	KDW	Mt. Juliet, TN
Mercury by Method 7471B	WG1766498	1	11/02/21 08:07	11/02/21 15:27	BMF	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1765966	5	11/02/21 12:22	11/03/21 18:49	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1765548	25	10/26/21 11:00	10/29/21 05:49	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1766323	1	10/26/21 11:00	10/31/21 06:08	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1766948	1	11/02/21 03:07	11/03/21 07:54	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1765811	1	10/30/21 01:41	10/30/21 15:02	AAT	Mt. Juliet, TN

GEI-6-7-8 L1423266-20 Solid

Collected by: Dexter C. | Collected date/time: 10/26/21 12:05 | Received date/time: 10/27/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1765837	1	10/30/21 16:24	10/30/21 16:39	KDW	Mt. Juliet, TN
Mercury by Method 7471B	WG1766498	1	11/02/21 08:07	11/02/21 15:30	BMF	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1765966	5	11/02/21 12:22	11/03/21 18:52	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1765548	25	10/26/21 12:05	10/29/21 06:11	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1766323	1	10/26/21 12:05	10/31/21 06:27	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1766948	1	11/02/21 03:07	11/03/21 07:41	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1765811	1	10/30/21 01:41	10/30/21 15:19	AAT	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Project Manager

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	91.8		1	10/30/2021 16:39	WG1765837

Mercury by Method 7471B

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Mercury	ND		0.0436	1	11/02/2021 15:04	WG1766498

Metals (ICPMS) by Method 6020B

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Arsenic	2.26		1.09	5	11/03/2021 18:25	WG1765966
Barium	41.9		2.72	5	11/03/2021 18:25	WG1765966
Cadmium	ND		1.09	5	11/03/2021 18:25	WG1765966
Chromium	23.4		5.45	5	11/03/2021 18:25	WG1765966
Lead	ND		2.18	5	11/03/2021 18:25	WG1765966
Selenium	ND		2.72	5	11/03/2021 18:25	WG1765966
Silver	ND		0.545	5	11/03/2021 18:25	WG1765966

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Gasoline Range Organics-NWTPH	ND		3.01	25	10/29/2021 11:17	WG1765532
(S) a,a,a-Trifluorotoluene(FID)	*119*		*77.0-120*		*10/29/2021 11:17*	WG1765532

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

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Acetone	ND		0.0607	1	10/31/2021 03:56	WG1766323
Acrylonitrile	ND	C3	0.0152	1	10/31/2021 03:56	WG1766323
Benzene	ND		0.00121	1	10/31/2021 03:56	WG1766323
Bromobenzene	ND		0.0152	1	10/31/2021 03:56	WG1766323
Bromodichloromethane	ND		0.00303	1	10/31/2021 03:56	WG1766323
Bromoform	ND		0.0303	1	10/31/2021 03:56	WG1766323
Bromomethane	ND		0.0152	1	10/31/2021 03:56	WG1766323
n-Butylbenzene	ND		0.0152	1	10/31/2021 03:56	WG1766323
sec-Butylbenzene	ND		0.0152	1	10/31/2021 03:56	WG1766323
tert-Butylbenzene	ND		0.00607	1	10/31/2021 03:56	WG1766323
Carbon tetrachloride	ND		0.00607	1	10/31/2021 03:56	WG1766323
Chlorobenzene	ND		0.00303	1	10/31/2021 03:56	WG1766323
Chlorodibromomethane	ND		0.00303	1	10/31/2021 03:56	WG1766323
Chloroethane	ND		0.00607	1	10/31/2021 03:56	WG1766323
Chloroform	ND		0.00303	1	10/31/2021 03:56	WG1766323
Chloromethane	ND		0.0152	1	10/31/2021 03:56	WG1766323
2-Chlorotoluene	ND		0.00303	1	10/31/2021 03:56	WG1766323
4-Chlorotoluene	ND		0.00607	1	10/31/2021 03:56	WG1766323
1,2-Dibromo-3-Chloropropane	ND		0.0303	1	10/31/2021 03:56	WG1766323
1,2-Dibromoethane	ND		0.00303	1	10/31/2021 03:56	WG1766323
Dibromomethane	ND		0.00607	1	10/31/2021 03:56	WG1766323
1,2-Dichlorobenzene	ND		0.00607	1	10/31/2021 03:56	WG1766323
1,3-Dichlorobenzene	ND		0.00607	1	10/31/2021 03:56	WG1766323
1,4-Dichlorobenzene	ND		0.00607	1	10/31/2021 03:56	WG1766323
Dichlorodifluoromethane	ND		0.00303	1	10/31/2021 03:56	WG1766323
1,1-Dichloroethane	ND		0.00303	1	10/31/2021 03:56	WG1766323
1,2-Dichloroethane	ND		0.00303	1	10/31/2021 03:56	WG1766323

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

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,1-Dichloroethene	ND		0.00303	1	10/31/2021 03:56	WG1766323
cis-1,2-Dichloroethene	ND		0.00303	1	10/31/2021 03:56	WG1766323
trans-1,2-Dichloroethene	ND		0.00607	1	10/31/2021 03:56	WG1766323
1,2-Dichloropropane	ND		0.00607	1	10/31/2021 03:56	WG1766323
1,1-Dichloropropene	ND		0.00303	1	10/31/2021 03:56	WG1766323
1,3-Dichloropropane	ND		0.00607	1	10/31/2021 03:56	WG1766323
cis-1,3-Dichloropropene	ND		0.00303	1	10/31/2021 03:56	WG1766323
trans-1,3-Dichloropropene	ND		0.00607	1	10/31/2021 03:56	WG1766323
2,2-Dichloropropane	ND		0.00303	1	10/31/2021 03:56	WG1766323
Di-isopropyl ether	ND		0.00121	1	10/31/2021 03:56	WG1766323
Ethylbenzene	ND		0.00303	1	10/31/2021 03:56	WG1766323
Hexachloro-1,3-butadiene	ND		0.0303	1	10/31/2021 03:56	WG1766323
Isopropylbenzene	ND		0.00303	1	10/31/2021 03:56	WG1766323
p-Isopropyltoluene	ND		0.00607	1	10/31/2021 03:56	WG1766323
2-Butanone (MEK)	ND		0.121	1	10/31/2021 03:56	WG1766323
Methylene Chloride	ND		0.0303	1	10/31/2021 03:56	WG1766323
4-Methyl-2-pentanone (MIBK)	ND		0.0303	1	10/31/2021 03:56	WG1766323
Methyl tert-butyl ether	ND		0.00121	1	10/31/2021 03:56	WG1766323
Naphthalene	ND		0.0152	1	10/31/2021 03:56	WG1766323
n-Propylbenzene	ND		0.00607	1	10/31/2021 03:56	WG1766323
Styrene	ND		0.0152	1	10/31/2021 03:56	WG1766323
1,1,1,2-Tetrachloroethane	ND		0.00303	1	10/31/2021 03:56	WG1766323
1,1,2,2-Tetrachloroethane	ND		0.00303	1	10/31/2021 03:56	WG1766323
1,1,2-Trichlorotrifluoroethane	ND		0.00303	1	10/31/2021 03:56	WG1766323
Tetrachloroethene	ND		0.00303	1	10/31/2021 03:56	WG1766323
Toluene	ND		0.00607	1	10/31/2021 03:56	WG1766323
1,2,3-Trichlorobenzene	ND	C4	0.0152	1	10/31/2021 03:56	WG1766323
1,2,4-Trichlorobenzene	ND		0.0152	1	10/31/2021 03:56	WG1766323
1,1,1-Trichloroethane	ND		0.00303	1	10/31/2021 03:56	WG1766323
1,1,2-Trichloroethane	ND		0.00303	1	10/31/2021 03:56	WG1766323
Trichloroethene	ND		0.00121	1	10/31/2021 03:56	WG1766323
Trichlorofluoromethane	ND		0.00303	1	10/31/2021 03:56	WG1766323
1,2,3-Trichloropropane	ND		0.0152	1	10/31/2021 03:56	WG1766323
1,2,4-Trimethylbenzene	ND		0.00607	1	10/31/2021 03:56	WG1766323
1,2,3-Trimethylbenzene	ND		0.00607	1	10/31/2021 03:56	WG1766323
1,3,5-Trimethylbenzene	ND		0.00607	1	10/31/2021 03:56	WG1766323
Vinyl chloride	ND		0.00303	1	10/31/2021 03:56	WG1766323
Xylenes, Total	ND		0.00789	1	10/31/2021 03:56	WG1766323
(S) Toluene-d8	*104*		*75.0-131*		*10/31/2021 03:56*	WG1766323
(S) 4-Bromofluorobenzene	*99.6*		*67.0-138*		*10/31/2021 03:56*	WG1766323
(S) 1,2-Dichloroethane-d4	*103*		*70.0-130*		*10/31/2021 03:56*	WG1766323

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	ND		4.36	1	11/03/2021 07:15	WG1766948
Residual Range Organics (RRO)	ND		10.9	1	11/03/2021 07:15	WG1766948
(S) o-Terphenyl	*53.8*		*18.0-148*		*11/03/2021 07:15*	WG1766948

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00654	1	10/30/2021 13:00	WG1765811
Acenaphthene	ND		0.00654	1	10/30/2021 13:00	WG1765811
Acenaphthylene	ND		0.00654	1	10/30/2021 13:00	WG1765811
Benzo(a)anthracene	ND		0.00654	1	10/30/2021 13:00	WG1765811
Benzo(a)pyrene	ND		0.00654	1	10/30/2021 13:00	WG1765811
Benzo(b)fluoranthene	ND		0.00654	1	10/30/2021 13:00	WG1765811
Benzo(g,h,i)perylene	ND		0.00654	1	10/30/2021 13:00	WG1765811
Benzo(k)fluoranthene	ND		0.00654	1	10/30/2021 13:00	WG1765811
Chrysene	ND		0.00654	1	10/30/2021 13:00	WG1765811
Dibenz(a,h)anthracene	ND		0.00654	1	10/30/2021 13:00	WG1765811
Fluoranthene	ND		0.00654	1	10/30/2021 13:00	WG1765811
Fluorene	ND		0.00654	1	10/30/2021 13:00	WG1765811
Indeno(1,2,3-cd)pyrene	ND		0.00654	1	10/30/2021 13:00	WG1765811
Naphthalene	ND		0.0218	1	10/30/2021 13:00	WG1765811
Phenanthrene	ND		0.00654	1	10/30/2021 13:00	WG1765811
Pyrene	ND		0.00654	1	10/30/2021 13:00	WG1765811
1-Methylnaphthalene	ND		0.0218	1	10/30/2021 13:00	WG1765811
2-Methylnaphthalene	ND		0.0218	1	10/30/2021 13:00	WG1765811
2-Chloronaphthalene	ND		0.0218	1	10/30/2021 13:00	WG1765811
(S) Nitrobenzene-d5	*85.9*		*14.0-149*		*10/30/2021 13:00*	WG1765811
(S) 2-Fluorobiphenyl	*70.0*		*34.0-125*		*10/30/2021 13:00*	WG1765811
(S) p-Terphenyl-d14	*110*		*23.0-120*		*10/30/2021 13:00*	WG1765811

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	92.3		1	10/30/2021 16:39	WG1765837

Mercury by Method 7471B

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Mercury	ND		0.0434	1	11/02/2021 15:07	WG1766498

Metals (ICPMS) by Method 6020B

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Arsenic	2.36		1.08	5	11/03/2021 18:28	WG1765966
Barium	45.2		2.71	5	11/03/2021 18:28	WG1765966
Cadmium	ND		1.08	5	11/03/2021 18:28	WG1765966
Chromium	21.5		5.42	5	11/03/2021 18:28	WG1765966
Lead	ND		2.17	5	11/03/2021 18:28	WG1765966
Selenium	ND		2.71	5	11/03/2021 18:28	WG1765966
Silver	ND		0.542	5	11/03/2021 18:28	WG1765966

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Gasoline Range Organics-NWTPH	ND		2.99	25	10/29/2021 11:38	WG1765532
(S) a,a,a-Trifluorotoluene(FID)	*119*		*77.0-120*		*10/29/2021 11:38*	WG1765532

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

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Acetone	ND		0.0594	1	10/31/2021 04:15	WG1766323
Acrylonitrile	ND	C3	0.0148	1	10/31/2021 04:15	WG1766323
Benzene	ND		0.00119	1	10/31/2021 04:15	WG1766323
Bromobenzene	ND		0.0148	1	10/31/2021 04:15	WG1766323
Bromodichloromethane	ND		0.00297	1	10/31/2021 04:15	WG1766323
Bromoform	ND		0.0297	1	10/31/2021 04:15	WG1766323
Bromomethane	ND		0.0148	1	10/31/2021 04:15	WG1766323
n-Butylbenzene	ND		0.0148	1	10/31/2021 04:15	WG1766323
sec-Butylbenzene	ND		0.0148	1	10/31/2021 04:15	WG1766323
tert-Butylbenzene	ND		0.00594	1	10/31/2021 04:15	WG1766323
Carbon tetrachloride	ND		0.00594	1	10/31/2021 04:15	WG1766323
Chlorobenzene	ND		0.00297	1	10/31/2021 04:15	WG1766323
Chlorodibromomethane	ND		0.00297	1	10/31/2021 04:15	WG1766323
Chloroethane	ND		0.00594	1	10/31/2021 04:15	WG1766323
Chloroform	ND		0.00297	1	10/31/2021 04:15	WG1766323
Chloromethane	ND		0.0148	1	10/31/2021 04:15	WG1766323
2-Chlorotoluene	ND		0.00297	1	10/31/2021 04:15	WG1766323
4-Chlorotoluene	ND		0.00594	1	10/31/2021 04:15	WG1766323
1,2-Dibromo-3-Chloropropane	ND		0.0297	1	10/31/2021 04:15	WG1766323
1,2-Dibromoethane	ND		0.00297	1	10/31/2021 04:15	WG1766323
Dibromomethane	ND		0.00594	1	10/31/2021 04:15	WG1766323
1,2-Dichlorobenzene	ND		0.00594	1	10/31/2021 04:15	WG1766323
1,3-Dichlorobenzene	ND		0.00594	1	10/31/2021 04:15	WG1766323
1,4-Dichlorobenzene	ND		0.00594	1	10/31/2021 04:15	WG1766323
Dichlorodifluoromethane	ND		0.00297	1	10/31/2021 04:15	WG1766323
1,1-Dichloroethane	ND		0.00297	1	10/31/2021 04:15	WG1766323
1,2-Dichloroethane	ND		0.00297	1	10/31/2021 04:15	WG1766323

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

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,1-Dichloroethene	ND		0.00297	1	10/31/2021 04:15	WG1766323
cis-1,2-Dichloroethene	ND		0.00297	1	10/31/2021 04:15	WG1766323
trans-1,2-Dichloroethene	ND		0.00594	1	10/31/2021 04:15	WG1766323
1,2-Dichloropropane	ND		0.00594	1	10/31/2021 04:15	WG1766323
1,1-Dichloropropene	ND		0.00297	1	10/31/2021 04:15	WG1766323
1,3-Dichloropropane	ND		0.00594	1	10/31/2021 04:15	WG1766323
cis-1,3-Dichloropropene	ND		0.00297	1	10/31/2021 04:15	WG1766323
trans-1,3-Dichloropropene	ND		0.00594	1	10/31/2021 04:15	WG1766323
2,2-Dichloropropane	ND		0.00297	1	10/31/2021 04:15	WG1766323
Di-isopropyl ether	ND		0.00119	1	10/31/2021 04:15	WG1766323
Ethylbenzene	ND		0.00297	1	10/31/2021 04:15	WG1766323
Hexachloro-1,3-butadiene	ND		0.0297	1	10/31/2021 04:15	WG1766323
Isopropylbenzene	ND		0.00297	1	10/31/2021 04:15	WG1766323
p-Isopropyltoluene	ND		0.00594	1	10/31/2021 04:15	WG1766323
2-Butanone (MEK)	ND		0.119	1	10/31/2021 04:15	WG1766323
Methylene Chloride	ND		0.0297	1	10/31/2021 04:15	WG1766323
4-Methyl-2-pentanone (MIBK)	ND		0.0297	1	10/31/2021 04:15	WG1766323
Methyl tert-butyl ether	ND		0.00119	1	10/31/2021 04:15	WG1766323
Naphthalene	ND		0.0148	1	10/31/2021 04:15	WG1766323
n-Propylbenzene	ND		0.00594	1	10/31/2021 04:15	WG1766323
Styrene	ND		0.0148	1	10/31/2021 04:15	WG1766323
1,1,1,2-Tetrachloroethane	ND		0.00297	1	10/31/2021 04:15	WG1766323
1,1,2,2-Tetrachloroethane	ND		0.00297	1	10/31/2021 04:15	WG1766323
1,1,2-Trichlorotrifluoroethane	ND		0.00297	1	10/31/2021 04:15	WG1766323
Tetrachloroethene	ND		0.00297	1	10/31/2021 04:15	WG1766323
Toluene	ND		0.00594	1	10/31/2021 04:15	WG1766323
1,2,3-Trichlorobenzene	ND	C4	0.0148	1	10/31/2021 04:15	WG1766323
1,2,4-Trichlorobenzene	ND		0.0148	1	10/31/2021 04:15	WG1766323
1,1,1-Trichloroethane	ND		0.00297	1	10/31/2021 04:15	WG1766323
1,1,2-Trichloroethane	ND		0.00297	1	10/31/2021 04:15	WG1766323
Trichloroethene	ND		0.00119	1	10/31/2021 04:15	WG1766323
Trichlorofluoromethane	ND		0.00297	1	10/31/2021 04:15	WG1766323
1,2,3-Trichloropropane	ND		0.0148	1	10/31/2021 04:15	WG1766323
1,2,4-Trimethylbenzene	ND		0.00594	1	10/31/2021 04:15	WG1766323
1,2,3-Trimethylbenzene	ND		0.00594	1	10/31/2021 04:15	WG1766323
1,3,5-Trimethylbenzene	ND		0.00594	1	10/31/2021 04:15	WG1766323
Vinyl chloride	ND		0.00297	1	10/31/2021 04:15	WG1766323
Xylenes, Total	ND		0.00772	1	10/31/2021 04:15	WG1766323
(S) Toluene-d8	*104*		*75.0-131*		*10/31/2021 04:15*	WG1766323
(S) 4-Bromofluorobenzene	*96.9*		*67.0-138*		*10/31/2021 04:15*	WG1766323
(S) 1,2-Dichloroethane-d4	*100*		*70.0-130*		*10/31/2021 04:15*	WG1766323

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	ND		4.34	1	11/03/2021 06:11	WG1766948
Residual Range Organics (RRO)	ND		10.8	1	11/03/2021 06:11	WG1766948
(S) o-Terphenyl	*37.8*		*18.0-148*		*11/03/2021 06:11*	WG1766948

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00650	1	10/30/2021 13:18	WG1765811
Acenaphthene	ND		0.00650	1	10/30/2021 13:18	WG1765811
Acenaphthylene	ND		0.00650	1	10/30/2021 13:18	WG1765811
Benzo(a)anthracene	ND		0.00650	1	10/30/2021 13:18	WG1765811
Benzo(a)pyrene	ND		0.00650	1	10/30/2021 13:18	WG1765811
Benzo(b)fluoranthene	ND		0.00650	1	10/30/2021 13:18	WG1765811
Benzo(g,h,i)perylene	ND		0.00650	1	10/30/2021 13:18	WG1765811
Benzo(k)fluoranthene	ND		0.00650	1	10/30/2021 13:18	WG1765811
Chrysene	ND		0.00650	1	10/30/2021 13:18	WG1765811
Dibenz(a,h)anthracene	ND		0.00650	1	10/30/2021 13:18	WG1765811
Fluoranthene	ND		0.00650	1	10/30/2021 13:18	WG1765811
Fluorene	ND		0.00650	1	10/30/2021 13:18	WG1765811
Indeno(1,2,3-cd)pyrene	ND		0.00650	1	10/30/2021 13:18	WG1765811
Naphthalene	ND		0.0217	1	10/30/2021 13:18	WG1765811
Phenanthrene	ND		0.00650	1	10/30/2021 13:18	WG1765811
Pyrene	ND		0.00650	1	10/30/2021 13:18	WG1765811
1-Methylnaphthalene	ND		0.0217	1	10/30/2021 13:18	WG1765811
2-Methylnaphthalene	ND		0.0217	1	10/30/2021 13:18	WG1765811
2-Chloronaphthalene	ND		0.0217	1	10/30/2021 13:18	WG1765811
(S) Nitrobenzene-d5	*98.0*		*14.0-149*		*10/30/2021 13:18*	WG1765811
(S) 2-Fluorobiphenyl	*77.9*		*34.0-125*		*10/30/2021 13:18*	WG1765811
(S) p-Terphenyl-d14	*96.1*		*23.0-120*		*10/30/2021 13:18*	WG1765811

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	89.0		1	10/30/2021 16:39	WG1765837

Mercury by Method 7471B

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Mercury	ND		0.0450	1	11/02/2021 15:09	WG1766498

Metals (ICPMS) by Method 6020B

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Arsenic	2.93		1.12	5	11/03/2021 18:32	WG1765966
Barium	25.3		2.81	5	11/03/2021 18:32	WG1765966
Cadmium	ND		1.12	5	11/03/2021 18:32	WG1765966
Chromium	11.8		5.62	5	11/03/2021 18:32	WG1765966
Lead	ND		2.25	5	11/03/2021 18:32	WG1765966
Selenium	ND		2.81	5	11/03/2021 18:32	WG1765966
Silver	ND		0.562	5	11/03/2021 18:32	WG1765966

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Gasoline Range Organics-NWTPH	ND		3.23	25	10/29/2021 12:00	WG1765532
(S) a,a,a-Trifluorotoluene(FID)	*119*		*77.0-120*		*10/29/2021 12:00*	WG1765532

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

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Acetone	ND		0.0646	1	10/31/2021 04:34	WG1766323
Acrylonitrile	ND	C3	0.0161	1	10/31/2021 04:34	WG1766323
Benzene	ND		0.00129	1	10/31/2021 04:34	WG1766323
Bromobenzene	ND		0.0161	1	10/31/2021 04:34	WG1766323
Bromodichloromethane	ND		0.00323	1	10/31/2021 04:34	WG1766323
Bromoform	ND		0.0323	1	10/31/2021 04:34	WG1766323
Bromomethane	ND		0.0161	1	10/31/2021 04:34	WG1766323
n-Butylbenzene	ND		0.0161	1	10/31/2021 04:34	WG1766323
sec-Butylbenzene	ND		0.0161	1	10/31/2021 04:34	WG1766323
tert-Butylbenzene	ND		0.00646	1	10/31/2021 04:34	WG1766323
Carbon tetrachloride	ND		0.00646	1	10/31/2021 04:34	WG1766323
Chlorobenzene	ND		0.00323	1	10/31/2021 04:34	WG1766323
Chlorodibromomethane	ND		0.00323	1	10/31/2021 04:34	WG1766323
Chloroethane	ND		0.00646	1	10/31/2021 04:34	WG1766323
Chloroform	ND		0.00323	1	10/31/2021 04:34	WG1766323
Chloromethane	ND		0.0161	1	10/31/2021 04:34	WG1766323
2-Chlorotoluene	ND		0.00323	1	10/31/2021 04:34	WG1766323
4-Chlorotoluene	ND		0.00646	1	10/31/2021 04:34	WG1766323
1,2-Dibromo-3-Chloropropane	ND		0.0323	1	10/31/2021 04:34	WG1766323
1,2-Dibromoethane	ND		0.00323	1	10/31/2021 04:34	WG1766323
Dibromomethane	ND		0.00646	1	10/31/2021 04:34	WG1766323
1,2-Dichlorobenzene	ND		0.00646	1	10/31/2021 04:34	WG1766323
1,3-Dichlorobenzene	ND		0.00646	1	10/31/2021 04:34	WG1766323
1,4-Dichlorobenzene	ND		0.00646	1	10/31/2021 04:34	WG1766323
Dichlorodifluoromethane	ND		0.00323	1	10/31/2021 04:34	WG1766323
1,1-Dichloroethane	ND		0.00323	1	10/31/2021 04:34	WG1766323
1,2-Dichloroethane	ND		0.00323	1	10/31/2021 04:34	WG1766323

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

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,1-Dichloroethene	ND		0.00323	1	10/31/2021 04:34	WG1766323
cis-1,2-Dichloroethene	ND		0.00323	1	10/31/2021 04:34	WG1766323
trans-1,2-Dichloroethene	ND		0.00646	1	10/31/2021 04:34	WG1766323
1,2-Dichloropropane	ND		0.00646	1	10/31/2021 04:34	WG1766323
1,1-Dichloropropene	ND		0.00323	1	10/31/2021 04:34	WG1766323
1,3-Dichloropropane	ND		0.00646	1	10/31/2021 04:34	WG1766323
cis-1,3-Dichloropropene	ND		0.00323	1	10/31/2021 04:34	WG1766323
trans-1,3-Dichloropropene	ND		0.00646	1	10/31/2021 04:34	WG1766323
2,2-Dichloropropane	ND		0.00323	1	10/31/2021 04:34	WG1766323
Di-isopropyl ether	ND		0.00129	1	10/31/2021 04:34	WG1766323
Ethylbenzene	ND		0.00323	1	10/31/2021 04:34	WG1766323
Hexachloro-1,3-butadiene	ND		0.0323	1	10/31/2021 04:34	WG1766323
Isopropylbenzene	ND		0.00323	1	10/31/2021 04:34	WG1766323
p-Isopropyltoluene	ND		0.00646	1	10/31/2021 04:34	WG1766323
2-Butanone (MEK)	ND		0.129	1	10/31/2021 04:34	WG1766323
Methylene Chloride	ND		0.0323	1	10/31/2021 04:34	WG1766323
4-Methyl-2-pentanone (MIBK)	ND		0.0323	1	10/31/2021 04:34	WG1766323
Methyl tert-butyl ether	ND		0.00129	1	10/31/2021 04:34	WG1766323
Naphthalene	ND		0.0161	1	10/31/2021 04:34	WG1766323
n-Propylbenzene	ND		0.00646	1	10/31/2021 04:34	WG1766323
Styrene	ND		0.0161	1	10/31/2021 04:34	WG1766323
1,1,1,2-Tetrachloroethane	ND		0.00323	1	10/31/2021 04:34	WG1766323
1,1,2,2-Tetrachloroethane	ND		0.00323	1	10/31/2021 04:34	WG1766323
1,1,2-Trichlorotrifluoroethane	ND		0.00323	1	10/31/2021 04:34	WG1766323
Tetrachloroethene	ND		0.00323	1	10/31/2021 04:34	WG1766323
Toluene	ND		0.00646	1	10/31/2021 04:34	WG1766323
1,2,3-Trichlorobenzene	ND	C4	0.0161	1	10/31/2021 04:34	WG1766323
1,2,4-Trichlorobenzene	ND		0.0161	1	10/31/2021 04:34	WG1766323
1,1,1-Trichloroethane	ND		0.00323	1	10/31/2021 04:34	WG1766323
1,1,2-Trichloroethane	ND		0.00323	1	10/31/2021 04:34	WG1766323
Trichloroethene	ND		0.00129	1	10/31/2021 04:34	WG1766323
Trichlorofluoromethane	ND		0.00323	1	10/31/2021 04:34	WG1766323
1,2,3-Trichloropropane	ND		0.0161	1	10/31/2021 04:34	WG1766323
1,2,4-Trimethylbenzene	ND		0.00646	1	10/31/2021 04:34	WG1766323
1,2,3-Trimethylbenzene	ND		0.00646	1	10/31/2021 04:34	WG1766323
1,3,5-Trimethylbenzene	ND		0.00646	1	10/31/2021 04:34	WG1766323
Vinyl chloride	ND		0.00323	1	10/31/2021 04:34	WG1766323
Xylenes, Total	ND		0.00839	1	10/31/2021 04:34	WG1766323
(S) Toluene-d8	*104*		*75.0-131*		*10/31/2021 04:34*	WG1766323
(S) 4-Bromofluorobenzene	*99.4*		*67.0-138*		*10/31/2021 04:34*	WG1766323
(S) 1,2-Dichloroethane-d4	*99.4*		*70.0-130*		*10/31/2021 04:34*	WG1766323

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	ND		4.50	1	11/03/2021 06:24	WG1766948
Residual Range Organics (RRO)	ND		11.2	1	11/03/2021 06:24	WG1766948
(S) o-Terphenyl	*45.3*		*18.0-148*		*11/03/2021 06:24*	WG1766948

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00675	1	10/30/2021 13:35	WG1765811
Acenaphthene	ND		0.00675	1	10/30/2021 13:35	WG1765811
Acenaphthylene	ND		0.00675	1	10/30/2021 13:35	WG1765811
Benzo(a)anthracene	ND		0.00675	1	10/30/2021 13:35	WG1765811
Benzo(a)pyrene	ND		0.00675	1	10/30/2021 13:35	WG1765811
Benzo(b)fluoranthene	ND		0.00675	1	10/30/2021 13:35	WG1765811
Benzo(g,h,i)perylene	ND		0.00675	1	10/30/2021 13:35	WG1765811
Benzo(k)fluoranthene	ND		0.00675	1	10/30/2021 13:35	WG1765811
Chrysene	ND		0.00675	1	10/30/2021 13:35	WG1765811
Dibenz(a,h)anthracene	ND		0.00675	1	10/30/2021 13:35	WG1765811
Fluoranthene	ND		0.00675	1	10/30/2021 13:35	WG1765811
Fluorene	ND		0.00675	1	10/30/2021 13:35	WG1765811
Indeno(1,2,3-cd)pyrene	ND		0.00675	1	10/30/2021 13:35	WG1765811
Naphthalene	ND		0.0225	1	10/30/2021 13:35	WG1765811
Phenanthrene	ND		0.00675	1	10/30/2021 13:35	WG1765811
Pyrene	ND		0.00675	1	10/30/2021 13:35	WG1765811
1-Methylnaphthalene	ND		0.0225	1	10/30/2021 13:35	WG1765811
2-Methylnaphthalene	ND		0.0225	1	10/30/2021 13:35	WG1765811
2-Chloronaphthalene	ND		0.0225	1	10/30/2021 13:35	WG1765811
(S) Nitrobenzene-d5	*93.3*		*14.0-149*		*10/30/2021 13:35*	WG1765811
(S) 2-Fluorobiphenyl	*75.9*		*34.0-125*		*10/30/2021 13:35*	WG1765811
(S) p-Terphenyl-d14	*96.6*		*23.0-120*		*10/30/2021 13:35*	WG1765811

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	90.2		1	10/30/2021 16:39	WG1765837

Mercury by Method 7471B

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Mercury	ND		0.0443	1	11/02/2021 15:12	WG1766498

Metals (ICPMS) by Method 6020B

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Arsenic	3.17		1.11	5	11/03/2021 18:35	WG1765966
Barium	44.9		2.77	5	11/03/2021 18:35	WG1765966
Cadmium	ND		1.11	5	11/03/2021 18:35	WG1765966
Chromium	24.4		5.54	5	11/03/2021 18:35	WG1765966
Lead	ND		2.22	5	11/03/2021 18:35	WG1765966
Selenium	ND		2.77	5	11/03/2021 18:35	WG1765966
Silver	ND		0.554	5	11/03/2021 18:35	WG1765966

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Gasoline Range Organics-NWTPH	ND		3.08	25	10/29/2021 04:21	WG1765548
(S) a,a,a-Trifluorotoluene(FID)	*91.8*		*77.0-120*		*10/29/2021 04:21*	WG1765548

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

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Acetone	ND		0.0616	1	10/31/2021 04:53	WG1766323
Acrylonitrile	ND	C3	0.0154	1	10/31/2021 04:53	WG1766323
Benzene	ND		0.00123	1	10/31/2021 04:53	WG1766323
Bromobenzene	ND		0.0154	1	10/31/2021 04:53	WG1766323
Bromodichloromethane	ND		0.00308	1	10/31/2021 04:53	WG1766323
Bromoform	ND		0.0308	1	10/31/2021 04:53	WG1766323
Bromomethane	ND		0.0154	1	10/31/2021 04:53	WG1766323
n-Butylbenzene	ND		0.0154	1	10/31/2021 04:53	WG1766323
sec-Butylbenzene	ND		0.0154	1	10/31/2021 04:53	WG1766323
tert-Butylbenzene	ND		0.00616	1	10/31/2021 04:53	WG1766323
Carbon tetrachloride	ND		0.00616	1	10/31/2021 04:53	WG1766323
Chlorobenzene	ND		0.00308	1	10/31/2021 04:53	WG1766323
Chlorodibromomethane	ND		0.00308	1	10/31/2021 04:53	WG1766323
Chloroethane	ND		0.00616	1	10/31/2021 04:53	WG1766323
Chloroform	ND		0.00308	1	10/31/2021 04:53	WG1766323
Chloromethane	ND		0.0154	1	10/31/2021 04:53	WG1766323
2-Chlorotoluene	ND		0.00308	1	10/31/2021 04:53	WG1766323
4-Chlorotoluene	ND		0.00616	1	10/31/2021 04:53	WG1766323
1,2-Dibromo-3-Chloropropane	ND		0.0308	1	10/31/2021 04:53	WG1766323
1,2-Dibromoethane	ND		0.00308	1	10/31/2021 04:53	WG1766323
Dibromomethane	ND		0.00616	1	10/31/2021 04:53	WG1766323
1,2-Dichlorobenzene	ND		0.00616	1	10/31/2021 04:53	WG1766323
1,3-Dichlorobenzene	ND		0.00616	1	10/31/2021 04:53	WG1766323
1,4-Dichlorobenzene	ND		0.00616	1	10/31/2021 04:53	WG1766323
Dichlorodifluoromethane	ND		0.00308	1	10/31/2021 04:53	WG1766323
1,1-Dichloroethane	ND		0.00308	1	10/31/2021 04:53	WG1766323
1,2-Dichloroethane	ND		0.00308	1	10/31/2021 04:53	WG1766323

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

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,1-Dichloroethene	ND		0.00308	1	10/31/2021 04:53	WG1766323
cis-1,2-Dichloroethene	ND		0.00308	1	10/31/2021 04:53	WG1766323
trans-1,2-Dichloroethene	ND		0.00616	1	10/31/2021 04:53	WG1766323
1,2-Dichloropropane	ND		0.00616	1	10/31/2021 04:53	WG1766323
1,1-Dichloropropene	ND		0.00308	1	10/31/2021 04:53	WG1766323
1,3-Dichloropropane	ND		0.00616	1	10/31/2021 04:53	WG1766323
cis-1,3-Dichloropropene	ND		0.00308	1	10/31/2021 04:53	WG1766323
trans-1,3-Dichloropropene	ND		0.00616	1	10/31/2021 04:53	WG1766323
2,2-Dichloropropane	ND		0.00308	1	10/31/2021 04:53	WG1766323
Di-isopropyl ether	ND		0.00123	1	10/31/2021 04:53	WG1766323
Ethylbenzene	ND		0.00308	1	10/31/2021 04:53	WG1766323
Hexachloro-1,3-butadiene	ND		0.0308	1	10/31/2021 04:53	WG1766323
Isopropylbenzene	ND		0.00308	1	10/31/2021 04:53	WG1766323
p-Isopropyltoluene	ND		0.00616	1	10/31/2021 04:53	WG1766323
2-Butanone (MEK)	ND		0.123	1	10/31/2021 04:53	WG1766323
Methylene Chloride	ND		0.0308	1	10/31/2021 04:53	WG1766323
4-Methyl-2-pentanone (MIBK)	ND		0.0308	1	10/31/2021 04:53	WG1766323
Methyl tert-butyl ether	ND		0.00123	1	10/31/2021 04:53	WG1766323
Naphthalene	ND		0.0154	1	10/31/2021 04:53	WG1766323
n-Propylbenzene	ND		0.00616	1	10/31/2021 04:53	WG1766323
Styrene	ND		0.0154	1	10/31/2021 04:53	WG1766323
1,1,1,2-Tetrachloroethane	ND		0.00308	1	10/31/2021 04:53	WG1766323
1,1,2,2-Tetrachloroethane	ND		0.00308	1	10/31/2021 04:53	WG1766323
1,1,2-Trichlorotrifluoroethane	ND		0.00308	1	10/31/2021 04:53	WG1766323
Tetrachloroethene	ND		0.00308	1	10/31/2021 04:53	WG1766323
Toluene	ND		0.00616	1	10/31/2021 04:53	WG1766323
1,2,3-Trichlorobenzene	ND	C4	0.0154	1	10/31/2021 04:53	WG1766323
1,2,4-Trichlorobenzene	ND		0.0154	1	10/31/2021 04:53	WG1766323
1,1,1-Trichloroethane	ND		0.00308	1	10/31/2021 04:53	WG1766323
1,1,2-Trichloroethane	ND		0.00308	1	10/31/2021 04:53	WG1766323
Trichloroethene	ND		0.00123	1	10/31/2021 04:53	WG1766323
Trichlorofluoromethane	ND		0.00308	1	10/31/2021 04:53	WG1766323
1,2,3-Trichloropropane	ND		0.0154	1	10/31/2021 04:53	WG1766323
1,2,4-Trimethylbenzene	ND		0.00616	1	10/31/2021 04:53	WG1766323
1,2,3-Trimethylbenzene	ND		0.00616	1	10/31/2021 04:53	WG1766323
1,3,5-Trimethylbenzene	ND		0.00616	1	10/31/2021 04:53	WG1766323
Vinyl chloride	ND		0.00308	1	10/31/2021 04:53	WG1766323
Xylenes, Total	ND		0.00801	1	10/31/2021 04:53	WG1766323
(S) Toluene-d8	*104*		*75.0-131*		*10/31/2021 04:53*	WG1766323
(S) 4-Bromofluorobenzene	*100*		*67.0-138*		*10/31/2021 04:53*	WG1766323
(S) 1,2-Dichloroethane-d4	*101*		*70.0-130*		*10/31/2021 04:53*	WG1766323

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	ND		4.43	1	11/03/2021 06:36	WG1766948
Residual Range Organics (RRO)	ND		11.1	1	11/03/2021 06:36	WG1766948
(S) o-Terphenyl	*45.8*		*18.0-148*		*11/03/2021 06:36*	WG1766948

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00665	1	10/30/2021 13:52	WG1765811
Acenaphthene	ND		0.00665	1	10/30/2021 13:52	WG1765811
Acenaphthylene	ND		0.00665	1	10/30/2021 13:52	WG1765811
Benzo(a)anthracene	ND		0.00665	1	10/30/2021 13:52	WG1765811
Benzo(a)pyrene	ND		0.00665	1	10/30/2021 13:52	WG1765811
Benzo(b)fluoranthene	ND		0.00665	1	10/30/2021 13:52	WG1765811
Benzo(g,h,i)perylene	ND		0.00665	1	10/30/2021 13:52	WG1765811
Benzo(k)fluoranthene	ND		0.00665	1	10/30/2021 13:52	WG1765811
Chrysene	ND		0.00665	1	10/30/2021 13:52	WG1765811
Dibenz(a,h)anthracene	ND		0.00665	1	10/30/2021 13:52	WG1765811
Fluoranthene	ND		0.00665	1	10/30/2021 13:52	WG1765811
Fluorene	ND		0.00665	1	10/30/2021 13:52	WG1765811
Indeno(1,2,3-cd)pyrene	ND		0.00665	1	10/30/2021 13:52	WG1765811
Naphthalene	ND		0.0222	1	10/30/2021 13:52	WG1765811
Phenanthrene	ND		0.00665	1	10/30/2021 13:52	WG1765811
Pyrene	ND		0.00665	1	10/30/2021 13:52	WG1765811
1-Methylnaphthalene	ND		0.0222	1	10/30/2021 13:52	WG1765811
2-Methylnaphthalene	ND		0.0222	1	10/30/2021 13:52	WG1765811
2-Chloronaphthalene	ND		0.0222	1	10/30/2021 13:52	WG1765811
(S) Nitrobenzene-d5	*94.9*		*14.0-149*		*10/30/2021 13:52*	WG1765811
(S) 2-Fluorobiphenyl	*81.7*		*34.0-125*		*10/30/2021 13:52*	WG1765811
(S) p-Terphenyl-d14	*95.1*		*23.0-120*		*10/30/2021 13:52*	WG1765811

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	91.6		1	10/30/2021 16:39	WG1765837

Mercury by Method 7471B

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Mercury	0.0731		0.0437	1	11/02/2021 15:15	WG1766498

Metals (ICPMS) by Method 6020B

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Arsenic	6.28		1.09	5	11/03/2021 18:39	WG1765966
Barium	72.2		2.73	5	11/03/2021 18:39	WG1765966
Cadmium	ND		1.09	5	11/03/2021 18:39	WG1765966
Chromium	33.9		5.46	5	11/03/2021 18:39	WG1765966
Lead	27.6		2.18	5	11/03/2021 18:39	WG1765966
Selenium	ND		2.73	5	11/03/2021 18:39	WG1765966
Silver	ND		0.546	5	11/03/2021 18:39	WG1765966

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Gasoline Range Organics-NWTPH	ND		2.97	25	10/29/2021 04:43	WG1765548
(S) a,a,a-Trifluorotoluene(FID)	*94.7*		*77.0-120*		*10/29/2021 04:43*	WG1765548

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

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Acetone	ND		0.0594	1	10/31/2021 05:12	WG1766323
Acrylonitrile	ND	C3	0.0148	1	10/31/2021 05:12	WG1766323
Benzene	ND		0.00119	1	10/31/2021 05:12	WG1766323
Bromobenzene	ND		0.0148	1	10/31/2021 05:12	WG1766323
Bromodichloromethane	ND		0.00297	1	10/31/2021 05:12	WG1766323
Bromoform	ND		0.0297	1	10/31/2021 05:12	WG1766323
Bromomethane	ND		0.0148	1	10/31/2021 05:12	WG1766323
n-Butylbenzene	ND		0.0148	1	10/31/2021 05:12	WG1766323
sec-Butylbenzene	ND		0.0148	1	10/31/2021 05:12	WG1766323
tert-Butylbenzene	ND		0.00594	1	10/31/2021 05:12	WG1766323
Carbon tetrachloride	ND		0.00594	1	10/31/2021 05:12	WG1766323
Chlorobenzene	ND		0.00297	1	10/31/2021 05:12	WG1766323
Chlorodibromomethane	ND		0.00297	1	10/31/2021 05:12	WG1766323
Chloroethane	ND		0.00594	1	10/31/2021 05:12	WG1766323
Chloroform	ND		0.00297	1	10/31/2021 05:12	WG1766323
Chloromethane	ND		0.0148	1	10/31/2021 05:12	WG1766323
2-Chlorotoluene	ND		0.00297	1	10/31/2021 05:12	WG1766323
4-Chlorotoluene	ND		0.00594	1	10/31/2021 05:12	WG1766323
1,2-Dibromo-3-Chloropropane	ND		0.0297	1	10/31/2021 05:12	WG1766323
1,2-Dibromoethane	ND		0.00297	1	10/31/2021 05:12	WG1766323
Dibromomethane	ND		0.00594	1	10/31/2021 05:12	WG1766323
1,2-Dichlorobenzene	ND		0.00594	1	10/31/2021 05:12	WG1766323
1,3-Dichlorobenzene	ND		0.00594	1	10/31/2021 05:12	WG1766323
1,4-Dichlorobenzene	ND		0.00594	1	10/31/2021 05:12	WG1766323
Dichlorodifluoromethane	ND		0.00297	1	10/31/2021 05:12	WG1766323
1,1-Dichloroethane	ND		0.00297	1	10/31/2021 05:12	WG1766323
1,2-Dichloroethane	ND		0.00297	1	10/31/2021 05:12	WG1766323

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

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,1-Dichloroethene	ND		0.00297	1	10/31/2021 05:12	WG1766323
cis-1,2-Dichloroethene	ND		0.00297	1	10/31/2021 05:12	WG1766323
trans-1,2-Dichloroethene	ND		0.00594	1	10/31/2021 05:12	WG1766323
1,2-Dichloropropane	ND		0.00594	1	10/31/2021 05:12	WG1766323
1,1-Dichloropropene	ND		0.00297	1	10/31/2021 05:12	WG1766323
1,3-Dichloropropane	ND		0.00594	1	10/31/2021 05:12	WG1766323
cis-1,3-Dichloropropene	ND		0.00297	1	10/31/2021 05:12	WG1766323
trans-1,3-Dichloropropene	ND		0.00594	1	10/31/2021 05:12	WG1766323
2,2-Dichloropropane	ND		0.00297	1	10/31/2021 05:12	WG1766323
Di-isopropyl ether	ND		0.00119	1	10/31/2021 05:12	WG1766323
Ethylbenzene	ND		0.00297	1	10/31/2021 05:12	WG1766323
Hexachloro-1,3-butadiene	ND		0.0297	1	10/31/2021 05:12	WG1766323
Isopropylbenzene	ND		0.00297	1	10/31/2021 05:12	WG1766323
p-Isopropyltoluene	ND		0.00594	1	10/31/2021 05:12	WG1766323
2-Butanone (MEK)	ND		0.119	1	10/31/2021 05:12	WG1766323
Methylene Chloride	ND		0.0297	1	10/31/2021 05:12	WG1766323
4-Methyl-2-pentanone (MIBK)	ND		0.0297	1	10/31/2021 05:12	WG1766323
Methyl tert-butyl ether	ND		0.00119	1	10/31/2021 05:12	WG1766323
Naphthalene	ND		0.0148	1	10/31/2021 05:12	WG1766323
n-Propylbenzene	ND		0.00594	1	10/31/2021 05:12	WG1766323
Styrene	ND		0.0148	1	10/31/2021 05:12	WG1766323
1,1,1,2-Tetrachloroethane	ND		0.00297	1	10/31/2021 05:12	WG1766323
1,1,2,2-Tetrachloroethane	ND		0.00297	1	10/31/2021 05:12	WG1766323
1,1,2-Trichlorotrifluoroethane	ND		0.00297	1	10/31/2021 05:12	WG1766323
Tetrachloroethene	ND		0.00297	1	10/31/2021 05:12	WG1766323
Toluene	ND		0.00594	1	10/31/2021 05:12	WG1766323
1,2,3-Trichlorobenzene	ND	C4	0.0148	1	10/31/2021 05:12	WG1766323
1,2,4-Trichlorobenzene	ND		0.0148	1	10/31/2021 05:12	WG1766323
1,1,1-Trichloroethane	ND		0.00297	1	10/31/2021 05:12	WG1766323
1,1,2-Trichloroethane	ND		0.00297	1	10/31/2021 05:12	WG1766323
Trichloroethene	ND		0.00119	1	10/31/2021 05:12	WG1766323
Trichlorofluoromethane	ND		0.00297	1	10/31/2021 05:12	WG1766323
1,2,3-Trichloropropane	ND		0.0148	1	10/31/2021 05:12	WG1766323
1,2,4-Trimethylbenzene	ND		0.00594	1	10/31/2021 05:12	WG1766323
1,2,3-Trimethylbenzene	ND		0.00594	1	10/31/2021 05:12	WG1766323
1,3,5-Trimethylbenzene	ND		0.00594	1	10/31/2021 05:12	WG1766323
Vinyl chloride	ND		0.00297	1	10/31/2021 05:12	WG1766323
Xylenes, Total	ND		0.00772	1	10/31/2021 05:12	WG1766323
(S) Toluene-d8	*104*		*75.0-131*		*10/31/2021 05:12*	WG1766323
(S) 4-Bromofluorobenzene	*101*		*67.0-138*		*10/31/2021 05:12*	WG1766323
(S) 1,2-Dichloroethane-d4	*105*		*70.0-130*		*10/31/2021 05:12*	WG1766323

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	ND		21.8	5	11/03/2021 15:22	WG1766948
Residual Range Organics (RRO)	166		54.6	5	11/03/2021 15:22	WG1766948
(S) o-Terphenyl	*60.1*		*18.0-148*		*11/03/2021 15:22*	WG1766948

Sample Narrative:

L1423266-13 WG1766948: Cannot run at lower dilution due to viscosity of extract

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00655	1	10/30/2021 16:11	WG1765811
Acenaphthene	ND		0.00655	1	10/30/2021 16:11	WG1765811
Acenaphthylene	ND		0.00655	1	10/30/2021 16:11	WG1765811
Benzo(a)anthracene	0.0298		0.00655	1	10/30/2021 16:11	WG1765811
Benzo(a)pyrene	0.0363		0.00655	1	10/30/2021 16:11	WG1765811
Benzo(b)fluoranthene	0.0500		0.00655	1	10/30/2021 16:11	WG1765811
Benzo(g,h,i)perylene	0.0306		0.00655	1	10/30/2021 16:11	WG1765811
Benzo(k)fluoranthene	0.0150		0.00655	1	10/30/2021 16:11	WG1765811
Chrysene	0.0354		0.00655	1	10/30/2021 16:11	WG1765811
Dibenz(a,h)anthracene	0.00660		0.00655	1	10/30/2021 16:11	WG1765811
Fluoranthene	0.0622		0.00655	1	10/30/2021 16:11	WG1765811
Fluorene	ND		0.00655	1	10/30/2021 16:11	WG1765811
Indeno(1,2,3-cd)pyrene	0.0325		0.00655	1	10/30/2021 16:11	WG1765811
Naphthalene	ND		0.0218	1	10/30/2021 16:11	WG1765811
Phenanthrene	0.0244		0.00655	1	10/30/2021 16:11	WG1765811
Pyrene	0.0474		0.00655	1	10/30/2021 16:11	WG1765811
1-Methylnaphthalene	ND		0.0218	1	10/30/2021 16:11	WG1765811
2-Methylnaphthalene	ND		0.0218	1	10/30/2021 16:11	WG1765811
2-Chloronaphthalene	ND		0.0218	1	10/30/2021 16:11	WG1765811
(S) Nitrobenzene-d5	*113*		*14.0-149*		*10/30/2021 16:11*	WG1765811
(S) 2-Fluorobiphenyl	*81.7*		*34.0-125*		*10/30/2021 16:11*	WG1765811
(S) p-Terphenyl-d14	*99.3*		*23.0-120*		*10/30/2021 16:11*	WG1765811

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	85.4		1	10/30/2021 16:39	WG1765837

Mercury by Method 7471B

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Mercury	ND		0.0469	1	11/02/2021 15:22	WG1766498

Metals (ICPMS) by Method 6020B

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Arsenic	3.70		1.17	5	11/03/2021 18:42	WG1765966
Barium	61.0		2.93	5	11/03/2021 18:42	WG1765966
Cadmium	ND		1.17	5	11/03/2021 18:42	WG1765966
Chromium	26.7		5.86	5	11/03/2021 18:42	WG1765966
Lead	ND		2.34	5	11/03/2021 18:42	WG1765966
Selenium	ND		2.93	5	11/03/2021 18:42	WG1765966
Silver	ND		0.586	5	11/03/2021 18:42	WG1765966

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Gasoline Range Organics-NWTPH	ND		3.43	25	10/29/2021 05:05	WG1765548
(S) a,a,a-Trifluorotoluene(FID)	*88.3*		*77.0-120*		*10/29/2021 05:05*	WG1765548

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

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Acetone	ND		0.0686	1	10/31/2021 05:31	WG1766323
Acrylonitrile	ND	C3	0.0171	1	10/31/2021 05:31	WG1766323
Benzene	ND		0.00137	1	10/31/2021 05:31	WG1766323
Bromobenzene	ND		0.0171	1	10/31/2021 05:31	WG1766323
Bromodichloromethane	ND		0.00343	1	10/31/2021 05:31	WG1766323
Bromoform	ND		0.0343	1	10/31/2021 05:31	WG1766323
Bromomethane	ND		0.0171	1	10/31/2021 05:31	WG1766323
n-Butylbenzene	ND		0.0171	1	10/31/2021 05:31	WG1766323
sec-Butylbenzene	ND		0.0171	1	10/31/2021 05:31	WG1766323
tert-Butylbenzene	ND		0.00686	1	10/31/2021 05:31	WG1766323
Carbon tetrachloride	ND		0.00686	1	10/31/2021 05:31	WG1766323
Chlorobenzene	ND		0.00343	1	10/31/2021 05:31	WG1766323
Chlorodibromomethane	ND		0.00343	1	10/31/2021 05:31	WG1766323
Chloroethane	ND		0.00686	1	10/31/2021 05:31	WG1766323
Chloroform	ND		0.00343	1	10/31/2021 05:31	WG1766323
Chloromethane	ND		0.0171	1	10/31/2021 05:31	WG1766323
2-Chlorotoluene	ND		0.00343	1	10/31/2021 05:31	WG1766323
4-Chlorotoluene	ND		0.00686	1	10/31/2021 05:31	WG1766323
1,2-Dibromo-3-Chloropropane	ND		0.0343	1	10/31/2021 05:31	WG1766323
1,2-Dibromoethane	ND		0.00343	1	10/31/2021 05:31	WG1766323
Dibromomethane	ND		0.00686	1	10/31/2021 05:31	WG1766323
1,2-Dichlorobenzene	ND		0.00686	1	10/31/2021 05:31	WG1766323
1,3-Dichlorobenzene	ND		0.00686	1	10/31/2021 05:31	WG1766323
1,4-Dichlorobenzene	ND		0.00686	1	10/31/2021 05:31	WG1766323
Dichlorodifluoromethane	ND		0.00343	1	10/31/2021 05:31	WG1766323
1,1-Dichloroethane	ND		0.00343	1	10/31/2021 05:31	WG1766323
1,2-Dichloroethane	ND		0.00343	1	10/31/2021 05:31	WG1766323

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

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,1-Dichloroethene	ND		0.00343	1	10/31/2021 05:31	WG1766323
cis-1,2-Dichloroethene	ND		0.00343	1	10/31/2021 05:31	WG1766323
trans-1,2-Dichloroethene	ND		0.00686	1	10/31/2021 05:31	WG1766323
1,2-Dichloropropane	ND		0.00686	1	10/31/2021 05:31	WG1766323
1,1-Dichloropropene	ND		0.00343	1	10/31/2021 05:31	WG1766323
1,3-Dichloropropane	ND		0.00686	1	10/31/2021 05:31	WG1766323
cis-1,3-Dichloropropene	ND		0.00343	1	10/31/2021 05:31	WG1766323
trans-1,3-Dichloropropene	ND		0.00686	1	10/31/2021 05:31	WG1766323
2,2-Dichloropropane	ND		0.00343	1	10/31/2021 05:31	WG1766323
Di-isopropyl ether	ND		0.00137	1	10/31/2021 05:31	WG1766323
Ethylbenzene	ND		0.00343	1	10/31/2021 05:31	WG1766323
Hexachloro-1,3-butadiene	ND		0.0343	1	10/31/2021 05:31	WG1766323
Isopropylbenzene	ND		0.00343	1	10/31/2021 05:31	WG1766323
p-Isopropyltoluene	ND		0.00686	1	10/31/2021 05:31	WG1766323
2-Butanone (MEK)	ND		0.137	1	10/31/2021 05:31	WG1766323
Methylene Chloride	ND		0.0343	1	10/31/2021 05:31	WG1766323
4-Methyl-2-pentanone (MIBK)	ND		0.0343	1	10/31/2021 05:31	WG1766323
Methyl tert-butyl ether	ND		0.00137	1	10/31/2021 05:31	WG1766323
Naphthalene	ND		0.0171	1	10/31/2021 05:31	WG1766323
n-Propylbenzene	ND		0.00686	1	10/31/2021 05:31	WG1766323
Styrene	ND		0.0171	1	10/31/2021 05:31	WG1766323
1,1,1,2-Tetrachloroethane	ND		0.00343	1	10/31/2021 05:31	WG1766323
1,1,2,2-Tetrachloroethane	ND		0.00343	1	10/31/2021 05:31	WG1766323
1,1,2-Trichlorotrifluoroethane	ND		0.00343	1	10/31/2021 05:31	WG1766323
Tetrachloroethene	ND		0.00343	1	10/31/2021 05:31	WG1766323
Toluene	ND		0.00686	1	10/31/2021 05:31	WG1766323
1,2,3-Trichlorobenzene	ND	C4	0.0171	1	10/31/2021 05:31	WG1766323
1,2,4-Trichlorobenzene	ND		0.0171	1	10/31/2021 05:31	WG1766323
1,1,1-Trichloroethane	ND		0.00343	1	10/31/2021 05:31	WG1766323
1,1,2-Trichloroethane	ND		0.00343	1	10/31/2021 05:31	WG1766323
Trichloroethene	ND		0.00137	1	10/31/2021 05:31	WG1766323
Trichlorofluoromethane	ND		0.00343	1	10/31/2021 05:31	WG1766323
1,2,3-Trichloropropane	ND		0.0171	1	10/31/2021 05:31	WG1766323
1,2,4-Trimethylbenzene	ND		0.00686	1	10/31/2021 05:31	WG1766323
1,2,3-Trimethylbenzene	ND		0.00686	1	10/31/2021 05:31	WG1766323
1,3,5-Trimethylbenzene	ND		0.00686	1	10/31/2021 05:31	WG1766323
Vinyl chloride	ND		0.00343	1	10/31/2021 05:31	WG1766323
Xylenes, Total	ND		0.00892	1	10/31/2021 05:31	WG1766323
(S) Toluene-d8	*105*		*75.0-131*		*10/31/2021 05:31*	WG1766323
(S) 4-Bromofluorobenzene	*100*		*67.0-138*		*10/31/2021 05:31*	WG1766323
(S) 1,2-Dichloroethane-d4	*101*		*70.0-130*		*10/31/2021 05:31*	WG1766323

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	ND		4.69	1	11/03/2021 06:49	WG1766948
Residual Range Organics (RRO)	ND		11.7	1	11/03/2021 06:49	WG1766948
(S) o-Terphenyl	*32.5*		*18.0-148*		*11/03/2021 06:49*	WG1766948

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00703	1	10/30/2021 14:27	WG1765811
Acenaphthene	ND		0.00703	1	10/30/2021 14:27	WG1765811
Acenaphthylene	ND		0.00703	1	10/30/2021 14:27	WG1765811
Benzo(a)anthracene	ND		0.00703	1	10/30/2021 14:27	WG1765811
Benzo(a)pyrene	ND		0.00703	1	10/30/2021 14:27	WG1765811
Benzo(b)fluoranthene	ND		0.00703	1	10/30/2021 14:27	WG1765811
Benzo(g,h,i)perylene	ND		0.00703	1	10/30/2021 14:27	WG1765811
Benzo(k)fluoranthene	ND		0.00703	1	10/30/2021 14:27	WG1765811
Chrysene	ND		0.00703	1	10/30/2021 14:27	WG1765811
Dibenz(a,h)anthracene	ND		0.00703	1	10/30/2021 14:27	WG1765811
Fluoranthene	ND		0.00703	1	10/30/2021 14:27	WG1765811
Fluorene	ND		0.00703	1	10/30/2021 14:27	WG1765811
Indeno(1,2,3-cd)pyrene	ND		0.00703	1	10/30/2021 14:27	WG1765811
Naphthalene	ND		0.0234	1	10/30/2021 14:27	WG1765811
Phenanthrene	ND		0.00703	1	10/30/2021 14:27	WG1765811
Pyrene	ND		0.00703	1	10/30/2021 14:27	WG1765811
1-Methylnaphthalene	ND		0.0234	1	10/30/2021 14:27	WG1765811
2-Methylnaphthalene	ND		0.0234	1	10/30/2021 14:27	WG1765811
2-Chloronaphthalene	ND		0.0234	1	10/30/2021 14:27	WG1765811
(S) Nitrobenzene-d5	*85.6*		*14.0-149*		*10/30/2021 14:27*	WG1765811
(S) 2-Fluorobiphenyl	*75.7*		*34.0-125*		*10/30/2021 14:27*	WG1765811
(S) p-Terphenyl-d14	*89.7*		*23.0-120*		*10/30/2021 14:27*	WG1765811

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	91.7		1	10/30/2021 16:39	WG1765837

Mercury by Method 7471B

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Mercury	ND		0.0436	1	11/02/2021 15:25	WG1766498

Metals (ICPMS) by Method 6020B

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Arsenic	2.58		1.09	5	11/03/2021 18:46	WG1765966
Barium	39.6		2.73	5	11/03/2021 18:46	WG1765966
Cadmium	ND		1.09	5	11/03/2021 18:46	WG1765966
Chromium	21.1		5.45	5	11/03/2021 18:46	WG1765966
Lead	ND		2.18	5	11/03/2021 18:46	WG1765966
Selenium	ND		2.73	5	11/03/2021 18:46	WG1765966
Silver	ND		0.545	5	11/03/2021 18:46	WG1765966

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Gasoline Range Organics-NWTPH	ND		3.02	25	10/29/2021 05:27	WG1765548
(S) a,a,a-Trifluorotoluene(FID)	*94.5*		*77.0-120*		*10/29/2021 05:27*	WG1765548

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

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Acetone	ND		0.0604	1	10/31/2021 05:49	WG1766323
Acrylonitrile	ND	C3	0.0151	1	10/31/2021 05:49	WG1766323
Benzene	ND		0.00121	1	10/31/2021 05:49	WG1766323
Bromobenzene	ND		0.0151	1	10/31/2021 05:49	WG1766323
Bromodichloromethane	ND		0.00302	1	10/31/2021 05:49	WG1766323
Bromoform	ND		0.0302	1	10/31/2021 05:49	WG1766323
Bromomethane	ND		0.0151	1	10/31/2021 05:49	WG1766323
n-Butylbenzene	ND		0.0151	1	10/31/2021 05:49	WG1766323
sec-Butylbenzene	ND		0.0151	1	10/31/2021 05:49	WG1766323
tert-Butylbenzene	ND		0.00604	1	10/31/2021 05:49	WG1766323
Carbon tetrachloride	ND		0.00604	1	10/31/2021 05:49	WG1766323
Chlorobenzene	ND		0.00302	1	10/31/2021 05:49	WG1766323
Chlorodibromomethane	ND		0.00302	1	10/31/2021 05:49	WG1766323
Chloroethane	ND		0.00604	1	10/31/2021 05:49	WG1766323
Chloroform	ND		0.00302	1	10/31/2021 05:49	WG1766323
Chloromethane	ND		0.0151	1	10/31/2021 05:49	WG1766323
2-Chlorotoluene	ND		0.00302	1	10/31/2021 05:49	WG1766323
4-Chlorotoluene	ND		0.00604	1	10/31/2021 05:49	WG1766323
1,2-Dibromo-3-Chloropropane	ND		0.0302	1	10/31/2021 05:49	WG1766323
1,2-Dibromoethane	ND		0.00302	1	10/31/2021 05:49	WG1766323
Dibromomethane	ND		0.00604	1	10/31/2021 05:49	WG1766323
1,2-Dichlorobenzene	ND		0.00604	1	10/31/2021 05:49	WG1766323
1,3-Dichlorobenzene	ND		0.00604	1	10/31/2021 05:49	WG1766323
1,4-Dichlorobenzene	ND		0.00604	1	10/31/2021 05:49	WG1766323
Dichlorodifluoromethane	ND		0.00302	1	10/31/2021 05:49	WG1766323
1,1-Dichloroethane	ND		0.00302	1	10/31/2021 05:49	WG1766323
1,2-Dichloroethane	ND		0.00302	1	10/31/2021 05:49	WG1766323

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

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,1-Dichloroethene	ND		0.00302	1	10/31/2021 05:49	WG1766323
cis-1,2-Dichloroethene	ND		0.00302	1	10/31/2021 05:49	WG1766323
trans-1,2-Dichloroethene	ND		0.00604	1	10/31/2021 05:49	WG1766323
1,2-Dichloropropane	ND		0.00604	1	10/31/2021 05:49	WG1766323
1,1-Dichloropropene	ND		0.00302	1	10/31/2021 05:49	WG1766323
1,3-Dichloropropane	ND		0.00604	1	10/31/2021 05:49	WG1766323
cis-1,3-Dichloropropene	ND		0.00302	1	10/31/2021 05:49	WG1766323
trans-1,3-Dichloropropene	ND		0.00604	1	10/31/2021 05:49	WG1766323
2,2-Dichloropropane	ND		0.00302	1	10/31/2021 05:49	WG1766323
Di-isopropyl ether	ND		0.00121	1	10/31/2021 05:49	WG1766323
Ethylbenzene	ND		0.00302	1	10/31/2021 05:49	WG1766323
Hexachloro-1,3-butadiene	ND		0.0302	1	10/31/2021 05:49	WG1766323
Isopropylbenzene	ND		0.00302	1	10/31/2021 05:49	WG1766323
p-Isopropyltoluene	ND		0.00604	1	10/31/2021 05:49	WG1766323
2-Butanone (MEK)	ND		0.121	1	10/31/2021 05:49	WG1766323
Methylene Chloride	ND		0.0302	1	10/31/2021 05:49	WG1766323
4-Methyl-2-pentanone (MIBK)	ND		0.0302	1	10/31/2021 05:49	WG1766323
Methyl tert-butyl ether	ND		0.00121	1	10/31/2021 05:49	WG1766323
Naphthalene	ND		0.0151	1	10/31/2021 05:49	WG1766323
n-Propylbenzene	ND		0.00604	1	10/31/2021 05:49	WG1766323
Styrene	ND		0.0151	1	10/31/2021 05:49	WG1766323
1,1,1,2-Tetrachloroethane	ND		0.00302	1	10/31/2021 05:49	WG1766323
1,1,2,2-Tetrachloroethane	ND		0.00302	1	10/31/2021 05:49	WG1766323
1,1,2-Trichlorotrifluoroethane	ND		0.00302	1	10/31/2021 05:49	WG1766323
Tetrachloroethene	ND		0.00302	1	10/31/2021 05:49	WG1766323
Toluene	ND		0.00604	1	10/31/2021 05:49	WG1766323
1,2,3-Trichlorobenzene	ND	C4	0.0151	1	10/31/2021 05:49	WG1766323
1,2,4-Trichlorobenzene	ND		0.0151	1	10/31/2021 05:49	WG1766323
1,1,1-Trichloroethane	ND		0.00302	1	10/31/2021 05:49	WG1766323
1,1,2-Trichloroethane	ND		0.00302	1	10/31/2021 05:49	WG1766323
Trichloroethene	ND		0.00121	1	10/31/2021 05:49	WG1766323
Trichlorofluoromethane	ND		0.00302	1	10/31/2021 05:49	WG1766323
1,2,3-Trichloropropane	ND		0.0151	1	10/31/2021 05:49	WG1766323
1,2,4-Trimethylbenzene	ND		0.00604	1	10/31/2021 05:49	WG1766323
1,2,3-Trimethylbenzene	ND		0.00604	1	10/31/2021 05:49	WG1766323
1,3,5-Trimethylbenzene	ND		0.00604	1	10/31/2021 05:49	WG1766323
Vinyl chloride	ND		0.00302	1	10/31/2021 05:49	WG1766323
Xylenes, Total	ND		0.00785	1	10/31/2021 05:49	WG1766323
(S) Toluene-d8	*104*		*75.0-131*		*10/31/2021 05:49*	WG1766323
(S) 4-Bromofluorobenzene	*100*		*67.0-138*		*10/31/2021 05:49*	WG1766323
(S) 1,2-Dichloroethane-d4	*101*		*70.0-130*		*10/31/2021 05:49*	WG1766323

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	ND		4.36	1	11/03/2021 07:02	WG1766948
Residual Range Organics (RRO)	ND		10.9	1	11/03/2021 07:02	WG1766948
(S) o-Terphenyl	*31.1*		*18.0-148*		*11/03/2021 07:02*	WG1766948

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00654	1	10/30/2021 14:44	WG1765811
Acenaphthene	ND		0.00654	1	10/30/2021 14:44	WG1765811
Acenaphthylene	ND		0.00654	1	10/30/2021 14:44	WG1765811
Benzo(a)anthracene	ND		0.00654	1	10/30/2021 14:44	WG1765811
Benzo(a)pyrene	ND		0.00654	1	10/30/2021 14:44	WG1765811
Benzo(b)fluoranthene	ND		0.00654	1	10/30/2021 14:44	WG1765811
Benzo(g,h,i)perylene	ND		0.00654	1	10/30/2021 14:44	WG1765811
Benzo(k)fluoranthene	ND		0.00654	1	10/30/2021 14:44	WG1765811
Chrysene	ND		0.00654	1	10/30/2021 14:44	WG1765811
Dibenz(a,h)anthracene	ND		0.00654	1	10/30/2021 14:44	WG1765811
Fluoranthene	ND		0.00654	1	10/30/2021 14:44	WG1765811
Fluorene	ND		0.00654	1	10/30/2021 14:44	WG1765811
Indeno(1,2,3-cd)pyrene	ND		0.00654	1	10/30/2021 14:44	WG1765811
Naphthalene	ND		0.0218	1	10/30/2021 14:44	WG1765811
Phenanthrene	ND		0.00654	1	10/30/2021 14:44	WG1765811
Pyrene	ND		0.00654	1	10/30/2021 14:44	WG1765811
1-Methylnaphthalene	ND		0.0218	1	10/30/2021 14:44	WG1765811
2-Methylnaphthalene	ND		0.0218	1	10/30/2021 14:44	WG1765811
2-Chloronaphthalene	ND		0.0218	1	10/30/2021 14:44	WG1765811
(S) Nitrobenzene-d5	*86.5*		*14.0-149*		*10/30/2021 14:44*	WG1765811
(S) 2-Fluorobiphenyl	*71.6*		*34.0-125*		*10/30/2021 14:44*	WG1765811
(S) p-Terphenyl-d14	*97.4*		*23.0-120*		*10/30/2021 14:44*	WG1765811

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	86.9		1	10/30/2021 16:39	WG1765837

Mercury by Method 7471B

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Mercury	ND		0.0460	1	11/02/2021 15:27	WG1766498

Metals (ICPMS) by Method 6020B

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Arsenic	7.77		1.15	5	11/03/2021 18:49	WG1765966
Barium	58.8		2.88	5	11/03/2021 18:49	WG1765966
Cadmium	ND		1.15	5	11/03/2021 18:49	WG1765966
Chromium	41.6		5.75	5	11/03/2021 18:49	WG1765966
Lead	3.16		2.30	5	11/03/2021 18:49	WG1765966
Selenium	ND		2.88	5	11/03/2021 18:49	WG1765966
Silver	ND		0.575	5	11/03/2021 18:49	WG1765966

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Gasoline Range Organics-NWTPH	ND		3.35	25	10/29/2021 05:49	WG1765548
(S) a,a,a-Trifluorotoluene(FID)	*94.3*		*77.0-120*		*10/29/2021 05:49*	WG1765548

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

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Acetone	ND		0.0669	1	10/31/2021 06:08	WG1766323
Acrylonitrile	ND	C3	0.0167	1	10/31/2021 06:08	WG1766323
Benzene	ND		0.00134	1	10/31/2021 06:08	WG1766323
Bromobenzene	ND		0.0167	1	10/31/2021 06:08	WG1766323
Bromodichloromethane	ND		0.00335	1	10/31/2021 06:08	WG1766323
Bromoform	ND		0.0335	1	10/31/2021 06:08	WG1766323
Bromomethane	ND		0.0167	1	10/31/2021 06:08	WG1766323
n-Butylbenzene	ND		0.0167	1	10/31/2021 06:08	WG1766323
sec-Butylbenzene	ND		0.0167	1	10/31/2021 06:08	WG1766323
tert-Butylbenzene	ND		0.00669	1	10/31/2021 06:08	WG1766323
Carbon tetrachloride	ND		0.00669	1	10/31/2021 06:08	WG1766323
Chlorobenzene	ND		0.00335	1	10/31/2021 06:08	WG1766323
Chlorodibromomethane	ND		0.00335	1	10/31/2021 06:08	WG1766323
Chloroethane	ND		0.00669	1	10/31/2021 06:08	WG1766323
Chloroform	ND		0.00335	1	10/31/2021 06:08	WG1766323
Chloromethane	ND		0.0167	1	10/31/2021 06:08	WG1766323
2-Chlorotoluene	ND		0.00335	1	10/31/2021 06:08	WG1766323
4-Chlorotoluene	ND		0.00669	1	10/31/2021 06:08	WG1766323
1,2-Dibromo-3-Chloropropane	ND		0.0335	1	10/31/2021 06:08	WG1766323
1,2-Dibromoethane	ND		0.00335	1	10/31/2021 06:08	WG1766323
Dibromomethane	ND		0.00669	1	10/31/2021 06:08	WG1766323
1,2-Dichlorobenzene	ND		0.00669	1	10/31/2021 06:08	WG1766323
1,3-Dichlorobenzene	ND		0.00669	1	10/31/2021 06:08	WG1766323
1,4-Dichlorobenzene	ND		0.00669	1	10/31/2021 06:08	WG1766323
Dichlorodifluoromethane	ND		0.00335	1	10/31/2021 06:08	WG1766323
1,1-Dichloroethane	ND		0.00335	1	10/31/2021 06:08	WG1766323
1,2-Dichloroethane	ND		0.00335	1	10/31/2021 06:08	WG1766323

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

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,1-Dichloroethene	ND		0.00335	1	10/31/2021 06:08	WG1766323
cis-1,2-Dichloroethene	ND		0.00335	1	10/31/2021 06:08	WG1766323
trans-1,2-Dichloroethene	ND		0.00669	1	10/31/2021 06:08	WG1766323
1,2-Dichloropropane	ND		0.00669	1	10/31/2021 06:08	WG1766323
1,1-Dichloropropene	ND		0.00335	1	10/31/2021 06:08	WG1766323
1,3-Dichloropropane	ND		0.00669	1	10/31/2021 06:08	WG1766323
cis-1,3-Dichloropropene	ND		0.00335	1	10/31/2021 06:08	WG1766323
trans-1,3-Dichloropropene	ND		0.00669	1	10/31/2021 06:08	WG1766323
2,2-Dichloropropane	ND		0.00335	1	10/31/2021 06:08	WG1766323
Di-isopropyl ether	ND		0.00134	1	10/31/2021 06:08	WG1766323
Ethylbenzene	ND		0.00335	1	10/31/2021 06:08	WG1766323
Hexachloro-1,3-butadiene	ND		0.0335	1	10/31/2021 06:08	WG1766323
Isopropylbenzene	ND		0.00335	1	10/31/2021 06:08	WG1766323
p-Isopropyltoluene	ND		0.00669	1	10/31/2021 06:08	WG1766323
2-Butanone (MEK)	ND		0.134	1	10/31/2021 06:08	WG1766323
Methylene Chloride	ND		0.0335	1	10/31/2021 06:08	WG1766323
4-Methyl-2-pentanone (MIBK)	ND		0.0335	1	10/31/2021 06:08	WG1766323
Methyl tert-butyl ether	ND		0.00134	1	10/31/2021 06:08	WG1766323
Naphthalene	ND		0.0167	1	10/31/2021 06:08	WG1766323
n-Propylbenzene	ND		0.00669	1	10/31/2021 06:08	WG1766323
Styrene	ND		0.0167	1	10/31/2021 06:08	WG1766323
1,1,1,2-Tetrachloroethane	ND		0.00335	1	10/31/2021 06:08	WG1766323
1,1,2,2-Tetrachloroethane	ND		0.00335	1	10/31/2021 06:08	WG1766323
1,1,2-Trichlorotrifluoroethane	ND		0.00335	1	10/31/2021 06:08	WG1766323
Tetrachloroethene	ND		0.00335	1	10/31/2021 06:08	WG1766323
Toluene	ND		0.00669	1	10/31/2021 06:08	WG1766323
1,2,3-Trichlorobenzene	ND	C4	0.0167	1	10/31/2021 06:08	WG1766323
1,2,4-Trichlorobenzene	ND		0.0167	1	10/31/2021 06:08	WG1766323
1,1,1-Trichloroethane	ND		0.00335	1	10/31/2021 06:08	WG1766323
1,1,2-Trichloroethane	ND		0.00335	1	10/31/2021 06:08	WG1766323
Trichloroethene	ND		0.00134	1	10/31/2021 06:08	WG1766323
Trichlorofluoromethane	ND		0.00335	1	10/31/2021 06:08	WG1766323
1,2,3-Trichloropropane	ND		0.0167	1	10/31/2021 06:08	WG1766323
1,2,4-Trimethylbenzene	ND		0.00669	1	10/31/2021 06:08	WG1766323
1,2,3-Trimethylbenzene	ND		0.00669	1	10/31/2021 06:08	WG1766323
1,3,5-Trimethylbenzene	ND		0.00669	1	10/31/2021 06:08	WG1766323
Vinyl chloride	ND		0.00335	1	10/31/2021 06:08	WG1766323
Xylenes, Total	ND		0.00870	1	10/31/2021 06:08	WG1766323
(S) Toluene-d8	*102*		*75.0-131*		*10/31/2021 06:08*	WG1766323
(S) 4-Bromofluorobenzene	*101*		*67.0-138*		*10/31/2021 06:08*	WG1766323
(S) 1,2-Dichloroethane-d4	*107*		*70.0-130*		*10/31/2021 06:08*	WG1766323

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	5.55		4.60	1	11/03/2021 07:54	WG1766948
Residual Range Organics (RRO)	24.3		11.5	1	11/03/2021 07:54	WG1766948
(S) o-Terphenyl	*61.6*		*18.0-148*		*11/03/2021 07:54*	WG1766948

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00691	1	10/30/2021 15:02	WG1765811
Acenaphthene	ND		0.00691	1	10/30/2021 15:02	WG1765811
Acenaphthylene	ND		0.00691	1	10/30/2021 15:02	WG1765811
Benzo(a)anthracene	ND		0.00691	1	10/30/2021 15:02	WG1765811
Benzo(a)pyrene	ND		0.00691	1	10/30/2021 15:02	WG1765811
Benzo(b)fluoranthene	ND		0.00691	1	10/30/2021 15:02	WG1765811
Benzo(g,h,i)perylene	ND		0.00691	1	10/30/2021 15:02	WG1765811
Benzo(k)fluoranthene	ND		0.00691	1	10/30/2021 15:02	WG1765811
Chrysene	ND		0.00691	1	10/30/2021 15:02	WG1765811
Dibenz(a,h)anthracene	ND		0.00691	1	10/30/2021 15:02	WG1765811
Fluoranthene	ND		0.00691	1	10/30/2021 15:02	WG1765811
Fluorene	ND		0.00691	1	10/30/2021 15:02	WG1765811
Indeno(1,2,3-cd)pyrene	ND		0.00691	1	10/30/2021 15:02	WG1765811
Naphthalene	ND		0.0230	1	10/30/2021 15:02	WG1765811
Phenanthrene	ND		0.00691	1	10/30/2021 15:02	WG1765811
Pyrene	ND		0.00691	1	10/30/2021 15:02	WG1765811
1-Methylnaphthalene	ND		0.0230	1	10/30/2021 15:02	WG1765811
2-Methylnaphthalene	ND		0.0230	1	10/30/2021 15:02	WG1765811
2-Chloronaphthalene	ND		0.0230	1	10/30/2021 15:02	WG1765811
(S) Nitrobenzene-d5	*77.8*		*14.0-149*		*10/30/2021 15:02*	WG1765811
(S) 2-Fluorobiphenyl	*62.6*		*34.0-125*		*10/30/2021 15:02*	WG1765811
(S) p-Terphenyl-d14	*80.0*		*23.0-120*		*10/30/2021 15:02*	WG1765811

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	92.4		1	10/30/2021 16:39	WG1765837

Mercury by Method 7471B

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Mercury	ND		0.0433	1	11/02/2021 15:30	WG1766498

Metals (ICPMS) by Method 6020B

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Arsenic	2.31		1.08	5	11/03/2021 18:52	WG1765966
Barium	35.1		2.71	5	11/03/2021 18:52	WG1765966
Cadmium	ND		1.08	5	11/03/2021 18:52	WG1765966
Chromium	16.3		5.41	5	11/03/2021 18:52	WG1765966
Lead	ND		2.16	5	11/03/2021 18:52	WG1765966
Selenium	ND		2.71	5	11/03/2021 18:52	WG1765966
Silver	ND		0.541	5	11/03/2021 18:52	WG1765966

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Gasoline Range Organics-NWTPH	ND		2.95	25	10/29/2021 06:11	WG1765548
(S) a,a,a-Trifluorotoluene(FID)	*94.3*		*77.0-120*		*10/29/2021 06:11*	WG1765548

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

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Acetone	ND		0.0590	1	10/31/2021 06:27	WG1766323
Acrylonitrile	ND	C3	0.0147	1	10/31/2021 06:27	WG1766323
Benzene	ND		0.00118	1	10/31/2021 06:27	WG1766323
Bromobenzene	ND		0.0147	1	10/31/2021 06:27	WG1766323
Bromodichloromethane	ND		0.00295	1	10/31/2021 06:27	WG1766323
Bromoform	ND		0.0295	1	10/31/2021 06:27	WG1766323
Bromomethane	ND		0.0147	1	10/31/2021 06:27	WG1766323
n-Butylbenzene	ND		0.0147	1	10/31/2021 06:27	WG1766323
sec-Butylbenzene	ND		0.0147	1	10/31/2021 06:27	WG1766323
tert-Butylbenzene	ND		0.00590	1	10/31/2021 06:27	WG1766323
Carbon tetrachloride	ND		0.00590	1	10/31/2021 06:27	WG1766323
Chlorobenzene	ND		0.00295	1	10/31/2021 06:27	WG1766323
Chlorodibromomethane	ND		0.00295	1	10/31/2021 06:27	WG1766323
Chloroethane	ND		0.00590	1	10/31/2021 06:27	WG1766323
Chloroform	ND		0.00295	1	10/31/2021 06:27	WG1766323
Chloromethane	ND		0.0147	1	10/31/2021 06:27	WG1766323
2-Chlorotoluene	ND		0.00295	1	10/31/2021 06:27	WG1766323
4-Chlorotoluene	ND		0.00590	1	10/31/2021 06:27	WG1766323
1,2-Dibromo-3-Chloropropane	ND		0.0295	1	10/31/2021 06:27	WG1766323
1,2-Dibromoethane	ND		0.00295	1	10/31/2021 06:27	WG1766323
Dibromomethane	ND		0.00590	1	10/31/2021 06:27	WG1766323
1,2-Dichlorobenzene	ND		0.00590	1	10/31/2021 06:27	WG1766323
1,3-Dichlorobenzene	ND		0.00590	1	10/31/2021 06:27	WG1766323
1,4-Dichlorobenzene	ND		0.00590	1	10/31/2021 06:27	WG1766323
Dichlorodifluoromethane	ND		0.00295	1	10/31/2021 06:27	WG1766323
1,1-Dichloroethane	ND		0.00295	1	10/31/2021 06:27	WG1766323
1,2-Dichloroethane	ND		0.00295	1	10/31/2021 06:27	WG1766323

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

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,1-Dichloroethene	ND		0.00295	1	10/31/2021 06:27	WG1766323
cis-1,2-Dichloroethene	ND		0.00295	1	10/31/2021 06:27	WG1766323
trans-1,2-Dichloroethene	ND		0.00590	1	10/31/2021 06:27	WG1766323
1,2-Dichloropropane	ND		0.00590	1	10/31/2021 06:27	WG1766323
1,1-Dichloropropene	ND		0.00295	1	10/31/2021 06:27	WG1766323
1,3-Dichloropropane	ND		0.00590	1	10/31/2021 06:27	WG1766323
cis-1,3-Dichloropropene	ND		0.00295	1	10/31/2021 06:27	WG1766323
trans-1,3-Dichloropropene	ND		0.00590	1	10/31/2021 06:27	WG1766323
2,2-Dichloropropane	ND		0.00295	1	10/31/2021 06:27	WG1766323
Di-isopropyl ether	ND		0.00118	1	10/31/2021 06:27	WG1766323
Ethylbenzene	ND		0.00295	1	10/31/2021 06:27	WG1766323
Hexachloro-1,3-butadiene	ND		0.0295	1	10/31/2021 06:27	WG1766323
Isopropylbenzene	ND		0.00295	1	10/31/2021 06:27	WG1766323
p-Isopropyltoluene	ND		0.00590	1	10/31/2021 06:27	WG1766323
2-Butanone (MEK)	ND		0.118	1	10/31/2021 06:27	WG1766323
Methylene Chloride	ND		0.0295	1	10/31/2021 06:27	WG1766323
4-Methyl-2-pentanone (MIBK)	ND		0.0295	1	10/31/2021 06:27	WG1766323
Methyl tert-butyl ether	ND		0.00118	1	10/31/2021 06:27	WG1766323
Naphthalene	ND		0.0147	1	10/31/2021 06:27	WG1766323
n-Propylbenzene	ND		0.00590	1	10/31/2021 06:27	WG1766323
Styrene	ND		0.0147	1	10/31/2021 06:27	WG1766323
1,1,1,2-Tetrachloroethane	ND		0.00295	1	10/31/2021 06:27	WG1766323
1,1,2,2-Tetrachloroethane	ND		0.00295	1	10/31/2021 06:27	WG1766323
1,1,2-Trichlorotrifluoroethane	ND		0.00295	1	10/31/2021 06:27	WG1766323
Tetrachloroethene	ND		0.00295	1	10/31/2021 06:27	WG1766323
Toluene	ND		0.00590	1	10/31/2021 06:27	WG1766323
1,2,3-Trichlorobenzene	ND	C4	0.0147	1	10/31/2021 06:27	WG1766323
1,2,4-Trichlorobenzene	ND		0.0147	1	10/31/2021 06:27	WG1766323
1,1,1-Trichloroethane	ND		0.00295	1	10/31/2021 06:27	WG1766323
1,1,2-Trichloroethane	ND		0.00295	1	10/31/2021 06:27	WG1766323
Trichloroethene	ND		0.00118	1	10/31/2021 06:27	WG1766323
Trichlorofluoromethane	ND		0.00295	1	10/31/2021 06:27	WG1766323
1,2,3-Trichloropropane	ND		0.0147	1	10/31/2021 06:27	WG1766323
1,2,4-Trimethylbenzene	ND		0.00590	1	10/31/2021 06:27	WG1766323
1,2,3-Trimethylbenzene	ND		0.00590	1	10/31/2021 06:27	WG1766323
1,3,5-Trimethylbenzene	ND		0.00590	1	10/31/2021 06:27	WG1766323
Vinyl chloride	ND		0.00295	1	10/31/2021 06:27	WG1766323
Xylenes, Total	ND		0.00767	1	10/31/2021 06:27	WG1766323
(S) Toluene-d8	*103*		*75.0-131*		*10/31/2021 06:27*	WG1766323
(S) 4-Bromofluorobenzene	*96.5*		*67.0-138*		*10/31/2021 06:27*	WG1766323
(S) 1,2-Dichloroethane-d4	*101*		*70.0-130*		*10/31/2021 06:27*	WG1766323

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	ND		4.33	1	11/03/2021 07:41	WG1766948
Residual Range Organics (RRO)	ND		10.8	1	11/03/2021 07:41	WG1766948
(S) o-Terphenyl	*48.8*		*18.0-148*		*11/03/2021 07:41*	WG1766948

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00649	1	10/30/2021 15:19	WG1765811
Acenaphthene	ND		0.00649	1	10/30/2021 15:19	WG1765811
Acenaphthylene	ND		0.00649	1	10/30/2021 15:19	WG1765811
Benzo(a)anthracene	ND		0.00649	1	10/30/2021 15:19	WG1765811
Benzo(a)pyrene	ND		0.00649	1	10/30/2021 15:19	WG1765811
Benzo(b)fluoranthene	ND		0.00649	1	10/30/2021 15:19	WG1765811
Benzo(g,h,i)perylene	ND		0.00649	1	10/30/2021 15:19	WG1765811
Benzo(k)fluoranthene	ND		0.00649	1	10/30/2021 15:19	WG1765811
Chrysene	ND		0.00649	1	10/30/2021 15:19	WG1765811
Dibenz(a,h)anthracene	ND		0.00649	1	10/30/2021 15:19	WG1765811
Fluoranthene	ND		0.00649	1	10/30/2021 15:19	WG1765811
Fluorene	ND		0.00649	1	10/30/2021 15:19	WG1765811
Indeno(1,2,3-cd)pyrene	ND		0.00649	1	10/30/2021 15:19	WG1765811
Naphthalene	ND		0.0216	1	10/30/2021 15:19	WG1765811
Phenanthrene	ND		0.00649	1	10/30/2021 15:19	WG1765811
Pyrene	ND		0.00649	1	10/30/2021 15:19	WG1765811
1-Methylnaphthalene	ND		0.0216	1	10/30/2021 15:19	WG1765811
2-Methylnaphthalene	ND		0.0216	1	10/30/2021 15:19	WG1765811
2-Chloronaphthalene	ND		0.0216	1	10/30/2021 15:19	WG1765811
(S) Nitrobenzene-d5	*99.3*		*14.0-149*		*10/30/2021 15:19*	WG1765811
(S) 2-Fluorobiphenyl	*86.3*		*34.0-125*		*10/30/2021 15:19*	WG1765811
(S) p-Terphenyl-d14	*121*	J1	*23.0-120*		*10/30/2021 15:19*	WG1765811

Method Blank (MB)

(MB) R3723681-1 10/30/21 16:39

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0.00100			

L1423266-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1423266-05 10/30/21 16:39 • (DUP) R3723681-3 10/30/21 16:39

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	89.0	89.2	1	0.237		10

Laboratory Control Sample (LCS)

(LCS) R3723681-2 10/30/21 16:39

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	50.0	100	85.0-115	

Method Blank (MB)

(MB) R3724558-1 11/02/21 14:52

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Mercury	U		0.0180	0.0400

Laboratory Control Sample (LCS)

(LCS) R3724558-2 11/02/21 14:54

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Mercury	0.500	0.509	102	80.0-120	

L1423622-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1423622-05 11/02/21 14:57 • (MS) R3724558-3 11/02/21 14:59 • (MSD) R3724558-4 11/02/21 15:02

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Mercury	0.669	ND	0.790	0.736	111	103	1	75.0-125			7.13	20

QUALITY CONTROL SUMMARY

L1423266-01,03,05,11,13,14,15,17,20

Method Blank (MB)

(MB) R3725162-1 11/03/21 17:52

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.100	1.00
Barium	U		0.152	2.50
Cadmium	U		0.0855	1.00
Chromium	U		0.297	5.00
Lead	U		0.0990	2.00
Selenium	0.208	J	0.180	2.50
Silver	U		0.0865	0.500

Laboratory Control Sample (LCS)

(LCS) R3725162-2 11/03/21 17:55

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	91.7	91.7	80.0-120	
Barium	100	90.8	90.8	80.0-120	
Cadmium	100	101	101	80.0-120	
Chromium	100	96.7	96.7	80.0-120	
Lead	100	93.1	93.1	80.0-120	
Selenium	100	98.2	98.2	80.0-120	
Silver	20.0	19.7	98.4	80.0-120	

L1423646-29 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1423646-29 11/03/21 17:59 • (MS) R3725162-5 11/03/21 18:09 • (MSD) R3725162-6 11/03/21 18:12

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	29.6	112	116	82.6	85.9	5	75.0-125			2.90	20
Barium	100	382	476	502	94.4	120	5	75.0-125			5.33	20
Cadmium	100	ND	91.5	98.6	90.9	98.0	5	75.0-125			7.48	20
Chromium	100	26.3	113	115	86.4	88.8	5	75.0-125			2.09	20
Lead	100	19.4	106	110	86.2	91.0	5	75.0-125			4.46	20
Selenium	100	ND	91.3	98.2	90.2	97.1	5	75.0-125			7.27	20
Silver	20.0	ND	17.6	18.6	88.2	93.0	5	75.0-125			5.36	20

Method Blank (MB)

(MB) R3725739-3 10/29/21 04:36

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPHG C6 - C12	U		0.848	2.50
(S) a,a,a-Trifluorotoluene(FID)	*117*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3725739-2 10/29/21 03:47

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPHG C6 - C12	5.50	6.17	112	71.0-124	
(S) a,a,a-Trifluorotoluene(FID)			*104*	*77.0-120*	

L1423058-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1423058-01 10/29/21 08:23 • (MS) R3725739-6 10/29/21 13:48 • (MSD) R3725739-7 10/29/21 14:10

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	162	ND	199	188	123	117	25	50.0-150			5.36	27
(S) a,a,a-Trifluorotoluene(FID)					*110*	*109*		*77.0-120*				

Method Blank (MB)

(MB) R3723041-2 10/29/21 03:49

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Gasoline Range Organics-NWTPH	U		0.848	2.50
(S) a,a,a-Trifluorotoluene(FID)	*93.8*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3723041-1 10/29/21 03:05

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5.50	5.75	105	71.0-124	
(S) a,a,a-Trifluorotoluene(FID)			*100*	*77.0-120*	

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Method Blank (MB)

(MB) R3725864-2 10/31/21 00:10

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acetone	U		0.0365	0.0500
Acrylonitrile	U		0.00361	0.0125
Benzene	U		0.000467	0.00100
Bromobenzene	U		0.000900	0.0125
Bromodichloromethane	U		0.000725	0.00250
Bromoform	U		0.00117	0.0250
Bromomethane	U		0.00197	0.0125
n-Butylbenzene	U		0.00525	0.0125
sec-Butylbenzene	U		0.00288	0.0125
tert-Butylbenzene	U		0.00195	0.00500
Carbon tetrachloride	U		0.000898	0.00500
Chlorobenzene	U		0.000210	0.00250
Chlorodibromomethane	U		0.000612	0.00250
Chloroethane	U		0.00170	0.00500
Chloroform	U		0.00103	0.00250
Chloromethane	U		0.00435	0.0125
2-Chlorotoluene	U		0.000865	0.00250
4-Chlorotoluene	U		0.000450	0.00500
1,2-Dibromo-3-Chloropropane	U		0.00390	0.0250
1,2-Dibromoethane	U		0.000648	0.00250
Dibromomethane	U		0.000750	0.00500
1,2-Dichlorobenzene	U		0.000425	0.00500
1,3-Dichlorobenzene	U		0.000600	0.00500
1,4-Dichlorobenzene	U		0.000700	0.00500
Dichlorodifluoromethane	U		0.00161	0.00250
1,1-Dichloroethane	U		0.000491	0.00250
1,2-Dichloroethane	U		0.000649	0.00250
1,1-Dichloroethene	U		0.000606	0.00250
cis-1,2-Dichloroethene	U		0.000734	0.00250
trans-1,2-Dichloroethene	U		0.00104	0.00500
1,2-Dichloropropane	U		0.00142	0.00500
1,1-Dichloropropene	U		0.000809	0.00250
1,3-Dichloropropane	U		0.000501	0.00500
cis-1,3-Dichloropropene	U		0.000757	0.00250
trans-1,3-Dichloropropene	U		0.00114	0.00500
2,2-Dichloropropane	U		0.00138	0.00250
Di-isopropyl ether	U		0.000410	0.00100
Ethylbenzene	U		0.000737	0.00250
Hexachloro-1,3-butadiene	U		0.00600	0.0250
Isopropylbenzene	U		0.000425	0.00250

Method Blank (MB)

(MB) R3725864-2 10/31/21 00:10

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
p-Isopropyltoluene	U		0.00255	0.00500
2-Butanone (MEK)	0.0821	J	0.0635	0.100
Methylene Chloride	U		0.00664	0.0250
4-Methyl-2-pentanone (MIBK)	U		0.00228	0.0250
Methyl tert-butyl ether	U		0.000350	0.00100
Naphthalene	U		0.00488	0.0125
n-Propylbenzene	U		0.000950	0.00500
Styrene	U		0.000229	0.0125
1,1,1,2-Tetrachloroethane	U		0.000948	0.00250
1,1,2,2-Tetrachloroethane	U		0.000695	0.00250
Tetrachloroethene	U		0.000896	0.00250
Toluene	U		0.00130	0.00500
1,1,2-Trichlorotrifluoroethane	U		0.000754	0.00250
1,2,3-Trichlorobenzene	U		0.00733	0.0125
1,2,4-Trichlorobenzene	U		0.00440	0.0125
1,1,1-Trichloroethane	U		0.000923	0.00250
1,1,2-Trichloroethane	U		0.000597	0.00250
Trichloroethene	U		0.000584	0.00100
Trichlorofluoromethane	U		0.000827	0.00250
1,2,3-Trichloropropane	U		0.00162	0.0125
1,2,3-Trimethylbenzene	U		0.00158	0.00500
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
Vinyl chloride	U		0.00116	0.00250
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	*103*			*75.0-131*
(S) 4-Bromofluorobenzene	*100*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*107*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3725864-1 10/30/21 23:13

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acetone	0.625	0.554	88.6	10.0-160	
Acrylonitrile	0.625	0.518	82.9	45.0-153	
Benzene	0.125	0.112	89.6	70.0-123	
Bromobenzene	0.125	0.125	100	73.0-121	
Bromodichloromethane	0.125	0.115	92.0	73.0-121	

Laboratory Control Sample (LCS)

(LCS) R3725864-1 10/30/21 23:13

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Bromoform	0.125	0.112	89.6	64.0-132	
Bromomethane	0.125	0.114	91.2	56.0-147	
n-Butylbenzene	0.125	0.109	87.2	68.0-135	
sec-Butylbenzene	0.125	0.108	86.4	74.0-130	
tert-Butylbenzene	0.125	0.111	88.8	75.0-127	
Carbon tetrachloride	0.125	0.113	90.4	66.0-128	
Chlorobenzene	0.125	0.115	92.0	76.0-128	
Chlorodibromomethane	0.125	0.110	88.0	74.0-127	
Chloroethane	0.125	0.121	96.8	61.0-134	
Chloroform	0.125	0.114	91.2	72.0-123	
Chloromethane	0.125	0.133	106	51.0-138	
2-Chlorotoluene	0.125	0.117	93.6	75.0-124	
4-Chlorotoluene	0.125	0.114	91.2	75.0-124	
1,2-Dibromo-3-Chloropropane	0.125	0.104	83.2	59.0-130	
1,2-Dibromoethane	0.125	0.117	93.6	74.0-128	
Dibromomethane	0.125	0.125	100	75.0-122	
1,2-Dichlorobenzene	0.125	0.115	92.0	76.0-124	
1,3-Dichlorobenzene	0.125	0.114	91.2	76.0-125	
1,4-Dichlorobenzene	0.125	0.112	89.6	77.0-121	
Dichlorodifluoromethane	0.125	0.107	85.6	43.0-156	
1,1-Dichloroethane	0.125	0.115	92.0	70.0-127	
1,2-Dichloroethane	0.125	0.128	102	65.0-131	
1,1-Dichloroethene	0.125	0.110	88.0	65.0-131	
cis-1,2-Dichloroethene	0.125	0.113	90.4	73.0-125	
trans-1,2-Dichloroethene	0.125	0.105	84.0	71.0-125	
1,2-Dichloropropane	0.125	0.117	93.6	74.0-125	
1,1-Dichloropropene	0.125	0.120	96.0	73.0-125	
1,3-Dichloropropane	0.125	0.120	96.0	80.0-125	
cis-1,3-Dichloropropene	0.125	0.121	96.8	76.0-127	
trans-1,3-Dichloropropene	0.125	0.124	99.2	73.0-127	
2,2-Dichloropropane	0.125	0.0921	73.7	59.0-135	
Di-isopropyl ether	0.125	0.116	92.8	60.0-136	
Ethylbenzene	0.125	0.107	85.6	74.0-126	
Hexachloro-1,3-butadiene	0.125	0.145	116	57.0-150	
Isopropylbenzene	0.125	0.106	84.8	72.0-127	
p-Isopropyltoluene	0.125	0.101	80.8	72.0-133	
2-Butanone (MEK)	0.625	0.531	85.0	30.0-160	
Methylene Chloride	0.125	0.111	88.8	68.0-123	
4-Methyl-2-pentanone (MIBK)	0.625	0.603	96.5	56.0-143	
Methyl tert-butyl ether	0.125	0.111	88.8	66.0-132	

Laboratory Control Sample (LCS)

(LCS) R3725864-1 10/30/21 23:13

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Naphthalene	0.125	0.116	92.8	59.0-130	
n-Propylbenzene	0.125	0.111	88.8	74.0-126	
Styrene	0.125	0.107	85.6	72.0-127	
1,1,1,2-Tetrachloroethane	0.125	0.104	83.2	74.0-129	
1,1,2,2-Tetrachloroethane	0.125	0.109	87.2	68.0-128	
Tetrachloroethene	0.125	0.123	98.4	70.0-136	
Toluene	0.125	0.113	90.4	75.0-121	
1,1,2-Trichlorotrifluoroethane	0.125	0.122	97.6	61.0-139	
1,2,3-Trichlorobenzene	0.125	0.126	101	59.0-139	
1,2,4-Trichlorobenzene	0.125	0.128	102	62.0-137	
1,1,1-Trichloroethane	0.125	0.107	85.6	69.0-126	
1,1,2-Trichloroethane	0.125	0.120	96.0	78.0-123	
Trichloroethene	0.125	0.126	101	76.0-126	
Trichlorofluoromethane	0.125	0.113	90.4	61.0-142	
1,2,3-Trichloropropane	0.125	0.113	90.4	67.0-129	
1,2,3-Trimethylbenzene	0.125	0.105	84.0	74.0-124	
1,2,4-Trimethylbenzene	0.125	0.103	82.4	70.0-126	
1,3,5-Trimethylbenzene	0.125	0.106	84.8	73.0-127	
Vinyl chloride	0.125	0.125	100	63.0-134	
Xylenes, Total	0.375	0.325	86.7	72.0-127	
(S) Toluene-d8			*103*	*75.0-131*	
(S) 4-Bromofluorobenzene			*101*	*67.0-138*	
(S) 1,2-Dichloroethane-d4			*108*	*70.0-130*	

Method Blank (MB)

(MB) R3724440-1 11/02/21 07:41

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Diesel Range Organics (DRO)	U		1.33	4.00
Residual Range Organics (RRO)	U		3.33	10.0
(S) o-Terphenyl	*53.8*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3724440-2 11/02/21 07:54

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Diesel Range Organics (DRO)	50.0	32.2	64.4	50.0-150	
(S) o-Terphenyl			*70.6*	*18.0-148*	

L1423415-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1423415-01 11/02/21 16:57 • (MS) R3724440-3 11/02/21 17:10 • (MSD) R3724440-4 11/02/21 17:22

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Diesel Range Organics (DRO)	47.8	ND	33.5	42.3	53.9	71.3	5	50.0-150		J3	23.2	20
(S) o-Terphenyl					*129*	*62.5*		*18.0-148*				

Method Blank (MB)

(MB) R3723791-2 10/30/21 10:59

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Anthracene	U		0.00230	0.00600
Acenaphthene	U		0.00209	0.00600
Acenaphthylene	U		0.00216	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(g,h,i)perylene	U		0.00177	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Fluoranthene	U		0.00227	0.00600
Fluorene	U		0.00205	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
Naphthalene	U		0.00408	0.0200
Phenanthrene	U		0.00231	0.00600
Pyrene	U		0.00200	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
2-Chloronaphthalene	U		0.00466	0.0200
(S) Nitrobenzene-d5	*105*			*14.0-149*
(S) 2-Fluorobiphenyl	*87.4*			*34.0-125*
(S) p-Terphenyl-d14	*109*			*23.0-120*

Laboratory Control Sample (LCS)

(LCS) R3723791-1 10/30/21 10:42

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0587	73.4	50.0-126	
Acenaphthene	0.0800	0.0587	73.4	50.0-120	
Acenaphthylene	0.0800	0.0573	71.6	50.0-120	
Benzo(a)anthracene	0.0800	0.0587	73.4	45.0-120	
Benzo(a)pyrene	0.0800	0.0532	66.5	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0611	76.4	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0611	76.4	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0601	75.1	49.0-125	
Chrysene	0.0800	0.0615	76.9	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0610	76.3	47.0-125	
Fluoranthene	0.0800	0.0596	74.5	49.0-129	

Laboratory Control Sample (LCS)

(LCS) R3723791-1 10/30/21 10:42

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.0800	0.0620	77.5	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0590	73.8	46.0-125	
Naphthalene	0.0800	0.0582	72.8	50.0-120	
Phenanthrene	0.0800	0.0627	78.4	47.0-120	
Pyrene	0.0800	0.0593	74.1	43.0-123	
1-Methylnaphthalene	0.0800	0.0548	68.5	51.0-121	
2-Methylnaphthalene	0.0800	0.0538	67.3	50.0-120	
2-Chloronaphthalene	0.0800	0.0555	69.4	50.0-120	
(S) Nitrobenzene-d5			*107*	*14.0-149*	
(S) 2-Fluorobiphenyl			*79.1*	*34.0-125*	
(S) p-Terphenyl-d14			*103*	*23.0-120*	

L1422174-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1422174-01 10/30/21 16:46 • (MS) R3723791-3 10/30/21 17:04 • (MSD) R3723791-4 10/30/21 17:21

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Anthracene	0.0760	0.00867	0.0599	0.0670	67.4	76.8	1	10.0-145			11.2	30
Acenaphthene	0.0760	ND	0.0537	0.0618	63.3	73.9	1	14.0-127			14.0	27
Acenaphthylene	0.0760	ND	0.0555	0.0625	73.0	82.2	1	21.0-124			11.9	25
Benzo(a)anthracene	0.0760	0.0208	0.0739	0.0757	69.9	72.2	1	10.0-139			2.41	30
Benzo(a)pyrene	0.0760	0.0134	0.0567	0.0634	57.0	65.8	1	10.0-141			11.2	31
Benzo(b)fluoranthene	0.0760	0.0366	0.0795	0.0783	56.4	54.9	1	10.0-140			1.52	36
Benzo(g,h,i)perylene	0.0760	0.0259	0.0604	0.0733	45.4	62.4	1	10.0-140			19.3	33
Benzo(k)fluoranthene	0.0760	0.00795	0.0550	0.0627	61.9	72.0	1	10.0-137			13.1	31
Chrysene	0.0760	0.0322	0.0986	0.0974	87.4	85.8	1	10.0-145			1.22	30
Dibenz(a,h)anthracene	0.0760	ND	0.0479	0.0656	56.6	79.9	1	10.0-132		J3	31.2	31
Fluoranthene	0.0760	0.0456	0.0859	0.0880	53.0	55.8	1	10.0-153			2.42	33
Fluorene	0.0760	ND	0.0620	0.0633	81.6	83.3	1	11.0-130			2.08	29
Indeno(1,2,3-cd)pyrene	0.0760	0.0145	0.0627	0.0731	63.4	77.1	1	10.0-137			15.3	32
Naphthalene	0.0760	0.0545	0.0884	0.0944	44.6	52.5	1	10.0-135			6.56	27
Phenanthrene	0.0760	0.137	0.160	0.145	30.3	10.5	1	10.0-144			9.84	31
Pyrene	0.0760	0.0469	0.0944	0.0809	62.5	44.7	1	10.0-148			15.4	35
1-Methylnaphthalene	0.0760	0.0965	0.119	0.123	29.6	34.9	1	10.0-142			3.31	28
2-Methylnaphthalene	0.0760	0.121	0.143	0.138	28.9	22.4	1	10.0-137			3.56	28
2-Chloronaphthalene	0.0760	ND	0.0497	0.0601	65.4	79.1	1	29.0-120			18.9	24
(S) Nitrobenzene-d5					*114*	*128*		*14.0-149*				
(S) 2-Fluorobiphenyl					*81.2*	*84.2*		*34.0-125*				
(S) p-Terphenyl-d14					*98.9*	*104*		*23.0-120*				

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
RDL (dry)	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
C3	The reported concentration is an estimate. The continuing calibration standard associated with this data responded low. Method sensitivity check is acceptable.
C4	The reported concentration is an estimate. The continuing calibration standard associated with this data responded low. Data is likely to show a low bias concerning the result.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
J3	The associated batch QC was outside the established quality control range for precision.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Com[redacted]/Address:
GeoEngineers- Portland, OR

4000 Kruse Way Place
Bldg. 3, Suite 200
Lake Oswego, OR 97035

Billing Information:
Accounts Payable (Marlee Johnston)
17425 NE Union Hill Rd, Suite 250
Redmond, WA 98052

Pres Chk

Chain of Custody Page 1 of 3

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12065 Lebanon Rd Mount Juliet, TN 37122
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Report to: Cris Watkins

Email To: cwatkins@geoengineers.com

Project Description:

City/State Collected: Seatac, WA

Please Circle: PT MT CT ET

Phone: 503-603-6661

Client Project # 0180-393-00

Lab Project # GEOENGPOR-018039300

SDG # L1423266

J226

Acctnum: GEOENGPOR
Template: T197917
Prelogin: P882161
PM: 110 - Brian Ford
PB:
Shipped Via:

Collected by (print): Dexter Chan

Site/Facility ID #

P.O. #

Collected by (signature): [signature]

Immediately Packed on Ice N____ Y X

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day X 10 Day (Rad Only)
____ Three Day

Quote #

Date Results Needed

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	NWTPHDX no silica 8ozClr-NoPres	NWTPHDX w/ silica 8ozClr-NoPres	NWTPHGX 40mlAmb/MeOH10ml/Syr	PAHs 8270ESIM 8ozClr-NoPres	RCRA8 Metals 6020 4ozClr-NoPres	VOCs 8260D 40mlAmb/MeOH10ml/Syr	Hold			Remarks	Sample # (lab only)
GEI-1-9-10		SS	9-10	10/26/21	1120	3							X				-01
GEI-1-14-15		SS	14-15	↓	1125	↓							X				-02
GEI-2-9-10		SS	9-10		1140								X				-03
GEI-2-14-15		SS	14-15		1145								X				-04
GEI-3-9-10		SS	9-10		1245								X				-05
GEI-3-14-15		SS	14-15		1250								X				-06
GEI-4-9-10		SS	9-10		1430 ~~1255~~								X				-07
GEI-4-14-15		SS	14-15		1435 ~~1300~~								X				-08
MW-1-9-10		SS	9-10		1225								X				-09
MW-1-14-15		SS	14-15	↓	1230	↓							X				-10

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other________

Remarks:

pH ______ Temp ______

Flow ______ Other ______

Samples returned via:
__ UPS __ FedEx __ Courier ________

Tracking # 5217 3314 1922

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: ✓Y __N
Bottles arrive intact: ✓Y __N
Correct bottles used: ✓Y __N
Sufficient volume sent: ✓Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N
RAD Screen <0.5 mR/hr: ✓Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeOH TBR	
[signature]	10/26/21	1500		5	
Relinquished by : (Signature)	**Date:**	**Time:**	**Received by: (Signature)**	**Temp: °C / Bottles Received:**	**If preservation required by Login: Date/Time**
				1.7+0=1.7 63	
Relinquished by : (Signature)	**Date:**	**Time:**	**Received for lab by: (Signature)**	**Date: / Time:**	**Hold: / Condition: NCF / OK**
			[signature]	10/27/21 930	OK

Company Name/Address:
GeoEngineers- Portland, OR

4000 Kruse Way Place
Bldg. 3, Suite 200
Lake Oswego, OR 97035

Billing Information:
Accounts Payable (Marlee Johnston)
17425 NE Union Hill Rd, Suite 250
Redmond, WA 98052

Pres Chk

Report to: Cris Watkins

Email To: cwatkins@geoengineers.com

Project Description:

City/State Collected: Seattle, WA

Please Circle: PT MT CT ET

Phone: 503-603-6661

Client Project # 0180-393-00

Lab Project # GEOENGPOR-018039300

Collected by (print): Dexter Chen

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day X 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

No. of Cntrs

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	NWTPHDX no silica 8ozClr-NoPres	NWTPHDX w/ silica 8ozClr-NoPres	NWTPHGX 40mlAmb/MeOH10ml/Syr	PAHs 8270ESIM 8ozClr-NoPres	RCRA8 Metals 6020 4ozClr-NoPres	VOCs 8260D 40mlAmb/MeOH10ml/Syr	HOLD			Remarks	Sample # (lab only)
MW-2-9-10		SS	9-10	10/25/21	1400	3							X				-11
MW-2-14-15		SS	14-15	10/25/21	1405								X				-12
GEI-4-2-3		SS	2-3	10/26/21	1000								X				-13
MW-1-2-3		SS	2-3		1020								X				-14
GEI-5-7-8		SS	7-8		1040								X				-15
GEI-5-15-16		SS	15-16		1045								X				-16
MW-3-2-3		SS	2-3		1100								X				-17
MW-3-7-8		SS	7-8		1105								X				-18
MW-3-14-15		SS	14-15		1110								X				-19
GEI-6-7-8		SS	7-8		1205								X				-20

Chain of Custody Page 2 of 3

Pace Analytical®

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SDG # 423268

Table #

Acctnum: GEOENGPOR

Template: T197917

Prelogin: P882161

PM: 110 - Brian Ford

PB:

Shipped Via:

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking # "

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N
RAD Screen <0.5 mR/hr: Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCl / MeoH TBR	If preservation required by Login: Date/Time
[signature]	10/26/21	1520			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.3R °C Bottles Received: 1.7+0=17 63	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 10/27/21 Time: 930	Hold: Condition: NCF / OK

Company/Address:
GeoEngineers- Portland, OR

4000 Kruse Way Place
Bldg. 3, Suite 200
Lake Oswego, OR 97035

Billing Information:
Accounts Payable (Marlee Johnston)
17425 NE Union Hill Rd, Suite 250
Redmond, WA 98052

Pres Chk

Report to: **Cris Watkins**

Email To: **cwatkins@geoengineers.com**

Project Description:

City/State Collected: Seattle, WA

Please Circle: PT MT CT ET

Phone: **503-603-6661**

Client Project # **0180-393-00**

Lab Project # **GEOENGPOR-018039300**

Collected by (print): Dexter Chan

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ____ Y ____

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ~~X~~ 10 Day (Rad Only)
____ Three Day

Date Results Needed

Quote #

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	NWTPHDX no silica 8ozClr-NoPres	NWTPHDX w/ silica 8ozClr-NoPres	NWTPHGX 40mlAmb/MeOH10ml/Syr	PAHs 8270ESIM 8ozClr-NoPres	RCRA8 Metals 6020 4ozClr-NoPres	VOCs 8260D 40mlAmb/MeOH10ml/Syr	HOLD			Remarks	Sample # (lab only)
GEI-6-14-15		SS	14-15	10/26/21	1210	3							X				-21

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

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SDG # 1423266

Table #

Acctnum: **GEOENGPOR**

Template: **T197917**

Prelogin: **P882161**

PM: **110 - Brian Ford**

PB:

Shipped Via:

* Matrix:
SS - Soil **AIR** - Air **F** - Filter
GW - Groundwater **B** - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking #

Sample Receipt Checklist

COC Seal Present/Intact:	NP	Y	N
COC Signed/Accurate:		Y	N
Bottles arrive intact:		Y	N
Correct bottles used:		Y	N
Sufficient volume sent:		Y	N
If Applicable			
VOA Zero Headspace:		Y	N
Preservation Correct/Checked:		Y	N
RAD Screen <0.5 mR/hr:		Y	N

Relinquished by : (Signature)	Date: 10/26/21	Time: 1500	Received by: (Signature)	Trip Blank Received: Yes / No HCl / MeoH TBR	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 1.7 °C Bottles Received: 5 63	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 10/27/21 Time: 930	Hold: Condition: NCF / OK

Brian Ford

From: Cris J. Watkins <cwatkins@geoengineers.com>
Sent: Thursday, October 28, 2021 5:54 PM
To: Brian Ford
Cc: Phil D. Welker
Subject: RE: updated analysis request FW: L1423266 Proj 0180-393-00 Hold Samples Received

Also – please update the project name to WSDOT-A-1 Towing. Thanks,

Cris J. Watkins
Senior Environmental Scientist | GeoEngineers, Inc.
Telephone: 503.603.6687
Mobile: 971.235.6147

From: Cris J. Watkins
Sent: Thursday, October 28, 2021 3:53 PM
To: Brian Ford <Brian.Ford@pacelabs.com>
Cc: Phil D. Welker <pwelker@geoengineers.com>
Subject: updated analysis request FW: L1423266 Proj 0180-393-00 Hold Samples Received

Hey Brian,

Can you run the following samples on a 5-day TAT:

GEI-1-9-10
GEI-2-9-10
GEI-3-9-10
GEI-4-2-3
GEI-5-7-8
GEI-6-7-8
MW-1-2-3
MW-2-9-10
MW-3-2-3

We will run Dx-no silica, Gx, PAHs, RCRA 8 and VOCs.

Thanks,

Cris J. Watkins
Senior Environmental Scientist | GeoEngineers, Inc.
Telephone: 503.603.6687
Mobile: 971.235.6147

From: Brian Ford <Brian.Ford@pacelabs.com>
Sent: Thursday, October 28, 2021 8:22 AM
To: Cris J. Watkins <cwatkins@geoengineers.com>
Subject: L1423266 Proj 0180-393-00 Hold Samples Received

[EXTERNAL]

Thanks,

Brian Ford
Project Manager 2 / Pace National
12065 Lebanon Road | Mt. Juliet, TN 37122
Office: 615.773.9772
brian.ford@pacelabs.com

APPENDIX C
Report Limitations and Guidelines for Use

APPENDIX C
REPORT LIMITATIONS AND GUIDELINES FOR USE[1]

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

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.

Environmental Services Are Performed for Specific Purposes, Persons and Projects

This report has been prepared for the exclusive use of the WSDOT, their authorized agents and regulatory agencies. This report is not intended for use by others, and the information contained herein is not applicable to other sites.

GeoEngineers structures our services to meet the specific needs of our clients. For example, an environmental site assessment or remedial action 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 WSDOT should rely on this plan 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 applies to the King County Tax Parcel 3223049048 project located in Des Moines, 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 remedial action plan, GeoEngineers should be given the opportunity to review our interpretations and recommendations and provide written modifications or confirmation, as appropriate.

---

[1] Developed based on material provided by Geoprofessional Business Association (GBA), Professional Firms Practicing in the GeoSciences, www.geoprofesional.org.

Reliance Conditions for Third Parties

No third party may rely on the product of our services unless GeoEngineers agrees in advance, and in writing to such reliance. This is to provide our firm with reasonable protection against open-ended liability claims by third parties with whom there would otherwise be no contractual limits to their actions.

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.

Subsurface Conditions Can Change

This report is based on conditions that existed at the time our site studies were 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.

Soil and Groundwater End Use

The cleanup levels referenced in this report are site- and situation-specific. The cleanup levels may not be applicable for other sites or for other on-site uses of the affected media (soil and/or groundwater). Note that hazardous substances may be present in some of the Site soil and/or groundwater at detectable concentrations that are less than the referenced cleanup levels. GeoEngineers should be contacted prior to the export of soil or groundwater from the subject Site or reuse of the affected media on Site to evaluate the potential for associated environmental liabilities. We cannot be responsible for potential environmental liability arising out of the transfer of soil and/or groundwater from the subject site to another location or its reuse on site in instances that we were not aware of or could not control.

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

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 reproduction is acceptable, but recognize that separating logs from the report can elevate risk.

Geotechnical, Geologic and Environmental 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.

Most Environmental Findings Are Professional Opinions

Our interpretations of subsurface conditions are based on field observations and chemical analytical data from the sampling locations at the site documented in past reports. 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. There is always a potential that areas of contamination exist in portions of the site that were not sampled or tested during this or previous studies. Our remedial action plan, conclusions and interpretations should not be construed as a warranty of the subsurface conditions.

GeoEngineers