2023 Groundwater Monitoring Report

FL358 - Y Pay Mor Dry Cleaners
2210 South 320th Street
Federal Way, Washington
VCP No. NW3265

for
Sound Transit

May 21, 2024

GeoEngineers
Earth Science + Technology

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VCP No. NW3265

File No. 4082-039-03

May 21, 2024

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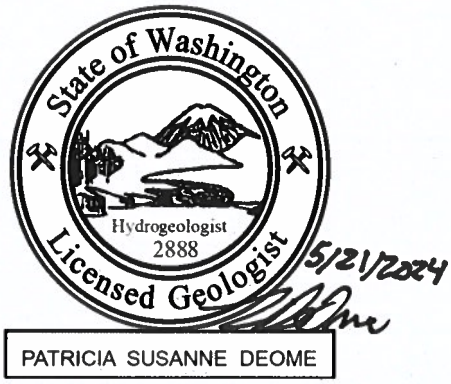

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1.0 INTRODUCTION

This report presents the 2023 groundwater monitoring completed for the "Y Pay Mor Drycleaner" Site located at 2210 South 320th Street in Federal Way, Washington (also referred to as "Y Pay Mor Cleaners" or "Site"; Figure 1). The Site is identified in Washington State Department of Ecology (Ecology) databases as Facility Site ID Number 2518 and Cleanup Site ID Number 3180. The Y Pay Mor Site is located on King County Parcel No. 2423200050, identified by Sound Transit as Federal Way Link Extension (FWLE) Parcel FL358 (Parcel FL358; Figure 2). Parcel FL358 was acquired by Sound Transit in 2020. Construction associated with the Sound Transit FWLE Project, including the new Federal Way Downtown Station and new surrounding rights-of-way (ROW) has been ongoing since 2020.

Sound Transit is completing an independent cleanup at the Y Pay Mor Site in accordance with the requirements of the Model Toxics Control Act (MTCA), Revised Code of Washington (RCW) 70A.305, and Chapter 173-340 Washington Administrative Code (WAC). Sound Transit has been enrolled in Ecology's Voluntary Cleanup Program (VCP) since March 2020 (VCP No. NW3265).

2.0 SITE BACKGROUND

2.1. Site History and Regulatory Action

The SeaTac Plaza shopping center was built in 1979. Y Pay Mor Cleaners occupied the easternmost tenant space (space A-6) of the shopping center building from approximately November 1985 to June 1992 (RZA AGRA 1992). Other non-dry cleaning commercial businesses occupied this tenant space from 1979 to 1985 and after 1992. A restaurant and a portion of a laser tag facility occupied the former dry cleaner space when Sound Transit began investigating the Site in 2017.

Two tetrachloroethene (PCE) spills occurred inside the Y Pay Mor Cleaners tenant space in 1991 (southern source area). The PCE spills reportedly occurred on the concrete floor in the vicinity of the dry cleaning equipment along the then western wall of the tenant space. Spilled PCE liquid was reportedly cleaned up by Chemical Processors, Inc. (RZA AGRA 1992). An interim cleanup action was conducted between June 1993 and September 1994 to remove PCE and the PCE dechlorination products trichloroethene (TCE) and cis-1,2-dichloroethene (cis-DCE) from soil beneath the former dry cleaner space (AGRA Earth & Environmental 1994). The interim action consisted of soil vapor extraction (SVE) systems to treat soil in the vadose zone beneath the building floor slab. Based on investigations and interim actions in the 1990s, Ecology issued a No Further Action (NFA) determination for the Site in 1998. The 1998 NFA was conditioned on restrictive covenants (RCs) recorded for the Site. An RC dated September 21, 1995, was recorded under King County recording number 9510121424, and a second RC dated July 24, 1998, was recorded under King County recording number 9808101434.

Subsequent investigations conducted at the Site since 2017 identified an additional PCE release source area near an exterior stormwater catch basin in the loading dock area directly north of the former dry cleaner space (northern source area) (OSG 2021).

A second interim action was completed in 2020 and consisted of excavating 4,000 tons of chlorinated volatile organic compounds (CVOC)-contaminated soil within the northern and southern source areas (OSG 2021).

The majority of contaminated source material in the vadose zone was removed during the interim actions. Post-interim action CVOC contamination remaining in soil and groundwater is limited to the glacial deposits within the shallow aquifer (GeoEngineers 2023). The deeper aquifer has not been impacted based on the soil chemical analytical results collected within the hard silt aquitard located between the shallow and deeper aquifers.

Monitoring wells were installed in 2022 to evaluate groundwater conditions following the 2020 interim action (Shannon and Wilson 2022).

2.2. Ongoing and Planned Construction

The Site is currently a construction site associated with the FWLE Project. New infrastructure including a paved bus loop and sidewalks were constructed over the eastern portion of the Site in 2023. The northwestern portion of the Site is currently unpaved and used for construction storage.

The northwestern corner of the Y Pay Mor Site is designated as surplus property with future transit-oriented development (TOD) uses in the next 2 to 3 years. Future redevelopment plans are not known at this time, but TOD may be a mix of residential and commercial uses. The Site is zoned by Federal Way as "City Center Core" which allows mixed commercial and multifamily residential (City of Federal Way 2022).

3.0 CONTAMINANTS OF CONCERN AND PRELIMINARY CLEANUP LEVELS

3.1. Chemicals of Concern

Chemicals of concern (COCs) identified for the Site based on the source of contamination (historic dry cleaners), documented spills of PCE, and findings of the remedial investigation (RI) are PCE and associated breakdown compounds TCE, cis-DCE, trans-1,2-dichloroethene (trans-DCE), 1,1-dichloroethene (DCE), and vinyl chloride.

3.2 Preliminary Cleanup Levels

The Preliminary Cleanup Levels (PCULs) were developed during the 2023 Updated Remedial Investigation (RI) and are based on Site exposure pathways and receptors. Ecology's "Cleanup Levels and Risk Calculations (CLARC) Master Spreadsheet.xlsx" table dated February 2024 was reviewed for any recent updates.

In addition to the PCULs, Screening Levels (SLs) for protection of indoor air from vapor intrusion were reviewed to evaluate whether contaminants detected in groundwater have the potential to migrate into enclosed spaces at concentrations exceeding indoor air PCULs. The groundwater SLs protective of indoor air were obtained from the CLARC Table dated February 2024. These SLs have not been incorporated as groundwater PCULs.

4.0 GROUNDWATER CONDITIONS

4.1. Field Activities

The groundwater monitoring activities completed in 2023 were in general accordance with groundwater monitoring proposed in the 2021 RI Work Plan and supplemental discussions with Ecology (GeoEngineers 2021). Groundwater monitoring field procedures are described in Appendix A.

Groundwater monitoring was completed in the 11 existing monitoring wells for four quarterly events during 2023. Activities completed during each event included measuring the depth of groundwater relative to the surveyed casing rim position and obtaining groundwater samples from each well during each event using low-flow sampling techniques with a bladder pump, as explained further below:

- The depth to groundwater was measured in each well to the nearest 0.01 foot during each sampling event.
- The wells were purged before sampling. Water quality parameters (e.g., conductivity, dissolved oxygen, pH, oxidation-reduction potential [ORP], and temperature) during purging were recorded on field data sheets.
- Groundwater ferrous iron was measured in each well with a field kit after purging.
- Groundwater samples were collected from each well and submitted for chemical analysis of PCE, TCE, cis- and trans-DCE, DCE, and vinyl chloride by EPA Method 8260, ammonia by SM 4500-NH3, total organic carbon by SM 5310B, biological oxygen demand (BOD) by SM 5210B, total iron by EPA Method 6010, nitrate and nitrite by EPA Method 353.2 and dissolved methane, ethane, ethene, and acetylene by Method RSK-175. The March 2023 groundwater samples were also analyzed for dehalococcoides (DHC).
- Field quality assurance-quality control (QA-QC) samples included one field duplicate per event, one trip blank per sampling day, and one rinsate sample per day.

Water generated during sampling was containerized in 55-gallon steel drums placed within a secondary containment basin and labeled in accordance with the RI Work Plan. Investigation-derived waste (IDW) water was profiled as hazardous waste and transported to an approved disposal facility (Waste Management).

4.2. Groundwater Conditions

The current understanding of Site groundwater conditions is based on the 2023 data collected from monitoring wells FL358-MW5A/B to FL358-MW14. Well information is included in Table 1. Groundwater elevations from the groundwater monitoring events between June 2022 and December 2023 are listed in Table 2. Groundwater elevation and elevation contours are shown on Figures 3 through 6.

The groundwater elevations in individual wells during 2023 generally fluctuated approximately 3 to 3.5 feet. A larger fluctuation of up to 7.5 feet was observed between September 2023 (low) and December 2023 (high). The horizontal hydraulic gradient is estimated to range from approximately 0.02 to 0.04 feet per foot (ft/ft) in June/September 2023 and 0.03 to 0.08 ft/ft in December/March 2023.

The inferred shallow aquifer groundwater flow direction was multidirectional during each event with a component of groundwater flow to the west near the northern portion of the Y Pay Mor Site and a

component of groundwater flow to the south-southwest in the central and southern portions of the Y Pay Mor Site. Minor seasonal variability in flow direction was observed in the central and southern portions of the Site with a stronger westerly flow component in December 2023 as compared to the other sampling events.

4.3. Groundwater Chemical Analytical Results

Results for chemical analyses performed during the 2023 groundwater monitoring events are summarized in Table 3 and illustrated on Figures 3 through 7. The 2022 groundwater monitoring data are also included in Table 3. Water quality and natural attenuation parameters are summarized in Table 3. Appendix B presents the CVOC concentration trend data graphs from 2022 and 2023 for selected wells. Appendix C contains waste disposal tickets. Appendix D contains the laboratory chemical analytical data reports and data validation reports for the 2023 groundwater monitoring events.

4.4. Chlorinated Organic Solvents and Associated Dechlorination Products

4.4.1. PCE

PCE was detected at concentrations greater than the PCUL (5 micrograms per liter [µg/L]) in the groundwater samples from monitoring wells FL358-MW5A, FL358-MW6, and FL358-MW13. The greatest PCE concentrations were detected in samples from FL358-MW5A (48 to 170 µg/L). Notable PCE trends during the 2023 monitoring events are listed below:

- **FL358-MW5A:** PCE concentrations during the June (170 µg/L), September (110 µg/L), and December (120 µg/L) groundwater monitoring events increased compared to the 2022 and March 2023 sampling events in this well (21 to 91 µg/L).
- **FL358-MW5B, FL358-MW7, and FL358-MW9**: PCE was detected in 2022 and/or early 2023 at concentrations less than the PCUL. PCE was not detected in the last two monitoring events in 2023.
- **FL358-MW6:** PCE concentrations have generally decreased over time between August 2022 and December 2023 (53 to 17 µg/L).
- **FL358-MW13:** PCE concentrations exceeded the PCUL during the March 2023 event, but PCE concentrations during the subsequent three events in 2023 were less than the PCUL.

4.4.2. TCE

TCE was detected at concentrations greater than the PCUL (5 µg/L) in groundwater samples from monitoring wells FL358-MW5A and FL358-MW6; these wells are located in the northern source area. TCE was either not detected or was detected at concentrations less than the PCUL in the remaining groundwater samples analyzed. Notable TCE trends are listed below:

- **FL358-MW5A:** TCE concentrations have been greater than the PCUL in every groundwater monitoring event since June 2022 with the highest TCE concentration in the June 2023 sample (140 ug/L). In the two subsequent sampling events from this well, September and December 2023, the TCE concentration decreased to 110 µg/L.
- **FL358-MW6:** The TCE concentrations have fluctuated up and down over the seven monitoring events, but have consistently ranged between 96 and 150 µg/L.

4.4.3. Cis-DCE

Cis-DCE was detected at concentrations greater than the PCUL (70 µg/L) in groundwater samples from monitoring wells FL358-MW5A and FL358-MW6, which are located in the northern source area. Cis-DCE was either not detected or was detected at concentrations less than the PCUL in the remaining groundwater samples analyzed. The concentrations of cis-DCE in the groundwater samples represent more than 80% of the total dichloroethenes (DCEs) (as represented by the sum of DCE, cis-DCE, and trans-DCE concentrations). Cis-DCE is the predominant isomer formed during anaerobic dechlorination of PCE and TCE (ITRC 1999); when approximately 80% of the total DCEs present are in the form of cis--DCE, it is a strong indicator that anaerobic dechlorination is occurring (EPA 1998). Notable trends include the following:

- **FL358-MW5A:** Cis-DCE concentrations have generally increased over time since June 2022; the March 2023 event was the first event where the concentration of cis-DCE exceeded the PCUL (160 µg/L). The highest cis-DCE concentration in 2023 was in June 2023 (210 µg/L).
- **FL358-MW6:** Cis-DCE concentrations have fluctuated sporadically over the seven monitoring events, but the overall trend over time shows declining concentrations; the lowest detected result for this compound occurred during the most recent event in December 2023 (52 µg/L).

4.4.4. Trans-DCE

Trans-DCE was either not detected or was detected at concentrations less than the PCUL (100 µg/L) in the 2023 groundwater samples.

4.4.5. DCE

DCE was not detected in the analyzed groundwater samples collected during the 2023 groundwater sampling events.

4.4.6. Vinyl Chloride

Vinyl chloride was detected at concentrations greater than the PCUL (0.20 µg/L) in groundwater samples from eight monitoring wells (FL358-MW5A, FL358-MW6, FL358-MW7, FL358-MW9, FL358-MW10, FL358-MW11, FL358-MW12, and FL358-MW14) throughout the 2023 sampling events. Vinyl chloride was either not detected or was detected at concentrations less than the PCUL in the remaining monitoring wells. Notable trends include the following:

- **FL358-MW7:** The vinyl chloride concentrations increased two-fold from the first half of 2023 to the second half of 2023. The vinyl chloride concentrations in the March and June 2023 events were 4.0 and 3.3 µg/L, respectively; vinyl chloride concentrations in the September and December 2023 events were 9.2 µg/L and 10 µg/L, respectively.
- **FL358-MW9 and FL358-MW12:** Vinyl chloride had not been detected in these wells until the most recent monitoring event in December 2023 when the concentrations of vinyl chloride in these wells (0.61 and 0.29 µg/L, respectively) were greater than the PCUL.
- **FL358-MW10:** Vinyl chloride was consistently detected at concentrations greater than the PCUL in the samples collected between June 2022 and June 2023. Vinyl chloride was not detected during the two most recent sampling events (September and December 2023).

4.4.7. Ethane and Acetylene

Ethane and acetylene were not detected in the analyzed groundwater samples collected during the 2023 groundwater sampling events.

4.4.8. Ethene

Ethene was detected in the FL358-MW5A and FL358-MW7 groundwater samples collected during the 2023 sampling events.

4.4.9. Methane

The presence of methane in groundwater is an indicator of reducing conditions in the aquifer, which is a condition that favors dechlorination activity. Methane was detected at levels indicative of reductive dechlorination (500 µg/L or above) at least once in seven of the monitoring wells (FL358-MW5A, FL358-MW6, FL358-MW7, FL358-MW9, FL358-MW10, FL358-MW11, and FL358-MW12). The methane concentrations were generally highest in FL358-MW9 and FL358-MW12.

4.5. DHC Results

The March 2023 groundwater samples were tested to identify the population of dehalococcoides (DHC) cells present in groundwater[1]. DHC cells were detected in 11 of 12 samples with cell counts ranging from 1.6 to 2,580 cells per milliliter (cells/mL).

Reductive dechlorination from PCE to ethene is typically associated with DHC cell counts greater than 1,000 cells/mL; this level of DHC was identified in one well (FL358-MW5A). When lower DHC counts (10 to 1,000 cells/mL) are present, reductive dechlorination from ethene may still occur when the strain of DHC has more vinyl chloride reductase genes. DHC cell counts between 10 and 1,000 cells/mL were detected in six wells (FL358-MW5B, FL358-MW6, FL358-MW9, FL358-MW10, FL358-MW11, and FL358-MW12). The presence of vinyl chloride reductase genes in Site groundwater is not known at this time because they were not quantified during the 2023 groundwater sampling events.

4.6. Geochemical and Conventional Groundwater Conditions

Geochemical and conventional parameters and trends inform the evaluation of whether conditions exist that are conducive to the dechlorination of PCE to ethene and to evaluate aquifer conditions relative to anaerobic biodegradation (EPA 1998). Total organic carbon, BOD, ferrous and total iron, ammonia, nitrate, nitrite, pH, temperature, and dissolved oxygen were monitored in 2023. The results are included in Table 3. The results are generally summarized below relative to the criteria summarized in EPA's Technical for Evaluation of Natural Attenuation of Chlorinated Solvents in Groundwater (EPA 1998).

[1] The anaerobic bacterium dehalococcoides (DHC) is an organism that can completely dechlorinate PCE or TCE to ethene. However, the dechlorination of PCE to ethene is based on the strain of DHC. The strain of DHC is identified by quantifying the functional genes or the "reductive dehalogenase genes" (EPA 2006).

- **Dissolved Oxygen[2]:** Groundwater dissolved oxygen data are used to evaluate whether an aquifer is anaerobic or aerobic. Anaerobic conditions are more conducive to reductive dechlorination of PCE to ethene because anaerobic bacteria generally cannot function when dissolved oxygen concentrations exceed approximately 0.5 mg/L. Aerobic conditions can be beneficial for dechlorination of DCE/vinyl chloride to ethene (ITRC 1999). Anaerobic conditions (e.g., dissolved oxygen <0.5 mg/L) were observed in the majority of the wells based on the 2022 and early 2023 groundwater samples. However, aerobic conditions (e.g., dissolved oxygen >0.5 mg/L) were observed at least once in each well throughout 2023.
- **Nitrate:** Nitrate concentrations in the contaminated portion of the aquifer should be less than 1 mg/L for reductive dechlorination to occur. Nitrate concentrations were less than 1 mg/L in the samples analyzed.
- **Nitrite:** The reduction of nitrates to nitrites is an indicator that conditions are favorable for PCE to degrade naturally under anaerobic conditions. Nitrites were generally not detected in the analyzed groundwater samples. Nitrite was detected during one sampling event in well FL358-MW6 in September 2023.
- **Ferrous Iron (II):** The presence of ferrous iron greater than 1 mg/L may indicate an anaerobic dechlorination process is occurring. Ferrous iron was detected generally greater than 1 mg/L in the wells monitored except for FL358-MW5B, FL358-MW6, and FL358-MW8. Wells FL358-MW5B and FL358-MW8 are not contaminated.
- **Oxygen-Reduction Potential (ORP):** The ORP of groundwater influences the rate of biodegradation. ORP is used only as a general indicator due to the high degree of measurement variability during monitoring. ORP values below -50 millivolts (mV) indicate electron transfer is possible and measurements below -100mV indicate electron transfer is likely. ORP values were less than -50mV at least once in wells FL358-MW7, FL358-MW8, FL358-MW9, FL358-MW10, FL358-MW11, FL358-MW12, and FL358-MW14. ORP values were less than -100 mV in two wells (FL358-MW7 and FL358-MW12).
- **Total organic carbon:** Total organic carbon values greater than 20 mg/L indicate electron donors are available for reductive dechlorination. Total organic carbon concentrations ranged between 2.8 and 32 mg/L during the 2023 sampling events. Total organic carbon was greater than 20 mg/L in wells FL358-MW7, FL358-MW11, and FL358-MW12.
- **Ammonia:** The presence of ammonia indicates dechlorination may be occurring. It also may indicate anaerobic conditions in the aquifer. Ammonia was detected in every well except the upgradient well FL358-MW8.
- **Biological Oxygen Demand (BOD):** BOD can be used as a relative measure of the microbial activity in the water to decompose PCE. High values initially are desirable, with values decreasing over time. BOD was detected at least once in each well during the 2023 sampling event.

[2] Dissolved oxygen measurements are subject to a high degree of variability because the data are collected using field instruments that are sensitive to aeration during well purging.

4.7. Evidence of Natural Attenuation

Evaluation of natural attenuation is ongoing and considers a variety of factors including lines of evidence supporting natural attenuation, data trends, and conditions throughout the aquifer. It is apparent that PCE dechlorination is actively occurring at the Site based on the following lines of evidence:

- PCE dechlorination products (TCE, cis-DCE, vinyl chloride) were detected in the groundwater samples,
- Geochemical and conventional groundwater parameters are favorable for dechlorination and/or indicate dechlorination, and
- Elevated DHC microbes are present in groundwater in the northern source area and moderate levels of DHC microbes are present throughout the aquifer.

Additionally, EPA provides a Natural Attenuation Screening Protocol to assist in evaluating aquifer conditions and anaerobic biodegradation processes (EPA 1998). The screening protocol is included in Appendix E. The screening protocol results in a numeric score and a score between 15 and 20 indicates "adequate evidence for anaerobic biodegradation of chlorinated organics." The score for Site groundwater with the highest PCE, TCE, and vinyl chloride concentrations (i.e., at monitoring wells FL358-MW5A and FL358-MW6) was "17" based on the Natural Attenuation Screening Protocol; based on this methodology, there is "adequate evidence" that natural attenuation is occurring.

4.8. Vapor Intrusion Evaluation

PCE, TCE, and vinyl chloride were detected at concentrations exceeding the MTCA Method B SL for VI in groundwater samples collected from wells FL358-MW5A, FL358-MW6, FL358-MW7, FL358-MW9, FL358-MW10, FL358-MW11, FL358-MW13, and FL358-MW14. Theoretically, these groundwater sampling results indicate that PCE, TCE, and vinyl chloride potentially could migrate into enclosed spaces at concentrations exceeding the Method B indoor air PCULs and/or SLs protective of commercial workers.

The nearest existing building is the newly constructed (but not yet operational) light rail station that includes one indoor security office that will have future commercial worker use and other rooms (bathrooms, entry hallway) for transient passenger use. The closest wells to the station are FL358-MW11 (152 horizontal feet away) and FL358-MW14 (170 horizontal feet away). Ecology VI guidance indicates that buildings located more than 100 feet horizontally from a plume of subsurface VOC contamination are unlikely to experience unacceptable VI impacts. Therefore, based on Ecology's VI Guidance, indoor air vapor intrusion is not considered a complete exposure pathway for the light rail station building.

The boundary of the potential TOD property falls within the northwest portion of the Site. It is recommended to evaluate the risk of potential indoor air vapor intrusion when the location of a future building is known, as groundwater COC concentrations are likely to reduce over time.

5.0 DISCUSSION AND RECOMMENDATIONS

Quarterly groundwater monitoring was completed in 2023 at existing wells FL358-MW5A/B to FL358-MW14 at the Y Pay Mor Site. Monitoring wells FL358-MW5A, FL358-MW6, FL358-MW7, FL358-MW11, and FL358-MW14 have consistently had concentrations of one or more CVOCs greater than the PCULs (Figures 3 through 7). CVOC concentrations in FL358-MW10 and FL358-MW13 declined to concentrations less than the PCULs in 2023.

Monitoring wells FL358-MW9 and FL358-MW12 had no CVOC exceedances in 2022 and the first three monitoring events in 2023. In December 2023, vinyl chloride was detected in these wells at concentrations slightly greater than the PCUL. The vinyl chloride PCUL is lower than the TCE and cis-DCE PCULs (0.2 µg/L vs. 5 and 70 µg/L). Continued groundwater monitoring is warranted to assess the CVOC plume size, location, and orientation over time, to further evaluate seasonal fluctuations in groundwater elevations and flow directions, and to further evaluate natural attenuation processes.

Based on our interpretation of the 2022 and 2023 groundwater monitoring data and CVOC concentration trends, we recommend the following:

- Install additional monitoring wells to further delineate the CVOC plume downgradient in the western and southern directions.
- Quarterly groundwater sampling and chemical analysis of existing and new wells for select CVOCs (PCE, TCE, cis- and trans-DCE, DCE, and vinyl chloride), ammonia, total organic carbon, BOD, total iron, nitrate, nitrite, and dissolved gases (methane, ethane, ethene, and acetylene). Additionally, we recommend sulfate and chloride be measured during the 2024 sampling events. Select groundwater samples collected should also be analyzed for DHC and DHC reductase genes to confirm the potential for reductive dechlorination to ethene during one 2024 sampling event.

6.0 LIMITATIONS

We have prepared this letter report for use by South County Transit Partners and Sound Transit. This report may be provided to regulatory agencies for review and information. Our services were completed in accordance with our contract with South County Transit Partners. No other party may rely on the product of our services unless we agree 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.

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. No warranty or other conditions, express or implied, should be understood.

Please refer to Appendix F "Report Limitations and Guidelines For Use" for additional information pertaining to the use of this report.

7.0 REFERENCES

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Table 1

Boring Information

Y Pay Mor Site

Federal Way, Washington

Location Identification[1]	Date Drilled or Installed	Type	Exploratory Method	Ground Surface Elevation at Time of Drilling[2] (feet)	Top of Casing Elevation (feet)[2]	Total Depth of Boring at Time of Drilling (feet bgs)	Screened Interval Depth at Time of Drilling (feet bgs)
Additional Investigation (Shannon & Wilson 2022)							
FL358-MW5A	06/22/2022	Groundwater Well	Sonic	435.50	435.70	27	21 - 26
FL358-MW5B	06/21/2022	Groundwater Well	Sonic	435.50	435.66	40	32 - 37
FL358-MW6	06/21/2022	Groundwater Well	Sonic	435.73	435.64	40	17 - 37
FL358-MW7	06/20/2022	Groundwater Well	Sonic	433.61	433.50	35	14 - 34
FL358-MW8	06/15/2022	Groundwater Well	Sonic	435.67	435.87	40	18 - 38
FL358-MW9	06/16/2022	Groundwater Well	Sonic	435.41	435.50	45	21 - 41
FL358-MW10	06/13/2022	Groundwater Well	Sonic	433.91	433.97	40	18 - 38
FL358-MW11	06/14/2022	Groundwater Well	Sonic	432.94	432.78	35	15 - 35
FL358-MW12	06/20/2022	Groundwater Well	Sonic	435.24	435.11	40	18 - 38
FL358-MW13	06/14/2022	Groundwater Well	Sonic	435.53	435.68	42.5	21 - 41
FL358-MW14	06/15/2022	Groundwater Well	Sonic	434.44	434.32	40	19 - 39

Notes:

[1] Approximate monitoring well locations are shown on Figures 3 through 6.

[2] Elevation measurements are relative to NAVD88 datum and reflect surface at time of drilling. Elevations were based on an elevation survey of the boring location provided by Kiewit. Significant figures presented are a function of the precision of the reference elevation or as reported by surveyors.

bgs = below ground surface

Table 2

Groundwater Elevations

Y Pay Mor Site

Federal Way, Washington

Monitoring Well[1] (TOC Elevation)	Date Measured	Screened Interval (feet bgs)	Depth to Groundwater (feet below TOC)	Groundwater Elevation[2] (feet)
FL358-MW5A (435.70)	06/27/22	21 - 26	10.14	425.56
	07/20/22		11.25	424.45
	10/19/22		13.69	422.01
	11/28/22		11.95	423.75
	03/14/23		10.30	425.40
	06/07/23		12.46	423.24
	09/12/23		15.33	420.37
	12/08/23		8.74	426.96
FL358-MW5B (435.66)	06/27/22	32 - 37	9.34	426.32
	07/20/22		10.42	425.24
	10/19/22		12.60	423.06
	11/28/22		10.77	424.89
	03/14/23		9.36	426.30
	06/07/23		11.37	424.29
	09/12/23		14.52	421.14
	12/08/23		7.84	427.82
FL358-MW6 (435.64)	06/27/22	17 - 37	11.59	424.05
	07/20/22		12.70	422.94
	10/19/22		15.25	420.39
	11/28/22		13.72	421.92
	03/14/23		11.63	424.01
	06/07/23		13.51	422.13
	09/12/23		16.17	419.47
	12/08/23		10.12	425.52
FL358-MW7 (433.50)	06/27/22	14 - 34	11.75	421.75
	10/19/22		15.34	418.16
	11/28/22		14.09	419.41
	03/14/23		11.60	421.90
	06/07/23		13.84	419.66
	09/12/23		16.13	417.37
	12/08/23		9.98	423.52
FL358-MW8 (435.87)	06/27/22	18 - 38	9.68	426.19
	10/19/22		12.99	422.88
	11/28/22		11.17	424.70
	03/14/23		9.70	426.17
	06/07/23		12.05	423.82
	09/12/23		14.71	421.16
	12/08/23		7.42	428.45
FL358-MW9 (435.50)	06/27/22	21 - 41	12.52	422.98
	10/19/22		15.68	419.82
	11/28/22		14.14	421.36
	03/14/23		12.05	423.45
	06/07/23		14.15	421.35
	09/12/23		16.24	419.26
	12/08/23		9.70	425.80

Monitoring Well[1] (TOC Elevation)	Date Measured	Screened Interval (feet bgs)	Depth to Groundwater (feet below TOC)	Groundwater Elevation[2] (feet)
FL358-MW10 (433.97)	06/27/22	18 - 38	11.97	422.00
	10/19/22		15.31	418.66
	11/28/22		14.02	419.95
	03/14/23		11.86	422.11
	06/07/23		14.14	419.83
	09/12/23		16.85	417.12
	12/08/23		9.12	424.85
FL358-MW11 (432.78)	06/27/22	15 - 35	11.89	420.89
	10/19/22		15.25	417.53
	11/28/22		14.07	418.71
	03/14/23		11.68	421.10
	06/07/23		13.96	418.82
	09/12/23		15.99	416.79
	12/08/23		9.98	422.80
FL358-MW12 (435.11)	06/27/22	18 - 38	12.21	422.90
	10/19/22		16.04	419.07
	11/28/22		13.08	422.03
	03/14/23		12.51	422.60
	06/07/23		14.49	420.62
	09/12/23		17.17	417.94
	12/08/23		11.25	423.86
FL358-MW13 (435.68)	06/27/22	21 - 41	13.40	422.28
	10/19/22		16.62	419.06
	11/28/22		15.17	420.51
	03/14/23		14.85	420.83
	06/07/23		15.68	420.00
	09/12/23		17.95	417.73
	12/08/23		13.22	422.46
FL358-MW14 (434.32)	06/27/22	19 - 39	12.05	422.27
	07/20/22		13.22	421.10
	10/19/22		15.59	418.73
	11/28/22		14.43	419.89
	03/14/23		12.81	421.51
	06/07/23		14.34	419.98
	09/12/23		16.20	418.12
	12/08/23		10.24	424.08

Notes:

[1] Approximate monitoring well locations are shown on Figures 2 through 7.

[2] Groundwater elevations relative to NAVD88. Top of casing elevations were surveyed by Kiewit in June 2022. Groundwater elevation contours are shown on Figures 3 through 6.

bgs = below ground surface

TOC = top of casing

Table 3

Groundwater Parameters and Chemical Analytical Data

Y Pay Mor Site

Federal Way, Washington

Location ID[1]	Sample ID	Sample Date	VOCs[2] (µg/L)						Dissolved Gases[3] (µg/L)			
			Tetrachloroethene (PCE)	Trichloroethene (TCE)	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	1,1-Dichloroethene	Vinyl Chloride	Ethane	Ethene	Methane	Acetylene
Groundwater Preliminary Cleanup Level[8] (µg/L)			5	5	70	100	7	0.2	--	--	--	--
Protection of Indoor Air/Vapor Intrusion Commercial Use[9] (µg/L)			120	12	1,600	650	1,100	1.6	--	--	--	--
Protection of Indoor Air/Vapor Intrusion Residential Use[9] (µg/L)			25	1.4	180	77	130	0.33	--	--	--	--
Conditions Indicative of Reductive Dechlorination Occuring[10]			N/A	Detected	>80% of total DCEs	Detected	Detected	Detected	N/A	>10	>500	Detected
FL358-MW5A	FL358-MW5A-220630	06/30/2022	**91**	**50**	**37**	1.0 U	1.0 U	**2.3**	0.22 U	**0.79**	**1,400**	**9.5**
	FL358-MW5A-082522	08/05/2022	**24**	**27**	**60**	**0.50**	0.40 U	**2.0**	0.22 U	0.29 U	**1,400**	1.2 U
	FL358-MW5A-113022	11/30/2022	**21**	**28**	**55**	**0.49**	0.40 U	**4.0**	--	--	--	--
	FL358-MW5A-230315	03/15/2023	**48**	**93**	**160**	**1.3**	0.80 U	**14**	0.22 U	**2.8**	**610**	1.2 U
	FL358-MW5A-230607	06/07/2023	**170**	**140**	**210**	2.0 U	2.0 U	**20**	0.22 U	**4.4**	**510**	1.2 U
	FL358-MW5A-230913	09/13/2023	**110**	**110**	**110**	0.80 U	0.80 U	**11**	--	**0.87**	**360**	1.2 U
	FL358-MW5A-231208	12/08/2023	**120**	**110**	**100**	1.0 U	1.0 U	**8.2**	0.56 U	**0.58**	**710**	3.1 U
FL358-MW5B	FL358-MW5B-220630	06/30/2022	**3.4**	**0.83**	0.20 U	0.20 U	0.20 U	0.20 U	0.22 U	0.29 U	**100**	1.2 U
	FL358-MW5B-082422	08/24/2022	**0.26**	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.22 U	0.29 U	**110**	1.2 U
	FL358-MW5B-112822	11/28/2022	**0.20**	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	--	--	--	--
	FL358-MW5B-230315	03/15/2023	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.22 U	0.29 U	**45**	1.2 U
	FL358-MW5B-230607	06/07/2023	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.22 U	0.29 U	**74**	1.2 U
	FL358-MW5B-230913	09/13/2023	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	--	0.29 U	**110**	1.2 U
	FL358-MW5B-231208	12/08/2023	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.56 U	0.58 U	**430**	3.1 U
	FL358-DUP-231208	12/08/2023	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.56 U	0.58 U	**490**	3.1 U
FL358-MW6	FL358-MW6-220630	06/30/2022	**38**	**100**	**86**	1.0 U	1.0 U	**1.5**	0.22 U	0.29 U	**2,000 JL**	**8.7**
	FL358-MW6-082522	08/05/2022	**53**	**130**	**110**	**1.1**	0.80 U	**1.8**	0.22 U	0.29 U	**2,100**	1.2 U
	FL358-MW6-113022	11/30/2022	**32**	**100**	**71**	0.80 U	0.80 U	**1.0**	--	--	--	--
	FL358-MW6-230315	03/15/2023	**39**	**150**	**96**	**0.88**	0.80 U	**1.4**	0.22 U	0.29 U	**1,400**	1.2 U
	GW-DUP-230315	03/15/2023	**37**	**140**	**91**	**0.85**	0.80 U	**1.4**	0.22 U	0.29 U	**1,500**	1.2 U
	FL358-MW6-230607	06/07/2023	**34**	**99**	**64**	0.80 U	0.80 U	**1.2**	0.22 U	0.29 U	**970**	1.2 U
	FL358-DUP-230607	06/07/2023	**36**	**96**	**65**	0.80 U	0.80 U	**1.2**	0.22 U	0.29 U	**770**	1.2 U
	FL358-MW6-230913	09/13/2023	**18**	**110**	**86**	0.80 U	0.80 U	**1.3**	--	0.29 U	**230**	1.2 U
	FL358-DUP-230913	09/13/2023	**17**	**100**	**83**	0.80 U	0.80 U	**1.3**	--	0.29 U	**200**	1.2 U
	FL358-MW6-231208	12/08/2023	**17**	**96**	**52**	1.0 U	1.0 U	1.0 U	0.56 U	0.58 U	**450**	3.1 U
FL358-MW7	FL358-MW7-220629	06/29/2022	**0.33 B**	0.20 U	**6.0**	0.20 U	0.20 U	**3.7**	0.22 U	0.29 U	**4,100 JL**	1.2 U
	FL358-MW7-082422	08/24/2022	**0.28**	0.20 U	**7.1**	0.20 U	0.20 U	**4.6**	0.22 U	0.29 U	**3,100**	1.2 U
	FL358-MW7-112922	11/29/2022	0.20 U	0.20 U	**5.3**	0.20 U	0.20 U	**4.9**	--	--	--	--
	FL358-MW7-230315	03/15/2023	**0.35**	0.20 U	**4.7**	0.20 U	0.20 U	**4.0**	0.22 U	0.29 U	**4,500**	1.2 U
	FL358-MW7-230606	06/06/2023	**0.25**	0.20 U	**3.4**	0.20 U	0.20 U	**3.3**	0.22 U	0.29 U	**4,900**	1.2 U
	FL358-MW7-230912	09/12/2023	0.20 U	0.20 U	**9.5**	0.20 U	0.20 U	**9.2**	--	**0.73**	**1,500**	1.2 U
	FL358-MW7-231208	12/08/2023	0.40 U	0.40 U	**7.4**	0.40 U	0.40 U	**10**	0.56 U	0.58 U	**2,400**	3.1 U

Table 3

Groundwater Parameters and Chemical Analytical Data

Y Pay Mor Site

Federal Way, Washington

Location ID[1]	Sample ID	Sample Date	Conventionals[4] (mg/L)							DHC[7] (cells/mL)	Groundwater Parameters[5]			
			Total Organic Carbon	Ammonia (Total as N)	Nitrate	Nitrite	Total Iron	Ferrous Iron[6]	Biological Oxygen Demand		ORP (mV)	pH	DO (mg/L)	Temperature (°C)
Groundwater Preliminary Cleanup Level[8] (µg/L)			--	--	--	--	--	--	--	--	--	--	--	--
Protection of Indoor Air/Vapor Intrusion Commercial Use[9] (µg/L)			--	--	--	--	--	--	--	--	--	--	--	--
Protection of Indoor Air/Vapor Intrusion Residential Use[9] (µg/L)			--	--	--	--	--	--	--	--	--	--	--	--
Conditions Indicative of Reductive Dechlorination Occuring[10]			>20 mg/L	Detected and Increasing	<1.0 mg/L	Detected and Increasing	>1.0 mg/L	>1.0 mg/L	Detected	>1,000 (likely) >10 and <1,000 (possible)	<-50 mV (possible) <-100 mV (likely)	5 < pH < 9	<0.5 mg/L (anerobic) >0.5 mg/L (aerobic)	>20 C° = faster dechlorination
FL358-MW5A	FL358-MW5A-220630	06/30/2022	**8.2**	**0.10**	0.050 U	0.020 U	**0.56**	**0.690**	**2.5**	--	-19.2	7.43	0.20	13.80
	FL358-MW5A-082522	08/05/2022	**7.7**	**0.090**	**0.056**	0.020 U	**1.30**	**1.66**	2.0 U	--	15.3	6.12	0.06	15.51
	FL358-MW5A-113022	11/30/2022	--	--	--	--	--	--	--	--	8.1	6.77	0.12	14.48
	FL358-MW5A-230315	03/15/2023	**7.3**	0.050 U	**0.64**	0.020 U	**2.1**	--	**2.2**	**2,580**	-12.7	6.55	0.22	12.00
	FL358-MW5A-230607	06/07/2023	**6.6**	**0.059**	**0.061**	0.020 U	**1.7**	**0.90**	**2.6**	**--**	37.3	6.55	0.12	15.35
	FL358-MW5A-230913	09/13/2023	**6.4**	**0.16**	0.050 U	0.020 U	**1.2**	**0.89**	**2.4**	**--**	1.4	6.48	0.28	14.27
	FL358-MW5A-231208	12/08/2023	**7.1**	**0.077**	0.050 U	0.020 U	**0.860**	**1.16**	**4.4**	--	234.3	6.36	0.64	14.01
FL358-MW5B	FL358-MW5B-220630	06/30/2022	**4.9**	**0.079**	0.050 U	0.020 U	**0.12**	0.100 U	2.0 U	--	-36.1	7.59	0.18	14.20
	FL358-MW5B-082422	08/24/2022	**5.1**	0.050 U	0.050 U	0.020 U	**0.19**	**0.176**	2.0 U	--	-3.2	6.04	0.08	14.10
	FL358-MW5B-112822	11/28/2022	--	--	--	--	--	--	--	--	16.3	6.81	0.13	13.68
	FL358-MW5B-230315	03/15/2023	**4.0**	0.050 U	0.050 U	0.020 U	**0.22**	--	**3.2**	**18.6**	33.1	6.58	0.28	13.10
	FL358-MW5B-230607	06/07/2023	**3.8**	0.050 U	0.050 U	0.020 U	**0.32**	**0.0**	2.0 U	**--**	78.8	6.62	0.30	19.14
	FL358-MW5B-230913	09/13/2023	**3.1**	**0.082**	0.050 U	0.020 U	**0.59**	**0.12**	2.0 U	**--**	48.1	6.36	3.93	17.38
	FL358-MW5B-231208	12/08/2023	**4.0**	**0.060**	0.050 U	0.020 U	**0.800**	**0.21**	**2.1**	**--**	234.8	6.37	0.40	13.08
	FL358-DUP-231208	12/08/2023	**3.8**	0.050 U	0.050 U	0.020 U	**0.690**	**0.21**	**2.1**	--	--	--	--	--
FL358-MW6	FL358-MW6-220630	06/30/2022	**8.3**	**0.10**	0.050 U	0.020 U	**0.43**	**0.588**	**3.0**	--	7.7	7.30	0.30	13.77
	FL358-MW6-082522	08/05/2022	**7.9**	**0.16**	**0.062**	0.020 U	**0.68**	**0.710**	**2.5**	--	61.7	5.98	0.09	15.21
	FL358-MW6-113022	11/30/2022	--	--	--	--	--	--	--	--	27.7	6.77	0.11	13.89
	FL358-MW6-230315	03/15/2023	**7.0**	**0.15 J**	0.050 U	0.020 U	**0.73**	--	**7.0**	**89.9**	29.0	6.48	4.10	12.50
	GW-DUP-230315	03/15/2023	**7.1**	**0.067 J**	0.050 U	0.020 U	**0.65**	--	**6.2**	**99.8**	--	--	--	--
	FL358-MW6-230607	06/07/2023	**6.6**	**0.13**	0.050 U	0.020 U	**1.1**	**0.36**	2.0 U	--	44.5	6.62	0.15	12.54
	FL358-DUP-230607	06/07/2023	**7.0**	**0.081**	**0.051**	0.020 U	**0.79**	**0.36**	**2.8**	**--**	--	--	--	--
	FL358-MW6-230913	09/13/2023	**5.9**	**0.089 J**	0.050 U	**0.044**	**3.6**	**0.75**	2.0 U	**--**	38.0	6.63	7.75	14.09
	FL358-DUP-230913	09/13/2023	**5.9**	**0.14 J**	0.050 U	**0.037**	**3.6**	**0.75**	2.0 U	**--**	--	--	--	--
	FL358-MW6-231208	12/08/2023	**4.7**	**0.065**	0.050 U	0.020 U	**1.2**	**0.57**	2.0 U	--	46.4	6.43	0.51	13.46
FL358-MW7	FL358-MW7-220629	06/29/2022	**20**	**2.9**	**0.064**	0.020 U	**36**	**42.8**	2.0 U	--	-46.0	7.56	0.63	13.49
	FL358-MW7-082422	08/24/2022	**20**	**3.9**	**0.63**	0.020 U	**43**	**48.2**	**26**	--	-46.9	6.29	0.08	15.70
	FL358-MW7-112922	11/29/2022	--	--	--	--	--	--	--	--	-30.5	6.70	0.21	14.83
	FL358-MW7-230315	03/15/2023	**18**	**2.2**	0.050 U	0.020 U	**35**	--	**6.0**	**265**	-115.1	6.46	4.23	12.10
	FL358-MW7-230606	06/06/2023	**18**	**2.9**	**0.12**	0.020 U	**45**	**2.06**	**7.7**	**--**	-34.1	6.53	0.18	12.44
	FL358-MW7-230912	09/12/2023	**19**	**3.8**	**0.067**	0.020 U	**51**	**2.89**	**7.8**	**--**	-11.0	6.20	7.15	15.27
	FL358-MW7-231208	12/08/2023	**20**	**3.7**	**0.32**	0.020 U	**46**	**1.63**	**14**	--	-63.0	6.26	0.49	13.46

Location ID[1]	Sample ID	Sample Date	VOCs[2] (µg/L)						Dissolved Gases[3] (µg/L)			
			Tetrachloroethene (PCE)	Trichloroethene (TCE)	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	1,1-Dichloroethene	Vinyl Chloride	Ethane	Ethene	Methane	Acetylene
Groundwater Preliminary Cleanup Level[8] (µg/L)			5	5	70	100	7	0.2	--	--	--	--
Protection of Indoor Air/Vapor Intrusion Commercial Use[9] (µg/L)			120	12	1,600	650	1,100	1.6	--	--	--	--
Protection of Indoor Air/Vapor Intrusion Residential Use[9] (µg/L)			25	1.4	180	77	130	0.33	--	--	--	--
FL358-MW8	FL358-MW8-220628	06/28/2022	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.22 U	0.29 U	**170**	1.2 U
	FL358-MW8-082322	08/23/2022	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.22 U	0.29 U	**180**	1.2 U
	FL358-MW8-112822	11/28/2022	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	--	--	--	--
	FL358-MW8-230315	03/15/2023	0.20 U	**0.25**	0.20 U	0.20 U	0.20 U	0.20 U	0.22 U	0.29 U	**56**	1.2 U
	FL358-MW8-230607	06/07/2023	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.22 U	0.29 U	**71**	1.2 U
	FL358-MW8-230913	09/13/2023	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	--	0.29 U	**67**	1.2 U
	FL358-MW8-231208	12/08/2023	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.56 U	0.58 U	**170**	3.1 U
FL358-MW9	FL358-MW9-220628	06/28/2022	**0.87 B**	**2.6 J**	**2.6 J**	0.20 U	0.20 U	0.20 U	0.22 U	0.29 U	**6,100 JL**	1.2 U
	FL358-MW100-220628[9]	06/28/2022	**0.58 B**	**1.8 J**	**1.8 J**	0.20 U	0.20 U	0.20 U	0.22 U	0.29 U	**5,300 JL**	1.2 U
	FL358-MW9-082322	08/23/2022	**1.7**	**2.9**	**2.0**	0.20 U	0.20 U	0.20 U	0.22 U	0.29 U	**6,400**	1.2 U
	FL358-MW101[9]	08/23/2022	**1.6**	**2.8**	**2.0**	0.20 U	0.20 U	0.20 U	0.22 U	0.29 U	**6,400**	1.2 U
	FL358-MW9-112922	11/29/2022	0.20 U	0.20 U	**1.8**	0.20 U	0.20 U	0.20 U	--	--	--	--
	FL358-MW9-230315	03/15/2023	0.20 U	**0.23**	**1.8**	0.20 U	0.20 U	0.20 U	0.22 U	0.29 U	**7,600**	1.2 U
	FL358-MW9-230607	06/07/2023	0.20 U	**0.86**	**2.7**	0.20 U	0.20 U	0.20 U	0.22 U	0.29 U	**7,900**	1.2 U
	FL358-MW9-230913	09/13/2023	0.20 U	**0.86**	**5.6**	0.20 U	0.20 U	0.20 U	--	0.29 U	**4,900**	1.2 U
	FL358-MW9-231208	12/08/2023	0.20 U	**1.6**	**12**	0.20 U	0.20 U	**0.61**	0.56 U	0.58 U	**3,600**	3.1 U
FL358-MW10	FL358-MW10-220627	06/27/2022	0.20 U	**0.36**	**7.6**	0.20 U	0.20 U	**0.22**	0.22 U	0.29 U	**2,700**	1.2 U
	FL358-MW10-082322	08/23/2022	0.20 U	**0.36**	**9.0**	0.20 U	0.20 U	**0.36**	0.22 U	0.29 U	**5,000**	1.2 U
	FL358-MW10-112922	11/29/2022	0.20 U	**0.28**	**6.2**	0.20 U	0.20 U	**0.31**	--	--	--	--
	FL358-MW101-112922[9]	11/29/2022	0.20 U	**0.29**	**6.2**	0.20 U	0.20 U	**0.33**	--	--	--	--
	FL358-MW10-230314	03/14/2023	0.20 U	**0.25**	**6.4**	0.20 U	0.20 U	**0.52**	0.22 U	0.29 U	**3,500**	1.2 U
	FL358-MW10-230607	06/07/2023	0.20 U	0.20 U	**4.9**	0.20 U	0.20 U	**0.46**	0.22 U	0.29 U	**3,800**	1.2 U
	FL358-MW10-230912	09/12/2023	0.20 U	0.20 U	**1.0**	0.20 U	0.20 U	0.20 U	--	0.29 U	**3,500**	1.2 U
	FL358-MW10-231208	12/08/2023	0.20 U	0.20 U	**0.44**	0.20 U	0.20 U	0.20 U	0.56 U	0.58 U	**3,000**	3.1 U
FL358-MW11	FL358-MW11-220627	06/27/2022	0.20 U	0.20 U	**7.7**	0.20 U	0.20 U	**4.8**	0.22 U	0.29 U	**2,900**	1.2 U
	FL358-MW11-082422	08/24/2022	0.20 U	0.20 U	**8.8**	0.20 U	0.20 U	**5.5**	0.22 U	0.29 U	**2,700**	1.2 U
	FL358-MW11-113022	11/30/2022	0.20 U	0.20 U	**6.1**	0.20 U	0.20 U	**4.1**	--	--	--	--
	FL358-MW11-230315	03/15/2023	0.20 U	0.20 U	**6.1**	0.20 U	0.20 U	**5.0**	0.22 U	0.29 U	**3,700**	1.2 U
	FL358-MW11-230607	06/07/2023	0.20 U	0.20 U	**4.2**	0.20 U	0.20 U	**3.3**	0.22 U	0.29 U	**4,100**	1.2 U
	FL358-MW11-230912	09/12/2023	0.20 U	0.20 U	**5.1**	0.20 U	0.20 U	**4.5**	--	0.29 U	**1,600**	1.2 U
	FL358-MW11-231208	12/08/2023	0.20 U	0.20 U	**4.9**	0.20 U	0.20 U	**5.1**	0.56 U	0.58 U	**3,000**	3.1 U
FL358-MW12	FL358-MW12-220629	06/29/2022	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.22 U	0.29 U	**3,100**	1.2 U
	FL358-MW12-082322	08/23/2022	0.20 U	0.20 U	**0.32**	0.20 U	0.20 U	0.20 U	0.22 U	0.29 U	**5,500**	1.2 U
	FL358-MW12-112822	11/28/2022	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	--	--	--	--
	FL358-MW12-230315	03/15/2023	0.20 U	0.20 U	**0.29**	0.20 U	0.20 U	0.20 U	0.22 U	0.29 U	**5,600**	1.2 U
	FL358-MW12-230606	06/06/2023	0.20 U	0.20 U	**0.25**	0.20 U	0.20 U	0.20 U	0.22 U	0.29 U	**5,700**	1.2 U
	FL358-MW12-230912	09/12/2023	0.20 U	**0.23**	**0.52**	0.20 U	0.20 U	0.20 U	--	0.29 U	**1,800**	1.2 U
	FL358-MW12-231208	12/08/2023	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	**0.29**	0.56 U	0.58 U	**1700**	3.1 U

Location ID[1]	Sample ID	Sample Date	Conventionals[4] (mg/L)							DHC[7] (cells/mL)	Groundwater Parameters[5]			
			Total Organic Carbon	Ammonia (Total as N)	Nitrate	Nitrite	Total Iron	Ferrous Iron[6]	Biological Oxygen Demand		ORP (mV)	pH	DO (mg/L)	Temperature (°C)
Groundwater Preliminary Cleanup Level[8] (µg/L)			--	--	--	--	--	--	--	--	--	--	--	--
Protection of Indoor Air/Vapor Intrusion Commercial Use[9] (µg/L)			--	--	--	--	--	--	--	--	--	--	--	--
Protection of Indoor Air/Vapor Intrusion Residential Use[9] (µg/L)			--	--	--	--	--	--	--	--	--	--	--	--
FL358-MW8	FL358-MW8-220628	06/28/2022	**4.4**	0.050 U	0.050 U	0.020 U	**0.33**	**0.457**	2.0 U	--	61.3	7.43	0.30	13.20
	FL358-MW8-082322	08/23/2022	**4.6**	0.050 U	0.050 U	0.020 U	**0.26**	**0.336**	2.0 U	--	-65.2	5.90	0.14	14.01
	FL358-MW8-112822	11/28/2022	--	--	--	0.020 U	--	--	--	--	70.2	6.84	0.10	13.47
	FL358-MW8-230315	03/15/2023	**4.0**	0.050 U	0.050 U	0.020 U	**1.4**	--	2.0 U	**4.6**	-5.6	6.60	0.09	13.00
	FL358-MW8-230607	06/07/2023	**3.9**	0.050 U	**0.058**	0.020 U	**0.93**	**0.23**	2.0 U	**--**	46.0	6.59	0.15	14.83
	FL358-MW8-230913	09/13/2023	**2.8**	0.050 U	0.050 U	0.020 U	**2.9**	**0.34**	**2.0**	**--**	38.0	6.45	7.72	14.64
	FL358-MW8-231208	12/08/2023	**3.1**	0.050 U	**0.072**	0.020 U	**1.2**	**0.26**	2.0 U	--	234.2	6.43	0.56	12.73
FL358-MW9	FL358-MW9-220628	06/28/2022	**13**	**1.3**	0.050 U	0.020 U	**59**	**64.9**	**5.4 JL**	--	-63.5	7.53	0.29	13.56
	FL358-MW100-220628[9]	06/28/2022	**13**	**1.4**	0.050 U	0.020 U	**57**	**69.8**	**2.9 JL**	--	-	-	-	-
	FL358-MW9-082322	08/23/2022	**14**	**1.4**	**0.63**	0.020 U	**54**	**62.0**	**23**	--	-53.4	5.92	0.07	14.57
	FL358-MW101[9]	08/23/2022	**14**	**1.5**	**0.48**	0.020 U	**53**	**69.4**	**22**	--	-	-	-	-
	FL358-MW9-112922	11/29/2022	--	--	--	0.020 U	--	--	--	--	2.7	6.62	0.12	13.71
	FL358-MW9-230315	03/15/2023	**14**	**1.4**	0.050 U	0.020 U	**52**	--	**13**	**226**	-94.1	6.36	1.00	12.50
	FL358-MW9-230607	06/07/2023	**12**	**1.5**	**0.18**	0.020 U	**54**	**3.0**	**18**	**--**	-56.4	6.46	0.17	12.60
	FL358-MW9-230913	09/13/2023	**10**	**1.8**	**0.074**	0.020 U	**46**	**2.37**	2.0 U	**--**	-53.4	6.36	2.54	13.52
	FL358-MW9-231208	12/08/2023	**11**	0.050 U	**0.20**	0.020 U	**43**	**2.01**	**7.5**	--	-64.8	6.34	0.33	13.23
FL358-MW10	FL358-MW10-220627	06/27/2022	**10**	**0.57**	0.050 U	0.020 U	**24**	**29.3**	**4.7**	--	13.4	6.13	0.28	14.90
	FL358-MW10-082322	08/23/2022	**11**	**0.61**	**0.45**	0.020 U	**23**	**32.1**	**22**	--	-12.9	5.85	0.05	15.67
	FL358-MW10-112922	11/29/2022	--	--	--	0.020 U	--	--	--	--	-5.3	6.61	0.08	14.35
	FL358-MW101-112922[9]	11/29/2022	--	--	--	0.020 U	--	--	--	--	-	-	-	-
	FL358-MW10-230314	03/14/2023	**11**	**0.54**	0.050 U	0.020 U	**24**	--	**3.9**	**54.8**	-92.7	6.32	2.49	13.50
	FL358-MW10-230607	06/07/2023	**9.8**	**0.61**	**0.095**	0.020 U	**22**	**2.88**	**8.0**	**--**	-22.0	6.44	0.29	12.57
	FL358-MW10-230912	09/12/2023	**10**	**0.74**	0.050 U	0.020 U	**29**	**7.0**	**4.6**	**--**	-57.4	6.27	1.34	14.26
	FL358-MW10-231208	12/08/2023	**17**	**1.5**	**0.25**	0.020 U	**49**	**7.0**	**14**	--	196.2	6.40	0.81	13.75
FL358-MW11	FL358-MW11-220627	06/27/2022	**24**	**2.8**	**0.14 J**	0.020 U	**46**	**55.5**	**9.4**	--	5.6	6.11	0.26	14.90
	FL358-MW11-082422	08/24/2022	**23**	**2.8**	**0.70**	0.020 U	**42**	**46.9**	**33**	--	-46.7	5.87	0.05	14.97
	FL358-MW11-113022	11/30/2022	--	--	--	0.020 U	--	--	--	--	-29.9	6.58	0.05	14.91
	FL358-MW11-230315	03/15/2023	**22**	**2.8**	**0.074**	0.020 U	**36**	--	**9.7**	**124**	-91.2	6.39	0.43	12.30
	FL358-MW11-230607	06/07/2023	**22**	**3.1**	**0.18**		**47**	**3.5**	**12**	**--**	-40.0	6.33	0.49	14.06
	FL358-MW11-230912	09/12/2023	**21**	**3.5**	**0.076**	0.020 U	**44**	**2.71**	**3.5**	**--**	-49.9	6.32	7.83	14.12
	FL358-MW11-231208	12/08/2023	**21**	**3.8**	**0.78**	0.020 U	**35**	**3.19**	**14**	--	209.5	6.32	0.75	14.38
FL358-MW12	FL358-MW12-220629	06/29/2022	**28**	**4.5**	**0.082**	0.020 U	**70**	**76.0**	**7.8**	--	-61.4	7.53	0.37	13.72
	FL358-MW12-082322	08/23/2022	**28**	**4.3**	**0.41**	0.020 U	**69**	**76.4**	**21**	--	-75.0	5.87	0.11	14.37
	FL358-MW12-112822	11/28/2022	--	--	--	--	--	--	--	--	-18.2	6.60	0.44	12.79
	FL358-MW12-230315	03/15/2023	**32**	**4.2**	**0.14**	0.020 U	**75**	--	**14**	**304**	-110.2	6.46	0.27	12.60
	FL358-MW12-230606	06/06/2023	**28**	**3.9**	**0.22**	0.020 U	**73**	**3.0**	**13**	**--**	-36.0	6.42	0.34	14.76
	FL358-MW12-230912	09/12/2023	**27**	**3.6**	0.050 U	0.020 U	**62**	**0.45**	**6.6**	**--**	-18.5	6.27	8.41	14.82
	FL358-MW12-231208	12/08/2023	**27**	**4.1**	**0.31**	0.020 U	**59**	**3.0**	**16**	--	72.4	6.20	2.75	13.73

Location ID[1]	Sample ID	Sample Date	VOCs[2] (µg/L)						Dissolved Gases[3] (µg/L)			
			Tetrachloroethene (PCE)	Trichloroethene (TCE)	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	1,1-Dichloroethene	Vinyl Chloride	Ethane	Ethene	Methane	Acetylene
Groundwater Preliminary Cleanup Level[8] (µg/L)			5	5	70	100	7	0.2	--	--	--	--
Protection of Indoor Air/Vapor Intrusion Commercial Use[9] (µg/L)			120	12	1,600	650	1,100	1.6	--	--	--	--
Protection of Indoor Air/Vapor Intrusion Residential Use[9] (µg/L)			25	1.4	180	77	130	0.33	--	--	--	--
FL358-MW13	FL358-MW13-220628	06/28/2022	**8.0**	**2.9**	**4.3**	0.20 U	0.20 U	0.20 U	0.22 U	0.29 U	**41**	1.2 U
	FL358-MW13-082522	08/05/2022	**5.1**	**2.5**	**4.2**	0.20 U	0.20 U	0.20 U	0.22 U	0.29 U	**140**	1.2 U
	FL358-MW13-113022	11/30/2022	**1.1**	**0.56**	**0.79**	0.20 U	0.20 U	0.20 U	--	--	--	--
	FL358-MW13-230315	03/15/2023	**5.7**	**2.6**	**4.9**	0.20 U	0.20 U	0.20 U	0.22 U	0.29 U	**270**	1.2 U
	FL358-MW13-230606	06/06/2023	**4.0**	**1.8**	**3.5**	0.20 U	0.20 U	0.20 U	0.22 U	0.29 U	**250**	1.2 U
	FL358-MW13-230913	09/13/2023	**3.0**	**1.5**	**2.8**	0.20 U	0.20 U	0.20 U	--	0.29 U	**170**	1.2 U
	FL358-MW13-231208	12/08/2023	**3.2**	**1.5**	**3.3**	0.20 U	0.20 U	0.20 U	0.56 U	0.58 U	**51**	3.1 U
FL358-MW14	FL358-MW14-220629	06/29/2022	0.20 U	**0.35**	**16**	0.20 U	0.20 U	**2.5**	0.22 U	0.29 U	**510**	1.2 U
	FL358-MW14-082422	08/24/2022	0.20 U	0.20 U	**4.9**	0.20 U	0.20 U	**1.1**	0.22 U	0.29 U	**910**	1.2 U
	FL358-MW14-112922	11/29/2022	0.20 U	0.20 U	**7.1**	0.20 U	0.20 U	**1.5**	--	--	--	--
	FL358-MW14-230314	03/14/2023	0.20 U	**0.20**	**9.7**	0.20 U	0.20 U	**2.3**	0.22 U	0.29 U	**430**	1.2 U
	FL358-MW14-230607	06/07/2023	0.20 U	0.20 U	**9.2**	0.20 U	0.20 U	**2.5**	0.22 U	0.29 U	**450**	1.2 U
	FL358-MW14-230912	09/12/2023	0.20 U	0.20 U	**9.1**	0.20 U	0.20 U	**1.8**	--	0.29 U	**100**	1.2 U
	FL358-MW14-231208	12/08/2023	0.40 U	0.40 U	**8.2**	0.40 U	0.40 U	**1.9**	0.56 U	0.58 U	**320**	3.1 U

Notes:

[1] Sample locations are shown on Figure 2.

[2] Volatile organic compounds (VOCs) analyzed by United States Environmental Protection Agency (EPA) Method 8260.

[3] Dissolved gases analyzed by Method RSK 175.

[4] Total organic carbon analyzed by EPA method SM5310B, Ammonia analyzed by Method SM4500-NH_3D, Nitrate analyzed by EPA Method 353.2, Nitrite analyzed by EPA Method 353.2, Total Iron analyzed by EPA Method 6010D, Ferrous Iron analyzed by Method SM3500-Fe B, and Biological Oxygen Demand analyzed by Method SM5210B.

[5] Stabilized groundwater parameters are reported that represent conditions during the time of sample collection.

[6] March 2023 ferrous iron data not available due to field equipment malfunction. Digital and manual Hach Colorimeter (by Method 8146) used for sampling events between June and December 2023. Samples collected by SWI during June and August 2022 events were analyzed by Method SM 3500-Fe at OnSite Environmental, Inc.

[7] Dehalococcoides (DHC) was analyzed using the CENSUS® method at Microbial Insights Laboratory in Knoxville, Tennessee.

[8] Groundwater screening level protective of indoor air.

[9] Based on "Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Groundwater" (EPA 1998). DHC criteria based on guidance from Microbial Insights.

B = Result is shown as estimated because laboratory quality control testing did not meet standards. The concentration presented is biased high due to potential cross contamination indicated by low-level PCE detections in the rinsate samples. Flag applied by Shannon & Wilson.

DHC = dehalococcoides

J = Estimated result due to quality control failures. Flag applied by Shannon & Wilson for the 2022 events. Flag applied by GeoEngineers for 2023 events.

JL = Estimated result, biased low, due to quality control failures. Flag applied by Shannon & Wilson.

N = Nitrogen

N/A = not applicable

U = analyte was not detected above the Practical Quantitation Limit (PQL)

-- = not analyzed

µmhos/cm = micromhos per centimeter

C = Celsius

g/L = grams per liter

mg/L = milligrams per liter

mV = millivolts

NTU = Nephelometric Turbidity Unit

µg/L = micrograms per liter

Bold indicates analyte was detected above the Practical Quantitation Limit (PQL).

Shading indicates analyte was detected at a concentration greater than the preliminary cleanup level.

Shading indicates geochemical parameters are favorable for dechlorination.

Shading indicates dissolved oxygen indicates the anaerobic aquifer are favorable for dechlorination of PCE, TCE and DCEs.

Shading indicates dissolved oxygen indicates the aerobic aquifer are favorable for dechlorination of vinyl chloride.

Shading indicates the analyte was not detected but the laboratory reporting limit is greater than the cleanup level.

Location ID[1]	Sample ID	Sample Date	Conventionals[4] (mg/L)							DHC[7] (cells/mL)	Groundwater Parameters[5]			
			Total Organic Carbon	Ammonia (Total as N)	Nitrate	Nitrite	Total Iron	Ferrous Iron[6]	Biological Oxygen Demand		ORP (mV)	pH	DO (mg/L)	Temperature (°C)
Groundwater Preliminary Cleanup Level[8] (µg/L)			--	--	--	--	--	--	--	--	--	--	--	--
Protection of Indoor Air/Vapor Intrusion Commercial Use[9] (µg/L)			--	--	--	--	--	--	--	--	--	--	--	--
Protection of Indoor Air/Vapor Intrusion Residential Use[9] (µg/L)			--	--	--	--	--	--	--	--	--	--	--	--
FL358-MW13	FL358-MW13-220628	06/28/2022	**7.5**	0.050 U	0.050 U	0.020 U	**2.2**	**0.985**	2.0 U	--	100.1	7.21	0.95	13.90
	FL358-MW13-082522	08/05/2022	**7.4**	**0.064**	**0.11**	0.020 U	**3.7**	**3.17**	2.0 U	--	35.0	5.79	1.43	15.73
	FL358-MW13-113022	11/30/2022	--	--	--	--	--	--	--	--	-2.8	6.63	0.31	14.64
	FL358-MW13-230315	03/15/2023	**9.0**	**0.078**	0.050 U	0.020 U	**5.2**	--	2.0 U	**1.6**	-14.1	6.28	0.29	13.20
	FL358-MW13-230606	06/06/2023	**8.6**	**0.084**	**0.054**	0.020 U	**7.8**	**4.5**	2.0 U	**--**	47.8	6.25	0.35	15.59
	FL358-MW13-230913	09/13/2023	**8.5**	**0.063**	0.050 U	0.020 U	**4.0**	**1.46**	2.0 U	**--**	12.6	6.21	4.45	15.09
	FL358-MW13-231208	12/08/2023	**7.7**	**0.057**	0.086	0.020 U	**4.8**	**--**	**2.0**	--	192.3	6.42	6.32	13.58
FL358-MW14	FL358-MW14-220629	06/29/2022	**10**	**0.060**	0.050 U	0.020 U	**7.8**	**12.0**	**3.0**	--	-0.6	7.44	0.25	14.59
	FL358-MW14-082422	08/24/2022	**11**	**0.12**	**0.29**	0.020 U	**10**	**13.1**	**2.2**	--	11.0	5.84	0.23	16.13
	FL358-MW14-112922	11/29/2022	--	--	--	--	--	--	--	--	14.2	6.53	0.09	14.19
	FL358-MW14-230314	03/14/2023	**9.8**	**0.28**	**0.43**	0.020 U	**9.5**	--	**3.0**	0.5 U	-68.8	6.27	1.44	13.60
	FL358-MW14-230607	06/07/2023	**9.0**	**0.076**	**0.065**	0.020 U	**7.8**	**2.34**	2.0 U	**--**	21.6	6.26	0.21	14.48
	FL358-MW14-230912	09/12/2023	**8.3**	**0.22**	0.050 U	0.020 U	**7.5**	**1.80**	2.0 U	**--**	27.4	6.20	6.24	15.21
	FL358-MW14-231208	12/08/2023	**8.6**	**0.067**	**0.077**	0.020 U	**6.0**	**7.0**	2.0 U	--	-8.6	6.19	0.46	13.81

Notes:

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g/L = grams per liter

mg/L = milligrams per liter

mV = millivolts

NTU = Nephelometric Turbidity Unit

µg/L = micrograms per liter

Bold indicates analyte was detected above the Practical Quantitation Limit (PQL).

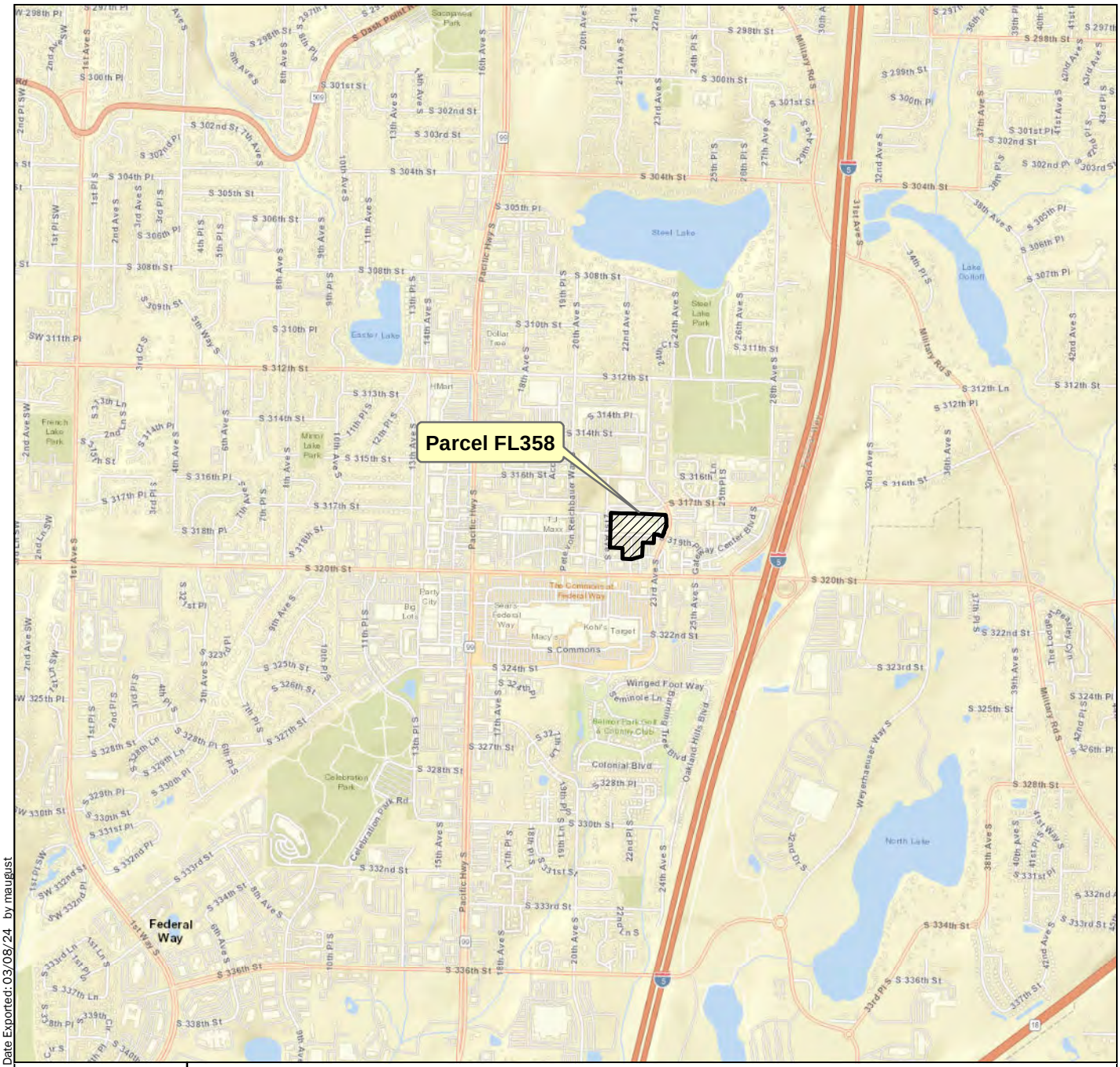
Shading indicates analyte was detected at a concentration greater than the preliminary cleanup level.

Shading indicates geochemical parameters are favorable for dechlorination.

Shading indicates dissolved oxygen indicates the anaerobic aquifer are favorable for dechlorination of PCE, TCE and DCEs.

Shading indicates dissolved oxygen indicates the aerobic aquifer are favorable for dechlorination of vinyl chloride.

Shading indicates the analyte was not detected but the laboratory reporting limit is greater than the cleanup level.



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: Mapbox Open Street Map, 2017

Projection: NAD 1983 StatePlane Washington North FIPS 4601 Feet

Vicinity Map

Remedial Investigation
Y Pay Mor Site
Federal Way, Washington

GeoEngineers

Figure 1

P:\4\4082039\GIS\MXD\4082039_F01_VicinityMap_FL358_RI_WorkPlan.mxd Date Exported: 03/08/24 by maugust

Legend

- Surplus Property (Potential TOD)
- FL358 Parcel Boundary
- Former Y Pay Mor Cleaners

N W E S

Notes:

1. The locations of all features shown are approximate.
2. TOD = transit-oriented development; ROW = right-of-way
3. 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: Google Earth Pro Aerial Image, 2017

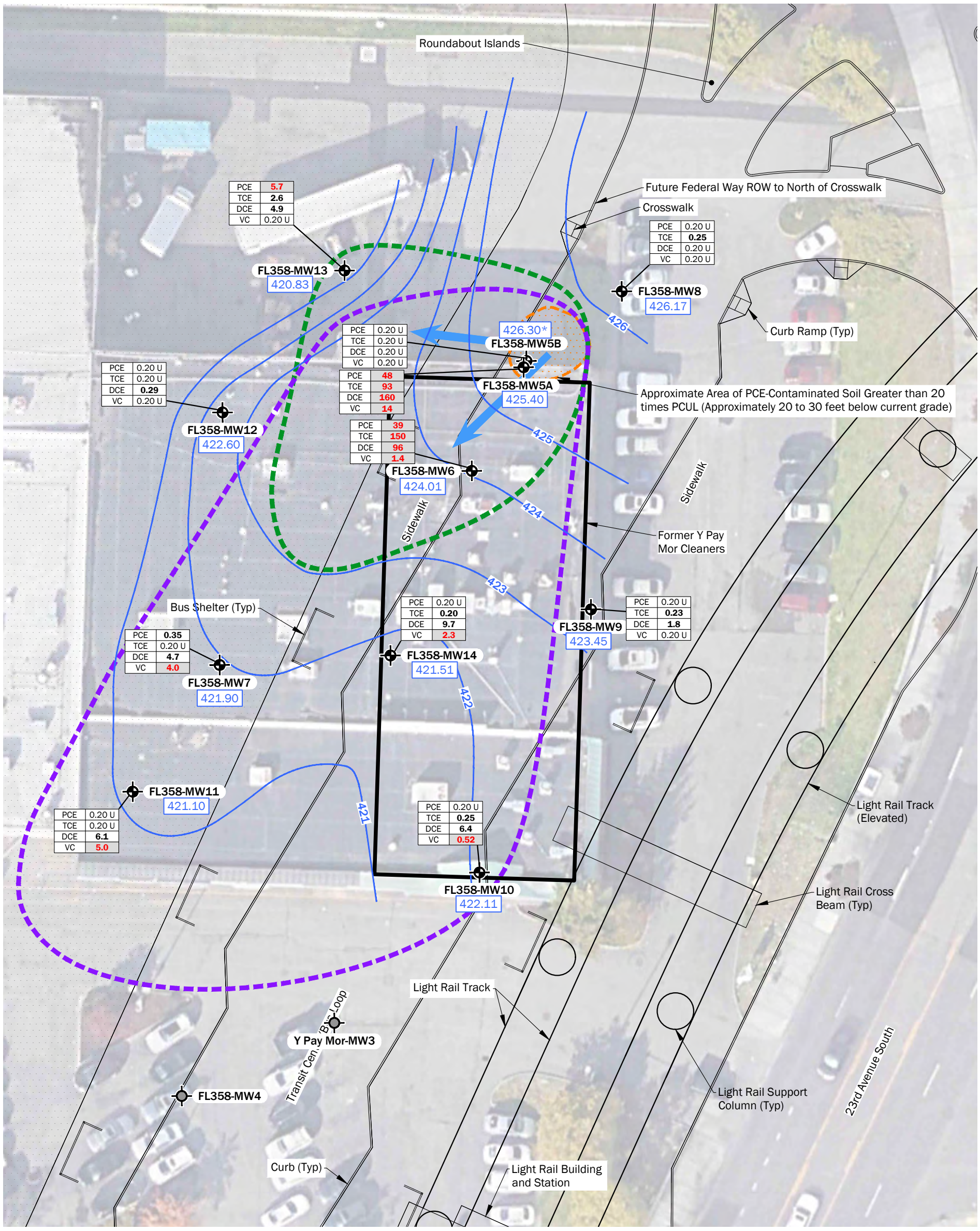
Site Plan

Y Pay Mor Site
Federal Way, Washington

GeoEngineers

Figure 2

04082-039-03 Date Exported: 8/2/2023



Legend

- Former Y Pay Mor Cleaners
- Surplus Property Boundary (Potential TOD) To Remain Unpaved Until Development
- Monitoring Well
- −421− Groundwater Elevation Contour
- 422.90 Groundwater Elevation
- Approximate Groundwater Flow Direction of Shallow Aquifer (variable range shown)

Tetrachloroethene =	PCE	**0.33**
Trichloroethene =	TCE	0.20 U
cis-1,2-Dichloroethene =	DCE	**6.0**
Vinyl Chloride =	VC	**3.7**

"U" indicates the contaminant was not detected

Bold text indicates the contaminant was detected

Red text with gray shading indicates the contaminant was detected at a concentration greater than PCUL

- Approximate Area of PCE-Contaminated Soil Greater Than 20 Times PCUL
- Approximate Extent of PCE in Groundwater at Concentrations Greater than the PCUL During the March 2023 Sampling Event
- Approximate Extent of Vinyl Chloride in Groundwater at Concentrations Greater than the PCUL During the March 2023 Sampling Event

N W E S

30 0 30
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.
3. PCUL= Preliminary Cleanup Level, PCE = tetrachloroethene, TCE = trichloroethene, TOD = Transit Oriented Development

*Water elevation was not used in groundwater contour map.

Data Source: Design plans S3.15 S07-CDP536, S07-UCP336 dated October 28, 2021 completed by Kiewit/Parsons
Projection: Project Datum Washington State Planes, North Zone, US Foot.

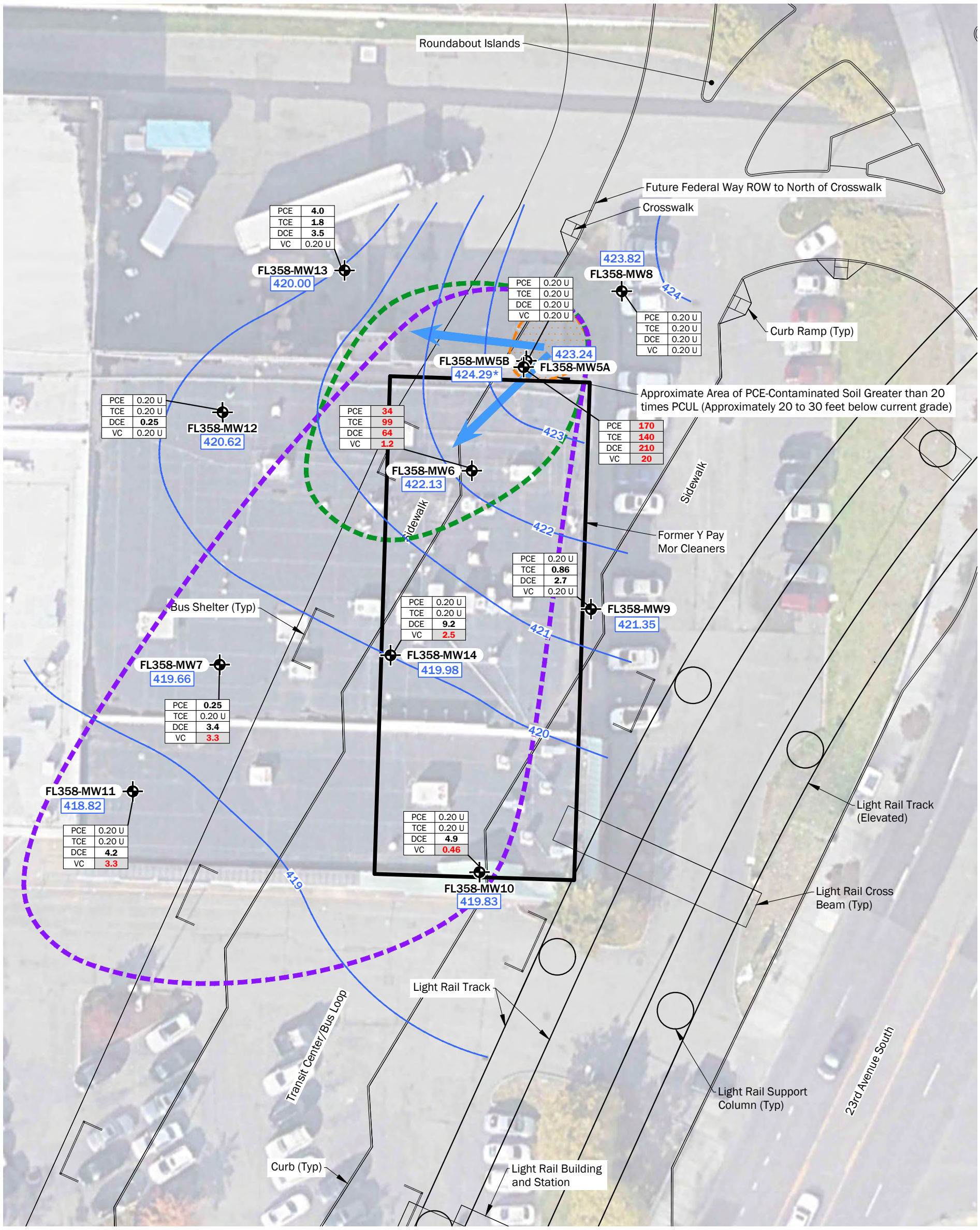
Groundwater Analytical Results (March 2023)

Y Pay Mor Site
Federal Way, Washington

GeoEngineers

Figure 3

P:\4 4082039\CAD\03\FL358\Groundwater Report\2023\408203903_F03_March 2023 GW Contours.dwg 3 Date Exported:3/21/2024 9:52 AM - by Chad Stickel



Legend

- Former Y Pay Mor Cleaners
- Surplus Property Boundary (Potential TOD) To Remain Unpaved Until Development
- Monitoring Well
- 421 Groundwater Elevation Contour
- 422.90 Groundwater Elevation
- Approximate Groundwater Flow Direction of Shallow Aquifer (variable range shown)

Tetrachloroethene =	PCE	**0.33**
Trichloroethene =	TCE	0.20 U
cis-1,2-Dichloroethene =	DCE	**6.0**
Vinyl Chloride =	VC	**3.7**

"U" indicates the contaminant was not detected

Bold text indicates the contaminant was detected

Red text with gray shading indicates the contaminant was detected at a concentration greater than PCUL

- Approximate Area of PCE-Contaminated Soil Greater Than 20 Times PCUL
- Approximate Extent of PCE in Groundwater at Concentrations Greater than the PCUL During the June 2023 Sampling Event
- Approximate Extent of Vinyl Chloride in Groundwater at Concentrations Greater than the PCUL During the June 2023 Sampling Event

N W E S

30 0 30
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.
3. PCUL= Preliminary Cleanup Level, PCE = tetrachloroethene, TCE = trichloroethene, TOD = Transit Oriented Development

*Water elevation was not used in groundwater contour map.

Data Source: Design plans S3.15 S07-CDP536, S07-UCP336 dated October 28, 2021 completed by Kiewit/Parsons
Projection: Project Datum Washington State Planes, North Zone, US Foot.

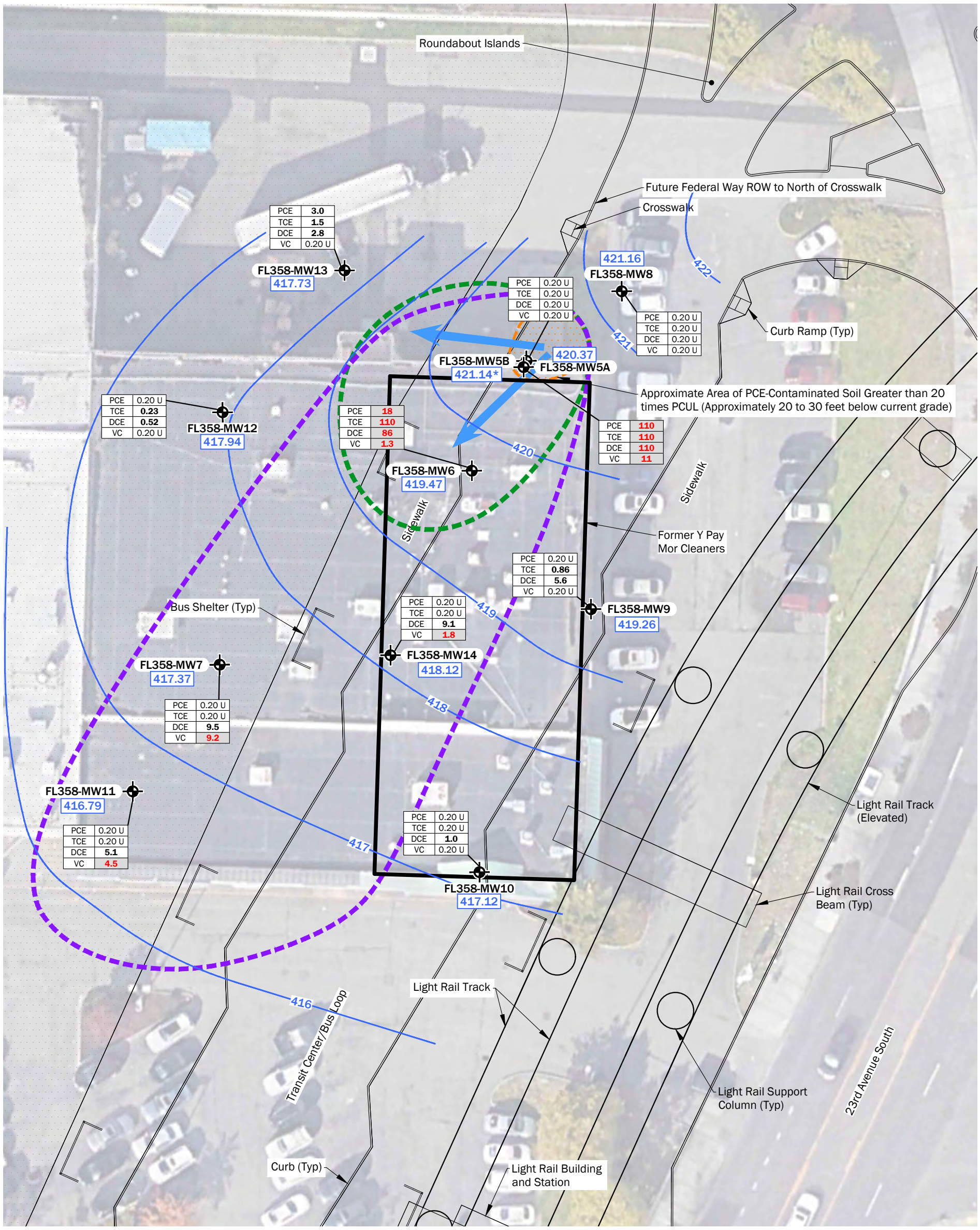
Groundwater Analytical Results (June 2023)

Y Pay Mor Site
Federal Way, Washington

GeoEngineers

Figure 4

P:\4_4082039\CAD\03\FL358\Groundwater Report\2023\408203903_F04_June 2023 GW Contours.dwg 4 Date Exported:3/21/2024 9:50 AM - by Chad Stickel



Legend

- Former Y Pay Mor Cleaners
- Surplus Property Boundary (Potential TOD) To Remain Unpaved Until Development
- Monitoring Well
- 421 — Groundwater Elevation Contour
- 422.90 — Groundwater Elevation
- Approximate Groundwater Flow Direction of Shallow Aquifer (variable range shown)

Tetrachloroethene =	PCE	**0.33**
Trichloroethene =	TCE	0.20 U
cis-1,2-Dichloroethene =	DCE	**6.0**
Vinyl Chloride =	VC	**3.7**

"U" indicates the contaminant was not detected

Bold text indicates the contaminant was detected

Red text with gray shading indicates the contaminant was detected at a concentration greater than PCUL

- Approximate Area of PCE-Contaminated Soil Greater Than 20 Times PCUL
- Approximate Extent of PCE in Groundwater at Concentrations Greater than the PCUL During the September 2023 Sampling Event
- Approximate Extent of Vinyl Chloride in Groundwater at Concentrations Greater than the PCUL During the Septmber 2023 Sampling Event

N W E S

30 0 30
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.
3. PCUL= Preliminary Cleanup Level, PCE = tetrachloroethene, TCE = trichloroethene, TOD = Transit Oriented Development

*Water elevation was not used in groundwater contour map.

Data Source: Design plans S3.15 S07-CDP536, S07-UCP336 dated October 28, 2021 completed by Kiewit/Parsons
Projection: Project Datum Washington State Planes, North Zone, US Foot.

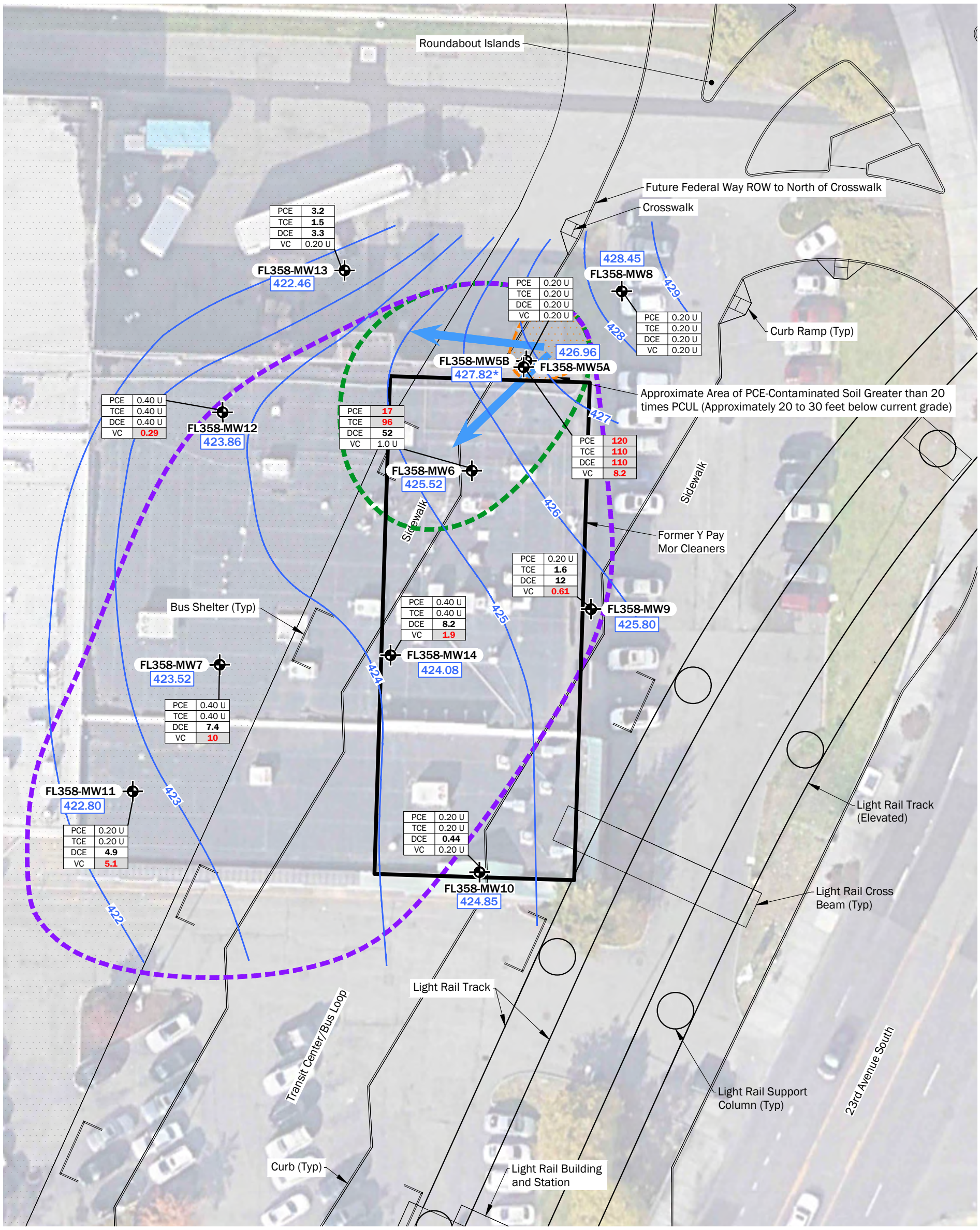
Groundwater Analytical Results (September 2023)

Y Pay Mor Site
Federal Way, Washington

GeoEngineers

Figure 5

P:\4_4082039\CAD\03\FL358\Groundwater Report\2023\408203903_F05_Sep 2023 GW Contours.dwg 5 Date Exported:3/21/2024 10:37 AM - by Chad Stickel



Legend

- Former Y Pay Mor Cleaners
- Surplus Property Boundary (Potential TOD) To Remain Unpaved Until Development
- Monitoring Well
- 421 Groundwater Elevation Contour
- 422.90 Groundwater Elevation
- Approximate Groundwater Flow Direction of Shallow Aquifer (variable range shown)
- Approximate Area of PCE-Contaminated Soil Greater Than 20 Times PCUL
- Approximate Extent of PCE in Groundwater at Concentrations Greater than the PCUL During the December 2023 Sampling Event
- Approximate Extent of Vinyl Chloride in Groundwater at Concentrations Greater than the PCUL During the December 2023 Sampling Event

Tetrachloroethene =	PCE	0.33
Trichloroethene =	TCE	0.20 U
cis-1,2-Dichloroethene =	DCE	6.0
Vinyl Chloride =	VC	3.7

"U" indicates the contaminant was not detected

Bold text indicates the contaminant was detected

Red text with gray shading indicates the contaminant was detected at a concentration greater than PCUL

N W E S

30 0 30
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.
3. PCUL= Preliminary Cleanup Level, PCE = tetrachloroethene, TCE = trichloroethene, TOD = Transit Oriented Development

*Water elevation was not used in groundwater contour map.

Data Source: Design plans S3.15 S07-CDP536, S07-UCP336 dated October 28, 2021 completed by Kiewit/Parsons
Projection: Project Datum Washington State Planes, North Zone, US Foot.

Groundwater Analytical Results (December 2023)

Y Pay Mor Site
Federal Way, Washington

GeoEngineers

Figure 6

P:\4.4082039\CAD\03\FL358\Groundwater Report\2023\408203903_F06_Dec 2023 GW Contours.dwg 6 Date Exported:3/21/2024 9:58 AM - by Chad Stickel

APPENDIX A
Field Procedures

APPENDIX A
FIELD PROCEDURES

Groundwater Sample Collection and Handling

Groundwater samples were collected using a bladder pump with tubing at low-flow sampling rates. The depth to water was measured at each monitoring well before beginning purging. The groundwater was pumped at approximately 0.5 liters per minute until the water purged clear, after which the samples were collected at a flow rate of approximately 0.5 liters per minute (low-flow). A YSI water quality meter with a flow-through-cell was used to monitor the following parameters during purging:

- Ferrous iron
- Acidity (pH)
- Electrical conductivity (EC)
- Turbidity
- Dissolved oxygen (DO)
- Temperature
- Total dissolved solids (TDS)
- Oxygen reduction potential (ORP)

Collection of water samples began once these parameters were observed to vary by less than 10 percent on three consecutive measurements. The Sampling and Analysis Plan in the 2021 RI Work Plan stated: "Purging will continue until the purge water temperature, pH, electrical conductivity, DO, and ORP stabilize to within 10 percent for three consecutive measurements or until three well casing volumes are removed and turbidity is less than 25 NTU [nephelometric turbidity units]." Although select wells were sampled before the turbidity had reached 25 NTU or less, sampling occurred only after other parameters had stabilized.

Purge water generated during these activities was transferred to the onsite dedicated purge water drum labeled with the date and origin of contents. Incidental waste generated during sampling activities such as gloves, plastic sheeting, paper towels, and similar expended and discarded field supplies were disposed of in the local trash receptacle.

The groundwater samples were transferred directly from the tubing outlet to laboratory-prepared sample containers. New nitrile gloves were worn when collecting the groundwater samples. The sample containers were filled and placed in a cooler with ice pending transport to the analytical laboratory. Sample labels were completed for each sample. Chain-of-custody procedures were followed in transporting the samples to the laboratory.

Groundwater Elevation Measurements

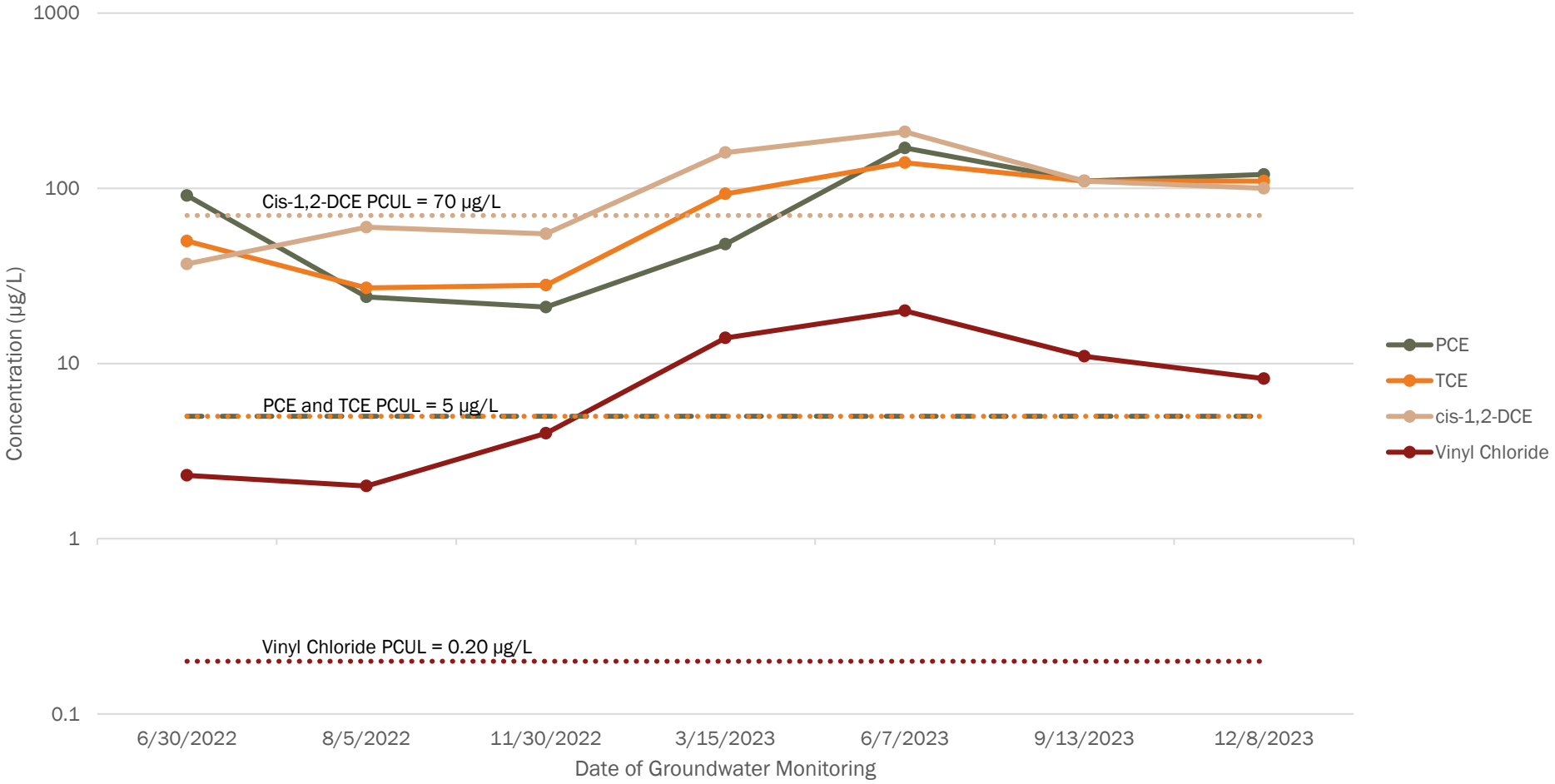
The groundwater elevation was measured at each well during the sitewide gauge. Each monitoring well was given time to equilibrate with the atmosphere. Once equilibrated, the depth to water was measured from the top of the casing, and then the groundwater elevation was calculated based on the top-of-rim survey data. The depth of groundwater in each well was measured to the nearest 0.01 foot relative to the surveyed well casing rim position.

Investigative Waste Disposal for Groundwater

Purge water generated during quarterly sampling events was stored on-site in 55-gallon steel drums placed in a secondary containment system and picked up for permitted disposal by Waste Management.

APPENDIX B
Chemical of Concern Concentration Trend Graphs

FL358-MW5A



Notes:

See Table 3 for a comprehensive summary of the groundwater compliance monitoring results and groundwater cleanup levels.

PCE = tetrachloroethene
TCE = trichloroethene
cis-1,2-DCE = cis-1,2-dichloroethene
PCUL = Preliminary Cleanup Level
µg/L = microgram per liter

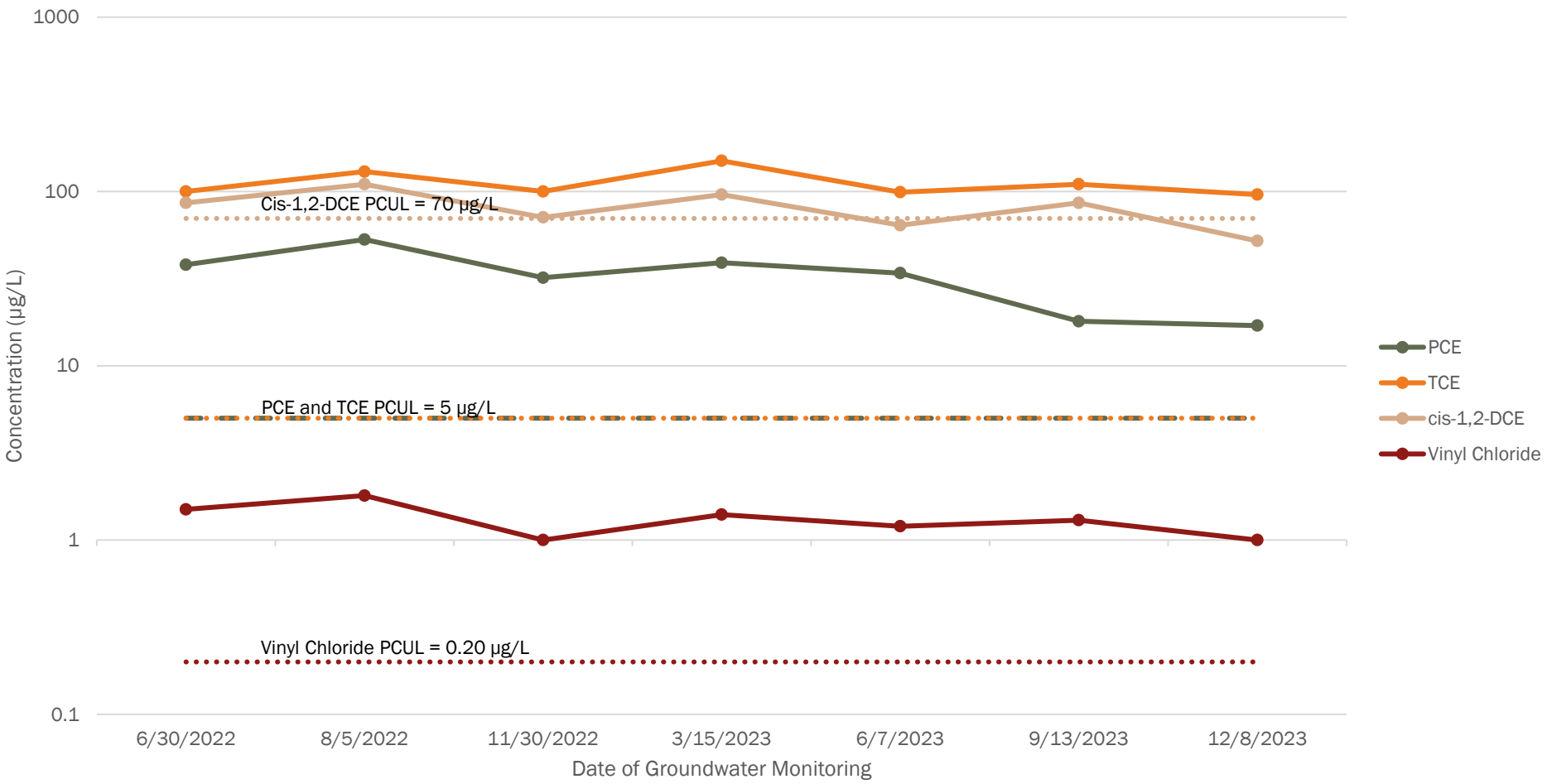
Monitoring Well FL358-MW5A

2023 Groundwater Compliance Monitoring
Y Pay Mor Site
Federal Way, Washington

GeoEngineers

Figure B-1

FL358-MW6



Notes:

See Table 3 for a comprehensive summary of the groundwater compliance monitoring results and groundwater cleanup levels.

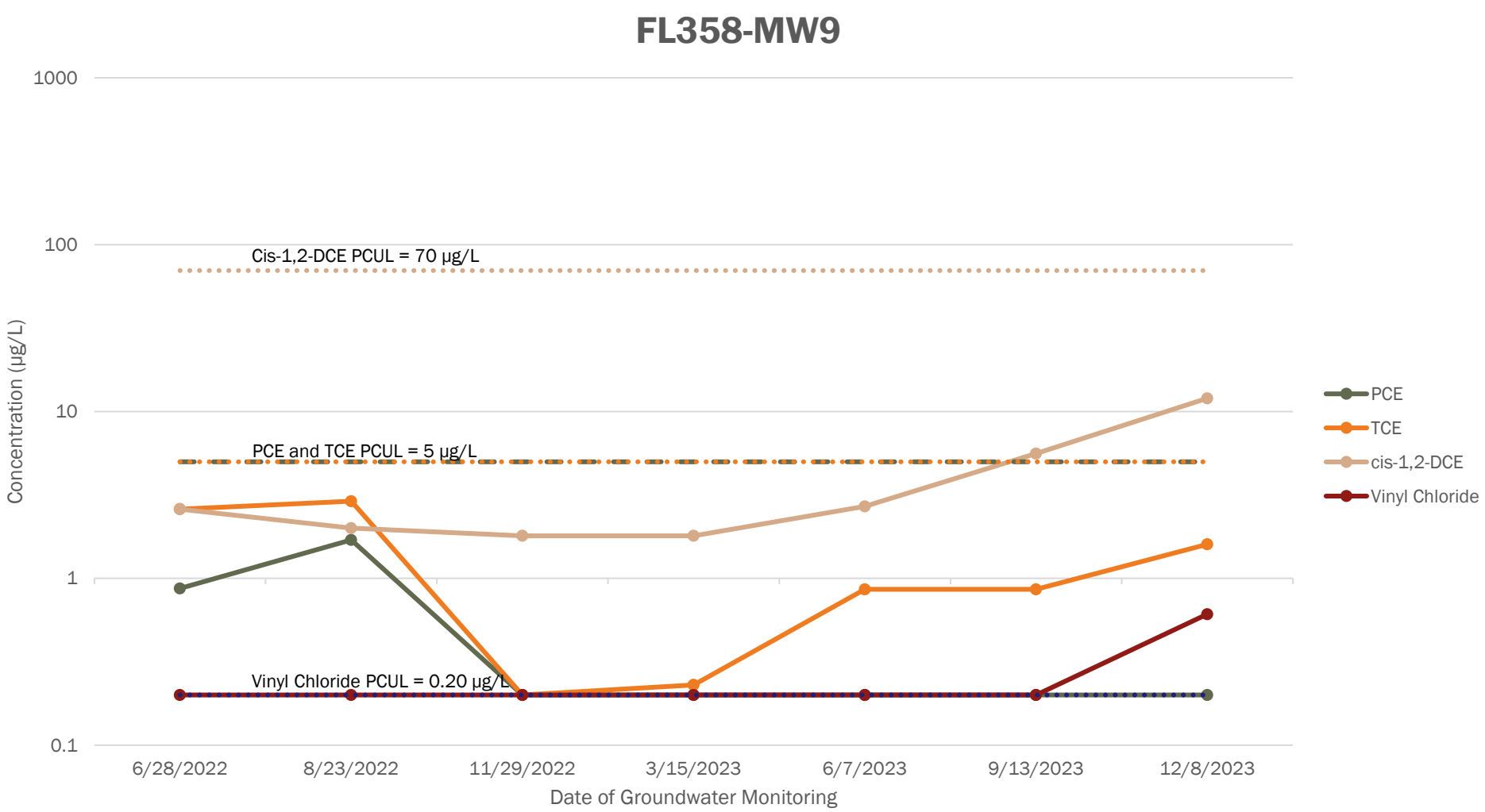
PCE = tetrachloroethene
TCE = trichloroethene
cis-1,2-DCE = cis-1,2-dichloroethene
PCUL = Preliminary Cleanup Level
µg/L = microgram per liter

Monitoring Well FL358-MW6

2023 Groundwater Compliance Monitoring
Y Pay Mor Site
Federal Way, Washington

GeoEngineers

Figure B-2



Notes:
See Table 3 for a comprehensive summary of the groundwater compliance monitoring results and groundwater cleanup levels.

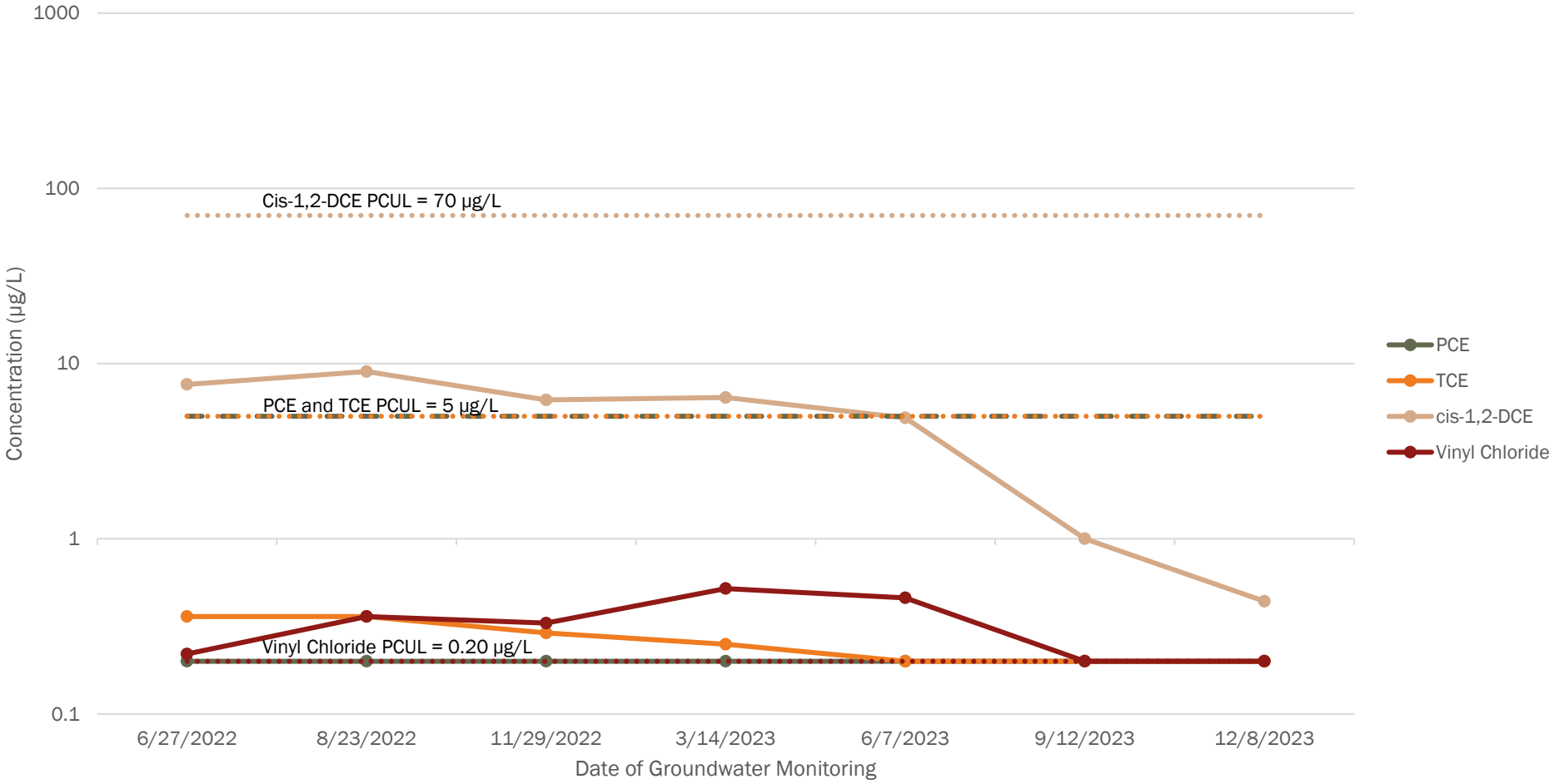
PCE = tetrachloroethene
TCE = trichloroethene
cis-1,2-DCE = cis-1,2-dichloroethene
PCUL = Preliminary Cleanup Level
µg/L = microgram per liter

Monitoring Well FL358-MW9

2023 Groundwater Compliance Monitoring
Y Pay Mor Site
Federal Way, Washington

GeoEngineers

Figure B-3



Notes:
See Table 3 for a comprehensive summary of the groundwater compliance monitoring results and groundwater cleanup levels.

PCE = tetrachloroethene
TCE = trichloroethene
cis-1,2-DCE = cis-1,2-dichloroethene
PCUL = Preliminary Cleanup Level
µg/L = microgram per liter

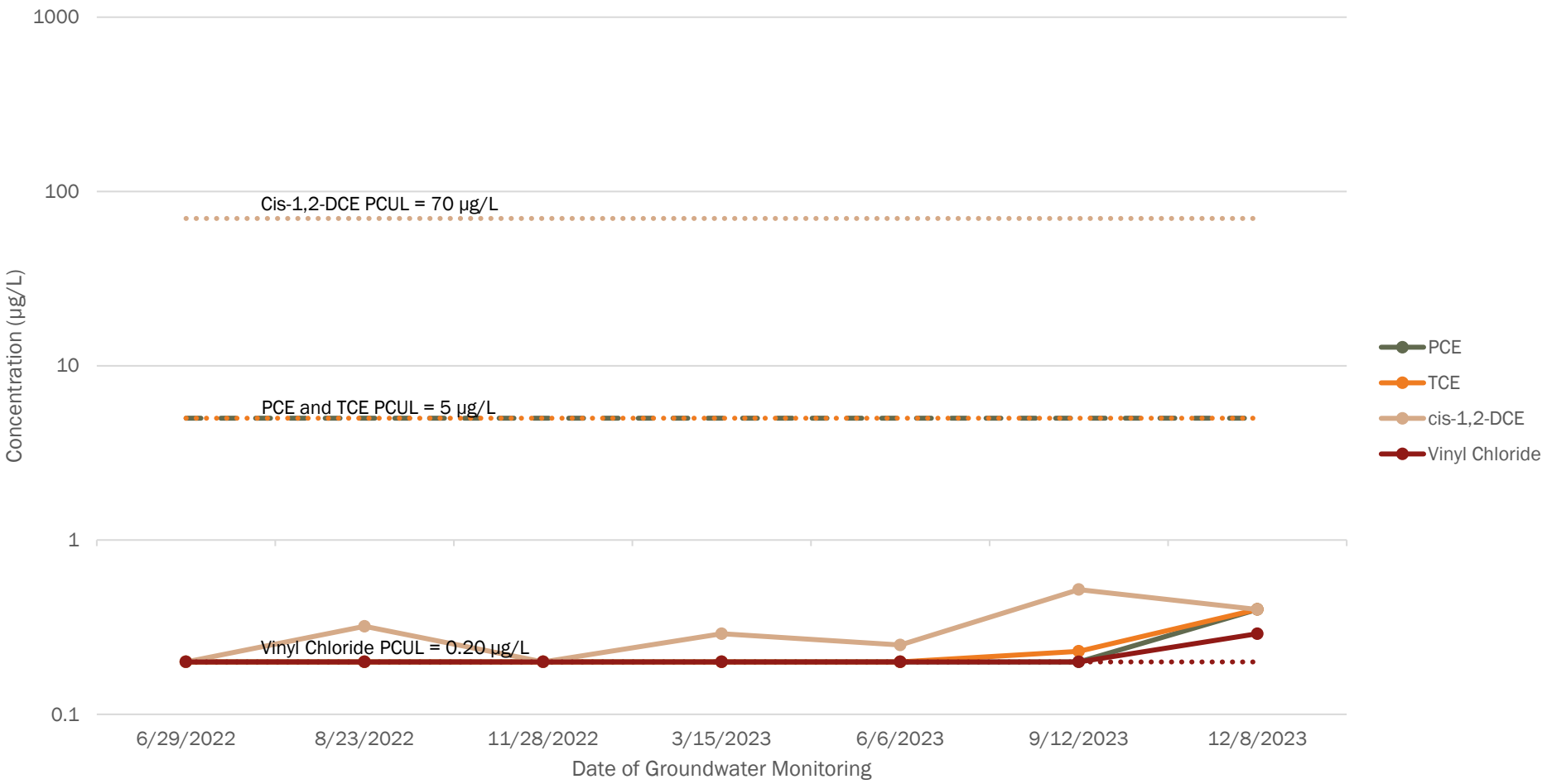
Monitoring Well FL358-MW10

2023 Groundwater Compliance Monitoring
Y Pay Mor Site
Federal Way, Washington

GeoEngineers

Figure B-4

FL358-MW12



Notes:

See Table 3 for a comprehensive summary of the groundwater compliance monitoring results and groundwater cleanup levels.

PCE = tetrachloroethene
TCE = trichloroethene
cis-1,2-DCE = cis-1,2-dichloroethene
PCUL = Preliminary Cleanup Level
µg/L = microgram per liter

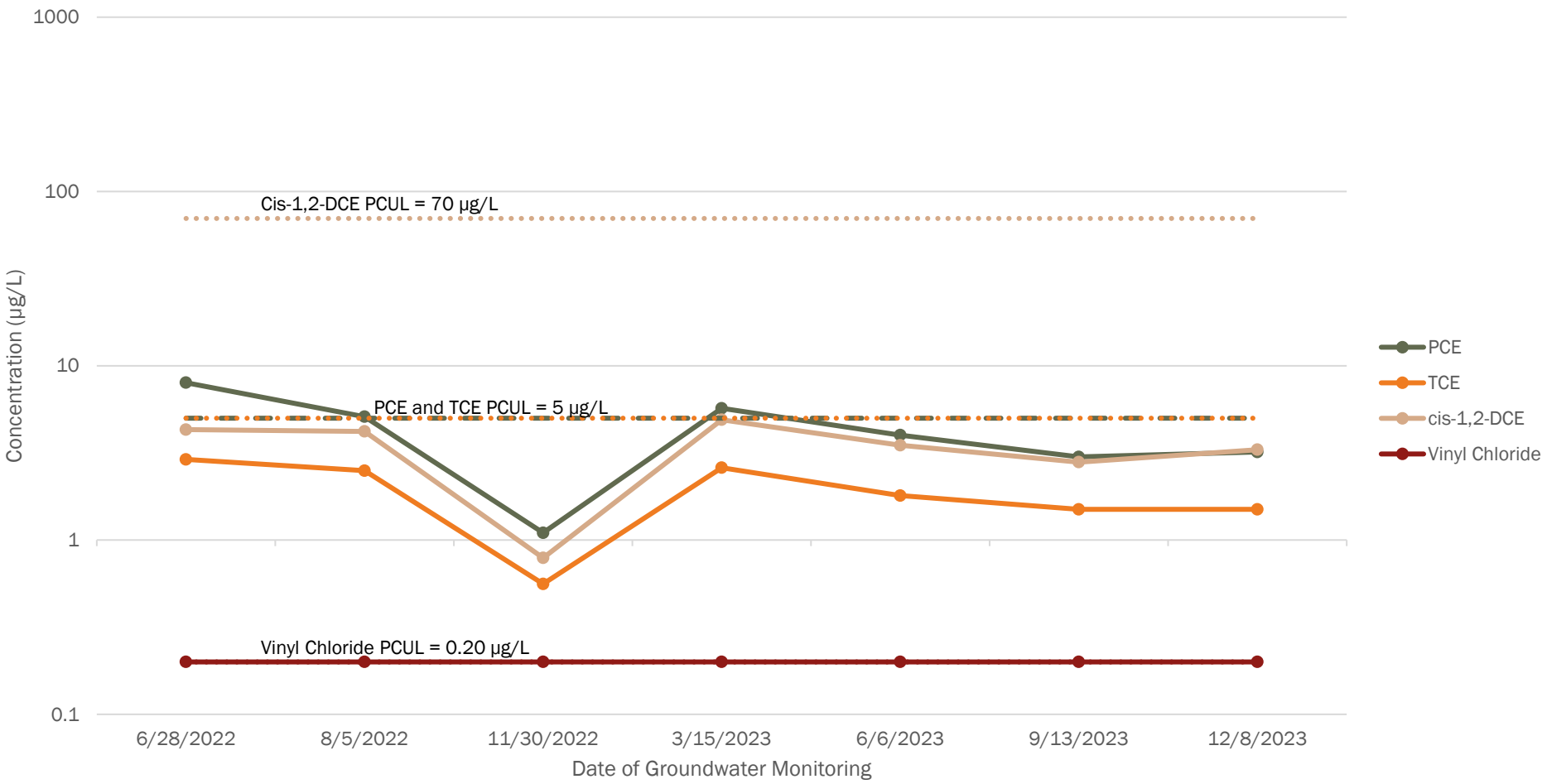
Monitoring Well FL358-MW12

2023 Groundwater Compliance Monitoring
Y Pay Mor Site
Federal Way, Washington

GeoEngineers

Figure B-5

FL358-MW13



Notes:

See Table 3 for a comprehensive summary of the groundwater compliance monitoring results and groundwater cleanup levels.

PCE = tetrachloroethene
TCE = trichloroethene
cis-1,2-DCE = cis-1,2-dichloroethene
PCUL = Preliminary Cleanup Level
µg/L = microgram per liter

Monitoring Well FL358-MW13

2023 Groundwater Compliance Monitoring
Y Pay Mor Site
Federal Way, Washington

GeoEngineers

Figure B-6

APPENDIX C
Investigation-Derived Waste (IDW) Disposal Receipts

Please print or type.

Form Approved. OMB No. 2050-003

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
	WAD980983084	2	(800)424-9300	015743470 FLE

5. Generator's Name and Mailing Address
SOUND TRANSIT ~~2210 S 320TH STREET FEDERAL WAY WA 98003~~ 401 S JACKSON SEA, WA 98104
Generator's Phone: (206)398-5227

Generator's Site Address (if different than mailing address)
2210 S 320TH ST FEDERAL WAY WA 98003

6. Transporter 1 Company Name
CHEMICAL WASTE MANAGEMENT, INC.
U.S. EPA ID Number: ORD089452353

7. Transporter 2 Company Name
UPRR
U.S. EPA ID Number: NED001792910

8. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
17629 CEDAR SPRINGS LANE
ARLINGTON OR 97812-9709
Facility's Phone: (541)454-2643
U.S. EPA ID Number: ORD089452353

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
X	1. NA3082,HAZARDOUS WASTE,LIQUID,N.O.S. (GROUNDWATER),9,PGIII OR351870	1	DM	200	P	F002		
	2.							
	3.							
	4.							

14. Special Handling Instructions and Additional Information
1.OR351870

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: BOSS STANSBY
Signature:
Month: 5 Day: 9 Year: 23

INT'L
16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER
17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Pele Laupati
Signature:
Month: 5 Day: 9 Year: 23
Transporter 2 Printed/Typed Name:
Signature:
Month: Day: Year:

DESIGNATED FACILITY
18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator)
Month: Day: Year:
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. 2. 3. 4.
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name:
Signature:
Month: Day: Year:

EPA Form 8700-22 (Rev. 12-17) Previous editions are obsolete.

DESIGNATED FACILITY TO EPA's e-MANIFEST SYSTEM

CVMI

Please print or type.

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
WAD980993084	2	(800)424-9300	015743513 FLE

5. Generator's Name and Mailing Address
SOUND TRANSIT
~~2219 SOUTH 320TH STREET~~ 401 S JACKSON ST
~~FEDERAL WAY WA 98003~~ SEA, WA 98104

Generator's Site Address (if different than mailing address)
2210 S 320TH ST
FEDERAL WAY, WA 98003

Generator's Phone: ~~(206)398-5227~~

6. Transporter 1 Company Name
CHEMICAL WASTE MANAGEMENT, INC.
U.S. EPA ID Number
ORD089452353

7. Transporter 2 Company Name
UPRR
U.S. EPA ID Number
NED001792810

8. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
17629 CEDAR SPRINGS LANE
ARLINGTON OR 97812-9709
Facility's Phone: (541)454-2643
U.S. EPA ID Number
ORD089452353

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. NA3082,HAZARDOUS WASTE,LIQUID,N.O.S. (GROUNDWATER),9,PGIII OR351870	1	DM	150	P	F002
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1.OR351870

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Ross Stainsby
Signature:
Month 6 Day 28 Year 23

INT'L
16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER
17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Pele Laupati
Signature:
Month 6 Day 28 Year 23
Transporter 2 Printed/Typed Name
Signature
Month Day Year

DESIGNATED FACILITY
18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator)
Month Day Year
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. 2. 3. 4.
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name
Signature
Month Day Year

EPA Form 8700-22 (Rev. 12-17) Previous editions are obsolete.

DESIGNATED FACILITY TO EPA's e-MANIFEST SYSTEM

Oct 2, 2023 at 11:12:50
2210 S 320th St
Federal Way WA 98003
United States

CWMI

Form Approved. OMB No. 2050-0039

Please print or type.

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
	WAD980983084	2	(800)424-9300	015743572 FLE

5. Generator's Name and Mailing Address
SOUND TRANSIT
401 S JACKSON ST
SEATTLE WA 98104
Generator's Phone: (206)398-5227

Generator's Site Address (if different than mailing address)
2210 S 320TH ST
FEDERAL WAY, WA 98003

6. Transporter 1 Company Name: CHEMICAL WASTE MANAGEMENT, INC. — U.S. EPA ID Number: ORD089452353

7. Transporter 2 Company Name: UPRR — U.S. EPA ID Number: NED001792910

8. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
17629 CEDAR SPRINGS LANE
ARLINGTON OR 97812-9709
Facility's Phone: (541)454-2643
U.S. EPA ID Number: ORD089452353

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
X	1. NA3082,HAZARDOUS WASTE,LIQUID,N.O.S. (GROUNDWATER),9,PGIII OR351870	1	DM	500	P	F002		
	2.							
	3.							
	4.							

14. Special Handling Instructions and Additional Information
1.OR351870

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Amanda Johnson — Signature — Month 10 Day 02 Year 23

INT'L
16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER
17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Pele Laupati — Signature — Month 10 Day 2 Year 23
Transporter 2 Printed/Typed Name — Signature — Month Day Year

DESIGNATED FACILITY
18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) — Month Day Year
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. 2. 3. 4.
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name — Signature — Month Day Year

EPA Form 8700-22 (Rev. 12-17) Previous editions are obsolete.

DESIGNATED FACILITY TO EPA's e-MANIFEST SYSTEM

Style CF27R LABELMASTER® (800) 621-5808 www.labelmaster.com

ease print or type.

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
	WAD980983084	2	(800)424-9300	015743714 FLE

5. Generator's Name and Mailing Address

SOUND TRANSIT
401 S JACKSON ST
SEATTLE WA 98104

Generator's Phone: (206)398-5227

Generator's Site Address (if different than mailing address)

2210 SOUTH 320TH STREET
FEDERAL WAY, WA 98003

6. Transporter 1 Company Name — U.S. EPA ID Number

CHEMICAL WASTE MANAGEMENT, INC. — ORD089452353

7. Transporter 2 Company Name — U.S. EPA ID Number

UPRR — NED001792910

8. Designated Facility Name and Site Address — U.S. EPA ID Number

CHEMICAL WASTE MANAGEMENT, INC.
17629 CEDAR SPRINGS LANE
ARLINGTON OR 97812-9709

Facility's Phone: (541)454-2643 — ORD089452353

GENERATOR

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. NA3082,HAZARDOUS WASTE,LIQUID,N.O.S. (WATER),9,PGIII OR351870	1	DM	400	P	F002
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information

1.OR351870

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name — Signature — Month 2 Day 6 Year 24

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit: _____
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Pele Laupati — Signature — Month 2 Day 6 Year 24

Transporter 2 Printed/Typed Name — Signature — Month Day Year

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

DESIGNATED FACILITY

18b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1. | 2. | 3. | 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name — Signature — Month Day Year

LAND DISPOSAL RESTRICTION (LDR) NOTIFICATION AND CERTIFICATION FORM (PHASE IV)

WASTE MANAGEMENT

Generator Name: Sound Transit

Profile Number: OR351870 Manifest Number: 015743714FCE

Ref. #	2. US EPA HAZARDOUS WASTE CODE(s)	3. SUBCATEGORY ENTER THE SUBCATEGORY DESCRIPTION (If not applicable, simply check NONE)		4. HOW MUST THE WASTE BE MANAGED? ENTER LETTER FROM BELOW
		DESCRIPTION	NONE	
1.	F002	PCE and TCE	☐	A
2.			☐	
3.			☐	
4.			☐	

1. Is this waste a non-wastewater or wastewater? (See 40 CFR 268.2) Check ONE: ☐ Non-Wastewater ☑ Wastewater
   For hazardous debris meeting the definition of debris and subject to the alternate treatment standards in 268.45, check here: ☐
2. In **column 2**, identify ALL USEPA hazardous waste codes that apply to this waste shipment, as defined by 40 CFR 261.
   - To list additional waste code(s) use Land Disposal Notification/Certification Supplemental Form (CWM-2005-D) and check here: ☐
3. In **column 3**, for each waste code, identify the subcategory if one applies, or check NONE if the waste code has no subcategory.
4. In **column 4**, enter the letter from the list below (A. – D.) that describes how the waste must be managed to comply with the land disposal restriction regulations in 40 CFR 268. Please note that if you enter B.1, B.3, B.6 or D, you are certifying that the waste meets all the Land Disposal Restrictions and may be landfilled without further treatment. If you enter B.4, you are certifying that the waste has been decharacterized, but still requires treatment for UHCs. (States authorized by EPA to manage the LDR program may have regulatory citations different from the 40 CFR citations listed on this form. Where these regulatory citations differ, your form will be deemed to refer to those state citations as well as 40 CFR.)
5. Constituents of concern for waste codes F001-F005 and F039 and underlying hazardous constituents (UHCs) for D001-D043, must be identified unless the treatment facility will monitor for all constituents. **If any of these codes apply, check appropriate box below:**
   - To identify constituents of concern for F001-F005, F039 and UHCs, use the Identification of Constituents of Concern Form (CWM-2007) and check here: ☐
   - If UHCs are applicable, but none are present at the point of generation, check here: ☐
   - If incineration facility will monitor for all constituents of concern (except dioxins), check here: ☐

MANAGEMENT METHODS

A RESTRICTED WASTE REQUIRES TREATMENT
This waste must be treated to the applicable treatment standards set forth in 40 CFR 268.40.

B.1 RESTRICTED WASTE TREATED TO PERFORMANCE STANDARDS
"I certify under penalty of law that I personally have examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process had been operated and maintained properly so as to comply with the treatment standards specified in 40 CFR 268.40 without impermissible dilution of the prohibited waste. I am aware there are significant penalties for submitting a false certification including the possibility of fine and imprisonment."

B.3 GOOD FAITH ANALYTICAL CERTIFICATION FOR INCINERATED ORGANICS
"I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the non-wastewater organic constituents have been treated by combustion units as specified in 268.42 Table 1. I have been unable to detect the non-wastewater organic constituents despite having used best faith efforts to analyze for such constituents. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

B.4 DECHARACTERIZED WASTE REQUIRES TREATMENT FOR UNDERLYING HAZARDOUS CONSTITUENTS
"I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.40 or 268.49, to remove the hazardous characteristic. This de-characterized waste contains underlying hazardous constituents that require further treatment to meet treatment standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

B.6 RESTRICTED DEBRIS TREATED TO ALTERNATE PERFORMANCE STANDARDS
"I certify under penalty of law that the debris has been treated in accordance with the requirements of 40CFR 268.45. I am aware that there are significant penalties for making a false certification, including the possibility of fine and imprisonment."

C. RESTRICTED WASTE SUBJECT TO A VARIANCE
This waste is subject to a national capacity variance, a treatability variance, or a case-by-case extension. Enter the effective date of prohibition in column (4) above.

D. RESTRICTED WASTE CAN BE LAND DISPOSED WITHOUT FURTHER TREATMENT
"I certify under penalty of law I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR Part 268 Subpart D and LAC 33: V. 2223-2233. I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

I hereby certify that all information submitted in this and all associated documents is complete and accurate to the best of my knowledge and information.

Name: (Print) Ross Stainsby Title: Sr. Environmental Specialist

Signature: Ross Stainsby Date: 2/6/24

APPENDIX D
Chemical Analytical Data and Data Validation Reports

GeoEngineers

1101 Fawcett Avenue, Suite 200, Tacoma, Washington 98402, Telephone: 253.383.4940, Fax: 253.383.4923 www.geoengineers.com

Data Validation Report

Project:	Sound Transit – Federal Way Link Extension Parcel FL358 (Y Pay Mor Drycleaner) March 2023 Groundwater Samples
GEI File:	4082-039-03
Date:	March 8, 2024

This report documents the results of a United States Environmental Protection Agency (USEPA)-defined Stage 2A data validation (USEPA Document 540-R-08-005; USEPA 2009) of analytical data from the analyses of water samples collected as part of the March 2023 sampling event, and the associated laboratory and field quality control (QC) samples. The samples were obtained from the Y Pay Mor Drycleaner Site located at 2210 South 320th Street in Federal Way, Washington.

OBJECTIVE AND QUALITY CONTROL ELEMENTS

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

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

The data validation included review of the following QC elements:

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

VALIDATED SAMPLE DELIVERY GROUPS

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

TABLE 1. SUMMARY OF VALIDATED SAMPLE DELIVERY GROUPS

Laboratory SDG	Samples Validated
2303-180	FL358-MW5A-230315, FL358-MW5B-230315, FL358-MW6-230315, GW-DUP-230315, FL358-MW7-230314, FL358-MW8-230315, FL358-MW9-230315, FL358-MW10-230314, FL358-MW11-230315, FL358-MW12-230315, FL358-MW13-230315, FL358-MW14-230314, RB-1-230314, RB-1-230315, TB-1-230314, TB-2-230315
056UC	FL358-MW5A-230315, FL358-MW5B-230315, FL358-MW6-230315, GW-DUP-230315, FL358-MW7-230314, FL358-MW8-230315, FL358-MW9-230315, FL358-MW10-230314, FL358-MW11-230315, FL358-MW12-230315, FL358-MW13-230315, FL358-MW14-230314

CHEMICAL ANALYSIS PERFORMED

OnSite Environmental, Inc. (OnSite) of Redmond, Washington, performed laboratory analysis on the water samples using one or more of the following methods:

- Volatile Organic Compounds (VOCs) by Method SW8260D;
- Total Metals by Method EPA6010D;
- Dissolved Gases by Method RSK-175;
- Nitrate and Nitrite by Method EPA353.2;
- Ammonia as Nitrogen by Method SM4500-NH3D; and
- Total Organic Carbon (TOC) by Method SM5310B

AmTest Laboratories (AmTest), located in Kirkland, Washington, served as a secondary laboratory sub-contracted through OnSite and performed analyses on the samples using the following method:

- Biochemical Oxygen Demand (BOD) by Method SM5210B

Microbial Insights (MI), located in Knoxville, Tennessee, performed laboratory analyses on selected samples using the following method:

- Dehalococcoides by Method CENSUS

DATA VALIDATION SUMMARY

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

Data Package Completeness

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

Chain-of-Custody Documentation

Chain-of-custody (COC) forms were provided with the laboratory analytical reports. The COCs were accurate and complete when submitted to the laboratory. The forms were appropriately signed and dated by both field collectors and laboratory personnel upon receipt.

Holding Times and Sample Preservation

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

Method, Trip, and Rinsate Blanks

Method Blanks

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

Trip Blanks

Trip blanks are analyzed to provide an indication as to whether volatile compounds have cross-contaminated other like samples within the transportation process to the laboratory. None of the target analytes were detected above the reporting limits in the trip blanks.

Rinsate Blanks

Equipment rinsate blanks are analyzed to provide an indication as to whether field decontamination and sampling procedures effectively prevent cross-contamination in field activities. None of the target analytes were detected above the reporting limits in the rinsate blanks.

Surrogate Recoveries

A surrogate compound is a compound that is chemically similar to the organic analytes of interest, but unlikely to be found in an environmental sample. Surrogates are used for organic analyses and are added to the samples, standards, and blanks to serve as an accuracy and specificity check of each analysis. The surrogates are added to the samples at a known concentration and percent recoveries are calculated following analysis. The surrogate percent recoveries for field samples were within the laboratory control limits.

Matrix Spikes/Matrix Spike Duplicates

Since the actual analyte concentration in an environmental sample is not known, the accuracy of a particular analysis is usually inferred by performing a matrix spike (MS) analysis on one sample from the associated batch, known as the parent sample. One aliquot of the sample is analyzed in the normal manner and then a second aliquot of the sample is spiked with a known amount of analyte concentration and analyzed. From these

analyses, a percent recovery is calculated. Matrix spike duplicate (MSD) analyses are generally performed for organic analyses as a precision check and analyzed in the same sequence as a matrix spike. Using the result values from the MS and MSD, the relative percent difference (RPD) is calculated. The percent recovery control limits for MS and MSD analyses are specified in the laboratory documents, as are the RPD control limits for MS/MSD sample sets.

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

Laboratory Control Samples/Laboratory Control Sample Duplicates

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

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

Laboratory Duplicates

Internal laboratory duplicate analyses are performed to monitor the precision of the analyses. Two separate aliquots of a sample are analyzed as distinct samples in the laboratory and the RPD between the two results is calculated. Duplicate analyses should be performed once per analytical batch. If one or more of the samples used has a concentration less than five times the reporting limit for that sample, the absolute difference is used instead of the RPD. The RPD control limits are specified in the laboratory documents. Laboratory duplicates were analyzed at the proper frequency and the specified acceptance criteria were met.

Field Duplicates

In order to assess precision, field duplicate samples are collected and analyzed along with the reviewed sample batches. The duplicate samples are analyzed for the same parameters as the associated parent samples. Precision is determined by calculating the RPD between each pair of samples. If one or more of the sample analytes has a concentration less than five times the reporting limit for that sample, then the absolute difference is used instead of the RPD. The RPD control limit for water samples is 35 percent.

SDG 2303-180: One field duplicate sample pair, FL358-MW6-230315 and GW-DUP-230315, was submitted with this SDG. The precision criteria for the target analytes were met for this sample pair, with the exception of ammonia. The positive results for this target analyte were qualified as estimated (J) in this sample pair.

OVERALL ASSESSMENT

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

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

TABLE 2. SUMMARY OF QUALIFIED SAMPLES

Sample ID	Analyte	Qualifier	Reason
FL358-MW6-230315	Ammonia	J	Field Duplicate Precision
GW-DUP-230315	Ammonia	J	Field Duplicate Precision

REFERENCES

U.S. Environmental Protection Agency (USEPA). "Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use," EPA-540-R-08-005. January 2009.

U.S. Environmental Protection Agency (USEPA) 2020a. Contract Laboratory Program National Functional Guidelines for Organic Superfund Methods Data Review, EPA-540-R-20-005. November 2020.

U.S. Environmental Protection Agency (USEPA) 2020b. Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Methods Data Review, EPA-542-R-20-006. November 2020.

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

March 29, 2023

Tricia DeOme
GeoEngineers, Inc.
1101 Fawcett Avenue South, Suite 200
Tacoma, WA 98402

Re: Analytical Data for Project 4082-039-03
Laboratory Reference No. 2303-180

Dear Tricia:

Enclosed are the analytical results and associated quality control data for samples submitted on March 15, 2023.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: March 29, 2023
Samples Submitted: March 15, 2023
Laboratory Reference: 2303-180
Project: 4082-039-03

Case Narrative

Samples were collected on March 14 and 15, 2023 and received by the laboratory on March 15, 2023. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Nitrate EPA 353.3 Analysis

The reported Nitrate results are a calculated value based on the subtraction of Nitrite from the Nitrate plus Nitrite result. The Nitrite analysis, which has a 48-hour holding time, was performed within the holding time. Immediately after this analysis, an aliquot of the samples was preserved with concentrated sulfuric acid and stored at 4 degrees C. The preserved samples were then analyzed within the maximum 28-day holding time for the Nitrate plus Nitrite analysis

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Date of Report: March 29, 2023
Samples Submitted: March 15, 2023
Laboratory Reference: 2303-180
Project: 4082-039-03

ANALYTICAL REPORT FOR SAMPLES

Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
FL358-MW7-230314	03-180-01	Water	3-14-23	3-15-23	
FL358-MW10-230314	03-180-02	Water	3-14-23	3-15-23	
FL358-MW14-230314	03-180-03	Water	3-14-23	3-15-23	
FL358-MW6-230315	03-180-04	Water	3-15-23	3-15-23	
FL358-MW9-230315	03-180-05	Water	3-15-23	3-15-23	
FL358-MW8-230315	03-180-06	Water	3-15-23	3-15-23	
FL358-MW5A-230315	03-180-07	Water	3-15-23	3-15-23	
FL358-MW5B-230315	03-180-08	Water	3-15-23	3-15-23	
FL358-MW11-230315	03-180-09	Water	3-15-23	3-15-23	
FL358-MW12-230315	03-180-10	Water	3-15-23	3-15-23	
FL358-MW13-230315	03-180-11	Water	3-15-23	3-15-23	
GW-DUP-230315	03-180-12	Water	3-15-23	3-15-23	
RB-1-230315	03-180-13	Water	3-15-23	3-15-23	
RB-1-230314	03-180-14	Water	3-15-23	3-15-23	
TB-1-230314	03-180-15	Water	---	3-15-23	
TB-2-230315	03-180-16	Water	---	3-15-23	

Date of Report: March 29, 2023
Samples Submitted: March 15, 2023
Laboratory Reference: 2303-180
Project: 4082-039-03

VOLATILE ORGANICS EPA 8260D

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW7-230314**					
Laboratory ID:	03-180-01					
Vinyl Chloride	4.0	0.20	EPA 8260D	3-17-23	3-17-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
(cis) 1,2-Dichloroethene	4.7	0.20	EPA 8260D	3-17-23	3-17-23	
Trichloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
Tetrachloroethene	0.35	0.20	EPA 8260D	3-17-23	3-17-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*110*	*75-127*				
Toluene-d8	*106*	*80-127*				
4-Bromofluorobenzene	*98*	*78-125*				
Client ID:	**FL358-MW10-230314**					
Laboratory ID:	03-180-02					
Vinyl Chloride	0.52	0.20	EPA 8260D	3-17-23	3-17-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
(cis) 1,2-Dichloroethene	6.4	0.20	EPA 8260D	3-17-23	3-17-23	
Trichloroethene	0.25	0.20	EPA 8260D	3-17-23	3-17-23	
Tetrachloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*109*	*75-127*				
Toluene-d8	*105*	*80-127*				
4-Bromofluorobenzene	*96*	*78-125*				
Client ID:	**FL358-MW14-230314**					
Laboratory ID:	03-180-03					
Vinyl Chloride	2.3	0.20	EPA 8260D	3-17-23	3-17-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
(cis) 1,2-Dichloroethene	9.7	0.20	EPA 8260D	3-17-23	3-17-23	
Trichloroethene	0.20	0.20	EPA 8260D	3-17-23	3-17-23	
Tetrachloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*109*	*75-127*				
Toluene-d8	*106*	*80-127*				
4-Bromofluorobenzene	*98*	*78-125*				

Date of Report: March 29, 2023
Samples Submitted: March 15, 2023
Laboratory Reference: 2303-180
Project: 4082-039-03

VOLATILE ORGANICS EPA 8260D

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW6-230315**					
Laboratory ID:	03-180-04					
Vinyl Chloride	1.4	0.80	EPA 8260D	3-17-23	3-17-23	
1,1-Dichloroethene	ND	0.80	EPA 8260D	3-17-23	3-17-23	
(trans) 1,2-Dichloroethene	0.88	0.80	EPA 8260D	3-17-23	3-17-23	
(cis) 1,2-Dichloroethene	96	0.80	EPA 8260D	3-17-23	3-17-23	
Trichloroethene	150	0.80	EPA 8260D	3-17-23	3-17-23	
Tetrachloroethene	39	0.80	EPA 8260D	3-17-23	3-17-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*108*	*75-127*				
Toluene-d8	*106*	*80-127*				
4-Bromofluorobenzene	*97*	*78-125*				
Client ID:	**FL358-MW9-230315**					
Laboratory ID:	03-180-05					
Vinyl Chloride	ND	0.20	EPA 8260D	3-17-23	3-17-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
(cis) 1,2-Dichloroethene	1.8	0.20	EPA 8260D	3-17-23	3-17-23	
Trichloroethene	0.23	0.20	EPA 8260D	3-17-23	3-17-23	
Tetrachloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*110*	*75-127*				
Toluene-d8	*108*	*80-127*				
4-Bromofluorobenzene	*97*	*78-125*				
Client ID:	**FL358-MW8-230315**					
Laboratory ID:	03-180-06					
Vinyl Chloride	ND	0.20	EPA 8260D	3-17-23	3-17-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
Trichloroethene	0.25	0.20	EPA 8260D	3-17-23	3-17-23	
Tetrachloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*111*	*75-127*				
Toluene-d8	*108*	*80-127*				
4-Bromofluorobenzene	*101*	*78-125*				

Date of Report: March 29, 2023
Samples Submitted: March 15, 2023
Laboratory Reference: 2303-180
Project: 4082-039-03

VOLATILE ORGANICS EPA 8260D

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW5A-230315**					
Laboratory ID:	03-180-07					
Vinyl Chloride	14	0.80	EPA 8260D	3-17-23	3-17-23	
1,1-Dichloroethene	ND	0.80	EPA 8260D	3-17-23	3-17-23	
(trans) 1,2-Dichloroethene	1.3	0.80	EPA 8260D	3-17-23	3-17-23	
(cis) 1,2-Dichloroethene	160	0.80	EPA 8260D	3-17-23	3-17-23	
Trichloroethene	93	0.80	EPA 8260D	3-17-23	3-17-23	
Tetrachloroethene	48	0.80	EPA 8260D	3-17-23	3-17-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*111*	*75-127*				
Toluene-d8	*107*	*80-127*				
4-Bromofluorobenzene	*101*	*78-125*				
Client ID:	**FL358-MW5B-230315**					
Laboratory ID:	03-180-08					
Vinyl Chloride	ND	0.20	EPA 8260D	3-17-23	3-17-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
Trichloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
Tetrachloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*110*	*75-127*				
Toluene-d8	*107*	*80-127*				
4-Bromofluorobenzene	*98*	*78-125*				
Client ID:	**FL358-MW11-230315**					
Laboratory ID:	03-180-09					
Vinyl Chloride	5.0	0.20	EPA 8260D	3-17-23	3-17-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
(cis) 1,2-Dichloroethene	6.1	0.20	EPA 8260D	3-17-23	3-17-23	
Trichloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
Tetrachloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*110*	*75-127*				
Toluene-d8	*106*	*80-127*				
4-Bromofluorobenzene	*98*	*78-125*				

Date of Report: March 29, 2023
Samples Submitted: March 15, 2023
Laboratory Reference: 2303-180
Project: 4082-039-03

VOLATILE ORGANICS EPA 8260D

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW12-230315**					
Laboratory ID:	03-180-10					
Vinyl Chloride	ND	0.20	EPA 8260D	3-17-23	3-17-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
(cis) 1,2-Dichloroethene	0.29	0.20	EPA 8260D	3-17-23	3-17-23	
Trichloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
Tetrachloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*110*	*75-127*				
Toluene-d8	*106*	*80-127*				
4-Bromofluorobenzene	*97*	*78-125*				
Client ID:	**FL358-MW13-230315**					
Laboratory ID:	03-180-11					
Vinyl Chloride	ND	0.20	EPA 8260D	3-17-23	3-17-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
(cis) 1,2-Dichloroethene	4.9	0.20	EPA 8260D	3-17-23	3-17-23	
Trichloroethene	2.6	0.20	EPA 8260D	3-17-23	3-17-23	
Tetrachloroethene	5.7	0.20	EPA 8260D	3-17-23	3-17-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*111*	*75-127*				
Toluene-d8	*106*	*80-127*				
4-Bromofluorobenzene	*98*	*78-125*				
Client ID:	**GW-DUP-230315**					
Laboratory ID:	03-180-12					
Vinyl Chloride	1.4	0.80	EPA 8260D	3-17-23	3-17-23	
1,1-Dichloroethene	ND	0.80	EPA 8260D	3-17-23	3-17-23	
(trans) 1,2-Dichloroethene	0.85	0.80	EPA 8260D	3-17-23	3-17-23	
(cis) 1,2-Dichloroethene	91	0.80	EPA 8260D	3-17-23	3-17-23	
Trichloroethene	140	0.80	EPA 8260D	3-17-23	3-17-23	
Tetrachloroethene	37	0.80	EPA 8260D	3-17-23	3-17-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*111*	*75-127*				
Toluene-d8	*107*	*80-127*				
4-Bromofluorobenzene	*94*	*78-125*				

Date of Report: March 29, 2023
Samples Submitted: March 15, 2023
Laboratory Reference: 2303-180
Project: 4082-039-03

VOLATILE ORGANICS EPA 8260D

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**RB-1-230315**					
Laboratory ID:	03-180-13					
Vinyl Chloride	ND	0.20	EPA 8260D	3-17-23	3-17-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
Trichloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
Tetrachloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*109*	*75-127*				
Toluene-d8	*106*	*80-127*				
4-Bromofluorobenzene	*96*	*78-125*				
Client ID:	**RB-1-230314**					
Laboratory ID:	03-180-14					
Vinyl Chloride	ND	0.20	EPA 8260D	3-17-23	3-17-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
Trichloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
Tetrachloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*109*	*75-127*				
Toluene-d8	*105*	*80-127*				
4-Bromofluorobenzene	*96*	*78-125*				
Client ID:	**TB-1-230314**					
Laboratory ID:	03-180-15					
Vinyl Chloride	ND	0.20	EPA 8260D	3-17-23	3-17-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
Trichloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
Tetrachloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*109*	*75-127*				
Toluene-d8	*107*	*80-127*				
4-Bromofluorobenzene	*98*	*78-125*				

Date of Report: March 29, 2023
Samples Submitted: March 15, 2023
Laboratory Reference: 2303-180
Project: 4082-039-03

VOLATILE ORGANICS EPA 8260D

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**TB-2-230315**					
Laboratory ID:	03-180-16					
Vinyl Chloride	ND	0.20	EPA 8260D	3-17-23	3-17-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
Trichloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
Tetrachloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*111*	*75-127*				
Toluene-d8	*106*	*80-127*				
4-Bromofluorobenzene	*100*	*78-125*				

Date of Report: March 29, 2023
Samples Submitted: March 15, 2023
Laboratory Reference: 2303-180
Project: 4082-039-03

TOTAL IRON
EPA 6010D

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW7-230314**					
Laboratory ID:	03-180-01					
Iron	**35000**	250	EPA 6010D	3-20-23	3-20-23	
Client ID:	**FL358-MW10-230314**					
Laboratory ID:	03-180-02					
Iron	**24000**	250	EPA 6010D	3-20-23	3-20-23	
Client ID:	**FL358-MW14-230314**					
Laboratory ID:	03-180-03					
Iron	**9500**	50	EPA 6010D	3-20-23	3-20-23	
Client ID:	**FL358-MW6-230315**					
Laboratory ID:	03-180-04					
Iron	**730**	50	EPA 6010D	3-20-23	3-20-23	
Client ID:	**FL358-MW9-230315**					
Laboratory ID:	03-180-05					
Iron	**52000**	250	EPA 6010D	3-20-23	3-20-23	
Client ID:	**FL358-MW8-230315**					
Laboratory ID:	03-180-06					
Iron	**1400**	50	EPA 6010D	3-20-23	3-20-23	
Client ID:	**FL358-MW5A-230315**					
Laboratory ID:	03-180-07					
Iron	**2100**	50	EPA 6010D	3-20-23	3-20-23	
Client ID:	**FL358-MW5B-230315**					
Laboratory ID:	03-180-08					
Iron	**220**	50	EPA 6010D	3-20-23	3-20-23	

Date of Report: March 29, 2023
Samples Submitted: March 15, 2023
Laboratory Reference: 2303-180
Project: 4082-039-03

TOTAL IRON
EPA 6010D

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW11-230315**					
Laboratory ID:	03-180-09					
Iron	**36000**	250	EPA 6010D	3-20-23	3-20-23	
Client ID:	**FL358-MW12-230315**					
Laboratory ID:	03-180-10					
Iron	**75000**	250	EPA 6010D	3-20-23	3-20-23	
Client ID:	**FL358-MW13-230315**					
Laboratory ID:	03-180-11					
Iron	**5200**	50	EPA 6010D	3-20-23	3-20-23	
Client ID:	**GW-DUP-230315**					
Laboratory ID:	03-180-12					
Iron	**650**	50	EPA 6010D	3-20-23	3-20-23	

Date of Report: March 29, 2023
Samples Submitted: March 15, 2023
Laboratory Reference: 2303-180
Project: 4082-039-03

DISSOLVED GASES
RSK 175

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW7-230314**					
Laboratory ID:	03-180-01					
Methane	**4500**	42	RSK 175	3-17-23	3-17-23	
Ethane	**ND**	0.22	RSK 175	3-17-23	3-17-23	
Ethene	**ND**	0.29	RSK 175	3-17-23	3-17-23	
Acetylene	**ND**	1.2	RSK 175	3-17-23	3-17-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
1-Butene	*61*	*50-150*				
Client ID:	**FL358-MW10-230314**					
Laboratory ID:	03-180-02					
Methane	**3500**	33	RSK 175	3-17-23	3-17-23	
Ethane	**ND**	0.22	RSK 175	3-17-23	3-17-23	
Ethene	**ND**	0.29	RSK 175	3-17-23	3-17-23	
Acetylene	**ND**	1.2	RSK 175	3-17-23	3-17-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
1-Butene	*69*	*50-150*				
Client ID:	**FL358-MW14-230314**					
Laboratory ID:	03-180-03					
Methane	**430**	3.3	RSK 175	3-17-23	3-17-23	
Ethane	**ND**	0.22	RSK 175	3-17-23	3-17-23	
Ethene	**ND**	0.29	RSK 175	3-17-23	3-17-23	
Acetylene	**ND**	1.2	RSK 175	3-17-23	3-17-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
1-Butene	*65*	*50-150*				
Client ID:	**FL358-MW6-230315**					
Laboratory ID:	03-180-04					
Methane	**1400**	11	RSK 175	3-17-23	3-17-23	
Ethane	**ND**	0.22	RSK 175	3-17-23	3-17-23	
Ethene	**ND**	0.29	RSK 175	3-17-23	3-17-23	
Acetylene	**ND**	1.2	RSK 175	3-17-23	3-17-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
1-Butene	*72*	*50-150*				

Date of Report: March 29, 2023
Samples Submitted: March 15, 2023
Laboratory Reference: 2303-180
Project: 4082-039-03

DISSOLVED GASES
RSK 175

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW9-230315**					
Laboratory ID:	03-180-05					
Methane	**7600**	55	RSK 175	3-17-23	3-17-23	
Ethane	**ND**	0.22	RSK 175	3-17-23	3-17-23	
Ethene	**ND**	0.29	RSK 175	3-17-23	3-17-23	
Acetylene	**ND**	1.2	RSK 175	3-17-23	3-17-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
1-Butene	*61*	*50-150*				
Client ID:	**FL358-MW8-230315**					
Laboratory ID:	03-180-06					
Methane	**56**	0.55	RSK 175	3-17-23	3-17-23	
Ethane	**ND**	0.22	RSK 175	3-17-23	3-17-23	
Ethene	**ND**	0.29	RSK 175	3-17-23	3-17-23	
Acetylene	**ND**	1.2	RSK 175	3-17-23	3-17-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
1-Butene	*73*	*50-150*				
Client ID:	**FL358-MW5A-230315**					
Laboratory ID:	03-180-07					
Methane	**610**	5.5	RSK 175	3-17-23	3-17-23	
Ethane	**ND**	0.22	RSK 175	3-17-23	3-17-23	
Ethene	**2.8**	0.29	RSK 175	3-17-23	3-17-23	
Acetylene	**ND**	1.2	RSK 175	3-17-23	3-17-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
1-Butene	*72*	*50-150*				
Client ID:	**FL358-MW5B-230315**					
Laboratory ID:	03-180-08					
Methane	**45**	0.55	RSK 175	3-17-23	3-17-23	
Ethane	**ND**	0.22	RSK 175	3-17-23	3-17-23	
Ethene	**ND**	0.29	RSK 175	3-17-23	3-17-23	
Acetylene	**ND**	1.2	RSK 175	3-17-23	3-17-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
1-Butene	*76*	*50-150*				

Date of Report: March 29, 2023
Samples Submitted: March 15, 2023
Laboratory Reference: 2303-180
Project: 4082-039-03

DISSOLVED GASES
RSK 175

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW11-230315**					
Laboratory ID:	03-180-09					
Methane	**3700**	33	RSK 175	3-17-23	3-17-23	
Ethane	**ND**	0.22	RSK 175	3-17-23	3-17-23	
Ethene	**ND**	0.29	RSK 175	3-17-23	3-17-23	
Acetylene	**ND**	1.2	RSK 175	3-17-23	3-17-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
1-Butene	*69*	*50-150*				
Client ID:	**FL358-MW12-230315**					
Laboratory ID:	03-180-10					
Methane	**5600**	55	RSK 175	3-17-23	3-17-23	
Ethane	**ND**	0.22	RSK 175	3-17-23	3-17-23	
Ethene	**ND**	0.29	RSK 175	3-17-23	3-17-23	
Acetylene	**ND**	1.2	RSK 175	3-17-23	3-17-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
1-Butene	*67*	*50-150*				
Client ID:	**FL358-MW13-230315**					
Laboratory ID:	03-180-11					
Methane	**270**	3.3	RSK 175	3-17-23	3-17-23	
Ethane	**ND**	0.22	RSK 175	3-17-23	3-17-23	
Ethene	**ND**	0.29	RSK 175	3-17-23	3-17-23	
Acetylene	**ND**	1.2	RSK 175	3-17-23	3-17-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
1-Butene	*70*	*50-150*				
Client ID:	**GW-DUP-230315**					
Laboratory ID:	03-180-12					
Methane	**1500**	14	RSK 175	3-17-23	3-17-23	
Ethane	**ND**	0.22	RSK 175	3-17-23	3-17-23	
Ethene	**ND**	0.29	RSK 175	3-17-23	3-17-23	
Acetylene	**ND**	1.2	RSK 175	3-17-23	3-17-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
1-Butene	*70*	*50-150*				

Date of Report: March 29, 2023
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Laboratory Reference: 2303-180
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TOTAL ORGANIC CARBON
SM 5310B

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW7-230314**					
Laboratory ID:	03-180-01					
Total Organic Carbon	**18**	1.0	SM 5310B	3-17-23	3-17-23	
Client ID:	**FL358-MW10-230314**					
Laboratory ID:	03-180-02					
Total Organic Carbon	**11**	1.0	SM 5310B	3-17-23	3-17-23	
Client ID:	**FL358-MW14-230314**					
Laboratory ID:	03-180-03					
Total Organic Carbon	**9.8**	1.0	SM 5310B	3-17-23	3-17-23	
Client ID:	**FL358-MW6-230315**					
Laboratory ID:	03-180-04					
Total Organic Carbon	**7.0**	1.0	SM 5310B	3-17-23	3-17-23	
Client ID:	**FL358-MW9-230315**					
Laboratory ID:	03-180-05					
Total Organic Carbon	**14**	1.0	SM 5310B	3-17-23	3-17-23	
Client ID:	**FL358-MW8-230315**					
Laboratory ID:	03-180-06					
Total Organic Carbon	**4.0**	1.0	SM 5310B	3-17-23	3-17-23	
Client ID:	**FL358-MW5A-230315**					
Laboratory ID:	03-180-07					
Total Organic Carbon	**7.3**	1.0	SM 5310B	3-17-23	3-17-23	
Client ID:	**FL358-MW5B-230315**					
Laboratory ID:	03-180-08					
Total Organic Carbon	**4.0**	1.0	SM 5310B	3-17-23	3-17-23	
Client ID:	**FL358-MW11-230315**					
Laboratory ID:	03-180-09					
Total Organic Carbon	**22**	1.0	SM 5310B	3-17-23	3-17-23	

Date of Report: March 29, 2023
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TOTAL ORGANIC CARBON
SM 5310B

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW12-230315**					
Laboratory ID:	03-180-10					
Total Organic Carbon	**32**	1.0	SM 5310B	3-17-23	3-17-23	
Client ID:	**FL358-MW13-230315**					
Laboratory ID:	03-180-11					
Total Organic Carbon	**9.0**	1.0	SM 5310B	3-17-23	3-17-23	
Client ID:	**GW-DUP-230315**					
Laboratory ID:	03-180-12					
Total Organic Carbon	**7.1**	1.0	SM 5310B	3-17-23	3-17-23	

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Project: 4082-039-03

AMMONIA (as Nitrogen)
SM 4500-NH_3 D

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW7-230314**					
Laboratory ID:	03-180-01					
Ammonia	**2.2**	0.050	SM 4500-NH3 D	3-22-23	3-22-23	
Client ID:	**FL358-MW10-230314**					
Laboratory ID:	03-180-02					
Ammonia	**0.54**	0.050	SM 4500-NH3 D	3-22-23	3-22-23	
Client ID:	**FL358-MW14-230314**					
Laboratory ID:	03-180-03					
Ammonia	**0.28**	0.050	SM 4500-NH3 D	3-22-23	3-22-23	
Client ID:	**FL358-MW6-230315**					
Laboratory ID:	03-180-04					
Ammonia	**0.15**	0.050	SM 4500-NH3 D	3-22-23	3-22-23	
Client ID:	**FL358-MW9-230315**					
Laboratory ID:	03-180-05					
Ammonia	**1.4**	0.050	SM 4500-NH3 D	3-22-23	3-22-23	
Client ID:	**FL358-MW8-230315**					
Laboratory ID:	03-180-06					
Ammonia	**ND**	0.050	SM 4500-NH3 D	3-22-23	3-22-23	
Client ID:	**FL358-MW5A-230315**					
Laboratory ID:	03-180-07					
Ammonia	**ND**	0.050	SM 4500-NH3 D	3-22-23	3-22-23	
Client ID:	**FL358-MW5B-230315**					
Laboratory ID:	03-180-08					
Ammonia	**ND**	0.050	SM 4500-NH3 D	3-22-23	3-22-23	
Client ID:	**FL358-MW11-230315**					
Laboratory ID:	03-180-09					
Ammonia	**2.8**	0.050	SM 4500-NH3 D	3-22-23	3-22-23	

Date of Report: March 29, 2023
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Laboratory Reference: 2303-180
Project: 4082-039-03

AMMONIA (as Nitrogen)
SM 4500-NH_3 D

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW12-230315**					
Laboratory ID:	03-180-10					
Ammonia	**4.2**	0.050	SM 4500-NH3 D	3-22-23	3-22-23	
Client ID:	**FL358-MW13-230315**					
Laboratory ID:	03-180-11					
Ammonia	**0.078**	0.050	SM 4500-NH3 D	3-22-23	3-22-23	
Client ID:	**GW-DUP-230315**					
Laboratory ID:	03-180-12					
Ammonia	**0.067**	0.050	SM 4500-NH3 D	3-22-23	3-22-23	

Date of Report: March 29, 2023
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NITRATE (as Nitrogen)
EPA 353.2

Matrix: Water
Units: mg/L-N

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW7-230314**					
Laboratory ID:	03-180-01					
Nitrate	**ND**	0.050	EPA 353.2	3-31-23	3-31-23	
Client ID:	**FL358-MW10-230314**					
Laboratory ID:	03-180-02					
Nitrate	**ND**	0.050	EPA 353.2	3-31-23	3-31-23	
Client ID:	**FL358-MW14-230314**					
Laboratory ID:	03-180-03					
Nitrate	**0.43**	0.050	EPA 353.2	3-31-23	3-31-23	
Client ID:	**FL358-MW6-230315**					
Laboratory ID:	03-180-04					
Nitrate	**ND**	0.050	EPA 353.2	3-31-23	3-31-23	
Client ID:	**FL358-MW9-230315**					
Laboratory ID:	03-180-05					
Nitrate	**ND**	0.050	EPA 353.2	3-31-23	3-31-23	
Client ID:	**FL358-MW8-230315**					
Laboratory ID:	03-180-06					
Nitrate	**ND**	0.050	EPA 353.2	3-31-23	3-31-23	
Client ID:	**FL358-MW5A-230315**					
Laboratory ID:	03-180-07					
Nitrate	**0.64**	0.050	EPA 353.2	3-31-23	3-31-23	
Client ID:	**FL358-MW5B-230315**					
Laboratory ID:	03-180-08					
Nitrate	**ND**	0.050	EPA 353.2	3-31-23	3-31-23	
Client ID:	**FL358-MW11-230315**					
Laboratory ID:	03-180-09					
Nitrate	**0.074**	0.050	EPA 353.2	3-31-23	3-31-23	

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Laboratory Reference: 2303-180
Project: 4082-039-03

NITRATE (as Nitrogen)
EPA 353.2

Matrix: Water
Units: mg/L-N

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW12-230315**					
Laboratory ID:	03-180-10					
Nitrate	**0.14**	0.050	EPA 353.2	3-31-23	3-31-23	
Client ID:	**FL358-MW13-230315**					
Laboratory ID:	03-180-11					
Nitrate	**ND**	0.050	EPA 353.2	3-31-23	3-31-23	
Client ID:	**GW-DUP-230315**					
Laboratory ID:	03-180-12					
Nitrate	**ND**	0.050	EPA 353.2	3-31-23	3-31-23	

Date of Report: March 29, 2023
Samples Submitted: March 15, 2023
Laboratory Reference: 2303-180
Project: 4082-039-03

NITRITE (as Nitrogen)
EPA 353.2

Matrix: Water
Units: mg/L-N

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW7-230314**					
Laboratory ID:	03-180-01					
Nitrite	**ND**	0.020	EPA 353.2	3-16-23	3-16-23	
Client ID:	**FL358-MW10-230314**					
Laboratory ID:	03-180-02					
Nitrite	**ND**	0.020	EPA 353.2	3-16-23	3-16-23	
Client ID:	**FL358-MW14-230314**					
Laboratory ID:	03-180-03					
Nitrite	**ND**	0.020	EPA 353.2	3-16-23	3-16-23	
Client ID:	**FL358-MW6-230315**					
Laboratory ID:	03-180-04					
Nitrite	**ND**	0.020	EPA 353.2	3-16-23	3-16-23	
Client ID:	**FL358-MW9-230315**					
Laboratory ID:	03-180-05					
Nitrite	**ND**	0.020	EPA 353.2	3-16-23	3-16-23	
Client ID:	**FL358-MW8-230315**					
Laboratory ID:	03-180-06					
Nitrite	**ND**	0.020	EPA 353.2	3-16-23	3-16-23	
Client ID:	**FL358-MW5A-230315**					
Laboratory ID:	03-180-07					
Nitrite	**ND**	0.020	EPA 353.2	3-16-23	3-16-23	
Client ID:	**FL358-MW5B-230315**					
Laboratory ID:	03-180-08					
Nitrite	**ND**	0.020	EPA 353.2	3-16-23	3-16-23	
Client ID:	**FL358-MW11-230315**					
Laboratory ID:	03-180-09					
Nitrite	**ND**	0.020	EPA 353.2	3-16-23	3-16-23	

Date of Report: March 29, 2023
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NITRITE (as Nitrogen)
EPA 353.2

Matrix: Water
Units: mg/L-N

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW12-230315**					
Laboratory ID:	03-180-10					
Nitrite	**ND**	0.020	EPA 353.2	3-16-23	3-16-23	
Client ID:	**FL358-MW13-230315**					
Laboratory ID:	03-180-11					
Nitrite	**ND**	0.020	EPA 353.2	3-16-23	3-16-23	
Client ID:	**GW-DUP-230315**					
Laboratory ID:	03-180-12					
Nitrite	**ND**	0.020	EPA 353.2	3-16-23	3-16-23	

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VOLATILE ORGANICS EPA 8260D
QUALITY CONTROL

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0317W1					
Vinyl Chloride	ND	0.20	EPA 8260D	3-17-23	3-17-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
Trichloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
Tetrachloroethene	ND	0.20	EPA 8260D	3-17-23	3-17-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*108*	*75-127*				
Toluene-d8	*104*	*80-127*				
4-Bromofluorobenzene	*95*	*78-125*				

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0317W1									
	SB	SBD	SB	SBD	SB	SBD				
Vinyl Chloride	**9.99**	**9.75**	10.0	10.0	100	98	71-135	2	20	
1,1-Dichloroethene	**10.6**	**10.5**	10.0	10.0	106	105	78-125	1	19	
(trans) 1,2-Dichloroethene	**10.5**	**10.6**	10.0	10.0	105	106	80-125	1	17	
(cis) 1,2-Dichloroethene	**11.0**	**10.9**	10.0	10.0	110	109	80-129	1	17	
Trichloroethene	**10.5**	**10.5**	10.0	10.0	105	105	80-122	0	18	
Tetrachloroethene	**10.2**	**10.2**	10.0	10.0	102	102	80-124	0	18	
Surrogate:										
Dibromofluoromethane					*108*	*106*	*75-127*			
Toluene-d8					*106*	*106*	*80-127*			
4-Bromofluorobenzene					*99*	*100*	*78-125*			

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TOTAL IRON
EPA 6010D
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0320WH3					
Iron	**ND**	50	EPA 6010D	3-20-23	3-20-23	

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	03-124-04										
	ORIG	DUP									
Iron	**3060**	**2910**	NA	NA		NA		NA	5	20	
MATRIX SPIKES											
Laboratory ID:	03-124-04										
	MS	MSD	MS	MSD		MS	MSD				
Iron	**23400**	**23500**	20000	20000	3060	**102**	**102**	75-125	0	20	

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DISSOLVED GASES
RSK 175
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:						
Laboratory ID:	MB0317W1					
Methane	**ND**	0.55	RSK 175	3-17-23	3-17-23	
Ethane	**ND**	0.22	RSK 175	3-17-23	3-17-23	
Ethene	**ND**	0.29	RSK 175	3-17-23	3-17-23	
Acetylene	**ND**	1.2	RSK 175	3-17-23	3-17-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
1-Butene	*83*	*50-150*				

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANK										
Laboratory ID:	SB0317W1									
	SB	SBD	SB	SBD	SB	SBD				
Methane	**37.2**	**35.6**	44.2	44.2	84	81	75-125	4	25	
Ethane	**68.6**	**66.3**	83.2	83.2	83	80	75-125	3	25	
Ethene	**62.5**	**63.7**	77.7	77.7	80	82	75-125	2	25	
Acetylene	**56.7**	**54.1**	72.0	72.0	79	75	75-125	5	25	
Surrogate:										
1-Butene					*78*	*81*	*50-150*			

Date of Report: March 29, 2023
Samples Submitted: March 15, 2023
Laboratory Reference: 2303-180
Project: 4082-039-03

TOTAL ORGANIC CARBON
SM 5310B
QUALITY CONTROL

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0317W1					
Total Organic Carbon	**ND**	1.0	SM 5310B	3-17-23	3-17-23	

Analyte	Result		Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE									
Laboratory ID:	03-119-02								
	ORIG	DUP							
Total Organic Carbon	**ND**	**ND**	NA	NA	NA	NA	NA	12	
MATRIX SPIKE									
Laboratory ID:	03-119-02								
	MS		MS		MS				
Total Organic Carbon	**11.1**		10.0	ND	111	80-120	NA	NA	
SPIKE BLANK									
Laboratory ID:	SB0317W1								
	SB		SB		SB				
Total Organic Carbon	**10.2**		10.0	NA	102	80-118	NA	NA	

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Samples Submitted: March 15, 2023
Laboratory Reference: 2303-180
Project: 4082-039-03

AMMONIA (as Nitrogen)
SM 4500-NH_3 D
QUALITY CONTROL

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0322W1					
Ammonia	**ND**	0.050	SM 4500-NH3 D	3-22-23	3-22-23	

Analyte	Result		Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE									
Laboratory ID:	03-180-01								
	ORIG	DUP							
Ammonia	**2.19**	**2.30**	NA	NA	NA	NA	5	15	
MATRIX SPIKE									
Laboratory ID:	03-180-01								
	MS		MS		MS				
Ammonia	**6.71**		5.00	2.19	90	87-110	NA	NA	
SPIKE BLANK									
Laboratory ID:	SB0322W1								
	SB		SB		SB				
Ammonia	**4.52**		5.00	NA	90	88-110	NA	NA	

Date of Report: March 29, 2023
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NITRATE (as Nitrogen)
EPA 353.2
QUALITY CONTROL

Matrix: Water
Units: mg/L-N

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0331W3					
Nitrate	**ND**	0.050	EPA 353.2	3-31-23	3-31-23	

Analyte	Result		Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE									
Laboratory ID:	03-361-01								
	ORIG	DUP							
Nitrate	**0.157**	**0.118**	NA	NA	NA	NA	28	10	C
MATRIX SPIKE									
Laboratory ID:	03-361-01								
	MS		MS		MS				
Nitrate	**2.37**		2.00	0.157	111	88-125	NA	NA	
SPIKE BLANK									
Laboratory ID:	SB0331W3								
	SB		SB		SB				
Nitrate	**2.20**		2.00	NA	110	90-120	NA	NA	

Date of Report: March 29, 2023
Samples Submitted: March 15, 2023
Laboratory Reference: 2303-180
Project: 4082-039-03

NITRITE (as Nitrogen)
EPA 353.2
QUALITY CONTROL

Matrix: Water
Units: mg/L-N

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0316W1					
Nitrite	**ND**	0.020	EPA 353.2	3-16-23	3-16-23	

Analyte	Result		Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE									
Laboratory ID:	03-180-01								
	ORIG	DUP							
Nitrite	**ND**	**ND**	NA	NA	NA	NA	NA	11	
MATRIX SPIKE									
Laboratory ID:	03-180-01								
	MS		MS		MS				
Nitrite	**0.251**		0.250	ND	100	83-117	NA	NA	
SPIKE BLANK									
Laboratory ID:	SB0316W1								
	SB		SB		SB				
Nitrite	**0.247**		0.250	NA	99	91-112	NA	NA	

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1 - Sample extract treated with a sulfuric acid/silica gel cleanup procedure.

X2 - Sample extract treated with a silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in methods 8260 & 8270, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Y1 - Negative effects of the matrix from this sample on the instrument caused values for this analyte in the bracketing continuing calibration verification standard (CCVs) to be outside of 20% acceptance criteria. Because of this, quantitation limits and sample concentrations should be considered estimates.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Am Test Inc.
13600 NE 126TH PL
Suite C
Kirkland, WA 98034
(425) 885-1664

Professional Analytical Services

Mar 27 2023
On-Site Environmental
14648 NE 95th ST
Redmond, WA 98052
Attention: David Baumeister

Dear David Baumeister:

Enclosed please find the analytical data for your project.

The following is a cross correlation of client and laboratory identifications for your convenience.

CLIENT ID	MATRIX	AMTEST ID	TEST
FL358-MW7-230314	Water	23-A004949	DEM
FL358-MW10-230314	Water	23-A004950	DEM
FL358-MW14-230314	Water	23-A004951	DEM
FL358-MW6-230315	Water	23-A004952	DEM
FL358-MW9-230315	Water	23-A004953	DEM
FL358-MW8-230315	Water	23-A004954	DEM
FL358-MW5A-230315	Water	23-A004955	DEM
FL358-MW5B-230315	Water	23-A004956	DEM
FL358-MW11-230315	Water	23-A004957	DEM
FL358-MW12-230315	Water	23-A004958	DEM
FL358-MW13-230315	Water	23-A004959	DEM
GW-DUP-230315	Water	23-A004960	DEM

Your samples were received on Thursday, March 16, 2023. At the time of receipt, the samples were logged in and properly maintained prior to the subsequent analysis.

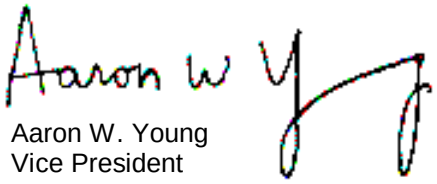
The analytical procedures used at AmTest are well documented and are typically derived from the protocols of the EPA, USDA, FDA or the Army Corps of Engineers.

Following the analytical data you will find the Quality Control (QC) results.

Please note that the detection limits that are listed in the body of the report refer to the Practical Quantitation Limits (PQL's), as opposed to the Method Detection Limits (MDL's).

If you should have any questions pertaining to the data package, please feel free to contact me.

Sincerely,



Aaron W. Young
Vice President

Project #: 4082-039-03
SDG #: 2328740
PO Number: 03-180

BACT = Bacteriological
CONV = Conventionals
MET = Metals
ORG = Organics
NUT=Nutrients
DEM=Demand
MIN=Mineral

Am Test Inc.
13600 NE 126TH PL
Suite C
Kirkland, WA 98034
(425) 885-1664
www.amtestlab.com

Professional Analytical Services

ANALYSIS REPORT

On-Site Environmental
14648 NE 95th ST
Redmond, WA 98052
Attention: David Baumeister
SDG Number: 2328740
Project #: 4082-039-03
PO Number: 03-180
All results reported on an as received basis.

Date Received: 03/16/23
Date Reported: 3/27/23

AMTEST Identification Number **23-A004949**
Client Identification **FL358-MW7-230314**
Sampling Date **03/14/23, 13:40**

Demand

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
BOD	6.0	mg/l		2	SM 5210B	JM	03/16/23

AMTEST Identification Number **23-A004950**
Client Identification **FL358-MW10-230314**
Sampling Date **03/14/23, 17:00**

Demand

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
BOD	3.9	mg/l		2	SM 5210B	JM	03/16/23

AMTEST Identification Number **23-A004951**
Client Identification **FL358-MW14-230314**
Sampling Date **03/14/23, 10:50**

Demand

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
BOD	3.0	mg/l		2	SM 5210B	JM	03/16/23

AMTEST Identification Number **23-A004952**
Client Identification **FL358-MW6-230315**
Sampling Date **03/15/23, 11:55**

Demand

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
BOD	6.3	mg/l		2	SM 5210B	JM	03/16/23

AMTEST Identification Number **23-A004953**
Client Identification **FL358-MW9-230315**
Sampling Date **03/15/23, 09:45**

Demand

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
BOD	13.	mg/l	P	2	SM 5210B	JM	03/16/23

AMTEST Identification Number **23-A004954**
Client Identification **FL358-MW8-230315**
Sampling Date **03/15/23, 14:25**

Demand

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
BOD	< 2	mg/l		2	SM 5210B	JM	03/16/23

AMTEST Identification Number **23-A004955**
Client Identification **FL358-MW5A-230315**
Sampling Date **03/15/23, 15:45**

Demand

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
BOD	2.2	mg/l		2	SM 5210B	JM	03/16/23

AMTEST Identification Number **23-A004956**
Client Identification **FL358-MW5B-230315**
Sampling Date **03/15/23, 15:45**

Demand

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
BOD	3.2	mg/l		2	SM 5210B	JM	03/16/23

AMTEST Identification Number **23-A004957**
Client Identification **FL358-MW11-230315**
Sampling Date **03/15/23, 09:30**

Demand

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
BOD	9.7	mg/l		2	SM 5210B	JM	03/16/23

AMTEST Identification Number **23-A004958**
Client Identification **FL358-MW12-230315**
Sampling Date **03/15/23, 11:50**

Demand

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
BOD	14.	mg/l	P	2	SM 5210B	JM	03/16/23

AMTEST Identification Number **23-A004959**
Client Identification **FL358-MW13-230315**
Sampling Date **03/15/23, 13:45**

Demand

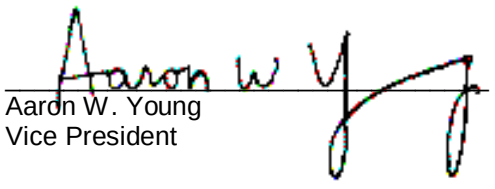
PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
BOD	< 2	mg/l		2	SM 5210B	JM	03/16/23

AMTEST Identification Number **23-A004960**
Client Identification **GW-DUP-230315**
Sampling Date **03/15/23, 06:00**

Demand

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
BOD	6.2	mg/l		2	SM 5210B	JM	03/16/23

P = Oxygen depletion exceeded method specification. Sample was diluted.



Aaron W. Young
Vice President

Am Test Inc.
13600 NE 126th PL
Suite C
Kirkland, WA, 98034
(425) 885-1664
www.amtestlab.com

Professional Analytical Services

QC Summary for sample numbers: 23-A004949 to 23-A004960

DUPLICATES

SAMPLE #	ANALYTE	UNITS	SAMPLE VALUE	DUP VALUE	RPD
23-A004945	BOD	mg/l	230	240	4.3

BLANKS

ANALYTE	UNITS	RESULT
BOD	mg/l	< 2

OnSite Environmental Inc.

14648 NE 95th Street, Redmond, WA 98052 · (425) 883-3881

Laboratory Reference #: 03-180

Laboratory: AmTest Laboratories

Attention: Aaron Young

13600 NE 126th Pl Kirkland, WA 98034

Phone Number: (425) 885-1664

Turnaround Request

1 Day 2 Day 3 Day

Standard

Other:

Project Manager: David Baumeister

email: dbaumeister@onsite-env.com

Project Number: 4082-039-03

Project Name:

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	Requested Analyses
4949	FL358-MW7-230314	3/14/23	1340	W	1	BOD 5
4950	FL358-MW10-230314	3/14/23	1700	W	1	BOD 5
4951	FL358-MW14-230314	3/14/23	1050	W	1	BOD 5
4952	FL358-MW6-230315	3/15/23	1155	W	1	BOD 5
4953	FL358-MW9-230315	3/15/23	0945	W	1	BOD 5
4954	FL358-MW8-230315	3/15/23	1425	W	1	BOD 5
4955	FL358-MW5A-230315	3/15/23	1545	W	1	BOD 5
4956	FL358-MW5B-230315	3/15/23	1545	W	1	BOD 5
4957	FL358-MW11-230315	3/15/23	0930	W	1	BOD 5
4958	FL358-MW12-230315	3/15/23	1150	W	1	BOD 5

	Company	Date	Time	Comments/Special Instructions
Relinquished by:	OnSite EW	3/16/23	930	EDDs
Received by: KH	Amtest	3/16/23	930	
Relinquished by:				T 23.0°C
Received by:				
Relinquished by:				
Received by:				

P.8

OnSite Environmental Inc.

14648 NE 95th Street, Redmond, WA 98052 · (425) 883-3881

Laboratory Reference #: 03-180

Laboratory: AmTest Laboratories

Attention: Aaron Young

13600 NE 126th Pl Kirkland, WA 98034

Phone Number: (425) 885-1664

Turnaround Request

1 Day 2 Day 3 Day

(Standard)

Other: _____

Project Manager: David Baumeister

email: dbaumeister@onsite-env.com

Project Number: 4082-039-03

Project Name: _____

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	Requested Analyses
4959	FL358-MW13-230315	3/15/23	1345	W	1	BOD 5
4960	GW-DUP-230315	3/15/23	0600	W	1	BOD 5

	Company	Date	Time	Comments/Special Instructions
Relinquished by:	OnSite Env	3/16/23	930	EDDs
Received by: KH	Amtest	3/16/23	930	
Relinquished by:				T=3.0°C
Received by:				
Relinquished by:				
Received by:				

P.9

OnSite Environmental Inc.

Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Chain of Custody

Laboratory Number: 03-180

Company: GeoEngineers
Project Number: 4082-059-03
Project Name: FL 350 ST LINK EXT
Project Manager: Tricia DeOme
Sampled by: PDR/JAK

Turnaround Request (in working days) (Check One)

- ☐ Same Day ☐ 1 Day
- ☐ 2 Days ☐ 3 Days
- ☒ Standard (7 Days)
- ☐ ______ (other)

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX (8021☐ 8260☐)	NWTPH-Gx	NWTPH-Dx (SG Clean-up☐)	Volatiles 8260 ①	Halogenated Volatiles 8260	EDB EPA 8011 (Waters Only)	Semivolatiles 8270/SIM (with low-level PAHs)	PAHs 8270/SIM (low-level)	PCBs 8082	Organochlorine Pesticides 8081	Organophosphorus Pesticides 8270/SIM	Chlorinated Acid Herbicides 8151	Total RCRA Metals	Total ~~MTCA Metals~~ Iron	TCLP Metals	HEM (oil and grease) 1664	DIS GAS - RSK 175	TOC SM 5310B	Ammonia, Nitrate, Nitrite	BOD	% Moisture
1	FL358-MW7-230314	3/14/23	1340	GW	10					X										X			X	X	X	X	
2	FL358-MW10-230314	↓	1700	GW	10					X										X			X	X	X	X	
3	FL358-MW14-230314	↓	1050	GW	10					X										X			X	X	X	X	
4	FL358-MW6-230315	3/15/23	1155	GW	10					X										X			X	X	X	X	
5	FL358-MW9-230315	↓	945	GW	10					X										X			X	X	X	X	
6	FL358-MW8-230315	↓	1425	GW	10					X										✓			X	X	X	X	
7	FL358-MW5A-230315	↓	1545	GW	10					X										X			X	X	X	X	
8	FL358-MW5B-230315	↓	1545	GW	10					X										X			X	X	X	X	
9	FL358-MW11-230315	↓	930	GW	10					X										X			X	X	X	X	
10	FL358-MW12-230315	↓	1150	GW	10					X										X			X	X	X	X	

	Signature	Company	Date	Time
Relinquished	[signature]	GEI	3/15/23	1815
Received	[signature]	Onsite	3-15-23	1830
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

① PCE + Breakdown + Vinyl Chloride

Data Package: Standard ☐ Level III ☐ Level IV ☐

Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Chain of Custody

Page 2 of 2

Laboratory Number: 03-180

Company: GeoEngineers
Project Number: 4082-039-02
Project Name: FL358
Project Manager: Trista DeQuire
Sampled by: PDR / JAF

Turnaround Request (in working days) (Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☒ Standard (7 Days)
☐ ________ (other)

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX (8021☐ 8260☐)	NWTPH-Gx	NWTPH-Dx (SG Clean-up☐)	Volatiles 8260	Halogenated Volatiles 8260	EDB EPA 8011 (Waters Only)	Semivolatiles 8270/SIM (with low-level PAHs)	PAHs 8270/SIM (low-level)	PCBs 8082	Organochlorine Pesticides 8081	Organophosphorus Pesticides 8270/SIM	Chlorinated Acid Herbicides 8151	Total RCRA Metals	Total ~~MTCA~~ Metals IRON	TCLP Metals	HEM (oil and grease) 1664	DIS GAS - RSK 175	TOC SM5310B	NH_3, NO_3, NO_2	BOD	% Moisture
11	FL358-MW13-230315	3/15/23	1345	GW	10					X										X			X	X	X	X	
12	GW-DUP-230315	↓	0600	GW	3					X										X			X	X	X	X	
13	RB-1-230315	↓	1700	W	3					X																	
14	RB-1-230314	3/14/23	1730	W	3					X																	
15	TB-1-230314	3/15/23		W	3					X																	
16	TB-2-230315	↓		W	3					X																	

	Signature	Company	Date	Time
Relinquished	[signature]	GEI	3/15/23	1415
Received	[signature]	OnSite	3-15-23	1830
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

Data Package: Standard ☐ Level III ☐ Level IV ☐

Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

10515 Research Drive
Knoxville, TN 37932
Phone: (865) 573-8188
Fax: (865) 573-8133

Client: Tricia DeOme
GeoEngineers, Inc.
1101 South Fawcett Avenue
Tacoma, WA 98402

Phone: 253-267-2114

Fax:

Identifier: 056UC **Date Rec:** 03/15/2023 **Report Date:** 03/22/2023

Client Project #: 004082-039-03 T 22.03 **Client Project Name:** FWLE 358

Purchase Order #: 004082-039-03 TASK No.: 2200.3

Test results provided for: CENSUS

Reviewed By:

Charles Slater

Results relate only to the items tested and the sample(s) as received by the laboratory.

MICROBIAL INSIGHTS, INC.

10515 Research Dr., Knoxville, TN 37932
Tel. (865) 573-8188 Fax. (865) 573-8133

CENSUS

Client: **GeoEngineers, Inc.**
Project: FWLE 358

MI Project Number: **056UC**
Date Received: 03/15/2023

Sample Information

Client Sample ID:		**FL358-MW7-230314**	**FL358-MW14-230314**	**FL358-MW10-230315**	**FL358-MW11-230315**	**FL358-MW9-230315**
Sample Date:		03/14/2023	03/14/2023	03/15/2023	03/15/2023	03/15/2023
Units:		cells/mL	cells/mL	cells/mL	cells/mL	cells/mL
Analyst/Reviewer:		AR/CS	AR/CS	AR/CS	AR/CS	AR/CS
Dechlorinating Bacteria						
Dehalococcoides	*DHC*	**2.65E+02**	<5.00E-01	**5.48E+01**	**1.24E+02**	**2.26E+02**

Legend:
NA = Not Analyzed NS = Not Sampled J = Estimated gene copies below PQL but above LQL I = Inhibited
< = Result not detected

MICROBIAL INSIGHTS, INC.

10515 Research Dr., Knoxville, TN 37932
Tel. (865) 573-8188 Fax. (865) 573-8133

CENSUS

Client: **GeoEngineers, Inc.**
Project: FWLE 358

MI Project Number: **056UC**
Date Received: 03/15/2023

Sample Information

Client Sample ID:		**FL358-MW12-230315**	**FL358-MW6-230315**	**GW-DUP-230315**	**FL358-MW8-230315**	**FL358-MW13-230315**
Sample Date:		03/15/2023	03/15/2023	03/15/2023	03/15/2023	03/15/2023
Units:		cells/mL	cells/mL	cells/mL	cells/mL	cells/mL
Analyst/Reviewer:		AR/CS	AR/CS	AR/CS	AR/CS	AR/CS
Dechlorinating Bacteria						
Dehalococcoides	*DHC*	**3.04E+02**	**9.98E+01**	**8.98E+01**	**4.60E+00**	**1.60E+00**

Legend:
NA = Not Analyzed NS = Not Sampled J = Estimated gene copies below PQL but above LQL I = Inhibited
< = Result not detected

MICROBIAL INSIGHTS, INC.

10515 Research Dr., Knoxville, TN 37932
Tel. (865) 573-8188 Fax. (865) 573-8133

CENSUS

Client: **GeoEngineers, Inc.**
Project: FWLE 358

MI Project Number: **056UC**
Date Received: 03/15/2023

Sample Information

Client Sample ID:		**FL358-MW5A-2 30315**	**FL358-MW5B-2 30315**
Sample Date:		03/15/2023	03/15/2023
Units:		cells/mL	cells/mL
Analyst/Reviewer:		AR/CS	AR/CS
Dechlorinating Bacteria			
Dehalococcoides	*DHC*	**2.58E+03**	**1.86E+01**

Legend:
NA = Not Analyzed NS = Not Sampled J = Estimated gene copies below PQL but above LQL I = Inhibited
< = Result not detected

Quality Assurance/Quality Control Data

Samples Received **3/15/2023**

Component	Date Prepared	Date Analyzed	Arrival Temperature	Positive Control	Extraction Blank	Negative Control
DHC	03/15/2023	03/22/2023	0 °C	99%	non-detect	non-detect

Samples Received **3/16/2023**

Component	Date Prepared	Date Analyzed	Arrival Temperature	Positive Control	Extraction Blank	Negative Control
DHC	03/16/2023	03/22/2023	10 °C	97%	non-detect	non-detect

REPORT TO:

Name: TRICIA DEOME
Company: GEOENGINEERS, INC.
Address: 1101 FAWCETT AVE
TACOMA, WA
email: TDEOME@GEOENGINEERS.COM
Phone:
Fax:

INVOICE TO: (For Invoices paid by a third party it is imperative that all information be provided)

Name: AS REPORT
Company:
Address:
email:
Phone:
Fax:

microbialinsights
10515 Research Dr
Knoxville, TN 37932
865-573-8188
www.microbe.com

Project Manager:
Project Name: FWLE 355
Project No.: 4022-039-03 T 22.03

Purchase Order No.
Subcontract No.
MI Quote No.

Please Check One:
☑ More samples to follow
☐ No Additional Samples

Report Type: ☐ Standard (default) ☐ Microbial Insights Level III raw data(15% surcharge) ☐ Microbial Insights Level IV (25% surcharge) ☐ Comprehensive Interpretive(15%) ☐ Historical Interpretive (35%)

EDD type: ☑ Microbial Insights Standard (default) ☐ All other available EDDs (5% surcharge) Specify EDD Type:

Please contact us with any questions about the analyses or filling out the COC at (865) 573-8188 (9:00 am to 5:00 pm EST, M-F). After hours email: customerservice@microbe.com

Sample Information						Analyses						CENSUS: Please select the target organism/gene																					
MI ID (Laboratory Use Only)	Sample Name	Date Sampled	Time Sampled	Matrix	Total Number of Containers	PLFA	NGS	QuantArray Chlor	QuantArray Petro	QuantArray NSZD	QuantArray BGC	DHC (Dehalococcoides)	DHC Functional genes (bvc, tce, vcr)	DHBt (Dehalobacter)	DHG (Dehalogenimonas)	DSM (Desulfuromonas)	DSB (Desulfitobacterium)	EBAC (Total)	SRB (Sulfate Reducing Bacteria-APS)	MGN (Methanogens)	MOB (Methanotrophs)	SMMO	DNF (Dentrifiers-nirS and nirK)	AMO (ammonia oxidizing bacteria)	PM1 (MTBE aerobic)	RMO (Toluene Monooxygenase)	RDEG (Toluene Monooxygenase)	PHE (Phenol Hydroxylase)	NAH (Napthalene-aerobic)	BSSA (Toluene/Xylene-Anaerobic)	add. qPCR:	RNA (Expression Option)*	Other:
056UC 1	FL355-MW7-230314	3/14/23	1340	W	1							X																					
2	FL355-MW14-230314	"	1050	"	"							X																					

Relinquished by: Date 3/14/23
Received by: Date 3/15/23

It is vital that chain of custody is filled out correctly & that all relative information is provided.
Failure to provide sufficient and/or correct information regarding reporting, invoicing & analyses requested information may result in delays for which MI will not be liable.

* additional cost and sample preservation are associated with RNA samples.

**Saturday delivery: See sampling protocol for alternate shipping address.

REPORT TO:
Name: TRICIA DEOME
Company: GEOENGINEERS, INC.
Address: 1101 FAWCETT AVE STE 200
TACOMA, WA 98402
email: TDEOME@GEOENGINEERS.COM
Phone:
Fax:

INVOICE TO: (For Invoices paid by a third party it is imperative that all information be provided)
Name: AS REPORT
Company:
Address:
email:
Phone:
Fax:

microbialinsights
10515 Research Dr
Knoxville, TN 37932
865-573-8188
www.microbe.com

Project Manager:
Project Name: FWLE 358
Project No.: 0082-039-03 T22.03

Purchase Order No.
Subcontract No.
MI Quote No.

Please Check One:
☐ More samples to follow
☑ No Additional Samples

Report Type: ☑ Standard (default) ☐ Microbial Insights Level III raw data (15% surcharge) ☐ Microbial Insights Level IV (25% surcharge) ☐ Comprehensive Interpretive (15%) ☐ Historical Interpretive (35%)

EDD type: ☑ Microbial Insights Standard (default) ☐ All other available EDDs (5% surcharge) Specify EDD Type:

Please contact us with any questions about the analyses or filling out the COC at (865) 573-8188 (9:00 am to 5:00 pm EST, M-F). After hours email: customerservice@microbe.com

Sample Information						Analyses						CENSUS: Please select the target organism/gene																		
MI ID (Laboratory Use Only)	Sample Name	Date Sampled	Time Sampled	Matrix	Total Number of Containers	PLFA	NGS	QuantArray Chlor	QuantArray Petro	QuantArray NSZD	QuantArray BGC	DHC (Dehalococcoides)	DHC Functional genes (bvc, tce, vcr)	DHBt (Dehalobacter)	DHG (Dehalogenimonas)	DSM (Desulfuromonas)	DSB (Desulfitobacterium)	EBAC (Total)	SRB (Sulfate Reducing Bacteria-APS)	MGN (Methanogens)	MOB (Methanotrophs)	SMMO	DNF (Denitrifiers-nirS and nirK)	AMO (ammonia oxidizing bacteria)	PM1 (MTBE aerobic)	RMO (Toluene Monooxygenase)	RDEG (Toluene Monooxygenase)	PHE (Phenol Hydroxylase)	NAH (Napthalene-aerobic)	BSSA (Toluene/Xylene-Anaerobic)	add. qPCR:	RNA (Expression Option)*	Other:
056LLC 3	FL358-MW10-230315	3/15/23	0740	GW	1							X																				
4	FL358-MW11-230315		0930																													
5	FL358-MW9-230315		0945																													
6	FL358-MW12-230315		1150																													
7	FL358-MW6-230315		1145																													
8	GW-DUP-230315		0600																													
9	FL358-MW8-230315		1430																													
10	FL358-MW13-230315		1545																													
11	FL358-MW8A-230315		1545																													
12	FL358-MW58D-230315		1545																													

Relinquished by: Date 3/15/23
Received by: Date 3/16/23

It is vital that chain of custody is filled out correctly & that all relative information is provided.
Failure to provide sufficient and/or correct information regarding reporting, invoicing & analyses requested information may result in delays for which MI will not be liable.

* additional cost and sample preservation are associated with RNA samples.

**Saturday delivery: See sampling protocol for alternate shipping address.

GeoEngineers

1101 Fawcett Avenue, Suite 200, Tacoma, Washington 98402, Telephone: 253.383.4940, Fax: 253.383.4923 www.geoengineers.com

Data Validation Report

Project:	Sound Transit – Federal Way Link Extension Parcel FL358 (Y Pay Mor Drycleaner) June 2023 Groundwater Samples
GEI File:	4082-039-03
Date:	March 8, 2024

This report documents the results of a United States Environmental Protection Agency (USEPA)-defined Stage 2A data validation (USEPA Document 540-R-08-005; USEPA 2009) of analytical data from the analyses of water samples collected as part of the June 2023 sampling event, and the associated laboratory and field quality control (QC) samples. The samples were obtained from the Y Pay Mor Drycleaner Site located at 2210 South 320th Street in Federal Way, Washington.

OBJECTIVE AND QUALITY CONTROL ELEMENTS

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

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

The data validation included review of the following QC elements:

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

VALIDATED SAMPLE DELIVERY GROUPS

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

TABLE 1. SUMMARY OF VALIDATED SAMPLE DELIVERY GROUPS

Laboratory SDG	Samples Validated
2306-079	FL358-MW5A-230607, FL358-MW5B-230607, FL358-MW6-230607, FL358-Dup-230607, FL358-MW7-230606, FL358-MW8-230607, FL358-MW9-230607, FL358-MW10-230607, FL358-MW11-230607, FL358-MW12-230606, FL358-MW13-230606, FL358-MW14-230606, FL358-RIN-230606, FL358-RIN-230607, FL358-TB-230606, FL358-TB-230607

CHEMICAL ANALYSIS PERFORMED

OnSite Environmental, Inc. (OnSite) of Redmond, Washington, performed laboratory analysis on the water samples using one or more of the following methods:

- Volatile Organic Compounds (VOCs) by Method SW8260D;
- Total Metals by Method EPA6010D;
- Dissolved Gases by Method RSK-175;
- Nitrate and Nitrite by Method EPA353.2;
- Ammonia as Nitrogen by Method SM4500-NH3D; and
- Total Organic Carbon (TOC) by Method SM5310B

AmTest Laboratories (AmTest), located in Kirkland, Washington, served as a secondary laboratory sub-contracted through OnSite and performed analyses on the samples using the following method:

- Biochemical Oxygen Demand (BOD) by Method SM5210B

DATA VALIDATION SUMMARY

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

Data Package Completeness

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

Chain-of-Custody Documentation

Chain-of-custody (COC) forms were provided with the laboratory analytical reports. The COCs were accurate and complete when submitted to the laboratory. The forms were appropriately signed and dated by both field collectors and laboratory personnel upon receipt.

Holding Times and Sample Preservation

The sample holding time is defined as the time that elapses between sample collection and sample analysis. Maximum holding time criteria exist for each analysis to help ensure that the analyte concentrations found at

the time of analysis reflect the concentration present at the time of sample collection. Established holding times were met for each analysis. The sample coolers arrived at the laboratory within the appropriate temperatures of between two and six degrees Celsius.

Method, Trip, and Rinsate Blanks

Method Blanks

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

Trip Blanks

Trip blanks are analyzed to provide an indication as to whether volatile compounds have cross-contaminated other like samples within the transportation process to the laboratory. None of the target analytes were detected above the reporting limits in the trip blanks.

Rinsate Blanks

Equipment rinsate blanks are analyzed to provide an indication as to whether field decontamination and sampling procedures effectively prevent cross-contamination in field activities. None of the target analytes were detected above the reporting limits in the rinsate blanks.

Surrogate Recoveries

A surrogate compound is a compound that is chemically similar to the organic analytes of interest, but unlikely to be found in an environmental sample. Surrogates are used for organic analyses and are added to the samples, standards, and blanks to serve as an accuracy and specificity check of each analysis. The surrogates are added to the samples at a known concentration and percent recoveries are calculated following analysis. The surrogate percent recoveries for field samples were within the laboratory control limits.

Matrix Spikes/Matrix Spike Duplicates

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

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

Laboratory Control Samples/Laboratory Control Sample Duplicates

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

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

Laboratory Duplicates

Internal laboratory duplicate analyses are performed to monitor the precision of the analyses. Two separate aliquots of a sample are analyzed as distinct samples in the laboratory and the RPD between the two results is calculated. Duplicate analyses should be performed once per analytical batch. If one or more of the samples used has a concentration less than five times the reporting limit for that sample, the absolute difference is used instead of the RPD. The RPD control limits are specified in the laboratory documents. Laboratory duplicates were analyzed at the proper frequency and the specified acceptance criteria were met.

Field Duplicates

In order to assess precision, field duplicate samples are collected and analyzed along with the reviewed sample batches. The duplicate samples are analyzed for the same parameters as the associated parent samples. Precision is determined by calculating the RPD between each pair of samples. If one or more of the sample analytes has a concentration less than five times the reporting limit for that sample, then the absolute difference is used instead of the RPD. The RPD control limit for water samples is 35 percent.

SDG 2306-079: One field duplicate sample pair, FL358-MW6-230607 and FL358-Dup-230607, was submitted with this SDG. The precision criteria for the target analytes were met for this sample pair.

OVERALL ASSESSMENT

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

No analytical results were qualified. The data are acceptable for the intended use.

REFERENCES

U.S. Environmental Protection Agency (USEPA). "Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use," EPA-540-R-08-005. January 2009.

U.S. Environmental Protection Agency (USEPA) 2020a. Contract Laboratory Program National Functional Guidelines for Organic Superfund Methods Data Review, EPA-540-R-20-005. November 2020.

U.S. Environmental Protection Agency (USEPA) 2020b. Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Methods Data Review, EPA-542-R-20-006. November 2020.

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

June 21, 2023

Katy Atakturk
GeoEngineers, Inc.
2101 4th Avenue, Suite 950
Seattle, WA 98121

Re: Analytical Data for Project 4082-039-03 T22.03
Laboratory Reference No. 2306-079

Dear Katy:

Enclosed are the analytical results and associated quality control data for samples submitted on June 7, 2023.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: June 21, 2023
Samples Submitted: June 7, 2023
Laboratory Reference: 2306-079
Project: 4082-039-03 T22.03

Case Narrative

Samples were collected on June 6 and 7, 2023 and received by the laboratory on June 7, 2023. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Date of Report: June 21, 2023
Samples Submitted: June 7, 2023
Laboratory Reference: 2306-079
Project: 4082-039-03 T22.03

ANALYTICAL REPORT FOR SAMPLES

Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
FL358-MW5A-230607	06-079-01	Water	6-7-23	6-7-23	
FL358-MW5B-230607	06-079-02	Water	6-7-23	6-7-23	
FL358-MW6-230607	06-079-03	Water	6-7-23	6-7-23	
FL358-MW7-230606	06-079-04	Water	6-6-23	6-7-23	
FL358-MW8-230607	06-079-05	Water	6-7-23	6-7-23	
FL358-MW9-230607	06-079-06	Water	6-7-23	6-7-23	
FL358-MW10-230607	06-079-07	Water	6-7-23	6-7-23	
FL358-MW11-230607	06-079-08	Water	6-7-23	6-7-23	
FL358-MW12-230606	06-079-09	Water	6-6-23	6-7-23	
FL358-MW13-230606	06-079-10	Water	6-6-23	6-7-23	
FL358-MW14-230606	06-079-11	Water	6-6-23	6-7-23	
FL358-Dup-230607	06-079-12	Water	6-7-23	6-7-23	
FL358-RIN-230606	06-079-13	Water	6-6-23	6-7-23	
FL358-RIN-230607	06-079-14	Water	6-7-23	6-7-23	
FL358-TB-230606	06-079-15	Water	---	6-7-23	
FL358-TB-230607	06-079-16	Water	---	6-7-23	

Date of Report: June 21, 2023
Samples Submitted: June 7, 2023
Laboratory Reference: 2306-079
Project: 4082-039-03 T22.03

VOLATILE ORGANICS EPA 8260D

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW5A-230607**					
Laboratory ID:	06-079-01					
Vinyl Chloride	20	2.0	EPA 8260D	6-8-23	6-8-23	
1,1-Dichloroethene	ND	2.0	EPA 8260D	6-8-23	6-8-23	
(trans) 1,2-Dichloroethene	ND	2.0	EPA 8260D	6-8-23	6-8-23	
(cis) 1,2-Dichloroethene	210	2.0	EPA 8260D	6-8-23	6-8-23	
Trichloroethene	140	2.0	EPA 8260D	6-8-23	6-8-23	
Tetrachloroethene	170	2.0	EPA 8260D	6-8-23	6-8-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*77*	*75-127*				
Toluene-d8	*82*	*80-127*				
4-Bromofluorobenzene	*106*	*78-125*				
Client ID:	**FL358-MW5B-230607**					
Laboratory ID:	06-079-02					
Vinyl Chloride	ND	0.20	EPA 8260D	6-8-23	6-8-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
Trichloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
Tetrachloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*80*	*75-127*				
Toluene-d8	*83*	*80-127*				
4-Bromofluorobenzene	*108*	*78-125*				
Client ID:	**FL358-MW6-230607**					
Laboratory ID:	06-079-03					
Vinyl Chloride	1.2	0.80	EPA 8260D	6-8-23	6-8-23	
1,1-Dichloroethene	ND	0.80	EPA 8260D	6-8-23	6-8-23	
(trans) 1,2-Dichloroethene	ND	0.80	EPA 8260D	6-8-23	6-8-23	
(cis) 1,2-Dichloroethene	64	0.80	EPA 8260D	6-8-23	6-8-23	
Trichloroethene	99	0.80	EPA 8260D	6-8-23	6-8-23	
Tetrachloroethene	34	0.80	EPA 8260D	6-8-23	6-8-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*82*	*75-127*				
Toluene-d8	*83*	*80-127*				
4-Bromofluorobenzene	*106*	*78-125*				

Date of Report: June 21, 2023
Samples Submitted: June 7, 2023
Laboratory Reference: 2306-079
Project: 4082-039-03 T22.03

VOLATILE ORGANICS EPA 8260D

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW7-230606**					
Laboratory ID:	06-079-04					
Vinyl Chloride	3.3	0.20	EPA 8260D	6-8-23	6-8-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
(cis) 1,2-Dichloroethene	3.4	0.20	EPA 8260D	6-8-23	6-8-23	
Trichloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
Tetrachloroethene	0.25	0.20	EPA 8260D	6-8-23	6-8-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*80*	*75-127*				
Toluene-d8	*84*	*80-127*				
4-Bromofluorobenzene	*108*	*78-125*				
Client ID:	**FL358-MW8-230607**					
Laboratory ID:	06-079-05					
Vinyl Chloride	ND	0.20	EPA 8260D	6-8-23	6-8-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
Trichloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
Tetrachloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*80*	*75-127*				
Toluene-d8	*84*	*80-127*				
4-Bromofluorobenzene	*108*	*78-125*				
Client ID:	**FL358-MW9-230607**					
Laboratory ID:	06-079-06					
Vinyl Chloride	ND	0.20	EPA 8260D	6-8-23	6-8-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
(cis) 1,2-Dichloroethene	2.7	0.20	EPA 8260D	6-8-23	6-8-23	
Trichloroethene	0.86	0.20	EPA 8260D	6-8-23	6-8-23	
Tetrachloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*79*	*75-127*				
Toluene-d8	*83*	*80-127*				
4-Bromofluorobenzene	*107*	*78-125*				

Date of Report: June 21, 2023
Samples Submitted: June 7, 2023
Laboratory Reference: 2306-079
Project: 4082-039-03 T22.03

VOLATILE ORGANICS EPA 8260D

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW10-230607**					
Laboratory ID:	06-079-07					
Vinyl Chloride	0.46	0.20	EPA 8260D	6-8-23	6-8-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
(cis) 1,2-Dichloroethene	4.9	0.20	EPA 8260D	6-8-23	6-8-23	
Trichloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
Tetrachloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*79*	*75-127*				
Toluene-d8	*82*	*80-127*				
4-Bromofluorobenzene	*106*	*78-125*				
Client ID:	**FL358-MW11-230607**					
Laboratory ID:	06-079-08					
Vinyl Chloride	3.3	0.20	EPA 8260D	6-8-23	6-8-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
(cis) 1,2-Dichloroethene	4.2	0.20	EPA 8260D	6-8-23	6-8-23	
Trichloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
Tetrachloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*78*	*75-127*				
Toluene-d8	*82*	*80-127*				
4-Bromofluorobenzene	*106*	*78-125*				
Client ID:	**FL358-MW12-230606**					
Laboratory ID:	06-079-09					
Vinyl Chloride	ND	0.20	EPA 8260D	6-8-23	6-8-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
(cis) 1,2-Dichloroethene	0.25	0.20	EPA 8260D	6-8-23	6-8-23	
Trichloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
Tetrachloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*80*	*75-127*				
Toluene-d8	*84*	*80-127*				
4-Bromofluorobenzene	*106*	*78-125*				

Date of Report: June 21, 2023
Samples Submitted: June 7, 2023
Laboratory Reference: 2306-079
Project: 4082-039-03 T22.03

VOLATILE ORGANICS EPA 8260D

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW13-230606**					
Laboratory ID:	06-079-10					
Vinyl Chloride	ND	0.20	EPA 8260D	6-8-23	6-8-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
(cis) 1,2-Dichloroethene	3.5	0.20	EPA 8260D	6-8-23	6-8-23	
Trichloroethene	1.8	0.20	EPA 8260D	6-8-23	6-8-23	
Tetrachloroethene	4.0	0.20	EPA 8260D	6-8-23	6-8-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*79*	*75-127*				
Toluene-d8	*83*	*80-127*				
4-Bromofluorobenzene	*107*	*78-125*				
Client ID:	**FL358-MW14-230606**					
Laboratory ID:	06-079-11					
Vinyl Chloride	2.5	0.20	EPA 8260D	6-8-23	6-8-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
(cis) 1,2-Dichloroethene	9.2	0.20	EPA 8260D	6-8-23	6-8-23	
Trichloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
Tetrachloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*77*	*75-127*				
Toluene-d8	*82*	*80-127*				
4-Bromofluorobenzene	*108*	*78-125*				
Client ID:	**FL358-Dup-230607**					
Laboratory ID:	06-079-12					
Vinyl Chloride	1.2	0.80	EPA 8260D	6-8-23	6-8-23	
1,1-Dichloroethene	ND	0.80	EPA 8260D	6-8-23	6-8-23	
(trans) 1,2-Dichloroethene	ND	0.80	EPA 8260D	6-8-23	6-8-23	
(cis) 1,2-Dichloroethene	65	0.80	EPA 8260D	6-8-23	6-8-23	
Trichloroethene	96	0.80	EPA 8260D	6-8-23	6-8-23	
Tetrachloroethene	36	0.80	EPA 8260D	6-8-23	6-8-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*81*	*75-127*				
Toluene-d8	*83*	*80-127*				
4-Bromofluorobenzene	*105*	*78-125*				

Date of Report: June 21, 2023
Samples Submitted: June 7, 2023
Laboratory Reference: 2306-079
Project: 4082-039-03 T22.03

VOLATILE ORGANICS EPA 8260D

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-RIN-230606**					
Laboratory ID:	06-079-13					
Vinyl Chloride	ND	0.20	EPA 8260D	6-8-23	6-8-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
Trichloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
Tetrachloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*79*	*75-127*				
Toluene-d8	*83*	*80-127*				
4-Bromofluorobenzene	*105*	*78-125*				
Client ID:	**FL358-RIN-230607**					
Laboratory ID:	06-079-14					
Vinyl Chloride	ND	0.20	EPA 8260D	6-8-23	6-8-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
Trichloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
Tetrachloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*80*	*75-127*				
Toluene-d8	*84*	*80-127*				
4-Bromofluorobenzene	*106*	*78-125*				
Client ID:	**FL358-TB-230606**					
Laboratory ID:	06-079-15					
Vinyl Chloride	ND	0.20	EPA 8260D	6-8-23	6-8-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
Trichloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
Tetrachloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*82*	*75-127*				
Toluene-d8	*84*	*80-127*				
4-Bromofluorobenzene	*106*	*78-125*				

Date of Report: June 21, 2023
Samples Submitted: June 7, 2023
Laboratory Reference: 2306-079
Project: 4082-039-03 T22.03

VOLATILE ORGANICS EPA 8260D

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-TB-230607**					
Laboratory ID:	06-079-16					
Vinyl Chloride	ND	0.20	EPA 8260D	6-8-23	6-8-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
Trichloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
Tetrachloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*79*	*75-127*				
Toluene-d8	*82*	*80-127*				
4-Bromofluorobenzene	*104*	*78-125*				

Date of Report: June 21, 2023
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TOTAL ORGANIC CARBON
SM 5310B

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW5A-230607**					
Laboratory ID:	06-079-01					
Total Organic Carbon	**6.6**	1.0	SM 5310B	6-20-23	6-20-23	
Client ID:	**FL358-MW5B-230607**					
Laboratory ID:	06-079-02					
Total Organic Carbon	**3.8**	1.0	SM 5310B	6-20-23	6-20-23	
Client ID:	**FL358-MW6-230607**					
Laboratory ID:	06-079-03					
Total Organic Carbon	**6.6**	1.0	SM 5310B	6-20-23	6-20-23	
Client ID:	**FL358-MW7-230606**					
Laboratory ID:	06-079-04					
Total Organic Carbon	**18**	1.0	SM 5310B	6-20-23	6-20-23	
Client ID:	**FL358-MW8-230607**					
Laboratory ID:	06-079-05					
Total Organic Carbon	**3.9**	1.0	SM 5310B	6-20-23	6-20-23	
Client ID:	**FL358-MW9-230607**					
Laboratory ID:	06-079-06					
Total Organic Carbon	**12**	1.0	SM 5310B	6-20-23	6-20-23	
Client ID:	**FL358-MW10-230607**					
Laboratory ID:	06-079-07					
Total Organic Carbon	**9.8**	1.0	SM 5310B	6-20-23	6-20-23	
Client ID:	**FL358-MW11-230607**					
Laboratory ID:	06-079-08					
Total Organic Carbon	**22**	1.0	SM 5310B	6-20-23	6-20-23	
Client ID:	**FL358-MW12-230606**					
Laboratory ID:	06-079-09					
Total Organic Carbon	**28**	1.0	SM 5310B	6-20-23	6-20-23	

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TOTAL ORGANIC CARBON
SM 5310B

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW13-230606**					
Laboratory ID:	06-079-10					
Total Organic Carbon	**8.6**	1.0	SM 5310B	6-20-23	6-20-23	
Client ID:	**FL358-MW14-230606**					
Laboratory ID:	06-079-11					
Total Organic Carbon	**9.0**	1.0	SM 5310B	6-20-23	6-20-23	
Client ID:	**FL358-Dup-230607**					
Laboratory ID:	06-079-12					
Total Organic Carbon	**7.0**	1.0	SM 5310B	6-20-23	6-20-23	

Date of Report: June 21, 2023
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TOTAL IRON
EPA 6010D

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW5A-230607**					
Laboratory ID:	06-079-01					
Iron	**1700**	50	EPA 6010D	6-14-23	6-14-23	
Client ID:	**FL358-MW5B-230607**					
Laboratory ID:	06-079-02					
Iron	**320**	50	EPA 6010D	6-14-23	6-14-23	
Client ID:	**FL358-MW6-230607**					
Laboratory ID:	06-079-03					
Iron	**1100**	50	EPA 6010D	6-14-23	6-14-23	
Client ID:	**FL358-MW7-230606**					
Laboratory ID:	06-079-04					
Iron	**45000**	500	EPA 6010D	6-14-23	6-14-23	
Client ID:	**FL358-MW8-230607**					
Laboratory ID:	06-079-05					
Iron	**930**	50	EPA 6010D	6-14-23	6-14-23	
Client ID:	**FL358-MW9-230607**					
Laboratory ID:	06-079-06					
Iron	**54000**	500	EPA 6010D	6-14-23	6-14-23	
Client ID:	**FL358-MW10-230607**					
Laboratory ID:	06-079-07					
Iron	**22000**	50	EPA 6010D	6-14-23	6-14-23	
Client ID:	**FL358-MW11-230607**					
Laboratory ID:	06-079-08					
Iron	**47000**	500	EPA 6010D	6-14-23	6-14-23	

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TOTAL IRON
EPA 6010D

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW12-230606**					
Laboratory ID:	06-079-09					
Iron	**73000**	500	EPA 6010D	6-14-23	6-14-23	
Client ID:	**FL358-MW13-230606**					
Laboratory ID:	06-079-10					
Iron	**7800**	50	EPA 6010D	6-14-23	6-14-23	
Client ID:	**FL358-MW14-230606**					
Laboratory ID:	06-079-11					
Iron	**7800**	50	EPA 6010D	6-14-23	6-14-23	
Client ID:	**FL358-Dup-230607**					
Laboratory ID:	06-079-12					
Iron	**790**	50	EPA 6010D	6-14-23	6-14-23	

Date of Report: June 21, 2023
Samples Submitted: June 7, 2023
Laboratory Reference: 2306-079
Project: 4082-039-03 T22.03

DISSOLVED GASES
RSK 175

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW5A-230607**					
Laboratory ID:	06-079-01					
Methane	**510**	5.5	RSK 175	6-13-23	6-13-23	
Ethane	**ND**	0.22	RSK 175	6-13-23	6-13-23	
Ethene	**4.4**	0.29	RSK 175	6-13-23	6-13-23	
Acetylene	**ND**	1.2	RSK 175	6-13-23	6-13-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
1-Butene	*59*	*50-150*				
Client ID:	**FL358-MW5B-230607**					
Laboratory ID:	06-079-02					
Methane	**74**	0.55	RSK 175	6-13-23	6-13-23	
Ethane	**ND**	0.22	RSK 175	6-13-23	6-13-23	
Ethene	**ND**	0.29	RSK 175	6-13-23	6-13-23	
Acetylene	**ND**	1.2	RSK 175	6-13-23	6-13-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
1-Butene	*83*	*50-150*				
Client ID:	**FL358-MW6-230607**					
Laboratory ID:	06-079-03					
Methane	**970**	8.3	RSK 175	6-13-23	6-13-23	
Ethane	**ND**	0.22	RSK 175	6-13-23	6-13-23	
Ethene	**ND**	0.29	RSK 175	6-13-23	6-13-23	
Acetylene	**ND**	1.2	RSK 175	6-13-23	6-13-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
1-Butene	*73*	*50-150*				
Client ID:	**FL358-MW7-230606**					
Laboratory ID:	06-079-04					
Methane	**4900**	28	RSK 175	6-13-23	6-13-23	
Ethane	**ND**	0.22	RSK 175	6-13-23	6-13-23	
Ethene	**ND**	0.29	RSK 175	6-13-23	6-13-23	
Acetylene	**ND**	1.2	RSK 175	6-13-23	6-13-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
1-Butene	*63*	*50-150*				

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DISSOLVED GASES
RSK 175

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW8-230607**					
Laboratory ID:	06-079-05					
Methane	**71**	0.55	RSK 175	6-13-23	6-13-23	
Ethane	**ND**	0.22	RSK 175	6-13-23	6-13-23	
Ethene	**ND**	0.29	RSK 175	6-13-23	6-13-23	
Acetylene	**ND**	1.2	RSK 175	6-13-23	6-13-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
1-Butene	*67*	*50-150*				
Client ID:	**FL358-MW9-230607**					
Laboratory ID:	06-079-06					
Methane	**7900**	55	RSK 175	6-13-23	6-13-23	
Ethane	**ND**	0.22	RSK 175	6-13-23	6-13-23	
Ethene	**ND**	0.29	RSK 175	6-13-23	6-13-23	
Acetylene	**ND**	1.2	RSK 175	6-13-23	6-13-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
1-Butene	*85*	*50-150*				
Client ID:	**FL358-MW10-230607**					
Laboratory ID:	06-079-07					
Methane	**3800**	28	RSK 175	6-14-23	6-14-23	
Ethane	**ND**	0.22	RSK 175	6-14-23	6-14-23	
Ethene	**ND**	0.29	RSK 175	6-14-23	6-14-23	
Acetylene	**ND**	1.2	RSK 175	6-14-23	6-14-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
1-Butene	*72*	*50-150*				
Client ID:	**FL358-MW11-230607**					
Laboratory ID:	06-079-08					
Methane	**4100**	55	RSK 175	6-14-23	6-14-23	
Ethane	**ND**	0.22	RSK 175	6-14-23	6-14-23	
Ethene	**ND**	0.29	RSK 175	6-14-23	6-14-23	
Acetylene	**ND**	1.2	RSK 175	6-14-23	6-14-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
1-Butene	*71*	*50-150*				

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DISSOLVED GASES
RSK 175

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW12-230606**					
Laboratory ID:	06-079-09					
Methane	**5700**	55	RSK 175	6-14-23	6-14-23	
Ethane	**ND**	0.22	RSK 175	6-14-23	6-14-23	
Ethene	**ND**	0.29	RSK 175	6-14-23	6-14-23	
Acetylene	**ND**	1.2	RSK 175	6-14-23	6-14-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
1-Butene	*76*	*50-150*				
Client ID:	**FL358-MW13-230606**					
Laboratory ID:	06-079-10					
Methane	**250**	1.7	RSK 175	6-14-23	6-14-23	
Ethane	**ND**	0.22	RSK 175	6-14-23	6-14-23	
Ethene	**ND**	0.29	RSK 175	6-14-23	6-14-23	
Acetylene	**ND**	1.2	RSK 175	6-14-23	6-14-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
1-Butene	*74*	*50-150*				
Client ID:	**FL358-MW14-230606**					
Laboratory ID:	06-079-11					
Methane	**450**	5.5	RSK 175	6-14-23	6-14-23	
Ethane	**ND**	0.22	RSK 175	6-14-23	6-14-23	
Ethene	**ND**	0.29	RSK 175	6-14-23	6-14-23	
Acetylene	**ND**	1.2	RSK 175	6-14-23	6-14-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
1-Butene	*72*	*50-150*				
Client ID:	**FL358-Dup-230607**					
Laboratory ID:	06-079-12					
Methane	**770**	5.5	RSK 175	6-14-23	6-14-23	
Ethane	**ND**	0.22	RSK 175	6-14-23	6-14-23	
Ethene	**ND**	0.29	RSK 175	6-14-23	6-14-23	
Acetylene	**ND**	1.2	RSK 175	6-14-23	6-14-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
1-Butene	*77*	*50-150*				

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NITRATE (as Nitrogen)
EPA 353.2

Matrix: Water
Units: mg/L-N

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW5A-230607**					
Laboratory ID:	06-079-01					
Nitrate	**0.061**	0.050	EPA 353.2	6-14-23	6-14-23	
Client ID:	**FL358-MW5B-230607**					
Laboratory ID:	06-079-02					
Nitrate	**ND**	0.050	EPA 353.2	6-14-23	6-14-23	
Client ID:	**FL358-MW6-230607**					
Laboratory ID:	06-079-03					
Nitrate	**ND**	0.050	EPA 353.2	6-14-23	6-14-23	
Client ID:	**FL358-MW7-230606**					
Laboratory ID:	06-079-04					
Nitrate	**0.12**	0.050	EPA 353.2	6-14-23	6-14-23	
Client ID:	**FL358-MW8-230607**					
Laboratory ID:	06-079-05					
Nitrate	**0.058**	0.050	EPA 353.2	6-14-23	6-14-23	
Client ID:	**FL358-MW9-230607**					
Laboratory ID:	06-079-06					
Nitrate	**0.18**	0.050	EPA 353.2	6-14-23	6-14-23	
Client ID:	**FL358-MW10-230607**					
Laboratory ID:	06-079-07					
Nitrate	**0.095**	0.050	EPA 353.2	6-14-23	6-14-23	
Client ID:	**FL358-MW11-230607**					
Laboratory ID:	06-079-08					
Nitrate	**0.18**	0.050	EPA 353.2	6-14-23	6-14-23	
Client ID:	**FL358-MW12-230606**					
Laboratory ID:	06-079-09					
Nitrate	**0.22**	0.050	EPA 353.2	6-14-23	6-14-23	

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NITRATE (as Nitrogen)
EPA 353.2

Matrix: Water
Units: mg/L-N

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW13-230606**					
Laboratory ID:	06-079-10					
Nitrate	**0.054**	0.050	EPA 353.2	6-14-23	6-14-23	
Client ID:	**FL358-MW14-230606**					
Laboratory ID:	06-079-11					
Nitrate	**0.065**	0.050	EPA 353.2	6-14-23	6-14-23	
Client ID:	**FL358-Dup-230607**					
Laboratory ID:	06-079-12					
Nitrate	**0.051**	0.050	EPA 353.2	6-14-23	6-14-23	

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NITRITE (as Nitrogen)
EPA 353.2

Matrix: Water
Units: mg/L-N

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW5A-230607**					
Laboratory ID:	06-079-01					
Nitrite	**ND**	0.020	EPA 353.2	6-7-23	6-7-23	
Client ID:	**FL358-MW5B-230607**					
Laboratory ID:	06-079-02					
Nitrite	**ND**	0.020	EPA 353.2	6-7-23	6-7-23	
Client ID:	**FL358-MW6-230607**					
Laboratory ID:	06-079-03					
Nitrite	**ND**	0.020	EPA 353.2	6-7-23	6-7-23	
Client ID:	**FL358-MW7-230606**					
Laboratory ID:	06-079-04					
Nitrite	**ND**	0.020	EPA 353.2	6-7-23	6-7-23	
Client ID:	**FL358-MW8-230607**					
Laboratory ID:	06-079-05					
Nitrite	**ND**	0.020	EPA 353.2	6-7-23	6-7-23	
Client ID:	**FL358-MW9-230607**					
Laboratory ID:	06-079-06					
Nitrite	**ND**	0.020	EPA 353.2	6-7-23	6-7-23	
Client ID:	**FL358-MW10-230607**					
Laboratory ID:	06-079-07					
Nitrite	**ND**	0.020	EPA 353.2	6-7-23	6-7-23	
Client ID:	**FL358-MW11-230607**					
Laboratory ID:	06-079-08					
Nitrite	**ND**	0.020	EPA 353.2	6-7-23	6-7-23	
Client ID:	**FL358-MW12-230606**					
Laboratory ID:	06-079-09					
Nitrite	**ND**	0.020	EPA 353.2	6-7-23	6-7-23	

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NITRITE (as Nitrogen)
EPA 353.2

Matrix: Water
Units: mg/L-N

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW13-230606**					
Laboratory ID:	06-079-10					
Nitrite	**ND**	0.020	EPA 353.2	6-7-23	6-7-23	
Client ID:	**FL358-MW14-230606**					
Laboratory ID:	06-079-11					
Nitrite	**ND**	0.020	EPA 353.2	6-7-23	6-7-23	
Client ID:	**FL358-Dup-230607**					
Laboratory ID:	06-079-12					
Nitrite	**ND**	0.020	EPA 353.2	6-7-23	6-7-23	

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AMMONIA (as Nitrogen)
SM 4500-NH_3 D

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW5A-230607**					
Laboratory ID:	06-079-01					
Ammonia	**0.059**	0.050	SM 4500-NH3 D	6-15-23	6-15-23	
Client ID:	**FL358-MW5B-230607**					
Laboratory ID:	06-079-02					
Ammonia	**ND**	0.050	SM 4500-NH3 D	6-15-23	6-15-23	
Client ID:	**FL358-MW6-230607**					
Laboratory ID:	06-079-03					
Ammonia	**0.13**	0.050	SM 4500-NH3 D	6-15-23	6-15-23	
Client ID:	**FL358-MW7-230606**					
Laboratory ID:	06-079-04					
Ammonia	**2.9**	0.050	SM 4500-NH3 D	6-15-23	6-15-23	
Client ID:	**FL358-MW8-230607**					
Laboratory ID:	06-079-05					
Ammonia	**ND**	0.050	SM 4500-NH3 D	6-15-23	6-15-23	
Client ID:	**FL358-MW9-230607**					
Laboratory ID:	06-079-06					
Ammonia	**1.5**	0.050	SM 4500-NH3 D	6-15-23	6-15-23	
Client ID:	**FL358-MW10-230607**					
Laboratory ID:	06-079-07					
Ammonia	**0.61**	0.050	SM 4500-NH3 D	6-15-23	6-15-23	
Client ID:	**FL358-MW11-230607**					
Laboratory ID:	06-079-08					
Ammonia	**3.1**	0.050	SM 4500-NH3 D	6-15-23	6-15-23	
Client ID:	**FL358-MW12-230606**					
Laboratory ID:	06-079-09					
Ammonia	**3.9**	0.050	SM 4500-NH3 D	6-15-23	6-15-23	

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AMMONIA (as Nitrogen)
SM 4500-NH_3 D

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW13-230606**					
Laboratory ID:	06-079-10					
Ammonia	**0.084**	0.050	SM 4500-NH3 D	6-15-23	6-15-23	
Client ID:	**FL358-MW14-230606**					
Laboratory ID:	06-079-11					
Ammonia	**0.076**	0.050	SM 4500-NH3 D	6-15-23	6-15-23	
Client ID:	**FL358-Dup-230607**					
Laboratory ID:	06-079-12					
Ammonia	**0.081**	0.050	SM 4500-NH3 D	6-15-23	6-15-23	

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VOLATILE ORGANICS EPA 8260D
QUALITY CONTROL

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0608W1					
Vinyl Chloride	ND	0.20	EPA 8260D	6-8-23	6-8-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
Trichloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
Tetrachloroethene	ND	0.20	EPA 8260D	6-8-23	6-8-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*80*	*75-127*				
Toluene-d8	*84*	*80-127*				
4-Bromofluorobenzene	*106*	*78-125*				

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0608W1									
	SB	SBD	SB	SBD	SB	SBD				
Vinyl Chloride	**9.48**	**9.49**	10.0	10.0	95	95	66-133	0	15	
1,1-Dichloroethene	**8.97**	**8.89**	10.0	10.0	90	89	80-128	1	19	
(trans) 1,2-Dichloroethene	**9.19**	**9.17**	10.0	10.0	92	92	81-126	0	15	
(cis) 1,2-Dichloroethene	**9.41**	**9.51**	10.0	10.0	94	95	84-130	1	15	
Trichloroethene	**9.16**	**9.35**	10.0	10.0	92	94	80-122	2	18	
Tetrachloroethene	**10.4**	**10.6**	10.0	10.0	104	106	80-125	2	15	
Surrogate:										
Dibromofluoromethane					*83*	*81*	*75-127*			
Toluene-d8					*86*	*85*	*80-127*			
4-Bromofluorobenzene					*109*	*109*	*78-125*			

Date of Report: June 21, 2023
Samples Submitted: June 7, 2023
Laboratory Reference: 2306-079
Project: 4082-039-03 T22.03

TOTAL ORGANIC CARBON
SM 5310B
QUALITY CONTROL

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0620W1					
Total Organic Carbon	**ND**	1.0	SM 5310B	6-20-23	6-20-23	

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE								
Laboratory ID:	06-123-01							
	ORIG DUP							
Total Organic Carbon	**10.2** **10.5**	NA	NA	NA	NA	3	13	
MATRIX SPIKE								
Laboratory ID:	06-123-01							
	MS	MS		MS				
Total Organic Carbon	**20.1**	10.0	10.2	99	86-127	NA	NA	
SPIKE BLANK								
Laboratory ID:	SB0620W1							
	SB	SB		SB				
Total Organic Carbon	**10.5**	10.0	NA	105	90-122	NA	NA	

Date of Report: June 21, 2023
Samples Submitted: June 7, 2023
Laboratory Reference: 2306-079
Project: 4082-039-03 T22.03

TOTAL IRON
EPA 6010D
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0614WH1					
Iron	**ND**	50	EPA 6010D	6-14-23	6-14-23	

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	06-109-01										
	ORIG	DUP									
Iron	**225**	**216**	NA	NA		NA		NA	4	20	
MATRIX SPIKES											
Laboratory ID:	06-109-01										
	MS	MSD	MS	MSD		MS	MSD				
Iron	**21000**	**21000**	20000	20000	225	**104**	**104**	75-125	0	20	

Date of Report: June 21, 2023
Samples Submitted: June 7, 2023
Laboratory Reference: 2306-079
Project: 4082-039-03 T22.03

DISSOLVED GASES
RSK 175
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0613W1					
Methane	**ND**	0.55	RSK 175	6-13-23	6-13-23	
Ethane	**ND**	0.22	RSK 175	6-13-23	6-13-23	
Ethene	**ND**	0.29	RSK 175	6-13-23	6-13-23	
Acetylene	**ND**	1.2	RSK 175	6-13-23	6-13-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
1-Butene	*83*	*50-150*				
Laboratory ID:	MB0614W1					
Methane	**ND**	0.55	RSK 175	6-14-23	6-14-23	
Ethane	**ND**	0.22	RSK 175	6-14-23	6-14-23	
Ethene	**ND**	0.29	RSK 175	6-14-23	6-14-23	
Acetylene	**ND**	1.2	RSK 175	6-14-23	6-14-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
1-Butene	*87*	*50-150*				

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANK										
Laboratory ID:	SB0613W1									
	SB	SBD	SB	SBD	SB	SBD				
Methane	**36.9**	**36.9**	44.2	44.2	84	84	75-125	0	25	
Ethane	**68.3**	**68.2**	83.2	83.2	82	82	75-125	0	25	
Ethene	**62.0**	**62.0**	77.7	77.7	80	80	75-125	0	25	
Acetylene	**59.1**	**58.0**	72.0	72.0	82	81	75-125	2	25	
Surrogate:										
1-Butene					*78*	*78*	*50-150*			
Laboratory ID:	SB0614W1									
	SB	SBD	SB	SBD	SB	SBD				
Methane	**41.0**	**39.3**	44.2	44.2	93	89	75-125	4	25	
Ethane	**76.0**	**72.3**	83.2	83.2	91	87	75-125	5	25	
Ethene	**69.0**	**64.8**	77.7	77.7	89	83	75-125	6	25	
Acetylene	**61.8**	**59.1**	72.0	72.0	86	82	75-125	4	25	
Surrogate:										
1-Butene					*85*	*78*	*50-150*			

Date of Report: June 21, 2023
Samples Submitted: June 7, 2023
Laboratory Reference: 2306-079
Project: 4082-039-03 T22.03

NITRATE (as Nitrogen)
EPA 353.2
QUALITY CONTROL

Matrix: Water
Units: mg/L-N

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0614W2					
Nitrate	**ND**	0.050	EPA 353.2	6-14-23	6-14-23	

Analyte	Result		Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE									
Laboratory ID:	06-079-01								
	ORIG	DUP							
Nitrate	**0.0610**	**0.0537**	NA	NA	NA	NA	13	19	
MATRIX SPIKE									
Laboratory ID:	06-079-01								
	MS		MS		MS				
Nitrate	**2.03**		2.00	0.0610	98	85-121	NA	NA	
SPIKE BLANK									
Laboratory ID:	SB0614W2								
	SB		SB		SB				
Nitrate	**1.98**		2.00	NA	99	87-118	NA	NA	

Date of Report: June 21, 2023
Samples Submitted: June 7, 2023
Laboratory Reference: 2306-079
Project: 4082-039-03 T22.03

NITRITE (as Nitrogen)
EPA 353.2
QUALITY CONTROL

Matrix: Water
Units: mg/L-N

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0607W1					
Nitrite	**ND**	0.020	EPA 353.2	6-7-23	6-7-23	

Analyte	Result		Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE									
Laboratory ID:	06-079-01								
	ORIG	DUP							
Nitrite	**ND**	**ND**	NA	NA	NA	NA	NA	11	
MATRIX SPIKE									
Laboratory ID:	06-079-01								
	MS		MS		MS				
Nitrite	**0.249**		0.250	ND	100	85-119	NA	NA	
SPIKE BLANK									
Laboratory ID:	SB0607W1								
	SB		SB		SB				
Nitrite	**0.254**		0.250	NA	102	89-118	NA	NA	

Date of Report: June 21, 2023
Samples Submitted: June 7, 2023
Laboratory Reference: 2306-079
Project: 4082-039-03 T22.03

AMMONIA (as Nitrogen)
SM 4500-NH_3 D
QUALITY CONTROL

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0615W1					
Ammonia	**ND**	0.050	SM 4500-NH3 D	6-15-23	6-15-23	

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE								
Laboratory ID:	06-079-01							
	ORIG DUP							
Ammonia	**0.0589** **0.0612**	NA	NA	NA	NA	4	27	
MATRIX SPIKE								
Laboratory ID:	06-079-02							
	MS	MS		MS				
Ammonia	**5.23**	5.00	ND	105	78-118	NA	NA	
SPIKE BLANK								
Laboratory ID:	SB0615W1							
	SB	SB		SB				
Ammonia	**5.19**	5.00	NA	104	85-114	NA	NA	

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1 - Sample extract treated with a sulfuric acid/silica gel cleanup procedure.

X2 - Sample extract treated with a silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in methods 8260 & 8270, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Y1 - Negative effects of the matrix from this sample on the instrument caused values for this analyte in the bracketing continuing calibration verification standard (CCVs) to be outside of 20% acceptance criteria. Because of this, quantitation limits and sample concentrations should be considered estimates.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Am Test Inc.
13600 NE 126TH PL
Suite C
Kirkland, WA 98034
(425) 885-1664

Professional Analytical Services

Jun 14 2023
On-Site Environmental
14648 NE 95th ST
Redmond, WA 98052
Attention: David Baumeister

Dear David Baumeister:

Enclosed please find the analytical data for your project.

The following is a cross correlation of client and laboratory identifications for your convenience.

CLIENT ID	MATRIX	AMTEST ID	TEST
FL358-MW5A-230607	Water	23-A009841	DEM
FL358-MW5B-230607	Water	23-A009842	DEM
FL358-MW6-230607	Water	23-A009843	DEM
FL358-MW7-230606	Water	23-A009844	DEM
FL358-MW8-230607	Water	23-A009845	DEM
FL358-MW9-230607	Water	23-A009846	DEM
FL358-MW10-230607	Water	23-A009847	DEM
FL358-MW11-230607	Water	23-A009848	DEM
FL358-MW12-230606	Water	23-A009849	DEM
FL358-MW13-230606	Water	23-A009850	DEM
FL358-MW14-230606	Water	23-A009851	DEM
GW DUP-230607	Water	23-A009852	DEM

Your samples were received on Wednesday, June 7, 2023. At the time of receipt, the samples were logged in and properly maintained prior to the subsequent analysis.

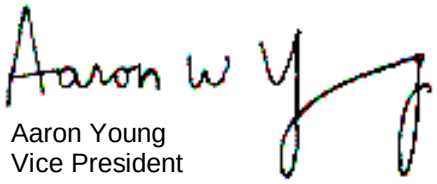
The analytical procedures used at AmTest are well documented and are typically derived from the protocols of the EPA, USDA, FDA or the Army Corps of Engineers.

Following the analytical data you will find the Quality Control (QC) results.

Please note that the detection limits that are listed in the body of the report refer to the Practical Quantitation Limits (PQL's), as opposed to the Method Detection Limits (MDL's).

If you should have any questions pertaining to the data package, please feel free to contact me.

Sincerely,



Aaron Young
Vice President

Project #: 4082-039-03 T22
SDG #: 2329860
PO Number: 06-079

BACT = Bacteriological
CONV = Conventionals
MET = Metals
ORG = Organics
NUT=Nutrients
DEM=Demand
MIN=Mineral

Am Test Inc.
13600 NE 126TH PL
Suite C
Kirkland, WA 98034
(425) 885-1664
www.amtestlab.com

Professional Analytical Services

ANALYSIS REPORT

On-Site Environmental
14648 NE 95th ST
Redmond, WA 98052
Attention: David Baumeister
SDG Number: 2329860
Project #: 4082-039-03 T22
PO Number: 06-079
All results reported on an as received basis.

Date Received: 06/07/23
Date Reported: 6/14/23

AMTEST Identification Number **23-A009841**
Client Identification **FL358-MW5A-230607**
Sampling Date **06/07/23, 13:45**

Demand

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
BOD	2.6	mg/l		2	SM 5210B	JM	06/08/23

AMTEST Identification Number **23-A009842**
Client Identification **FL358-MW5B-230607**
Sampling Date **06/07/23, 13:35**

Demand

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
BOD	< 2	mg/l		2	SM 5210B	JM	06/08/23

AMTEST Identification Number **23-A009843**
Client Identification **FL358-MW6-230607**
Sampling Date **06/07/23, 12:20**

Demand

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
BOD	< 2	mg/l		2	SM 5210B	JM	06/08/23

AMTEST Identification Number **23-A009844**
Client Identification **FL358-MW7-230606**
Sampling Date **06/06/23, 10:45**

Demand

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
BOD	7.7	mg/l		2	SM 5210B	JM	06/08/23

AMTEST Identification Number **23-A009845**
Client Identification **FL358-MW8-230607**
Sampling Date **06/07/23, 11:35**

Demand

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
BOD	< 2	mg/l		2	SM 5210B	JM	06/08/23

AMTEST Identification Number **23-A009846**
Client Identification **FL358-MW9-230607**
Sampling Date **06/07/23, 10:45**

Demand

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
BOD	18.	mg/l		2	SM 5210B	JM	06/08/23

AMTEST Identification Number **23-A009847**
Client Identification **FL358-MW10-230607**
Sampling Date **06/07/23, 08:40**

Demand

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
BOD	8.0	mg/l	P	2	SM 5210B	JM	06/08/23

AMTEST Identification Number **23-A009848**
Client Identification **FL358-MW11-230607**
Sampling Date **06/07/23, 08:52**

Demand

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
BOD	12.	mg/l	P	2	SM 5210B	JM	06/08/23

AMTEST Identification Number **23-A009849**
Client Identification **FL358-MW12-230606**
Sampling Date **06/06/23, 11:07**

Demand

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
BOD	13.	mg/l		2	SM 5210B	JM	06/08/23

AMTEST Identification Number **23-A009850**
Client Identification **FL358-MW13-230606**
Sampling Date **06/06/23, 12:57**

Demand

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
BOD	< 2	mg/l		2	SM 5210B	JM	06/08/23

AMTEST Identification Number **23-A009851**
Client Identification **FL358-MW14-230606**
Sampling Date **06/06/23, 12:50**

Demand

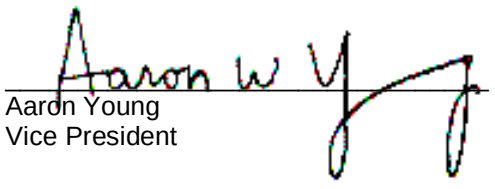
PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
BOD	< 2	mg/l		2	SM 5210B	JM	06/08/23

AMTEST Identification Number **23-A009852**
Client Identification **GW DUP-230607**
Sampling Date **06/07/23, 06:00**

Demand

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
BOD	2.8	mg/l		2	SM 5210B	JM	06/08/23

P = Oxygen depletion exceeded method specification. Sample was diluted.



Aaron Young
Vice President

Am Test Inc.
13600 NE 126th PL
Suite C
Kirkland, WA, 98034
(425) 885-1664
www.amtestlab.com

Professional Analytical Services

QC Summary for sample numbers: 23-A009841 to 23-A009852

DUPLICATES

SAMPLE #	ANALYTE	UNITS	SAMPLE VALUE	DUP VALUE	RPD
23-A009864	BOD	mg/l	260	280	7.4

BLANKS

ANALYTE	UNITS	RESULT
BOD	mg/l	< 2

OnSite Environmental Inc.

14648 NE 95th Street, Redmond, WA 98052 · (425) 883-3881

Laboratory Reference #: 06-079

Laboratory: AmTest Laboratories

Turnaround Request

Project Manager: David Baumeister

Attention: Aaron Young

1 Day 2 Day 3 Day

email: dbaumeister@onsite-env.com

13600 NE 126th Pl Kirkland, WA 98034

Standard

Project Number: 4082-039-03 T22.03

Phone Number: (425) 885-1664

Other: _____

Project Name: _____

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	Requested Analyses
9841	FL358-MW5A-230607	6/7/23	13:45	W	1	BOD 5
9842	FL358-MW5B-230607	6/7/23	13:35	W	1	BOD 5
9843	FL358-MW6-230607	6/7/23	12:20	W	1	BOD 5
9844	FL358-MW7-230606	6/6/23	10:45	W	1	BOD 5
9845	FL358-MW8-230607	6/7/23	11:35	W	1	BOD 5
9846	FL358-MW9-230607	6/7/23	10:45	W	1	BOD 5
9847	FL358-MW10-230607	6/7/23	8:40	W	1	BOD 5
9848	FL358-MW11-230607	6/7/23	8:52	W	1	BOD 5
9849	FL358-MW12-230606	6/6/23	11:07	W	1	BOD 5
9850	FL358-MW13-230606	6/6/23	12:57	W	1	BOD 5

	Company	Date	Time	Comments/Special Instructions
Relinquished by:	OSE	6/7/23	1603	EDDs
Received by: KH	Amtest	6/7/23	1603	
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				T=13.2°C

OnSite Environmental Inc.

14648 NE 95th Street, Redmond, WA 98052 · (425) 883-3881

Laboratory Reference #: 06-079

Laboratory: AmTest Laboratories

Attention: Aaron Young

13600 NE 126th Pl Kirkland, WA 98034

Phone Number: (425) 885-1664

Turnaround Request

1 Day 2 Day 3 Day

Standard

Other:

Project Manager: David Baumeister

email: dbaumeister@onsite-env.com

Project Number: 4082-039-03 T22.03

Project Name:

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	Requested Analyses
9851	FL358-MW14-230606	6/6/23	12:50	W	1	BOD 5
9852	GW Dup-230607	6/7/23	6:00	W	1	BOD 5

	Company	Date	Time	Comments/Special Instructions
Relinquished by:	ESE	6/7/23	1603	EDDs
Received by:	Amtest	6/8/23	1603	
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				T=13.2°C

Chain of Custody

OnSite Environmental Inc.
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: GeoEngineers
Project Number: 4082-039-03 T 22.03
Project Name: FL358
Project Manager: Katy Atakturk
Sampled by: JAK/PDR

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
■ Standard (7 Days)
(TPH analysis 5 Days)
☐ _____ (other)

Laboratory Number: 06-079

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	Project VOCs (1)	VOCs by 8260C + TICs	VOCs by 8260C	Alkalinity by EPA 310.2	TOC by SM 5310B	COD by EPA 410.4 (2)	Total Fe by EPA 6010D	Total and Dis Mn by EPA 6000 series (3)	Nitrate by EPA 353.2 (4)	Sulfate by ASTM D516-07	Sulfide by SM4500S2D (2)	Methane, Ethane, Ethene by RSK 175	Chloride by SM4500-Cl E			BOD (SM 5210B)	Dissolved Gases (RSK 175) ⊞	Nitrate/Nitrite (EPA 353.2)	Ammonia (SM 4500-NH3)			% Moisture
1	FL358-MW5A-2306-07	6/7/23	1345	W	10	X				X		X									X	X	X	X			
2	FL358-MW5B-2306-07	6/7/23	1335	W	10	X				X		X									X	X	X	X			
3	FL358-MW6-2306-07	6/7/23	1220	W	10	X				X		X									X	X	X	X			
4	FL358-MW7-2306-06	6/6/23	1045	W	10	X				X		X									X	X	X	X			
5	FL358-MW8-2306-07	6/7/23	1135	W	10	X				X		X									X	X	X	X			
6	FL358-MW9-2306-07	6/7/23	1045	W	10	X				X		X									X	X	X	X			
7	FL358-MW10-2306-07	6/7/23	0840	W	10	X				X		X									X	X	X	X			
8	FL358-MW11-2306-07	6/7/23	0852	W	10	X				X		X									X	X	X	X			
9	FL358-MW12-2306-06	6/6/23	1107	W	10	X				X		X									X	X	X	X			
10	FL358-MW13-2306-06	6/6/23	1257	W	10	X				X		X									X	X	X	X			

	Signature	Company	Date	Time
Relinquished		GEI	6/7/23	1525
Received		COGE	6/7/23	1525
Relinquished				
Received				
Relinquished				
Received				

Comments/Special Instructions
Project VOCs: PCE + Breakdown products
Dissolved Gases: Ethene + Methane + Acetylene
Report Nitrate & Nitrite as separate values

Reviewed/Date
Reviewed/Date
Chromatograms with final report ☐

Data Package: Level III ☐ Level IV ☐ Electronic Data Deliverables (EDDs) ■ _____

Chain of Custody

OnSite Environmental Inc.
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: GeoEngineers
Project Number: 4082-039-03 T 22.03
Project Name: FL358
Project Manager: Katy Atakturk
Sampled by: JAK/PDR

Turnaround Request (in working days)

(Check One)

- ☐ Same Day ☐ 1 Day
- ☐ 2 Days ☐ 3 Days
- ■ Standard (7 Days) (TPH analysis 5 Days)
- ☐ _____ (other)

Laboratory Number: 06-079

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	Project VOCs (1)	VOCs by 8260C + TICs	VOCs by 8260C	Alkalinity by EPA 310.2	TOC by SM 5310B	COD by EPA 410.4 (2)	Total Fe by EPA 6010D	Total and Dis Mn by EPA 6000 series (3)	Nitrate by EPA 353.2 (4)	Sulfate by ASTM D516-07	Sulfide by SM4500S2D (2)	Methane, Ethane, Ethene by RSK 175	Chloride by SM4500-Cl E			BOD (SM 5210B)	Dissolved Gases (RSK 175) ⊞	Nitrate/Nitrite (EPA 353.2)	Ammonia (SM 4500-NH3)			% Moisture
11	FL358-MW14-230606	6/6/23	1250	W	10	X				X		X									X	X	X	X			
12	~~FL358-OW~~ Dup-230607	6/7/23	0600	W	10	X				X		X									X	X	X	X			
13	FL358-RIN-230606	6/6/2023	1310	W	3	X																					
14	FL358-RIN-230607	6/7/2023	1415	W	3	X																					
15	FL358-TB-230606	6/6/2023	—	W	1	X																					
16	FL358-TB-230607	6/7/2023	—	W	1	X																					

	Signature	Company	Date	Time
Relinquished		GEI	6/7/23	1525
Received		OSE	6/7/23	1525
Relinquished				
Received				
Relinquished				
Received				

Comments/Special Instructions

Project VOCs: PCE + Breakdown products
Dissolved Gases: Ethene + Methane + Acetylene
Report Nitrate & Nitrite as separate values

Reviewed/Date _____ Reviewed/Date _____

Chromatograms with final report ☐

Data Package: Level III ☐ Level IV ☐ Electronic Data Deliverables (EDDs) ■ _____

GeoEngineers

1101 Fawcett Avenue, Suite 200, Tacoma, Washington 98402, Telephone: 253.383.4940, Fax: 253.383.4923 www.geoengineers.com

Data Validation Report

Project:	Sound Transit – Federal Way Link Extension Parcel FL358 (Y Pay Mor Drycleaner) September 2023 Groundwater Samples
GEI File:	4082-039-03
Date:	March 8, 2024

This report documents the results of a United States Environmental Protection Agency (USEPA)-defined Stage 2A data validation (USEPA Document 540-R-08-005; USEPA 2009) of analytical data from the analyses of water samples collected as part of the September 2023 sampling event, and the associated laboratory and field quality control (QC) samples. The samples were obtained from the Y Pay Mor Drycleaner Site located at 2210 South 320th Street in Federal Way, Washington.

OBJECTIVE AND QUALITY CONTROL ELEMENTS

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

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

The data validation included review of the following QC elements:

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

VALIDATED SAMPLE DELIVERY GROUPS

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

TABLE 1. SUMMARY OF VALIDATED SAMPLE DELIVERY GROUPS

Laboratory SDG	Samples Validated
2309-118	FL358-MW5A-230913, FL358-MW5B-230913, FL358-MW6-230913, FL358-DUP-230913, FL358-MW7-230912, FL358-MW8-230913, FL358-MW9-230913, FL358-MW10-230912, FL358-MW11-230912, FL358-MW12-230912, FL358-MW13-230913, FL358-MW14-230912, FL358-RIN1-230912, FL358-RIN2-230913, TB-1-230912, TB-2-230913

CHEMICAL ANALYSIS PERFORMED

OnSite Environmental, Inc. (OnSite) of Redmond, Washington, performed laboratory analysis on the water samples using one or more of the following methods:

- Volatile Organic Compounds (VOCs) by Method SW8260D;
- Total Metals by Method EPA6010D;
- Dissolved Gases by Method RSK-175;
- Nitrate and Nitrite by Method EPA353.2;
- Ammonia as Nitrogen by Method SM4500-NH3D; and
- Total Organic Carbon (TOC) by Method SM5310B

AmTest Laboratories (AmTest), located in Kirkland, Washington, served as a secondary laboratory sub-contracted through OnSite and performed analyses on the samples using the following method:

- Biochemical Oxygen Demand (BOD) by Method SM5210B

DATA VALIDATION SUMMARY

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

Data Package Completeness

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

Chain-of-Custody Documentation

Chain-of-custody (COC) forms were provided with the laboratory analytical reports. The COCs were accurate and complete when submitted to the laboratory. The forms were appropriately signed and dated by both field collectors and laboratory personnel upon receipt.

Holding Times and Sample Preservation

The sample holding time is defined as the time that elapses between sample collection and sample analysis. Maximum holding time criteria exist for each analysis to help ensure that the analyte concentrations found at

the time of analysis reflect the concentration present at the time of sample collection. Established holding times were met for each analysis. The sample coolers arrived at the laboratory within the appropriate temperatures of between two and six degrees Celsius.

Method, Trip, and Rinsate Blanks

Method Blanks

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

Trip Blanks

Trip blanks are analyzed to provide an indication as to whether volatile compounds have cross-contaminated other like samples within the transportation process to the laboratory. None of the target analytes were detected above the reporting limits in the trip blanks.

Rinsate Blanks

Equipment rinsate blanks are analyzed to provide an indication as to whether field decontamination and sampling procedures effectively prevent cross-contamination in field activities. None of the target analytes were detected above the reporting limits in the rinsate blanks.

Surrogate Recoveries

A surrogate compound is a compound that is chemically similar to the organic analytes of interest, but unlikely to be found in an environmental sample. Surrogates are used for organic analyses and are added to the samples, standards, and blanks to serve as an accuracy and specificity check of each analysis. The surrogates are added to the samples at a known concentration and percent recoveries are calculated following analysis. The surrogate percent recoveries for field samples were within the laboratory control limits.

Matrix Spikes/Matrix Spike Duplicates

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

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

Laboratory Control Samples/Laboratory Control Sample Duplicates

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

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

Laboratory Duplicates

Internal laboratory duplicate analyses are performed to monitor the precision of the analyses. Two separate aliquots of a sample are analyzed as distinct samples in the laboratory and the RPD between the two results is calculated. Duplicate analyses should be performed once per analytical batch. If one or more of the samples used has a concentration less than five times the reporting limit for that sample, the absolute difference is used instead of the RPD. The RPD control limits are specified in the laboratory documents. Laboratory duplicates were analyzed at the proper frequency and the specified acceptance criteria were met.

Field Duplicates

In order to assess precision, field duplicate samples are collected and analyzed along with the reviewed sample batches. The duplicate samples are analyzed for the same parameters as the associated parent samples. Precision is determined by calculating the RPD between each pair of samples. If one or more of the sample analytes has a concentration less than five times the reporting limit for that sample, then the absolute difference is used instead of the RPD. The RPD control limit for water samples is 35 percent.

SDG 2309-118: One field duplicate sample pair, FL358-MW6-230913 and FL358-DUP-230913, was submitted with this SDG. The precision criteria for the target analytes were met for this sample pair, with the exception of ammonia. The positive results for this target analyte were qualified as estimated (J) in this sample pair.

OVERALL ASSESSMENT

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

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

TABLE 2. SUMMARY OF QUALIFIED SAMPLES

Sample ID	Analyte	Qualifier	Reason
FL358-MW6-230913	Ammonia	J	Field Duplicate Precision
FL358-DUP-230913	Ammonia	J	Field Duplicate Precision

REFERENCES

U.S. Environmental Protection Agency (USEPA). "Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use," EPA-540-R-08-005. January 2009.

U.S. Environmental Protection Agency (USEPA) 2020a. Contract Laboratory Program National Functional Guidelines for Organic Superfund Methods Data Review, EPA-540-R-20-005. November 2020.

U.S. Environmental Protection Agency (USEPA) 2020b. Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Methods Data Review, EPA-542-R-20-006. November 2020.

OnSite Environmental Inc.
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September 22, 2023

Katy Atakturk
GeoEngineers, Inc.
2101 4th Avenue, Suite 950
Seattle, WA 98121

Re: Analytical Data for Project 4082-039-03
Laboratory Reference No. 2309-118

Dear Katy:

Enclosed are the analytical results and associated quality control data for samples submitted on September 13, 2023.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: September 22, 2023
Samples Submitted: September 13, 2023
Laboratory Reference: 2309-118
Project: 4082-039-03

Case Narrative

Samples were collected on September 12 and 13, 2023 and received by the laboratory on September 13, 2023. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Dissolved Gases RSK 175 Analysis

The client did not initially indicate on the chain of custody that the samples were to be analyzed for Acetylene in addition to the regular RSK-175 analytes, therefore Acetylene was not added to the continuing calibration mixture or to the spiking solution. At the clients request the samples were inspected for the presence of Acetylene after the fact, but please note there is no calibration confirmation for these samples. It should be noted that all other analytes were in calibration, and it is very unusual for a single compound (in this case Acetylene) to fail calibration if all other compounds are properly calibrated, and that all samples were non-detect for this Acetylene, and so we are confident in the validity of this data.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Date of Report: September 22, 2023
Samples Submitted: September 13, 2023
Laboratory Reference: 2309-118
Project: 4082-039-03

ANALYTICAL REPORT FOR SAMPLES

Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
FL358-MW7-230912	09-118-01	Water	9-12-23	9-13-23	
FL358-MW10-230912	09-118-02	Water	9-12-23	9-13-23	
FL358-MW11-230912	09-118-03	Water	9-12-23	9-13-23	
FL358-MW12-230912	09-118-04	Water	9-12-23	9-13-23	
FL358-MW14-230912	09-118-05	Water	9-12-23	9-13-23	
FL358-RIN1-230912	09-118-06	Water	9-12-23	9-13-23	
TB-1-230912	09-118-07	Water	---	9-13-23	
FL358-MW5A-230913	09-118-08	Water	9-13-23	9-13-23	
FL358-MW5B-230913	09-118-09	Water	9-13-23	9-13-23	
FL358-MW6-230913	09-118-10	Water	9-13-23	9-13-23	
FL358-MW13-230913	09-118-11	Water	9-13-23	9-13-23	
FL358-MW8-230913	09-118-12	Water	9-13-23	9-13-23	
FL358-MW9-230913	09-118-13	Water	9-13-23	9-13-23	
FL358-DUP-230913	09-118-14	Water	9-13-23	9-13-23	
FL358-RIN2-230913	09-118-15	Water	9-13-23	9-13-23	
TB-2-230913	09-118-16	Water	---	9-13-23	

Date of Report: September 22, 2023
Samples Submitted: September 13, 2023
Laboratory Reference: 2309-118
Project: 4082-039-03

VOLATILE ORGANICS EPA 8260D

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW7-230912**					
Laboratory ID:	09-118-01					
Vinyl Chloride	9.2	0.20	EPA 8260D	9-15-23	9-15-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
(cis) 1,2-Dichloroethene	9.5	0.20	EPA 8260D	9-15-23	9-15-23	
Trichloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
Tetrachloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*108*	*75-127*				
Toluene-d8	*118*	*80-127*				
4-Bromofluorobenzene	*82*	*78-125*				
Client ID:	**FL358-MW10-230912**					
Laboratory ID:	09-118-02					
Vinyl Chloride	ND	0.20	EPA 8260D	9-15-23	9-15-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
(cis) 1,2-Dichloroethene	1.0	0.20	EPA 8260D	9-15-23	9-15-23	
Trichloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
Tetrachloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*107*	*75-127*				
Toluene-d8	*119*	*80-127*				
4-Bromofluorobenzene	*81*	*78-125*				
Client ID:	**FL358-MW11-230912**					
Laboratory ID:	09-118-03					
Vinyl Chloride	4.5	0.20	EPA 8260D	9-15-23	9-15-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
(cis) 1,2-Dichloroethene	5.1	0.20	EPA 8260D	9-15-23	9-15-23	
Trichloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
Tetrachloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*107*	*75-127*				
Toluene-d8	*120*	*80-127*				
4-Bromofluorobenzene	*81*	*78-125*				

Date of Report: September 22, 2023
Samples Submitted: September 13, 2023
Laboratory Reference: 2309-118
Project: 4082-039-03

VOLATILE ORGANICS EPA 8260D

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW12-230912**					
Laboratory ID:	09-118-04					
Vinyl Chloride	ND	0.20	EPA 8260D	9-15-23	9-15-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
(cis) 1,2-Dichloroethene	0.52	0.20	EPA 8260D	9-15-23	9-15-23	
Trichloroethene	0.23	0.20	EPA 8260D	9-15-23	9-15-23	
Tetrachloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*102*	*75-127*				
Toluene-d8	*119*	*80-127*				
4-Bromofluorobenzene	*81*	*78-125*				
Client ID:	**FL358-MW14-230912**					
Laboratory ID:	09-118-05					
Vinyl Chloride	1.8	0.20	EPA 8260D	9-15-23	9-15-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
(cis) 1,2-Dichloroethene	9.1	0.20	EPA 8260D	9-15-23	9-15-23	
Trichloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
Tetrachloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*106*	*75-127*				
Toluene-d8	*118*	*80-127*				
4-Bromofluorobenzene	*80*	*78-125*				
Client ID:	**FL358-RIN1-230912**					
Laboratory ID:	09-118-06					
Vinyl Chloride	ND	0.20	EPA 8260D	9-15-23	9-15-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
Trichloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
Tetrachloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*103*	*75-127*				
Toluene-d8	*118*	*80-127*				
4-Bromofluorobenzene	*82*	*78-125*				

Date of Report: September 22, 2023
Samples Submitted: September 13, 2023
Laboratory Reference: 2309-118
Project: 4082-039-03

VOLATILE ORGANICS EPA 8260D

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**TB-1-230912**					
Laboratory ID:	09-118-07					
Vinyl Chloride	ND	0.20	EPA 8260D	9-15-23	9-15-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
Trichloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
Tetrachloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*106*	*75-127*				
Toluene-d8	*119*	*80-127*				
4-Bromofluorobenzene	*81*	*78-125*				
Client ID:	**FL358-MW5A-230913**					
Laboratory ID:	09-118-08					
Vinyl Chloride	11	0.80	EPA 8260D	9-15-23	9-15-23	
1,1-Dichloroethene	ND	0.80	EPA 8260D	9-15-23	9-15-23	
(trans) 1,2-Dichloroethene	ND	0.80	EPA 8260D	9-15-23	9-15-23	
(cis) 1,2-Dichloroethene	110	0.80	EPA 8260D	9-15-23	9-15-23	
Trichloroethene	110	0.80	EPA 8260D	9-15-23	9-15-23	
Tetrachloroethene	110	0.80	EPA 8260D	9-15-23	9-15-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*103*	*75-127*				
Toluene-d8	*117*	*80-127*				
4-Bromofluorobenzene	*81*	*78-125*				
Client ID:	**FL358-MW5B-230913**					
Laboratory ID:	09-118-09					
Vinyl Chloride	ND	0.20	EPA 8260D	9-15-23	9-15-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
Trichloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
Tetrachloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*102*	*75-127*				
Toluene-d8	*117*	*80-127*				
4-Bromofluorobenzene	*79*	*78-125*				

Date of Report: September 22, 2023
Samples Submitted: September 13, 2023
Laboratory Reference: 2309-118
Project: 4082-039-03

VOLATILE ORGANICS EPA 8260D

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW6-230913**					
Laboratory ID:	09-118-10					
Vinyl Chloride	1.3	0.80	EPA 8260D	9-15-23	9-15-23	
1,1-Dichloroethene	ND	0.80	EPA 8260D	9-15-23	9-15-23	
(trans) 1,2-Dichloroethene	ND	0.80	EPA 8260D	9-15-23	9-15-23	
(cis) 1,2-Dichloroethene	86	0.80	EPA 8260D	9-15-23	9-15-23	
Trichloroethene	110	0.80	EPA 8260D	9-15-23	9-15-23	
Tetrachloroethene	18	0.80	EPA 8260D	9-15-23	9-15-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*105*	*75-127*				
Toluene-d8	*117*	*80-127*				
4-Bromofluorobenzene	*81*	*78-125*				
Client ID:	**FL358-MW13-230913**					
Laboratory ID:	09-118-11					
Vinyl Chloride	ND	0.20	EPA 8260D	9-15-23	9-15-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
(cis) 1,2-Dichloroethene	2.8	0.20	EPA 8260D	9-15-23	9-15-23	
Trichloroethene	1.4	0.20	EPA 8260D	9-15-23	9-15-23	
Tetrachloroethene	3.0	0.20	EPA 8260D	9-15-23	9-15-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*104*	*75-127*				
Toluene-d8	*121*	*80-127*				
4-Bromofluorobenzene	*80*	*78-125*				
Client ID:	**FL358-MW8-230913**					
Laboratory ID:	09-118-12					
Vinyl Chloride	ND	0.20	EPA 8260D	9-15-23	9-15-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
Trichloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
Tetrachloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*106*	*75-127*				
Toluene-d8	*120*	*80-127*				
4-Bromofluorobenzene	*82*	*78-125*				

Date of Report: September 22, 2023
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Project: 4082-039-03

VOLATILE ORGANICS EPA 8260D

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW9-230913**					
Laboratory ID:	09-118-13					
Vinyl Chloride	ND	0.20	EPA 8260D	9-15-23	9-15-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
(cis) 1,2-Dichloroethene	5.6	0.20	EPA 8260D	9-15-23	9-15-23	
Trichloroethene	0.86	0.20	EPA 8260D	9-15-23	9-15-23	
Tetrachloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*106*	*75-127*				
Toluene-d8	*118*	*80-127*				
4-Bromofluorobenzene	*81*	*78-125*				
Client ID:	**FL358-DUP-230913**					
Laboratory ID:	09-118-14					
Vinyl Chloride	1.3	0.80	EPA 8260D	9-15-23	9-15-23	
1,1-Dichloroethene	ND	0.80	EPA 8260D	9-15-23	9-15-23	
(trans) 1,2-Dichloroethene	ND	0.80	EPA 8260D	9-15-23	9-15-23	
(cis) 1,2-Dichloroethene	83	0.80	EPA 8260D	9-15-23	9-15-23	
Trichloroethene	100	0.80	EPA 8260D	9-15-23	9-15-23	
Tetrachloroethene	17	0.80	EPA 8260D	9-15-23	9-15-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*100*	*75-127*				
Toluene-d8	*116*	*80-127*				
4-Bromofluorobenzene	*81*	*78-125*				
Client ID:	**FL358-RIN2-230913**					
Laboratory ID:	09-118-15					
Vinyl Chloride	ND	0.20	EPA 8260D	9-15-23	9-15-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
Trichloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
Tetrachloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*103*	*75-127*				
Toluene-d8	*119*	*80-127*				
4-Bromofluorobenzene	*83*	*78-125*				

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VOLATILE ORGANICS EPA 8260D

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**TB-2-230913**					
Laboratory ID:	09-118-16					
Vinyl Chloride	ND	0.20	EPA 8260D	9-15-23	9-15-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
Trichloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
Tetrachloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*107*	*75-127*				
Toluene-d8	*120*	*80-127*				
4-Bromofluorobenzene	*83*	*78-125*				

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Project: 4082-039-03

TOTAL IRON
EPA 6010D

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW7-230912**					
Laboratory ID:	09-118-01					
Iron	**51000**	500	EPA 6010D	9-19-23	9-20-23	
Client ID:	**FL358-MW10-230912**					
Laboratory ID:	09-118-02					
Iron	**29000**	500	EPA 6010D	9-19-23	9-20-23	
Client ID:	**FL358-MW11-230912**					
Laboratory ID:	09-118-03					
Iron	**44000**	500	EPA 6010D	9-19-23	9-20-23	
Client ID:	**FL358-MW12-230912**					
Laboratory ID:	09-118-04					
Iron	**62000**	500	EPA 6010D	9-19-23	9-20-23	
Client ID:	**FL358-MW14-230912**					
Laboratory ID:	09-118-05					
Iron	**7500**	50	EPA 6010D	9-19-23	9-20-23	
Client ID:	**FL358-MW5A-230913**					
Laboratory ID:	09-118-08					
Iron	**1200**	50	EPA 6010D	9-19-23	9-20-23	
Client ID:	**FL358-MW5B-230913**					
Laboratory ID:	09-118-09					
Iron	**590**	50	EPA 6010D	9-19-23	9-20-23	
Client ID:	**FL358-MW6-230913**					
Laboratory ID:	09-118-10					
Iron	**3600**	50	EPA 6010D	9-19-23	9-20-23	

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Project: 4082-039-03

TOTAL IRON
EPA 6010D

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW13-230913**					
Laboratory ID:	09-118-11					
Iron	**4000**	50	EPA 6010D	9-19-23	9-20-23	
Client ID:	**FL358-MW8-230913**					
Laboratory ID:	09-118-12					
Iron	**2900**	50	EPA 6010D	9-19-23	9-20-23	
Client ID:	**FL358-MW9-230913**					
Laboratory ID:	09-118-13					
Iron	**46000**	500	EPA 6010D	9-19-23	9-20-23	
Client ID:	**FL358-DUP-230913**					
Laboratory ID:	09-118-14					
Iron	**3600**	50	EPA 6010D	9-19-23	9-20-23	

Date of Report: September 22, 2023
Samples Submitted: September 13, 2023
Laboratory Reference: 2309-118
Project: 4082-039-03

DISSOLVED GASES
RSK 175

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW7-230912**					
Laboratory ID:	09-118-01					
Methane	**1500**	11	RSK 175	9-19-23	9-19-23	
Ethene	**0.73**	0.29	RSK 175	9-19-23	9-19-23	
Acetylene	**ND**	1.2	RSK 175	9-19-23	9-19-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
1-Butene	*76*	*50-150*				
Client ID:	**FL358-MW10-230912**					
Laboratory ID:	09-118-02					
Methane	**3500**	55	RSK 175	9-19-23	9-19-23	
Ethene	**ND**	0.29	RSK 175	9-19-23	9-19-23	
Acetylene	**ND**	1.2	RSK 175	9-19-23	9-19-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
1-Butene	*76*	*50-150*				
Client ID:	**FL358-MW11-230912**					
Laboratory ID:	09-118-03					
Methane	**1600**	11	RSK 175	9-19-23	9-19-23	
Ethene	**ND**	0.29	RSK 175	9-19-23	9-19-23	
Acetylene	**ND**	1.2	RSK 175	9-19-23	9-19-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
1-Butene	*75*	*50-150*				
Client ID:	**FL358-MW12-230912**					
Laboratory ID:	09-118-04					
Methane	**1800**	11	RSK 175	9-19-23	9-19-23	
Ethene	**ND**	0.29	RSK 175	9-19-23	9-19-23	
Acetylene	**ND**	1.2	RSK 175	9-19-23	9-19-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
1-Butene	*79*	*50-150*				
Client ID:	**FL358-MW14-230912**					
Laboratory ID:	09-118-05					
Methane	**100**	0.55	RSK 175	9-19-23	9-19-23	
Ethene	**ND**	0.29	RSK 175	9-19-23	9-19-23	
Acetylene	**ND**	1.2	RSK 175	9-19-23	9-19-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
1-Butene	*102*	*50-150*				

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Laboratory Reference: 2309-118
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DISSOLVED GASES
RSK 175

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW5A-230913**					
Laboratory ID:	09-118-08					
Methane	**360**	5.5	RSK 175	9-19-23	9-19-23	
Ethene	**0.87**	0.29	RSK 175	9-19-23	9-19-23	
Acetylene	**ND**	1.2	RSK 175	9-19-23	9-19-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
1-Butene	*111*	*50-150*				
Client ID:	**FL358-MW5B-230913**					
Laboratory ID:	09-118-09					
Methane	**110**	0.55	RSK 175	9-19-23	9-19-23	
Ethene	**ND**	0.29	RSK 175	9-19-23	9-19-23	
Acetylene	**ND**	1.2	RSK 175	9-19-23	9-19-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
1-Butene	*98*	*50-150*				
Client ID:	**FL358-MW6-230913**					
Laboratory ID:	09-118-10					
Methane	**230**	2.2	RSK 175	9-19-23	9-19-23	
Ethene	**ND**	0.29	RSK 175	9-19-23	9-19-23	
Acetylene	**ND**	1.2	RSK 175	9-19-23	9-19-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
1-Butene	*95*	*50-150*				
Client ID:	**FL358-MW13-230913**					
Laboratory ID:	09-118-11					
Methane	**170**	1.1	RSK 175	9-19-23	9-19-23	
Ethene	**ND**	0.29	RSK 175	9-19-23	9-19-23	
Acetylene	**ND**	1.2	RSK 175	9-19-23	9-19-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
1-Butene	*112*	*50-150*				
Client ID:	**FL358-MW8-230913**					
Laboratory ID:	09-118-12					
Methane	**67**	0.55	RSK 175	9-19-23	9-19-23	
Ethene	**ND**	0.29	RSK 175	9-19-23	9-19-23	
Acetylene	**ND**	1.2	RSK 175	9-19-23	9-19-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
1-Butene	*99*	*50-150*				

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Laboratory Reference: 2309-118
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DISSOLVED GASES
RSK 175

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW9-230913**					
Laboratory ID:	09-118-13					
Methane	**4900**	55	RSK 175	9-19-23	9-19-23	
Ethene	**ND**	0.29	RSK 175	9-19-23	9-19-23	
Acetylene	**ND**	1.2	RSK 175	9-19-23	9-19-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
1-Butene	*89*	*50-150*				
Client ID:	**FL358-DUP-230913**					
Laboratory ID:	09-118-14					
Methane	**200**	2.2	RSK 175	9-19-23	9-19-23	
Ethene	**ND**	0.29	RSK 175	9-19-23	9-19-23	
Acetylene	**ND**	1.2	RSK 175	9-19-23	9-19-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
1-Butene	*106*	*50-150*				

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NITRATE (as Nitrogen)
EPA 353.2

Matrix: Water
Units: mg/L-N

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW7-230912**					
Laboratory ID:	09-118-01					
Nitrate	**0.067**	0.050	EPA 353.2	9-14-23	9-14-23	
Client ID:	**FL358-MW10-230912**					
Laboratory ID:	09-118-02					
Nitrate	**ND**	0.050	EPA 353.2	9-14-23	9-14-23	
Client ID:	**FL358-MW11-230912**					
Laboratory ID:	09-118-03					
Nitrate	**0.076**	0.050	EPA 353.2	9-14-23	9-14-23	
Client ID:	**FL358-MW12-230912**					
Laboratory ID:	09-118-04					
Nitrate	**ND**	0.050	EPA 353.2	9-14-23	9-14-23	
Client ID:	**FL358-MW14-230912**					
Laboratory ID:	09-118-05					
Nitrate	**ND**	0.050	EPA 353.2	9-14-23	9-14-23	
Client ID:	**FL358-MW5A-230913**					
Laboratory ID:	09-118-08					
Nitrate	**ND**	0.050	EPA 353.2	9-14-23	9-14-23	
Client ID:	**FL358-MW5B-230913**					
Laboratory ID:	09-118-09					
Nitrate	**ND**	0.050	EPA 353.2	9-14-23	9-14-23	
Client ID:	**FL358-MW6-230913**					
Laboratory ID:	09-118-10					
Nitrate	**ND**	0.050	EPA 353.2	9-14-23	9-14-23	
Client ID:	**FL358-MW13-230913**					
Laboratory ID:	09-118-11					
Nitrate	**ND**	0.050	EPA 353.2	9-14-23	9-14-23	

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NITRATE (as Nitrogen)
EPA 353.2

Matrix: Water
Units: mg/L-N

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW8-230913**					
Laboratory ID:	09-118-12					
Nitrate	**ND**	0.050	EPA 353.2	9-14-23	9-14-23	
Client ID:	**FL358-MW9-230913**					
Laboratory ID:	09-118-13					
Nitrate	**0.074**	0.050	EPA 353.2	9-14-23	9-14-23	
Client ID:	**FL358-DUP-230913**					
Laboratory ID:	09-118-14					
Nitrate	**ND**	0.050	EPA 353.2	9-14-23	9-14-23	

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Laboratory Reference: 2309-118
Project: 4082-039-03

NITRITE (as Nitrogen)
EPA 353.2

Matrix: Water
Units: mg/L-N

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW7-230912**					
Laboratory ID:	09-118-01					
Nitrite	**ND**	0.020	EPA 353.2	9-14-23	9-14-23	
Client ID:	**FL358-MW10-230912**					
Laboratory ID:	09-118-02					
Nitrite	**ND**	0.020	EPA 353.2	9-14-23	9-14-23	
Client ID:	**FL358-MW11-230912**					
Laboratory ID:	09-118-03					
Nitrite	**ND**	0.020	EPA 353.2	9-14-23	9-14-23	
Client ID:	**FL358-MW12-230912**					
Laboratory ID:	09-118-04					
Nitrite	**ND**	0.020	EPA 353.2	9-14-23	9-14-23	
Client ID:	**FL358-MW14-230912**					
Laboratory ID:	09-118-05					
Nitrite	**ND**	0.020	EPA 353.2	9-14-23	9-14-23	
Client ID:	**FL358-MW5A-230913**					
Laboratory ID:	09-118-08					
Nitrite	**ND**	0.020	EPA 353.2	9-14-23	9-14-23	
Client ID:	**FL358-MW5B-230913**					
Laboratory ID:	09-118-09					
Nitrite	**ND**	0.020	EPA 353.2	9-14-23	9-14-23	
Client ID:	**FL358-MW6-230913**					
Laboratory ID:	09-118-10					
Nitrite	**0.044**	0.020	EPA 353.2	9-14-23	9-14-23	
Client ID:	**FL358-MW13-230913**					
Laboratory ID:	09-118-11					
Nitrite	**ND**	0.020	EPA 353.2	9-14-23	9-14-23	

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Laboratory Reference: 2309-118
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NITRITE (as Nitrogen)
EPA 353.2

Matrix: Water
Units: mg/L-N

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW8-230913**					
Laboratory ID:	09-118-12					
Nitrite	**ND**	0.020	EPA 353.2	9-14-23	9-14-23	
Client ID:	**FL358-MW9-230913**					
Laboratory ID:	09-118-13					
Nitrite	**0.028**	0.020	EPA 353.2	9-14-23	9-14-23	
Client ID:	**FL358-DUP-230913**					
Laboratory ID:	09-118-14					
Nitrite	**0.037**	0.020	EPA 353.2	9-14-23	9-14-23	

Date of Report: September 22, 2023
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Laboratory Reference: 2309-118
Project: 4082-039-03

TOTAL ORGANIC CARBON
SM 5310B

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW7-230912**					
Laboratory ID:	09-118-01					
Total Organic Carbon	**19**	1.0	SM 5310B	9-20-23	9-20-23	
Client ID:	**FL358-MW10-230912**					
Laboratory ID:	09-118-02					
Total Organic Carbon	**10**	1.0	SM 5310B	9-20-23	9-20-23	
Client ID:	**FL358-MW11-230912**					
Laboratory ID:	09-118-03					
Total Organic Carbon	**21**	1.0	SM 5310B	9-20-23	9-20-23	
Client ID:	**FL358-MW12-230912**					
Laboratory ID:	09-118-04					
Total Organic Carbon	**27**	1.0	SM 5310B	9-20-23	9-20-23	
Client ID:	**FL358-MW14-230912**					
Laboratory ID:	09-118-05					
Total Organic Carbon	**8.3**	1.0	SM 5310B	9-20-23	9-20-23	
Client ID:	**FL358-MW5A-230913**					
Laboratory ID:	09-118-08					
Total Organic Carbon	**6.4**	1.0	SM 5310B	9-20-23	9-20-23	
Client ID:	**FL358-MW5B-230913**					
Laboratory ID:	09-118-09					
Total Organic Carbon	**3.1**	1.0	SM 5310B	9-20-23	9-20-23	
Client ID:	**FL358-MW6-230913**					
Laboratory ID:	09-118-10					
Total Organic Carbon	**5.9**	1.0	SM 5310B	9-20-23	9-20-23	
Client ID:	**FL358-MW13-230913**					
Laboratory ID:	09-118-11					
Total Organic Carbon	**8.5**	1.0	SM 5310B	9-20-23	9-20-23	

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TOTAL ORGANIC CARBON
SM 5310B

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW8-230913**					
Laboratory ID:	09-118-12					
Total Organic Carbon	**2.8**	1.0	SM 5310B	9-20-23	9-20-23	
Client ID:	**FL358-MW9-230913**					
Laboratory ID:	09-118-13					
Total Organic Carbon	**10**	1.0	SM 5310B	9-20-23	9-20-23	
Client ID:	**FL358-DUP-230913**					
Laboratory ID:	09-118-14					
Total Organic Carbon	**5.9**	1.0	SM 5310B	9-20-23	9-20-23	

Date of Report: September 22, 2023
Samples Submitted: September 13, 2023
Laboratory Reference: 2309-118
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AMMONIA (as Nitrogen)
SM 4500-NH_3 D

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW7-230912**					
Laboratory ID:	09-118-01					
Ammonia	**3.8**	0.050	SM 4500-NH3 D	9-14-23	9-14-23	
Client ID:	**FL358-MW10-230912**					
Laboratory ID:	09-118-02					
Ammonia	**0.74**	0.050	SM 4500-NH3 D	9-14-23	9-14-23	
Client ID:	**FL358-MW11-230912**					
Laboratory ID:	09-118-03					
Ammonia	**3.5**	0.050	SM 4500-NH3 D	9-14-23	9-14-23	
Client ID:	**FL358-MW12-230912**					
Laboratory ID:	09-118-04					
Ammonia	**3.6**	0.050	SM 4500-NH3 D	9-14-23	9-14-23	
Client ID:	**FL358-MW14-230912**					
Laboratory ID:	09-118-05					
Ammonia	**0.22**	0.050	SM 4500-NH3 D	9-14-23	9-14-23	
Client ID:	**FL358-MW5A-230913**					
Laboratory ID:	09-118-08					
Ammonia	**0.16**	0.050	SM 4500-NH3 D	9-14-23	9-14-23	
Client ID:	**FL358-MW5B-230913**					
Laboratory ID:	09-118-09					
Ammonia	**0.082**	0.050	SM 4500-NH3 D	9-14-23	9-14-23	
Client ID:	**FL358-MW6-230913**					
Laboratory ID:	09-118-10					
Ammonia	**0.089**	0.050	SM 4500-NH3 D	9-14-23	9-14-23	
Client ID:	**FL358-MW13-230913**					
Laboratory ID:	09-118-11					
Ammonia	**0.063**	0.050	SM 4500-NH3 D	9-14-23	9-14-23	

Date of Report: September 22, 2023
Samples Submitted: September 13, 2023
Laboratory Reference: 2309-118
Project: 4082-039-03

AMMONIA (as Nitrogen)
SM 4500-NH_3 D

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW8-230913**					
Laboratory ID:	09-118-12					
Ammonia	**ND**	0.050	SM 4500-NH3 D	9-14-23	9-14-23	
Client ID:	**FL358-MW9-230913**					
Laboratory ID:	09-118-13					
Ammonia	**1.8**	0.050	SM 4500-NH3 D	9-14-23	9-14-23	
Client ID:	**FL358-DUP-230913**					
Laboratory ID:	09-118-14					
Ammonia	**0.14**	0.050	SM 4500-NH3 D	9-14-23	9-14-23	

Date of Report: September 22, 2023
Samples Submitted: September 13, 2023
Laboratory Reference: 2309-118
Project: 4082-039-03

VOLATILE ORGANICS EPA 8260D
QUALITY CONTROL

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0915W1					
Vinyl Chloride	ND	0.20	EPA 8260D	9-15-23	9-15-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
Trichloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
Tetrachloroethene	ND	0.20	EPA 8260D	9-15-23	9-15-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*108*	*75-127*				
Toluene-d8	*119*	*80-127*				
4-Bromofluorobenzene	*83*	*78-125*				

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0915W1									
	SB	SBD	SB	SBD	SB	SBD				
Vinyl Chloride	**11.0**	**10.9**	10.0	10.0	110	109	71-135	1	20	
1,1-Dichloroethene	**10.0**	**10.2**	10.0	10.0	100	102	78-125	2	19	
(trans) 1,2-Dichloroethene	**9.99**	**10.2**	10.0	10.0	100	102	80-125	2	17	
(cis) 1,2-Dichloroethene	**10.1**	**10.2**	10.0	10.0	101	102	80-129	1	17	
Trichloroethene	**9.87**	**10.0**	10.0	10.0	99	100	80-122	1	18	
Tetrachloroethene	**10.8**	**11.4**	10.0	10.0	108	114	80-124	5	18	
Surrogate:										
Dibromofluoromethane					*103*	*103*	*75-127*			
Toluene-d8					*117*	*119*	*80-127*			
4-Bromofluorobenzene					*92*	*88*	*78-125*			

Date of Report: September 22, 2023
Samples Submitted: September 13, 2023
Laboratory Reference: 2309-118
Project: 4082-039-03

TOTAL IRON
EPA 6010D
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0919WH1					
Iron	**ND**	50	EPA 6010D	9-19-23	9-20-23	

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	09-099-08										
	ORIG	DUP									
Iron	**9210**	**8910**	NA	NA		NA		NA	3	20	
MATRIX SPIKES											
Laboratory ID:	09-099-08										
	MS	MSD	MS	MSD		MS	MSD				
Iron	**31200**	**30200**	20000	20000	9210	**110**	**105**	75-125	3	20	

Date of Report: September 22, 2023
Samples Submitted: September 13, 2023
Laboratory Reference: 2309-118
Project: 4082-039-03

DISSOLVED GASES
RSK 175
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0919W1					
Methane	**ND**	0.55	RSK 175	9-19-23	9-19-23	
Ethene	**ND**	0.29	RSK 175	9-19-23	9-19-23	
Acetylene	**ND**	1.2	RSK 175	9-19-23	9-19-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
1-Butene	*94*	*50-150*				

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANK										
Laboratory ID:	SB0919W1									
	SB	SBD	SB	SBD	SB	SBD				
Methane	**46.1**	**45.9**	44.2	44.2	104	104	75-125	0	25	
Ethene	**76.3**	**76.2**	77.7	77.7	98	98	75-125	0	25	
Surrogate:										
1-Butene					*95*	*95*	*50-150*			

Date of Report: September 22, 2023
Samples Submitted: September 13, 2023
Laboratory Reference: 2309-118
Project: 4082-039-03

NITRATE (as Nitrogen)
EPA 353.2
QUALITY CONTROL

Matrix: Water
Units: mg/L-N

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0915W1					
Nitrate	**ND**	0.050	EPA 353.2	9-14-23	9-14-23	

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE								
Laboratory ID:	09-118-09							
	ORIG DUP							
Nitrate	**ND** **ND**	NA	NA	NA	NA	NA	19	
MATRIX SPIKE								
Laboratory ID:	09-118-09							
	MS	MS		MS				
Nitrate	**1.99**	2.00	ND	100	85-121	NA	NA	
SPIKE BLANK								
Laboratory ID:	SB0915W1							
	SB	SB		SB				
Nitrate	**1.96**	2.00	NA	98	87-118	NA	NA	

Date of Report: September 22, 2023
Samples Submitted: September 13, 2023
Laboratory Reference: 2309-118
Project: 4082-039-03

NITRITE (as Nitrogen)
EPA 353.2
QUALITY CONTROL

Matrix: Water
Units: mg/L-N

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0914W1					
Nitrite	**ND**	0.020	EPA 353.2	9-14-23	9-14-23	

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE								
Laboratory ID:	09-118-09							
	ORIG DUP							
Nitrite	**ND** **ND**	NA	NA	NA	NA	NA	11	
MATRIX SPIKE								
Laboratory ID:	09-118-09							
	MS	MS		MS				
Nitrite	**0.273**	0.250	ND	109	85-119	NA	NA	
SPIKE BLANK								
Laboratory ID:	SB0914W1							
	SB	SB		SB				
Nitrite	**0.270**	0.250	NA	108	89-118	NA	NA	

Date of Report: September 22, 2023
Samples Submitted: September 13, 2023
Laboratory Reference: 2309-118
Project: 4082-039-03

TOTAL ORGANIC CARBON
SM 5310B
QUALITY CONTROL

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0920W1					
Total Organic Carbon	**ND**	1.0	SM 5310B	9-20-23	9-20-23	

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE								
Laboratory ID:	09-118-01							
	ORIG DUP							
Total Organic Carbon	**18.9** **19.3**	NA	NA	NA	NA	2	13	
MATRIX SPIKE								
Laboratory ID:	09-118-01							
	MS	MS		MS				
Total Organic Carbon	**28.7**	10.0	18.9	98	86-127	NA	NA	
SPIKE BLANK								
Laboratory ID:	SB0920W1							
	SB	SB		SB				
Total Organic Carbon	**9.23**	10.0	NA	92	90-122	NA	NA	

Date of Report: September 22, 2023
Samples Submitted: September 13, 2023
Laboratory Reference: 2309-118
Project: 4082-039-03

AMMONIA (as Nitrogen)
SM 4500-NH_3 D
QUALITY CONTROL

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0914W1					
Ammonia	**ND**	0.050	SM 4500-NH3 D	9-14-23	9-14-23	

Analyte	Result		Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE									
Laboratory ID:	09-056-01								
	ORIG	DUP							
Ammonia	**0.581**	**0.518**	NA	NA	NA	NA	11	27	
MATRIX SPIKE									
Laboratory ID:	09-056-01								
	MS		MS		MS				
Ammonia	**4.89**		5.00	0.581	86	78-118	NA	NA	
SPIKE BLANK									
Laboratory ID:	SB0914W1								
	SB		SB		SB				
Ammonia	**5.01**		5.00	NA	100	85-114	NA	NA	

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1 - Sample extract treated with a sulfuric acid/silica gel cleanup procedure.

X2 - Sample extract treated with a silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in methods 8260 & 8270, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Y1 - Negative effects of the matrix from this sample on the instrument caused values for this analyte in the bracketing continuing calibration verification standard (CCVs) to be outside of 20% acceptance criteria. Because of this, quantitation limits and sample concentrations should be considered estimates.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Am Test Inc.
13600 NE 126TH PL
Suite C
Kirkland, WA 98034
(425) 885-1664

Professional Analytical Services

Sep 20 2023
On-Site Environmental
14648 NE 95th ST
Redmond, WA 98052
Attention: David Baumeister

Dear David Baumeister:

Enclosed please find the analytical data for your project.

The following is a cross correlation of client and laboratory identifications for your convenience.

CLIENT ID	MATRIX	AMTEST ID	TEST
FL358-MW7-230912	Water	23-A015585	DEM
FL358-MW10-230912	Water	23-A015586	DEM
FL358-MW11-230912	Water	23-A015587	DEM
FL358-MW12-230912	Water	23-A015588	DEM
FL358-MW14-230912	Water	23-A015589	DEM
FL358-MW5A-230913	Water	23-A015590	DEM
FL358-MW5B-230913	Water	23-A015591	DEM
FL358-MW6-230913	Water	23-A015592	DEM
FL358-MW13-230913	Water	23-A015593	DEM
FL358-MW8-230913	Water	23-A015594	DEM
FL358-MW9-230913	Water	23-A015595	DEM
FL358-DUP-230913	Water	23-A015596	DEM

Your samples were received on Wednesday, September 13, 2023. At the time of receipt, the samples were logged in and properly maintained prior to the subsequent analysis.

The analytical procedures used at AmTest are well documented and are typically derived from the protocols of the EPA, USDA, FDA or the Army Corps of Engineers.

Following the analytical data you will find the Quality Control (QC) results.

Please note that the detection limits that are listed in the body of the report refer to the Practical Quantitation Limits (PQL's), as opposed to the Method Detection Limits (MDL's).

If you should have any questions pertaining to the data package, please feel free to contact me.

Sincerely,

Aaron Young
Vice President

Project #: 4082-039-03
SDG #: 2331220
PO Number: 09-118

BACT = Bacteriological
CONV = Conventionals
MET = Metals
ORG = Organics
NUT=Nutrients
DEM=Demand
MIN=Mineral

Am Test Inc.
13600 NE 126TH PL
Suite C
Kirkland, WA 98034
(425) 885-1664
www.amtestlab.com

Professional Analytical Services

ANALYSIS REPORT

On-Site Environmental
14648 NE 95th ST
Redmond, WA 98052
Attention: David Baumeister
SDG Number: 2331220
Project #: 4082-039-03
PO Number: 09-118
All results reported on an as received basis.

Date Received: 09/13/23
Date Reported: 9/20/23

AMTEST Identification Number **23-A015585**
Client Identification **FL358-MW7-230912**
Sampling Date **09/12/23, 13:15**

Demand

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
BOD	7.8	mg/l		2	SM 5210B	HU	09/14/23

AMTEST Identification Number **23-A015586**
Client Identification **FL358-MW10-230912**
Sampling Date **09/12/23, 14:50**

Demand

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
BOD	4.6	mg/l		2	SM 5210B	HU	09/14/23

AMTEST Identification Number **23-A015587**
Client Identification **FL358-MW11-230912**
Sampling Date **09/12/23, 12:50**

Demand

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
BOD	3.5	mg/l		2	SM 5210B	HU	09/14/23

AMTEST Identification Number **23-A015588**
Client Identification **FL358-MW12-230912**
Sampling Date **09/12/23, 10:10**

Demand

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
BOD	6.6	mg/l		2	SM 5210B	HU	09/14/23

AMTEST Identification Number **23-A015589**
Client Identification **FL358-MW14-230912**
Sampling Date **09/12/23, 15:05**

Demand

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
BOD	< 2	mg/l		2	SM 5210B	HU	09/14/23

AMTEST Identification Number **23-A015590**
Client Identification **FL358-MW5A-230913**
Sampling Date **09/13/23, 13:50**

Demand

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
BOD	2.4	mg/l	S	2	SM 5210B	HU	09/14/23

AMTEST Identification Number **23-A015591**
Client Identification **FL358-MW5B-230913**
Sampling Date **09/13/23, 12:55**

Demand

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
BOD	< 2	mg/l		2	SM 5210B	HU	09/14/23

AMTEST Identification Number **23-A015592**
Client Identification **FL358-MW6-230913**
Sampling Date **09/13/23, 12:20**

Demand

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
BOD	< 2	mg/l		2	SM 5210B	HU	09/14/23

AMTEST Identification Number **23-A015593**
Client Identification **FL358-MW13-230913**
Sampling Date **09/13/23, 09:20**

Demand

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
BOD	< 2	mg/l		2	SM 5210B	HU	09/14/23

AMTEST Identification Number **23-A015594**
Client Identification **FL358-MW8-230913**
Sampling Date **09/13/23, 11:20**

Demand

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
BOD	2.0	mg/l	S	2	SM 5210B	HU	09/14/23

AMTEST Identification Number **23-A015595**
Client Identification **FL358-MW9-230913**
Sampling Date **09/13/23, 10:05**

Demand

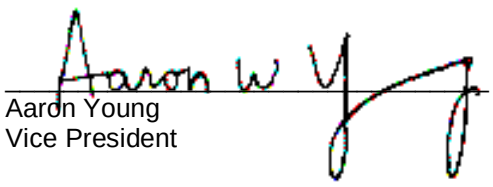
PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
BOD	< 2	mg/l	S	2	SM 5210B	HU	09/14/23

AMTEST Identification Number **23-A015596**
Client Identification **FL358-DUP-230913**
Sampling Date **09/13/23, 06:00**

Demand

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
BOD	< 2	mg/l		2	SM 5210B	HU	09/14/23

S = Sample did not meet the method specification of 2ppm depletion.



Aaron Young
Vice President

Am Test Inc.
13600 NE 126th PL
Suite C
Kirkland, WA, 98034
(425) 885-1664
www.amtestlab.com

Professional Analytical Services

QC Summary for sample numbers: 23-A015585 to 23-A015596

DUPLICATES

SAMPLE #	ANALYTE	UNITS	SAMPLE VALUE	DUP VALUE	RPD
23-A015602	BOD	mg/l	290	310	6.7

BLANKS

ANALYTE	UNITS	RESULT
BOD	mg/l	< 2

OnSite Environmental Inc.

14648 NE 95th Street, Redmond, WA 98052 · (425) 883-3881

Laboratory Reference #: 09-118

Laboratory: AmTest Laboratories

Attention: Aaron Young

13600 NE 126th Pl Kirkland, WA 98034

Phone Number: (425) 885-1664

Turnaround Request

1 Day ~~2 Day~~ 3 Day

Standard

Other: _____

Project Manager: David Baumeister

email: dbaumeister@onsite-env.com

Project Number: 4082-039-03

Project Name: _____

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	Requested Analyses
15585	FL358-MW7-230912	9/12/23	13:15	W	1	BOD 5
15586	FL358-MW10-230912	9/12/23	14:50	W	1	BOD 5
15587	FL358-MW11-230912	9/12/23	12:50	W	1	BOD 5
15588	FL358-MW12-230912	9/12/23	10:10	W	1	BOD 5
15589	FL358-MW14-230912	9/12/23	15:05	W	1	BOD 5
15590	FL358-MW5A-230913	9/13/23	13:50	W	1	BOD 5
15591	FL358-MW5B-230913	9/13/23	12:55	W	1	BOD 5
15592	FL358-MW6-230913	9/13/23	12:20	W	1	BOD 5
15593	FL358-MW13-230913	9/13/23	9:20	W	1	BOD 5
15594	FL358-MW8-230913	9/13/23	11:20	W	1	BOD 5

	Company	Date	Time	Comments/Special Instructions
Relinquished by:	OSE	9/13/23	1616	EDDs
Received by:	Amtest	9/13/23	1616	
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				

T=5.3°C

OnSite Environmental Inc.

14648 NE 95th Street, Redmond, WA 98052 · (425) 883-3881

Laboratory Reference #: 09-118

Laboratory: AmTest Laboratories

Attention: Aaron Young

13600 NE 126th Pl Kirkland, WA 98034

Phone Number: (425) 885-1664

Turnaround Request

1 Day 2 Day 3 Day

Standard

Other: _____

Project Manager: David Baumeister

email: dbaumeister@onsite-env.com

Project Number: 4082-039-03

Project Name: _____

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	Requested Analyses
15595	FL358-MW9-230913	9/13/23	10:05	W	1	BOD 5
15596	FL358-DUP-230913	9/13/23	6:00	W	1	BOD 5

	Company	Date	Time	Comments/Special Instructions
Relinquished by:	OSE	9/13/23	1616	T=5.3°C
Received by: KH	9/13/23	1616 9/13/23	1616	
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				

① Wrong time in wrong spot KH 9/13/23

Chain of Custody

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Laboratory Number: 09-118

Company: GeoEngineers
Project Number: 4082-039-03
Project Name: Federal Way Link Ext. FL358
Project Manager: Katy Atakturk
Sampled by: Paul Robinette/James Kohn

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☑ Standard (7 Days)
☐ _____ (other)

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx (☐ Acid / SG Clean-up)	Volatiles 8260C	Halogenated Volatiles 8260C	EDB EPA 8011 (Waters Only)	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total ~~RCRA Metals~~ IRON	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	~~HOLD~~ DISS. GASES	NITRATE/NITRITE	BOD + TOC	AMMONIA	% Moisture
1	FL358-MW7-230912	9/12/2023	1315	W	10					X									X				X	X	X	X	
2	FL358-MW10-230912	9/12/2023	1450	W	10					↓									—				—	—	—	—	
3	FL358-MW11-230912	9/12/2023	1250	W	10																						
4	FL358-MW12-230912	9/12/2023	1010	W	10																						
5	FL358-MW14-230912	9/12/2023	1505	W	10					↓									—				—	—	—	—	
6	FL358-RIN1-230912	9/12/2023	1530	W	3	9/13/23				X																	
7	TB-1-230912	—	—	W	2					X																	

	Signature	Company	Date	Time
Relinquished		GEL	9/13/23	1538
Received		OSE	9/13/23	1538
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions
VOCs - PCE + BREAKDOWN ONLY

Data Package: Standard ☐ Level III ☐ Level IV ☐
Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

Chain of Custody

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: GeoEngineers
Project Number: 4082-039-03
Project Name: Federal Way Link Ext. FL358
Project Manager: Katy Atakturk
Sampled by: Paul Robinette

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☑ Standard (7 Days)
☐ _____ (other)

Laboratory Number: 09-118

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers
8	FL358-MW5A-230913	9/13/2023	1350	W	10
9	FL358-MW5B-230913	9/13/2023	1235	W	10
10	FL358-MW6-230913	9/13/2023	1220	W	10
11	FL358-MW13-230913	9/13/2023	920	W	10
12	FL358-MW8-230913	9/13/2023	1120	W	10
13	FL358-MW9-230913	9/13/2023	1005	W	10
14	FL358-DUP-230913	9/13/2023	0600	W	10
15	FL358-RIN2-230913	9/13/2023	1414	W	3
16	TB-2-230913	—	—	W	1

Analysis	Lab ID 8	9	10	11	12	13	14	15	16
NWTPH-HCID									
NWTPH-Gx/BTEX									
NWTPH-Gx									
NWTPH-Dx (☐ Acid / SG Clean-up)									
Volatiles 8260C	X	|	|	|	|	|	|	|	|
Halogenated Volatiles 8260C									
EDB EPA 8011 (Waters Only)									
Semivolatiles 8270D/SIM (with low-level PAHs)									
PAHs 8270D/SIM (low-level)									
PCBs 8082A									
Organochlorine Pesticides 8081B									
Organophosphorus Pesticides 8270D/SIM									
Chlorinated Acid Herbicides 8151A									
Total ~~RCRA Metals~~ IRON	X	|	|	|	|	|	|	|	
Total MTCA Metals									
TCLP Metals									
HEM (oil and grease) 1664A									
~~HOLD~~ DISS GASES	X	|	|	|	|	|	|	|	
NITRATE/NITRITE	X	|	|	|	|	|	|	|	
BOD + TOC	X	|	|	|	|	|	|		
AMMONIA	X	|	|	|	|	|	|		
% Moisture									

	Signature	Company	Date	Time
Relinquished		GEI	9/13/23	1538
Received		ONE	9/13/23	1538
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions
VOCs - PCE + BREAKDOWN ONLY

Data Package: Standard ☐ Level III ☐ Level IV ☐
Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

GeoEngineers

1101 Fawcett Avenue, Suite 200, Tacoma, Washington 98402, Telephone: 253.383.4940, Fax: 253.383.4923 www.geoengineers.com

Data Validation Report

Project:	Sound Transit – Federal Way Link Extension Parcel FL358 (Y Pay Mor Drycleaner) December 2023 Groundwater Samples
GEI File:	4082-039-03
Date:	March 8, 2024

This report documents the results of a United States Environmental Protection Agency (USEPA)-defined Stage 2A data validation (USEPA Document 540-R-08-005; USEPA 2009) of analytical data from the analyses of water samples collected as part of the December 2023 sampling event, and the associated laboratory and field quality control (QC) samples. The samples were obtained from the Y Pay Mor Drycleaner Site located at 2210 South 320th Street in Federal Way, Washington.

OBJECTIVE AND QUALITY CONTROL ELEMENTS

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

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

The data validation included review of the following QC elements:

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

VALIDATED SAMPLE DELIVERY GROUPS

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

TABLE 1. SUMMARY OF VALIDATED SAMPLE DELIVERY GROUPS

Laboratory SDG	Samples Validated
2312-112	FL358-MW7-231207, FL358-MW12-231207, FL358-MW13-231207, FL358-MW14-231207, RB1-231207, TB1-231207
2312-129	FL358-MW5A-231208, FL358-MW5B-231208, FL358-DUP-231208, FL358-MW6-231208, FL358-MW8-231208, FL358-MW9-231208, FL358-RB1-231208, FL358-TB1-231208
2312-138	FL358-MW10-231211, FL358-MW11-231211, FL358-RB1-231211, FL358-TB1-231211

CHEMICAL ANALYSIS PERFORMED

OnSite Environmental, Inc. (OnSite) of Redmond, Washington, performed laboratory analysis on the water samples using one or more of the following methods:

- Volatile Organic Compounds (VOCs) by Method SW8260D;
- Total Metals by Method EPA6010D;
- Dissolved Gases by Method RSK-175;
- Nitrate and Nitrite by Method EPA353.2;
- Ammonia as Nitrogen by Method SM4500-NH3D; and
- Total Organic Carbon (TOC) by Method SM5310B

AmTest Laboratories (AmTest), located in Kirkland, Washington, served as a secondary laboratory sub-contracted through OnSite and performed analyses on the samples using the following method:

- Biochemical Oxygen Demand (BOD) by Method SM5210B

DATA VALIDATION SUMMARY

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

Data Package Completeness

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

Chain-of-Custody Documentation

Chain-of-custody (COC) forms were provided with the laboratory analytical reports. The COCs were accurate and complete when submitted to the laboratory. The forms were appropriately signed and dated by both field collectors and laboratory personnel upon receipt.

Holding Times and Sample Preservation

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

Method, Trip, and Rinsate Blanks

Method Blanks

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

Trip Blanks

Trip blanks are analyzed to provide an indication as to whether volatile compounds have cross-contaminated other like samples within the transportation process to the laboratory. None of the target analytes were detected above the reporting limits in the trip blanks.

Rinsate Blanks

Equipment rinsate blanks are analyzed to provide an indication as to whether field decontamination and sampling procedures effectively prevent cross-contamination in field activities. None of the target analytes were detected above the reporting limits in the rinsate blanks.

Surrogate Recoveries

A surrogate compound is a compound that is chemically similar to the organic analytes of interest, but unlikely to be found in an environmental sample. Surrogates are used for organic analyses and are added to the samples, standards, and blanks to serve as an accuracy and specificity check of each analysis. The surrogates are added to the samples at a known concentration and percent recoveries are calculated following analysis. The surrogate percent recoveries for field samples were within the laboratory control limits.

Matrix Spikes/Matrix Spike Duplicates

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

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

Laboratory Control Samples/Laboratory Control Sample Duplicates

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

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

Laboratory Duplicates

Internal laboratory duplicate analyses are performed to monitor the precision of the analyses. Two separate aliquots of a sample are analyzed as distinct samples in the laboratory and the RPD between the two results is calculated. Duplicate analyses should be performed once per analytical batch. If one or more of the samples used has a concentration less than five times the reporting limit for that sample, the absolute difference is used instead of the RPD. The RPD control limits are specified in the laboratory documents. Laboratory duplicates were analyzed at the proper frequency and the specified acceptance criteria were met.

Field Duplicates

In order to assess precision, field duplicate samples are collected and analyzed along with the reviewed sample batches. The duplicate samples are analyzed for the same parameters as the associated parent samples. Precision is determined by calculating the RPD between each pair of samples. If one or more of the sample analytes has a concentration less than five times the reporting limit for that sample, then the absolute difference is used instead of the RPD. The RPD control limit for water samples is 35 percent.

SDG 2312-129: One field duplicate sample pair, FL358-MW5B-231208 and FL358-DUP-231208, was submitted with this SDG. The precision criteria for the target analytes were met for this sample pair.

OVERALL ASSESSMENT

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

No analytical results were qualified. The data are acceptable for the intended use.

REFERENCES

U.S. Environmental Protection Agency (USEPA). "Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use," EPA-540-R-08-005. January 2009.

U.S. Environmental Protection Agency (USEPA) 2020a. Contract Laboratory Program National Functional Guidelines for Organic Superfund Methods Data Review, EPA-540-R-20-005. November 2020.

U.S. Environmental Protection Agency (USEPA) 2020b. Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Methods Data Review, EPA-542-R-20-006. November 2020.

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

December 28, 2023

Katy Atakturk
GeoEngineers, Inc.
2101 4th Avenue, Suite 950
Seattle, WA 98121

Re: Analytical Data for Project 4082-039-03
Laboratory Reference No. 2312-112

Dear Katy:

Enclosed are the analytical results and associated quality control data for samples submitted on December 7, 2023.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: December 28, 2023
Samples Submitted: December 7, 2023
Laboratory Reference: 2312-112
Project: 4082-039-03

Case Narrative

Samples were collected on December 7, 2023 and received by the laboratory on December 7, 2023. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below. However the soil results for the QA/QC samples are reported on a wet-weight basis.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Date of Report: December 28, 2023
Samples Submitted: December 7, 2023
Laboratory Reference: 2312-112
Project: 4082-039-03

ANALYTICAL REPORT FOR SAMPLES

Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
FL358-MW7-231207	12-112-01	Water	12-7-23	12-7-23	
FL358-MW12-231207	12-112-02	Water	12-7-23	12-7-23	
FL358-MW13-231207	12-112-03	Water	12-7-23	12-7-23	
FL358-MW14-231207	12-112-04	Water	12-7-23	12-7-23	
TB1-231207	12-112-05	Water	---	12-7-23	
RB1-231207	12-112-06	Water	12-7-23	12-7-23	

Date of Report: December 28, 2023
Samples Submitted: December 7, 2023
Laboratory Reference: 2312-112
Project: 4082-039-03

VOLATILE ORGANICS EPA 8260D

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW7-231207**					
Laboratory ID:	12-112-01					
Vinyl Chloride	10	0.40	EPA 8260D	12-18-23	12-18-23	
1,1-Dichloroethene	ND	0.40	EPA 8260D	12-18-23	12-18-23	
(trans) 1,2-Dichloroethene	ND	0.40	EPA 8260D	12-18-23	12-18-23	
(cis) 1,2-Dichloroethene	7.4	0.40	EPA 8260D	12-18-23	12-18-23	
Trichloroethene	ND	0.40	EPA 8260D	12-18-23	12-18-23	
Tetrachloroethene	ND	0.40	EPA 8260D	12-18-23	12-18-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*80*	*75-127*				
Toluene-d8	*99*	*80-127*				
4-Bromofluorobenzene	*93*	*78-125*				
Client ID:	**FL358-MW12-231207**					
Laboratory ID:	12-112-02					
Vinyl Chloride	0.29	0.20	EPA 8260D	12-12-23	12-12-23	
1,1-Dichloroethene	ND	0.40	EPA 8260D	12-18-23	12-18-23	
(trans) 1,2-Dichloroethene	ND	0.40	EPA 8260D	12-18-23	12-18-23	
(cis) 1,2-Dichloroethene	ND	0.40	EPA 8260D	12-18-23	12-18-23	
Trichloroethene	ND	0.40	EPA 8260D	12-18-23	12-18-23	
Tetrachloroethene	ND	0.40	EPA 8260D	12-18-23	12-18-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*91*	*75-127*				
Toluene-d8	*99*	*80-127*				
4-Bromofluorobenzene	*97*	*78-125*				
Client ID:	**FL358-MW13-231207**					
Laboratory ID:	12-112-03					
Vinyl Chloride	ND	0.20	EPA 8260D	12-12-23	12-12-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	12-12-23	12-12-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	12-12-23	12-12-23	
(cis) 1,2-Dichloroethene	3.3	0.20	EPA 8260D	12-12-23	12-12-23	
Trichloroethene	1.5	0.20	EPA 8260D	12-12-23	12-12-23	
Tetrachloroethene	3.2	0.20	EPA 8260D	12-12-23	12-12-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*90*	*75-127*				
Toluene-d8	*91*	*80-127*				
4-Bromofluorobenzene	*104*	*78-125*				

Date of Report: December 28, 2023
Samples Submitted: December 7, 2023
Laboratory Reference: 2312-112
Project: 4082-039-03

VOLATILE ORGANICS EPA 8260D

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW14-231207**					
Laboratory ID:	12-112-04					
Vinyl Chloride	1.9	0.40	EPA 8260D	12-18-23	12-18-23	
1,1-Dichloroethene	ND	0.40	EPA 8260D	12-18-23	12-18-23	
(trans) 1,2-Dichloroethene	ND	0.40	EPA 8260D	12-18-23	12-18-23	
(cis) 1,2-Dichloroethene	8.2	0.40	EPA 8260D	12-18-23	12-18-23	
Trichloroethene	ND	0.40	EPA 8260D	12-18-23	12-18-23	
Tetrachloroethene	ND	0.40	EPA 8260D	12-18-23	12-18-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*104*	*75-127*				
Toluene-d8	*104*	*80-127*				
4-Bromofluorobenzene	*102*	*78-125*				
Client ID:	**TB1-231207**					
Laboratory ID:	12-112-05					
Vinyl Chloride	ND	0.20	EPA 8260D	12-12-23	12-12-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	12-12-23	12-12-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	12-12-23	12-12-23	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260D	12-12-23	12-12-23	
Trichloroethene	ND	0.20	EPA 8260D	12-12-23	12-12-23	
Tetrachloroethene	ND	0.20	EPA 8260D	12-12-23	12-12-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*91*	*75-127*				
Toluene-d8	*90*	*80-127*				
4-Bromofluorobenzene	*102*	*78-125*				
Client ID:	**RB1-231207**					
Laboratory ID:	12-112-06					
Vinyl Chloride	ND	0.20	EPA 8260D	12-12-23	12-12-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	12-12-23	12-12-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	12-12-23	12-12-23	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260D	12-12-23	12-12-23	
Trichloroethene	ND	0.20	EPA 8260D	12-12-23	12-12-23	
Tetrachloroethene	ND	0.20	EPA 8260D	12-12-23	12-12-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*91*	*75-127*				
Toluene-d8	*90*	*80-127*				
4-Bromofluorobenzene	*103*	*78-125*				

Date of Report: December 28, 2023
Samples Submitted: December 7, 2023
Laboratory Reference: 2312-112
Project: 4082-039-03

TOTAL IRON
EPA 6010D

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW7-231207**					
Laboratory ID:	12-112-01					
Iron	**46000**	500	EPA 6010D	12-9-23	12-12-23	
Client ID:	**FL358-MW12-231207**					
Laboratory ID:	12-112-02					
Iron	**59000**	500	EPA 6010D	12-9-23	12-12-23	
Client ID:	**FL358-MW13-231207**					
Laboratory ID:	12-112-03					
Iron	**4800**	50	EPA 6010D	12-9-23	12-11-23	
Client ID:	**FL358-MW14-231207**					
Laboratory ID:	12-112-04					
Iron	**6000**	50	EPA 6010D	12-9-23	12-11-23	

Date of Report: December 28, 2023
Samples Submitted: December 7, 2023
Laboratory Reference: 2312-112
Project: 4082-039-03

TOTAL ORGANIC CARBON
SM 5310B

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW7-231207**					
Laboratory ID:	12-112-01					
Total Organic Carbon	**20**	1.0	SM 5310B	12-18-23	12-18-23	
Client ID:	**FL358-MW12-231207**					
Laboratory ID:	12-112-02					
Total Organic Carbon	**27**	1.0	SM 5310B	12-18-23	12-18-23	
Client ID:	**FL358-MW13-231207**					
Laboratory ID:	12-112-03					
Total Organic Carbon	**7.7**	1.0	SM 5310B	12-18-23	12-18-23	
Client ID:	**FL358-MW14-231207**					
Laboratory ID:	12-112-04					
Total Organic Carbon	**8.6**	1.0	SM 5310B	12-18-23	12-18-23	

Date of Report: December 28, 2023
Samples Submitted: December 7, 2023
Laboratory Reference: 2312-112
Project: 4082-039-03

NITRATE (as Nitrogen)
EPA 353.2

Matrix: Water
Units: mg/L-N

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW7-231207**					
Laboratory ID:	12-112-01					
Nitrate	**0.32**	0.050	EPA 353.2	12-11-23	12-11-23	
Client ID:	**FL358-MW12-231207**					
Laboratory ID:	12-112-02					
Nitrate	**0.31**	0.050	EPA 353.2	12-11-23	12-11-23	
Client ID:	**FL358-MW13-231207**					
Laboratory ID:	12-112-03					
Nitrate	**0.086**	0.050	EPA 353.2	12-11-23	12-11-23	
Client ID:	**FL358-MW14-231207**					
Laboratory ID:	12-112-04					
Nitrate	**0.077**	0.050	EPA 353.2	12-11-23	12-11-23	

Date of Report: December 28, 2023
Samples Submitted: December 7, 2023
Laboratory Reference: 2312-112
Project: 4082-039-03

NITRITE (as Nitrogen)
EPA 353.2

Matrix: Water
Units: mg/L-N

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW7-231207**					
Laboratory ID:	12-112-01					
Nitrite	**ND**	0.020	EPA 353.2	12-8-23	12-8-23	
Client ID:	**FL358-MW12-231207**					
Laboratory ID:	12-112-02					
Nitrite	**ND**	0.020	EPA 353.2	12-8-23	12-8-23	
Client ID:	**FL358-MW13-231207**					
Laboratory ID:	12-112-03					
Nitrite	**ND**	0.020	EPA 353.2	12-8-23	12-8-23	
Client ID:	**FL358-MW14-231207**					
Laboratory ID:	12-112-04					
Nitrite	**ND**	0.020	EPA 353.2	12-8-23	12-8-23	

Date of Report: December 28, 2023
Samples Submitted: December 7, 2023
Laboratory Reference: 2312-112
Project: 4082-039-03

DISSOLVED GASES
RSK 175

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW7-231207**					
Laboratory ID:	12-112-01					
Methane	**2400**	28	RSK 175	12-14-23	12-14-23	
Ethane	**ND**	0.56	RSK 175	12-14-23	12-14-23	
Ethene	**ND**	0.58	RSK 175	12-14-23	12-14-23	
Acetylene	**ND**	3.1	RSK 175	12-14-23	12-14-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
1-Butene	*101*	*50-150*				
Client ID:	**FL358-MW12-231207**					
Laboratory ID:	12-112-02					
Methane	**1700**	28	RSK 175	12-14-23	12-14-23	
Ethane	**ND**	0.56	RSK 175	12-14-23	12-14-23	
Ethene	**ND**	0.58	RSK 175	12-14-23	12-14-23	
Acetylene	**ND**	3.1	RSK 175	12-14-23	12-14-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
1-Butene	*92*	*50-150*				
Client ID:	**FL358-MW13-231207**					
Laboratory ID:	12-112-03					
Methane	**51**	0.55	RSK 175	12-14-23	12-14-23	
Ethane	**ND**	0.56	RSK 175	12-14-23	12-14-23	
Ethene	**ND**	0.58	RSK 175	12-14-23	12-14-23	
Acetylene	**ND**	3.1	RSK 175	12-14-23	12-14-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
1-Butene	*130*	*50-150*				
Client ID:	**FL358-MW14-231207**					
Laboratory ID:	12-112-04					
Methane	**320**	3.3	RSK 175	12-14-23	12-14-23	
Ethane	**ND**	0.56	RSK 175	12-14-23	12-14-23	
Ethene	**ND**	0.58	RSK 175	12-14-23	12-14-23	
Acetylene	**ND**	3.1	RSK 175	12-14-23	12-14-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
1-Butene	*95*	*50-150*				

Date of Report: December 28, 2023
Samples Submitted: December 7, 2023
Laboratory Reference: 2312-112
Project: 4082-039-03

AMMONIA (as Nitrogen)
SM 4500-NH_3 D

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW7-231207**					
Laboratory ID:	12-112-01					
Ammonia	**3.7**	0.050	SM 4500-NH3 D	12-27-23	12-27-23	
Client ID:	**FL358-MW12-231207**					
Laboratory ID:	12-112-02					
Ammonia	**4.1**	0.050	SM 4500-NH3 D	12-27-23	12-27-23	
Client ID:	**FL358-MW13-231207**					
Laboratory ID:	12-112-03					
Ammonia	**0.057**	0.050	SM 4500-NH3 D	12-27-23	12-27-23	
Client ID:	**FL358-MW14-231207**					
Laboratory ID:	12-112-04					
Ammonia	**0.067**	0.050	SM 4500-NH3 D	12-27-23	12-27-23	

Date of Report: December 28, 2023
Samples Submitted: December 7, 2023
Laboratory Reference: 2312-112
Project: 4082-039-03

VOLATILE ORGANICS EPA 8260D
QUALITY CONTROL

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1212W1					
Vinyl Chloride	ND	0.20	EPA 8260D	12-12-23	12-12-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	12-12-23	12-12-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	12-12-23	12-12-23	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260D	12-12-23	12-12-23	
Trichloroethene	ND	0.20	EPA 8260D	12-12-23	12-12-23	
Tetrachloroethene	ND	0.20	EPA 8260D	12-12-23	12-12-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*92*	*75-127*				
Toluene-d8	*91*	*80-127*				
4-Bromofluorobenzene	*103*	*78-125*				
Laboratory ID:	MB1218W1					
Vinyl Chloride	ND	0.20	EPA 8260D	12-18-23	12-18-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	12-18-23	12-18-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	12-18-23	12-18-23	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260D	12-18-23	12-18-23	
Trichloroethene	ND	0.20	EPA 8260D	12-18-23	12-18-23	
Tetrachloroethene	ND	0.20	EPA 8260D	12-18-23	12-18-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*104*	*75-127*				
Toluene-d8	*99*	*80-127*				
4-Bromofluorobenzene	*99*	*78-125*				

Date of Report: December 28, 2023
Samples Submitted: December 7, 2023
Laboratory Reference: 2312-112
Project: 4082-039-03

VOLATILE ORGANICS EPA 8260D
QUALITY CONTROL

Matrix: Water
Units: ug/L

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB1212W1									
	SB	SBD	SB	SBD	SB	SBD				
Vinyl Chloride	**9.33**	**8.90**	10.0	10.0	93	89	71-135	5	20	
1,1-Dichloroethene	**9.40**	**9.33**	10.0	10.0	94	93	78-125	1	19	
(trans) 1,2-Dichloroethene	**9.52**	**9.48**	10.0	10.0	95	95	80-125	0	17	
(cis) 1,2-Dichloroethene	**9.82**	**9.99**	10.0	10.0	98	100	80-129	2	17	
Trichloroethene	**10.1**	**10.1**	10.0	10.0	101	101	80-122	0	18	
Tetrachloroethene	**11.1**	**11.1**	10.0	10.0	111	111	80-124	0	18	
Surrogate:										
Dibromofluoromethane					*94*	*94*	*75-127*			
Toluene-d8					*92*	*89*	*80-127*			
4-Bromofluorobenzene					*105*	*105*	*78-125*			
Laboratory ID:	SB1218W1									
	SB	SBD	SB	SBD	SB	SBD				
Vinyl Chloride	**10.8**	**10.3**	10.0	10.0	108	103	71-135	5	20	
1,1-Dichloroethene	**8.84**	**9.60**	10.0	10.0	88	96	78-125	8	19	
(trans) 1,2-Dichloroethene	**9.69**	**10.5**	10.0	10.0	97	105	80-125	8	17	
(cis) 1,2-Dichloroethene	**9.89**	**10.5**	10.0	10.0	99	105	80-129	6	17	
Trichloroethene	**9.37**	**9.94**	10.0	10.0	94	99	80-122	6	18	
Tetrachloroethene	**9.94**	**10.7**	10.0	10.0	99	107	80-124	7	18	
Surrogate:										
Dibromofluoromethane					*100*	*106*	*75-127*			
Toluene-d8					*100*	*100*	*80-127*			
4-Bromofluorobenzene					*103*	*104*	*78-125*			

Date of Report: December 28, 2023
Samples Submitted: December 7, 2023
Laboratory Reference: 2312-112
Project: 4082-039-03

TOTAL IRON
EPA 6010D
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1209WH2					
Iron	**ND**	50	EPA 6010D	12-9-23	12-11-23	

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	12-053-01										
	ORIG	DUP									
Iron	**790**	**770**	NA	NA		NA		NA	3	20	
MATRIX SPIKES											
Laboratory ID:	12-053-01										
	MS	MSD	MS	MSD		MS	MSD				
Iron	**20700**	**21300**	20000	20000	790	**100**	**103**	75-125	3	20	

Date of Report: December 28, 2023
Samples Submitted: December 7, 2023
Laboratory Reference: 2312-112
Project: 4082-039-03

TOTAL ORGANIC CARBON
SM 5310B
QUALITY CONTROL

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1218W1					
Total Organic Carbon	**ND**	1.0	SM 5310B	12-18-23	12-18-23	

Analyte	Result		Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE									
Laboratory ID:	12-062-03								
	ORIG	DUP							
Total Organic Carbon	**ND**	**ND**	NA	NA	NA	NA	NA	13	
MATRIX SPIKE									
Laboratory ID:	12-062-03								
	MS		MS		MS				
Total Organic Carbon	**10.3**		10.0	ND	103	86-127	NA	NA	
SPIKE BLANK									
Laboratory ID:	SB1218W1								
	SB		SB		SB				
Total Organic Carbon	**9.59**		10.0	NA	96	90-122	NA	NA	

Date of Report: December 28, 2023
Samples Submitted: December 7, 2023
Laboratory Reference: 2312-112
Project: 4082-039-03

NITRATE (as Nitrogen)
EPA 353.2
QUALITY CONTROL

Matrix: Water
Units: mg/L-N

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1211W1					
Nitrate	**ND**	0.050	EPA 353.2	12-11-23	12-11-23	

Analyte	Result		Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE									
Laboratory ID:	12-112-01								
	ORIG	DUP							
Nitrate	**0.324**	**0.301**	NA	NA	NA	NA	7	19	
MATRIX SPIKE									
Laboratory ID:	12-112-01								
	MS		MS		MS				
Nitrate	**2.21**		2.00	0.324	94	85-121	NA	NA	
SPIKE BLANK									
Laboratory ID:	SB1211W1								
	SB		SB		SB				
Nitrate	**2.09**		2.00	NA	105	87-118	NA	NA	

Date of Report: December 28, 2023
Samples Submitted: December 7, 2023
Laboratory Reference: 2312-112
Project: 4082-039-03

NITRITE (as Nitrogen)
EPA 353.2
QUALITY CONTROL

Matrix: Water
Units: mg/L-N

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1208W1					
Nitrite	**ND**	0.020	EPA 353.2	12-8-23	12-8-23	

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE								
Laboratory ID:	12-112-04							
	ORIG DUP							
Nitrite	**ND** **ND**	NA	NA	NA	NA	NA	11	
MATRIX SPIKE								
Laboratory ID:	12-112-04							
	MS	MS		MS				
Nitrite	**0.228**	0.250	ND	91	85-119	NA	NA	
SPIKE BLANK								
Laboratory ID:	SB1208W1							
	SB	SB		SB				
Nitrite	**0.257**	0.250	NA	103	89-118	NA	NA	

Date of Report: December 28, 2023
Samples Submitted: December 7, 2023
Laboratory Reference: 2312-112
Project: 4082-039-03

DISSOLVED GASES
RSK 175
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1214W1					
Methane	**ND**	0.55	RSK 175	12-14-23	12-14-23	
Ethane	**ND**	0.56	RSK 175	12-14-23	12-14-23	
Ethene	**ND**	0.58	RSK 175	12-14-23	12-14-23	
Acetylene	**ND**	3.1	RSK 175	12-14-23	12-14-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
1-Butene	*108*	*50-150*				

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANK										
Laboratory ID:	SB1214W1									
	SB	SBD	SB	SBD	SB	SBD				
Methane	**46.7**	**44.2**	44.2	44.2	106	100	75-125	6	25	
Ethane	**87.1**	**82.7**	83.2	83.2	105	99	75-125	5	25	
Ethene	**77.9**	**73.0**	77.7	77.7	100	94	75-125	6	25	
Acetylene	**57.2**	**53.8**	72.0	72.0	79	75	60-140	6	25	
Surrogate:										
1-Butene					*102*	*94*	*50-150*			

Date of Report: December 28, 2023
Samples Submitted: December 7, 2023
Laboratory Reference: 2312-112
Project: 4082-039-03

AMMONIA (as Nitrogen)
SM 4500-NH_3 D
QUALITY CONTROL

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1227W1					
Ammonia	**ND**	0.050	SM 4500-NH3 D	12-27-23	12-27-23	

Analyte	Result		Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE									
Laboratory ID:	12-112-01								
	ORIG	DUP							
Ammonia	**3.72**	**4.05**	NA	NA	NA	NA	8	27	
MATRIX SPIKE									
Laboratory ID:	12-112-01								
	MS		MS		MS				
Ammonia	**9.05**		5.00	3.72	107	78-118	NA	NA	
SPIKE BLANK									
Laboratory ID:	SB1227W1								
	SB		SB		SB				
Ammonia	**5.12**		5.00	NA	102	85-114	NA	NA	

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1 - Sample extract treated with a sulfuric acid/silica gel cleanup procedure.

X2 - Sample extract treated with a silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in methods 8260 & 8270, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Y1 - Negative effects of the matrix from this sample on the instrument caused values for this analyte in the bracketing continuing calibration verification standard (CCVs) to be outside of 20% acceptance criteria. Because of this, quantitation limits and sample concentrations should be considered estimates.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Am Test Inc.
13600 NE 126TH PL
Suite C
Kirkland, WA 98034
(425) 885-1664

Professional Analytical Services

Dec 26 2023
On-Site Environmental
14648 NE 95th ST
Redmond, WA 98052
Attention: David Baumeister

Dear David Baumeister:

Enclosed please find the analytical data for your project.

The following is a cross correlation of client and laboratory identifications for your convenience.

CLIENT ID	MATRIX	AMTEST ID	TEST
FL358-MW7-231207	Water	23-A021286	DEM
FL358-MW12-231207	Water	23-A021287	DEM
FL358-MW13-231207	Water	23-A021288	DEM
FL358-MW14-231207	Water	23-A021289	DEM

Your samples were received on Friday, December 8, 2023. At the time of receipt, the samples were logged in and properly maintained prior to the subsequent analysis.

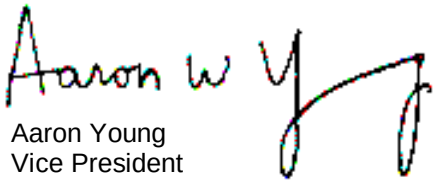
The analytical procedures used at AmTest are well documented and are typically derived from the protocols of the EPA, USDA, FDA or the Army Corps of Engineers.

Following the analytical data you will find the Quality Control (QC) results.

Please note that the detection limits that are listed in the body of the report refer to the Practical Quantitation Limits (PQL's), as opposed to the Method Detection Limits (MDL's).

If you should have any questions pertaining to the data package, please feel free to contact me.

Sincerely,



Aaron Young
Vice President

Project #: 4082-039-03
SDG #: 2332530

BACT = Bacteriological
CONV = Conventionals
MET = Metals
ORG = Organics
NUT=Nutrients
DEM=Demand
MIN=Minerals

Am Test Inc.
13600 NE 126TH PL
Suite C
Kirkland, WA 98034
(425) 885-1664
www.amtestlab.com

Professional Analytical Services

ANALYSIS REPORT

On-Site Environmental
14648 NE 95th ST
Redmond, WA 98052
Attention: David Baumeister
SDG Number: 2332530
Project #: 4082-039-03
All results reported on an as received basis.

Date Received: 12/08/23
Date Reported: 12/26/23

AMTEST Identification Number **23-A021286**
Client Identification **FL358-MW7-231207**
Sampling Date **12/07/23, 12:15**

Demand

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
BOD	14.	mg/l		2	SM 5210B	JM	12/08/23

AMTEST Identification Number **23-A021287**
Client Identification **FL358-MW12-231207**
Sampling Date **12/07/23, 13:15**

Demand

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
BOD	16.	mg/l	P	2	SM 5210B	JM	12/08/23

AMTEST Identification Number **23-A021288**
Client Identification **FL358-MW13-231207**
Sampling Date **12/07/23, 15:35**

Demand

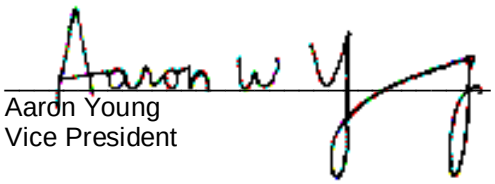
PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
BOD	2.0	mg/l		2	SM 5210B	JM	12/08/23

AMTEST Identification Number **23-A021289**
Client Identification **FL358-MW14-231207**
Sampling Date **12/07/23, 14:20**

Demand

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
BOD	< 2	mg/l		2	SM 5210B	JM	12/08/23

P = Oxygen depletion exceeded method specification. Sample was diluted.



Aaron Young
Vice President

Am Test Inc.
13600 NE 126th PL
Suite C
Kirkland, WA, 98034
(425) 885-1664
www.amtestlab.com

Professional Analytical Services

QC Summary for sample numbers: 23-A021286 to 23-A021289

DUPLICATES

SAMPLE #	ANALYTE	UNITS	SAMPLE VALUE	DUP VALUE	RPD
23-A021231	BOD	mg/l	44.	43.	2.3

BLANKS

ANALYTE	UNITS	RESULT
BOD	mg/l	< 2

OnSite Environmental Inc.

14648 NE 95th Street, Redmond, WA 98052 · (425) 883-3881

Laboratory Reference #: 12-112

Laboratory: AmTest Laboratories

Attention: Aaron Young

13600 NE 126th Pl Kirkland, WA 98034

Phone Number: (425) 885-1664

Turnaround Request

1 Day 2 Day 3 Day

Standard

Other: _____

Project Manager: David Baumeister

email: dbaumeister@onsite-env.com

Project Number: 4082-039-03

Project Name: _____

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	Requested Analyses
21286	FL358-MW7-231207	12/7/23	12:15	W	1	BOD 5
21287	FL358-MW12-231207	12/7/23	13:15	W	1	BOD 5
21288	FL358-MW13-231207	12/7/23	15:35	W	1	BOD 5
21289	FL358-MW14-231207	12/7/23	14:20	W	1	BOD 5

	Company	Date	Time	Comments/Special Instructions
Relinquished by:	OSE	12/8/23	3 pm	EDDS
Received by:	Amtest	12/8/23	1501	
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				

T=5.3°C

Chain of Custody

Page 1 of 1

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: GEI
Project Number: 4082-039-03
Project Name: FL358
Project Manager: KATY ATAKTURK
Sampled by: JK + PR

Turnaround Request (in working days)

(Check One)

- ☐ Same Day
- ☐ 1 Day
- ☐ 2 Days
- ☐ 3 Days
- ☑ Standard (7 Days)
- ☐ _____ (other)

Laboratory Number: 12-112

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX (8021☐ 8260☐)	NWTPH-Gx	NWTPH-Dx (SG Clean-up☐)	Volatiles 8260	Halogenated Volatiles 8260	EDB EPA 8011 (Waters Only)	Semivolatiles 8270/SIM (with low-level PAHs)	PAHs 8270/SIM (low-level)	PCBs 8082	Organochlorine Pesticides 8081	Organophosphorus Pesticides 8270/SIM	Chlorinated Acid Herbicides 8151	Total RCRA Metals	Total ~~MTCA~~ Metals ICP	TCLP Metals	HEM (oil and grease) 1664	TOC/BOD	NITRATE/NITRITE	DISS GASES*	AMMONIA	% Moisture
1	FL358-MW7-231207	12/7/23	1215	W	10					X	X									X				X	X	X	
2	MW12-231207		1315																								
3	MW13-231207		1535																								
4	MW14-231207		1420																								
5	TB1-231207	—	—	—	1																						
6	FB1-231207	12/7/23	1600	W	3						X																

	Signature	Company	Date	Time
Relinquished		GEI	12/7/23	1705
Received		OSE	12/7/23	1705
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

* METHANE, ETHANE, ACETYLENE, ETHENE PCE+ BREAKDOWN ONLY

Data Package: Standard ☐ Level III ☐ Level IV ☐

Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

December 28, 2023

Katy Atakturk
GeoEngineers, Inc.
2101 4th Avenue, Suite 950
Seattle, WA 98121

Re: Analytical Data for Project 4082-039-03
Laboratory Reference No. 2312-138

Dear Katy:

Enclosed are the analytical results and associated quality control data for samples submitted on December 11, 2023.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: December 28, 2023
Samples Submitted: December 11, 2023
Laboratory Reference: 2312-138
Project: 4082-039-03

Case Narrative

Samples were collected on December 11, 2023 and received by the laboratory on December 11, 2023. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below. However the soil results for the QA/QC samples are reported on a wet-weight basis.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Date of Report: December 28, 2023
Samples Submitted: December 11, 2023
Laboratory Reference: 2312-138
Project: 4082-039-03

ANALYTICAL REPORT FOR SAMPLES

Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
FL358-MW10-231211	12-138-01	Water	12-11-23	12-11-23	
FL358-MW11-231211	12-138-02	Water	12-11-23	12-11-23	
FL358-RB1-231211	12-138-03	Water	12-11-23	12-11-23	
FL358-TB1-231211	12-138-04	Water	---	12-11-23	

Date of Report: December 28, 2023
Samples Submitted: December 11, 2023
Laboratory Reference: 2312-138
Project: 4082-039-03

VOLATILE ORGANICS EPA 8260D

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW10-231211**					
Laboratory ID:	12-138-01					
Vinyl Chloride	ND	0.20	EPA 8260D	12-14-23	12-14-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	12-14-23	12-14-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	12-14-23	12-14-23	
(cis) 1,2-Dichloroethene	0.44	0.20	EPA 8260D	12-14-23	12-14-23	
Trichloroethene	ND	0.20	EPA 8260D	12-14-23	12-14-23	
Tetrachloroethene	ND	0.20	EPA 8260D	12-14-23	12-14-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*100*	*75-127*				
Toluene-d8	*104*	*80-127*				
4-Bromofluorobenzene	*100*	*78-125*				
Client ID:	**FL358-MW11-231211**					
Laboratory ID:	12-138-02					
Vinyl Chloride	5.1	0.20	EPA 8260D	12-14-23	12-14-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	12-14-23	12-14-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	12-14-23	12-14-23	
(cis) 1,2-Dichloroethene	4.9	0.20	EPA 8260D	12-14-23	12-14-23	
Trichloroethene	ND	0.20	EPA 8260D	12-14-23	12-14-23	
Tetrachloroethene	ND	0.20	EPA 8260D	12-14-23	12-14-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*88*	*75-127*				
Toluene-d8	*103*	*80-127*				
4-Bromofluorobenzene	*97*	*78-125*				
Client ID:	**FL358-RB1-231211**					
Laboratory ID:	12-138-03					
Vinyl Chloride	ND	0.20	EPA 8260D	12-14-23	12-14-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	12-14-23	12-14-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	12-14-23	12-14-23	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260D	12-14-23	12-14-23	
Trichloroethene	ND	0.20	EPA 8260D	12-14-23	12-14-23	
Tetrachloroethene	ND	0.20	EPA 8260D	12-14-23	12-14-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*87*	*75-127*				
Toluene-d8	*103*	*80-127*				
4-Bromofluorobenzene	*97*	*78-125*				

Date of Report: December 28, 2023
Samples Submitted: December 11, 2023
Laboratory Reference: 2312-138
Project: 4082-039-03

VOLATILE ORGANICS EPA 8260D

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-TB1-231211**					
Laboratory ID:	12-138-04					
Vinyl Chloride	ND	0.20	EPA 8260D	12-14-23	12-14-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	12-14-23	12-14-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	12-14-23	12-14-23	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260D	12-14-23	12-14-23	
Trichloroethene	ND	0.20	EPA 8260D	12-14-23	12-14-23	
Tetrachloroethene	ND	0.20	EPA 8260D	12-14-23	12-14-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*83*	*75-127*				
Toluene-d8	*102*	*80-127*				
4-Bromofluorobenzene	*96*	*78-125*				

Date of Report: December 28, 2023
Samples Submitted: December 11, 2023
Laboratory Reference: 2312-138
Project: 4082-039-03

TOTAL IRON
EPA 6010D

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW10-231211**					
Laboratory ID:	12-138-01					
Iron	**49000**	500	EPA 6010D	12-14-23	12-14-23	
Client ID:	**FL358-MW11-231211**					
Laboratory ID:	12-138-02					
Iron	**35000**	500	EPA 6010D	12-14-23	12-14-23	

Date of Report: December 28, 2023
Samples Submitted: December 11, 2023
Laboratory Reference: 2312-138
Project: 4082-039-03

TOTAL ORGANIC CARBON
SM 5310B

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW10-231211**					
Laboratory ID:	12-138-01					
Total Organic Carbon	**17**	1.0	SM 5310B	12-18-23	12-18-23	
Client ID:	**FL358-MW11-231211**					
Laboratory ID:	12-138-02					
Total Organic Carbon	**21**	1.0	SM 5310B	12-18-23	12-18-23	

Date of Report: December 28, 2023
Samples Submitted: December 11, 2023
Laboratory Reference: 2312-138
Project: 4082-039-03

NITRATE (as Nitrogen)
EPA 353.2

Matrix: Water
Units: mg/L-N

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW10-231211**					
Laboratory ID:	12-138-01					
Nitrate	**0.25**	0.050	EPA 353.2	12-12-23	12-12-23	
Client ID:	**FL358-MW11-231211**					
Laboratory ID:	12-138-02					
Nitrate	**0.78**	0.050	EPA 353.2	12-12-23	12-12-23	

Date of Report: December 28, 2023
Samples Submitted: December 11, 2023
Laboratory Reference: 2312-138
Project: 4082-039-03

NITRITE (as Nitrogen)
EPA 353.2

Matrix: Water
Units: mg/L-N

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW10-231211**					
Laboratory ID:	12-138-01					
Nitrite	**ND**	0.020	EPA 353.2	12-12-23	12-12-23	
Client ID:	**FL358-MW11-231211**					
Laboratory ID:	12-138-02					
Nitrite	**ND**	0.020	EPA 353.2	12-12-23	12-12-23	

Date of Report: December 28, 2023
Samples Submitted: December 11, 2023
Laboratory Reference: 2312-138
Project: 4082-039-03

AMMONIA (as Nitrogen)
SM 4500-NH_3 D

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW10-231211**					
Laboratory ID:	12-138-01					
Ammonia	**1.5**	0.050	SM 4500-NH3 D	12-27-23	12-27-23	
Client ID:	**FL358-MW11-231211**					
Laboratory ID:	12-138-02					
Ammonia	**3.8**	0.050	SM 4500-NH3 D	12-27-23	12-27-23	

Date of Report: December 28, 2023
Samples Submitted: December 11, 2023
Laboratory Reference: 2312-138
Project: 4082-039-03

DISSOLVED GASES
RSK 175

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FL358-MW10-231211**					
Laboratory ID:	12-138-01					
Methane	**3000**	55	RSK 175	12-14-23	12-14-23	
Ethane	**ND**	0.56	RSK 175	12-14-23	12-14-23	
Ethene	**ND**	0.58	RSK 175	12-14-23	12-14-23	
Acetylene	**ND**	3.1	RSK 175	12-14-23	12-14-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
1-Butene	*79*	*50-150*				
Client ID:	**FL358-MW11-231211**					
Laboratory ID:	12-138-02					
Methane	**3000**	28	RSK 175	12-14-23	12-14-23	
Ethane	**ND**	0.56	RSK 175	12-14-23	12-14-23	
Ethene	**ND**	0.58	RSK 175	12-14-23	12-14-23	
Acetylene	**ND**	3.1	RSK 175	12-14-23	12-14-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
1-Butene	*91*	*50-150*				

Date of Report: December 28, 2023
Samples Submitted: December 11, 2023
Laboratory Reference: 2312-138
Project: 4082-039-03

VOLATILE ORGANICS EPA 8260D
QUALITY CONTROL

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1214W1					
Vinyl Chloride	ND	0.20	EPA 8260D	12-14-23	12-14-23	
1,1-Dichloroethene	ND	0.20	EPA 8260D	12-14-23	12-14-23	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	12-14-23	12-14-23	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260D	12-14-23	12-14-23	
Trichloroethene	ND	0.20	EPA 8260D	12-14-23	12-14-23	
Tetrachloroethene	ND	0.20	EPA 8260D	12-14-23	12-14-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*101*	*75-127*				
Toluene-d8	*103*	*80-127*				
4-Bromofluorobenzene	*101*	*78-125*				

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB1214W1									
	SB	SBD	SB	SBD	SB	SBD				
Vinyl Chloride	**10.9**	**10.9**	10.0	10.0	109	109	71-135	0	20	
1,1-Dichloroethene	**10.3**	**10.4**	10.0	10.0	103	104	78-125	1	19	
(trans) 1,2-Dichloroethene	**10.3**	**10.4**	10.0	10.0	103	104	80-125	1	17	
(cis) 1,2-Dichloroethene	**10.2**	**10.4**	10.0	10.0	102	104	80-129	2	17	
Trichloroethene	**10.2**	**10.3**	10.0	10.0	102	103	80-122	1	18	
Tetrachloroethene	**10.8**	**11.0**	10.0	10.0	108	110	80-124	2	18	
Surrogate:										
Dibromofluoromethane					*100*	*105*	*75-127*			
Toluene-d8					*100*	*101*	*80-127*			
4-Bromofluorobenzene					*100*	*104*	*78-125*			

Date of Report: December 28, 2023
Samples Submitted: December 11, 2023
Laboratory Reference: 2312-138
Project: 4082-039-03

TOTAL IRON
EPA 6010D
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1214WH1					
Iron	**ND**	50	EPA 6010D	12-14-23	12-14-23	

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	12-053-04										
	ORIG	DUP									
Iron	**946**	**867**	NA	NA		NA		NA	9	20	
MATRIX SPIKES											
Laboratory ID:	12-053-04										
	MS	MSD	MS	MSD		MS	MSD				
Iron	**20400**	**20800**	20000	20000	946	**97**	**99**	75-125	2	20	

Date of Report: December 28, 2023
Samples Submitted: December 11, 2023
Laboratory Reference: 2312-138
Project: 4082-039-03

TOTAL ORGANIC CARBON
SM 5310B
QUALITY CONTROL

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1218W1					
Total Organic Carbon	**ND**	1.0	SM 5310B	12-18-23	12-18-23	

Analyte	Result		Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE									
Laboratory ID:	12-062-03								
	ORIG	DUP							
Total Organic Carbon	**ND**	**ND**	NA	NA	NA	NA	NA	13	
MATRIX SPIKE									
Laboratory ID:	12-062-03								
	MS		MS		MS				
Total Organic Carbon	**10.3**		10.0	ND	103	86-127	NA	NA	
SPIKE BLANK									
Laboratory ID:	SB1218W1								
	SB		SB		SB				
Total Organic Carbon	**9.59**		10.0	NA	96	90-122	NA	NA	

Date of Report: December 28, 2023
Samples Submitted: December 11, 2023
Laboratory Reference: 2312-138
Project: 4082-039-03

NITRATE (as Nitrogen)
EPA 353.2
QUALITY CONTROL

Matrix: Water
Units: mg/L-N

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1212W1					
Nitrate	**ND**	0.050	EPA 353.2	12-12-23	12-12-23	

Analyte	Result		Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE									
Laboratory ID:	12-138-01								
	ORIG	DUP							
Nitrate	**0.250**	**0.253**	NA	NA	NA	NA	1	19	
MATRIX SPIKE									
Laboratory ID:	12-138-01								
	MS		MS		MS				
Nitrate	**1.98**		2.00	0.250	87	85-121	NA	NA	
SPIKE BLANK									
Laboratory ID:	SB1212W1								
	SB		SB		SB				
Nitrate	**1.91**		2.00	NA	96	87-118	NA	NA	

Date of Report: December 28, 2023
Samples Submitted: December 11, 2023
Laboratory Reference: 2312-138
Project: 4082-039-03

NITRITE (as Nitrogen)
EPA 353.2
QUALITY CONTROL

Matrix: Water
Units: mg/L-N

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1212W1					
Nitrite	**ND**	0.020	EPA 353.2	12-12-23	12-12-23	

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE								
Laboratory ID:	12-138-01							
	ORIG DUP							
Nitrite	**ND** **ND**	NA	NA	NA	NA	NA	11	
MATRIX SPIKE								
Laboratory ID:	12-138-01							
	MS	MS		MS				
Nitrite	**0.237**	0.250	ND	95	85-119	NA	NA	
SPIKE BLANK								
Laboratory ID:	SB1212W1							
	SB	SB		SB				
Nitrite	**0.228**	0.250	NA	91	89-118	NA	NA	

Date of Report: December 28, 2023
Samples Submitted: December 11, 2023
Laboratory Reference: 2312-138
Project: 4082-039-03

AMMONIA (as Nitrogen)
SM 4500-NH_3 D
QUALITY CONTROL

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1227W1					
Ammonia	**ND**	0.050	SM 4500-NH3 D	12-27-23	12-27-23	

Analyte	Result		Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE									
Laboratory ID:	12-112-01								
	ORIG	DUP							
Ammonia	**3.72**	**4.05**	NA	NA	NA	NA	8	27	
MATRIX SPIKE									
Laboratory ID:	12-112-01								
	MS		MS		MS				
Ammonia	**9.05**		5.00	3.72	107	78-118	NA	NA	
SPIKE BLANK									
Laboratory ID:	SB1227W1								
	SB		SB		SB				
Ammonia	**5.12**		5.00	NA	102	85-114	NA	NA	

Date of Report: December 28, 2023
Samples Submitted: December 11, 2023
Laboratory Reference: 2312-138
Project: 4082-039-03

DISSOLVED GASES
RSK 175
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1214W1					
Methane	**ND**	0.55	RSK 175	12-14-23	12-14-23	
Ethane	**ND**	0.56	RSK 175	12-14-23	12-14-23	
Ethene	**ND**	0.58	RSK 175	12-14-23	12-14-23	
Acetylene	**ND**	3.1	RSK 175	12-14-23	12-14-23	
Surrogate:	*Percent Recovery*	*Control Limits*				
1-Butene	*108*	*50-150*				

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANK										
Laboratory ID:	SB1214W1									
	SB	SBD	SB	SBD	SB	SBD				
Methane	**46.7**	**44.2**	44.2	44.2	106	100	75-125	6	25	
Ethane	**87.1**	**82.7**	83.2	83.2	105	99	75-125	5	25	
Ethene	**77.9**	**73.0**	77.7	77.7	100	94	75-125	6	25	
Acetylene	**57.2**	**53.8**	72.0	72.0	79	75	60-140	6	25	
Surrogate:										
1-Butene					*102*	*94*	*50-150*			

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1 - Sample extract treated with a sulfuric acid/silica gel cleanup procedure.

X2 - Sample extract treated with a silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in methods 8260 & 8270, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Y1 - Negative effects of the matrix from this sample on the instrument caused values for this analyte in the bracketing continuing calibration verification standard (CCVs) to be outside of 20% acceptance criteria. Because of this, quantitation limits and sample concentrations should be considered estimates.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Am Test Inc.
13600 NE 126TH PL
Suite C
Kirkland, WA 98034
(425) 885-1664

Professional Analytical Services

Dec 26 2023
On-Site Environmental
14648 NE 95th ST
Redmond, WA 98052
Attention: David Baumeister

Dear David Baumeister:

Enclosed please find the analytical data for your project.

The following is a cross correlation of client and laboratory identifications for your convenience.

CLIENT ID	MATRIX	AMTEST ID	TEST
FL358-MW10-231211	Water	23-A021387	DEM
FL358-MW11-231211	Water	23-A021388	DEM

Your samples were received on Monday, December 11, 2023. At the time of receipt, the samples were logged in and properly maintained prior to the subsequent analysis.

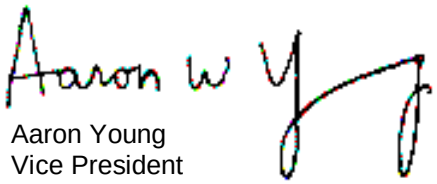
The analytical procedures used at AmTest are well documented and are typically derived from the protocols of the EPA, USDA, FDA or the Army Corps of Engineers.

Following the analytical data you will find the Quality Control (QC) results.

Please note that the detection limits that are listed in the body of the report refer to the Practical Quantitation Limits (PQL's), as opposed to the Method Detection Limits (MDL's).

If you should have any questions pertaining to the data package, please feel free to contact me.

Sincerely,



Aaron Young
Vice President

Project #: 4082-039-03
SDG #: 2332550

BACT = Bacteriological
CONV = Conventionals
MET = Metals
ORG = Organics
NUT=Nutrients
DEM=Demand
MIN=Minerals

Am Test Inc.
13600 NE 126TH PL
Suite C
Kirkland, WA 98034
(425) 885-1664
www.amtestlab.com

Professional Analytical Services

ANALYSIS REPORT

On-Site Environmental
14648 NE 95th ST
Redmond, WA 98052
Attention: David Baumeister
SDG Number: 2332550
Project #: 4082-039-03
All results reported on an as received basis.

Date Received: 12/11/23
Date Reported: 12/26/23

AMTEST Identification Number **23-A021387**
Client Identification **FL358-MW10-231211**
Sampling Date **12/11/23, 13:15**

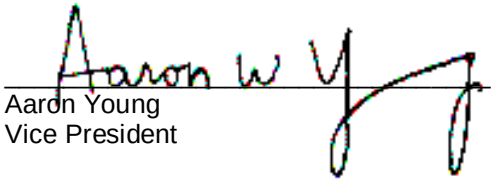
Demand

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
BOD	14.	mg/l		2	SM 5210B	JM	12/13/23

AMTEST Identification Number **23-A021388**
Client Identification **FL358-MW11-231211**
Sampling Date **12/11/23, 11:35**

Demand

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
BOD	14.	mg/l		2	SM 5210B	JM	12/13/23



Aaron Young
Vice President

Am Test Inc.
13600 NE 126th PL
Suite C
Kirkland, WA, 98034
(425) 885-1664
www.amtestlab.com

Professional Analytical Services

QC Summary for sample numbers: 23-A021387 to 23-A021388

DUPLICATES

SAMPLE #	ANALYTE	UNITS	SAMPLE VALUE	DUP VALUE	RPD
23-A021522	BOD	mg/l	8.3	7.7	7.5

BLANKS

ANALYTE	UNITS	RESULT
BOD	mg/l	< 2

10.0°C

P.4

OnSite Environmental Inc.

14648 NE 95th Street, Redmond, WA 98052 · (425) 883-3881

Laboratory Reference #: 12-138

Laboratory: AmTest Laboratories

Attention: Aaron Young

13600 NE 126th Pl Kirkland, WA 98034

Phone Number: (425) 885-1664

Turnaround Request

1 Day 2 Day 3 Day

Standard

Other:

Project Manager: David Baumeister

email: dbaumeister@onsite-env.com

Project Number: 4082-039-03

Project Name:

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	Requested Analyses
21357	FL358-MW10-231211	12/11/23	13:15	W	1	BOD5
21358	FL358-MW11-231211	12/11/23	11:35	W	1	BOD5

	Company	Date	Time	Comments/Special Instructions
Relinquished by: Katelyn Pickard	OSE	12/11/23	1540	EDDs
Received by: Sandra Hutchison	Amtest	12/11/23	3:40	
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				

Chain of Custody

Page 1 of 1

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Laboratory Number: 12-138

Company: GeoEngineers
Project Number: 4082-039-03
Project Name: Federal Way Link Ext. FL358
Project Manager: Katy Atakturk
Sampled by: Paul Robinette

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☑ Standard (7 Days)
☐ _____ (other)

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx (☐ Acid / SG Clean-up)	Volatiles 8260C	Halogenated Volatiles 8260C (2)	EDB EPA 8011 (Waters Only)	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	~~TCLP Metals~~ Total IRON	HEM (oil and grease) 1664A	~~HOLD~~ TDC/BOD	NITRATE/NITRITE	Ammonia	DISS Gases (1)	% Moisture
1	FL358-MW10-231211	12/11/23	1315	W	10						X										X		X	X	X	X	
2	FL358-MW11-231211	12/11/23	1135	W	10						X										X		X	X	X	X	
3	FL358-RB1-231211	12/11/23	1325	W	3						X																
4	FL358-TB1-231211	12/11/23	—	W	1						X																

	Signature	Company	Date	Time
Relinquished		GEI	12/11/23	1454
Received		OSE	12/11/23	1454
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions
(1) METHANE, ETHENE, ACETYLENE, ETHANE
(2) PCE + Breakdown only

Data Package: Standard ☐ Level III ☐ Level IV ☐
Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

APPENDIX E
EPA Screening for MNA of Chlorinated Organic Compounds in Groundwater

Table E-1

Analytical Parameters and Weighting for Preliminary Screening for Anaerobic Biodegradation Processes

Analysis	Concentration in Most Contaminated Zone	Interpretation	EPA Value	Y Pay Mor Northern Source Area (FL358-MW5A and FL358-MW6)
Oxygen	<0.5 mg/L	Tolerated, suppresses the reductive pathway at higher concentrations	3	3
	>5 mg/L	Not tolerated; however, vinyl chloride may be oxidized aerobically	-3	
Nitrate	<1 mg/L	At higher concentrations may compete with reductive pathway	2	2
Iron II	>1 mg/L	Reductive pathway possible; vinyl chloride may be oxidized under Fe(III)- reducing conditions	3	3
Sulfate	<20 mg/L	At higher concentrations may compete with reductive pathway	2	--
Sulfide	>1 mg/L	Reductive pathway possible	3	--
Methane	<0.5 mg/L	Vinyl chloride oxidizes	0	3
	>0.5 mg/L	Ultimate reductive daughter product, vinyl chloride accumulates	3	
Oxidation Reduction Potential (ORP)	<50 millivolts (mV)	Reductive pathway possible	1	0
	<-100mV	Reductive pathway likely	2	
pH	5 < pH < 9	Optimal range for reductive pathway	0	0
	5 > pH > 9	Outside optimal range for reductive pathway	-2	
Total Organic Carbon	> 20 mg/L	Carbon and energy source; drives dechlorination; can be natural or anthropogenic	2	0
Temperature	> 20°C	At T >20°C biochemical process is accelerated	1	0
Carbon Dioxide	>2x background	Ultimate oxidative daughter product	1	--
Alkalinity	>2x background	Results from interaction between carbon dioxide and aquifer minerals	1	--
Chloride	>2x background	Daughter product of organic chlorine	2	--
Hydrogen	>1 nM	Reductive pathway possible, vinyl chloride may accumulate	3	--
	<1 nM	Vinyl chloride oxidized	0	--
Volatile Fatty Acids	> 0.1 mg/L	Intermediates resulting from biodegradation of more complex compounds; carbon and energy source	2	--
BTEX	> 0.1 mg/L	Carbon and energy source; drives dechlorination	2	--
Tetrachloroethene	--	Material released	0	0
Trichloroethene	--	Material released	0	2
		Daughter product of PCE	2	
DCE	--	Material released	0	2
		Daughter product of TCE (If cis is > 80 percent of total DCE it is likely a daughter product)	2	
Vinyl chloride	--	Material released	0	2
		Daughter product of DCE	2	
Ethene/Ethane	>0.01mg/L	Daughter product of vinyl chloride/ethene	2	0
	>0.1 mg/L		2 3	
Total				**17**

Notes:

Scoring - Based on the U.S. EPA Natural Attenuation Evaluation Protocol (1998)

0 to 5= Inadequate evidence for reductive degradation of chlorinated organics

6 to 14 = Limited evidence for reductive degradation of chlorinated organics (may need to collect more parameter data)

15 to 20 = Adequate evidence for reductive degradation of chlorinated organics

>20 = Strong evidence for reductive degradation of chlorinated organics

PCE = tetrachloroethene

TCE = trichloroethene

DCE = dichloroethene

BTEX = benzene, toluene, ethylbenzene, and xylenes

°C = degrees Celsius

> greater than

< less than

mg/L = milligram per liter

APPENDIX F
Report Limitations and Guidelines for Use

APPENDIX F
REPORT LIMITATIONS AND GUIDELINES FOR USE[3]

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 geosciences 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 Sound Transit and their authorized agents. This report may be reviewed by 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 Sound Transit should rely on this report without first conferring with GeoEngineers. This report should not be applied for any purpose or project except the one originally contemplated.

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

This report applies to the FL358 Y Pay Mor Site located at 2210 South 320th Street located in Federal Way, Washington. GeoEngineers considered a number of unique, project-specific factors when establishing the scope of services for this project and report. Unless GeoEngineers specifically indicates otherwise, do not rely on this report if it was:

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

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

[3] Developed based on material provided by GBA, The GeoProfessional Business Association; www.gba.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 and slope instability or groundwater fluctuations. Always contact GeoEngineers before applying this report to determine if it is still applicable.

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

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.

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.

Most Environmental Findings Are Professional Opinions

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