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February 13, 2025

Mr. Sam Meng, Site Manager
Department of Ecology
PO Box 47775
Olympia, Washington 98504-7775

Subject: **Submittal of Semi-Annual 2024 Groundwater Monitoring Report**
July through December 2024
Sunoco Vancouver Facility
Vancouver, Washington
File No. 19001-009-36/37

Dear Mr. Meng:

Enclosed please find the *Semi-Annual Groundwater Monitoring Report: July through December 2024*. The report was prepared on behalf of NuStar Terminals Services, Inc. (NuStar) by GeoEngineers, Inc. (GeoEngineers) and presents data collected from July through December 2024.

If you have any questions or would like to discuss this further, please contact me at 503-807-3835.

Sincerely,
GeoEngineers, Inc.

Stephanie Bosze Salisbury, LG
Associate Geologist

SBS:jm

cc:

Ms. Victoria Wark Sunoco (electronic deliverable)
Ms. Patty Boyden, Port of Vancouver (electronic deliverable)
Mr. Richard Roché, Parametrix (electronic deliverable)
Mr. R.J. Sherman, PG, Kinder Morgan (electronic deliverable)

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Semi-Annual Groundwater Monitoring Report

July through December 2024
Sunoco Vancouver Facility
2565 NW Harborside Drive, Port of Vancouver
Vancouver, Washington

for

NuStar Terminals Service, Inc.

February 13, 2025

GeoEngineers
Earth Science + Technology

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1.0 INTRODUCTION

This semi-annual groundwater monitoring report was prepared by GeoEngineers, Inc. (GeoEngineers) on behalf of NuStar Terminals Services, Inc. (NuStar) for the Sunoco Vancouver Facility (Facility)[1] in Vancouver, Washington (Figure 1). This report presents the results of the groundwater monitoring activities completed at the Facility during the third and fourth quarters of 2024. Additionally, the report includes a summary and evaluation of interim action monitoring data for the reporting period.

The Facility is located at the Port of Vancouver (POV) Terminal No. 2 in Vancouver, Washington (Figure 1). The Facility Site Plan is shown on Figure 2. The property address is 2565 NW Harborside Drive, Port of Vancouver, Vancouver, Washington 98660 (Latitude: N45° 38.26', Longitude: W122° 42.20'). The property is owned by the POV and leased by Sunoco; the current extent of the leasehold is shown on Figure 2. The Facility is on the north shore of the Columbia River. Land adjacent to the Facility is industrial property also owned by the POV. The Facility is approximately 19 acres in size located on Clark County Tax Lot Numbers: 151979-000, 502010-002, 502010-000, and a portion of 502020-000, as well as a portion of the Washington Department of Natural Resources tideland area managed by the POV.

2.0 GROUNDWATER MONITORING FIELD ACTIVITIES

The groundwater monitoring event was performed in accordance with the Groundwater Monitoring Plan (GWMP; Ash Creek, 2008), approved by the Washington State Department of Ecology (Ecology) in a letter to NuStar dated July 30, 2009. The monitoring program for the third and fourth quarters of 2024 is summarized in Table 1. Two monitoring events were conducted during this period: the third quarter 2024 groundwater monitoring event was conducted from September 3 through 6, 2024. The fourth quarter 2024 monitoring event was conducted from December 2 through 7, 2024.

2.1. Water Level Measurements

Third quarter 2024 groundwater levels were measured on September 3, 2024, and fourth quarter groundwater levels were measured on December 2, 2024. The depth to groundwater was measured at Facility monitoring wells, multi-level groundwater monitoring system (MGMS) wells and selected off-leasehold wells (MW-F, MW-14, MW17, MW-23i, MW-25i, MW-26, MW-32s, MW-32i, S-1, and S2). Monitoring well locations are shown on Figure 2.

Depth to groundwater and groundwater elevation data are summarized in Table 2. The wells are screened in three different groundwater zones: Shallow, Intermediate, and Deep as defined in the Remedial Investigation report for the Facility (Apex, 2013).

2.2. Monitoring Well Sampling and Analysis

The sampling and analysis program for the third and fourth quarters of 2024 is summarized in Table 1. Groundwater monitoring data sheets for the sampling events are included in Appendix A. For quality

[1] On May 3, 2024, Sunoco LP announced it had completed the acquisition of NuStar Energy L.P. Note, the entity names have not legally changed and thus references to NuStar are retained in this document.

assurance/quality control (QA/QC), sample duplicates were collected from wells MW-7, MW-12, MW-19, and MGMS3-40 during the third and fourth quarter 2024 sampling events.

For both sampling events, the samples were uniquely labeled, stored in insulated coolers with ice, and transported under chain-of-custody protocol to Apex Laboratories of Tigard, Oregon, for laboratory analysis. Samples were analyzed for halogenated volatile organic compounds (HVOCs) by U.S. Environmental Protection Agency (EPA) Method 8260D. Groundwater analytical results for both events are shown in Table 3. Historical HVOC data are tabulated in Appendix B.

The terminal handled and distributed bulk fertilizer products, primarily urea but also mono-ammonium phosphate, continuously from 2014 to September 2020. The former contract with the fertilizer supplier has been terminated and it is unlikely fertilizer will be handled at the terminal in the future under a new contract. Urea cannot be directly measured in water but can be estimated by analysis of the primary urea constituents: ammonia, nitrate, and nitrite. To evaluate for urea in groundwater during the third and fourth quarters of 2024, Facility monitoring wells were sampled for nitrate as nitrogen and nitrite as nitrogen by EPA Method 300.0 and ammonia as nitrogen by EPA Method 4500-NH3. Groundwater analytical results for both events are shown with historical results in Table 4.

Samples from select wells were also analyzed for total organic carbon (TOC) and ethene, ethane, and methane to assist in evaluating remedial parameters. Samples collected during the third and fourth quarter events were subcontracted to ALS Environmental of Kelso, Washington using chain-of-custody protocols for TOC analysis using EPA Method 5310C. Apex Laboratories subcontracted to Air Technology Laboratories of City of Industry, California, using chain-of-custody protocols, for laboratory analysis of ethene, ethane, and methane by Method RSK-175. Chain-of-custody protocols and subcontract orders between Apex Laboratories and subcontracted laboratories are included in the analytical laboratory reports from Apex Laboratories, which are presented in Appendix C.

3.0 GROUNDWATER ELEVATIONS

Groundwater elevations and estimated elevation contours for the Shallow and Intermediate Zone wells for the third quarter 2024 are shown on Figures 3 and 4, respectively. Groundwater elevations and estimated elevation contours for the Shallow and Intermediate Zone wells for the fourth quarter 2024 are shown on Figures 5 and 6, respectively.

3.1. Third Quarter 2024

Shallow Zone. On September 3, 2024, depth-to-groundwater measurements were made at Shallow Zone monitoring wells in accordance with the groundwater monitoring plan provided in Table 1. The observed depths to groundwater in these Shallow Zone wells ranged from 26.36 to 28.57 feet below the top of casing (BTOC), and the corresponding groundwater elevations in these wells ranged from 4.33 to 5.80 feet above mean sea level (MSL; Table 2).

During the third quarter 2024 monitoring event, gauging of the Shallow Zone wells was completed between 8:42 AM and 11:16 AM. During the gauging activities, the water level in the adjacent Columbia River

decreased by 1.22 feet. River stage data are based on the Columbia River Datum (CRD)[2] and were obtained from the nearest National Oceanographic and Atmospheric Administration (NOAA) tide station (Station ID 9440083), which is located approximately 0.5 mile upstream of the Facility.

As shown in Table 2, groundwater elevations in the Shallow Zone were calculated to be an average of 3.19 feet lower in September 2024 than during the previous monitoring event in June 2024. During the third quarter 2024 gauging event, and generally consistent with previous gauging data, there was a groundwater divide extending from wells MW-10 and MW-8 located in the northwest corner of the Facility to well MW-15 located in the eastern corner of the Facility. To the south/southwest of the well MW-10 and MW-2 areas, groundwater flow is south toward the river. While data are limited to the north of the groundwater divide, groundwater flow north of the divide, and coincidentally north of the northern property boundary, is generally to the north and away from the river (Figure 3).

Intermediate Zone. On September 3, 2024, depth-to-groundwater measurements were made at Intermediate Zone monitoring wells in accordance with the groundwater monitoring plan provided in Table 1. Groundwater levels in Intermediate Zone wells were measured during a predicted tidal inflection to minimize the magnitude of tidal influence on water levels during the gauging event. Water levels were measured from Intermediate Zone wells between 2:32 PM and 3:38 PM on September 3, 2024. During the time interval in which Intermediate Zone wells were gauged, water levels in the adjacent Columbia River increased by 0.13 foot.

During the September 3, 2024 water level measurements, the observed depths to groundwater in the Intermediate Zone wells ranged from 28.57 to 30.84 feet BTOC, with groundwater elevations ranging from 2.73 to 3.61 feet above MSL (Table 2). As shown in Table 2, groundwater elevations in the Intermediate Zone were calculated to be an average of 4.79 feet lower in September 2024 than during the previous monitoring event in June 2024. During the September 2024 gauging event, the Intermediate Zone groundwater gradient beneath the Facility was flat with gradient of approximately 0.002 foot/foot toward the river (Figure 4).

Deep Zone. Depth to groundwater was measured in well MW-24d, which is screened from 210 to 230 feet below ground surface (bgs), within the Troutdale Formation. Depth to water in well MW-24d was 29.65 feet BTOC, corresponding to an elevation of 4.26 feet above MSL. A groundwater potentiometric map was not prepared for Deep Zone groundwater.

3.2. Fourth Quarter 2024

Shallow Zone. On December 2, 2024, depth-to-groundwater measurements were made at Shallow Zone monitoring wells in accordance with the groundwater monitoring plan provided in Table 1. The observed depths to groundwater in these Shallow Zone wells ranged from 25.48 to 32.98 feet BTOC, with groundwater elevations ranging from 4.56 to 6.36 feet above MSL (Table 2).

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[2] Columbia River Datum (CRD) is the adopted fixed low water reference plane for this area. CRD is a U.S. Army Corps of Engineers non-tidal datum defined at distinct river miles relative to the North American Vertical Datum of 1988 (NAVD88) and is used as chart datum above river mile 23 on the Columbia River. Datums are computed using observations from the low river stages of the year, generally August through October due to the masking of the tidal signal from strong seasonal river runoff during other portions of the year. Depending on river flow, water levels can be significantly higher than CRD. As of 2014, the U.S. Army Corps of Engineers provided updated offsets for CRD that have been applied to this station.

During the fourth quarter 2024 monitoring event, gauging of the Shallow Zone wells was completed between 7:47 AM and 12:10 PM. During the gauging activities, the water level in the adjacent Columbia River decreased by a net of 1.09 feet. As shown in Table 2, groundwater elevations in December 2024 were calculated to be an average of 1.03 feet higher than during the previous gauging event in September 2024. Although well MW-3 was gauged during the fourth quarter groundwater monitoring event, the calculated groundwater elevation is anomalous and suspected to be due to a gauging error. As such, the groundwater elevation for well MW-3 was excluded for isocontouring.

During the fourth quarter groundwater monitoring event, there was a slight groundwater ridge trending across the site from northwest to southeast, between wells MW-26, MW-9, MP-1, MW-7, MW-5, and MW-15). From the ridge, most groundwater flow on the leasehold was toward the south/southwest, towards the river.

Intermediate Zone. During the December 2, 2024 gauging event, depth to groundwater was measured in Intermediate Zone wells between 10:56 AM and 11:54 AM. During this time period, water levels in the adjacent Columbia River decreased by a net 0.24 foot.

The observed depths to groundwater in Intermediate Zone wells ranged from 26.45 to 29.35 feet BTOC, and groundwater elevations in these wells ranged from 4.23 to 5.48 feet above MSL (Table 2). As shown in Table 2, groundwater elevations on average were calculated to be an average of 1.96 feet higher in December 2024 than the previous monitoring event in September 2024. Although well MW-19i was gauged during the fourth quarter groundwater monitoring event, the calculated groundwater elevation is anomalous and suspected to be due to a gauging error. As such, the groundwater elevation for well MW-19i was excluded for isocontouring.

During the December 2, 2024 gauging event, intermediate groundwater flow beneath the Facility was flat with a slight groundwater flow toward the river (Figure 6).

Deep Zone. Depth to groundwater in Deep Zone well MW-24d was 28.41 feet BTOC, corresponding to an elevation of 5.50 feet above MSL (Table 2).

4.0 GROUNDWATER SAMPLE ANALYTICAL RESULTS

Complete copies of the laboratory reports for the third and fourth quarter 2024 groundwater monitoring events, including the quality assurance evaluation report and chain-of-custody protocol documentation, are included in Appendix C.

4.1. Third Quarter 2024

The September 2024 monitoring program included the collection of groundwater samples from the wells listed in Table 1[3]. Groundwater samples from these wells were analyzed for HVOCs, nitrate as nitrogen, nitrite as nitrogen, and ammonia as nitrogen. The HVOC and nitrate/nitrite/ammonia results for the third

[3] Beginning first quarter 2024, Kinder Morgan wells KMW-4 through KMW-6 have been added to the project scope. The wells are owned and maintained by Kinder Morgan; split samples are collected by GeoEngineers for HVOC and fertilizer contaminants of potential concern (COPC) analysis during the Kinder Morgan sampling activities.

quarter 2024 are summarized in Tables 3 and 4, respectively; HVOC data are shown on Figure 7, and nitrate and ammonia results are shown on Figure 8.

4.2. Fourth Quarter 2024

The December 2024 monitoring program included the collection of groundwater samples from the wells listed in Table 1. The groundwater samples were analyzed for HVOCs, nitrate as nitrogen, nitrite as nitrogen, and ammonia as nitrogen. The sample results for the fourth quarter 2024 are summarized in Tables 3 and 4; HVOC data are shown on Figure 9, and nitrate and ammonia results are shown on Figure 10.

4.3. Evaluation of Results

HVOC and fertilizer constituent concentration trend plots for each monitoring well are provided in Appendices D and E, respectively. Monitoring results demonstrate decreasing HVOC concentration trends in Shallow and Intermediate Zone groundwater in 29 of 33 monitoring wells. HVOC concentration trends were flat to moderately increasing for trichloroethene (TCE) and tetrachloroethene (PCE) in wells EX, MW-17, MW-19, and MGMS3-132. The concentrations of PCE and TCE in wells MW-17 and MGMS3-132 have consistently been variable and relatively low (i.e., PCE ranging from less than 1 microgram per liter [µg/L] to 16.3 µg/L for MGMS3-132 and TCE ranging from less than the reporting limit of 0.5 µg/L to 28.2 µg/L for MW-17); therefore, it is difficult to identify a discernable concentration trend for the wells. The flat or increasing HVOC trends may be the result of the conversion of chlorinated hydrocarbon mass from PCE to TCE during reductive dechlorination. A discussion of reductive dechlorination and total molar ethene mass is presented in Section 5.3.

Ammonia, nitrate, and nitrite results are provided in Table 4 and on Figures 8 and 10. The highest concentrations of ammonia and nitrate were generally found in the western areas of the leasehold, or to the immediate west of the NuStar leasehold, in Shallow Zone groundwater. The only exception being well MW-1, in which ammonia was elevated relative to the other monitoring wells in the area. It should be noted that the wells surrounding MW-1 (MGMS3, MW-5, and EW-1) each continue to have relatively low concentrations of ammonia and nitrate during the second half of 2024. Furthermore, groundwater data collected during a soil and groundwater investigation during the fall of 2023 indicate that fertilizer constituents in groundwater from a boring, about 100 feet east of well MW-1, are also very low. Concentrations of ammonia and nitrate in the Intermediate Zone groundwater were more consistent throughout the Facility and were generally one to two orders of magnitude lower than concentrations in Shallow Zone groundwater.

Fertilizer products have historically been stored at the Facility, although the specific products and storage areas have changed over time. Historical fertilizer handling operations ceased in late August 2008. The Facility obtained a new contract in 2014, and, at that time, resumed fertilizer handling and distribution processes. This fertilizer contract continued until it was terminated, and the last shipment was received in September 2020. There is currently no active receiving, handling, or distribution of fertilizer products at the NuStar Facility. Historical nitrate results are included in both Table 4 and Appendix E.

Trend plots depicting the concentrations of ammonia and nitrate since October 2020 are provided in Appendix E. For some monitoring wells, older fertilizer data are available (and are referenced in Table 4); however, the trend plots are intended to show fertilizer constituent concentration trends after fertilizer was no longer stored or handled at the Facility, thus do not depict pre-September 2020 data. Where ammonia or nitrate are not shown on the trend plots, the constituent(s) has remained below method reporting limits

during the monitoring period. While the results are still preliminary, significant reductions of nitrate and/or ammonia have been observed in several wells in which concentrations were elevated in September 2020 (i.e. EX, MGMS1-3[43], MW-1 [nitrate only], MW-8, MW-9, MW-10, MW-19, EX, and MP-1). With the exception of well MW-1, these wells are located in the western portion of the Facility (or off the leasehold to the west), consistent with our understanding of the most elevated fertilizer constituent concentrations at the Facility. For wells MW-7, MW-12, MW-13 and MW-16, concentration trends indicate that either nitrate or ammonia (not both) have increased since fertilizer handling stopped in September 2020. Groundwater concentrations from the remaining wells are either low (less than 1.0 milligrams per liter [mg/L]) or have remained relatively constant since fertilizer handling has ceased. In each monitoring well, there is a strong seasonable variability in fertilizer constituent concentration. The trend patterns for nitrate and ammonia are not identical and are in some instances inversely related (e.g., wells MW-12 and MW-13).

In accordance with the 2019 Agreed Order DE 15806 (the Order), a Supplemental Remedial Investigation (SRI) was initiated in the first semi-annual 2021 reporting period to further assess the nature and extent of ammonia, nitrates, and nitrites in groundwater at the Facility. The results of the SRI groundwater investigation were submitted to Ecology in a *Draft Phase I SRI Upland Soil and Groundwater Investigation Report* in June 2023. In that report, additional investigation was proposed to further evaluate potential sources as well as the nature and extent of fertilizer constituents in groundwater at the Facility. Ecology approved the work scope with some additional comments/recommendations and the field investigation was completed in October/November 2023. Soil and groundwater data for fertilizer constituents (nitrate, nitrite, ammonia, phosphate) were presented to Ecology in a package of tables and figures at a meeting on May 9, 2024. The results will ultimately be compiled into an SRI report and will be used for potential interim cleanup action planning. More information on the additional SRI is provided in Section 7.0.

5.0 INTERIM ACTION MEASURE ACTIVITIES

Several interim actions have been implemented at the Facility, as listed below.

- Between 2000 and 2005, a remediation system operated at the Facility that included: (1) a re-circulating system to treat groundwater, and (2) vapor extraction to treat soil. The interim action system pumped groundwater from extraction wells installed near the river, treated the pumped water with potassium permanganate, and then filtered and pumped the water into a series of injection wells along the railroad tracks. For soil, a soil vapor extraction (SVE) system withdrew soil vapors from wells IW-1, IN-2, IN-3, IN-4, EX-1, EX-3, EX-4, and EX-5. This SVE system was inactivated in 2005 because it no longer was removing significant HVOC mass.
- Bioremediation injections for remediation of Facility groundwater and the installation of an SVE system for the remediation of HVOCs in vadose-zone soils were completed in the spring/summer of 2008. These activities are herein referred to as the 2008 interim action. This SVE system has been operating since 2008.
- The SVE system was expanded and additional bioremediation injections were completed during the summer of 2011, which is referred to herein as the 2011 interim action. Details of the 2008 and 2011 interim actions are provided in the *Interim Action Installation Report* (Ash Creek, 2009b) and the 2011 *Interim Action Evaluation Report* (Ash Creek, 2012), respectively.

- Additional bioremediation injections were completed in 2016 adjacent to the seawall at the Facility in accordance with the 2015 *Interim Action Work Plan* (Apex, 2016). This work is referred to as the 2016 interim action. The *Interim Action Summary Report* (Apex, 2017) describes the scope and preliminary results of the 2016 interim action.

The 2008, 2011, and 2016 interim actions and results to date are described in the following subsections.

5.1. Summary of 2008 and 2011 Interim Actions

The 2008 interim action consisted of an SVE system in the vadose zone and enhanced anaerobic bioremediation of the Shallow Zone groundwater. The 2008 enhanced bioremediation locations and the SVE system layout are shown in Appendix F. The 2008 SVE system removed approximately 3,150 pounds of HVOCs between startup in September 2008 and the expansion in 2011. The mass removal rate at startup in 2008 was 58.8 pounds per day (lbs/day). The removal rate decreased to an average of 1.7 lbs/day by the third quarter of 2011. A mass removal chart for the 2008 SVE system is provided in Appendix F.

A soil and groundwater investigation in 2010 indicated that the 2008 interim action had reduced HVOCs in vadose-zone soils by 90 percent for PCE and 98 percent for TCE and had reduced total molar ethene concentrations in source area groundwater by 77 percent (Ash Creek, 2011). The investigation results were summarized in an appendix to the *2011 Interim Action Work Plan* (Work Plan; Ash Creek 2011) that was submitted to Ecology on March 25, 2011. The Work Plan included a proposal for the expansion of the SVE system to include 17 additional SVE well locations, additional bioremediation injections in the 2008 interim action area, and bioremediation injections in an expanded interim action area. On May 23, 2011, Ecology approved the Work Plan. The bioinjection activities were conducted from July 21 through August 31, 2011, and the SVE installation activities were conducted from August 2 through 5, 2011, and August 29 through October 3, 2011. The 2008 and 2011 bioremediation injection locations are shown on Figure 11.

The initial Facility SVE system installed in 2008, herein referred to as the 2008 SVE system, was comprised of 17 wells, divided among five branches, which were connected by a network of underground piping as shown on drawings provided in Appendix F. As part of the 2011 SVE system expansion, Branches 4 and 5 were disconnected from the other system branches and were connected to a new blower unit located approximately 150 feet to the northeast of the railroad tracks (Figure 13). The wells and piping associated with Branches 4 and 5 and the associated blower unit are herein referred to as the North System.

In August 2011, 17 additional SVE well pairs (for a total of 34 additional SVE wells) were installed within and to the south of warehouse 2625 (a.k.a. the Butler Building), in general accordance with the Work Plan (Ash Creek 2011; Figure 13). For each well pair, one well is screened in vadose-zone soils from 10 to 15 feet bgs and the second well is screened in vadose-zone soils from 15 to 25 feet bgs. These 17 well pairs, along with the Branch 1 through 3 wells from the 2008 SVE system, are piped underground to a blower unit located outside of the southeast corner of warehouse 2625. These SVE wells, associated underground piping, and the blower unit are herein referred to as the South System.

5.2. Summary of 2016 Interim Action

NuStar and the POV submitted a joint Feasibility Study (FS) to Ecology in March 2014 (Apex and Parametrix, 2014). To avoid potential delays in groundwater treatment while working through the FS and the associated regulatory approval process, NuStar proposed to implement a portion of the recommended

remedial action for the NuStar source area as an interim action. The details of the proposed interim action were submitted to Ecology in an *Interim Action Work Plan* on September 15, 2015. After a 30-day public comment period from May 12 to June 10, 2016, the Work Plan was approved on June 14, 2016. The interim action consisted of bioremediation injections along the southern portion of the NuStar terminal near the seawall. Per Ecology's request, the interim action also included baseline sediment and surface water sampling in the Columbia River. Additionally, enhanced bioremediation injections were implemented in an isolated area to the northwest of the NuStar terminal (the Northwest [NW] Area), which has been less responsive to monitored natural attenuation than at the NuStar terminal. The NW Area bioremediation injections were completed as a joint project between NuStar and the POV.

The NW Area injections were completed in July 2016 and included the injection of 52,000 gallons of bioremediation oil substrate (EOS®PRO, diluted with water) into the Shallow Zone groundwater through 30 boreholes in the vicinity of and between (NuStar) monitoring wells MW-14 and MW-26. Figure 12 illustrates the approximate boring locations in the NW Area. The same substrate material was injected at the NuStar terminal in August and September 2016 and included the injection of 100,000 gallons of EOSPRO (diluted with water) into 72 borings along the southern portion of the Facility, adjacent to the seawall. Figure 12 identifies the approximate locations of the injection borings near the NuStar seawall. In accordance with the approved *Interim Action Work Plan*, a summary of the groundwater injection and surface/water sampling activities was provided to Ecology in an *Interim Action Summary Report* on June 29, 2017 (Apex, 2017). The report included the results of the baseline surface water and sediment sampling as well as the results of two quarters of post interim action groundwater monitoring. A brief evaluation of the groundwater monitoring results from the interim action area is summarized in Section 5.3 below.

5.3. Interim Action Monitoring and Evaluation

This section summarizes the scope and results of groundwater monitoring that has been performed to evaluate the effectiveness of interim actions. Effectiveness is evaluated by reviewing HVOC and ethene concentration trends and TOC concentrations in groundwater. Effectiveness of the SVE system is evaluated based on the mass removal rate.

5.3.1. Enhanced Bioremediation Injections

Groundwater samples collected from wells EX, MP-1, MW-7, MW-12, MW-13, MW-14, MW-19, MW-24i, MW-26, MGMS1-43, MGMS2-40, and MGMS3-43 during the third and fourth quarters 2024 sampling events were analyzed for TOC by EPA Method 5310D and ethene by Method RSK-175, to evaluate the performance of the bioremediation injections.

In addition to the laboratory analysis of groundwater samples, field measurements of oxidation-reduction potential (ORP) and dissolved oxygen (DO) were collected from the monitoring wells during the third and fourth quarters 2024 monitoring events. Table 5 shows the results of interim action groundwater monitoring from the February 2007 baseline event through the fourth quarter 2024 monitoring event. Wells MW-24i and MGMS2-40 are not located within the 2008 interim action injection area but are located within the footprint of the 2011 and 2016 interim action areas; therefore, interim action monitoring data for these wells are presented from the second quarter 2011 baseline event through the fourth quarter 2024. Wells MW-13, MW-14, MW-19, MW-26, MGMS-1, and MGMS-3 are not located within the 2008 or 2011 interim action areas but are within the 2016 interim action area; therefore, monitoring data for those wells are presented from September 2016 through December 2024.

A discussion of reductive dechlorination of HVOCs in groundwater from prior to the 2008 interim action through the fourth quarter 2024 is provided below.

5.3.1.1. HVOC Concentrations Evaluation

Bioremediation injections in the primary source area at the Facility were initiated in 2008 and expanded in 2011[4]; bioremediation injections along the riverbank and in the NW Area were completed in 2016. Additionally, seven injection boreholes were advanced in 2016 in the area of wells MP-1 and EX[5], located on the western side of the (former) primary source area. The following paragraphs evaluate the results to date in each of these areas.

Primary Source Area. Concentration trend plots for PCE, TCE, total dichloroethene (DCE), and vinyl chloride (VC) in 2008/2011 interim action area wells EX, MGMS2-40, MP-1, and MW-7 are provided in Appendix G. HVOC data are included from the baseline monitoring event that was completed prior to the 2008 interim action (first quarter 2007; second quarter 2007 for well MGMS2-40) through December 2024. Except for well EX, concentrations of PCE and TCE have decreased in the interim action monitoring wells. Since the interim actions were initiated, the concentration of PCE in wells MW-7 and MGMS2-40 has been reduced by 99 and 90 percent, respectively, and the concentration of TCE has decreased by 62 and 83 percent, respectively. The concentrations of PCE and TCE in well MP-1 have decreased by approximately 90 percent and 94 percent, respectively, between the February 2007 baseline event and the December 2024 monitoring event.

The concentrations of PCE and TCE in well EX decreased by more than 99 percent between the February 2007 baseline event and the December 2018 monitoring event. Monitoring well EX was identified as damaged during the first quarter of 2019 and was decommissioned during the third quarter 2019. The December 2018 sampling event was the last sampling event for well EX prior to the well decommissioning. In April 2021, a replacement monitoring well, also referred to as EX, was installed adjacent to the abandoned well location. HVOC concentrations in samples collected from the replacement monitoring well EX between the second half of 2021 and December 2024 have been higher than the concentrations measured in the previous monitoring well EX location between December 2011 and December 2018. HVOC trends from June 2021 through December 2024 in well EX are flat to slightly decreasing.

Another indicator of effective treatment of chlorinated ethenes is a decrease in the total molar chloroethene concentration (the molar concentration of PCE, TCE, DCE, and VC combined). The use of total molar concentrations allows an assessment of changes in the total number of related contaminant molecules as the reductive dechlorination process transitions from the relatively heavy PCE to the progressively lighter TCE, DCE, and VC. Molar concentration trend plots for the interim action wells are provided in Appendix G. Between the February 2007 baseline event and the December 2024 monitoring event, total molar concentrations in wells MP-1, MW-7 and MGMS2-40 decreased between 75 percent (well MGMS2-40) to approximately 98 percent (well MW-7). Between the first sampling event in February 2007 and the December 2018 monitoring event, total molar concentrations in well EX decreased over 99 percent The total molar concentrations in well EX during the last six quarterly monitoring events were lower than the

[4] The description of the primary source area or "source area" is detailed in the Revised Remedial Investigation Report (Ash Creek, 2009a); the location is identified on Figure 2 of this report.

[5] Monitoring well EX has historically been referred to as EX-1 or EX. It is now referred to as EX. Note the replacement well was installed approximately 4 feet from the original, due to the presence of utilities in the area and safety requirements around intrusive work in the vicinity of buried utilities.

2007 baseline concentration. Concentration trends will continue to be evaluated in well EX to determine if those concentrations continue to trend downward. Additional HVOC investigation was completed during the fourth quarter 2023 in this area as part of Phase II of the SRI. The data from the investigation are currently being evaluated and will provide more information about HVOC concentrations in the vicinity of well EX and the primary source area. and to further understand the remedial progress from interim actions conducted to date.

Riverbank Area. Wells MW-12, MW-13, MW-19, MGMS1-43, and MGMS3-40 are located within the 2016 riverbank interim action area and, therefore, are useful for evaluating the effectiveness of the 2016 interim action. Concentration trend plots for PCE, TCE, DCE, and VC in these wells are provided in Appendix G. As shown on the trend plots, monitoring results from the 2016 interim action area indicate reductions in concentrations of PCE and TCE of over 93 percent in groundwater from wells MW-12, MW-13, and MGMS3-40 after the 2016 enhanced bioremediation injections. For example, concentrations of PCE and TCE in well MW-13 in June 2016, prior to the injection event, were 2,470 and 1,820 µg/L, respectively. By December 2024, PCE and TCE were detected at 19.2 and 8.46 µg/L, respectively. DCE concentrations have also decreased. The DCE concentration in well MW-13 has been reduced by approximately 92 percent since the 2016 enhanced bioremediation injections; concentrations of DCE in well MGMS1-43 have decreased by more than 92 percent since 2007 and over 68 percent since 2016. Concentrations of DCE in well MGMS3-40 have decreased by more than 99 percent compared to the concentrations measured in 2007 and 2016.

Unlike wells MW-12 and MW-13, HVOC concentrations in well MW-19 have not shown a discernable response to the 2016 oil injections. Well MW-19 is in an area of consistently flat groundwater gradient, and it appears, based on the TOC readings from this well (see Table 5), that the oil substrate did not reach the area of this well. However, the presence of VC and ethene (reductive dichlorination end products in the groundwater samples from the well supports that reductive dechlorination is occurring in the vicinity of the well.

The third and fourth quarters 2024 results showed a continued decrease of ethene in most of the riverbank wells suggesting that the oil substrate is becoming depleted and enhanced reductive dechlorination has slowed significantly in response. Additional discussion of ethene production is provided in the sections below. Future quarterly monitoring will be utilized to further evaluate these concentration trends, both in the Shallow Zone source area as well as outside of the source area treatment zone and in Intermediate Zone groundwater.

Northwest Area. Wells MW-14 and MW-26 are located within the 2016 NW Area interim action area and, therefore, are useful for evaluating the effectiveness of the interim action in this area. Concentration trend plots for PCE, TCE, DCE, and VC in these wells are provided in Appendix G. Response to the 2016 interim action injections was delayed and reduced in these wells, likely due to the typically flat or north/northwest groundwater gradient slowing the spread of the oil substrate. In general, the average concentrations of PCE and TCE in wells MW-14 and MW-26 have only decreased slightly since the 2016 injections. The total molar ethene concentrations in both wells have continued to decrease, as shown on the trend plots in Appendix G. These results indicate that although injections were not as effective at enhancing natural attenuation in the NW Area, there still has been moderate success at dechlorination in this area.

Wells MW-14 and MW-26 are located on the periphery of the injection area, limiting their utility in monitoring the effectiveness of the injections. Continued quarterly groundwater monitoring will be conducted to further

evaluate concentration trends. Additional soil and groundwater HVOC investigation was conducted in the NW Area during the fourth quarter 2023 and the results are currently being evaluated. The additional data will provide updated information on the nature and extent of HVOCs off site to the northwest of the NuStar leasehold and will be summarized for Ecology in the SRI.

5.3.1.2. Ethene Evaluation

Ethene is an end product of the reductive dechlorination process. The detection of ethene confirms the completion of the reductive dechlorination pathway and the destruction of the target HVOCs at the Facility. Ethene degrades quickly in most natural environments; therefore, observing increases in ethene concentration can be difficult. During the first semi-annual 2024 monitoring period, ethene was detected in three of the twelve 2016 interim action area monitoring wells sampled (MW-12, MW-13, and MGMS3-40). Further discussion of ethene results is provided below.

Primary Source Area. While the focus of the 2016 interim actions was not located in the area historically identified as the "primary source area," there was some overlap between the 2008/2011 interim action injection areas and the 2016 interim action injection area, namely in the vicinity of wells MP-1 and EX. Concentrations of ethene in well MP-1 reached a maximum of 328 µg/L in March 2017, decreased to 83.2 µg/L in June 2017, and then decreased to below reporting limits (1.0 to 13 µg/L) in the samples collected since then (September 2017 through December 2024). These data suggest that the 2016 bioremediation substrate injected near well MP-1 was effective for stimulating reductive dechlorination; however, the mass of substrate may be diminished.

Ethene was detected in well EX during six consecutive sampling events following the 2016 interim actions, with the highest concentration measured in June 2018 (99.2 µg/L). In the September 2018 monitoring event, ethene was detected an order of magnitude lower (2.9 µg/L) and has not been detected in well EX during the subsequent 14 sampling events. Well EX was not sampled between December 2018 and June 2021; due to damage to the well, the well was decommissioned in September 2019 and a replacement well was installed adjacent to the former well on April 15, 2021.

Monitoring well MGMS2-40 is located near, but outside of, the 2016 interim action injection area, and within the footprint of the 2011 interim action injection area. Ethene concentrations in well MGMS2-40 increased in response to the 2011 injections and remained elevated, although with variability, through March 2018. Ethene was not detected in well MGMS2-40 in the July 2018 sample but was detected during subsequent monitoring event samples through December 2020, at concentrations ranging from 1.4 to 78 µg/L. Ethene has not been detected (<1.0 µg/L) since the December 2020 monitoring event.

Riverbank Area. Prior to the 2016 interim action injections, ethene was not present in groundwater in wells located in the 2016 interim action area, including wells MW-12, MW-13, MW-19, and MGMS3-40, as shown in Table 5. Since the completion of the 2016 interim action injections, ethene has been detected in the four 2016 interim action area wells. The presence of ethene suggests that the 2016 injections have successfully resulted in the complete reductive dechlorination of the PCE and TCE. A summary of the presence and persistence of ethene in each riverbank area interim action well is provided below; ethene concentrations are tabulated in Table 5.

- Ethene concentrations in well MW-12 increased from non-detect, prior to the 2016 interim action, to 75.2 µg/L in March 2017, and remained elevated between March 2017 and September 2017. Concentrations of ethene in well MW-12 have been variable since November 2017, with concentrations

ranging from below reporting limits (ranging between 1.0 and 13.0 µg/L) up to 200 µg/L. The concentration of ethene in well MW-12 during this reporting period was 91 µg/L in September 2024 and 1.3 µg/L in December 2024.

- PCE and TCE concentrations in well MW-13 have decreased significantly between September 2016 and December 2024 (from 5,090 µg/L and 951 µg/L, respectively, to 192 µg/L and 84.6 µg/L, respectively), but it was not until November 2017 that ethene was detected in the well. Beginning in November 2017, concentrations of ethene rose to a maximum concentration of 500 µg/L in July 2018 and then decreased to 7.1 µg/L by December 2018. Since December 2018, the concentrations of ethene in well MW-13 have been variable ranging from below the reporting limit of 1.0 µg/L (multiple events) to 240 µg/L in September 2021. The ethene concentrations in well MW-13 during September and December 2024 were 5.6 µg/L and below the reporting limit of 1.0 µg/L, respectively.
- Ethene was first detected in well MW-19 during the September 2017 monitoring event and was detected consistently until December 2019, with the highest concentration (271 µg/L) detected during the June 2018 sampling event. Concentrations have since decreased and have been below the reporting limit (1.0 µg/L) since the October 2020 sampling event, except for low detections during the June 2021, September 2021, September 2022, December 2023, and September 2024 sampling events (all ranging from 1.1 µg/L to 1.4 µg/L). As previously stated, VC concentrations in groundwater samples collected from well MW-19 during the June 2018 monitoring event were the highest since the well was first sampled in 2002. Since then, VC has consistently been detected in well MW-19, but at variable concentrations (i.e., no discernable increasing or decreasing trend). Collectively, these data confirm reductive dechlorination around well MW-19 and that chlorinated HVOC mass is being degraded.
- Ethene was detected in well MGMS3-40 during the first monitoring event after the 2016 injections (December 2016) and has been detected during the subsequent monitoring events through December 2024, at concentrations ranging from 1.1 µg/L to 242 µg/L. The only exceptions were the December 2019 and December 2021 sampling events when concentrations of ethene were below the reporting limit (1.0 µg/L).

NW Area. Ethene concentrations in wells MW-14 and MW-26 have not been detected above the reporting limit (1.0 to 13 µg/L) since ethene monitoring was initiated in September 2016. As stated above, these wells are located on the periphery of the injection area, limiting their utility in monitoring the effectiveness of the injections.

5.3.1.3. Total Organic Carbon Evaluation

The presence of elevated TOC indicates that the bioremediation injections have increased the electron donor carbon source needed to reductively dechlorinate the HVOCs present in groundwater at the Facility. While a baseline monitoring event was not conducted prior to the 2016 injection event, TOC data are available for wells MP-1 and MW-12 (riverbank area) for the event prior to the injections (June 2016) and the two events concurrent with and following the injections (September and December 2016). TOC was further analyzed between March 2017 and December 2024 at select wells. TOC results are tabulated in Table 5. A discussion of the TOC results is provided below.

Primary Source Area. Seven bioremediation injection points were located near well MP-1 during the 2016 interim action. In well MP-1, TOC values increased by over three orders of magnitude between June and September 2016, with concentrations remaining elevated during the December 2016 event. During the

March 2017 event, the TOC values remained stable from the previous event; however, TOC values decreased in June 2017 by an order of magnitude and further decreased in September 2017 by another order of magnitude before remaining stable to slightly decreasing through December 2024. At well EX, the TOC concentration increased by two orders of magnitude following the 2016 interim action injections, then decreased an order of magnitude during the June 2017 event and remained relatively consistent, until the well was decommissioned, at concentrations ranging between 11 and 44 mg/L. When the replacement well was sampled for the first time in June 2021, the TOC concentration had decreased to 5.32 mg/L and has remained at similar levels since, ranging from 1.20 mg/L (September 2023) to 6.10 mg/L (March 2024). These results indicate utilization of the oil substrate in the dechlorination of HVOCs, supporting the significant decreases in HVOC concentrations observed following the 2016 bioremediation injections in this area.

Riverbank Area. The following describes TOC results in the riverbank portion of the 2016 interim action area (wells MW-12, MW-13, MW-19, MGMS3-40, and MGMS1-43).

- In groundwater collected from well MW-12, TOC concentrations increased by over three orders of magnitude between June and September 2016, with concentrations remaining elevated during the December 2016 monitoring event. Between December 2016 and March 2017, TOC concentrations in well MW-12 decreased by an order of magnitude and then gradually decreased another order of magnitude between June 2017 and June 2018. While there is seasonal variability in TOC concentrations in this well (with the most elevated concentrations typically in September), the overall TOC concentration in well MW-12 has decreased from July 2018 to December 2024.
- At well MW-13, TOC concentrations were elevated during the September 2016 sampling event, and then decreased by three orders of magnitude by the November 2017 event. Since November 2017, TOC concentrations in well MW-13 have steadily decreased through the December 2024 sampling event.
- At well MW-19, TOC values were low (one to two orders of magnitude below concentrations observed in wells MP-1 and MW-12) from September 2016 through November 2017, then increased by an order of magnitude during the March 2018 through September 2018 events. TOC concentrations decreased by up to an order of magnitude during most of 2019 and then increased again (between 14 and 40 mg/L) during the 2020 monitoring events. Since March 2021, the concentration of TOC in well MW-19 has remained relatively steady and below 10 mg/L.
- At well MGMS3-40, TOC concentrations increased during the September and December 2016 groundwater monitoring events, then decreased by an order of magnitude during the March 2017 event and have remained stable below 10 mg/L through December 2024.
- At well MGMS1-43, the TOC concentration in groundwater has remained relatively low and steady from September 2016 through December 2024 and does not appear to have been significantly influenced by the oil injections in 2016.

With the exception of well MGMS1-43, TOC concentrations in riverbank area wells indicate utilization of the oil substrate in the dechlorination of HVOCs, which is supported by decreasing HVOC concentrations in most riverbank area wells.

NW Area. In wells MW-14 and MW-26, TOC concentrations did not increase after the September 2016 injections. TOC levels in these wells have historically been low and stable. Concentrations of TOC in

well MW-14 increased an order of magnitude, from 5.06 mg/L in September 2018 to 50 mg/L in December 2019 before decreasing to 4.22 mg/L in June 2020, and remained low and stable through the December 2024 sampling event (concentrations typically near or less than 3.0 mg/L).

Summary of Enhanced Bioremediation Results Following the 2016 Interim Action. The 2016 groundwater interim action was implemented in July through September 2016 and included over 72 bioremediation injections at the NuStar Facility and 30 bioremediation injections at the off-Facility NW Area. Since implementation, groundwater in the 2016 interim action area has been monitored for 20 quarters for indicators of reductive dechlorination. The results from the third and fourth quarters 2024 sampling events are consistent with previous events and indicate that reductive dechlorination is occurring. Specifically:

- Up to three orders of magnitude reduction of PCE and TCE concentrations have been observed between the September 2016 and December 2024 monitoring events in many of the 2016 interim action area wells.
- Observed trends in breakdown product concentrations are consistent with reductive dechlorination of chlorinated ethene compounds.
- After the 2016 injections, ethene was first detected in four riverbank interim action monitoring wells in March 2017. Detections of ethene in Facility wells have continued through December 2024, although concentrations are decreasing over time in most of the wells. TOC concentrations are also decreasing and are below 10 mg/L in the majority of wells. The additional HVOC investigation data collected during the Phase II supplemental remedial investigation will aid in future HVOC remediation decisions, including the possibility of additional enhanced bioremediation injections in the project area.
- As identified above, wells MW-14 and MW-26 are located on the periphery of the injection area in the NW Area and provide limited utility in evaluating the effectiveness of the 2016 interim action in this area. However, HVOCs and total molar ethene concentrations in these wells have continued to decrease supporting that reductive dechlorination is occurring in this area.

5.3.2. SVE Systems—Monitoring and Mass Removal Evaluation

The following paragraphs summarize the monitoring and analytical results as well as the total HVOC mass removal for the North and South SVE Systems at the Facility. Field vapor measurements are collected with a photoionization detector (PID). Effluent vapor samples from the SVE systems are collected into Summa™ canisters and submitted to Eurofins Air Toxics Inc. in Folsom, California, for analysis of HVOCs by EPA Method TO-15.

The North SVE System has been non-operational since May 2017 and a replacement blower is required to return the North SVE system to operation. The north system monitoring data from 2017 indicate that the majority of VOC mass in the vadose zone is beneath the South SVE area and that future mass removal from the North SVE area is likely very minimal. The North SVE wells and piping are still in place and could be returned to use with a replacement blower, should future need arise.

The majority of the SVE wells at the terminal are currently connected to the South SVE system. As described in the *Second Semi-Annual Groundwater Monitoring* Report (GeoEngineers, 2024), the South SVE system was turned off after the November 2023 system monitoring event, for the duration of the heavy rain season, and was scheduled to be restarted in March 2024. During the March 2024 operations and maintenance event, field staff were not able to restart the system. After two attempts to troubleshoot and repair the system, a remediation contractor was hired to repair the system and perform some additional routine

maintenance. The repair work took place on July 11, 2024 and consisted of inspecting parts for corrosion and troubleshooting the electrical supply to the system. The South system was restarted on July 11, 2024 and monitoring and sampling has continued on a bi-monthly basis. The days of operation between monitoring events are summarized in Table 11.

The North SVE System operational and analytical data through May 2017 are provided in Tables 6 and 7, respectively. The South SVE System operational and analytical data through December 2, 2024 are provided in Tables 8 and 9, respectively.

SVE System Mass Removal. The approximate HVOC mass removed by the North and South SVE Systems is presented in Tables 10 and 11 and on Figures 14 and 15, respectively. The North and South Systems have removed approximately 232 and 5,207 pounds of HVOCs, respectively, since startup in October 2011. Including the mass removed from the 2008 SVE System, the total mass removal by SVE at the Facility to date is approximately 8,620 pounds (through December 2, 2024). HVOC data from the recent Phase II SRI indicate that residual VOCs are still present in fine-grained soils of the former source area and additional SVE operation is warranted, if feasible.

6.0 INFRASTRUCTURE MAINTENANCE

The following section describes maintenance and upgrades at the Facility.

6.1. SVE System

As discussed in Section 5.3.2, the South system was repaired and then restarted on July 11, 2024. Following two bi-monthly monitoring and sampling events, the data indicated that it was time to replace the carbon filter media on the South SVE system. The South SVE system was shut down for 56 days prior to the carbon replacement. On November 21, 2024, Pacific Coast Carbon removed the spent carbon and refilled the vessels with clean carbon. The spent carbon was placed in Oregon Department of Transportation (DOT) totes and, following characterization, transported to the Chemical Waste Management, Inc. facility in Arlington, Oregon, for disposal. The South SVE system was restarted immediately following the carbon exchange on November 21, 2024, and the bi-monthly operations and maintenance program resumed in December 2024.

7.0 FUTURE ACTIVITIES AND SUPPLEMENTAL REMEDIAL INVESTIGATION

Groundwater monitoring, conducted on a quarterly basis, and reporting on a semi-annual basis, will continue in accordance with the *Groundwater Monitoring Plan* approved by Ecology in 2008 (Ash Creek, 2008). While the condition of facility monitoring wells is inspected during each field event, a comprehensive annual monitoring well inspection and maintenance event will be completed during the first quarter 2025 groundwater monitoring event.

The South SVE system will continue to be operated, monitored, and sampled throughout the year, with a temporary shutdown during the heavy rain season, which typically occurs between December and February each year. The monitoring results will be provided to Ecology in the next semi-annual groundwater monitoring report.

In 2019, Ecology issued Agreed Order DE 15806 for an SRI for the presence of metals in Site media, due to operations at the adjacent Kinder Morgan Bulk Terminal, and ammonia, nitrates, and nitrites due to fertilizer operations at NuStar. As a requirement of the Agreed Order, NuStar, the POV, and Kinder Morgan (the Parties) submitted a *Draft Supplemental Remedial Investigation Work Plan NuStar Terminals Services, Inc. Vancouver Main Terminal* (SRIWP) to Ecology in February 2020 (Cascadia, 2020), proposing a stormwater, soil, groundwater, and sediment investigation to evaluate the nature and extent of metals and fertilizer constituents in Site media. The work plan also included additional delineation of HVOCs in groundwater to the west of well MW-26 and of HVOCs in site sediment. The Parties responded to Ecology's comments and provided a revised Draft SRIWP to Ecology in June 2020. The Parties received additional comments from Ecology in July 2020. On December 18, 2020, a final SRIWP was submitted to Ecology and was approved by the agency on December 21, 2020. In accordance with the Order, implementation of the SRIWP was completed from March through May 2021. The POV conducted additional soil, groundwater, stormwater and riverbank investigations during the fourth quarter 2021 and first quarter 2022 as part of a baseline assessment. The baseline assessment was conducted to document environmental conditions in the Kinder Morgan operational areas at the time the Kinder Morgan lease ended on December 31, 2021 and prior to a new lessee, Metro Ports, taking over the leasehold and copper handling operations in January 2022.[6] The results of the SRI have been presented to Ecology during online meetings during the first half of 2022 and the results of the sediment investigation were submitted to Ecology in a Phase I SRI Results Sediment Report on November 22, 2022 (GeoEngineers, Antea Group and Parametrix [GeoEngineers et al., 2022]),. A *Draft Phase I SRI Upland Soil and Groundwater Investigation* report was submitted to Ecology on June 9, 2023 [(GeoEngineers et al., 2023), documenting the soil and groundwater investigation conducted during 2021, the POV baseline assessment, and a work plan for additional (Phase II) upland and riverbank investigation. Ecology provided comments on the report as well as additional recommendations for the Phase II scope, on August 1, 2023. While the report was not formally approved, the Parties accepted Ecology's additional recommendations for investigation, and the work plan was conceptually approved by Ecology.

The NuStar portion of the SRI Phase II field investigation was implemented from October 23 through December 1, 2023, and included the collection of soil and groundwater samples from 45 vertical borings at and in the vicinity of the NuStar leasehold and one angled boring near the shoreline adjacent to the NuStar leasehold. The borings from the Phase II SRI were sampled for HVOCs, fertilizer constituents, or both. In addition, two monitoring wells (NKM-1 and NKM-2) were jointly installed by NuStar and Kinder Morgan along the riverbank, downgradient from the historical fertilizer and ore handling operations (Figure 2).

The results of the SRI Phase II investigation were presented to Ecology at an in-person meeting in Vancouver, Washington on May 9, 2024. Representatives for NuStar requested that Ecology evaluate the VOC and fertilizer data presented to confirm that the data are complete to evaluate the nature and extent of contaminants of potential concern (COPCs) in the SRI. Ecology has provided feedback during monthly meetings that the extent of VOCs and fertilizer has been adequately delineated to the north, west, and east of the terminal; however, they are looking for better spatial representation of fertilizer constituent data under the central and eastern portions of warehouses 2645 and 2655. The structural stability of

[6] It is our understanding that as of January 1, 2023, Vancouver Bulk Terminal (VBT) is now the operator of the bulk mineral storage facility located immediately to the north and west of the NuStar leasehold.

warehouses 2645, 2655 and 2625 is uncertain; the last structural survey of the warehouses was completed in 2020. NuStar plans to conduct a follow-up structural survey of warehouses 2645, 2655, and 2625, likely during second quarter 2025, prior to committing to additional intrusive investigation in the warehouses. Additional investigation may be proposed inside the warehouses, likely during second quarter 2025, if the buildings are deemed safe for access for intrusive work. In addition, NuStar submitted an Additional Monitoring Well Installation Work Plan to Ecology in February 2024, which included a proposal to install six additional monitoring wells along the riverbank downgradient from warehouses 2655 and 2625. Three of the proposed wells will help expand the lateral extent of groundwater monitoring points along the riverbank; the other three wells will be screened from approximately 40 to 45 feet bgs, a groundwater monitoring depth currently not represented along the riverbank and which correlates with upland groundwater that is impacted with HVOCs at concentrations indicative of remnant source material.

Representatives for Kinder Morgan also presented their Phase II SRI data at the May 9, 2024 meeting and proposed to conduct additional riverbank and upland sampling during the summer of 2024. Kinder Morgan prepared a *Supplemental Remedial Investigation—2024 Additional Investigative Workplan (Revised)* (Antea Group, 2024) documenting their proposed Phase III SRI, which was approved by Ecology on September 12, 2024. The field work was completed in September 2024 and the results of Kinder Morgan's Phase III SRI will be presented to Ecology in a memorandum in February 2025.

Kinder Morgan's Phase III SRI analytical results and NuStar's monitoring well installation plans will be agenda topics at an in-person meeting between the Parties, Ecology, and the Yakama Nation, scheduled for February 27, 2025.

8.0 REFERENCES

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TABLES

GeoEngineers

Table 1

Groundwater Monitoring Plan—Third and Fourth Quarters 2024

NuStar Vancouver Facility

Vancouver, Washington

Monitoring Program	Well ID	Groundwater Zone	Included Monitoring Wells		Notes
			Third Quarter	Fourth Quarter	
Groundwater monitoring includes depth-to-water measurement.	MW-1	Shallow	☑	☑	
	MW-2	Shallow	☑	☑	
	MW-3	Shallow	☑	☑	
	MW-5	Shallow	☑	☑	
	MW-6	Shallow	☑	☑	
	MW-7	Shallow	☑	☑	
	MW-8	Shallow	☑	☑	
	MW-9	Shallow	☑	☑	
	MW-10	Shallow	☑	☑	
	MW-12	Shallow	☑	☑	
	MW-13	Shallow	☑	☑	
	MW-14	Shallow	☑	☑	
	MW-15	Shallow	☐	☑	
	MW-16	Shallow	☑	☑	
	MW-17	Shallow	☑	☑	
	MW-18i	Intermediate	☑	☑	
	MW-19	Shallow	☑	☑	
	MW-19i	Intermediate	☑	☑	
	MW-20i	Intermediate	☑	☑	
	MW-21i-40	Intermediate	☑	☑	
	MW-21i-105	Intermediate	☑	☑	
	MW-22i	Intermediate	☑	☑	
	MW-23i	Intermediate	☑	☑	
	MW-24i	Intermediate	☑	☑	
	MW-24d	Deep	☑	☑	
	MW-25i	Intermediate	☑	☑	
	MW-26	Shallow	☑	☑	
	MW-30i	Intermediate	☐	☐	
	MW-31i	Intermediate	☐	☐	
	MW-32s	Shallow	☑	☐	
	MW-32i	Intermediate	☐	☐	
	MGMS1-3(43)	Shallow	☑	☑	
	MGMS1-2 (60)	Intermediate	☑	☑	
	MGMS1-1(110)	Lower Intermediate	☐	☑	
	MGMS2-4(40)	Shallow	☑	☑	
	MGMS2-3 (60)	Intermediate	☑	☑	
	MGMS2-2(110)	Lower Intermediate	☐	☑	
	MGMS2-1(132)	Lower Intermediate	☐	☑	
	MGMS3-4(40)	Shallow	☑	☑	
	MGMS3-3(60)	Intermediate	☑	☑	
	MGMS3-2(101)	Lower Intermediate	☐	☑	
	MGMS3-1(132)	Lower Intermediate	☐	☑	
	MW-E	Shallow	☐	☐	
	MW-F	Shallow	☐	☐	
	EW-1	Shallow	☑	☑	

Table 1

Groundwater Monitoring Plan—Third and Fourth Quarters 2024

NuStar Vancouver Facility

Vancouver, Washington

Monitoring Program	Well ID	Groundwater Zone	Included Monitoring Wells		Notes
			Third Quarter	Fourth Quarter	
Groundwater monitoring includes depth-to-water measurement.	EX	Shallow	☑	☑	
	MP-1	Shallow	☑	☑	
	MP-2	Shallow	☐	☐	
	MP-3	Shallow	☐	☐	
	MP-4	Shallow	☐	☐	
	S-1	Intermediate	☑	☑	
	S-2	Shallow	☑	☑	
	NKW-1	Shallow	☑	☑	
	NKW-2	Shallow	☑	☑	
	KMW-4	Shallow	☑	☑	
	KMW-5	Shallow	☑	☑	
	KMW-6	Intermediate	☑	☑	

Notes:

1. ☑= Included in sampling program represented in this report.
2. ☐= Not included in sampling program represented in this report; water level measurement only.
3. Wells MW-E, MW-G, MW-30i, MW-31i, and MW-32i are sampled by the Port of Vancouver.
4. Wells KMW-4, KMW-5, and KMW-6 are owned and maintaned by Kinder Morgan.
   Field scientists with GeoEngineers collect split samples from these wells during the Kinder Morgan sampling activities.

Table 2

Groundwater Elevation Data: 2024

NuStar Vancouver Facility

Vancouver, Washington

Well Number (TOC Elevation)	Date of Measurement	Depth to Water (feet BTOC)	Groundwater Elevation (feet)
Groundwater Monitoring Wells			
MW-1 (32.60)	3/4/2024	25.23	7.37
	6/10/2024	24.47	8.13
	9/3/2024	27.81	4.79
	12/2/2024	26.98	5.62
MW-2 (34.04)	3/4/2024	26.28	7.76
	6/10/2024	26.55	7.49
	9/3/2024	29.04	5.00
	12/2/2024	28.31	5.73
MW-3 (34.41)	3/4/2024	26.19	8.22
	6/10/2024	25.79	8.62
	9/3/2024	29.42	4.99
	12/2/2024	27.23	7.18
MW-5 (33.86)	3/4/2024	26.31	7.55
	6/10/2024	25.94	7.92
	9/3/2024	29.07	4.79
	12/2/2024	27.78	6.08
MW-6 (32.83)	3/4/2024	24.98	7.85
	6/10/2024	25.65	7.18
	9/3/2024	27.83	5.00
	12/2/2024	26.70	6.13
MW-7 (33.74)	3/4/2024	26.26	7.48
	6/10/2024	25.89	7.85
	9/3/2024	28.79	4.95
	12/2/2024	27.73	6.01
MW-8 (33.69)	3/4/2024	25.72	7.97
	6/10/2024	25.49	8.20
	9/3/2024	27.92	5.77
	12/2/2024	27.33	6.36
MW-9 (33.98)	3/4/2024	26.39	7.59
	6/10/2024	26.21	7.77
	9/3/2024	29.02	4.96
	12/2/2024	27.93	6.05
MW-10 (34.37)	3/4/2024	26.34	8.03
	6/10/2024	26.24	8.13
	9/3/2024	28.57	5.80
	12/2/2024	28.19	6.18

Table 2

Groundwater Elevation Data: 2024

NuStar Vancouver Facility

Vancouver, Washington

Well Number (TOC Elevation)	Date of Measurement	Depth to Water (feet BTOC)	Groundwater Elevation (feet)
MW-12 (31.43)	3/4/2024	24.06	7.37
	6/10/2024	23.32	8.11
	9/3/2024	26.58	4.85
	12/2/2024	26.81	4.62
MW-13 (33.15)	3/4/2024	25.65	7.50
	6/10/2024	25.10	8.05
	9/3/2024	28.27	4.88
	12/2/2024	27.29	5.86
MW-14 (33.79)	3/4/2024	26.42	7.37
	6/10/2024	26.14	7.65
	9/3/2024	28.93	4.86
	12/2/2024	27.96	5.83
MW-15 (39.22)	3/4/2024	32.94	6.28
	6/10/2024	31.07	8.15
	9/3/2024	33.69	5.53
	12/2/2024	32.98	6.24
MW-16 (33.05)	3/4/2024	25.51	7.54
	6/10/2024	24.88	8.17
	9/3/2024	28.09	4.96
	12/2/2024	27.52	5.53
MW-17 (32.65)	3/4/2024	24.81	7.84
	6/10/2024	24.24	8.41
	9/3/2024	27.47	5.18
	12/2/2024	26.51	6.14
MW-18i (33.40)	3/4/2024	25.59	7.81
	6/10/2024	25.15	8.25
	9/3/2024	29.79	3.61
	12/2/2024	27.96	5.44
MW-19 (33.59)	3/4/2024	26.05	7.54
	6/10/2024	25.57	8.02
	9/3/2024	28.72	4.87
	12/2/2024	27.71	5.88
MW-19i (33.62)	3/4/2024	25.88	7.74
	6/10/2024	25.43	8.19
	9/3/2024	30.07	3.55
	12/2/2024	26.45	7.17

Table 2

Groundwater Elevation Data: 2024

NuStar Vancouver Facility

Vancouver, Washington

Well Number (TOC Elevation)	Date of Measurement	Depth to Water (feet BTOC)	Groundwater Elevation (feet)
MW-20i	3/4/2024	25.09	7.72
(32.81)	6/10/2024	24.63	8.18
	9/3/2024	29.23	3.58
	12/2/2024	27.61	5.20
MW21i-40	3/4/2024	26.17	7.49
(33.66)	6/10/2024	25.79	7.87
	9/3/2024	30.07	3.59
	12/2/2024	28.32	5.34
MW-21i-105	3/4/2024	26.21	7.78
(33.99)	6/10/2024	25.48	8.51
	9/3/2024	30.33	3.66
	12/2/2024	28.62	5.37
MW-22i	3/4/2024	26.62	7.77
(34.39)	6/10/2024	26.17	8.22
	9/3/2024	30.82	3.57
	12/2/2024	29.09	5.30
MW-23i	3/4/2024	25.85	7.79
(33.64)	6/10/2024	25.40	8.24
	9/3/2024	30.29	3.35
	12/2/2024	28.43	5.21
MW-24i	3/4/2024	25.83	7.99
(33.82)	6/10/2024	25.39	8.43
	9/3/2024	30.32	3.50
	12/2/2024	28.50	5.32
MW-25i	3/4/2024	25.84	7.74
(33.58)	6/10/2024	25.40	8.18
	9/3/2024	30.50	3.08
	12/2/2024	29.35	4.23
MW-26	3/4/2024	26.33	7.40
(33.73)	6/10/2024	26.13	7.60
	9/3/2024	28.77	4.96
	12/2/2024	27.85	5.88
MW-24d	3/4/2024	26.20	7.71
(33.91)	6/10/2024	25.76	8.15
	9/3/2024	29.65	4.26
	12/2/2024	28.41	5.50

Table 2

Groundwater Elevation Data: 2024

NuStar Vancouver Facility

Vancouver, Washington

Well Number (TOC Elevation)	Date of Measurement	Depth to Water (feet BTOC)	Groundwater Elevation (feet)
EW-1 (31.20)	3/4/2024	23.64	7.56
	6/10/2024	23.04	8.16
	9/3/2024	26.36	4.84
	12/2/2024	25.48	5.72
EX (33.24)	3/4/2024	25.79	7.45
	6/10/2024	25.32	7.92
	9/3/2024	28.42	4.82
	12/2/2024	27.40	5.84
MP-1 (33.71)	3/4/2024	26.17	7.54
	6/10/2024	25.79	7.92
	9/3/2024	28.81	4.90
	12/2/2024	27.70	6.01
Secor Interim Action Pilot Study Wells			
S-1 (32.69)	3/4/2024	24.90	7.79
	6/10/2024	24.45	8.24
	9/3/2024	29.48	3.21
	12/2/2024	27.49	5.20
S-2 (32.90)	3/4/2024	25.33	7.57
	6/10/2024	24.80	8.10
	9/3/2024	28.57	4.33
	12/2/2024	27.02	5.88
Multi-Level Monitoring Wells			
MGMS1-3 (43)* (32.82)	3/4/2024	25.58	7.24
	6/10/2024	24.71	8.11
	9/3/2024	28.21	4.61
	12/2/2024	27.41	5.41
MGMS1-2(60)* (32.82)	3/4/2024	25.25	7.57
	6/10/2024	24.78	8.04
	9/3/2024	29.73	3.09
	12/2/2024	27.40	5.42
MGMS1-1(110)* (32.82)	3/4/2024	25.25	7.57
	6/10/2024	24.78	8.04
	9/3/2024	29.73	3.09
	12/2/2024	27.46	5.36
MGMS2-4(40)* (32.46)	3/4/2024	25.71	6.75
	6/10/2024	24.91	7.55
	9/3/2024	27.78	4.68
	12/2/2024	27.20	5.26

Table 2

Groundwater Elevation Data: 2024

NuStar Vancouver Facility

Vancouver, Washington

Well Number (TOC Elevation)	Date of Measurement	Depth to Water (feet BTOC)	Groundwater Elevation (feet)
MGMS2-3(60)* (32.46)	3/4/2024	25.25	7.21
	6/10/2024	24.69	7.77
	9/3/2024	29.73	2.73
	12/2/2024	27.90	4.56
MGMS2-2(110)* (32.46)	3/4/2024	25.25	7.21
	6/10/2024	24.69	7.77
	9/3/2024	29.68	2.78
	12/2/2024	27.61	4.85
MGMS2-1(132)* (32.46)	3/4/2024	25.25	7.21
	6/10/2024	24.69	7.77
	9/3/2024	29.68	2.78
	12/2/2024	27.60	4.86
MGMS3-4(40)* (31.60)	3/4/2024	24.54	7.06
	6/10/2024	23.64	7.96
	9/3/2024	27.06	4.54
	12/2/2024	26.26	5.34
MGMS3-3(60)* (31.60)	3/4/2024	23.93	7.67
	6/10/2024	23.52	8.08
	9/3/2024	28.57	3.03
	12/2/2024	26.66	4.94
MGMS3-2(101)* (31.60)	3/4/2024	23.94	7.66
	6/10/2024	23.52	8.08
	9/3/2024	28.57	3.03
	12/2/2024	26.30	5.30
MGMS3-1(132)* (31.60)	3/4/2024	23.96	7.64
	6/10/2024	23.52	8.08
	9/3/2024	28.57	3.03
	12/2/2024	26.30	5.30
Port of Vancouver Wells			
MW-30i (29.77)	03/27/17	11.42	18.35
	06/12/17	15.55	14.22
	09/25/17	26.36	3.41
	11/06/17	Well Abandoned	
MW-31i** (31.33)	3/4/2024	NM	NM
	6/10/2024	NM	NM
	9/3/2024	NM	NM
	12/2/2024	NM	NM

Table 2

Groundwater Elevation Data: 2024

NuStar Vancouver Facility

Vancouver, Washington

Well Number (TOC Elevation)	Date of Measurement	Depth to Water (feet BTOC)	Groundwater Elevation (feet)
MW-32s (34.34)	3/6/2024	26.90	7.44
	6/10/2024	25.79	8.55
	9/3/2024	29.43	4.91
	12/2/2024	28.21	6.13
MW-32i (34.41)	3/6/2024	27.99	6.42
	6/10/2024	26.30	8.11
	9/3/2024	30.84	3.57
	12/2/2024	28.93	5.48
MW-E ** (30.64)	9/11/2023	NM	NM
	12/11/2023	NM	NM
	3/4/2024	NM	NM
	6/10/2024	NM	NM
MW-F (34.11)	3/4/2024	26.62	7.49
	6/10/2024	25.95	8.16
	9/3/2024	29.22	4.89
	12/2/2024	27.91	6.20
NKM-1 (33.38)	3/4/2024	25.97	7.41
	6/10/2024	25.29	8.09
	9/3/2024	28.58	4.80
	12/2/2024	27.72	5.66
NKM-2 (33.29)	3/4/2024	25.84	7.45
	6/10/2024	25.19	8.10
	9/3/2024	28.49	4.80
	12/2/2024	27.90	5.39

Notes:

1. TOC = Top of casing; BTOC = Below top of casing.
2. Utilizes survey information from May 2023 (for select wells resurveyed). NGVD29 datum (feet mean sea level).
3. * Water levels measurement points are located at the top of the plastic fittings mounted on the well covers.
4. NM = Not measured.
5. **The casing has been modified at Port of Vancouver well MW-E and MW-31i.
   The TOC elevation has not yet been re-surveyed, so groundwater elevation data for these wells may be inaccurate.

Table 3

Groundwater Analytical Results: 2024

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	1,2-Dichloropropane	Tetrachloroethene	1,1,1-Trichloroethane	1,1,2-Trichloroethane	Trichloroethene	Vinyl Chloride
		Concentrations in µg/L (ppb)										
MW-1	3/7/2024	3.00	<0.400	0.430	41.8	0.750	<0.500	9.22	<0.400	<0.500	9.90	<0.200
	6/13/2024	2.92	<0.400	<0.400	46.1	0.570	<0.500	20.1	<0.400	<0.500	11.2	<0.200
	9/6/2024	4.83	<0.400	<0.400	70.1	0.990	<0.500	12.4	<0.400	<0.500	11.3	<0.200
	12/4/2024	4.78	<0.400	0.670	74.0	1.31	<0.500	19.1	<0.400	<0.500	13.7	0.360
MW-2	3/7/2024	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
	6/14/2024	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
	9/6/2024	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
	12/5/2024	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
MW-3	3/7/2024	0.990	<0.400	<0.400	37.0	1.31	1.10	160	1.78	<0.500	32.9	<0.200
	6/12/2024	0.740	<0.400	<0.400	26.9	1.15	0.630	137	1.51	<0.500	27.5	<0.200
	9/5/2024	1.92	<0.400	<0.400	43.4	0.640	0.780	118	1.14	<0.500	23.8	<0.200
	12/5/2024	0.580	<0.400	<0.400	17.8	1.22	0.500	160	1.88	<0.500	28.9	<0.200
MW-5	3/7/2024	0.680	<0.400	<0.400	19.9	<0.400	<0.500	4.28	<0.400	<0.500	4.49	5.03
	6/11/2024	0.920	<0.400	<0.400	36.3	<0.400	<0.500	<0.400	<0.400	<0.500	0.800	14.0
	9/5/2024	0.980	<0.400	<0.400	3.16	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	1.84
	12/5/2024	1.92	<0.400	<0.400	24.2	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	2.99
MW-6	3/6/2024	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
	6/12/2024	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.200
	9/6/2024	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
	12/5/2024	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
MW-7	3/7/2024	1.92	<0.400	0.570	22.2	0.430	<0.500	70.0	<0.400	<0.500	36.3	0.320
	3/7/2024 DUP	1.69	<0.400	0.540	20.8	<0.400	<0.500	76.8	<0.400	<0.500	34.5	0.280
	6/11/2024	6.74	<0.400	1.63	58.7	0.720	<0.400	152	1.50	<0.500	87.9	0.660
	6/11/2024 DUP	6.34	<0.400	1.42	53.8	0.720	<0.400	179	1.40	<0.500	80.5	0.560
	9/4/2024	2.31	<0.400	0.490	29.8	<0.400	<0.500	83.4	0.550	<0.500	32.0	<0.200
	9/4/2024 DUP	2.18	<0.400	0.510	28.3	<0.400	<0.500	80.7	0.500	<0.500	30.0	0.200
	12/3/2024	9.32	<0.800	2.30	87.8	1.62	<1.00	251	2.46	<1.00	122	1.26
	12/3/2024 DUP	10.3	<0.800	2.32	95.8	1.72	<1.00	278	2.62	<1.00	133	1.30
MW-8	3/6/2024	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	2.42	<0.400	<0.500	<0.400	<0.200
	6/11/2024	<0.400	<0.400	<0.400	6.42	0.470	<0.500	1.64	<0.400	<0.500	<0.400	<0.200
	9/5/2024	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	2.71	<0.400	<0.500	<0.400	<0.200
	12/5/2024	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	3.48	<0.400	<0.500	<0.400	<0.200
MW-9	3/7/2024	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	39.8	0.570	<0.500	11.4	<0.200
	6/11/2024	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	53.4	0.580	<0.500	13.7	<0.200
	9/5/2024	0.540	<0.400	<0.400	15.0	1.08	<0.500	151	2.23	<0.500	40.5	0.860
	12/3/2024	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	65.5	1.09	<0.500	17.3	<0.200
MW-10	3/5/2024	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	2.06	<0.400	<0.500	1.82	<0.200
	6/11/2024	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	3.21	<0.400	<0.500	1.99	<0.200
	9/4/2024	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	1.45	<0.400	<0.500	1.45	<0.200
	12/4/2024	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	3.60	<0.400	<0.500	1.60	<0.200
MW-12	3/5/2024	98.8	<4.00	<4.00	80.2	<4.00	<5.00	<4.00	<4.00	<5.00	4.40	1360
	3/5/2024 DUP	95.9	<4.00	<4.00	79.5	<4.00	<5.00	<4.00	<4.00	<5.00	<4.00	1330
	6/13/2024	29.9	<0.400	0.440	32.8	<0.400	<0.500	3.88	<0.400	<0.500	3.90	22.8
	6/13/2024 DUP	27.2	<0.400	0.410	30.2	<0.400	<0.500	3.86	<0.400	<0.500	3.89	16.0
	9/5/2024	66.7	<0.400	<0.400	33.8	<0.400	<0.500	0.630	<0.400	<0.500	0.600	483
	9/5/2024 DUP	64.5	<0.400	<0.400	32.4	<0.400	<0.500	0.560	<0.400	<0.500	0.640	375
	12/4/2024	3.00	<0.400	<0.400	9.99	<0.400	<0.500	11.2	<0.400	<0.500	6.11	7.63
	12/4/2024 DUP	2.88	<0.400	<0.400	9.52	<0.400	<0.500	10.6	<0.400	<0.500	6.11	7.28
MW-13	3/6/2024	37.6	<2.00	48.9	1400	17.3	<2.50	955	<2.00	<2.50	986	432
	6/13/2024	<4.00	<4.00	<4.00	147	<4.00	<5.00	212	<4.00	<5.00	89.4	35.9
	9/3/2024	36.5 Q-42	<0.400	29.5 Q-42	1,960	33.7	<0.500	1,600	0.600	<0.500	928	321
	12/3/2024	1.79	<0.400	1.67	96.8	1.79	<0.500	192	<0.400	<0.500	84.6	15.6
MW-14	3/5/2024	4.30	<2.00	2.05	42.0	<2.00	<2.00	90.7	<2.00	<2.50	262	<1.00
	6/12/2024	0.410	<0.400	<0.400	5.75	<0.400	<0.500	20.6	<0.400	<0.500	39.8	<0.200
	9/4/2024	6.25	<0.400	2.63	96.4	2.05	<0.500	128	0.780	<0.500	266	<0.200
	12/4/2024	4.28	<0.400	2.82	69.5	1.86	<0.500	144	0.570	<0.500	239	<0.200
MW-15	6/15/2023	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	0.580	<0.400	<0.500	<0.400	<0.400
	12/15/2023	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	0.540	<0.400	<0.500	<0.400	<0.200
	6/11/2024	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	0.470	<0.400	<0.500	<0.400	<0.200
	12/5/2024	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	0.590	<0.400	<0.500	<0.400	<0.200
MW-16	3/11/2024	<0.400	<0.400	<0.400	25.3	<0.400	<0.500	80.7	0.540	<0.500	8.94	<0.200
	6/11/2024	<0.400	<0.400	<0.400	15.0	<0.400	<0.500	35.3	<0.400	<0.500	4.02	<0.200
	9/5/2024	<0.400	<0.400	<0.400	29.8	<0.400	<0.500	66.6	<0.400	<0.500	6.83	<0.200
	12/4/2024	<0.400	<0.400	<0.400	14.0	<0.400	<0.500	47.8	<0.400	<0.500	3.76	<0.200

Table 3

Groundwater Analytical Results: 2024

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
		Concentrations in µg/L (ppb)										
MW-17	3/5/2024	<0.400	<0.400	<0.400	6.04	<0.400	<0.500	1.47	<0.400	<0.500	2.96	<0.200
	6/12/2024	<0.400	<0.400	<0.400	0.690	<0.400	<0.500	0.850	<0.400	<0.500	0.660	<0.200
	9/4/2024	<0.400	<0.400	<0.400	1.24	<0.400	<0.500	0.590	<0.400	<0.500	0.900	<0.200
	12/4/2024	0.420	<0.400	<0.400	11.8	<0.400	<0.500	3.49	<0.400	<0.500	5.95	<0.200
MW-18i	3/7/2024	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	0.900	<0.400	<0.500	0.410	<0.200
	6/12/2024	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	0.960	<0.400	<0.500	0.420	<0.200
	9/5/2024	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	1.15	<0.400	<0.500	<0.400	<0.200
	12/4/2024	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	1.58	<0.400	<0.500	0.460	<0.200
MW-19	3/6/2024	54.0	<20.0	26.6	1010	15.4	<25.0	2420	14.2	<25.0	1270	87.8
	3/6/2024 DUP	50.2	<20.0	27.4	961	14.0	<25.0	2760	14.4	<25.0	1350	89.2
	6/12/2024	66.3	<4.00	19.9	1150	10.9	<5.00	2600	12.6	<5.00	894	39.8
	6/12/2024 DUP	62.0	<4.00	18.8	1100	9.40	<5.00	2440	12.8	<5.00	896	36.2
	9/3/2024	<20.0	<20.0	32.0	482	<20.0	<25.0	8,410	43.0	<25.0	1,330	47.0
	9/3/2024 DUP	<20.0	<20.0	38.0	582	<20.0	<25.0	9,000	55.0	<25.0	1,630	59.5
	12/3/2024	51.5	<4.00	16.6	692	6.10	<5.00	2,570	10.5	<5.00	708	16.7
	12/3/2024 DUP	57.0	<4.00	17.5	752	7.20	<5.00	2,510	11.0	<5.00	739	18.6
MW-19i	3/7/2024	<0.400	<0.400	<0.400	0.610	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
	6/12/2024	<0.400	<0.400	<0.400	0.430	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
	9/5/2024	<0.400	<0.400	<0.400	0.540	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
	12/4/2024	<0.400	<0.400	<0.400	0.470	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
MW-20i	3/7/2024	<0.400	<0.400	<0.400	6.48	<0.400	<0.500	1.66	<0.400	<0.500	1.14	<0.200
	6/12/2024	<0.400	<0.400	<0.400	6.68	<0.400	<0.500	1.55	<0.400	<0.500	0.990	<0.200
	9/5/2024	<0.400	<0.400	<0.400	6.30	<0.400	<0.500	1.47	<0.400	<0.500	0.930	<0.200
	12/4/2024	<0.400	<0.400	<0.400	5.69	<0.400	<0.500	1.87	<0.400	<0.500	1.21	<0.200
MW-21i-105	3/5/2024	0.800	<0.400	0.530	15.9	<0.400	<0.500	32.3	<0.400	<0.500	15.1	<0.200
	6/13/2024	0.730	<0.400	<0.400	17.4	0.540	<0.500	21.6	<0.400	<0.500	10.9	<0.200
	9/5/2024	0.700	<0.400	0.410	18.5	<0.400	<0.500	31.0	<0.400	<0.500	11.8	<0.200
	12/5/2024	0.540	<0.400	0.440 Q	11.0	<0.400	<0.500	30.3	<0.400	<0.500	9.33	<0.200
MW-21i-40	3/7/2024	1.46	<0.400	<0.400	26.5	<0.400	<0.500	18.6	<0.400	<0.500	11.3	<0.200
	6/13/2024	1.10	<0.400	<0.400	23.0	<0.400	<0.500	16.3	<0.400	<0.500	9.18	<0.200
	9/6/2024	1.24	<0.400	<0.400	25.1	<0.400	<0.500	20.9	<0.400	<0.500	10.1	<0.200
	12/4/2024	1.19	<0.400	0.440	20.3	<0.400	<0.500	20.8	<0.400	<0.500	9.85	<0.200
MW-22i	3/5/2024	0.550	<0.400	<0.400	15.3	<0.400	<0.500	2.64	<0.400	<0.500	5.54	<0.200
	6/14/2024	0.460	<0.400	<0.400	15.0	<0.400	<0.500	1.55	<0.400	<0.500	4.29	<0.200
	9/5/2024	0.430	<0.400	<0.400	14.0	<0.400	<0.500	1.78	<0.400	<0.500	3.53	<0.200
	12/5/2024	0.400	<0.400	<0.400	10.3	<0.400	<0.500	1.73	<0.400	<0.500	3.55	<0.200
MW-23i	3/7/2024	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
	6/13/2024	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.200
	9/6/2024	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	0.520	<0.400	<0.500	<0.400	<0.200
	12/5/2024	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
MW-24i	3/7/2024	1.59	<0.400	<0.400	16.3	<0.400	<0.500	16.1	<0.400	<0.500	9.70	<0.200
	6/13/2024	1.09	<0.400	<0.400	17.5	<0.400	<0.500	16.7	<0.400	<0.500	8.68	<0.200
	9/4/2024	1.00	<0.400	<0.400	21.6	<0.400	<0.500	22.4	<0.400	<0.500	10.0	<0.200
	12/3/2024	1.17	<0.400	0.440	18.2	<0.400	<0.500	21.7	<0.400	<0.500	9.31	<0.200
MW-24d	3/7/2024	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
	6/12/2024	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
	9/4/2024	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
	12/6/2024	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
MW-25i	3/6/2024	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	0.570	<0.400	<0.500	<0.400	<0.200
	6/12/2024	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
	9/4/2024	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
	12/4/2024	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	0.640	<0.400	<0.500	<0.400	<0.200
MW-26	3/6/2024	2.60	<1.00	<1.00	31.0	<1.00	<1.25	133	1.38	<1.25	221	<0.500
	6/14/2024	2.38	<1.00	<1.00	37.4	1.32	<1.25	160	1.40	<1.25	204	<0.500
	9/4/2024	2.74	<0.800	0.960	41.4	1.42	<1.00	116	1.28	<1.00	182	<0.400
	12/3/2024	3.02	<1.00	1.15	46.6	1.90	<1.25	193	1.88	<1.25	237	<0.500
MW-32s	9/13/2023	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	3/17/2023	<0.400	<0.400	<0.400	1.93	<0.400	<0.500	3.68	<0.400	<0.500	1.43	<0.400
	3/6/2024	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
	9/4/2024	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200

Table 3

Groundwater Analytical Results: 2024

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
		Concentrations in µg/L (ppb)										
EW-1	3/6/2024	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	0.420	<0.200
	6/12/2024	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	0.470	<0.400	<0.500	<0.400	<0.200
	9/6/2024	<0.400	<0.400	<0.400	0.600	<0.400	<0.500	14.7	0.430	<0.500	4.63	<0.200
	12/5/2024	<0.400	<0.400	<0.400	1.07	<0.400	<0.500	32.2	0.900	<0.500	6.98	<0.200
S-1	3/6/2024	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	0.420	<0.200
	6/12/2024	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	0.470	<0.400	<0.500	<0.400	<0.200
	9/4/2024	<0.400	<0.400	<0.400	4.08	<0.400	<0.500	0.530	<0.400	<0.500	0.910	<0.200
	12/5/2024	<0.400	<0.400	<0.400	0.830	<0.400	<0.500	0.760	<0.400	<0.500	0.650	<0.200
S-2	3/6/2024	8.24	<0.400	<0.400	39.3	0.510	<0.500	<0.400	0.550	<0.500	1.12	0.280
	6/12/2024	5.70	<0.400	<0.400	30.5	0.760	<0.500	<0.400	<0.400	<0.500	0.570	<0.200
	9/4/2024	7.40	<0.400	<0.400	40.7	0.490	<0.500	<0.400	0.740	<0.500	1.54	0.270
	12/5/2024	5.61	<0.400	<0.400	26.9	0.410	<0.500	<0.400	<0.400	<0.500	0.730	<0.200
MGMS1-3(43)	3/6/2024	119	<8.00	23.8	3090	44.6	<10.0	170	<8.00	<10.0	446	78.8
	6/12/2024	103	<4.00	18.5	2150	40.7	<5.00	98.3	<4.00	<5.00	306	36.6
	9/4/2024	82.2	<8.00	20.2	2,200	37.2	<10.0	140	<8.00	<10.0	304	11.2
	12/3/2024	42.6	<8.00	8.60	955	21.6	<10.0	66.6	<8.00	<10.0	168	14.8
MGMS1-2(60)	3/6/2024	1.82	<0.400	<0.400	14.8	<0.400	<0.500	18.6	<0.400	<0.500	11.0	<0.200
	6/12/2024	0.620	<0.400	<0.400	10.8	<0.400	<0.500	14.6	<0.400	<0.500	9.52	<0.200
	9/4/2024	1.24	<0.400	<0.400	16.8	<0.400	<0.500	20.3	<0.400	<0.500	10.1	<0.200
	12/3/2024	1.43	<0.400	<0.400	14.6	<0.400	<0.500	14.3	<0.400	<0.500	11.6	0.370
MGMS1-1(110)	6/15/2023	3.94	<0.400	<0.400	122	0.490	<0.500	12.2	<0.400	<0.500	21.4	<0.400
	12/11/2023	3.83	<0.400	<0.400	115	0.580	<0.500	16.0	<0.400	<0.500	22.0	<0.200
	6/12/2024	2.91	<0.400	<0.400	101	0.460	<0.500	13.7	<0.400	<0.500	19.4	<0.200
	12/3/2024	9.79	<0.400	1.23	194	1.14	<0.500	22.0	<0.400	<0.500	51.6	<0.200
MGMS2-4(40)	3/4/2024	22.5	<0.800	12.5	331	3.60	<1.00	405	2.60	<0.100	294	0.680
	6/10/2024	25.8	<2.00	13.0	403	3.55	<2.50	315	3.10	<2.50	232	<1.00
	9/4/2024	12.5	<0.800	8.02	281	2.84	<1.00	215	0.820	<1.00	134	<0.400
	12/3/2024	21.0 Q-42	<2.00	12.1 Q-42	385	3.85 Q-42	<2.50	285	<2.00	<2.50	183	<1.00 Q-42
MGMS2-3(60)	3/4/2024	0.610	<0.400	<0.400	11.3	<0.400	<0.500	16.2	<0.400	<0.500	8.51	0.240
	6/10/2024	0.630	<0.400	<0.400	15.2	<0.400	<0.500	21.0	<0.400	<0.500	9.83	0.230
	9/4/2024	0.700	<0.400	<0.400	16.2	<0.400	<0.500	13.3	<0.400	<0.500	7.14	0.310
	12/3/2024	0.860	<0.400	<0.400	18.8	<0.400	<0.500	12.5	<0.400	<0.500	8.23	0.290
MGMS2-2(110)	6/13/2023	<0.400	<0.400	<0.400	5.26	<0.400	<0.500	2.31	<0.400	<0.500	1.86	0.720
	12/12/2023	<0.400	<0.400	<0.400	4.57	<0.400	<0.500	3.81	<0.400	<0.500	2.16	0.670
	6/10/2024	<0.400	<0.400	<0.400	3.94	<0.400	<0.500	3.05	<0.400	<0.500	1.94	0.630
	12/3/2024	<0.400	<0.400	<0.400	7.36	<0.400	<0.500	4.61	<0.400	<0.500	3.19	1.17
MGMS2-1(132)	6/13/2023	<0.400	<0.400	<0.400	6.13	<0.400	<0.500	1.99	<0.400	<0.500	1.76	0.910
	12/12/2023	<0.400	<0.400	<0.400	6.65	<0.400	<0.500	2.91	<0.400	<0.500	2.27	1.16
	6/11/20204	<0.400	<0.400	<0.400	8.78	<0.400	<0.500	2.43	<0.400	<0.500	2.43	1.17
	12/3/2024	0.540	<0.400	<0.400	15.8	<0.400	<0.500	3.45	<0.400	<0.500	4.21	2.46
MGMS3-4(40)	3/4/2024	7.74	<0.400	0.780	193	0.480	<0.500	1.34**	<0.400	<0.500	0.630**	197
	3/4/2024 DUP	7.63	<0.400	0.770	183	0.470	<0.500	0.450**	<0.400	<0.500	0.440**	205
	6/10/2024	3.74	<0.400	<0.400	1.95	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	53.4
	6/10/2024 DUP	3.82	<0.400	<0.400	2.06	<0.400	<0.500	0.450	<0.400	<0.500	<0.400	54.5
	9/4/2024	3.43	<0.400	<0.400	44.8	<0.400	<0.500	0.540	<0.400	<0.500	<0.400	108
	9/4/2024 DUP	3.54	<0.400	<0.400	43.5	<0.400	<0.500	0.510	<0.400	<0.500	<0.400	105
	12/2/2024	2.45	<0.400	<0.400	0.710	<0.400	<0.500	0.480	<0.400	<0.500	<0.400	12.5
	12/2/2024 DUP	2.33	<0.400	<0.400	0.640	<0.400	<0.500 Q-37	0.500	<0.400	<0.500	<0.400	11.5
MGMS3-3(60)	3/4/2024	<0.400	<0.400	<0.400	6.63	<0.400	<0.500	1.96	<0.400	<0.500	1.57	<0.200
	6/10/2024	<0.400	<0.400	<0.400	2.68	<0.400	<0.500	1.43	<0.400	<0.500	0.780	0.350
	9/4/2024	<0.400	<0.400	<0.400	7.50	<0.400	<0.500	1.74	<0.400	<0.500	1.24	<0.200
	12/2/2024	<0.400	<0.400	<0.400	5.15	<0.400	<0.500	1.51	<0.400	<0.500	0.910	0.410
MGMS3-2(101)	6/15/2023	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	1.18	<0.400	<0.500	<0.400	<0.400
	12/13/2023	<0.400	<0.400	<0.400	1.72	<0.400	<0.500	3.28	<0.400	<0.500	1.90	<0.200
	6/10/2024	<0.400	<0.400	<0.400	0.400	<0.400	<0.500	1.47	<0.400	<0.500	0.790	<0.200
	12/2/2024	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	1.32	<0.400	<0.500	<0.400	<0.200
MGMS3-1(132)	6/15/2023	<0.400	<0.400	<0.400	1.46	<0.400	<0.500	2.83	<0.400	<0.500	1.74	<0.400
	12/13/2023	0.480	<0.400	<0.400	5.04	<0.400	<0.500	8.17	<0.400	<0.500	5.20	0.240
	6/10/2024	<0.400	<0.400	<0.400	2.40	<0.400	<0.500	3.35	<0.400	<0.500	2.69	<0.200
	12/2/2024	<0.400	<0.400	<0.400	0.570	<0.400	<0.500	1.61	<0.400	<0.500	0.820	<0.200
EX*	3/6/2024	<8.00	<8.00	<8.00	436	<8.00	<10.0	2060	8.60	<10.0	214	5.40
	6/13/2024	<4.00	<4.00	<4.00	141	<4.00	<5.00	1850	<4.00	<5.00	113	2.20
	9/4/2024	4.50	<4.00	4.50	625	4.50	<5.00	2,060	7.20	<5.00	212	4.40
	12/3/2024	<4.00	<4.00	<4.00	248	<4.00	<5.00	2,870	5.70	<5.00	200	6.70

Table 3

Groundwater Analytical Results: 2024

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
		Concentrations in µg/L (ppb)										
MP-1	3/7/2024	<1.00	<1.00	<1.00	**9.85**	<1.00	<1.25	**224**	<1.00	<1.25	**35.0**	<0.500
	6/13/2024	<1.00	<1.00	<1.00	**10.0**	<1.00	<1.25	**159**	<1.00	<1.25	**35.6**	<0.500
	9/3/2024	<0.800	<0.800	<0.800	**4.14**	<0.800	<1.00	**164**	<0.800	<1.00	**23.9**	<0.400
	12/4/2024	<0.400	<0.400	**0.440**	**4.78**	<0.400	<0.500	**168**	**0.470**	<0.500	**24.3**	<0.200
NKW-1	3/5/2024	**16.4**	<4.00	<4.00	**166**	<4.00	<5.00	**250**	<4.00	<5.00	**74.8**	**10.4**
	6/11/2024	**3.05**	<0.400	**0.640**	**47.2**	<0.400	<0.500	**84.3**	<0.400	<0.500	**27.0**	**0.290**
	9/3/2024	**32.4**	<0.400	**8.08**	**424**	**3.07**	<0.500	**807**	**2.33**	<0.500	**238**	**132**
	12/3/2024	**5.98**	<0.400	**2.02**	**134**	**0.970**	<0.500	**128**	<0.400	<0.500	**44.0**	**7.55**
NKW-2	3/5/2024	**89.9**	<4.00	**33.5**	**4010**	**41.8**	<5.00	**38.3**	<4.00	<5.00	**80.9**	**12.1**
	6/11/2024	**66.0**	<20.0	**29.5**	**2140**	**27.0**	<25.0	**55.0**	<20.0	<25.0	**107**	<10.0
	9/3/2024	**176**	<4.00	**64.9**	**6,880**	**79.8**	<5.00	**73.0**	<4.00	<5.00	**202**	**36.9**
	12/3/2024	**47.0**	<8.00	**25.8**	**1,620**	**16.4**	<10.0	**45.2**	<8.00	<10.0	**66.4**	<4.00
KMW-4	12/13/2023	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	**16.9**	<0.400	<0.500	**11.7**	<0.200
	6/10/2024	**0.940**	<0.400	**0.600**	**3.12**	<0.400	<0.500	**27.4**	**1.28**	<0.500	**84.7**	<0.200
	9/4/2024	**1.60**	<0.400	**1.78**	**13.2**	<0.400	<0.500	**71.9**	**2.22**	<0.500	**165**	<0.200
	12/3/2024	**0.580**	<0.400	<0.400	**3.15**	<0.400	<0.500	**66.9**	**0.740**	<0.500	**84.3**	<0.200
KMW-5	12/13/2023	**0.430**	<0.400	<0.400	**3.16**	<0.400	<0.500	**0.580**	<0.400	<0.500	**2.08**	**3.05**
	6/10/2024	**0.410**	<0.400	<0.400	**4.81**	<0.400	<0.500	<0.400	<0.400	<0.500	**0.400**	**2.29**
	9/3/2024	**0.760**	<0.400	**0.580**	**4.05**	<0.400	<0.500	<0.400	**0.410**	<0.500	**4.51**	**2.75**
	12/3/2024	**0.430**	<0.400	<0.400	**3.10**	<0.400	<0.500	<0.400	<0.400	<0.500	**0.510**	**2.99**
KMW-6	12/13/2023	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
	6/11/2024	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
	9/3/2024	<0.400	<0.400	<0.400	**1.76**	<0.400	<0.500	**1.83**	<0.400	<0.500	**20.8**	<0.200
	12/3/2024	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	**0.680**	<0.400	<0.500	**1.16**	<0.200

Notes:

1. µg/L (ppb) = Micrograms per liter (parts per billion).
2. **Bold** values represent detected concentration of listed analyte.
3. < = Not detected at or above the specified laboratory method reporting limit (MRL).
4. Halogenated volatile organic compounds (HVOCs) analysis by U.S. Environmental Protection Agency (EPA) Method 8260B.
5. *This well was decommissioned during the third quarter 2019 and a replacement well was installed adjacent (offset 3 - 4 ft) in April 2021. Historically the well has been referred to as EX or EX-1.
6. **These relative percent difference for these field duplicate samples are outside of the +/- 30% limits.
7. 'Q' qualifiers indicate that spike recovery and/or RPD for this analyte is outside acceptance limits.

Table 4

Groundwater Analytical Results—Ammonia, Nitrate, and Nitrite

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Ammonia (as Nitrogen)	Nitrate-Nitrogen	Nitrite-Nitrogen
		Concentrations in mg/L (ppm)		
EX	2/6/2007	**26.7**	**108**	**0.49**
	3/23/2009	**14**	**43**	**0.54**
	3/16/2010	**3.4**	**89**	**0.71**
	6/7/2011	–	**150**	<0.10
	12/9/2011	–	<0.50	<0.10
	3/21/2018	**302**	**1.22**	**0.47**
	6/28/2018	**119**	<0.10	<0.050
	9/24/2018	**132**	**0.461**	<0.250
	12/4/2018	**117**	**24.1**	<0.250
	6/17/2021	**32.7**	**140**	0.59
	9/16/2021	**81.4**	**70.8**	<0.250
	12/10/2021	**29.6**	**85.6 H-01**	<0.250 H-01
	3/8/2022	**28.9**	**100**	<0.250
	06/16/2022	**93.6**	**87.6**	<0.250
	9/14/2022	**35.4**	**40**	<0.250
	12/8/2022	**77.1**	**77.6**	<0.250
	3/15/2023	**46.9**	**48.8**	<0.250
	6/14/2023	**49.2**	**134**	<0.250
	9/12/2023	**29.4**	**48.0**	<0.250
	12/14/2023	**24.5**	**169**	<0.250
	3/6/2024	**29.6**	**37.9**	<0.250
	6/13/2024	**28.4**	**42.0**	<0.250
	9/4/2024	**17.7**	**20.0**	<0.250
	12/3/2024	**13.4**	**18.1**	<0.250
MW-1	11/9/2017	**3.96**	**46.4**	<1.0
	3/20/2018	**6.20**	**1.84**	<0.10
	7/1/2018	**1.47**	<0.10	<0.10
	9/25/2018	**5.79**	<0.250	<0.250
	12/4/2018	**3.38**	**79.4**	<0.250
	3/21/2019	**22.0**	**2.8**	<0.250
	6/5/2019	**176**	**32.8**	**0.802**
	9/27/2019	**56.9**	**44.0**	<0.250
	12/4/2019	**112**	**134**	<0.250
	3/10/2020	**14.4**	**0.393**	<0.250
	6/17/2020	**38**	**7.45**	<0.250
	10/7/2020	**401**	**96.9**	<0.250
	12/8/2020	**417**	**71.9**	<0.250
	3/4/2021	**461**	**15.9**	<0.250
	6/16/2021	**323**	**62.6**	<0.250
	9/16/2021	**196**	**21.3**	**4.49**
	12/9/2021	**518**	**366**	**96.6**
	3/8/2022	**616**	**239**	**40.8**
	06/15/2022	**73.7**	**0.810**	<0.250
	9/15/2022	**363**	**94.5**	**2.6**
	12/6/2022	**574**	**242**	**11.2**
	3/17/2023	**154**	**35.0**	**0.619 H-01**
	6/14/2023	**216**	**35.8**	<0.250
	9/12/2023	**144**	**103**	<0.250
	12/13/2023	**80.1**	**122**	<0.250
	3/7/2024	**84.9**	**23.7**	<0.250
	6/13/2024	**60.1**	**105**	<0.250
	9/6/2024	**80.6**	**50.5**	<0.250
	12/4/2024	**135**	**113**	<0.250
MW-2	11/6/2017	**6.34**	**0.26**	<0.10
	7/2/2018	**9.85**	<0.10	<0.10
	3/21/2019	**11.0**	<0.250	<0.250
	6/5/2019	**9.86**	<0.250	<0.250
	9/27/2019	**9.82**	<0.250	<0.250
	12/4/2019	**9.72**	<0.250	<0.250
	3/12/2020	**9.04**	<0.250	<0.250
	6/17/2020	**10.9**	<0.250	<0.250
	10/8/2020	**9.48**	<0.250	<0.250
	12/9/2020	**9.78**	<0.250	<0.250
	3/4/2021	**8.75**	<0.250	<0.250
	6/16/2021	**9.31**	<0.250	<0.250
	9/16/2021	**9.62**	<0.250	<0.250
	12/9/2021	**17.2**	<0.250	<0.250
	3/8/2022	**9.08**	<0.250	<0.250
	06/16/2022	**12.6**	<0.250	<0.250
	9/15/2022	**12.80**	<0.250	<0.250
	12/8/2022	**9.21**	<0.250	<0.250
	3/16/2023	**9.65**	<0.250	<0.250
	6/13/2023	**14.1**	<0.250	<0.250
	9/13/2023	**7.48**	<0.250	<0.250
	12/13/2023	**8.97**	<0.250	<0.250
	3/7/2024	**9.12**	<0.250	<0.250
	6/14/2024	**9.80**	<0.250	<0.250
	9/6/2024	**8.98**	<0.250	<0.250
	12/5/2024	**9.13**	<0.250	<0.250

Table 4

Groundwater Analytical Results—Ammonia, Nitrate, and Nitrite

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Ammonia (as Nitrogen)	Nitrate-Nitrogen	Nitrite-Nitrogen
		Concentrations in mg/L (ppm)		
MW-3	11/8/2017	**1.68**	**2.7**	<1.0
	3/20/2018	<0.40	**19.7**	<0.10
	7/2/2018	**0.569**	**15.4**	**1.49**
	9/26/2018	**1.56**	**5.64**	<0.250
	12/7/2018	**1.18**	**10.2**	<0.250
	3/20/2019	<0.0200	**17.1**	<0.250
	6/7/2019	<0.0200	**15.1**	<0.250
	9/27/2019	**2.04**	**3.90**	<0.250
	12/4/2019	**0.212**	**11.5**	<0.250
	3/10/2020	**0.021**	**14.7**	<0.250
	6/17/2020	<0.0200	**7.92**	<0.250
	10/7/2020	**0.998**	**5.57**	<0.250
	12/8/2020	<0.0200	**9.16**	<0.250
	3/4/2021	**0.042**	**15.1**	<0.250
	6/16/2021	**0.023**	**9.06**	<0.250
	9/14/2021	**0.821**	**4.39**	<0.250
	12/9/2021	<0.0200	**8.23**	<0.250
	3/9/2022	<0.0200	**4.78**	<0.250
	06/16/2022	**0.123**	**0.437**	<0.250
	9/15/2022	**0.071**	**2.68**	<0.250
	12/6/2022	<0.0200	**5.57**	<0.250
	3/16/2023	<0.0200	<0.250	<0.250
	6/13/2023	**0.0300**	**3.74**	<0.250
	9/13/2023	**0.754**	**0.890**	<0.250
	12/13/2023	<0.0200	**5.48**	<0.250
	3/7/2024	<0.0200	**4.88**	<0.250
	6/12/2024	<0.0200	**3.90**	<0.250
	9/5/2024	**1.75**	**1.23**	<0.250
	12/5/2024	<0.0200	**5.80**	<0.250
MW-5	11/7/2017	**2.86**	<0.10	<0.10
	3/21/2018	<0.05	**2.63**	<0.10
	6/29/2018	**0.819**	<0.10	<0.10
	9/27/2018	**9.55**	<0.250	<0.250
	12/7/2018	**1.22**	<0.250	<0.250
	3/26/2019	**2.40**	**0.866**	<0.250
	6/7/2019	**2.94**	<0.250	<0.250
	12/4/2019	**0.570**	<0.250	<0.250
	3/12/2020	**0.114**	<0.250	<0.250
	6/18/2020	**0.114**	<0.250	<0.250
	10/6/2020	**9.20**	<0.250	<0.250
	12/10/2020	**0.294**	<0.250	<0.250
	3/3/2021	**0.543**	**4.64**	<0.250
	6/16/2021	**1.39**	<0.250	<0.250
	9/15/2021	**9.86**	<0.250	<0.250
	12/9/2021	**0.722**	<0.250	<0.250
	3/9/2022	**1.12**	<0.250	<0.250
	06/16/2022	**3.86**	<0.250	<0.250
	9/14/2022	**8.92**	<0.250	<0.250
	12/8/2022	**2.41**	<0.250	<0.250
	3/15/2023	**1.52**	<0.250	<0.250
	6/15/2023	**1.33**	<0.250	<0.250
	9/12/2023	**8.68**	<0.250	<0.250
	12/15/2023	**0.385**	<0.250	<0.250
	3/7/2024	**0.176**	<0.250	<0.250
	6/11/2024	**0.660**	<0.250	<0.250
	9/5/2024	**8.28**	<0.250	<0.250
	12/5/2024	**0.448**	<0.250	<0.250
MW-6	11/7/2017	**0.608**	**0.35**	<0.10
	7/1/2018	**4.17**	<0.10	<0.10
	9/25/2018	**4.30**	<0.250	<0.250
	3/20/2019	**5.17**	**0.738**	<0.250
	6/5/2019	**0.964**	**0.883**	<0.250
	9/27/2019	**6.36**	<0.250	<0.250
	12/4/2019	**2.18**	<0.250	<0.250
	3/12/2020	**9.42**	<0.250	<0.250
	6/17/2020	**1.87**	<0.250	<0.250
	10/8/2020	**3.14**	<0.250	<0.250
	12/9/2020	**2.67**	**0.315**	<0.250
	3/4/2021	**4.56**	<0.250	<0.250
	6/16/2021	**3.05**	<0.250	<0.250
	9/15/2021	<0.0200	<0.250	<0.250
	12/9/2021	**0.583**	**1.12**	<0.250
	3/8/2022	**1.77**	<0.250	<0.250
	6/14/2022	**0.893**	<0.250	<0.250
	9/15/2022	**11.0**	<0.250	<0.250
	12/6/2022	**0.725**	<0.250	<0.250
	3/14/2023	**2.18**	<0.250 H-01	<0.250 H-01
	6/14/2023	**13.7**	<0.250	<0.250
	9/13/2023	**2.74**	<0.250	<0.250
	12/13/2023	**0.532**	**1.09**	<0.250
	3/6/2024	**5.54**	<0.250	<0.250

Table 4

Groundwater Analytical Results—Ammonia, Nitrate, and Nitrite

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Ammonia (as Nitrogen)	Nitrate-Nitrogen	Nitrite-Nitrogen
		Concentrations in mg/L (ppm)		
MW-6 (continued)	6/12/2024	**2.08**	<0.250	<0.250
	9/6/2024	**14.5**	<0.250	<0.250
	12/5/2024	**1.05**	<0.250	<0.250
MW-7	2/6/2007	**3.00**	**60.7**	< 0.100
	6/10/2008	**4.89**	**67.5**	**0.1**
	3/23/2009	**11**	**56**	<0.10
	3/16/2010	**2.40**	**99**	<0.50
	6/7/2011	--	**140**	<0.10
	12/9/2011	--	<0.50	<0.10
	11/7/2017	**9.09**	<0.10	<0.10
	3/21/2018	**13.4**	<0.10	<0.10
	3/21/2018 DUP	**16.9**	<0.10	<0.10
	6/29/2018	**7.9**	**10.8**	0.10
	9/27/2018	**16.7**	<0.250	<0.250
	12/7/2018	**22.4**	**13.3**	<0.250
	12/7/2018 DUP	**22.1**	**13.5**	<0.250
	3/20/2019	**34.5**	**13.1**	<0.250
	3/20/2019 DUP	**33.7**	**13.4**	<0.250
	6/5/2019	**16.6**	**30.4**	<0.250
	6/5/2019 DUP	**17.0**	**30.3**	<0.250
	9/26/2019	**19.8**	**11.5**	<0.250
	9/26/2019 DUP	**20.3**	**11.5**	<0.250
	12/3/2019	**33.1**	**47.4**	<0.250
	12/3/19 DUP	**34.9**	**49.7**	<0.250
	3/11/2020	**6.89**	**18.7**	<0.250
	3/11/2020 DUP	**6.89**	**18.7**	<0.250
	6/18/2020	**5.21**	**27.6**	<0.250
	6/18/2020 DUP	**6.33**	**27.6**	<0.250
	10/8/2020	**14.5**	**1.92**	<0.250
	10/8/2020 DUP	**14.3**	**1.83**	<0.250
	12/9/2020	**34.5**	**88.6**	<0.250
	12/9/2020 DUP	**33.3**	**88.9**	<0.250
	3/3/2021	**5.94**	**10.6**	<0.250
	3/3/2021 DUP	**5.97**	**10.7**	<0.250
	6/16/2021	**16.1**	**94.9**	<0.250
	6/16/2021 DUP	**16.7**	**79.1**	<0.250
	9/14/2021	**11.6**	**14.4**	<0.250
	9/14/2021 DUP	**11.5**	**13.7**	<0.250
	12/8/2021	**34.3**	**130**	<0.200
	12/8/2021 DUP	**37.2**	**137**	<0.250
	3/9/2022	**10.9**	**39.6**	<0.250
	3/9/2022 DUP	**11.0**	**39.7**	<0.250
	6/14/2022	**0.0230**	**9.04**	<0.250
	6/14/2022 DUP	**0.0320**	**8.72**	<0.250
	9/15/2022	**9.02**	**5.77**	<0.250
	9/15/2022 DUP	**6.45**	**5.88**	<0.250
	12/7/2022	**16.7**	**66.5**	<0.250
	12/7/2022 DUP	**17.3**	**56.6**	<0.250
	3/14/2023	**11.8 D**	**16.1 H-01, D**	<0.250 H-01
	3/14/2023 DUP	**7.52 D**	**10.3 H-01, D**	<0.250 H-01
	6/15/2023	**0.780**	**9.39**	<0.250
	6/15/23 DUP	**0.784**	**9.42**	<0.250
	9/12/2023	**8.38**	**29.7**	<0.250
	9/12/2023 DUP	**8.34**	**29.5**	<0.250
	12/14/2023	**22.0**	**125**	<0.250
	12/14/2023 DUP	**22.0**	**128**	<0.250
	3/7/2024	**8.13**	**24.4**	<0.250
	3/7/24 DUP	**7.61**	**21.4**	<0.250
	6/11/2024	**25.0**	**167**	<0.250
	6/11/2024 DUP	**23.5**	**156**	<0.250
	9/4/2024	**10.8**	**50.0**	<0.250
	9/4/2024 DUP	**10.6**	**50.6**	<0.250
	12/3/2024	**64.9**	**487 H-01**	<0.250
	12/3/2024 DUP	**47.2**	**383 H-01**	<0.250
MW-8	6/10/2008	<0.0500	**167**	<0.1
	11/6/2017	<0.050	**207**	<0.10
	3/19/2018	<0.40	**284**	<0.10
	6/29/2018	<0.050	**333**	<0.10
	9/25/2018	<0.0200	**235**	<0.250
	12/7/2018	**0.0230**	**260**	<0.250
	3/22/2019	**0.0350**	**544**	<0.250
	6/3/2019	<0.0200	**176**	<0.250
	12/3/2019	<0.0200	**276 E**	<0.250
	3/11/2020	**0.7320**	**311**	<1.25
	6/17/2020	<0.0200	**108 H-01**	<0.250
	10/6/2020	<0.0200	**248 H-01**	<0.250
	12/10/2020	<0.0200	**276**	<0.250
	3/3/2021	<0.0200	**317**	<0.250
	6/16/2021	<0.0200	**206**	<1.25 R-04
	9/15/2021	<0.0200	**248**	<0.250
	12/13/2021	<0.0200	**273**	<0.250 R-04
	3/8/2022	<0.0200	**212**	<0.250

Table 4

Groundwater Analytical Results—Ammonia, Nitrate, and Nitrite

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Ammonia (as Nitrogen)	Nitrate-Nitrogen	Nitrite-Nitrogen
		Concentrations in mg/L (ppm)		
MW-8 (continued)	06/15/2022	<0.0200	**41**	<0.250
	9/14/2022	<0.0200	**204**	<0.250
	12/7/2022	<0.0200	**201**	<0.250
	3/15/2023	<0.0200	**220**	<0.250
	6/13/2023	<0.0200	**210**	<0.250
	9/12/2023	<0.0200	**207**	<0.250
	12/12/2023	<0.0200	**146**	<0.250
	3/6/2024	<0.0200	**246**	<0.250
	6/11/2024	<0.0200	**66**	<0.250
	9/5/2024	<0.0200	**142**	<0.250
	12/5/2024	<0.0200	**201**	<0.250
MW-9	6/11/2024	<0.0200	**65.9**	<0.250
	9/21/2010	**1.4**	**89**	<0.10
	11/9/2017	**17.4**	**559**	<0.10
	3/21/2018	<0.050	**230**	<0.10
	6/29/2018	**14.2**	**382**	**0.61**
	9/27/2018	**17.0**	**468**	<0.250
	12/7/2018	**5.60**	**311**	<0.250
	3/20/2019	**0.198**	**173**	<0.250
	6/7/2019	**0.022**	**125**	<0.250
	9/26/2019	**0.680**	**138**	<0.250
	12/3/2019	**0.618**	**101**	<0.250
	3/11/2020	**0.085**	**264**	<0.250
	6/18/2020	<0.0200	**128**	<0.250
	10/8/2020	**5.76**	**172**	<0.250
	12/9/2020	**11.1**	**302**	<0.250
	3/3/2021	<0.0200	**298**	<0.250
	6/15/2021	**0.026**	**156**	<1.25 R-04
	9/14/2021	**0.891**	**117**	<0.250
	12/9/2021	**0.063**	**113 H-01**	<0.250 H-01
	3/8/2022	**0.146**	**132**	<0.250
	6/14/2022	**13.2**	**35.2**	<0.250
	9/15/2022	<0.0200	**156**	<0.250
	12/7/2022	**6.54**	**227**	<0.250
	3/17/2023	**14.5**	**329 H-01**	<0.250
	6/15/2023	**2.07**	**93.6**	<0.250
	9/12/2023	**3.41**	**170**	<0.250
	12/14/2023	<0.0200	**67.9**	<0.250
	3/7/2024	<0.0200	**89.7**	<0.250
	6/11/2024	<0.0200	**79.4**	<0.250
	9/5/2024	**2.95**	**84.4**	<0.250
	12/3/2024	<0.0200	**96.7**	<0.250
MW-10	11/6/2017	**35.6**	**333**	**0.270**
	6/29/2018	**29.0**	**486**	<0.10
	9/25/2018	**37.2**	**413**	<0.250
	9/25/2018 DUP	**38.0**	**412**	<0.250
	3/21/2019	**45.0**	**412**	<0.250
	6/6/2019	**36.5**	**363**	**0.463 R-04**
	9/25/2019	**37.3**	**429**	<0.5
	12/4/2019	**36.6**	**460**	<0.250
	3/11/2020	**18.2**	**491**	<1.25
	6/17/2020	**13.2**	**489 H-01**	<0.250 H-01
	10/8/2020	**34.8**	**541**	<0.250
	12/9/2020	**37.7**	**515**	<0.250
	3/4/2021	**14.1**	**420**	<0.250
	6/15/2021	**17.0**	**430**	<1.25 R-04
	9/15/2021	**31.7**	**395**	**0.447**
	12/9/2021	**35.7**	**363**	<1.25 R-04
	3/9/2022	**7.91**	**384**	<1.25 R-04
	06/15/2022	**5.58**	**222**	<0.250
	9/14/2022	**15.9**	**408**	<0.250
	12/8/2022	**31.6**	**424**	<0.250
	3/15/2023	**18.2**	**415**	<0.250
	6/14/2023	**2.66**	**327**	<0.250
	9/12/2023	**18.2**	**403**	<0.250
	12/14/2023	**15.4**	**342**	<0.250
	3/5/2024	**3.94**	**294**	<0.250
	6/11/2024	**5.03**	**321**	<0.250
	9/4/2024	**17.5**	**372**	<0.250
	12/4/2024	**11.1**	**357**	<0.250
MW-12	10/19/2010	--	**59**	--
	6/7/2011	--	**1.1**	<0.10
	12/7/2011	--	**67**	<0.10
	9/22/2015	**110**	**47**	--
	11/9/2017	**55.4**	**0.57**	<0.25
	3/20/2018	**39.4**	<0.10	<0.10
	3/20/2018 DUP	**39.9**	<0.10	<0.10
	7/1/2018	**33.0**	<0.10	<0.10
	9/25/2018	**126**	<0.250	<0.250
	9/25/2018 DUP	**129**	<0.250	<0.250
	12/4/2018	**37.2**	**82.2**	**0.487**

Table 4

Groundwater Analytical Results—Ammonia, Nitrate, and Nitrite

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Ammonia (as Nitrogen)	Nitrate-Nitrogen	Nitrite-Nitrogen
		Concentrations in mg/L (ppm)		
MW-12 (continued)	12/4/2018 DUP	**37.1**	**80.0**	**0.526**
	3/20/2019	**53.2**	<0.250	<0.250
	3/20/2019 DUP	**48.2**	<0.250	<0.250
	6/5/2019	**19.8**	**2.34**	<0.250
	6/5/2019 DUP	**22.4**	**2.32**	<0.250
	9/26/2019	**107**	**0.371**	<0.250
	9/26/2019 DUP	**122**	**0.383**	<0.250
	12/4/2019	**22.8**	**36.4**	<0.250
	12/4/2019 DUP	**20.2**	**35.6**	<0.250
	3/11/2020	**26.6**	**12.0**	<0.250
	3/11/2020 DUP	**25.6**	**11.9**	<0.250
	6/18/2020	**12.2**	**1.66**	<0.250
	6/18/2020 DUP	**12.3**	**1.61**	<0.250
	10/7/2020	**125**	<0.250	<0.250
	10/7/2020 DUP	**122**	<0.250	<0.250
	12/8/2020	**12.8**	**49.1**	**0.364**
	12/8/2020 DUP	**13.0**	**49.9**	**0.380**
	3/5/2021	**27.6**	**0.861**	<0.250
	3/5/2021 DUP	**28.2**	**0.920**	<0.250
	6/16/2021	**35.6**	**71.8**	**3.52**
	6/16/2021 DUP	**30.8**	**70.3**	**3.41**
	9/14/2021	**138**	**0.835**	<0.250
	9/14/2021 DUP	**145**	**1.14**	<0.250
	12/9/2021	**4.51**	**14.3**	<0.250
	12/9/2021 DUP	**4.32**	**14.2**	<0.250
	3/8/2022	**27.2**	**72.1**	<0.250
	3/8/2022 DUP	**26.0**	**74 H-01**	<0.250
	6/14/2022	**2.29**	**2.20**	<0.250
	6/14/2022 DUP	**2.31**	**2.19**	<0.250
	9/14/2022	**175**	<0.250	<0.250
	9/14/2022 DUP	**218**	<0.250	<0.250
	12/8/2022	**32.7**	**162**	<0.250
	12/8/2022 DUP	**32.0**	**165**	<0.250
	3/16/2023	**139**	<0.250	<0.250
	3/16/2023 DUP	**151**	<0.250	<0.250
	6/14/2023	**98.2**	<0.250	<0.250
	6/14/23 DUP	**96.6**	<0.250	<0.250
	9/13/2023	**147**	<0.250	<0.250
	9/13/2023 DUP	**147**	<0.250	<0.250
	12/13/2023	**2.61**	**8.34**	<0.250
	12/13/2023 DUP	**2.80**	**8.49**	<0.250
	3/5/2024	**123**	<0.250	<0.250
	3/5/2024 DUP	**128**	<0.250	<0.250 Q-42
	6/13/2024	**90.0**	**11.1 H-01**	<0.250 H-01
	6/13/2024 DUP	**87.9**	**11.6 H-01**	<0.250
	9/5/2024	**170**	<0.250	<0.250
	9/5/2024 DUP	**174**	<0.250	<0.250
	12/4/2024	**7.53**	**35.1 H-01**	<0.250
	12/4/2024 DUP	**7.81**	**35.3 H-01**	<0.250
MW-13	9/22/2015	**48**	**135**	–
	11/7/2017	**35.0**	**0.52**	<0.10
	3/20/2018	**191**	<0.10	<0.10
	7/1/2018	**23.5**	<0.10	<0.10
	9/25/2018	**37.7**	<0.250	<0.250
	12/5/2018	**49.8**	<0.250	<0.250
	3/19/2019	**110**	<0.250	<0.250
	6/6/2019	**78.5**	<0.250	<0.250
	9/26/2019	**76.2**	<0.250	<0.250
	12/3/2019	**63.2**	<0.250	<0.250
	3/10/2020	**52.0**	<0.250	<0.250
	6/18/2020	**18.1**	<0.250	<0.250
	10/7/2020	**56.6**	<0.250	<0.250
	12/8/2020	**39.8**	<0.250	<0.250
	3/4/2021	**32.1**	<0.250	<0.250
	6/15/2021	**21.2**	**11.0**	<0.250
	9/14/2021	**50.4**	<0.250	<0.250
	12/9/2021	**12.5**	**9.11**	<0.250
	3/9/2022	**6.51**	**42.3**	<0.250
	6/14/2022	**1.97**	**5.25**	<0.250
	9/15/2022	**48.9**	<0.250	<0.250
	12/6/2022	**7.89**	**65.8**	<0.250
	3/16/2023	**32.1**	<0.250 H-01	<0.250 H-01
	6/14/2023	**19.4**	<0.250	<0.250
	9/13/2023	**40.8**	<0.250	<0.250
	12/13/2023	**0.562**	**52.7**	<0.250
	3/6/2024	**50.4**	<0.250	<0.250
	6/13/2024	**10.4**	**27.3**	**0.777**
	9/3/2024	**57.9**	<0.250	<0.250
	12/3/2024	**3.13**	**36.5**	**0.725**
MW-14	11/8/2017	**34.7**	**50.3**	<1.0
	3/20/2018	**50.7**	**17.1**	<0.10
	6/28/2018	**31.6**	**104**	<2.5

Table 4

Groundwater Analytical Results—Ammonia, Nitrate, and Nitrite

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Ammonia (as Nitrogen)	Nitrate-Nitrogen	Nitrite-Nitrogen
		Concentrations in mg/L (ppm)		
MW-14 (continued)	9/26/2018	**41.0**	**150**	<0.250
	12/5/2018	**53.7**	**75.5**	<0.250
	3/19/2019	**190**	**51.3**	<0.250
	6/6/2019	**33.9**	**28.6**	**0.958**
	9/25/2019	**29.6**	**145**	<0.250
	12/4/2019	**245**	**85.5**	<0.250
	3/11/2020	**32.0**	**137**	<0.250
	6/17/2020	**23.9**	**118 H-01**	<0.250
	10/8/2020	**32.5**	**305**	<0.250
	12/9/2020	**21.3**	**200**	<0.250
	3/4/2021	**15.9**	**258**	<0.250
	6/15/2021	**6.79**	**158**	<1.25 R-04
	9/14/2021	**17.6**	**364**	**0.00**
	12/9/2021	**17.6**	**155**	<0.250
	3/8/2022	**5.20**	**254 H-01**	<0.250
	06/16/2022	**0.372**	**174**	<0.250
	9/13/2022	**10.1**	**345**	<0.250
	12/7/2022	**6.66**	**168**	<0.250
	3/15/2023	**8.69**	**299**	<0.250
	6/13/2023	**0.699**	**181**	<0.250
	9/12/2023	**9.46**	**326**	<0.250
	12/14/2023	**2.28**	**125**	<0.250
	3/5/2024	**4.85**	**226**	<0.250
	6/12/2024	**1.55**	**66.9**	<0.250
	9/4/2024	**12.1**	**347**	<0.250
	12/4/2024	**7.35**	**305**	<0.250
MW-15	11/6/2017	<0.050	**9.78**	<0.10
	7/2/2018	<0.050	**6.06**	<0.10
	6/6/2019	<0.0200	**2.42**	<0.250
	6/18/2020	<0.0200	**1.34**	<0.250
	12/10/2020	<0.0200	**5.85**	<0.250
	6/17/2021	<0.0200	**5.38**	<0.250
	12/10/2021	<0.0200	**4.61 H-01**	<0.250 H-01
	06/15/2022	<0.0200	**0.634**	<0.250
	12/5/2022	<0.0200	**8.58**	<0.250
	6/15/2023	<0.0200	**5.13**	<0.250
	12/14/2023	<0.0200	**5.86**	<0.250
	6/11/2024	<0.0200	**5.49**	<0.250
	12/5/2024	<0.0200	**4.93**	<0.250
MW-16	11/6/2017	<0.050	**9.95**	<0.10
	3/19/2018	<0.40	**15.7**	<0.10
	7/2/2018	<0.050	**19.4**	<0.10
	9/25/2018	<0.0200	**6.10**	<0.250
	12/6/2018	<0.0200	**10.2**	<0.250
	3/22/2019	**5.31**	**7.90**	<0.250
	6/4/2019	<0.0200	**8.58**	<0.250
	9/25/2019	<0.0200	**7.15**	<0.250
	12/3/2019	<0.0200	**7.93**	<0.250
	3/11/2020	**0.465**	**10.5**	<0.250
	6/18/2020	<0.0200	**2.44**	<0.250
	10/7/2020	<0.0200	**7.10**	<0.250
	12/9/2020	<0.0200	**9.58**	<0.250
	3/3/2021	<0.0200	**7.09**	<0.250
	6/16/2021	**0.022**	**8.66**	<0.250
	9/15/2021	<0.0200	**5.99**	<0.250
	12/7/2021	<0.0200	**13.0**	<0.250
	3/9/2022	<0.0200	**17.0**	<0.250
	06/16/2022	<0.0200	**5.80**	<0.250
	9/14/2022	<0.0200	**5.28**	<0.250
	12/7/2022	<0.0200	**11.5**	<0.250
	3/15/2023	<0.0200	**25.8**	<0.250
	6/15/2023	<0.0200	**17.7**	<0.250
	9/13/2023	<0.0200	**8.16**	<0.250
	12/14/2023	<0.0200	**25.0**	<0.250
	3/11/2024	<0.0200	**21.0 Q-42**	<0.250 Q-42
	6/11/2024	<0.0200	**24.6**	<0.250
	9/5/2024	<0.0200	**14.1**	<0.250
	12/4/2024	<0.0200	**13.8**	<0.250
MW-17	11/8/2017	**0.634**	**43.4**	<1.0
	6/28/2018	<0.050	**7.84**	<0.10
	9/26/2018	**2.13**	**0.760**	<0.250
	3/19/2019	**5.77**	**25.3**	<0.250
	6/6/2019	**0.119**	**24.7**	<0.250
	9/26/2019	**2.12**	**1.10**	<0.250
	12/3/2019	**0.353**	**15.9**	<0.250
	3/10/2020	**1.21**	**11.5**	<0.250
	6/17/2020	<0.0200	**10.6 H-01**	<0.250
	10/7/2020	**3.44**	**0.636**	<0.250
	12/8/2020	**0.481**	**24.3**	<0.250
	3/3/2021	**1.00**	**2.95**	<0.250
	6/15/2021	**0.146**	**28.1**	<0.250
	9/14/2021	**6.55**	<0.250	<0.250
	12/8/2021	**2.42**	**9.18**	<0.250
	3/8/2022	**0.0890**	**27.7**	<0.250

Table 4

Groundwater Analytical Results—Ammonia, Nitrate, and Nitrite

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Ammonia (as Nitrogen)	Nitrate-Nitrogen	Nitrite-Nitrogen
		Concentrations in mg/L (ppm)		
MW-17 (continued)	06/16/2022	<0.0200	**0.763**	<0.250
	9/13/2022	**5.84**	<0.250	<0.250
	12/7/2022	**3.39**	**34.1**	<0.250
	3/15/2023	**4.92**	<0.250	<0.250
	6/13/2023	**0.0290**	**0.337**	<0.250
	9/13/2023	**8.24**	<0.250	<0.250
	12/14/2023	<0.0200	**19.7**	<0.250
	3/5/2024	**0.723**	**14.8**	<0.250
	6/12/2024	**0.103**	**13.4**	<0.250
	9/4/2024	**7.16**	<0.250	<0.250
	12/4/2024	**1.85**	**17.9 H-01**	<0.250
MW-18i	6/10/2008	<0.0500	**0.35**	<0.1
	11/7/2017	<0.050	**1.07**	<0.10
	3/21/2018	<0.050	**0.75**	<0.10
	7/2/2018	<0.050	**1.13**	<0.10
	9/27/2018	<0.0200	**1.00**	<0.250
	12/6/2018	<0.0200	**0.715**	<0.250
	3/21/2019	<0.0200	**0.509**	<0.250
	6/3/2019	<0.0200	**0.755**	<0.250
	9/25/2019	<0.0200	**0.831**	<0.250
	12/3/2019	<0.0200	**0.846**	<0.250
	3/11/2020	<0.0200	**0.445**	<0.250
	6/17/2020	<0.0200	**0.420**	<0.250
	10/7/2020	<0.0200	**0.415**	<0.250
	12/9/2020	<0.0200	**0.618**	<0.250
	3/3/2021	<0.0200	**0.528**	<0.250
	6/17/2021	<0.0200	**0.467**	<0.250
	9/15/2021	<0.0200	**0.422**	<0.250
	12/9/2021	<0.0200	**0.475**	<0.250
	3/9/2022	<0.0200	**0.415**	<0.250
	06/16/2022	<0.0200	**0.372**	<0.250
	9/15/2022	<0.0200	**0.561**	<0.250
	12/7/2022	<0.0200	**0.542**	<0.250
	3/17/2023	<0.0200	<0.250	<0.250
	6/15/2023	<0.0200	**0.765**	<0.250
	9/13/2023	<0.0200	**0.777**	<0.250
	12/14/2023	<0.0200	**0.793**	<0.250
	3/7/2024	<0.0200	**0.822**	<0.250
	6/12/2024	<0.0200	**1.38**	<0.250
	9/5/2024	<0.0200	**1.42**	<0.250
	12/4/2024	<0.0200	**2.01**	<0.250
MW-19	10/19/2010	--	**19**	--
	9/22/2015	**46**	**135**	--
	11/9/2017	**80**	**41**	<1.0
	3/21/2018	**150**	**47.8**	<0.10
	3/21/2018 DUP	**152**	**46.5**	<0.10
	6/28/2018	**194**	<0.10	<0.10
	9/25/2018	**122**	**120**	<0.250
	9/25/2018 DUP	**125**	**121**	<0.250
	12/5/2018	**188**	**118**	<0.250
	12/5/2018 DUP	**188**	**119**	<0.250
	3/20/2019	**242**	**195**	<0.250
	3/20/2019 DUP	**192**	**191**	<0.250
	6/7/2019	**145**	**34.8**	**1.06**
	9/26/2019	**113**	**232**	<0.250
	9/26/2019 DUP	**119**	**233**	<0.250
	12/3/2019	**131**	**129**	<0.250
	12/3/2019 DUP	**125**	**136**	<0.250
	3/11/2020	**109**	**213**	<1.25
	3/11/2020 DUP	**107**	**205**	<1.25
	6/18/2020	**88.0**	**30.8**	<0.250
	6/18/2020 DUP	**90.4**	**27.2**	<0.250
	10/7/2020	**187**	**224**	<0.250
	10/7/2020 DUP	**155**	**228**	<0.250
	12/8/2020	**180**	**147**	<0.250
	12/8/2020 DUP	**176**	**157**	<0.250
	3/3/2021	**156**	**137**	<0.250
	3/3/2021 DUP	**166**	**160**	<0.250
	6/16/2021	**115 D**	**152**	<1.25 R-04
	6/16/2021 DUP	**23.4 D**	**146**	<1.25 R-04
	9/15/2021	**111**	**150**	<0.250
	9/15/2021 DUP	**100**	**177**	<0250
	12/8/2021	**104**	**89.5**	<0.250
	12/8/2021 DUP	**79.4**	**69.8**	<0.250
	3/9/2022	**103**	**108**	<1.25 R-04
	3/9/2022 DUP	**105**	**102**	<0.250
	6/14/2022	**1.31**	**103**	<0.250
	6/14/2022 DUP	**1.10**	**104**	<0.250
	9/15/2022	**69.80**	**92.5**	<0.250
	9/15/2022 DUP	**75.4**	**102**	<0.250
	12/6/2022	**141**	**82.0**	<0.250

Table 4

Groundwater Analytical Results—Ammonia, Nitrate, and Nitrite

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Ammonia (as Nitrogen)	Nitrate-Nitrogen	Nitrite-Nitrogen
		Concentrations in mg/L (ppm)		
MW-19 (continued)	12/6/2022 DUP	**142**	**76.7**	<0.250
	3/14/2023	**112**	**205 H-01**	<0.250 H-01
	3/14/2023 DUP	**123**	**211 H-01**	<0.250 H-01
	6/14/2023	**76.3**	**131**	<0.250
	6/14/23 DUP	**72.1**	**130**	<0.250
	9/14/2023	**64.0**	**118**	<0.250
	9/14/2023 DUP	**62.4**	**120**	<0.250
	12/15/2023	**137**	**34.1**	<0.250
	12/15/2023 DUP	**141**	**37.6**	<0.250
	3/6/2024	**127**	**63.7**	<0.250
	3/6/24 DUP	**121**	**66.7**	<0.250
	6/12/2024	**108**	**77.8**	<0.250
	6/12/2024 DUP	**108**	**85.5**	<0.250
	9/3/2024	**73.8**	**81.9**	<0.250
	9/3/2024 DUP	**64.2**	**78.9**	<0.250
	12/3/2024	**71.8**	**112**	<0.250
	12/3/2024 DUP	**72.8**	**105**	<0.250
MW-19i	11/8/2017	**0.236**	<0.10	<0.10
	3/20/2018	<0.40	<0.10	<0.10
	7/2/2018	**0.158**	<0.10	<0.10
	9/27/2018	**0.213**	<0.250	<0.250
	12/6/2018	**0.240**	<0.250	<0.250
	3/25/2019	**0.212**	<0.250	<0.250
	6/3/2019	**0.178**	<0.250	<0.250
	12/4/2019	**0.169**	<0.250	<0.250
	3/12/2020	<0.0200	<0.250	<0.250
	6/18/2020	**0.191**	<0.250	<0.250
	10/7/2020	**0.178**	<0.250	<0.250
	12/10/2020	**0.226**	<0.250	<0.250
	3/3/2021	**0.198**	<0.250	<0.250
	6/17/2021	**0.187**	<0.250	<0.250
	9/15/2021	**0.271**	<0.250	<0.250
	12/7/2021	**0.031**	**0.798**	<0.250
	3/9/2022	**0.220**	<0.250	<0.250
	06/16/2022	**0.264**	<0.250	<0.250
	9/14/2022	**0.358**	<0.250	<0.250
	12/7/2022	**0.246**	<0.250	<0.250
	3/14/2023	**0.342**	<0.250 H-01	<0.250 H-01
	6/14/2023	**0.223**	<0.250	<0.250
	9/12/2023	**0.302**	<0.250	<0.250
	12/14/2023	**0.273**	<0.250	<0.250
	3/7/2024	**0.268**	<0.250	<0.250
	6/12/2024	**0.237**	<0.250	<0.250
	9/5/2024	**0.269**	<0.250	<0.250
	12/4/2024	**0.263**	<0.250	<0.250
MW-20i	11/7/2017	**0.125**	**0.28**	<0.10
	3/21/2018	**1.01**	**1.06**	<0.10
	7/2/2018	**0.115**	**0.37**	<0.10
	9/25/2018	**0.244**	**1.11**	<0.250
	12/6/2018	<0.0200	<0.250	<0.250
	3/22/2019	**0.027**	**0.261**	<0.250
	6/3/2019	**0.353**	**1.77**	<0.250
	9/25/2019	<0.0200	**0.617**	<0.250
	12/3/2019	**0.030**	**1.84**	<0.250
	3/11/2020	<0.0200	**0.332**	<0.250
	6/17/2020	<0.0200	**0.585**	<0.250
	10/7/2020	<0.0200	**0.360**	<0.250
	12/9/2020	**0.176**	**0.643**	<0.250
	3/2/2021	<0.0200	**0.330**	<0.250
	6/17/2021	<0.0200	<0.250	<0.250
	9/15/2021	**0.028**	**0.367**	<0.250
	12/9/2021	<0.200	**0.260**	<0.250
	3/9/2022	<0.0200	**0.314**	<0.250
	06/15/2022	<0.0200	**0.258**	<0.250
	9/14/2022	<0.0200	**0.253**	<0.250
	12/7/2022	<0.0200	<0.250	<0.250
	3/15/2023	<0.0200	<0.250	<0.250
	6/15/2023	<0.0200	**0.326**	<0.250
	9/13/2023	<0.0200	**0.344**	<0.250
	12/14/2023	<0.0200	**0.502**	<0.250
	3/7/2024	<0.0200	**0.265**	<0.250
	6/12/2024	<0.0200	**0.279**	<0.250
	9/5/2024	<0.0200	**0.476**	<0.250
	12/4/2024	<0.0200	**0.424**	<0.250
MW-21i-40	6/10/2008	**0.0594**	<0.100	<0.100
	11/8/2017	<0.050	**1.90**	<1.0
	3/22/2018	**0.071**	**1.70**	<0.10
	6/29/2018	<0.050	**5.12**	<1.0
	9/27/2018	<0.0200	**3.61**	<0.250
	12/6/2018	<0.0200	**3.16**	<0.250
	3/21/2019	**0.0360**	**3.41**	<0.250

Table 4

Groundwater Analytical Results—Ammonia, Nitrate, and Nitrite

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Ammonia (as Nitrogen)	Nitrate-Nitrogen	Nitrite-Nitrogen
		Concentrations in mg/L (ppm)		
MW-21i-40 (continued)	6/3/2019	<0.0200	**1.49**	<0.250
	9/25/2019	<0.0200	**3.49**	<0.250
	12/3/2019	<0.0200	**4.61**	<0.250
	3/11/2020	<0.0200	**2.90**	<0.250
	6/17/2020	<0.0200	**2.11**	<0.250
	10/7/2020	<0.0200	**5.67**	<0.250
	12/9/2020	<0.0200	**6.15**	<0.250
	3/2/2021	**0.117**	**3.70**	<0.250
	6/16/2021	**0.0620**	**5.77**	<0.250
	9/15/2021	<0.0200	**5.55**	<0.250
	12/7/2021	<0.0200	**4.64**	<0.250
	3/8/2022	<0.0200	**5.20**	<0.250
	06/16/2022	<0.0200	**3.40**	<0.250
	9/14/2022	**0.027**	**4.87**	<0.250
	12/7/2022	<0.0200	**3.76**	<0.250
	3/15/2023	<0.0200	**4.76**	<0.250
	6/14/2023	<0.0200	**4.55**	<0.250
	9/13/2023	<0.0200	**4.45**	<0.250
	12/14/2023	<0.0200	**3.83**	<0.250
	3/7/2024	<0.0200	**2.29**	<0.250
	6/13/2024	<0.0200	**2.12**	<0.250
	9/6/2024	<0.0200	**0.809**	<0.250
	12/4/2024	<0.0200	**1.75**	<0.250
MW-21i-105	6/10/2008	**0.0645**	<0.100	<0.100
	11/8/2017	<0.050	**1.6**	<1.0
	3/22/2018	**13.0**	**15.8**	**0.10**
	6/29/2018	**12.3**	**13.1**	<0.10
	9/26/2018	**0.409**	**0.759**	<0.250
	12/6/2018	**3.05**	**5.29**	<0.250
	3/21/2019	**49.6**	**0.755**	<0.250
	6/6/2019	**45.7**	**7.57**	**1.25**
	9/25/2019	**28.3**	**4.46**	**1.81**
	12/4/2019	**42.5**	**4.15**	**2.11**
	3/12/2020	**32.6**	**3.54**	**4.79**
	6/18/2020	**44.6**	**4.18**	**12.1**
	10/8/2020	**45.6**	**5.85**	**10.6**
	12/9/2020	**34.4**	**8.54**	**5.76**
	3/4/2021	**2.30**	**7.39**	**2.47**
	6/15/2021	**17.6**	**11.0**	**2.99**
	9/15/2021	**7.29**	**1.15**	<0.250
	12/8/2021	**2.34**	**9.42**	<0.250
	3/9/2022	<0.0200	**3.13**	<0.250
	06/15/2022	**3.02**	**0.868**	<0.250
	9/15/2022	**1.67**	**1.87**	<0.250
	12/6/2022	**1.44**	**0.840**	<0.250
	3/14/2023	**0.101**	**2.61 H-01**	<0.250 H-01
	6/13/2023	**2.21**	**1.34**	<0.250
	9/12/2023	**1.38**	**0.815**	<0.250
	12/14/2023	**1.81**	**0.847**	<0.250
	3/5/2024	**1.68**	**1.02**	<0.250
	6/13/2024	**1.32**	**0.970**	<0.250
	9/5/2024	**1.02**	**1.28**	<0.250
	12/5/2024	**0.954**	**1.62**	<0.250
MW-22i	11/7/2017	**0.354**	<1.0	<1.0
	3/22/2018	**1.25**	**0.63**	<0.10
	6/29/2018	**0.469**	<1.0	<1.0
	9/26/2018	**0.369**	<0.250	<0.250
	12/5/2018	**0.378**	<0.250	<0.250
	3/21/2019	**0.448**	<0.250	<0.250
	6/6/2019	**0.329**	<0.250	<0.250
	9/25/2019	**0.339**	<0.250	<0.250
	12/4/2019	**0.395**	<0.250	<0.250
	3/12/2020	**0.111**	<0.250	<0.250
	6/18/2020	**0.331**	<0.250	<0.250
	10/8/2020	**0.325**	<0.250	<0.250
	12/9/2020	**0.339**	<0.250	<0.250
	3/4/2021	**0.206**	<0.250	<0.250
	6/15/2021	**0.328**	<0.250	<0.250
	9/15/2021	**0.390**	<0.250	<0.250
	12/8/2021	**0.339**	<0.250	<0.250
	3/9/2022	**0.342**	<0.250	<0.250
	06/15/2022	**0.119**	<0.250	<0.250
	9/14/2022	**0.119**	**0.342**	<0.250
	12/8/2022	**0.374**	<0.250	<0.250
	3/16/2023	**0.358**	<0.250	<0.250
	6/13/2023	**0.269**	**1.09**	<0.250
	9/12/2023	**0.324**	<0.250	<0.250
	12/14/2023	**0.409**	<0.250	<0.250
	3/5/2024	**0.361**	<0.250	<0.250
	6/14/2024	**0.411**	<0.250	<0.250

Table 4

Groundwater Analytical Results—Ammonia, Nitrate, and Nitrite

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Ammonia (as Nitrogen)	Nitrate-Nitrogen	Nitrite-Nitrogen
		Concentrations in mg/L (ppm)		
MW-22i (continued)	9/5/2024	**0.369**	<0.250	<0.250
	12/5/2024	**0.384**	<0.250	<0.250
MW-23i	6/10/2008	<0.0500	**0.440**	<0.100
	11/8/2017	<0.0500	**0.78**	<0.100
	3/21/2018	<0.0500	**0.72**	<0.100
	6/28/2018	<0.0500	**0.53**	<0.100
	9/27/2018	<0.0200	**1.04**	<0.250
	12/6/2018	<0.0200	**0.520**	<0.250
	3/22/2019	<0.0200	**0.592**	<0.250
	6/3/2019	<0.0200	**0.604**	<0.250
	12/4/2019	<0.0200	**0.534**	<0.250
	3/12/2020	<0.0200	**0.639**	<0.250
	6/17/2020	<0.0200	**0.372**	<0.250
	10/7/2020	<0.0200	**0.796**	<0.250
	12/9/2020	<0.0200	**0.667**	<0.250
	3/2/2021	<0.0200	**0.616**	<0.250
	6/17/2021	**0.0410**	**0.650**	<0.250
	9/15/2021	<0.0200	**1.07**	<0.250
	12/9/2021	<0.0200	**0.406 H-01**	<0.250 H-01
	3/9/2022	<0.0200	**0.680**	<0.250
	06/15/2022	<0.0200	**0.310**	<0.250
	9/14/2022	<0.0200	**1.08**	<0.250
	12/7/2022	<0.0200	**0.990**	<0.250
	3/14/2023	<0.0300 R-01	**1.69 H-01**	<0.250 H-01
	6/14/2023	<0.0200	**1.35**	<0.250
	9/13/2023	<0.0200	**1.88**	<0.250
	12/14/2023	<0.0200	**0.716**	<0.250
	3/7/2027	<0.0200	**1.83**	<0.250
	6/13/2024	<0.0200	**1.77**	<0.250
	9/6/2024	<0.0200	**2.16**	<0.250
	12/5/2024	<0.0200	**1.28**	<0.250
MW-24i	6/7/2011	--	**0.50**	<0.10
	12/7/2011	--	**1.60**	<0.10
	11/9/2017	<0.050	**3.09**	<0.10
	3/21/2018	**0.687**	**7.36**	<0.10
	6/28/2018	<0.050	**2.37**	<0.050
	9/27/2018	<0.0200	**7.56**	<0.250
	12/4/2018	**0.067**	**2.97**	<0.250
	3/25/2019	**0.020**	**4.07**	<0.250
	6/7/2019	<0.0200	**2.19**	<0.250
	9/27/2019	**0.116**	<0.250	<0.250
	12/3/2019	<0.0200	**2.86**	<0.250
	3/12/2020	<0.0200	**4.87**	<0.250
	6/18/2020	<0.0200	**2.70**	<0.250
	10/9/2020	<0.0200	**1.70**	<0.250
	12/10/2020	<0.0200	**9.40**	<0.250
	3/3/2021	<0.0200	**1.30**	<0.250
	6/17/2021	**0.026**	**5.43**	<0.250
	9/14/2021	<0.0200	**10.2**	<0.250
	12/7/2021	<0.0200	**0.784**	<0.250
	3/8/2022	<0.0200	**3.45**	<0.250
	06/15/2022	<0.0200	**0.431**	<0.250
	9/14/2022	**0.577**	<0.250	<0.250
	12/8/2022	<0.0200	**8.62**	<0.250
	3/15/2023	<0.0200	**6.22**	<0.250
	6/13/2023	<0.0200	**4.01**	<0.250
	9/13/2023	<0.0200	**9.17**	<0.250
	12/11/2023	<0.0200	**0.826**	<0.250
	3/7/2024	<0.0200	**7.12**	<0.0250
	6/13/2024	<0.0200	**8.40**	<0.250
	9/4/2024	<0.0200	**9.25**	<0.250
	12/3/2024	<0.0200	**11.0**	<0.250
MW-24d	11/6/2017	**0.153**	<0.10	<0.10
	3/20/2018	<0.40	<0.10	<0.10
	6/27/2018	**0.160**	<0.10	<0.050
	9/28/2018	**0.145**	<0.250	<0.250
	12/10/2018	**0.993**	<0.250	<0.250
	3/25/2019	**0.147**	<0.250	<0.250
	6/4/2019	**0.131**	<0.250	<0.250
	9/27/2019	**0.050**	**3.76**	<0.250
	12/3/2019	**0.142**	<0.250	<0.250
	3/12/2020	**0.130**	<0.250	<0.250
	6/18/2020	**0.211**	<0.250	<0.250
	10/9/2020	**0.140**	<0.250	<0.250
	3/3/2021	**0.163**	<0.250	<0.250
	9/14/2021	**0.110**	<0.250	<0.250
	12/7/2021	**0.121**	<0.250	<0.250
	3/8/2022	**0.124**	<0.250	<0.250
	06/15/2022	**0.115**	<0.250	<0.250
	9/15/2022	**0.140**	<0.250	<0.250
	12/6/2022	**0.341**	<0.250	<0.250

Table 4

Groundwater Analytical Results—Ammonia, Nitrate, and Nitrite

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Ammonia (as Nitrogen)	Nitrate-Nitrogen	Nitrite-Nitrogen
		Concentrations in mg/L (ppm)		
MW-24d (continued)	3/16/2023	**0.123**	<0.250	<0.250
	6/14/2023	<0.0200	**1.26**	<0.250
	9/14/2023	**0.102**	<0.250	<0.250
	12/15/2023	**0.106**	<0.250	<0.250
	3/7/2024	**0.0990**	<0.250	<0.250
	6/12/2024	**0.0970**	<0.250	<0.250
	9/4/2024	**0.114**	<0.250	<0.250
	12/6/2024	**0.105**	<0.250	<0.250
MW-25i	11/8/2017	**0.138**	**0.53**	<0.25
	3/21/2018	<0.050	**0.40**	<0.10
	6/29/2018	<0.050	**0.27**	<0.10
	9/27/2018	<0.0200	**0.775**	<0.250
	12/6/2018	<0.0200	**0.541**	<0.250
	3/22/2019	**0.0250**	**0.0389**	<0.250
	6/3/2019	<0.0200	**0.383**	<0.250
	9/25/2019	<0.0200	**0.710**	<0.250
	12/3/2019	<0.0200	**0.405**	<0.250
	3/12/2020	<0.0200	**0.453**	<0.250
	6/18/2020	<0.0200	**0.357**	<0.250
	10/7/2020	<0.0200	**0.644**	<0.250
	12/9/2020	<0.0200	**0.485**	<0.250
	3/2/2021	<0.0200	**0.797**	<0.250
	6/17/2021	<0.0200	**0.675**	<0.250
	9/15/2021	<0.0200	**1.09**	<0.250
	12/8/2021	<0.0200	**0.426**	<0.250
	3/8/2022	<0.0200	**0.628**	<0.250
	06/16/2022	<0.0200	<0.250	<0.250
	9/14/2022	<0.0200	**0.782**	<0.250
	12/8/2022	<0.0200	**0.903**	<0.250
	3/15/2023	<0.0200	**1.09**	<0.250
	6/14/2023	<0.0200	**1.59**	<0.250
	9/14/2023	<0.0200	**1.03**	<0.250
	12/14/2023	<0.0200 B-02	**0.965**	<0.250
	3/6/2024	**0.0340**	**1.92**	<0.250
	6/12/2024	<0.0200	**1.71**	<0.250
	9/4/2024	<0.0200	**1.31**	<0.250
	12/4/2024	<0.0200	**1.72**	<0.250
MW-26	11/8/2017	**34.1**	**101**	<2.5
	3/20/2018	**30.0**	**271**	<0.25
	6/29/2018	**22.4**	**213**	<0.10
	9/24/2018	**30.2**	**212**	<0.250
	12/5/2018	**35.3**	**152**	<0.250
	3/22/2019	**60.6**	**544**	<0.250
	6/3/2019	**41.3**	**476**	<0.250
	9/26/2019	**32.4**	**383**	<0.500
	12/3/2019	**24.7**	**279**	<0.250
	3/11/2020	**48.9**	**628**	<1.25
	6/17/2020	**42.9**	**573 H-01**	<0.250 H-01
	10/7/2020	**30.1**	**358**	<0.250
	12/9/2020	**41.1**	**484**	<0.250
	3/4/2021	**55.2**	**457**	<0.250
	6/17/2021	**55.3**	**583 H-01**	<0.250
	9/15/2021	**81.0**	**376**	<0.250
	12/7/2021	**91.6**	**479**	<0.250
	12/7/2021 DUP	**86.6**	**465**	<0.250
	3/8/2022	**49.1**	**348**	<0.250
	06/15/2022	**109**	**380**	<0.250
	9/14/2022	**80.8**	**321**	<0.250
	12/8/2022	**118**	**349**	<0.250
	3/15/2023	**112**	**406**	<0.250
	6/14/2023	**66.8**	**306**	<0.250
	9/14/2023	**124**	**418**	<0.250
	12/15/2023	**72.7**	**316**	<0.250
	3/6/2024	**89.2**	**384**	<0.250
	6/14/2024	**96.5**	**381**	<0.250
	9/4/2024	**187**	**470**	<0.250
	12/3/2024	**96.0**	**397**	<0.250
MW-32s	11/10/2017	**0.235**	**0.58**	<0.10
	3/22/2018	<0.050	**0.16**	<0.10
	10/1/2018	<0.0200	<0.250	<0.250
	12/10/2018	**0.069**	**1.81**	<0.250
	3/25/2019	<0.0200	<0.250	<0.250
	9/26/2019	**0.0630**	<0.250	<0.25
	3/13/2020	<0.0200	<0.250	<0.250
	10/9/2020	<0.0200	<0.250	<0.250
	3/2/2021	<0.0200	<0.250	<0.250
	9/16/2021	<0.0200	<0.250	<0.250
	3/9/2022	<0.0200	<0.250	<0.250
	9/15/2022	<0.0200	<0.250	<0.250
	3/17/2023	<0.0200	<0.250	<0.250

Table 4

Groundwater Analytical Results—Ammonia, Nitrate, and Nitrite

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Ammonia (as Nitrogen)	Nitrate-Nitrogen	Nitrite-Nitrogen
		Concentrations in mg/L (ppm)		
MW-32s (continued)	9/13/2023	<0.0200	<0.250	<0.250
	3/6/2024	<0.0200	<0.250	<0.250
	9/4/2024	<0.0200	<0.250	<0.250
EW-1	11/9/2017	<0.050	**0.50**	<0.10
	7/1/2018	<0.050	**2.91**	<0.10
	9/27/2018	<0.0200	**0.686**	<0.250
	3/25/2019	<0.0200	**3.69**	<0.250
	6/4/2019	<0.0200	**3.42**	<0.250
	12/4/2019	<0.0200	**0.708**	<0.250
	3/11/2020	<0.0200	**2.56**	<0.250
	6/17/2020	<0.0200	**4.24**	<0.250
	10/7/2020	<0.0200	**1.46**	<0.250
	12/9/2020	**0.177**	**2.32**	<0.250
	3/2/2021	<0.0200	**25.3**	<0.250
	6/16/2021	<0.0200	**28.4**	<0.250
	9/16/2021	<0.0200	**2.48**	<0.250
	12/7/2021	**0.0210**	**3.62**	<0.250
	3/8/2022	<0.0200	**1.22**	<0.250
	06/16/2022	<0.0200	<0.250	<0.250
	9/15/2022	<0.0200	**3.23**	<0.250
	12/8/2022	<0.0200	**1.24**	<0.250
	3/14/2023	<0.0200	**3.46 H-01**	<0.250 H-01
	6/14/2023	<0.0200	**4.09**	<0.250
	9/12/2023	<0.0200	**3.09**	<0.250
	12/14/2023	<0.0200	**5.05**	<0.250
	3/6/2024	<0.0200	**3.82**	<0.250
	6/12/2024	<0.0200	**3.54**	<0.250
	9/6/2024	<0.0200	**3.30**	<0.250
	12/5/2024	<0.0200	**4.62**	<0.250
S-1	11/8/2017	**7.13**	**4.14**	<0.10
	3/20/2018	**35.5**	**11.4**	**0.24**
	6/28/2018	<1.3	**3.02**	<0.10
	9/26/2018	**0.259**	**3.03**	<0.250
	12/5/2018	<0.0200	**2.16**	<0.250
	3/19/2019	**0.846**	**3.35**	<0.250
	6/5/2019	**0.141**	**1.95**	<0.250
	9/25/2019	<0.0200	**3.72**	<0.250
	12/4/2019	<0.0200	**2.04**	<0.250
	3/10/2020	<0.0200	**1.08**	<0.250
	6/17/2020	<0.0200	**1.13**	<0.250
	10/7/2020	<0.0200	**1.86**	<0.250
	12/8/2020	**0.0210**	**1.40**	<0.250
	3/3/2021	<0.0200	**1.39**	<0.250
	6/15/2021	<0.0200	**1.54**	<0.250
	9/14/2021	<0.0200	**1.18**	<0.250
	12/8/2021	**0.0440**	**0.762**	<0.250
	3/28/2022	<0.0200	**1.94**	<0.250
	6/15/2022	<0.0200	**0.331**	<0.250
	9/13/2022	<0.0200	**2.51**	<0.250
	12/7/2022	<0.0200	**2.00**	<0.250
	3/16/2023	<0.0200	**2.26**	<0.250
	6/14/2023	<0.0200	**0.705**	<0.250
	9/14/2023	<0.0200	**4.25**	<0.250
	12/13/2023	<0.0200	**1.00**	<0.250
	3/6/2024	<0.0200	**1.74**	<0.250
	6/12/2024	<0.0200	**2.72**	<0.250
	9/4/2024	<0.0200	**4.16**	<0.250
	12/5/2024	<0.0200	**3.13**	<0.250
S-2	11/8/2017	**5.64**	**1.05**	<0.10
	3/20/2018	**6.1**	**1.25**	<0.10
	6/28/2018	**8.05**	**3.28**	**0.054**
	9/26/2018	**7.55**	**5.93**	<0.250
	12/5/2018	**7.76**	<0.250	<0.250
	3/19/2019	**25.6**	**3.23**	**0.259**
	6/5/2019	**6.06**	<0.250	<0.250
	9/25/2019	**0.691**	**1.77**	<0.250
	12/4/2019	**6.83**	**0.408**	<0.250
	3/10/2020	**6.96**	**0.906**	<0.250
	6/17/2020	**6.34**	<0.250	<0.250
	10/7/2020	**5.97**	**5.45**	<0.250
	12/8/2020	**6.85**	<0.250	<0.250
	3/3/2021	**5.61**	<0.250	<0.250
	6/15/2021	**5.56**	<0.250	<0.250
	9/14/2021	**7.03**	**4.60**	<0.250
	12/8/2021	**4.98**	<0.250	<0.250
	3/28/2022	**4.82**	<0.250	<0.250
	6/15/2022	**4.75**	<0.250	<0.250
	9/13/2022	**5.12**	**6.67**	<0.250
	12/7/2022	**4.53**	<0.250	<0.250
	3/14/2023	**3.95**	<0.250 H-01	<0.250 H-01
	6/14/2023	**5.57**	<0.250	<0.250

Table 4

Groundwater Analytical Results—Ammonia, Nitrate, and Nitrite

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Ammonia (as Nitrogen)	Nitrate-Nitrogen	Nitrite-Nitrogen
		Concentrations in mg/L (ppm)		
S-2 continued	9/14/2023	**4.22**	**0.253**	<0.250
	12/13/2023	**3.76**	<0.250	<0.250
	3/6/2024	**3.91**	**0.793**	<0.250
	6/12/2024	**3.72**	<0.250	<0.250
	9/4/2024	**3.40**	**6.62**	<0.250
	12/5/2024	**3.16**	<0.250	<0.250
MGMS1-3(43)	10/19/2010	--	**390**	--
	11/7/2017	**217**	**120**	<1.0
	3/22/2018	**214**	<0.10	<0.10
	7/1/2018	**198**	<0.10	<0.10
	9/28/2018	**240**	**75.8**	<0.250
	12/4/2018	**246**	**30.6**	<0.250
	3/26/2019	**238**	**13.5**	<0.250
	6/7/2019	**209**	<0.25	<0.250
	9/27/2019	**233**	**84.1**	<0.250
	12/4/2019	**216**	**45.3**	<0.250
	3/11/2020	**199**	**12.3**	<0.250
	6/16/2020	**157**	<0.250	<0.250
	10/6/2020	**214**	**40.7**	<0.250
	12/10/2020	**190**	**10.8**	<0.250
	3/4/2021	**233**	**0.731**	<0.250
	6/16/2021	**188**	**0.398**	<0.250
	9/14/2021	**219**	**21.1**	<0.250
	12/7/2021	**175**	<0.250	<0.250
	3/10/2022	**271**	**1.27**	<0.250
	06/15/2022	**180**	<0.250	<0.250
	9/12/2022	**209**	**32.5**	<0.250
	12/8/2022	**236**	**10.2**	<0.250
	3/16/2023	**199**	**25.2**	<0.250 H-01
	6/13/2023	**197**	**1.58 M-02**	<0.250
	9/12/2023	**174**	**57.7**	<0.250
	12/11/2023	**278**	**2.11**	<0.250
	3/6/2024	**202**	**10.4 M-02**	<0.250
	6/12/2024	**198**	**2.64**	<0.250
	9/4/2024	**197**	**41.7**	<0.250
	12/3/2024	**70.6**	**6.23**	<0.250
MGMS1-2(60)	11/7/2017	<0.050	**1.91**	<0.10
	3/22/2018	**0.054**	**3.18**	<0.10
	7/1/2018	<0.050	**1.83**	<0.10
	10/1/2018	<0.0200	**3.65**	<0.250
	12/4/2018	**0.104**	**0.697**	<0.250
	3/26/2019	<0.0200	**1.39**	<0.250
	6/7/2019	<0.0200	**1.08**	<0.250
	9/27/2019	<0.0200	**2.58**	<0.250
	12/4/2019	<0.0200	**0.732**	<0.250
	3/12/2020	<0.0200	**3.25**	<0.250
	6/16/2020	<0.0200	**0.375**	<0.250
	10/6/2020	<0.0200	**2.49 M-02**	<0.250
	12/10/2020	<0.0200	**1.46**	<0.250
	3/4/2021	<0.0200	**2.18**	<0.250
	6/16/2021	<0.0200	**0.908**	<0.250
	9/14/2021	**4.75**	**2.12**	<0.250
	12/7/2021	<0.0200	**0.638**	<0.250
	3/10/2022	<0.0200	**1.70**	<0.250
	06/15/2022	<0.0200	**0.257**	<0.250
	9/12/2022	**0.022**	**4.00**	<0.250
	12/8/2022	**1.95**	**2.60**	<0.250
	3/16/2023	**1.87**	**4.31**	<0.250
	6/14/2023	**0.123**	**2.59**	<0.250
	9/12/2023	**2.06**	**2.33**	<0.250
	12/11/2023	**0.0570**	**0.879**	<0.250
	3/6/2024	**1.10**	**4.78**	<0.250
	6/12/2024	**0.139**	**2.23**	<0.250
	9/4/2024	**3.11**	**5.01**	<0.250
	12/3/2024	**0.103**	**1.37**	<0.250
MGMS1-1(110)	11/7/2017	**0.822**	**0.73**	<0.10
	7/1/2018	**0.134**	**0.11**	<0.10
	10/1/2018	**0.595**	**0.898**	<0.250
	6/7/2019	**0.179**	**0.533**	<0.250
	12/4/2019	**0.225**	**0.587**	<0.250
	6/16/2020	**0.211**	**0.856**	<0.250
	12/8/2020	**0.237**	<0.250	<0.250
	6/16/2021	**0.130**	**0.552**	<0.250
	12/7/2021	**0.0910**	**0.623**	<0.250
	6/15/2022	**0.034**	**0.444**	<0.250
	12/8/2022	**0.0710**	**0.280**	<0.250
	6/15/2023	**0.0370**	<0.250	<0.250
	12/11/2023	<0.0200	<0.250	<0.250
	6/12/2024	<0.0200	<0.250	<0.250
	12/3/2024	**0.292**	**0.426**	<0.250

Table 4

Groundwater Analytical Results—Ammonia, Nitrate, and Nitrite

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Ammonia (as Nitrogen)	Nitrate-Nitrogen	Nitrite-Nitrogen
		Concentrations in mg/L (ppm)		
MGMS2-4(40)	9/21/2010	**130**	**560**	<0.10
	6/7/2011	--	**200**	<0.10
	12/7/2011	--	**8.0**	<0.10
	11/9/2017	**87.1**	<0.10	<0.10
	3/22/2018	**84.2**	<0.10	<0.10
	7/1/2018	**83.6**	**0.76**	<0.10
	9/28/2018	**85.2**	**9.38**	<0.250
	12/10/2018	**80.7**	<0.250	<0.250
	3/25/2019	**85.2**	<0.250	<0.250
	6/4/2019	**78.7**	<0.250	<0.250
	9/27/2019	**78.9**	**1.34**	<0.250
	12/4/2019	**76.1**	<0.250	<0.250
	3/12/2020	**74.9**	<0.250	<0.250
	6/16/2020	**75.8**	**6.57**	**0.414**
	10/6/2020	**80.8**	**6.08**	**0.253**
	12/8/2020	**68.6**	**28.5**	**0.385**
	3/4/2021	**115**	**3.23**	<0.250
	6/17/2021	**60.9**	<0.250	<0.250
	9/16/2021	**78.6**	**39.9**	<0.250
	12/7/2021	**52.8**	**44.9**	<0.250
	3/10/2022	**66.3**	**34.4**	<0.250
	6/14/2022	**46.5**	**64.2**	<0.250
	9/12/2022	**73.1**	**21.6**	<0.250
	12/6/2022	**29.8**	**38.9**	<0.250
	3/16/2023	**57.3**	**44.8**	<0.250
	6/13/2023	**64.6**	**20.4**	<0.250
	9/11/2023	**47.4**	**2.22**	<0.250
	12/12/2023	**109**	**77.3**	<0.250
	3/4/2024	**62.0**	**117**	<0.250
	6/10/2024	**65.5**	**120**	<0.250
	9/4/2024	**56.0**	**48.9**	<0.250
	12/3/2024	**52.8**	**86.3**	<0.250
MGMS2-3(60)	11/9/2017	**1.03**	**0.12**	<0.10
	3/22/2018	**0.153**	**0.68**	<0.10
	7/1/2018	<0.050	**0.77**	<0.10
	12/10/2018	**1.39**	<0.250	<0.250
	3/25/2019	**0.407**	<0.250	<0.250
	6/4/2019	<0.0200	**0.852**	<0.250
	9/27/2019	**0.719**	<0.250	<0.250
	12/4/2019	**1.15**	<0.250	<0.250
	3/12/2020	**0.0280**	**0.678**	<0.250
	6/16/2020	**0.0200**	**0.519**	<0.250
	10/6/2020	**0.306**	<0.250	<0.250
	12/8/2020	**0.136**	**0.558**	<0.250
	3/4/2021	<0.0200	**0.606**	<0.250
	6/17/2021	<0.0200	**0.59**	<0.250
	9/16/2021	**0.082**	**0.45**	<0.250
	12/7/2021	**0.996**	<0.250	<0.250
	3/10/2022	<0.0200	**0.613**	<0.250
	6/14/2022	<0.0200	**0.486**	<0.250
	9/12/2022	**0.025**	**0.470**	<0.250
	12/6/2022	<0.0200	**0.594**	<0.250
	3/16/2023	<0.0200	**1.21**	<0.250
	6/13/2023	<0.0200	**0.999**	<0.250
	9/11/2023	<0.0200	**1.45**	<0.250
	12/12/2023	**0.239**	**0.373**	<0.250
	3/4/2024	<0.200	**1.41**	<0.250
	6/10/2024	<0.0200	**0.886**	<0.250
	9/4/2024	**0.0230**	**1.85**	<0.250
	12/3/2024	**0.0300**	**1.31**	<0.250
MGMS2-2(110)	11/9/2017	<0.050	**0.37**	<0.10
	7/1/2018	**0.050**	**0.28**	<0.10
	9/28/2018	<0.0200	**0.412**	<0.250
	6/4/2019	<0.0200	**0.402**	<0.250
	12/4/2019	<0.0200	**0.400**	<0.250
	6/16/2020	<0.0200	**0.317**	<0.250
	12/8/2020	**0.0230**	**0.333**	<0.250
	6/17/2021	<0.0200	**0.282**	<0.250
	12/7/2021	<0.0200	**0.376**	<0.250
	6/14/2022	<0.0200	**0.335**	<0.250
	12/6/2022	<0.0200	<0.250	<0.250
	6/13/2023	<0.0200	**0.268**	<0.250
	12/12/2023	<0.0200	**0.870**	<0.250
	6/10/2024	<0.0200	**1.38**	<0.250
	12/3/2024	<0.0200	**2.40**	<0.250
MGMS2-1(132)	11/9/2017	<0.050	<0.10	<0.10
	7/1/2018	<0.050	<0.10	<0.10
	9/28/2018	**0.0500**	<0.250	<0.250
	6/4/2019	<0.0200	<0.250	<0.250
	12/4/2019	<0.0200	<0.250	<0.250
	6/16/2020	<0.0200	<0.250	<0.250

Table 4

Groundwater Analytical Results—Ammonia, Nitrate, and Nitrite

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Ammonia (as Nitrogen)	Nitrate-Nitrogen	Nitrite-Nitrogen
		Concentrations in mg/L (ppm)		
MGMS2-1(132) (continued)	12/8/2020	**0.0230**	<0.250	<0.250
	6/17/2021	<0.0200	<0.250	<0.250
	12/7/2021	<0.0200	<0.250	<0.250
	6/14/2022	<0.0200	<0.250	<0.250
	12/6/2022	<0.0200	**0.432**	<0.250
	6/13/2023	**0.0240**	<0.250	<0.250
	12/12/2023	<0.0200	<0.250	<0.250
	6/11/2024	<0.0200	<0.250	<0.250
	12/3/2024	**0.0280**	<0.250	<0.250
MGMS3-4(40)	9/22/2015	**1.1**	<0.10	–
	11/10/2017	**1.71**	<0.10	<0.10
	3/22/2018	**1.55**	<0.10	<0.10
	7/1/2018	**0.971**	<0.10	<0.10
	9/28/2018	**1.71**	<0.250	<0.250
	9/28/2018 DUP	**1.68**	<0.250	<0.250
	12/10/2018	**1.04**	<0.250	<0.250
	3/26/2019	**2.67**	<0.250	<0.250
	6/3/2019	**1.31**	<0.250	<0.250
	6/3/2019 DUP	**1.32**	<0.250	<0.250
	6/3/2019 DUP	**1.32**	<0.250	<0.250
	9/27/2019	**1.14**	<0.250	<0.250
	9/27/2019 DUP	**1.26**	<0.250	<0.250
	12/4/2019	**0.906**	<0.250	<0.250
	12/4/2019 DUP	**0.918**	<0.250	<0.250
	3/12/2020	**2.09**	<0.250	<0.250
	6/16/2020	**0.784**	<0.250	<0.250
	6/16/2020 DUP	**0.789**	<0.250	<0.250
	10/6/2020	**1.68**	<0.250	<0.250
	10/6/2020 DUP	**1.64**	<0.250	<0.250
	12/10/2020	**1.73**	<0.250	<0.250
	12/10/2020 DUP	**1.76**	<0.250	<0.250
	3/4/2021	**2.35**	<0.250	<0.250
	3/4/2021 DUP	**2.30**	<0.250	<0.250
	6/16/2021	**2.33**	<0.250	<0.250
	6/16/2021 DUP	**2.35**	<0.250	<0.250
	9/16/2021	**1.24**	<0.250	<0.250
	9/16/2021 DUP	**1.24**	<0.250	<0.250
	12/10/2021	**1.30**	<0.250 H-01	<0.250 H-01
	12/10/2021 DUP	**1.31**	<0.250 H-01	<0.250 H-01
	3/10/2022	**2.72**	<0.250	<0.250
	3/10/2022 DUP	**2.79**	<0.250	<0.250
	6/14/2022	**2.25**	<0.250	<0.250
	6/14/2022 DUP	**2.21**	<0.250	<0.250
	9/14/2022	**3.45**	<0.250	<0.250
	9/14/2022 DUP	**3.47**	<0.250	<0.250
	12/6/2022	**2.42**	<0.250	<0.250
	12/6/2022 DUP	**2.44**	<0.250	<0.250
	3/16/2023	**4.30**	<0.250	<0.250
	3/16/2023 DUP	**4.28**	<0.250	<0.250
	6/15/2023	**2.94**	<0.250	<0.250
	6/15/23 DUP	**2.95**	<0.250	<0.250
	9/11/2023	**1.75**	<0.250	<0.250
	9/11/2023 DUP	**1.72**	<0.250	<0.250
	12/13/2023	**2.14**	<0.250	<0.250
	12/13/2023 DUP	**2.19**	<0.250	<0.250
	3/4/2024	**3.77**	<0.250	<0.250
	3/4/2024 DUP	**3.69**	<0.250	<0.250
	6/10/2024	**3.41**	<0.250	<0.250
	6/10/2024 DUP	**3.43**	<0.250	<0.250
	9/4/2024	**2.18**	<0.250	<0.250
	9/4/2024 DUP	**2.30**	<0.250	<0.250
	12/2/2024	**1.00**	<0.250	<0.250
	12/2/2024 DUP	**0.852**	<0.250	<0.250
MGMS3-3(60)	11/10/2017	<0.050	<0.10	<0.10
	3/22/2018	**0.272**	**0.39**	<0.10
	7/1/2018	**0.100**	**0.29**	<0.10
	9/28/2018	<0.0200	**0.393**	<0.250
	12/10/2018	<0.0200	<0.250	<0.250
	3/26/2019	<0.0200	**0.495**	<0.250
	6/3/2019	<0.0200	**0.371**	<0.250
	9/27/2019	<0.0200	<0.250	<0.250
	12/4/2019	<0.0200	**0.364**	<0.250
	3/12/2020	<0.0200	**0.257**	<0.250
	6/16/2020	<0.0200	**0.262**	<0.250
	10/6/2020	<0.0200	**0.296**	<0.250
	12/10/2020	<0.0200	**0.310**	<0.250
	3/4/2021	<0.0200	**0.376**	<0.250
	6/16/2021	<0.0200	**0.318**	<0.250
	9/16/2021	**0.0970**	**0.298**	<0.250
	12/10/2021	<0.0200	**0.307 H-01**	<0.250 H-01
	3/10/2022	<0.0200	**0.358**	<0.250
	6/14/2022	<0.0200	<0.250	<0.250
	9/14/2022	<0.0200	**0.488**	<0.250
	12/6/2022	<0.0200	**0.429**	<0.250

Table 4

Groundwater Analytical Results—Ammonia, Nitrate, and Nitrite

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Ammonia (as Nitrogen)	Nitrate-Nitrogen	Nitrite-Nitrogen
		Concentrations in mg/L (ppm)		
MGMS3-3(60) (continued)	3/16/2023	<0.0200	**1.00**	<0.250
	6/15/2023	<0.0200	**0.653**	<0.250
	9/11/2023	<0.0200	**1.03**	<0.250
	12/13/2023	<0.0200	**0.410**	<0.250
	3/4/2024	<0.0200	**0.930**	<0.250
	6/10/2024	<0.0200	**0.529**	<0.250
	9/4/2024	<0.0200	**1.27**	<0.250
	12/2/2024	<0.0200	**0.608**	<0.250
MGMS3-2(101)	11/10/2017	<0.050	**0.48**	<0.10
	7/1/2018	<0.050	**0.43**	<0.10
	9/28/2018	<0.0200	**0.506**	<0.250
	6/3/2019	<0.0200	**0.467**	<0.250
	12/4/2019	<0.0200	**0.451**	<0.250
	6/16/2020	<0.0200	**0.370**	<0.250
	12/10/2020	<0.0200	**0.389**	<0.250
	6/16/2021	<0.0200	**0.352**	<0.250
	12/10/2021	**0.0620**	**0.357 H-01**	<0.250 H-01
	6/14/2022	<0.0200	**0.457**	<0.250
	12/6/2022	<0.0200	**0.371**	<0.250
	6/15/2023	<0.0200	**0.406**	<0.250
	12/13/2023	<0.0200	**0.489**	<0.250
	6/10/2024	<0.0200	**0.685**	<0.250
	12/2/2024	<0.0200	**1.29**	<0.250
MGMS3-1(132)	11/10/2017	<0.050	**0.52**	<0.10
	7/1/2018	<0.050	**0.46**	<0.10
	9/28/2018	<0.0200	**0.468**	<0.250
	6/5/2019	<0.0200	**0.560**	<0.250
	12/4/2019	<0.0200	**0.629**	<0.250
	6/16/2020	<0.0200	**0.591**	<0.250
	12/10/2020	<0.0200	**0.412**	<0.250
	12/10/2021	**0.0240**	**0.607 H-01**	<0.250 H-01
	6/14/2022	<0.0200	**0.848**	<0.250
	12/6/2022	<0.0200	**0.368**	<0.250
	6/15/2023	<0.0200	**0.628**	<0.250
	12/13/2023	<0.0200	**0.802**	<0.250
	6/10/2024	<0.0200	**0.588**	<0.250
	12/2/2024	<0.0200	**1.04**	<0.250
MP-1	2/6/2007	**42.4**	**247**	**0.18**
	3/23/2009	**35**	**210**	**1.2**
	3/16/2010	**37**	**990**	**0.76**
	6/7/2011	--	**160**	<0.10
	12/9/2011	--	**120**	**0.91**
	11/9/2017	**12.2**	**23.0**	<0.50
	3/21/2018	**7.13**	**37.8**	<0.10
	6/28/2018	**8.71**	**38.2**	<0.10
	9/26/2018	**10.9**	**113**	<0.250
	12/4/2018	**6.01**	**80.8**	<0.250
	3/20/2019	**7.05**	**77.6**	<0.250
	6/7/2019	**8.24**	**61.6**	**0.366**
	9/26/2019	**2.15**	**97.7**	**0.384**
	12/3/2019	**2.39**	**118**	<0.250
	3/11/2020	**8.82**	**110**	<0.250
	6/17/2020	**5.81**	**161 H-01**	<0.250
	10/8/2020	**5.22**	**115**	<0.250
	12/9/2020	**1.95**	**106**	<0.250
	3/3/2021	**6.68**	**140**	<0.250
	6/16/2021	**2.71**	**70.1**	**0.690**
	9/16/2021	**8.12**	**56.8**	<0.250
	12/8/2021	**0.735**	**53.9**	**0.434**
	3/9/2022	**2.58**	**43.9**	<0.250
	6/14/2022	**3.71**	**90.2**	**0.323**
	9/14/2022	**6.50**	**83.3**	<0.250
	12/7/2022	**1.47**	**76.7**	**0.345**
	3/17/2023	**2.25**	**30.6**	<0.250
	6/15/2023	**4.60**	**90.7 H-01**	<0.250
	9/13/2023	**4.86**	**56.6**	<0.250
	12/15/2023	**0.336**	**43.1**	<0.250
	3/7/2024	**3.63**	**30.5**	<0.250
	6/13/2024	**0.225**	**11.9**	<0.250
	9/3/2024	**2.32**	**26.8**	<0.250
	12/4/2024	**0.153**	**17.0**	<0.250
MP-3	6/28/2018	**18.8**	**138**	**0.42**
NKW-1	12/12/2023	<0.0200	**6.32**	<0.250
	3/5/2024	**16.7**	**13.7**	<0.250
	6/11/2024	**4.60**	**24.6**	<0.250
	9/3/2024	**61.5**	**88.4**	<0.250
	12/3/2024	**1.82**	**18.3**	<0.250

Table 4

Groundwater Analytical Results—Ammonia, Nitrate, and Nitrite

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Ammonia (as Nitrogen)	Nitrate-Nitrogen	Nitrite-Nitrogen
		Concentrations in mg/L (ppm)		
NKW-2	12/12/2023	**2.61**	**33.9**	<0.250
	3/5/2024	**19.6**	**19.9**	<0.250
	6/11/2024	**19.9**	**47.2**	<0.250
	9/3/2024	**40.2**	**3.23**	<0.250
	12/3/2024	**18.1**	**32.1 H-01**	<0.250
KMW-4	12/13/2023	**0.140**	**6.79**	<0.250
	6/10/2024	<0.0200	**31.5**	<0.250
	9/4/2024	**0.383 Q-42**	**63.6**	<0.250
	12/3/2024	<0.0200	**11.4**	<0.250
KMW-5	12/13/2023	<0.0200	<0.250	<0.250
	6/10/2024	**1.19**	<0.250	<0.250
	9/3/2024	**18.2**	<0.250	<0.250
	12/3/2024	**8.56**	<0.250	<0.250
KMW-6	12/13/2023	<0.0200	**0.605**	<0.250
	6/11/2024	<0.0200	**1.62**	<0.250
	9/3/2024	<0.0200	**3.47**	<0.250
	12/3/2024	<0.0200	**1.60**	<0.250

Notes:

1. mg/L (ppm) = Milligrams per liter (parts per million).
2. **Bold** value represents detected concentration of listed analyte.
3. -- = Not sampled or not analyzed.
4. < = Not detected at or above the specified laboratory method reporting limit (MRL).
5. Ammonia as nitrogen by Method 350.1.
6. Nitrate as nitrogen and nitrite as nitrogen by Method 300.0.
7. E = Estimated value.
8. H-01 = This sample was analyzed outside the recommended holding time.
9. M-02 = Due to matrix interference, this analyte cannot be accurately quantified. The reported result is estimated.
10. R-01/R-04 = Reporting levels elevated due to preparation and/or analytical dilution necessary for analysis.
11. D = Relative percent difference (RPD) between sample and duplicate is outside of the acceptable range of +/- 30%.
13. 'Q' qualifiers indicate that spike recovery and/or RPD for this analyte is outside acceptance limits.

Table 5

Interim Action—Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Volatile Organic Compounds										Attenuation Chemistry	Field Parameters	
		1,1-Dichloro ethane	1,2-Dichloro ethane	1,1-Dichloro ethene	cis-1,2-Dichloro ethene	trans-1,2-Dichloro ethene	Tetrachloro ethene	1,1,1-Trichloro ethane	Trichloro ethene	Vinyl chloride	Ethene	Total Organic Carbon	Dissolved Oxygen	Oxidation Reduction Potential
		Concentrations in µg/L										(mg/L)	(mg/L)	(mV)
MW-7	2/6/2007	<100	<100	<100	<100	<100	**31,500**	<100	**352**	<100	N/A	<1.0	1.20	245.7
	12/16/2008	<50	<50	<50	**130**	<50	**15,000**	<50	**450**	<50	N/A	**2.4**	0.72	-103.2
	3/23/2009	<15.0	<0.50	<15.0	**420**	<15.0	**3,300**	<15.0	**270**	<15.0	N/A	**6.7**	0.69	-614.5
	6/18/2009	**3.7**	<3.0	<3.0	**520**	<3.0	**890**	**5.2**	**350**	<3.0	N/A	N/A	6.97	-16.4
	9/18/2009	**9.8**	<3.0	**5.5**	**930**	<3.0	**2,600**	**10**	**250**	<3.0	<1.0	**4.1**	0.59	121.7
	12/18/2009	**6.7**	<5.0	<5.0	**330**	<5.0	**1,600**	**6.7**	**160**	<5.0	<1.0	**2.5**	1.23	162.1
	3/16/2010	<2.0	<2.0	<2.0	**180**	<2.0	**550**	**2.0**	**56**	<2.0	<1.0	**2.6**	1.37	147.7
	6/17/2010	<1.5	<1.5	<1.5	**360**	<1.5	**200**	**2.7**	**72**	<1.5	<1.0	**2.8**	1.86	240.0
	9/23/2010	**3.3**	<3.0	<3.0	**690**	<3.0	**750**	**3.5**	**110**	**4.8**	<1.0	**8.2**	0.64	-483.4
	12/10/2010	**1.8**	<0.90	<0.90	**94**	<0.90	**220**	**1.6**	**36**	**1.7**	**1.19**	**0.84**	6.29	111.6
	3/11/2011	**6.6**	<0.90	**1.6**	**150**	**0.91**	**420**	**5.1**	**82**	**9.3**	**7.76**	**1.10**	6.65	132.3
	6/7/2011	**4.8**	<2.5	**3.4**	**1,400**	**3.3**	**430**	**4.0**	**110**	**7.9**	<1.0	**4.7**	0.45	108.6
	9/19/2011	<5.0	<5.0	<5.0	**1,300**	<5.0	**410**	<5.0	**84**	**78**	N/A	**3,400**	4.53	695.8
	12/9/2011	**8.0**	<5.0	**6.9**	**3,400**	**6.8**	**200**	<5.0	**32**	**110**	**38.7**	**1,600**	1.19	-117.5
	3/12/2012	**9.2**	<5.0	<5.0	**1,600**	<5.0	**41**	<5.0	**8.6**	**600**	**71**	**1,000**	2.97	96.8
	06/22/2012	**9.0**	<2.0	<2.0	**500**	<2.0	**25**	<2.0	**5.2**	**290**	**130**	**790**	6.28	-137.9
	9/14/2012	**3.8**	<0.50	**0.54**	**180**	**0.70**	**28**	<0.50	**5.2**	**80**	**47**	**790**	2.29	93.3
	12/14/2012	**1.9**	<0.50	<0.50	**130**	<0.50	**11**	<0.50	**6.8**	**18**	**19.5**	**550**	0.34	24.1
	3/15/2013	**0.69**	<0.50	<0.50	**110**	<0.50	**1.6**	<0.50	**0.78**	**11**	**13.3**	**250**	1.02	53.3
	6/14/2013	**0.51**	<0.50	<0.50	**58**	<0.50	**1.6**	<0.50	<0.50	**16**	**5.86**	**220**	0.29	47.9
	9/20/2013	**1.5**	<0.50	<0.50	**56**	<0.50	<0.50	<0.50	<0.50	**10**	**18.6**	**270**	0.45	-189.3
	12/16/2013	**2.9**	<0.50	<0.50	**6.9**	<0.50	**0.51**	<0.50	<0.50	**9.1**	**5.0**	**250**	0.44	-66.1
	3/24/2014	**1.6**	<0.50	<0.50	**13**	<0.50	**9.8**	<0.50	**2.6**	**7.6**	**220**	**77**	0.43	76.9
	6/25/2014	**0.19**	<0.50	<0.50	**0.62**	<0.50	<0.50	<0.50	<0.50	**1.4**	**21.9**	**120**	0.6	-90.5
	9/30/2014	**2.7**	<0.50	<0.50	**4.5**	<0.50	<0.50	<0.50	<0.50	**9.8**	<1.0	**160**	1.93	-112.0
	12/15/2014	**4.5**	<0.50	<0.50	**16**	<0.50	**0.61**	<0.50	**1.5**	**21**	<1.0	**28.5**	1.61	-34.0
	3/20/2015	**1.0**	<0.50	<0.50	**8.4**	<0.50	<0.50	<0.50	**1.1**	**1.0**	<6.2	**23.5**	1.19	-76.8
	6/17/2015	**2.6**	<0.50	<0.50	**12**	<0.50	**1.2**	<0.50	**1.0**	**12.6**	<10.0	**46**	0.81	-4.9
	9/23/2015	**1.8**	<0.50	<0.50	**12.7**	<0.50	**4.5**	<0.50	**4.2**	**4.8**	<10.0	**40.6**	0.87	-30.5
	12/8/2015	<0.50	<0.50	<0.50	**4.1**	<0.50	**0.94**	<0.50	**1.7**	**1.9**	<10.0	**9.8**	1.98	84.1
	6/17/2016	**0.60**	<0.50	<0.50	**10.9**	<0.50	**0.69**	<0.50	**2.1**	**5.4**	<10.0	**18.9**	1.67	-120.1
	9/29/2016	**1.1**	<0.50	<0.50	**10.9**	<0.50	<0.50	<0.50	**6.0**	**5.5**	N/A	N/A	0.96	164.1
	12/14/2016	<0.50	<0.50	<0.50	**9.4**	<0.50	**0.78**	<0.50	<0.50	**1.0**	N/A	N/A	1.13	5.6
	3/28/2017	<0.50	<0.50	<0.50	<0.50	<0.50	**1.2**	<0.50	**0.73**	<0.50	N/A	N/A	0.89	-25.4
	6/14/2017	<0.50	<1.0	<0.50	**2.5**	<0.50	<0.50	<0.50	**0.55**	**2.5**	<10.0	**9.1**	1.08	-60.5
	9/27/2017	<0.50	<1.0	<0.50	**1.7**	<0.50	**2.6**	<0.50	**1.60**	**1.7**	<10.0	**7.8**	1.75	110.2
	3/21/2018	**0.495 J**	<0.500	<0.500	**17.6**	<0.500	**0.228 J**	<0.500	**2.86**	**4.93**	<13.0	**9.96**	6.03	10.5
	6/29/2018	**0.461 J**	<0.500	<0.500	**5.50**	<0.500	**9.89**	<0.500	**3.53**	**1.47**	<10.0	**5.0**	0.56	187.5
	9/27/2018	**1.23**	<0.400	<0.400	**8.48**	<0.400	**6.50**	<0.400	**10.8**	**2.08**	N/A	N/A	1.21	-9.0
	12/7/2018	**3.97**	<0.400	**0.472**	**17.7**	<0.400	**30.4**	<0.400	**18.1**	**1.62**	N/A	N/A	1.89	18.5
	3/20/2019	**1.87**	<0.400	<0.400	**22.2**	<0.400	**22.8**	<0.400	**10.8**	**0.605**	<1.0	**9.07**	3.20	93.4
	6/5/2019	**2.91**	<0.400	**0.559**	**20.2**	<0.400	**28.4**	<0.400	**12.7**	**1.15**	<1.0	**4.77**	6.02	92.2
	9/26/2019	**2.98**	<0.400	**0.672**	**21.0**	<0.400	**41.7**	<0.400	**17.9**	**0.420**	N/A	N/A	0.67	182.9
	12/3/2019	**4.61**	<0.400	**0.839**	**29.7**	<0.400	**66.1**	<0.400	**31.8**	<0.400	<1.0	**7.51**	6.61	194.0
	3/11/2020	**0.936**	<0.400	<0.400	**26.5**	<0.400	**47.4**	<0.400	**14.3**	**0.476**	<1.0	**5.98**	3.39	109.1
	6/18/2020	**0.850**	<0.400	<0.400	**11.1**	<0.400	**43.0**	<0.400	**10.1**	<0.400	<1.0	**5.10**	1.03	230.9
	10/8/2020	**1.97**	<0.400	**0.481**	**23.6**	<0.400	**50.2**	<0.400	**19.7**	<0.400	<1.0	**15.4**	1.65	18.5
	12/9/2020	**7.05**	<0.400	**1.41**	**56.3**	**0.552**	**108**	<0.400	**45.4**	<0.400	<1.0	**8.45**	2.50	139.5
	3/3/2021	<0.400	<0.400	**1.28**	**20.0**	<0.400	**56.4**	<0.400	**22.4**	<0.400	<1.0	**4.53**	2.79	103.9
	6/16/2021	**0.927**	<0.400	**4.30**	**35.5**	<0.400	**78.0**	<0.400	**39.6**	**0.450**	<1.0	**8.63**	2.55	195.0
	9/14/2021	**2.11**	<0.400	**0.457**	**25.8**	<0.400	**47.6**	<0.400	**20.6**	<0.400	<1.0	**19.40**	2.37	19.2
	12/8/2021	**4.67**	<0.400	**0.870**	**39.1**	<0.400	**118**	**0.593**	**51.2**	**0.537**	<1.0	**9.16**	0.35	159.5
	3/9/2022	**3.24**	<0.400	**0.950**	**37.2**	**0.530**	**78.8**	<0.400	**38.2**	**1.20**	<1.0	**4.43**	0.19	177.1
	6/14/2022	<0.400	<0.400	<0.400	**3.76**	<0.400	**85.6**	**0.790**	**27.2**	<0.400	<1.0	<1.00	5.32	166.3
	9/15/2022	**1.26**	<0.400	<0.400	**31.3**	<0.400	**30.9**	<0.500	**13.0**	**0.660**	<1.0	**14.8**	0.46	144.2
	12/7/2022	**4.22**	<0.400	**0.930**	**41.1**	**0.440**	**118.0**	**0.570**	**46.3**	**0.560**	<1.0	**7.62**	2.14	72.8
	3/14/2023	**1.97**	<0.400	**0.460**	**22.6**	<0.400	**67.0**	<0.400	**27.8**	**0.820**	<1.0	**8.66**	0.96	-290.9
	6/15/2023	<0.400	<0.400	<0.400	**3.34**	<0.400	**19.0**	<0.400	**5.79**	<0.400	<1.0	**2.71**	0.31	-537.2
	9/12/2023	**2.30**	<0.400	**0.620**	**26.8**	<0.400	**65.5**	<0.400	**30.5**	**0.250**	<1.0	**5.89**	0.18	137.5
	12/14/2023	**5.53**	<0.400	**1.01**	**44.9**	**0.790**	**123**	**1.00**	**52.0**	**0.690**	<1.0	**3.80**	0.35	129.1
	3/7/2024	**1.69**	<0.400	**0.540**	**20.8**	<0.400	**70.0**	<0.400	**36.3**	**0.280**	<1.0	**5.70**	0.32	50.1
	6/11/2024	**6.74**	<0.400	**1.63**	**58.7**	**0.720**	**152**	**1.50**	**87.9**	**0.660**	<1.0	**4.70**	1.26	9.0
	9/4/2024	**2.31**	<0.400	**0.510**	**29.8**	<0.400	**83.4**	**0.550**	**32.0**	**0.200**	<1.0	**11.9**	0.34	130.5
	12/3/2024	**10.3**	<0.800	**2.32**	**95.8**	**1.72**	**278**	**2.62**	**133**	**1.30**	<1.0	**4.50**	6.75	196.6
MP-1	2/6/2007	**18.4**	<5.0	<5.0	**347**	**8.5**	**1,610**	**11.2**	**421**	**23.6**	N/A	<1.00	0.39	208.9
	12/16/2008	**<5.0**	<5.0	<5.0	**70**	<5.0	**1,600**	**10**	**230**	<5.0	N/A	**1.80**	1.37	-78.5
	3/23/2009	**6.0**	<4.0	<4.0	**89**	<4.0	**1,200**	**10**	**180**	<4.0	N/A	**2.0**	1.05	127.3
	6/18/2009	**4.3**	<4.0	<4.0	**43**	<4.0	**1,500**	**12**	**180**	<4.0	N/A	N/A	3.65	-43.7
	9/18/2009	**14**	<4.0	<0.40	**240**	**8.9**	**1,100**	**8.2**	**310**	**7.3**	<1.0	**1.50**	0.48	99.7
	12/18/2009	<4.0	<4.0	<4.0	**58**	<4.0	**1,000**	**7.1**	**180**	<4.0	<1.0	**1.60**	0.78	155.3
	3/16/2010	**22**	<3.0	**4.7**	**410**	**13**	**1,500**	**8.6**	**400**	**10**	**2.47**	**2.4**	0.89	83.2
	6/17/2010	**3.2**	<3.0	<3.0	**120**	<3.0	**800**	**5.4**	**140**	<3.0	<1.0	**2.4**	3.22	228.3
	9/23/2010	<3.0	<3.0	<3.0	**41**	<3.0	**730**	**4.0**	**120**	<3.0	<1.0	**2.0**	0.53	-464.0
	12/10/2010	<3.0	<3.0	<3.0	**27**	<3.0	**1,000**	**4.5**	**150**	<3.0	<1.0	**1.0**	0.52	-4.6
	3/14/2011	**7.1**	<3.0	<3.0	**150**	<3.0	**1,200**	**6.4**	**180**	**5.9**	<0.0010	**0.96**	1.35	159.6
	6/7/2011	**4.9**	<2.5	<2.5	**75**	<2.5	**640**	**3.3**	**130**	<2.5	<1.0	**1.6**	0.52	48.9
	9/19/2011	**2.4**	<1.5	<1.5	**4.1**	<1.5	**30**	**1.9**	**72**	**1.6**	N/A	**3.7**	0.69	913.5
	12/9/2011	**2.6**	<2.5	<2.5	**49**	**3.1**	**640**	**3.1**	**120**	<2.5	**3.28**	**8.3**	0.83	-51.7
	3/9/2012	**9.4**	<1.5	**2.8**	**440**	**6.3**	**490**	**3.5**	**140**	**21**	**15.9**	**16**	0.23	77.7
	6/22/2012	**5.6**	<2.5	**2.8**	**530**	**2.9**	**690**	**12**	**120**	**48**	**66.6**	**26**	0.83	-51.7
	9/14/2012	**4.0**	<1.5	<1.5	**170**	**2.2**	**340**	**2.0**	**83**	**4.5**	**16**	**23**	0.43	98.2
	12/14/2012	**2.0**	<0.90	<0.90	**170**	**1.7**	**230**	**1.0**	**48**	**1.8**	**21.1**	**18**	0.28	-15.2
	3/15/2013	**5.1**	<0.90	**0.94**	**140**	**2.5**	**230**	**1.0**	**69**	**1.8**	**5.86**	**35**	0.44	60.4
	6/14/2013	**4.5**	<0.90	**1.4**	**190**	**1.6**	**330**	**1.4**	**70**	**1.8**	**2.96**	**28**	0.34	187.2
	9/20/2013	**2.9**	<0.90	<0.90	**77**	**1.5**	**260**	**0.95**	**66**	<0.90	**3.17**	**35**	0.44	1.2
	12/16/2013	**1.7**	<0.90	**1.1**	**67**	**0.92**	**290**	**1.2**	**70**	<0.90	<1.0	**26**	1.10	10.3
	3/24/2014	**2.2**	<1.5	<1.5	**240**	<1.5	**360**	**1.8**	**54**	<1.5	**33**	**38**	0.69	-18.7
	6/23/2014	**4.9**	<1.5	**2.3**	**290**	**1.7**	**1,200**	**9.5**	**130**	**5.0**	**19.6**	**34**	3.00	-14.0
	9/30/2014	**2.8**	<2.0	<2.0	**110**	<2.0	**360**	<2.0	**63**	**16**	<1.0	**29**	4.09	42.3
	12/15/2014	**1.7**	<1.5	<1.5	**58**	<1.5	**320**	<1.5	**59**	<1.5	<1.0	**2.4**	0.88	-28.6
	3/20/2015	**3.6**	<1.0	**1.5**	**190**	**1.5**	**570**	**1.0**	**96**	**25**	<6.2	**7.8**	1.04	29.8
	6/18/2015	**2.9**	<0.84	**1.5**	**91**	**0.87**	**376**	<0.84	**80.8**	<0.84	<10.0	**6.0**	1.75	-148.5
	9/22/2015	**1.8**	<1.2	**1.4**	**38.3**	<1.2	**343**	<1.2	**68.3**	<1.2	<1.0	**2.2**	1.66	105.5
	12/8/2015	**1.8**	<1.2	**1.5**	**50.9**	<1.2	**308**	<1.2	**62.6**	<1.2	<1.0	**9.9**	1.20	82.8
	3/8/2016	**7.5**	<0.84	**2.1**	**148**	**1.2**	**433**	<0.84	**100**	<0.84	<1.0	**5.1**	1.13	29.5

Table 5

Interim Action—Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Volatile Organic Compounds										Attenuation Chemistry	Field Parameters	
		1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	1,1,1-Trichloroethane	Trichloroethene	Vinyl chloride	Ethene	Total Organic Carbon	Dissolved Oxygen	Oxidation Reduction Potential
		Concentrations in µg/L										(mg/L)	(mg/L)	(mV)
MP-1 continued	6/17/2016	**5.0**	<0.50	**1.5**	**125**	**0.97**	**206**	<0.50	**67.3**	<0.50	<10.0	<1.0	3.71	-8.6
	9/28/2016	**1.3**	<0.50	**3.1**	**40.5**	<0.50	**99.4**	<0.50	**35.5**	**3.3**	<10.0	**2620**	1.32	135.2
	12/13/2016	**0.64**	<0.50	**0.92**	**209**	**0.55**	**2.9**	<0.50	**1.0**	**4.3**	<10.0	**130**	3.57	12.1
	3/30/2017	**7.5**	<0.50	<0.50	**177**	**6.0**	<0.50	<0.50	**0.79**	**186**	**328**	**137**	0.79	-137.7
	6/14/2017	**2.3**	<1.0	<0.50	**143**	**1.9**	**16.2**	<0.50	**8.5**	**29.4**	**83.2**	**38.9**	0.87	-53.2
	9/26/2017	**4.5**	<1.0	**3.4**	**83.0**	**0.83**	**307**	<0.50	**65.9**	**2.3**	<10.0	**4.3**	0.93	80.5
	11/9/2017	**3.3**	<0.50	**4.3**	**105**	**0.91**	**198**	<0.50	**74.0**	**2.6**	<10.0	**3.7**	0.66	-104.8
	3/21/2018	**3.17**	<0.500	**4.04**	**151**	**1.02**	**245**	<0.500	**64.5**	**1.63**	<13.0	**8.3**	0.36	175.8
	6/28/2018	**10.2**	<0.500	**9.34**	**353**	**1.74**	**747**	**0.555**	**140**	**5.26**	<10.0	**8.2**	0.45	159.1
	9/26/2018	<8.00	<8.00	<8.00	**60.2**	<8.00	**322**	<8.00	**57**	<8.00	<1.0	**3.12**	0.99	126.4
	12/4/2018	<0.400	**2.79**	**6.59**	**130**	**0.836**	**355**	<0.400	**76.7**	**1.24**	<1.0	**6.09**	2.28	-22.7
	3/20/2019	**1.43**	<0.400	**3.08**	**69.0**	<0.400	**146**	<0.400	**36.6**	**1.55**	<1.0	**3.34**	5.86	72.6
	6/7/2019	<8.00	<8.00	<8.00	**205**	<8.00	**769**	<8.00	**111**	<8.00	<1.0	**8.2**	0.73	29.2
	9/29/2019	**1.36**	<0.800	**1.14**	**37.1**	<0.800	**176**	<0.800	**26.8**	<0.800	<1.0	**1.94**	0.70	-16.2
	12/3/2019	**1.57**	<0.800	**1.80**	**40.6**	<0.800	**306**	<0.800	**57.8**	<0.800	<1.0	**2.27**	5.01	181.8
	3/11/2020	**3.94**	<0.800	**5.63**	**177**	**1.14**	**1,370**	**1.77**	**190**	<0.800	<1.0	**2.28**	0.94	99.5
	6/17/2020	<4.00	<4.00	<4.00	**72.0**	<4.00	**427**	<4.00	**61.2**	<4.00	<1.0	**5.91**	0.96	237.3
	10/8/2020	<2.00	<2.00	<2.00	**36.7**	<2.00	**510**	<2.00	**52.3**	<2.00	<1.0	**1.74**	1.80	1.6
	12/9/2020	**1.15**	<0.800	<0.800	**29.5**	<0.800	**362**	<0.800	**41.3**	<0.800	<1.0	**1.76**	1.50	-30.7
	3/3/2021	**2.34**	<2.00	<2.00	**70.1**	<2.00	**831**	<2.00	**100**	<2.00	<1.0	**1.83**	6.85	19.3
	6/16/2021	<4.00	<4.00	<4.00	**70.7**	<4.00	**309**	<4.00	**52.0**	<4.00	<1.0	**2.81**	1.88	266.0
	9/15/2021	**1.67**	<0.800	**1.27**	**38.1**	<0.800	**392**	<0.800	**63.8**	<0.800	<1.0	**1.51**	1.30	-56.5
	12/8/2021	<2.00	<2.00	<2.00	**9.16**	<2.00	**152**	<2.00	**29.2**	<2.00	N/A	<1.00	2.44	100.7
	3/9/2022	<2.00	<2.00	<2.00	**33.4**	<2.00	**322**	<2.00	**59.0**	<2.00	<1.0	**1.10**	2.17	162.3
	6/14/2022	<2.00	<2.00	<2.00	**40.0**	<2.00	**417**	<2.00	**41.9**	<2.00	<1.0	**2.83**	0.32	202.6
	9/14/2022	<2.00	<2.00	<2.00	**24.6**	<2.00	**470**	<2.00	**39.4**	<2.00	<1.0	<1.00	0.26	-18.0
	12/7/2022	<2.00	<2.00	<2.00	**27.6**	<2.00	**436**	<2.00	**56.8**	<2.00	<1.0	**1.27**	1.22	140.9
	3/17/2023	<2.00	<2.00	<2.00	**11.1**	<2.00	**199**	<2.00	**26.1**	<2.00	<1.0	**1.01**	0.59	-230.2
	6/15/2023	**3.30**	<2.00	<2.00	**65.9**	<2.00	**1,000**	**2.85**	**85.0**	<2.00	<1.0	**1.55**	0.67	-495.2
	9/13/2023	<0.800	<0.800	<0.800	**13.4**	<0.800	**277**	<0.800	**31.9**	<0.800	<1.0	<1.00	0.34	81.5
	12/15/2023	<0.800	<0.800	<0.800	**6.76**	<0.800	**189**	<0.800	**29.6**	<0.400	<1.0	**0.60**	0.59	108.0
	3/7/2024	<1.00	<1.00	<1.00	**9.85**	<1.00	**224**	<1.00	**81.0**	<0.500	<1.0	**0.80**	0.17	20.7
	6/13/2024	<1.00	<1.00	<1.00	**10.0**	<1.00	**159**	<1.00	**35.6**	<0.500	<1.0	**0.80**	1.15	119.5
	9/3/2024	<0.800	<0.800	<0.800	**4.14**	<0.800	**164**	<0.800	**23.9**	<0.400	<1.0	**0.70**	0.84	176.4
	12/4/2024	<0.400	<0.400	**0.440**	**4.78**	<0.400	**168**	**0.470**	**24.3**	<0.200	<1.0	**0.60**	7.11	120.1
EX	2/6/2007	<10.0	<10.0	<10.0	**68.2**	<10.0	**2,810**	**40**	**564**	<10.0	N/A	**1.45**	0.24	164.8
	12/16/2008	**54**	<15.0	<15.0	**490**	<15.0	**4,500**	**71**	**830**	<15.0	N/A	**3.30**	0.74	-174.5
	3/23/2009	<5.0	<5.0	<5.0	**50**	<5.0	**1,400**	**43**	**420**	<5.0	N/A	**3.0**	0.47	68.8
	6/18/2009	<0.50	<0.50	<0.50	**4.2**	<0.50	**24**	**1.1**	**11**	<0.50	N/A	N/A	0.37	-9.3
	9/18/2009	**4.1**	<0.50	**3.3**	**120**	**0.76**	**2,100**	**38**	**380**	**1.1**	<1.0	**4.9**	0.60	109.0
	12/18/2009	<2.5	<2.5	<2.5	**5.6**	<2.5	**700**	**3.7**	**56**	<2.5	**55.6**	**1.8**	2.13	170.1
	3/16/2010	<0.50	<0.50	<0.50	**20**	<0.50	**150**	**3.2**	**33**	<0.50	<0.50	**2.4**	0.88	102.6
	6/17/2010	**0.97**	<0.50	<0.50	**92**	<0.50	**150**	**2.3**	**39**	**2.2**	<1.0	**3.3**	0.84	239.5
	9/23/2010	**1.5**	<0.50	**1.6**	**90**	**0.53**	**2,400**	**20**	**220**	**1.8**	<1.0	**3.6**	0.93	-521.6
	12/21/2010	**0.83**	<0.50	**0.59**	**30**	<0.50	**900**	**6.7**	**99**	**0.71**	<1.0	<0.50	0.91	131.7
	3/31/2011	**8.2**	<4.0	**8.1**	**240**	<4.0	**6,800**	**110**	**910**	**5.1**	**1.91**	**1.9**	--	--
	6/7/2011	<4.0	<4.0	<4.0	**140**	<4.0	**1,400**	**15**	**170**	<4.0	<1.0	**3.5**	0.70	115.2
	9/19/2011	**7.9**	<5.0	**11**	**290**	<5.0	**4,100**	**73**	**460**	**14**	N/A	**560**	0.63	907.9
	12/9/2011	**16**	<5.0	**19**	**12,000**	**9.3**	<50	**17**	<50	**140**	**11.4**	**320**	1.23	-68.3
	3/9/2012	**5.0**	<4.0	<4.0	**1,400**	**8.6**	**33**	<4.0	**10**	**290**	**24.2**	**89**	0.14	-33.6
	6/22/2012	**3.4**	<0.50	**0.68**	**170**	**1.3**	**3.0**	**0.59**	**1.1**	**120**	**150**	**110**	1.23	-68.3
	9/14/2012	**1.5**	<1.5	<1.5	**320**	<1.5	**3.0**	<1.5	<1.5	**42**	**47.2**	**77**	0.15	-29.5
	12/14/2012	<0.50	<0.50	<0.50	**26**	<0.50	**0.87**	<0.50	<0.50	**12**	**5.92**	**59**	0.25	3.3
	3/15/2013	<0.50	<0.50	<0.50	<0.50	<0.50	**1.2**	<0.50	<0.50	**4.4**	<1.0	**64**	0.37	67.0
	6/14/2013	<0.50	<0.50	<0.50	**1.6**	<0.50	**0.79**	<0.50	<0.50	<0.50	<1.0	**12**	0.54	158.8
	9/20/2013	**1.9**	<0.50	**0.54**	**71**	**0.68**	**4.1**	<0.50	**2.6**	**30**	**35.4**	**42**	0.43	-175.4
	12/16/2013	**3.8**	<0.50	<0.50	**34**	<0.50	**2.0**	<0.50	**1.4**	**28**	**45.3**	**46**	1.66	11.9
	3/24/2014	**0.80**	<0.50	<0.50	**30**	<0.50	**20**	<0.50	**7.5**	**11**	**91.1**	**35**	0.51	158.7
	6/23/2014	**2.9**	<0.50	**1.1**	**160**	**0.97**	**29**	<0.50	**15**	**38**	**81.5**	**34**	0.41	-50
	9/30/2014	--	--	--	--	--	--	--	--	--	--	--	--	--
	12/15/2014	<0.50	<0.50	<0.50	**10**	<0.50	**22**	<0.50	**2.7**	<0.50	<1.0	**158**	2.41	-52.2
	3/19/2015	**3.5**	<0.50	**2.1**	**690**	**1.9**	**170**	**2.5**	**56**	**2.8**	<6.2	<5.0	1.05	18.2
	6/18/2015	**2.6**	<0.50	**2.6**	**420**	**1.6**	**186**	**0.88**	**42**	**3.2**	<10.0	**7.5**	2.29	-35.2
	9/22/2015	**2.9**	<0.50	**3.7**	**543**	**2.6**	**302**	**0.65**	**61.9**	**24.4**	<1.0	**22.6**	0.90	23.7
	12/8/2015	<0.50	<0.50	<0.50	**427**	<0.50	**94.4**	<0.50	**21.3**	**2.1**	<1.0	**7.5**	--	--
	3/8/2016	**4.0**	<1.2	**2.9**	**1,160**	**3.6**	**274**	**5.0**	**71.1**	**13.3**	<1.0	**22**	0.36	113.3
	6/17/2016	<5.0	<5.0	<5.0	**1,040**	<5.0	**592**	<5.0	**90.8**	<5.0	<10.0	**1.2**	2.72	4.8
	9/28/2016	**4.6**	<1.7	**3.5**	**2,230**	**3.8**	**39.4**	**2.5**	**549**	**128**	N/A	N/A	1.61	138.1
	12/12/2016	<0.50	<0.50	<0.50	**8.1**	<0.50	**4.3**	<0.50	**0.96**	**51.9**	N/A	N/A	2.00	-24
	3/28/2017	<0.50	<0.50	<0.50	**5.2**	<0.50	**6.1**	<0.50	**1.9**	<0.50	**23.5**	**347**	1.50	89.9
	6/14/2017	**10.7**	<1.0	<0.50	**11.7**	**0.56**	**9.5**	<0.50	**3.0**	**1.3**	**11.2**	**14.0**	3.48	-12.4
	9/26/2017	**8.8**	<1.0	<0.50	**6.9**	<0.50	**0.82**	<0.50	**0.63**	**10.1**	**17.5**	**25.5**	1.18	-140.5
	3/21/2018	**1.34**	<0.500	<0.500	**22.6**	<0.500	**1.48**	<0.500	**2.72**	**10.8**	**28.3**	**15.4**	0.19	74.4
	6/28/2018	**4.55**	<0.500	**1.11**	**722**	**8.72**	**1.91**	<0.500	**0.758**	**424**	**99.2**	**43.6**	0.39	-62.6
	9/24/2018	**1.42**	<0.400	<0.400	**3.38**	**0.751**	**3.07**	<0.400	**2.42**	**7.56**	**2.9**	**13.2**	1.55	150.7
	12/4/2018	**0.876**	<0.400	<0.400	**8.18**	<0.400	**6.35**	<0.400	**3.60**	**1.88**	<1.0	**11.0**	5.80	-10.0
	6/17/2021	**3.90**	<0.400	**4.55**	**415**	**2.33**	**4,570**	**12.4**	**322**	**22.2**	<1.0	**5.32**	3.02	67.5
	9/16/2021	**11.30**	<0.400	**7.65**	**739**	**6.50**	**2,940**	**7.80**	**380**	**20.6**	<1.0	**6.01**	3.25	186.4
	12/10/2021	**3.09**	<0.400	**3.73**	**198**	**1.55**	**4,900**	**10.6**	**268**	**6.76**	<1.0	**4.57**	0.58	241.4
	3/8/2022	**3.27**	<0.400	**4.40**	**224**	**1.74**	**6,930**	**19.8**	**321**	**9.00**	<1.0	**2.95**	2.07	170.0
	6/16/2022	**22.7**	<2.00	**7.80**	**412**	**8.50**	**1,590**	<2.00	**344**	**7.30**	<1.0	**3.52**	7.41	137.9
	9/14/2022	<20.0	<20.0	<20.0	**466**	<20.0	**2,340**	<20.0	**224**	**24.5**	<1.0	**4.29**	1.16	180.9
	12/8/2022	<20.0	<20.0	<20.0	**608**	<20.0	**4,040**	<20.0	**334**	<20.0	<1.0	**3.41**	2.50	-0.6
	3/15/2023	<20.0	<20.0	<20.0	**677**	<20.0	**2,860**	<20.0	**276**	<20.0	<1.0	**4.46**	2.39	-48.0
	6/14/2023	<20.0	<20.0	<20.0	**944**	<20.0	**3,120**	<20.0	**402**	<20.0	<1.0	**3.99**	0.32	144.0
	9/12/2023	<8.00	<8.00	<8.00	**562**	<8.00	**2,290**	<8.00	**198**	**6.80**	<1.0	**3.80**	1.48	114.6
	12/14/2023	<8.00	<8.00	<8.00	**83.6**	<8.00	**2450**	**10.2**	**148**	<4.00	<1.0	**1.20**	0.19	22.2
	3/6/2024	<8.00	<8.00	<8.00	**436**	<8.00	**2,060**	**8.60**	**214**	**5.40**	<1.0	**6.10**	0.42	158.5
	6/13/2024	<4.00	<4.00	<4.00	**141**	<4.00	**1,850**	<4.00	**113**	**2.20**	<1.0	**2.00**	0.14	224.0
	9/4/2024	**4.50**	<4.00	**4.50**	**625**	**4.50**	**2,060**	**7.20**	**212**	**4.40**	<1.0	**4.50**	0.32	-3.8
	12/3/2024	<4.00	<4.00	<4.00	**248**	<4.00	**2,870**	**5.70**	**200**	**6.70**	<1.0	**1.50**	8.49	84.3

Table 5

Interim Action—Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Volatile Organic Compounds										Attenuation Chemistry	Field Parameters	
		1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	1,1,1-Trichloroethane	Trichloroethene	Vinyl chloride	Ethene	Total Organic Carbon	Dissolved Oxygen	Oxidation Reduction Potential
		Concentrations in µg/L										(mg/L)	(mg/L)	(mV)
MW-12	6/7/2011	**1.8**	<0.50	<0.50	**59**	**1.0**	**53**	**0.70**	**25**	<0.50	<1.0	**0.94**	3.16	110.4
	9/19/2011	**240**	**2.5**	**45**	**4,700**	**55**	**860**	**65**	**690**	**63**	N/A	**8.3**	0.84	906.3
	12/7/2011	**130**	**1.3**	**28**	**2,900**	**33**	**520**	**34**	**380**	**40**	**6.15**	**59**	1.00	109.0
	3/12/2012	**210**	<15.0	**44**	**3,800**	**45**	**770**	**48**	**540**	**46**	<1.0	**65**	1	45.3
	6/22/2012	**100**	<5.0	**16**	**1,700**	**39**	**270**	**13**	**200**	**22**	<1.0	**56**	0.66	117.1
	9/14/2012	**270**	<15.0	**58**	**5,400**	**73**	**1,100**	**76**	**730**	**84**	<1.0	**100**	0.43	140.7
	12/13/2012	**1.0**	<0.50	<0.50	**62**	**0.97**	**38**	**0.53**	**23**	<0.50	<1.0	**4.9**	1.07	128.6
	3/15/2013	**200**	**1.8**	**40**	**4,300**	**56**	**760**	**53**	**540**	**54**	<1.0	**95**	0.62	117.3
	6/13/2013	**240**	<15.0	**39**	**4,800**	**53**	**610**	**46**	**500**	**59**	<1.0	**62**	0.39	205.2
	9/20/2013	**170**	**1.6**	**37**	**3,400**	**49**	**510**	**37**	**400**	**50**	<1.0	**110**	0.59	-10.7
	12/16/2014	**36**	<2.5	**7.6**	**800**	**10**	**150**	**5.8**	**110**	**9.8**	<1.0	**23**	1.22	40.4
	3/24/2014	**110**	**0.77**	**18**	**1,900**	**25**	**180**	**8.6**	**170**	**47**	<1.0	**41**	1.94	29.1
	6/24/2014	**14**	<1.5	**1.9**	**310**	**2.3**	**42**	**1.6**	**34**	<1.5	<1.0	**13**	3.68	1.5
	9/30/2014	**190**	<15.0	**39**	**3,500**	**45**	**680**	**36**	**480**	**42**	<1.0	**93**	6.09	47.1
	12/11/2014	**0.73**	<0.50	<0.50	**34**	**0.64**	**25**	<0.50	**15**	<0.50	<1.0	**1.9**	0.65	-110.0
	3/20/2015	**102**	<5.0	**25**	**2,110**	**29**	**580**	**18**	**340**	**37**	<6.2	**4**	0.89	75.7
	6/19/2015	**151**	<10.0	**28.2**	**2,570**	**25**	**514**	**23.6**	**356**	**31.1**	<10.0	**4.8**	0.71	10.2
	9/22/2015	**120**	<8.3	**16.9**	**2,250**	**23.4**	**343**	**15.7**	**239**	**22.5**	<1.0	**4.4**	1.06	65.3
	12/8/2015	**0.84**	<0.50	<0.50	**40.1**	**0.72**	**44.9**	**0.52**	**22**	<0.50	<10.0	**16.5**	0.99	28.1
	3/8/2016	**79.9**	<3.6	**15.4**	**1,380**	**16.2**	**325**	**7.7**	**209**	**21.3**	<10.0	**5.5**	0.71	62.2
	6/16/2016	**174**	<8.4	**29.9**	**3,310**	**31.6**	**314**	**12.8**	**288**	**52.3**	<10.0	**3.7**	2.68	59.7
	9/27/2016	**44**	<10.0	**11.5**	**867**	**11.4**	**387**	**3.9**	**163**	**14.8**	<10.0	**5,240**	0.98	252.5
	12/14/2016	**16.5**	<10.0	**4.7**	**744**	**2.3**	**62.3**	<10.0	**42.2**	**20.5**	<10.0	**1,930**	0.46	-91.3
	3/30/2017	**11.4**	<2.5	**3.8**	**1,120**	**6.1**	**55.9**	<2.5	**29.6**	**28.3**	**75.2**	**490**	2.92	-17.9
	6/12/2017	**14.0**	<3.1	**4.7**	**893 J**	**7.6**	**42.4**	<3.1	**18.1**	**48.4**	**120**	**530**	0.91	-34.2
	9/28/2017	**19.5**	<1.7	<1.7	**457**	**5.4**	<1.7	<1.7	<1.7	**47.7**	**16.0**	**243**	1.19	-87.4
	11/9/2017	**4.5**	<0.50	<0.50	**22.2**	**1.6**	<0.50	<0.50	<0.50	**49.1**	<10.0	**326 J**	1.61	-119.0
	3/20/2018	**0.522**	<0.500	<0.500	**5.64**	**1.33**	<0.500	<0.500	**0.271 J**	**2.77**	<13.0	**89.1**	8.95	-136.3
	7/1/2018	**0.913**	<0.500	<0.500	**4.02**	**1.57**	**0.304 J**	<0.500	**0.996**	**1.45**	<10.0	**66.0**	1.77	114.3
	9/25/2018	**0.730**	<0.400	<0.400	**1.46**	**0.520**	<0.400	<0.400	<0.400	**1.23**	<1.0	**79.5**	1.27	-174.0
	12/4/2018	**0.470**	<0.400	<0.400	**4.30**	**0.415**	**1.29**	<0.400	**1.29**	**1.69**	<1.0	**36.4**	5.51	-30.5
	3/20/2019	**0.655**	<0.400	<0.400	**6.70**	**0.675**	**2.11**	<0.400	**1.33**	**1.64**	<1.0	**34.4**	2.34	-38.6
	6/5/2019	**0.719**	<0.400	<0.400	**9.36**	**0.756**	**3.64**	<0.400	**3.45**	**2.74**	<1.0	**16.6**	1.72	69.9
	9/26/2019	**6.26**	<0.400	<0.400	**5.31**	**0.565**	<0.400	<0.400	**0.459**	**6.82**	**1.1**	**46.1**	0.29	-227.1
	12/5/2019	<0.400	<0.400	<0.400	**2.61**	<0.400	**2.37**	<0.400	**1.41**	**0.413**	<1.0	**23.8**	9.18	185.3
	3/11/2020	**0.806**	<0.400	<0.400	**8.47**	**0.561**	**7.01**	<0.400	**4.25**	**0.423**	<1.0	**12.0**	5.10	91.3
	6/18/2020	**1.30**	<0.400	<0.400	**14.1**	<0.400	**2.59**	<0.400	**2.68**	**1.04**	<1.0	**10.5**	0.90	173.1
	10/7/2020	**37.8**	<0.400	<0.400	**81.7**	**0.632**	<0.400	<0.400	**0.750**	**196**	**56**	**39.5**	2.49	-156.9
	12/8/2020	**1.55**	<0.400	<0.400	**9.92**	<0.400	**13.5**	<0.400	**6.47**	**7.36**	**3.6**	**4.60**	2.34	120.9
	3/5/2021	<0.400	<0.400	**1.55**	**8.6**	<0.400	**6.73**	<0.400	**4.92**	**0.436**	<1.0	**8.33**	0.68	-4.2
	6/16/2021	<0.400	<0.400	**6.90**	**34.0**	**0.426**	**8.85**	<0.400	**9.62**	**35.7**	**14.0**	**10.7**	2.90	273.2
	9/14/2021	**37.40**	<0.400	<0.400	**59.0**	**0.572**	**4.29**	<0.400	**5.59**	**308**	**18.0**	**49.2**	3.69	-1.1
	12/9/2021	**0.680**	<0.400	<0.400	**7.49**	<0.400	**12.3**	<0.400	**6.68**	**2.10**	N/A	**4.23**	0.26	133
	3/8/2022	**13.4**	<0.400	<0.400	**18.6**	<0.400	**8.43**	<0.400	**9.36**	**168**	**58.0**	**4.22**	0.32	133.6
	6/14/2022	<0.400	<0.400	<0.400	**2.48**	<0.400	**10.6**	<0.400	**5.38**	**0.490**	<1.0	**1.46**	7.42	69.5
	9/14/2022	**79.600**	<0.400	**10.2**	**2470**	**2.58**	**0.850**	<0.400	**11.6**	**2000**	**92.0**	**29.1**	0.46	186.5
	12/8/2022	**8.60**	<0.400	**0.730**	**165**	**0.53**	**7.29**	<0.400	**5.11**	**124**	**10**	**4.11**	1.35	182.9
	3/16/2023	**88.3**	<0.400	**2.23**	**576**	**1.55**	**2.51**	<0.400	**4.11**	**1300**	**69**	**22.9**	0.18	-358.3
	6/14/2023	**109**	<4.00	<4.00	**208**	<10.0	**4.80**	<4.00	<4.00	**1710**	**200**	**10.7**	0.61	-513.9
	9/13/2023	**105**	<4.00	**10.4**	**1310**	<4.00	<6.00	<4.00	**8.00**	**1690**	**67**	**31.1**	0.06	-133.8
	12/13/2023	<0.400	<0.400	<0.400	**4.14**	<0.400	**6.94**	<0.400	**3.36**	**1.80**	<1.0	**1.60**	0.48	101.8
	3/5/2024	**96.0**	<4.00	<4.00	**79.5**	<4.00	<4.00	<4.00	<4.00	**1330**	**120**	**11.9**	0.19	-19.5
	6/13/2024	**29.9**	<4.00	**0.440**	**32.8**	<0.400	**3.88**	<0.400	**3.90**	**22.8**	**2.3**	**9.70**	0.30	130.1
	9/5/2024	**66.7**	<0.400	<0.400	**33.8**	<0.400	**0.630**	<0.400	**0.640**	**483**	**91**	**27.0**	0.18	-103.1
	12/4/2024	**3.00**	<0.400	<0.400	**10.0**	<0.400	**11.2**	<0.400	**6.11**	**7.63**	**1.3**	**1.80**	6.56	135.2
MW-24i	6/7/2011	<0.50	<0.50	<0.50	**2.0**	<0.50	**6.6**	<0.50	**1.4**	<0.50	<1.0	**1.2**	6.40	59.0
	9/16/2011	**13**	<0.50	**2.5**	**270**	**1.7**	**27**	**5.6**	**24**	**19**	N/A	**7.0**	0.61	646.9
	12/7/2011	**5.0**	<0.50	**0.84**	**100**	<0.50	**19**	**2.9**	**14**	**7.5**	**2.29**	**290**	3.50	-147.5
	3/12/2012	**5.9**	<0.50	<0.50	**79**	<0.50	**30**	**2.3**	**11**	**4.5**	**2.03**	**33**	2.11	-1.2
	6/22/2012	**1.8**	<0.50	<0.50	**14**	<0.50	**0.85**	<0.50	<0.50	**2.6**	**1.52**	**44**	3.50	-147.5
	9/14/2012	**4.4**	<0.50	**0.87**	**58**	<0.50	**31**	**0.79**	**20**	<0.50	<1.0	**15**	0.40	-54.0
	12/14/2012	<0.50	<0.50	<0.50	**51**	<0.50	**2.1**	<0.50	**0.65**	<0.50	<1.0	**16**	2.11	6.3
	3/15/2013	**2.8**	<0.50	<0.50	**48**	<0.50	**23**	**0.57**	**15**	<0.50	<1.0	**9.5**	0.79	13.1
	6/14/2013	**2.7**	<0.50	<0.50	**28**	<0.50	**6.2**	<0.50	**3.6**	<0.80	<1.0	**11**	0.39	130.2
	9/20/2013	**1.0**	<0.50	<0.50	**15**	<0.50	**15**	<0.50	**5.9**	<0.80	<1.0	**11**	1.92	-31.2
	12/16/2013	**1.3**	<0.50	<0.50	**8.4**	<0.50	**6.7**	<0.50	**3.4**	<0.50	<1.0	**7.9**	3.08	16.9
	3/24/2014	**1.3**	<0.50	<0.50	**16**	<0.50	**10**	<0.50	**5.5**	<0.80	<1.0	**9.4**	3.16	-55.4
	6/23/2014	**1.2**	<0.50	<0.50	**13**	<0.50	**1.3**	<0.50	**5.2**	**2.1**	**29.1**	**8.4**	4.70	-49.7
	9/30/2014	**1.8**	<0.50	<0.50	**21**	<0.50	**20**	<0.50	**10**	<0.50	<1.0	**12.0**	2.01	129.7
	12/15/2014	**0.60**	<0.50	<0.50	**12**	<0.50	**2.4**	<0.50	**1.1**	<0.50	<1.0	<1.0	6.27	-13.9
	3/20/2015	**0.58**	<0.50	<0.50	**5.9**	<0.50	**6.1**	<0.50	**3.1**	<0.50	<6.2	<1.0	10.28	38.6
	6/18/2015	<0.50	<0.50	<0.50	**3.4**	<0.50	<0.50	<0.50	<0.50	<0.50	<10.0	**1.6**	1.08	-158.7
	9/22/2015	**1.9**	<0.50	<0.50	**4.7**	<0.50	**2.2**	<0.50	**0.8**	<0.50	<1.0	**2.3**	1.85	99.4
	12/8/2015	**0.74**	<0.50	<0.50	**18**	<0.50	**189**	<0.50	**36.4**	<0.50	<1.0	**3.5**	1.36	99.2
	3/8/2016	<0.50	<0.50	<0.50	**3.5**	<0.50	**4.1**	<0.50	**1.6**	<0.50	<10.0	**1.0**	1.75	47.8
	6/17/2016	0.99	<0.50	<0.50	**7.8**	<0.50	**11.5**	<0.50	**6.3**	<0.50	<10.0	<1.0	3.12	14.0
	9/28/2016	**0.53**	<0.50	<0.50	**5.4**	<0.50	**5.8**	<0.50	**3.1**	<0.50	<10.0	**5.3**	2.58	123.9
	12/12/2016	<0.50	<0.50	<0.50	<0.50	<0.50	**1.1**	<0.50	<0.50	<0.50	<10.0	**1.5**	5.64	2.6
	3/30/2017	<0.50	<0.50	<0.50	**0.70**	<0.50	**1.0**	<0.50	<0.50	<0.50	<10.0	**3.4**	5.24	14.3
	6/15/2017	<0.50	<1.0	<0.50	**3.2**	<0.50	**6.6**	<0.50	**2.8**	<0.50	<10.0	**1.2**	3.72	-13.4
	9/26/2017	**2.1**	<1.0	<0.50	**24.5**	<0.50	**30.1**	<0.50	**16.6**	<0.50	<10.0	**1.2**	1.21	-10.7
	11/9/2017	**1.1**	<0.50	<0.50	**9.6**	<0.50	**12.7**	<0.50	**5.9**	<0.50	<10.0	**1.3**	3.11	-100.1
	3/21/2018	**1.42**	<0.500	<0.500	**13.5**	<0.500	**19.1**	<0.500	**10.2**	<0.500	<13.0	**0.734 B J**	0.95	129.6
	6/28/2018	**1.44**	<0.500	<0.500	**13.6**	**1.09**	**10.3**	<0.500	**5.93**	<0.500	<10.0	<1.0	2.69	129.9
	9/27/2018	**2.18**	<0.400	<0.400	**25.0**	<0.400	**24.8**	<0.400	**14.3**	<0.400	N/A	N/A	1.67	106.3
	12/4/2018	**0.800**	<0.400	<0.400	**5.13**	<0.400	**10.2**	<0.400	**3.76**	<0.400	N/A	N/A	5.24	-6.9
	3/25/2019	**0.888**	<0.400	<0.400	**8.46**	<0.400	**11.7**	<0.400	**5.91**	<0.400	<1.0	<1.00	4.52	18.1
	6/7/2019	**0.601**	<0.400	<0.400	**4.99**	<0.400	**7.39**	<0.400	**3.55**	<0.400	<1.0	<1.00	4.39	5.8
	9/27/2019	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	**1.6**	<1.00	5.30	-252.2
	12/3/2019	**0.775**	<0.400	<0.400	**3.82**	<0.400	**8.78**	<0.400	**3.72**	<0.400	<1.0	<1.00	3.09	1.3
	3/12/2020	**1.30**	<0.400	<0.400	**15.4**	<0.400	**17.0**	<0.400	**8.42**	<0.400	<1.0	<1.00	7.57	66.9
	6/18/2020	**0.610**	<0.400	<0.400	**2.91**	<0.400	**6.24**	<0.400	**2.84**	<0.400	<1.0	<1.00	7.63	-43.8
	10/9/2020	<0.400	<0.400	<0.400	**1.08**	<0.400	**1.35**	<0.400	<0.400	<0.400	<1.0	**1.09**	3.60	-63.2
	12/10/2020	**1.73**	<0.400	<0.400	**20.0**	<0.400	**29.7**	<0.400	**13.0**	<0.400	N/A	N/A	9.37	77.2
	3/3/2021	<0.400	<0.400	<0.400	**0.505**	<0.400	**0.955**	<0.400	<0.400	<0.400	<1.0	<1.00	6.41	22.2
	6/17/2021	<0.400	<0.400	**0.989**	**9.31**	<0.400	**15.7**	<0.400	**8.00**	<0.400	<1.0	<1.50	2.99	132.0

Table 5

Interim Action—Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Volatile Organic Compounds										Attenuation Chemistry	Field Parameters	
		1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	1,1,1-Trichloroethane	Trichloroethene	Vinyl chloride	Ethene	Total Organic Carbon	Dissolved Oxygen	Oxidation Reduction Potential
		Concentrations in µg/L										(mg/L)	(mg/L)	(mV)
MW-24i continued	9/14/2021	<0.400	<0.400	<0.400	27.5	<0.400	36.7	<0.400	17.20	<0.400	N/A	<1.00	0.17	94.0
	12/7/2021	<0.400	<0.400	<0.400	0.540	<0.400	2.22	<0.400	0.629	<0.400	<1.0	<1.00	5.32	38.7
	3/8/2022	0.900	<0.400	<0.400	7.93	<0.400	13.2	<0.400	6.19	<0.400	<1.0	<1.00	5.54	57.9
	6/15/2022	<0.400	<0.400	<0.400	0.430	<0.400	0.710	<0.400	<0.400	<0.400	<1.0	<1.00	8.95	47.7
	9/14/2022	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	<1.0	<1.00	0.56	66.6
	12/8/2022	1.07	<0.400	<0.400	15.500	<0.400	38.6	<0.400	9.46	<0.400	<1.0	<1.00	1.85	4.8
	3/15/2023	1.04	<0.400	<0.400	15.9	<0.400	16.1	<0.400	7.95	<0.400	<1.0	<1.00	0.00	222.0
	6/13/2023	0.850	<0.400	<0.400	14.3	<0.400	9.97	<0.400	5.21	<0.400	<1.0	<1.00	2.91	169.1
	9/13/2023	0.990	<0.400	<0.400	23.0	<0.400	17.8	<0.400	9.01	<0.200	<1.0	<1.00	0.61	129.8
	12/11/2023	<0.400	<0.400	<0.400	1.11	<0.400	2.09	<0.400	0.680	<0.200	<1.0	0.41 J	7.20	39.4
	3/7/2024	1.59	<0.400	<0.400	16.3	<0.400	<0.500	<0.400	9.70	<0.200	<1.0	0.17	0.56	127.0
	6/13/2024	1.09	<0.400	<0.400	17.5	<0.400	16.7	<0.400	8.68	<0.200	<1.0	0.42 J	0.48	238.0
	9/4/2024	1.00	<0.400	<0.400	21.6	<0.400	22.4	<0.400	10.0	<0.200	<1.0	0.41 J	0.26	-3.8
	12/3/2024	1.17	<0.400	0.440	18.2	<0.400	21.7	<0.400	9.31	<0.200	<1.0	0.45 J	8.15	83.0
MGMS2-4(40)	6/7/2011	65	<15.0	30	1,600	17	4,400	57	1,400	48	<1.0	2.2	0.86	49.5
	9/12/2011	44	<15.0	28	7,400	20	790	48	380	58	N/A	110	2.63	338.9
	12/7/2011	35	<15.0	<15.0	5,300	<15.0	61	<15.0	39	460	14.5	300	6.28	-137.9
	3/8/2012	38	<2.0	2.3	470	2.8	9.9	5.2	5.4	260	368	290	1.22	-73.6
	6/19/2012	53	<0.50	<0.50	20	1.3	7.2	<0.50	2.5	63	566	500	6.28	-137.9
	9/12/2012	39	<1.5	2.8	310	3.2	89	5.0	80	440	264	140	1.16	-40.1
	12/11/2012	4.8	<0.50	<0.50	33	1.3	10	<0.50	3.4	4.0	110	280	0.55	-82.3
	3/15/2013	28	<0.50	1.9	300	2.0	5.6	2.5	2.2	270	121	81	0.33	-24.3
	6/11/2013	8.3	<0.50	<0.50	7.9	<0.50	0.94	<0.50	<0.50	4.8	55.6	110	0.42	-116.7
	9/17/2013	28	<0.50	4.8	290	1.4	16	1.6	17	330	143	98	0.27	-209.9
	12/16/2013	9.7	<0.50	<0.50	8.4	<0.50	2.4	<0.50	1.4	3.4	33.3	110	1.19	-41.9
	3/24/2014	45	<0.50	2.9	84	<0.50	2.6	<0.50	1.8	270	930	120	1.06	-126.1
	6/26/2014	31	<0.50	10	88	0.84	21	<0.50	22	90	207	120	2.22	-23.7
	9/23/2014	30	<0.50	30	590	2.4	170	3.2	110	800	12.1	94	1.31	-119.0
	12/12/2014	35	<0.50	<0.50	10	<0.50	3.4	<0.50	2.3	18	34	7.9	1.41	-162.1
	3/20/2015	4.3	<0.50	3.9	47	<0.50	31	<0.50	22	17	8.1	8	20.02	-83.7
	6/19/2015	13.8	<0.50	1.3	53.8	<0.50	18.4	<0.50	12.8	48.3	33.7	11	13.5	-117.5
	9/25/2015	12.3	<0.50	4.2	105	0.61	67.4	0.92	45.9	57.8	<10.0	10.9	9.67	-145.1
	12/8/2015	13.5	<0.50	<0.50	7.2	<0.50	4.0	<0.50	2.8	3.3	22.8	7.9	6.14	-96.9
	3/8/2016	20.6	<0.50	1.6	36.0	<0.50	6.5	<0.50	6.2	36	63.7	7.4	5.52	-161.7
	6/17/2016	24.9	<0.50	26.4	744	2.8	223	3.1	146	227	31	3.8	1.60	-72.2
	9/29/2016	12.1	<0.50	<0.50	115	<0.50	33.3	<0.50	24.8	142	N/A	N/A	5.16	194.5
	12/16/2016	10.3	<0.50	<0.50	5.2	<0.50	2.6	<0.50	1.9	2.0	N/A	N/A	0.80	-28.1
	3/31/2017	57.6	<0.50	14.3	236	0.60	4.3	<0.50	14.4	235	N/A	N/A	0.68	-92.2
	6/15/2017	38.6	<0.50	3.5	46.2	<0.50	5.1	<0.50	4.9	98.9	128	7.0	1.29	-109.6
	9/29/2017	21.7	<1.0	6.8	195	0.74	41.5	0.67	31.3	428	47.4	6.4	1.03	-43.7
	11/9/2017	21.3	<0.50	0.86	61.6	0.52	13.2	<0.50	9.2	170	95.7	6.2	1.24	-113.3
	3/22/2018	25.9	<0.500	4.22	109	0.571	46.0	0.259 J	27.3	122	32.7	9.58	6.89	-112.9
	7/1/2018	12.7	<0.500	5.93	151	0.971	62.1	1.04	48.9	38.2	<10.0	5.2	3.15	-50.8
	9/28/2018	8.74	<0.800	1.44	140	<0.800	66.9	<0.800	43.3	106	3.6	5.91	1.50	97.3
	12/10/2018	20.9	<0.400	0.563	24.9	<0.400	18.7	<0.400	12.0	123	78	5.08	2.05	-111.4
	3/25/2019	26.6	<0.400	2.58	136	0.752	62.0	<0.400	35.9	155	26	4.61	0.97	151.7
	6/4/2019	28.2	<0.400	0.960	37.8	<0.400	14.6	<0.400	10.4	145	19	4.83	0.64	104.5
	9/27/2019	11.2	<0.400	0.729	73.8	<0.400	17.0	<0.400	13.1	101	1.4	4.76	7.37	-133.9
	12/4/2019	20.6	<0.400	0.778	40.5	<0.400	32.3	<0.400	17.9	65.4	4.2	5.01	4.39	-82.2
	3/12/2020	24.1	<0.400	2.73	105	0.641	86.3	0.453	43.3	134	2.1	5.13	8.14	-78.9
	6/16/2020	27.3	<0.400	1.25	85.0	<0.400	14.8	<0.400	9.09	138	6.1	4.13	0.93	177.2
	10/6/2020	19.1	<0.400	2.45	98.4	0.635	101	<0.400	56.2	148	3.8	5.15	1.17	28.8
	12/8/2020	17.8	<0.800	1.85	82.6	<0.800	41.0	<0.800	19.4	80.2	2.0	5.37	1.07	-19.5
	3/4/2021	3.83	<0.400	25.1	159	1.12	115	<0.400	59.9	72.5	<1.0	5.17	1.97	-19.5
	6/17/2021	3.25	<0.400	20.7	181	0.975	68.8	<0.400	35.6	66.3	<1.0	4.93	2.75	82.2
	9/16/2021	9.92	<4.00	1.40	98.7	0.734	42.2	<4.00	28.3	34.2	<1.0	4.82	4.14	18.9
	12/7/2021	22.7	<0.400	6.97	178	1.50	190	0.812	106	0.989	<1.0	5.84	0.59	60.5
	3/10/2022	21.8	<4.00	8.70	260	<4.00	155	<4.00	92.9	<4.00	<1.0	4.85	0.83	205.2
	6/14/2022	35.2	<2.00	7.20	209	<2.00	138	4.75	69.3	<2.00	<1.0	6.19	1.48	222.1
	9/12/2022	16.2	<0.400	9.45	330	2.55	271	0.960	142	1.41	<1.0	4.19	0.20	-15.4
	12/6/2022	19.6	<0.400	9.63	297	2.58	245	1.55	153	0.400	<1.0	4.20	0.61	44.5
	3/16/2023	17.7	<4.00	10.00	311	<4.00	299	<4.00	169	<4.00	<1.0	4.63	0.00	182
	6/13/2023	19.1	<0.800	8.50	352	2.64	173	1.02	121	<0.800	<1.0	4.14	0.13	213.2
	9/11/2023	16.6	<0.400	10.8	338	2.92	162	0.570	101	1.11	<1.0	3.99 Q	0.22	9.4
	12/12/2023	27.6	<0.400	12.7	396	3.29	408	4.16	204	0.780	<1.0	3.40	0.23	55.7
	3/4/2024	22.5	<0.800	12.5	331	3.60	405	2.60	294	0.680	<1.0	3.50	0.22	40.0
	6/10/2024	25.8	<2.00	13.0	403	3.55	315	3.10	232	<1.00	<1.0	3.30	2.78	-16.1
	9/4/2024	12.5	<0.800	8.02	281	2.84	215	0.820	134	<0.400	<1.0	3.60	0.18	-18.0
	12/3/2024	21.0 Q-42	<2.00	12.1 Q-42	385	3.85 Q-42	285	<2.00	183	<1.00 Q-42	<1.0	3.00	8.12	75
MW-13	9/28/2016	<2.5	<2.5	<2.5	148	<2.5	5,090	<2.5	951	<2.5	<10.0	33,600	2.71	158.7
	12/16/2016	<5.0	<5.0	<5.0	509	<5.0	1,020	<5.0	394	<5.0	<10.0	2,220	0.66	-111.4
	3/30/2017	<5.0	<5.0	<5.0	101	<5.0	176	<5.0	57.6	<5.0	<10.0	341	4.36	-61.8
	6/15/2017	<1.0	<1.0	1.2	272	1.6	97.7	<1.0	56.3	4.1	N/A	N/A	1.41	-105.7
	9/27/2017	<1.0	<1.0	5.0	3220	7.3	3.3	<1.0	1.3	25.0	<10.0	55.8	2.16	-103.9
	11/7/2017	<4.2	<4.2	<4.2	1,360	5.4	<4.2	<4.2	<4.2	25.0	11.6	85.5	2.19	-89.2
	3/20/2018	0.879	<0.500	2.55	1,730	5.20	0.396 J	<0.500	2.19	211	191	73.7	5.79	-114.8
	7/1/2018	18.3	0.148 J	5.98	1680	26.9	<0.500	<0.500	0.781	2030	500	52.9	1.13	-31.0
	9/25/2018	1.91	<0.400	<0.400	9.78	1.26	0.410	<0.400	0.800	113	61	20.8	1.22	-146.8
	12/5/2018	<0.400	<0.400	<0.400	6.17	0.682	0.567	<0.400	0.413	55.2	7.1	51.7	7.71	-130.6
	3/19/2019	<0.400	<0.400	<0.400	2.69	<0.400	<0.400	<0.400	0.433	2.02	<1.0	48.5	2.58	-79.2
	6/6/2019	<0.400	<0.400	<0.400	4.62	<0.400	<0.400	<0.400	0.673	2.89	<1.0	21.2	0.02	48.4
	9/26/2019	1.07	<0.400	<0.400	1.94	0.439	<0.400	<0.400	<0.400	2.01	<1.0	34.3	0.50	-261.4
	12/3/2019	1.50	<0.400	<0.400	1.06	0.488	<0.400	<0.400	<0.400	1.42	<1.0	29.1	2.41	-149.4
	3/10/2020	9.19	<0.400	1.97	72.5	2.04	<0.400	<0.400	7.59	134	18.0	20.1	5.76	-122.2
	6/18/2020	0.610	<0.400	<0.400	1.15	<0.400	<0.400	<0.400	1.12	5.28	<1.0	21.9	0.90	182.1
	10/7/2020	18.1	<0.400	<0.400	3.47	0.920	0.470	<0.400	0.87	98.8	120	9.99	0.26	-126.4
	12/8/2020	2.67	<0.400	<0.400	0.606	<0.400	<0.400	<0.400	<0.400	2.30	<1.0	23.2	2.11	-100.5
	3/4/2021	<0.400	<0.400	11.9	3.48	0.494	<0.400	<0.400	0.996	27.4	16.0	12.9	3.06	-120.8
	6/15/2021	<0.400	<0.400	1.12	13.4	0.673	1.01	<0.400	2.56	12.9	1.00	20.9	4.20	10.0
	9/14/2021	<4.00	<4.00	34.3	90.7	<4.00	<4.00	<4.00	<4.00	635	240	8.44	1.68	-84.1
	12/9/2021	0.684	<0.400	<0.400	10.4	<0.400	4.97	<0.400	3.28	6.13	5.50	44.2	0.74	37.5
	3/9/2022	2.00	<0.400	0.650	13.2	0.500	1.07	<0.400	3.37	26.3	16.0	4.38	0.37	157.1
	6/14/2022	<0.400	<0.400	<0.400	1.36	<0.400	1.81	<0.400	0.720	0.4	<1.0	3.24	2.35	162.8
	9/15/2022	29.8	<0.400	15.2	224	4.86	4.10	<0.400	15.7	764	76.0	7.32	0.35	-101.3
	12/6/2022	2.940	<0.400	<0.400	5.37	<0.400	3.40	<0.400	4.53	14.1	17 Q	<1.00	1.45	136.8

Table 5

Interim Action—Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Volatile Organic Compounds										Attenuation Chemistry	Field Parameters	
		1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	1,1,1-Trichloroethane	Trichloroethene	Vinyl chloride	Ethene	Total Organic Carbon	Dissolved Oxygen	Oxidation Reduction Potential
		Concentrations in µg/L										(mg/L)	(mg/L)	(mV)
MW-13 continued	3/16/2023	**22.3 Q-42**	<0.400	**8.08 Q-42**	**145**	**2.90**	**0.680**	<0.400	**1.19**	**268**	**54**	**4.95**	0.29	-359.3
	6/14/2023	**26.1**	<2.00	**20.3**	**313**	**6.50**	**49.4**	<2.00	**117**	**426**	**60**	**4.29**	0.45	-507.7
	9/13/2023	**30.4**	<2.00	**16.0**	**204**	**5.05**	**103**	<2.00	**85.2**	**788**	**150**	**6.73**	0.01	-127.5
	12/13/2023	**0.440**	<0.400	<0.400	**1.57**	<0.400	**22.3**	**0.450**	**15.4**	**0.650**	<1.0	**2.00**	0.19	190.1
	3/6/2024	**37.6**	<2.00	**48.9**	**1400**	**17.3**	**955**	<2.00	**986**	**432**	**11.0**	**3.00**	0.23	32.6
	6/13/2024	<4.00	<4.00	<4.00	**147**	<4.00	**212**	<4.00	**89.4**	**35.9**	**8.2**	**2.10**	0.18	143.8
	9/3/2024	**36.5 Q-42**	<0.400	**29.5 Q-42**	**1,960**	**33.7**	**1,600**	**0.600**	**928**	**321**	**5.6**	**2.90**	0.26	-8.7
	12/3/2024	**1.79**	<0.400	**1.67**	**96.8**	**1.79**	**192**	<0.400	**84.6**	**15.6**	<1.0	**1.80**	6.50	129.5
MW-14	9/27/2016	**7.2**	<0.50	**2.1**	**61.8**	**0.94**	**100**	**1.7**	**218**	<0.50	<10.0	**8.8**	8.1	221.2
	12/13/2016	<0.50	<0.50	<0.50	**1.3**	<0.50	**0.56**	<0.50	**0.97**	<0.50	<10.0	**5.1**	3.1	55.0
	3/27/2017	<0.50	<0.50	**0.57**	**69.2**	<0.50	**14.7**	<0.50	**33.4**	**0.62**	<10.0	**5.1**	3.1	55.0
	6/13/2017	**10**	<1.0	**5.3**	**432**	**2.7**	**58.3**	**2.1**	**204**	**2.5**	N/A	N/A	0.94	61.3
	9/26/2017	**6.2**	<0.84	**2.6**	**279**	**2.8**	**62.4**	**1.1**	**265**	<0.84	<10.0	**3.8**	1.89	80.6
	11/8/2017	**4.5**	<0.84	**2.1**	**306**	**2.2**	**39.3**	<0.84	**160**	**0.91**	<10.0	**8.5**	1.85	106.9
	3/20/2018	**5.42**	<0.500	**3.64**	**500**	**2.56**	**36.0**	**0.579**	**150**	**1.35**	<13.0	**8.76**	0.58	21.7
	6/28/2018	**10.5**	<0.500	**2.54**	**255**	**2.52**	**34.9**	**1.57**	**247**	**0.687**	<10.0	**6.6**	6.59	203.6
	9/26/2018	**12.1**	<4.00	**4.40**	**361**	**4.50**	**84.3**	<4.00	**484**	<4.00	<1.0	**4.56**	1.55	100.1
	12/5/2018	**5.43**	<4.00	<4.00	**333**	<4.00	**83.4**	<4.00	**260**	<4.00	<1.0	**13.4**	4.40	55.3
	3/19/2019	**5.4**	<2.00	<2.00	**223**	**2.06**	**31.4**	<2.00	**178**	<2.00	<1.0	**4.89**	8.17	88.6
	6/6/2019	**1.74**	<0.400	**1.09**	**151**	**0.937**	**19.1**	<0.400	**76.4**	<0.400	<1.0	**6.64**	2.96	80.3
	9/25/2019	**12.5**	<0.400	**4.58**	**264**	**3.60**	**91.8**	**1.47**	**327**	**0.482**	<1.0	**5.06**	0.77	67.5
	12/4/2019	**7.81**	<0.400	**3.17**	**242**	**2.88**	**107**	**0.704**	**351**	<0.400	<1.0	**50.0**	4.41	110.9
	3/11/2020	**6.80**	<2.00	**2.72**	**186**	**2.45**	**85.9**	<2.00	**294**	<2.00	NA	N/A	3.30	108.2
	6/17/2020	**3.50**	<2.00	<2.00	**82.6**	<2.00	**62.6**	<2.00	**197**	<2.00	<1.0	**4.22**	1.16	205.3
	10/8/2020	**14.6**	<2.00	**4.79**	**207**	<2.00	**124**	<2.00	**680**	<2.00	<1.0	**2.79**	0.82	18.1
	12/9/2020	**7.77**	<2.00	**3.04**	**180**	**2.52**	**109**	<2.00	**339**	<2.00	<1.0	**3.05**	1.05	94.4
	3/4/2021	**3.76**	<0.400	**9.39**	**161**	**2.51**	**128**	**1.24**	**410**	<0.400	<1.0	**2.16**	8.52	84.7
	6/15/2021	**0.485**	<0.400	**0.87**	**23.8**	<0.400	**28.3**	<0.400	**80.6**	<0.400	<1.0	**2.44**	7.35	-23.0
	9/14/2021	**11.1**	<0.400	**4.52**	**159**	**3.21**	**156**	**1.43**	**531**	<0.530	<1.0	**2.48**	2.56	-8.4
	12/9/2021	**0.522**	<0.400	**0.465**	**21.6**	<0.400	**34.9**	<0.400	**72.8**	<0.400	<1.0	**3.09**	0.29	132.7
	3/8/2022	**2.37**	<0.400	**1.16**	**39.3**	**0.670**	**54.3**	**0.540**	**194**	<0.400	<1.0	**1.30**	0.71	78.8
	6/16/2022	**0.740**	<0.400	<0.400	**7.36**	<0.400	**16.2**	<0.400	**41.7**	<0.400	<1.0	**1.04**	1.54	65.1
	9/13/2022	**6.76**	<0.400	**2.48**	**115.0**	**2.10**	**109**	**0.800**	**321**	<0.400	<1.0	**2.01**	0.59	48.6
	12/7/2022	**1.10**	<0.400	**0.74**	**27.9**	**0.67**	**59.6**	<0.400	**108**	<0.400	<1.0	**2.69**	2.00	119.8
	3/15/2023	**3.15**	<0.400	**1.57**	**58.8**	**1.59**	**146**	**0.740**	**223**	<0.400	<1.0	**1.43**	0.23	-371.9
	6/13/2023	**1.76**	<0.400	**0.860**	**27.5**	**0.760**	**48.5**	<0.400	**158**	<0.400	<1.0	**1.68**	0.34	-514.4
	9/12/2023	**5.85**	<2.00	**5.15**	**82.7**	**2.45**	**119**	<2.00	**324**	<1.00	<1.0	**1.71**	0.26	162.4
	12/14/2023	<0.400	<0.400	**0.400**	**6.75**	<0.400	**26.6**	<0.400	**48.6**	<.200	<1.0	–	1.12	135.3
	3/5/2024	**4.30**	<2.00	**2.05**	**42.0**	<2.00	**90.7**	<2.00	**262**	<1.00	<1.0	**1.30**	0.22	44.7
	6/12/2024	**0.410**	<0.400	<0.400	**5.75**	<0.400	**20.6**	<0.400	**39.8**	<0.200	<1.0	**1.00**	0.69	182.3
	9/4/2024	**6.25**	<0.400	**2.63**	**96.4**	**2.05**	**128**	**0.780**	**266**	<0.200	<1.0	**1.90**	0.56	137.9
	12/4/2024	**4.28**	<0.400	**2.82**	**69.5**	**1.86**	**144**	**0.570**	**239**	<0.200	<1.0	**1.70**	6.47	152.6
MW-19	9/26/2016	**10.4**	<5.0	**11.0**	**235**	<5.0	**1,520**	**14.5**	**592**	**10.1**	<10.0	**1.9**	3.27	174.4
	12/12/2016	**78.7**	<5.0	**14.2**	**1,030**	**11.6**	**1,730**	**15.5**	**975**	**31.9**	<10.0	**8.1**	9.22	175.2
	3/28/2017	**214**	<5.0	**26.7**	**1,990**	**21.5**	**755**	**19.9**	**896**	**63.2**	<10.0	**4.8**	2.5	35.8
	6/14/2017	**41.8**	<2.5	**15.8**	**486**	**6.2**	**566**	**8.2**	**506**	**17.2**	N/A	N/A	1.54	-22.7
	9/26/2017	**11.1**	<2.5	**28.9**	**1,160**	**5.4**	**3,710**	**40.4**	**1,480**	**111**	**44.3**	**8.1**	1.92	185.2
	11/9/2017	**104**	**0.75 J**	**24.9**	**1,660**	**24.0**	**1,530**	**20.2**	**1,020**	**115**	**11.8**	**6.9**	2.26	-75.2
	3/21/2018	**59.0**	**0.225 J**	**31.4**	**2,430**	**11.2**	**1,250**	**17.0**	**1,340**	**413**	**32.3**	**29.9**	1.43	135.6
	6/28/2018	**81.6**	<0.500	**36.3**	**4190**	**18.4**	**177**	**11.7**	**191**	**799**	**271**	**58.2**	2.18	-30.8
	9/25/2018	<0.400	<0.400	<0.400	**1,960**	<0.400	**3,830**	<0.400	**2,270**	**116**	**9.8**	**16.8**	1.30	57.4
	12/5/2018	**91.8**	**0.453**	**39.3**	**1,750**	**18.4**	**3,090**	**21.8**	**1,490**	**79.0**	**2.1**	**10.5**	5.11	-29.9
	3/20/2019	**49.7**	<8.00	**39.5**	**1,910**	**13.9**	**2,970**	**23.7**	**2,090**	**75.8**	**2.1**	**19.1**	4.26	108.6
	6/7/2019	**108**	<10.0	**52.6**	**1,910**	**20.4**	**894**	<10.0	**793**	**80.8**	**2.9**	**9.34**	0.72	61
	9/26/2019	**41.9**	<4.00	**40.2**	**1,160**	**12.1**	**4,340**	**30.6**	**1,620**	**39.1**	**3.1**	**5.38**	1.73	-172.4
	12/3/2019	**57.4**	<20.0	**28.6**	**1,250**	<20.0	**1,670**	<20.0	**1,200**	**25.6**	<1.0	**6.88**	6.52	205.1
	3/11/2020	**35.4**	<10.0	**60.4**	**1,450**	**14.8**	**4,730**	**29.1**	**2,010**	**154**	**7.5**	**13.6**	3.01	87.0
	6/18/2020	**32.5**	<20.0	**27.5**	**956**	**5.60**	**1,080**	**9.40**	**697**	**96.3**	**5.0**	**40.1**	3.12	162.1
	10/7/2020	**46.9**	<20.0	**58.8**	**1,510**	<20.0	**8,110**	**39.0**	**2,920**	**53.8**	<1.0	**19.7**	1.1	-83.5
	12/8/2020	**70.8**	<40.0	<40.0	**1,330**	<40.0	**3,880**	<40.0	**1,210**	**117**	<1.0	**17.3**	2.36	106.3
	3/3/2021	**51.0**	<0.4	**41.4**	**1,120**	**11.4**	**4,470**	**27.8**	**1,880**	**53.6**	<1.0	**5.84**	6.47	24.6
	6/16/2021	**28.2**	<10	**58**	**1,260**	**15.1**	**4,770**	**22.5**	**1,190**	**80.8**	**1.3**	**7.63**	2.95	391.7
	9/15/2021	**19.6**	<10.0	**53.6**	**922**	<10.0	**6,790**	**60.8**	**2,540**	**45.1**	**1.4**	**4.94**	1.49	32.9
	12/8/2021	**226**	<40.0	**86.0**	**3,690**	<40.0	**9,310**	**55.3**	**3,420**	**117**	<1.0	**5.48**	0.33	155.3
	3/9/2022	**71.0**	<20.00	**31.0**	**1,240**	<20.0	**3,500**	**20.5**	**942**	**33.0**	<1.0	**4.33**	0.31	210.9
	6/14/2022	**0.940**	<0.400	<0.400	**14.6**	<0.400	**46.2**	<0.400	**16.5**	**0.950**	<1.0	**2.20**	4.56	195.4
	9/15/2022	**16.8**	<0.400	**44.8**	**1050**	**5.79**	**6,010**	**48.2**	**1,100**	**196**	**1.30**	**5.18**	0.41	226.4
	12/6/2022	**69.0**	<20.0	**36.5**	**1,130**	<20.0	**4,340**	**25.0**	**1,390**	**36.5**	<1.0	**5.40**	1.62	60.2
	3/14/2023	**20.5**	<2.00	**36.2**	**767**	**12.6**	**5,260**	**32.2**	**1,840**	**45.8**	<1.0	**5.63**	0.22	-332.1
	6/14/2023	**30.0**	<8.00	**22.8**	**813**	**11.0**	**2,290**	**12.4**	**1,060**	**25.8**	<1.0	**3.85**	0.34	-549.9
	9/14/2023	<20.0	<20.0	**27.0**	**387**	<20.0	**6120**	**33.5**	**1130**	**23.0**	<1.0	**3.18**	0.07	110.5
	12/15/2023	**158**	<20.0	**28.0**	**1500**	<20.0	**1830**	<20.0	**856**	**58.0**	**1.3**	**3.90**	0.19	93.5
	3/6/2024	**54.0**	<20.0	**26.6**	**1010**	**15.4**	**2,420**	**14.2**	**1,270**	**87.8**	<1.0	**4.00**	0.27	25.7
	6/12/2024	**66.3**	<4.00	**19.9**	**1150**	**10.9**	**2600**	**12.6**	**894**	**39.8**	<1.0	**4.40**	3.62	114.8
	9/3/2024	<20.0	<20.0	**38.0**	**582**	<20.0	**9,000**	**55.0**	**1,630**	**59.5**	**1.1**	**2.20**	0.33	-20.0
	12/3/2024	**57.0**	<4.00	**17.5**	**752**	**7.20**	**2,510**	**11.0**	**739**	**18.6**	<1.0	**4.60**	7.04	162.8
MW-26	9/26/2016	**3.9**	<0.50	**1.1**	**61.1**	**1.6**	**160**	**2.4**	**288**	<0.50	N/A	N/A	1.64	236.7
	12/13/2016	**8.9**	<0.50	**2.4**	**85.9**	**2.0**	**167**	**3.3**	**410**	<0.50	<10.0	**2.4**	0.88	102.4
	3/29/2017	<0.50	<0.50	<0.50	**170**	<0.50	**214**	<0.50	**452**	<0.50	<10.0	**1.3**	1.34	165.2
	6/13/2017	**6.7**	<1.0	**1.9**	**113**	**2.0**	**160**	**2.1**	**311 E, J**	**0.65**	NA	N/A	3.80	74.6
	9/26/2017	**5.1**	<1.0	**1.0**	**192**	**2.1**	**68.4**	**0.83**	**192**	**0.98**	<10.0	**7.1**	5.56	77.3
	11/8/2017	**4.8**	<0.50	**1.5**	**204**	**2.3**	**88.1**	**1.0**	**170**	**1.8**	<10.0	**5.9**	1.75	99.8
	3/20/2018	**4.85**	<0.500	**1.35**	**157**	**1.85**	**108**	**1.20**	**190**	**1.75**	<13.0	**5.84**	7.28	156.4
	6/29/2018	**5.05**	<0.500	**1.46**	**114**	**1.88**	**138**	**1.94**	**221**	**1.02**	<10.0	**3.9**	0.88	224.6
	9/24/2018	**4.24**	<0.400	**1.24**	**141**	**2.14**	**117**	**1.19**	**233**	**1.18**	<1.0	**5.13**	4.17	152.8
	12/5/2018	**3.02**	<0.400	**1.09**	**147**	**1.89**	**139**	**0.846**	**210**	**0.85**	<1.0	<1.00	4.16	36.5
	3/22/2019	**7.74**	<0.800	**2.18**	**142**	**3.18**	**139**	**2.09**	**383**	<0.800	<1.0	**3.48**	1.12	100.2
	6/3/2019	**5.75**	<2.00	<2.00	**92.2**	**2.35**	**148**	**2.10**	**336**	<2.00	<1.0	**2.76**	5.68	69.1
	9/26/2019	**5.14**	<2.00	<2.00	**104**	**2.6**	**133**	<2.00	**272**	<2.00	<1.0	**4.38**	0.40	-6.1
	12/3/2019	**2.63**	<2.00	<2.00	**95**	**<2.00**	**137**	<2.00	**216**	<2.00	<1.0	**5.56**	3.12	49.2
	3/11/2020	**3.65**	<2.00	<2.00	**59.7**	<2.00	**79.1**	<2.00	**205**	<2.00	<1.0	**3.72**	10.81	72.3
	6/17/2020	**5.16**	<0.800	**1.38**	**64.2**	**1.90**	**143**	**2.20**	**299**	<0.800	N/A	N/A	2.19	-17.1
	10/7/2020	**2.64**	<2.00	<2.00	**62.8**	<2.00	**118**	<2.00	**208**	<2.00	<1.0	**4.06**	9.73	109.3
	12/9/2020	**3.34**	<2.00	<2.00	**64.3**	<2.00	**147**	<2.00	**218**	<2.00	<1.0	**4.04**	3.99	119.1
	3/4/2021	**1.89**	<0.4	**5.92**	**89.4**	**2.39**	**151**	**2.04**	**320**	<0.4	<1.0	**2.87**	1.97	141.5
	6/17/2021	**1.43**	<1.0	**4.35**	**72.3**	**1.92**	**132**	**2.06**	**366**	<1.0	<1.0	**3.42**	6.13	226.5

Table 5

Interim Action—Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Volatile Organic Compounds										Attenuation Chemistry	Field Parameters	
		1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	1,1,1-Trichloroethane	Trichloroethene	Vinyl chloride	Ethene	Total Organic Carbon	Dissolved Oxygen	Oxidation Reduction Potential
		Concentrations in µg/L										(mg/L)	(mg/L)	(mV)
MW-26 continued	9/15/2021	**3.33**	<2.00	<2.00	**71.7**	<2.00	**162**	<2.00	**257**	<2.00	<1.0	**4.28**	0.33	225
	12/7/2021	**2.74**	<2.00	<2.00	**43.5**	<2.00	**205**	<2.00	**255**	<2.00	<1.0	**2.63**	0.76	219.2
	3/8/2022	**2.56**	<0.400	**0.930**	**44.1**	**1.18**	**184**	**1.81**	**247**	<0.400	<1.0	**2.23**	1.12	170.9
	6/15/2022	**4.30**	<2.00	<2.00	**63.8**	<2.00	**283**	**2.40**	**362**	<2.00	<1.0	**1.23**	3.13	143.6
	9/14/2022	**2.40**	<2.00	<2.00	**31.9**	<2.00	**87.9**	<2.00	**151**	<2.00	<1.0	**1.63**	7.53	265.3
	12/8/2022	**1.86**	<0.800	<0.800	**28.1**	<0.800	**129**	**0.98**	**156**	<0.800	<1.0	**2.00**	2.19	193.2
	3/15/2023	**2.70**	<2.00	<2.00	**35.9**	<2.00	**161**	<2.00	**203**	<2.00	<1.0	**2.21**	0.32	-347.1
	6/14/2023	**3.50**	<2.00	<2.00	**43.7**	<2.00	**141**	<2.00	**219**	**3.05**	<1.0	**1.82**	0.36	-509.8
	9/14/2023	**3.25**	<2.00	<2.00	**44.3**	<2.00	**121**	<2.00	**208**	<1.00	<1.0	**2.05**	0.34	151.5
	12/15/2023	**3.20**	<0.800	**0.880**	**48.7**	**1.10 Q**	**211**	**1.48**	**253**	<0.400	<1.0	**2.00**	0.28	126.5
	3/6/2024	**2.60**	<1.00	<1.00	**31.0**	<1.00	**133**	**1.38**	<1.25	<0.500	<1.0	**1.60**	1.01	52.7
	6/14/2024	**2.38**	<1.00	<1.00	**37.4**	**1.32**	**160**	**1.40**	**204**	<0.500	<1.0	**1.90**	0.37	152.7
	9/4/2024	**2.74**	<0.800	**0.960**	**41.4**	**1.42**	**116**	**1.28**	**182**	<0.400	<1.0	**2.20**	0.70	113.9
	12/3/2024	**3.02**	<1.00	**1.15**	**46.6**	**1.90**	**193**	**1.88**	**237**	<0.500	<1.0	**1.70**	6.07	149.7
MGMS1-3(43)	9/26/2016	**81.9**	<8.3	**13.5**	**1,980**	**24.2**	**230**	<8.3	**366**	**52**	<10.0	**9.0**	5.09	184.2
	12/16/2016	**92.6**	<8.4	**9.5**	**1,810**	**20.1**	**64.1**	<8.4	**171**	**239**	<10.0	**6.2**	6.06	-17.5
	3/31/2017	**90.8**	<8.4	**12.5**	**1,430**	**15.2**	**45.8**	<8.4	**119**	**348**	**14.8**	**7.0**	3.02	-40.7
	6/12/2017	**173**	<8.3	**16.7**	**2,620**	**18.7**	**24.4**	<8.3	**116**	**681**	N/A	N/A	1.17	-109.8
	9/29/2017	**60.1**	<2.5	**6.9**	**901**	**12.9**	**70.7**	<2.5	**126**	**117**	<10.0	**6.1**	8.73	90.7
	11/7/2017	**153**	<2.5	**13.7**	**2,350 J**	**26.6**	**108**	<2.5	**211**	**181**	<10.0	**5.6**	2.04	74.5
	3/22/2018	**192**	<0.500	**18.0**	**2,450**	**34.9**	**80.1**	**0.780**	**278**	**236**	<13.0	**13.8**	10.71	-11.7
	7/1/2018	**116**	<0.500	**13.8**	**1,880**	**32.8**	**107**	**0.588**	**246**	**118**	<10.0	**7.5**	3.48	-1.6
	9/28/2018	**141**	<8.00	**27.8**	**3,150**	**47.4**	**252**	<8.00	**528**	**134**	<1.0	**5.52**	1.98	97.4
	12/4/2018	**148**	<0.400	**22.5**	**2,750**	**48.1**	**146**	**1.08**	**388**	**129**	<1.0	**6.06**	8.31	-2.0
	3/26/2019	**160**	<8.00	**22.3**	**3,210**	**42.2**	**145**	<8.00	**372**	**105**	<1.0	**5.58**	0.96	-10.1
	6/7/2019	**169**	<8.00	**26.5**	**3,090**	**40.8**	**115**	<8.00	**315**	**145**	<1.0	**6.73**	1.24	-12.5
	9/27/2019	**156**	<8.00	**30.5**	**3,240**	**53.9**	**212**	<8.00	**434**	**113**	<1.0	**6.32**	0.42	-295.7
	12/4/2019	**124**	<8.00	**17.5**	**2,860**	**40.9**	**162**	<8.00	**398**	**11.8**	<1.0	**5.60**	6.76	-32.5
	3/11/2020	**157**	<10.0	**29.7**	**3,230**	**60.4**	**228**	<10.0	**495**	**157**	**1.4**	**4.82**	8.24	-40.1
	6/16/2020	**114**	<10.0	**21.8**	**2,520**	**31.5**	**116**	<10.0	**264**	**152**	**3.4**	**6.56**	1.3	166.4
	10/6/2020	**124**	<10.0	**26.0**	**2,980**	**45.5**	**219**	<10.0	**507**	**48.2**	<1.0	**5.30**	1.07	127.5
	12/10/2020	**131**	<20.0	<20.0	**2,620**	**34.3**	**151**	<20.0	**294**	**40.6**	<1.0	**5.51**	1.26	95.2
	3/4/2021	**29.0**	<4	**128**	**2,840**	**38.5**	**135**	<4.00	**388**	**161**	<1.0	**5.64**	1.46	-22.8
	6/16/2021	**20.8**	<10	**103**	**2,690**	**34.9**	**90.5**	<10	**297**	**153**	**1.6**	**6.53**	0.58	-71.8
	9/14/2021	**152**	<10.0	**31.2**	**3,550**	**49.6**	**170**	<10.0	**464**	**61.6**	<1.0	**5.05**	0.42	113
	12/7/2021	**87.6**	<10.0	**17.2**	**2,280**	**61.2**	**139**	<10.0	**338**	**177**	**2.9**	**6.57**	0.3	124
	3/10/2022	**114**	<4.00	**23.5**	**2,250**	**28.7**	**53.6**	<4.00	**209**	**322**	**7.2**	**6.10**	0.49	224.3
	6/15/2022	**74.5**	<20.0	<20.0	**1250**	<20.0	**43.5**	<20.0	**140**	**572**	**49**	**7.53**	1.09	74.8
	9/12/2022	**124**	<4.00	**27.9**	**2,960**	**55.2**	**193**	<4.00	**471**	**176**	<1.0	**4.64**	0.22	7.3
	12/8/2022	**104**	<10.0	**25**	**2630**	**39.8**	**175**	<10.0	**385**	**41.2**	<1.0	**5.24**	0.22	-33.5
	3/16/2023	**113**	<4.00	**22.6**	**2,920**	**45.9**	**161**	<4.00	**428**	**42.6**	<1.0	**4.84**	0.78	167
	6/13/2023	**104**	<8.00	**21.0**	**2,520**	**35.6**	**133**	<8.00	**370**	**141**	<1.0	**5.18**	0.31	78.6
	9/12/2023	**91.2**	<8.00	**22.4**	**2,350**	**46.6**	**126**	<8.00	**339**	**39.4**	<1.0	**4.48**	0.32	84.7
	12/11/2023	**113**	<8.00	**23.2**	**2630**	**42.8**	**160**	<8.00	**390**	**145 Q**	**1.2**	**5.30**	0.31	54.9
	3/6/2024	**119**	<8.00	**23.8**	**3,090**	**44.6**	**170**	<8.00	**446**	**78.8**	<1.0	**4.20**	0.43	213.0
	6/12/2024	**103**	<4.00	**18.5**	**2150**	**40.7**	**98.3**	<4.00	**306**	**36.6**	<1.0	**4.60**	0.14	219.8
	9/4/2024	**82.2**	<8.00	**20.2**	**2,200**	**37.2**	**140**	<8.00	**304**	**11.2**	<1.0	**4.20**	0.20	-14.8
	12/3/2024	**42.6**	<8.00	**8.60**	**955**	**21.6**	**66.6**	<8.00	**168**	**14.8**	<1.0	**2.00**	8.36	83.1
MGMS3-4(40)	9/26/2016	**4.5**	<0.50	**0.60**	**226**	**2.0**	**1.7**	<0.50	**1.4**	**52.1**	<10.0	**36.2**	2.7	165.3
	12/16/2016	**1.0**	<0.50	<0.50	**1.3**	**0.97**	**0.63**	<0.50	<0.50	**0.88**	**55.2**	**86.9**	5.95	-9.20
	3/28/2017	**22.5**	**0.68**	**3.3**	**1,050**	**6.0**	**1.4**	<0.50	**0.60**	**323**	**68.1**	**5.0**	1.57	-125.8
	6/12/2017	**3.3**	<0.50	<0.50	**1.7**	<0.50	**0.97**	<0.50	<0.50	<0.50	N/A	N/A	5.22	-94.1
	9/26/2017	**1.1**	<1.0	<0.50	**0.69**	<0.50	**0.79**	<0.50	<0.50	<0.50	**22.8**	**3.8**	10.02	-82.8
	11/10/2017	**4.3**	<0.50	<0.50	**8.0**	<0.50	**0.85**	<0.50	<0.50	**15.8**	**54.8**	**6.5**	0.93	-111.6
	3/22/2018	**8.57**	<0.500	<0.500	**9.81**	**0.179 J**	**1.45**	<0.500	**0.528**	**39.8**	**242**	**8.74**	6.95	-130.8
	7/1/2018	**1.39**	<0.500	<0.500	**7.58**	<0.500	**0.498 J**	<0.500	**0.169 J**	**8.98**	**27.4**	**4.6**	3.18	-28.6
	9/28/2018	**9.08**	<0.400	**0.560**	**143**	<0.400	**0.970**	<0.400	<0.400	**129**	**33**	**4.38**	6.62	-61.7
	12/10/2018	**1.54**	<0.400	<0.400	**1.77**	<0.400	**0.603**	<0.400	<0.400	**5.44**	**4.9**	**3.42**	1.05	-122.9
	3/26/2019	**8.36**	<0.400	**0.709**	**117**	<0.400	**0.680**	<0.400	<0.400	**151**	**38**	**4.00**	0.74	92.6
	6/3/2019	**7.22**	<0.400	**0.440**	**74.7**	<0.400	**0.530**	<0.400	<0.400	**157**	**45**	**3.66**	0.89	-24.3
	9/27/2019	**5.09**	<0.400	**0.413**	**80.5**	<0.400	**0.578**	<0.400	<0.400	**106**	**8.4**	**2.86**	0.35	-182.8
	12/4/2019	**1.67**	<0.400	<0.400	**2.66**	<0.400	**1.35**	<0.400	<0.400	**5.79**	<1.0	**2.69**	2.92	-91.1
	3/12/2020	**12.8**	<0.400	**2.43**	**418**	**0.638**	**0.529**	<0.400	**0.439**	**330**	**40**	**4.00**	3.98	-136.4
	6/16/2020	**3.71**	<0.400	<0.400	**138**	<0.400	**0.660**	<0.400	<0.400	**134**	**12.0**	**3.08**	0.48	186.5
	10/6/2020	**4.38**	<0.400	<0.400	**67.2**	<0.400	**0.850**	<0.400	<0.400	**84.0**	**4.1**	**3.15**	0.56	-84.6
	12/10/2020	<8.00	<8.00	<8.00	**125**	<8.00	<8.00	<8.00	<8.00	**155**	**16**	**3.49**	0.70	-93.0
	3/4/2021	<0.400	<0.400	**6.69**	**111**	<0.400	**0.698**	<0.400	<0.400	**137**	**13**	**3.35**	2.96	-137.2
	6/16/2021	<0.400	<0.400	**4.74**	**16.3**	<0.400	**0.486**	<0.400	<0.400	**109**	**6.2**	**2.87**	0.74	-152.3
	9/16/2021	**2.86**	<0.400	<0.400	**9.61**	<4.00	**0.547**	<0.400	<0.400	**30.7**	**1.2**	**2.69**	2.01	31.7
	12/10/2021	**2.32**	<0.400	<0.400	**6.02**	<0.400	**0.509**	<0.400	<0.400	**25.7**	<1.0	**2.54**	0.37	-80.3
	3/10/2022	**5.70**	<0.400	<0.400	**102**	<0.400	**0.510**	<0.400	<0.400	**122**	**5.8**	**2.86**	0.66	131.8
	6/14/2022	**12.8**	<0.400	**1.85**	**280**	**0.610**	**0.570**	<0.400	**2.15**	**292**	**28**	**3.80**	0.87	-2.0
	9/14/2022	**7.85**	<2.00	<2.00	**344**	<2.0	<2.00	<2.00	<2.00	**171**	**4.2**	**3.02**	3.40	-65.7
	12/6/2022	**3.61**	<0.400	<0.400	**8.19**	<0.400	**0.540**	<0.400	<0.400	**58.5**	**2.8 Q**	–	1.55	-130.1
	3/16/2023	**10.2**	<4.00	<4.00	**394**	<4.00	<4.00	<4.00	<4.00	**298**	**5.7**	**3.92**	0.89	-124.0
	6/15/2023	**7.81**	<4.00	<4.00	**56.9**	<4.00	<4.00	<4.00	<4.00	**92**	**6.2**	**3.37**	0.07	-132.4
	9/11/2023	**3.95**	<0.400	<0.400	**32.3**	<0.400	**0.420**	<0.400	<0.400	**67.4**	**1.6**	**2.32 Q**	0.27	-127.3
	12/13/2023	**7.99**	**0.450**	<0.400	**32.6**	<0.400	**0.500**	<0.400	<0.400	**199**	**17**	**2.00**	0.23	-89.5
	3/4/2024	**7.74**	<0.400	**0.780**	**193**	**0.480**	**1.34**	<0.400	**0.630**	**197**	**4.90**	**2.80**	0.26	-61.4
	6/10/2024	**3.74**	<0.400	<0.400	**1.95**	<0.400	<0.400	<0.400	<0.400	**53.4**	**2.7**	**2.10**	2.3	-87.4
	9/4/2024	**3.54**	<0.400	<0.400	**44.8**	<0.400	**0.540**	<0.400	<0.400	**108**	**5.6**	**2.40**	0.48	-110.2
	12/2/2024	**2.45**	<0.400	<0.400	**0.710**	<0.400	**0.500**	<0.400	<0.400	**12.5**	**1.1**	**1.50**	7.93	20.3

Notes:

1. µg/L (ppb) = Micrograms per liter (parts per billion)
2. mg/L = milligrams per liter
3. mV = millivolts
4. N/A = Not analyzed
5. -- = Not sampled
6. B = The analyte was found in the associated method blank.
7. J = Value is estimated
8. Ethene is analyzed by EPA Method RSK-175M. All other HVOCs were analyzed by EPA Method 8260.
9. **Bold** value represents detected concentration of listed analyte.
10. < = Not detected at or above the specified laboratory method reporting limit (MRL).
11. E = Analyte concentration exceeded the calibration range. Reported result is estimated.
12. **'Q' qualifiers indicate that spike recovery and/or RPD for this analyte is outside acceptance limits.**
13. Main sample values are shown. Main and duplicate sample values are shown on Table 3.
14. Q = Analyte exhibited high recovery in the LCS. Results may contain a high bias.

Table 6

North SVE System—Operation Monitoring

NuStar Vancouver Facility

Vancouver, Washington

Date	Branch 4		Branch 5		Post Blower		Notes
	PID	Pressure	PID	Pressure	PID	Pressure	
10/12/2011	0.0	-13.0	0.0	-12.0	7.2	0.1	--
11/2/2011	--*	-25.0	6.7	-25.0	--	--	--
11/17/2011	0.8	-16.0	6.9	-16.0	7.0	0.1	PID complications; Routinely reported error code. Potential moisture issues.
12/5/2011	--	--	--	--	--	--	System off on arrival and would not restart. Contractor identified electrical issues.
12/14/2011	--	--	--	--	--	--	System not operating, pending blower replacement. Blower reinstalled January 10, 2012.
1/23/2012	--	-15.0	6.5	-15.0	3.9	0.1	Water in sample port of Branch 4, could not get PID reading.
2/17/2012	0.1	-11.0	0.9	-11.0	2.9	1.0	--
3/22/2012	6.8	-12.0	5.4	-12.0	1.3	0.05	--
4/26/2012	1.3	-4.2	6.4	-4.0	1.0	0.05	--
5/23/2012	0.1	-3.4	3.2	-3.4	0.4	--	--
6/20/2012	0.0	-2.8	0.0	-2.7	0.1	0.2	--
7/24/2012	3.2	-3.2	9.2	-3.2	0.2	0.4	Used Rental PID.
8/22/2012	0.4	-2.4	1.0	-2.4	0.0	0.2	--
9/25/2012	0.1	-1.7	0.5	-1.7	0.0	0.2	Used ACA PID #3.
10/29/2012	--	--	--	--	--	--	System not operating.
11/26/2012	8.4	-4.0	9.2	-4.0	3.0	0.05	Used ACA PID #3.
12/21/2012	0.1	-0.63	0.0	-0.62	0.0	0.1	Used ACA PID #3.
1/24/2013	10.4	-0.45	0.0	-0.15	0.5	0.1	Used ACA PID #3.
2/28/2013	37.1	-0.22	2.1	-0.15	1.3	0.1	Used ACA PID #3.
3/25/2013	--	--	--	--	--	--	System not operating.
4/29/2013	--	--	--	--	--	--	System not operating.
5/24/2013	0.4	-23.0	0.1	-23.0	7.9	0.1	Used APEX PID #3.
6/25/2013	--	-20.0	--	-20.0	--	0.1	--
7/25/2013	6.6	-20.0	13.3	-20.0	6.1	0.1	Used APEX PID #3.
8/27/2013	1.9	-18.0	16.9	-18.0	6.8	0.1	Used APEX PID #3.
9/30/2013	0.0	-20.0	0.0	-20.0	2.1	0.1	Used APEX PID #3.
10/24/2013	1.3	-20.0	1.2	-20.0	2.3	0.1	Used APEX PID #3.
11/25/2013	0.3	-23.0	0.2	-23.0	1.1	0.1	Used APEX PID #3.
12/27/2013	1.0	-21.0	0.6	-21.0	2.6	0.1	Used APEX PID #1
1/29/2014	0.2	-20.0	0.1	-20.0	0.0	3.0	--
2/24/2014	2.4	-20.0	2.6	-20.0	2.6	9.0	Used APEX PID #3.
3/31/2014	0.3	-20.0	1.0	-20.0	0.2	1.0	Used APEX PID #4
4/29/2014	2.0	-20.0	1.4	-20.0	0.0	2.0	--
5/27/2014	2.0	-20.0	1.3	-20.0	0.9	2.0	--
7/3/2014	0.5	-20.0	0.3	-18.0	0.4	4.0	--
7/28/2014	4.0	-20.0	2.6	-19.0	0.1	3.0	Used APEX PID #3.
8/25/2014	--	-20.0	--	-19.0	3.7	3.5	Used APEX PID #3.
9/30/2014	2.1	-17.0	0.6	-17.0	1.7	--	--
10/27/2014	0.4	-26.0	1.4	-26.0	2.3	2.0	Used APEX PID #3.
11/25/2014	0.3	-21.0	1.5	-20.0	0.5	--	Used APEX PID #3.
12/29/2014	20.2	-25.0	32.1	-25.0	--	2.0	Used APEX PID #3.
1/26/2015	2.0	-25.0	3.2	-25.0	0.7	3.0	Used APEX PID #3. Knockout drum emptied.
2/26/2015	0.0	-22.0	0.0	-25.0	0.0	0.1	--
3/30/2015	0.0	-23.0	0.2	-27.0	0.0	0.4	Used APEX PID #3.
4/24/2015	0.0	-23.0	0.2	-27.0	0.0	0.4	--
5/28/2015	5.5	-26.0	4.8	-26.0	5.5	0.05	--
7/29/2015	7.5	-17.0	0.3	-17.0	0.5	0.10	Used APEX PID #3.
8/31/2015	0.0	-11.0	0.0	-10.0	0.9	0.05	Used APEX PID #3.
9/28/2015	0.6	-12.0	2.4	-12.0	1.8	0.00	Used APEX PID #3.
10/29/2015	0.5	-12.0	0.3	-13.0	2.9	1.00	Used APEX PID #3.
11/30/2015	0.0	-13.0	0.2	-13.0	0.0	2.00	Used APEX PID #3.
12/28/2015	0.0	-17.0	9.0	-18.0	0.0	0.10	Used APEX PID #3.
2/1/2016	30.4	-28.0	0.0	-25.0	2.6	3.00	Used APEX PID #3.
2/29/2016	0.0	-13.0	0.0.	-13.0	0.0	0.10	Used APEX PID #3.
3/29/2016	0.0	-12.0	0.0	-12.0	0.0	0.20	Used APEX PID #3.
4/27/2016	0.2	-11.0	0.0	-5.0	0.0	1.00	Used APEX PID #3. North SVE system turned off.
5/25/2016	--	--	--	--	--	--	North SVE system intentionally turned off for approx . 60 days to evaluate system efficiency.
6/28/2016	20.4	-23.0	14.3	-23.0	0.9	0.10	Used APEX PID #3.
7/26/2016	0.0	-20.0	0.4	-20.0	0.6	1.20	Used APEX PID #3.
9/29/2016	1.0	-16.0	0.0	-15.0	0.0	0.10	Used APEX PID #3.
10/25/2016	0.4	-14.0	0.0	-14.0	0.0	0.10	Used APEX PID #3.
11/28/2016	0.0	-12.0	0.0	-12.0	0.0	0.10	Used APEX PID #3.
12/28/2016	0.0	-12.0	0.0	-12.0	0.0	0.10	Used APEX PID #3.
1/30/2017	0.0	-5.0	0.0	-5.0	0.0	0.10	Used APEX PID #3.
2/28/2017	12.5	-15.0	8.7	-14.0	1.0	0.10	--
3/28/2017	0.0	-20.0	0.0	-20.0	0.1	0.00	Used Mini Rae 3000.
4/24/2017	0.8	-20.0	0.0	-20.0	2.0	0.10	Used APEX PID #3.

Notes:

1. PID = photionization detector
2. PID readings in parts per million (ppm), calibrated to 100 ppm isobutylene.
3. Pressure readings in inches of water, measured with magnehelic gauge.
4. -- = Not available; branch not in use or no measurement collected during the site visit.
5. * = During the 11/2/2011 monitoring event, PID malfunctioned while monitoring Branch 4. Instrument readings would not stabilize.

Table 7

North SVE System—Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Sampling Location	Sample ID	Date	1,1,1-Trichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	Methylene Chloride	Tetrachloro-ethene	Toluene	Trichloro-ethene	Vinyl Chloride
			Concentrations in µg/m^3								
System Effluent	North_EFF-20111012	10/12/2011	**69**	<16	**160**	<16	<14	**9,500**	**16**	**700**	<10
System Effluent	Post Blower_North_012312	1/23/2012	<170	<120	<120	<120	<110	**16,000**	<120	**530**	<79
System Effluent	North_Effluent_0121712	2/17/2012	<140	<100	<100	<100	<91	**11,000**	<99	**300**	<67
System Effluent	North Effluent-032212	3/22/2012	<28	<54	<27	<27	<23	**6,600**	<25	**140**	<8.6
System Effluent	North_Effluent_062012	6/20/2012	<1.6	<3.2	<1.6	<1.6	**5.3**	**250**	<1.5	**15**	<0.51
System Effluent	North_Effluent_082212	8/22/2012	<1.6	<3.2	<1.6	<1.6	<1.4	**140**	<1.5	**11**	<0.51
System Effluent	North_Effluent_112612	11/26/2012	**39**	<14	**52**	<7.1	<6.2	**22,000**	<6.8	**510**	<4.6
System Effluent	North_Effluent_122112	12/21/2012	<31	<59	<30	<30	<26	**3,500**	<28	**61**	<19
System Effluent	North_Effluent_022813	2/28/2013	<36	<70	<35	<35	<31	**4,400**	<33	**160**	<22
System Effluent	SVE North	5/24/2013	<240	<170	**280**	<170	<380	**23,000**	<160	**1,100**	<110
System Effluent	SVE North	6/25/2013	**76**	<51	**88**	<51	<110	**13,000**	<49	**730**	<33
System Effluent	SVE North	8/27/2013	<150	<110	<110	<110	<230	**17,000**	<100	**800**	<69
System Effluent	SVE North Effluent	10/24/2013	<82	<60	<60	<60	<130	**10,000**	<57	**570**	<39
System Effluent	SVE North Effluent	12/27/2013	<44	<32	<32	<32	<69	**7,000**	<30	**470**	<20
System Effluent	SVE North Effluent	1/29/2014	<10	<40	**22**	<40	<87	**1,300**	<38	**110**	<26
System Effluent	SVE_North_Post Carbon	2/24/2014	**55**	<83	**68**	<41	<36	**8,700**	<39	**760**	<27
System Effluent	SVE North Post Carbon	3/5/2014	**25**	<39	**29**	<20	<17	**4,600**	<19	**300**	<13
System Effluent	VCP_North_Effluent	3/31/2014	**19**	<13	**18**	<13	<28	**3,500**	<12	**200**	<8.2
System Effluent	North_SVE_Effluent_042914	4/29/2014	**22**	<15	**17**	<15	<33	**3,500**	<14	**220**	<9.8
System Effluent	North_SVE_Effluent_052714	5/27/2014	<31	<23	<23	<23	<50	**4,100**	<22	**280**	<15
System Effluent	North_VCP_Effluent	7/3/2014	<23	<17	**20**	<17	<37	**4,500**	<16	**290**	<11
System Effluent	SVE North	7/28/2014	<120	<88	**<88**	<88	<190	**7,200**	<84	**460**	<22
System Effluent	North SVE	9/30/2014	<48	<35	**48**	<35	<76	**7,300**	<33	**480**	<22
System Effluent	SVE North Effluent	10/27/2014	<110	<80	<80	<80	<180	**15,000**	<76	**410**	<52
System Effluent	SVE North 11.25.14	11/25/2014	<39	<28	<28	<28	<62	**7,100**	<27	**390**	<18
System Effluent	SVENorth122914	12/29/2014	<140	<99	<99	<99	<220	**15,000**	<94	**290**	<64
System Effluent	SVE North	1/26/2015	**16**	<31	<16	<16	<14	**1,500**	<15	**130**	<10
System Effluent	SVE North	2/26/2015	<1.6	<3.2	<1.6	<1.6	<1.5	**32**	<1.5	<2.1	<1.0
System Effluent	SVE North	3/30/2015	**15**	<9.6	**9.5**	<4.8	<4.2	**1,700**	<4.6	**130**	<3.1
System Effluent	SVE N	4/24/2015	<8.5	<16	<8.2	<8.2	<7.2	**550**	<7.8	**50**	<5.3
System Effluent	SVE North	5/14/2015	<1.6	<3.2	<1.6	<1.6	<1.4	<2.7	<1.5	<2.1	<1.0
System Effluent	SVE North	5/28/2015	<3.8	<7.3	<3.6	<3.6	<3.2	**360**	**3.6**	**8.0**	<2.4
System Effluent	SVE North	7/29/2015	**19**	<33	**21**	<16	<14	**2,000**	<16	**210**	<11
System Effluent	SVE North	8/31/2015	**65**	<65	**62**	<33	<28	**7,100**	<31	**600**	<21
System Effluent	SVE North	9/28/2015	**21**	<22	<11	<11	<9.7	**1,400**	<11	**190**	<7.1
System Effluent	SVE North	10/29/2015	<56	<110	**59**	<55	<48	**6,300**	<52	**550**	<35
System Effluent	SVE_North_Effluent_113015	11/30/2015	<54	<140	<72	<72	<72	**2,300**	<72	**86**	<72
System Effluent	SVE_North_Effluent_122815	12/28/2015	<32	<62	<31	<31	<27	**5,600**	<30	**110**	<20
System Effluent	North_Effluent_020116	2/1/2016	<53	<100	<51	<51	<45	**11,000**	<48	**150**	<33
System Effluent	SVE_North_Effluent_022916	2/29/2016	**30**	<33	**29**	<16	<14	**7,800**	<16	**160**	<11
System Effluent	SVE_North_Effluent_032916	3/29/2016	**19**	<14	<7.2	<7.2	<6.3	**920**	<6.9	**19**	<4.7
System Effluent	North_Effluent	4/27/2016	<15	<29	<14	<14	<13	**1,500**	<14	**75**	<9.2
System Effluent	North_Effluent_62816	6/28/2016	<11	<22	<11	<13	<9.6	**1,800**	<10	**83**	<7.1
System Effluent	SVE-North-Effluent 72616	7/26/2016	<1.6	<3.2	<1.6	<1.6	<1.4	**84**	**2.0**	**6**	<1.0
System Effluent	SVE-North-Effluent 83016	8/30/2016	<0.30	<0.80	<0.40	<0.40	<0.40	**54**	<0.40	**2**	<0.40
System Effluent	SVE_North_Effluent_092916	9/29/2016	<1.6	<3.2	<1.6	<1.6	<1.4	**15**	<1.5	<2.1	<1.0
System Effluent	SVE_North_Effluent_102516	10/25/2016	<1.6	<3.2	<1.6	<1.6	<1.4	**7.9**	**3.0**	<2.1	<1.0
System Effluent	SVE_North_Effluent_112816	11/28/2016	<1.6	<3.2	<1.6	<1.6	<1.4	**2.8**	**3.9**	<2.1	<1.0
System Effluent	SVE_North_Effluent_122816	12/28/2016	<1.6	<3.2	<1.6	<1.6	<1.4	<2.7	**1.7**	<2.1	<1.0
System Effluent	SVE_North_Effluent_013017	1/30/2017	<1.6	<3.2	<1.6	<1.6	<1.4	<2.7	**4.6**	<2.1	<1.0
System Effluent	SVE_North_Effluent_022817	2/28/2017	<1.6	<3.2	<1.6	<1.6	<1.4	**5.9**	<1.5	<2.1	<1.0
System Effluent	SVE_North_Effluent_032817	3/28/2017	<1.6	<3.2	<1.6	<1.6	<1.4	**3.2**	**2.9**	<2.1	<1.0
System Effluent	SVE_North_Effluent	4/24/2017	<1.6	<3.2	<1.6	<1.6	<1.4	**3.9**	**3.7**	<2.1	<1.0

Notes:

1. µg/m^3 = Micrograms per cubic meter.
2. Samples analyzed by Modified EPA Method TO-15.
3. Only analytes detected in at least one sample are presented in this table.
4. **Bold** value represents detected concentration of listed analyte.
5. < = Not detected at or above the specified laboratory method reporting limit (MRL).

Table 8

South SVE System–Operation Monitoring

NuStar Vancouver Facility

Vancouver, Washington

Date	Pre-Blower		Post Blower (Pre-Carbon)		Post Carbon 1		Post Carbon 2		Notes
	PID	Pressure	PID	Pressure	PID	Pressure	PID	Pressure	
10/12/2011	--	-14.0	17.1	24.0	0	12.0	0.2	4.0	--
10/18/2011	--	-14.0	15.5	--	15.5	14.0	0.5	3.0	Pre-carbon, post blower tap is now covered by noise suppression panels.
11/2/2011	--	-15.0	18.2	26.0	0.0	26.0	2.0	7.0	--
11/17/2011	--	-18.0	8.9	27.0	--*	15.0	--*	6.8	--
12/5/2011	8.3	-18.0	10.7	39.0	0.0	19.0	2.2	6.1	System switch off upon arrival. System restarted. Monitoring event conducted approximately 3 hours after restart.
12/14/2011	11.8	-19.0	21.0	28.0	0.0	18.0	0.7	6.2	--
1/9/2012	7.3	-17.0	8.3	29.0	0.0	18.0	0.0	6.2	--
1/23/2012	7.0	-17.0	8.9	29.0	0.0	17.0	0.0	6.9	--
2/17/2012	6.0	-18.0	11.2	29.0	0.0	18.0	0.0	6.0	--
3/22/2012	13.3	-16.0	10.7	27.0	0.0	15.0	0.0	6.5	--
4/26/2012	10.3	-17.0	11.6	27.0	0.0	16.0	0.0	6.4	--
5/23/2012	10.4	-20.0	10.6	31.0	0.0	19.0	0.0	6.6	--
6/20/2012	7.3	-21.0	7.5	33.0	0.5	20.0	0.0	6.3	--
7/24/2012	19.8	-20.0	41.5	32.0	226.3	20.0	98.8	6.2	Used rental PID.
8/22/2012	8.0	-48.0	10.1	29.0	5.5	18.0	1.1	4.6	--
9/25/2012	10.0	-46.0	13.7	29.0	9.5	15.0	12.8	4.3	Used ACA PID #3.
10/29/2012	8.4	-34.0	18.6	47.0	0.3	28.0	12.9	4.3	Used ACA PID #3; Carbon change-out on 10/29/2012
11/26/2012	13.7	<-100	1.6	18.0	0.1	6.6	3.1	0.66	Used ACA PID #3.
12/21/2012	0.5	-107	0.5	17.0	0.0	6.1	0.0	0.49	Used ACA PID #3.
1/24/2013	5.1	-105	0.5	10.0	0.0	6.5	0.0	0.61	Used ACA PID #3.
2/28/2013	2.8	-105	0.1	18.0	0.0	7.0	0.0	0.60	Used ACA PID #3.
3/25/2013	8.4	-102	0.9	16.0	0.1	7.0	0.0	0.58	Used Apex PID #3
4/29/2013	0.2	-98	0.4	15.0	0.0	6.3	0.1	0.49	Used Apex PID #3
5/24/2013	41.0	-18	49.7	47.0	0.2	26	0.7	5.0	Used Apex PID #3
6/25/2013	--	-15	--	51.0	--	31	--	5.1	--
7/25/2013	12.3	-16	13.9	50.0	0.7	32	0.5	6.0	Used Apex PID #3
8/27/2013	13.2	-16	12.1	52.0	3.8	31	1.2	5.2	Used Apex PID #3
9/30/2013	5.2	-15	15.4	45.0	27.4	30	0.4	5.2	Used Apex PID #3
10/24/2013	3.1	-14	13.2	50.0	6.8	32	1.5	5.2	Used Apex PID #3
11/25/2013	1.4	-19	19.3	51.0	12.4	35	2.8	5.3	Used Apex PID #3
12/27/2013	0.3	-19	7.7	55.0	3.1	32	0.0	5.4	Used Apex PID #1
1/29/2014	2.4	-19	6.7	50.0	5.7	30	0.2	10.0	--
2/24/2014	7.7	-19	19.7	50.0	2.4	30	1.4	10.0	Used Apex PID #3
3/31/2014	2.6	-15	4.6	46.0	5.4	30	0.0	8.0	Used APEX PID #4
4/29/2014	2.0	-14	3.4	48.8	9.7	30	0.0	8.0	--
5/27/2014	3.5	-14	5.0	49.0	10.2	28	0.1	7.0	--
7/3/2014	1.6	-18	2.4	50.0	1.4	30	0.1	10.0	--
7/28/2014	8.5	-19	9.0	50.0	11.0	30	8.7	8.0	Used Apex PID #3
8/25/2014	4.6	-17	7.5	49.0	15.8	26	11.0	7.0	Used Apex PID #3
9/30/2014	0.5	-14	5.2	40.0	4.0	28	2.7	5.0	--
10/27/2014	--	--	--	--	--	--	--	--	System off upon arrival. Unable to turn back on.
11/3/2014	5.0	-20	23.0	50.0	13.1	20	14.6	8.0	Used Apex PID #3
11/25/2014	--	--	--	--	--	--	--	--	System off for drum replacement.
12/29/2014	--	--	--	--	--	--	--	--	System off.
1/26/2015	27.1	-25	34.6	20.0	1.0	17	0.0	10.0	Used Apex PID #3
2/26/2015	0.8	-20	12.9	30.0	0.2	19	0.1	8.0	--
3/30/2015	0.4	-20	14.2	29.0	0.1	20	0.1	8.0	Used Apex PID #3
4/24/2015	0.4	-20	14.2	29.0	0.1	20	0.1	8.0	
5/28/2015	1.0	-20	57.5	28.0	63.6	17	33.0	7.0	--
7/29/2015	0.0	-16	14.1	25.0	9.6	14	1.2	5.0	Used Apex PID #3
8/31/2015	0.0	-20	1.2	26.0	6.9	14	1.8	6.0	Used Apex PID #3
9/28/2015	3.0	-20	7.4	26.0	3.8	16	1.1	6.0	Used Apex PID #3
10/29/2015	9.0	-22	11.2	27.0	7.6	16	0.2	8.0	Used Apex PID #3
11/30/2015	--	-18	7.0	30.0	33.6	18	0.4	6.0	Used Apex PID #3
12/28/2015	--	-18	12.5	29.0	1.3	18	0.4	8.0	Used Apex PID #3
2/1/2016	0.1	-24	0.3	19.0	9.2	16	0.0	7.0	Used Apex PID #3
2/29/2016	0.2	-18	25.2	30.0	8.5	17	2.3	6.0	Used Apex PID #3
3/29/2016	0.0	-19	54.0	28.0	13.2	16	3.4	7.0	Used Apex PID #3
4/27/2016	5.0	-28	32.0	50.0	21.3	0.2	22.3	1.0	Used Apex PID #3
5/25/2016	0.2	-100	0.3	3.0	23.2	2	9.7	0.6	Used Apex PID #3
6/28/2016	--	--	--	--	--	--	--	--	System shut down
7/26/2016	8.1	-20	30.4	30.0	26.2	20	18.1	10.0	Used Apex PID #3
9/29/2016	26.3	-18	27.4	28.0	36.7	16	35.7	6.0	Used Apex PID #3
10/25/2016	0.8	-18	13.3	30.0	58.0	18	7.7	8.0	Used Apex PID #3
11/28/2016	0.0	-22	70.1	30.0	78.0	18	54.2	8.0	Used Apex PID #3
12/28/2016	0.0	-100	0.0	2.0	0.4	1.0	1.0	1.0	Bleeder valve appears damaged. No sample collected. Turned system off prior to departure.
1/30/2017	0.0	-22	52.3	33.0	0.0	20.0	0.0	10.0	Used Apex PID #3
2/28/2017	--	--	--	--	--	--	--	--	No sample collected.
3/28/2017	--	--	--	--	--	--	--	--	System not working properly. Knock out drum valve was pulled down and sucking in ambient air. No sample collected.
4/24/2017	--	--	--	--	--	--	--	--	Could not get valve to operate properly. System pulling in ambient air.
7/31/2017	0.0	-18	31.8	31.0	31.2	18.0	27.2	8.0	Used Apex PID #3
8/28/2017	0.0	-18	75.0	32.0	60.0	18.0	50.1	9.0	
9/25/2017	39.2	-18	32.7	30.0	19.7	18.0	20.6	7.5	Used Apex PID #3
10/26/2017	2.8	-22	27.7	30.0	19.0	18.0	17.4	7.0	Used Apex PID #3
11/29/2017	5.2	-20	68.0	30.0	54.0	18.0	56.0	7.0	
12/21/2017	0.3	-20	12.4	30.0	6.7	18.0	5.6	8.0	Pre-Carbon was not sampled due to sampling canister malfunction.
1/22/2018	0.0	-20	13.6	30.0	10.2	18.0	7.2	7.0	Used Apex PID #3
2/28/2018	--	-20	--	30.0	--	18.0	--	7.0	PID was not within calibration and readings were not recorded.
3/29/2018	--	-20	19.0	31.0	28.0	19.0	19.0	8.0	Used Apex PID #3
4/24/2018	2.2	-20	26.8	31.0	29.2	19.0	18.8	8.0	Used Apex PID #3
5/16/2018	13.8	-20	26.6	30.0	40.2	18.0	26.8	8.0	
7/23/2018	30.0	-18	34.5	29.0	37.5	17.0	37.3	7.0	
11/7/2018	3.0	-18	22.9	30.0	20.7	17.0	19.3	6.0	
1/4/2019	0.5	-24	27.3	28.0	23.4	16.0	22.4	6.0	Used Cascadia PID
3/8/2019	0.7	-24	19.2	28.0	12.1	16.0	12.4	6.0	Used Cascadia PID
5/7/2019	4.0	-20	33.0	29.0	25.4	17.0	25.8	7.0	Used Cascadia PID
7/8/2019	0.6	-21	33.6	29.0	26.1	17.0	27.1	7.0	Used Cascadia PID
9/9/2019	1.0	-21	29.7	29.0	27.1	17.0	22.8	6.0	Used Cascadia PID
11/4/2019	0.9	-21	31.6	29.0	18.1	12.0	16.2	6.0	Used Cascadia PID

Table 8

South SVE System–Operation Monitoring

NuStar Vancouver Facility

Vancouver, Washington

Date	Pre-Blower		Post Blower (Pre-Carbon)		Post Carbon 1		Post Carbon 2		Notes
	PID	Pressure	PID	Pressure	PID	Pressure	PID	Pressure	
1/10/2020	0.1	-21	6.3	29.0	4.2	16.0	3.5	6.0	Used Cascadia PID
12/14/2020	0.6	-18	52.9	30.0	25.2	17.0	21.9	6.0	Used Cascadia PID
2/23/2021	0.1	-21	13.1	30.0	16.8	17.0	7.2	6.0	Used Cascadia PID
4/9/2021	0.0	-17	303.4	30.0	281.1	18.0	278.6	7.0	Used FEI miniRAE 30.00 PID
6/18/2021	0.2	-16	26.7	30.0	32.4	18.0	25.3	7.0	Used Cascadia PID
8/25/2021	0.0	-17	29.1	30.0	33.6	18.0	35.5	7.0	Used GeoEngineers PID
11/19/2021	0.0	-19	36.9	28.0	25.1	11.0	24.5	6.0	Used GeoEngineers PID
12/8/2021	0.0	-19	29.5	28.0	10.9	16.0	11.8	7.0	Used Cascadia PID. System was off on arrival. System ran for 15 minutes before readings were taken.
1/25/2022	0.0	-19	19.5	28.5	11.6	16.5	11.1	6.5	Used GeoEngineers PID
3/10/2022	0.0	-21	13.5	29.0	9.0	12.0	8.5	6.0	Used GeoEngineers PID
5/10/2022	0.0	-18	15.0	29.5	10.0	12.5	9.3	7.0	Used GeoEngineers PID
7/12/2022	0.0	-16	20.7	29.0	16.3	16.5	14.9	7.0	Used GeoEngineers PID
9/12/2022	0.0	-17	22.8	29.0	23.1	17.0	17.5	7.0	Used GeoEngineers PID
11/14/2022	0.0	-19	15.9	29.0	14.2	17.0	12.1	6.5	Used GeoEngineers PID
1/16/2023	0.0	-21	12.3	28.5	9.3	16.0	7.2	6.5	Used GeoEngineers PID
3/13/2023	0.0	-21	10.0	28.0	7.8	16.0	5.9	6.0	Used GeoEngineers PID
5/9/2023	0.0	-21	11.1	28.5	12.0	16.0	7.1	6.5	Used GeoEngineers PID
7/11/2023	0.0	-19	32.6	26.5	14.0	14.5	6.4	7.0	Used GeoEngineers PID
9/11/2023	0.0	-16	20.5	29.5	24.2	17.5	15.0	7.0	Used GeoEngineers PID
11/10/2023	0.0	-18	11.7	29.0	12.2	17.0	9.6	8.0	Used GeoEngineers PID
7/22/2024	0.0	-17	27.7	28.0	18.9	16.0	15.8	7.0	Used GeoEngineers PID
9/3/2024	0.0	-17	19.7	28.0	23.5	16.0	30.0	6.5	Used GeoEngineers PID
12/2/2024	0.0	-18	20.9	28.0	11.3	17.0	10.7	6.0	Used GeoEngineers PID

Notes:

1. PID = photoionization detector
2. PID readings in parts per million (ppm), calibrated to 100 ppm isobutylene.
3. Pressure readings in inches of water, measured with magnehelic gauge.
4. -- = Not available or not applicable.
5. Note Cascadia and GeoEngineers PID are the same equipment.

Table 9

South SVE System–Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Sampling Location	Sample ID	Date	1,1-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	Methylene Chloride	Tetrachloro-ethene	Toluene	1,1,1-Trichloro-ethane	Trichloro-ethene	Vinyl chloride	Total Xylenes
			Concentrations in µg/m³										
Pre Carbon	INF 1006	10/6/2011	<330	<320	**470**	<320	<280	**40,000**	<300	**520**	**5,100**	<210	<350
Post Carbon	EFF 1006	10/6/2011	<16	<16	**390**	<16	<14	<27	<15	**140**	**50**	<10	<17
Pre Carbon	Post Blower 110211	11/2/2011	<290	<280	**430**	<280	<250	**26,000**	<270	<390	**2,100**	<180	<310
Pre Carbon	SOUTHSVE_PRECARBON_121411	12/14/2011	<580	<570	**620**	<570	<500	**54,000**	<540	<780	**2,800**	<360	<620
Post Carbon	SOUTHSVE_POSTCARBON_121411	12/14/2011	<16	**35**	**23**	<16	**17**	**1,600**	<15	**78**	**1,300**	**12**	<17
Post Carbon	POST CARBON_SOUTH_012312	1/23/2012	<16	<16	<16	<16	<14	<27	<15	<22	<21	<10	<17
Pre Carbon	South_PreCarbon_021712	2/17/2012	<300	<300	**460**	<300	<260	**28,000**	<280	<410	**1,200**	<190	<330
Post Carbon	South_PostCarbon_021712	2/17/2102	<16	<16	<16	<16	<14	<27	<15	<22	<21	<17	<10
Pre Carbon	South Influent - 032212	3/22/2012	<190	<190	**310**	<95	<84	**30,000**	<91	**99**	**960**	<31	<100
Post Carbon	South Effluent - 032212	3/22/2012	<1.2	<3.2	<1.6	<1.6	**4**	<2.7	<1.5	<1.6	<2.1	**6.4**	<3.5
Pre Carbon	South_SVE_PRECARBON	4/26/2012	<210	<560	<280	<280	<240	**32,000 S**	<270	<290	**640 S**	<90	<610
Post Carbon	South-SVE_POSTCARBON	4/26/2012	<1.2	<3.2	<1.6	<1.6	**4**	<2.7	<1.5	<1.6	<2.1	**2.4**	<3.5
Pre Carbon	SOUTH_SVE_PRECARBON	5/23/2012	<100	<260	**200**	<130	<120	**19,000**	<130	<140	**780**	<43	<290
Post Carbon	South_SVE_PRECARBON	5/23/2012	<1.2	<3.2	<1.6	<1.6	**3**	<2.7	<1.5	<1.6	<2.1	**3.7**	<3.5
Pre Carbon	South_PreCarbon_062012	6/20/2012	<240	<630	**360**	<320	<280	**35,000**	<300	<330	**1,400**	<100	<1040
Post Carbon	South_PostCarbon_062012	6/20/2012	<0.30	<0.80	<0.40	<0.40	**1.0**	<0.40	<0.40	<0.30	<0.40	**1.2**	<1.2
Pre Carbon	South_PreCarbon_072412	7/24/2012	<150	<390	**240**	<200	<170	**33,000**	<190	<200	**1,100**	<63	<640
Post Carbon	South_PostCarbon_072412	7/24/2012	<1.2	**11**	<1.6	<1.6	**3.0**	<2.7	**2.2**	<1.6	<2.1	**3.9**	<5.2
Pre Carbon	South_PreCarbon_082212	8/22/2012	<250	<660	**760**	<330	<290	**47,000**	<310	<340	**2,000**	<110	**1,080**
Post Carbon	South_PostCarbon_082212	8/22/2012	<21	<55	<27	<27	<24	<47	<26	<28	<37	<8.8	<90
Pre Carbon	South_PreCarbon_092512	9/25/2012	<270	<700	**500**	<400	<310	**50,000**	<330	<360	**1,900**	<230	<770
Post Carbon	South_PostCarbon_092512	9/25/2012	**13**	**18**	**1,200**	**11**	**5.7**	<2.7	<1.5	<1.6	<2.1	**6.2**	<3.5
Pre Carbon	South_PreCarbon_102912	10/29/2012	<320	<850	**440**	<480	<370	**60,000**	<400	<440	**2,200**	<270	<930
Post Carbon	South_PostCarbon_102912	10/29/2012	<5.3	<14	<7	<7	<7	<7	<7	<7	<7	<7	<14
Pre Carbon	South_PreCarbon_112612	11/26/2012	<95	<250	<120	<120	<110	**10,000**	<120	<130	**530**	<80	<410
Post Carbon	South_PostCarbon_112612	11/26/2012	<2.7	<7.2	<3.6	<3.6	<3.6	<3.6	<3.6	<2.7	<3.6	<3.6	<10.8
Pre Carbon	South_PreCarbon_122112	12/21/2012	<71	<190	**110**	<93	<82	**14,000**	<89	<96	**600**	<60	<300
Post Carbon	South_PostCarbon_122112	12/21/2012	<1.2	<3.2	<1.6	<1.6	**1.6**	<2.7	<1.5	<1.6	<2.1	**3.0**	<5.2
Pre Carbon	South_PreCarbon_012413	1/24/2013	<9.2	<24	**14**	<12	<11	**1,700**	<11	<12	**100**	<7.8	<39
Post Carbon	South_PostCarbon_012413	1/24/2013	<1.2	<3.2	<1.6	<1.6	**3.3**	<2.7	<1.5	<1.6	<2.1	**3.7**	<5.2
Pre Carbon	South_PreCarbon_022813	2/28/2013	<5.9	<15	**8.5**	<7.7	<6.7	**940**	<7.3	<7.9	**84**	<5.0	<25.4
Post Carbon	South_PostCarbon_022813	2/28/2013	<1.2	<3.2	<1.6	<1.6	**8.1**	<2.7	<1.5	<1.6	<2.1	<1.0	<5.2
Pre Carbon	South_PreCarbon_032513	3/25/2013	<29	<75	<38	<38	<33	**3,700**	<36	<39	**160**	<24	<123
Post Carbon	South_PostCarbon_032513	3/25/2013	<1.2	<3.2	<1.6	<1.6	**2.0**	<2.7	<1.5	<1.6	<2.1	**2.0**	<5.2
Pre Carbon	SVE South Pre Carbon	4/29/2013	<6.3	<16	**10**	<8.2	<7.2	**950**	<7.8	<8.4	**48**	<5.3	<26.9
Post Carbon	SVE South Post Carbon	4/29/2013	<0.30	<0.80	<0.40	<0.40	<0.40	<0.40	<0.40	<0.30	<0.40	**0.93**	<1.2

Table 9

South SVE System–Analytical Results

NuStar Vancouver Facility
Vancouver, Washington

Sampling Location	Sample ID	Date	1,1-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	Methylene Chloride	Tetrachloro-ethene	Toluene	1,1,1-Trichloro-ethane	Trichloro-ethene	Vinyl chloride	Total Xylenes
			Concentrations in µg/m³										
Pre Carbon	SVE South Pre Carbon	5/24/2013	<1,100	<1,100	**2,400**	<1,100	<2,400	**240,000**	<1,100	<1,500	**8,400**	<720	<4,300
Post Carbon	SVE South Post Carbon	5/24/2013	<0.81	<0.79	<0.79	<0.79	<1.7	<1.4	<0.75	<1.1	<1.1	<0.51	<3.1
Pre Carbon	SVE South Pre Carbon	6/25/2013	<150	<150	**630**	<150	<330	**39,000**	<140	<210	**1,800**	<97	<570
Post Carbon	SVE South Post Carbon	6/25/2013	<0.81	**8.1**	**3.8**	<0.79	**5.6**	<1.4	<0.75	<1.1	<1.1	**3.1**	<3.1
Pre Carbon	SVE South Pre Carbon	7/25/2013	<120	<120	**380**	<120	<260	**22,000**	<110	<160	**1,200**	<77	<460
Post Carbon	SVE South Post Carbon	7/25/2013	<0.81	**17**	**65**	**2.1**	**3.4**	<1.4	**1.2**	<1.1	<1.1	**2.6**	**1.4**
Pre Carbon	SVE South Pre Carbon	8/27/2013	<150	<150	**520**	<150	<330	**28,000**	<140	<210	**1,500**	<97	<580
Post Carbon	SVE South Post Carbon	8/27/2013	**3.3**	**13**	**270**	**7.0**	**4.7**	<2.7	<1.5	<2.2	<2.1	**3.7**	<6.0
Pre Carbon	SVE South Precarbon	9/30/2013	<110	<110	**450**	<110	<240	**26,000**	<110	<150	**1,400**	<72	<420
Pre Carbon	SVE South Pre Carbon	10/24/2013	<140	<140	**430**	<140	<310	**27,000**	<130	<190	**1,100**	<90	<530
Post Carbon	SVE South Post Carbon	10/24/2013	**3.8**	**4.9**	**390**	**3.3**	<5.2	**4.3**	<2.3	**5.4**	<3.2	**2.6**	<5.1
Pre Carbon	SVE South Pre Carbon	11/25/2013	<100	<98	**250**	<98	<220	**21,000**	<93	<140	**840**	<63	<380
Post Carbon	SVE South Post Carbon	11/25/2013	<2.8	**4.1**	**250**	<2.8	**7.3**	<4.8	<2.6	**17**	**56**	<1.8	<10.6
Pre Carbon	SVE South Pre Carbon	12/27/2013	<110	<110	**270**	<110	<240	**20,000**	<100	<150	**900**	<70	<420
Post Carbon	SVE South Post Carbon	12/27/2013	**2.5**	**4.5**	**220**	**2.4**	**3.8**	**3.5**	<1.1	**6.8**	**62**	<0.77	<4.6
Pre Carbon	SVE South Pre-Carbon	1/29/2014	<80	<79	**260**	<79	<170	**20,000**	<75	<110	**800**	<51	<306
Post Carbon	SVE South Post-Carbon	1/29/2014	**4.5**	**7.2**	**330**	**4.8**	<8.7	**7.9**	<3.8	**13**	**98**	**3.1**	<15.3
Pre Carbon	SVE_South_Pre_Carbon	2/24/2014	<190	<490	**430**	<240	**240.0**	**34,000**	**600**	<250	**1,500**	<160	<800
Post Carbon	SVE_South_Effluent	2/24/2014	<1.2	<3.2	**41**	<1.6	<1.4	<2.7	<1.5	<1.6	<2.1	<1.0	<5.2
Pre Carbon	SVE South Pre Carbon	3/5/2014	<110	<280	**270**	<140	<120	**16,000**	**660**	<140	**660**	<90	**1,090**
Post Carbon	SVE South Effluent	3/5/2014	**3.7**	<8.3	**310**	**4.2**	**4.4**	<7.1	<4.0	<4.3	**21**	<2.7	<13.7
Pre Carbon	VCP_South_Post_Blower	3/31/2014	<83	<82	**260**	<82	<180	**20,000**	<78	<110	**630**	<53	<309
Post Carbon	VCP_South_Effluent	3/31/2014	**3.3**	**4.9**	**290**	**4.2**	<4.3	<3.4	<1.9	**3.3**	**21**	**1.4**	<7.6
Pre Carbon	South_SVE_Postblower_042914	4/29/2014	<47	<46	**180**	<46	<100	**13,000**	<44	<63	**550**	<30	<180
Post Carbon	South_SVE_Effluent_042914	4/29/2014	**5.1**	**5.0**	**540**	<4.8	<11	<8.2	<4.6	<6.6	**37**	<3.1	<18.3
Pre Carbon	South_SVE_Postblower_052714	5/27/2014	<57	<55	**160**	<55	<120	**12,000**	<53	<76	**490**	<36	<201
Post Carbon	South_SVE_PostCarbon_052714	5/27/2014	**5.0**	<4.8	**530**	<4.8	<11	<8.2	<4.6	**14**	**8.1**	<3.1	<18.3
Pre Carbon	South_VCP_Post Blower	7/3/2014	<18	<18	**56**	<18	<45	**2,800**	<18	<18	**150**	<18	<63
Post Carbon	South_VCP_Post Carbon	7/3/2014	<16	<16	**760**	<16	<35	**55**	<15	**430**	**3,200**	<10	<60
Pre Carbon	SVE Pre Carbon	7/28/2014	<69	<67	**200**	<67	<150	**15,000**	<64	<93	**750**	<43	<254
Post Carbon	SVE Post Carbon	7/28/2014	<68	<67	**270**	<67	<150	**13,000**	<63	**530**	**12,000**	<43	<253
Pre Carbon	South SVE Pre Carbon	8/25/2014	<140	<130	**340**	<130	<290	**20,000**	<130	<180	**1,100**	<86	<520
Post Carbon	South SVE Post Carbon	8/25/2014	<140	<130	**270**	<130	<290	**9,600**	<130	<180	**2,700**	<86	<520
Pre Carbon	South SVE_Pre Carbon	9/30/2014	<110	<110	**250**	<110	<230	**17,000**	<100	<150	**930**	<69	<410
Post Carbon	South SVE_Post Carbon	9/30/2014	<130	<120	**280**	<120	<270	**23,000**	<120	<170	**620**	<80	<480
Pre Carbon	SVE South Post Blower	11/3/2014	<130	<130	**320**	<130	<280	**24,000**	<120	<170	**1,100**	<81	<490
Post Carbon	SVE South Post Carbon	11/3/2014	<81	<81	**130**	<81	<180	**12,000**	<77	<110	**290**	<52	<309

Table 9

South SVE System–Analytical Results

NuStar Vancouver Facility
Vancouver, Washington

Sampling Location	Sample ID	Date	1,1-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	Methylene Chloride	Tetrachloro-ethene	Toluene	1,1,1-Trichloro-ethane	Trichloro-ethene	Vinyl chloride	Total Xylenes
			Concentrations in µg/m³										
Pre Carbon	SVE South Pre Carbon	1/26/2015	<190	<500	**420**	<250	<220	**21,000**	**240**	<260	**860**	<160	<820
Post Carbon	SVE South Post Carbon	1/26/2015	<78	<200	<100	<100	<90	<170	**190**	<110	<140	<66	<330
Pre Carbon	SVE South Pre Carbon	2/26/2015	<150	<390	**260**	<200	<170	**18,000**	**280**	<200	**660**	<130	<650
Post Carbon	SVE South Post Carbon	2/26/2015	<1.2	<3.2	<1.6	<1.6	**3.2**	<2.7	<1.5	<1.6	<2.1	**2.5**	<5.2
Pre Carbon	SVE South Pre Carbon	3/30/2015	<61	<160	**200**	<79	**160**	**17,000**	**180**	<82	**570**	<51	<257
Post Carbon	SVE South Post Carbon	3/30/2015	<1.2	<3.2	<1.6	<1.6	**2.8**	<2.7	**2.7**	<1.6	**51**	**2.5**	<5.2
Pre Carbon	SVE S Pre Carbon	4/24/2015	<37	<97	**170**	<49	<43	**5,400**	<46	<50	**410**	<31	<163
Post Carbon	SVE S Post Carbon	4/24/2015	<6.2	<16	<8.1	<8.1	<7.1	**660**	<7.7	<8.3	**19**	<5.2	**18**
Pre Carbon	SVE South Pre Carbon	5/28/2015	<60	<160	**140**	<79	**92**	**8,000**	**240**	<81	**460**	<51	<256
Post Carbon	SVE South Post Carbon	5/28/2015	<4.9	<13	<6.3	<6.3	<5.6	**650**	<6.0	<6.5	**16**	<4.1	**22.1**
Pre Carbon	SVE South Pre Carbon	7/29/2015	<65	<170	**190**	<85	<75	**12,000**	<81	<88	**790**	<55	<183
Post Carbon	SVE South Post Carbon	7/29/2015	**10**	<27	**960**	**16**	<12	**440**	<13	<14	<18	<8.7	<45
Pre Carbon	SVE South Pre Carbon	8/31/2015	<64	<170	**160**	<83	<73	**12,000**	<79	<86	**780**	<54	<171
Post Carbon	SVE South Post Carbon	8/31/2015	<21	<55	**530**	<27	<24	**3,400**	<26	<28	**94**	<18	<90
Pre Carbon	SVE South Pre Carbon	9/28/2015	<83	<220	**170**	<110	<94	**9,900**	<100	<110	**660**	<70	<360
Post Carbon	SVE South Post Carbon	9/28/2015	**3.4**	<6.0	**340**	**3.6**	<2.6	**300**	<2.8	**39**	**59**	<1.9	<9.8
Pre Carbon	SVE South Pre Carbon	10/29/2015	<130	<350	**230**	<170	<150	**18,000**	<170	<180	**790**	<110	<570
Post Carbon	SVE South Post Carbon	10/29/2015	**4.2**	**5.2**	**340**	**4.5**	**2.6**	**26**	<1.5	**67**	**310**	**1.7**	<5.2
Pre Carbon	SVE_South_Precarbon_113015	11/30/2015	<29	<77	**54**	<38	<38	**3,000**	<38	<29	**300**	<38	<77
Post Carbon	SVE_South_Postcarbon_113015	11/30/2015	<0.80	<0.80	**27**	**0.60**	<0.40	<0.40	<0.40	**6**	**11**	<0.40	<0.80
Pre Carbon	SVE_SOUTH_PRE CARBON_12/28/15	12/28/2015	<120	<320	**180**	<160	<140	**35,000**	<150	<170	**1,200**	<100	<530
Post Carbon	SVE_SOUTH_POST CARBON_12/28/15	12/28/2015	<1.2	<3.2	**28**	<1.6	<1.4	<2.7	**1.5**	**2**	**6.5**	<1.0	<4.2
Pre Carbon	SVE_SOUTH_PRE CARBON	2/1/2016	<8.6	<22	**20**	<11	<9.8	**2,900**	<11	**14**	**120**	<7.2	<37
Post Carbon	SVE_SOUTH_POST CARBON	2/1/2016	**2.2**	<3.2	**160**	**2.90**	<1.4	<2.7	<1.5	**92**	**260**	<1.0	<5.2
Pre Carbon	SVE_SOUTH_PRE CARBON	3/29/2016	<230	<610	**710**	<300	<270	**71,000**	<290	**520**	**2,800**	<200	<670
Post Carbon	SVE_SOUTH_POST CARBON	3/29/2016	<69	<180	**490**	<23	<79	**9,300**	<86	**1500**	**9,300**	<58	<200
Pre Carbon	SVE_SOUTH_PRE CARBON	4/27/2016	<6.4	<17	**12**	<8.4	<7.4	**910**	<8.0	<8.7	**23**	<5.4	<18
Post Carbon	SVE_SOUTH_POST CARBON	4/27/2016	<63	<160	**180**	<82	<72	**11,000**	<78	**110**	**2,200**	<53	<180
Pre Carbon	SVE_SOUTH_PRE CARBON	5/25/2016	<1.2	<3.2	**4**	<1.6	<1.4	**550**	**2.9**	**3**	**22**	<1.0	**3.9**
Post Carbon	SVE_SOUTH_POST CARBON	5/25/2016	<16	<41	**2300**	**30.00**	<18	**14,000**	<19	**130**	**3,300**	<13	<45
Pre Carbon	SVE_SOUTH_PRE CARBON	7/26/2016	<98	<260	**340**	<130	<110	**18,000**	<120	<130	**970**	<83	<420
Post Carbon	SVE_SOUTH_POST CARBON	7/26/2016	<78	<200	**760**	<120	<89	**15,000**	<97	**220**	**1,400**	<66	<330
Pre Carbon	SVE_SOUTH_PRE CARBON	8/30/2016	<86	<230	**340**	<110	<99	**28,000**	<110	<120	**1,400**	<73	<370
Post Carbon	SVE_SOUTH_POST CARBON	8/30/2016	<81	<210	**370**	<110	<93	**19,000**	<100	**210**	**910**	<68	<350
Pre Carbon	SVE_SOUTH_PRE CARBON	9/29/2016	<73	<190	**340**	<95	<83	**25,000**	<90	**110**	**1,300**	<61	<310
Post Carbon	SVE_SOUTH_POST CARBON	9/29/2016	<46	<120	**410**	<60	<53	**14,000**	<57	**140**	**1,900**	<39	<196

Table 9

South SVE System–Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Sampling Location	Sample ID	Date	1,1-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	Methylene Chloride	Tetrachloro-ethene	Toluene	1,1,1-Trichloro-ethane	Trichloro-ethene	Vinyl chloride	Total Xylenes
			Concentrations in µg/m³										
Pre Carbon	SVE-SOUTH_PRE CARBON_102516	10/25/2016	<150	<390	**380**	<190	<170	**32,000**	<180	<200	**1,500**	<120	<630
Post Carbon	SVE-SOUTH_POST CARBON_102516	10/25/2016	<100	<260	**530**	<130	<120	**19,000**	<130	**180**	**2,700**	<85	<430
Pre Carbon	SVE_SOUTH_PRE CARBON_112816	11/28/2016	<260	<670	**420**	<340	<290	**52,000**	<320	<350	**2,100**	<220	<1110
Post Carbon	SVE_SOUTH_POST CARBON_112816	11/28/2016	<79	<210	<100	<100	<90	**18,000**	<98	**360**	**3,200**	<66	<340
Pre Carbon	SVE_SOUTH_PRE CARBON_013017	1/30/2017	<260	<690	**660**	<340	<300	**61,000**	<330	**400**	**2,400**	<220	<1130
Post Carbon	SVE_SOUTH_POST CARBON_013017	1/30/2017	<1.2	<3.2	<1.6	<1.6	<1.4	**24**	**1.8**	<1.6	<2.1	<1.0	<5.2
Pre Carbon	SVE_SOUTH_PRE CARBON_073117	7/31/2017	<100	<260	**400**	<130	<110	**17,000**	**340**	<130	**1,000**	<84	<430
Post Carbon	SVE_SOUTH_POST CARBON_073117	7/31/2017	<1.2	<3.2	<1.6	<1.6	**2.4**	**6.5**	**8.2**	<1.6	**3.9**	**2.4**	<5.2
Pre Carbon	SVE_SOUTH_PRE CARBON_082817	8/28/2017	<60	<160	**320**	<79	<69	**32,000**	<75	**90**	**1,100**	<51	<256
Post Carbon	SVE_SOUTH_POST CARBON_082817	8/28/2017	<1.2	**5.8**	**2**	<1.6	**2.4**	**160**	**2.3**	<1.6	**3.9**	**2.2**	<5.2
Pre Carbon	SVE_SOUTH_PRE CARBON_092517	9/25/2017	<21	<55	**200**	<27	<24	**23,000**	<26	**45**	**460**	<18	<90
Post Carbon	SVE_SOUTH_POST CARBON_092517	9/25/2017	<1.2	**8.0**	**16**	<1.6	**5.3**	**6.8**	<1.5	<1.6	<2.1	**2.2**	<5.2
Pre Carbon	SVE_SOUTH_PRE CARBON_102617	10/26/2017	<40	<100	**230**	<52	<45	**13,000**	<49	**64**	**700**	<33	<167
Post Carbon	SVE_SOUTH_POST CARBON_102617	10/26/2017	**2.0**	**15**	**98**	**2.1**	**1.6**	**9.7**	<1.5	**3.9**	<2.1	**1.5**	<5.2
Pre Carbon	SVE_SOUTH_PRE CARBON_112917	11/29/2017	<140	<370	**280**	<180	<160	**22,000**	<170	<190	**820**	<120	<600
Post Carbon	SVE_SOUTH_POST CARBON_112917	11/29/2017	**3.8**	**8.5**	**220**	**4.0**	<2.0	<4.0	<2.2	**12**	<3.2	**2.5**	<5.7
Pre Carbon	SVE_SOUTH_PRE CARBON_122117	12/21/2017	--	--	--	--	--	--	--	--	--	--	--
Post Carbon	SVE_SOUTH_POST CARBON_122117	12/21/2017	**4.6**	**4.9**	**300**	**5.2**	**1.7**	<2.7	<1.5	**20**	**7.2**	**1.8**	<5.2
Pre Carbon	SVE_SOUTH_PRE CARBON_012218	1/22/2018	<110	<290	**150**	<150	<130	**13,000**	<140	<150	**390**	<95	<480
Post Carbon	SVE_SOUTH_POST CARBON_012218	1/22/2018	**4.3**	<6.5	**380**	<3.2	<2.8	**8.1**	<3.1	**11**	**16**	**2.1**	<10.6
Pre Carbon	SVE_SOUTH_PRE CARBON_022818	2/28/2018	<19	<49	**200**	<25	<22	**13,000**	<23	**52**	**440**	<16	<81
Post Carbon	SVE_SOUTH_POST CARBON_022818	2/28/2018	**2.8**	<3.2	**300**	**4.0**	<1.4	<2.7	<1.5	**14**	**51**	**5.1**	<5.2
Pre Carbon	SVE_SOUTH_PRE CARBON_032918	3/29/2018	<23	<60	**180**	<30	<26	**13,000**	<28	**46**	**470**	<19	<98
Post Carbon	SVE_SOUTH_POST CARBON_032918	3/29/2018	**4.2**	**5.2**	**500**	**7.4**	**1.5**	**7.8**	<1.5	**15**	**110**	**1.7**	<5.2
Pre Carbon	SVE_SOUTH_PRE CARBON_042418	4/24/2018	<69	<180	**140**	<90	<79	**12,000**	<86	<58	**350**	<58	<299
Post Carbon	SVE_SOUTH_POST CARBON_042418	4/24/2018	**3.4**	**4.2**	**470**	**7.6**	**1.5**	**6.6**	**3.1**	**8.4**	**76**	**1.4**	**17.9**
Pre Carbon	SVE_SOUTH_PRE CARBON_051618	5/16/2018	<50	<130	**160**	<65	<57	**7,800**	<62	<68	**370**	<42	<212
Post Carbon	SVE_SOUTH_POST CARBON_051618	5/16/2018	<4.7	<12	**480**	**6.6**	<0.97	<1.3	<0.75	**7.1**	**33**	<4	<19.7
Pre Carbon	SVE_South_72318-Pre Carbon	7/23/2018	<63	<170	**170**	<83	<73	**18,000**	<79	<85	**770**	<53	<271
Post Carbon	SVE_South_Post Carbon-72318	7/23/2018	<25	<65	**230**	<33	<29	**8,300**	<31	**520**	**6,400**	<21	<108
Pre Carbon	SVE_South_PreCarbon_110718	11/7/2018	<64	<170	**310**	<84	<74	**31,000**	<80	**91**	**1,300**	<54	<180
Post Carbon	SVE_South_PostCarbon_110718	11/7/2018	<1.2	<3.2	<1.6	<1.6	<1.4	**15**	<1.5	<1.6	<2.1	**1.6**	<3.5
Pre Carbon	SVE_South_PreCarbon_010419	1/4/2019	<64	<160	**280**	<82	<71	**32,000**	<77	**84**	**920**	<53	<180
Post Carbon	SVE_South_PostCarbon_010419	1/4/2019	<1.2	<3.2	<1.6	<1.6	**2.1**	<2.7	**2.3**	<1.6	<2.1	**1.5**	**7.3**
Pre Carbon	SVE_South_PreCarbon_030819	3/8/2019	<69	<180	**180**	<90	<79	**21,000**	<86	<93	**570**	<58	<200
Post Carbon	SVE_South_PostCarbon_030819	3/8/2019	<1.2	<3.2	<1.6	<1.6	**1.8**	**5.5**	<1.5	<1.6	<2.1	**1.3**	<3.5

Table 9

South SVE System–Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Sampling Location	Sample ID	Date	1,1-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	Methylene Chloride	Tetrachloro-ethene	Toluene	1,1,1-Trichloro-ethane	Trichloro-ethene	Vinyl chloride	Total Xylenes
			Concentrations in µg/m³										
Pre Carbon	SVE_South_PreCarbon_050719	5/7/2019	<69	<180	**140**	<90	<79	**17,000**	<85	<93	**450**	<58	<200
Post Carbon	SVE_South_PostCarbon_050719	5/7/2019	<1.2	<3.2	**9.9**	<1.6	<1.4	**1,300**	**13**	**3.0**	**31**	<1.0	**11.7**
Pre Carbon	SVE_South_PreCarbon_070819	7/8/2019	<64	<170	**100**	<83	<73	**16,000**	<79	<86	**530**	<54	<180
Post Carbon	SVE_South_PostCarbon_070819	7/8/2019	<1.2	**6.3**	<1.6	<1.6	**1.6**	**7.9**	<1.5	<1.6	<2.1	<1.0	**1.7**
Pre Carbon	SVE_South_PreCarbon_090919	9/9/2019	<28	<74	**120**	<37	<32	**15,000**	<35	**48**	**590**	<24	<81
Post Carbon	SVE_South_PostCarbon_090919	9/9/2019	**2.8**	**3.6**	**160**	**9.1**	<1.4	<2.7	<1.5	<1.6	<2.1	<1.0	<3.5
Pre Carbon	SVE_South_PreCarbon_110419	11/4/2019	<33	<87	**300**	<43	<38	**38,000**	<41	**87**	**990**	<28	<95
Post Carbon	SVE_South_PostCarbon_110419	11/4/2019	**2.2**	<5.2	**160**	**5.6**	<2.3	<4.4	<2.5	<2.7	<3.5	**3.2**	<5.7
Pre Carbon	SVE-South-PreCarbon-011020	1/10/2020	<12	<31	**110**	<16	<14	**9,200**	<15	**33**	**420**	<10	<17
Post Carbon	SVE-South-PostCarbon-011020	1/10/2020	<1.7	<4.5	**130**	<2.3	<2.0	<3.9	<2.2	**5.1**	<3.1	<1.5	<5.0
Pre Carbon	SVE_South_PreCarbon_121420	12/14/2020	<62	<160	**400**	<82	**160**	**32,000**	**130**	**100**	**1,300**	<53	<180
Post Carbon	SVE_South_PostCarbon_121420	12/14/2020	**2.3**	<5.4	**180**	<2.7	<2.4	<4.6	<2.6	**8.9**	<3.6	<1.7	<5.9
Pre Carbon	SVE_South_PreCarbon_022321	2/23/2021	<35	<91	**120**	<46	<500	**18,000**	<43	<47	**390**	<29	<100
Post Carbon	SVE_South_PostCarbon_022321	2/23/2021	**2.4**	**6.0**	**150**	**3.5**	<27	<4.2	<2.3	**7.0**	**36**	<1.6	<5.4
Pre Carbon	SVE_South_PreCarbon_040921	4/9/2021	<13	<34	**150**	<17	<190	**14,000**	<16	**32**	**450**	<11	<38
Post Carbon	SVE_South_PostCarbon_040921	4/9/2021	**5.0**	<4.2	**390**	**9.7**	<23	<3.6	<2.0	**7.1**	**41**	<1.3	<4.6
Pre Carbon	SVE_South_PreCarbon_061721	6/17/2021	<11	<29	**94**	<15	<160	**11,000**	<14	**31**	**380**	<9.4	<32
Post Carbon	SVE_South_PostCarbon_061721	6/17/2021	<7.8	<20	**400**	<10	<110	**340**	<9.7	**940**	**4,800**	<6.6	<22
Pre Carbon	SVE_South_PreCarbon_082521	8/25/2021	<17	<46	**86**	<23	<250	**12,000**	<22	**33**	**500**	<15	<50
Post Carbon	SVE_South_PostCarbon_082521	8/25/2021	<12	<32	**44**	<16	<170	**10,000**	**42**	<16	**180**	<10	<35
Pre Carbon	SVE_South_PreCarbon_111921	11/19/2021	<22	<58	**160**	<29	<320	**17,000**	<27	**52**	**620**	<19	<63
Post Carbon	SVE_South_PostCarbon_120821*	12/8/2021*	<1.6	<4.3	<2.2	<2.2	<24	<3.7	<2.0	<2.2	<2.9	<1.4	<4.7
Pre Carbon	SVE_South_PreCarbon_012522	1/25/2022	<22	<59	**100**	<29	<320	**16,000**	<28	**30 J**	**410**	<19	<64
Post Carbon	SVE_South_PostCarbon_012522	1/25/2022	<1.7	<4.5	<2.2	<2.2	<25	<3.8	<2.1	<2.3	<3.0	<1.4	<4.9
Pre Carbon	SVE_South_PreCarbon_031022	3/10/2022	<13	<34	**68**	<17	<190	**11,000**	<16	**25**	**320**	<11	<38
Post Carbon	SVE_South_PostCarbon_031022	3/10/2022	<1.6	<4.3	<2.1	<2.1	<23	<3.7	<2.0	<2.2	<2.9	<1.4	<4.7
Pre Carbon	SVE_South_PreCarbon_051022	5/10/2022	<16	<42	**78**	<21	<230	**12,000**	<20	**23**	**310**	<14	<46
Post Carbon	SVE_South_PostCarbon_051022	5/10/2022	<4.4	<4.3	<2.2	<2.5	<24	<3.7	<2.1	<2.2	<2.9	<1.4	<4.8
Pre Carbon	SVE_South_PreCarbon_071222	7/12/2022	<64	<24	**61**	<32	<350	**12,000**	<30	<33	**290**	<21	<70
Post Carbon	SVE_South_PostCarbon_071222	7/12/2022	<1.8	<4.6	<2.3	<2.3	<25	<3.9	<2.2	<2.4	<3.1	<1.5	<5.0

Table 9

South SVE System–Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Sampling Location	Sample ID	Date	1,1-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	Methylene Chloride	Tetrachloro-ethene	Toluene	1,1,1-Trichloro-ethane	Trichloro-ethene	Vinyl chloride	Total Xylenes
			Concentrations in µg/m^3										
Pre Carbon	PreCarbon_SVE_South_09122022	9/12/2022	<16	<41	**64**	<20	<220	**11,000**	<19	**31**	**440**	<13	<45
Post Carbon	PostCarbon_SVE_South_09122022	9/12/2022	**4.1**	<3.6	**220**	12.0	<20	<3.1	<1.7	<1.9	<2.4	<1.2	<4.0
Pre Carbon	PreCarbon_S_SVE_11142022	11/14/2022	<16	<42	**18**	<21	<230	**1,800**	<20	**5.3**	**76**	<14	<46
Post Carbon	PostCarbon_S_SVE_11142022	11/14/2022	<1.7	<4.4	**31**	<2.2	<24	<3.8	<2.1	1.3	<3.0	<1.4	<4.8
Pre Carbon	PreCarbon_SVE_South_011623	1/16/2023	<14	<37	**71**	<19	<200	**10,000**	<44	**22**	**310**	<12	<41
Post Carbon	PostCarbon_SVE_South_011623	1/16/2023	<1.6	<4.3	**69**	<2.1	<23	<3.6	<5.0	**6.2**	**24**	<1.4	<4.6
Pre Carbon	PreCarbon_South_SVE_03132023	3/13/2023	<14	<13	**65**	<13	<120	**7,300**	<25	**19**	**290**	<8.6	<29
Post Carbon	PostCarbon_South_SVE_03132023	3/13/2023	<2.7	<2.6	**63**	<2.6	<23	**5.4**	<5.0	**5.8**	**36**	<1.7	<2.9
Pre Carbon	PreCarbon_South_SVE_05092023	5/9/2023	<23	<22	**50**	<22	<200	**10,000**	<42	<31	**220**	<14	<49
Post Carbon	PostCarbon_South_SVE_05092023	5/9/2023	<2.6	<2.5	**96**	3.2	<22	<4.3	<4.8	<3.5	**14**	<1.6	<5.5
Pre Carbon	SVE_South_PreCarbon_071123	7/11/2023	<31	<30	**170**	<30	<110	**51,000**	<29	**90**	**830**	<20	<33
Post Carbon	SVE_South_PostCarbon_071123	7/11/2023	**3.0**	**2.6**	**180**	**5.4**	<21	<4.0	<4.5	<3.2	**8.4**	<1.5	<2.6
Pre Carbon	20230911_South_SVE_PreCarbon	9/11/2023	<25	<24	**75**	<24	<210	**12,000**	<46	<33	**440**	<16	<26
Post Carbon	20230911_South_SVE_PostCarbon	9/11/2023	**3.9**	**3.4**	**350**	**7.0**	<23	<4.5	<5.0	**13**	**37**	<1.7	<2.9
Pre Carbon	20231110_S_SVE_PreCarbon	11/20/2023	<23	<23	**62**	<22	<200	**13,000**	<43	**31 J**	**440**	<14	<25
Post Carbon	20231110_S_SVE_PostCarbon	11/10/2023	<3.7	<3.6	**90**	<3.6	<31	**2,000**	<6.8	**260**	**1,100**	<2.3	<3.9
Pre Carbon	PreCarbon_SouthSVE_072224	7/22/2024	<55	<54	**220**	<54	<470	**30,000**	<100	<74	**960**	<34	<59
Post Carbon	PostCarbon_SouthSVE_072224	7/22/2024	<7.3	<7.1	**300**	**7.4**	<62	**520**	<14	**300**	**2,500**	<4.6	<7.8
Pre Carbon	PreCarbon_SouthSVE_090324	9/3/2024	<23	<22	**86**	<22	<200	**15,000**	<42	<31	**520**	<14	<24
Post Carbon	PostCarbon_SouthSVE_090324	9/3/2024	<16	<15	**110**	<15	<130	**10,000**	<29	**63**	**2,300**	<9.9	<17
Pre Carbon	Pre-carbon SSVE 20241202	12/2/2024	<29	<28	**130**	<28	<250	**20,000**	<54	**39**	**640**	<18	<31
Post Carbon	Post-carbon SSVE 20241202	12/2/2024	<14	<13	<13	<13	<120	<23	<26	<18	<18	<8.7	<15

Notes:

1. µg/m^3 = Micrograms per cubic meter.
2. Samples analyzed by Modified EPA Method TO-15.
3. Only analytes detected in at least one sample are presented in this table.
4. S = Surrogate recoveries were above acceptable recovery limits. Results may be biased high.
5. **Bold** values represents detected concentration of listed analyte.
6. -- = Not sampled.
7. * = Due to a faulty sample container, the Post Carbon sample was not able to be collected on the same date as the Pre Carbon sample.

Table 10

North SVE System—HVOC Mass Removal

NuStar Vancouver Facility

Vancouver, Washington

Sample Date	Post-Blower Pressure (in water)	Air Flow Rate [1] (cfm)	Total HVOCs (mg/m^3)	HVOC Removal (lb/day)
10/12/2011	0.1	250	10.5	0.2
1/23/2012	0.1	361	16.5	0.5
2/17/2012	0.05	215	11.3	0.2
3/22/2012	--	210	6.7	0.1
6/20/2012	0.2	217.8	0.3	0.005
8/22/2012	0.2	216	0.2	0.003
11/26/2012	0.05	215	22.6	0.436
12/21/2012	0.1	215	3.6	0.069
2/28/2013	0.1	215	4.6	0.088
5/24/2013	0.1	215	24.4	0.471
6/25/2013	0.1	215	13.8	0.267
8/27/2013	0.1	215	17.8	0.344
10/24/2013	0.1	215	10.6	0.204
12/27/2013	0.1	215	7.5	0.144
1/29/2014	3.0	215	1.4	0.028
2/24/2014	9.0	215	9.5	0.184
3/31/2014	1.0	215	3.7	0.072
4/29/2014	2.0	215	3.7	0.072
5/27/2014	2.0	215	4.4	0.085
7/3/2014	4.0	215	4.8	0.093
7/28/2014	3.0	215	7.7	0.148
9/30/2014	--	215	7.8	0.151
10/27/2014	2.0	215	15.4	0.298
11/25/2014	--	215	7.5	0.145
12/29/2014	2.0	215	15.3	0.296
1/26/2015	3.0	215	1.6	0.032
2/26/2015	0.1	215	0.0	0.001
3/30/2015	0.4	215	1.8	0.036
4/24/2015	0.4	215	0.6	0.012
5/14/2015	--	215	0.0	0.000
5/28/2015	0.05	215	0.4	0.007
7/29/2015	0.10	215	2.2	0.043
8/31/2015	0.05	215	7.8	0.150
9/28/2015	0.00	215	1.6	0.031
10/29/2015	1.00	215	6.9	0.134
11/30/2015	2.00	215	2.4	0.046
12/28/2015	0.10	215	5.7	0.110
2/1/2016	3.00	215	11.2	0.215
2/29/2016	0.10	215	8.0	0.154
3/29/2016	0.20	215	0.9	0.018
4/27/2016	1.00	215	1.6	0.030
5/25/2016	--*	--*	--*	--*
6/28/2016	0.10	215	1.8830	0.036
7/26/2016	1.20	215	0.0916	0.00177
9/29/2016	0.10	215	0.0150	0.00029
10/25/2016	0.10	215	0.0109	0.000211
11/28/2016	0.10	215	0.0067	0.000129
12/28/2016	0.10	215	0.0017	0.0000329
1/30/2017	0.10	215	0.0046	0.0000889
2/28/2017	0.10	215	0.0059	0.000114
3/28/2017	0.10	215	0.0061	0.000118
4/24/2017	0.10	215	0.0076	0.000147

Table 10

North SVE System—HVOC Mass Removal

NuStar Vancouver Facility

Vancouver, Washington

Date	Activity	HVOC Removal Rate (lb/day)	Days of Operation	Approximate HVOCs Removed (lbs)	Approximate Cumulative HVOCs Removed (lbs)
10/10/2011	Startup	--	--	--	--
10/12/2011	Sample	0.2	37	9	9
1/23/2012	Sample	0.5	31	17	26
2/17/2012	Sample	0.2	25	6	32
3/22/2012	Sample	0.1	34	5	37
6/20/2012	Sample	0.005	90	1	38
8/22/2012	Sample	0.003	63	1	39
11/26/2012	Sample	0.436	66	29	68
12/21/2012	Sample	0.069	25	2	70
2/28/2013	Sample	0.088	69	7	77
5/24/2013	Sample	0.471	--	--	77
6/25/2013	Sample	0.267	32	9	86
8/27/2013	Sample	0.344	63	22	108
10/24/2013	Sample	0.204	58	12	120
12/27/2013	Sample	0.144	64	10	130
1/29/2014	Sample	0.028	33	1	131
2/24/2014	Sample	0.184	--	--	131
3/31/2014	Sample	0.072	35	3	134
4/29/2014	Sample	0.072	29	3	137
5/27/2014	Sample	0.085	28	3	140
7/3/2014	Sample	0.093	37	4	144
7/28/2014	Sample	0.148	25	4	148
9/30/2014	Sample	0.151	64	10	158
10/27/2014	Sample	0.298	27	9	167
11/25/2014	Sample	0.145	29	5	172
12/29/2014	Sample	0.296	34	11	183
1/26/2015	Sample	0.032	28	1	184
2/26/2015	Sample	0.001	31	1	185
3/30/2015	Sample	0.036	32	2	187
4/24/2015	Sample	0.012	25	1	188
5/14/2015	Sample	0.000	20	0	188
5/28/2015	Sample	0.007	14	1	189
6/30/2015	Estimate	0.007	33	1	190
6/30/2015	Estimate	0.000	0	0	190
7/29/2015	Sample	0.043	29	2	192
8/31/2015	Sample	0.150	33	5	197
9/28/2015	Sample	0.031	28	1	198
10/29/2015	Sample	0.134	31	5	203
11/30/2015	Sample	0.046	32	2	205
12/28/2015	Sample	0.110	28	4	209
2/1/2016	Sample	0.215	35	8	217
2/29/2016	Sample	0.154	28	5	222
3/29/2016	Sample	0.018	29	1	223
4/27/2016	Sample	0.030	29	1	224
5/25/2016	Sample	--*	28	--*	221
6/28/2016	Sample	0.0364	34	2	223
7/26/2016	Sample	0.00177	28	1	224
9/29/2016	Sample	0.00029	65	1	225
10/25/2016	Sample	0.000211	26	1	226
11/28/2016	Sample	0.000129	34	1	227
12/28/2016	Sample	0.0000329	30	1	228
1/30/2017	Sample	0.0000889	33	1	229
2/28/2017	Sample	0.000114	29	1	230
3/28/2017	Sample	0.000118	28	1	231
4/24/2017	Sample	0.000147	27	1	232

Notes:

1. Air flow rate read from system gauge.
2. cfm = cubic feet per minute
3. mg/m^3 = milligrams per cubic meter
4. lb/day = pounds per day
5. HVOCs = halogenated volatile organic compounds
6. lbs = pounds
7. * = Not measured/sampled; system intentionally shut down to evaluate system efficiency.
8. -- = Not measured/sampled.

Table 11

South SVE System—HVOC Mass Removal

NuStar Vancouver Facility

Vancouver, Washington

Sample Date	Activity	Post-Blower Pressure (in water)	Air Flow Rate [(1)] (cfm)	Total HVOCs (mg/m3)	HVOC Removal (lb/day)	Days of Operation	Approximate HVOCs Removed (lbs)	Approximate Cumulative HVOCs Removed (lbs)
10/6/2011	Startup	33.0	590	46	2.4	0.5	2	2
11/2/2011	Sample	27.0	590	29	1.5	27	41	43
12/14/2011	Sample	27.0	590	57	3.0	42	96	139
2/17/2012	Sample	29.0	--[6]	30	1.6	65	151	290
3/22/2012	Sample	27.0	658	31	1.9	34	59	349
4/26/2012	Sample	27.0	--	0	0.0	35	33	382
5/23/2012	Sample	31.0	--	20	1.2	29	18	400
6/20/2012	Sample	33.0	--	37	2.2	28	47	447
7/24/2012	Sample	32.0	--	34	2.0	34	72	519
8/22/2012	Sample	29.0	--	51	3.0	29	74	593
9/25/2012	Sample	29.0	--	52	3.1	34	104	697
10/29/2012	Sample	47.0	--	63	3.7	34	116	813
11/26/2012	Sample	18.0	--	11	0.6	28	61	874
12/21/2012	Sample	17.0	--	15	0.9	25	19	893
1/24/2013	Sample	10.0	--	2	0.1	34	17	910
2/28/2013	Sample	18.0	--	1	0.1	35	3	913
3/25/2013	Sample	16.0	--	4	0.2	25	4	917
4/29/2013	Sample	15.0	--	1	0.1	35	6	923
5/24/2013	Sample	47.0	--	251	14.8	--	--	996
6/25/2013	Sample	51.0	--	41	2.5	32	277	1,273
7/25/2013	Sample	50.0	--	24	1.4	30	58	1,331
8/27/2013	Sample	52.0	--	30	1.8	33	53	1,384
9/30/2013	Sample	45.0	--	28	1.6	34	59	1,443
10/24/2013	Sample	50.0	--	29	1.7	24	41	1,484
11/25/2013	Sample	51.0	--	22	1.3	32	48	1,532
12/27/2013	Sample	55.0	--	21	1.3	32	41	1,573
1/29/2014	Sample	50.0	--	21	1.2	33	41	1,614
2/24/2014	Sample	50.0	--	37	2.2	--	--	1,614
3/31/2014	Sample	46.0	--	21	1.2	35	60	1,674
4/29/2014	Sample	48.8	--	14	0.8	29	30	1,704
5/27/2014	Sample	49.0	--	13	0.7	28	22	1,726
7/3/2014	Sample	50.0	--	3	0.2	37	18	1,744
7/28/2014	Sample	50.0	--	16	0.9	25	15	1,759
8/25/2014	Sample	49.0	--	21	1.2	28	31	1,790
9/30/2014	Sample	40.0	--	18	1.1	36	42	1,832
11/3/2014	Sample	50.0	--	25	1.5	30	39	1,871
12/31/2014	Estimated	--	--	--	--	22	33	1,904
1/26/2015	Sample	20.0	--	23	1.3	26	37	1,941
2/26/2015	Sample	30.0	--	19	1.1	31	39	1,980
3/30/2015	Sample	29.0	--	18	1.1	32	36	2,016
4/24/2015	Sample	29.0	--	6	0.4	25	18	2,034
5/28/2015	Sample	28.0	--	9	0.5	34	15	2,049
7/29/2015	Sample	25.0	--	13	0.8	62	41	2,090
8/31/2015	Sample	26.0	--	13	0.8	33	26	2,116
9/28/2015	Sample	26.0	--	11	0.6	28	20	2,136
10/29/2015	Sample	27.0	--	19	1.1	31	28	2,164
11/30/2015	Sample	30.0	--	3	0.2	32	22	2,186
12/28/2015	Sample	29.0	--	36	2.2	28	33	2,219
2/1/2016	Sample	19.0	--	3	0.2	35	41	2,260
2/29/2016	Sample	30.0	--	3	0.2	28	6	2,266
3/29/2016	Sample	28.0	--	75	4.4	29	67	2,333
4/27/2016	Sample	5.0	--	1	0.1	29	66	2,399
5/25/2016	Sample	3.0	--	1	0.03	28	2	2,401
6/28/2016	Sample	-- *	-- *	-- *	-- *	-- *	-- *	2,401
7/26/2016	Sample	30.0	--	19	1.1	62	36	2,437
9/29/2016	Sample	28.0	--	27	1.6	65	89	2,526
10/25/2016	Sample	30.0	--	34	2.0	26	47	2,573
11/28/2016	Sample	30.0	--	55	3.3	34	90	2,663
12/28/2016	No sample collected	2.0	--	--	--	--	--	2,663
1/30/2017	Sample	33.0	--	64	3.8	63	223	2,886
3/28/2017	**System Not Working Properly -- No Data or Samples**	--	--	--	--	--	--	2,886
8/28/2017	Sample	32.0	--	34	2.0	28	44	3379
9/25/2017	Sample	30.0	--	24	1.4	28	48	3,427
10/26/2017	Sample	30.0	--	14	0.8	31	35	3,462
11/29/2017	Sample	30.0	--	23	1.4	34	38	3,500
12/21/2017	Estimated (using November effluent data)	30.0	--	23	1.4	22	30	3,530
1/22/2018	Sample	30.0	--	14	0.8	32	36	3,566
2/28/2018	Sample	30.0	--	14	0.8	37	31	3,597
3/29/2018	Sample	31.0	--	14	0.8	29	24	3,621
4/24/2018	Sample	31.0	--	12	0.7	26	21	3,642
5/16/2018	Sample	30.0	--	8	0.5	22	14	3,656
7/23/2018	Sample	29.0	--	19	1.1	68	55	3,711
11/7/2018	Sample	30.0	--	33	1.9	107	164	3,875

Table 11

South SVE System—HVOC Mass Removal

NuStar Vancouver Facility

Vancouver, Washington

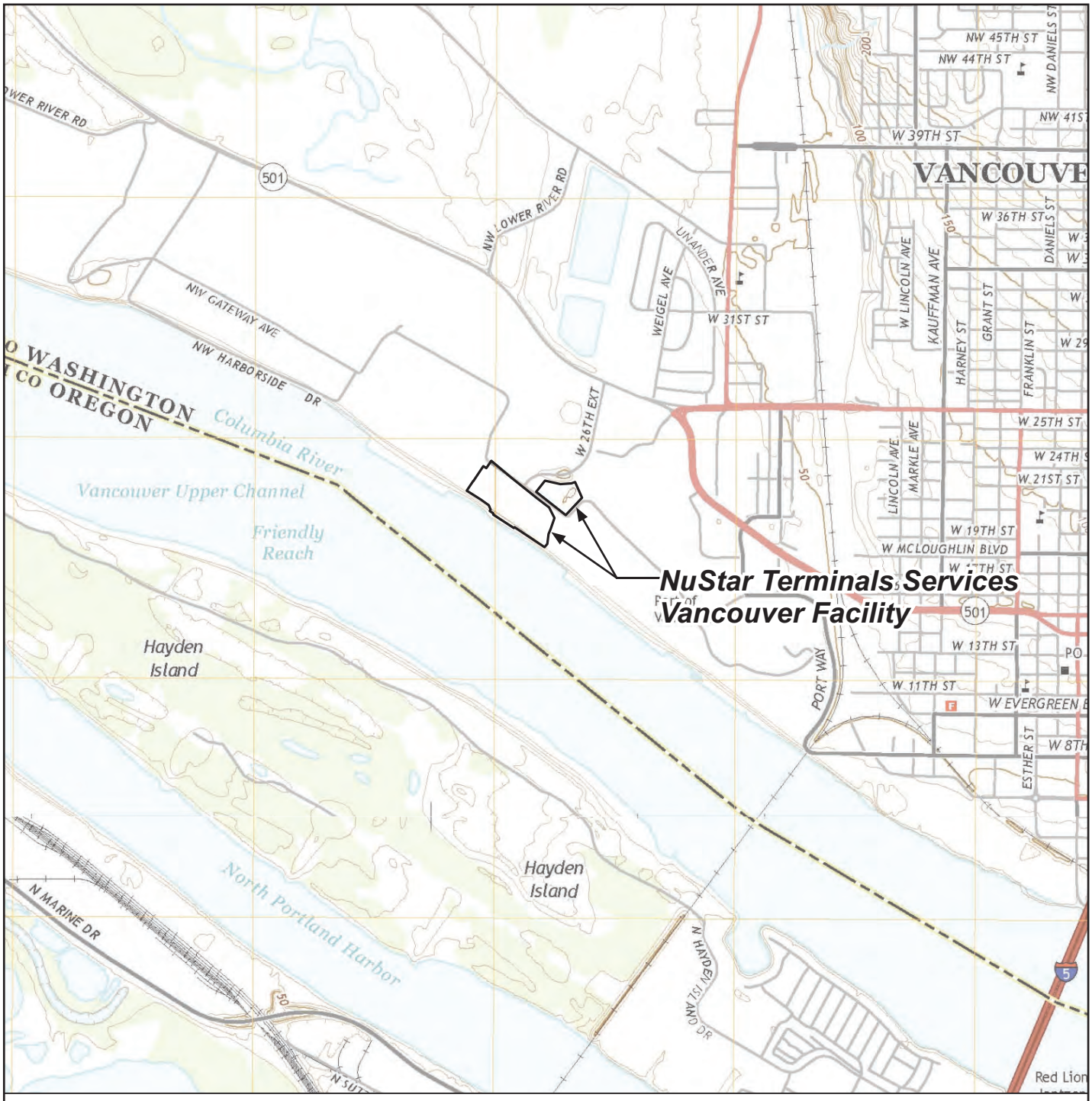
Sample Date	Activity	Post-Blower Pressure (in water)	Air Flow Rate [1] (cfm)	Total HVOCs (mg/m3)	HVOC Removal (lb/day)	Days of Operation	Approximate HVOCs Removed (lbs)	Approximate Cumulative HVOCs Removed (lbs)
1/4/2019	Sample	28.0	--	33	2.0	58	114	3,989
3/8/2019	Sample	28.0	--	22	1.3	63	103	4,092
5/7/2019	Sample	29.0	--	18	1.0	60	70	4,162
7/8/2019	Sample	29.0	--	17	1.0	62	63	4,225
9/9/2019	Sample	29.0	--	16	0.9	63	61	4,286
11/4/2019	Sample	29.0	468	39	1.7	56	73	4,359
1/10/2020	Sample	29.0	468	10	0.4	67	70	4,429
12/14/2020	Sample	30.0	--	34	1.4	6	6	4,435
2/23/2021	Sample	30.0	--	19	0.8	71	79	4,514
4/9/2021	Sample	30.0	--	15	0.6	45	32	4,546
6/17/2021	Sample	30.0	--	12	0.5	69	38	4,584
8/25/2021	Sample	30.0	--	13	0.5	69	36	4,620
11/19/2021	Sample	28.0	--	18	0.8	86	56	4,676
1/25/2022	Sample	28.5	--	17	0.7	67	49	4,725
3/10/2022	Sample	29.0	--	0	0.0	44	16	4,741
5/10/2022	Sample	29.5	--	12	0.5	61	17	4,758
7/12/2022	Sample	29.0	--	12	0.5	63	33	4,791
9/12/2022	Sample	29.0	--	12	0.5	62	32	4,823
11/14/2022	Sample	29.0	--	2	0.1	63	18	4,841
1/16/2023	Sample	28.5	--	10	0.4	63	17	4,858
3/13/2023	Sample	28.0	--	8	0.3	56	22	4,880
5/9/2023	Sample	28.5	--	10	0.4	57	22	4,926
7/11/2023	Sample	26.5	--	52	2.2	63	83	5,009
9/11/2023	Sample	29.5	--	13	0.5	62	85	5,094
11/10/2023	Sample	29.0	--	14	0.6	60	33	5,127
7/22/2024	Sample	28.0	--	31	1.3	11	11	5,138
9/3/2024	Sample	28.0	--	16	0.7	43	43	5,181
12/2/2024	Sample	28.0	--	21	0.9	33	26	5,207

Notes:

1. Air flow rate read from system gauge.
2. cfm = cubic feet per minute
3. mg/m^3 = milligrams per cubic meter
4. lb/day = pounds per day
5. lbs = pounds
6. Flow rate was not measured on dates with dashes (--). For calculations, rate is assumed to be the same as measured the date before.
7. System was down during the October 27, 2014 monitoring event and was restarted on October 29, 2014. It is assumed that the system was down for a total of 4 days, although the exact duration of shutdown is unknown.
8. * = system was off for part replacement.
9. -- = Not measured/sampled.
10. HVOCs = halogenated volatile organic compounds
11. **The last known time the system was operating was on the May 9, 2023 monitoring event. The system was assumed to be down between the May 9, 2023 monitoring event and the end of the semi-annual monitoring period (June 30, 2023). Therefore, the mass removed calculation may be slightly conservative.

FIGURES

GeoEngineers



Note: Base map prepared from USGS 7.5-minute quadrangles of Vancouver, WA and Portland, OR-WA, dated 2014 as provided by USGS.gov.

0 2,000 4,000

Approximate Scale in Feet



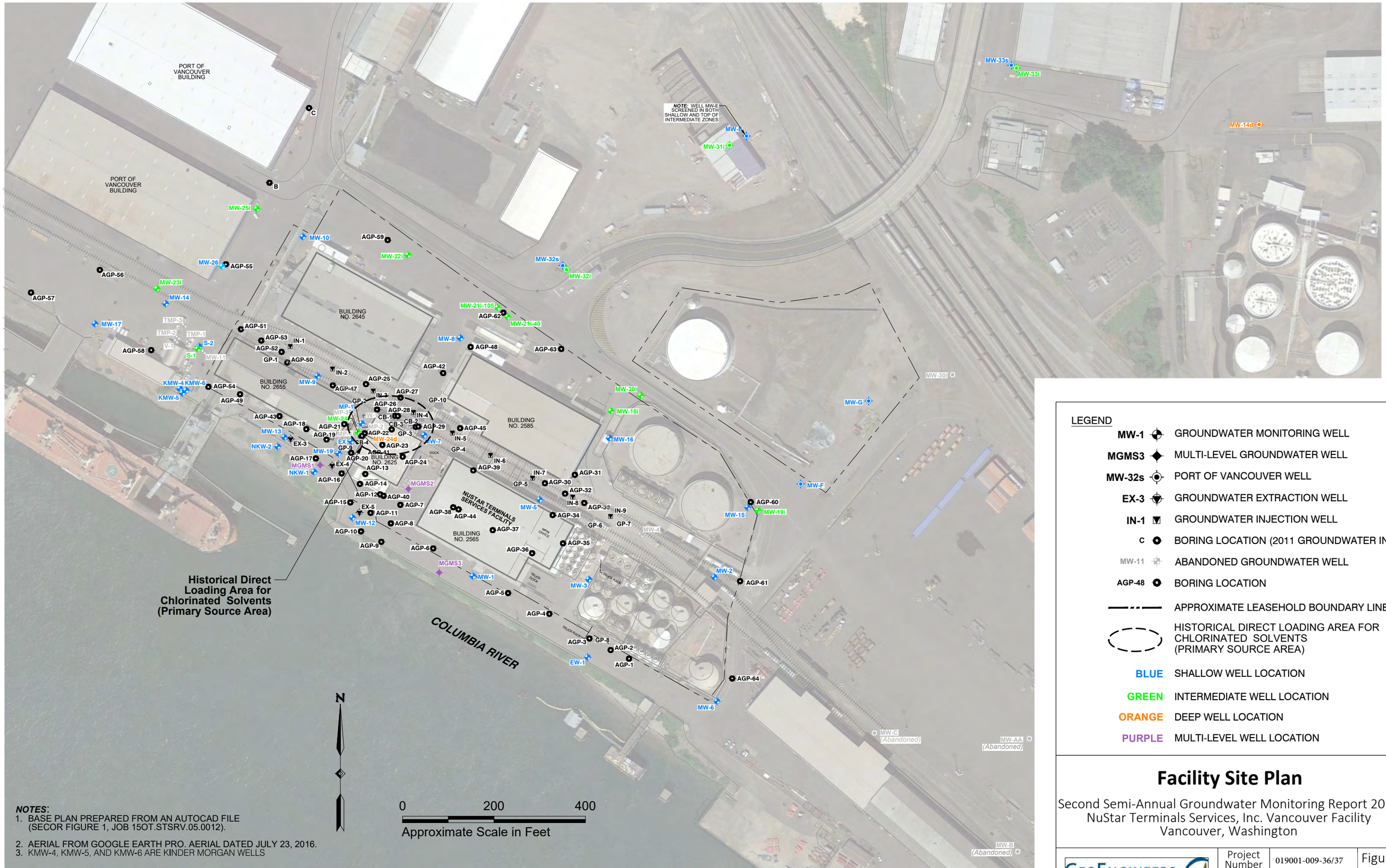
N

Facility Location Map

Second Semi-Annual Groundwater Monitoring Report 2024
NuStar Terminals Services, Inc. Vancouver Facility Vancouver, Washington

GeoEngineers

Project Number	019001-009-36/37	Figure
February 2025		1



LEGEND

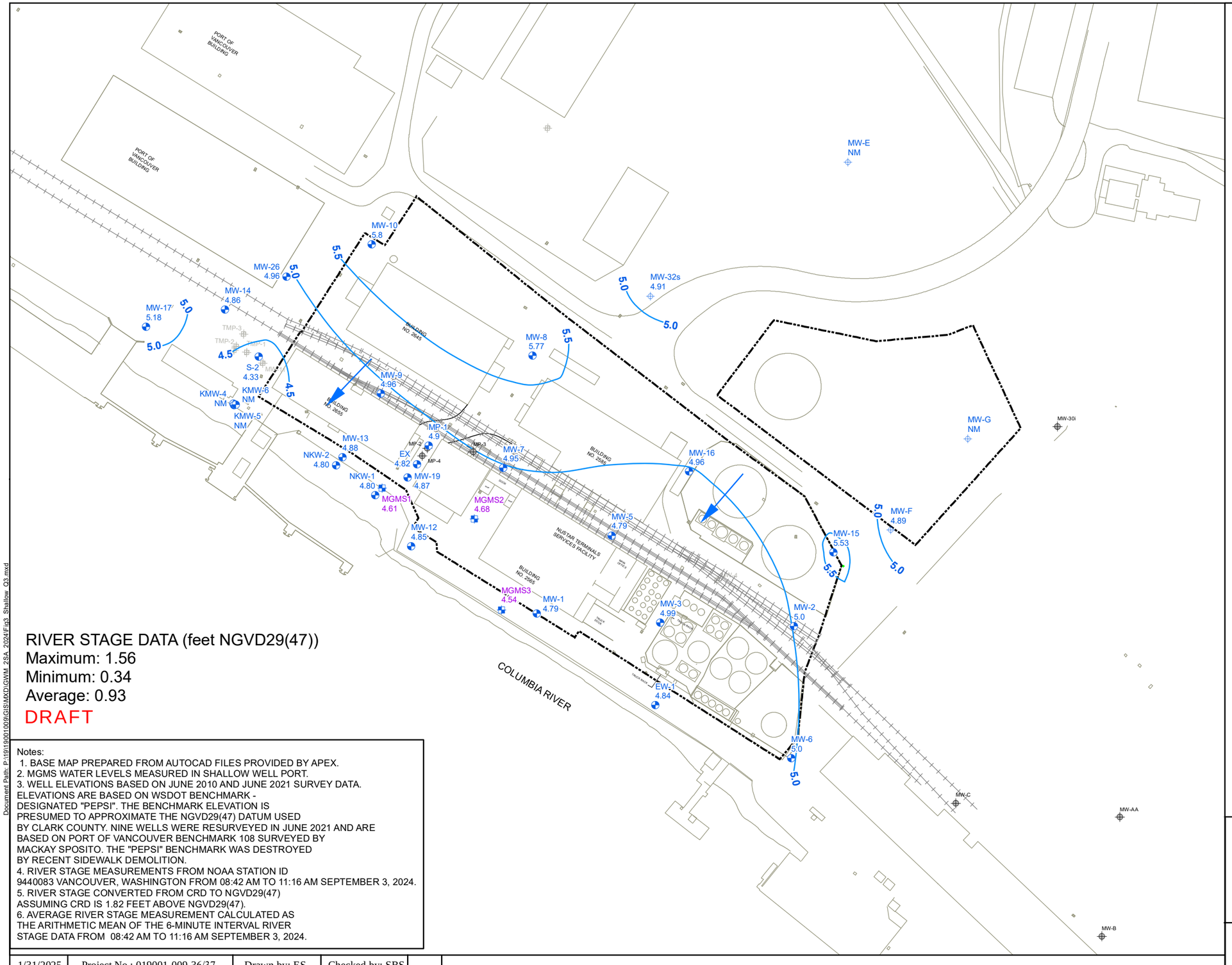
MW-1	GROUNDWATER MONITORING WELL
MGMS3	MULTI-LEVEL GROUNDWATER WELL
MW-32s	PORT OF VANCOUVER WELL
EX-3	GROUNDWATER EXTRACTION WELL
IN-1	GROUNDWATER INJECTION WELL
C	BORING LOCATION (2011 GROUNDWATER INV.)
MW-11	ABANDONED GROUNDWATER WELL
AGP-48	BORING LOCATION
	APPROXIMATE LEASEHOLD BOUNDARY LINE
	HISTORICAL DIRECT LOADING AREA FOR CHLORINATED SOLVENTS (PRIMARY SOURCE AREA)
BLUE	SHALLOW WELL LOCATION
GREEN	INTERMEDIATE WELL LOCATION
ORANGE	DEEP WELL LOCATION
PURPLE	MULTI-LEVEL WELL LOCATION

Facility Site Plan

Second Semi-Annual Groundwater Monitoring Report 2024
NuStar Terminals Services, Inc. Vancouver Facility
Vancouver, Washington

GeoEngineers

Project Number	019001-009-36/37	Figure
February 2025		2



RIVER STAGE DATA (feet NGVD29(47))
Maximum: 1.56
Minimum: 0.34
Average: 0.93
DRAFT

Notes:
1. BASE MAP PREPARED FROM AUTOCAD FILES PROVIDED BY APEX.
2. MGMS WATER LEVELS MEASURED IN SHALLOW WELL PORT.
3. WELL ELEVATIONS BASED ON JUNE 2010 AND JUNE 2021 SURVEY DATA. ELEVATIONS ARE BASED ON WSDOT BENCHMARK - DESIGNATED "PEPSI". THE BENCHMARK ELEVATION IS PRESUMED TO APPROXIMATE THE NGVD29(47) DATUM USED BY CLARK COUNTY. NINE WELLS WERE RESURVEYED IN JUNE 2021 AND ARE BASED ON PORT OF VANCOUVER BENCHMARK 108 SURVEYED BY MACKAY SPOSITO. THE "PEPSI" BENCHMARK WAS DESTROYED BY RECENT SIDEWALK DEMOLITION.
4. RIVER STAGE MEASUREMENTS FROM NOAA STATION ID 9440083 VANCOUVER, WASHINGTON FROM 08:42 AM TO 11:16 AM SEPTEMBER 3, 2024.
5. RIVER STAGE CONVERTED FROM CRD TO NGVD29(47) ASSUMING CRD IS 1.82 FEET ABOVE NGVD29(47).
6. AVERAGE RIVER STAGE MEASUREMENT CALCULATED AS THE ARITHMETIC MEAN OF THE 6-MINUTE INTERVAL RIVER STAGE DATA FROM 08:42 AM TO 11:16 AM SEPTEMBER 3, 2024.

Legend

- Port of Vancouver Well
- Multi-Level Groundwater Well
- Monitoring Well
- Historical Groundwater Extraction Well
- Abandonded Groundwater Well
- Groundwater Elevation Contour (Feet)
- Approximate Property Line

4.79 - Groundwater Elevation in Feet

(4.54) Wells designated with Parentheses Were Not Used in Contouring

NM - Not Measured

NA - Water Elevation Data not Available

BLUE - Shallow Well Location

PURPLE - Multi Level Well Location

Groundwater Flow Direction

0 50 100 200 Feet

Third Quarter- Shallow Groundwater (September 2024)

Second Semi-Annual Groundwater Monitoring Report 2024
NuStar Terminals Services, Inc. Vancouver Facility
Vancouver, Washington

1/31/2025	Project No.: 019001-009-36/37	Drawn by: ES	Checked by: SBS	

[redacted]

Figure 3

Document Path: P:\19\19001009\GIS\MXD\GWM_2SA_2024\Fig3_Shallow_Q3.mxd

PORT OF VANCOUVER BUILDING

MW-25i
3.08

MW-23i
3.35

TMP-3
TMP-2
TMP-1
V-1
S-1
3.21
MW-1

BUILDING NO. 2845

BUILDING NO. 2855

3.5

MW-22i
3.57

MW-32i
3.57

MW-21i-105
3.66

MW-21i-40
3.59

MW-18i
3.61

MW-20i
3.58

BUILDING NO. 2585

MW-24i
3.5
MP-2
MP-3
MP-4

MGMS1
5.42

3.0

MGMS2
4.94

DOCK

NUSTAR TERMINALS SERVICES FACILITY

MAIN OFFICE

BUILDING NO. 2565

MGMS3
4.94

3.0

TRUCK RACK

TRUCK DOCK

3.5

MW-19i
3.55

COLUMBIA RIVER

RIVER STAGE DATA (feet NGVD29(47))
Maximum: -0.76
Minimum: -0.92
Average: -0.88
DRAFT

Notes:
1. BASE MAP PREPARED FROM AUTOCAD FILES PROVIDED BY APEX.
2. MGMS WATER LEVELS MEASURED IN INTERMEDIATE WELL PORT.
3. WELL ELEVATIONS BASED ON JUNE 2010 AND JUNE 2021 SURVEY DATA. ELEVATIONS ARE BASED ON WSDOT BENCHMARK - DESIGNATED "PEPSI". THE BENCHMARK ELEVATION IS PRESUMED TO APPROXIMATE THE NGVD29(47) DATUM USED BY CLARK COUNTY. NINE WELLS WERE RESURVEYED IN JUNE 2021 AND ARE BASED ON PORT OF VANCOUVER BENCHMARK 108 SURVEYED BY MACKAY SPOSITO. THE "PEPSI" BENCHMARK WAS DESTROYED BY RECENT SIDEWALK DEMOLITION.
4. RIVER STAGE MEASUREMENTS FROM NOAA STATION ID 9440083 VANCOUVER, WASHINGTON FROM 14:32 AM TO 15:38 PM SEPTEMBER 3, 2024.
5. RIVER STAGE CONVERTED FROM CRD TO NGVD29(47) ASSUMING CRD IS 1.82 FEET ABOVE NGVD29(47).
6. AVERAGE RIVER STAGE MEASUREMENT CALCULATED AS THE ARITHMETIC MEAN OF THE 6-MINUTE INTERVAL RIVER STAGE DATA FROM 14:32 AM TO 15:38 PM SEPTEMBER 3, 2024.

Legend

- Port of Vancouver Well
- Multi-Level Groundwater Well
- Monitoring Well
- Historical Groundwater Extraction Well
- Abandonded Groundwater Well
- Groundwater Elevation Contour (Feet)
- Approximate Property Line
- 3.55 - Groundwater Elevation in Feet

NM - Not Measured

GREEN - Intermediate Well Location

PURPLE - Multi Level Well Location

0 50 100 200 Feet

Third Quarter- Intermediate (September 2024)

Second Semi-Annual Groundwater Monitoring Report 2024
NuStar Terminals Services, Inc. Vancouver Facility
Vancouver, Washington

Figure 4

1/17/2025	Project No.: 019001-009-36/37	Drawn by: ES	Checked by: SBS	

Document Path: P:\19\19001009\GIS\MXD\GWM_2SA_2024Fig4_Int_Q3.mxd

MW-E
NM

MW-10
6.18

MW-26
5.88

MW-14
5.83

MW-32s
6.13

MW-17
6.14

S-2
5.88

MW-8
6.36

MW-9
6.05

KMW-4
NM

KMW-5
NM

KMW-6
NM

MW-G
NM

MP-1
6.01

MW-13
5.86

EX
5.84

MW-7
6.01

MW-16
5.53

NKW-2
5.39

MGMS1
5.41

MW-19
5.88

MGMS2
5.26

NKW-1
5.66

MW-5
6.08

MW-F
6.20

MW-12
4.62

MW-15
6.24

MW-1
5.62

MW-3
(7.18)

MW-2
5.73

MGMS3
5.34

EW-1
5.72

6.0

MW-6
6.13

RIVER STAGE DATA (feet NGVD29(47))
Maximum: 2.18
Minimum: 1.09
Average: 1.61
DRAFT

Notes:
1. BASE MAP PREPARED FROM AUTOCAD FILES PROVIDED BY APEX.
2. MGMS WATER LEVELS MEASURED IN SHALLOW WELL PORT.
3. WELL ELEVATIONS BASED ON JUNE 2010 AND JUNE 2021 SURVEY DATA. ELEVATIONS ARE PRIMARILY BASED ON WSDOT BENCHMARK - DESIGNATED "PEPSI". THE BENCHMARK ELEVATION IS PRESUMED TO APPROXIMATE THE NGVD29(47) DATUM USED BY CLARK COUNTY. NINE WELLS WERE RESURVEYED IN JUNE 2021 AND ARE BASED ON PORT OF VANCOUVER BENCHMARK 108 SURVEYED BY MACKAY+SPOSITO. THE "PEPSI" BENCHMARK WAS DESTROYED BY RECENT SIDEWALK DEMOLITION. A SUBSET OF SITE WELLS WERE RESURVEYED BY MACKAY+SPOSITO ON MAY 25, 2023 USING THE SAME BENCHMARK AS NOTED ABOVE.
4. RIVER STAGE MEASUREMENTS FROM NOAA STATION ID 9440083 VANCOUVER, WASHINGTON FROM 7:47 AM TO 12:10 PM ON DECEMBER 2, 2024.
5. RIVER STAGE CONVERTED FROM CRD TO NGVD29(47) ASSUMING CRD IS 1.82 FEET ABOVE NGVD29(47).
6. AVERAGE RIVER STAGE MEASUREMENT CALCULATED AS THE ARITHMETIC MEAN OF THE 6-MINUTE INTERVAL RIVER STAGE DATA FROM 7:47 AM TO 12:10 PM ON DECEMBER 2, 2024.

Legend

- Port of Vancouver Well
- Multi-Level Groundwater Well
- Monitoring Well
- Historical Groundwater Extraction Well
- Abandonded Groundwater Well
- Groundwater Elevation Contour (Feet)
- Approximate Property Line
- 8.20 - Groundwater Elevation in Feet

NM - Not Measured

BLUE - Shallow Well Location

PURPLE - Multi Level Well Location

Groundwater Flow Direction

0 50 100 200
Feet

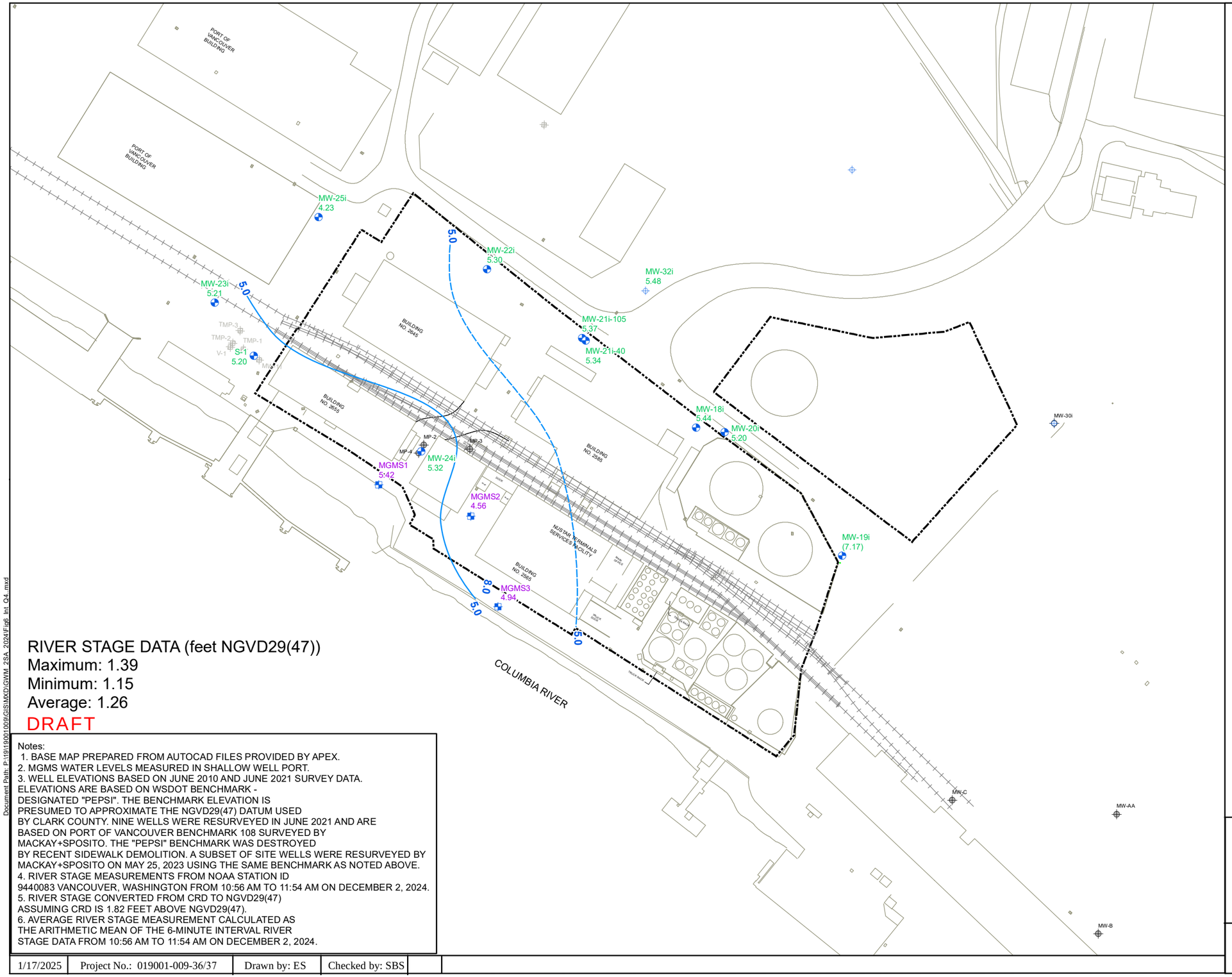
Fourth Quarter- Shallow Groundwater (December 2024)

Second Semi-Annual Groundwater Monitoring Report 2024
NuStar Terminals Services, Inc. Vancouver Facility
Vancouver, Washington

1/31/2025	Project No.: 019001-009-36/37	Drawn by: ES	Checked by: SBS	

Figure
5

Document Path: P:\019\019001\009\GIS\MXD\GWM_2SA_2024Fig5_Shallow_Q4.mxd



RIVER STAGE DATA (feet NGVD29(47))
Maximum: 1.39
Minimum: 1.15
Average: 1.26

DRAFT

Notes:
1. BASE MAP PREPARED FROM AUTOCAD FILES PROVIDED BY APEX.
2. MGMS WATER LEVELS MEASURED IN SHALLOW WELL PORT.
3. WELL ELEVATIONS BASED ON JUNE 2010 AND JUNE 2021 SURVEY DATA. ELEVATIONS ARE BASED ON WSDOT BENCHMARK - DESIGNATED "PEPSI". THE BENCHMARK ELEVATION IS PRESUMED TO APPROXIMATE THE NGVD29(47) DATUM USED BY CLARK COUNTY. NINE WELLS WERE RESURVEYED IN JUNE 2021 AND ARE BASED ON PORT OF VANCOUVER BENCHMARK 108 SURVEYED BY MACKAY+SPOSITO. THE "PEPSI" BENCHMARK WAS DESTROYED BY RECENT SIDEWALK DEMOLITION. A SUBSET OF SITE WELLS WERE RESURVEYED BY MACKAY+SPOSITO ON MAY 25, 2023 USING THE SAME BENCHMARK AS NOTED ABOVE.
4. RIVER STAGE MEASUREMENTS FROM NOAA STATION ID 9440083 VANCOUVER, WASHINGTON FROM 10:56 AM TO 11:54 AM ON DECEMBER 2, 2024.
5. RIVER STAGE CONVERTED FROM CRD TO NGVD29(47) ASSUMING CRD IS 1.82 FEET ABOVE NGVD29(47).
6. AVERAGE RIVER STAGE MEASUREMENT CALCULATED AS THE ARITHMETIC MEAN OF THE 6-MINUTE INTERVAL RIVER STAGE DATA FROM 10:56 AM TO 11:54 AM ON DECEMBER 2, 2024.

Legend

- Port of Vancouver Well
- Multi-Level Groundwater Well
- Monitoring Well
- Historical Groundwater Extraction Well
- Abandonded Groundwater Well
- Approximate Property Line
- 8.22 - Groundwater Elevation in Feet

NM - Not Measured

GREEN - Intermediate Well Location

PURPLE - Multi Level Well Location

Groundwater Flow Direction

0 50 100 200 Feet

Fourth Quarter- Intermediate (December 2024)

Second Semi-Annual Groundwater Monitoring Report 2024
NuStar Terminals Services, Inc. Vancouver Facility
Vancouver, Washington

Figure 6

1/17/2025	Project No.: 019001-009-36/37	Drawn by: ES	Checked by: SBS	

Document Path: P:\19\19001009\GIS\MXD\GWM_2SA_2024Fig6_Int_Q4_.mxd

MW-23i	
PCE	0.520

S-2	
TCE	1.54
cis-1,2-DCE	40.7
trans-1,2-DCE	0.490
1,1-DCA	7.40
1,1,1-TCA	0.740
VC	0.270

MW-14	
PCE	128
TCE	266
cis-1,2-DCE	96.4
trans-1,2-DCE	2.05
1,1-DCE	2.63
1,1-DCA	6.25
1,1,1-TCA	0.780

MW-26	
PCE	116
TCE	182
cis-1,2-DCE	41.4
trans-1,2-DCE	1.42
1,1-DCE	0.960
1,1-DCA	2.74
1,1,1-TCA	1.28

S-1	
PCE	0.530
TCE	0.910
cis-1,2-DCE	4.08

MW-10	
PCE	1.45
TCE	1.45

MW-22i	
PCE	1.78
TCE	3.53
cis-1,2-DCE	14.0
1,1-DCA	0.430

MW-21i-105	
PCE	31.0
TCE	11.8
cis-1,2-DCE	18.5
1,1-DCE	0.410
1,1-DCA	0.700

MW-25i
ND[2]

KMW-4	
PCE	71.9
TCE	165
cis-1,2-DCE	13.2
1,1-DCE	1.78
1,1-DCA	1.60
1,1,1-TCA	2.22

MW-9	
PCE	151
TCE	40.5
cis-1,2-DCE	15.0
trans-1,2-DCE	1.08
1,1-DCA	0.540
1,1,1-TCA	2.23
VC	0.860

MW-8	
PCE	2.71

MW-32s
ND[2]

KMW-5	
TCE	4.51
cis-1,2-DCE	4.05
1,1-DCE	0.580
1,1-DCA	0.760
1,1,1-TCA	0.410
VC	2.75

MW-24i	
PCE	22.4
TCE	10.0
cis-1,2-DCE	21.6
1,1-DCA	1.00

MW-7/MW-7 DUP		
PCE	83.4	80.7
TCE	32.0	30.0
cis-1,2-DCE	29.8	28.3
1,1-DCE	0.490	0.510
1,1-DCA	2.31	2.18
1,1,1-TCA	0.550	0.500
VC	<0.200	0.200

MW-21i-40	
PCE	20.9
TCE	10.1
cis-1,2-DCE	25.1
1,1-DCA	1.24

MW-17	
PCE	0.590
TCE	0.900
cis-1,2-DCE	1.24

KMW-6	
PCE	1.83
TCE	20.8
cis-1,2-DCE	1.76

MW-24d
ND[2]

MW-18i	
PCE	1.15

MW-20i	
PCE	1.47
TCE	0.930
cis-1,2-DCE	6.30

MW-5	
cis-1,2-DCE	3.16
1,1-DCA	0.980
VC	1.84

MW-13	
PCE	1,600
TCE	928
cis-1,2-DCE	1,960
trans-1,2-DCE	33.7
1,1-DCE	29.5
1,1-DCA	36.5
1,1,1-TCA	0.600
VC	321

MW-16	
PCE	66.6
TCE	6.83
cis-1,2-DCE	29.8

MP-1	
PCE	164
TCE	23.9
cis-1,2-DCE	4.14

MW-19i	
cis-1,2-DCE	0.540

NKW-2	
PCE	73.0
TCE	202
cis-1,2-DCE	6,880
trans-1,2-DCE	79.8
1,1-DCE	64.9
1,1-DCA	176
VC	36.9

MW-3	
PCE	118
TCE	23.8
cis-1,2-DCE	43.4
trans-1,2-DCE	0.640
1,1-DCA	1.92
1,1,1-TCA	1.14

MW-2
ND[2]

MGMS1	43	60
PCE	140	20.3
TCE	304	10.1
cis-1,2-DCE	2,200	16.8
trans-1,2-DCE	37.2	<0.400
1,1-DCE	20.2	1.24
1,1-DCA	82.2	<0.400
VC	11.2	<0.200

MW-19/MW-19 DUP		
PCE	8,410	9,000
TCE	1,330	1,630
cis-1,2-DCE	482	582
1,1-DCE	32.0	38.0
1,1,1-TCA	43.0	55.0
VC	47.0	59.5

MW-1	
PCE	12.4
TCE	11.3
cis-1,2-DCE	70.1
trans-1,2-DCE	0.990
1,1-DCA	4.83

EW-1	
CF	1.45
PCE	14.7
TCE	4.63
cis-1,2-DCE	0.600
1,1,1-TCA	0.430

NKW-1	
PCE	807
TCE	238
cis-1,2-DCE	424
trans-1,2-DCE	3.07
1,1-DCE	8.08
1,1-DCA	32.4
1,1,1-TCA	2.33
VC	132

EX	
PCE	2,060
TCE	212
cis-1,2-DCE	625
trans-1,2-DCE	4.50
1,1-DCE	4.50
1,1-DCA	4.50
1,1,1-TCA	7.20
VC	4.40

MW-12/MW-12 DUP		
PCE	0.630	0.560
TCE	0.600	0.640
cis-1,2-DCE	33.8	32.4
1,1-DCA	66.7	64.5
VC	483	375

MGMS3	40	40 DUP	60
PCE	0.540	0.510	1.74
TCE	<0.400	<0.400	1.24
cis-1,2-DCE	44.8	43.5	7.50
1,1-DCA	3.43	3.54	<0.400
VC	108	105	<0.400

MGMS2	40	60
PCE	215	13.3
TCE	135	7.14
cis-1,2-DCE	281	16.2
trans-1,2-DCE	2.84	<0.400
1,1-DCE	8.02	<0.400
1,1-DCA	12.5	0.700
1,1,1-TCA	0.820	<0.400
VC	<0.400	0.310

DRAFT

NOTES:
1. BASE PLAN PREPARED FROM AN AUTOCAD FILE (SECOR FIGURE 1, JOB 15OT.STSRV.05.0012).
2. ND = NOT DETECTED. WELL SAMPLED BUT NO VOC CONSTITUENTS WERE DETECTED.
3. NM = NOT MEASURED
4. HVOC = HALOGENATED VOLATILE ORGANIC COMPOUND

WELL IDENTIFICATION — DEPTH OF PORT SAMPLED (IF NOT SPECIFIED - SINGLE PORT WELL)

MGMS2	40	60
PCE	215	13.3
TCE	135	7.14
cis-1,2-DCE	281	16.2
trans-1,2-DCE	2.84	<0.400
1,1-DCE	8.02	<0.400
1,1-DCA	12.5	0.700
1,1,1-TCA	0.820	<0.400
VC	<0.400	0.310

CHEMICAL CONCENTRATION IN µg/L (ONLY DETECTED COMPOUNDS ARE SHOWN)

ANALYTE SAMPLED

Legend

- Port of Vancouver Well
- Multi-Level Groundwater Well
- Monitoring Well
- Historical Groundwater Extraction Well
- Abandonded Groundwater Well
- Approximate Property Line

BLUE - Shallow zone concentration data

GREEN - Intermediate zone concentration data

ORANGE - Deep zone concentration data

PCE	TETRACHLOROETHENE
TCE	TRICHLOROETHENE
cis-1,2-DCE	CIS-1,2-DICHLOROETHENE
trans-1,2-DCE	TRANS-1,2-DICHLOROETHENE
VC	VINYL CHLORIDE
1,1-DCE	1,1-DICHLOROETHENE
1,1-DCA	1,1-DICHLOROETHANE
CF	CHLOROFORM
1,1,1-TCA	1,1,1-TRICHLOROETHANE
CA	CHLOROETHANE

0 50 100 200 Feet

HVOC Concentrations in Groundwater (September 2024)

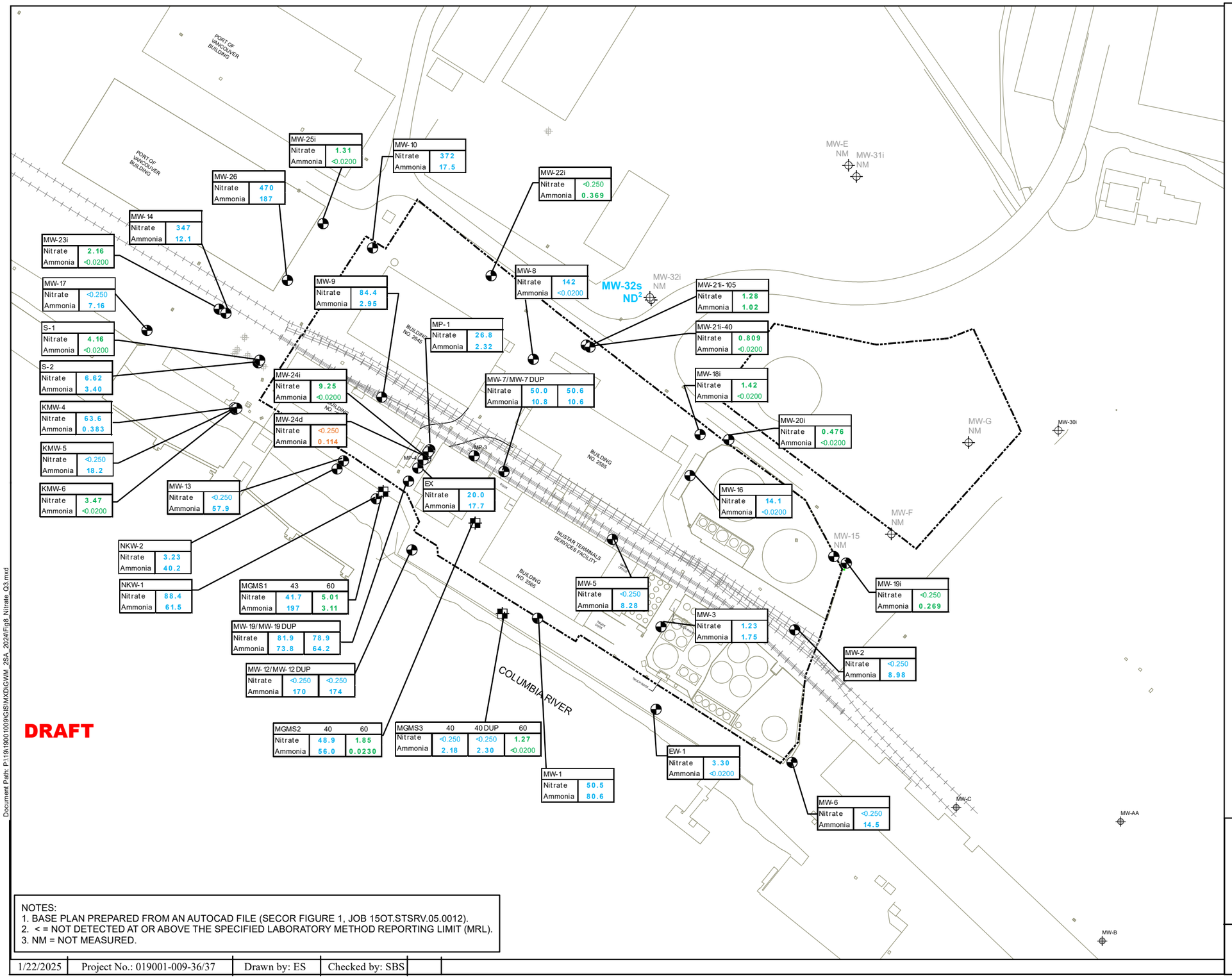
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NuStar Terminals Services, Inc. Vancouver Facility
Vancouver, Washington

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Figure 7

1/21/2025 | Project No.: 019001-009-36/37 | Drawn by: ES | Checked by: SBS

Document Path: P:\19\19001009\GIS\MXD\GWM_2SA_2024\Fig7_VOCs_Q3_2024.mxd



WELL IDENTIFICATION

MW-20i	
Nitrate	0.476
Ammonia	<0.0200

NITRATE IN mg/L (AS NITROGEN METHOD 300.0)

AMMONIA IN mg/L (AS NITROGEN METHOD 350.1)

Legend

- Port of Vancouver Well
- Multi-Level Groundwater Well
- Monitoring Well
- Historical Groundwater Extraction Well
- Abandonded Groundwater Well
- Approximate Property Line

BLUE - Shallow zone concentration data

GREEN - Intermediate zone concentration

ORANGE - Deep zone concentration data

0 50 100 200 Feet

Nitrate and Ammonia Concentrations in Groundwater (September 2024)

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NuStar Terminals Services, Inc. Vancouver Facility
Vancouver, Washington

GeoEngineers

Figure 8

NOTES:
1. BASE PLAN PREPARED FROM AN AUTOCAD FILE (SECOR FIGURE 1, JOB 15OT.STSRV.05.0012).
2. < = NOT DETECTED AT OR ABOVE THE SPECIFIED LABORATORY METHOD REPORTING LIMIT (MRL).
3. NM = NOT MEASURED.

1/22/2025	Project No.: 019001-009-36/37	Drawn by: ES	Checked by: SBS

Document Path: P:\19\19001009\GIS\MXD\GWM_2SA_2024\Fig8_Nitrate_Q3.mxd

MW-14	
PCE	144
TCE	239
cis-1,2-DCE	69.5
trans-1,2-DCE	1.86
1,1-DCE	2.82
1,1-DCA	4.28
1,1,1-TCA	0.570

MW-26	
PCE	193
TCE	237
cis-1,2-DCE	46.6
trans-1,2-DCE	1.90
1,1-DCE	1.15
1,1-DCA	3.02
1,1,1-TCA	1.88

MW-25i	
PCE	0.640

S-2	
TCE	0.730
cis-1,2-DCE	26.9
trans-1,2-DCE	0.410
1,1-DCA	5.61

S-1	
PCE	0.760
TCE	0.650
cis-1,2-DCE	0.830

MW-10	
PCE	3.60
TCE	1.60

MW-22i	
PCE	1.73
TCE	3.55
cis-1,2-DCE	10.3
1,1-DCA	0.400

MW-21i-105	
PCE	30.3
TCE	9.33
cis-1,2-DCE	11.0
1,1-DCE	0.440
1,1-DCA	0.540

KMW-4	
PCE	66.9
TCE	84.3
cis-1,2-DCE	3.15
1,1-DCA	0.580
1,1,1-TCA	0.740

KMW-5	
TCE	0.510
cis-1,2-DCE	3.10
1,1-DCA	0.430
VC	2.99

MW-8	
PCE	3.48

MW-9	
PCE	65.5
TCE	17.3
1,1,1-TCA	1.09

MW-7/MW-7 DUP		
PCE	251	278
TCE	122	133
cis-1,2-DCE	87.8	95.8
trans-1,2-DCE	1.62	1.72
1,1-DCE	2.30	2.32
1,1-DCA	9.32	10.3
1,1,1-TCA	2.46	2.62
VC	1.26	1.30

MW-21i-40	
PCE	20.8
TCE	9.85
cis-1,2-DCE	20.3
1,1-DCE	0.440
1,1-DCA	1.19

MW-17	
PCE	3.49
TCE	5.95
cis-1,2-DCE	11.8
1,1-DCA	0.420

MW-24i	
PCE	21.7
TCE	9.31
cis-1,2-DCE	18.2
1,1-DCE	0.440
1,1-DCA	1.17

MW-18i	
PCE	1.58
TCE	0.460

KMW-6	
PCE	0.680
TCE	1.16

MW-5	
cis-1,2-DCE	24.2
1,1-DCA	1.92
VC	2.99

MW-20i	
PCE	1.87
TCE	1.21
cis-1,2-DCE	5.69

MW-13	
PCE	192
TCE	84.6
cis-1,2-DCE	96.8
trans-1,2-DCE	1.79
1,1-DCE	1.67
1,1-DCA	1.79
VC	15.6

MW-16	
PCE	47.8
TCE	3.76
cis-1,2-DCE	14.0

MW-15	
PCE	0.590

MP-1	
PCE	168
TCE	24.3
cis-1,2-DCE	4.78
1,1-DCE	0.440
1,1,1-TCA	0.470

MW-19i	
cis-1,2-DCE	0.470

NKW-1	
PCE	128
TCE	44.0
cis-1,2-DCE	134
trans-1,2-DCE	0.970
1,1-DCE	2.02
1,1-DCA	5.98
VC	7.55

MW-3	
PCE	160
TCE	28.9
cis-1,2-DCE	17.8
trans-1,2-DCE	1.22
1,1-DCA	0.580
1,1,1-TCA	1.88

NKW-2	
PCE	45.2
TCE	66.4
cis-1,2-DCE	1,620
trans-1,2-DCE	16.4
1,1-DCE	25.8
1,1-DCA	47.0

MW-1	
PCE	19.1
TCE	13.7
cis-1,2-DCE	74.0
trans-1,2-DCE	1.31
1,1-DCE	0.670
1,1-DCA	4.78
VC	0.360

EW-1	
CF	1.10
PCE	32.2
TCE	6.98
cis-1,2-DCE	1.07
1,1,1-TCA	0.900

MGMS1	43	60	110
PCE	66.6	14.3	22.0
TCE	168	11.6	51.6
cis-1,2-DCE	955	14.6	194
trans-1,2-DCE	21.6	<0.400	1.14
1,1-DCE	8.60	<0.400	1.23
1,1-DCA	42.6	1.43	9.79
VC	14.8	0.370	<0.200

MW-19/MW-19DUP		
PCE	2,570	2,510
TCE	708	739
cis-1,2-DCE	692	752
trans-1,2-DCE	6.10	7.20
1,1-DCE	16.6	17.5
1,1-DCA	51.5	57.0
1,1,1-TCA	10.5	11.0
VC	16.7	18.6

MW-12/MW-12 DUP		
PCE	11.2	10.6
TCE	6.11	6.11
cis-1,2-DCE	9.99	9.52
1,1-DCA	3.00	2.88
VC	7.63	7.28

EX	
PCE	2,870
TCE	200
cis-1,2-DCE	248
1,1,1-TCA	5.70
VC	6.70

MGMS2	40	60	110	132
PCE	285	12.5	4.61	3.45
TCE	183	8.23	3.19	4.21
cis-1,2-DCE	385	18.8	7.36	15.8
trans-1,2-DCE	3.85	<0.400	<0.400	<0.400
1,1-DCE	12.1	<0.400	<0.400	<0.400
1,1-DCA	21.0	0.860	<0.400	0.540
VC	<1.00	0.290	1.17	2.46

MGMS3	40	40 DUP	60	110	132
PCE	0.480	0.500	1.51	1.32	1.61
TCE	<0.400	<0.400	0.910	<0.400	0.820
cis-1,2-DCE	0.710	0.640	5.15	<0.400	0.570
1,1-DCA	2.45	2.33	<0.400	<0.400	<0.400
VC	12.5	11.5	0.410	<0.200	<0.200

MW-23 ND[2]

MW-24d ND[2]

MW-2 ND[2]

MW-6 ND[2]

MW-32s ND

MW-E NM

MW-31i NM

MW-321 NM

MW-G NM

MW-F NM

MW-4 NM

MW-30i

MW-C

MW-AA

MW-B

PORT OF VANCOUVER BUILDING

BUILDING NO. 2456

BUILDING NO. 2457

TERMINALS FACILITY

COLUMBIA

MP-1

MP-2

MP-3

MP-4

DRAFT

NOTES:
1. BASE PLAN PREPARED FROM AN AUTOCAD FILE (SECOR FIGURE 1, JOB 15OT.STSRV.05.0012).
2. ND = NOT DETECTED. WELL SAMPLED BUT NO VOC CONSTITUENTS WERE DETECTED.
3. NM = NOT MEASURED.
4. HVOC = HALOGENATED VOLATILE ORGANIC COMPOUND

WELL IDENTIFICATION

DEPTH OF PORT SAMPLED (IF NOT SPECIFIED - SINGLE PORT WELL)

MGMS1	43	60	110
PCE	66.6	14.3	22.0
TCE	168	11.6	51.6
cis-1,2-DCE	955	14.6	194
trans-1,2-DCE	21.6	<0.400	1.14
1,1-DCE	8.60	<0.400	1.23
1,1-DCA	42.6	1.43	9.79
VC	14.8	0.370	<0.200

CHEMICAL CONCENTRATION IN µg/L (ONLY DETECTED COMPOUNDS ARE SHOWN)

ANALYTE SAMPLED

Legend

- Port of Vancouver Well
- Multi-Level Groundwater Well
- Monitoring Well
- Historical Groundwater Extraction Well
- Abandonded Groundwater Well
- Approximate Property Line

BLUE - Shallow zone concentration data

GREEN - Intermediate zone concentration data

ORANGE - Deep zone concentration data

PCE	TETRACHLOROETHENE
TCE	TRICHLOROETHENE
cis-1,2-DCE	CIS-1,2-DICHLOROETHENE
trans-1,2-DCE	TRANS-1,2-DICHLOROETHENE
VC	VINYL CHLORIDE
1,1-DCE	1,1-DICHLOROETHENE
1,1-DCA	1,1-DICHLOROETHANE
CF	CHLOROFORM
1,1,1-TCA	1,1,1-TRICHLOROETHANE
CA	CHLOROETHANE

0 50 100 200 Feet

HVOC Concentrations in Groundwater (December 2024)

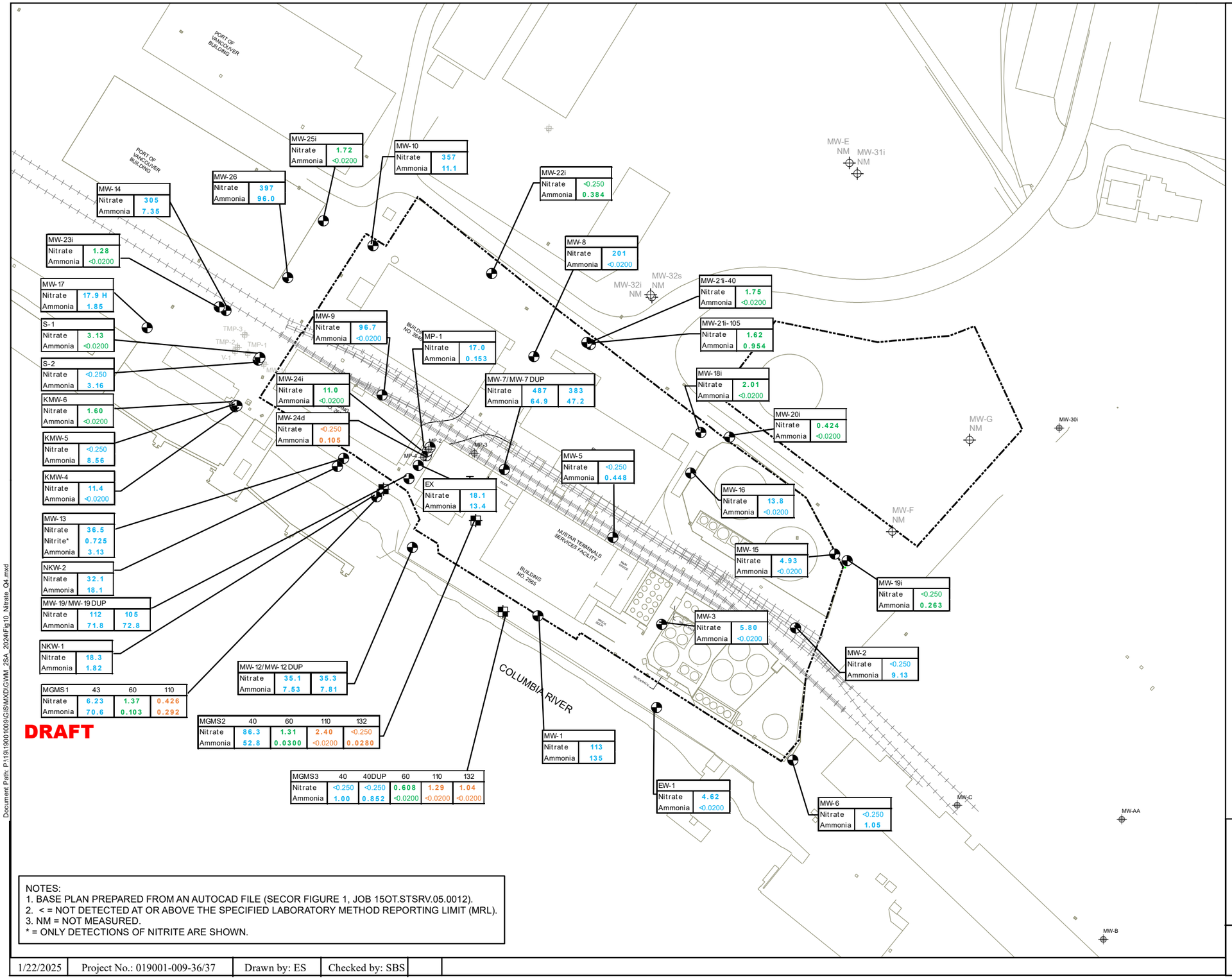
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Vancouver, Washington

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Figure 9

1/22/2025	Project No.: 019001-009-36/37	Drawn by: ES	Checked by: SBS	

Document Path: P:\19\19001009\GIS\MXD\GWM_2SA_2024\Fig9_VOCs_Q4.mxd



WELL IDENTIFICATION

MW-21i-105
Nitrate 1.62 — NITRATE IN mg/L (AS NITROGEN METHOD 300.0)
Ammonia 0.954 — AMMONIA IN mg/L (AS NITROGEN METHOD 350.1)

Legend

- Port of Vancouver Well
- Multi-Level Groundwater Well
- Monitoring Well
- Historical Groundwater Extraction Well
- Abandonded Groundwater Well
- Approximate Property Line

BLUE - Shallow zone concentration data

GREEN - Intermediate zone concentration data

ORANGE - Deep zone concentration data

NOTES:
1. BASE PLAN PREPARED FROM AN AUTOCAD FILE (SECOR FIGURE 1, JOB 15OT.STSRV.05.0012).
2. < = NOT DETECTED AT OR ABOVE THE SPECIFIED LABORATORY METHOD REPORTING LIMIT (MRL).
3. NM = NOT MEASURED.
* = ONLY DETECTIONS OF NITRITE ARE SHOWN.

Nitrate and Ammonia Concentrations in Groundwater (December 2024)

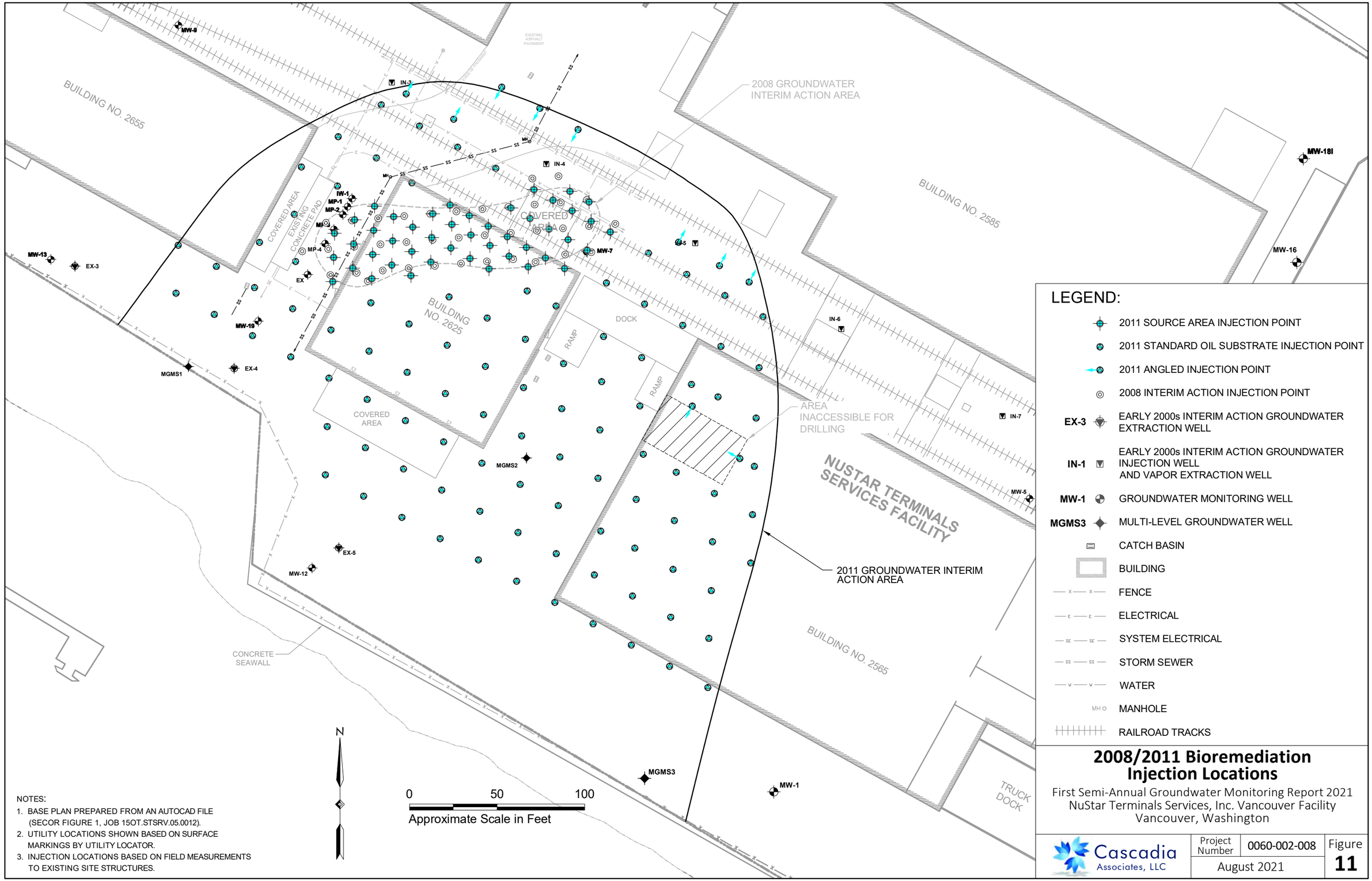
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Vancouver, Washington

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Figure 10

1/22/2025	Project No.: 019001-009-36/37	Drawn by: ES	Checked by: SBS	

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NOTES:

1. BASE PLAN PREPARED FROM AN AUTOCAD FILE (SECOR FIGURE 1, JOB 15OT.STSRV.05.0012).
2. UTILITY LOCATIONS SHOWN BASED ON SURFACE MARKINGS BY UTILITY LOCATOR.
3. INJECTION LOCATIONS BASED ON FIELD MEASUREMENTS TO EXISTING SITE STRUCTURES.

LEGEND:

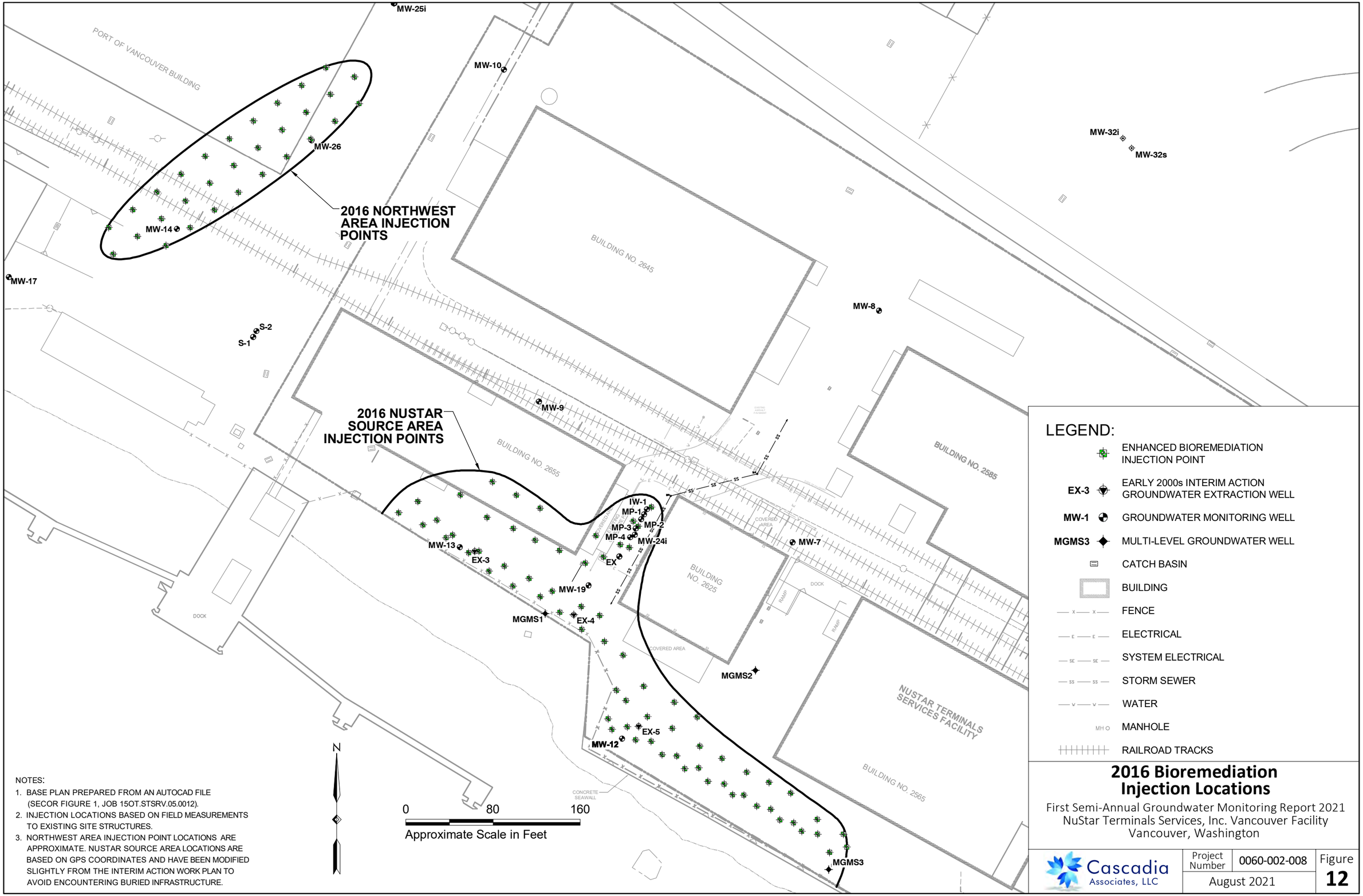
- 2011 SOURCE AREA INJECTION POINT
- 2011 STANDARD OIL SUBSTRATE INJECTION POINT
- 2011 ANGLED INJECTION POINT
- 2008 INTERIM ACTION INJECTION POINT
- **EX-3** EARLY 2000s INTERIM ACTION GROUNDWATER EXTRACTION WELL
- **IN-1** EARLY 2000s INTERIM ACTION GROUNDWATER INJECTION WELL AND VAPOR EXTRACTION WELL
- **MW-1** GROUNDWATER MONITORING WELL
- **MGMS3** MULTI-LEVEL GROUNDWATER WELL
- CATCH BASIN
- BUILDING
- FENCE
- ELECTRICAL
- SYSTEM ELECTRICAL
- STORM SEWER
- WATER
- MANHOLE
- RAILROAD TRACKS

2008/2011 Bioremediation Injection Locations

First Semi-Annual Groundwater Monitoring Report 2021
NuStar Terminals Services, Inc. Vancouver Facility
Vancouver, Washington

Cascadia Associates, LLC

Project Number	0060-002-008	Figure 11
August 2021		



NOTES:

1. BASE PLAN PREPARED FROM AN AUTOCAD FILE (SECOR FIGURE 1, JOB 15OT.STSRV.05.0012).
2. INJECTION LOCATIONS BASED ON FIELD MEASUREMENTS TO EXISTING SITE STRUCTURES.
3. NORTHWEST AREA INJECTION POINT LOCATIONS ARE APPROXIMATE. NUSTAR SOURCE AREA LOCATIONS ARE BASED ON GPS COORDINATES AND HAVE BEEN MODIFIED SLIGHTLY FROM THE INTERIM ACTION WORK PLAN TO AVOID ENCOUNTERING BURIED INFRASTRUCTURE.

LEGEND:

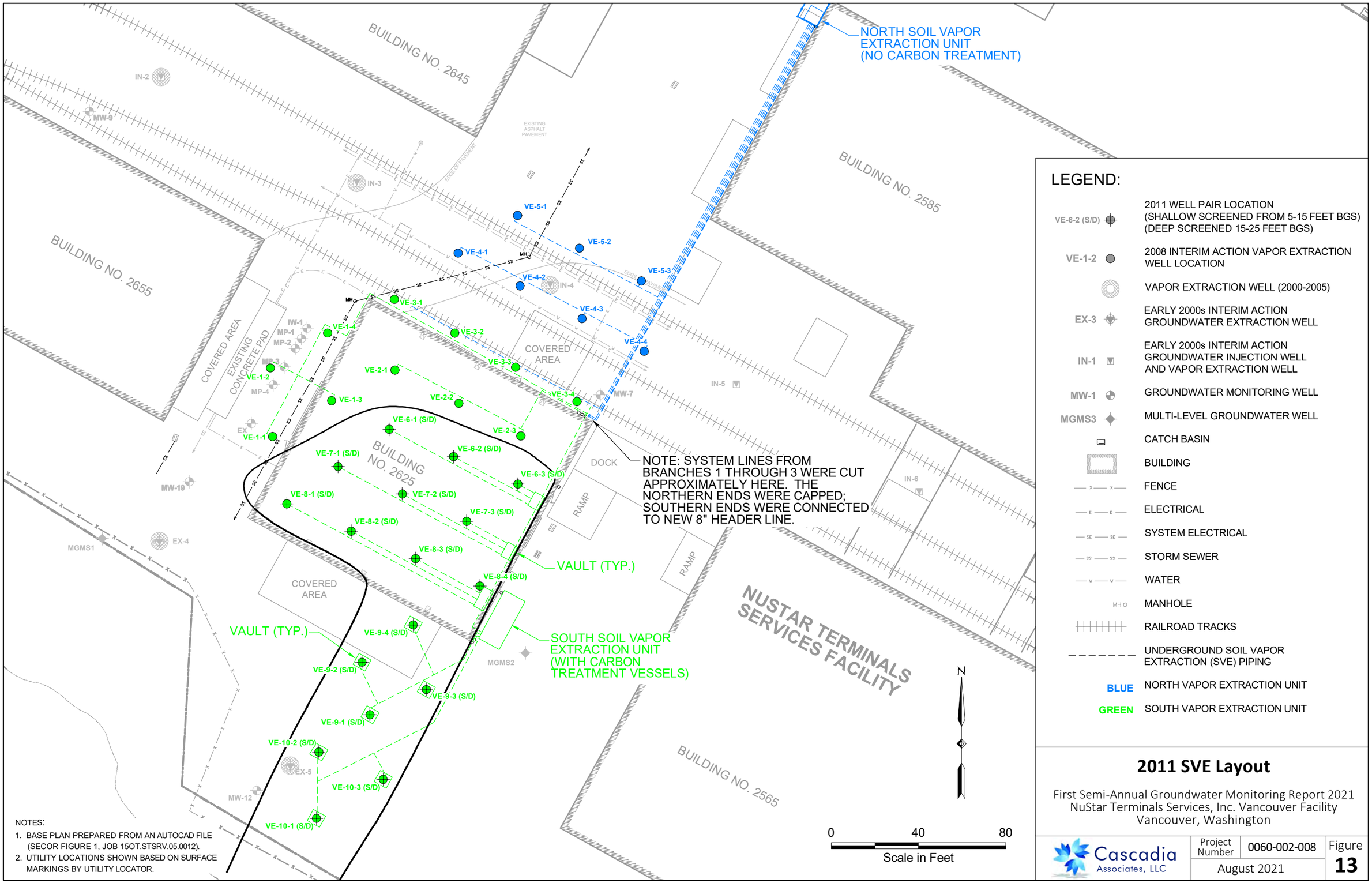
- ENHANCED BIOREMEDIATION INJECTION POINT
- EX-3 — EARLY 2000s INTERIM ACTION GROUNDWATER EXTRACTION WELL
- MW-1 — GROUNDWATER MONITORING WELL
- MGMS3 — MULTI-LEVEL GROUNDWATER WELL
- CATCH BASIN
- BUILDING
- FENCE
- ELECTRICAL
- SYSTEM ELECTRICAL
- STORM SEWER
- WATER
- MH — MANHOLE
- RAILROAD TRACKS

2016 Bioremediation Injection Locations

First Semi-Annual Groundwater Monitoring Report 2021
NuStar Terminals Services, Inc. Vancouver Facility
Vancouver, Washington

Cascadia Associates, LLC

Project Number	0060-002-008	Figure
August 2021		12



NOTES:

1. BASE PLAN PREPARED FROM AN AUTOCAD FILE (SECOR FIGURE 1, JOB 15OT.STSRV.05.0012).
2. UTILITY LOCATIONS SHOWN BASED ON SURFACE MARKINGS BY UTILITY LOCATOR.

LEGEND:

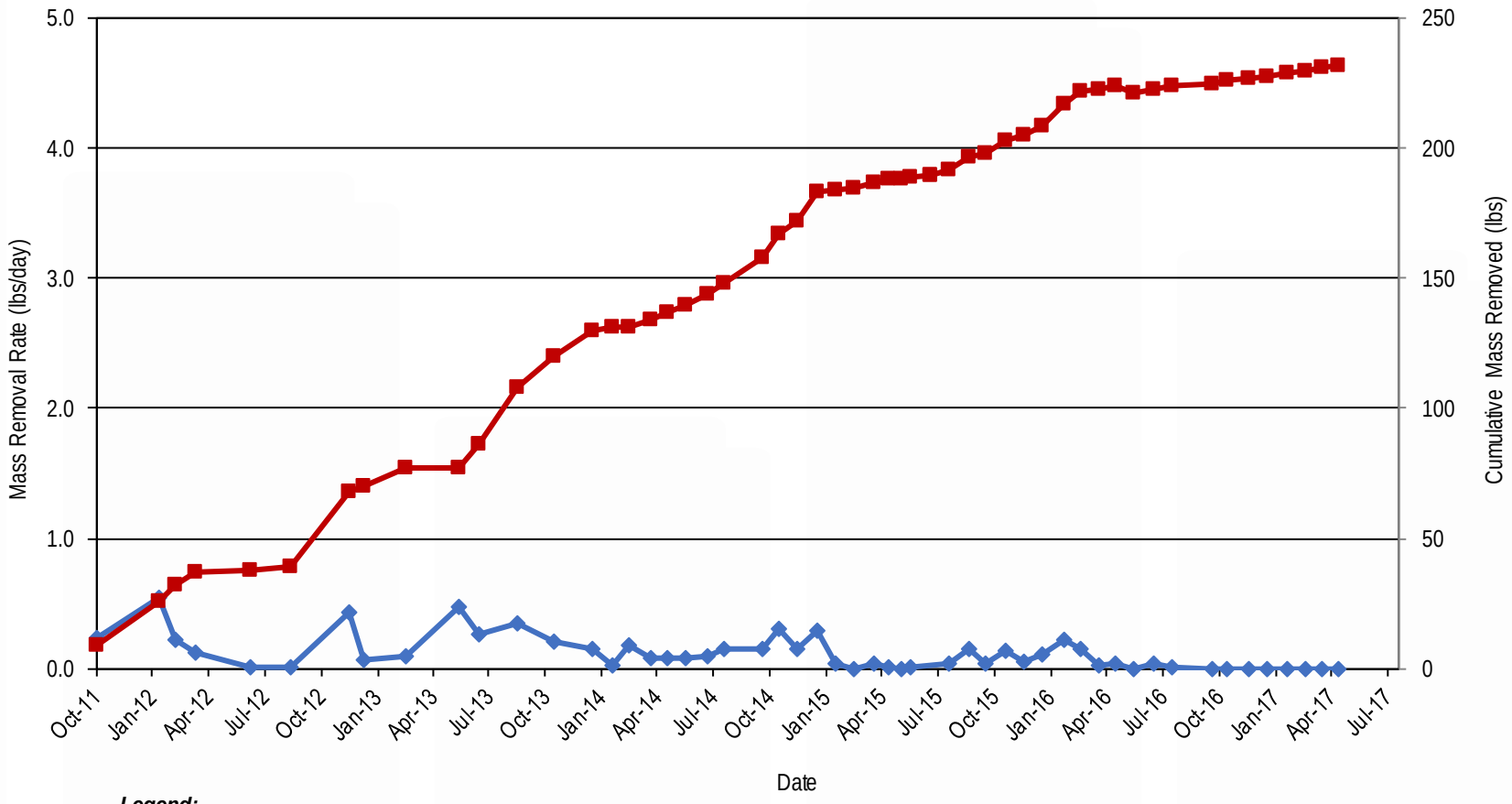
- VE-6-2 (S/D) — 2011 WELL PAIR LOCATION (SHALLOW SCREENED FROM 5-15 FEET BGS) (DEEP SCREENED 15-25 FEET BGS)
- VE-1-2 — 2008 INTERIM ACTION VAPOR EXTRACTION WELL LOCATION
- VAPOR EXTRACTION WELL (2000-2005)
- EX-3 — EARLY 2000s INTERIM ACTION GROUNDWATER EXTRACTION WELL
- IN-1 — EARLY 2000s INTERIM ACTION GROUNDWATER INJECTION WELL AND VAPOR EXTRACTION WELL
- MW-1 — GROUNDWATER MONITORING WELL
- MGMS3 — MULTI-LEVEL GROUNDWATER WELL
- CATCH BASIN
- BUILDING
- FENCE
- ELECTRICAL
- SYSTEM ELECTRICAL
- STORM SEWER
- WATER
- MH — MANHOLE
- RAILROAD TRACKS
- UNDERGROUND SOIL VAPOR EXTRACTION (SVE) PIPING
- BLUE — NORTH VAPOR EXTRACTION UNIT
- GREEN — SOUTH VAPOR EXTRACTION UNIT

2011 SVE Layout

First Semi-Annual Groundwater Monitoring Report 2021
NuStar Terminals Services, Inc. Vancouver Facility
Vancouver, Washington

Cascadia Associates, LLC

Project Number	0060-002-008	Figure
August 2021		13



Legend:

Halogenated Volatile Organic Compound (HVOC) Removal Rate (lbs/day)

Approximate Cumulative HVOCs Removed (lbs)

North SVE System

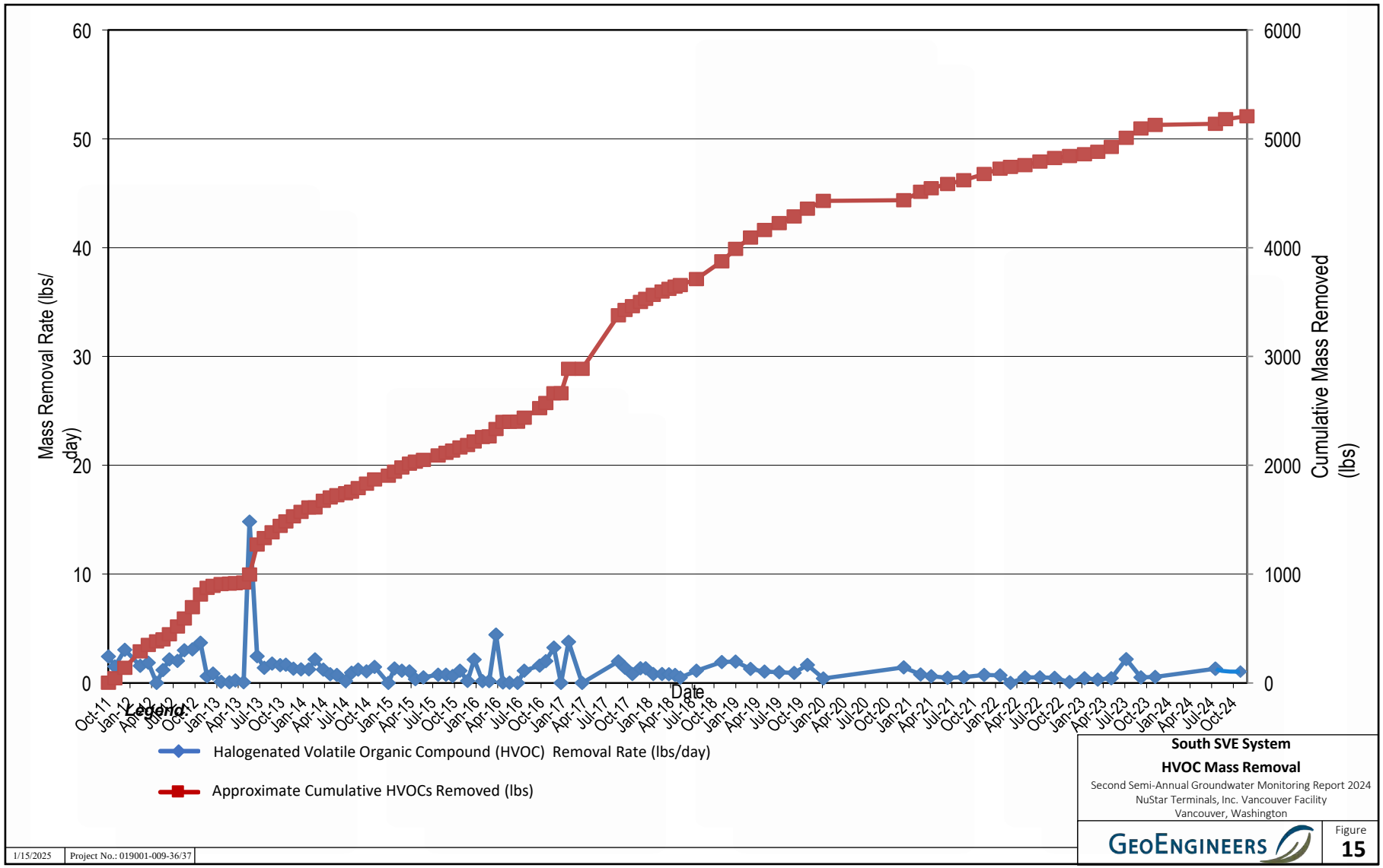
HVOC Mass Removal

Second Semi-Annual Groundwater Monitoring Report 2024
NuStar Terminals, Inc. Vancouver Facility
Vancouver, Washington

GeoEngineers

Figure **14**

1/15/2025 | Project No.: 019001-009-36/37



South SVE System

HVOC Mass Removal

Second Semi-Annual Groundwater Monitoring Report 2024
NuStar Terminals, Inc. Vancouver Facility
Vancouver, Washington

GeoEngineers

Figure **15**

1/15/2025 | Project No.: 019001-009-36/37

APPENDICES

GeoEngineers

APPENDIX A
Field Sampling Data Sheets

Project 3Q24 Date 9/3/24
Client
Sampler

Well ID	Time	DTP	DTW	Product Thickness	Notes			
MW-1	0946	—	27.81	—				
MW-2	0924	—	29.04	—	slight	odor		
MW-3	0942	—	29.42	—				
MW-5	1006	—	29.07	—				
MW-6	0931	—	27.83	—				
MW-7	0848	—	28.79	—				
MW-8	0842	—	27.92	—				
MW-9	1030	—	29.02	—				
MW-10	1116	—	28.57	—				
MW-12	0957	—	26.58	—				
MW-13	1043	—	28.27	—				
MW-14	1103	—	28.93	—				
MW-15	0917	—	33.69	—				
MW-16	0906	—	28.09	—				
MW-17	1052	—	27.47	—				
MW-18i	1436	-	29.79	-				
MW-19	1023	—	28.72	—				
MW-19i	1432	—	30.07	—				
MW-20i	1438	-	29.23	-				
MW-21i-40	1451	—	30.07	—				
MW-21i-105	1448	—	30.33	—				
MW-22i	1501	-	30.82	-				
MW-23i	1514	-	30.29	-				
MW-24i	1518	-	30.32	-				
MW-24d	2026	—	29.65	—				
MW-25i	1509	—	30.50	—				
MW-26	1209	—	28.77	—				
MW-32s	0855	—	29.43	—	Found w/ lids	not tightened,		
MW-32i	1456	-	30.84	-	as rec'v.	No evidence of water entering well.		

Check tide board at 0937, approx. 3 ft on board

Project
Client
Sampler

Date

Well ID	Time	DTP	DTW	Product Thickness	Notes			
MGMS1-3(43)	1012	—	28.24	—				
MGMS1-2 (60)*	1524	—	29.73	—				
MGMS1-1(110)	1525	—	29.73	—				
MGMS2-4(40)	1002	—	27.78	—				
MGMS2-3 (60)*	1531	—	29.73	—				
MGMS2-2(110)	1532	—	29.68	—				
MGMS2-1(132)	1533	—	29.68	—				
MGMS3-4(40)	0951	—	27.06	—				
MGMS3-3(60)*	1538	—	28.57	—				
MGMS3-2(101)	1539	—	28.57	—				
MGMS3-1(132)	1541	—	28.57	—				
MW-F	0900	—	29.22	—				
EW-1	0935	—	26.36	—				
EX	1024	—	28.42	—				
MP-1	1027	—	28.81	—				
S-1*	1518	—	29.48	—				
S-2	1048	—	28.57	—				
NKW-1	1016	—	28.59	—				
NKW-2	1041	—	28.49	—				

WELL MONITORING DATA SHEET

GeoEngineers

Well ID:	MW-1	Job Number:	19001-009-33 / 34
Client:	Sunoco - Vancouver Main Terminal	Date:	9/6/24
Project:	3Q24 GWM	Sampler:	CW
Weather:	Clear - 70° smoke	Time In/Out:	-

WELL DATA

Monument Type:	Flush-mount	Well Diameter:	2"	Depth to Free Product:	------
	Other: -	Well Depth:	-	Free Product Thickness:	------
Monument Condition:	Good	Depth to Water:		Water Column Length:	------
Well Cap Lock Present:	(Yes) No	Screened Interval:	-	Purge Volume:	------

Comments: -

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)				
Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic Pump / (Bladder Pump)	Pump Intake Depth:	Mid-screen
Sampling Method:	Low-flow	Tubing Material & Type:	(Skip-bonded / LDPE) DEDICATED

Time			DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
0757			28.24	0.30	7.01	18.1	1393	0.96	-17.9	clear
0800			28.24	0.30	6.99	18.0	1346	0.56	-18.1	↓
0803			28.24	0.30	6.97	18.0	1305	0.43	-17.9	
0806			28.24	0.30	6.96	18.0	1295	0.36	-17.1	

PURGING DATA

Sample ID:	MW-1	Sampling Flow Rate:	0.30	Analytical Laboratory:	Apex	
Sample Time:	0806	Final Depth to Water:	28.24	Did Well Dewater:	No	
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
3 x VOA	HCl	HVOC / RSK	------	------	------	------
1 x 250 mL	H2SO4	Nitrate / Nitrite	------	------	------	------
1 x 250 mL	------	Ammonia	------	------	------	------
1 x 250 mL	H2SO4	TOC	------	------	------	------
2 x VOA	HCl	RSK-175	------	------	------	------

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GeoEngineers

Well ID:	MW-2	Job Number:	19001-009-33 / 34
Client:	Sunoco - Vancouver Main Terminal	Date:	9/6/24
Project:	3Q24 GWM	Sampler:	CW
Weather:	Clear	Time In/Out:	-

WELL DATA

Monument Type:	Flush-mount	Well Diameter:	2"	Depth to Free Product:	------
	Other: -	Well Depth:	-	Free Product Thickness:	------
Monument Condition:	Good	Depth to Water:		Water Column Length:	------
Well Cap Lock Present:	Yes No	Screened Interval:	-	Purge Volume:	------
Comments:					

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)				
Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic Pump / Bladder Pump	Pump Intake Depth:	Mid-screen
Sampling Method:	Low-flow	Tubing Material & Type:	Skip-bonded / LDPE DEDICATED

Time			DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
0947			29.68	0.30	6.57	16.0	806	0.62	-82.3	light cloudy
0950			↓	0.30	6.58	15.8	807	0.24	-83.2	sulfur odor
0953				0.30	6.58	15.7	808	0.20	-83.6	↓

PURGING DATA

Sample ID:	MW-2	Sampling Flow Rate:	0.30	Analytical Laboratory:		Apex
Sample Time:	0953	Final Depth to Water:	29.66	Did Well Dewater:		
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
3 x VOA	HCl	HVOC / RSK	------	------	------	------
1 x 250 mL	H2SO4	Nitrate / Nitrite	------	------	------	------
1 x 250 mL	------	Ammonia	------	------	------	------
1 x 250 mL	H2SO4	TOC	------	------	------	------
2 x VOA	HCl	RSK-175	------	------	------	------

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GeoEngineers

Well ID:	MW-3	Job Number:	19001-009-33 / 34
Client:	Sunoco - Vancouver Main Terminal	Date:	9/5/24
Project:	3Q24 GWM	Sampler:	CW
Weather:	Sunny - 75°	Time In/Out:	–

WELL DATA

Monument Type:	Flush-mount	Well Diameter:	2"	Depth to Free Product:	------
	Other: Vault	Well Depth:	–	Free Product Thickness:	------
Monument Condition:	Good	Depth to Water:		Water Column Length:	------
Well Cap Lock Present:	(Yes) No	Screened Interval:	–	Purge Volume:	------
Comments:	–				

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)

Water height multipliers (gal): 1-inch well = 0.041 | 2-inch = 0.162 | 4-inch = 0.653 | 1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic Pump / (Bladder Pump)	Pump Intake Depth:	Mid-screen
Sampling Method:	Low-flow	Tubing Material & Type:	(Skip-bonded / LDPE) DEDICATED

Time			DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ~~ppm~~	+/-20 mV	
1019			*	0.35	6.53	17.0	420.1	0.73	-1.4	clear
1022			↓	0.35	6.50	16.1	408.0	1.40	-6.4	↓
1025				0.30	6.46	15.6	414.7	1.00	-0.2	
1028				0.30	6.47	15.6	422.9	0.59	-0.0	
1031				0.30	6.46	15.5	425.3	0.61	0.6	

PURGING DATA

Sample ID:	MW-3	Sampling Flow Rate:	0.35		Analytical Laboratory:	Apex
Sample Time:	1031	Final Depth to Water:	–		Did Well Dewater:	No
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
3 x VOA	HCl	HVOC / ~~RSK~~	------	------	------	------
1 x 250 mL	H2SO4	Nitrate / Nitrite	------	------	------	------
1 x 250 mL	------	Ammonia	------	------	------	------
1 x 250 mL	H2SO4	TOC	------	------	------	------
2 x VOA	HCl	RSK-175	------	------	------	------

NOTES/ADDITIONAL COMMENTS

* DTW below pump top
- Slight yellow tint seen after filling VOAs

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	MW-5	Job Number:	
Client:	Via Main	Date:	9/5/24
Project:	3624	Sampler:	JP/CP
Weather:	Hazy 80	Time In/Out:	—

WELL DATA

Monument Type:	Flush-mount/Stick-up	Well Diameter:	2"	Depth to Free Product:	—
	Other:	Well Depth:	—	Free Product Thickness:	—
Monument Condition:	Good	Depth to Water:	29.21	Water Column Length:	—
Well Cap Lock Present:	Yes No	Screened Interval:	—	Purge Volume:	—

Comments:

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)				
Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	BP / LF	Pump Intake Depth:	MW-5
Sampling Method:		Tubing Material & Type:	SIB

NEW / DEDICATED

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
1108			29.24	0.35	6.53	21.4	1128	0.81	-86.3	Clear
1111			29.23	0.35	6.53	20.7	1126	0.41	-104.3	↓
1114			29.21	0.36	6.55	20.9	1125	0.33	-114.7	
1117			↓	0.30	6.56	21.0	1123	0.31	-112.1	

PURGING DATA

Sample ID:	MW-5	Sampling Flow Rate:	0.30			Analytical Laboratory:	Apex
Sample Time:	1117	Final Depth to Water:	29.17			Did Well Dewater:	N
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
(3) VOA	HCl	HVOCs					
(1) 250	—	NH3					
(1) 250	H_2SO_4	NO_2/NO_3					

NOTES/ADDITIONAL COMMENTS

(5)

WELL MONITORING DATA SHEET

GeoEngineers

Well ID:	MW-6	Job Number:	19001-009-33 / 34
Client:	Sunoco - Vancouver Main Terminal	Date:	9/6/24
Project:	3Q24 GWM	Sampler:	CW
Weather:	Clear - 77°	Time In/Out:	-

WELL DATA

Monument Type:	Flush-mount	Well Diameter:	2"	Depth to Free Product:	------
	Other: -	Well Depth:	-	Free Product Thickness:	------
Monument Condition:	Good	Depth to Water:		Water Column Length:	------
Well Cap Lock Present:	Yes / No	Screened Interval:	-	Purge Volume:	------

Comments:

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)

Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic Pump / Bladder Pump	Pump Intake Depth:	Mid-screen
Sampling Method:	Low-flow	Tubing Material & Type:	Skip-bonded / LDPE DEDICATED

Time			DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
0844			28.18	0.30	6.53	17.0	851	0.64	-59.8	clear
0847			28.18	0.30	6.50	16.5	841	0.39	-60.4	↓
0850			28.18	0.30	6.47	16.3	818	0.28	-57.7	
0853			28.18	0.30	6.44	16.2	794	0.24	-55.5	

PURGING DATA

Sample ID:	MW-6	Sampling Flow Rate:	0.30		Analytical Laboratory:	Apex
Sample Time:	0853	Final Depth to Water:	28.16		Did Well Dewater:	No

No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
3 x VOA	HCl	HVOC / ~~RSK~~	------	------	------		------
1 x 250 mL	H2SO4	Nitrate / Nitrite	------	------	------		------
1 x 250 mL	------	Ammonia	------	------	------		------
1 x 250 mL	H2SO4	TOC	------	------	------		------
2 x VOA	HCl	RSK-175	------	------	------		------

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GeoEngineers

Well ID:	MW-8	Job Number:	
Client:		Date:	4/5/24
Project:		Sampler:	
Weather:		Time In/Out:	

WELL DATA

Monument Type:	Flush-mount/Stick-up	Well Diameter:	4"	Depth to Free Product:	—
	Other: Vault	Well Depth:	—	Free Product Thickness:	—
Monument Condition:	Good	Depth to Water:	28.19	Water Column Length:	—
Well Cap Lock Present:	Yes No	Screened Interval:	—	Purge Volume:	—

Comments:

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)

Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	BP	Pump Intake Depth:	NS
Sampling Method:	LF	Tubing Material & Type:	SB

NEW / ~~DEDICATED~~

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
1025			28.19	0.30	6.08	17.4	1476	3.29	172.9	Clear
1029				↓	6.09	17.8	1488	3.54	150.8	↓
1031			28.31		6.10	16.4	1496	3.65	155.1	
1034					6.11	16.2	1495	3.60	161.6	
1037			28.46	↓	6.11	16.2	1495	3.59	163.7	↓

PURGING DATA

Sample ID:	MW-8	Sampling Flow Rate:	0.30			Analytical Laboratory:	Apex/BV
Sample Time:	1037	Final Depth to Water:	28.51			Did Well Dewater:	
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
(3) VOA	HCl	HCID					
(1) 250	—	NH3					
(1) 250	H_2SO_4	NO2/NO3					

NOTES/ADDITIONAL COMMENTS

(5)

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	MW-9	Job Number:	19001-009-33 / 34
Client:	Sunoco - Vancouver Main Terminal	Date:	9/5/24
Project:	3Q24 GWM	Sampler:	CW
Weather:	Sunny ~85°	Time In/Out:	–

WELL DATA

Monument Type:	Flush-mount	Well Diameter:	4"	Depth to Free Product:	------
	Other: –	Well Depth:	–	Free Product Thickness:	-------
Monument Condition:	Good	Depth to Water:		Water Column Length:	-------
Well Cap Lock Present:	(Yes) No	Screened Interval:	–	Purge Volume:	-------

Comments:

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)

Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic Pump / Bladder Pump	Pump Intake Depth:	Mid-screen
Sampling Method:	Low-flow	Tubing Material & Type:	Skip-bonded / LDPE DEDICATED

Time			DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
1235			29.02	0.30	~~6.35~~	15.3	1122	0.36	7.8	clear
1238			29.08	0.30	6.29	15.1	1032	0.26	11.8	
1241			29.08	0.30	6.24	15.1	973	0.22	15.8	
1244			29.09	0.30	6.22	15.0	948	0.21	16.2	
1247			29.10	0.30	6.21	14.9	921	0.19	15.6	

PURGING DATA

Sample ID:	MW-9	Sampling Flow Rate:	0.30		Analytical Laboratory:	Apex
Sample Time:	1247	Final Depth to Water:	29.06		Did Well Dewater:	No

No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
3 x VOA	HCl	HVOC / RSK	------	------	------		------
1 x 250 mL	H2SO4	Nitrate / Nitrite	------	------	------		------
~~1 x 250 mL~~	------	Ammonia	------	------	------		------
1 x 250 mL	H2SO4	TOC	------	------	------		------
2 x VOA	HCl	RSK-175	------	------	------		------

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GeoEngineers

Well ID:	MW-12	Job Number:	19001-009-33 / 34
Client:	Sunoco - Vancouver Main Terminal	Date:	9/5/24
Project:	3Q24 GWM	Sampler:	CW
Weather:	Sunny - 80°	Time In/Out:	–

WELL DATA

Monument Type:	Flush-mount	Well Diameter:	4"	Depth to Free Product:	------
	Other: –	Well Depth:	–	Free Product Thickness:	------
Monument Condition:	Good	Depth to Water:		Water Column Length:	------
Well Cap Lock Present:	(Yes) No	Screened Interval:	–	Purge Volume:	------

Comments: –

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)				
Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic Pump / (Bladder Pump)	Pump Intake Depth:	Mid-screen
Sampling Method:	Low-flow	Tubing Material & Type:	(Skip-bonded / LDPE) DEDICATED

Time			DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
1115			27.19	0.35	6.85	17.6	2774	0.54	-110.5	Slight cloudy
1118			27.37	0.35	6.88	17.7	2763	0.26	-111.4	↓
1121			27.52	0.35	6.87	17.8	2742	0.19	-107.2	↓
1124			27.63	0.35	6.87	17.7	2720	0.18	-103.1	↓

PURGING DATA

Sample ID:	MW-12 + MW-12DUP	Sampling Flow Rate:	0.35			Analytical Laboratory:	Apex
Sample Time:	1124	Final Depth to Water:	27.41			Did Well Dewater:	NO
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
3 x VOA	HCl	HVOC / RSK	------	------	------	MW-12 DUP	------
1 x 250 mL	H2SO4	Nitrate / Nitrite	------	------	------	↓	------
1 x 250 mL	------	Ammonia	------	------	------	↓	------
1 x 250 mL	H2SO4	TOC	------	------	------	↓	------
3 x VOA	HCl	RSK-175	------	------	------	↓	------
+ DUP							

NOTES/ADDITIONAL COMMENTS

Heavy bubbles in bottles

WELL MONITORING DATA SHEET

GeoEngineers

Well ID:	MW-7	Job Number:	19001-009-33 / 34
Client:	Sunoco - Vancouver Main Terminal	Date:	9/4/21
Project:	3Q24 GWM	Sampler:	CW
Weather:	85° - Sunny	Time In/Out:	—

WELL DATA

Monument Type:	Flush-mount	Well Diameter:	4"	Depth to Free Product:	------
	Other: Vault	Well Depth:	—	Free Product Thickness:	------
Monument Condition:	Good	Depth to Water:		Water Column Length:	------
Well Cap Lock Present:	(Yes) No	Screened Interval:	—	Purge Volume:	------

Comments: —

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)				
Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic Pump / Bladder Pump	Pump Intake Depth:	Mid-screen
Sampling Method:	Low-flow	Tubing Material & Type:	Skip-bonded / LDPE

DEDICATED

Time			DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
1404			28.94	0.30	6.60	16.9	1488	0.70	146.8	clear
1407			29.22	0.30	6.59	16.7	1391	0.53	144.1	↓
1410			29.31	0.30	6.59	16.6	1232	0.46	142.6	
1413			29.51	0.30	6.59	16.6	1110	0.39	135.9	
1416			29.54	0.30	6.60	16.5	1089	0.38	134.4	
1419			29.61	0.30	6.60	16.4	1084	0.36	133.1	
1422			29.68	0.30	6.61	16.5	1064	0.34	130.5	

PURGING DATA

Sample ID:	MW-7 + DUP	Sampling Flow Rate:	0.30		Analytical Laboratory:	Apex
Sample Time:	1422	Final Depth to Water:	29.46		Did Well Dewater:	No
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
3 x VOA	HCl	HVOC / RSK	------	------	------	MW-7 DUP ------
1 x 250 mL	H2SO4	Nitrate / Nitrite	------	------	------	↓ ------
1 x 250 mL	------	Ammonia	------	------	------	------
1 x 250 mL	H2SO4	TOC	------	------	------	------
2 x VOA	HCl	RSK-175	------	------	------	------
X 2 (DUP)						

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GeoEngineers

Well ID:	MW-10	Job Number:	19001-009-33 / 34
Client:	Sunoco - Vancouver Main Terminal	Date:	9/4/24
Project:	3Q24 GWM	Sampler:	CW
Weather:	Cloudy - 65°	Time In/Out:	-

WELL DATA

Monument Type:	Flush-mount	Well Diameter:	4"	Depth to Free Product:	------
	Other: -	Well Depth:	-	Free Product Thickness:	------
Monument Condition:	Good	Depth to Water:	-	Water Column Length:	------
Well Cap Lock Present:	Yes No	Screened Interval:	-	Purge Volume:	------
Comments:	-				

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)				
Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic Pump / Bladder Pump	Pump Intake Depth:	Mid-screen
Sampling Method:	Low-flow	Tubing Material & Type:	Skip-bonded / LDPE — DEDICATED

Time			DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
0748			28.84	0.30	5.78	16.6	3306	0.72	-15.7	clear
0751			28.89	0.30	5.73	17.0	3328	0.62	-15.1	↓
0754			28.91	0.30	5.70	17.1	3340	0.46	-13.3	
0757			28.92	0.30	5.69	17.2	3346	0.40	-12.6	

PURGING DATA

Sample ID:	MW-10	Sampling Flow Rate:	0.30	Analytical Laboratory:	Apex	
Sample Time:	0757	Final Depth to Water:	28.88	Did Well Dewater:	NO	
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
3 x VOA	HCl	HVOC / RSK	------	------	------	
1 x 250 mL	H2SO4	Nitrate / Nitrite	------	------	------	
1 x 250 mL	------	Ammonia	------	------	------	
1 x 250 mL	H2SO4	TOC	------	------	------	
2 x VOA	HCl	RSK-175	------	------	------	

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	MW-13	Job Number:	19001-009-33 / 34
Client:	Sunoco - Vancouver Main Terminal	Date:	9/3/24
Project:	3Q24 GWM	Sampler:	CW
Weather:	Pt Sunny - 75°	Time In/Out:	—

WELL DATA

Monument Type:	Flush-mount	Well Diameter:	4"	Depth to Free Product:	------
	Other: —	Well Depth:	—	Free Product Thickness:	------
Monument Condition:	Good	Depth to Water:		Water Column Length:	------
Well Cap Lock Present:	(Yes) No	Screened Interval:		Purge Volume:	------

Comments: —

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)

Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic Pump (Bladder Pump)	Pump Intake Depth:	Mid-screen
Sampling Method:	Low-flow	Tubing Material & Type:	Skip-bonded / LDPE — DEDICATED

Time			DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
1446			29.28	0.35	6.98	16.7	163.1	0.25	-10.4	clear
1449			29.32	0.35	6.99	16.6	163.5	0.25	-9.6	
1452			29.35	0.35	6.99	16.7	162.8	0.26	-8.7	
1										

PURGING DATA

Sample ID:	MW-13	Sampling Flow Rate:	0.35	Analytical Laboratory:		Apex
Sample Time:	1452	Final Depth to Water:	28.91	Did Well Dewater:		No

No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
3 x VOA	HCl	HVOC / RSK	------	------	------		------
1 x 250 mL	H2SO4	Nitrate / Nitrite	------	------	------		------
1 x 250 mL	------	Ammonia	------	------	------		------
1 x 250 mL	H2SO4	TOC	------	------	------		------
3 x VOA	HCl	RSK-175	------	------	------		------

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GeoEngineers

Well ID:	MW-14	Job Number:	19001-009-33 / 34
Client:	Sunoco - Vancouver Main Terminal	Date:	4/4/24
Project:	3Q24 GWM	Sampler:	CW
Weather:	Sunny - 80°	Time In/Out:	-

WELL DATA

Monument Type:	Flush-mount	Well Diameter:	4"	Depth to Free Product:	------
	Other: -	Well Depth:	-	Free Product Thickness:	------
Monument Condition:	Good	Depth to Water:		Water Column Length:	------
Well Cap Lock Present:	(Yes) No	Screened Interval:	-	Purge Volume:	------
Comments:	-				

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)				
Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic Pump / Bladder Pump	Pump Intake Depth:	Mid-screen
Sampling Method:	Low-flow	Tubing Material & Type:	Skip-bonded / LDPE DEDICATED

Time			DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
1222			28.91	0.30	6.36	19.1	3588	1.11	147.2	clear
1225			28.94	0.30	6.38	18.2	3551	0.79	144.4	
1228			28.93	0.30	6.41	18.3	3534	0.61	139.4	↓
1231			28.94	0.30	6.42	18.1	3516	0.56	137.9	

PURGING DATA

Sample ID:	MW-14	Sampling Flow Rate:	0.30		Analytical Laboratory:	Apex
Sample Time:	1231	Final Depth to Water:	28.92		Did Well Dewater:	No

No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
3 x VOA	HCl	HVOC / RSK	------	------	------		------
1 x 250 mL	H2SO4	Nitrate / Nitrite	------	------	------		------
1 x 250 mL	------	Ammonia	------	------	------		------
1 x 250 mL	H2SO4	TOC	------	------	------		------
3 x VOA	HCl	RSK-175	------	------	------		------

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	MW-16	Job Number:	—
Client:	Van Main	Date:	9/5/24
Project:	3Q24 GWM	Sampler:	JP/EP
Weather:	65° Hazy	Time In/Out:	—

WELL DATA

Monument Type:	(Flush-mount)/Stick-up	Well Diameter:	4"	Depth to Free Product:	—
	Other: Vault	Well Depth:	—	Free Product Thickness:	—
Monument Condition:	Good	Depth to Water:	28.50	Water Column Length:	—
Well Cap Lock Present:	(Yes) No	Screened Interval:	—	Purge Volume:	—

Comments:

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)

Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	BP	Pump Intake Depth:	18
Sampling Method:	LP	Tubing Material & Type:	SB — NEW / (DEDICATED)

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
0904			28.50	0.40	6.40	15.2	556	2.41	198.8	Clear
0907			28.55	0.40	6.34	15.0	562	1.35	190.0	↓
0910			28.57	↓	6.37	15.0	587	1.06	180.8	
0913			↓	↓	6.36	15.0	595	0.97	182.8	↓

PURGING DATA

Sample ID:	MW-16	Sampling Flow Rate:	0.40			Analytical Laboratory:	Apex
Sample Time:	0915	Final Depth to Water:				Did Well Dewater:	No
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
(3) VOA	HCl	HCO3					
(1) 250	—	NH3					
(1) 250	H_2SO_4	NO_2/NO_3					

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GeoEngineers

Well ID:	MW-17	Job Number:	19001-009-33 / 34
Client:	Sunoco - Vancouver Main Terminal	Date:	9/4/24
Project:	3Q24 GWM	Sampler:	CW
Weather:	Sunny ~82°	Time In/Out:	-

WELL DATA

Monument Type:	Flush-mount	Well Diameter:	4"	Depth to Free Product:	------
	Other: Vault	Well Depth:	-	Free Product Thickness:	------
Monument Condition:	Good	Depth to Water:		Water Column Length:	------
Well Cap Lock Present:	(Yes) No	Screened Interval:	-	Purge Volume:	------

Comments: -

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)

Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic Pump / (Bladder Pump)	Pump Intake Depth:	Mid-screen
Sampling Method:	Low-flow	Tubing Material & Type:	Skip-bonded / LDPE — DEDICATED

Time			DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
1317			27.64	0.30	6.77	17.5	1804	1.12	135.8	clear
1320			27.68	0.30	6.72	16.7	1803	0.68	129.0	↓
1323			27.68	0.30	6.72	16.8	1801	0.54	121.2	
1326			27.68	0.30	6.73	16.7	1782	0.47	114.3	

PURGING DATA

Sample ID:	MW-17	Sampling Flow Rate:	0.30	Analytical Laboratory:	Apex	
Sample Time:	1326	Final Depth to Water:	27.67	Did Well Dewater:	No	

No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
8 x VOA	HCl	HVOC / RSK	------	------	------		------
1 x 250 mL	H2SO4	Nitrate / Nitrite	------	------	------		------
1 x 250 mL	------	Ammonia	------	------	------		------
1 x 250 mL	H2SO4	TOC	------	------	------		------
2 x VOA	HCl	RSK-175	------	------	------		------

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GeoEngineers

Well ID:	MW-18i	Job Number:	—
Client:	Van Main	Date:	9/5/24
Project:	3924 GWM	Sampler:	JP/EP
Weather:	65° Hazy	Time In/Out:	—

WELL DATA

Monument Type:	Flush-mount/Stick-up	Well Diameter:	2	Depth to Free Product:	—
	Other:	Well Depth:	~	Free Product Thickness:	—
Monument Condition:	Good	Depth to Water:	28.66	Water Column Length:	~
Well Cap Lock Present:	Yes No	Screened Interval:	/	Purge Volume:	/

Comments:

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)

Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:		Pump Intake Depth:	
Sampling Method:		Tubing Material & Type:	NEW / DEDICATED

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
0821			28.66	0.30	7.23	16.3	230.1	6.55	2	Clear
									114.7	↓
0824			28.66	0.30	7.03	16.0	225.4	5.40	123.8	
0827			28.70	0.30	6.95	16.0	249.2	4.25	132.4	
0830			28.69	0.30	6.90	15.1	281.5	2.80	136.9	
0833			↓	↓	6.88	15.1	286.7	2.46	137.8	
0836					6.87	15.1	292.3	2.17	138.6	
0839					6.85	15.1	296.2	1.97	138.6	↓

PURGING DATA

Sample ID:	MW-18i	Sampling Flow Rate:	0.30		Analytical Laboratory:	Apex
Sample Time:	0839	Final Depth to Water:			Did Well Dewater:	No

No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
(3) VOA	HCl	HVOCs	—	—	—	—
(1) 250	-	NH_3	—	—	—	—
(1) 250	H_2SO_4	NO_2/NO_3	—	—	—	—

NOTES/ADDITIONAL COMMENTS

(5)

WELL MONITORING DATA SHEET

GeoEngineers

Well ID:	MW-19	Job Number:	19001-009-33 / 34
Client:	Sunoco - Vancouver Main Terminal	Date:	09/03/24
Project:	3Q24 GWM	Sampler:	
Weather:	70° cloudy	Time In/Out:	

WELL DATA

Monument Type:	Flush-mount	Well Diameter:		Depth to Free Product:	------
	Other: —	Well Depth:		Free Product Thickness:	------
Monument Condition:	Good	Depth to Water:		Water Column Length:	------
Well Cap Lock Present:	(Yes) No	Screened Interval:		Purge Volume:	------

Comments:

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)				
Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic Pump / (Bladder Pump)	Pump Intake Depth:	Mid-screen
Sampling Method:	Low-flow	Tubing Material & Type:	Skip-bonded / LDPE — DEDICATED

Time			DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
1237			29.19	0.35	7.21	15.4	1369	0.50	-25.2	
1240				0.35	7.21	15.5	1362	0.42	-23.1	
1243				0.35	7.21	15.4	1393	0.46	-21.4	
1246				0.35	7.21	15.4	1372	0.40	-20.2	
1249				0.35	7.21	15.7	1378	0.33	-20.0	

PURGING DATA

Sample ID:		Sampling Flow Rate:			Analytical Laboratory:	Apex
Sample Time:	1249	Final Depth to Water:			Did Well Dewater:	NO

No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
3 x VOA	HCl	HVOC / RSK	------	------	------		------
1 x 250 mL	H2SO4	Nitrate / Nitrite	------	------	------		------
1 x 250 mL	-----	Ammonia	------	------	------		------
1 x 250 mL	H2SO4	TOC	------	------	------		------
2 x VOA	HCl	RSK-175	------	------	------		------

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GeoEngineers

Well ID:	MW-19I	Job Number:	—
Client:	Van Main	Date:	9/5/24
Project:	3924	Sampler:	SP/BB
Weather:	85° Hazy	Time In/Out:	—

WELL DATA

Monument Type:	Flush-mount/Stick-up	Well Diameter:	2"	Depth to Free Product:	—
	Other:	Well Depth:	—	Free Product Thickness:	—
Monument Condition:	Good	Depth to Water:	29.85	Water Column Length:	—
Well Cap Lock Present:	Yes No	Screened Interval:	—	Purge Volume:	—

Comments:

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)

Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	BP / LP	Pump Intake Depth:	MS / SB
Sampling Method:		Tubing Material & Type:	NEW / DEDICATED

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
1221			29.83	0.35	7.12	28.4	4.6	7.48	-42.7	Clear
1224			29.87		6.99	24.9	313.2	6.66	-46.9	
1227			29.87		6.91	22.4	309.2	4.90	-32.0	
1230					6.84	20.5	302.5	3.36	-8.9	
1233					6.81	20.3	311.8	2.38	-0.7	
1236			29.90		6.79	20.0	332.8	1.48	7.8	
1239					6.78	20.0	385.5	1.07	12.6	
1242					6.74	19.9	440.1	0.77	13.6	
1245					6.77	20.0	469.4	0.64	11.0	
1248			29.91		6.77	20.0	471.3	0.61	9.8	
1251			29.91		6.77	19.8	481.5	0.58	8.0	

PURGING DATA

Sample ID:	MW-19I	Sampling Flow Rate:	0.35		Analytical Laboratory:		Apex
Sample Time:	1251	Final Depth to Water:			Did Well Dewater:		No
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
(3) VOA	HCl	HVOCs	—				
(1) 250	—	NH_3	—				
(1) 250	H_2SO_4	NO_2/NO_3	—				

NOTES/ADDITIONAL COMMENTS

(5)

WELL MONITORING DATA SHEET

GeoEngineers

Well ID:	MW-20i	Job Number:	
Client:	Van Mack	Date:	9/5/24
Project:	3924	Sampler:	JP/CP
Weather:	Clear, 78°, haze	Time In/Out:	

WELL DATA

Monument Type:	Flush-mount/Stick-up	Well Diameter:	2"	Depth to Free Product:	
	Other: Vault	Well Depth:		Free Product Thickness:	
Monument Condition:	Good	Depth to Water:	28.41	Water Column Length:	
Well Cap Lock Present:	Yes No	Screened Interval:		Purge Volume:	

Comments:

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)

Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	BP / LF	Pump Intake Depth:	MS
Sampling Method:		Tubing Material & Type:	S.S. NEW / DEDICATED

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
0939			28.41	0.25	6.91	21.2	339.7	8.13	136.9	Clear
0942					6.77	19.1	384.0	4.21	140.8	
0945					6.75	18.6	340.8	2.66	139.9	
0948			28.43		6.73	18.4	343.0	1.42	136.2	
0951					6.72	18.3	392.6	0.94	131.6	
0954			28.37		6.71	18.3	392.6	0.80	128.3	
0957			28.38		6.71	18.3	391.8	0.76	127.3	

PURGING DATA

Sample ID:	MW-20i	Sampling Flow Rate:	0.25		Analytical Laboratory:	Apex
Sample Time:	0957	Final Depth to Water:			Did Well Dewater:	NO

No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
(3) VOA	HCl	HVOCs				
(1) 250	H_2SO_4	NO_2/NO_3				
(1) 250	-	NH_3				

NOTES/ADDITIONAL COMMENTS

(5)

WELL MONITORING DATA SHEET

GeoEngineers

Well ID:	MW-21i-40	Job Number:	
Client:	Van Main	Date:	9/6/24
Project:	3824	Sampler:	JP
Weather:	Haze 75°	Time In/Out:	

WELL DATA

Monument Type:	Flush-mount/Stick-up	Well Diameter:	2"	Depth to Free Product:	
	Other: Vault	Well Depth:		Free Product Thickness:	
Monument Condition:	Good	Depth to Water:	28.92	Water Column Length:	
Well Cap Lock Present:	Yes No	Screened Interval:		Purge Volume:	

Comments:

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)

Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	BP / LF	Pump Intake Depth:	VS
Sampling Method:		Tubing Material & Type:	SB — NEW / DEDICATED

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
0906			28.92	0.30	6.57	15.5	391.2	2.12	100.7	Clear
0909			28.93	0.30	6.53	15.4	400.0	0.97	106.2	↓
0912			28.93	0.30	6.52	15.3	400.0	0.50	107.1	
0915			↓	↓	6.50	15.2	401.5	0.40	108.2	
0918			↓	↓	6.49	15.2	402.0	0.35	108.5	↓

PURGING DATA

Sample ID:	MW-21i-40	Sampling Flow Rate:	0.30		Analytical Laboratory:		Anatek
Sample Time:	0918	Final Depth to Water:	28.96		Did Well Dewater:		No
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
(3) VOA	HCl	HVOCs					
(1) 250	-	NH_3					
(1) 250	H_2SO_4	NO_2/NO_3					

NOTES/ADDITIONAL COMMENTS

(5)

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	MW-21i-105	Job Number:	19001-009-33 / 34
Client:	Sunoco - Vancouver Main Terminal	Date:	9/5/24
Project:	3Q24 GWM	Sampler:	CW
Weather:	Sunny ~75°	Time In/Out:	-

WELL DATA

Monument Type:	Flush-mount	Well Diameter:		Depth to Free Product:	------
	Other: -	Well Depth:	-	Free Product Thickness:	------
Monument Condition:	Good	Depth to Water:		Water Column Length:	------
Well Cap Lock Present:	(Yes) No	Screened Interval:	-	Purge Volume:	------
Comments:	-				

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)				
Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic Pump / (Bladder Pump)	Pump Intake Depth:	Mid-screen
Sampling Method:	Low-flow	Tubing Material & Type:	(Skip-bonded / LDPE) DEDICATED

Time			DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
0930			29.57	0.35	7.36	16.4	494.2	0.88	+14.5	clear
0933			29.58	0.35	7.38	16.2	504	0.43	-13.1	↓
0936			29.57	0.35	7.37	16.1	501	0.33	-11.5	
0939			29.58	0.35	7.38	16.0	499	0.29	-10.3	

PURGING DATA

Sample ID:	MW-21i-105	Sampling Flow Rate:	0.35		Analytical Laboratory:	Apex
Sample Time:	0939	Final Depth to Water:	29.57		Did Well Dewater:	no
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
3 x VOA	HCl	HVOC / ~~RSK~~	------	------	------	------
1 x 250 mL	H2SO4	Nitrate / Nitrite	------	------	------	------
1 x 250 mL	------	Ammonia	------	------	------	------
1 x 250 mL	H2SO4	TOC	------	------	------	------
2 x VOA	HCl	RSK-175	------	------	------	------

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GeoEngineers

Well ID:	MW-22i	Job Number:	19001-009-33 / 34
Client:	Sunoco - Vancouver Main Terminal	Date:	9/5/24
Project:	3Q24 GWM	Sampler:	CW
Weather:	Sunny - 75°	Time In/Out:	—

WELL DATA

Monument Type:	Flush-mount	Well Diameter:	2"	Depth to Free Product:	------
	Other: —	Well Depth:	—	Free Product Thickness:	------
Monument Condition:	Good	Depth to Water:		Water Column Length:	------
Well Cap Lock Present:	(Yes) No	Screened Interval:	—	Purge Volume:	------
Comments:	—				

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)				
Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic Pump / (Bladder Pump)	Pump Intake Depth:	Mid-screen
Sampling Method:	Low-flow	Tubing Material & Type:	Skip-bonded / LDPE — DEDICATED

Time			DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
0837			29.62	0.30	6.61	17.0	5.18	0.93	-27.8	clear
0840			29.70	0.30	6.62	17.0	5.21	0.63	-28.1	↓
0843			29.74	0.30	6.63	17.0	5.25	0.41	-28.0	
0846			29.74	0.30	6.63	17.1	5.27	0.36	-27.2	

PURGING DATA

Sample ID:	MW-22i	Sampling Flow Rate:	0.30	Analytical Laboratory:		Apex
Sample Time:	0846	Final Depth to Water:	29.73	Did Well Dewater:		NO

No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
3 x VOA	HCl	HVOC / RSK	------	------	------		------
1 x 250 mL	H2SO4	Nitrate / Nitrite	------	------	------		------
1 x 250 mL	------	Ammonia	------	------	------		------
1 x 250 mL	H2SO4	TOC	------	------	------		------
2 x VOA	HCl	RSK-175	------	------	------		------

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GeoEngineers

Well ID:	MW-23i	Job Number:	
Client:	Van Main	Date:	9/5/24
Project:	3424	Sampler:	SP
Weather:	Haze, ~78°	Time In/Out:	-

WELL DATA

Monument Type:	Flush-mount/Stick-up Other: Vault	Well Diameter:	2"	Depth to Free Product	-
		Well Depth:	-	Free Product Thickness:	-
Monument Condition:	Good	Depth to Water:	28.74	Water Column Length:	-
Well Cap Lock Present:	Yes No	Screened Interval:		Purge Volume:	-

Comments:

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)

Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	BP	Pump Intake Depth:	
Sampling Method:	LF	Tubing Material & Type:	SS NS NEW / ~~DEDICATED~~

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
0818			28.74	0.30	6.93	14.2	195.2	10.43	135.6	Clear
0821					6.72	17.1	200.7	8.30	139.5	
0824					6.71	16.6	202.9	7.16	140.3	
0827			28.67		6.76	16.2	~~46~~ 219.4	6.05	142.2	
0830			28.67		6.73	16.2	248.2	5.10	145.0	
0833					6.65	16.2	403.5	1.62	150.0	
0836					6.64	16.2	419.5	0.90	144.5	
0839			28.70		6.65	16.2	420.8	0.86	143.0	
0842			28.70		6.65	16.2	421.6	0.82	142.0	

PURGING DATA

Sample ID:	MW-23i	Sampling Flow Rate:	0.30			Analytical Laboratory:	Apex
Sample Time:	0842	Final Depth to Water:				Did Well Dewater:	No
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
(3) VOA	HCl	HVOCs					
(1) 250	-	Mtg					
(1) 250	H_2SO_4	NO_2/NO_3					

NOTES/ADDITIONAL COMMENTS

(5)

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	MW-25i	Job Number:	19001-009-33 / 34
Client:	Sunoco - Vancouver Main Terminal	Date:	9/4/24
Project:	3Q24 GWM	Sampler:	CW
Weather:	Cloudy - 70°	Time In/Out:	-

WELL DATA

Monument Type:	Flush-mount	Well Diameter:	2"	Depth to Free Product:	------
	Other: -	Well Depth:	-	Free Product Thickness:	------
Monument Condition:	Good	Depth to Water:	-	Water Column Length:	------
Well Cap Lock Present:	(Yes) No	Screened Interval:	-	Purge Volume:	------
Comments:	-				

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)

Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic Pump / (Bladder Pump)	Pump Intake Depth:	Mid-screen
Sampling Method:	Low-flow	Tubing Material & Type:	(Skip-bonded / LDPE) DEDICATED

Time			DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
0839			28.84	0.30	6.62	16.7	421.3	1.80	69.4	clear
0842			28.89	0.30	6.51	15.7	431.9	0.93	73.8	↓
0845			28.90	0.30	6.51	15.6	431.9	0.86	75.2	
0848			28.90	0.30	6.51	15.6	432.1	0.77	76.6	
0851			28.91	0.30	6.50	15.5	432.3	0.72	78.1	

PURGING DATA

Sample ID:	MW-25i	Sampling Flow Rate:	0.30	Analytical Laboratory:		Apex
Sample Time:	0851	Final Depth to Water:	28.87	Did Well Dewater:		No

No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
3 x VOA	HCl	HVOC / RSK	------	------	------		------
1 x 250 mL	H2SO4	Nitrate / Nitrite	------	------	------		------
1 x 250 mL	------	Ammonia	------	------	------		------
1 x 250 mL	H2SO4	TOC	------	------	------		------
2 x VOA	HCl	RSK-175	------	------	------		------

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GeoEngineers

Well ID:	MW-26	Job Number:	19001-009-33 / 34
Client:	Sunoco - Vancouver Main Terminal	Date:	9/4/24
Project:	3Q24 GWM	Sampler:	CW
Weather:	Pt Sunny - 70°	Time In/Out:	–

WELL DATA

Monument Type:	Flush-mount	Well Diameter:	2"	Depth to Free Product:	------
	Other: –	Well Depth:	–	Free Product Thickness:	------
Monument Condition:	Good	Depth to Water:		Water Column Length:	------
Well Cap Lock Present:	Yes No	Screened Interval:	–	Purge Volume:	------

Comments: –

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)

Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic Pump / Bladder Pump	Pump Intake Depth:	Mid-screen
Sampling Method:	Low-flow	Tubing Material & Type:	Skip-bonded / LDPE — DEDICATED

Time			DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
0908			28.76	0.35	6.24	16.8	6106	1.15	137.0	clear
0911			28.77	0.35	6.25	16.9	6064	0.94	129.1	
0914			28.79	0.35	6.27	17.0	6013	0.77	122.0	
0917			28.80	0.35	6.27	16.9	5853	0.66	116.2	
0920			28.80	0.35	6.27	17.0	5737	0.70	113.9	

PURGING DATA

Sample ID:	MW-26	Sampling Flow Rate:	0.35		Analytical Laboratory:		Apex
Sample Time:	0920	Final Depth to Water:	28.79		Did Well Dewater:		No
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
3 x VOA	HCl	HVOC / RSK	------	------	------		------
1 x 250 mL	H2SO4	Nitrate / Nitrite	------	------	------		------
1 x 250 mL	------	Ammonia	------	------	------		------
1 x 250 mL	H2SO4	TOC	------	------	------		------
2 x VOA	HCl	RSK-175	------	------	------		------

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GeoEngineers

Well ID:	EW-1	Job Number:	
Client:	Van Meter	Date:	9/6/24
Project:	3624	Sampler:	JP
Weather:	~~Clear~~ ~60° Haze	Time In/Out:	-

WELL DATA

Monument Type:	Flush-mount/Stick-up	Well Diameter:	2"	Depth to Free Product:	
	Other: Vault	Well Depth:		Free Product Thickness:	
Monument Condition:	Good	Depth to Water:	26.71	Water Column Length:	
Well Cap Lock Present:	Yes No	Screened Interval:	-	Purge Volume:	

Comments:

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)

Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	BP	Pump Intake Depth:	
Sampling Method:	LF	Tubing Material & Type:	SI NS
			NEW / ~~DEDICATED~~

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
0726			—	Param	not	collected		—		Brown Sediment
0733			26.71	0.30	6.79	15.8	293.1	7.23	87.8	Clear
0736				0.30	6.68	15.9	292.4	6.95	99.8	
0739			26.74	↓	6.60	16.3	291.6	6.92	113.5	↓
0742					6.54	16.4	291.6	6.87	124.9	
0745			26.79	↓	6.51	16.3	291.8	6.77	132.7	

PURGING DATA

Sample ID:	EW-1 0745	Sampling Flow Rate:	0.30		Analytical Laboratory:	Apex
Sample Time:		Final Depth to Water:	26.84		Did Well Dewater:	

No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
(3) VOA	HCl	HVOCs	—			
(1) 250	-	NH_3	—			
(1) 250	H_2SO_4	NO_2/NO_3	—			

NOTES/ADDITIONAL COMMENTS

(5) ∇ DTB ~28.3' BTC

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	EX	Job Number:	—
Client:	Van Main	Date:	9/4/24
Project:	3824 GWM	Sampler:	JP/EP
Weather:	80° sunny	Time In/Out:	—

WELL DATA

Monument Type:	(Flush-mount)/Stick-up	Well Diameter:	2"	Depth to Free Product:	—
	Other: Vault	Well Depth:	—	Free Product Thickness:	—
Monument Condition:	Good	Depth to Water:	28.50	Water Column Length:	—
Well Cap Lock Present:	(Yes) No	Screened Interval:		Purge Volume:	—

Comments:

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)				
Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	BP	Pump Intake Depth:	MS
Sampling Method:	LF	Tubing Material & Type:	SS NEW / ~~DEDICATED~~

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
1406			28.50	0.4	7.13	17.7	1786	2.14	-5.9	Clear/Fa
1409					7.31	16.6	1639	1.20	-4.3	
1412			28.50		7.31	18.0	1130	0.66	-2.5	
1415					7.26	18.0	807	0.43	-2.5	
1418					7.24	17.8	800	0.40	-3.8	
1421			28.48		7.24	17.9	778	0.32	-3.8	

PURGING DATA

Sample ID:	EX	Sampling Flow Rate:	0.40	Analytical Laboratory:		Apex NW
Sample Time:	1421	Final Depth to Water:	28.51	Did Well Dewater:		

No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
(3) VOA	HCl	1-HVOCs/RSK				
(1) 250	—	NH_3				
(2) 250	H_2SO_4	NO_2/NO_3/TOC				

(9)

NOTES/ADDITIONAL COMMENTS

Slight foaminess in purge. Purge feels slick/slippery

WELL MONITORING DATA SHEET

GeoEngineers

Well ID:	MP-1	Job Number:	19001-009-33 / 34
Client:	Sunoco - Vancouver Main Terminal	Date:	9/3/24
Project:	3Q24 GWM	Sampler:	CW
Weather:	Cloudy 70°	Time In/Out:	–

WELL DATA

Monument Type:	Flush-mount	Well Diameter:	2"	Depth to Free Product:	------
	Other: –	Well Depth:	–	Free Product Thickness:	------
Monument Condition:	Good	Depth to Water:	*	Water Column Length:	------
Well Cap Lock Present:	(Yes) No	Screened Interval:	–	Purge Volume:	------
Comments:	–				

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)				
Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic Pump / (Bladder Pump)	Pump Intake Depth:	Mid-screen
Sampling Method:	Low-flow	Tubing Material & Type:	(Skip-bonded / LDPE) DEDICATED

Time			DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
1252			*	0.35	6.84	14.5	455.1	1.27	202.6	clear
1255			|	0.35	6.86	14.7	448.4	1.03	191.9	
1258			|	0.35	6.88	14.8	450.1	0.94	182.0	↓
1301			|	0.35	6.90	14.9	451.2	0.84	176.4	

PURGING DATA

Sample ID:	MP-1	Sampling Flow Rate:	0.35		Analytical Laboratory:	Apex
Sample Time:	1301	Final Depth to Water:	28.78		Did Well Dewater:	No
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
3 x VOA	HCl	HVOC / RSK	------	------	------	
1 x 250 mL	H2SO4	Nitrate / Nitrite	------	------	------	
1 x 250 mL	------	Ammonia	------	------	------	
1 x 250 mL	H2SO4	TOC	------	------	------	
3 x VOA	HCl	RSK-175	------	------	------	

NOTES/ADDITIONAL COMMENTS

Interface probe intermittently working - not reliable tone - to be repaired

WELL MONITORING DATA SHEET

GeoEngineers

Well ID:	S-1	Job Number:	19001-009-33 / 34
Client:	Sunoco - Vancouver Main Terminal	Date:	9/4/24
Project:	3Q24 GWM	Sampler:	CW
Weather:	Sunny ~78°	Time In/Out:	-

WELL DATA

Monument Type:	Flush-mount	Well Diameter:	2"	Depth to Free Product:	------
	Other: Vault	Well Depth:	-	Free Product Thickness:	------
Monument Condition:	Good	Depth to Water:		Water Column Length:	------
Well Cap Lock Present:	(Yes) No	Screened Interval:	-	Purge Volume:	------

Comments:

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)

Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic Pump / Bladder Pump	Pump Intake Depth:	Mid-screen
Sampling Method:	Low-flow	Tubing Material & Type:	Skip-bonded / LDPE

DEDICATED

Time			DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
1103			28.55	0.35	6.90	19.5	243.2	7.72	102.6	clear
1106			28.58	0.35	6.86	19.0	255.0	7.47	106.9	
1109			28.60	0.35	6.74	19.0	295.4	7.20	118.6	
1112			28.62	0.35	6.65	18.8	461.1	5.93	123.5	
1115			28.62	0.35	6.63	18.8	541	3.04	116.1	
1118			28.61	0.35	6.63	18.8	546	2.71	112.8	
1121			28.62	0.35	6.62	18.9	544	2.11	109.6	
1124			28.61	0.35	6.62	18.8	545	1.81	106.7	

PURGING DATA

Sample ID:	S-1	Sampling Flow Rate:	0.35	Analytical Laboratory:	Apex	
Sample Time:	1124	Final Depth to Water:	28.58	Did Well Dewater:	NO	
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
3 x VOA	HCl	HVOC / RSK	------	------	------	------
1 x 250 mL	H2SO4	Nitrate / Nitrite	------	------	------	------
1 x 250 mL	------	Ammonia	------	------	------	------
1 x 250 mL	H2SO4	TOC	------	------	------	------
2 x VOA	HCl	RSK-175	------	------	------	------

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GeoEngineers

Well ID:	S-2	Job Number:	19001-009-33 / 34
Client:	Sunoco - Vancouver Main Terminal	Date:	9/4/24
Project:	3Q24 GWM	Sampler:	CW
Weather:	Sunny - 75°	Time In/Out:	–

WELL DATA

Monument Type:	Flush-mount	Well Diameter:	2"	Depth to Free Product:	------
	Other: – Vault	Well Depth:	–	Free Product Thickness:	------
Monument Condition:	Good	Depth to Water:		Water Column Length:	------
Well Cap Lock Present:	(Yes) No	Screened Interval:	–	Purge Volume:	------

Comments: –

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)				
Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic Pump / (Bladder Pump)	Pump Intake Depth:	Mid-screen
Sampling Method:	Low-flow	Tubing Material & Type:	~~Skip~~-bonded / LDPE — DEDICATED

Time			DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
1021			28.71	0.30	6.61	19.6	2269	1.88	84.6	Slight orange tint
1024			28.73	0.30	6.59	19.7	2261	1.36	71.2	
1027			28.73	0.30	6.59	19.8	2258	1.08	58.1	
1030			28.74	0.30	6.59	19.8	2249	0.80	34.4	
1033			28.75	0.30	6.59	19.8	2246	0.75	25.6	
1036			28.77	0.30	6.59	19.9	2244	0.64	18.4	
1039			28.79	0.30	6.59	20.0	2240	0.59	11.8	

PURGING DATA

Sample ID:	S-2	Sampling Flow Rate:	0.30	Analytical Laboratory:	Apex	
Sample Time:	1034	Final Depth to Water:	28.73	Did Well Dewater:		

No. of ~~Containers~~/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
3 x VOA	HCl	HVOC / RSK	------	------	------		------
1 x 250 mL	H2SO4	Nitrate / Nitrite	------	------	------		------
1 x 250 mL	------	Ammonia	------	------	------		------
1 x 250 mL	H2SO4	TOC	------	------	------		------
2 x VOA	HCl	RSK-175	------	------	------		------

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GeoEngineers

Well ID:	MW-24i	Job Number:	–
Client:	~~Grab~~ Van Main	Date:	9/4/24
Project:	3624	Sampler:	JPIED
Weather:	Clear, 85°	Time In/Out:	–

WELL DATA

Monument Type:	Flush-mount/Stick-up	Well Diameter:	2"	Depth to Free Product	–
	Other: Vault	Well Depth:	–	Free Product Thickness:	–
Monument Condition:	Good	Depth to Water:	30.13	Water Column Length:	–
Well Cap Lock Present:	(Yes) No	Screened Interval:	–	Purge Volume:	–

Comments:

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)

Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	BP LF	Pump Intake Depth:	MS
Sampling Method:		Tubing Material & Type:	SIS

NEW / ~~DEDICATED~~

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
1318			30.13	0.40	7.57	23.7	388.1	2.98	-26.1	Clear
1321			–		6.86	17.5	522	2.09	-6.9	
1324			30.17		6.88	16.5	521	0.92	-5.6	
1327			–		6.90	16.1	522	0.46	-4.4	
1330			–		6.90	16.1	523	0.31	-3.6	
1333			30.17		6.90	16.0	523	0.26	-3.8	

PURGING DATA

Sample ID:	MW-24i	Sampling Flow Rate:	0.40			Analytical Laboratory:	Apex NK
Sample Time:	1330	Final Depth to Water:	30.23			Did Well Dewater:	
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
(6) VOA	HCl	HWOCs/RSK					
(1) 250	–	NH3					
(2) 250	H_2SO_4	NO_2/NO_3/TOC					

NOTES/ADDITIONAL COMMENTS

(9)

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	MW-24d	Job Number:	—
Client:	Van Meir	Date:	9/4/24
Project:	3824	Sampler:	JP/LP
Weather:	80, clear	Time In/Out:	—

WELL DATA

Monument Type:	Flush-mount/Stick-up	Well Diameter:	2 4	Depth to Free Product:	—
	Other:	Well Depth:	~210'	Free Product Thickness:	—
Monument Condition:	Good	Depth to Water:	30.48	Water Column Length:	—
Well Cap Lock Present:	Yes No	Screened Interval:	—	Purge Volume:	—

Comments:

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)

Water height multipliers (gal): 1-inch well = 0.041 | 2-inch = 0.162 | 4-inch = 0.653 | 1 gal = 3.785 liters

PURGING DATA

Purge Method:	BP	Pump Intake Depth:	MS
Sampling Method:	LF	Tubing Material & Type:	SS

NEW / ~~DEDICATED~~

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
1225			30.48	0.40	7.64	16.1	371.0	3.02	-45.0	Clear
1229			30.32	↓	7.87	15.7	364.7	0.90	-64.3	↓
1231			30.34		7.96	15.7	366.7	0.62	-73.5	
1234			—		8.00	15.7	367.4	0.46	-79.9	
1237			—		8.00	15.8	367.1	0.37	-76.9	

PURGING DATA

Sample ID:	MW-24d	Sampling Flow Rate:	0.40		Analytical Laboratory:	Apex
Sample Time:	1237	Final Depth to Water:	30.21		Did Well Dewater:	No
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
(3) VOA	HCl	HVOCs				
(1) 250	-	NH4				
(1) 250	H2SO4	NO2/NO3				

NOTES/ADDITIONAL COMMENTS

(5)

WELL MONITORING DATA SHEET

GeoEngineers

Well ID:	MW-32S	Job Number:	—
Client:	Van Main	Date:	9/4/24
Project:	3Q24 GWM	Sampler:	JP/EP
Weather:	75° Sunny	Time In/Out:	—

WELL DATA

Monument Type:	(Flush-mount)/Stick-up	Well Diameter:		Depth to Free Product:	—
	Other:	Well Depth:		Free Product Thickness:	—
Monument Condition:	Good	Depth to Water:	29.50	Water Column Length:	
Well Cap Lock Present:	(Yes) No	Screened Interval:		Purge Volume:	

Comments:

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)

Water height multipliers (gal): 1-inch well = 0.041 | 2-inch = 0.162 | 4-inch = 0.653 | 1 gal = 3.785 liters

PURGING DATA

Purge Method:	PP	Pump Intake Depth:	Mid-screen dedicated
Sampling Method:	Low-flow	Tubing Material & Type:	NEW / (DEDICATED)

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/- 0.5 ppm	+/-20 mV	
1058			29.50	0.15	6.53	18.1	915	2.17	-12.0	clear
1101				↓	6.57	18.1	894	0.52	-13.4	↓
1104			30.03		6.57	18.2	892	0.58	-12.3	
1107					6.57	18.4	901	0.59	-11.2	

PURGING DATA

Sample ID:	MW-32S	Sampling Flow Rate:	0.15		Analytical Laboratory:	Apex
Sample Time:	1107	Final Depth to Water:	30.64		Did Well Dewater:	

No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
(3) VOA	HCl	HVOCs	—			
(1) 250	-	NH3	—			
(1) 250	H_2SO_4	NO_2 / NO_3	—			

NOTES/ADDITIONAL COMMENTS

(5)

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	MW-MS1-3(43)	Job Number:	—
Client:	Van Main	Date:	9/4/24
Project:	3024	Sampler:	SP/CP
Weather:	Clear ~75°	Time In/Out:	—

WELL DATA

Monument Type:	Flush-mount/Stick-up	Well Diameter:	MW-MS	Depth to Free Product:	—
	Other: Vault	Well Depth:	—	Free Product Thickness:	—
Monument Condition:	Good	Depth to Water:	28.46	Water Column Length:	—
Well Cap Lock Present:	Yes No	Screened Interval:	—	Purge Volume:	—

Comments:

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)

Water height multipliers (gal): 1-inch well = 0.041 | 2-inch = 0.162 | 4-inch = 0.653 | 1 gal = 3.785 liters

PURGING DATA

Purge Method: PP LF

Sampling Method:

Pump Intake Depth: MS

Tubing Material & Type: LDPE

NEW / DEDICATED

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
1015			28.46	0.30	7.01	14.1	2465	6.72	-14.6	Clear
1018			28.44	0.30	7.04	18.2	2713	0.53	-15.5	
1021			28.44	0.30	7.04	18.1	2724	0.27	-14.7	
			↓	↓	7.05	18.2	2737	0.20	-14.8	↓

PURGING DATA

Sample ID:	MW-MS1-3(43)	Sampling Flow Rate:	0.30			Analytical Laboratory:	Anatex
Sample Time:	1024	Final Depth to Water:	28.31			Did Well Dewater:	No
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
8 VOA	HCl	HVOCs/RSK					
(1) 250	—	~~NO3~~ NH3					
(2) 250	H_2SO_4	NO_2/NO_3/TOC					

NOTES/ADDITIONAL COMMENTS

(9)

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	MGMSI-2(60)	Job Number:	—
Client:	Van Main	Date:	4/4/24
Project:	3Q24 GWM	Sampler:	JP/EP
Weather:	70° Sunny	Time In/Out:	—

WELL DATA

Monument Type:	Flush-mount/Stick-up	Well Diameter:		Depth to Free Product	
	Other: Vault	Well Depth:	28.65	Free Product Thickness:	
Monument Condition:	Good	Depth to Water:	—	Water Column Length:	
Well Cap Lock Present:	(Yes) No	Screened Interval:		Purge Volume:	
Comments:					

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)

Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:		Pump Intake Depth:	
Sampling Method:		Tubing Material & Type:	NEW / DEDICATED

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
0955			28.65	0.25	7.04	16.9	448.8	0.27	-24.8	Clear
0958					7.02	16.7	445.1	0.17	-25.8	
1001					7.02	16.5	443.9	0.16	-24.1	
1004			28.71		7.03	16.5	443.1	0.15	-24.1	

PURGING DATA

Sample ID:	MGMSI-2(60)	Sampling Flow Rate:	0.25		Analytical Laboratory:	Apex
Sample Time:	1004	Final Depth to Water:	28.74		Did Well Dewater:	No
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
3 VOA	HCl	HVOCs				
1 250	—	NH_3				
1 250	H_2SO_4	NO_2 / NO_3				

NOTES/ADDITIONAL COMMENTS

5

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	MGMS2-3(60)	Job Number:	—
Client:	Van Main	Date:	9/4/24
Project:	3Q24 GWM	Sampler:	JP/EP
Weather:	65° cloudy	Time In/Out:	—

WELL DATA

Monument Type:	(Flush-mount)/Stick-up	Well Diameter:	MGMS	Depth to Free Product	—
	Other: Vault	Well Depth:	28.45	Free Product Thickness:	—
Monument Condition:	Good	Depth to Water:	—	Water Column Length:	—
Well Cap Lock Present:	(Yes) No	Screened Interval:	—	Purge Volume:	—
Comments:	—				

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)

Water height multipliers (gal): 1-inch well = 0.041 | 2-inch = 0.162 | 4-inch = 0.653 | 1 gal = 3.785 liters

PURGING DATA

Purge Method:	PP	Pump Intake Depth:	MS perm.
Sampling Method:	Low-flow	Tubing Material & Type:	LDPE

NEW / (DEDICATED)

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
0920			28.45	0.25	6.95	19.3	1135	0.34	-26.8	Clear
0924				↓	6.88	17.8	436.0	0.29	-21.1	↓
0927			28.52		6.87	17.7	429.7	0.18	-21.9	
0930			28.56	↓	6.87	17.7	428.1	0.16	-22.7	

PURGING DATA

Sample ID:	MGMS2-3(60)	Sampling Flow Rate:	0.25			Analytical Laboratory:	Apex
Sample Time:	0930	Final Depth to Water:	28.56			Did Well Dewater:	NO
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
3 x VOA	HCl	HVOCs	—	—	—	—	
1 x 250	—	NH_3	—	—	—	—	
1 x 250	H_2SO_4	NO_2/NO_3	—	—	—	—	

NOTES/ADDITIONAL COMMENTS

5 containers

WELL MONITORING DATA SHEET

GeoEngineers

Well ID:	MGMS2-4(40)	Job Number:	—
Client:	Van Main	Date:	9/4/24
Project:	3Q24 GWM	Sampler:	JP/EP
Weather:	60° cloudy	Time In/Out:	—

WELL DATA

Monument Type:	Flush-mount/Stick-up	Well Diameter:	MGMS	Depth to Free Product	—
	Other: Vault	Well Depth.	—	Free Product Thickness:	—
Monument Condition:	Good	Depth to Water:	28.11	Water Column Length:	—
Well Cap Lock Present:	Yes No	Screened Interval:	—	Purge Volume:	—

Comments: —

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)

Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	PP	Pump Intake Depth:	MS perm.
Sampling Method:	Low-Flow	Tubing Material & Type:	LDPE NEW / DEDICATED

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
0853			28.11	0.2	7.05	18.7	1545	1.48	-21.5	clear
0856				↓	7.06	18.5	1597	0.34	-20.1	↓
0859					7.03	18.4	1640	0.22	-18.8	
0902			28.73	↓	7.03	18.2	1663	0.18	-18.0	↓

PURGING DATA

Sample ID:	MGMS2-4(40)	Sampling Flow Rate:	0.2		Analytical Laboratory:	Apex
Sample Time:	0902	Final Depth to Water:	28.22		Did Well Dewater:	NO

No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
6 x VOA	HCl	HVOCs + RSK-175		—		
1 x 250	—	NH_3		—		
2 x 250	H_2SO_4	NO_2/NO_3 /TOC		—		

NOTES/ADDITIONAL COMMENTS

9 containers

WELL MONITORING DATA SHEET

GeoEngineers

Well ID:	MGMS3-4(40)	Job Number:	—
Client:	Van Main	Date:	9/4/24
Project:	3924 GWM	Sampler:	EP/JP
Weather:	55° cloudy	Time In/Out:	—

WELL DATA

Monument Type:	(Flush-mount)/Stick-up	Well Diameter:	MGMS	Depth to Free Product:	—
	Other: Vault	Well Depth:	—	Free Product Thickness:	—
Monument Condition:	Good	Depth to Water:	26.87	Water Column Length:	—
Well Cap Lock Present:	(Yes) No	Screened Interval:	—	Purge Volume	—
Comments:	—				

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)				
Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	PP	Pump Intake Depth:	MS perm.
Sampling Method:	Low-flow	Tubing Material & Type:	LDPE NEW / (DEDICATED)

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
0732			26.87		6.30	17.2	1.0	10.24	171.9	clear
0735			↓	0.3	6.66	16.5	510	0.90	-95.7	↓
0738			↓	↓	6.67	16.4	509	0.59	-105.6	
0741			↓	↓	6.68	16.4	510	0.48	-110.2	↓

PURGING DATA

Sample ID:	MGMS3-4(40) 0741	Sampling Flow Rate:	0.30		Analytical Laboratory:	Aspect
Sample Time:	0741	Final Depth to Water:	26.87		Did Well Dewater:	
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID

NOTES/ADDITIONAL COMMENTS

9x main
5x dup

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	MGMS3-3(60)	Job Number:	—
Client:	Van Main	Date:	9/4/24
Project:	3Q24 GWM	Sampler:	EP/JP
Weather:	60° cloudy	Time In/Out:	—

WELL DATA

Monument Type:	Flush-mount/Stick-up	Well Diameter:	MGMS	Depth to Free Product:	—
	Other: Vault	Well Depth:	—	Free Product Thickness:	—
Monument Condition:	Good	Depth to Water:	26.77	Water Column Length:	—
Well Cap Lock Present:	(Yes) No	Screened Interval:	—	Purge Volume:	—
Comments:	—				

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)

Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	PP	Pump Intake Depth:	MS perminent
Sampling Method:	Low-flow	Tubing Material & Type:	LDPE

NEW / (DEDICATED)

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (mg/L)	ORP (mV)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5 °C	+/-5%	+/-0.5 ppm	+/-20 mV	
0814			26.77	0.25	7.04	18.4	265.8	2.14	-56.1	clear
0817					6.96	16.7	264.8	1.00	-23.9	
0820			26.83		6.90	16.6	267.5	0.99	-22.6	
0823					6.98	16.3	266.4	1.04	-22.7	
0826					6.99	16.2	296.0	1.11	-22.9	
0829			26.96		7.00	16.2	305.6	1.14	-22.9	

PURGING DATA

Sample ID:	MGMS3-3(60)	Sampling Flow Rate:	0.25		Analytical Laboratory:	Apex
Sample Time:	0829	Final Depth to Water:	26.96		Did Well Dewater:	NO
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
3x VOA	HCl	HVOCs	—			
1 x 250	—	NH_3	—			
1 x 250	H_2SO_4	NO_2/NO_3	—			

NOTES/ADDITIONAL COMMENTS

5 containers

Project: Van Main
Client: Sunoco
Sampler: CW | SR

Date: 12/2/24
Permit:

Well ID:	Time:	DTP:	DTW:	Product Thickness:	Notes:
MW-1	0806		26.98		
MW-2	0811		28.31		Sewer like odor
MW-3	0839		27.23		
MW-5	0934		27.78		
MW-6	0823		26.70		
MW-7	0922		27.73		
MW-8	0947		27.33		
MW-9	0913		27.93		
MW-10	0825		28.19		
MW-12	1006		26.81		
MW-13	0844		27.29		
MW-14	0758		27.96		
MW-15	1024		32.98		
MW-16	1039		27.52		
MW-17	0747		26.51		
MW-18i	1056		27.96		
MW-19	1003		27.71		
MW-19i	1145		26.45		
MW-20i *	1154		27.61		
MW-21i-40	1100		28.32		
MW-21i-105	1102		28.62		
MW-22i	1114		29.09		
MW-23i	1127		28.43		
MW-24i	1131		28.50		
MW-24d	0949		28.41		
MW-25i	1118		29.35		
MW-26	0814		27.85		
MW-32s	0953		28.21		
MW-32i	1057		28.93		

MGMS1-3(43)	1012		27.41		
MGMS1-2(60)	1124		27.46		
MGMS1-1(110)	1015		27.46		
MGMS2-4(40)	0934		27.20		
MGMS2-3(60)	1119		27.90		
MGMS2-2(110)	0936		27.61		
MGMS2-1(132)	0939		27.60		
MGMS3-4(40)	0908		26.26		
MGMS3-3(60)	1115		26.66		
MGMS3-2(101)	0912		26.30		
MGMS3-1(132)	0914		26.30		
MW-F	0747		27.91		
EW-1	0831		25.48		
EX-1	0955		27.40		
MP-1	0853		27.70		
S-1	1133		27.49		
S-2	0831		27.02		
NKW-1	1207		27.72		
NKW-2	1210		27.60		

Project: Van Main Sout SVE Date: 12/2/24

Client: Sunoco Permit: 44055

Sampler: CW

Calibrate PID (Y/N)

	Pre-Blower	Post-Blower	Post-C1	Post C-2
Pressure	18	28	17	6
PID	0	20.9	11.3	10.7

Pre-Carbon Sample:

Name: Pre-Carbon SSVE 20241202 Can P_i: -28

Can #: 6L1677 Can P_f: 3

Flow Meter #: G0004 Sampling Time: 1415

Post-Carbon Sample:

Name: Post-Carbon SSVE 20241202 Can P_i: 29

Can #: 6L2768 Can P_f: 4

Flow Meter #: G0366 Sampling Time: 1430

Blue Water?

NO water

Waste Volume/pH?

~/A

Restart System?

YES

WELL MONITORING DATA SHEET

GeoEngineers

Well ID:	MW-1	Job Number:	19001-009-36/37
Client:	Sunoco	Date:	12/4/24
Project:	Van Main 4Q24 GWM	Sampler:	SR CW
Weather:	Sunny - 43°F	Time In/Out:	--

WELL DATA

Monument Type:	Flush-mount/Stick-up	Well Diameter:	2"	Depth to Free Product:	--
	Other: -	Well Depth:	-	Free Product Thickness:	--
Monument Condition:	Good	Depth to Water:	27.35	Water Column Length:	--
Well Cap Lock Present:	Yes No	Screened Interval:	-	Purge Volume:	--
Comments:	-				

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)				
Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic / ~~Bladder Pump~~	Pump Intake Depth:	Mid-Screen		
Sampling Method:	Low Flow	Tubing Material & Type:	LDPE 1/4" / ~~Skip-Bonded~~	NEW / ~~DEDICATED~~	

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	Purge Rate (L/min)	DTW (btc)	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Clarity/Color Other Remarks
					+/-0.5 °C	+/-0.5 ppm	+/-5%	+/-0.1	+/-20 mV	
1330	-	-	0.30	27.39	16.0	1.21	1901	6.77	154.1	clear
1333	-	-	0.30	27.40	16.2	0.65	1868	6.76	154.0	↓
1336	-	-	0.30	27.40	16.3	0.53	1881	6.77	148.7	
1339	-	-	0.30	27.39	16.3	0.46	1924	6.77	142.5	

PURGING DATA

Sample ID:	MW-1	Sampling Flow Rate:	0.30		Analytical Laboratory:		Apex
Sample Time:	1339	Final Depth to Water:	27.40		Did Well Dewater:		No
No. of Containers/Type	Preservative	Analysis/Method		Field Filtered	Filter Size	MS/MSD	Duplicate ID
3 x VOA	HCl	HVOC	RSK	--	--	--	/
1 x 250mL	Sulfuric Acid	Ammonia	TOC	--	--	--	
1 x 250 mL	None	Nitrate	Nitrite	--	--	--	

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	MW-2	Job Number:	19001-009
Client:	Sunoco	Date:	12/5/24
Project:	Van Main 4Q24 GWM	Sampler:	SB / CW
Weather:	Sun, 40°F	Time In/Out:	

WELL DATA

Monument Type:	Flush-mount/Stick-up	Well Diameter:	2"	Depth to Free Product:	--
	Other:	Well Depth:	—	Free Product Thickness:	--
Monument Condition:	Good	Depth to Water:	29.91	Water Column Length:	--
Well Cap Lock Present:	Yes No	Screened Interval:	~	Purge Volume:	--
Comments:					

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)				
Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic / Bladder Pump	Pump Intake Depth:	Mid-Screen
Sampling Method:	Low Flow	Tubing Material & Type:	LDPE 0.25" / Skip Bond — NEW / DEDICATED

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	Purge Rate (L/min)	DTW (btc)	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Clarity/Color Other Remarks
					+/-0.5 °C	+/-0.5 ppm	+/-5%	+/-0.1	+/-20 mV	
1450			0.20	29.91	13.2	3.34	828	8.13	69.2	Clear
1453			0.20	—	13.3	1.32	827	8.11	65.2	↓
1456			0.20	—	13.3	0.92	829	8.10	65.7	
1459			0.20	—	13.1	0.78	830	8.09	67.7	
1502			0.20	—	13.0	0.66	831	8.08	68.8	↓

PURGING DATA

Sample ID:	MW-2	Sampling Flow Rate:	0.20			Analytical Laboratory:	Apex
Sample Time:	1502	Final Depth to Water:	30.01			Did Well Dewater:	No
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
3 x VOA	HCl						
1 x 250 Poly	H_2SO_4						
1 x 250 Poly	NA						

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	MW-3	Job Number:	19001-009-36/37
Client:	Sunoco	Date:	12/5/24
Project:	Van Main 4Q24 GWM	Sampler:	SR CW
Weather:	Sunny - 42° F	Time In/Out:	-

WELL DATA

Monument Type:	Flush-mount/Stick-up	Well Diameter:	2"	Depth to Free Product:	--
	Other: Vault	Well Depth:	-	Free Product Thickness:	--
Monument Condition:	Good	Depth to Water:	27.56	Water Column Length:	--
Well Cap Lock Present:	Yes No	Screened Interval:	-	Purge Volume:	--
Comments:	-				

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)				
Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic / Bladder Pump	Pump Intake Depth:	Mid-Screen
Sampling Method:	Low Flow	Tubing Material & Type:	LDPE 1/4" / Skip-Bonded NEW / DEDICATED

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	Purge Rate (L/min)	DTW (btc)	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Clarity/Color Other Remarks
					+/-0.5 °C	+/-0.5 ppm	+/-5%	+/-0.1	+/-20 mV	
1257	-	-	0.30	27.58	13.3	7.66	379.2	6.70	107.8	clear
1300	-	-	0.30	27.60	13.4	7.63	375.1	6.65	111.3	↓
1303	-	-	0.30	27.60	13.4	7.55	373.2	6.63	115.3	
1306	-	-	0.30	27.59	13.4	7.44	372.6	6.62	117.4	

PURGING DATA

Sample ID:	MW-3	Sampling Flow Rate:	0.30			Analytical Laboratory:	Apex
Sample Time:	1306	Final Depth to Water:	27.79			Did Well Dewater:	no
No. of Containers/Type	Preservative	Analysis/Method		Field Filtered	Filter Size	MS/MSD	Duplicate ID
3 x VOA	HCl	HVOC	RSK	--	--	--	/
1 x 250mL	Sulfuric Acid	Ammonia	TOC	--	--	--	
1 x 250 mL	None	Nitrate	Nitrite	--	--	--	

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	MW-5	Job Number:	19001-009
Client:	Sunoco	Date:	12/5/24
Project:	Van Main 4Q24 GWM	Sampler:	~~SR~~ CW
Weather:	Sunny, 300F	Time In/Out:	

WELL DATA

Monument Type:	~~Flush-mount~~/Stick-up	Well Diameter:	2"	Depth to Free Product:	--
	Other:	Well Depth:	30'	Free Product Thickness:	--
Monument Condition:	Good	Depth to Water:	27.95	Water Column Length:	--
Well Cap Lock Present:	Yes No	Screened Interval:	—	Purge Volume:	--
Comments:					

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)				
Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic / Bladder Pump	Pump Intake Depth:	Mid-Screen
Sampling Method:	Low Flow	Tubing Material & Type:	LDPE 0.25" / Skip Bond — NEW / DEDICATED

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	Purge Rate (L/min)	DTW (btc)	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Clarity/Color Other Remarks
					+/-0.5 °C	+/-0.5 ppm	+/-5%	+/-0.1	+/-20 mV	
0810			0.20	Below Pump	18.0	2.57	661	7.54	83.9	Clear
0813				—	18.3	0.72	677	7.54	84.3	
0816				—	18.4	0.40	679	7.55	82.5	
0819				—	17.7	0.32	677	7.57	80.9	
0822				—	17.7	0.27	675	7.57	78.0	
0825				—	17.9	0.25	676	7.57	77.7	

PURGING DATA

Sample ID:	MW-5	Sampling Flow Rate:	0.20			Analytical Laboratory:	Apex
Sample Time:	0825	Final Depth to Water:				Did Well Dewater:	No
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
3x VOA	HCl						
1x 250 Poly	H_2SO_4						
1x 250 Poly	NA						

NOTES/ADDITIONAL COMMENTS

Nauseating Smell on pump and tubing, NOT in purge water.

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	MW-6	Job Number:	19001-009-36/37
Client:	Sunoco	Date:	12/5/24
Project:	Van Main 4Q24 GWM	Sampler:	SR (CW)
Weather:	Sunny - 45°F	Time In/Out:	-

WELL DATA

Monument Type:	(Flush-mount)/Stick-up	Well Diameter:	2"	Depth to Free Product:	--
	Other: -	Well Depth:	-	Free Product Thickness:	--
Monument Condition:	Good	Depth to Water:	26.93	Water Column Length:	--
Well Cap Lock Present:	(Yes) No	Screened Interval:	-	Purge Volume:	--
Comments:					

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)				
Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic / Bladder Pump	Pump Intake Depth:	Mid-Screen
Sampling Method:	Low Flow	Tubing Material & Type:	LDPE 1/4" / Skip-Bonded — NEW / DEDICATED

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	Purge Rate (L/min)	DTW (btc)	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Clarity/Color Other Remarks
					+/-0.5 °C	+/-0.5 ppm	+/-5%	+/-0.1	+/-20 mV	
1349	-	-	0.30	26.94	13.9	1.12	411.3	6.18	-14.0	clear, sulfur-like odor
1352	-	-	0.30	26.95	13.9	0.72	404.2	6.21	-22.6	↓
1355	-	-	0.30	26.94	13.9	0.51	3799	6.27	-30.2	
1358	-	-	0.30	26.96	13.9	0.48	369.5	6.29	-38.1	

PURGING DATA

Sample ID:	MW-6	Sampling Flow Rate:	0.30			Analytical Laboratory:	Apex
Sample Time:	1358	Final Depth to Water:	26.95			Did Well Dewater:	NO
No. of Containers/Type	Preservative	Analysis/Method		Field Filtered	Filter Size	MS/MSD	Duplicate ID
3 x VOA	HCl	(HVOC)	RSK	--	--	--	|
1 x 250mL	Sulfuric Acid	(Ammonia)	TOC	--	--	--	|
1 x 250 mL	None	(Nitrate)	(Nitrite)	--	--	--	|

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	MW-7	Job Number:	19001-009-36/37
Client:	Sunoco	Date:	12/3/24
Project:	Van Main 4Q24 GWM	Sampler:	SR CW
Weather:	Sunny - 46°F	Time In/Out:	-

WELL DATA

Monument Type:	Flush-mount/Stick-up	Well Diameter:	4"	Depth to Free Product:	--
	Other: Vault	Well Depth:	-	Free Product Thickness:	--
Monument Condition:	Good	Depth to Water:	27.71	Water Column Length:	--
Well Cap Lock Present:	Yes No	Screened Interval:	-	Purge Volume:	--

Comments: —

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)				
Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic / Bladder Pump	Pump Intake Depth:	Mid-Screen
Sampling Method:	Low Flow	Tubing Material & Type:	LDPE 1/4" / Skip-Bonded — NEW / DEDICATED

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	Purge Rate (L/min)	DTW (btc)	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Clarity/Color Other Remarks
					+/-0.5 °C	+/-0.5 ppm	+/-5%	+/-0.1	+/-20 mV	
1452	-	-	0.30	27.72	13.0	1.07	5038	6.64	212.8	clear
1455	-	-	0.30	27.89	13.2	0.94	5036	6.70	204.9	
1458	-	-	0.30	28.03	13.3	0.72	4952	6.73	199.1	↓
1501	-	-	0.30	28.15	13.2	0.68	4912	6.75	196.6	

PURGING DATA

Sample ID:	MW-7 + MW-1 DUP	Sampling Flow Rate:	0.30			Analytical Laboratory:	Apex
Sample Time:	1501	Final Depth to Water:	28.10			Did Well Dewater:	NO
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
5 x VOA	HCl	HVOC RSK	--	--	--		
2 x 250mL	Sulfuric Acid	Ammonia TOC	--	--	--		
1 x 250 mL	None	Nitrate Nitrite	--	--	--		
3 x VOA	HCl	HVOC				DUP	
1 x 250	Sulf. Acid	Ammonia				DUP	
1 x 250	None	NO_2 / NO_3				DUP	

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	MW-8	Job Number:	19001-009
Client:	Sunoco	Date:	12/18/24
Project:	Van Main 4Q24 GWM	Sampler:	SR / CW
Weather:	Sun, 35°F	Time In/Out:	

WELL DATA

Monument Type:	Flush-mount/Stick-up	Well Diameter:	2"	Depth to Free Product:	--
	Other: Vault	Well Depth:	—	Free Product Thickness:	--
Monument Condition:	Good	Depth to Water:	27.50	Water Column Length:	--
Well Cap Lock Present:	(Yes) No	Screened Interval:	—	Purge Volume:	--
Comments:					
Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)					
Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters	

PURGING DATA

Purge Method:	Peristaltic / Bladder Pump	Pump Intake Depth:	Mid-Screen
Sampling Method:	Low Flow	Tubing Material & Type:	LDPE 0.25" / Skip Bond — NEW / DEDICATED

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	Purge Rate (L/min)	DTW (btc)	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Clarity/Color Other Remarks
					+/-0.5 °C	+/-0.5 ppm	+/-5%	+/-0.1	+/-20 mV	
1036			0.20	27.50	13.8	4.89	1957	7.54	87.5	Clear
1039			↓	↓	14.1	2.56	1942	7.56	87.2	↓
1042					14.1	2.09	1938	7.56	85.2	
1045					14.1	1.94	1939	7.56	83.8	
1048			↓	↓	14.1	1.89	1942	7.56	83.5	↓

PURGING DATA

Sample ID:	MW-8	Sampling Flow Rate:	0.20			Analytical Laboratory:	Apex
Sample Time:	1048	Final Depth to Water:	27.50			Did Well Dewater:	NO
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
3 x VOA	HCl						
1 x 250 Poly	H_2SO_4						
1 x 250 Poly	NA						

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	MW-9	Job Number:	19001-009-36/37
Client:	Sunoco	Date:	12/3/24
Project:	Van Main 4Q24 GWM	Sampler:	SR (CW)
Weather:	Sunny - 45°F	Time In/Out:	–

WELL DATA

Monument Type:	(Flush-mount)/Stick-up	Well Diameter:	4"	Depth to Free Product:	--
	Other: –	Well Depth:	–	Free Product Thickness:	--
Monument Condition:	Good	Depth to Water:	27.96	Water Column Length:	--
Well Cap Lock Present:	(Yes) No	Screened Interval:	–	Purge Volume:	--

Comments: –

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)				
Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic / ~~Bladder Pump~~	Pump Intake Depth:	Mid-Screen
Sampling Method:	Low Flow	Tubing Material & Type:	LDPE 1/4" / (Skip-Bonded) NEW / (DEDICATED)

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	Purge Rate (L/min)	DTW (btc)	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Clarity/Color Other Remarks
					+/-0.5 °C	+/-0.5 ppm	+/-5%	+/-0.1	+/-20 mV	
1406	–	–	0.30	27.98	12.6	6.47	989	5.26	189.9	Clear
1409	–	–	0.30	27.97	12.6	6.47	981	5.23	193.8	↓
1412	–	–	0.30	27.97	12.6	6.39	978	5.19	200.6	
1415	–	–	0.30	27.97	12.6	6.34	979	5.16	209.6	

PURGING DATA

Sample ID:	MW-9	Sampling Flow Rate:	0.30	Analytical Laboratory:	Apex	
Sample Time:	1415	Final Depth to Water:	27.97	Did Well Dewater:	NO	
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
3 x VOA	HCl	(HVOC) RSK	--	--	--	↓
1 x 250mL	Sulfuric Acid	(Ammonia) TOC	--	--	--	↓
1 x 250 mL	None	(Nitrate) (Nitrite)	--	--	--	↓

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GeoEngineers

Well ID:	MW-10	Job Number:	19001-009-36/37
Client:	Sunoco	Date:	12/4/24
Project:	Van Main 4Q24 GWM	Sampler:	SR (CW)
Weather:	Sunny - 40°F	Time In/Out:	-

WELL DATA

Monument Type:	(Flush-mount)/Stick-up	Well Diameter:	4"	Depth to Free Product:	--
	Other: Vault	Well Depth:	-	Free Product Thickness:	--
Monument Condition:	Good	Depth to Water:	27.36	Water Column Length:	--
Well Cap Lock Present:	(Yes) No	Screened Interval:	-	Purge Volume:	--

Comments:

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)				
Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic / (Bladder Pump)	Pump Intake Depth:	Mid-Screen
Sampling Method:	Low Flow	Tubing Material & Type:	LDPE 1/4" / (Skip-Bonded) NEW / (DEDICATED)

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	Purge Rate (L/min)	DTW (btc)	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Clarity/Color Other Remarks
					+/-0.5 °C	+/-0.5 ppm	+/-5%	+/-0.1	+/-20 mV	
1209	-	-	0.30	27.41	14.0	1.31	2954	5.19	189.9	clear
1212	-	-	0.30	27.84	14.1	0.83	3005	5.14	191.2	↓
1215	-	-	0.30	28.76	14.0	0.65	3036	5.11	192.8	↓
1218	-	-	0.30	28.94	14.0	0.59	3054	5.10	193.4	↓

PURGING DATA

Sample ID:	MW-10	Sampling Flow Rate:	0.30			Analytical Laboratory:	Apex
Sample Time:	1218	Final Depth to Water:	27.72			Did Well Dewater:	No
No. of Containers/Type	Preservative	Analysis/Method		Field Filtered	Filter Size	MS/MSD	Duplicate ID
3 x VOA	HCl	(HVOC)	RSK	--	--	--	|
1 x 250mL	Sulfuric Acid	Ammonia	TOC	--	--	--	|
1 x 250 mL	None	Nitrate	(Nitrite)	--	--	--	|

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	MW-12	Job Number:	19001-009-36/37
Client:	Sunoco	Date:	12/4/24
Project:	Van Main 4Q24 GWM	Sampler:	SR (CW)
Weather:	Sunny, ~31° F	Time In/Out:	-

WELL DATA

Monument Type:	(Flush-mount)/Stick-up	Well Diameter:	4"	Depth to Free Product:	--
	Other: -	Well Depth:	-	Free Product Thickness:	--
Monument Condition:	Good	Depth to Water:	26.10	Water Column Length:	--
Well Cap Lock Present:	(Yes) No	Screened Interval:	-	Purge Volume:	--

Comments: -

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)				
Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic / (Bladder Pump)	Pump Intake Depth:	Mid-Screen
Sampling Method:	Low Flow	Tubing Material & Type:	LDPE 1/4" / (Skip-Bonded) NEW / (DEDICATED)

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	Purge Rate (L/min)	DTW (btc)	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Clarity/Color Other Remarks
					+/-0.5 °C	+/-0.5 ppm	+/-5%	+/-0.1	+/-20 mV	
0813	-	-	0.30	26.12	12.2	1.31	792	6.83	132.3	clear
0816	-	-	0.30	26.37	12.5	0.79	732	6.69	134.0	↓
0819	-	-	0.30	26.44	12.7	0.62	677	6.62	134.9	↓
0822	-	-	0.30	26.61	12.8	0.57	661	6.58	135.2	↓
0825	-	-	0.30	26.76	12.8	0.54	641	6.56	135.2	↓

PURGING DATA

Sample ID:	MW-12 + MW-12 DUP	Sampling Flow Rate:	0.30	Analytical Laboratory:	Apex	
Sample Time:	0825	Final Depth to Water:	27.01	Did Well Dewater:	No	
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
5 x VOA	HCl	(HVOC) RSK	--	--	--	
2 x 250mL	Sulfuric Acid	(Ammonia) TOC	--	--	--	
1 x 250 mL	None	(Nitrate) Nitrite	--	--	--	
3 x	HCl	(HVOC)	|	|	|	DUP
1 x 250	Sulf.	(Ammonia)	|	|	|	DUP
1 x	None	(NO2 / NO3)	|	|	|	DUP

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	MW-13	Job Number:	19061-009-36/37
Client:	Sunoco	Date:	12/3/24
Project:	Van Main 4Q24 GWM	Sampler:	SR (CW)
Weather:	Fog - 40°	Time In/Out:	–

WELL DATA

Monument Type:	(Flush-mount)/Stick-up	Well Diameter:	4"	Depth to Free Product:	--
	Other: –	Well Depth:	–	Free Product Thickness:	--
Monument Condition:	Good	Depth to Water:	27.72	Water Column Length:	--
Well Cap Lock Present:	(Yes) No	Screened Interval:	–	Purge Volume:	--

Comments:

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)

Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic / (Bladder Pump)	Pump Intake Depth:	Mid-Screen
Sampling Method:	Low Flow	Tubing Material & Type:	LDPE 1/4" / (Skip-Bonded) NEW / (DEDICATED)

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	Purge Rate (L/min)	DTW (btc)	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Clarity/Color Other Remarks
					+/-0.5 °C	+/-0.5 ppm	+/-5%	+/-0.1 su	+/-20 mV	
1134	–	–	0.35	27.74	13.7	1.40	695	~~668~~ ~~6.34~~	134.1	clear
1137	–	–	0.35	27.74	13.9	0.84	686	6.50	134.5	↓
1140	–	–	0.35	27.74	14.0	0.63	679	6.49	132.4	
1143	–	–	0.30	27.70	13.9	0.54	679	6.50	129.5	

PURGING DATA

Sample ID:	MW-13	Sampling Flow Rate:	0.30			Analytical Laboratory:	Apex
Sample Time:	1143	Final Depth to Water:	27.72			Did Well Dewater:	No
No. of Containers/Type	Preservative	Analysis/Method		Field Filtered	Filter Size	MS/MSD	Duplicate ID
5 x VOA	HCl	(HVOC)	RSK	--	--	--	–
2 x 250mL	Sulfuric Acid	(Ammonia)	~~TOC~~	--	--	--	–
1 x 250 mL	None	(Nitrate	Nitrite)	--	--	--	–

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	MW-14	Job Number:	19081-007-36/37
Client:	Sunoco	Date:	12/4/24
Project:	Van Main 4Q24 GWM	Sampler:	SR (CW)
Weather:	Sunny - 39°F	Time In/Out:	-

WELL DATA

Monument Type:	Flush-mount/Stick-up	Well Diameter:	4"	Depth to Free Product:	--
	~~Other~~	Well Depth:	-	Free Product Thickness:	--
Monument Condition:	Good	Depth to Water:	27.95	Water Column Length:	--
Well Cap Lock Present:	Yes No	Screened Interval:	-	Purge Volume:	--

Comments: -

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)

Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic / ~~Bladder Pump~~	Pump Intake Depth:	Mid-Screen
Sampling Method:	Low Flow	Tubing Material & Type:	LDPE 1/4" / ~~Silp~~-Bonded NEW / ~~DEDICATED~~

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	Purge Rate (L/min)	DTW (btc)	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Clarity/Color Other Remarks
					+/-0.5 °C	+/-0.5 ppm	+/-5%	+/-0.1	+/-20 mV	
0920	-	-	0.30	27.97	13.4	1.44	2701	6.38	163.0	clear
0923	-	-	0.30	27.98	13.7	0.86	2789	6.41	160.1	↓
0926	-	-	0.30	27.98	13.9	0.56	2798	6.46	154.9	
0929	-	-	0.30	27.98	13.7	0.50	2796	6.47	152.6	

PURGING DATA

Sample ID:	MW-14	Sampling Flow Rate:	0.30			Analytical Laboratory:	Apex
Sample Time:	0929	Final Depth to Water:	27.99			Did Well Dewater:	No
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
5 x VOA	HCl	(HVOC) RSK	--	--	--		
2 x 250mL	Sulfuric Acid	(Ammonia) TOC	--	--	--		
1 x 250 mL	None	(Nitrate Nitrite)	--	--	--		

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	MW-15	Job Number:	19001-009
Client:	Sunoco	Date:	12/5/24
Project:	Van Main 4Q24 GWM	Sampler:	(SR) / CW
Weather:	Sn, 40°F	Time In/Out:	–

WELL DATA

Monument Type:	Flush-mount / Stick-up	Well Diameter:	2"	Depth to Free Product:	--
	Other:	Well Depth:	—	Free Product Thickness:	--
Monument Condition:	Good	Depth to Water:	33.10	Water Column Length:	--
Well Cap Lock Present:	Yes / No	Screened Interval:	—	Purge Volume:	--

Comments:

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)				
Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic / Bladder Pump	Pump Intake Depth:	Mid-Screen
Sampling Method:	Low Flow	Tubing Material & Type:	LDPE 0.25" / Skip Bond — NEW / DEDICATED

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	Purge Rate (L/min)	DTW (btc)	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Clarity/Color Other Remarks
					+/-0.5 °C	+/-0.5 ppm	+/-5%	+/-0.1	+/-20 mV	
1132			0.20		12.9	3.96	637	7.25	83.3	Clear
1135			↓		13.1	1.01	633	7.25	84.7	↓
1138					13.2	0.89	632	7.75	87.9	
1141			↓		13.3	0.77	632	7.76	82.6	↓
~~1144~~										

PURGING DATA

Sample ID:	MW-15	Sampling Flow Rate:	0.20		Analytical Laboratory:		Apex
Sample Time:	1141	Final Depth to Water:			Did Well Dewater:		No
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
3x VOA	HCl						
1x250 Poly	H_2SO_4						
1x250 Poly	NA						

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	MW-16	Job Number:	19001-009
Client:	Sunoco	Date:	12/4/24
Project:	Van Main 4Q24 GWM	Sampler:	SR / CW
Weather:	Sunny, 40°F	Time In/Out:	

WELL DATA

Monument Type:	Flush-mount/Stick-up	Well Diameter:	4"~~-2"~~	Depth to Free Product:	--
	Other: Vault	Well Depth:	-	Free Product Thickness:	--
Monument Condition:	Good	Depth to Water:	27.57	Water Column Length:	--
Well Cap Lock Present:	Yes No	Screened Interval:	-	Purge Volume:	--

Comments:

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)

Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic / ~~Bladder Pump~~	Pump Intake Depth:	Mid-Screen
Sampling Method:	Low Flow	Tubing Material & Type:	LDPE 0.25" / Skip Bond — NEW / DEDICATED

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	Purge Rate (L/min)	DTW (btc)	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Clarity/Color Other Remarks
					+/-0.5 °C	+/-0.5 ppm	+/-5%	+/-0.1	+/-20 mV	
0947			0.20	27.71	12.4	3.84	684	7.82	86.4	Clear
0950			0.20	27.74	12.7	1.37	681	7.78	85.8	
0953			↓	↓	12.9	0.80	678	7.76	85.1	
0956					13.0	0.61	688	7.77	83.8	
0959			↓	↓	13.0	0.49	698	7.77	82.4	↓

PURGING DATA

Sample ID:	MW-16	Sampling Flow Rate:	0.20	Analytical Laboratory:	Apex	
Sample Time:	0959	Final Depth to Water:	27.74	Did Well Dewater:	No	
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
3xVOA	HCl					
1x Poly	H_2SO_4					
1x Poly	NA					

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	MW-17	Job Number:	14001-009-36/37
Client:	Sunoco	Date:	12/4/24
Project:	Van Main 4Q24 GWM	Sampler:	SR (CW)
Weather:	Sunny - 40°F	Time In/Out:	-

WELL DATA

Monument Type:	Flush-mount/Stick-up	Well Diameter:	4"	Depth to Free Product:	--
	Other: Vault	Well Depth:	-	Free Product Thickness:	--
Monument Condition:	Good	Depth to Water:	26.68	Water Column Length:	--
Well Cap Lock Present:	(Yes) No	Screened Interval:	-	Purge Volume:	--

Comments: -

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)

Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic / Bladder Pump	Pump Intake Depth:	Mid-Screen
Sampling Method:	Low Flow	Tubing Material & Type:	LDPE 1/4" (Skip-Bonded) NEW / (DEDICATED)

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	Purge Rate (L/min)	DTW (btc)	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Clarity/Color Other Remarks
					+/-0.5 °C	+/-0.5 ppm	+/-5%	+/-0.1	+/-20 mV	
1009	-	-	0.30	26.68	13.6	1.31	951	6.77	132.0	clear
1012	-	-	0.30	26.68	13.8	0.77	950	6.73	128.6	↓
1015	-	-	0.30	26.68	13.8	0.59	949	6.71	125.5	
1018	-	-	0.30	26.68	13.9	0.52	948	6.70	123.3	

PURGING DATA

Sample ID:	MW-17	Sampling Flow Rate:	0.30			Analytical Laboratory:	Apex
Sample Time:	1018	Final Depth to Water:	26.68			Did Well Dewater:	No
No. of Containers/Type	Preservative	Analysis/Method		Field Filtered	Filter Size	MS/MSD	Duplicate ID
3 x VOA	HCl	(HVOC)	RSK	--	--	--	|
1 x 250mL	Sulfuric Acid	(Ammonia)	TOC	--	--	--	|
1 x 250 mL	None	(Nitrate Nitrite)		--	--	--	|

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	MW-18i	Job Number:	19001-009
Client:	Sunoco	Date:	12/4/24
Project:	Van Main 4Q24 GWM	Sampler:	SR / CW
Weather:	Sn, 40s	Time In/Out:	

WELL DATA

Monument Type:	Flush-mount/Stick-up	Well Diameter:	2"	Depth to Free Product:	--
	Other:	Well Depth:	—	Free Product Thickness:	--
Monument Condition:	Good	Depth to Water:	18.08	Water Column Length:	--
Well Cap Lock Present:	Yes / No	Screened Interval:	—	Purge Volume:	--

Comments:

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)

Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic / Bladder Pump	Pump Intake Depth:	Mid-Screen
Sampling Method:	Low Flow	Tubing Material & Type:	LDPE 0.25" / Skip Bond — NEW / DEDICATED

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	Purge Rate (L/min)	DTW (btc)	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Clarity/Color Other Remarks
					+/-0.5 °C	+/-0.5 ppm	+/-5%	+/-0.1	+/-20 mV	
1113			0.20	18.12	13.5	6.39	253	8.21	86.7	Clear
1118			0.20	18.14	14.2	2.42	308	8.13	85.5	↓
1121			↓	18.14	14.0	1.65	318	8.14	84.1	
1124				18.14	14.0	1.27	325	8.14	82.1	
1127				↓	14.0	1.06	333	8.13	81.2	
1130			↓	↓	14.0	0.94	340	8.13	80.4	↓

PURGING DATA

Sample ID:	MW-18i	Sampling Flow Rate:	0.20			Analytical Laboratory:	Apex
Sample Time:	1130	Final Depth to Water:	18.14			Did Well Dewater:	No
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
3x VOA	HCl						
1x ~~AA~~ 250	N/A						
1x NA2SO	H_2SO_4						

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	MW-19	Job Number:	19001-009-36/37
Client:	Sunoco	Date:	12/3/24
Project:	Van Main 4Q24 GWM	Sampler:	SR (CW)
Weather:	Fog - 40° F	Time In/Out:	–

WELL DATA

Monument Type:	(Flush-mount) / Stick-up	Well Diameter:	2"	Depth to Free Product:	--
	Other: –	Well Depth:	–	Free Product Thickness:	--
Monument Condition:	Good	Depth to Water:	28.05	Water Column Length:	--
Well Cap Lock Present:	(Yes) No	Screened Interval:	–	Purge Volume:	--

Comments: –

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)				
Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic / (Bladder Pump)	Pump Intake Depth:	Mid-Screen
Sampling Method:	Low Flow	Tubing Material & Type:	LDPE 1/4" / (Skip-Bonded) NEW / (DEDICATED)

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	Purge Rate (L/min)	DTW (btc)	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Clarity/Color Other Remarks
					+/-0.5 °C	+/-0.5 ppm	+/-5%	+/-0.1	+/-20 mV	
1030	–	–	0.30	28.05	13.5	0.98	2136	7.01	171.2	clear
1033	–	–	0.30	28.14	13.5	0.94	2089	7.02	172.2	↓
1036	–	–	0.30	28.19	13.6	0.63	2056	7.03	168.5	↓
1039	–	–	0.30	28.22	13.7	0.55	2018	7.04	162.8	↓

PURGING DATA

Sample ID:	MW-19 + MW-19 DUP	Sampling Flow Rate:	0.30			Analytical Laboratory:	Apex
Sample Time:	1039	Final Depth to Water:	28.17			Did Well Dewater:	No
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
5 x VOA	HCl	(HVOC) (RSK)	--	--	--	~~DUP~~	
2 x 250mL	Sulfuric Acid	~~Ammonia~~ (TOC)	--	--	--	~~DUP~~	
1 x 250 mL	None	(Nitrate Nitrite)	--	--	--	~~DUP~~	
3x VOA	HCl	HVOC	–	–	–	DUP	
1x 250	Sulf. acid	Ammonia	–	–	–	DUP	
1x 250	None	NO_2/NO_3	–	–	–	DUP	

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	MW-19i	Job Number:	19001-009
Client:	Sunoco	Date:	12/4/24
Project:	Van Main 4Q24 GWM	Sampler:	SB / CW
Weather:	Sunny, 30°F	Time In/Out:	

WELL DATA

Monument Type:	Flush-mount/Stick-up	Well Diameter:	2"	Depth to Free Product:	--
	Other: Cover	Well Depth:	—	Free Product Thickness:	--
Monument Condition:	Good	Depth to Water:	28.14	Water Column Length:	--
Well Cap Lock Present:	Yes No	Screened Interval:	—	Purge Volume:	--
Comments:					
Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)					
Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters	

PURGING DATA

Purge Method:	Peristaltic / Bladder Pump	Pump Intake Depth:	Mid-Screen		
Sampling Method:	Low Flow	Tubing Material & Type:	LDPE 0.25" / Skip Bond	NEW / DEDICATED	

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	Purge Rate (L/min)	DTW (btc)	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Clarity/Color Other Remarks
					+/-0.5 °C	+/-0.5 ppm	+/-5%	+/-0.1	+/-20 mV	
0828			0.20	28.14	12.5	4.27	380	8.21	78.6	Clear
0831			0.20	28.14	12.5	1.42	409	8.09	78.3	↓
0834			↓	↓	12.4	0.81	457	8.06	79.4	
0837					13.0	0.66	483	8.04	78.0	
0840					12.8	0.64	490	8.05	79.1	
0843			↓	↓	12.6	0.46	488	8.04	78.3	↓
~~0846~~										

PURGING DATA

Sample ID:	MW-19i	Sampling Flow Rate:	0.20			Analytical Laboratory:	Apex
Sample Time:	0843	Final Depth to Water:	28.14			Did Well Dewater:	No
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
3 x VOA	HCl						
1 x 250 Poly	H_2SO_4						
1 x 250 Poly	NA						

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	MW-20i	Job Number:	19001-009
Client:	Sunoco	Date:	12/4/24
Project:	Van Main 4Q24 GWM	Sampler:	SR / CW
Weather:	Sun, 50°F	Time In/Out:	

WELL DATA

Monument Type:	Flush-mount/Stick-up	Well Diameter:	2"	Depth to Free Product:	--
	Other: Vault	Well Depth:	—	Free Product Thickness:	--
Monument Condition:	Good	Depth to Water:	27.81	Water Column Length:	--
Well Cap Lock Present:	Yes No	Screened Interval:	—	Purge Volume:	--
Comments:					

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)				
Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic / Bladder Pump	Pump Intake Depth:	Mid-Screen
Sampling Method:	Low Flow	Tubing Material & Type:	LDPE 0.25" / Skip Bond — NEW / DEDICATED

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	Purge Rate (L/min)	DTW (btc)	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Clarity/Color Other Remarks
					+/-0.5 °C	+/-0.5 ppm	+/-5%	+/-0.1	+/-20 mV	
1300			0.20	27.81	12.5	7.56	334	8.23	82.4	Clear
1303			↓	↓	13.3	1.56	366	8.10	79.1	↓
1306					13.0	0.76	374	8.08	79.3	
1309					13.1	0.63	377	8.07	79.4	
1312			↓	↓	13.2	0.58	377	8.06	79.4	↓

PURGING DATA

Sample ID:	MW-20i	Sampling Flow Rate:	0.20			Analytical Laboratory:	Apex
Sample Time:	1312	Final Depth to Water:	27.81			Did Well Dewater:	No
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
3x VOA	HCl						
2x 250 Poly	H_2SO_4 / NA						

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	MW-21-40	Job Number:	19001-009
Client:	Sunoco	Date:	12/4/24
Project:	Van Main 4Q24 GWM	Sampler:	(SR) / CW
Weather:	Sun, 48°F	Time In/Out:	

WELL DATA

Monument Type:	Flush-mount/Stick-up	Well Diameter:	2"	Depth to Free Product:	--
	Other: Vault	Well Depth:	—	Free Product Thickness:	--
Monument Condition:	Good	Depth to Water:	28.85	Water Column Length:	--
Well Cap Lock Present:	(Yes) No	Screened Interval:	—	Purge Volume:	--

Comments:

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)

Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic / ~~Bladder Pump~~	Pump Intake Depth:	Mid-Screen
Sampling Method:	Low Flow	Tubing Material & Type:	~~LDPE 0.25"~~ / Skip Bond — NEW / DEDICATED

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	Purge Rate (L/min)	DTW (btc)	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Clarity/Color Other Remarks
					+/-0.5 °C	+/-0.5 ppm	+/-5%	+/-0.1	+/-20 mV	
1214			0.20	28.85	14.2	4.65	364	8.12	77.8	clear
1217			0.20	↓	14.5	1.21	386	8.05	76.3	↓
1220			↓	↓	14.7	0.61	393	8.05	76.3	↓
1223			↓	↓	14.5	0.42	395	8.07	76.5	↓
1226			↓	↓	14.6	0.34	395	8.07	76.4	↓

PURGING DATA

Sample ID:	MW-21-40	Sampling Flow Rate:	0.20			Analytical Laboratory:	Apex
Sample Time:	1226	Final Depth to Water:	28.85			Did Well Dewater:	No
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
3x40A	HCl						
1x250 Poly	H_2SO_4						
1x250 Poly	NA						

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	MW-21i-105	Job Number:	14001-009-36/37
Client:	Sunoco	Date:	12/5/24
Project:	Van Main 4Q24 GWM	Sampler:	SR (CW)
Weather:	Sunny ~40°F	Time In/Out:	-

WELL DATA

Monument Type:	Flush-mount/Stick-up	Well Diameter:	2"	Depth to Free Product:	--
	Other: -	Well Depth:	-	Free Product Thickness:	--
Monument Condition:	Good	Depth to Water:	28.89	Water Column Length:	--
Well Cap Lock Present:	Yes No	Screened Interval:	-	Purge Volume:	--

Comments: -

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)				
Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic / Bladder Pump	Pump Intake Depth:	Mid-Screen
Sampling Method:	Low Flow	Tubing Material & Type:	LDPE 1/4" / ~~Skip-Bonded~~ NEW / DEDICATED

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	Purge Rate (L/min)	DTW (btc)	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Clarity/Color Other Remarks
					+/-0.5 °C	+/-0.5 ppm	+/-5%	+/-0.1	+/-20 mV	
1208	-	-	0.40	28.89	14.7	3.24	510	7.42	106.1	clear
1211	-	-	0.40	28.90	13.8	3.13	509	7.41	102.0	↓
1214	-	-	0.40	28.89	13.4	1.09	509	7.41	95.0	
1217	-	-	0.40	28.90	13.4	0.86	508	7.41	89.8	
1220	-	-	0.40	28.90	13.4	0.75	507	7.40	86.5	

PURGING DATA

Sample ID:	MW-21i-105	Sampling Flow Rate:	0.40			Analytical Laboratory:	Apex
Sample Time:	1220	Final Depth to Water:	28.90			Did Well Dewater:	No
No. of Containers/Type	Preservative	Analysis/Method		Field Filtered	Filter Size	MS/MSD	Duplicate ID
3 x VOA	HCl	(HVOC)	RSK	--	--	--	1
1 x 250mL	Sulfuric Acid	~~Ammonia~~	TOC	--	--	--	
1 x 250 mL	None	(Nitrate	Nitrite)	--	--	--	

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	MW-22i	Job Number:	1906i-009-36/37
Client:	Sunoco	Date:	12/5/24
Project:	Van Main 4Q24 GWM	Sampler:	SR CW
Weather:	Sunny - 38° F	Time In/Out:	-

WELL DATA

Monument Type:	Flush-mount/Stick-up	Well Diameter:	2"	Depth to Free Product:	--
	Other: -	Well Depth:	-	Free Product Thickness:	--
Monument Condition:	Good	Depth to Water:	29.05	Water Column Length:	--
Well Cap Lock Present:	Yes No	Screened Interval:	-	Purge Volume:	--
Comments:	-				

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)				
Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic / ~~Bladder Pump~~	Pump Intake Depth:	Mid-Screen
Sampling Method:	Low Flow	Tubing Material & Type:	LDPE 1/4" / ~~Silicone~~ NEW / ~~DEDICATED~~

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	Purge Rate (L/min)	DTW (btc)	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Clarity/Color Other Remarks
					+/-0.5 °C	+/-0.5 ppm	+/-5%	+/-0.1	+/-20 mV	
1025	-	-	0.30	29.06	13.9	1.26	549	6.65	106.4	clear
1028	-	-	0.30	29.06	13.6	0.87	579	6.63	31.2	
1031	-	-	0.30	29.06	13.6	0.76	585	6.63	21.1	
1034	-	-	0.30	29.06	13.7	0.66	585	6.64	10.4	
1037	-	-	0.30	29.06	13.8	0.61	586	6.64	-3.6	
1040	-	-	0.30	29.06	13.8	0.57	586	6.64	-6.2	

PURGING DATA

Sample ID:	MW-22i	Sampling Flow Rate:	0.30			Analytical Laboratory:	Apex
Sample Time:	1040	Final Depth to Water:	29.06			Did Well Dewater:	NO
No. of Containers/Type	Preservative	Analysis/Method		Field Filtered	Filter Size	MS/MSD	Duplicate ID
3 x VOA	HCl	HVOC	RSK	--	--	--	/
1 x 250mL	Sulfuric Acid	Ammonia	TOC	--	--	--	
1 x 250 mL	None	Nitrate	Nitrite	--	--	--	

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	MW-23i	Job Number:	19001-009
Client:	Sunoco	Date:	12/5/24
Project:	Van Main 4Q24 GWM	Sampler:	SR / CW
Weather:	Sunny, 40°F	Time In/Out:	

WELL DATA

Monument Type:	Flush-mount/~~Stick-up~~	Well Diameter:	2"	Depth to Free Product:	--
	Other: Vault	Well Depth:	—	Free Product Thickness:	--
Monument Condition:	Good	Depth to Water:	28.62	Water Column Length:	--
Well Cap Lock Present:	(Yes) No	Screened Interval:	—	Purge Volume:	--

Comments:

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)				
Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic / ~~Bladder Pump~~	Pump Intake Depth:	Mid-Screen
Sampling Method:	Low Flow	Tubing Material & Type:	LDPE 0.25" / Skip Bond — NEW / DEDICATED

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	Purge Rate (L/min)	DTW (btc)	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Clarity/Color Other Remarks
					+/-0.5 °C	+/-0.5 ppm	+/-5%	+/-0.1	+/-20 mV	
1223			0.20	28.67	13.9	8.52	251	8.22	84.5	clear
1226				28.67	14.1	4.25	242	8.16	87.6	
1229				28.68	14.2	3.69	244	8.19	86.9	
1232				28.68	14.2	3.51	246	8.22	84.9	
1235				28.68	14.1	3.42	24x	8.23	83.5	

PURGING DATA

Sample ID:	MW-23i	Sampling Flow Rate:	0.20			Analytical Laboratory:	Apex
Sample Time:	1235	Final Depth to Water:	28.68			Did Well Dewater:	No
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
3 x VOA	HCl						
1 x 250 Poly	H_2SO_4						
1 x 250 Poly	NA						

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GeoEngineers

Well ID:	MW-24i	Job Number:	19001-009
Client:	Sunoco	Date:	12/3/24
Project:	Van Main 4Q24 GWM	Sampler:	(SR) / CW
Weather:	Sunny, 80°F	Time In/Out:	

WELL DATA

Monument Type:	Flush-mount/Stick-up	Well Diameter:	2"	Depth to Free Product:	--
	Other: N/A	Well Depth:	-	Free Product Thickness:	--
Monument Condition:	Good	Depth to Water:	28.79	Water Column Length:	--
Well Cap Lock Present:	(Yes) No	Screened Interval:	-	Purge Volume:	--

Comments:

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)				
Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic / ~~Bladder Pump~~	Pump Intake Depth:	~~Top-Screen~~ / Mid-Screen
Sampling Method:	Low Flow	Tubing Material & Type:	LDPE 0.25" / ~~Skip Bond~~ NEW / ~~DEDICATED~~

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	Purge Rate (L/min)	DTW (btc)	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Clarity/Color Other Remarks
					+/-0.5 °C	+/-0.5 ppm	+/-5%	+/-0.1	+/-20 mV	
1411			0.20	28.79	13.7	6.27	344	8.40	80.5	Clear
1414				28.76	14.0	2.38	456	8.17	81.3	↓
1417				28.74	14.1	1.10	459	8.13	81.6	↓
1420				28.72	14.1	0.77	459	8.13	82.1	↓
1423				28.70	14.0	0.68	459	8.14	82.3	↓
1426				28.68	13.8	0.62	458	8.15	83.0	↓

PURGING DATA

Sample ID:	MW-24i	Sampling Flow Rate:	0.20			Analytical Laboratory:	Apex
Sample Time:	1426	Final Depth to Water:				Did Well Dewater:	No
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID	

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	MW-24d	Job Number:	19001-009-36/37
Client:	Sunoco	Date:	12/7/24
Project:	Van Main 4Q24 GWM	Sampler:	SR CW
Weather:	Sunny ~35°F	Time In/Out:	–

WELL DATA

Monument Type:	Flush-mount/Stick-up	Well Diameter:	2"	Depth to Free Product:	--
	Other: –	Well Depth:	–	Free Product Thickness:	--
Monument Condition:	Good	Depth to Water:	29.10	Water Column Length:	--
Well Cap Lock Present:	Yes No	Screened Interval:	–	Purge Volume:	--

Comments: –

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)

Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic / Bladder Pump	Pump Intake Depth:	Mid-Screen
Sampling Method:	Low Flow	Tubing Material & Type:	LDPE 1/4" / Skip-Bonded NEW / DEDICATED

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	Purge Rate (L/min)	DTW (btc)	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Clarity/Color Other Remarks
					+/-0.5 °C	+/-0.5 ppm	+/-5%	+/-0.1	+/-20 mV	
0953	–	–	0.25	29.10	11.7	2.14	359.7	7.85	74.2	clear
0956	–	–	0.25	29.11	11.6	1.64	360.4	7.92	41.1	
0959	–	–	0.25	29.11	11.5	0.92	361.2	8.01	0.7	
1002	–	–	0.25	29.11	11.5	0.79	361.1	8.06	-68.2	
1005	–	–	0.25	29.11	11.2	0.68	361.2	8.08	-96.4	
1008	–	–	0.25	29.11	11.2	0.64	361.0	8.09	-108.1	
1011	–	–	0.25	29.10	11.3	0.61	361.0	8.08	-114.7	

PURGING DATA

Sample ID:	MW-24d	Sampling Flow Rate:	0.25			Analytical Laboratory:	Apex
Sample Time:	1011	Final Depth to Water:	29.10			Did Well Dewater:	NO
No. of Containers/Type	Preservative	Analysis/Method		Field Filtered	Filter Size	MS/MSD	Duplicate ID
3 x VOA	HCl	HVOC	RSK	--	--	--	
1 x 250mL	Sulfuric Acid	Ammonia	TOC	--	--	--	
1 x 250 mL	None	Nitrate	Nitrite	--	--	--	

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	MW-25i	Job Number:	19001-009-36/77
Client:	Sunoco	Date:	12/4/24
Project:	Van Main 4Q24 GWM	Sampler:	SR (CW)
Weather:	Sunny - 42°F	Time In/Out:	-

WELL DATA

Monument Type:	Flush-mount/Stick-up	Well Diameter:	2"	Depth to Free Product:	--
	Other: -	Well Depth:	-	Free Product Thickness:	--
Monument Condition:	Good	Depth to Water:	28.41	Water Column Length:	--
Well Cap Lock Present:	Yes No	Screened Interval:	-	Purge Volume:	--

Comments: -

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)				
Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic / ~~Bladder Pump~~	Pump Intake Depth:	Mid-Screen
Sampling Method:	Low Flow	Tubing Material & Type:	LDPE 1/4" / ~~Skip-Bonded~~ NEW / DEDICATED

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	Purge Rate (L/min)	DTW (btc)	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Clarity/Color Other Remarks
					+/-0.5 °C	+/-0.5 ppm	+/-5%	+/-0.1	+/-20 mV	
1109	-	-	0.35	28.41	13.4	1.84	423.6	7.07	119.4	clear
1112	-	-	0.35	28.41	13.5	1.09	423.8	6.90	119.6	↓
1115	-	-	0.35	28.41	13.5	0.88	422.6	6.88	118.7	
1118	-	-	0.35	28.41	13.6	0.77	422.2	6.87	117.0	

PURGING DATA

Sample ID:	MW-25i	Sampling Flow Rate:	0.35		Analytical Laboratory:		Apex
Sample Time:	1118	Final Depth to Water:	28.41		Did Well Dewater:		No
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
3 x VOA	HCl	(HVOC) RSK	--	--	--	|	
1 x 250mL	Sulfuric Acid	(Ammonia) TOC	--	--	--	|	
1 x 250 mL	None	(Nitrate Nitrite)	--	--	--	|	

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	MW-26	Job Number:	19001-009-36/37
Client:	Sunoco	Date:	12/3/24
Project:	Van Main 4Q24 GWM	Sampler:	SR (CW)
Weather:	Sunny - 44°F	Time In/Out:	~

WELL DATA

Monument Type:	Flush-mount/Stick-up	Well Diameter:	2"	Depth to Free Product:	--
	Other:	Well Depth:	-	Free Product Thickness:	--
Monument Condition:	Good	Depth to Water:	27.87	Water Column Length:	--
Well Cap Lock Present:	Yes No	Screened Interval:	-	Purge Volume:	--

Comments: -

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)				
Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic / ~~Bladder Pump~~	Pump Intake Depth:	Mid-Screen
Sampling Method:	Low Flow	Tubing Material & Type:	LDPE 1/4" / Skip-Bonded NEW / DEDICATED

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	Purge Rate (L/min)	DTW (btc)	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Clarity/Color Other Remarks
					+/-0.5 °C	+/-0.5 ppm	+/-5%	+/-0.1	+/-20 mV	
1251	-	-	0.30	27.87	14.0	1.12	4831	6.21	181.0	clear
1254	-	-	0.30	27.88	14.2	0.91	4782	6.18	176.1	
1257	-	-	0.30	27.87	14.3	0.74	4642	6.16	172.2	
1300	-	-	0.30	27.87	14.4	0.66	4401	6.12	168.5	
1303	-	-	0.30	27.89	14.5	0.57	4107	6.08	159.1	
1306	-	-	0.30	27.88	14.6	0.53	3958	6.07	152.7	
1309	-	-	0.30	27.87	14.6	0.51	3889	6.07	149.7	

PURGING DATA

Sample ID:	MW-26	Sampling Flow Rate:	0.30		Analytical Laboratory:		Apex
Sample Time:	1309	Final Depth to Water:	27.87		Did Well Dewater:		NO
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
5 x VOA	HCl	HVOC RSK	--	--	--		
2 x 250mL	Sulfuric Acid	Ammonia TOC	--	--	--		
1 x 250 mL	None	Nitrate Nitrite	--	--	--		

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	MGMSI-3(43)	Job Number:	19001-009
Client:	Sunoco	Date:	12/3/24
Project:	Van Main 4Q24 GWM	Sampler:	SR / CW
Weather:	Sunny, 40°F	Time In/Out:	

WELL DATA

Monument Type:	Flush-mount/Stick-up	Well Diameter:	2"	Depth to Free Product:	--
	Other: Vault	Well Depth:	—	Free Product Thickness:	--
Monument Condition:	Good	Depth to Water:	27.68	Water Column Length:	--
Well Cap Lock Present:	Yes No	Screened Interval:	—	Purge Volume:	--

Comments:

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)				
Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	~~Peristaltic~~ / Bladder Pump	Pump Intake Depth:	Mid-Screen
Sampling Method:	Low Flow	Tubing Material & Type:	LDPE 0.25" / Skip Bond — NEW / DEDICATED

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	Purge Rate (L/min)	DTW (btc)	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Clarity/Color Other Remarks
					+/-0.5 °C	+/-0.5 ppm	+/-5%	+/-0.1	+/-20 mV	
1250			0.10	27.61	11.5	2.27	1184	8.43	82.6	Clear
1253			↓		11.9	1.21	949	8.39	81.7	↓
1256					12.2	1.12	895	8.59	83.7	
1259					12.3	1.16	902	8.38	82.3	
1302			↓		12.3	1.20	930	8.36	83.1	↓

PURGING DATA

Sample ID:	MGMSI-3(43)	Sampling Flow Rate:	0.10			Analytical Laboratory:	Apex
Sample Time:	1302	Final Depth to Water:				Did Well Dewater:	No
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID	

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	MW-MS1-2(60)	Job Number:	19001-009
Client:	Sunoco	Date:	12/3/24
Project:	Van Main 4Q24 GWM	Sampler:	SR / CW
Weather:	Sun, 35°F	Time In/Out:	

WELL DATA

Monument Type:	Flush-mount/Stick-up	Well Diameter:	2"	Depth to Free Product:	--
	Other: Vault	Well Depth:	~	Free Product Thickness:	--
Monument Condition:	Good	Depth to Water:	27.52	Water Column Length:	--
Well Cap Lock Present:	Yes No	Screened Interval:	~	Purge Volume:	--

Comments:

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)

Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic / Bladder Pump	Pump Intake Depth:	Mid-Screen
Sampling Method:	Low Flow	Tubing Material & Type:	LDPE 0.25" / Skip Bond — NEW / DEDICATED

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	Purge Rate (L/min)	DTW (btc)	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Clarity/Color Other Remarks
					+/-0.5 °C	+/-0.5 ppm	+/-5%	+/-0.1	+/-20 mV	
1213			0.20	27.52	11.2	2.17	243	8.30	73.5	Clear
1216			↓	↓	11.2	1.66	215	8.26	72.2	↓
1219					11.4	1.60	211	8.22	72.5	
1222			↓	↓	11.4	1.58	213	8.21	73.6	↓

PURGING DATA

Sample ID:	MW-MS1-2(60)	Sampling Flow Rate:	0.20			Analytical Laboratory:	Apex
Sample Time:	1222	Final Depth to Water:	27.52			Did Well Dewater:	No
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
3x VOA	HCl						
250	H_2SO_4						
250	NA						

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	MGMSI-1 (110)	Job Number:	19001-009
Client:	Sunoco	Date:	12/13/24
Project:	Van Main 4Q24 GWM	Sampler:	SR / CW
Weather:		Time In/Out:	

WELL DATA

Monument Type:	Flush-mount/Stick-up	Well Diameter:	2"	Depth to Free Product:	--
	Other: Vault	Well Depth:	—	Free Product Thickness:	--
Monument Condition:	Good	Depth to Water:	27.71	Water Column Length:	--
Well Cap Lock Present:	Yes No	Screened Interval:		Purge Volume:	--
Comments:					
Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)					
Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters	

PURGING DATA

Purge Method:	Peristaltic / Bladder Pump	Pump Intake Depth:	Mid-Screen		
Sampling Method:	Low Flow	Tubing Material & Type:	LDPE 0.25" / Skip Bond	NEW / DEDICATED	

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	Purge Rate (L/min)	DTW (btc)	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Clarity/Color Other Remarks
					+/-0.5 °C	+/-0.5 ppm	+/-5%	+/-0.1	+/-20 mV	
1143			0.20	27.71	10.9	4.83	266	8.44	78.2	Clear
1146				27.72	11.1	1.28	240	8.23	74.4	
1149				27.73	11.3	0.99	239	8.19	74.1	
1152				27.74	11.5	0.80	238	8.19	73.4	
1155				27.74	11.6	0.76	237	8.20	73.3	↓

PURGING DATA

Sample ID:	MGMSI-1 (110)	Sampling Flow Rate:	0.20			Analytical Laboratory:	Apex
Sample Time:	1155	Final Depth to Water:				Did Well Dewater:	No
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID	

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	MGMS2-4(40)	Job Number:	19001-009
Client:	Sunoco	Date:	12/3/24
Project:	Van Main 4Q24 GWM	Sampler:	SR / CW
Weather:	Fog, 30°F	Time In/Out:	

WELL DATA

Monument Type:	Flush-mount/Stick-up	Well Diameter:	2"	Depth to Free Product:	--
	Other: Vault	Well Depth:		Free Product Thickness:	--
Monument Condition:	Good	Depth to Water:	26.98	Water Column Length:	--
Well Cap Lock Present:	Yes No	Screened Interval:		Purge Volume:	--

Comments:

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)

Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic / Bladder Pump	Pump Intake Depth:	Mid-Screen
Sampling Method:	Low Flow	Tubing Material & Type:	LDPE 0.25" / Skip Bond — NEW / DEDICATED

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	Purge Rate (L/min)	DTW (btc)	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Clarity/Color Other Remarks
					+/-0.5 °C	+/-0.5 ppm	+/-5%	+/-0.1	+/-20 mV	
1100			0.10	26.98	12.2	1.25	1731	8.12	72.3	Clear
1103			↓		12.8	0.45	1873	8.10	74.9	↓
1106					12.7	0.33	1895	8.11	75.6	
1109			↓		12.5	0.25	1914	8.12	75.0	↓

PURGING DATA

Sample ID:	MGMS2-4(40)	Sampling Flow Rate:	0.10		Analytical Laboratory:	Apex
Sample Time:	1109	Final Depth to Water:			Did Well Dewater:	NO

No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
5 X VOA	HCl					
2 X 250 Poly	H_2SO_4					
1 X 250 poly	NA					

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GeoEngineers

Well ID:	MGMSZ-3 (60)	Job Number:	19001-009
Client:	Sunoco	Date:	12/3/24
Project:	Van Main 4Q24 GWM	Sampler:	SR / CW
Weather:	Fog, 30°F	Time In/Out:	

WELL DATA

Monument Type:	Flush-mount/Stick-up	Well Diameter:	2"	Depth to Free Product:	--
	Other: Vault	Well Depth:		Free Product Thickness:	--
Monument Condition:	Good	Depth to Water:	27.82	Water Column Length:	--
Well Cap Lock Present:	Yes No	Screened Interval:		Purge Volume:	--

Comments:

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)				
Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic / Bladder Pump	Pump Intake Depth:	Mid-Screen
Sampling Method:	Low Flow	Tubing Material & Type:	LDPE 0.25" / Skip Bond — NEW / DEDICATED

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	Purge Rate (L/min)	DTW (btc)	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Clarity/Color Other Remarks
					+/-0.5 °C	+/-0.5 ppm	+/-5%	+/-0.1	+/-20 mV	
1030			0.10	27.82	9.0	5.96	355	8.17	72.1	Clear
1033			↓	-	12.0	0.99	362	8.07	78.6	↓
1036				-	12.3	0.62	364	8.05	79.7	
1039				-	12.3	0.80	365	8.08	79.2	
1042				27.85	12.3	0.45	366	8.05	78.2	

PURGING DATA

Sample ID:	MGMSZ-3 (60)	Sampling Flow Rate:	0.10			Analytical Laboratory:	Apex
Sample Time:	1042	Final Depth to Water:				Did Well Dewater:	No
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
3 x VOA	HCl						
1 x 250 Poly	H_2SO_4						
250 poly	NA						

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	MW-52-2(110)	Job Number:	19001-009
Client:	Sunoco	Date:	12/3/24
Project:	Van Main 4Q24 GWM	Sampler:	(SR) CW
Weather:	Fog, ~30°F	Time In/Out:	

WELL DATA

Monument Type:	Flush-mount/Stick-up	Well Diameter:	2"	Depth to Free Product:	--
	Other: Vault	Well Depth:	—	Free Product Thickness:	--
Monument Condition:	Good	Depth to Water:	27.50	Water Column Length:	--
Well Cap Lock Present:	Yes No	Screened Interval:	—	Purge Volume:	--

Comments:

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)

Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic / Bladder Pump	Pump Intake Depth:	Mid-Screen
Sampling Method:	Low Flow	Tubing Material & Type:	LDPE 0.25" / Skip Bond — NEW / DEDICATED

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	Purge Rate (L/min)	DTW (btc)	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Clarity/Color Other Remarks
					+/-0.5 °C	+/-0.5 ppm	+/-5%	+/-0.1	+/-20 mV	
0838			0.10	27.50	10.5	6.69	320	8.01	64.9	Clear
0841			↓	↓	11.7	1.10	389	8.03	70.2	↓
0844			↓	↓	12.1	0.67	417	8.12	71.1	↓
0847			↓	↓	12.2	0.53	432	8.13	71.4	↓
0850			↓	27.50	12.0	0.48	434	8.14	71.7	↓

PURGING DATA

Sample ID:	MW-52-2(110)	Sampling Flow Rate:	0.10			Analytical Laboratory:	Apex
Sample Time:	0850	Final Depth to Water:	27.50			Did Well Dewater:	NO
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
3 X VOA	HCl						
1 X 250 Poly	H_2SO_4						
1 X 250 Poly	NA						

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	MGMS2-1(132)	Job Number:	19001-009
Client:	Sunoco	Date:	12/3/24
Project:	Van Main 4Q24 GWM	Sampler:	SR / CW
Weather:	Fog, 30°F	Time In/Out:	

WELL DATA

Monument Type:	Flush-mount/Stick-up	Well Diameter:	2"	Depth to Free Product:	--
	Other: Monument	Well Depth:	-	Free Product Thickness:	--
Monument Condition:	Good	Depth to Water:	27.43	Water Column Length:	--
Well Cap Lock Present:	Yes No	Screened Interval:	-	Purge Volume:	--

Comments:

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)				
Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic / Bladder Pump	Pump Intake Depth:	Mid-Screen		
Sampling Method:	Low Flow	Tubing Material & Type:	LDPE 0.25" / Skip Bond	NEW / DEDICATED	

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	Purge Rate (L/min)	DTW (btc)	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Clarity/Color Other Remarks
					+/-0.5 °C	+/-0.5 ppm	+/-5%	+/-0.1	+/-20 mV	
0800			0.10	27.47	8.7	1.60	254	8.10	69.6	Clear
0803			0.10	27.47	9.5	0.82	264	8.14	70.8	"
0806			"	"	9.5	0.64	274	8.31	72	"
0809			"	"	9.6	0.54	277	8.40	72	"
0812			"	"	9.7	0.47	280	8.37	72	"

PURGING DATA

Sample ID:	MGMS2-1(132)	Sampling Flow Rate:	0.10		Analytical Laboratory:		Apex
Sample Time:	0812	Final Depth to Water:	27.47		Did Well Dewater:		No
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
3 x VOA	HCl						
1 x 250 mL Poly	H_2SO_4						
1 x 250 Poly	NA						

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	MGMS3-4(40')	Job Number:	19001-009
Client:	Sunoco	Date:	12/2/24
Project:	Van Main 4Q24 GWM	Sampler:	SR / CW
Weather:	Sun, 70°F	Time In/Out:	

WELL DATA

Monument Type:	Flush-mount/Stick-up	Well Diameter:	2"	Depth to Free Product:	--
	(Other) Vault	Well Depth:		Free Product Thickness:	--
Monument Condition:	Good	Depth to Water:		Water Column Length:	--
Well Cap Lock Present:	Yes No	Screened Interval:		Purge Volume:	--
Comments:					
Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)					
Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters	

PURGING DATA

Purge Method:	Peristaltic / Bladder Pump	Pump Intake Depth:	Mid-Screen		
Sampling Method:	Low Flow	Tubing Material & Type:	LDPE 0.25" / Skip Bond	NEW / DEDICATED	

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	Purge Rate (L/min)	DTW (btc)	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Clarity/Color Other Remarks
					+/-0.5 °C	+/-0.5 ppm	+/-5%	+/-0.1	+/-20 mV	
1245			0.200	26.73	15.1	1.99	431	7.83	10.6	Clear
1248			0.20	26.73	15.2	0.88	427	7.85	14.4	↓
1251			↓	↓	15.2	0.58	428	7.93	17.0	
1254					15.3	0.45	431	7.94	19.0	
1257					15.2	0.38	433	7.93	20.3	↓

PURGING DATA

Sample ID:	MGMS3-4(40')/INA	Sampling Flow Rate:	0.20		Analytical Laboratory:		Apex
Sample Time:	1257	Final Depth to Water:	26.73		Did Well Dewater:		N/O
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
3X 250 Poly	HCl						
2X 250 poly	NA						
5 X VOA	HCl						

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	MGMS3-3(60)	Job Number:	19001-009
Client:	Sunoco	Date:	12/12/24
Project:	Van Main 4Q24 GWM	Sampler:	SR / CW
Weather:	Sunny, 40°F	Time In/Out:	

WELL DATA

Monument Type:	Flush-mount/Stick-up	Well Diameter:	2"	Depth to Free Product:	--
	Other: Vault	Well Depth:		Free Product Thickness:	--
Monument Condition:	Good	Depth to Water:	26.86	Water Column Length:	--
Well Cap Lock Present:	Yes No	Screened Interval:		Purge Volume:	--

Comments:

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)

Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic / Bladder Pump	Pump Intake Depth:	Mid-Screen
Sampling Method:	Low Flow	Tubing Material & Type:	LDPE 0.25" / Skip Bond — NEW / DEDICATED

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	Purge Rate (L/min)	DTW (btc)	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Clarity/Color Other Remarks
					+/-0.5 °C	+/-0.5 ppm	+/-5%	+/-0.1	+/-20 mV	
1347			0.20	26.80	15.1	2.77	237	8.04	43.9	Clear
1350			0.20	26.77	15.1	1.85	222	8.09	43.7	↓
1353			0.20	26.78	14.8	1.97	219	8.12	43.8	↓
1356			0.20	26.76	14.8	2.12	217	8.11	43.8	↓

PURGING DATA

Sample ID:	MGMS3-3(60)	Sampling Flow Rate:	0.20			Analytical Laboratory:	Apex
Sample Time:	1356	Final Depth to Water:	26.70			Did Well Dewater:	No
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
3 X VOA	HCl						
2 1 X 250 Poly	H_2NO_3						
1 X 250 Poly	NA						

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	MGMS3-2 (101)	Job Number:	19001-009
Client:	Sunoco	Date:	12/2/24
Project:	Van Main 4Q24 GWM	Sampler:	SR / CW
Weather:	Sunny, 40°F	Time In/Out:	

WELL DATA

Monument Type:	Flush-mount/Stick-up	Well Diameter:	2"	Depth to Free Product:	--
	Other: Vault	Well Depth:		Free Product Thickness:	--
Monument Condition:	Good	Depth to Water:	26.68	Water Column Length:	--
Well Cap Lock Present:	Yes No	Screened Interval:		Purge Volume:	--

Comments:

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)				
Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic / Bladder Pump			Pump Intake Depth:		Mid-Screen				
Sampling Method:	Low Flow			Tubing Material & Type:		LDPE 0.25" / Skip Bond		NEW / DEDICATED		
Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	Purge Rate (L/min)	DTW (btc)	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Clarity/Color Other Remarks
					+/-0.5 °C	+/-0.5 ppm	+/-5%	+/-0.1	+/-20 mV	
2:16			0.20	26.66	14.7	2.42	257	8.22	44.2	Clear
2:19			0.20	26.63	14.5	1.07	289	8.27	43.6	↓
2:22			0.20	26.60	14.3	0.93	290	8.31	44.0	↓
2:25			0.20	26.58	14.2	0.88	290	8.31	43.8	↓

PURGING DATA

Sample ID:	MGMS3-2(101)	Sampling Flow Rate:	0.20			Analytical Laboratory:	Apex
Sample Time:	14:25	Final Depth to Water:	26.46			Did Well Dewater:	No
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
3X VOA	HCl						
1 X 250	~~HNO3~~ H_2SO_4						
1 X 250	NA						

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	MGMS3-1 (132)	Job Number:	19001-009
Client:	Sunoco	Date:	12/2/24
Project:	Van Main 4Q24 GWM	Sampler:	SR / CW
Weather:	Sunny, 40°F	Time In/Out:	–

WELL DATA

Monument Type:	Flush-mount/Stick-up	Well Diameter:	2"	Depth to Free Product:	--
	Other: Vault	Well Depth:		Free Product Thickness:	--
Monument Condition:	Good	Depth to Water:	26.50	Water Column Length:	--
Well Cap Lock Present:	Yes No	Screened Interval:		Purge Volume:	--

Comments:

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)

Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic / Bladder Pump	Pump Intake Depth:	Mid-Screen		
Sampling Method:	Low Flow	Tubing Material & Type:	LDPE 0.25" / Skip Bond	NEW / DEDICATED	

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	Purge Rate (L/min)	DTW (btc)	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Clarity/Color Other Remarks
					+/-0.5 °C	+/-0.5 ppm	+/-5%	+/-0.1	+/-20 mV	
1449			0.20	26.46	14.2	4.11	270	8.57	43.9	Clear
1452			↓	26.40	14.2	2.23	273	8.43	44.6	↓
1455				26.37	14.2	1.81	275	8.47	45.1	
1458				26.34	14.1	1.84	275	8.50	45.4	
1501				26.32	14.1	1.92	277	8.48	45.1	↓

PURGING DATA

Sample ID:	MGMS3-1 (132)	Sampling Flow Rate:	0.20		Analytical Laboratory:		Apex
Sample Time:	1501	Final Depth to Water:	26.16		Did Well Dewater:		No
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
1x250 Poly	H_2SO_4						
1x250 Poly	NA						
3xVOA	HCl						

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	EW-1	Job Number:	19001-009
Client:	Sunoco	Date:	12/5/24
Project:	Van Main 4Q24 GWM	Sampler:	SR / CW
Weather:	Sun, 38°F	Time In/Out:	

WELL DATA

Monument Type:	Flush-mount/Stick-up	Well Diameter:	2"	Depth to Free Product:	--
	Other: Vault	Well Depth:	~	Free Product Thickness:	--
Monument Condition:	Good	Depth to Water:	25.80	Water Column Length:	--
Well Cap Lock Present:	(Yes) No	Screened Interval:	~	Purge Volume:	--

Comments:

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)				
Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic / ~~Bladder Pump~~	Pump Intake Depth:	Mid-Screen
Sampling Method:	Low Flow	Tubing Material & Type:	LDPE 0.25" / ~~Skip Bond~~ NEW / ~~DEDICATED~~

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	Purge Rate (L/min)	DTW (btc)	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Clarity/Color Other Remarks
					+/-0.5 °C	+/-0.5 ppm	+/-5%	+/-0.1	+/-20 mV	
0933			0.20	25.80	11.7	8.67	309	7.92	74.1	Clear
0936			0.20		13.2	4.81	313	7.92	84.8	
0939					13.6	4.24	312	7.92	83.5	
0942					14.1	3.91	313	7.92	83.0	
0945					14.0	3.81	314	7.92	82.5	
0948					14.1	3.71	315	7.93	82.6	

PURGING DATA

Sample ID:	EW-1	Sampling Flow Rate:	0.20			Analytical Laboratory:	Apex
Sample Time:	0948	Final Depth to Water:	25.80			Did Well Dewater:	No
No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID	
3x VOA	HCl						
1x250 Poly	H_2SO_4						
1x250 Poly	NA						

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	EX	Job Number:	19001-009
Client:	Sunoco	Date:	12/3/24
Project:	Van Main 4Q24 GWM	Sampler:	SR / CW
Weather:	Sun, 50°F	Time In/Out:	

WELL DATA

Monument Type:	Flush-mount/Stick-up	Well Diameter:	2"	Depth to Free Product:	--
	Other: Vault	Well Depth:	~	Free Product Thickness:	--
Monument Condition:		Depth to Water:	27.42	Water Column Length:	--
Well Cap Lock Present:	Yes / No	Screened Interval:	~	Purge Volume:	--
Comments:					

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)				
Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic / Bladder Pump	Pump Intake Depth:	Mid-Screen
Sampling Method:	Low Flow	Tubing Material & Type:	LDPE 0.25" / Skip Bond — NEW / DEDICATED

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	Purge Rate (L/min)	DTW (btc)	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Clarity/Color Other Remarks
					+/-0.5 °C	+/-0.5 ppm	+/-5%	+/-0.1	+/-20 mV	
1512			0.20	27.44	14.1	4.66	1117	8.56	87.1	Clear
1515			↓	↓	14.2	1.44	1110	8.57	86.4	↓
1518					14.3	0.56	1060	8.57	86.3	
1521					14.2	0.46	1021	8.57	86.0	
1524					14.3	0.38	920	8.54	85.4	
1827					14.2	0.32	765	8.51	84.9	
1830					14.2	0.27	709	8.49	84.7	
1533					14.0	0.27	665	8.48	84.5	
1536					14.3	0.28	618	8.45	84.2	
1539					14.1	0.32	622	8.48	84.4	
1542			↓	↓	14.0	0.20	631	8.49	84.3	↓

PURGING DATA

Sample ID:	EX	Sampling Flow Rate:	0.20	Analytical Laboratory:	Apex	
Sample Time:	1542	Final Depth to Water:	27.44	Did Well Dewater:	No	

No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID	

NOTES/ADDITIONAL COMMENTS

RSK/TOL

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	MP-1	Job Number:	19001-007-36/37
Client:	Sunoco	Date:	12/4/24
Project:	Van Main 4Q24 GWM	Sampler:	SR (CW)
Weather:	Sunny - 40°F	Time In/Out:	-

WELL DATA

Monument Type:	Flush-mount/Stick-up	Well Diameter:	2"	Depth to Free Product:	--
	Other: -	Well Depth:	-	Free Product Thickness:	--
Monument Condition:	Good	Depth to Water:	27.87	Water Column Length:	--
Well Cap Lock Present:	(Yes) No	Screened Interval:	-	Purge Volume:	--

Comments: -

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)				
Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic / (Bladder Pump)	Pump Intake Depth:	Mid-Screen
Sampling Method:	Low Flow	Tubing Material & Type:	LDPE 1/4" / (Skip-Bonded) NEW / (DEDICATED)

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	Purge Rate (L/min)	DTW (btc)	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Clarity/Color Other Remarks
					+/-0.5 °C	+/-0.5 ppm	+/-5%	+/-0.1	+/-20 mV	
1248	-	-	0.30	27.88	13.3	1.42	385.2	7.02	141.6	clear
1251	-	-	0.30	27.90	13.5	1.00	399.4	7.07	137.9	↓
1254	-	-	0.30	27.91	13.6	0.67	403.7	7.10	130.5	
1257	-	-	0.30	27.90	13.7	0.53	407.3	7.11	120.1	

PURGING DATA

Sample ID:	MP-1	Sampling Flow Rate:	0.30			Analytical Laboratory:	Apex
Sample Time:	1257	Final Depth to Water:	27.92			Did Well Dewater:	No
No. of Containers/Type	Preservative	Analysis/Method		Field Filtered	Filter Size	MS/MSD	Duplicate ID
5 x VOA	HCl	(HVOC) RSK		--	--	--	/
2 x 250mL	Sulfuric Acid	(Ammonia) TOC		--	--	--	
1 x 250 mL	None	(Nitrate Nitrite)		--	--	--	

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	S-1	Job Number:	1905[illegible]-036/37
Client:	Sunoco	Date:	12/5/24
Project:	Van Main 4Q24 GWM	Sampler:	SR CW
Weather:	Sunny ~37°F	Time In/Out:	--

WELL DATA

Monument Type:	Flush-mount/Stick-up	Well Diameter:	2"	Depth to Free Product:	--
	Other: Vault	Well Depth:	--	Free Product Thickness:	--
Monument Condition:	Good	Depth to Water:	27.34	Water Column Length:	--
Well Cap Lock Present:	Yes No	Screened Interval:	--	Purge Volume:	--

Comments: --

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)				
Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic / Bladder Pump	Pump Intake Depth:	Mid-Screen
Sampling Method:	Low Flow	Tubing Material & Type:	LDPE 1/4" / Skip-Bonded NEW / DEDICATED

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	Purge Rate (L/min)	DTW (btc)	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Clarity/Color Other Remarks
					+/-0.5 °C	+/-0.5 ppm	+/-5%	+/-0.1	+/-20 mV	
0926	-	-	0.35	27.34	11.3	10.07	284.4	7.40	120.6	clear
0929	-	-	0.35	27.35	11.6	6.11	293.6	7.10	116.1	↓
0932	-	-	0.35	27.35	12.0	4.22	349.8	6.93	122.4	
0935	-	-	0.35	27.35	12.0	3.01	3422.6	6.84	125.8	
0938	-	-	0.35	27.35	12.3	2.36	446.4	6.80	127.1	
0941	-	-	0.35	27.35	12.4	2.14	438.4	6.78	127.4	
0944	-	-	0.35	27.35	12.3	2.02	441.7	6.77	127.8	

PURGING DATA

Sample ID:	S-1	Sampling Flow Rate:	0.30			Analytical Laboratory:	Apex
Sample Time:	0944	Final Depth to Water:	27.35			Did Well Dewater:	No
No. of Containers/Type	Preservative	Analysis/Method		Field Filtered	Filter Size	MS/MSD	Duplicate ID
3 x VOA	HCl	HVOC	RSK	--	--	--	
1 x 250mL	Sulfuric Acid	Ammonia	TOC	--	--	--	
1 x 250 mL	None	Nitrate	Nitrite	--	--	--	

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	S-2	Job Number:	19001-009-36/37
Client:	Sunoco	Date:	12/5/24
Project:	Van Main 4Q24 GWM	Sampler:	SR (CW)
Weather:	Sunny - 35°F	Time In/Out:	-

WELL DATA

Monument Type:	Flush-mount/Stick-up	Well Diameter:	2"	Depth to Free Product:	--
	Other: Vault	Well Depth:	-	Free Product Thickness:	--
Monument Condition:	Good	Depth to Water:	27.52	Water Column Length:	--
Well Cap Lock Present:	Yes No	Screened Interval:	-	Purge Volume:	--

Comments:

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)				
Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic / Bladder Pump	Pump Intake Depth:	Mid-Screen
Sampling Method:	Low Flow	Tubing Material & Type:	LDPE 1/4" / Skip-Bonded NEW / DEDICATED

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	Purge Rate (L/min)	DTW (btc)	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Clarity/Color Other Remarks
					+/-0.5 °C	+/-0.5 ppm	+/-5%	+/-0.1	+/-20 mV	
0835	-	-	0.30	27.52	11.7	2.06	2016	6.63	159.4	Slight orange tint
0838	-	-	0.30	27.52	11.7	1.19	2002	6.62	162.6	
0841	-	-	0.30	27.52	11.9	0.94	1995	6.64	160.4	↓
0844	-	-	0.30	27.52	11.7	0.77	1984	6.68	155.9	↓

PURGING DATA

Sample ID:	S-2	Sampling Flow Rate:	0.30			Analytical Laboratory:	Apex
Sample Time:	0844	Final Depth to Water:	27.52			Did Well Dewater:	NO
No. of Containers/Type	Preservative	Analysis/Method		Field Filtered	Filter Size	MS/MSD	Duplicate ID
3 x VOA	HCl	HVOC	RSK	--	--	--	↓
1 x 250mL	Sulfuric Acid	Ammonia	TOC	--	--	--	↓
1 x 250 mL	None	Nitrate	Nitrite	--	--	--	↓

NOTES/ADDITIONAL COMMENTS

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	NKW-1	Job Number:	19001-009-36/37
Client:	Sunoco	Date:	12/3/24
Project:	Van Main 4Q24 GWM	Sampler:	SR CW
Weather:	Fog ~40°	Time In/Out:	–

WELL DATA

Monument Type:	Flush-mount / Stick-up	Well Diameter:	2"	Depth to Free Product:	--
	Other: –	Well Depth:	–	Free Product Thickness:	--
Monument Condition:	Good	Depth to Water:	27.83	Water Column Length:	--
Well Cap Lock Present:	Yes No	Screened Interval:	–	Purge Volume:	--

Comments: –

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)				
Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic / Bladder Pump	Pump Intake Depth:	Mid-Screen
Sampling Method:	Low Flow	Tubing Material & Type:	LDPE 1/4" / Skip-Bonded NEW / DEDICATED

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	Purge Rate (L/min)	DTW (btc)	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Clarity/Color Other Remarks
					+/-0.5 °C	+/-0.5 ppm	+/-5%	+/-0.1	+/-20 mV	
1135	–	–	–	27.87	14.16	2.27	347	5.50	203.3	clear

PURGING DATA

Sample ID:	NKW-1	Sampling Flow Rate:	–			Analytical Laboratory:	Apex
Sample Time:	1145	Final Depth to Water:	–			Did Well Dewater:	No
No. of Containers/Type	Preservative	Analysis/Method		Field Filtered	Filter Size	MS/MSD	Duplicate ID
3 x VOA	HCl	HVOC	RSK	--	--	--	
1 x 250mL	Sulfuric Acid	Ammonia	TOC	--	--	--	/
1 x 250 mL	None	Nitrate	Nitrite	--	--	--	

NOTES/ADDITIONAL COMMENTS

Antea Pump + tubing

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	NKW-2	Job Number:	19001-009-36/37
Client:	Sunoco	Date:	12/3/24
Project:	Van Main 4Q24 GWM	Sampler:	SR (CW)
Weather:	Fog. 36°F	Time In/Out:	–

WELL DATA

Monument Type:	(Flush-mount)/Stick-up	Well Diameter:	2"	Depth to Free Product:	--
	Other: –	Well Depth:	–	Free Product Thickness:	--
Monument Condition:	Good	Depth to Water:	27.67	Water Column Length:	--
Well Cap Lock Present:	(Yes) No	Screened Interval:	–	Purge Volume:	--

Comments: –

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)

Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic / (Bladder Pump)	Pump Intake Depth:	Mid-Screen
Sampling Method:	Low Flow	Tubing Material & Type:	LDPE 1/4" / (Skip-Bonded) NEW / (DEDICATED)

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	Purge Rate (L/min)	DTW (btc)	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Clarity/Color Other Remarks
					+/-0.5 °C	+/-0.5 ppm	+/-5%	+/-0.1	+/-20 mV	
1044	–	–	–	27.71	13.8	6.34	970	6.65	130.1	clear

PURGING DATA

Sample ID:	NKW-2	Sampling Flow Rate:	–
Sample Time:	1045	Final Depth to Water:	–

Analytical Laboratory:	Apex
Did Well Dewater:	No

No. of Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
3 x VOA	HCl	(HVOC) RSK	--	--	--	
1 x 250mL	Sulfuric Acid	(Ammonia) TOC	--	--	--	1
1 x 250 mL	None	(Nitrate Nitrite)	--	--	--	

NOTES/ADDITIONAL COMMENTS

Antea Pump + tubing

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	KMW-4	Job Number:	19001-009-36/37
Client:	Sunoco	Date:	12/3/24
Project:	Van Main 4Q24 GWM	Sampler:	SR (CW)
Weather:	Fog - 38°	Time In/Out:	-

WELL DATA

Monument Type:	Flush-mount/Stick-up	Well Diameter:	2"	Depth to Free Product:	--
	Other: -	Well Depth:	-	Free Product Thickness:	--
Monument Condition:	Good	Depth to Water:	27.83	Water Column Length:	--
Well Cap Lock Present:	Yes No	Screened Interval:	-	Purge Volume:	--

Comments: -

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)				
Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic / Bladder Pump	Pump Intake Depth:	Mid-Screen
Sampling Method:	Low Flow	Tubing Material & Type:	LDPE 1/4" / Silp-Bonded — NEW / DEDICATED

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	Purge Rate (L/min)	DTW (btc)	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Clarity/Color Other Remarks
					+/-0.5 °C	+/-0.5 ppm	+/-5%	+/-0.1	+/-20 mV	
0955	-	-	-	27.90	13.8	5.69	435	6.60	88.2	clear

PURGING DATA

Sample ID:	KMW-4	Sampling Flow Rate:	-
Sample Time:	1000	Final Depth to Water:	-
Analytical Laboratory:	Apex		
Did Well Dewater:	No		

No. of Containers/Type	Preservative	Analysis/Method		Field Filtered	Filter Size	MS/MSD	Duplicate ID	
3 x VOA	HCl	HVOC	RSK	--	--	--	-	
1 x 250mL	Sulfuric Acid	Ammonia	TOC	--	--	--	-	
1 x 250 mL	None	Nitrate	Nitrite	--	--	--	-	

NOTES/ADDITIONAL COMMENTS

Antea pump + tubing

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	KMW-5	Job Number:	1900I-009-36/37
Client:	Sunoco	Date:	12/3/24
Project:	Van Main 4Q24 GWM	Sampler:	SR CW
Weather:	Fog - 38°	Time In/Out:	

WELL DATA

Monument Type:	Flush-mount/Stick-up	Well Diameter:	2"	Depth to Free Product:	--
	Other: –	Well Depth:	–	Free Product Thickness:	--
Monument Condition:	Good	Depth to Water:	27.92	Water Column Length:	--
Well Cap Lock Present:	Yes No	Screened Interval:	–	Purge Volume:	--

Comments: –

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)				
Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic / Bladder Pump	Pump Intake Depth:	Mid-Screen
Sampling Method:	Low Flow	Tubing Material & Type:	LDPE 1/4" / Skip-Bonded NEW / DEDICATED

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	Purge Rate (L/min)	DTW (btc)	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Clarity/Color Other Remarks
					+/-0.5 °C	+/-0.5 ppm	+/-5%	+/-0.1	+/-20 mV	
0914	–	–	–	28.15	13.0	2.60	1463	6.49	-104.1	Clear

PURGING DATA

Sample ID:	KMW-5	Sampling Flow Rate:	–			Analytical Laboratory:	Apex
Sample Time:	0915	Final Depth to Water:				Did Well Dewater:	No
No. of Containers/Type	Preservative	Analysis/Method		Field Filtered	Filter Size	MS/MSD	Duplicate ID
3 x VOA	HCl	HVOC	RSK	--	--	--	–
1 x 250mL	Sulfuric Acid	Ammonia	TOC	--	--	--	–
1 x 250 mL	None	Nitrate	Nitrite	--	--	--	–

NOTES/ADDITIONAL COMMENTS

Antea Pump + tubing

WELL MONITORING DATA SHEET

GEOENGINEERS

Well ID:	KMW-6	Job Number:	19001009-36/37
Client:	Sunoco	Date:	12/3/24
Project:	Van Main 4Q24 GWM	Sampler:	SR CW
Weather:	Fog - 35°	Time In/Out:	

WELL DATA

Monument Type:	Flush-mount / Stick-up	Well Diameter:	2"	Depth to Free Product:	--
	Other: -	Well Depth:	-	Free Product Thickness:	--
Monument Condition:	Good	Depth to Water:	27.90	Water Column Length:	--
Well Cap Lock Present:	Yes No	Screened Interval:	-	Purge Volume:	--

Comments: -

Purge Volume = (Water Height) X (Multiplier) X (# Casing Volumes)				
Water height multipliers (gal):	1-inch well = 0.041	2-inch = 0.162	4-inch = 0.653	1 gal = 3.785 liters

PURGING DATA

Purge Method:	Peristaltic / Bladder Pump	Pump Intake Depth:	Mid-Screen
Sampling Method:	Low Flow	Tubing Material & Type:	LDPE 1/4" / ~~Skip-Bonded~~ NEW / DEDICATED

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	Purge Rate (L/min)	DTW (btc)	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Clarity/Color Other Remarks
					+/-0.5 °C	+/-0.5 ppm	+/-5%	+/-0.1	+/-20 mV	
0832	✓	-	-	27.94	12.7	6.26	324	6.85	160.0	clear

PURGING DATA

Sample ID:	KMW-6	Sampling Flow Rate:	-
Sample Time:	0835	Final Depth to Water:	✓
Analytical Laboratory:	Apex		
Did Well Dewater:	No		

No. of Containers/Type	Preservative	Analysis/Method		Field Filtered	Filter Size	MS/MSD	Duplicate ID	
3 x VOA	HCl	HVOC	RSK	--	--	--	-	
1 x 250mL	Sulfuric Acid	Ammonia	TOC	--	--	--	-	
1 x 250 mL	None	Nitrate	Nitrite	--	--	--	-	

NOTES/ADDITIONAL COMMENTS

Antea pump + tubing

Project: South SVE O&M
Client: NuStar Van Mem
Sampler: JP

Date: 7/22/24
Permit:

Well ID	Time	DTP	DTW	Product Thickness	Notes
0705	Calibrate Cascade			PID 0	Blow pom JP. Background = 0 ppm
	Pre	Post	Post C1	Post C2	
Pressure	-17	28	16	7	in. ~~Hg~~ H_2O
PID	0.0	27.7	18.9	15.8	ppm
Intake	Sample				
Name:	PreCarbon_South_SVE_072224				Can Pi: -27.0
Can #:	GL2820				Can Pf: ~~-28.0~~ -7.5 JP 7/2
Flow #:	G0218				Time: 0727
Post Carbon 2	Sample				
Name:	PostCarbon_SouthSVE_072224				Can Pi: -27.5
Can #:	GL1154				Can Pf: -5.5
Flow #:	~~G0241~~ G0218				Time: 0738
	Gauge needle bent.				
Blue	Water?				
		No water	in KOD		
System Restart?					
		Yes	@ 0749		7/22/24

Project: South SVE O&M
Client: NuStar Van Main
Sampler:

Date: 09/03/24
Permit:

Calibrate PID (Y)N) Background=0

Well ID	Time	DTP	DTW	Product Thickness	Notes
	Pre-Blower	Post-Blower	Post-C1	Post C-2	
Pressure	-17	28	16	6.5	
PID	0.0	19.7	23.5	20.0	
Pre-carbon Sample:					
	Name:	PreCarbon_SouthSVE_090324			Can P_i: -29
	Can#:	6L2005			Can P_f: -5
	Flow meter #: 2242				Sampling time: 1145
Post-Carbon Sample:		PostCarbon_SouthSVE_090324			Can P_i: <-30
	Name:	↵			Can P_f: -5.5
	Can #:	6L2094			Sampling time: 1155
	Flow meter #: 2305				
Blue water?		NO.			
Waste Volume/pH? N/A					
Restart system?		Yes.			

APPENDIX B
Historical Groundwater Analytical Data

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-1	11/17/1993	--	500	--	--	<250	<250	--	14,000	--	--	750	<250	--	1,400	<500
	9/1/1995	<250	<500	<250	<250	<250	<250	<250	13,000	<250	<250	620	<250	--	890	610
	9/24/1996	<5	<20	<2	<2	54	<2	8.4	11,000	83	17	2,600	68	--	1,800	420
	12/2/1996	0.8	<0.50	<0.50	<0.20	6.7	<0.50	0.3	1,500	4.4	<0.20	1,200	7.3	--	310	1.6
	11/12/1997	<125	<250	<125	<125	<125	<125	<125	11,600	<125	<125	6,330	<125	--	2,880	<250
	8/11/1999	<50	<250	<25	<250	43.1	<25	<25	8,590	86	<25	2,520	52.5	--	1,210	408
	11/16/1999	<50	<125	<25	<50	38	<25	<25	6,250	47.5	<25	2,400	28	--	829	148
	2/29/2000	<100	<500	<50	<50	<50	<50	<50	6,720	60.9	<50	1,370	<100	--	590	438
	6/27/2000	<100	<500	<50	<50	<50	<50	<50	6,480	65.1	<50	1,780	<100	--	795	284
	8/31/2000	<100	<500	<50	<50	<50	<50	<50	5,160	<50	<50	1,960	<100	--	720	<50
	11/30/2000	<20	<100	<10	<10	15	<10	<10	1,550	12.7	<10	660	<20	--	234	<10
	2/27/2001	<100	<100	<50	<50	<50	<50	<50	4,990	<50	<50	1,140	<100	--	440	190
	5/29/2001	<50	<250	<25	<25	<25	<25	<25	4,050	<25	<25	1,040	<50	--	407	91
	9/25/2001	<50	<50	<50	<50	<50	<50	<50	5,000	<50	<50	890	<50	--	440	240
	12/17/2001	<2	<10	<1	<1	<1	<1	<1	109	1.26	<1	164	<2	--	42.9	<1
	3/19/2002	<50	<25	<25	<50	35	<25	<25	4,120	35	<25	710	<25	--	349	170
	5/30/2002	<10	<5	<5	<10	10.8	<5	<5	1,140	6.6	<5	307	<5	--	101	22.3
	11/8/2002	<20	<10	<10	<20	22.8	<10	<10	1,980	20.2	<10	367	<10	--	174	14.4
	5/30/2003	<20	<10	<10	<20	21.2	<10	<10	2,180	<10	<10	1,200	14.2	--	340	22.6
	11/2/2004	<20	<10	<10	<20	22.4	<10	<10	2,130	23.6	<10	335	<10	--	169	22.8
	11/16/2004	<12	<12	<12	<12	15	<12	<12	1,300	<12	<12	310	<12	--	130	<12
	5/18/2005	<5	<2.5	<2.5	<5	12	<2.5	<2.5	773	14.1	<2.5	193	<2.5	--	87.6	3.8
	5/23/2007	<10	<10	<10	<10	15.5	<10	<10	1,110	<10	<10	58.5	<10	--	45.4	11.7
	9/11/2007	<50	<25	<25	<50	<25	<25	<25	916	<25	<25	34	<25	--	34	62.5
	12/13/2007	<10	<5	<5	<10	9.7	<5	<5	526	5	<5	81.9	<5	--	45.4	8.8
	3/5/2008	<1	<0.500	<0.500	<1	16.1	<0.500	1.66	826	9.18	2.3	49.7	0.88	<0.500	45.6	58.8
	9/19/2008	<20	<10	<10	<20	20.4	<10	<10	633	<10	<10	108	<10	<10	74.8	<10
	12/10/2008	<2.5	<2.5	<2.5	<2.5	15	<2.5	<2.5	570	6.2	<2.5	28	<2.5	<2.5	25	48
	3/27/2009	<2.5	<2.5	<2.5	<2.5	17	<0.50	<2.5	580	5.7	<2.5	39	<2.5	<2.5	42	4.4
	6/17/2009	<0.90	<0.90	<0.90	<0.90	6.3	<0.90	<0.90	310	3.6	0.99	21	<0.90	<0.90	14	9.7
	9/18/2009	<0.80	<0.80	<0.80	<0.80	19	<0.80	<0.80	590	4.2	1.9	29	<0.80		27	8.1
	12/17/2009	<0.50	<0.50	<0.50	<0.50	4.8	<0.50	<0.50	170	0.72	0.67	53	0.53	<0.50	26	<0.50
	3/19/2010	<0.50	<0.50	<0.50	<0.50	9.3	<0.50	0.61	300	3.6	1.4	22	<0.50	<0.50	21	26

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-1	6/15/2010	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	9.6	<0.50	<0.50	22	<0.50	<0.50	6.6	<0.50
(continued)	9/23/2010	<0.90	<0.90	<0.90	<0.90	12	<0.90	<0.90	380	3.4	1.6	25	<0.90	<0.90	27	7.1
	12/9/2010	<1.5	<1.5	<1.5	<1.5	7.1	1.5	<1.5	250	2.2	<1.5	25	<1.5	<1.5	17	8
	3/10/2011	<1.5	<1.5	<1.5	<1.5	7.5	<1.5	<1.5	250	3	<1.5	16	<1.5	<1.5	16	18
	6/9/2011	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	4.4	<0.5	<0.5	11	<0.5	<0.5	3.4	<0.5
	9/19/2011	<1.5	<1.5	<1.5	<1.5	12	<1.5	<1.5	300	3.2	<1.5	5.2	<1.5	<1.5	13	30
	12/9/2011	<1.5	<1.5	<1.5	<1.5	11	<1.5	<1.5	260	2.9	<1.5	6.2	<1.5	<1.5	8.4	40
	3/9/2012	<0.50	<0.50	<0.50	<0.50	7.8	<0.50	<0.50	200	2.4	1	3.1	<0.50	<0.50	9.5	19
	6/22/2012	<0.5	<0.5	<0.5	<0.5	4.8	<0.5	<0.5	140	1.7	0.53	17	<0.5	<0.5	13	14
	9/13/2012	<1.5	<1.5	<1.5	<1.5	10	<1.5	<1.5	260	2.4	<1.5	<1.5	<1.5	<1.5	7	25
	12/13/2012	<0.50	<0.50	<0.50	<0.50	1.4	<0.50	<0.50	47	0.64	<0.50	26	<0.50	<0.50	14	<0.50
	3/15/2013	<0.50	<0.50	<0.50	<0.50	5.8	<0.50	<0.50	140	1.6	0.8	0.83	<0.50	<0.50	6	0.98
	6/13/2013	<0.50	<0.50	<0.50	<0.50	7.2	<0.50	<0.50	130	1.9	0.63	1.1	<0.50	<0.50	2.4	28
	9/19/2013	<0.50	<0.50	<0.50	<0.50	11	<0.50	<0.50	180	1.6	1	3.2	<0.50	<0.50	5.6	0.92
	12/16/2013	<0.50	<0.50	<0.50	<0.50	7.8	<0.50	<0.50	110	1.8	<0.50	8.5	<0.50	<0.50	5.9	13
	3/21/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	9.1	<0.50	<0.50	10	<0.50	<0.50	4.3	<0.50
	6/25/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	5.6	45	1	<0.50	<0.50	<0.50	<0.50	0.65	5.9
	9/30/2014	<0.50	<0.50	<0.50	<0.50	11	<0.50	<0.50	170	1.3	0.83	12	<0.50	<0.50	9.7	3.3
	12/11/2014	<0.50	<0.50	<0.50	<0.50	1.5	<0.50	<0.50	30	<0.50	<0.50	17	<0.50	<0.50	9.4	<0.50
	3/19/2015	<0.50	<0.50	<0.50	<0.50	6.2	<0.50	<0.50	47.4	0.67	<0.50	1.1	<0.50	<0.50	1.9	<5
	6/17/2015	<0.50	<0.50	<0.50	<0.50	9.5	<0.50	<0.50	75	0.8	<0.50	4.3	<0.50	<0.50	4.6	4.9
	9/24/2015	<0.50	<0.50	<0.50	<0.50	8.4	<0.50	<0.50	39.1	0.65	<0.50	2.8	<0.50	<0.50	2.4	32.7
	12/8/2015	<0.50	<0.50	<0.50	<0.50	1.4	<0.50	<0.50	25.2	<0.50	<0.50	18	<0.50	<0.50	8.9	<0.50
	3/7/2016	<0.50	<2	<5	<0.50	4.4	<0.50	<0.50	51.9	<0.50	<0.50	18	<0.50	<0.50	10.3	0.57
	6/15/2016	<0.50	<2	<0.50	<0.50	3.7	<0.50	<0.50	13.1	<0.50	<0.50	0.67	<0.50	<0.50	1.2	5.3
	9/27/2016	<0.50	<2	<0.50	<0.50	8.6	<0.50	<0.50	25.2	<0.50	<0.50	2.3	<0.50	<0.50	3.1	23.9
	12/16/2016	<0.50	<2	<0.50	<0.50	3.4	<0.50	<0.50	22.5	<0.50	<0.50	8	<0.50	<0.50	5.8	0.86
	3/30/2017	<0.50	<2	<0.50	<0.50	<0.5	<0.5	<0.50	1.6	<0.50	<0.50	4.6	<0.50	<0.50	1.6	<0.50
	6/12/2017	<2.0	<2.0	<0.50	<0.50	2.1	<1.0	<0.50	9.9	<0.50	<0.50	4.4	<0.50	<0.50	3.1	<0.50
	9/26/2017	<2.0	<2.0	<0.50	<0.50	6.8	<1.0	<0.50	6.7	<0.50	<0.50	1.5	<0.50	<0.50	1.6	22.6
	11/9/2017	<2.0	<2.0	<0.50	<0.50	5.00	<0.50	<0.50	22.80	<0.50	<0.50	9.50	<0.50	<0.50	6.50	1.1
	3/20/2018	<0.500	<2.50	<0.500	<0.500	4.84	<0.500	<0.500	6.13	<0.500	0.322 J	2.49	<0.500	<0.500	2.06	<0.500
	7/1/2018	<0.500	<2.50	<0.500	<0.500	6.70	<0.500	0.204 J	16.1	0.303 J	0.427 J	0.530	<0.500	<0.500	1.63	10.5

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-1 (continued)	9/25/2018	<1.00	<5.00	<1.00	<1.00	7.33	<0.400	0.740	44.9	0.610	0.510	4.24	<0.400	<0.500	8.09	3.19
	12/4/2018	<1.00	<5.00	<1.00	<1.00	4.73	<0.400	<0.400	22.7	<0.400	<0.500	15.700	<0.400	<0.500	9.04	2.57
	3/21/2019	<1.00	<5.00	<1.00	<1.00	4.37	<0.400	0.780	28.5	0.530	<0.500	2.78	<0.400	<0.500	6.65	0.400
	6/5/2019	<1.00	<5.00	<1.00	<1.00	2.54	<0.400	<0.400	27.6	0.481	<0.500	12.9	<0.400	<0.500	8.43	<0.400
	9/27/2019	<1.00	<5.00	<1.00	<1.00	8.66	<0.400	0.57	106	1.78	0.703	19.1	0.45	<0.500	18.4	2.97
	12/4/2019	<1.00	<5.00	<1.00	<1.00	3.22	<0.400	<0.400	26.6	0.494	<0.500	10.6	<0.400	<0.500	7.39	0.67
	3/10/2020	<1.00	<5.00	<1.00	<1.00	4.45	<0.400	<0.400	13.4	<0.400	<0.500	5.96	<0.400	<0.500	5.22	<0.400
	6/17/2020	<1.00	<5.00	<1.00	<1.00	2.95	<0.400	0.42	23.5	0.520	<0.500	12.1	<0.400	<0.500	7.75	0.46
	10/7/2020	<1.00	<5.00	<1.00	<1.00	6.45	<0.400	<0.400	104	1.41	<0.500	26.4	<0.400	<0.500	22.2	1.80
	12/8/2020	<2.00	<5.00	<1.00	<1.00	5.47	<0.400	0.512	62.6	0.968	<0.500	19.0	<0.400	<0.500	12.3	1.42
	3/4/2021	<1.00	<5.00	<1.00	<1.00	3.38	<0.400	<0.400	37.2	0.608	<0.500	6.44	<0.400	<0.500	6.6	1.76
	6/16/2021	<1.00	<5.00	<1.00	<1.00	4.76	<0.400	0.624	75.8	0.892	<0.500	9.95	<0.400	<0.500	14.2	2.05
	9/15/2021	<1.00	<5.00	<1.00	<1.00	5.06	<0.400	0.465	69.8	0.878	<0.500	7.3	<0.400	<0.500	8.69	3.2
	12/9/2021	<1.00	<5.00	<1.00	<1.00	1.51	<0.400	<0.400	24.9	0.446	<0.500	16.8	<0.400	<0.500	6.84	1.56
	3/8/2022	<1.00	<5.00	<1.00	<1.00	1.33	<0.400	<0.400	20.9	0.420	<0.500	16.1	<0.400	<0.500	6.92	1.44
	06/15/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	0.800	<0.400	<0.500	4.93	<0.400	<0.500	1.09	<0.400
	9/15/2022	<1.00	<5.00	<1.00	<1.00	6.41	<0.400	0.45	112	1.73	0.5	19.1	0.73	<0.500	16.6	8.68
	12/6/2022	<1.00	<5.00	<1.00	<1.00	4.37	<0.400	0.41	82.3	1.29	<0.500	30.3	0.56	<0.500	15.8	3.08
	3/17/2023	<1.00	<5.00	<1.00	<1.00	3.92	<0.400	0.51	68.7	1.07	<0.500	14.0	<0.400	<0.500	13.4	0.82
	6/14/2023	<1.00	<5.00	<1.00	<1.00	4.82	<0.400	0.54	75.9	1.23	0.530	11.2	<0.400	<0.500	13.9	2.05
	9/12/2023	<4.00	<5.00	<1.00	<1.00	5.44	<0.400	0.430	86.5	1.38	<0.500	15.3	0.450	<0.500	16.1	0.680
	12/13/2023	<1.00	<5.00	<1.00	<1.00	0.600	<0.400	<0.400	8.89	<0.400	<0.500	19.9	<0.400	<0.500	4.28	<0.200
	3/7/2024	<1.00	<5.00	<1.00	<1.00	3.00	<0.400	0.43	41.8	0.750	<0.500	9.22	<0.400	<0.500	9.90	<0.200
	6/13/2024	<1.00	<5.00	<1.00	<1.00	2.92	<0.400	<0.400	46.1	0.570	<0.500	20.1	<0.400	<0.500	11.2	<0.200
	9/6/2024	<1.00	<5.00	<1.00	<1.00	4.83	<0.400	<0.400	70.1	0.990	<0.500	12.4	<0.400	<0.500	11.3	<0.200
	12/4/2024	<1.00	<5.00	<1.00	<1.00	4.78	<0.400	0.670	74.0	1.31	<0.500	19.1	<0.400	<0.500	13.7	0.360
MW-2	11/17/1993	--	51	--	--	12	<0.50	--	10	--	--	<0.50	<0.50	--	<0.50	<0.10
	9/1/1995	<0.50	16	<0.50	<0.20	8.2	<0.50	<0.50	2.5	<0.50	<0.50	<0.50	<0.50	--	<0.50	2.2
	9/24/1996	<0.50	19	<0.20	<0.20	9.6	0.5	<0.20	9.4	<0.20	<0.20	<0.20	<0.50	--	0.3	5.1
	12/2/1996	<0.50	8.8	<0.50	<0.20	6.9	0.6	<0.20	11	<1	<0.20	<0.50	<1	--	<0.30	7.2
	11/13/1997	<0.50	<1	<0.50	<0.50	5.32	0.571	<0.50	7.9	<0.50	<0.50	<0.50	<0.50	--	<0.50	<1
	8/11/1999	<1	18.3	<0.50	<0.50	6.38	<0.50	<0.50	20	<0.50	<0.50	<0.50	<1	--	10.4	1.64
	2/29/2000	<1	16	<0.50	<0.50	5.68	<0.50	<0.50	23.5	<0.50	<0.50	<0.50	<1	--	4.52	1.21
	6/27/2000	<1	18.3	<0.50	<0.50	5.34	<0.50	1.27	23.4	<0.50	<0.50	12.8	<1	--	16.6	<0.50
	5/30/2001	<1	<5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1	--	<0.50	<0.50

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-2	5/30/2002	<1	1.68	<0.50	<1	2.65	<0.50	<0.50	0.51	<0.50	<0.50	0.61	<0.50	--	<0.50	<0.50
(continued)	11/8/2002	<1	10.4	<0.50	<1	3.13	<0.50	<0.50	1.84	<0.50	<0.50	1.05	<0.50	--	0.98	<0.50
	5/30/2003	<1	3.64	<0.50	<1	1.95	<0.50	<0.50	0.59	<0.50	<0.50	6.6	<0.50	--	1.13	<0.50
	9/12/2007	<1	5.9	<0.50	<1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--	<0.50	<0.50
	3/7/2008	<1	7.86	<0.500	<1	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	0.5	<0.500	<0.500	<0.500	<0.500
	9/18/2008	<1	5.93	<0.500	<1	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
	3/24/2009	<0.50	4.8	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/16/2009	<0.50	5.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1	<0.50	<0.50	0.85	<0.50
	3/19/2010	<0.50	5.7	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/23/2010	<0.5	3.8	<0.50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	3/9/2011	<0.50	4.8	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/16/2011	<0.50	4.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/9/2012	<0.50	4.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/13/2012	<0.50	3.4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/14/2013	<0.50	3.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/19/2013	<0.50	2.9	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/21/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/30/2014	<0.50	2.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/19/2015	<0.50	0.96	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/23/2015	<0.50	2.7	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/7/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/29/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/28/2017	<0.50	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/25/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	11/6/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	7/2/2018	<0.500	3.0	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
	9/25/2018	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	3/21/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	6/5/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	9/27/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	12/5/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	3/12/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	6/17/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	10/8/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	12/9/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	3/4/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	6/16/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	9/15/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	12/9/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-2 (continued)	3/8/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	06/16/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	9/15/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	12/8/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	3/16/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	6/13/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	9/13/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
	12/13/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
	3/7/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
	6/14/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
	9/6/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
	12/5/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
MW-3	11/17/1993	--	210	--	--	27	4	--	240	--	--	190	20	--	97	130
	9/1/1995	<50	<100	<50	<50	<50	<50	<50	2,700	<50	<50	1,300	<50	--	140	730
	9/24/1996	<5	<20	7.9	<2	12	<2	<2	1,100	9.5	4	1,800	21	--	330	82
	12/2/1996	<50	<50	<50	<20	<30	<50	<20	650	<100	<20	2,100	<100	--	470	<50
	11/12/1997	<25	<50	<25	<25	<25	<25	<25	464	<25	<25	2,000	<25	--	241	<50
	8/11/1999	<20	<100	<10	<10	<10	<10	<10	500	<10	<10	1,760	25.4	--	247	<10
	11/16/1999	<20	<50	<10	<20	14	<10	<10	628	15.2	<10	700	<10	--	132	<10
	2/29/2000	<20	<100	<10	<10	<10	<10	<10	473	<10	<10	1,890	25.4	--	356	<10
	6/27/2000	<20	<100	<10	<10	<10	<10	<10	410	<10	10.2	1,460	<20	--	241	<10
	8/31/2000	<20	<100	<10	<10	52.2	<10	<10	2,580	25.5	<10	399	<20	--	100	171
	11/30/2000	<5	<25	<2.5	<2.5	13.3	<2.5	<2.5	374	3.73	<2.5	366	<5	--	80.3	3.1
	2/27/2001	<5	<25	3.64	<2.5	5.78	<2.5	<2.5	153	<2.5	2.5	358	<5	--	76.1	<2.5
	5/29/2001	<5	<25	2.8	<2.5	<2.5	<2.5	<2.5	112	<2.5	<2.5	647	5.12	--	93.3	<2.5
	9/25/2001	<1.3	3.1	2.4	<1.3	10	2	<1.3	210	3	1.7	550	7.2	--	90	4.9
	12/17/2001	<10	<50	<5	<5	<5	<5	<5	164	<5	<5	826	16.9	--	155	<5
	3/19/2002	<5	<2.5	2.75	<5	<2.5	<2.5	<2.5	138	4.1	<2.5	758	9.6	--	107	<2.5
	5/30/2002	<10	7.8	<5	<10	27.8	<5	<5	1,380	42.6	6	302	11.5	--	55.1	96.7
	8/28/2002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	11/8/2002	<5	15	<2.5	<5	29.4	3.55	<2.5	399	9.05	5.7	359	5.8	--	67.1	19.4
	1/23/2003	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	5/30/2003	<5	<2.5	6.45	<5	<2.5	<2.5	<2.5	50.1	3.65	<2.5	706	4.95	--	72.6	<2.5
	11/10/2003	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	1/26/2004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	5/4/2004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8/17/2004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	11/2/2004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	11/16/2004	<10	<5	<5	<10	15	<5	<5	440	5.9	<5	270	<5	--	72	<5

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-3 (continued)	3/23/2005	<2	2.26	4.16 B	<2	8.92	<1	<1	246	8.4	2.86	329	5.04	--	71.9	3.84
	5/18/2005	<2	<1	3.86	<2	5.74	<1	<1	188	4.72	3.02	304	5.06	--	88.5	<1
	8/18/2005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	11/14/2005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/21/2006	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	6/5/2006	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/7/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	5/23/2007	<2	<2	<2	<2	<2	<2	<2	110	6.3	<2	349	4.54	--	70.6	<2
	9/11/2007	<5	9.95	14.4	<5	43	6.1	<2.50	950	28.2	12	601	31	--	223	6.1
	12/12/2007	<10	<5	<5	<10	<5	<5	<5	95.7	<5	<5	254	<5	--	63.2	<5
	3/6/2008	<1	<0.500	2.10 J	<1	1.32	<0.500	<0.500	127	8.49	2.37	144	5.66	<0.500	94.7	<0.500
	9/19/2008	<5	3.7	2.65 J	<5	10.6	<2.50	<2.50	187	5.85	2.95	283	6.6	<2.50	75	<2.50
	12/10/2008	<0.90	1.5	1.9	<0.90	5.3	1.2	<0.90	120	4.3	1.5	200	3.8	<0.90	54	<0.90
	3/26/2009	<0.50	<0.50	1.4	<0.50	1.6	<0.50	<0.50	83	4.3	1.2	180	3.6	<0.50	46	<0.50
	6/17/2009	<0.50	<0.50	1.1	<0.50	0.89	<0.50	<0.50	76	4.7	0.71	190	3.4	<0.50	49	<0.50
	9/18/2009	<0.50	<0.50	3.3	<0.50	10	<0.50	<0.50	180	6.2	2.2	270	7.3	<0.50	62	1.2
	12/17/2009	<0.90	<0.90	0.96	<0.90	<0.90	<0.90	<0.90	50	3.2	<0.90	180	3.2	<0.90	47	<0.90
	3/19/2010	<0.90	<0.90	1 BE	<0.90	<0.90	<0.90	<0.90	77	5.4	<0.90	280	4.1	<0.90	49	<0.90
	6/16/2010	<0.50	<0.50	2.3	<0.50	1.6	0.9	<0.50	42	1.7	<0.50	180	1.9	<0.50	30	<0.50
	9/23/2010	<0.5	<0.5	2.8 BE	<0.5	0.56	<0.5	<0.5	75	4.4	0.51	220	3	<0.5	39	<0.5
	12/9/2010	<0.5	<0.5	2.7	<0.5	<0.5	<0.5	<0.5	39	3.4	<0.5	210	3	<0.5	35	<0.5
	3/10/2011	<0.50	<0.50	5.4	<0.50	<0.50	<0.50	<0.50	8.9	1.1	<0.50	110	1.6	<0.50	15	<0.50
	6/10/2011	<0.5	<0.5	1.6	<0.5	2.2	0.76	<0.5	36	1.1	0.54	99	1.6	<0.5	30	<0.5
	9/16/2011	<0.50	<0.50	2	<0.50	3	0.59	<0.50	70	1.7	0.91	130	2.4	<0.50	31	<0.50
	12/9/2011	<0.50	<0.50	2.2	<0.50	2.9	0.54	<0.50	62	1.6	0.83	190	2.6	<0.50	45	<0.50
	3/12/2012	<0.50	<0.50	2.4	<0.50	0.83	<0.50	<0.50	52	2.8	1	140	3.1	<0.50	45	<0.50
	6/21/2012	<0.5	<0.5	2.3	<0.5	0.9	<0.5	<0.5	45	2.7	0.56	170	2.7	<0.5	37	<0.5
	9/13/2012	<0.50	<0.50	1.7	<0.50	4.1	<0.50	<0.50	100	2.1	1.4	140	3.3	<0.50	45	<0.50
	12/13/2012	<0.50	<0.50	1.3	<0.50	0.78	<0.50	<0.50	27	1.6	<0.50	170	2	<0.50	36	<0.50
	3/14/2013	<0.50	<0.50	1.8	<0.50	1	<0.50	<0.50	64	2.5	1.4	160	3.2	<0.50	53	<0.50
	6/14/2013	<0.90	<0.90	1.4	<0.90	1.1	<0.90	<0.90	68	3.1	1.3	210	3.3	<0.90	48	<0.90
	9/19/2013	<0.50	<0.50	1.1	<0.50	1.1	<0.50	<0.50	99	1.5	1.4	86	1.7	<0.50	30	<0.50
	12/16/2013	<0.50	<0.50	1.4	<0.50	1.3	<0.50	<0.50	47	2.1	0.81	170	2.4	<0.50	38	<0.50
	3/21/2014	<0.50	<0.50	1.3	<0.50	0.64	<0.50	<0.50	27	1.6	<0.50	150	2	<0.50	30	<0.50
	6/24/2014	<0.50	0.86	0.86	<0.50	1.4	<0.50	<0.50	65	3.2	1.3	180	3.2	<0.50	44	<0.50
	9/30/2014	<0.50	<0.50	1	<0.50	6.7	0.7	<0.50	110	2.1	1.3	180	2.8	<0.50	47	<0.50
	12/11/2014	<0.50	<0.50	1.2	<0.50	0.8	<0.50	<0.50	28	1.7	<0.50	150	2.2	<0.50	37	<0.50

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-3	3/19/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
(continued)	6/15/2015	<0.50	<0.50	0.86	<0.50	1.1	<0.50	<0.50	49	2	0.88	160	2.8	<0.50	44	<0.50
	12/9/2015	<0.50	<0.50	0.66	<0.50	4.9	<0.50	<0.50	72	1.8	1.1	145	1.8	<0.50	33.6	<0.50
	3/7/2016	<0.50	<2	0.76	<0.50	2.2	<0.50	<0.50	61.8	2.5	1.3	199	3.6	<0.50	45.1	<0.50
	6/16/2016	<0.50	<2	<0.50	<0.50	1.1	<0.50	<0.50	50.2	0.82	<0.50	49.5	0.77	<0.50	17.4	<0.50
	9/30/2016	<0.50	<2	0.67	<0.50	8.2	0.73	<0.50	95.3	1.5	1.6	145	2	<0.50	40.1	<0.50
	12/16/2016	<0.50	<2	0.52	<0.50	1.1	<0.50	<0.50	26.8	0.9	0.57	86.2	1.2	<0.50	23.9	<0.50
	3/29/2017	<0.50	<2	<0.50	<0.50	7.1	1.3	<0.50	77.9	1.2	<0.50	67.6	0.64	<0.50	20.2	2.5
	6/14/2017	<2.0	<2.0	1.0	<0.50	2.1	<1.0	<0.50	39.0	1.5	<0.50	163	1.7	<0.50	30.4	<0.50
	9/25/2017	<2.0	<2.0	<0.50	<0.50	5.6	<1.0	<0.50	73.3	1.3	<0.50	127	1.5	<0.50	29.5	<0.50
	11/8/2017	<2.0	<2.0	<0.50	<0.50	5.0	<0.50	<0.50	59.5	0.6	<0.50	67	0.6	<0.50	16.1	0.7
	3/20/2018	<0.500	<2.50	0.380 J	<0.500	2.0	0.144 J	<0.500	77.8	2.2	1.99	194	3.4	<0.500	48.6	<0.500
	7/2/2018	<0.500	<2.50	0.439 J	<0.500	<0.500	3.2	<0.500	64.5	1.6	1.07	180	2.6	<0.500	43.1	<0.500
	9/26/2018	<1.00	<5.00	<1.00	<1.00	6.41	<0.400	<0.400	75.6	0.73	1.18	145	1.18	<0.500	36.3	<0.400
	12/7/2018	<2.00	<10.0	<2.00	<2.00	3.1	<0.800	<0.800	44.2	1.0	<1.00	96	1.0	<1.00	27.8	<0.800
	3/20/2019	<1.00	<5.00	<1.00	<1.00	0.930	<0.400	<0.400	37.5	1.16	1.03	112	1.55	<0.500	33.2	<0.400
	6/7/2019	<1.00	<5.00	1.02	<1.00	1.22	<0.400	<0.400	41.6	1.99	0.708	195	2.62	<0.500	39.8	<0.400
	9/27/2019	<1.00	<5.00	<1.00	<1.00	7.00	0.47	<0.400	72.3	1.25	1.32	130	1.7	<0.500	32.9	<0.400
	12/4/2019	<1.00	<5.00	<1.00	<1.00	1.54	<0.400	<0.400	36.5	1.07	0.634	136	1.33	<0.500	36.4	<0.400
	3/10/2020	<1.00	<5.00	<1.00	<1.00	1.77	<0.400	<0.400	48.9	1.97	1.03	192	2.74	<0.500	50.9	<0.400
	6/17/2020	<2.00	<10.0	<2.00	<2.00	<0.800	<0.400	<0.400	18.6	1.16	<1.00	115	1.38	<1.00	22.8	<0.800
	10/7/2020	<1.00	<5.00	<1.00	<1.00	5.30	<0.400	<0.400	62.9	1.02	1.10	169	1.57	<0.500	32.6	<0.400
	12/8/2020	<10.0	<25.0	<5.00	<5.00	<2.00	<2.00	<2.00	29.7	<2.00	<2.50	145	<2.00	<2.50	36.1	<2.00
	3/4/2021	<1.00	<5.00	<1.00	<1.00	1.13	<0.400	<0.400	41.8	1.65	1.06	182	2.65	<0.500	46.7	<0.400
	6/16/2021	<2.50	<12.5	<2.50	<2.50	<1.00	<1.00	<1.00	31.5	1.44	<1.25	145	1.86	<1.25	36.3	<1.00
	9/14/2021	<1.00	<5.00	<1.00	<1.00	5.07	<0.400	<0.400	63.2	1.120	1.04	117	1.60	<0.500	33.1	<0.400
	12/9/2021	<1.00	<5.00	<1.00	<1.00	0.719	<0.400	<0.400	24.6	1.310	<0.500	183	2.50	<0.500	42.5	<0.400
	3/8/2022	<1.00	<5.00	<1.00	<1.00	0.980	<0.400	<0.400	30.9	1.19	0.640	137	1.47	<0.500	29.3	<0.400
	06/16/2022	<1.00	<5.00	<1.00	<1.00	1.73	<0.400	<0.400	38.4	0.500	0.600	116	1.20	<0.500	28.6	<0.400
	9/15/2022	<2.00	<10.0	<2.00	<2.00	2.72	<0.400	<0.400	41.9	<0.500	<1.00	107	1.8	<1.00	24.5	<0.500
	12/6/2022	<1.00	<5.00	<1.00	<1.00	1.13	<0.400	<0.400	31.4	1.23	<0.500	137	1.74	<0.500	29.5	<0.400
	3/16/2023	<1.00	<5.00	<1.00	<1.00	0.94	<0.400	<0.400	35.1	1.34	0.98	144	1.79	<0.500	31.7	<0.400
	6/13/2023	<1.00	<5.00	<1.00	<1.00	0.72	<0.400	<0.400	23.7	1.19	<0.600	136	1.77	<0.500	23.9	<0.400
	9/13/2023	<2.00	<5.00	<1.00	<1.00	2.85	<0.400	<0.400	51.8	0.550	0.920	139	1.35	<0.500	29.1	<0.400
	12/13/2023	<1.00	<5.00	<1.00	<1.00	0.480	<0.400	<0.400	12.4	0.970	<0.500	143	1.75	<0.500	26.6	<0.200
	3/7/2024	<1.00	<5.00	<1.00	<1.00	0.990	<0.400	<0.400	37.0	1.31	1.10	160	1.78	<0.500	32.9	<0.200
	6/12/2024	<1.00	<5.00	<1.00	<1.00	0.740	<0.400	<0.400	26.9	1.15	0.630	137	1.51	<0.500	27.5	<0.200

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility
Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-3 (continued)	9/5/2024	<1.00	<5.00	<1.00	<1.00	1.92	<0.400	<0.400	43.4	0.640	0.780	118	1.14	<0.500	23.8	<0.200
	12/5/2024	<1.00	<5.00	<1.00	<1.00	0.580	<0.400	<0.400	17.8	1.22	0.500	160	1.88	<0.500	28.9	<0.200
MW-4	11/17/1993	--	850	--	--	12	<50	--	20	--	--	40	<50	--	5.4	<10
	9/1/1995	<5	340	<5	<5	5.2	<50	<5	14	<5	<5	<50	<50	--	<50	30
	9/24/1996	<0.50	300	<0.20	<0.20	7.1	1.4	<0.20	3.2	<0.20	1	0.5	<0.50	--	0.8	4.7
	12/2/1996	<0.50	310	<0.50	0.3	3.8	1	<0.20	19	<1	0.3	<0.50	<1	--	<0.30	39
	11/13/1997	<0.50	252	<0.50	<0.50	4.22	1.23	<0.50	6.91	<0.50	0.688	<0.50	<0.50	--	<0.50	<1
	8/11/1999	<2	144	<1	<1	1.21	<1	<1	<1	<1	<1	3.6	<2	--	<1	<1
	11/16/1999	<1	26.3	<0.50	<1	2.3	<0.50	<0.50	4.18	<0.50	<0.50	1.2	<0.50	--	0.88	2.07
	2/29/2000	<2	119	<1	<1	2.84	<1	<1	4.1	<1	<1	<1	<2	--	<1	5.72
	6/28/2000	<5	59.4	<2.5	<2.5	3.89	<2.5	<2.5	2.5	<2.5	<2.5	<2.5	<5	--	<2.5	<2.5
	7/5/2000	Well Abandoned														
MW-5	11/17/1993	--	1,900	--	--	<25	<25	--	100	--	--	1,200	<25	--	52	<50
	9/1/1995	<1	<2	<1	<2	<1	<1	<1	1,300	<1	<1	60,000	<1	--	<1	<2
	9/24/1996	<5	140	<2	<2	35	<2	7.5	2,600	80	5.3	16,000	64	--	670	370
	12/2/1996	71	<50	<50	27	<30	<50	<20	5,600	<100	<20	27,000	110	--	1,700	340
	11/12/1997	<500	<1	<500	<500	<500	<500	<500	<500	<500	<500	28,000	<500	--	1,250	<1
	8/11/1999	<200	<1	<100	<100	<100	<100	<100	1,750	<100	<100	25,100	<200	--	862	238
	2/29/2000	<100	<500	<50	<50	<50	<50	<50	126	<50	<50	5,250	<100	--	135	<50
	8/31/2000	<50	<250	<25	<25	41.4	<25	<25	1,860	<25	<25	5,660	<50	--	347	280
	11/30/2000	<50	<250	<25	<25	27.3	<25	<25	3,850	26.8	<25	6,150	<50	--	511	189
	2/27/2001	<50	<250	<25	<25	<25	<25	<25	1,370	<25	<25	7,350	<50	--	445	127
	5/30/2001	<50	<250	<25	<25	<25	<25	<25	2,410	<25	<25	5,560	<50	--	439	129
	9/25/2001	<25	200	<25	<25	34	<25	<25	1,800	<25	<25	2,200	<25	--	180	180
	12/17/2001	<100	<500	<50	<50	<50	<50	<50	1,480	<50	<50	10,100	<100	--	646	<50
	3/19/2002	<50	<25	<25	<50	<25	<25	<25	360	<25	<25	4,640	<25	--	221	114
	5/29/2002	<50	46	<25	<50	<25	<25	<25	916	<25	<25	4,330	<25	--	238	39.5
	8/29/2002	<50	<25	<25	<50	<25	<25	<25	1,160	<25	<25	4,090	<25	--	288	310
	11/8/2002	<5	178	<2.5	<5	8.3	<2.5	<2.5	385	3.25	<2.5	603	<2.5	--	63.4	66
	1/23/2003	<50	<25	<25	<50	<25	<25	<25	582	<25	<25	4,090	<25	--	349	<25
	5/30/2003	<10	14.1	<5	<10	<5	<5	<5	382	<5	<5	1,450	7.9	--	140	67
	11/10/2003	<1	84.2	<1	<1	1.06	<1	<1	90.7	<1	<1	161	<1	--	30.8	9.42
	1/26/2004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	5/4/2004	<20	<20	<20	<20	<20	<20	<20	432	<20	<20	2,440	<20	--	178	188

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-5	8/17/2004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
(continued)	11/2/2004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	11/16/2004	<50	<50	<50	<50	<50	<50	<50	6,300	<50	<50	1,800	<50	--	370	990
	3/23/2005	<20	<10	<10	<20	26.2	<10	<10	2,350	27.6	<10	511	<10	--	147	604
	5/18/2005	<5	<2.5	<2.5	<5	9.25	<2.5	6.45	817	10.2	<2.5	611	<2.5	--	156	329
	8/18/2005	<5	5.15	<2.50	<5	14.4	<2.50	<2.50	397	4.7	<2.50	169 B	<2.50	--	81.8	278
	11/15/2005	<20	<10	<10	<20	36.2	<10	<10	2,790	14	<10	408	<10	--	177	615
	2/21/2006	<1	<0.500	<0.500	<1	<0.500	<0.500	<0.500	72.7	1.06	<0.500	184	0.78	--	31.5	5.05
	6/5/2006	<20	<20	<20	<20	<20	<20	<20	2,800	<20	<20	157	<20	--	75	199
	9/6/2006	<2	10.6	<1	<2	8.3	<1	<1	377	3.66	<1	104	<1	--	45	29.9
	12/6/2006	<2	<1	<1	<2	1.32	<1	1.34	113	1.28	1.52	240	1.6	--	58	43.3
	2/7/2007	<10	<5	<5	<10	<5	<5	<5	1,220	18	<5	124	<5	--	26.9	600
	5/22/2007	<5	<5	<5	<5	<5	<5	<5	634	8.45	<5	102	<5	--	40.8	59.4
	9/12/2007	<1	67.5	<0.50	<1	<0.50	<0.50	<0.50	16.2	<0.50	<0.50	0.89	<0.50	--	1.38	1.86
	12/13/2007	<1	<0.50	<0.50	<1	7.1	<0.50	4.67	2,420	9.22	1.14	180	<0.50	--	179	416
	3/7/2008	<1	<0.500	<0.500	<1	2.18	<0.500	1.33	411	3.21	<0.500	86.4	<0.500	<0.500	26.1	105
	9/18/2008	<1	101	<0.500	<1	0.79	<0.500	<0.500	11.2	<0.500	<0.500	1.14	<0.500	<0.500	1.27	1.74
	12/10/2008	<2	<2	<2	<2	3.7	<2	<2	360	2.3	<2	49	<2	<2	53	150
	3/27/2009	<0.50	4.2	<0.50	<0.50	4	<0.50	<0.50	170	1	<0.50	0.59	<0.50	<0.50	<0.50	64
	6/17/2009	<0.50	<0.50	<0.50	<0.50	4.1	<0.50	0.6	160	2.5	<0.50	11	<0.50	<0.50	12	11
	9/18/2009	<0.50	65 BE	<0.50	<0.50	<0.50	<0.50	<0.50	3.6	<0.50	<0.50	<0.50	<0.50	<0.50	0.5	1.2
	12/17/2009	<0.50	<0.80	<0.50	<0.50	2.1	<0.50	1.4	340	2	<0.50	19	<0.50	<0.50	37	93
	3/19/2010	<0.50	1.4	<0.50	<0.50	4.4	<0.50	<0.50	72	<0.50	<0.50	24	<0.50	<0.50	14	21
	6/16/2010	<0.50	<0.50	<0.50	<0.50	3.6	<0.50	0.83	94	0.65	0.54	4.1	<0.50	<0.50	10	23
	9/23/2010	<0.5	59	<0.5	<0.5	0.84	<0.5	<0.5	9.7	<0.5	<0.5	<0.5	<0.5	<0.5	0.97	1.3
	12/9/2010	<0.5	<0.5	<0.5	<0.5	0.84	<0.5	<0.5	140	0.73	<0.5	5.6	<0.5	<0.5	8.8	15
	3/11/2011	<0.50	<0.50	<0.50	<0.50	0.96	<0.50	<0.50	34	<0.50	<0.50	8.4	<0.50	<0.50	7.6	4.7
	6/10/2011	<0.5	<0.5	<0.5	<0.5	5	<0.5	<0.5	40	<0.5	0.63	2.2	<0.5	<0.5	3.8	26
	9/19/2011	<0.50	2.3	<0.50	<0.50	2.8	<0.50	<0.50	97	<0.50	<0.50	1.3	<0.50	<0.50	11	6.3
	12/9/2011	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	47	<0.50	<0.50	2.7	<0.50	<0.50	7.7	2.8
	3/12/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	4.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	3.4
	6/22/2012	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	13	<0.5	<0.5	0.54	<0.5	<0.5	2.9	3
	9/14/2012	<0.50	20	<0.50	<0.50	0.75	<0.50	<0.50	26	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	3.4
	12/13/2012	<0.50	<0.50	<0.50	<0.50	0.72	<0.50	<0.50	67	0.65	<0.50	<0.50	<0.50	<0.50	1.7	6.6

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-5	3/15/2013	<0.50	7.4	<0.50	<0.50	1.5	<0.50	<0.50	48	<0.50	<0.50	<0.50	<0.50	<0.50	1.1	6.6
(continued)	6/13/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	8.5	<0.50	<0.50	7.2	<0.50	<0.50	7.2	1.7
	9/19/2013	<0.50	23	<0.50	<0.50	<0.50	<0.50	<0.50	4.6	<0.50	<0.50	<0.50	<0.50	<0.50	1.2	0.61
	12/16/2013	<0.50	<0.50	<0.50	<0.50	0.88	<0.50	<0.50	180	<0.50	<0.50	<0.50	<0.50	<0.50	0.8	71
	3/21/2014	<0.50	<0.50	<0.50	<0.50	1.3	<0.50	<0.50	39	<0.50	<0.50	<0.50	<0.50	<0.50	3.4	10
	6/25/2014	<0.50	<0.50	<0.50	<0.50	<5	<0.50	<0.50	14	<0.50	<0.50	1.3	<0.50	<0.50	8	2.3
	9/30/2014	<0.50	28	<0.50	<0.50	<5	<0.50	<0.50	20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	3.6
	12/16/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	33	<0.50	<0.50	<0.50	<0.50	<0.50	2.2	1.9
	3/19/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	26.5	<0.50	<0.50	8.4	<0.50	<0.50	5.8	5.6
	6/17/2015	<0.50	2.2	<0.50	<0.50	<0.50	<0.50	<0.50	3.2	<0.50	<0.50	0.63	<0.50	<0.50	0.64	<0.50
	9/24/2015	<0.50	24.6	<0.50	<0.50	<0.50	<0.50	<0.50	4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.3
	12/8/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.73	199	<0.50	<0.50	29.5	<0.50	<0.50	43.2	32.3
	12/8/2015 DUP	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.68	175	<0.50	<0.50	27.1	<0.50	<0.50	38.5	28.4
	3/8/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	4	<0.50	<0.50	9.9	<0.50	<0.50	3.1	<0.50
	6/17/2016	<0.50	7.5	<0.50	<0.50	<0.50	<0.50	<0.50	23.3	<0.50	<0.50	7.3	<0.50	<0.50	3.2	<0.50
	9/29/2016	<5	<20	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
	12/14/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	4.3	<0.50	<0.50	11.5	<0.50	<0.50	2.5	1.1
	3/28/2017	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	8.4	<0.5	<0.5	6.5	<0.5	<0.5	5.8	<0.5
	6/14/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<1.0	<0.50	4.2	<0.50	<0.50	16.3	<0.50	<0.50	6.8	<0.50
	9/27/2017	<2.0	<2.0	<0.50	<0.50	1.60	<1.0	<0.50	15.6	<0.50	<0.50	26.7	<0.50	<0.50	15.6	0.64
	11/7/2017	<2.0	<2.0	<0.50	<0.50	0.99	<0.50	<0.50	35.6	<0.50	<0.50	3.5	<0.50	<0.50	9.7	5.30
	3/21/2018	<0.500	<2.50	<0.500	<0.500	<0.500	<0.500	<0.500	1.9	<0.500	<0.500	10.6	0.199 J	<0.500	2.4	0.260 J
	6/29/2018	<0.500	<2.50	<0.500	<0.500	0.56	<0.500	<0.500	45.5	0.174 J	<0.500	21.3	<0.500	<0.500	11.8	1.17
	9/27/2018	<1.00	26.9	<1.00	<1.00	<0.400	<0.400	<0.400	0.562	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	12/7/2018	<1.00	<5.00	<1.00	<1.00	1.03	<0.400	<0.400	129.0	<0.400	<0.500	4.7	<0.400	<0.500	11.7	4.80
	3/26/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	2.01	<0.400	<0.500	0.947	<0.400	<0.500	0.977	<0.400
	6/7/2019	<1.00	<5.00	<1.00	<1.00	0.404	<0.400	<0.400	11.1	<0.400	<0.500	20.4	<0.400	<0.500	8.63	<0.400
	9/26/2019	<1.00	<5.00	<1.00	<1.00	<0.4	<0.400	<0.400	10.7	<0.400	<0.500	0.972	<0.400	<0.500	1.35	1.10
	12/4/2019	<1.00	<5.00	<1.00	<1.00	0.817	<0.400	1.60	632	1.11	<0.500	0.925	<0.400	<0.500	9.85	10.70
	3/12/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	14.3	<0.400	<0.500	18.7	<0.400	<0.500	7.11	2.58
	6/18/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	10.4	<0.400	<0.500	17.3	<0.400	<0.500	18.3	0.41
	10/6/2020	<1.00	8.79	<1.00	<1.00	<0.400	<0.400	<0.400	5.74	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	1.10
	12/10/2020	<2.00	<5.00	<1.00	<1.00	0.499	<0.400	<0.400	38.4	<0.400	<0.500	<0.400	<0.400	<0.500	3.67	4.77
	3/3/2021	<1.00	6.41	<1.00	<1.00	0.664	<0.400	<0.400	10.4	<0.400	<0.500	7.5	<0.400	<0.500	5.55	20.5

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-5 (continued)	6/16/2021	<1.00	<5.00	<1.00	<1.00	6.51	<0.400	0.963	697	4.67	0.684	20.5	<0.400	<0.500	26.5	72.3
	9/15/2021	<1.00	<5.00	<1.00	<1.00	1.06	<0.400	<0.400	20.3	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	7.48
	12/9/2021	<1.00	<5.00	<1.00	<1.00	0.522	<0.400	0.53	89	0.857	<0.500	10.2	<0.400	<0.500	6.02	33.9
	3/9/2022	<1.00	<5.00	<1.00	<1.00	0.620	<0.400	<0.400	81.9	0.640	<0.500	14.4	<0.400	<0.400	7.62	8.04
	06/16/2022	<1.00	<5.00	<1.00	<1.00	0.640	<0.400	<0.400	17.0	<0.400	<0.500	0.760	<0.400	<0.500	2.00	1.93
	9/14/2022	<1.00	<5.00	<1.00	<1.00	0.430	<0.400	<0.400	2.67	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	1.83
	12/8/2022	<10.0	<50.0	<10.0	<10.0	<4.00	<4.00	<4.00	279	<4.00	<5.00	<4.00	<4.00	<5.00	<4.00	30.3
	3/15/2023	<1.00	<5.00	<1.00	<1.00	2.34	<0.400	<0.400	59.5	<0.400	<0.500	<0.400	<0.400	<0.500	<0.500	10.5
	6/15/2023	<1.00	<5.00	<1.00	<1.00	0.59	<0.400	<0.400	87.1	0.51	<0.500	<0.400	<0.400	<0.500	8.12	5.04
	9/12/2023	<4.00	23.9	<1.00	<1.00	0.470	<0.400	<0.400	2.32	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	1.35
	12/15/2023	<1.00	<5.00	<1.00	<1.00	0.920	<0.400	0.500	92.0	<0.400	<0.500	0.550	<0.400	<0.500	17.6	2.60
	3/7/2024	<1.00	<5.00	<1.00	<1.00	0.680	<0.400	<0.400	19.9	<0.400	<0.500	4.28	<0.400	<0.500	4.49	5.03
	6/11/2024	<1.00	<5.00	<1.00	<1.00	0.920	<0.400	<0.400	36.3	<0.400	<0.500	<0.400	<0.400	<0.500	0.800	140
	9/5/2024	<1.00	<5.00	<1.00	<1.00	0.980	<0.400	<0.400	3.16	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	1.84
	12/5/2024	<1.00	<5.00	<1.00	<1.00	1.92	<0.400	<0.400	24.2	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	2.99
MW-6	11/17/1993	--	<1	--	--	<0.50	<0.50	--	1.2	--	--	2.1	<0.50	--	0.54	<1
	9/1/1995	<0.50	<1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--	<0.50	<1
	9/24/1996	<0.50	<2	<0.20	<0.20	<0.20	<0.20	<0.20	0.3	<0.20	<0.20	<0.20	<0.50	--	<0.20	<1
	12/2/1996	<0.50	<0.50	<0.50	<0.20	<0.20	<0.50	<0.20	<0.20	<1	<0.20	<0.50	<1	--	<0.20	<0.20
	11/12/1997	<0.50	<1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.03	<0.50	--	<0.50	<1
	8/11/1999	<1	<5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1	--	1.37	<0.50
	11/16/1999	<1	<2.5	<0.50	<1	<0.50	<0.50	<0.50	0.51	<0.50	<0.50	<0.50	<0.50	--	<0.50	<0.50
	2/29/2000	<1	<5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.654	<1	--	<0.50	<0.50
	6/27/2000	<1	<5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1	--	<0.50	<0.50
	5/29/2001	<1	<5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1	--	<0.50	<0.50
	5/30/2002	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	1.51	<0.50	<0.50	1.31	<0.50	--	<0.50	<0.50
	8/28/2002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	11/8/2002	<1	<0.50	<0.50	<1	0.51	<0.50	<0.50	2.55	<0.50	<0.50	0.97	<0.50	--	0.55	0.52
	1/23/2003	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	5/30/2003	<0.50	<0.50	<0.50	<1	<0.50	<0.50	<0.50	1.5	<0.50	<0.50	3.73	<0.50	--	0.99	<0.50
	11/17/2004	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	0.88	<0.50	<0.50	<0.50	<0.50	--	<0.50	<0.50
	5/17/2005	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--	<0.50	<0.50
	9/12/2007	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--	<0.50	<0.50
	3/6/2008	<1	<0.500	<0.500	<1	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	1.16	<0.500	<0.500	<0.500	<0.500

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-6 (continued)	9/19/2008	<1	<0.500	<0.500	<1	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
	3/24/2009	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/16/2009	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/19/2010	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/23/2010	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	3/9/2011	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/15/2011	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/5/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/13/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/14/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/19/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/21/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	10/2/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/19/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/18/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/7/2016	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/28/2016	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/30/2017	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	9/28/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	11/7/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	7/1/2018	<0.500	<2.50	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
	9/25/2018	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	3/22/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	6/5/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	9/27/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	12/5/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	3/12/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	6/17/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	10/8/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	12/9/2020	<2.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	3/4/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	6/16/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	9/15/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	12/9/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-6 (continued)	3/8/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	6/14/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	9/15/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	0.549	<0.400	<0.500	<0.400	<0.400
	12/6/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	3/14/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	6/14/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	9/13/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
	12/13/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
	3/6/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
	6/12/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.200
	9/6/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
	12/5/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
MW-7	12/2/1996	81	<50	<50	39	<30	<50	110	110	<100	<20	73,000	1,900	--	7,600	<50
	11/12/1997	<500	<1	<500	<500	<500	<500	<500	<500	<500	<500	36,400	<500	--	7,670	<1
	8/11/1999	<1	<5	<500	<500	<500	<500	<500	<500	<500	<500	49,000	1,210	--	4,650	<500
	11/16/1999	<100	<250	<50	<100	<50	<50	92	353	<50	<50	54,800	914	--	5,320	<50
	2/28/2000	<1	<5	<500	<500	<500	<500	<500	<500	<500	<500	52,400	<1	--	4,060	<500
	6/28/2000	<1	<5	<500	<500	<500	<500	<500	<500	<500	<500	54,300	<1	--	3,390	<500
	8/31/2000	<500	<2	<250	<250	<250	<250	<250	<250	<250	<250	50,900	824	--	3,960	<250
	11/30/2000	<500	<2	<250	<250	<250	<250	<250	<250	<250	<250	33,500	520	--	3,560	<250
	2/27/2001	<500	<2	<250	<250	<250	<250	<250	386	<250	<250	26,700	<500	--	3,290	<250
	5/30/2001	<200	<1,000	<100	<100	<100	<100	<100	374	<100	<100	20,400	214	--	2,820	<100
	9/25/2001	<25	<25	<25	<25	28	<25	35	350	<25	<25	19,000	260	--	2,500	<25
	12/17/2001	<100	<50	<50	<50	84.6	<50	<50	506	<50	<50	10,100	200	--	1,960	<50
	3/18/2002	<50	<25	<25	<50	<25	<25	<25	206	<25	<25	7,250	71	--	1,020	<25
	5/31/2002	<50	<25	<25	<50	<25	<25	<25	42.5	<25	<25	5,500	<25	--	311	<25
	8/29/2002	<50	<25	<25	<50	<25	<25	50.5	93	<25	<25	4,940	44.5	--	634	<25
	11/7/2002	<50	<25	<25	<50	<25	<25	<25	123	<25	<25	5,810	43	--	758	<25
	1/23/2003	<20	<10	<10	<20	<10	<10	<10	59.8	<10	<10	2,010	14	--	282	<10
	5/28/2003	<10	<5	<5	<5	6.3	<5	<5	<5	<5	<5	1,080	10.9	--	67.9	<5
	11/11/2003	<20	<20	<20	<20	40.2	<20	<20	246	<20	<20	2,460	62	--	599	<20
	1/27/2004	<20	<10	<10	<20	17	<10	<10	105	<10	<10	3,510	33	--	380	<10
	5/4/2004	<20	<20	<20	<20	<20	<20	<20	72.4	<20	<20	3,940	22	--	323	<20
	11/16/2004	<50	<50	<50	<50	<50	<50	<50	99	<50	<50	8,000	<50	--	520	<50

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-7 (continued)	3/24/2005	<50	<25	<25	<50	<25	<25	<25	98.5	<25	<25	3,930	26	--	404	<25
	5/18/2005	<10	<5	<5	<10	<5	<5	<5	72.7	<5	<5	1,310	12.4	--	180	<5
	05/18/2005 DUP	<10	<5	<5	<10	<5	<5	<5	69.4	<5	<5	1,250	12.4	--	179	<5
	8/18/2005	<20	<10	<10	<20	<10	<10	<10	54.8	<10	<10	1,800	<10	--	237	<10
	11/15/2005	<20	<10	<10	<20	15.2	<10	<10	107	<10	<10	1,960	29.6	--	333	<10
	2/21/2006	<20	<10	<10	<20	<10	<10	<10	<10	<10	<10	2,640	<10	--	139	<10
	6/5/2006	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	26,100	<200	--	568	<200
	9/6/2006	<100	<50	<50	<100	<50	<50	<50	56	<50	<50	12,800	<50	--	422	<50
	12/6/2006	<200	<100	<100	<200	<100	<100	<100	<100	<100	<100	24,600	<100	--	408	<100
	2/7/2007	<200	<100	<100	<200	<100	<100	<100	<100	<100	<100	31,500	<100	--	352	<100
	5/22/2007	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	29,100	<200	--	450	<200
	9/12/2007	<200	<100	<100	<200	<100	<100	<100	<100	<100	<100	21,300	<100	--	366	<100
	12/13/2007	<500	<250	<250	<500	<250	<250	<250	345	<250	<250	18,700	<250	--	1,040	280
	03/06/2008[7.]	<1	<0.500	<0.500	<1	5.06	2.57	3.99	42.3	2.9	<0.500	26,300	38.7	<0.500	430	<0.500
	6/10/2008	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	27,000	<500	<500	575	<500
	9/18/2008	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	23,200	<500	<500	530	<500
	12/11/2008	<50	<50	<50	<50	<50	<50	<50	130	<50	<50	15,000	<50	<50	450	<50
	12/11/2008 DUP	<50	<50	<50	<50	<50	<50	<50	120	<50	<50	14,000	<50	<50	430	<50
	3/23/2009	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	420	<0.50	<0.50	3,330	<0.50	<0.50	270	<0.50
	6/18/2009	<3	<3	<3	<3	3.7	<3	<3	520	<3	<3	890	5.2	<3	350	<3
	06/18/2009 DUP	<2.5	<2.5	<2.5	<2.5	3.8	<2.5	<2.5	520	<2.5	<2.5	910	5.6	<2.5	360	<2.5
	9/18/2009	<3	<3	<3	<3	9.8	<3	5.5	930	<3	<3	2,600	10	<3	250	<3
	09/18/2009 DUP	<3	<3	<3	<3	8.7	<3	4.8	850	<3	<3	2,600	9.3	<3	240	<3
	12/18/2009	<5	<5	<5	<5	6.7	<5	<5	330	<5	<5	1,600	6.7	<5	160	<5
	12/18/2009 DUP	<5	<5	<5	<5	6.6	<5	<5	320	<5	<5	1,500	6.6	<5	160	<5
	3/16/2010	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	180	<2.5	<2.5	510	<2.5	<2.5	52	<2.5
	03/16/2010 DUP	<2	<2	<2	<2	<2	<2	<2	180	<2	<2	560	<2	<2	55	<2
	6/17/2010	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	360	<1.5	<1.5	200	2.7	<1.5	72	<1.5
	06/17/2010 DUP	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	360	<1.5	<1.5	200	2.8	<1.5	72	<1.5
	9/23/2010	<3	<3	<3	<3	3.3	<3	<3	690	<3	<3	750	3.5	<3	110	4.8
	09/23/2010 DUP	<3	<3	<3	<3	3.1	<3	<3	700	<3	<3	740	3.8	<3	100	4.1
	12/10/2010	<0.9	<0.9	<0.9	<0.9	1.8	<0.9	<0.9	94	<0.9	<0.9	220	1.6	<0.9	36	1.7
	12/10/2010 DUP	<0.9	<0.9	<0.9	<0.9	1.7	<0.9	<0.9	98	<0.9	<0.9	230	1.7	<0.9	36	1.8
	3/11/2011	<0.90	<0.90	<0.90	<0.90	6.6	<0.90	1.6	150	0.91	<0.90	420	5.1	<0.90	82	9.3

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-7	03/11/2011 DUP	<0.90	<0.90	<0.90	<0.90	6.5	<0.90	1.9	150	1.1	<0.90	400	5.2	<0.90	80	9.7
(continued)	6/7/2011	<2.5	<2.5	<2.5	<2.5	4.8	<2.5	3.4	1,400	3.3	<2.5	430	4	<2.5	110	7.9
	06/07/2011 DUP	<6	<6	<6	<6	<6	<6	<6	1,400	<6	<6	400	<6	<6	110	7.8
	9/19/2011	<5	<5	<5	<5	<5	<5	<5	1,300	<5	<5	410	<5	<5	84	78
	09/19/2011 DUP	<7	<7	<7	<7	<7	<7	<7	1,300	<7	<7	420	<7	<7	87	81
	12/7/2011	<5	<5	<5	<5	8	<5	6.9	3,400	6.8	<5	200	<5	<5	32	110
	12/07/2011 DUP	<6	<6	<6	<6	7.6	<6	7.8	3,400	6.8	<6	210	<6	<6	32	110
	3/12/2012	<5	<5	<5	<5	9.2	<5	<5	1,600	<5	<5	41	<5	<5	8.6	600
	03/12/2012 DUP	<7	<7	<7	<7	9.5	<7	<7	1,600	<7	<7	42	<7	<7	8.9	660
	06/22/2012	<2	9.2	<2	<2	9.8	<2	<2	540	<2	<2	24	<2	<2	5.1	300
	06/22/2012 DUP	<2	8.1	<2	<2	9	<2	<2	500	<2	<2	25	<2	<2	5.2	290
	9/14/2012	<0.50	6.3	<0.50	<0.50	3.8	<0.50	0.54	180	0.7	<0.50	28	<0.50	0.52	5.2	80
	09/14/2012 DUP	<0.50	5.7	<0.50	<0.50	3.8	<0.50	<0.50	180	0.78	<0.50	28	<0.50	<0.50	5.3	79
	12/14/2012	<0.50	6.3	<0.50	<0.50	1.9	<0.50	<0.50	130	<0.50	<0.50	8.2	<0.50	<0.50	5.3	16
	12/14/2012 DUP	<0.50	5.6	<0.50	<0.50	1.8	<0.50	<0.50	130	<0.50	<0.50	11	<0.50	<0.50	6.8	18
	3/15/2013	<0.50	5.2	<0.50	<0.50	0.68	<0.50	<0.50	110	<0.50	<0.50	1.5	<0.50	<0.50	0.75	11
	03/15/2013 DUP	<0.50	5.4	<0.50	<0.50	0.69	<0.50	<0.50	110	<0.50	<0.50	1.6	<0.50	<0.50	0.78	11
	6/14/2013	<0.50	2	<0.50	<0.50	<0.50	<0.50	<0.50	57	<0.50	<0.50	1.6	<0.50	<0.50	<0.50	15
	06/14/2013 DUP	<0.50	2	<0.50	<0.50	0.51	<0.50	<0.50	58	<0.50	<0.50	1.5	<0.50	<0.50	<0.50	16
	9/20/2013	<0.50	3	<0.50	<0.50	1.5	<0.50	<0.50	56	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	10
	09/20/2013 DUP	<0.50	3	<0.50	<0.50	1.5	<0.50	<0.50	56	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	10
	12/16/2013	<0.50	2.4	<0.50	<0.50	2.9	<0.50	<0.50	6.9	<0.50	<0.50	0.51	<0.50	<0.50	<0.50	9.1
	12/16/2013 DUP	<0.50	2.4	<0.50	<0.50	2.4	<0.50	<0.50	6.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	8.9
	3/24/2014	<0.50	0.97	<0.50	<0.50	1.6	<0.50	<0.50	13	<0.50	<0.50	9.8	<0.50	<0.50	2.6	7.6
	3/24/2014 DUP	<0.50	1	<0.50	<0.50	1.6	<0.50	<0.50	13	<0.50	<0.50	9.4	<0.50	<0.50	2.5	7.7
	6/25/2014	<0.50	1.3	<0.50	<0.50	0.17	<0.50	<0.50	0.59	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.3
	6/25/2014 DUP	<0.50	0.15	<0.50	<0.50	0.19	<0.50	<0.50	0.62	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.4
	9/30/2014	<0.50	1.9	<0.50	<0.50	2.7	<0.50	<0.50	4.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	9.8
	9/30/2014 DUP	<0.50	1.7	<0.50	<0.50	2.6	<0.50	<0.50	4.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	8.8
	12/15/2014	<0.50	1.2	<0.50	<0.50	3.4	<0.50	<0.50	12	<0.50	<0.50	<0.50	<0.50	<0.50	1	15
	12/15/2014 DUP	<0.50	1.6	<0.50	<0.50	4.5	<0.50	<0.50	16	<0.50	<0.50	0.61	<0.50	<0.50	1.5	21
	3/20/2015	<0.50	<0.50	<0.50	<0.50	1	<0.50	<0.50	8.4	<0.50	<0.50	<0.50	<0.50	<0.50	1.1	1
	3/20/2015 DUP	<0.50	<0.50	<0.50	<0.50	1	<0.50	<0.50	7.7	<0.50	<0.50	0.53	<0.50	<0.50	1	10.4
	6/17/2015	<0.50	0.72	<0.50	<0.50	2.6	<0.50	<0.50	12	<0.50	<0.50	1.2	<0.50	<0.50	1	12.6

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-7 (continued)	6/17/2015 DUP	<0.50	0.71	<0.50	<0.50	2.6	<0.50	<0.50	12.2	<0.50	<0.50	0.96	<0.50	<0.50	1	12.3
	9/24/2015	<0.50	<0.50	<0.50	<0.50	1.7	<0.50	<0.50	12.4	<0.50	<0.50	4.5	<0.50	<0.50	4.2	4.6
	9/24/2015 DUP	<0.50	<0.50	<0.50	<0.50	1.8	<0.50	<0.50	12.7	<0.50	<0.50	4.5	<0.50	<0.50	4.2	4.8
	12/8/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	4.1	<0.50	<0.50	9.4	<0.50	<0.50	1.7	1.9
	6/17/2016	<0.50	<2	<0.50	<0.50	0.6	<0.50	<0.50	10.9	<0.50	<0.50	0.69	<0.50	<0.50	2.1	5.4
	6/17/2016 DUP	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	11	<0.50	<0.50	0.62	<0.50	<0.50	2	5.4
	9/29/2016	<0.50	<2	<0.50	<0.50	1.1	<0.50	<0.50	10.9	<0.50	<0.50	<0.50	<0.50	<0.50	5.5	5.5
	9/29/2016 DUP	<0.50	<2	<0.50	<0.50	1.1	<0.50	<0.50	10.9	<0.50	<0.50	<0.50	<0.50	<0.50	6	5.5
	12/14/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	9.2	<0.50	<0.50	0.65	<0.50	<0.50	<0.50	0.98
	12/14/2016 DUP	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	9.4	<0.50	<0.50	0.78	<0.50	<0.50	<0.50	1
	3/28/2017	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.1	<0.5	<0.5	0.73	<0.5
	3/28/2017 DUP	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	<0.5	<0.5	0.69	<0.5
	6/14/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<1.0	<0.50	2.5	<0.50	<0.50	<0.50	<0.50	<0.50	0.55	2.5
	6/14/2017 DUP	<2.0	<2.0	<0.50	<0.50	<0.50	<1.0	<0.50	2.4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2.5
	9/27/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<1.0	<0.50	1.7	<0.50	<0.50	2.60	<0.50	<0.50	1.60	1.6
	9/27/2017 DUP	<2.0	<2.0	<0.50	<0.50	<0.50	<1.0	<0.50	1.7	<0.50	<0.50	2.60	<0.50	<0.50	1.60	1.7
	11/7/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	2.6	<0.50	<0.50	6.30	<0.50	<0.50	7.80	1.4
	11/7/2017 DUP	<2.0	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	2.5	<0.50	<0.50	3.80	<0.50	<0.50	6.40	1.5
	3/21/2018	<0.500	<2.50	<0.500	<0.500	0.495 J	<0.500	<0.500	17.6	<0.500	<0.500	0.228 J	<0.500	<0.500	2.86	4.9
	3/21/2018 DUP	<0.500	<2.50	<0.500	<0.500	0.55	<0.500	<0.500	17.2	<0.500	<0.500	0.284 J	<0.500	<0.500	2.99	4.9
	6/29/2018	<0.500	<2.50	<0.500	<0.500	0.461 J	<0.500	<0.500	5.5	<0.500	<0.500	9.89	<0.500	<0.500	3.53	1.5
	6/29/2018 DUP	<0.500	<2.50	<0.500	<0.500	0.437 J	<0.500	<0.500	5.4	<0.500	<0.500	8.94	<0.500	<0.500	3.48	1.6
	9/27/2018	<1.00	<5.00	<1.00	<1.00	1.23	<0.400	<0.400	8.48	<0.400	<0.500	6.50	<0.400	<0.500	10.8	2.08
	12/7/2018	<1.00	<5.00	<1.00	<1.00	3.97	<0.400	0.43	15.4	<0.400	<0.500	30.40	<0.400	<0.500	18.10	1.6
	12/7/2018 DUP	<1.00	<5.00	<1.00	<1.00	3.84	<0.400	0.47	17.7	<0.400	<0.500	26.60	<0.400	<0.500	16.40	1.1
	3/20/2019	<1.00	<5.00	<1.00	<1.00	1.87	<0.400	<0.400	22.2	<0.400	<0.500	22.3	<0.400	<0.500	10.8	0.605
	3/20/2019 DUP	<1.00	<5.00	<1.00	<1.00	1.84	<0.400	<0.400	22.8	<0.400	<0.500	22.8	<0.400	<0.500	10.7	0.553
	6/5/2019	<1.00	<5.00	<1.00	<1.00	2.91	<0.400	0.559	20.2	<0.400	<0.500	28.1	<0.400	<0.500	12.7	1.11
	6/5/2019 DUP	<1.00	<5.00	<1.00	<1.00	2.87	<0.400	0.494	20.2	<0.400	<0.500	28.4	<0.400	<0.500	12.7	1.15
	9/26/2019	<1.00	<5.00	<1.00	<1.00	2.98	<0.400	0.65	20.1	<0.400	<0.500	41.7	<0.400	<0.500	17.9	0.42
	9/26/2019 DUP	<1.00	<5.00	<1.00	<1.00	2.95	<0.400	0.672	21	<0.400	<0.500	39.6	<0.400	<0.500	17.8	<0.400
	12/3/2019	<1.00	<5.00	<1.00	<1.00	4.61	<0.400	0.837	29.4	<0.400	<0.500	65.8	<0.400	<0.500	31	<0.400
	12/3/2019 DUP	<1.00	<5.00	<1.00	<1.00	4.58	<0.400	0.839	29.7	<0.400	<0.500	66.1	<0.400	<0.500	31.8	<0.400
	3/11/2020	<1.00	<5.00	<1.00	<1.00	0.936	<0.400	<0.400	26.5	<0.400	<0.500	45.8	<0.400	<0.500	14.1	0.476
	3/11/2020 DUP	<1.00	<5.00	<1.00	<1.00	0.912	<0.400	<0.400	25.7	<0.400	<0.500	47.4	<0.400	<0.500	14.3	0.44
	6/18/2020	<1.00	<5.00	<1.00	<1.00	0.78	<0.400	<0.400	10.2	<0.400	<0.500	43	<0.400	<0.500	10	<0.400
	6/18/2020 DUP	<1.00	<5.00	<1.00	<1.00	0.85	<0.400	<0.400	11.1	<0.400	<0.500	40.8	<0.400	<0.500	10.1	<0.400

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-7 (continued)	10/8/2020	<1.00	<5.00	<1.00	<1.00	1.97	<0.400	0.481	23.1	<0.400	<0.500	49.5	<0.400	<0.500	19.7	<0.400
	10/8/2020 DUP	<1.00	<5.00	<1.00	<1.00	1.96	<0.400	0.431	23.6	<0.400	<0.500	50.2	<0.400	<0.500	19.6	<0.400
	12/9/2020	<2.00	<5.00	<1.00	<1.00	7.05	<0.400	1.41	56.3	0.552	<0.500	108	<0.400	<0.500	45.4	<0.400
	12/9/2020 DUP	<2.00	<5.00	<1.00	<1.00	6.83	<0.400	1.38	55.6	0.519	<0.500	106	<0.400	<0.500	44.5	<0.400
	3/3/2021	<1.00	<5.00	<1.00	<1.00	1.28	<0.400	<0.400	20	<0.400	<0.500	56.4	<0.400	<0.500	22.4	<0.400
	3/3/2021 DUP	<1.00	<5.00	<1.00	<1.00	1.24	<0.400	<0.400	19.2	<0.400	<0.500	54.3	<0.400	<0.500	22.2	<0.400
	6/16/2021	<1.00	<5.00	<1.00	<1.00	4.3	<0.400	0.927	35.5	<0.400	<0.500	78	<0.400	<0.500	39.6	0.45
	6/16/2021 DUP	<1.00	<5.00	<1.00	<1.00	4.12	<0.400	0.825	32.6	<0.400	<0.500	72.8	<0.400	<0.500	37.3	0.426
	9/14/2021	<1.00	<5.00	<1.00	<1.00	2.11	<0.400	0.46	25.8	<0.400	<0.500	47.6	<0.400	<0.500	20.6	<0.400
	9/14/2021 DUP	<1.00	<5.00	<1.00	<1.00	2.24	<0.400	0.50	26.7	<0.400	<0.500	46	<0.400	<0.500	21.1	<0.400
	12/8/2021	<1.00	<5.00	<1.00	<1.00	4.67	<0.400	0.87	39.1	<0.400	<0.500	118	0.59	<0.500	51.2	0.537
	12/8/2021 DUP	<1.00	<5.00	<1.00	<1.00	4.56	<0.400	0.86	39.1	<0.400	<0.500	116	0.57	<0.500	51.4	0.531
	3/9/2022	<1.00	<5.00	<1.00	<1.00	3.24	<0.400	0.950	37.2	0.530	<0.500	78.8	<0.400	<0.500	38.2	1.20
	3/9/2022 DUP	<1.00	<5.00	<1.00	<1.00	3.34	<0.400	1.01	38.4	0.550	<0.500	84.9	<0.400	<0.400	40.5	1.26
	6/14/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	3.76	<0.400	<0.500	77.0	0.77	<0.500	25.4	<0.400
	6/14/2022 DUP	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	3.66	<0.400	<0.500	85.6	0.79	<0.500	27.2	<0.400
	9/15/2022	<1.00	<5.00	<1.00	<1.00	1.26	<0.400	<0.400	31.30	<0.400	<0.500	30.9	<0.400	<0.500	13.0	0.66
	9/15/2022 DUP	<1.00	<5.00	<1.00	<1.00	1.33	<0.400	<0.400	32.2	<0.400	<0.500	36.7	<0.400	<0.500	15.6	0.620
	12/7/2022	<1.00	<5.00	<1.00	<1.00	4.22	<0.400	0.93	41.1	0.440	<0.500	118	0.57	<0.500	46.3	0.560
	12/7/2022 DUP	<1.00	<5.00	<1.00	<1.00	4.49	<0.400	1.07	43.3	0.500	<0.500	124	0.65	<0.500	48.5	0.540
	3/14/2023	<1.00	<5.00	<1.00	<1.00	1.97	<0.400	0.430	22.1	<0.400	<0.500	67.0	<0.400	<0.500	27.3	0.820
	3/14/2023 DUP	<1.00	<5.00	<1.00	<1.00	1.95	<0.400	0.460	22.6	<0.400	<0.500	63.4	<0.400	<0.500	27.8	0.800
	6/15/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	3.3	<0.400	<0.500	19.0	<0.400	<0.500	5.8	<0.400
	6/15/2023 DUP	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	3.0	<0.400	<0.500	18.4	<0.400	<0.500	5.7	<0.400
	9/12/2023	<4.00	<5.00	<1.00	<1.00	2.30	<0.400	0.620	26.8	<0.400	<0.500	65.5	<0.400	<0.500	30.5	0.250
	9/12/2023 DUP	<4.00	<5.00	<1.00	<1.00	2.47	<0.400	0.640	28.7	<0.400	<0.500	68.8	0.410	<0.500	32.7	0.280
	12/14/2023	<1.00	<5.00	<1.00	<1.00	5.53	<0.400	1.01	44.9	0.790	<0.500	123	1.00	<0.500	52.0	0.690
	12/14/2023 DUP	<1.00	<5.00	<1.00	<1.00	5.88	<0.400	0.960	47.0	0.810	<0.500	122	1.06	<0.500	53.0	0.720
	3/7/2024	<1.00	<5.00	<1.00	<1.00	1.92	<0.400	0.570	22.2	0.430	<0.500	70	<0.400	<0.500	36.3	0.320
	3/7/2024 DUP	<1.00	<5.00	<1.00	<1.00	1.69	<0.400	0.540	20.8	<0.400	<0.500	76.8	<0.400	<0.500	34.5	0.280
	6/11/2024	<1.00	<5.00	<1.00	<1.00	6.74	<0.400	1.630	58.7	0.720	<0.400	152	1.50	<0.500	87.9	0.660
	6/11/2024 DUP	<1.00	<5.00	<1.00	<1.00	6.34	<0.400	1.420	53.8	0.720	<0.400	179	1.40	<0.500	80.5	0.560
	9/4/2024	<1.00	<5.00	<1.00	<1.00	2.31	<0.400	0.490	29.8	<0.400	<0.500	83.4	0.550	<0.500	32.0	<0.200
	9/4/2024 DUP	<1.00	<5.00	<1.00	<1.00	2.18	<0.400	0.510	28.3	<0.400	<0.500	80.7	0.500	<0.500	30.0	0.200
	12/3/2024	<2.00	<10.0	<2.00	<2.00	9.32	<0.800	2.30	87.8	1.620	<1.00	251	2.46	<1.00	122.0	1.26
	12/3/2024 DUP	<2.00	<10.0	<2.00	<2.00	10.30	<0.800	2.32	95.8	1.720	<1.00	278	2.62	<1.00	133.0	1.30

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-8	12/2/1996	<0.50	<0.50	<0.50	<0.20	1	<0.50	0.2	6.5	<1	<0.20	2.3	<1	--	12	<0.50
	11/13/1997	<1	<2	<1	<1	1.72	<1	2.44	9.32	<1	<1	52.4	4	--	38.6	<2
	8/11/1999	<1	<5	<0.50	<0.50	0.75	<0.50	<0.50	1.82	<0.50	<0.50	46.2	4.79	--	24.3	<0.50
	11/16/1999	<1	<2.5	<0.50	<1	1.22	<0.50	<0.50	2.11	<0.50	<0.50	39.8	1.55	--	15.5	<0.50
	2/28/2000	<1	<5	<0.50	<0.50	0.929	<0.50	0.721	2.38	<0.50	<0.50	41.8	3.7	--	20.5	<0.50
	6/27/2000	<1	<5	<0.50	<0.50	<0.50	<0.50	<0.50	1.46	<0.50	<0.50	33.7	2.88	--	17.5	<0.50
	5/30/2001	<100	<5	<0.50	<0.50	0.611	<0.50	<0.50	0.601	<0.50	<0.50	11.8	<1	--	5.46	<0.50
	5/30/2002	<1	<0.50	<0.50	<1	1.09	<0.50	<0.50	2.02	<0.50	<0.50	12.1	<0.50	--	4.47	<0.50
	5/28/2003	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	0.84	<0.50	<0.50	40.4	1.55	--	11.2	<0.50
	11/2/2004	<1	<0.50	<0.50	<1	1.02	<0.50	<0.50	1.99	<0.50	<0.50	8.88	<0.50	--	2.4	<0.50
	11/16/2004	<0.50	<0.50	<0.50	<0.50	0.9	<0.50	<0.50	1.6	<0.50	<0.50	0.6	<0.50	--	3.1	<0.50
	3/23/2005	<1	<0.50	<0.50	<1	0.78	<0.50	<0.50	1.82	<0.50	<0.50	13.5	0.53	--	2.41	<0.50
	5/17/2005	<1	<0.50	<0.50	<1	1.1	<0.50	<0.50	6.45	<0.50	<0.50	13.2	<0.50	--	6.92	<0.50
	05/17/2005 DUP	<1	<0.50	<0.50	<1	1.19	<0.50	<0.50	6.97	<0.50	<0.50	11.4	<0.50	--	6.39	<0.50
	11/16/2005	<1	<0.500	<0.500	<1	0.78	<0.500	<0.500	4.19	<0.500	<0.500	14.8	0.65	--	2.99	<0.500
	6/5/2006	<1	<1	<1	<1	1.26	<1	<1	19.8	<1	<1	20.7	<1	--	11.4	<1
	12/6/2006	<1	<0.50	<0.50	<1	1.11	<0.50	<0.50	14.2	<0.50	<0.50	18.3	<0.50	--	5.08	<0.50
	5/23/2007	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	22.8	<1	--	2.32	<1
	9/12/2007	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	0.52	<0.50	<0.50	12.4	0.6	--	0.65	<0.50
	12/12/2007	<1	<0.50	<0.50	<1	1.03	<0.50	<0.50	13.7	<0.50	<0.50	8.27	<0.50	--	2.71	<0.50
	3/6/2008	<1	<0.500	<0.500	<1	<0.500	<0.500	<0.500	1.64	<0.500	<0.500	19.1 J	<0.500	<0.500	1.4	<0.500
	6/10/2008[7.]	<1	<1	<1	<1	1.07	<1	<1	10.5	<1	<1	10.8	<1	<1	3.87	<1
	9/18/2008	<1	<0.500	<0.500	<1	<0.500	<0.500	<0.500	1.58	<0.500	<0.500	13.2	0.5	<0.500	1.21	<0.500
	12/9/2008	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.6	<0.50	<0.50	9.1	<0.50	<0.50	0.57	<0.50
	12/09/2008 DUP	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.5	<0.50	<0.50	9.7	<0.50	<0.50	0.59	<0.50
	3/26/2009	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2	<0.50	<0.50	8	<0.50	<0.50	0.56	<0.50
	6/17/2009	<0.50	<0.50	<0.50	<0.50	0.77	<0.50	<0.50	12	<0.50	<0.50	4.8	<0.50	<0.50	1.4	<0.50
	9/16/2009	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.1	<0.50	<0.50	11	<0.50	<0.50	<0.50	<0.50
	12/16/2009	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	3.2	<0.50	<0.50	8.4	<0.50	<0.50	0.51	<0.50
	3/18/2010	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2	<0.50	<0.50	11	<0.50	<0.50	<0.50	<0.50
	6/14/2010	<0.50	<0.50	<0.50	<0.50	1.1	<0.50	<0.50	20	0.52	<0.50	4.2	<0.50	<0.50	1.1	<0.50
	9/22/2010	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.7	<0.5	<0.5	8.1	<0.5	<0.5	<0.5	<0.5
	12/8/2010	<0.5	<0.5	<0.5	<0.5	1.4	<0.5	<0.5	20	1.1	<0.5	2.5	<0.5	<0.5	0.6	<0.5
	3/11/2011	<0.50	<0.50	<0.50	<0.50	0.93	<0.50	<0.50	20	0.58	<0.50	7.9	<0.50	<0.50	0.95	<0.50

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-8	6/8/2011	<0.5	<0.5	<0.5	<0.5	1.5	<0.5	<0.5	40	0.82	<0.5	4	<0.5	<0.5	1.1	<0.5
(continued)	9/15/2011	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.3	<0.50	<0.50	10	<0.50	<0.50	0.54	<0.50
	12/8/2011	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.54	<0.50	<0.50	10	<0.50	<0.50	<0.50	<0.50
	3/6/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	7.5	<0.50	<0.50	6.8	<0.50	<0.50	0.56	<0.50
	6/20/2012	<0.5	<0.5	<0.5	<0.5	0.89	<0.5	<0.5	22	<0.5	<0.5	6.1	<0.5	<0.5	1.4	<0.5
	9/12/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.4	<0.50	<0.50	7	<0.50	<0.50	<0.50	<0.50
	12/12/2012	<0.50	<0.50	<0.50	<0.50	1.3	<0.50	<0.50	36	1	<0.50	4.8	<0.50	<0.50	1	<0.80
	3/13/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.94	<0.50	<0.50	7.2	<0.50	<0.50	<0.50	<0.50
	6/13/2013	<0.50	<0.50	<0.50	<0.50	0.84	<0.50	<0.50	18	0.64	<0.50	6.2	<0.50	<0.50	0.76	<0.50
	9/19/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	6.6	<0.50	<0.50	4.8	<0.50	<0.50	<0.50	<0.50
	12/12/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	5.5	0.54	<0.50	4	<0.50	<0.50	<0.50	<0.50
	3/19/2014	<0.50	<0.50	<0.50	<0.50	1.1	<0.50	<0.50	21	1.1	<0.50	2.3	<0.50	<0.50	0.85	<0.50
	6/24/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	3.1	<0.50	<0.50	5.6	<0.50	<0.50	<0.50	<0.50
	9/26/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	3.8	<0.50	<0.50	6.1	<0.50	<0.50	<0.50	<0.50
	3/18/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.3	<0.50	<0.50	7.6	<0.50	<0.50	<0.50	<0.50
	6/17/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	5.9	<0.50	<0.50	<0.50	<0.50
	9/18/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2	<0.50	<0.50	6.3	<0.50	<0.50	<0.50	<0.50
	12/7/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2	<0.50	<0.50	1.1	<0.50	<0.50	<0.50	<0.50
	3/8/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	1.3	<0.50	<0.50	6.4	<0.50	<0.50	<0.50	<0.50
	6/15/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	4.1	<0.50	<0.50	<0.50	<0.50
	9/27/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	5.3	<0.50	<0.50	<0.50	<0.50
	12/14/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	3.1	<0.50	<0.50	3.8	<0.50	<0.50	<0.50	<0.50
	3/30/2017	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	35.7	0.96	<0.5	2.3	<0.5	<0.5	0.57	<0.5
	6/13/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<1.0	<0.50	14.3	<0.50	<0.50	4.3	<0.50	<0.50	0.56	<0.50
	9/25/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	4.3	<0.50	<0.50	<0.50	<0.50
	11/6/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	1.2	<0.50	<0.50	4.4	<0.50	<0.50	<0.50	<0.50
	3/19/2018	<0.500	<2.50	<0.500	<0.500	<0.500	<0.500	<0.500	0.6	<0.500	<0.500	4.2	<0.500	<0.500	<0.500	<0.500
	6/29/2018	<0.500	<2.50	<0.500	<0.500	0.139 J	<0.500	<0.500	2.6	<0.500	<0.500	5.4	<0.500	<0.500	0.368 J	<0.500
	9/25/2018	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	3.76	<0.400	<0.500	<0.400	<0.400
	12/7/2018	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	3.0	<0.400	<0.500	<0.400	<0.400
	3/22/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	3.83	<0.400	<0.500	<0.400	<0.400
	6/3/2019	<1.00	<5.00	<1.00	<1.00	0.430	<0.400	<0.400	6.57	<0.400	<0.500	2.05	<0.400	<0.500	<0.400	<0.400
	9/26/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	4.2	<0.400	<0.500	<0.400	<0.400
	12/3/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	4.06	<0.400	<0.500	<0.400	<0.400

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-8 (continued)	3/11/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	3.44	<0.400	<0.500	0.929	<0.400	<0.500	<0.400	<0.400
	6/17/2020	<1.00	<5.00	<1.00	<1.00	0.770	<0.400	<0.400	12.1	0.45	<0.500	3.51	<0.400	<0.500	0.43	<0.400
	10/6/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	4.56	<0.400	<0.500	<0.400	<0.400
	12/10/2020	<2.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	3.97	<0.400	<0.500	<0.400	<0.400
	3/3/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	0.575	<0.400	<0.500	2.71	<0.400	<0.500	<0.400	<0.400
	6/16/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	1.24	<0.400	<0.500	6.32	<0.400	<0.500	<0.400	<0.400
	9/15/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	4.64	<0.400	<0.500	<0.400	<0.400
	12/9/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	0.50	<0.400	<0.500	3.8	<0.400	<0.500	<0.400	<0.400
	3/8/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	4.08	<0.400	<0.500	3.90	<0.400	<0.500	<0.400	<0.400
	06/15/2022	<1.00	<5.00	<1.00	<1.00	0.750	<0.400	<0.400	10.6	0.730	<0.500	1.50	<0.400	<0.500	0.410	<0.400
	9/14/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	2.88	<0.400	<0.500	<0.400	<0.400
	12/7/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	0.75	<0.400	<0.500	3.2	<0.400	<0.500	<0.400	<0.400
	3/15/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	3.49	<0.400	<0.500	<0.400	<0.400
	6/13/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	3.43	<0.400	<0.500	2.83	<0.400	<0.500	<0.400	<0.400
	9/12/2023	<4.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	2.78	<0.400	<0.500	<0.400	<0.200
	12/12/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	5.04	<0.400	<0.500	2.92	<0.400	<0.500	<0.400	<0.200
	3/6/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	2.42	<0.400	<0.500	<0.400	<0.200
	6/11/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	6.42	0.47	<0.500	1.64	<0.400	<0.500	<0.400	<0.200
	9/5/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	2.71	<0.400	<0.500	<0.400	<0.200
	12/5/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	3.48	<0.400	<0.500	<0.400	<0.200
MW-9	12/2/1996	<50	<50	<50	<20	<30	<50	<20	<20	<100	<20	5,000	200	--	1,600	<50
	11/13/1997	<50	<100	<50	<50	<50	<50	<50	487	<50	<50	2,890	<50	--	1,840	<100
	8/11/1999	<20	<100	<10	<10	<10	<10	<10	54	<10	<10	1,490	43.2	--	517	<10
	11/16/1999	<20	<50	<10	<20	<10	<10	<10	103	<10	<10	1,730	32	--	305	<10
	2/28/2000	<20	<100	<10	<10	<10	<10	<10	<10	<10	<10	2,040	36.4	--	315	<10
	6/27/2000	<50	<250	<25	<25	<25	<25	<25	<25	<25	<25	1,300	<50	--	298	<25
	8/31/2000	<10	<50	<5	<5	<5	<5	<5	<5	<5	<5	1,560	31.3	--	229	<5
	11/30/2000	<10	<50	<5	<5	21.7	<5	10.5	1,330	11.7	<5	823	26.6	--	528	8.15
	9/25/2001	<2.5	<2.5	<2.5	<2.5	3.8	<2.5	<2.5	9.1	<2.5	<2.5	680	16	--	140	<2.5
	12/17/2001	<5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	306	<5	--	74.2	<2.5
	3/18/2002	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	113	<0.50	--	19.1	<0.50
	5/31/2002	<2	<1	<1	<2	<1	<1	<1	1.22	<1	<1	296	1.44	--	44	<1
	8/29/2002	<2	<1	<1	<2	<1	<1	<1	1.88	<1	<1	294	2.12	--	67.4	<1
	11/7/2002	<5	<2.5	<2.5	<5	<2.5	<2.5	<2.5	17.2	<2.5	<2.5	453	4	--	145	<2.5
	1/23/2003	<2	<1	<1	<2	<1	<1	<1	1.66	<1	<1	205	2.74	--	59.5	<1
	5/28/2003	<1	<0.50	<0.50	<1	1.81	<0.50	<0.50	0.97	<0.50	<0.50	141	2.85	--	27.4	<0.50
	11/11/2003	<5	<5	<5	<5	<5	<5	<5	23.7	<5	<5	401	6.25	--	91.4	<5

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-9 (continued)	1/27/2004	<2	<1	<1	<2	<1	<1	<1	2.58	<1	<1	179	2.54	--	58.1	<1
	5/4/2004	<1	<1	<1	<1	<1	<1	<1	1.09	<1	<1	178	2.56	--	51.9	<1
	8/17/2004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	11/2/2004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	11/15/2004	<25	<25	<25	<25	28	<25	<25	1,200	27	<25	1,800	<25	--	1,000	<25
	3/24/2005	<5	<2.5	<2.5	<5	3.3	<2.5	<2.5	54.2	<2.5	<2.5	675	8	--	239	<2.5
	5/18/2005	<2	<1	<1	<2	<1	<1	<1	2.68	<1	<1	2.41	2.08	--	62.4	<1
	8/18/2005	<5	<2.50	<2.50	<5	<2.50	<2.50	<2.50	20.5 B	<2.50	<2.50	551	7.6	--	209	<2.50
	11/15/2005	<10	<5	<5	<10	27.1	<5	6.8	1,020	18.6	<5	1,040	14.1	--	633	21.2
	2/21/2006	<10	<5	<5	<10	<5	<5	<5	16.7	<5	<5	534	<5	--	165	<5
	6/5/2006	<1	<1	<1	<1	<1	<1	<1	1.47	<1	<1	151	2.6	--	57.3	<1
	9/5/2006	<5	<2.50	<2.50	<5	5.5	<2.50	<2.50	117	3.15	<2.50	698	6.8	--	314	<2.50
	12/6/2006	<5	<2.50	<2.50	<5	2.95	<2.50	<2.50	59	<2.50	<2.50	578	5.55	--	237	<2.50
	2/7/2007	<5	<2.50	<2.50	<5	3.15	<2.50	<2.50	72.6	<2.50	<2.50	591	6.1	--	239	2.65
	5/23/2007	<2	<2	<2	<2	<2	<2	<2	6.32	<2	<2	210	3	--	90.4	<2
	9/12/2007	<2	<1	<1	<2	2.34	<1	<1	47.1	1.44	<1	282	5.12	--	184	<1
	12/13/2007	<5	<2.50	<2.50	<5	<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	253	4.45	--	78.4	<2.50
	3/6/2008	<1	<0.500	<0.500	<1	<0.500	<0.500	<0.500	1.92	<0.500	<0.500	138	3.77	<0.500	61.5	<0.500
	6/10/2008	<1	<1	<1	<1	<1	<1	<1	2.73	<1	<1	297	5.16	<1	87.7	<1
	9/18/2008	<5	<2.50	<2.50	<5	7.05	<2.50	<2.50	172	3.8	<0.5000	524	5.35	<0.500	315	4.15
	12/9/2008	<0.90	<0.90	<0.90	<0.90	3.8	<0.90	1.3	130	2.5	<0.90	270	5.1	<0.90	140	2.3
	3/26/2009	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	5.4	<0.50	<0.50	170	4	<0.50	56	<0.50
	6/17/2009	<0.50	<0.50	<0.50	<0.50	2.7	<0.50	1.1	72	2.8	<0.50	420	4.9	<0.50	180	1.8
	9/17/2009	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	3.1	<0.50	<0.50	170	4.4	<0.50	60	<0.50
	12/17/2009	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.57	<0.50	<0.50	120	2.5	<0.50	43	<0.50
	3/19/2010	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.8	<0.50	<0.50	160	3	<0.50	48	<0.50
	6/16/2010	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	100	1.4	<0.50	36	<0.50
	9/21/2010	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.7	<0.5	<0.5	140	2.9	<0.5	50	<0.5
	12/10/2010	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	100	1.3	<0.5	330	<0.5
	3/11/2011	<0.50	<0.50	<0.50	<0.50	0.66	<0.50	<0.50	17	0.82	<0.50	190	2.7	<0.50	81	0.52
	03/11/2011 DUP	<0.50	<0.50	<0.50	<0.50	0.67	<0.50	<0.50	17	0.85	<0.50	200	2.8	<0.50	84	0.51
	6/10/2011	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.3	<0.5	<0.5	53	1.9	<0.5	31	<0.5
	9/19/2011	<0.50	<0.50	<0.50	<0.50	2.1	<0.50	<0.50	72	2.3	<0.50	230	3.1	<0.50	120	0.78
	12/9/2011	<0.90	<0.90	<0.90	<0.90	53	<0.90	11	1,800	40	<0.90	600	10	<0.90	590	26
	3/12/2012	<0.50	<0.50	<0.50	<0.50	0.66	<0.50	<0.50	20	0.57	<0.50	140	2	<0.50	56	<0.50
	6/22/2012	<0.5	<0.5	<0.5	<0.5	3.3	<0.5	1.1	140	4.3	<0.5	220	3.3	<0.5	180	2.3
	9/14/2012	<0.90	<0.90	<0.90	<0.90	<0.90	<0.90	<0.90	17	<0.90	<0.90	210	2.4	<0.90	78	<0.90
	12/13/2012	<0.50	<0.50	<0.50	<0.50	0.7	<0.50	<0.50	29	0.96	<0.50	110	1.1	<0.50	49	<0.50
	3/15/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	5	<0.50	<0.50	86	1.8	<0.50	34	<0.50
	6/13/2013	<0.50	<0.50	<0.50	<0.50	2.4	<0.50	1	100	3.7	<0.50	240	3.1	<0.50	150	2.2
	9/20/2013	<0.50	<0.50	<0.50	<0.50	2	<0.50	0.51	74	2.2	<0.50	160	2	<0.50	87	0.82

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-9	12/16/2013	<0.50	<0.50	<0.50	<0.50	6.5	<0.50	1.4	230	6.4	<0.50	210	3.5	<0.50	180	2.8
(continued)	3/21/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	39	0.57	<0.50	19	<0.50
	6/25/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.68	41	1.6	<0.50	190	2.3	<0.50	91	1.1
	9/30/2014	<0.90	<0.90	<0.90	<0.90	2.3	<0.90	<0.90	77	2.3	<0.90	230	2.9	<0.90	110	1.3
	12/15/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	35	0.64	<0.50	18	<0.50
	3/19/2015	<0.50	<0.50	<0.50	<0.50	0.77	<0.50	<0.50	18.9	0.6	<0.50	155	2	<0.50	59.5	<0.50
	6/17/2015	<0.50	<0.50	<0.50	<0.50	0.93	<0.50	0.54	12.5	0.78	<0.50	160	1.9	<0.50	61.8	1.6
	9/17/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2.4	<0.50	<0.50	74.3	2.2	<0.50	31.6	<0.50
	12/8/2015	<0.50	<0.50	<0.50	<0.50	3.5	<0.50	0.85	145	4.2	<0.50	199	2.4	<0.50	113	2
	12/8/2015 DUP	<0.50	<0.50	<0.50	<0.50	3.7	<0.50	0.93	153	4.4	<0.50	198	2.5	<0.50	118	2.1
	3/8/2016	<1	<4	<1	<1	4.1	<1	<1	117	3.8	<1	164	2.3	<1	94.6	3.4
	6/17/2016	<0.50	<2	<0.50	<0.50	1.8	<0.50	0.58	60.7	2.4	<0.50	116	1.7	<0.50	68.3	0.89
	9/29/2016	<0.50	<2	<0.50	<0.50	1.2	<0.50	<0.50	39.3	1.8	<0.50	192	2.5	<0.50	91.9	0.76
	12/14/2016	<0.50	<2	<0.50	<0.50	1.3	<0.50	<0.50	59.7	1.6	<0.50	75.8	1.1	<0.50	44.9	0.52
	3/28/2017	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	0.77	<0.5	<0.5	27.9	0.89	<0.5	12.5	<0.5
	6/14/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<1.0	<0.50	17.5	0.60	<0.50	104	1.3	<0.50	47.2	<0.50
	9/27/2017	<2.0	<2.0	<0.50	<0.50	2.80	<1.0	<0.50	83.1	2.50	<0.50	102	2.4	<0.50	66.7	0.99
	11/7/2017	<2.0	<2.0	<0.50	<0.50	20.30	<0.50	3.30	569.0	15.20	<0.50	205	4.5	<0.50	167.0	7.80
	3/21/2018	<0.500	<2.50	<0.500	<0.500	<0.500	<0.500	<0.500	1.2	<0.500	<0.500	39	1.1	<0.500	14.9	<0.500
	6/29/2018	<0.500	<2.50	<0.500	<0.500	6.86	<0.500	1.63	169.0	8.28	<0.500	332	3.5	<0.500	182.0	2.42 J
	9/27/2018	<1.00	<5.00	<1.00	<1.00	5.69	<0.400	1.59	219	7.54	<0.500	243	3.96	<0.500	168	3.90
	12/7/2018	<1.00	<5.00	<1.00	<1.00	0.75	<0.400	<0.400	20.0	0.80	<0.500	178	3.4	<0.500	66.5	0.55
	3/20/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	2.47	<0.400	<0.500	58.9	1.47	<0.500	20.0	<0.400
	6/7/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	1.99	<0.400	<0.500	108	1.34	<0.500	49.4	<0.400
	9/26/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	3.34	<0.400	<0.500	81.3	2.34	<0.501	25.4	<0.401
	12/3/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	2.34	<0.400	<0.500	67.5	1.46	<0.502	24.3	<0.402
	3/11/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	5.21	<0.400	<0.500	55.4	1.41	<0.500	18.1	<0.400
	6/18/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	5.27	<0.400	<0.500	109	1.44	<0.500	45.9	<0.400
	10/8/2020	<1.00	<5.00	<1.00	<1.00	1.78	<0.400	0.817	39.0	1.280	<0.500	191	2.95	<0.500	72.2	1.55
	12/9/2020	<2.00	<5.00	<1.00	<1.00	6.49	<0.400	1.63	211	6.980	<0.500	262	3.86	<0.500	158	2.68
	3/3/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	1.56	<0.400	<0.500	73.5	1.38	<0.500	26.4	<0.400
	6/15/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	1.35	<0.400	<0.500	87.7	1.83	<0.500	32.4	<0.400
	9/14/2021	<1.00	<5.00	<1.00	<1.00	0.429	<0.400	<0.400	6.99	0.448	<0.500	144	3.26	<0.500	43	0.654
	12/9/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	0.799	<0.400	<0.500	134	1.62	<0.500	41.2	<0.400
	3/8/2022	<1.00	<5.00	<1.00	<1.00	0.410	<0.400	<0.400	10.3	0.500	<0.500	104	1.25	<0.500	36.2	<0.400
	6/14/2022	<1.00	<5.00	<1.00	<1.00	2.98	<0.400	0.55	29.7	<0.400	<0.500	47.8	<0.400	<0.500	21.7	0.67
	9/15/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.500	<0.400	<0.500	48.2	1.15	<0.500	12.4	<0.400
	12/7/2022	<1.00	<5.00	<1.00	<1.00	0.72	<0.400	<0.400	21.4	0.97	<0.500	172	3.26	<0.500	48.6	<0.400

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-9 (continued)	3/17/2023	<1.00	<5.00	<1.00	<1.00	0.99	<0.400	<0.400	40.2	2.17	<0.500	176	3.06	<0.500	66.6	0.72
	6/15/2023	<1.00	<5.00	<1.00	<1.00	2.01	<0.400	0.81	59.2	2.5	<0.500	175	1.9	<0.500	77.5	2.25
	9/12/2023	<2.00	<5.00	<1.00	<1.00	0.640	<0.400	0.500	18.5	1.21	<0.500	158	2.31	<0.500	46.7	1.28
	12/14/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	74.0	1.06	<0.500	19.3	<0.200
	3/7/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	39.8	0.570	<0.500	11.4	<0.200
	6/11/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	53.4	0.580	<0.500	13.7	<0.200
	9/5/2024	<1.00	<5.00	<1.00	<1.00	0.540	<0.400	<0.400	15.0	1.08	<0.500	151	2.23	<0.500	40.5	0.860
	12/3/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	65.5	1.09	<0.500	17.3	<0.200
MW-10	12/2/1996	<0.50	<0.50	<0.50	<0.20	<0.30	<0.50	<0.20	<0.20	<1	<0.20	2.7	<1	--	0.4	<0.50
	11/13/1997	<0.50	<1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.53	<0.50	--	3.65	<1
	8/11/1999	<1	<5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2.02	<1	--	1.24	<0.50
	11/16/1999	<1	<2.5	<0.50	<1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	69.6	1.89	--	10.3	<0.50
	2/28/2000	<1	<5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.63	<1	--	1.16	<0.50
	6/27/2000	<1	<5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.72	<1	--	3.74	<0.50
	5/30/2001	<1	<5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.25	<1	--	2.52	<0.50
	5/30/2002	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	4.05	<0.50	--	1.43	<0.50
	5/28/2003	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	0.86	<0.50	<0.50	2.21	<0.50	--	1.28	<0.50
	11/2/2004	<1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.93	<0.50	--	0.98	<0.50
	11/16/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	4.1	<0.50	--	3.4	<0.50
	3/23/2005	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.02	<0.50	--	1.21	<0.50
	5/17/2005	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.26	<0.50	--	1.19	<0.50
	9/12/2007	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.59 J	<0.50	--	0.83	<0.50
	3/5/2008	<1	<0.500	<0.500	<1	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	1.66	<0.500	<0.500	1.67	<0.500
	9/18/2008	<1	<0.500	<0.500	<1	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	1.13	<0.500	<0.500	1.4	<0.500
	3/25/2009	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.5	<0.50	<0.50	1.6	<0.50
	9/16/2009	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.4	<0.50	<0.50	2	<0.50
	3/18/2010	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.3	<0.50	<0.50	1.6	<0.50
	9/22/2010	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	<0.5	<0.5	1.4	<0.5
	3/9/2011	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.4	<0.50	<0.50	0.8	<0.50
	9/14/2011	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1	<0.50	<0.50	2.1	<0.50
	3/6/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.2	<0.50	<0.50	2	<0.50
	9/12/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.98	<0.50	<0.50	1.4	<0.50
	3/13/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2.6	<0.50	<0.50	3.1	<0.50
	9/18/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.3	<0.50	<0.50	1.4	<0.50
	3/19/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.2	<0.50	<0.50	8.8	<0.50	<0.50	16	<0.50

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-10 (continued)	9/26/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2	<0.50	<0.50	2	<0.50
	3/18/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.7	<0.50	<0.50	1.8	<0.50
	9/21/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2.4	<0.50	<0.50	1.6	<0.50
	3/7/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.98	<0.50
	9/27/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.6	<0.50	<0.50	1.4	<0.50
	3/30/2017	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.4	<0.5	<0.5	1.5	<0.5
	9/27/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	3.7	<0.50	<0.50	2.4	<0.50
	11/6/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2.5	<0.50	<0.50	1.1	<0.50
	6/29/2018	<0.500	<2.50	<0.500	<0.500	0.161 J	<0.500	<0.500	0.8	<0.500	<0.500	5.7	0.145 J	<0.500	5.8	<0.500
	9/25/2018	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	1.74	<0.400	<0.500	1.45	<0.400
	9/25/2018 DUP	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	1.76	<0.400	<0.500	1.54	<0.400
	3/21/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	3.24	<0.400	<0.500	2.00	<0.400
	6/6/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	7.51	<0.400	<0.500	4.19	<0.400
	9/25/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	2.03	<0.400	<0.500	1.35	<0.400
	12/4/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	1.65	<0.400	<0.500	1.15	<0.400
	3/11/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	1.97	<0.400	<0.500	1.53	<0.400
	6/17/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	9.74	<0.400	<0.500	5	<0.400
	10/8/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	2.34	<0.400	<0.500	1.81	<0.400
	12/9/2020	<2.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	2.40	<0.400	<0.500	1.95	<0.400
	3/4/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	1.66	<0.400	<0.500	1.84	<0.400
	6/15/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	3.19	<0.400	<0.500	2.6	<0.400
	9/15/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	2.34	<0.400	<0.500	1.96	<0.400
	12/9/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	4.75	<0.400	<0.500	2.7	<0.400
	3/9/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	3.93	<0.400	<0.500	2.22	<0.400
	06/15/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	3.22	<0.400	<0.500	1.77	<0.400
	9/14/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	1.55	<0.400	<0.500	1.66	<0.400
	12/8/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	2.66	<0.400	<0.500	1.9	<0.400
	3/15/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	2.40	<0.400	<0.500	2.09	<0.400
	6/14/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	9.89	<0.400	<0.500	4.93	<0.400
	9/12/2023	<4.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	1.71	<0.400	<0.500	1.90	<0.200
	12/14/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	2.70	<0.400	<0.500	1.86	<0.200
	3/5/2024	<2.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	2.06	<0.400	<0.500	1.82	<0.200
	6/11/2024	<2.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	3.21	<0.400	<0.500	1.99	<0.200
	9/4/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	1.45	<0.400	<0.500	1.45	<0.200
	12/4/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	3.60	<0.400	<0.500	1.60	<0.200

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-11	12/2/1996	<50	<50	<50	<20	<30	<50	52	140	<100	<20	2,200	550	--	5,900	<50
	11/13/1997	<50	<100	<50	<50	<50	<50	<50	<50	<50	<50	686	90.3	--	2,720	<100
	8/10/1999	<5	<25	<2.5	<2.5	13.7	<2.5	22.8	14.4	<2.5	<2.5	259	112	--	1,300	<2.5
	11/16/1999	<20	<50	<10	<20	12	<10	16.8	18.8	<10	<10	478	94.8	--	1,500	<10
	2/28/2000	<5	<25	<2.5	<2.5	2.71	<2.5	7.9	5.05	<2.5	<2.5	247	30.2	--	473	<2.5
	6/27/2000	<10	<50	<5	<5	12.1	<5	28.9	14.8	<5	<5	337	108	--	1,390	<5
	8/31/2000	<20	<100	<10	<10	15.4	<10	28	24.8	<10	<10	646	159	--	1,690	<10
	11/30/2000	<20	<100	<10	<10	12.2	<10	26.4	19.3	<10	<10	342	125	--	1,550	<10
	2/27/2001	<5	<25	<2.5	<2.5	3.65	<2.5	7.82	7.1	<2.5	<2.5	198	35.1	--	468	<2.5
	5/30/2001	<10	<50	<5	<5	5.2	<5	13.6	9.09	<5	<5	256	48.8	--	858	<5
	9/25/2001	<13	<13	<13	<13	<13	<13	<13	<13	<13	<13	260	57	--	820	<13
	12/17/2001	<10	<50	<5	<5	<5	<5	15.4	25.9	<5	<5	983	40.9	--	1,390	<5
	3/18/2002	<10	<5	<5	<10	11.9	<5	19.4	17.1	<5	<5	433	79.8	--	1,370	<5
	5/30/2002	<10	<5	<5	<10	5.9	<5	10.9	15.6	<5	<5	571	45.6	--	965	<5
	11/7/2002	<10	<5	<5	<10	15	<5	19.3	18.9	<5	<5	347	112	--	1,640	<5
	1/23/2003	<5	<2.5	<2.5	<5	3.35	<2.5	4.3	5.35	<2.5	<2.5	265	24.1	--	534	<2.5
	5/28/2003	<10	<5	<5	<10	13.3	<5	17.9	17.6	<5	<5	305	105	--	1,580	<5
	11/11/2003	<5	<5	<5	<5	5	<5	5.15	9.15	<5	<5	191	38.8	--	504	<5
	1/26/2004	<10	<5	<5	<10	9.6	<5	11.5	13.5	<5	<5	369	73.3	--	1,070	<5
	3/22/2004	Well Abandoned														
MW-12	12/2/1996	<50	<50	<50	<20	<30	<50	<20	29	<100	<20	2,500	<100	--	950	<50
	11/12/1997	<250	<500	<250	<250	<250	<250	<250	2,710	<250	<250	12,900	645	--	5,400	<500
	8/11/1999	<200	<1	<100	<100	120	<100	<100	2,680	<100	<100	11,300	758	--	3,520	<100
	11/16/1999	<200	<500	<100	<200	<100	<100	<100	160	<100	<100	18,200	922	--	4,630	<100
	2/28/2000	<200	<1	<100	<100	<100	<100	<100	908	<100	<100	3,780	<200	--	1,210	<100
	6/27/2000	<100	<500	<50	<50	161	<50	<50	2,880	<50	<50	12,000	712	--	3,180	<50
	5/30/2001	<50	<250	<25	<25	64.8	<25	54	1,650	<25	<25	4,990	298	--	1,810	<25
	5/30/2002	<5	<2.5	<2.5	<5	4.25	<2.5	<2.5	101	<2.5	<2.5	344	6.6	--	81.6	<2.5
	5/29/2003	<5	<2.5	<2.5	<5	28.4	<2.5	8	601	5.7	<2.5	362	18.2	--	199	<2.5
	11/16/2004	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	59	<2.5	<2.5	410	3.5	--	96	<2.5

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-12	3/23/2005	<20	<10	<10	<20	247	<10	53	3,640	40.2	<10	1,080	49.8	--	639	14.2
(continued)	5/18/2005	<1	<0.50	<0.50	<1	0.96	<0.50	0.98	30.1	0.57	<0.50	51.1	0.92	--	21.4	<0.50
	5/22/2007	<5	<5	<5	<5	35.6	<5	7.45	785	11.1	<5	233	7.8	--	139	<5
	9/11/2007	<100	<50	<50	<100	316	<50	57	6,700	53	<50	431	<50	--	516	<50
	12/12/2007	<2	<1	<1	<2	1.1	<1	<1	43.8	<1	<1	106	3.16	--	39.6	<1
	3/5/2008	<1	4.97	<0.500	<1	156	2.01	46.2	3,170	41.8	<0.500	440	21.2	<0.500	329	18.5
	9/19/2008	<50	<25	<25	<50	394	<25	66	7,650	69	<25	968	45	<25	924	58
	12/10/2008	<4	<4	<4	<4	33	<4	6.6	670	8.7	<4	99	5	<4	80	<4
	3/27/2009	<4	4.8	<4	<4	230	<4	39	4,800	46	<4	540	28	<4	440	31
	03/27/2009 DUP	<4	5	<4	<4	250	<4	44	4,700	51	<4	600	32	<4	490	35
	6/18/2009	<15	<15	<15	<15	170	<15	32	3,500	36	<15	270	<15	<15	230	26
	06/18/2009 DUP	<15	<15	<15	<15	170	<15	32	3,600	37	<15	310	<15	<15	250	25
	9/18/2009	<15	<15	<15	<15	240	<15	46	4,200	50	<15	540	26	<15	440	51
	09/18/2009 DUP	<15	<15	<15	<15	260	<15	49	4,600	52	<15	590	28	<15	470	56
	12/18/2009	<0.50	<0.50	<0.50	<0.50	2.4	<0.50	<0.50	100	1.1	1.3	170	2.2	<0.50	65	<0.50
	12/18/2009 DUP	<0.50	<0.50	<0.50	<0.50	2.2	<0.50	<0.50	96	1.1	1.3	160	2.1	<0.50	62	<0.50
	3/19/2010	<0.50	4.1	<0.50	<0.50	220	2.6	48	4,400	53	<0.50	480	28	0.7	380	37
	03/19/2010 DUP	<15	<15	<15	<15	270	<15	44	4,900	54	<15	600	29	<15	460	39
	6/16/2010	<0.50	<0.50	<0.50	<0.50	0.56	<0.50	<0.50	19	<0.50	<0.50	38	<0.50	<0.50	17	<0.50
	06/16/2010 DUP	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	18	0.54	<0.50	37	<0.50	<0.50	16	<0.50
	9/23/2010	<15	<15	<15	<15	260	<15	47	4,800	56	<15	780	38	<15	560	68
	9/23/2010 DUP	<15	<15	<15	<15	260	<15	49	4,800	57	<15	800	41	<15	580	65
	12/9/2010	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	3.5	<0.5	<0.5	5.1	<0.5	<0.5	2.1	<0.5
	12/09/10 DUP	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	4.4	<0.5	<0.5	5.8	<0.5	<0.5	2	<0.5
	3/10/2011	<0.50	0.67	<0.50	<0.50	94	0.96	17	1,900	19	0.55	340	12	<0.50	220	11
	03/10/2011 DUP	<0.50	0.87	<0.50	<0.50	93	1	17	1,600	19	0.55	260	13	<0.50	180	11
	6/7/2011	<0.5	<0.5	<0.5	<0.5	1.8	<0.5	<0.5	59	1	<0.5	53	0.7	<0.5	25	<0.5
	06/07/2011 DUP	<0.5	<0.5	<0.5	<0.5	1.8	<0.5	<0.5	60	1	<0.5	58	0.69	<0.5	27	<0.5
	9/19/2011	<0.50	3	<0.50	<0.50	240	2.5	45	4,700	55	<0.50	860	65	0.94	690	63
	09/19/2011 DUP	<20	<20	<20	<20	240	<20	53	4,700	60	<20	860	60	<20	680	68
	12/7/2011	<0.50	<0.50	<0.50	<0.50	130	1.3	28	2,900	33	<0.50	520	34	0.54	380	40
	12/07/2011 DUP	<0.50	<15	<0.50	<0.50	140	1.3	29	2,900	33	<0.50	580	34	0.55	400	41
	3/12/2012	<15	<15	<15	<15	210	<15	44	3,800	45	<15	770	48	<15	540	46
	03/12/2012 DUP	<20	<20	<20	<20	220	<20	44	4,000	47	<20	740	50	<20	540	45
	06/22/2012	<5	<5	<5	<5	100	<5	16	1,700	39	<5	270	13	<5	200	22
	06/22/2012 DUP	<5	<5	<5	<5	100	<5	16	1,700	39	<5	270	13	<5	190	22
	9/14/2012	<5	<5	<5	<5	220	<5	45	4,700	56	<5	890	61	<5	590	58
	09/14/2012 DUP	<15	<15	<15	<15	270	<15	58	5,400	73	<15	1,100	76	<15	730	84
	12/13/2012	<0.50	<0.50	<0.50	<0.50	1	<0.50	<0.50	62	0.97	<0.50	38	0.52	<0.50	22	<0.50
	12/13/2012 DUP	<0.50	<0.50	<0.50	<0.50	1	<0.50	<0.50	62	0.92	<0.50	38	0.53	<0.50	23	<0.50

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-12 (continued)	3/15/2013	<0.50	1	<0.50	<0.50	200	1.7	40	4,300	55	<0.50	760	53	0.71	540	53
	03/15/2013 DUP	<0.50	1	<0.50	<0.50	200	1.8	40	4,200	56	<0.50	750	52	0.66	520	54
	6/13/2013	<15	<15	<15	<15	230	<15	38	4,700	53	<15	590	44	<15	480	55
	06/13/2013 DUP	<15	<15	<15	<15	240	<15	39	4,800	53	<15	610	46	<15	500	59
	9/20/2013	<0.50	<0.50	<0.50	<0.50	170	1.6	37	3,400	49	<0.50	510	37	0.66	400	50
	09/20/2013 DUP	<0.50	<0.50	<0.50	<0.50	180	1.7	36	3,400	48	<0.50	520	37	0.63	400	49
	12/16/2013	<2.5	<2.5	<2.5	<2.5	36	<2.5	7.5	800	10	<2.5	150	5.7	<2.5	110	9.6
	12/16/2013 DUP	<2.5	<2.5	<2.5	<2.5	35	<2.5	7.6	770	9.6	<2.5	140	5.8	<2.5	110	9.8
	3/24/2014	<0.50	<0.50	<0.50	<0.50	110	0.77	18	1,900	25	<0.50	180	8.6	<0.50	170	47
	3/24/2014 DUP	<7	<7	<7	<7	97	<7	16	1,900	22	<7	170	7.5	<7	140	35
	6/24/2014	<1.5	<1.5	<1.5	<1.5	14	<1.5	1.7	300	2.1	<1.5	42	<1.5	<1.5	32	<1.5
	6/24/2014 DUP	<1.5	<1.5	<1.5	<1.5	14	<1.5	1.9	310	2.3	<1.5	42	1.6	<1.5	34	<1.5
	9/30/2014	<15	<15	<15	<15	190	<15	39	3,500	45	<15	670	36	<15	480	42
	9/30/2014 DUP	<15	<15	<15	<15	180	<15	39	3,500	45	<15	680	35	<15	460	42
	12/11/2014	<0.50	<0.50	<0.50	<0.50	0.72	<0.50	<0.50	34	0.64	<0.50	25	<0.50	<0.50	15	<0.50
	12/11/2014 DUP	<0.50	<0.50	<0.50	<0.50	0.73	<0.50	<0.50	32	0.6	<0.50	24	<0.50	<0.50	14	<0.50
	3/20/2015	<5	<5	<5	<5	102	<5	25.4	2,110	29.4	<5	584	17.8	<5	344	36.8
	3/20/2015 DUP	<12.5	<12.5	<12.5	<12.5	143	<12.5	25.8	2,490	28.8	<12.5	495	21.7	<12.5	340	29
	6/19/2015	<10	<10	<10	<10	151	<10	28.2	2,570	25	<10	514	23.6	<10	356	31.1
	6/19/2015 DUP	<10	<10	<10	<10	157	<10	31	2,680	30	<10	516	23.4	<10	362	33.2
	9/22/2015	<8.3	<8.3	<8.3	<8.3	120	<8.3	16.9	2,250	23.4	<8.3	343	15.7	<8.3	239	22.5
	9/22/2015 DUP	<8.3	<8.3	<8.3	<8.3	134	<8.3	21.4	2,490	25.7	<8.3	425	20.1	<8.3	282	26.5
	12/8/2015	<5	<5	<5	<5	8	<5	<5	40	0.7	<5	45	0.5	<5	22	<5
	3/8/2016	<3.6	<14.3	<3.6	<3.6	79.9	<3.6	15.4	1,380	16.2	<3.6	325	7.7	<3.6	209	21.3
	3/8/2016 DUP	<3.6	<14.3	<3.6	<3.6	82	<3.6	16.6	1,390	15.6	<3.6	336	7.7	<3.6	210	21.2
	6/16/2016	<8.4	<33.4	<8.4	<8.4	174	<8.4	29.9	3,310	31.6	<8.4	314	12.8	<8.4	288	52.3
	6/16/2016 DUP	<8.4	<33.4	<8.4	<8.4	192	<8.4	31.9	3,420	37.4	<8.4	367	15.4	<8.4	311	67
	9/27/2016	<10	<40	<10	<10	26	<10	<10	525	<10	<10	67.6	<10	<10	45.4	14.8
	9/27/2016 DUP	<2.5	<10	<2.5	<2.5	44.4	<2.5	11.5	867	11.4	<2.5	387	3.9	<2.5	163	22.6
	12/14/2016	<1	<4	<1	<1	<1	<1	<1	6.9	2.3	<1	<1	<1	<1	<1	20.5
	12/14/2016 DUP	<2.5	29.1	<2.5	<2.5	16.5	<2.5	4.7	744	<2.5	<2.5	62.3	<2.5	<2.5	42.2	21.2
	3/30/2017	<10	<40	<10	<10	<10	<10	<10	1,120	<10	<10	55.9	<10	<10	29.6	37.8
	3/30/2017 DUP	<2.5	<10	<2.5	<2.5	11.4	<2.5	3.8	853	6.1	<2.5	49	<2.5	<2.5	26	28.3
	6/12/2017	<125	<12.5	<3.1	<3.1	14.0	<3.1	4.7	893	7.6	<3.1	42.4	<3.1	<3.1	18.1	48.4
	6/12/2017 DUP	<3.1	<12.5	<3.1	<3.1	12.8	<3.1	<3.1	860	7.1	<3.1	40.0	<3.1	<3.1	16.5	47.4

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-12	9/28/2017	<3.1	17.4	<3.1	<3.1	19.5	<3.1	<3.1	457	5.4	<3.1	<3.1	<3.1	<3.1	<3.1	47.7
(continued)	9/28/2017 DUP	<1.7	16.3	<1.7	<1.7	17.3	<1.7	<1.7	428	5.2	<1.7	<1.7	<1.7	<1.7	<1.7	45.1
	11/9/2017	<2.0	15.4	<0.50	<0.50	4.5	<0.50	<0.50	22	1.4	<0.50	<0.50	<0.50	<0.50	<0.50	49.1
	11/9/2017 DUP	<2.0	12.6	<0.50	<0.50	4.5	<0.50	<0.50	21	1.6	<0.50	<0.50	<0.50	<0.50	<0.50	36.4
	3/20/2018	<0.500	7.50	<0.500	<0.500	0.5	<0.500	<0.500	6	1.3	<0.500	<0.500	<0.500	<0.500	0.271 J	2.8
	3/20/2018 DUP	<0.500	8.18	<0.500	<0.500	0.550 J	<0.500	<0.500	6	1.29 J	<0.500	0.203 J	<0.500	<0.500	0.261 J	2.6
	7/1/2018	<0.500	9.73	<0.500	<0.500	0.9	<0.500	<0.500	4	1.6	<0.500	0.304 J	<0.500	<0.500	1.0	1.5
	7/1/2018 DUP	<0.500	8.34	<0.500	<0.500	0.8	<0.500	<0.500	4	1.6	<0.500	0.289 J	<0.500	<0.500	1.0	1.3
	9/25/2018	<1.00	24.5	<1.00	<1.00	0.730	<0.400	<0.400	1.46	0.520	<0.500	<0.400	<0.400	<0.500	<0.400	1.23
	9/25/2018 DUP	<1.00	23.7	<1.00	<1.00	0.670	<0.400	<0.400	1.31	0.500	<0.500	<0.400	<0.400	<0.500	<0.400	1.21
	12/4/2018	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	4	0.4	<0.500	1.3	<0.400	<0.500	1.3	1.7
	12/4/2018 DUP	<1.00	6.03	<1.00	<1.00	0.5	<0.400	<0.400	4	0.4	<0.500	1.0	<0.400	<0.500	1.0	1.6
	3/20/2019	<2.00	<5.00	<1.00	<1.00	0.655	<0.400	<0.400	6.70	0.675	<0.500	2.11	<0.400	<0.500	1.33	1.64
	3/20/2019 DUP	<2.00	<5.00	<1.00	<1.00	0.615	<0.400	<0.400	6.31	0.621	<0.500	2.05	<0.400	<0.500	1.15	1.56
	6/5/2019	<2.00	<5.00	<1.00	<1.00	0.716	<0.400	<0.400	9.17	0.756	<0.500	3.30	<0.400	<0.500	3.45	2.64
	6/5/2019 DUP	<2.00	<5.00	<1.00	<1.00	0.719	<0.400	<0.400	9.36	0.725	<0.500	3.64	<0.400	<0.500	3.41	2.74
	9/26/2019	<1.00	18.1	<1.00	<1.00	6.26	<0.400	<0.400	5.31	0.565	<0.500	<0.400	<0.400	<0.500	0.442	6.82
	9/26/2019 DUP	<1.00	16	<1.00	<1.00	6.12	<0.400	<0.400	5.06	0.55	<0.500	<0.400	<0.400	<0.500	0.459	6.45
	12/5/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	2.61	<0.400	<0.500	2.37	<0.400	<0.500	1.41	0.413
	12/5/2019 DUP	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	2.51	<0.400	<0.500	2.18	<0.400	<0.500	1.23	<0.400
	3/11/2020	<1.00	<5.00	<1.00	<1.00	0.803	<0.400	<0.400	8.18	0.515	<0.500	7.01	<0.400	<0.500	4.17	0.423
	3/11/2020 DUP	<1.00	<5.00	<1.00	<1.00	0.806	<0.400	<0.400	8.47	0.561	<0.500	6.95	<0.400	<0.500	4.25	<0.400
	6/18/2020	<1.00	<5.00	<1.00	<1.00	1.25	<0.400	<0.400	14.2	0.41	<0.500	2.49	<0.400	<0.500	2.6	1.1
	6/18/2020 DUP	<1.00	<5.00	<1.00	<1.00	1.30	<0.400	<0.400	14.1	<0.400	<0.500	2.59	<0.400	<0.500	2.68	1.04
	10/7/2020	<1.00	<10.0	<1.00	<1.00	36.6	<0.400	<0.400	80.9	0.582	<0.500	<0.400	<0.400	<0.500	0.745	184
	10/7/2020 DUP	<1.00	<10.0	<1.00	<1.00	37.8	<0.400	<0.400	81.7	0.632	<0.500	<0.400	<0.400	<0.500	0.750	196
	12/8/2020	<2.00	<5.00	<1.00	<1.00	1.55	<0.400	<0.400	9.92	<0.400	<0.500	13.5	<0.400	<0.500	6.47	7.36
	12/8/2020 DUP	<2.00	<5.00	<1.00	<1.00	1.52	<0.400	<0.400	9.61	<0.400	<0.500	12.9	<0.400	<0.500	6.24	7.12
	3/5/2021	<1.00	<5.00	<1.00	<1.00	1.55	<0.400	<0.400	8.6	<0.400	<0.500	6.73	<0.400	<0.500	4.92	0.436
	3/5/2021 DUP	<1.00	<5.00	<1.00	<1.00	1.48	<0.400	<0.400	8.21	<0.400	<0.500	5.81	<0.400	<0.500	4.39	0.446
	6/16/2021	<1.00	<5.00	<1.00	<1.00	6.90	<0.400	<0.400	34.0	0.426	<0.500	8.85	<0.400	<0.500	9.62	35.7
	6/16/2021 DUP	<1.00	<5.00	<1.00	<1.00	6.53	<0.400	<0.400	32.4	<0.400	<0.500	8.21	<0.400	<0.500	8.87	33.4
	9/14/2021	<1.00	<5.00	<1.00	<1.00	37.4	<0.400	<0.400	59	0.572	<0.500	4.29	<0.400	<0.500	5.59	308
	9/14/2021 DUP	<1.00	<5.00	<1.00	<1.00	34.8	<0.400	<0.400	54.7	0.570	<0.500	3.75	<0.400	<0.500	5.1	282
	12/9/2021	<1.00	<5.00	<1.00	<1.00	0.644	<0.400	<0.400	7.49	<0.400	<0.500	12	<0.400	<0.500	6.54	2.02
	12/9/2021 DUP	<1.00	<5.00	<1.00	<1.00	0.68	<0.400	<0.400	7.36	<0.400	<0.500	12.3	<0.400	<0.500	6.68	2.1

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-12 (continued)	3/8/2022	<1.00	<5.00	<1.00	<1.00	13.4	<0.400	<0.400	18.6	<0.400	<0.500	8.43	<0.400	<0.500	9.36	168
	3/8/2022 DUP	<1.00	<5.00	<1.00	<1.00	9.15	<0.400	<0.400	15.6	<0.400	<0.500	8.70	<0.400	<0.500	9.62	99.5
	6/14/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	2.46	<0.400	<0.500	10.6	<0.400	<0.500	5.38	0.49
	6/14/2022 DUP	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	2.48	<0.400	<0.500	10.3	<0.400	<0.500	5.18	0.43
	9/14/2022	<1.00	<5.00	<1.00	<1.00	79.60	<0.400	10.20	2,470	2.58	<0.500	0.850	<0.400	<0.500	11.6	2000
	9/14/2022 DUP	<1.00	<5.00	<1.00	<1.00	77.80	<0.400	9.41	2,260	2.72	<0.500	0.750	<0.400	<0.500	10.0	1710
	12/8/2022	<1.00	<5.00	<1.00	<1.00	8.60	<0.400	0.73	165	0.530	<0.500	7.29	<0.400	<0.500	5.11	124
	12/8/2022 DUP	<1.00	<5.00	<1.00	<1.00	8.50	<0.400	0.73	161	0.510	<0.500	7.02	<0.400	<0.500	5.08	121
	3/16/2023	<1.00	<5.00	<1.00	<1.00	89.1	<0.400	2.23	563	1.35	<0.500	2.51	<0.400	<0.500	4.11	1210
	3/16/2023 DUP	<1.00	<5.00	<1.00	<1.00	88.3	<0.400	2.23	576 CONT	1.55	<0.500	2.43	<0.400	<0.500	4.06	1300 CONT
	6/14/2023	<10.0	<50.0	<10.0	<10.0	108	<4.00	<4.00	208	<10.0	<5.00	4.80	<4.00	<5.00	<4.00	1710
	6/14/23 DUP	<10.0	<50.0	<10.0	<10.0	109	<4.00	<4.00	204	<10.0	<5.00	4.10	<4.00	<5.00	<4.00	1680
	9/13/2023	<20.0	<50.0	<10.0	<10.0	94.2	<4.00	9.00	1100	<4.00	<5.00	<7.50	<4.00	<5.00	7.90	1490
	9/13/2023 DUP	<20.0	<50.0	<10.0	<10.0	105	<4.00	10.4	1310	<4.00	<5.00	<6.00	<4.00	<5.00	8.00	1690
	12/13/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	4.14	<0.400	<0.500	6.94	<0.400	<0.500	3.36	1.80
	12/13/2023 DUP	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	4.08	<0.400	<0.500	6.84	<0.400	<0.500	3.30	1.66
	3/5/2024	<20.0	<50.0	<10.0	<10.0	98.8	<4.00	<4.00	80.2	<4.00	<5.00	<4.00	<4.00	<5.00	4.40	1360
	3/5/2024 DUP	<20.0	<50.0	<10.0	<10.0	95.9	<4.00	<4.00	79.5	<4.00	<5.00	<4.00	<4.00	<5.00	<4.00	1330
	6/13/2024	<1.00	<5.00	<1.00	<1.00	29.9	<0.400	0.440	32.8	<0.400	<0.500	3.88	<0.400	<0.500	3.90	22.8
	6/13/2024 DUP	<1.00	<5.00	<1.00	<1.00	27.2	<0.400	0.410	30.2	<0.400	<0.500	3.86	<0.400	<0.500	3.89	16.0
	9/5/2024	<1.00	<5.00	<1.00	<1.00	66.7	<0.400	<0.400	33.8	<0.400	<0.500	0.630	<0.400	<0.500	0.600	483
	9/5/2024 DUP	<1.00	<5.00	<1.00	<1.00	64.5	<0.400	<0.400	32.4	<0.400	<0.500	0.560	<0.400	<0.500	0.640	375
	12/4/2024	<1.00	<5.00	<1.00	<1.00	3.00	<0.400	<0.400	10.0	<0.400	<0.500	11.2	<0.400	<0.500	6.11	7.63
	12/4/2024 DUP	<1.00	<5.00	<1.00	<1.00	2.88	<0.400	<0.400	9.52	<0.400	<0.500	10.6	<0.400	<0.500	6.11	7.28
MW-13	12/2/1996	0.7	<0.50	<0.50	<0.20	<0.30	<0.50	0.3	9.1	<1	<0.20	750	6.6	--	82	<0.50
	11/12/1997	<250	<500	<250	<250	291	<250	<250	5,050	<250	<250	18,100	<250	--	9,050	<500
	8/11/1999	<200	<1	<100	<100	<100	<100	<100	2,280	<100	<100	9,590	<200	--	3,920	<100
	11/16/1999	<50	<125	<25	<50	108	<25	51	2,620	<25	<25	7,210	67.5	--	3,050	--
	2/28/2000	<200	<1	<100	<100	<100	<100	<100	562	<100	<100	1,340	<200	--	602	<100
	6/28/2000	<100	<500	<50	<50	132	<50	142	4,210	<50	<50	14,700	155	--	6,360	<50
	5/30/2001	<200	<1,000	<100	<100	<100	<100	<100	2,460	<100	<100	10,300	<200	--	4,620	<100
	5/30/2002	<2	<1	<1	<2	1.44	<1	1.28	60.4	<1	<1	241	1.68	--	86.4	<1
	5/28/2003	<1	<0.50	<0.50	<1	1.71	<0.50	1.75	79.6	1.26	<0.50	121	1.58	--	130	<0.50
	11/16/2004	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	1,200	<12	--	230	<12
	5/18/2005	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	3.14	<0.50	<0.50	71.2	<0.50	--	10.3	<0.50
	9/12/2007	<50	<25	<25	<50	55	<25	28	1,290	<25	<25	2,730	29.5	--	2,020	<25
	12/12/2007	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	3.36	<0.50	<0.50	51.3	0.64	--	19.5	<0.50
	3/5/2008	<1	<0.500	<0.500	<1	8.32	<0.500	4.46	174	4.52	<0.500	383	4.21	<0.500	337	0.96
	6/25/2008	<5	<5	<5	<5	15.2	<5	<5	320	10.4	<5	132	<5	--	160	<5
	9/19/2008	<5	<2.50	<2.50	<5	5.6	<2.50	<2.50	116	2.65	<2.50	266	<2.50	<2.50	187	<2.50

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-13 (continued)	12/10/2008	<0.50	<0.50	<0.50	<0.50	1.5	<0.50	0.62	32	0.69	<0.50	25	0.6	<0.50	39	<0.50
	3/27/2009	<0.50	<0.50	<0.50	<0.50	0.7	<0.50	<0.50	15	<0.50	<0.50	25	<0.50	<0.50	17	<0.50
	03/27/2009 DUP	<0.50	<0.50	<0.50	<0.50	0.79	<0.50	<0.50	15	<0.50	<0.50	25	<0.50	<0.50	17	<0.50
	6/18/2009	<0.50	<0.50	<0.50	<0.50	2.4	<0.50	0.8	58	1.8	<0.50	16	<0.50	<0.50	42	<0.50
	9/17/2009	<0.50	<0.50	<0.50	<0.50	5.8	<0.50	3.3	130	2.9	<0.50	430	4	<0.50	270	1
	12/18/2009	<0.50	<0.50	<0.50	<0.50	0.62	<0.50	<0.50	16	<0.50	<0.50	66	0.61	<0.50	45	<0.50
	3/19/2010	<0.50	<0.50	<0.50	<0.50	2.7	<0.50	1.4	64	1.2	<0.50	130	1.3	<0.50	110	<0.50
	6/16/2010	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2.1	<0.50	<0.50	14	<0.50	<0.50	7.6	<0.50
	9/23/2010	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	2.7	<0.5	<0.5	45	<0.5	<0.5	12	<0.5
	12/21/2010	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	3/11/2011	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.5	<0.50	<0.50	0.65	<0.50
	6/9/2011	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.8	<0.5	<0.5	6.1	<0.5	<0.5	4.2	<0.5
	9/19/2011	<0.50	0.54	<0.50	<0.50	35	<0.50	17	700	20	<0.50	2,200	17	0.63	1,300	3.6
	12/9/2011	<9	<9	<9	<9	23	<9	11	530	18	<9	2,800	12	<9	1,400	<9
	3/12/2012	<9	<9	<9	<9	24	<9	14	600	14	<9	1,800	11	<9	1,200	<9
	6/22/2012	<4	<4	<4	<4	40	<4	13	940	30	<4	1,300	8.6	<4	1,000	4.5
	9/14/2012	<4	<4	<4	<4	38	<4	21	900	22	<4	3,100	16	<4	1,800	<4
	12/13/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	13	0.62	<0.50	88	<0.50	<0.50	51	<0.50
	3/15/2013	<0.50	<0.50	<0.50	<0.50	34	<0.50	21	890	20	<0.50	2,400	14	0.68	1,700	3.2
	6/14/2013	<4	<4	<4	<4	19	<4	9.4	520	15	<4	1,100	6	<4	920	<4
	9/20/2013	<0.50	<0.50	<0.50	<0.50	40	<0.50	20	770	19	<0.50	2,600	13	0.74	1,700	3.4
	12/13/2013	<4	<4	<4	<4	11	<4	6.6	280	5.8	<4	1,300	4.9	<4	720	<4
	3/21/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	14	<0.50	<0.50	100	<0.50	<0.50	54	<0.50
	6/24/2014	<0.50	<0.50	<0.50	<0.50	12	<0.50	<0.50	880	33	<0.50	1,500	12	0.67	1,300	3.2
	9/30/2014	<4	<4	<4	<4	38	<4	20	890	19	<4	3,100	13	<4	2,000	<4
	12/11/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	18	0.66	<0.50	91	<0.50	<0.50	65	<0.50
	3/18/2015	<1.6	<1.6	<1.6	<1.6	19	<1.6	3.1	515	7.4	<1.6	551	2.4	<1.6	609	<1.6
	6/18/2015	<0.50	<0.50	<0.50	<0.50	33.9	<0.50	15.9	615	15.3	<0.50	1,960	10.4	<0.50	1,390	2
	9/22/2015	<0.50	<0.50	<0.50	<0.50	33.9	<0.50	21	754	15.6	<0.50	2,370	10.4	<0.50	1,740	2.4
	12/8/2015	<0.50	<0.50	<0.50	<0.50	0.89	<0.50	0.64	30.5	0.88	<0.50	185	0.7	<0.50	121	<0.50
	3/8/2016	<2.5	<10	<2.5	<2.5	14.3	<2.5	6.4	336	4.6	<2.5	839	3.7	<2.5	736	<2.5
	6/16/2016	<8.4	<33.4	<8.4	<8.4	41.3	<8.4	17.8	841	19.2	<8.4	2,470	10.1	<8.4	1,820	<8.4
	9/28/2016	<2.5	<10	<2.5	<2.5	<2.5	<2.5	<2.5	148	<2.5	<2.5	4,840	<2.5	<2.5	895	<2.5
	9/28/2016 DUP	<2.5	<10	<2.5	<2.5	<2.5	<2.5	<2.5	145	<2.5	<2.5	5,090	<2.5	<2.5	951	<2.5
	12/16/2016	<5	<20	<5	<5	<5	<5	<5	509	<5	<5	1,020	<5	<5	394	<5
	3/30/2017	<5	<20	<5	<5	<5	<5	<5	101	<5	<5	176	<5	<5	57.6	<5
	6/15/2017	<1.0	<4.0	<1.0	<1.0	<1.0	<1.0	1.2	272	1.6	<1.0	97.7	<1.0	<1.0	56.3	4.1
	9/27/2017	<1.0	<4.0	<1.0	<1.0	<1.0	<1.0	5.0	3,220	7.3	<1.0	3.3	<1.0	<1.0	1.3	25.0

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-13	11/7/2017	<16.7	<16.7	<4.2	<4.2	<4.2	<4.2	<4.2	1,360	5.4	<4.2	<4.2	<4.2	<4.2	<4.2	25.0
(continued)	3/20/2018	<0.500	3.29	<0.500	<0.500	0.879	<0.500	2.55	1,730	5.20	<0.500	0.396 J	<0.500	<0.500	2.19	211
	7/1/2018	<0.500	<2.50	<0.500	<0.500	18.3	0.148 J	5.98	1680	26.9	<0.500	<0.500	<0.500	<0.500	0.781	2030
	9/25/2018	<1.00	10.9	<1.00	<1.00	1.91	<0.400	<0.400	9.78	1.26	<0.500	0.410	<0.400	<0.500	0.800	113
	12/5/2018	<1.00	6.7	<1.00	<1.00	<0.400	<0.400	<0.400	6.17	0.682	<0.500	0.567	<0.400	<0.500	0.413	55.2
	3/19/2019	<1.00	5.64	<1.00	<1.00	<0.400	<0.400	<0.400	2.69	<0.400	<0.500	<0.400	<0.400	<0.500	0.433	2.02
	6/6/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	4.62	<0.400	<0.500	<0.400	<0.400	<0.500	0.673	2.89
	9/26/2019	<1.00	<5.00	<1.00	<1.00	1.07	<0.400	<0.400	1.94	0.439	<0.500	<0.400	<0.400	<0.500	<0.400	2.01
	12/3/2019	<1.00	<5.00	<1.00	<1.00	1.50	<0.400	<0.400	1.06	0.488	<0.500	<0.400	<0.400	<0.500	<0.400	1.42
	3/10/2020	<1.00	<5.00	<1.00	<1.00	9.19	<0.400	1.97	72.5	2.040	<0.500	<0.400	<0.400	<0.500	7.59	134
	6/18/2020	<1.00	<5.00	<1.00	<1.00	0.610	<0.400	<0.400	1.15	<0.400	<0.500	<0.400	<0.400	<0.500	1.12	5.28
	10/7/2020	<1.00	7.1	<1.00	<1.00	18.1	<0.400	<0.400	3.47	0.920	<0.500	0.470	<0.400	<0.500	0.870	98.8
	12/8/2020	<2.00	<5.00	<1.00	<1.00	2.67	<0.400	<0.400	0.606	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	2.3
	3/4/2021	<1.00	<5.00	<1.00	<1.00	11.9	<0.400	<0.400	3.48	0.494	<0.500	<0.400	<0.400	<0.500	0.996	27.4
	6/15/2021	<1.00	<5.00	<1.00	<1.00	1.12	<0.400	<0.400	13.4	0.673	<0.500	1.01	<0.400	<0.500	2.56	12.9
	9/14/2021	<10.0	<50.0	<10.0	<10.0	34.3	<0.400	<0.400	90.7	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	635
	12/9/2021	<1.00	<5.00	<1.00	<1.00	0.684	<0.400	<0.400	10.4	<0.400	<0.500	4.97	<0.400	<0.500	3.28	6.13
	3/9/2022	<1.00	<5.00	<1.00	<1.00	2.00	<0.400	0.650	13.2	0.500	<0.500	1.07	<0.400	<0.500	3.37	26.3
	6/14/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	1.36	<0.400	<0.500	1.81	<0.400	<0.500	0.72	0.40
	9/15/2022	<1.00	<5.00	<1.00	<1.00	29.8	<0.400	15.2	224	4.860	<0.500	4.10	<0.400	<0.500	15.7	764
	12/6/2022	<1.00	<5.00	<1.00	<1.00	2.940	<0.400	<0.400	5.37	<0.400	<0.500	3.4	<0.400	<0.500	4.53	14.10
	3/16/2023	<1.00	<5.00	<1.00	<1.00	22.3 Q-42	<0.400	8.08 Q-42	145	2.900	<0.500	0.68	<0.400	<0.500	1.19	268
	6/14/2023	<5.00	<25.0	<5.00	<5.00	26.1	<2.00	20.3	313	6.500	<2.50	49.4	<2.00	<2.50	117	426
	9/13/2023	<10.0	<25.0	<5.00	<5.00	30.4	<2.00	16.0	204	5.05	<2.50	103	<2.00	<2.50	85.2	788
	12/13/2023	<1.00	<5.00	<1.00	<1.00	0.440	<0.400	<0.400	1.57	<0.400	<0.500	22.3	0.450	<0.500	15.4	0.650
	3/6/2024	<5.00	<25.0	<5.00	<5.00	37.6	<2.00	48.9	1400	17.3	<2.50	955	<2.00	<2.50	986	432
	6/13/2024	<10.0	<50.0	<10.0	<10.0	<4.00	<4.00	<4.00	147	<4.00	<5.00	212	<4.00	<5.00	89.4	35.90
	9/3/2024	<1.00	<5.00	<1.00	<1.00	36.5 Q-42	<0.400	29.5 Q-42	1,960	33.7	<0.500	1,600	0.600	<0.500	928	321
	12/3/2024	<1.00	<5.00	<1.00	<1.00	1.79	<0.400	1.67	96.8	1.790	<0.500	192	<0.400	<0.500	84.6	15.6
MW-14	11/12/1997	<5	<10	<5	<5	5.01	<5	<5	<5	<5	<5	42.6	<5	--	394	<10
	8/10/1999	<20	<100	<10	<10	<10	<10	<10	15.1	<10	<10	121	35.6	--	853	<10
	11/16/1999	<2	<5	<1	<2	2.48	<1	2.48	4.2	<1	<1	186	10.8	--	313	<1
	2/28/2000	<100	<500	<50	<50	<50	<50	83.2	85.1	<50	<50	711	190	--	5,300	<50
	6/27/2000	<10	<50	<5	<5	10.1	<5	18.9	219	<5	<5	207	46.2	--	1,150	<5
	11/30/2000	<2	<10	<1	<1	1.08	<1	1.88	2.27	<1	<1	21.3	5.54	--	157	<1
	5/30/2001	<1	<50	<5	<5	6.16	<5	13.8	30.4	<5	<5	268	28.2	--	1,280	<5

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-14 (continued)	5/30/2002	<10	<5	<5	<10	<5	<5	<5	8.4	<5	<5	78.3	11.9	--	303	<5
	5/28/2003	<1	<0.50	<0.50	<1	0.9	<0.50	1.47	4.15	<0.50	<0.50	80.6	4.99	--	188	<0.50
	11/15/2004	<25	<25	<25	<25	<25	<25	<25	96	<25	<25	480	<25	--	1,200	<25
	5/17/2005	<2	<1	<1	<2	4.64	<1	2.3	41.1	<1	<1	127	9.28	--	367	<1
	9/12/2007	<20	<10	<10	<20	21.6	<10	<10	162	<10	<10	180	22.2	--	963	<10
	3/5/2008	<1	<0.500	0.850 J	<1	24.3	<0.500	13.9	217	3.86	<0.500	549	27.2	<0.500	1,770	<0.500
	6/25/2008	<5	<5	<5	<5	15.2	<5	10.2	113	<5	<5	360	18.2	--	1,290	<5
	9/19/2008	<5	<2.50	<2.50	<5	19.1	<2.50	8.6	173	<2.50	<2.50	425	16.6	<2.50	1,320	<2.50
	12/10/2008	<5	<5	<5	<5	17	<5	9.6	160	<5	<5	330	17	<5	1,200	<5
	3/27/2009	<2.5	<2.5	<2.5	<2.5	16	<2.5	6.7	160	2.5	<2.5	320	14	<2.5	980	<2.5
	6/17/2009	<2.5	<2.5	<2.5	<2.5	21	<2.5	12	150	<2.5	<2.5	400	21	<2.5	1,400	<2.5
	9/18/2009	<0.50	<0.50	0.74	<0.50	19	<0.50	8.8	150	2	<0.50	440	17	<0.50	1,300	<0.50
	12/15/2009	<2.5	<2.5	<2.5	<2.5	11	<2.5	4.7	120	<2.5	<2.5	410	7.6	<2.5	820	<2.5
	3/17/2010	<2.5	<2.5	<2.5	<2.5	22	<2.5	9.5	140	<2.5	<2.5	320	15	<2.5	1,300	<2.5
	7/2/2010	<2.5	<2.5	<2.5	<2.5	7	<2.5	4.8	52	<2.5	<2.5	220	5.9	<2.5	610	<2.5
	9/22/2010	<3	<3	<3	<3	16	<3	6.5	140	<3	<3	230	10	<3	800	<3
	12/8/2010	<0.5	<0.5	<0.5	<0.5	1.2	<0.5	0.7	11	<0.5	<0.5	82	1.5	<0.5	150	<0.5
	3/9/2011	<3	<3	<3	<3	6.8	<3	3.8	55	<3	<3	200	5	<3	540	<3
	6/8/2011	<0.5	<0.5	<0.5	<0.5	0.64	<0.5	<0.5	1.8	<0.5	<0.5	27	1.1	<0.5	66	<0.5
	9/14/2011	<2.5	<2.5	<2.5	<2.5	12	<2.5	5.7	120	<2.5	<2.5	300	8	<2.5	850	<2.5
	12/6/2011	<2.5	<2.5	<2.5	<2.5	8.4	<2.5	3.9	88	<2.5	<2.5	320	5.7	<2.5	740	<2.5
	3/7/2012	<2.5	<2.5	<2.5	<2.5	9.3	<2.5	4.6	87	<2.5	<2.5	270	6.1	<2.5	760	<2.5
	6/19/2012	<2.5	<2.5	<2.5	<2.5	11	<2.5	5.6	70	<2.5	<2.5	200	7.4	<2.5	730	<2.5
	9/11/2012	<2.5	<2.5	<2.5	<2.5	11	<2.5	5.1	110	<2.5	<2.5	280	6.6	<2.5	730	<2.5
	12/12/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.51	<0.50	<0.50	16	<0.50	<0.50	27	<0.50
	3/12/2013	<0.50	<0.50	0.56	<0.50	12	<0.50	4.4	100	1.7	<0.50	230	7.2	<0.50	670	<0.50
	6/12/2013	<3	<3	<3	<3	11	<3	5	84	<3	<3	260	6.6	<3	770	<3
	9/18/2013	<0.50	<0.50	<0.50	<0.50	13	<0.50	4.6	130	2	<0.50	240	5.9	<0.50	640	<0.50
	12/11/2013	<1.5	<1.5	<1.5	<1.5	8.4	<1.5	2.8	83	<1.5	<1.5	180	3.7	<1.5	460	<1.5
	3/18/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	11	<0.50	<0.50	20	<0.50
	6/24/2014	<0.50	<0.50	<0.50	<0.50	17	<0.50	7	120	1.8	<0.50	210	0.87	<0.50	670	<0.50
	9/24/2014	<2.5	<2.5	<2.5	<2.5	10	<2.5	4	120	<2.5	<2.5	240	4	<2.5	640	<2.5
	12/9/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	4.7	<0.50	<0.50	29	0.61	<0.50	63	<0.50
	3/18/2015	<0.50	<0.50	<0.50	<0.50	15.4	<0.50	5.9	128	2.2	<0.50	312	5.9	<0.50	912	<0.50
	6/16/2015	<3.1	<3.1	<3.1	<3.1	14.7	<3.1	4.9	117	<3.1	<3.1	248	4.4	<3.1	792	<3.1
	9/21/2015	<0.50	<0.50	<0.50	<0.50	15.2	<0.50	5.6	116	2.1	<0.50	201	4.7	<0.50	654	<0.50
	12/8/2015	Not sampled; well monument under water.														
	3/8/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	4.2	<0.50	<0.50	12.5	<0.50	<0.50	29.2	<0.50
	9/27/2016	<0.50	<2	<0.50	<0.50	7.2	<0.50	2.1	61.8	0.94	<0.50	100	1.7	<0.50	218	<0.50
	12/13/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	1.3	<0.50	<0.50	0.56	<0.50	<0.50	0.97	<0.50
	3/27/2017	<0.5	<2	<0.5	<0.5	<0.5	<0.5	0.57	69.2	<0.5	<0.5	14.7	<0.5	<0.5	33.4	0.62
	6/13/2017	<2.0	<2.0	<0.50	<0.50	10	<1.0	5.3	432	2.7	<0.50	58.3	2.1	<0.50	204	2.5

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-14 (continued)	9/26/2017	<0.84	<3.3	<0.84	<0.84	6	<0.84	2.6	279	2.8	<0.84	62.4	<0.84	<0.84	265	<0.84
	11/8/2017	<3.3	<3.3	<0.84	<0.84	5	<0.84	2.1	306	2.2	<0.84	39.3	<0.84	<0.84	160	0.9
	3/20/2018	<0.500	1.67 J	<0.500	<0.500	5	<0.500	3.6	500	2.6	<0.500	36.0	0.6	<0.500	150	1.35 J
	6/28/2018	<0.500	<2.50	<0.500	<0.500	11	<0.500	2.5	255	2.5	<0.500	34.9	1.6	<0.500	247	0.7
	9/26/2018	<10.0	<50.0	<10.0	<10.0	12.1	<4.00	4.40	361	4.50	<5.00	84.3	<4.00	<5.00	484	<4.00
	12/5/2018	<10.0	<50.0	<10.0	<10.0	5	<4.00	<4.00	333	<4.00	<5.00	83.4	<4.00	<5.00	260	<4.00
	3/19/2019	<5.00	<25.0	<5.00	<5.00	5.40	<4.00	<4.00	223	2.06	<2.50	31.4	<2.00	<2.50	178	<2.00
	6/6/2019	<1.00	<5.00	<1.00	<1.00	1.74	<0.400	1.09	151	0.937	<0.500	19.1	<0.400	<0.500	76.4	<0.400
	9/25/2019	<1.00	<5.00	<1.00	<1.00	12.5	<0.400	4.58	264	3.6	<0.500	91.8	1.47	<0.500	327	0.482
	12/4/2019	<1.00	<5.00	<1.00	<1.00	7.81	<0.400	3.17	242	2.88	<0.500	107	0.704	<0.500	351	<0.400
	3/11/2020	<1.00	<5.00	<1.00	<1.00	6.8	<2.00	2.72	186	2.45	<2.50	85.9	<2.00	<2.50	294	<2.00
	6/17/2020	<5.00	<25.0	<5.00	<5.00	3.50	<2.00	<2.00	82.6	<2.00	<2.50	62.6	<2.00	<2.50	197	<2.00
	10/8/2020	<5.00	<25.0	<5.00	<5.00	14.6	<2.00	4.79	207	<2.00	<2.50	124	<2.00	<2.50	680	<2.00
	12/9/2020	<10.0	<25.0	<5.00	<5.00	7.77	<2.00	3.04	180	2.520	<2.50	109	<2.00	<2.50	339	<2.00
	3/4/2021	<1.00	<5.00	<1.00	<1.00	9.39	<0.400	3.76	161	2.51	<0.500	128	1.24	<0.500	410	<0.400
	6/15/2021	<1.00	<5.00	<1.00	<1.00	0.87	<0.400	0.485	23.8	<0.400	<0.500	28.3	<0.400	<0.500	80.6	<0.400
	9/14/2021	<1.00	<5.00	<1.00	<1.00	11.1	<0.400	4.52	159	3.210	<0.500	156	1.43	<0.500	531	<0.530
	12/9/2021	<1.00	<5.00	<1.00	<1.00	0.522	<0.400	0.47	21.6	<0.400	<0.500	34.9	<0.400	<0.500	72.8	<0.400
	3/8/2022	<1.00	<5.00	<1.00	<1.00	2.37	<0.400	1.16	39.3	0.670	<0.500	54.3	0.540	<0.500	194	<0.400
	06/16/2022	<1.00	<5.00	<1.00	<1.00	0.740	<0.400	<0.400	7.36	<0.400	<0.500	16.2	<0.400	<0.500	41.7	<0.400
	9/13/2022	<1.00	<5.00	<1.00	<1.00	6.76	<0.400	2.48	115.00	2.1	<0.500	109	0.8	<0.500	321	<0.400
	12/7/2022	<1.00	<5.00	<1.00	<1.00	1.1	<0.400	0.74	27.90	0.67	<0.500	59.6	<0.400	<0.500	108	<0.400
	3/15/2023	<1.00	<5.00	<1.00	<1.00	3.15	<0.400	1.57	58.80	1.59	<0.500	146	0.74	<0.500	223	<0.400
	6/13/2023	<1.00	<5.00	<1.00	<1.00	1.76	<0.400	0.86	27.5	0.76	<0.500	48.5	<0.400	<0.500	158	<0.400
	9/12/2023	<20.0	<25.0	<5.00	<5.00	5.85	<2.00	5.15	82.7	2.45	<2.50	119	<2.00	<2.50	324	<1.00
	12/14/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	0.400	6.75	<0.400	<0.500	26.6	<0.400	<0.500	48.6	<0.200
	3/5/2024	<10.0	<25.0	<5.00	<5.00	4.30	<2.00	2.05	42.0	<2.00	<2.00	90.7	<2.00	<2.50	262	<1.00
	6/12/2024	<1.00	<5.00	<1.00	<1.00	0.410	<0.400	<0.400	5.75	<0.400	<0.500	20.6	<0.400	<0.500	39.8	<0.200
	9/4/2024	<1.00	<5.00	<1.00	<1.00	6.25	<0.400	2.63	96.4	2.05	<0.500	128	0.780	<0.500	266	<0.200
	12/4/2024	<1.00	<5.00	<1.00	<1.00	4.28	<0.400	2.82	69.5	1.86	<0.500	144	0.570	<0.500	239	<0.200
MW-15	11/13/1997	<0.50	<1	<0.50	<0.50	<0.50	1.1	<0.50	6.78	<0.50	<0.50	2.38	1.68	--	1.81	<1
	11/16/1999	<1	<2.5	<0.50	<1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	967	13.7	--	63.4	<0.50
	2/28/2000	<1	<5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	17.9	1.55	--	1.01	<0.50
	6/27/2000	<1	<5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	5.44	1.03	--	0.565	<0.50
	5/30/2001	<1	<5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2.32	<1	--	<0.50	<0.50
	5/31/2002	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2.59	0.63	--	<0.50	<0.50
	5/29/2003	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	0.53	<0.50	<0.50	4.42	<0.50	--	1.3	<0.50
	11/2/2004	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.9	<0.50	--	<0.50	<0.50
	11/16/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.73	<0.50	<0.50	12	<0.50	--	3.1	<0.50

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-15 (continued)	3/24/2005	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.74	<0.50	--	1.49	<0.50
	5/17/2005	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.54	<0.50	--	0.58	<0.50
	9/13/2007	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.54 J	<0.50	--	<0.50	<0.50
	3/7/2008	<1	<0.500	<0.500	<1	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	2.63 J	<0.500	<0.500	<0.500	<0.500
	9/18/2008	<1	<0.500	<0.500	<1	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	0.86	<0.500	<0.500	<0.500	<0.500
	3/25/2009	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	<0.50
	9/17/2009	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.81	<0.50	<0.50	<0.50	<0.50
	3/18/2010	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.7	<0.50	<0.50	<0.50	<0.50
	9/23/2010	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.76	<0.5	<0.5	<0.5	<0.5
	3/9/2011	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/16/2011	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.64	<0.50	<0.50	<0.50	<0.50
	3/9/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.7	<0.50	<0.50	<0.50	<0.50
	9/10/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.5	<0.50	<0.50	<0.50	<0.50
	3/14/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.58	<0.50	<0.50	<0.50	<0.50
	9/19/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.56	<0.50	<0.50	<0.50	<0.50
	3/21/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/30/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.87	<0.50	<0.50	<0.50	<0.50
	3/18/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.5	<0.50	<0.50	<0.50	<0.50
	9/23/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.62	<0.50	<0.50	<0.50	<0.50
	3/8/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.59	<0.50	<0.50	<0.50	<0.50
	9/30/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.51	<0.50	<0.50	<0.50	<0.50
	3/28/2017	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	9/28/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	11/6/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.6	<0.50	<0.50	<0.50	<0.50
	7/2/2018	<0.500	<2.50	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	0.60	<0.500	<0.500	<0.500	<0.500
	6/6/2019	<1.00	<5.00	<1.00	<1.00	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	0.531	<0.500	<0.500	<0.500	<0.500
	6/18/2020	<1.00	<5.00	<1.00	<1.00	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	0.540	<0.400	<0.500	<0.400	<0.400
	12/10/2020	<2.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	0.599	<0.400	<0.500	<0.400	<0.400
	6/17/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	0.431	<0.400	<0.500	<0.400	<0.400
	12/10/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	0.583	<0.400	<0.500	<0.400	<0.400
	06/15/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	0.400	<0.400	<0.500	<0.400	<0.400
	12/5/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	0.470	<0.400	<0.500	<0.400	<0.400
	6/15/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	0.580	<0.400	<0.500	<0.400	<0.400
	12/15/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	0.540	<0.400	<0.500	<0.400	<0.200
	6/11/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	0.470	<0.400	<0.500	<0.400	<0.200
	12/5/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	0.590	<0.400	<0.500	<0.400	<0.200

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility
Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-16	11/12/1997	<5	<10	<5	<5	19.8	<5	27.8	23.6	<5	<5	328	57.5	--	142	<10
	8/11/1999	<5	<25	<2.5	<2.5	15.2	<2.5	<2.5	7.2	<2.5	<2.5	205	55.6	--	85.6	<2.5
	2/28/2000	<2	<10	<1	<1	10.4	<1	12	7.4	<1	<1	523	54.5	--	112	<1
	6/27/2000	<10	<50	<5	<5	12.4	<5	13.9	8.39	<5	<5	236	45	--	93.8	<5
	5/30/2001	<10	<50	<5	<5	9.28	<5	12	8.95	<5	<5	302	30.1	--	110	<5
	5/30/2002	<5	<2.5	<2.5	<5	13.5	<2.5	10.6	8.65	<2.5	<2.5	467	24	--	119	<2.5
	5/29/2003	<5	<2.5	<2.5	<5	3.6	<2.5	3.35	2.85	<2.5	<2.5	412	13.4	--	76	<2.5
	11/2/2004	<2	<10	<1	<1	<1	<1	<1	1.66	<1	<1	260	6.9	--	25.4	<1
	11/16/2004	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	300	7.8	--	26	<2.5
	3/24/2005	<2	<1	<1	<2	1.8	<1	1.34	1.96	<1	<1	373	11.8	--	49.4	<1
	5/17/2005	<1	<0.50	<0.50	<1	4.39	<0.50	3.14	9.25	<0.50	<0.50	120	9.09	--	41.5	<0.50
	11/15/2005	<1	<0.500	<0.500	<1	2.75	<0.500	1.86	2.5	<0.500	<0.500	152	8.94	--	33.4	<0.500
	2/21/2006	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	6/6/2006	<2	<2	<2	<2	12.2	<2	3.38	210	<2	<2	84.6	2.56	--	25.2	5.64
	12/6/2006	<2	<1	<1	<2	4.2	<1	2.12	16.7	<1	<1	176	5.88	--	45.6	<1
	5/23/2007	<1	<1	<1	<1	2.57	<1	<1	14	<1	<1	98.8	3.35	--	23.8	<1
	9/13/2007	<1	<0.50	<0.50	<1	3.15	<0.50	1.08	6.6	<0.50	<0.50	163	5.87	--	49.2	<0.50
	12/12/2007	<2	<1	<1	<1	2.32	<1	1.44	5.9	<1	<1	110	5.92	--	28.2	<1
	3/7/2008	<1	<0.500	<0.500	<1	3	<0.500	1.86	5.93	<0.500	<0.500	280	6.12	<0.500	73.3	<0.500
	9/18/2008	<5	<2.50	<2.50	<5	2.7	<2.50	<2.50	5.15	<2.50	<2.50	300	6.2	<2.50	65.2	<2.50
	12/9/2008	<1	<1	<1	<1	2.6	<1	1.8	5.5	<1	<1	300	5.7	<1	67	<1
	3/26/2009	<0.50	<0.50	<0.50	<0.50	1.4	<0.50	0.82	3.2	<0.50	<0.50	150	5.2	<0.50	28	<0.50
	6/17/2009	<0.50	<0.50	<0.50	<0.50	5	<0.50	0.95	29	<0.50	<0.50	54	1.8	<0.50	16	0.68
	9/17/2009	<0.50	<0.50	<0.50	<0.50	1.5	<0.50	1.1	2	<0.50	<0.50	220	4.8	<0.50	33	<0.50
	12/17/2009	<0.50	<0.50	<0.50	<0.50	0.87	<0.50	0.6	1.4	<0.50	<0.50	100	3.2	<0.50	19	<0.50
	3/19/2010	<0.50	<0.50	<0.50	<0.50	1.2	<0.50	1	2	<0.50	<0.50	110	4.5	<0.50	36	<0.50
	6/16/2010	<0.50	<0.50	<0.50	<0.50	4.9	<0.50	0.91	37	<0.50	<0.50	39	0.94	<0.50	9.9	1.6
	9/23/2010	<0.5	<0.5	<0.5	<0.5	1.4	<0.5	0.94	2.8	<0.5	<0.5	240	4.2	<0.5	43	<0.5
	12/10/2010	<0.5	<0.5	<0.5	<0.5	0.85	<0.5	0.54	1.6	<0.5	<0.5	94	2.4	<0.5	18	<0.5
	3/10/2011	<0.50	<0.50	<0.50	<0.50	1.8	<0.50	0.5	6.2	<0.50	<0.50	110	1.9	<0.50	21	<0.50
	6/9/2011	<0.5	<0.5	<0.5	<0.5	4.9	<0.5	1.2	63	<0.5	<0.5	28	<0.5	<0.5	7.1	2.2
	9/19/2011	<0.50	<0.50	<0.50	<0.50	1.2	<0.50	<0.50	5.1	<0.50	<0.50	160	2.7	<0.50	13	<0.50
	12/8/2011	<0.50	<0.50	<0.50	<0.50	0.92	<0.50	0.61	2.2	<0.50	<0.50	210	2.9	<0.50	38	<0.50
	6/20/2012	<0.5	<0.5	<0.5	<0.5	3.6	<0.5	0.56	24	<0.5	<0.5	60	0.98	<0.5	14	0.62
	9/13/2012	<0.50	<0.50	<0.50	<0.50	1.7	<0.50	0.61	6.5	<0.50	<0.50	190	2.4	<0.50	35	<0.50
	12/13/2012	<0.50	<0.50	<0.50	<0.50	1.5	<0.50	0.68	5.7	<0.50	<0.50	110	1.1	<0.50	24	<0.50
	3/14/2013	<0.50	<0.50	<0.50	<0.50	0.98	<0.50	0.7	4.7	<0.50	<0.50	200	2	<0.50	50	<0.50

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility
Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-16	6/14/2013	<0.50	<0.50	<0.50	<0.50	1.3	<0.50	<0.50	6	<0.50	<0.50	84	0.96	<0.50	18	<0.50
(continued)	9/19/2013	<0.50	<0.50	<0.50	<0.50	0.92	<0.50	0.75	7.1	<0.50	<0.50	180	1.4	<0.50	57	<0.50
	12/13/2013	<0.50	<0.50	<0.50	<0.50	0.8	<0.50	0.68	5.9	<0.50	<0.50	160	1.4	<0.50	52	<0.50
	3/20/2014	<0.50	<0.50	<0.50	<0.50	2.7	<0.50	0.89	19	<0.50	<0.50	52	<0.50	<0.50	13	0.55
	6/24/2014	<0.50	<0.50	<0.50	<0.50	2	<0.50	<0.50	10	<0.50	<0.50	70	0.7	<0.50	12	<0.50
	9/27/2014	<0.50	<0.50	<0.50	<0.50	0.77	<0.50	0.66	8.8	<0.50	<0.50	200	1.4	<0.50	47	<0.50
	12/11/2014	<0.50	<0.50	<0.50	<0.50	0.64	<0.50	<0.50	4	<0.50	<0.50	76	0.96	<0.50	17	<0.50
	3/18/2015	<0.50	<0.50	<0.50	<0.50	0.7	<0.50	<0.50	6	<0.50	<0.50	157	0.94	<0.50	31	<0.50
	6/17/2015	<0.50	<0.50	<0.50	<0.50	0.61	<0.50	<0.50	10.5	<0.50	<0.50	179	1	<0.50	41.6	<0.50
	9/23/2015	<0.50	<0.50	<0.50	<0.50	0.56	<0.50	0.65	10.4	<0.50	<0.50	173	1.2	<0.50	43.5	<0.50
	12/7/2015	Not sampled; well monument under water.														
	9/28/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	9.5	<0.50	<0.50	144	0.66	<0.50	35.6	<0.50
	12/14/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	3.1	<0.50	<0.50	51.5	<0.50	<0.50	11.6	<0.50
	3/29/2017	<0.5	<2	<0.5	<0.5	1.6	<0.5	<0.5	19	<0.5	<0.5	27	<0.5	<0.5	6.4	<0.5
	6/14/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<1.0	<0.50	6.4	<0.50	<0.50	53.7	0.66	<0.50	5.4	<0.50
	9/25/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<1.0	<0.50	1.3	<0.50	<0.50	148.0	1.00	<0.50	11.1	<0.50
	11/6/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	3.8	<0.50	<0.50	150.0	0.96	<0.50	17.4	<0.50
	3/19/2018	<0.500	<2.50	<0.500	<0.500	0.232 J	<0.500	0.190 J	3.8	<0.500	<0.500	99.7	0.82	<0.500	12.6	<0.500
	7/2/2018	<0.500	<2.50	<0.500	<0.500	0.500 J	<0.500	0.209 J	9.6	<0.500	<0.500	72.5	0.86	<0.500	7.4	<0.500
	9/25/2018	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	15.8	<0.400	<0.500	171	0.580	<0.500	33.9	<0.400
	12/6/2018	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	4.5	<0.400	<0.500	130.0	0.76	<0.500	20.8	<0.400
	3/22/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	7.90	<0.400	<0.500	136	0.771	<0.500	24.3	<0.400
	6/4/2019	<1.00	<5.00	<1.00	<1.00	0.810	<0.400	<0.400	14.3	<0.400	<0.500	30.1	<0.400	<0.500	5.34	<0.400
	9/25/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	14.4	<0.400	<0.500	136	0.658	<0.500	23.9	<0.400
	12/3/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	8.75	<0.400	<0.500	102	0.598	<0.500	19.9	<0.400
	3/11/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	8.67	<0.400	<0.500	79	0.552	<0.500	12.7	<0.400
	6/18/2020	<1.00	<5.00	<1.00	<1.00	1.070	<0.400	<0.400	23.8	<0.400	<0.500	27.3	<0.400	<0.500	5.89	0.42
	10/7/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	26.7	<0.400	<0.500	172	0.642	<0.500	35.9	<0.400
	12/9/2020	<2.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	15.7	<0.400	<0.500	122	0.550	<0.500	15.5	<0.400
	3/3/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	13.2	<0.400	<0.500	71.1	0.457	<0.500	12.2	<0.400
	6/16/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	11.6	<0.400	<0.500	75	0.444	<0.500	12.2	<0.400
	9/15/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	38.6	<0.400	<0.500	168	0.547	<0.500	31.6	<0.400
	12/7/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	6.38	<0.400	<0.500	43.1	<0.400	<0.500	5.79	<0.400
	3/9/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	14.8	<0.400	<0.500	54.0	<0.400	<0.500	8.82	<0.400
	06/16/2022	<1.00	<5.00	<1.00	<1.00	0.840	<0.400	<0.400	26.3	<0.400	<0.500	20.6	<0.400	<0.500	5.48	0.670
	9/14/2022	<1.00	<5.00	<1.00	<1.00	0.490	<0.400	0.48	84.1	<0.400	<0.500	113	0.57	<0.500	25	<0.400

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-16 (continued)	12/7/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	20.8	<0.400	<0.500	22.8	<0.400	<0.500	4.65	<0.400
	3/15/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	16.6	<0.400	<0.500	57	0.42	<0.500	7.52	<0.400
	6/15/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	27.1	<0.400	<0.500	56.1	0.43	<0.500	10.1	<0.400
	9/13/2023	<2.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	62.4	<0.400	<0.500	95.1	0.530	<0.500	14.9	<0.200
	12/14/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	10.6	<0.400	<0.500	37.6	0.460	<0.500	4.44	<0.200
	3/11/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	25.3	<0.400	<0.500	80.7	0.54	<0.500	8.94	<0.200
	6/11/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	15	<0.400	<0.500	35.3	<0.400	<0.500	4.02	<0.200
	9/5/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	29.8	<0.400	<0.500	66.6	<0.400	<0.500	6.83	<0.200
	12/4/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	14.0	<0.400	<0.500	47.8	<0.400	<0.500	3.76	<0.200
MW-17	11/13/1997	<0.50	<1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.9	<0.50	--	<0.50	<1
	11/16/1999	<1	<2.5	<0.50	<1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	127	1.5	--	9.54	<0.50
	2/28/2000	<1	<5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.85	<1	--	2.51	<0.50
	6/27/2000	<1	<5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2.27	<1	--	<0.50	<0.50
	5/30/2001	<1	<5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1	--	<0.50	<0.50
	5/30/2002	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.82	<0.50	--	<0.50	<0.50
	5/28/2003	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.75	<0.50	--	0.92	<0.50
	11/15/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2.5	<0.50	--	<0.50	<0.50
	5/17/2005	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	8.06	<0.50	--	6.68	<0.50
	5/23/2007	<1	<1	<1	<1	<1	<1	<1	8.82	<1	<1	37.8	<1	--	28.2	<1
	9/11/2007	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50 J	<0.50	--	<0.50	<0.50
	3/5/2008	<1	<0.500	<0.500	<1	0.9	<0.500	<0.500	0.96	<0.500	<0.500	1.05	<0.500	<0.500	3.62	<0.500
	9/19/2008	<1	<0.500	<0.500	<1	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	0.8	<0.500
	3/25/2009	<0.50	<0.50	<0.50	<0.50	0.57	<0.50	<0.50	1	<0.50	<0.50	0.69	<0.50	<0.50	3	<0.50
	9/16/2009	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.8	<0.50	<0.50	0.72	<0.50	<0.50	3.2	<0.50
	3/23/2010	<0.50	<0.50	<0.50	<0.50	1.2	<0.50	<0.50	3.9	<0.50	<0.50	3.2	0.58	<0.50	18	<0.50
	9/20/2010	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.69	<0.5	<0.5	0.71	<0.5	<0.5	3	<0.5
	3/9/2011	<0.50	<0.50	<0.50	<0.50	0.65	<0.50	<0.50	<0.50	<0.50	<0.50	2.5	<0.50	<0.50	8.2	<0.50
	9/13/2011	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.96	<0.50	<0.50	0.71	<0.50	<0.50	3.1	<0.50
	3/7/2012	<0.50	<0.50	<0.50	<0.50	1.6	<0.50	<0.50	5.4	<0.50	<0.50	6.8	0.56	<0.50	25	<0.50
	9/11/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.73	<0.50	<0.50	0.66	<0.50	<0.50	2.5	<0.50
	3/12/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.9	<0.50	<0.50	4.1	<0.50	<0.50	11	<0.50
	9/17/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.6	<0.50	<0.50	4.2	<0.50	<0.50	8.9	<0.50
	3/18/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/24/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.5	<0.50	<0.50	3.2	<0.50	<0.50	6.8	<0.50
	3/18/2015	<0.50	<0.50	<0.50	<0.50	0.71	<0.50	<0.50	2.4	<0.50	<0.50	3.9	<0.50	<0.50	12.6	<0.50
	9/17/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.53	<0.50	<0.50	2.5	<0.50	<0.50	4.2	<0.50
	3/8/2016	<0.50	<2	<0.50	<0.50	0.83	<0.50	<0.50	3.3	<0.50	<0.50	9.4	<0.50	<0.50	22.7	<0.50

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-17	9/27/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	1.5	<0.50	<0.50	4.2	<0.50	<0.50	10.4	<0.50
(continued	3/29/2017	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	9/29/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<1.0	<0.50	2.7	<0.50	<0.50	4.6	<0.50	<0.50	11.4	<0.50
	11/8/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	9.3	<0.50	<0.50	9.9	<0.50	<0.50	21.9	<0.50
	6/28/2018	<0.500	<2.50	<0.500	<0.500	0.516	<0.500	<0.500	2.7	<0.500	<0.500	3.7	<0.500	<0.500	9.0	<0.500
	9/26/2018	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	1.6	<0.400	<0.500	2.2	<0.400	<0.500	4.6	<0.400
	3/19/2019	<1.00	<5.00	<1.00	<1.00	0.623	<0.400	<0.400	10.5	<0.400	<0.500	6.91	<0.400	<0.500	15.2	<0.400
	6/6/2019	<1.00	<5.00	<1.00	<1.00	0.413	<0.400	<0.400	4.34	<0.400	<0.500	4.34	<0.400	<0.500	10.0	<0.400
	9/26/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	3.87	<0.400	<0.500	2.41	<0.400	<0.500	4.6	<0.400
	12/3/2019	<1.00	<5.00	<1.00	<1.00	0.829	<0.400	<0.400	26.8	<0.400	<0.500	5.54	<0.400	<0.500	15.1	<0.400
	3/10/2020	<1.00	<5.00	<1.00	<1.00	1.06	<0.400	<0.400	18.7	<0.400	<0.500	4.74	<0.400	<0.500	11.6	<0.400
	6/17/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	5.11	<0.400	<0.500	4.06	<0.400	<0.500	7.4	<0.400
	10/7/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	2.28	<0.400	<0.500	1.75	<0.400	<0.500	3.61	<0.400
	12/8/2020	<2.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	17.9	<0.400	<0.500	4.76	<0.400	<0.500	8.70	<0.400
	3/3/2021	<1.00	<5.00	<1.00	<1.00	0.684	<0.400	<0.400	22.8	<0.400	<0.500	4.19	<0.400	<0.500	11.00	<0.400
	6/15/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	5.99	<0.400	<0.500	1.9	<0.400	<0.500	3.62	<0.400
	9/14/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	2.23	<0.400	<0.500	1.14	<0.400	<0.500	3.42	<0.400
	12/8/2021	<1.00	<5.00	<1.00	<1.00	0.517	<0.400	<0.400	35.3	<0.400	<0.500	7.75	<0.400	<0.500	16.2	<0.400
	3/8/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	1.51	<0.400	<0.500	1.47	<0.400	<0.500	1.69	<0.400
	06/16/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	9/13/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	2.11	<0.400	<0.500	.490	<0.400	<0.500	1.00	<0.400
	12/7/2022	<1.00	<5.00	<1.00	<1.00	0.44	<0.400	<0.400	27.4	<0.400	<0.500	5.98	<0.400	<0.500	11.4	<0.400
	3/15/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	4.61	<0.400	<0.500	1.33	<0.400	<0.500	3.13	<0.400
	6/13/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	2.15	<0.400	<0.500	0.990	<0.400	<0.500	1.90	<0.400
	9/13/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	1.64	<0.400	<0.500	0.580	<0.400	<0.500	1.30	<0.200
	12/14/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	1.26	<0.400	<0.500	0.610	<0.200
	3/5/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	6.04	<0.400	<0.500	1.47	<0.400	<0.500	2.96	<0.200
	6/12/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	0.69	<0.400	<0.500	0.85	<0.400	<0.500	0.660	<0.200
	9/4/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	1.24	<0.400	<0.500	0.590	<0.400	<0.500	0.900	<0.200
	12/4/2024	<1.00	<5.00	<1.00	<1.00	0.420	<0.400	<0.400	11.8	<0.400	<0.500	3.49	<0.400	<0.500	5.95	<0.200

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-18i	9/29/2000	ND	ND	0.694	ND	0.843	ND	ND	16.5	ND	ND	11.7	ND	--	8.32	ND
	11/30/2000	<1	<5	<0.50	<0.50	0.907	<0.50	<0.50	11.6	<0.50	<0.50	12.4	<1	--	17.6	<0.50
	2/27/2001	<5	<25	<2.5	<2.5	<2.5	<2.5	<2.5	10.2	<2.5	<2.5	15.2	<5	--	10	<2.5
	5/30/2001	<5	<25	<2.5	<2.5	<2.5	<2.5	<2.5	6.47	<2.5	<2.5	29.5	<5	--	8.06	<2.5
	9/25/2001	<1	<1	<1	<1	1.8	<1	<1	23	<1	<1	62	2.3	--	39	<1
	3/29/2002	<1	<0.50	<0.50	<1	1.2	<0.50	<0.50	17.3	<0.50	<0.50	71.1	1.22	--	31	<0.50
	5/30/2002	<1	<0.50	<0.50	<1	1.18	<0.50	<0.50	18.6	<0.50	<0.50	53.2	1.14	--	19.3	<0.50
	8/29/2002	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	6.91	<0.50	<0.50	18.2	<0.50	--	7.34	<0.50
	11/7/2002	<1	<0.50	<0.50	<1	0.56	<0.50	<0.50	10.1	<0.50	<0.50	23.3	<0.50	--	9.7	<0.50
	1/23/2003	<1	<0.50	<0.50	<1	0.68	<0.50	<0.50	12.3	<0.50	<0.50	27.6	0.5	--	12.5	<0.50
	5/29/2003	<1	<0.50	<0.50	<1	0.59	<0.50	<0.50	10.4	<0.50	<0.50	23.9	0.5	--	10.8	<0.50
	11/11/2003	<1	<1	<1	<1	<1	<1	<1	16.1	<1	<1	31.5	<1	--	16.3	<1
	1/27/2004	<1	<0.50	<0.50	<1	0.67	<0.50	<0.50	14.2	<0.50	<0.50	69.7	0.53	--	12	<0.50
	5/4/2004	<1	<1	<1	<1	<1	<1	<1	15.6	<1	<1	112	<1	--	12.1	<1
	8/17/2004	<1	<0.50	3.76	<0.50	0.81	1.86	<0.50	22.6	0.78	<0.50	43.8	0.96	--	24	<1
	11/2/2004	<0.50	<0.50	<0.50	<0.50	1.09	<0.50	<0.50	21.8	<0.50	<0.50	32.2	0.6	--	17.8	<0.50
	11/16/2004	<0.50	<0.50	<0.50	<0.50	1	<0.50	<0.50	24	<0.50	<0.50	42	0.69	--	21	<0.50
	2/1/2005	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	8.92	<0.50	<0.50	13	<0.50	--	6.01	<0.50
	5/18/2005	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	11	<0.50	<0.50	9.69	<0.50	--	7.3	<0.50
	8/18/2005	<1	<0.500	<0.500	<1	1.17	<0.500	<0.500	18 B	<0.500	<0.500	21.4 B	0.58	--	16.3 B	<0.500
	08/18/2005 DUP	<1	<0.500	<0.500	<1	1.17	<0.500	<0.500	18.5 B	<0.500	<0.500	21.8 B	0.57	--	16.2 B	<0.500
	11/15/2005	<1	<0.500	<0.500	<1	<0.500	<0.500	<0.500	7.31	<0.500	<0.500	11.4	<0.500	--	6.31	<0.500
	2/21/2006	<1	<0.500	<0.500	<1	0.93	<0.500	<0.500	14.8	<0.500	<0.500	24.3	0.52	--	15.2	<0.500
	6/6/2006	<1	<1	<1	<1	<1	<1	<1	5.88	<1	<1	8.46	<1	--	4.47	<1
	9/6/2006	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	5.79	<0.50	<0.50	7.89	<0.50	--	4.23	<0.50
	12/6/2006	<1	<0.50	<0.50	<1	0.56	<0.50	<0.50	11.6	<0.50	<0.50	11.2	<0.50	--	6.91	<0.50
	2/7/2007	<1	<0.50	<0.50	<1	0.68	<0.50	<0.50	12	<0.50	<0.50	15	<0.50	--	9.32	<0.50
	5/23/2007	<1	<1	<1	<1	<1	<1	<1	14.6	<1	<1	17.2	<1	--	11.3	<1
	9/11/2007	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	4.87	<0.50	<0.50	1.13	<0.50	--	1.46	<0.50
	12/13/2007	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	2.99	<0.50	<0.50	5.57	<0.50	--	3.32	<0.50
	3/6/2008	<1	<0.500	<0.500	<1	0.82	<0.500	<0.500	13.2	<0.500	<0.500	13.2	<0.500	<0.500	9.78	<0.500
	6/10/2008	<1	1	1	<1	<1	<1	<1	4.17	<1	<1	4.31	<1	--	2.18	<1
	9/17/2008	<1	<0.500	<0.500	<1	<0.500	<0.500	<0.500	3.95	<0.500	<0.500	3.1	<0.500	<0.500	2.55	<0.500
	12/9/2008	<0.50	<0.50	<0.50	<0.50	0.7	<0.50	<0.50	12	<0.50	<0.50	8.5	<0.50	<0.50	7.4	<0.50

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-18i	3/26/2009	<0.50	<0.50	<0.50	<0.50	0.51	<0.50	<0.50	8	<0.50	<0.50	4.8	<0.50	<0.50	4.7	<0.50
(continued)	6/16/2009	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	3.3	<0.50	<0.50	2.5	<0.50	<0.50	1.7	<0.50
	9/16/2009	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	8.2	<0.50	<0.50	5.9	<0.50	<0.50	4.5	<0.50
	12/15/2009	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.6	<0.50	<0.50	2.5	<0.50	<0.50	1.6	<0.50
	3/18/2010	<0.50	<0.50	<0.50	<0.50	0.52	<0.50	<0.50	11	<0.50	<0.50	9.7	<0.50	<0.50	6	<0.50
	6/15/2010	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	3	<0.50	<0.50	3.6	<0.50	<0.50	1.8	<0.50
	9/22/2010	<0.5	<0.5	<0.5	<0.5	0.71	<0.5	0.5	15	<0.5	<0.5	9.8	<0.5	<0.5	7.4	<0.5
	12/9/2010	<0.5	<0.5	<0.5	<0.5	0.66	<0.5	0.5	15	<0.5	<0.5	12	<0.5	<0.5	8	<0.5
	3/10/2011	<0.50	<0.50	<0.50	<0.50	0.5	<0.50	<0.50	12	<0.50	<0.50	9.4	<0.50	<0.50	5.2	<0.50
	6/9/2011	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	2	<0.5	<0.5	2.1	<0.5	<0.5	1	<0.5
	9/15/2011	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	3.3	<0.50	<0.50	2.9	<0.50	<0.50	1.9	<0.50
	12/8/2011	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	9.8	<0.50	<0.50	8.5	<0.50	<0.50	4.8	<0.50
	3/7/2012	<0.50	<0.50	<0.50	<0.50	0.62	<0.50	<0.50	15	<0.50	<0.50	12	<0.50	<0.50	6.4	<0.50
	6/21/2012	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	2.7	<0.5	<0.5	1.5	<0.5	<0.5	0.97	<0.5
	9/13/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2.2	<0.50	<0.50	1.7	<0.50	<0.50	1	<0.50
	12/13/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	6.3	<0.50	<0.50	3.9	<0.50	<0.50	2.1	<0.50
	3/13/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	5.2	<0.50	<0.50	3.8	<0.50	<0.50	2.1	<0.50
	6/13/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	3.9	<0.50	<0.50	2.4	<0.50	<0.50	1.3	<0.50
	9/19/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	3.1	<0.50	<0.50	2.2	<0.50	<0.50	1.3	<0.50
	12/13/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	11	<0.50	<0.50	5.3	<0.50	<0.50	3.6	<0.50
	3/20/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.8	<0.50	<0.50	1	<0.50	<0.50	0.7	<0.50
	6/26/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.63	<0.50	<0.50	0.19	<0.50	<0.50	1	<0.50
	9/26/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.51	<0.50	<0.50	1.5	<0.50	<0.50	0.93	<0.50
	12/10/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2.9	<0.50	<0.50	2	<0.50	<0.50	1.3	<0.50
	3/18/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2.3	<0.50	<0.50	2	<0.50	<0.50	1.1	<0.50
	6/17/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.3	<0.50	<0.50	2	<0.50	<0.50	1.1	<0.50
	9/23/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	3.5	<0.50	<0.50	3.4	<0.50	<0.50	1.8	<0.50
	12/7/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	6.5	<0.50	<0.50	4	<0.50	<0.50	2.6	<0.50
	3/9/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.6	<0.50	<0.50	1	<0.50
	6/16/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.98	<0.50	<0.50	0.73	<0.50
	9/28/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.4	<0.50	<0.50	0.85	<0.50
	12/14/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	2.8	<0.50	<0.50	1.5	<0.50	<0.50	1.2	<0.50
	3/29/2017	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	1.5	<0.5	<0.5	1.4	<0.5	<0.5	1.2	<0.5
	6/13/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	1.1	<0.50	<0.50	0.66	<0.50
	9/27/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<1.0	<0.50	6.40	<0.50	<0.50	1.9	<0.50	<0.50	1.30	<0.50

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-18i (continued)	11/7/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.9	<0.50	<0.50	0.50	<0.50
	3/21/2018	<0.500	<2.50	<0.500	<0.500	<0.500	<0.500	<0.500	1.43	<0.500	<0.500	1.5	<0.500	<0.500	0.82	<0.500
	7/2/2018	<0.500	<2.50	<0.500	<0.500	<0.500	<0.500	<0.500	0.63	<0.500	<0.500	0.6	0.320 J	<0.500	<0.500	<0.500
	9/27/2018	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	0.7	<0.400	<0.500	<0.400	<0.400
	12/6/2018	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	0.96	<0.400	<0.500	1.3	<0.400	<0.500	0.70	<0.400
	3/21/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	2.53	<0.400	<0.500	1.38	<0.400	<0.500	1.03	<0.400
	6/3/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	1.31	<0.400	<0.500	0.970	<0.400	<0.500	0.560	<0.400
	9/25/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	0.63	<0.400	<0.500	0.920	<0.400	<0.500	0.647	<0.400
	12/3/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	1.300	<0.400	<0.500	0.589	<0.400
	3/11/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	1.6	<0.400	<0.500	0.896	<0.400	<0.500	0.502	<0.400
	6/17/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	0.94	<0.400	<0.500	0.880	<0.400	<0.500	0.400	<0.400
	10/7/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	0.891	<0.400	<0.500	0.419	<0.400
	12/9/2020	<2.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	0.764	<0.400	<0.500	<0.400	<0.400
	3/3/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	0.664	<0.400	<0.500	0.808	<0.400	<0.500	<0.400	<0.400
	6/17/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	0.698	<0.400	<0.500	0.45	<0.400
	9/15/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	1.05	<0.400	<0.500	0.487	<0.400
	12/9/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	1.23	<0.400	<0.500	0.949	<0.400	<0.500	0.533	<0.400
	3/9/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	0.990	<0.400	<0.500	0.730	<0.400	<0.500	0.450	<0.400
	06/16/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	0.850	<0.400	<0.500	0.920	<0.400	<0.500	0.440	<0.400
	9/15/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	0.690	<0.400	<0.500	<0.400	<0.400
	12/7/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	0.77	<0.400	<0.500	<0.400	<0.400
	3/17/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	0.650	<0.400	<0.500	<0.400	<0.400
	6/15/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	0.750	<0.400	<0.500	0.970	<0.400	<0.500	<0.400	<0.400
	9/13/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	0.570	<0.400	<0.500	<0.400	<0.200
	12/4/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	1.01	<0.400	<0.500	<0.400	<0.200
	3/7/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	0.900	<0.400	<0.500	0.410	<0.200
	6/12/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	0.960	<0.400	<0.500	0.420	<0.200
	9/5/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	1.15	<0.400	<0.500	<0.400	<0.200
	12/5/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	1.58	<0.400	<0.500	0.460	<0.200

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-19	3/7/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	0.900	<0.400	<0.500	0.410	<0.200
	6/12/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	0.960	<0.400	<0.500	0.420	<0.200
	11/7/2002	<20	<10	<10	<20	252	<10	66.2	2,450	23	<10	3,100	139	--	1,810	79.2
	5/30/2003	<50	<25	<25	<50	109	<25	36	1,300	<25	<25	7,160	104	--	2,070	35.5
	11/16/2004	<50	<50	<50	<50	<50	65	<50	490	<50	<50	7,300	130	--	1,400	<50
	5/18/2005	<10	<5	<5	<10	19.3	<5	<5	161	<5	<5	1,500	33.8	--	205	24.6
	11/15/2005	<20	<10	<10	<20	27	<10	18.8	230	<10	<10	3,080	67.2	--	785	14.6
	11/15/2005 DUP	<20	<10	<10	<20	25	<10	20.2	221	<10	<10	2,860	64.4	--	762	15.2
	6/5/2006	<10	<10	<10	<10	<10	<10	<10	80.9	<10	<10	1,280	13.1	--	237	<10
	12/6/2006	<20	<10	<10	<20	<10	<10	<10	76.2	<10	<10	2,060	17.2	--	304	<10
	5/22/2007	<20	<20	<20	<20	<20	<20	<20	114	<20	<20	2,720	51.4	--	504	<20
	9/11/2007	<50	<25	<25	<50	<25	<25	<25	85.5	<25	<25	3,370	62.5	--	608	<25
	12/12/2007	<50	<25	<25	<50	<25	<25	<25	80	<25	<25	2,070	38.5	--	326	<25
	03/05/2008[7.]	<1	<0.500	<0.500	<1	12.5	<0.500	20.5	149	4.53	<0.500	4,060	66	<0.500	1,030	6.41
	6/25/2008	<20	<20	<20	<20	45.8	<20	29.6	435	<20	<20	2,790	46.6	--	1,410	<20
	9/19/2008	<50	<25	<25	<50	62	<25	37.5	715	<25	<25	4,990	56.5	<25	2,870	39.5
	12/10/2008	<25	<25	<25	<25	51	<25	<25	500	<25	<25	6,600	110	<25	1,100	<25
	3/27/2009	<15	<15	<15	<15	53	<15	39	650	<15	<15	4,500	120	<15	1,900	25
	03/27/2009 DUP	<15	<15	<15	<15	56	<15	39	670	<15	<15	4,800	130	<15	1,900	25
	6/18/2009	<2.5	<2.5	<2.5	<2.5	5.4	<2.5	5.3	82	<2.5	<2.5	680	8.6	<2.5	240	<2.5
	06/18/2009 DUP	<2.5	<2.5	<2.5	<2.5	5.1	<2.5	5.4	80	<2.5	<2.5	660	8.4	<2.5	240	<2.5
	9/18/2009	<2.5	<2.5	<2.5	<2.5	12	<2.5	36	170	4.6	<2.5	9,400	140	<2.5	2,000	11
	09/18/2009 DUP	<2.5	<2.5	<2.5	<2.5	12	<2.5	36	170	4.4	<2.5	9,700	140	<2.5	2,000	12
	12/18/2009	<10	<10	<10	<10	87	<10	29	780	13	<10	3,200	57	<10	1,200	35
	12/18/2009 DUP	<10	<10	<10	<10	84	<10	27	740	12	<10	3,100	53	<10	1,200	32
	3/19/2010	<5	<5	<5	<5	<5	<5	8.3	45	<5	<5	1,900	19	<5	380	<5
	03/19/2010 DUP	<7	<7	<7	<7	<7	<7	8.3	44	<7	<7	1,800	18	<7	360	<7
	6/17/2010	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	6.7	<0.50	<0.50	67	<0.50	<0.50	25	<0.50
	06/17/2010 DUP	<0.50	<0.50	<0.50	<0.50	0.53	<0.50	<0.50	6.9	<0.50	<0.50	65	0.52	<0.50	24	<0.50
	9/23/2010	<2.5	<2.5	<2.5	<2.5	8.7	<2.5	21	110	3.6	<2.5	3,400	50	<2.5	920	12
	09/23/2010 DUP	<2.5	<2.5	<2.5	<2.5	8.5	<2.5	21	110	3.4	<2.5	3,700	49	<0.25	890	13
	12/9/2010	<15	<15	<15	<15	59	<15	38	590	<15	<15	6,200	68	<15	1,500	48
	12/09/2010 DUP	<1.5	<1.5	<1.5	<1.5	58	<1.5	37	590	<1.5	<1.5	6,000	67	<1.5	1,500	48
	3/8/2011	<5	<5	<5	<5	23	<5	12	280	<5	<5	1,500	18	<5	590	13

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-19	6/10/2011	<0.9	<0.9	<0.9	<0.9	22	<0.9	2.7	160	1.4	<0.9	240	3.6	<0.9	130	5.6
(continued)	06/10/2011 DUP	<0.9	<0.9	<0.9	<0.9	19	<0.9	2.3	140	1.3	<0.9	220	3.3	<0.9	120	5
	9/19/2011	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	53	<1.5	<1.5	400	3	<1.5	78	<1.5
	09/19/2011 DUP	<2	<2	<2	<2	<2	<2	<2	53	<2	<2	410	3.2	<2	80	<2
	12/9/2011	<1.5	<1.5	<1.5	<1.5	5	<1.5	4.3	110	<1.5	<1.5	730	10	<1.5	220	3.9
	12/09/2011 DUP	<2	<2	<2	<2	5.4	<2	4.7	120	<2	<2	770	10	<2	230	3.9
	3/9/2012	<2.5	<2.5	<2.5	<2.5	46	<2.5	26	820	1	<2.5	2,400	50	<2.5	1,200	67
	03/09/2012 DUP	<4	<4	<4	<4	43	<4	24	770	8.8	<4	2,400	46	<4	1,200	62
	06/22/2012	<5	<5	<5	<5	74	<5	17	1,000	14	<5	1,300	21	<5	1,000	57
	06/22/2012 DUP	<5	<5	<5	<5	74	<5	18	1,000	13	<5	1,300	22	<5	1,000	57
	9/14/2012	<5	<5	<5	<5	<5	<5	5.7	300	<5	<5	2,200	31	<5	340	8
	09/14/2012 DUP	<5	<5	<5	<5	<5	<5	5.9	300	<5	<5	2,300	31	<5	340	<5
	12/14/2012	<1.5	9.8	<1.5	<1.5	21	<1.5	1.8	330	3.6	<1.5	290	3.2	<1.5	140	3.1
	12/14/2012 DUP	<1	9.3	<1	<1	21	<1	1.7	340	3.7	<1	300	3.1	<1	140	3
	3/15/2013	<1.5	4.7	<1.5	<1.5	29	<1.5	21	870	5.5	<1.5	3,200	67	<1.5	1,600	9
	03/15/2013 DUP	<1.5	4.7	<1.5	<1.5	30	<1.5	20	820	6.1	<1.5	3,200	68	<1.5	1,500	9.2
	6/14/2013	<9	<9	<9	<9	25	<9	13	730	<9	<9	2,500	29	<9	1,000	<9
	06/14/2013 DUP	<9	<9	<9	<9	25	<9	11	720	<9	<9	2,400	26	<9	1,000	<9
	9/20/2013	<0.50	1.2	<0.50	<0.50	14	<0.50	25	520	4.5	<0.50	3,000	61	<0.50	1,100	10
	09/20/2013 DUP	<1	1.1	<1	<1	12	<1	21	490	3.8	<1	3,200	52	<1	1,200	9
	12/16/2013	<15	<15	<15	<15	37	<15	22	680	<15	<15	3,000	36	<15	1,100	<15
	12/16/2013 DUP	<15	<15	<15	<15	36	<15	22	660	<15	<15	2,900	37	<15	1,100	<15
	3/21/2014	<0.50	1.4	<0.50	<0.50	4.8	<0.50	2.4	130	1.2	<0.50	180	1.6	<0.50	51	4.3
	3/21/2014 DUP	<0.50	1.4	<0.50	<0.50	4.8	<0.50	2.2	130	1.1	<0.50	180	1.6	<0.50	51	4.3
	6/26/2014	<5	0.89	<0.50	<0.50	0.54	110	38	2,000	21	<0.50	1,900	36	0.8	1,500	6.2
	6/26/2014 DUP	<5	1.1	<0.50	<0.50	110	<0.50	38	1,900	21	<0.50	1,900	36	0.74	1,600	6.1
	9/30/2014	<15	<15	<15	<15	18	<15	38	520	<15	<15	4,400	61	<15	1,700	32
	9/30/2014 DUP	<15	<15	<15	<15	18	<15	37	510	<15	<15	4,400	60	<15	1,700	30
	12/12/2014	<5	<5	<5	<5	96	<5	20	1,500	12	<5	1,400	19	<5	790	60
	12/12/2014 DUP	<5	<5	<5	<5	110	<5	21	1,500	14	<5	1,500	21	<5	890	68
	3/18/2015	<4.2	<4.2	<4.2	<4.2	72.5	<4.2	48	1,460	17.5	<4.2	5,920	56.5	<4.2	3,970	53.7
	3/18/2015 DUP	<4.2	<4.2	<4.2	<4.2	82.9	<4.2	47.9	1,410	17.8	<4.2	4,930	56.2	<4.2	3,500	46.6
	6/18/2015	<0.50	<0.50	<0.50	<0.50	21.5	<0.5	48.5	628	6.6	<0.50	8,080	94.3	<0.50	2,200	28
	6/18/2015 DUP	<0.50	<0.50	<0.50	<0.50	22.7	<0.50	48.8	614	7.5	<0.50	7,990	985	<0.50	2,090	30.7

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-19 (continued)	9/22/2015	<0.50	<0.50	<0.50	<0.50	4.9	<0.5	31.7	185	2	<0.50	7,200	74.8	<0.50	791	6.8
	12/8/2015	<0.50	<0.50	<0.50	<0.50	150	<0.5	33.5	1,640	16.4	<0.50	2,900	36	<0.50	1,550	87.3
	12/8/2015 DUP	<0.50	<0.50	<0.50	<0.50	155	<0.50	35.1	1,680	17.2	<0.50	3,020	37.1	<0.50	1,600	89.8
	3/8/2016	<10	<40	<10	<10	96.6	<10	42	1,520	20.2	<10	4,080	40.8	<10	2,610	64.8
	3/8/2016 DUP	<10	<40	<10	<10	93	<10	42.8	1,460	18.2	<10	3,760	40.4	<10	2,560	72.4
	6/16/2016	<10	<40	<10	<10	<10	<10	22.2	507	<10	<10	3,250	29.2	<10	1,030	18.3
	6/16/2016 DUP	<12.5	<50	<12.5	<12.5	19.5	<12.5	23.8	505	<12.5	<12.5	3,460	28.1	<12.5	1,020	17.6
	9/26/2016	<5	<20	<5	<5	10.4	<5	11	235	<5	<5	1,520	14.5	<5	592	10.1
	12/12/2016	<5	<20	<5	<5	72.8	<5	11.2	1,030	10.7	<5	1,730	10.9	<5	812	28.2
	12/12/2016 DUP	<2.5	<10	<2.5	<2.5	78.7	<2.5	14.2	1,010	11.6	<2.5	1,530	15.5	<2.5	975	31.9
	3/28/2017	<5	<20	<5	<5	197	<5	25.5	1,930	19.7	<5	664	17	<5	826	58.5
	3/28/2017 DUP	<5	<20	<5	<5	214	<5	26.7	1,990	21.5	<5	755	19.9	<5	896	63.2
	6/14/2017	<2.5	<10	<2.5	<2.5	40.6	<2.5	15.4	481	6.1	<2.5	531	8.1	<2.5	481	16.5
	6/14/2017 DUP	<2.5	<10	<2.5	<2.5	41.8	<2.5	15.8	486	6.2	<2.5	566	8.2	<2.5	506	17.2
	9/26/2017	<2.5	<10	<2.5	<2.5	<2.5	<2.5	26.5	1,160	5.4	<2.5	3,620	38.9	<2.5	1,450	111.0
	9/26/2017 DUP	<2.5	<10	<2.5	<2.5	11.1	<2.5	28.9	1,150	5.4	<2.5	3,710	40.4	<2.5	1,480	111.0
	11/9/2017	<20	<20	<5.0	<5.0	104.0	<5.0	24.9	1,660	24.0	<5.0	1,530	20.2	<5.0	1,020	109.0
	11/9/2017 DUP	<2.0	<2.0	<0.50	<0.50	56.5	<0.50	14.7	1,040	14.7	<0.50	970	13.0	0.75	790	115.0
	3/21/2018	<0.500	3.90	<0.500	<0.500	59.0	0.225 J	31.4	2,430	11.2	<0.500	1,250	17.0	0.339 J	1,340	413.0
	3/21/2018 DUP	<0.500	4.26	<0.500	<0.500	58.2	0.242 J	30.7	2,470	10.8	<0.500	996	17.0	0.277 J	1,180	412.0
	6/28/2018	<0.500	<2.50	<0.500	<0.500	81.6	<0.500	35.6	3,890	16.4	<0.500	163	10.9	0.210 J	148	773.0
	6/28/2018 DUP	<0.500	<2.50	<0.500	<0.500	80.2	<0.500	36.3	4,190	18.4	<0.500	177	11.7	0.244 J	191	799.0
	9/25/2018	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	1,900	<0.400	<0.500	3,720	<0.400	<0.500	2,190	115.0
	9/25/2018 DUP	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	1,960	<0.400	<0.500	3,830	<0.400	<0.500	2,270	116.0
	12/5/2018	<1.00	<500	<1.00	<1.00	91.8	0.453	39.3	1,750	18.2	<0.500	3,090	21.8	0.67	1,490	79.0
	12/5/2018 DUP	<1.00	<500	<1.00	<1.00	90.1	<0.400	39.2	1,610	18.4	<0.500	2,460	21.3	0.67	1,290	77.1
	3/20/2019	<40.0	<100	<20.0	<20.0	49.7	<8.00	39.5	1,910	13.9	<10.0	2,970	22.7	<10.0	2,090	75.8
	3/20/2019 DUP	<40.0	<100	<20.0	<20.0	46.9	<8.00	37.6	1,820	13.5	<10.0	2,960	23.7	<10.0	2,040	70.2
	6/7/2019	<80.0	<100	<20.0	<20.0	108	<10.0	52.6	1,910	20.4	<12.5	894	<10.0	<12.5	793	70.1
	6/7/2019 DUP	<80.0	<100	<20.0	<20.0	89.6	<8.0	41.6	1,810	16.8	<10.0	772	8.60	<10.0	698	80.8
	9/26/2019	<10.0	<50.0	<10.0	<10.0	33.3	<4	35.1	958	9.59	<5	4,340	26.90	<5	1,430	35.4
	9/26/2019 DUP	<10.0	<50.0	<10.0	<10.0	41.9	<4	40.2	1,160	12.1	<5	4,010	30.60	<5	1,620	39.1
	12/3/2019	<50.0	<250	<50.0	<50.0	57.4	<20.0	28.6	1,250	<20.0	<25.0	1,670	<20.0	<25.0	1,190	25.6
	12/3/2019 DUP	<50.0	<250	<50.0	<50.0	53.4	<20.0	27.2	1,190	<20.0	<25.0	1,650	<20.0	<25.0	1,200	23.2

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-19 (continued)	3/11/2020	<25.0	<125	<25.0	<25.0	31.8	<10.0	55.4	1,290	<10.0	<12.5	4,600	28.80	<12.5	1,800	143
	3/11/2020 DUP	<25.0	<125	<25.0	<25.0	35.4	<10.0	60.4	1,450	14.8	<12.5	4,730	29.10	<12.5	2,010	154
	6/18/2020	<10.0	<50.0	<10.0	<10.0	25.7	<4.00	21.1	1,060	5.6	<5.00	1,000	9.40	<5.00	580	96.3
	6/18/2020 DUP	<50.0	<250	<50.0	<50.0	32.5	<20.0	27.5	956	<20.0	<25.0	1,080	<20.0	<25.0	697	95
	10/7/2020	<50.0	<250	<50.0	<50.0	44.5	<20.0	53.20	1,470	<20.0	<25.0	7,450	39.00	<25.0	2,760	52.4
	10/7/2020 DUP	<50.0	<250	<50.0	<50.0	46.9	<20.0	58.80	1,510	<20.0	<25.0	8,110	39.00	<25.0	2,920	53.8
	12/8/2020	<200	<500	<100	<100	54.5	<40.0	<40.0	1,150	<40.0	<50.0	3,880	<40.0	<50.0	1,110	117
	12/8/2020 DUP	<200	<500	<100	<100	70.8	<40.0	<40.0	1,330	<40.0	<50.0	3,300	<40.0	<50.0	1,210	87.9
	3/3/2021	<1.00	<5.00	<1.00	<1.00	41.4	<0.400	51.00	1,120	11.4	<0.500	4,470	27.8	<0.500	1,880	53.6
	3/3/2021 DUP	<50.0	<250	<50.0	<50.0	35.8	<20.0	48.5	1,140	<20.0	<25.0	4,620	26.4	<25.0	1,920	50
	6/16/2021	<25.0	<125	<25.0	<25.0	58	<10.0	28.2	1,260	15.1	<12.5	4,770	22.5	<12.5	1,190	80.8
	6/16/2021 DUP	<25.0	<125	<25.0	<25.0	54.1	<10.0	26.8	1,160	<10.0	<12.5	4,430	19.9	<12.5	1,090	76.1
	9/15/2021	<25.0	<125	<25.0	<25.0	19.6	<10.0	53.60	922	<10.0	<12.5	6,790	60.80	<12.5	2,540	45.1
	9/15/2021 DUP	<25.0	<125	<25.0	<25.0	19.3	<10.0	52.40	945	<10.0	<12.5	5,880	63.40	<12.5	2,670	49.1
	12/8/2021	<100	<500	<100	<100	223	<40.0	86.00	3,650	<40.0	<50.0	9,310	55.30	<50.0	3,420	110
	12/8/2021 DUP	<100	<500	<100	<100	226	<40.0	80.30	3,690	<40.0	<50.0	7,030	51.10	<50.0	3,040	117
	3/9/2022	<50.0	<250	<50.0	<50.0	71.0	<20.00	31.0	1,240	<20.0	<25.0	3,500	20.5	<25.0	942	33.0
	3/9/2022 DUP	<50.0	<250	<50.0	<50.0	69.5	<20.00	29.0	1,220	<20.0	<25.0	3,490	<20.0	<25.0	918	31.5
	6/14/2022	<1.00	<5.00	<1.00	<1.00	0.94	<0.400	<0.400	14.6	<0.400	<0.500	44.8	<0.400	<0.500	16.5	0.95
	6/14/2022 DUP	<1.00	<5.00	<1.00	<1.00	0.89	<0.400	<0.400	14.2	<0.400	<0.500	46.2	<0.400	<0.500	16.5	0.93
	9/15/2022	<1.00	<5.00	<1.00	<1.00	16.80	<0.400	44.80	1,050	5.79	<0.500	6010	48.2	<0.500	1100	196
	9/15/2022 DUP	<1.00	<5.00	<1.00	<1.00	15.10	<0.400	42.60	898	5.98	<0.500	9670	53.2	<0.500	1600	156
	12/6/2022	<50.0	<250	<50.0	<50.0	69.00	<20.00	36.50	1,130	<20.0	<25.0	4340	25	<25.0	1390	36.5
	12/6/2022 DUP	<50.0	<250	<50.0	<50.0	74.50	<20.0	33.50	1,160	<20.0	<25.0	4230	25	<25.0	1360	39.5
	3/14/2023	<1.00	<5.00	<1.00	<1.00	21.00	<0.400	42.80	690	7.58	<0.500	5770	34.1	<0.500	1860	51.3
	3/14/2023 DUP	<5.00	<25.0	<5.00	<5.00	20.50	<2.00	36.20	697	12.6	<2.50	5260	32.2	<2.50	1840	45.8
	6/14/2023	<20.0	<100	<20.0	<20.0	30.00	<8.00	22.20	813	11	<10.0	1720	12	<10.0	975	25.8
	6/14/23 DUP	<20.0	<100	<20.0	<20.0	28.80	<8.00	22.80	803	8.2	<10.0	2290	12.4	<10.0	1060	25.6
	9/14/2023	<50.00	<250	<50.0	<50.0	<20.0	<20.0	27.0	387	<20.0	<25.0	6120	33.5	<25.0	1130	23.0
	9/14/2023 DUP	<50.0	<250	<50.0	<50.0	<20.0	<20.0	25.5	374	<20.0	<25.0	5180	30.5	<25.0	1060	19.5
	12/15/2023	<50.0	<250	<50.0	<50.0	158	<20.0	25.5	1500	<20.0	<25.0	1820	<20.0	<25.0	856	58.0
	12/15/2023 DUP	<50.0	<250	<50.0	<50.0	106	<20.0	28.0	1270	<20.0	<25.0	1830	<20.0	<25.0	739	56.5
	3/6/2024	<50.0	<250	<50.0	<50.0	54.0	<20.0	26.6	1010	15.4	<25.0	2420	14.2	<25.0	1270	87.8
	3/6/2024 DUP	<50.0	<250	<50.0	<50.0	50.2	<20.0	27.4	961	14.0	<25.0	2760	14.4	<25.0	1350	89.2
	6/12/2024	<10.0	<50.0	<10.0	<10.0	66.3	<4.00	19.9	1150	10.9	<5.00	2600	12.6	<5.00	894	39.8

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-19 (continued)	6/12/2024 DUP	<10.0	<50.0	<10.0	<10.0	62.0	<4.00	18.8	1100	9.40	<5.00	2440	12.8	<5.00	896	36.2
	9/3/2024	<50.0	<250	<50.0	<50.0	<20.0	<20.0	32.0	482	<20.0	<25.0	8,410	43.0	<25.0	1,330	47.0
	9/3/2024 DUP	<50.0	<250	<50.0	<50.0	<20.0	<20.0	38.0	582	<20.0	<25.0	9,000	55.0	<25.0	1,630	59.5
	12/3/2024	<10.0	<50.0	<10.0	<10.0	51.5	<4.00	16.6	692	6.10	<5.00	2,570	10.5	<5.00	708	16.7
	12/3/2024 DUP	<10.0	<50.0	<10.0	<10.0	57.0	<4.00	17.5	752	7.20	<5.00	2,510	11.0	<5.00	739	18.6
MW-19i	6/10/2008	<1	<1	<1	<1	<1	<1	<1	8.46	<1	<1	<1	<1	<1	1.28	<1
	9/17/2008	<1	<0.500	<0.500	<1	1.93	0.53	<0.500	27.1	<0.500	<0.500	1.72	<0.500	<0.500	5.77	<0.500
	12/10/2008	<0.50	<0.50	<0.50	<0.50	1.8	<0.50	<0.50	28	<0.50	<0.50	<0.50	<0.50	<0.50	5.6	<0.50
	3/26/2009	<0.50	<0.50	<0.50	<0.50	1.7	<0.50	<0.50	25	<0.50	<0.50	<0.50	<0.50	<0.50	3.3	<0.50
	6/17/2009	<0.50	<0.50	<0.50	<0.50	0.9	<0.50	<0.50	10	<0.50	<0.50	0.67	<0.50	<0.50	1.5	<0.50
	9/16/2009	<0.50	<0.50	<0.50	<0.50	1.7	0.64	<0.50	28	<0.50	<0.50	<0.50	<0.50	<0.50	1.8	0.79
	12/15/2009	<0.50	<0.50	<0.50	<0.50	0.87	<0.50	<0.50	10	<0.50	<0.50	<0.50	<0.50	<0.50	0.7	<0.50
	3/18/2010	<0.50	<0.50	<0.50	<0.50	1.1	0.53	<0.50	15	<0.50	<0.50	<0.50	<0.50	<0.50	1.9	<0.50
	6/15/2010	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	4.7	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/22/2010	<0.5	<0.5	<0.5	<0.5	1.2	0.58	<0.5	20	<0.5	<0.5	<0.5	<0.5	<0.5	2.4	<0.5
	12/9/2010	<0.5	<0.5	<0.5	<0.5	1	<0.5	<0.5	14	<0.5	<0.5	<0.5	<0.5	<0.5	1	<0.5
	3/9/2011	<0.50	<0.50	<0.50	<0.50	0.94	<0.50	<0.50	14	<0.50	<0.50	<0.50	<0.50	<0.50	1.4	<0.50
	6/9/2011	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.88	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	9/15/2011	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	4.1	<0.50	<0.50	<0.50	<0.50	<0.50	0.73	<0.50
	12/9/2011	<0.50	<0.50	<0.50	<0.50	0.72	<0.50	<0.50	8.8	<0.50	<0.50	<0.50	<0.50	<0.50	1	<0.50
	3/12/2012	<0.50	<0.50	<0.50	<0.50	0.86	<0.50	<0.50	13	<0.50	<0.50	<0.50	<0.50	<0.50	1.4	<0.50
	6/21/2012	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	9/13/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	4.2	<0.50	<0.50	<0.50	<0.50	<0.50	0.65	<0.50
	12/12/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/14/2013	<0.50	<0.50	<0.50	<0.50	0.65	<0.50	<0.50	9.5	<0.50	<0.50	<0.50	<0.50	<0.50	1.1	<0.50
	6/12/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/19/2013	<0.50	<0.50	<0.50	<0.50	0.56	<0.50	<0.50	6.8	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	12/13/2013	<0.50	<0.50	<0.50	<0.50	0.6	<0.50	<0.50	6.6	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/20/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	6/24/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	5.1	<0.50	<0.50	0.83	<0.50	<0.50	1.6	<0.50
	9/27/2014	<0.50	<0.50	<0.50	<0.50	0.56	<0.50	<0.50	6.4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	12/10/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2.7	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/18/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	6/16/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	6.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/23/2015	<0.50	<0.50	<0.50	<0.50	0.75	<0.50	<0.50	11	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-19i (continued)	12/7/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/8/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	5.4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	6/16/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	3.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/28/2016	<5	<2	<0.50	<0.50	<0.50	<0.50	<0.50	5.9	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	12/14/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	2.4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/29/2017	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	6/14/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/28/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<1.0	<0.50	0.83	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	11/8/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	0.57	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/20/2018	<0.500	<2.50	<0.500	<0.500	<0.500	<0.500	<0.500	0.228 J	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
	7/2/2018	<0.500	<2.50	<0.500	<0.500	<0.500	<0.500	<0.500	0.212 J	<0.500	<0.500	0.223 J	<0.500	<0.500	<0.500	<0.500
	9/27/2018	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	12/6/2018	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	3/25/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	6/3/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	9/26/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	0.43	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	12/4/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	3/12/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	6/18/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	10/7/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	12/10/2020	<2.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	0.489	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	3/3/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	0.566	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	6/17/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	9/15/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	0.796	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	12/7/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	3/9/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	0.700	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	06/16/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	9/14/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	0.890	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	12/7/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	0.57	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	3/14/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	1.13	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	6/14/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	0.690	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	9/12/2023	<4.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	1.02	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
	12/14/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	0.500	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
	3/7/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	0.610	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility
Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-19i (continued)	6/12/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	0.430	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
	9/5/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	0.540	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
	12/4/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	0.470	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
MW-20i	6/10/2008	<1	<1	<1	<1	<1	<1	<1	18	<1	<1	5.77	<1	<1	3.2	<1
	9/17/2008	<1	<0.500	<0.500	<1	2.12	<0.500	<0.500	42.3	<0.500	<0.500	12.8	<0.500	<0.500	11	<0.500
	12/11/2008	<0.50	<0.50	<0.50	<0.50	2.1	<0.50	<0.50	47	<0.50	<0.50	11	<0.50	<0.50	9.3	<0.50
	3/25/2009	<0.50	<0.50	<0.50	<0.50	1.8	<0.50	<0.50	36	<0.50	<0.50	8.4	<0.50	<0.50	6.4	<0.50
	6/16/2009	<0.50	<0.50	<0.50	<0.50	1.6	<0.50	<0.50	30	<0.50	<0.50	6.3	<0.50	<0.50	5.1	<0.50
	9/17/2009	<0.50	<0.50	<0.50	<0.50	1.6	<0.50	<0.50	34	<0.50	<0.50	7.4	<0.50	<0.50	5	<0.50
	12/16/2009	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	9.3	<0.50	<0.50	1.1	<0.50	<0.50	0.69	<0.50
	3/18/2010	<0.50	<0.50	<0.50	<0.50	2.1	<0.50	<0.50	47	<0.50	<0.50	11	<0.50	<0.50	6.9	<0.50
	6/15/2010	<0.50	<0.50	<0.50	<0.50	0.51	<0.50	<0.50	13	<0.50	<0.50	4.3	<0.50	<0.50	2.3	<0.50
	9/22/2010	<0.5	<0.5	<0.5	<0.5	1.8	<0.5	<0.5	43	<0.5	<0.5	17	<0.5	<0.5	10	<0.5
	12/9/2010	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	13	<0.5	<0.5	3.7	<0.5	<0.5	2	<0.5
	3/11/2011	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	9.6	<0.50	<0.50	2.4	<0.50	<0.50	2.3	<0.50
	6/8/2011	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	2.9	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	9/15/2011	<0.50	<0.50	<0.50	<0.50	0.96	<0.50	<0.50	21	<0.50	<0.50	7.6	<0.50	<0.50	4.5	<0.50
	12/8/2011	<0.50	<0.50	<0.50	<0.50	1.2	<0.50	<0.50	26	<0.50	<0.50	6.4	<0.50	<0.50	4.2	<0.50
	3/7/2012	<0.50	<0.50	<0.50	<0.50	1.2	<0.50	<0.50	32	<0.50	<0.50	11	<0.50	<0.50	5.9	<0.50
	6/21/2012	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	8.3	<0.5	<0.5	2.6	<0.5	<0.5	1.5	<0.5
	9/13/2012	<0.50	<0.50	<0.50	<0.50	0.83	<0.50	<0.50	18	<0.50	<0.50	6.1	<0.50	<0.50	3.8	<0.50
	12/13/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	6.9	<0.50	<0.50	1.4	<0.50	<0.50	0.84	<0.50
	3/14/2013	<0.50	<0.50	<0.50	<0.50	1.1	<0.50	<0.50	28	<0.50	<0.50	9.2	<0.50	<0.50	6	<0.50
	6/13/2013	<0.50	<0.50	<0.50	<0.50	0.72	<0.50	<0.50	14	<0.50	<0.50	7.3	<0.50	<0.50	3.7	<0.50
	9/19/2013	<0.50	<0.50	<0.50	<0.50	0.64	<0.50	<0.50	11	<0.50	<0.50	3.9	<0.50	<0.50	2.4	<0.50
	12/13/2013	<0.50	<0.50	<0.50	<0.50	0.9	<0.50	<0.50	16	<0.50	<0.50	2.4	<0.50	<0.50	1.9	<0.50
	3/20/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	3.4	<0.50	<0.50	0.56	<0.50	<0.50	<0.50	<0.50
	6/30/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	4	<0.50	<0.50	1.1	<0.50	<0.50	0.58	<0.50
	9/27/2014	<0.50	<0.50	<0.50	<0.50	0.68	<0.50	<0.50	12	<0.50	<0.50	4.3	<0.50	<0.50	2.6	<0.50
	12/12/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	5.1	<0.50	<0.50	0.68	<0.50	<0.50	<0.50	<0.50
	3/18/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	10.3	<0.50	<0.50	3	<0.50	<0.50	1.7	<0.50
	6/17/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	10.8	<0.50	<0.50	3.7	<0.50	<0.50	2.2	<0.50
	9/23/2015	<0.50	<0.50	<0.50	<0.50	0.69	<0.50	<0.50	13.8	<0.50	<0.50	4.1	<0.50	<0.50	2.1	<0.50
	12/7/2015	Not sampled; well monument under water.														

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-20i	3/8/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	6.8	<0.50	<0.50	3.4	<0.50	<5	1.8	<0.50
(continued)	6/16/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	7.4	<0.50	<0.50	2.1	<0.50	<0.50	1.5	<0.50
	9/28/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	8.7	<0.50	<0.50	4	<0.50	<0.50	2.2	<0.50
	12/14/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	2.5	<0.50	<0.50	0.54	<0.50	<0.50	<0.50	<0.50
	3/30/2017	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	1.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	6/14/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<1.0	<0.50	5.6	<0.50	<0.50	1.5	<0.50	<0.50	0.84	<0.50
	9/27/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	0.7	<0.50	<0.50	<0.50	<0.50
	11/7/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	7.7	<0.50	<0.50	2.8	<0.50	<0.50	1.50	<0.50
	3/21/2018	<0.500	<2.50	<0.500	<0.500	0.303 J	<0.500	<0.500	5.7	<0.500	<0.500	1.4	<0.500	<0.500	0.90	<0.500
	7/2/2018	<0.500	<2.50	<0.500	<0.500	0.436 J	<0.500	<0.500	9.7	<0.500	<0.500	2.3	<0.500	<0.500	1.60	<0.500
	9/25/2018	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	7.7	<0.400	<0.500	2.1	<0.400	<0.500	1.39	<0.400
	12/6/2018	<1.00	<5.00	<1.00	<1.00	0.43	<0.400	<0.400	10.7	<0.400	<0.500	2.2	<0.400	<0.500	1.55	<0.400
	3/22/2019	<1.00	<5.00	<1.00	<1.00	0.492	<0.400	<0.400	10.5	<0.400	<0.500	2.04	<0.400	<0.500	1.65	<0.400
	6/3/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	4.58	<0.400	<0.500	0.950	<0.400	<0.500	0.590	<0.400
	9/25/2019	<1.00	<5.00	<1.00	<1.00	0.461	<0.400	<0.400	9.43	<0.400	<0.500	2.340	<0.400	<0.500	1.440	<0.400
	12/3/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	8.68	<0.400	<0.500	1.370	<0.400	<0.500	0.897	<0.400
	3/11/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	9.21	<0.400	<0.500	2.320	<0.400	<0.500	1.260	<0.400
	6/17/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	1.93	<0.400	<0.500	0.410	<0.400	<0.500	<0.400	<0.400
	10/7/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	7.66	<0.400	<0.500	1.11	<0.400	<0.500	0.850	<0.400
	12/9/2020	<2.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	10.0	<0.400	<0.500	1.57	<0.400	<0.500	0.856	<0.400
	3/2/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	8.68	<0.400	<0.500	1.16	<0.400	<0.500	0.902	<0.400
	6/17/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	9.16	<0.400	<0.500	1.66	<0.400	<0.500	1.12	<0.400
	9/15/2021	<1.00	<5.00	<1.00	<1.00	0.401	<0.400	<0.400	10.3	<0.400	<0.500	1.76	<0.400	<0.500	1.12	<0.400
	12/9/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	4.2	<0.400	<0.500	0.832	<0.400	<0.500	<0.400	<0.400
	3/9/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	6.13	<0.400	<0.500	1.25	<0.400	<0.500	0.770	<0.400
	06/15/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	1.07	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	9/14/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	6.99	<0.400	<0.500	1.10	<0.400	<0.500	0.860	<0.400
	12/7/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	6.42	<0.400	<0.500	1.4	<0.400	<0.500	0.72	<0.400
	3/15/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	6.97	<0.400	<0.500	7.44	<0.400	<0.500	1.15	<0.400
	6/15/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	7.00	<0.400	<0.500	1.67	<0.400	<0.500	1.05	<0.400
	9/13/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	6.44	<0.400	<0.500	1.09	<0.400	<0.500	0.820	<0.200
	12/14/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	3.86	<0.400	<0.500	0.730	<0.400	<0.500	0.430	<0.200
	3/7/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	6.48	<0.400	<0.500	1.66	<0.400	<0.500	1.14	<0.200
	6/12/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	6.68	<0.400	<0.500	1.55	<0.400	<0.500	0.990	<0.200

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-20i (continued)	9/5/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	6.30	<0.400	<0.500	1.47	<0.400	<0.500	0.930	<0.200
	12/4/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	5.69	<0.400	<0.500	1.87	<0.400	<0.500	1.21	<0.200
MW-21i-105	6/10/2008	<2	<2	<2	<2	2	<2	<2	15.8	<2	<2	53.2	<2	<0.50	25.1	<2
	9/18/2008	<1	<0.500	<0.500	<1	0.78	<0.500	<0.500	5.42	<0.500	<0.500	2.97	<0.500	<0.50	1.77	<0.500
	12/11/2008	<0.50	<0.50	<0.50	<0.50	2.2	<0.50	0.88	61	<0.50	<0.50	33	0.87	<0.50	17	<0.50
	3/26/2009	<0.50	<0.50	<0.50	<0.50	1.4	<0.50	<0.50	61	<0.50	<0.50	0.76	<0.50	<0.50	0.7	<0.50
	6/17/2009	<0.50	<0.50	<0.50	<0.50	1.8	<0.50	<0.50	76	<0.50	<0.50	4.3	0.6	<0.50	3.4	<0.50
	9/17/2009	<0.50	<0.50	<0.50	<0.50	1.6	<0.50	<0.50	73	<0.50	<0.50	11	0.59	<0.50	6.7	<0.50
	12/16/2009	<0.50	<0.50	<0.50	<0.50	1.5	<0.50	<0.50	60	<0.50	<0.50	14	0.65	<0.50	9.3	<0.50
	3/18/2010	<0.50	<0.50	<0.50	<0.50	1.7	<0.50	<0.50	64	<0.50	<0.50	6.2	0.58	<0.50	7.6	<0.50
	6/15/2010	<0.50	<0.50	<0.50	<0.50	1.7	<0.50	0.63	60	<0.50	<0.80	29	0.84	<0.50	22	<0.50
	9/22/2010	<0.5	<0.5	<0.5	<0.5	1.7	<0.5	<0.5	75	<0.5	<0.5	5.2	0.55	<0.50	5.1	<0.5
	12/8/2010	<0.5	<0.5	<0.5	<0.5	2	<0.5	0.52	72	<0.5	<0.5	27	0.91	<0.50	14	<0.50
	3/9/2011	<0.50	<0.50	<0.50	<0.50	1.9	<0.50	0.69	61	<0.50	<0.50	32	1.1	<0.50	17	<0.50
	6/9/2011	<0.5	<0.5	<0.5	<0.5	1.6	<0.5	0.61	63	<0.5	<0.5	29	0.7	<0.5	17	<0.5
	9/15/2011	<0.50	<0.50	<0.50	<0.50	1.9	<0.50	<0.50	88	<0.50	<0.50	12	0.59	<0.50	12	<0.50
	12/8/2011	<0.50	<0.50	<0.50	<0.50	1.6	<0.50	<0.50	73	<0.50	<0.50	15	0.58	<0.50	9.3	<0.50
	3/7/2012	<0.50	<0.50	<0.50	<0.50	1	<0.50	<0.50	38	<0.50	<0.50	5.6	<0.50	<0.50	5.7	<0.50
	6/20/2012	<0.5	<0.5	<0.5	<0.5	1.1	<0.5	<0.5	52	<0.5	<0.5	1.4	<0.5	<0.5	3	<0.5
	9/12/2012	<0.50	<0.50	<0.50	<0.50	0.82	<0.50	<0.50	34	<0.50	<0.50	5	<0.50	<0.50	6.3	<0.50
	12/12/2012	<0.50	<0.50	<0.50	<0.50	1.4	<0.50	<0.50	60	1	<0.50	13	<0.50	<0.50	15	<0.50
	3/13/2013	<0.50	<0.50	<0.50	<0.50	0.9	<0.50	<0.50	42	<0.50	<0.50	2.4	<0.50	<0.50	3.7	<0.50
	6/13/2013	<0.50	<0.50	<0.50	<0.50	1.2	<0.50	<0.50	48	<0.50	<0.50	1.2	<0.50	<0.50	9.9	<0.50
	9/18/2013	<0.50	<0.50	<0.50	<0.50	1.1	<0.50	<0.50	51	<0.50	<0.50	2.8	<0.50	<0.50	4.2	<0.50
	12/12/2013	<0.50	<0.50	<0.50	<0.50	1.4	<0.50	<0.50	61	1.6	<0.50	4	<0.50	<0.50	5.4	<0.50
	3/20/2014	<0.50	<0.50	<0.50	<0.50	1.2	<0.50	<0.50	52	<0.50	<0.50	4.4	<0.50	<0.50	6.8	<0.50
	6/25/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/26/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	5.8	<0.50	<0.50	5.4	<0.50	<0.50	3.3	<0.50
	12/10/2014	<0.50	<0.50	<0.50	<0.50	0.94	<0.50	<0.50	37	<0.50	<0.50	5.4	<0.50	<0.50	9.6	<0.50
	3/17/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	13.3	<0.50	<0.50	6.6	<0.50	<0.50	5.4	<0.50
	6/17/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	20.8	<0.50	<0.50	3.5	<0.50	<0.50	4	<0.50
	9/23/2015	<0.50	<0.50	<0.50	<0.50	0.91	<0.50	<0.50	41.4	<0.50	<0.50	3.4	<0.50	<0.50	5.4	<0.50
	12/7/2015	<0.50	<0.50	<0.50	<0.50	0.79	<0.50	<0.50	28.5	<0.50	<0.50	4.9	<0.50	<0.50	8.1	<0.50
	3/8/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-21i-105 (continued)	6/16/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/26/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	11.7	<0.50	<0.50	5.8	<0.50	<0.50	5.1	<0.50
	12/13/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/29/2017	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	4.8	<0.5	<0.5	5.7	<0.5	<0.5	2.9	<0.5
	6/13/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<1.0	<0.50	4.7	<0.50	<0.50	7.6	<0.50	<0.50	4.1	<0.50
	9/27/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<1.0	<0.50	4.3	<0.50	<0.50	5.7	<0.50	<0.50	3.9	<0.50
	11/8/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	13.0	<0.50	<0.50	7.4	<0.50	<0.50	6.4	<0.50
	3/22/2018	<0.500	<2.50	<0.500	<0.500	<0.500	<0.500	<0.500	0.7	<0.500	<0.500	0.5	<0.500	<0.500	0.477 J	<0.500
	6/29/2018	<0.500	<2.50	<0.500	<0.500	<0.500	<0.500	<0.500	1.9	<0.500	<0.500	1.8	<0.500	<0.500	1.3	<0.500
	9/26/2018	<1.00	<5.00	<1.00	<1.00	0.82	<0.400	<0.400	36.4	<0.400	<0.500	8.6	<0.400	<0.500	11.0	<0.400
	12/6/2018	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	8.6	<0.400	<0.500	9.5	<0.400	<0.500	5.9	<0.400
	3/21/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	1.04	<0.400	<0.500	1.08	<0.400	<0.500	0.760	<0.400
	6/6/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	4.11	<0.400	<0.500	3.90	<0.400	<0.500	2.38	<0.400
	9/25/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	4.08	<0.400	<0.500	4.93	<0.400	<0.500	2.62	<0.400
	12/4/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	3.09	<0.400	<0.500	5.61	<0.400	<0.500	2.79	<0.400
	3/12/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	2.48	<0.400	<0.500	3.60	<0.400	<0.500	2.02	<0.400
	6/18/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	1.59	<0.400	<0.500	3.08	<0.400	<0.500	1.49	<0.400
	10/8/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	1.76	<0.400	<0.500	4.60	<0.400	<0.500	1.96	<0.400
	12/9/2020	<2.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	1.88	<0.400	<0.500	3.53	<0.400	<0.500	1.62	<0.400
	3/4/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	2.23	<0.400	<0.500	3.32	<0.400	<0.500	1.74	<0.400
	6/15/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	1.37	<0.400	<0.500	1.7	<0.400	<0.500	1.01	<0.400
	9/15/2021	<1.00	<5.00	<1.00	<1.00	0.432	<0.400	<0.400	8.73	<0.400	<0.500	11.4	<0.400	<0.500	6.37	<0.400
	12/8/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	1.38	<0.400	<0.500	2.32	<0.400	<0.500	1.5	<0.400
	3/9/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	0.560	<0.400	<0.500	<0.400	<0.400
	6/15/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	4.80	<0.400	<0.500	6.51	<0.400	<0.500	3.88	<0.400
	9/15/2022	<1.00	<5.00	<1.00	<1.00	0.44	<0.400	<0.400	7.43	<0.400	<0.500	10.8	<0.400	<0.500	5.57	<0.400
	12/6/2022	<1.00	<5.00	<1.00	<1.00	0.88	<0.400	0.41	21.2	<0.400	<0.500	20.9	<0.400	<0.500	9.95	<0.400
	3/14/2023	<1.00	<5.01	<1.00	<1.00	<0.400 V-01	<0.400 V-01	<0.400 V-01	1.09 V-01	<0.400 V-01	<0.500 V-01	3.12 V-01	<0.400 V-01	<0.500 V-01	1.23 V-01	<0.400 V-01
	6/13/2023	<1.00	<5.00	<1.00	<1.00	0.7	<0.400	<0.400	13.3	<0.400	<0.500	20.9	<0.400	<0.500	11	<0.400
	9/12/2023	<4.00	<5.00	<1.00	<1.00	0.890	<0.400	0.540	20.7	<0.400	<0.500	16.9	<0.400	<0.500	11.0	<0.200
	12/14/2023	<1.00	<5.00	<1.00	<1.00	1.15	<0.400	0.570	19.3	<0.400	<0.500	44.5	<0.400	<0.500	17.2	<0.200
	3/5/2024	<2.00	<5.00	<1.00	<1.00	0.800	<0.400	0.530	15.9	<0.400	<0.500	32.3	<0.400	<0.500	15.1	<0.200

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-21i-105 (continued)	6/13/2024	<1.00	<5.00	<1.00	<1.00	0.730	<0.400	<0.400	17.4	0.540	<0.500	21.6	<0.400	<0.500	10.9	<0.200
	9/5/2024	<1.00	<5.00	<1.00	<1.00	0.700	<0.400	0.410	18.5	<0.400	<0.500	31.0	<0.400	<0.500	11.8	<0.200
	12/5/2024	<1.00	<5.00	<1.00	<1.00	0.540	<0.400	0.440	11.0	<0.400	<0.500	30.3	<0.400	<0.500	9.33	<0.200
MW-21i-40	9/18/2008	<1	<0.500	<0.500	<1	7.48	<0.500	4.38	124	0.77	<0.500	107	2.01	<0.500	133	<0.500
	12/11/2008	<0.50	<0.50	<0.50	<0.50	6.6	<0.50	3.6	130	0.84	<0.50	100	1.6	<0.50	110	<0.50
	3/26/2009	<0.50	<0.50	<0.50	<0.50	6.2	<0.50	3.6	130	0.63	<0.50	77	1.3	<0.50	88	<0.50
	6/17/2009	<0.50	<0.50	<0.50	<0.50	6.6	<0.50	3.1	120	0.79	<0.50	71	1.5	<0.50	88	<0.50
	9/18/2009	<0.50	<0.50	<0.50	<0.50	5.9	<0.50	3.2	120	1	<0.50	75	1.3	<0.50	92	0.55
	12/16/2009	<0.50	<0.50	<0.50	<0.50	5.7	<0.50	2.6	120	1	<0.50	90	1.2	<0.50	89	<0.50
	3/18/2010	<0.50	<0.50	<0.50	<0.50	5.5	<0.50	2.8	120	0.74	<0.50	84	1.1	<0.50	91	<0.50
	6/15/2010	<0.50	<0.50	<0.50	<0.50	5.4	<0.50	2.4	120	0.89	<0.50	62	1.2	<0.50	64	<0.50
	9/22/2010	<0.5	<0.5	<0.5	<0.5	4.9	<0.5	2.2	110	0.73	<0.5	68	0.93	<0.5	75	<0.5
	12/8/2010	<0.5	<0.5	<0.5	<0.5	5.1	<0.5	2.3	110	0.77	<0.5	72	1	<0.5	69	<0.5
	3/10/2011	<0.50	<0.50	<0.50	<0.50	4.6	<0.50	1.9	100	0.64	<0.50	53	1	<0.50	57	<0.50
	6/9/2011	<0.5	<0.5	<0.5	<0.5	4.7	<0.5	2.1	110	0.7	<0.5	50	0.96	<0.5	55	<0.5
	9/15/2011	<0.50	<0.50	<0.50	<0.50	5	<0.50	1.9	110	0.65	<0.50	54	1.1	<0.50	57	<0.50
	12/8/2011	<0.50	<0.50	<0.50	<0.50	4.8	<0.50	2.1	110	0.66	<0.50	61	0.96	<0.50	60	<0.50
	3/7/2012	<0.50	<0.50	<0.50	<0.50	5.3	<0.50	2.1	110	0.76	<0.50	74	1.5	<0.50	58	<0.50
	6/20/2012	<0.5	<0.5	<0.5	<0.5	5	<0.5	2	160	0.84	<0.5	19	0.81	<0.5	23	<0.5
	9/12/2012	<0.50	<0.50	<0.50	<0.50	5	<0.50	1.8	110	0.63	<0.50	50	1.1	<0.50	48	<0.50
	12/12/2012	<0.50	<0.50	<0.50	<0.50	5.3	<0.50	2	120	0.69	<0.50	74	1.1	<0.50	53	<0.50
	3/13/2013	<0.50	<0.50	<0.50	<0.50	4.6	<0.50	1.8	120	0.6	<0.50	43	0.83	<0.50	42	<0.50
	6/13/2013	<0.50	<0.50	<0.50	<0.50	1.2	<0.50	<0.50	48	<0.50	<0.50	12	<0.50	<0.50	9.9	<0.50
	9/18/2013	<0.50	<0.50	<0.50	<0.50	4.7	<0.50	1.4	100	0.53	<0.50	38	0.68	<0.50	33	<0.50
	12/12/2013	<0.50	<0.50	<0.50	<0.50	4.6	<0.50	1.3	100	1	<0.50	41	0.73	<0.50	37	<0.50
	3/20/2014	<0.50	<0.50	<0.50	<0.50	4.5	<0.50	1.5	100	0.61	<0.50	40	0.76	<0.50	34	<0.50
	6/25/2014	<0.50	<0.50	<0.50	<0.50	4.3	<0.50	1.3	100	0.51	<0.50	33	0.65	<0.50	29	<0.50
	9/26/2014	<0.50	<0.50	<0.50	<0.50	4	<0.50	1.4	100	86	<0.50	31	0.51	<0.50	32	<0.50
	12/10/2014	<0.50	<0.50	<0.50	<0.50	4.2	<0.50	1.4	100	0.6	<0.50	30	0.51	<0.50	32	<0.50
	3/17/2015	<0.50	<0.50	<0.50	<0.50	3.8	<0.50	1.5	102	0.51	<0.50	43.6	<0.50	<0.50	37.2	<0.50
	6/19/2015	<0.50	<0.50	<0.50	<0.50	2.7	<0.50	0.76	61.6	<0.50	<0.50	24.7	<0.50	<0.50	21.8	<0.50
	9/23/2015	<0.50	<0.50	<0.50	<0.50	3.3	<0.50	0.95	84.2	<0.50	<0.50	26.3	<0.50	<0.50	26.6	<0.50
	12/7/2015	<0.50	<0.50	<0.50	<0.50	2.8	<0.50	0.7	63.6	<0.50	<0.50	24.7	<0.50	<0.50	21.1	<0.50
	3/9/2016	<0.50	<2	<0.50	<0.50	2.1	<0.50	<0.50	58.6	<0.50	<0.50	14.2	<0.50	<0.50	15.1	<0.50
	6/16/2016	<0.50	<2	<0.50	<0.50	2.3	<0.50	0.8	67.8	<0.50	<0.50	18.1	<0.50	<0.50	17.1	<0.50
	9/26/2016	<0.50	<2	<0.50	<0.50	2.6	<0.50	0.87	77.2	<0.50	<0.50	20.1	<0.50	<0.50	19.8	<0.50
	12/13/2016	<0.50	<2	<0.50	<0.50	2.4	<0.50	0.83	74.2	<0.50	<0.50	21.4	<0.50	<0.50	19.4	<0.50
	3/29/2017	<0.5	<2	<0.5	<0.5	2.6	<0.5	0.91	87.6	0.58	<0.5	21.8	<0.5	<0.5	16.2	<0.5
	6/13/2017	<2.0	<2.0	<0.50	<0.50	2.3	<1.0	0.63	63.6	0.56	<0.50	24.1	<0.50	<0.50	15.1	<0.50

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-21i-40	9/27/2017	<2.0	<2.0	<0.50	<0.50	2.3	<1.0	0.70	60.0	<0.50	<0.50	18.1	<0.50	<0.50	15.0	<0.50
(continued)	11/8/2017	<2.0	<2.0	<0.50	<0.50	2.6	<0.50	0.84	65.4	0.63	<0.50	17.4	<0.50	<0.50	14.6	<0.50
	3/22/2018	<0.500	<2.50	<0.500	<0.500	2.1	<0.500	0.64	55.1	0.391 J	<0.500	22.5	<0.500	<0.500	16.5	<0.500
	6/28/2018	<0.500	<2.50	<0.500	<0.500	2.6	<0.500	0.75	63.2	0.53	<0.500	26.0	0.145 J	<0.500	17.0	<0.500
	9/27/2018	<1.00	<5.00	<1.00	<1.00	2.5	<0.400	0.70	62.1	0.69	<0.500	24.5	<0.400	<0.500	17.1	<0.400
	12/6/2018	<1.00	<5.00	<1.00	<1.00	2.4	<0.400	0.67	59.1	0.48	<0.500	32.7	<0.400	<0.500	19.3	<0.400
	3/21/2019	<1.00	<5.00	<1.00	<1.00	2.48	<0.400	0.700	48.8	0.500	<0.500	24.6	<0.400	<0.500	16.2	<0.400
	6/3/2019	<1.00	<5.00	<1.00	<1.00	2.23	<0.400	0.730	60.9	0.470	<0.500	24.1	<0.400	<0.500	16.9	<0.400
	9/25/2019	<1.00	<5.00	<1.00	<1.00	2.48	<0.400	0.768	55.5	0.657	<0.500	22.5	<0.400	<0.500	14.9	<0.400
	12/3/2019	<1.00	<5.00	<1.00	<1.00	2.5	<0.400	0.614	56.3	0.521	<0.500	32.1	<0.400	<0.500	19.1	<0.400
	3/11/2020	<1.00	<5.00	<1.00	<1.00	1.95	<0.400	0.626	47.4	0.411	<0.500	31.2	<0.400	<0.500	17.6	<0.400
	6/17/2020	<1.00	<5.00	<1.00	<1.00	1.95	<0.400	0.540	45.9	0.400	<0.500	31.1	<0.400	<0.500	14.6	<0.400
	10/7/2020	<1.00	<5.00	<1.00	<1.00	2.16	<0.400	0.527	50.7	0.433	<0.500	32.7	<0.400	<0.500	18.7	<0.400
	12/9/2020	<2.00	<5.00	<1.00	<1.00	2.46	<0.400	0.558	53.3	0.486	<0.500	30.0	<0.400	<0.500	15.8	<0.400
	3/2/2021	<1.00	<5.00	<1.00	<1.00	1.73	<0.400	0.403	38.1	<0.400	<0.500	19.6	<0.400	<0.500	12.7	<0.400
	6/16/2021	<1.00	<5.00	<1.00	<1.00	1.62	<0.400	<0.400	35.1	<0.400	<0.500	19.0	<0.400	<0.500	13.2	<0.400
	9/15/2021	<1.00	<5.00	<1.00	<1.00	2.04	<0.400	0.517	45.2	0.463	<0.500	30.1	<0.400	<0.500	16.3	<0.400
	12/7/2021	<1.00	<5.00	<1.00	<1.00	1.64	<0.400	<0.400	36.2	<0.400	<0.500	29.9	<0.400	<0.500	15.4	<0.400
	3/8/2022	<1.00	<5.00	<1.00	<1.00	1.89	<0.400	0.450	38.4	0.420	<0.500	28.0	<0.400	<0.500	15.3	<0.400
	6/16/2022	<1.00	<5.00	<1.00	<1.00	1.57	<0.400	<0.400	32.9	<0.400	<0.500	20.7	<0.400	<0.500	11.7	<0.400
	9/14/2022	<1.00	<5.00	<1.00	<1.00	1.68	<0.400	<0.400	34.8	0.420	<0.500	20.8	<0.400	<0.500	12.3	<0.400
	12/7/2022	<1.00	<5.00	<1.00	<1.00	1.03	<0.400	<0.400	22	<0.400	<0.500	16.9	<0.400	<0.500	8.44	<0.400
	3/15/2023	<1.00	<5.00	<1.00	<1.00	1.50	<0.400	<0.400	30.7	<0.400	<0.500	23.2	<0.400	<0.500	11	<0.400
	6/14/2023	<1.00	<5.00	<1.00	<1.00	1.69	<0.400	<0.400	34.9	0.41	<0.500	21.3	<0.400	<0.500	12.6	<0.400
	9/13/2023	<2.00	<5.00	<1.00	<1.00	1.19	<0.400	<0.400	27.1	<0.400	<0.500	21.1	<0.400	<0.500	9.38	<0.200
	12/14/2023	<1.00	<5.00	<1.00	<1.00	1.60	<0.400	<0.400	27.4	0.500	<0.500	26.2	<0.400	<0.500	11.2	<0.200
	3/7/2024	<1.00	<5.00	<1.00	<1.00	1.46	<0.400	<0.400	26.5	<0.400	<0.500	18.6	<0.400	<0.500	11.3	<0.200
	6/13/2024	<1.00	<5.00	<1.00	<1.00	1.10	<0.400	<0.400	23.0	<0.400	<0.500	16.3	<0.400	<0.500	9.18	<0.200
	9/6/2024	<1.00	<5.00	<1.00	<1.00	1.24	<0.400	<0.400	25.1	<0.400	<0.500	20.9	<0.400	<0.500	10.1	<0.200
	12/4/2024	<1.00	<5.00	<1.00	<1.00	1.19	<0.400	0.440	20.3	<0.400	<0.500	20.8	<0.400	<0.500	9.85	<0.200

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-22i	6/10/2008	<1	<1	<1	<1	1.02	<1	<1	30	<1	<1	10.3	<1	<1	30	<1
	9/17/2008	<1	<0.500	<0.500	<1	7.48	<0.500	4.38	124	0.77	<0.500	107	2.01	<0.500	133	<0.500
	12/11/2008	<0.50	<0.50	<0.50	<0.50	1.2	<0.50	0.73	63	<0.50	<0.50	1.1	<0.50	<0.50	6.8	<0.50
	3/25/2009	<0.50	<0.50	<0.50	<0.50	1.1	<0.50	0.64	50	<0.50	<0.50	2.5	<0.50	<0.50	14	<0.50
	6/16/2009	<0.50	<0.50	<0.50	<0.50	1.2	<0.50	0.52	39	<0.50	<0.50	8.5	<0.50	<0.50	24	<0.50
	9/17/2009	<0.50	<0.50	<0.50	<0.50	1	<0.50	0.57	40	<0.50	<0.50	3.3	<0.50	<0.50	21	<0.50
	12/15/2009	<0.50	<0.50	<0.50	<0.50	0.8	<0.50	<0.50	28	<0.50	<0.50	3.8	<0.50	<0.50	20	<0.50
	3/18/2010	<0.50	<0.50	<0.50	<0.50	0.86	<0.50	<0.50	34	<0.50	<0.50	2.6	<0.50	<0.50	16	<0.50
	6/14/2010	<0.50	<0.50	<0.50	<0.50	0.6	<0.50	<0.50	17	<0.50	<0.50	4	<0.50	<0.50	18	<0.50
	9/22/2010	<0.5	<0.5	<0.5	<0.5	0.75	<0.5	<0.5	24	<0.5	<0.5	3.6	<0.5	<0.5	18	<0.5
	12/8/2010	<0.5	<0.5	<0.5	<0.5	0.73	<0.5	<0.5	21	<0.5	<0.5	3.5	<0.5	<0.5	18	<0.5
	3/11/2011	<0.50	<0.50	<0.50	<0.50	0.67	<0.50	<0.50	17	<0.50	<0.50	3.6	<0.50	<0.50	17	<0.50
	6/8/2011	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	18	<0.5	<0.5	1.8	<0.5	<0.5	12	<0.5
	9/14/2011	<0.50	<0.50	<0.50	<0.50	0.55	<0.50	<0.50	18	<0.50	<0.50	1.3	<0.50	<0.50	11	<0.50
	12/8/2011	<0.50	<0.50	<0.50	<0.50	0.58	<0.50	<0.50	17	<0.50	<0.50	2.5	<0.50	<0.50	14	<0.50
	3/6/2012	<0.50	<0.50	<0.50	<0.50	0.51	<0.50	<0.50	13	<0.50	<0.50	2.4	<0.50	<0.50	13	<0.50
	6/20/2012	<0.5	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	12	<0.5	<0.5	1.9	<0.5	<0.5	11	<0.5
	9/12/2012	<0.50	<0.50	<0.50	<0.50	0.52	<0.50	<0.50	16	<0.50	<0.50	1.5	<0.50	<0.50	10	<0.50
	12/13/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	13	<0.50	<0.50	1.8	<0.50	<0.50	11	<0.50
	3/13/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	12	<0.50	<0.50	2.2	<0.50	<0.50	11	<0.50
	6/12/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	14	<0.50	<0.50	1.1	<0.50	<0.50	9.6	<0.50
	9/18/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	10	<0.50	<0.50	2.1	<0.50	<0.50	11	<0.50
	12/12/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	9.3	<0.50	<0.50	1.4	<0.50	<0.50	8.2	<0.50
	3/19/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	10	<0.50	<0.50	1.3	<0.50	<0.50	9.6	<0.50
	6/25/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	9	<0.50	<0.50	1.1	<0.50	<0.50	5.7	<0.50
	9/26/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	8.8	<0.50	<0.50	1.7	<0.50	<0.50	9.8	<0.50
	12/10/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	9.2	<0.50	<0.50	2.1	<0.50	<0.50	11	<0.50
	3/17/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	8.2	<0.50	<0.50	1.8	<0.50	<0.50	8.7	<0.50
	6/16/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	8.6	<0.50	<0.50	1.6	<0.50	<0.50	9	<0.50
	9/23/2015	<0.50	<0.50	<0.50	<0.50	0.5	<0.50	<0.50	10	<0.50	<0.50	2.1	<0.50	<0.50	1.15	<0.50
	12/7/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	8	<0.50	<0.50	2.1	<0.50	<0.50	11	<0.50
	3/9/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	8	<0.50	<0.50	2.2	<0.50	<0.50	12	<0.50
	6/16/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	6.5	<0.50	<0.50	1	<0.50	<0.50	7.9	<0.50
	9/28/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	8.1	<0.50	<0.50	1.3	<0.50	<0.50	9	<0.50

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-22i (continued)	12/13/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	8.6	<0.50	<0.50	2	<0.50	<0.50	10.2	<0.50
	3/29/2017	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	10	<0.5	<0.5	1.1	<0.5	<0.5	9.7	<0.5
	6/13/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<1.0	<0.50	9.6	<0.50	<0.50	0.63	<0.50	<0.50	6.2	<0.50
	9/27/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<1.0	<0.50	8.8	<0.50	<0.50	0.88	<0.50	<0.50	6.3	<0.50
	11/7/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	9.7	<0.50	<0.50	1.20	<0.50	<0.50	6.4	<0.50
	3/22/2018	<0.500	<2.50	<0.500	<0.500	0.330 J	<0.500	<0.500	9.6	<0.500	<0.500	1.76	<0.500	<0.500	7.8	<0.500
	6/29/2018	<0.500	<2.50	<0.500	<0.500	0.52	<0.500	<0.500	12.4	<0.500	<0.500	2.77	<0.500	<0.500	8.1	<0.500
	9/26/2018	<1.00	<5.00	<1.00	<1.00	0.42	<0.400	<0.400	12.5	<0.400	<0.500	2.42	<0.400	<0.500	6.8	<0.400
	12/5/2018	<1.00	<5.00	<1.00	<1.00	0.47	<0.400	<0.400	11.7	<0.400	<0.500	3.34	<0.400	<0.500	8.2	<0.400
	3/21/2019	<1.00	<5.00	<1.00	<1.00	0.510	<0.400	<0.400	12.2	<0.400	<0.500	1.24	<0.400	<0.500	4.92	<0.400
	6/6/2019	<1.00	<5.00	<1.00	<1.00	0.584	<0.400	<0.400	15.5	<0.400	<0.500	2.22	<0.400	<0.500	7.22	<0.400
	9/25/2019	<1.00	<5.00	<1.00	<1.00	0.577	<0.400	<0.400	15.5	<0.400	<0.500	3.12	<0.400	<0.500	6.88	<0.400
	12/4/2019	<1.00	<5.00	<1.00	<1.00	0.461	<0.400	<0.400	15.2	<0.400	<0.500	1.94	<0.400	<0.500	7.35	<0.400
	3/12/2020	<1.00	<5.00	<1.00	<1.00	0.587	<0.400	<0.400	16.1	<0.400	<0.500	3.32	<0.400	<0.500	8.23	<0.400
	6/18/2020	<1.00	<5.00	<1.00	<1.00	0.580	<0.400	<0.400	13.6	<0.400	<0.500	3.17	<0.400	<0.500	7.62	<0.400
	10/8/2020	<1.00	<5.00	<1.00	<1.00	0.502	<0.400	<0.400	16.0	<0.400	<0.500	3.68	<0.400	<0.500	8.02	<0.400
	12/9/2020	<2.00	<5.00	<1.00	<1.00	0.565	<0.400	<0.400	15.6	<0.400	<0.500	4.07	<0.400	<0.500	7.86	<0.400
	3/4/2021	<1.00	<5.00	<1.00	<1.00	0.51	<0.400	<0.400	13.3	<0.400	<0.500	2.12	<0.400	<0.500	6.62	<0.400
	6/15/2021	<1.00	<5.00	<1.00	<1.00	0.643	<0.400	<0.400	16.5	<0.400	<0.500	4.47	<0.400	<0.500	8.86	<0.400
	9/15/2021	<1.00	<5.00	<1.00	<1.00	0.656	<0.400	<0.400	19.5	<0.400	<0.500	3.01	<0.400	<0.500	6.53	<0.400
	12/8/2021	<1.00	<5.00	<1.00	<1.00	0.514	<0.400	<0.400	13.9	<0.400	<0.500	5	<0.400	<0.500	8.62	<0.400
	3/9/2022	<1.00	<5.00	<1.00	<1.00	0.630	<0.400	<0.400	17.4	<0.400	<0.500	3.51	<0.400	<0.500	7.53	<0.400
	6/15/2022	<1.00	<5.00	<1.00	<1.00	0.580	<0.400	<0.400	13.0	<0.400	<0.500	5.85	<0.400	<0.500	7.52	<0.400
	9/14/2022	<1.00	<5.00	<1.00	<1.00	0.450	<0.400	<0.400	11.5	<0.400	<0.500	4.31	<0.400	<0.500	5.88	<0.400
	12/8/2022	<1.00	<5.00	<1.00	<1.00	0.52	<0.400	<0.400	16.3	<0.400	<0.500	3.35	<0.400	<0.500	6.04	<0.400
	3/16/2023	<1.00	<5.00	<1.00	<1.00	0.64	<0.400	<0.400	17.4	<0.400	<0.500	3.81	<0.400	<0.500	6.63	<0.400
	6/13/2023	<1.00	<5.00	<1.00	<1.00	0.51	<0.400	<0.400	12.3	<0.400	<0.500	6.04	<0.400	<0.500	6.15	<0.400
	9/12/2023	<4.00	<5.00	<1.00	<1.00	0.530	<0.400	<0.400	15.6	<0.400	<0.500	2.81	<0.400	<0.500	5.83	<0.200
	12/14/2023	<1.00	<5.00	<1.00	<1.00	0.710	<0.400	<0.400	15.7	<0.400	<0.500	4.05	<0.400	<0.500	6.76	<0.200
	3/5/2024	<2.00	<5.00	<1.00	<1.00	0.550	<0.400	<0.400	15.3	<0.400	<0.500	2.64	<0.400	<0.500	5.54	<0.200
	6/14/2024	<1.00	<5.00	<1.00	<1.00	0.460	<0.400	<0.400	15.0	<0.400	<0.500	1.55	<0.400	<0.500	4.29	<0.200
	9/5/2024	<1.00	<5.00	<1.00	<1.00	0.430	<0.400	<0.400	14.0	<0.400	<0.500	1.78	<0.400	<0.500	3.53	<0.200
	12/5/2024	<1.00	<5.00	<1.00	<1.00	0.400	<0.400	<0.400	10.3	<0.400	<0.500	1.73	<0.400	<0.500	3.55	<0.200

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-23i	6/10/2008	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	06/10/2008 DUP	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	9/17/2008	<1	<0.500	<0.500	<1	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
	12/9/2008	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/25/2009	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	6/16/2009	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.54	<0.50	<0.50	<0.50	<0.50
	9/16/2009	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	12/15/2009	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/17/2010	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	7/2/2010	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/22/2010	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	12/8/2010	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	3/9/2011	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	6/8/2011	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	9/13/2011	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	12/6/2011	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/7/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	6/19/2012	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	9/11/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.67	<0.50	<0.50	<0.50	<0.50
	12/12/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/12/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	6/12/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/18/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	12/11/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/19/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	6/25/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/24/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	12/9/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/18/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.78	<0.50
	6/16/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/17/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	12/7/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/8/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	6/16/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-23i	9/27/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
(continued)	12/13/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/27/2017	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	6/13/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/26/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	11/8/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/21/2018	<0.500	<2.50	<0.500	<0.500	<0.500	<0.500	<0.500	0.207 J	<0.500	<0.500	0.402 J	<0.500	<0.500	0.215 J	<0.500
	6/28/2018	<0.500	<2.50	<0.500	<0.500	<0.500	<0.500	<0.500	0.202 J	<0.500	<0.500	0.247 J	<0.500	<0.500	0.212 J	<0.500
	9/27/2018	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	12/6/2018	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	3/22/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	6/3/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	9/26/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	0.59	<0.400	<0.500	<0.400	<0.400
	12/5/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	3/12/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	6/17/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	10/7/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	12/9/2020	<2.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	3/2/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	6/17/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	9/15/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	12/9/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	3/9/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	6/15/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	9/14/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	12/7/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	0.68	<0.400	<0.500	<0.400	<0.400
	3/14/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	0.52	<0.400	<0.500	<0.400	<0.400
	6/14/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	0.43	<0.400	<0.500	<0.400	<0.400
	9/13/2023	<2.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.700	<0.400	<0.500	<0.400	<0.200
	12/14/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
	3/7/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
	6/13/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.200
	9/6/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	0.520	<0.400	<0.500	<0.400	<0.200
	12/5/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-24i	10/1/2010	<0.50	<0.50	<0.50	<0.50	3.3	<0.50	0.94	52	<0.50	<0.50	52	1.9	<0.50	29	<0.50
	12/10/2010	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	3.5	<0.5	<0.5	6.3	<0.5	<0.5	2	<0.5
	3/14/2011	<0.50	<0.50	<0.50	<0.50	0.88	<0.50	<0.50	15	<0.50	<0.50	23	1	<0.50	7.4	<0.50
	6/7/2011	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	2	<0.5	<0.5	6.6	<0.5	<0.5	1.4	<0.5
	9/16/2011	<0.50	<0.50	<0.50	<0.50	13	<0.50	2.5	270	1.7	<0.50	27	5.6	<0.50	24	19
	12/7/2011	<0.50	<0.50	<0.50	<0.50	5	<0.50	0.84	100	<0.50	<0.50	19	2.9	<0.50	14	7.5
	3/12/2012	<0.50	<0.50	<0.50	<0.50	5.9	<0.50	<0.50	79	<0.50	<0.50	30	2.3	<0.50	11	4.5
	6/22/2012	<0.5	<0.5	<0.5	<0.5	1.8	<0.5	<0.5	14	<0.5	<0.5	0.85	<0.5	<0.5	<0.50	2.6
	9/14/2012	<0.50	<0.50	<0.50	<0.50	4.4	<0.50	0.87	58	<0.50	<0.50	31	0.79	<0.50	20	<0.50
	12/14/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	5.1	<0.50	<0.50	2.1	<0.50	<0.50	0.65	<0.50
	3/15/2013	<0.50	<0.50	<0.50	<0.50	2.8	<0.50	<0.50	48	<0.50	<0.50	23	0.57	<0.50	15	<0.50
	6/14/2013	<0.50	<0.50	<0.50	<0.50	2.7	<0.50	<0.50	28	<0.50	<0.50	6.2	<0.50	<0.50	3.6	<0.80
	9/20/2013	<0.50	<0.50	<0.50	<0.50	1	<0.50	<0.50	15	<0.50	<0.50	15	<0.50	<0.50	5.9	<0.80
	12/16/2013	<0.50	<0.50	<0.50	<0.50	1.3	<0.50	<0.50	8.4	<0.50	<0.50	6.7	<0.50	<0.50	3.4	<0.50
	3/24/2014	<0.50	<0.50	<0.50	<0.50	1.3	<0.50	<0.50	16	<0.50	<0.50	10	<0.50	<0.50	5.5	<0.80
	6/23/2014	<0.50	<0.50	<0.50	<0.50	1.2	<0.50	<0.50	13	<0.50	<0.50	1.3	<0.50	<0.50	5.2	2.1
	9/30/2014	<0.50	<0.50	<0.50	<0.50	1.8	<0.50	<0.50	21	<0.50	<0.50	20	<0.50	<0.50	10	<0.50
	12/15/2014	<0.50	<0.50	<0.50	<0.50	0.6	<0.50	<0.50	12	<0.50	<0.50	2.4	<0.50	<0.50	1.1	<0.50
	3/20/2015	<0.50	<0.50	<0.50	<0.50	0.58	<0.50	<0.50	5.9	<0.50	<0.50	6.1	<0.50	<0.50	3.1	<0.50
	6/18/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	3.4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/22/2015	<0.50	<0.50	<0.50	<0.50	1.9	<0.50	<0.50	4.7	<0.50	<0.50	2.2	<0.50	<0.50	0.8	<0.50
	12/8/2015	<0.50	<0.50	<0.50	<0.50	0.7	<0.50	<0.50	18	<0.50	<0.50	189	<0.50	<0.50	36.4	<0.50
	3/8/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	3.5	<0.50	<0.50	4.1	<0.50	<0.50	1.6	<0.50
	6/17/2016	<0.50	<2	<0.50	<0.50	0.99	<0.50	<0.50	7.8	<0.50	<0.50	11.5	<0.50	<0.50	6.3	<0.50
	9/28/2016	<0.50	<2	<0.50	<0.50	0.53	<0.50	<0.50	5.4	<0.50	<0.50	5.8	<0.50	<0.50	3.1	<0.50
	12/12/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.1	<0.50	<0.50	<0.50	<0.50
	3/30/2017	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	0.7	<0.5	<0.5	1	<0.5	<0.5	<0.50	<0.5
	6/15/2017	<0.50	<2.0	<0.50	<0.50	<0.50	<1.0	<0.50	3.2	<0.50	<0.50	6.6	<0.50	<0.50	2.8	<0.50
	9/26/2017	<2.0	<2.0	<0.50	<0.50	2.10	<1.0	<0.50	24.5	<0.50	<0.50	30.1	<0.50	<0.50	16.6	<0.50
	11/9/2017	<2.0	<2.0	<0.50	<0.50	1.10	<0.50	<0.50	9.6	<0.50	<0.50	12.7	<0.50	<0.50	5.9	<0.50
	3/21/2018	<0.500	<2.50	<0.500	<0.500	1.42	<0.500	<0.500	13.5	<0.500	<0.500	19.1	<0.500	<0.500	10.2	<0.500
	6/28/2018	<0.500	<2.50	<0.500	<0.500	1.44	<0.500	<0.500	13.6	1.09	<0.500	10.3	<0.500	<0.500	5.93	<0.500
	9/27/2018	<1.00	<5.00	<1.00	<1.00	2.18	<0.400	<0.400	25.0	<0.400	<0.500	24.8	<0.400	<0.500	14.3	<0.400
	12/4/2018	<1.00	<5.00	<1.00	<1.00	0.80	<0.400	<0.400	5.1	<0.400	<0.500	10.2	<0.400	<0.500	3.76	<0.400

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-24i (continued)	3/25/2019	<1.00	<5.00	<1.00	<1.00	0.888	<0.400	<0.400	8.46	<0.400	<0.500	11.7	<0.400	<0.500	5.91	<0.400
	6/7/2019	<1.00	<5.00	<1.00	<1.00	0.601	<0.400	<0.400	4.99	<0.400	<0.500	7.39	<0.400	<0.500	3.55	<0.400
	9/27/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	12/3/2019	<1.00	<5.00	<1.00	<1.00	0.775	<0.400	<0.400	3.82	<0.400	<0.500	8.78	<0.400	<0.500	3.72	<0.400
	3/12/2020	<1.00	<5.00	<1.00	<1.00	1.3	<0.400	<0.400	15.4	<0.400	<0.500	17	<0.400	<0.500	8.42	<0.400
	6/18/2020	<1.00	<5.00	<1.00	<1.00	0.61	<0.400	<0.400	2.91	<0.400	<0.500	6.24	<0.400	<0.500	2.84	<0.400
	10/9/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	1.08	<0.400	<0.500	1.35	<0.400	<0.500	<0.400	<0.400
	12/10/2020	<2.00	<5.00	<1.00	<1.00	1.73	<0.400	<0.400	20	<0.400	<0.500	29.7	<0.400	<0.500	13	<0.400
	3/3/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	0.505	<0.400	<0.500	0.955	<0.400	<0.500	<0.400	<0.400
	6/17/2021	<1.00	<5.00	<1.00	<1.00	0.989	<0.400	<0.400	9.31	<0.400	<0.500	15.7	<0.400	<0.500	8	<0.400
	9/14/2021	<1.00	<5.00	<1.00	<1.00	1.98	<0.400	<0.400	27.5	<0.400	<0.500	36.7	<0.400	<0.500	17.2	<0.400
	12/7/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	0.54	<0.400	<0.500	2.22	<0.400	<0.500	0.629	<0.400
	3/8/2022	<1.00	<5.00	<1.00	<1.00	0.900	<0.400	<0.400	7.93	<0.400	<0.500	13.2	<0.400	<0.500	6.19	<0.400
	6/15/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	0.430	<0.400	<0.500	0.710	<0.400	<0.500	<0.400	<0.400
	9/14/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	12/8/2022	<1.00	<5.00	<1.00	<1.00	1.07	<0.400	<0.400	15.5	<0.400	<0.500	38.6	<0.400	<0.500	9.46	<0.400
	3/15/2023	<1.00	<5.00	<1.00	<1.00	1.04	<0.400	<0.400	15.9	<0.400	<0.500	16.1	<0.400	<0.500	7.95	<0.400
	6/13/2023	<1.00	<5.00	<1.00	<1.00	0.85	<0.400	<0.400	14.3	<0.400	<0.500	9.97	<0.400	<0.500	5.21	<0.400
	9/13/2023	<2.00	<5.00	<1.00	<1.00	0.990	<0.400	<0.400	23.0	<0.400	<0.500	17.8	<0.400	<0.500	9.01	<0.200
	12/11/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	1.11	<0.400	<0.500	2.09	<0.400	<0.500	0.680	<0.200
	3/7/2024	<1.00	<5.00	<1.00	<1.00	1.59	<0.400	<0.400	16.3	<0.400	<0.500	16.1	<0.400	<0.500	9.70	<0.200
	6/13/2024	<1.00	<5.00	<1.00	<1.00	1.09	<0.400	<0.400	17.5	<0.400	<0.500	16.7	<0.400	<0.500	8.68	<0.200
	9/4/2024	<1.00	<5.00	<1.00	<1.00	1.00	<0.400	<0.400	21.6	<0.400	<0.500	22.4	<0.400	<0.500	10.0	<0.200
	12/3/2024	<1.00	<5.00	<1.00	<1.00	1.17	<0.400	0.440	18.2	<0.400	<0.500	21.7	<0.400	<0.500	9.31	<0.200
MW-24d	9/14/2011	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	12/9/2011	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/8/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	6/21/2012	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	9/14/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	12/14/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/15/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	6/14/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/20/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	12/16/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	7	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-24d	3/24/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	12	<0.50	<0.50	4	<0.50	<0.50	1.6	<0.50
(continued)	6/23/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	3.9	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	10/2/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	4.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	12/15/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/18/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	3.8	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	6/18/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	3.8	<0.50	<0.50	3.8	<0.50	<0.50	1.7	<0.50
	9/18/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	12/9/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/9/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	1.4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	6/17/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	0.87	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/30/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	0.62	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	12/12/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/28/2017	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	6/15/2017	<0.50	<2.0	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/25/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	11/6/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/20/2018	<0.500	<2.50	<0.500	<0.500	<0.500	<0.500	<0.500	0.259 J	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	0.199 J
	6/27/2018	<0.500	<2.50	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	0.275 J
	9/28/2018	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	12/10/2018	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	3/25/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	6/4/2019	<4.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	9/27/2019	<1.00	<5.00	<1.00	<1.00	0.415	<0.400	<0.400	1.00	<0.400	<0.500	1.62	<0.400	<0.500	0.845	<0.400
	12/3/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	3/12/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	6/18/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	10/9/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	3/3/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	9/14/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	12/7/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	3/8/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	6/15/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	9/15/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	12/6/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility
Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-24d (continued)	3/16/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	6/14/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	9/14/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
	12/15/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
	3/7/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
	6/12/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
	9/4/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
	12/6/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
MW-25i	9/16/2011	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	12/8/2011	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/6/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	6/20/2012	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	9/11/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	12/12/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/13/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	6/13/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/18/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	12/11/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/19/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	6/25/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/24/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	12/9/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/17/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	6/16/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/21/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.75	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	12/7/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/9/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/9/2016 DUP	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	6/15/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/29/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	0.81	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	12/13/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	0.77	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/29/2017	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	6/15/2017	<0.50	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/27/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-25i	11/8/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
(continued)	3/21/2018	<0.500	<2.50	<0.500	<0.500	<0.500	<0.500	<0.500	0.245 J	<0.500	<0.500	0.248 J	<0.500	<0.500	<0.500	<0.500
	6/29/2018	<0.500	<2.50	<0.500	<0.500	<0.500	<0.500	<0.500	0.274 B J	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
	9/27/2018	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	12/6/2018	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	3/22/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	6/4/2019	<4.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	9/25/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	12/3/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	0.54	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	3/12/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	6/18/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	0.44	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	10/7/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	12/9/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	3/2/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	6/17/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	9/15/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	12/8/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	3/8/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	6/16/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	0.560	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	9/14/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	12/8/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	3/15/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	6/14/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	0.41	<0.400	<0.500	<0.400	<0.400
	9/14/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
	12/14/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	0.430	<0.400	<0.500	<0.400	<0.200
	3/6/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	0.570	<0.400	<0.500	<0.400	<0.200
	6/12/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
	9/4/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
	12/4/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	0.640	<0.400	<0.500	<0.400	<0.200
MW-26	9/16/2011	<2	<2	<2	<2	7	<2	2.2	120	2.6	<2	250	5.7	<2	490	<2
	12/8/2011	<2	<2	<2	<2	7.1	<2	2.5	110	2.2	<2	300	5.8	<2	500	<2
	3/6/2012	<2	<2	<2	<2	8.2	<2	2.2	99	<2	<2	210	4.6	<2	450	<2
	6/19/2012	<2	<2	<2	<2	14	<2	3	90	<2	<2	160	5.2	<2	460	<2
	9/11/2012	<2	<2	<2	<2	6.3	<2	2.3	110	3	<2	280	4.3	<2	460	<2

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-26	12/12/2012	<2	<2	<2	<2	5.6	<2	<2	120	3.7	<2	300	3.8	<2	470	<2
(continued)	3/13/2013	<2	<2	<2	<2	4.9	<2	<2	83	<2	<2	210	2.9	<2	390	<2
	6/12/2013	<2	<2	<2	<2	8.2	<2	<2	80	<2	<2	170	4.5	<2	360	<2
	9/18/2013	<2	<2	<2	<2	5.7	<2	<2	96	2.4	<2	210	3.2	<2	410	<2
	12/11/2013	<2	<2	<2	<2	7.8	<2	<2	75	<2	<2	150	3.9	<2	370	<2
	3/19/2014	<2	<2	<2	<2	4.9	<2	<2	95	2.1	<2	220	2.9	<2	350	<2
	6/24/2014	<0.50	<0.50	<0.50	<0.50	2.7	<0.50	6.4	49	0.86	<0.50	150	2.1	<0.50	200	<0.50
	9/24/2014	<2	<2	<2	<2	3.9	<2	<2	68	<2	<2	220	3.1	<2	340	<2
	12/9/2014	<0.90	<0.90	<0.90	<0.90	3.8	<0.90	0.96	55	1.3	<0.90	160	2.8	<0.90	280	<0.90
	3/17/2015	<1	<1	<1	<1	5.8	<1	1.7	75.7	1.8	<1	265	3.7	<1	458	<1
	6/16/2015	<1.7	<1.7	<1.7	<1.7	5	<1.7	<1.7	77.9	<1.7	<1.7	205	2.8	<1.7	385	<1.7
	9/21/2015	<1.7	<1.7	<1.7	<1.7	4.3	<1.7	<1.7	72.4	1.7	<1.7	176	2.7	<1.7	326	<1.7
	12/7/2015	<1.2	<1.2	<1.2	<1.2	8.5	<1.2	1.7	75	1.6	<1.2	179	3.5	<1.2	393	<1.2
	3/8/2016	<1.2	<5	<1.2	<1.2	8	<1.2	1.5	76.1	1.8	<1.2	171	3.7	<1.2	370	<1.2
	6/15/2016	<1	<4	<1	<1	4.6	<1	1.4	83.1	2.2	<1	192	2.2	<1	343	<1
	9/27/2016	<0.50	<2	<0.50	<0.50	3.9	<0.50	1.1	61.1	1.6	<0.50	160	2.4	<0.50	288	<0.50
	12/13/2016	<0.50	<2	<0.50	<0.50	8.9	<0.50	2.4	85.9	2	<0.50	167	3.3	<0.50	410	<0.50
	3/29/2017	<5	<20	<5	<5	<5	<5	<5	170	<5	<5	214	<5	<5	452	<5
	6/13/2017	<2.0	<2.0	<0.50	<0.50	6.7	<1.0	1.9	113	2.0	<0.50	160	2.1	<0.50	311 E, J	0.65
	9/26/2017	<2.0	<2.0	<0.50	<0.50	5.1	<1.0	1.0	192	2.1	<0.50	68	0.8	<0.50	192	0.98
	11/8/2017	<2.0	2	<0.50	<0.50	4.8	<0.50	1.5	204	2.3	<0.50	88	1.0	<0.50	170	1.80
	3/20/2018	<0.500	0.633 J	0.149 J	<0.500	4.9	<0.500	1.4	157	1.9	<0.500	108	1.2	<0.500	190	1.75
	6/29/2018	<0.500	<2.50	<0.500	<0.500	5.1	<0.500	1.5	114	1.9	<0.500	138	1.9	<0.500	221	1.02
	9/24/2018	<1.00	<5.00	<1.00	<1.00	4.2	<0.400	1.2	141	2.1	<0.500	117	1.2	<0.500	233	1.18
	12/5/2018	<2.00	<10.0	<2.00	<2.00	3.0	<0.800	1.1	147	1.9	<1.00	139	0.8	<1.00	210	0.85
	3/22/2019	<2.00	<10.0	<2.00	<2.00	7.74	<0.800	2.18	142	3.18	<1.00	139	2.09	<1.00	383	<0.800
	6/3/2019	<20.0	<25.0	<5.00	<5.00	5.75	<2.00	<2.00	92.2	2.35	<2.50	148	2.10	<2.50	336	<2.00
	9/26/2019	<5.00	<25.0	<5.00	<5.00	5.14	<2.00	<2.00	104	2.6	<2.50	133	<2.00	<2.50	272	<2.00
	12/3/2019	<5.00	<25.0	<5.00	<5.00	2.63	<2.00	<2.00	95	<2.00	<2.50	137	<2.00	<2.50	216	<2.00
	3/11/2020	<5.00	<25.0	<5.00	<5.00	3.65	<2.00	<2.00	59.7	<2.00	<2.50	79.1	<2.00	<2.50	205	<2.00
	6/17/2020	<2.00	<10.0	<2.00	<2.00	5.16	<0.800	1.38	64.2	1.9	<1.00	143	2.20	<1.00	299	<0.800
	10/7/2020	<5.00	<25.0	<5.00	<5.00	2.64	<2.00	<2.00	62.8	<2.00	<2.50	118	<2.00	<2.50	208	<2.00
	12/9/2020	<10.0	<25.0	<5.00	<5.00	3.34	<2.00	<2.00	64.3	<2.00	<2.50	147	<2.00	<2.50	218	<2.00
	3/4/2021	<1.00	<5.00	<1.00	<1.00	5.92	<0.400	1.89	89.4	2.39	<0.500	151	2.04	<0.500	320	<0.400

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-26 (continued)	6/17/2021	<2.50	<12.5	<2.50	<2.50	4.35	<1.00	1.43	72.3	1.92	<1.25	132	2.06	<1.25	366	<1.00
	9/15/2021	<5.00	<25.0	<5.00	<5.00	3.33	<2.00	<2.00	71.7	<2.00	<2.50	162	<2.00	<2.50	257	<2.00
	12/7/2021	<5.00	<25.0	<5.00	<5.00	2.74	<2.00	<2.00	43.5	<2.00	<2.50	205	<2.00	<2.50	255	<2.00
	3/8/2022	<1.00	<5.00	<1.00	<1.00	2.56	<0.400	0.930	44	1.18	<0.500	184	1.81	<0.500	247	<0.400
	6/15/2022	<5.00	<25.0	<5.00	<5.00	4.30	<2.00	<2.00	63.8	<2.00	<2.50	283	2.40	<2.50	362	<2.00
	9/14/2022	<5.00	<25.0	<5.00	<5.00	2.4	<2.00	<2.00	31.9	<2.00	<2.50	87.9	<2.00	<2.50	151	<2.00
	12/8/2022	<2.00	<10.0	<2.00	<2.00	1.86	<0.800	<0.800	28.1	<0.800	<1.00	129	0.98	<1.00	156	<0.800
	3/15/2023	<5.00	<25.0	<5.00	<5.00	2.70	<2.00	<2.00	35.9	<2.00	<2.50	161	<2.00	<2.50	203	<2.00
	6/14/2023	<5.00	<25.0	<5.00	<5.00	3.50	<2.00	<2.00	43.7	<2.00	<2.50	141	<2.00	<2.50	219	3.05
	9/14/2023	<5.00	<25.0	<5.00	<5.00	3.25	<2.00	<2.00	44.3	<2.00	<2.50	121	<2.00	<2.50	208	<1.00
	12/15/2023	<2.00	<10.0	<2.00	<2.00	3.20	<0.800	0.880	48.7	1.10 Q	<1.00	211	1.48	<1.00	253	<0.400
	3/6/2024	<2.50	<12.5	<2.50	<2.50	2.60	<1.00	<1.00	31.0	<1.00	<1.25	133	1.38	<1.25	221	<0.500
	6/14/2024	<2.50	<12.5	<2.50	<2.50	2.38	<1.00	<1.00	37.4	1.32	<1.25	160	1.40	<1.25	204	<0.500
	9/4/2024	<2.00	<10.0	<2.00	<2.00	2.74	<0.800	0.960	41.4	1.42	<1.00	116	1.28	<1.00	182	<0.400
	12/3/2024	<2.50	<12.5	<2.50	<2.50	3.02	<1.00	1.15	46.6	1.90	<1.25	193	1.88	<1.25	237	<0.500
MW-32s	3/24/2005	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	5.79	<0.50	--	<0.50	<0.50
	8/18/2005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	11/14/2005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	3/6/1908	<1	<0.500	<0.500	<1	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
	9/17/2008	<1	<0.500	<0.500	<1	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
	12/9/2008	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	6/16/2009	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	12/15/2009	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	7/2/2010	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/22/2010	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	12/7/2010	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	6/9/2011	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.4	<0.5	<0.5	0.94	<0.5	<0.5	1.1	<0.5
	9/15/2011	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	12/8/2011	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	6/21/2012	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	9/13/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	12/11/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/14/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	6/11/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/20/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-32s (continued)	12/16/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/24/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	6/25/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	6/25/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	12/11/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/19/2015	<0.50	<0.50	0.77	<0.50	1.5	<0.50	<0.50	73.5	2.5	<0.50	<0.50	3.5	<0.50	52	<0.50
	6/17/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	12/7/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	6/16/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	6/16/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	12/14/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	6/14/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	11/10/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/22/2018	<0.500	<2.50	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
	10/1/2018	<2.0	<2.0	<0.50	<0.50	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	12/10/2018	<0.500	<2.50	<0.500	<0.500	0.860	<0.400	<0.400	16.5	<0.400	<0.500	14.7	<0.400	<0.500	5.99	<0.400
	3/25/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	9/26/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	3/13/2020	<2.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	10/9/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	3/2/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	9/16/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	3/9/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	9/15/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	3/17/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	9/13/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
	3/6/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
	9/4/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
MW-32i	11/10/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	7	<0.50	<0.50	8.2	<0.50	<0.50	3.4	<0.50
	3/17/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	1.93	<0.400	<0.500	3.68	<0.400	<0.500	1.43	<0.400
MW-F	6/14/1995	--	<10	<5	<5	<5	5	<5	15	<5	--	<5	<5	--	<5	<10
	2/27/2001	<1	<5	<0.50	<0.50	0.754	<0.50	<0.50	5.99	<0.50	<0.50	0.506	<1	--	1.18	<0.50
	5/29/2001	<1	<5	<0.50	<0.50	0.58	<0.50	<0.50	6.47	<0.50	<0.50	<0.50	<1	--	0.585	<0.50
	9/24/2001	<0.50	<0.50	<0.50	<0.50	1.2	<0.50	<0.50	6.5	<0.50	<0.50	<0.50	<0.50	--	<0.50	<0.50

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MW-F (continued)	12/18/2001	<1	<5	<0.50	<0.50	1.44	<0.50	<0.50	17.9	<0.50	<0.50	<0.50	<1	--	0.709	<0.50
	3/18/2002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	5/31/2002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8/28/2002	<1	<0.50	<0.50	<1	1.12	0.65	<0.50	9.54	<0.50	<0.50	<0.50	<0.50	--	0.69	<0.50
	11/8/2002	<1	<0.50	<0.50	<1	1.15	0.81	<0.50	9.86	<0.50	<0.50	<0.50	<0.50	--	0.65	<0.50
	1/23/2003	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	5/29/2003	<1	<0.50	<0.50	<1	1.11	0.83	<0.50	10.6	<0.50	<0.50	<0.50	<0.50	--	0.62	<0.50
	11/10/2003	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	1/26/2004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	5/4/2004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8/17/2004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	11/2/2004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	11/15/2004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	3/24/2005	<1	<0.50	<0.50	<1	0.87	0.64	<0.50	8.31	<0.50	<0.50	0.52	<0.50	--	0.74	<0.50
	5/17/2005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8/18/2005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	11/14/2005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	12/13/2007	<1	<0.50	<0.50	<1	0.5	0.52	<0.50	5.93	<0.50	<0.50	<0.50	<0.50	--	<0.50	<0.50
	9/18/2008	<1	<0.500	<0.500	<1	0.85	0.72	<0.500	8.57	<0.500	<0.500	<0.500	<0.500	<0.500	0.57	<0.500
EW-1	4/25/1991	--	<2	--	--	35	20	--	750	--	--	9,100	280	--	440	9.3
	11/17/1993	--	<200	--	--	<100	<100	--	1,700	--	--	8,600	<100	--	480	<200
	9/1/1995	<25	<50	<25	<25	<25	<25	<25	140	<25	<25	2,400	74	--	340	<50
	9/24/1996	<1	<4	3	<0.4	8.5	2.1	<0.40	260	6.2	<0.40	49	34	--	29	89
	12/2/1996	0.7	<0.50	1.9	<0.20	5.7	5	1	530	3.3	<0.20	310	86	--	98	10
	11/12/1997	<2.5	<5	<2.5	<2.5	5.05	3.38	<2.5	68.5	4.91	<2.5	111	5.1	--	47.4	9.2
	8/11/1999	<10	<50	<5	<5	<5	<5	<5	14.5	<5	<5	369	<10	--	39.9	<5
	11/16/1999	<5	<12.5	<2.5	<5	<2.5	3.15	<2.5	41.7	3	<2.5	314	6.9	--	35.5	5.1
	2/29/2000	<2	<10	<1	<1	<1	6.42	<1	13.7	<1	<1	97.3	3.48	--	20.8	<1
	6/27/2000	<2	<10	2.12	<1	<1	6.42	<1	17.5	<1	<1	293	5.37	--	35.1	<1
	8/31/2000	<5	<25	<2.5	<2.5	<2.5	<2.5	<2.5	31.9	<2.5	<2.5	325	<5	--	38.4	<2.5
	1/30/2000	<5	<25	<2.5	<2.5	<2.5	<2.5	<2.5	45.6	<2.5	<2.5	380	5.86	--	53.9	<2.5
	2/27/2001	<2	<10	1.42	<1	2.51	2.83	<1	35	<1	<1	240	7.98	--	47.5	2.43
	5/29/2001	<10	<50	<5	<5	<5	<5	<5	22.4	<5	<5	338	<10	--	61.1	<5
	9/25/2001	<5	<5	<5	<5	<5	<5	<5	14	<5	<5	320	9.5	--	61	<5

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
EW-1 (continued)	12/17/2001	<2	<10	<1	<1	1.19	<1	<1	25.8	<1	<1	217	12.8	--	47.1	<1
	3/19/2002	<2	<1	<1	<2	1.04	<1	<1	17.5	<1	<1	323	5.66	--	46.1	<1
	5/30/2002	<2	<1	1.38	<2	1	1.68	<1	23.5	<1	<1	319	6.46	--	39.9	<1
	8/29/2002	<2	<1	1.36	<2	2.44	1.24	<1	20.4	<1	<1	307	3.38	--	37.8	<1
	11/8/2002	<2	<1	1.46	<2	3.02	3.96	<1	28.4	<1	<1	274	5.54	--	50.2	<1
	1/23/2003	<2	<1	1.36	<2	2.34	<1	<1	17	<1	<1	252	5.06	--	51.9	<1
	5/30/2003	<2	<1	5.22	<2	<1	<1	<1	6.12	<1	<1	255	5.06	--	41.1	<1
	11/10/2003	<5	<5	<5	<5	<5	<5	<5	9	<5	<5	85.8	<5	--	16.2	<5
	1/27/2004	<1	<0.50	2.07	<1	0.87	0.78	<0.50	5.2	<0.50	<0.50	151	4.26	--	37.6	<0.50
	5/4/2004	<1	<1	4.73	<1	<1	1.25	<1	4.36	<1	<1	168	3.09	--	30.8	<1
	8/17/2004	<1	<0.50	3.76	<0.50	0.81	1.86	<0.50	6.83	<0.50	<0.50	144	1.73	--	23.2	<0.50
	11/17/2004	<2.5	<2.5	4	<2.5	<2.5	<2.5	<2.5	9.6	<2.5	<2.5	180	3.6	--	33	<2.5
	5/18/2005	<2	<1	<1	<2	<1	<1	<1	8.28	<1	<1	207	<1	--	23.2	2.3
	11/14/2005	<2	<1	1.06	<2	1.36	2.7	<1	11.1	<1	<1	187	<1	--	26.1	<1
	6/5/2006	<1	<1	2.4	<1	<1	<1	<1	6.18	<1	<1	102	3.55	--	19.1	<1
	12/6/2006	<1	<0.50	2.07	<1	1.13	<0.50	<0.50	8.98	<0.50	<0.50	133	2.1	--	28.3	<0.50
	9/12/2007	<1	<0.50	2.66	<1	0.51	1.14	<0.50	6.28	<0.50	<0.50	76.9	1.47	--	18.3	<0.50
	3/6/2008	<1	<0.500	1.71 J	<1	0.64	1.04	<0.500	5.75	<0.500	<0.500	80.9	1.45	<0.500	19.9	<0.500
	9/19/2008	<5	<2.50	<2.50	<5	<2.50	<2.50	<2.50	14.6	<2.50	<2.50	86.1	<2.50	<2.50	20.8	<2.50
	3/26/2009	<0.50	<0.50	3.6	<0.50	<0.50	0.76	<0.50	3.8	<0.50	<0.50	81	1	<0.50	14	<0.50
	9/17/2009	<0.50	<0.50	3.4	<0.50	0.63	<0.50	<0.50	8.3	<0.50	<0.50	100	0.74	<0.50	17	<0.50
	3/19/2010	<0.50	<0.50	3.5 BE	<0.50	<0.50	<0.50	0.52	4.1	<0.50	<0.50	89	1.5	<0.50	22	<0.50
	9/23/2010	<0.50	<0.50	1.7 BE	<0.50	0.86	0.94	<0.50	10	<0.50	<0.50	87	0.64	<0.50	17	<0.50
	3/10/2011	<0.50	<0.50	5.2	<0.50	<0.50	<0.50	<0.50	2.9	<0.50	<0.50	67	0.89	<0.50	13	<0.50
	9/16/2011	<0.50	<0.50	2.7	<0.50	<0.50	<0.50	<0.50	2.1	<0.50	<0.50	75	0.69	<0.50	9.9	<0.50
	3/12/2012	<0.50	<0.50	4.4	<0.50	<0.50	<0.50	<0.50	3	<0.50	<0.50	52	0.68	<0.50	13	<0.50
	9/13/2012	<0.50	<0.50	1.7	<0.50	<0.50	<0.50	<0.50	2.1	<0.50	<0.50	60	0.58	<0.50	8.6	<0.50
	3/15/2012	<0.50	<0.50	2.4	<0.50	<0.50	<0.50	<0.50	3.1	<0.50	<0.50	78	0.63	<0.50	12	<0.50
	9/19/2013	<0.50	<0.50	2.2	<0.50	<0.50	<0.50	<0.50	5.3	<0.50	<0.50	63	0.57	<0.50	14	<0.50
	3/20/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.3	<0.50	<0.50	32	1.6	<0.50	12	<0.50
	9/27/2014	Insufficient water for sampling during monitoring event.														
	9/21/2015	<0.50	<0.50	2	<0.50	<0.50	<0.50	<0.50	3.9	<0.50	<0.50	45.3	0.56	<0.50	12.5	<0.50
	3/8/2016	<0.50	<2	2	<0.50	<0.50	<0.50	<0.50	2.9	<0.50	<0.50	62.6	0.83	<0.50	14.3	<0.50
	9/29/2016	<0.50	<2	1.1	<0.50	<0.50	1.5	<0.50	5.4	<0.50	<0.50	38.6	<0.50	<0.50	10.5	<0.50

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
EW-1	3/30/2017	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	10.7	<0.50	<0.50	2.4	<0.50
(continued)	9/28/2017	<2.0	<2.0	2.4	<0.50	<0.50	<1.0	<0.50	1.8	<0.50	<0.50	32.4	<0.50	<0.50	7.2	<0.50
	11/9/2017	<2.0	<2.0	0.91	<0.50	<0.50	<0.50	<0.50	3.30	<0.50	<0.50	33.0	0.66	<0.50	7.3	<0.50
	7/1/2018	<0.500	<2.50	1.94	<0.500	0.134 J	<0.500	<0.500	1.15 B	<0.500	<0.500	30.7	0.56	<0.500	7.6	<0.500
	9/27/2018	<1.00	<5.00	1.15	<1.00	0.41	1.03	<0.400	3.18	<0.400	<0.500	29.7	0.41	<0.500	8.4	<0.400
	3/25/2019	<1.00	<5.00	1.85	<1.00	<0.400	<0.400	<0.400	1.70	<0.400	<0.500	30.7	0.676	<0.500	11.2	<0.400
	6/4/2019	<1.00	<5.00	1.45	<1.00	<0.400	0.590	<0.400	2.56	<0.400	<0.500	27.4	0.690	<0.500	9.53	<0.400
	9/26/2019	<1.00	<5.00	1.54	<1.00	<0.400	<0.4	<0.400	2.39	<0.400	<0.500	24.4	0.482	<0.500	7.4	<0.400
	12/4/2019	<1.00	<5.00	<1.00	<1.00	<0.400	0.552	<0.400	3.34	<0.400	<0.500	28.3	0.488	<0.500	9.99	<0.400
	3/11/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	0.811	<0.400	<0.500	15	<0.400	<0.500	5.04	<0.400
	6/17/2020	<1.00	<5.00	1.33	<1.00	<0.400	<0.400	<0.400	1.20	<0.400	<0.500	29.9	0.900	<0.500	6.78	<0.400
	10/7/2020	<1.00	<5.00	1.36	<1.00	<0.400	<0.400	<0.400	3.30	<0.400	<0.500	44.7	0.449	<0.500	10.6	<0.400
	12/9/2020	<2.00	<5.00	1.16	<1.00	<0.400	<0.400	<0.400	1.61	<0.400	<0.500	32.2	0.766	<0.500	8.64	<0.400
	3/2/2021	<1.00	<5.00	3.05	<1.00	<0.400	<0.400	<0.400	0.609	<0.400	<0.500	37.8	0.938	<0.500	15	<0.400
	6/16/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	21.6	0.711	<0.500	8.39	<0.400
	9/16/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	1.62	<0.400	<0.500	24.2	0.406	<0.500	8.06	<0.400
	12/7/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	24.5	1.330	<0.500	8.36	<0.400
	3/8/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	18.2	0.530	<0.500	6.02	<0.400
	6/16/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	9.19	0.400	<0.500	2.51	<0.400
	9/15/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	1.17	<0.400	<0.500	29.2	0.52	<0.500	7.36	<0.400
	12/8/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	1.68	<0.400	<0.500	23.2	0.4	<0.500	5.76	<0.400
	3/14/2023	<1.00	<5.00	1.42	<1.00	<0.400	<0.400	<0.400	0.88	<0.400	<0.500	26.7	0.59	<0.500	7.81	<0.400
	6/14/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	0.73	<0.400	<0.500	19.3	0.41	<0.500	6.22	<0.400
	9/12/2023	<4.00	<5.00	1.32	<1.00	<0.400	<0.400	<0.400	0.850	<0.400	<0.500	19.9	0.480	<0.500	5.52	<0.200
	12/14/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	0.740	<0.400	<0.500	21.4	1.04	<0.500	5.83	<0.200
	3/6/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	0.420	<0.200
	6/12/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	0.470	<0.400	<0.500	<0.400	<0.200
	9/6/2024	<1.00	<5.00	1.45	<1.00	<0.400	<0.400	<0.400	0.600	<0.400	<0.500	14.7	0.430	<0.500	4.63	<0.200
	12/5/2024	<1.00	<5.00	1.10	<1.00	<0.400	<0.400	<0.400	1.07	<0.400	<0.500	32.2	0.900	<0.500	6.98	<0.200
S-1	8/10/1999	<1	<5	<0.50	<1	<0.50	<0.50	<0.50	2.63	<0.50	<0.50	7.81	1.3	--	20.6	<0.50
	2/29/2000	<1	<5	<0.50	<0.50	0.761	<0.50	<0.50	2.21	<0.50	<0.50	60.6	2.98	--	24.4	<0.50
	6/28/2000	<5	<25	<2.5	<2.5	<2.5	<2.5	2.7	58.2	<2.5	<2.5	749	14.5	--	232	<2.5
	8/31/2000	<5	<25	<2.5	<2.5	<2.5	<2.5	<2.5	4.98	<2.5	<2.5	313	5.14	--	60.4	<2.5
	11/30/2000	<1	<5	<0.50	<0.50	<0.50	<0.50	<0.50	1.61	<0.50	<0.50	9.78	1.95	--	29.8	<0.50

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
S-1 (continued)	2/27/2001	<1	<5	<0.50	<0.50	<0.50	<0.50	0.551	1.66	<0.50	<0.50	13.5	2.26	--	45.2	<0.50
	5/30/2001	<1	<5	<0.50	<0.50	<0.50	<0.50	<0.50	0.974	<0.50	<0.50	7.38	<1	--	12.6	<0.50
	9/25/2001	<2.5	<2.5	<2.5	<2.5	2.6	<2.5	4	2.7	<2.5	<2.5	39	18	--	210	<2.5
	3/19/2002	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	4.21	<0.50	--	3.73	<0.50
	5/30/2002	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	8.45	<0.50	--	10.4	<0.50
	11/7/2002	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	2.34	<0.50	<0.50	8.71	1.02	--	19.7	<0.50
	1/23/2003	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	0.78	<0.50	<0.50	6.15	0.56	--	13	<0.50
	5/28/2003	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2.2	<0.500	--	8.67	<0.50
	11/11/2003	<1	<1	<1	<1	<1	<1	<1	1.85	<1	<1	4.22	<1	--	13.2	<1
	1/26/2004	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	6.57	0.67	--	15.5	<0.50
	5/4/2004	<1	<1	<1	<1	<1	<1	<1	1.17	<1	<1	4.07	<1	--	10.6	<1
	11/15/2004	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	2.8	<0.50	<0.50	8.4	0.82	--	18	<0.50
	2/1/2005	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	0.75	<0.50	<0.50	1.89	<0.50	--	2.87	<0.50
	5/18/2005	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	2.24	<0.50	<0.50	3.73	<0.50	--	8.39	<0.50
	5/23/2007	<1	<1	<1	<1	<1	<1	<1	3.63	<1	<1	4.02	<1	--	6.85	<1
	12/13/2007	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	4.61	<0.50	<0.50	4.87	<0.50	--	8.44	<0.50
	3/5/2008	<1	<0.500	<0.500	<1	<0.500	<0.500	<0.500	5.15	<0.500	<0.500	<0.500	4.14	<0.500	<0.500	<0.500
	6/25/2008	<1	<1	<1	<1	<1	<1	<1	1.67	<1	<1	<1	1.37	<1	<1	<1
	9/17/2008	<1	<0.500	<0.500	<1	<0.500	<0.500	<0.500	5.55	<0.500	<0.500	2.81	<0.500	<0.500	6.07	<0.500
	12/9/2008	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1	<0.50	<0.50	0.62	<0.50	<0.50	1.4	<0.50
	3/25/2009	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2.3	<0.50	<0.50	1.4	<0.50	<0.50	2.7	<0.50
	6/16/2009	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.91	<0.50	<0.50	0.81	<0.50	<0.50	1.8	<0.50
	9/16/2009	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2.4	<0.50	<0.50	1.7	<0.50	<0.50	5	<0.50
	12/16/2009	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2.4	<0.50	<0.50	1.7	<0.50	<0.50	6.1	<0.50
	3/17/2010	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.2	<0.50	<0.50	1	<0.50
	7/2/2010	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/22/2010	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.66	<0.5	<0.5	<0.5	<0.5	<0.5	1.5	<0.5
	12/8/2010	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	<0.5	<0.5	0.77	<0.5	<0.5	3	<0.5
	3/9/2011	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.2	<0.50
	6/8/2011	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.66	<0.5
	9/14/2011	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.8	<0.50	<0.50	1.4	<0.50	<0.50	4	<0.50
	12/6/2011	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.1	<0.50	<0.50	1.3	<0.50	<0.50	3.1	<0.50
	3/12/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.59	<0.50	<0.50	0.74	<0.50	<0.50	1.8	<0.50
	6/21/2012	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.98	<0.5	<0.5	0.94	<0.5	<0.5	3.5	<0.5

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
S-1	9/14/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.88	<0.50	<0.50	0.88	<0.50	<0.50	2.6	<0.50
(continued)	12/12/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.8	<0.50	<0.50	0.96	<0.50	<0.50	3.8	<0.50
	3/13/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.78	<0.50	<0.50	1.5	<0.50
	6/12/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.74	<0.50	<0.50	2.2	<0.50
	9/20/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.8	<0.50	<0.50	1.8	<0.50	<0.50	5.4	<0.50
	12/12/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1	<0.50	<0.50	1.2	<0.50	<0.50	5.1	<0.50
	3/20/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1	<0.50
	6/24/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.82	<0.50	<0.50	2.1	<0.50
	9/27/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.2	<0.50	<0.50	1.3	<0.50	<0.50	4.3	<0.50
	12/9/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.4	<0.50	<0.50	1.3	<0.50	<0.50	4.9	<0.50
	3/18/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.73	<0.50	<0.50	1.4	<0.50
	6/16/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.8	<0.50
	9/21/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.2	<0.50	<0.50	1.6	<0.50	<0.50	5.1	<0.50
	12/8/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.6	<0.50
	3/9/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	6/16/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/27/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	1.1	<0.50	<0.50	0.73	<0.50	<0.50	3	<0.50
	12/13/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	0.57	<0.50	<0.50	0.54	<0.50	<0.50	1.6	<0.50
	3/27/2017	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	6/13/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/28/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	11/8/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/20/2018	<0.500	<2.50	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
	6/28/2018	<0.500	<2.50	<0.500	<0.500	1.01	<0.500	0.336 J	3.62	<0.500	<0.500	3.16	0.90	<0.500	24.20	<0.500
	9/26/2018	<1.00	<5.00	<1.00	<1.00	0.51	<0.400	<0.400	2.58	<4.00	<0.500	2.11	0.41	<0.500	10.40	<0.400
	12/5/2018	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	1.10	<4.00	<0.500	1.94	<0.400	<0.500	7.39	<0.400
	3/19/2019	<1.00	<5.00	<1.00	<1.00	0.764	<0.400	<0.400	6.27	<0.400	<0.500	0.921	<0.400	<0.500	3.60	<0.400
	6/5/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	1.11	<0.400	<0.500	0.783	<0.400	<0.500	2.17	<0.400
	9/25/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	1.86	<0.400	<0.500	1.1	<0.400	<0.500	2.71	<0.400
	12/4/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	0.988	<0.400	<0.500	0.971	<0.400	<0.500	2.86	<0.400
	3/10/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	1.06	<0.400
	6/17/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	0.440	<0.400
	10/7/2020	<2.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	2.95	<0.400	<0.500	1.20	<0.400	<0.500	2.06	<0.400
	12/8/2020	<2.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	1.30	<0.400

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
S-1 (continued)	3/3/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	2.2	<0.400	<0.500	0.852	<0.400	<0.500	1.60	<0.400
	6/15/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	0.849	<0.400	<0.500	0.571	<0.400	<0.500	0.881	<0.400
	9/14/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	0.453	<0.400	<0.500	0.97	<0.400
	12/8/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	0.548	<0.400	<0.500	1.20	<0.400
	3/8/2022	<1.00	<5.00	<1.00	<1.00	0.440	<0.400	<0.400	3.94	<0.400	<0.500	1.12	<0.400	<0.500	1.92	<0.400
	6/15/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	9/13/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	3.30	<0.400	<0.500	1.59	<0.400	<0.400	1.44	<0.400
	12/7/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	0.98	<0.400	<0.500	1.68	<0.400	<0.500	1.14	<0.400
	3/16/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	0.45	<0.400	<0.500	0.87	<0.400	<0.500	0.46	<0.400
	6/14/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	9/14/2023	<1.00	<5.00	<1.00	<1.00	0.620	<0.400	<0.400	5.89	<0.400	<0.500	1.08	<0.400	<0.500	1.69	<0.200
	12/13/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	0.420	<0.200
	3/6/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	0.420	<0.200
	6/12/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	0.470	<0.400	<0.500	<0.400	<0.200
	9/4/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	4.08	<0.400	<0.500	0.530	<0.400	<0.500	0.910	<0.200
	12/5/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	0.830	<0.400	<0.500	0.760	<0.400	<0.500	0.650	<0.200
S-2	8/11/1999	<1	<5	<0.50	<0.50	2.37	<0.50	<0.50	<0.50	<0.50	<0.50	1.7	<1	--	0.843	<0.50
	11/15/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.52	<0.50	<0.50	4.4	<0.50	--	1.6	<0.50
	12/12/2012	<0.50	<0.50	<0.50	<0.50	2.7	<0.50	<0.50	1.7	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/13/2013	<0.50	<0.50	<0.50	<0.50	3.4	<0.50	<0.50	2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	6/12/2013	<0.50	<0.50	<0.50	<0.50	2.3	<0.50	<0.50	1.4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/20/2013	<0.50	<0.50	<0.50	<0.50	3.7	<0.50	<0.50	3.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	12/12/2013	<0.50	<0.50	<0.50	<0.50	3	<0.50	<0.50	2.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/20/2014	<0.50	<0.50	<0.50	<0.50	1.9	<0.50	<0.50	2.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	6/24/2014	<0.50	<0.50	<0.50	<0.50	3.1	<0.50	<0.50	3.4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/27/2014	<0.50	<0.50	<0.50	<0.50	4.5	<0.50	<0.50	4.7	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	12/9/2014	<0.50	<0.50	<0.50	<0.50	3.9	<0.50	<0.50	4.6	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/18/2015	<0.50	<0.50	<0.50	<0.50	4.5	<0.50	<0.50	5.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	6/16/2015	<0.50	<0.50	<0.50	<0.50	4.1	<0.50	<0.50	3.8	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	12/8/2015	<0.50	<0.50	<0.50	<0.50	3	<0.50	<0.50	3.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	6/16/2016	<0.50	<2	<0.50	<0.50	4.3	<0.50	<0.50	6	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/26/2016	<0.50	<2	<0.50	<0.50	6.2	<0.50	<0.50	11	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	12/13/2016	<0.50	<2	<0.50	<0.50	3.5	<0.50	<0.50	4.9	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/27/2017	<0.5	<2	<0.5	<0.5	2.6	<0.5	<0.5	4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	6/13/2017	<2.0	<2.0	<0.50	<0.50	3.3	<1.0	<0.50	4.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
S-2	9/28/2017	<2.0	<2.0	<0.50	<0.50	8.0	<1.0	<0.50	13.2	<0.50	<0.50	<0.50	0.86	<0.50	0.51	<0.50
(continued)	11/8/2017	<2.0	<2.0	<0.50	<0.50	7.1	<0.50	<0.50	12.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/20/2018	<0.500	<2.50	<0.500	<0.500	3.7	<0.500	<0.500	5.9	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
	6/28/2018	<0.500	<2.50	<0.500	<0.500	4.1	<0.500	<0.500	23.2	0.56	<0.500	<0.500	1.00	<0.500	2.34	<0.500
	9/26/2018	<1.00	<5.00	<1.00	<1.00	10.0	<0.400	<0.400	50.9	0.70	<0.500	<4.00	1.74	<0.500	4.00	0.42
	12/5/2018	<1.00	<5.00	<1.00	<1.00	7.0	<0.400	<0.400	28.5	<4.00	<0.500	<0.400	<0.400	<0.500	2.18	<0.400
	3/19/2019	<1.00	<5.00	<1.00	<1.00	2.65	<0.400	<0.400	8.23	<4.00	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	6/5/2019	<1.00	<5.00	<1.00	<1.00	5.38	<0.400	<0.400	19.8	<0.400	<0.500	<0.400	<0.400	<0.500	0.925	<0.400
	9/25/2019	<1.00	<5.00	<1.00	<1.00	8.88	<0.400	<0.400	49.6	0.638	<0.500	<0.400	0.942	<0.500	2.85	<0.400
	12/4/2019	<1.00	<5.00	<1.00	<1.00	7.12	<0.400	<0.400	30.5	<0.400	<0.500	<0.400	<0.400	<0.500	1.75	<0.400
	3/10/2020	<1.00	<5.00	<1.00	<1.00	6.54	<0.400	<0.400	26.4	0.52	<0.500	<0.400	<0.400	<0.500	1.15	<0.400
	6/17/2020	<1.00	<5.00	<1.00	<1.00	4.24	<0.400	<0.400	15.5	<0.400	<0.500	<0.400	<0.400	<0.500	0.58	<0.400
	10/7/2020	<1.00	<5.00	<1.00	<1.00	10.2	<0.400	<0.400	54.4	0.539	<0.500	<0.400	1.01	<0.500	3.08	0.448
	12/8/2020	<2.00	<5.00	<1.00	<1.00	7.72	<0.400	<0.400	31.4	<0.400	<0.500	<0.400	<0.400	<0.500	1.13	<0.400
	3/3/2021	<1.00	<5.00	<1.00	<1.00	8.00	<0.400	<0.400	37.2	0.578	<0.500	<0.400	<0.400	<0.500	1.44	<0.400
	6/15/2021	<1.00	<5.00	<1.00	<1.00	6.15	<0.400	<0.400	29.9	<0.400	<0.500	<0.400	<0.400	<0.500	1.17	<0.400
	9/14/2021	<1.00	<5.00	<1.00	<1.00	8.15	<0.400	<0.400	45.2	0.603	<0.500	<0.400	0.651	<0.500	2.16	<0.400
	12/8/2021	<1.00	<5.00	<1.00	<1.00	6.32	<0.400	<0.400	35.9	<0.400	<0.500	<0.400	<0.400	<0.500	1.38	<0.400
	3/28/2022	<1.00	<5.00	<1.00	<1.00	5.72	<0.400	<0.400	28.6	<0.400	<0.500	<0.400	0.410	<0.500	1.07	<0.400
	6/15/2022	<1.00	<5.00	<1.00	<1.00	5.13	<0.400	<0.400	28.3	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.400
	9/13/2022	<1.00	<5.00	<1.00	<1.00	6.43	<0.400	<0.400	39.8	0.810	<0.500	<0.400	0.820	<0.500	2.06	<0.400
	12/7/2022	<1.00	<5.00	<1.00	<1.00	9.13	<0.400	<0.400	55.4	0.87	<0.500	<0.400	0.410	<0.500	3.05	<0.400
	3/14/2023	<1.00	<5.00	<1.00	<1.00	9.16	<0.400	<0.400	50.4	0.61	<0.500	<0.400	<0.400	<0.500	1.74	<0.400
	6/14/2023	<1.00	<5.00	<1.00	<1.00	5.99	<0.400	<0.400	36.2	0.51	<0.500	<0.400	0.65	<0.500	1.78	<0.400
	9/14/2023	<1.00	<5.00	<1.00	<1.00	9.75	<0.400	<0.400	57.0	0.950	<0.500	<0.400	0.920	<0.500	3.18	0.290
	12/13/2023	<1.00	<5.00	<1.00	<1.00	9.75	<0.400	<0.400	57.6	0.980	<0.500	<0.400	<0.400	<0.500	1.52	0.320
	3/6/2024	<1.00	<5.00	<1.00	<1.00	8.24	<0.400	<0.400	39.3	0.510	<0.500	<0.400	0.550	<0.500	1.12	0.280
	6/12/2024	<1.00	<5.00	<1.00	<1.00	5.70	<0.400	<0.400	30.5	0.760	<0.500	<0.400	<0.400	<0.500	0.570	<0.200
	9/4/2024	<1.00	<5.00	<1.00	<1.00	7.40	<0.400	<0.400	40.7	0.490	<0.500	<0.400	0.740	<0.500	1.54	0.270
	12/5/2024	<1.00	<5.00	<1.00	<1.00	5.61	<0.400	<0.400	26.9	0.410	<0.500	<0.400	<0.400	<0.500	0.730	<0.200

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MGMS1-3(43)	6/28/2000	<50	<250	<25	<25	278	<25	55.9	4,270	<25	<25	734	<50	--	1,840	<25
	8/30/2000	<200	<1	<100	<100	420	<100	116	8,850	<100	<100	5,940	<200	--	3,040	<100
	11/29/2000	<100	<500	<50	<50	249	<50	76.2	4,560	<50	<50	1,210	<100	--	1,140	<50
	2/27/2001	<100	<500	<50	<50	697	<50	164	14,000	<50	<50	148	<100	--	1,390	133
	5/31/2001	<100	<500	<50	<50	<50	<50	<50	5,870	<50	<50	130	<100	--	599	<50
	9/24/2001	<13	<13	<13	<13	150	<13	32	4,700	<13	<13	310	<13	--	450	25
	12/18/2001	<50	<250	<25	<25	153	<25	33.3	3,600	<25	<25	276	<50	--	568	<25
	3/19/2002	<100	<50	<50	<100	310	<50	103	6,700	<50	<50	2,090	<50	--	1,720	86
	5/29/2002	<50	<25	<25	<50	188	<25	39	4,700	<25	<25	470	<25	--	624	37.5
	8/29/2002	<1	<0.50	<0.50	<1	3.72	<0.50	0.84	94.7	0.54	<0.50	34.9	0.75	--	35.7	1.46
	11/11/2002	<100	<50	<50	<100	183	<50	<50	4,810	<50	<50	757	<50	--	831	51
	1/23/2003	<100	<50	<50	<100	378	<50	76	10,500	<50	<50	782	<50	--	1,290	109
	5/28/2003	<100	<50	<50	<100	402	<50	72	9,510	<50	<50	270	<50	--	841	114
	11/11/2003	<50	<50	<50	<50	252	<50	<50	9,710	<50	<50	516	<50	--	1,020	58
	1/27/2004	<50	<25	<25	<50	290	<25	54.5	8,160	53.5	<25	393	<25	--	808	95
	5/3/2004	<100	<100	<100	<100	370	<100	<100	12,300	<100	<100	830	<100	--	1,520	111
	8/17/2004	<100	<50	<50	<100	401	<50	114	12,700	109	<50	1,540	<50	--	2,340	151
	11/15/2004	<120	<120	<120	<120	270	<120	<120	9,600	<120	<120	1,400	<120	--	1,600	<120
	3/24/2005	<100	<50	<50	<100	481	<50	148	15,600	135	<50	1,390	<50	--	2,090	266
	5/16/2005	<50	<25	<25	<50	327	<25	89	9,670	83	<25	802	<25	--	1,410	157
	5/17/2005	<100	<50	<50	<100	353	<50	86	10,600	94	<50	920	<50	--	1,660	173
	11/17/2005	<100	<50	<50	<100	392	<50	121	13,400	133	<50	1,310	<50	--	2,280	186
	6/6/2006	<100	<100	<100	<100	385	<100	<100	11,800	115	<100	628	<100	--	1,370	192
	12/6/2006	<100	<50	<50	<100	256	<50	72	9,960	92	<50	843	<50	--	1,260	155
	5/22/2007	<100	<100	<100	<100	439	<100	119	14,200	152	<100	910	<100	--	1,920	245
	9/11/2007	<100	<50	<50	<100	303	<50	109	11,700	128	<50	1,100	<50	--	2,060	189
	12/12/2007	<100	<50	<50	<100	270	<50	75	8,740	93	<50	1,010	<50	--	1,540	167
	3/5/2008	<50	<25	<25	<50	370	<25	128	6,740	220	<25	1,480	36	<25	2,350	234
	9/16/2008	<100	<50	<50	<100	302	<50	112	10,400	139	<50	2,700	<50	<50	2,500	171
	12/8/2008	<4	<4	<4	<4	190	<4	63	6,000	78	<4	1,300	19	<4	1,200	100
	3/25/2009	<15	<15	<15	<15	110	<15	66	3,500	34	<15	3,600	49	<15	2,100	49
	9/15/2009	<15	<15	<15	<15	140	<15	74	4,200	45	<15	4,300	44	<15	2,300	84
	12/14/2009	<15	<15	<15	<15	140	<15	46	4,000	55	<15	1,500	15	<15	1,100	67
	3/17/2010	<15	<15	<15	<15	160	<15	63	4,600	44	<15	2,800	32	<15	1,900	78

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MGMS1-3(43) (continued)	6/14/2010	<25	<25	<25	<25	220	<25	46	5,400	69	<25	790	<25	<25	900	85
	9/21/2010	<15	<15	<15	<15	130	<15	55	3,800	43	<15	2,900	37	<15	1,900	68
	12/7/2010	<15	<15	<15	<15	190	<15	63	5,500	69	<15	2,500	23	<15	1,800	96
	3/8/2011	<20	<20	<20	<20	170	<20	52	4,600	56	<20	1,400	<20	<20	1,300	86
	6/6/2011	<15	<15	<15	<15	190	<15	36	4,700	71	<15	610	<15	<15	790	97
	9/13/2011	<20	<20	<20	<20	290	<20	78	8,000	160	<20	900	<20	<20	1,800	160
	3/8/2012	<4	<40	<40	<40	340	<40	62	9,500	150	<40	240	<40	<40	690	890
	6/21/2012	<20	<20	<20	<20	220	<20	25	4,400	76	<20	74	<20	<20	260	1,100
	9/12/2012	<20	<20	<20	<20	280	<20	72	8,800	180	<20	360	<20	<20	970	890
	12/11/2012	<20	<20	<20	<20	220	<20	40	6,100	110	<20	160	<20	<20	430	680
	3/12/2013	<20	<20	<20	<20	220	<20	21	4,700	74	<20	110	<20	<20	340	1,600
	6/11/2013	<20	<20	<20	<20	190	<20	<20	3,900	56	<20	78	<20	<20	260	1,100
	9/17/2013	<15	<15	<15	<15	190	<15	21	4,600	66	<15	100	<15	<15	350	1,100
	12/10/2013	<15	<15	<15	<15	210	<15	18	3,600	54	<15	95	<15	<15	270	1,800
	3/18/2014	<20	<20	<20	<20	150	<20	<20	3,600	40	<20	93	<20	<20	260	440
	6/26/2014	<7	<7	<7	<7	120	<7	14	2,000	14	<7	21	<7	<7	57	480
	9/23/2014	<15	<15	<15	<15	190	<15	35	4,700	69	<15	120	<15	<15	420	550
	12/12/2014	<7	<7	<7	<7	200	<7	23	4,000	52	<7	100	<7	<7	350	810
	3/19/2015	<12.5	<12.5	<12.5	<12.5	131	<12.5	<12.5	2,450	16.6	<12.5	31.7	<12.5	<12.5	129	249
	6/18/2015	<0.50	<0.50	<0.50	<0.50	2.7	<0.50	<0.50	59.1	<0.50	<0.50	0.84	<0.50	<0.50	2.8	3.1
	9/21/2015	<10	<10	<10	<10	124	<10	14.1	2,810	24.8	<10	53.5	<10	<10	171	129
	12/8/2015	<0.50	<0.50	<0.50	<0.50	92	<0.50	<0.50	1,580	11.5	<0.50	26.2	<0.50	<0.50	88	230
	3/9/2016	<10	<40	<10	<10	93.9	<10	<10	1,700	12.4	<10	24.1	<10	<10	81.9	209
	6/17/2016	<8.3	<33.3	<8.3	<8.3	163	<8.3	26.6	3,130	36.1	<8.3	64.6	<8.3	<8.3	248	288
	9/30/2016	<8.3	<33.3	<8.3	<8.3	81.9	<8.3	13.5	1,980	24.2	<8.3	230	<8.3	<8.3	366	52
	12/16/2016	<8.4	<33.4	<8.4	<8.4	92.6	<8.4	9.5	1,810	20.1	<8.4	64.1	<8.4	<8.4	171	239
	3/31/2017	<8.4	<33.4	<8.4	<8.4	90.8	<8.4	12.5	1,430	15.2	<8.4	45.8	<8.4	<8.4	119	348
	6/12/2017	<8.3	<33.3	<8.3	<8.3	173	<8.3	16.7	2,620	18.7	<8.3	24.4	<8.3	<8.3	116	681
	9/29/2017	<2.5	<10.0	<2.5	<2.5	60	<2.5	6.9	901	12.9	<2.5	70.7	<2.5	<2.5	126	117
	11/7/2017	<10.0	<10.0	<2.5	<2.5	153	<2.5	13.7	2,350 J-	26.6	<2.5	108	<2.5	<2.5	211	181
	3/22/2018	<0.500	<2.50	<0.500	<0.500	192	<0.500	18.0	2,450	34.9	<0.500	80	0.8	0.200 J	278	236
	7/1/2018	<0.500	<2.50 J3	<0.500	<0.500	116	<0.500	13.8	1,880	32.8	<0.500	107	0.6	<0.500	246	118
	9/28/2018	<20.0	<100	<20.0	<20.0	141	<8.00	27.8	3,150	47.4	<10.0	252	<8.00	<10.0	528	134
	12/4/2018	<1.00	<5.00	<1.00	<1.00	148	<0.400	22.5	2,750	48.1	<0.500	146	1.1	<0.500	388	129

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Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MGMS1-3(43) (continued)	3/26/2019	<40.0	<100	<20.0	<20.0	160	<8.00	22.3	3,210	42.2	<10.0	145	<8.00	<10.0	372	105
	6/7/2019	<20.0	<100	<20.0	<20.0	169	<8.00	26.5	3090	40.8	<10.0	115	<8.00	<10.0	315	145
	9/27/2019	<20.0	<100	<20.0	<20.0	156	<8.00	30.5	3240	53.9	<10.0	212	<8.00	<10.0	434	113
	12/4/2019	<20.0	<100	<20.0	<20.0	124	<8.00	17.5	2860	40.9	<10.0	162	<8.00	<10.0	398	11.8
	3/11/2020	<25.0	<125	<25.0	<25.0	157	<10.0	29.7	3230	60.4	<12.5	228	<10.0	<12.5	495	157
	6/16/2020	<25.0	<125	<25.0	<25.0	114	<10.0	21.8	2520	31.5	<12.5	116	<10.0	<12.5	264	152
	10/6/2020	<25.0	<125	<25.0	<25.0	124	<10.0	26.0	2980	45.5	<12.5	219	<10.0	<12.5	507	48.2
	12/10/2020	<100	<250	<50	<50	131	<20	<20	2620	34.300	<25	151	<20	<25	294	40.6
	3/4/2021	<10.0	<50.0	<10.0	<10.0	128	<0.400	29.00	2840	38.500	<0.500	135	<0.400	<0.500	388	161
	6/16/2021	<25.0	<125	<25.0	<25.0	103	<10.0	20.80	2690	34.900	<12.5	90.5	<10.0	<12.5	297	153
	9/14/2021	<25.0	<125	<25.0	<25.0	152	<10.0	31.20	3550	49.600	<12.5	170	<10.0	<12.5	464	61.6
	12/7/2021	<25.0	<125	<25.0	<25.0	87.6	<10.0	17.20	2280	61.200	<12.5	139	<10.0	<12.5	338	177
	3/10/2022	<10.0	<50.0	<10.0	<10.0	114	<4.00	23.5	2,250	28.7	<5.00	53.6	<4.00	<5.00	209	322
	6/15/2022	<50.0	<250	<50.0	<50.0	74.5	<20.0	<20.0	1250	<20.0	<25.0	43.5	<20.0	<25.0	140	572
	9/12/2022	<10.0	<50.0	<10.0	<10.0	124	<4.00	27.9	2960	55.2	<5.00	193	<4.00	<5.00	471	176
	12/8/2022	<25.0	<125	<25.0	<25.0	104	<10.0	25	2630	39.8	<12.5	175	<10.0	<12.5	385	41.2
	3/16/2023	<10.0	<50.0	<10.0	<10.0	113	<4.00	22.6	2920	45.9	<5.00	161	<4.00	<5.00	428	42.6
	6/13/2023	<20.0	<100	<20.0	<20.0	104	<8.00	21	2520	35.6	<10.0	133	<8.00	<10.0	370	141
	9/12/2023	<80.0	<100	<20.0	<20.0	91.2	<8.00	22.4	2350	46.6	<10.0	126	<8.00	<10.0	339	39.4
	12/11/2023	<20.0	<100	<20.0	<20.0	113	<8.00	23.2	2630	42.8	<10.0	160	<8.00	<10.0	390	145 Q
	3/6/2024	<20.0	<100	<20.0	<20.0	119	<8.00	23.8	3090	44.6	<10.0	170	<8.00	<10.0	446	78.8
	6/12/2024	<10.0	<50.0	<10.0	<10.0	103	<4.00	18.5	2150	40.7	<5.00	98.3	<4.00	<5.00	306	36.6
	9/4/2024	<20.0	<100	<20.0	<20.0	82.2	<8.00	20.2	2,200	37.2	<10.0	140	<8.00	<10.0	304	11.2
	12/3/2024	<20.0	<100	<20.0	<20.0	42.6	<8.00	8.60	955	21.6	<10.0	66.6	<8.00	<10.0	168	14.8
MGMS1-2(60)	6/28/2000	<10	<50	<5	<5	53.6	<5	<5	369	<5	<5	658	19.7	--	240	<5
	8/30/2000	<20	<100	<10	<10	21.7	<10	13.1	267	<10	<10	2,590	108	--	586	<10
	11/29/2000	<2	<10	<1	<1	1.58	<1	1.09	57.7	<1	<1	121	4.58	--	40.3	<1
	2/27/2001	<1	<5	<0.5	<0.5	0.838	<0.5	0.686	32.9	<0.5	<0.5	54.6	2.06	--	24.7	<0.5
	5/31/2001	<1	<5	<0.50	<0.50	0.662	<0.50	0.581	39	<0.50	<0.50	69.4	<1	--	27.8	0.52
	9/24/2001	<13	<13	<13	<13	<13	<13	<13	89	<13	<13	830	14	--	150	<13
	12/18/2001	<1	<5	<0.50	<0.50	<0.50	<0.50	<0.50	20.4	<0.50	<0.50	12.8	<1	--	15.7	<0.50
	3/19/2002	<1	<0.50	<0.50	<1	2.52	<0.50	0.99	68	<0.50	<0.50	62.9	1.2	--	34	3.48
	5/29/2002	<1	<0.50	<0.50	<1	0.78	<0.50	<0.50	22.8	<0.50	<0.50	23.4	<0.50	--	14.2	0.6
	8/29/2002	<10	<5	<5	<10	30.6	<5	5.1	661	<5	<5	138	<5	--	116	<5

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MGMS1-2(60) (continued)	11/11/2002	<1	<0.50	<0.50	<1	2.99	<0.50	0.83	86	<0.50	<0.50	38.2	1.16	--	38.9	<0.50
	1/23/2003	<1	<0.50	<0.50	<1	1.53	<0.50	0.74	42.6	<0.50	<0.50	42.8	0.78	--	34.2	1.04
	5/28/2003	<1	<0.50	<0.50	<1	2.87	<0.50	1.21	72	<0.50	<0.50	51.1	1.18	--	47.6	0.63
	11/11/2003	<1	<1	<1	<1	1.84	<1	<1	48.8	<1	<1	45.9	<1	--	36	<1
	1/27/2004	<1	<0.50	<0.50	<1	2.06	<0.50	1.06	72.3	0.69	<0.50	40.9	0.66	--	43.1	0.63
	5/3/2004	<1	<1	<1	<1	4.07	<1	1.22	70.7	<1	<1	54.8	1.36	--	43.5	2.53
	8/17/2004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	11/2/2004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	11/15/2004	<0.50	<0.50	<0.50	<0.50	1.2	<0.50	0.68	39	<0.50	<0.50	31	<0.50	--	28	0.67
	2/1/2005	<1	<0.50	<0.50	<1	1.31	<0.50	<0.50	37.5	0.56	<0.50	33.2	<0.50	--	21.7	1.3
	5/16/2005	<1	<0.50	<0.50	<1	0.95	<0.50	<0.50	40.6	<0.50	<0.50	21.7	<0.50	--	19.8	<0.50
	05/16/2005 DUP	<1	<0.50	<0.50	<1	1.02	<0.50	<0.50	42.1	<0.50	<0.50	21.4	<0.50	--	20.5	<0.50
	8/18/2005	<1	<0.500	<0.500	<1	7.28	<0.500	2.41	145	1.2	<0.500	76.5 B	1.46	--	65.6	5.16 B
	11/17/2005	<1	<0.500	<0.500	<1	2.53	<0.500	0.99	87	0.59	<0.500	34.8	<0.500	--	26.4	0.93
	2/20/2006	<1	<0.500	<0.500	<1	6.17	<0.500	1.93	136	1.1	<0.500	61.9	0.93	--	45.5	4.17
	6/6/2006	<1	<1	<1	<1	1.02	<1	<1	33.7	<1	<1	23.4	<1	--	18.7	<1
	9/5/2006	<1	<0.50	<0.50	<1	5.37	<0.50	1.75	115	0.84	<0.50	55.9	0.8	--	37.5	4.79
	12/6/2006	<1	<0.50	<0.50	<1	3.39	<0.50	1.12	90.9	0.62	<0.50	39.5	<0.50	--	28.3	2.15
	2/7/2007	<1	<0.50	<0.50	<1	4.37	<0.50	1.37	116	0.93	<0.50	55.9	0.58	--	40.7	3
	5/22/2007	<1	<1	<1	<1	1.18	<1	<1	38.5	<1	<1	31.6	<1	--	25.2	<1
	9/11/2007	<5	<2.50	<2.50	<5	26.6	<2.50	8.75	711	7.2	<2.50	81.4	2.95	--	216	11.9
	12/12/2007	<1	<0.50	<0.50	<1	1.83	<0.50	0.79	64.9	0.65	<0.50	28.1	<0.50	--	24.9	0.67
	3/4/2008	<1	<0.500	<0.500	<1	6.65	<0.500	2.22	166	2.92	<0.500	75.4	0.81	<0.500	60.5	2.79
	9/16/2008	<5	<2.50	<2.50	<2.50	5.5	<2.50	<2.50	160	<2.50	<2.50	38.8	<2.50	<2.50	65.5	<2.50
	12/8/2008	<0.50	<0.50	<0.50	<0.50	4.1	<0.50	1.2	88	1.1	<0.50	40	0.51	<0.50	38	1.3
	12/08/2008 DUP	<0.50	<0.50	<0.50	<0.50	3.9	<0.50	1.2	84	1.1	<0.50	42	0.52	<0.50	38	1.3
	3/25/2009	<0.50	<0.50	<0.50	<0.50	3.1	<0.50	1.3	71	0.75	<0.50	40	0.65	<0.50	37	0.54
	6/15/2009	<0.50	<0.50	<0.50	<0.50	1	<0.50	0.8	47	0.9	<0.50	26	<0.50	<0.50	30	0.55
	9/15/2009	<0.50	<0.50	<0.50	<0.50	1.8	<0.50	0.82	44	0.58	<0.50	42	<0.50	<0.50	30	0.82
	12/14/2009	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	17	<0.50	<0.50	18	<0.50	<0.50	16	<0.50
	3/17/2010	<0.50	<0.50	<0.50	<0.50	2.4	<0.50	0.96	61	0.68	<0.50	40	0.51	<0.50	38	<0.50
	6/14/2010	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	20	<0.50	<0.50	17	<0.50	<0.50	15	<0.50
	9/21/2010	<0.5	<0.5	<0.5	<0.5	2.1	<0.5	0.57	46	<0.5	<0.5	42	<0.5	<0.5	32	0.8
	12/7/2010	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	16	<0.5	<0.5	19	<0.5	<0.5	15	<0.5

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MGMS1-2(60)	3/8/2011	<0.50	<0.50	<0.50	<0.50	0.54	<0.50	<0.50	19	<0.50	<0.50	27	<0.50	<0.50	16	<0.50
(continued)	6/6/2011	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	8.3	<0.5	<0.5	16	<0.5	<0.5	11	<0.5
	9/13/2011	<0.50	<0.50	<0.50	<0.50	2.5	<0.50	0.73	42	0.5	<0.50	42	0.89	<0.50	30	0.74
	12/6/2011	<0.50	<0.50	<0.50	<0.50	1	<0.50	<0.50	30	<0.50	<0.50	33	<0.50	<0.50	22	0.6
	3/8/2012	<0.50	<0.50	<0.50	<0.50	1.6	<0.50	<0.50	32	<0.50	<0.50	36	<0.50	<0.50	21	<5
	6/19/2012	<0.5	<0.5	<0.5	<0.5	0.71	<0.5	<0.5	28	<0.5	<0.5	22	<0.5	<0.5	16	<0.5
	9/12/2012	<0.50	<0.50	<0.50	<0.50	2.5	<0.50	0.66	36	<0.50	<0.50	33	<0.50	<0.50	20	1.1
	12/11/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	20	<0.50	<0.50	19	<0.50	<0.50	11	<0.50
	3/12/2013	<0.50	<0.50	<0.50	<0.50	1.8	<0.50	0.56	38	<0.50	<0.50	35	<0.50	<0.50	20	0.66
	6/11/2013	<0.50	<0.50	<0.50	<0.50	0.66	<0.50	<0.50	29	<0.50	<0.50	27	<0.50	<0.50	18	<0.50
	9/17/2013	<0.50	<0.50	<0.50	<0.50	0.89	<0.50	<0.50	20	<0.50	<0.50	32	<0.50	<0.50	16	0.54
	12/10/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	16	<0.50	<0.50	17	<0.50	<0.50	11	<0.50
	3/18/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	8.5	<0.50	<0.50	10	<0.50	<0.50	5.8	<0.50
	6/26/2014	<0.50	<0.50	<0.50	<0.50	1	<0.50	<0.50	33	<0.50	<0.50	21	<0.50	<0.50	20	<0.50
	9/23/2014	<0.50	<0.50	<0.50	<0.50	2.3	<0.50	<0.50	26	<0.50	<0.50	34	<0.50	<0.50	20	12
	12/12/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	22	<0.50	<0.50	20	<0.50	<0.50	14	<0.50
	3/19/2015	<0.50	<0.50	<0.50	<0.50	1.1	<0.50	<0.50	26.1	<0.50	<0.50	22.7	<0.50	<0.50	16.1	<0.50
	6/18/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.95	<0.50	<0.50	17.7	<0.50	<0.50	9.1	<0.50
	9/21/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2.3	<0.50	<0.50	1.6	<0.50
	12/8/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	18.8	<0.50	<0.50	13.8	<0.50	<0.50	12.4	<0.50
	3/9/2016	<0.50	<0.50	<0.50	<0.50	0.5	<0.50	<0.50	17.5	<0.50	<0.50	16.9	<0.50	<0.50	14	<0.50
	6/17/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	11.8	<0.50	<0.50	18	<0.50	<0.50	11.1	<0.50
	9/30/2016	<0.50	<2	<0.50	<0.50	0.89	<0.50	<0.50	17.7	<0.50	<0.50	22.5	<0.50	<0.50	17.6	<0.50
	12/16/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	5.1	<0.50	<0.50	7.6	<0.50	<0.50	4.7	<0.50
	3/31/2017	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	15.6	<0.5	<0.5	13.6	<0.5	<0.5	13.2	<0.5
	6/12/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<1.0	<0.50	6.0	<0.50	<0.50	12.8	<0.50	<0.50	7.1	<0.50
	9/29/2017	<2.0	<2.0	<0.50	<0.50	2.00	<1.0	<0.50	18.3	<0.50	<0.50	18.3	<0.50	<0.50	13.4	<0.50
	11/7/2017	<2.0	<2.0	<0.50	<0.50	1.60	<0.50	<0.50	24.9	<0.50	<0.50	14.0	<0.50	<0.50	14.7	<0.50
	3/22/2018	<0.500	<2.50	<0.500	<0.500	1.30	<0.500	<0.500	13.4	<0.500	<0.500	23.3	<0.500	<0.500	13.9	<0.500
	7/1/2018	<0.500	<2.50	<0.500	<0.500	0.89	<0.500	<0.500	11.8	<0.500	<0.500	18.4	<0.500	<0.500	8.5	<0.500
	10/1/2018	<1.00	<5.00	<1.00	<1.00	6.66	<0.400	<0.400	23.9	<0.400	<0.500	29.4	<0.400	<0.500	16.6	20.00
	12/4/2018	<1.00	<5.00	<1.00	<1.00	0.67	<0.400	<0.400	9.6	<0.400	<0.500	14.4	<0.400	<0.500	8.2	<0.400
	3/26/2019	<1.00	<5.00	<1.00	<1.00	0.439	<0.400	<0.400	9.10	<0.400	<0.500	12.9	<0.400	<0.500	8.37	<0.400
	6/7/2019	<1.00	<5.00	<1.00	<1.00	0.651	<0.400	<0.400	11.4	<0.400	<0.500	15.5	<0.400	<0.500	9.57	<0.400

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MGMS1-2(60) (continued)	9/27/2019	<1.00	<5.00	<1.00	<1.00	4.58	<0.400	0.44	27.9	<0.400	<0.500	33.2	<0.400	<0.500	19	7.9
	12/4/2019	<1.00	<5.00	<1.00	<1.00	0.465	<0.400	<0.400	8.86	<0.400	<0.500	16.8	<0.400	<0.500	9.35	<0.400
	3/12/2020	<1.00	<5.00	<1.00	<1.00	1.32	<0.400	<0.400	15.6	<0.400	<0.500	26.5	<0.400	<0.500	11.8	<0.400
	6/16/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	4.23	<0.400	<0.500	12.4	<0.400	<0.500	6.01	<0.400
	10/6/2020	<1.00	<5.00	<1.00	<1.00	1.16	<0.400	<0.400	16.5	<0.400	<0.500	24	<0.400	<0.500	15.3	<0.400
	12/10/2020	<2.00	<5.00	<1.00	<1.00	1.54	<0.400	<0.400	13.1	<0.400	<0.500	20.3	<0.400	<0.500	10	0.64
	3/4/2021	<1.00	<5.00	<1.00	<1.00	1.19	<0.400	<0.400	18.4	<0.400	<0.500	20.3	<0.400	<0.500	14.9	<0.400
	6/16/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	6.28	<0.400	<0.500	13	<0.400	<0.500	7.17	<0.400
	9/14/2021	<1.00	<5.00	<1.00	<1.00	17.2	<0.400	0.75	71.4	0.44	<0.500	29.8	<0.400	<0.500	18	60.5
	12/7/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	3.67	<0.400	<0.500	11.2	<0.400	<0.500	6.32	<0.400
	3/10/2022	<1.00	<5.00	<1.00	<1.00	0.690	<0.400	<0.400	10.5	<0.400	<0.500	14.4	<0.400	<0.500	8.03	<0.400
	6/15/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	2.36	<0.400	<0.500	7.70	<0.400	<0.500	4.30	<0.400
	9/12/2022	<1.00	<5.00	<1.00	<1.00	1.29	<0.400	<0.400	16	<0.400	<0.500	20.9	<0.400	<0.500	9.74	<0.400
	12/8/2022	<1.00	<5.00	<1.00	<1.00	6.73	<0.400	<0.400	26	<0.400	<0.500	20.6	<0.400	<0.500	11.6	13.3
	3/16/2023	<1.00	<5.00	<1.00	<1.00	2.88	<0.400	<0.400	21.4	<0.400	<0.500	25.2	<0.400	<0.500	11.8	<0.400
	6/14/2023	<1.00	<5.00	<1.00	<1.00	1.03	<0.400	<0.400	14.9	<0.400	<0.500	18.4	<0.400	<0.500	11.3	<0.400
	9/12/2023	<4.00	<5.00	<1.00	<1.00	1.37	<0.400	<0.400	19.2	<0.400	<0.500	17.6	<0.400	<0.500	14.1	0.290
	12/11/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	2.05	<0.400	<0.500	8.48	<0.400	<0.500	3.32	<0.200
	3/6/2024	<1.00	<5.00	<1.00	<1.00	1.82	<0.400	<0.400	14.8	<0.400	<0.500	18.6	<0.400	<0.500	11.0	<0.200
	6/12/2024	<1.00	<5.00	<1.00	<1.00	0.620	<0.400	<0.400	10.8	<0.400	<0.500	14.6	<0.400	<0.500	9.52	<0.200
	9/4/2024	<1.00	<5.00	<1.00	<1.00	1.24	<0.400	<0.400	16.8	<0.400	<0.500	20.3	<0.400	<0.500	10.1	<0.200
	12/3/2024	<1.00	<5.00	<1.00	<1.00	1.43	<0.400	<0.400	14.6	<0.400	<0.500	14.3	<0.400	<0.500	11.6	0.370
MGMS1-1(110)	6/28/2000	<1	<5	<0.50	<0.50	<0.50	<0.50	<0.50	3.78	<0.50	<0.50	3.9	<1	--	3.35	<0.50
	8/30/2000	<5	<25	<2.5	<2.5	3.7	<2.5	3.32	55	<2.5	<2.5	510	24	--	130	<2.5
	11/29/2000	<5	<25	<2.5	<2.5	4.21	<2.5	4.59	51	<2.5	<2.5	583	23.2	--	166	<2.5
	2/27/2001	<5	<25	<2.5	<2.5	5.21	<2.5	3.39	47.5	<2.5	<2.5	385	16.5	--	105	<2.5
	5/31/2001	<10	<50	<5	<5	<5	<5	<5	55.8	<5	<5	639	13.8	--	141	<5
	9/24/2001	<1.3	<1.3	<1.3	<1.3	6.1	<1.3	2.9	57	<1.3	<1.3	580	20	--	120	<1.3
	12/18/2001	<5	<25	<2.5	<2.5	5.04	<2.5	2.68	54.8	<2.5	<2.5	527	20.2	--	131	<2.5
	3/19/2002	<5	<2.5	<2.5	<5	5.25	<2.5	<2.5	54	<2.5	<2.5	454	10.8	--	98	<2.5
	5/29/2002	<5	<2.5	<2.5	<5	4.9	<2.5	<2.5	62.3	<2.5	<2.5	299	9.7	--	65.1	<2.5
	8/29/2002	<1	<0.50	<0.50	<1	5.43	<0.50	1.32	110	0.8	<0.50	60.2	3.62	--	47.8	<0.50
	11/11/2002	<2	<1	<1	<2	4.74	<1	1.2	46.1	<1	<1	208	7.84	--	66.1	<1
	1/23/2003	<2	<1	<1	<2	4.44	<1	1.24	65.3	<1	<1	210	6.54	--	74.1	<1

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MGMS1-1(110) (continued)	5/28/2003	<2	<1	<1	<2	3.96	<1	<1	69.2	<1	<1	109	2.48	--	57.5	<1
	11/11/2003	<2	<2	<2	<2	4.14	<2	<2	44.8	<2	<2	256	3.6	--	60.2	<2
	1/27/2004	<2	<1	<1	<2	4.22	<1	1.1	67.1	<1	<1	167	4.16	--	69.7	<1
	5/3/2004	<1	<1	<1	<1	3.66	<1	<1	47.2	<1	<1	190	2.18	--	55.9	<1
	11/15/2004	<2.5	<2.5	<2.5	<2.5	3.7	<2.5	<2.5	95	<2.5	<2.5	76	<2.5	--	64	<2.5
	6/20/2005	<2	<1	<1	<2	9.22	<1	2.58	283	1.8	<1	23.6	1.62	--	70	1.24
	11/17/2005	<1	<0.500	<0.500	<1	2.93	<0.500	<0.500	51.3	<0.500	<0.500	102	1.95	--	76.1	<0.500
	6/6/2006	<1	<1	<1	<1	2.15	<1	<1	44	<1	<1	94.4	1.36	--	66.8	<1
	12/6/2006	<1	<0.50	<0.50	<1	5.81	<0.50	0.6	142	<0.50	<0.50	53.8	0.88	--	74.6	0.57
	9/11/2007	<2	<1	<1	<2	3.78	<1	1.2	189	<1	<1	31.6	<1	--	61.1	<1
	3/4/2008	<1	<0.500	<0.500	<1	3.73	<0.500	0.91	242	2.37	<0.500	32.7	0.64	<0.500	44.4	<0.500
	3/25/2009	<0.50	<0.50	<0.50	<0.50	2.6	<0.50	0.87	160	0.9	<0.50	25	<0.50	<0.50	39	<0.50
	6/15/2009	<0.50	<0.50	<0.50	<0.50	2.3	<0.50	0.74	130	1	<0.50	24	<0.50	<0.50	39	<0.50
	9/15/2009	<2.5	<2.5	<2.5	<2.5	20	<2.5	2.7	620	3.6	<2.5	24	<2.5	<2.5	75	<2.5
	3/17/2010	<2.5	<2.5	<2.5	<2.5	20	<2.5	4.3	720	3.7	<2.5	20	<2.5	<2.5	79	<2.5
	9/21/2010	<0.5	<0.5	<0.5	<0.5	2.5	<0.5	1.1	150	1	<0.5	28	<0.5	<0.5	53	<0.5
	3/10/2011	<0.50	<0.50	<0.50	<0.50	1.4	<0.50	0.57	83	0.52	<0.50	26	<0.50	<0.50	31	<0.50
	9/13/2011	<0.50	<0.50	<0.50	<0.50	1.9	<0.50	1.2	110	0.96	<0.50	30	<0.50	<0.50	59	<0.50
	3/8/2012	<0.50	<0.50	<0.50	<0.50	1	<0.50	<0.50	62	<0.50	<0.50	22	<0.50	<0.50	21	<0.50
	9/12/2012	<0.50	<0.50	<0.50	<0.50	0.93	<0.50	0.53	60	<0.50	<0.50	22	<0.50	<0.50	25	<0.50
	3/12/2013	<0.50	<0.50	<0.50	<0.50	0.95	<0.50	<0.50	65	<0.50	<0.50	23	<0.50	<0.50	24	<0.50
	9/17/2013	<0.50	<0.50	<0.50	<0.50	1.1	<0.50	0.56	68	<0.50	<0.50	26	<0.50	<0.50	32	<0.50
	3/18/2014	<0.50	<0.50	<0.50	<0.50	1.2	<0.50	<0.50	63	<0.50	<0.50	23	<0.50	<0.50	27	0.65
	9/24/2014	Not sampled; 60-foot port accidentally sampled twice.														
	3/19/2015	<0.50	<0.50	<0.50	<0.50	2.7	<0.50	0.69	126	<0.50	<0.50	23.7	<0.50	<0.50	41.5	0.82
	9/21/2015	<0.50	<0.50	<0.50	<0.50	1.1	<0.50	<0.50	49	<0.50	<0.50	19.4	<0.50	<0.50	20.4	<0.50
	9/30/2016	<0.50	<0.50	<0.50	<0.50	1.2	<0.50	<0.50	56.7	<0.50	<0.50	18.4	<0.50	<0.50	28.7	<0.50
	3/31/2017	<0.50	<20	<0.50	<0.50	13.3	<0.50	1.1	328	0.7	<0.50	20.1	<0.50	<0.50	62.0	6.5
	9/29/2017	<2.0	<2.0	<0.50	<0.50	5.9	<1.0	0.540	173	<0.50	<0.50	9.0	<0.50	<0.50	32.8	0.6
	11/7/2017	<2.0	<2.0	<0.50	<0.50	10.5	<0.50	0.910	257	0.7	<0.50	11.5	<0.50	<0.50	41.8	0.9
	7/1/2018	<0.500	<2.50	<0.500	<0.500	3.30	<0.500	0.462 J	104	0.357 J	<0.500	18.5	0.132 J	<0.500	36.6	0.6
	10/1/2018	<1.00	<5.00	<1.00	<1.00	6.12	<0.400	0.723	153	0.485	<0.500	13.0	<0.400	<0.500	39.3	0.7
	6/7/2019	<1.00	<5.00	<1.00	<1.00	3.55	<0.400	<0.400	102	<0.400	<0.500	13.8	<0.400	<0.500	24.2	<0.400
	12/4/2019	<1.00	<5.00	<1.00	<1.00	4.61	<0.400	<0.400	134	<0.400	<0.500	14.0	<0.400	<0.500	31.9	<0.400

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MGMS1-1(110) (continued)	6/16/2020	<1.00	<5.00	<1.00	<1.00	4.22	<0.400	0.450	141	<0.400	<0.500	17.6	<0.400	<0.500	33.2	<0.400
	12/8/2020	<2.00	<5.00	<1.00	<1.00	5.56	<0.400	0.523	163	0.488	<0.500	16.1	<0.400	<0.500	32.7	<0.400
	6/16/2021	<1.00	<5.00	<1.00	<1.00	4.87	<0.400	0.408	166	0.464	<0.500	14.1	<0.400	<0.500	34.6	<0.400
	12/7/2021	<1.00	<5.00	<1.00	<1.00	4.06	<0.400	<0.400	132	<0.400	<0.500	18.0	<0.400	<0.500	33.2	<0.400
	6/15/2022	<1.00	<5.00	<1.00	<1.00	2.17	<0.400	<0.400	70.7	<0.400	<0.500	14.2	<0.400	<0.500	19.1	<0.400
	12/8/2022	<1.00	<5.00	<1.00	<1.00	5.17	<0.400	0.59	154	0.66	<0.500	17.6	<0.400	<0.500	32.5	<0.400
	6/15/2023	<1.00	<5.00	<1.00	<1.00	3.94	<0.400	<0.400	122	0.49	<0.500	12.2	<0.400	<0.500	21.4	<0.400
	12/11/2023	<1.00	<5.00	<1.00	<1.00	3.83	<0.400	<0.400	115	0.580	<0.500	16.0	<0.400	<0.500	22.0	<0.200
	6/12/2024	<1.00	<5.00	<1.00	<1.00	2.91	<0.400	<0.400	101	0.460	<0.500	13.7	<0.400	<0.500	19.4	<0.200
	12/3/2024	<1.00	<5.00	<1.00	<1.00	9.79	<0.400	1.23	194	1.14	<0.500	22.0	<0.400	<0.500	51.6	<0.200
MGMS2-4(40)	6/28/2000	<50	<250	<25	<25	44.9	<25	<25	1,210	<25	<25	5,030	215	–	3,090	<25
	8/30/2000	<10	<50	<5	<5	23.4	<5	31.3	644	7.28	<5	2,980	152	–	1,850	<5
	11/29/2000	<100	<500	<50	<50	51.3	<50	94	1,420	<50	<50	8,740	424	–	3,980	<50
	2/27/2001	<50	<250	<25	<25	35.6	<25	66.2	753	<25	<25	7,360	280	–	3,360	<25
	5/31/2001	<50	<250	<25	<25	<25	<25	<25	604	<25	<25	3,610	94.4	–	2,050	<25
	9/24/2001	<5	<5	<5	<5	28	<5	26	780	13	<5	2,600	170	–	1,700	<5
	12/18/2001	<50	<250	<25	<25	175	<25	77	1,350	<25	<25	5,590	374	–	3,220	<25
	3/19/2002	<50	<25	<25	<50	36	<25	36	868	<25	<25	6,240	180	–	3,040	<25
	5/29/2002	<50	<25	<25	<50	76	<25	53	1,330	<25	<25	6,580	230	–	2,530	<25
	11/11/2002	<20	<10	<10	<20	19.8	<10	13.6	639	<10	<10	3,080	89.4	–	1,820	<10
	1/23/2003	<20	<10	<10	<20	13.4	<10	<10	353	<10	<10	2,290	52.6	–	1,480	<10
	5/28/2003	<10	<5	<5	<10	5.4	<5	<5	110	<5	<5	1,190	19.1	–	474	<5
	11/11/2003	<10	<10	<10	<10	<10	<10	<10	54.1	<10	<10	1,820	14	–	398	<10
	1/27/2004	<20	<10	<10	<20	45.2	<10	10	397	<10	<10	1,740	55.8	–	688	<10
	5/3/2004	<10	<10	<10	<10	<10	<10	<10	41.2	<10	<10	599	<10	–	200	<10
	8/17/2004	<10	<5	<5	<10	9.7	<5	6.1	158	<5	<5	1,530	30.7	–	705	<5
	11/15/2004	<25	<25	<25	<25	<25	<25	<25	310	<25	<25	2,900	<25	–	1,300	<25
	3/24/2005	<20	<10	<10	<20	10.8	<10	<10	159	<10	<10	1,900	25.8	–	834	<10
	5/16/2005	<20	<10	<10	<20	34.2	<10	28.2	489	<10	<10	2,540	52.2	–	1,150	<10
	11/16/2005	<50	<25	<25	<50	43.5	<25	<25	396	<25	<25	4,240	82.5	–	1,750	<25
	6/6/2006	<50	<50	<50	<50	62	<50	<50	917	<50	<50	4,820	55	–	1,770	<50
	12/5/2006	<50	<25	<25	<50	<25	<25	<25	370	<25	<25	3,090	31.5	–	1,200	<25
	5/21/2007	<20	<20	<20	<20	27.4	<20	<20	359	<20	<20	2,880	38.2	–	1,080	<20
	9/10/2007	<50	<25	<25	<50	<25	<25	<25	402	<25	<25	2,010	52.5	–	1,600	<25

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MGMS2-4(40) (continued)	12/12/2007	<50	<25	<25	<50	26	<25	<25	330	<25	<25	2,080	35.5	–	914	<25
	03/04/2008[7]	<1	<0.500	<0.500	<1	20.4	<0.500	16.1	181	7.71	<0.500	1,810	53.7	0.51	950	4.68
	9/16/2008	<50	<25	<25	<25	<25	<25	<25	208	<25	<25	2,330	32	<25	1,130	<25
	12/8/2008	Not sampled. Air leak in sampling point prohibited the collection of the sample.														
	3/24/2009	<2	<2	<2	<2	8.4	<2	3.6	100	2	<2	990	14	<2	430	<2
	9/15/2009	<1.5	<1.5	<1.5	<1.5	3.1	<1.5	<1.5	52	<1.5	<1.5	440	4.1	<1.5	200	<1.5
	12/14/2009	<1.5	<1.5	<1.5	<1.5	54	<1.5	16	360	6.9	<1.5	2,400	62	<1.5	1,000	2.6
	3/16/2010	<7	<7	<7	<7	16	<7	<7	140	<7	<7	1,800	19	<7	810	<7
	6/14/2010	<25	<25	<25	<25	72	<25	41	1,400	<25	<25	6,400	68	<25	1,500	43
	9/21/2010	<2.5	<2.5	<2.5	<2.5	35	<2.5	17	480	9	<2.5	3,500	48	<2.5	1,500	5.4
	12/7/2010	<15	<15	<15	<15	69	<15	26	700	<15	<15	4,100	83	<15	1,600	<15
	3/7/2011	<15	<15	<15	<15	88	<15	30	930	<15	<15	3,700	91	<15	1,600	<15
	6/7/2011	<15	<15	<15	<15	65	<15	30	1,600	17	<15	4,400	57	<15	1,400	48
	9/12/2011	<15	<15	<15	<15	44	<15	28	7,400	20	<15	790	48	<15	380	58
	12/7/2011	<15	<15	<15	<15	35	<15	<15	5,300	<15	<15	61	<15	<15	39	460
	3/8/2012	<2	<2	<2	<2	38	<2	2.3	470	2.8	<2	9.9	5.2	<2	5.4	260
	6/19/2012	<0.5	3.9	<0.5	<0.5	53	<0.5	<0.5	20	1.3	<0.5	7.2	<0.5	<0.5	2.5	63
	9/13/2012	<1.5	1.8	<1.5	<1.5	39	<1.5	2.8	310	3.2	<1.5	89	5	<1.5	80	440
	12/11/2012	<0.50	30	<0.50	<0.50	4.8	<0.50	<0.50	33	1.3	<0.50	10	<0.50	<0.50	3.4	4
	3/12/2013	<0.50	8.2	<0.50	<0.50	28	<0.50	1.9	300	2	<0.50	5.6	2.5	<0.50	2.2	270
	6/11/2013	<0.50	15	<0.50	<0.50	8.3	<0.50	<0.50	7.9	<0.50	<0.50	0.94	<0.50	<0.50	<0.50	4.8
	9/17/2013	<0.50	9.4	<0.50	<0.50	28	<0.50	4.8	290	1.4	<0.50	16	1.6	<0.50	17	330
	12/16/2013	<0.50	6.9	<0.50	<0.50	9.7	<0.50	<0.50	8.4	<0.50	<0.50	2.4	<0.50	<0.50	1.4	3.4
	3/24/2014	<0.50	2.4	<0.50	<0.50	45	<0.50	2.9	84	<0.50	<0.50	2.6	<0.50	<0.50	1.8	270
	6/26/2014	<0.50	6.1	<0.50	<0.50	31	<0.50	10	88	0.84	<0.50	21	<0.50	<0.50	22	90
	9/23/2014	<0.50	2.5	<0.50	<0.50	30	<0.50	30	590	2.4	<0.50	170	3.2	<0.50	110	800
	12/12/2014	<0.50	12	<0.50	<0.50	35	<0.50	<0.50	10	<0.50	<0.50	3.4	<0.50	<0.50	2.3	18
	3/20/2015	<0.50	<0.50	<0.50	<0.50	4.3	<0.50	3.9	47	<0.50	<0.50	30.6	<0.50	<0.50	22.1	17.3
	6/19/2015	<0.50	<0.50	<0.50	<0.50	13.8	<0.50	1.3	53.8	<0.50	<0.50	18.4	<0.50	<0.50	12.8	48.3
	9/25/2015	<0.50	<0.50	<0.50	<0.50	12.3	<0.50	4.2	105	0.61	<0.50	67.4	0.92	<0.50	45.9	57.8
	12/8/2015	<0.50	3.8	<0.50	<0.50	13.5	<0.50	<0.50	7	<0.50	<0.50	4	<0.50	<0.50	2.8	3.3
	3/9/2016	<0.50	<2	<0.50	<0.50	20.6	<0.50	1.6	36	<0.50	<0.50	6.5	<0.50	<0.50	6.2	36
	6/17/2016	<0.50	<2	<0.50	<0.50	24.9	<0.50	26.4	744	2.8	<0.50	223	3.1	<0.50	146	227
	9/29/2016	<0.50	<2	<0.50	<0.50	12.1	<0.50	<0.50	115	<0.50	<0.50	33.3	<0.50	<0.50	24.8	142

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MGMS2-4(40) (continued)	12/16/2016	<0.50	<2	<0.50	<0.50	10.3	<0.50	<0.50	5.2	<0.50	<0.50	2.6	<0.50	<0.50	1.9	2
	3/31/2017	<0.5	<2	<0.5	<0.5	57.6	<0.5	14.3	236	0.6	<0.5	4.3	<0.5	<0.5	14.4	235
	6/15/2017	<0.50	<2.0	<0.50	<0.50	38.6	<0.50	3.5	46.2	<0.50	<0.50	5.1	<0.50	<0.50	4.9	98.9
	9/29/2017	<2.0	<2.0	<0.50	<0.50	21.7	<1.0	6.8	195.0	0.74	<0.50	41.5	0.67	<0.50	31.3	428.0
	11/9/2017	<2.0	<2.0	<0.50	<0.50	21.3	<0.50	0.9	61.6	0.52	<0.50	13.2	<0.50	<0.50	9.2	170.0
	3/22/2018	<0.500	<2.50	<0.500	<0.500	25.9	<0.500	4.2	109.0	0.57	<0.500	46.0	0.259 J	<0.500	27.3	122.0
	7/1/2018	<0.500	<2.50	<0.500	<0.500	12.7	<0.500	5.9	151.0	0.97	<0.500	62.1	1.04	<0.500	48.9	38.2
	9/28/2018	<2.00	<10.00	<2.00	<2.00	8.7	<0.800	1.4	140.0	<0.800	<1.00	66.9	<0.800	<1.00	43.3	106.0
	12/10/2018	<1.00	<5.00	<1.00	<1.00	20.9	<0.400	0.6	24.9	<0.400	<0.500	18.7	<0.400	<0.500	12.0	123.0
	3/25/2019	<1.00	<5.00	<1.00	<1.00	26.6	<0.400	2.58	136	0.752	<0.500	62.0	0.581	<0.500	35.9	155
	6/4/2019	<1.00	<5.00	<1.00	<1.00	28.2	<0.400	0.960	37.8	<0.400	<0.500	14.6	<0.400	<0.500	10.4	145
	9/27/2019	<1.00	<5.00	<1.00	<1.00	11.2	<0.400	0.729	73.8	<0.400	<0.500	17	<0.400	<0.500	13.1	101
	12/4/2019	<1.00	<5.00	<1.00	<1.00	20.6	<0.400	0.778	40.5	<0.400	<0.500	32.3	<0.400	<0.500	17.9	65.4
	3/12/2020	<1.00	<5.00	<1.00	<1.00	24.1	<0.400	2.730	105	0.64	<0.500	86.3	0.45	<0.500	43.3	134
	6/16/2020	<1.00	<5.00	<1.00	<1.00	27.3	<0.400	1.250	85	<0.400	<0.500	14.8	<0.400	<0.500	9.09	138
	10/6/2020	<1.00	<5.00	<1.00	<1.00	19.1	<0.400	2.45	98.4	0.635	<0.500	101	0.593	<0.500	56.2	148
	12/8/2020	<4.00	<10.0	<2.00	<2.00	17.8	<0.800	1.85	82.6	<0.800	<1.00	41.0	<0.800	<1.00	19.4	80.2
	3/4/2021	<1.00	<5.00	<1.00	<1.00	25.1	<0.400	3.83	159	1.120	<0.500	115.0	<0.400	<0.500	59.9	72.5
	6/17/2021	<1.00	<5.00	<1.00	<1.00	20.7	<0.400	3.25	181	0.975	<0.500	68.8	<0.400	<0.500	35.6	66.3
	9/16/2021	<1.00	<5.00	<1.00	<1.00	9.92	<0.400	1.40	98.7	0.734	<0.500	42.2	<0.400	<0.500	28.3	34.2
	12/7/2021	<1.00	<5.00	<1.00	<1.00	22.7	<0.400	6.97	178	1.500	<0.500	190.0	<0.400	<0.500	106	0.989
	3/10/2022	<10.0	<50.0	<50.0	<10.0	21.8	<4.00	8.70	260	<4.00	<5.00	155	<4.00	<5.00	92.9	<4.00
	6/14/2022	<5.00	<25.0	<5.00	<5.00	35.2	<2.00	7.20	209	<2.00	<2.50	138	4.75	<2.50	69.3	<2.00
	9/12/2022	<1.00	<5.00	<1.00	<1.00	16.2	<0.400	9.45	330	2.55	<0.500	271	0.96	<0.500	142	1.41
	12/6/2022	<1.00	<5.00	<1.00	<1.00	19.6	<0.400	9.63	297	2.58	<0.500	245	1.55	<0.500	153	0.4
	3/16/2023	<10.0	<50.0	<50.0	<10.0	17.7	<4.00	10	311	<4.00	<5.00	299	<4.00	<5.00	169	<4.00
	6/13/2023	<2.00	<10.00	<2.00	<2.00	19.1	<0.800	8.5	352	2.64	<1.00	173	1.02	<1.00	121	<0.800
	9/11/2023	<1.00	<5.00	<1.00	<1.00	16.6	<0.400	10.8	338	2.92	<0.500	162	0.570	<0.500	101	1.11
	12/12/2023	<1.00	<5.00	<1.00	<1.00	27.6	<0.400	12.7	396	3.29	<0.500	408	4.16	<0.500	204	0.780
	3/4/2024	<4.00	<10.0	<2.00	<2.00	22.5	<0.800	12.5	331	3.60	<1.00	405	2.60	<0.100	294	0.680
	6/10/2024	<5.00	<25.0	<5.00	<5.00	25.8	<2.00	13.0	403	3.55	<2.50	315	3.10	<2.50	232	<1.00
	9/4/2024	<2.00	<10.0	<2.00	<2.00	12.5	<0.800	8.02	281	2.84	<1.00	215	0.820	<1.00	134	<0.400
	12/3/2024	<5.00	<25.0	<5.00	<5.00	21.0 Q-42	<2.00	12.1 Q-42	385	3.85 Q-42	<2.50	285	<2.00	<2.50	183	<1.00 Q-42

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MGMS2-3(60)	6/28/2000	<5	<25	<2.5	<2.5	35.6	<2.5	8.3	433	<2.5	<2.5	110	22.3	--	198	<2.5
	8/30/2000	<10	<50	<5	<5	36	<5	13	1,120	<5	<5	164	32	--	136	<5
	11/29/2000	<5	<25	<2.5	<2.5	5.08	<2.5	3.88	279	<2.5	<2.5	26.8	<5	--	38	<2.5
	2/27/2001	<2	<10	<1	<1	40.2	<1	2.65	46.6	<1	<1	20.7	12.4	--	27	173
	5/31/2001	<1	<5	<0.50	<0.50	2.47	<0.50	2.3	39.1	<0.50	<0.50	113	3.44	--	75.6	5.06
	9/24/2001	<2.5	<2.5	<2.5	<2.5	14	<2.5	11	180	3.6	<2.5	340	11	--	220	48
	12/18/2001	<1	<5	<0.50	<0.50	0.607	<0.50	1.01	15	<0.50	<0.50	64.4	2.06	--	47.7	<0.50
	3/19/2002	<1	<0.50	<0.50	<1	5.4	<0.50	2.96	62.9	0.81	<0.50	91.9	5.78	--	80.1	15.2
	5/29/2002	<1	<0.50	<0.50	<1	2.55	<0.50	2.02	59.7	0.82	<0.50	119	4.8	--	67.6	1.06
	1/23/2003	<1	<0.50	<0.50	<1	10.1	<0.50	2.7	114	1.12	<0.50	111	6.06	--	96	22.8
	5/28/2003	<2	<1	<1	<2	15	<1	3.28	178	1.48	<1	131	9.3	--	126	15.6
	11/11/2003	<2	<2	<2	<2	21.3	<2	4.56	208	<2	<2	223	9.06	--	139	20.6
	1/27/2004	<1	<0.50	<0.50	<1	17.2	<0.50	2.83	117	1.57	<0.50	96.3	5.38	--	92.2	17.7
	5/3/2004	<1	<1	<1	<1	4.79	<1	1.96	86.4	<1	<1	121	3.31	--	84	<1
	11/15/2004	<2.5	<2.5	<2.5	<2.5	<2.5	13	4.4	220	2.8	<2.5	170	6.4	--	140	11
	2/1/2005	<1	<0.50	<0.50	<1	2.49	<0.50	1.47	92	2.46	<0.50	97.7	2.41	--	73.9	0.6
	5/16/2005	<1	<0.50	<0.50	<1	1.49	<0.50	1.51	45.2	0.59	<0.50	74.1	1.61	--	41.5	<0.50
	8/18/2005	<1	<0.500	<0.500	<1	<0.500	<0.500	<0.500	27.6 B	<0.500	<0.500	23.5 B	<0.500	--	13 B	<0.500
	11/16/2005	<1	<0.500	<0.500	<1	7.5	<0.500	2.05	90.9	1.16	<0.500	107	3.1	--	78.3	2.68
	2/20/2006	<1	<0.500	<0.500	<1	3.35	<0.500	1.6	65	0.82	<0.500	99.5	1.55	--	62.3	1.27
	6/6/2006	<1	<1	<1	<1	<1	<1	<1	55	<1	<1	76.3	1.01	--	36.2	<1
	9/5/2006	<1	<0.50	<0.50	<1	2.85	<0.50	1.13	75.1	0.73	<0.50	73	1.11	--	45.6	0.83
	12/5/2006	<1	<0.50	<0.50	<1	2.58	<0.50	1.44	77	0.75	<0.50	98.7	1.27	--	61.2	0.79
	2/7/2007	<1	<0.50	<0.50	<1	3.36	<0.50	1.3	96.5	0.79	<0.50	76.3	1.64	--	55	1.51
	5/21/2007	<1	<1	<1	<1	2.45	<1	1.33	73.7	<1	<1	99.1	1.51	--	54.5	<1
	9/10/2007	<10	<5	<5	<10	31.2	<5	8.2	559	<5	<5	221	10.8	--	192	26.7
	12/12/2007	<1	<0.50	<0.50	<1	1.49	<0.50	0.88	78.6	0.56	<0.50	66.1	0.98	--	36.8	1.75
	3/4/2008	<1	<0.500	<0.500	<1	4.46	<0.500	2.19	164	1.37	<0.500	89.7	2.32	<0.500	72.2	6.88
	9/16/2008	<5	<2.50	<2.50	<5	10.4	<2.50	3.65	166	<2.50	<2.50	111	3.85	<2.50	96.4	7.15
	12/8/2008	<0.80	<0.80	<0.80	<0.80	11	<0.80	3	160	1.7	<0.80	110	3.2	<0.80	80	10
	3/24/2009	<0.50	<0.50	<0.50	<0.50	5.8	<0.50	1.6	110	1	<0.50	84	2.2	<0.50	53	3.7
	9/15/2009	<0.50	<0.50	<0.50	<0.50	6.4	<0.50	2.3	91	1.2	<0.50	110	2.4	<0.50	72	4.2
	12/14/2009	<0.50	<0.50	<0.50	<0.50	2.1	<0.50	1.1	61	0.75	<0.50	84	1.1	<0.50	54	0.96
	3/16/2010	<0.50	<0.50	<0.50	<0.50	15	<0.50	3.6	140	1.6	<0.50	160	8.2	<0.50	110	12

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MGMS2-3(60)	6/14/2010	<0.50	<0.50	<0.50	<0.50	1.2	<0.50	0.75	46	0.55	<0.50	73	0.86	<0.50	38	0.88
(continued)	9/21/2010	<0.5	<0.5	<0.5	<0.5	11	<0.5	3	130	1.5	<0.5	150	5.8	<0.5	100	6.8
	12/7/2010	<0.5	<0.5	<0.5	<0.5	4.1	<0.5	1.8	86	1.2	<0.5	120	1.7	<0.5	77	1.6
	3/7/2011	<0.50	<0.50	<0.50	<0.50	1.5	<0.50	0.86	73	0.62	<0.50	61	1.2	<0.50	34	1.4
	6/6/2011	<0.5	<0.5	<0.5	<0.5	0.64	<0.5	<0.5	22	<0.5	<0.5	64	0.54	<0.5	27	<0.5
	9/12/2011	<0.50	<0.50	<0.50	<0.50	10	<0.50	3.2	110	1.4	<0.50	170	6	<0.50	100	2
	12/5/2011	<0.50	<0.50	<0.50	<0.50	2.6	<0.50	0.95	51	0.54	<0.50	84	1	<0.50	41	<0.50
	3/8/2012	<0.50	<0.50	<0.50	<0.50	10	<0.50	2.9	300	1.9	<0.50	71	1.5	<0.50	45	43
	6/19/2012	<0.5	<0.5	<0.5	<0.5	2	<0.5	1	79	0.87	<0.5	78	0.78	<0.5	45	5.3
	9/12/2012	<0.50	<0.50	<0.50	<0.50	1.5	<0.50	0.56	48	<0.50	<0.50	44	<0.50	<0.50	20	2.7
	12/11/2012	<0.50	<0.50	<0.50	<0.50	2.6	<0.50	2.5	59	1.5	<0.50	57	0.62	<0.50	36	16
	3/12/2013	<0.50	<0.50	<0.50	<0.50	0.74	<0.50	<0.50	22	<0.50	<0.50	16	<0.50	<0.50	9	<0.50
	6/11/2013	<0.50	<0.50	<0.50	<0.50	2.4	<0.50	1.5	53	0.58	<0.50	29	0.55	<0.50	21	12
	9/17/2013	<0.50	<0.50	<0.50	<0.50	5.4	<0.50	0.98	73	0.66	<0.50	24	0.6	<0.50	13	29
	12/10/2013	<0.50	<0.50	<0.50	<0.50	3	<0.50	1	88	0.88	<0.50	23	0.6	<0.50	18	13
	3/18/2014	<0.50	<0.50	<0.50	<0.50	0.96	<0.50	<0.50	28	<0.50	<0.50	33	<0.50	<0.50	13	1.7
	9/23/2014	Insufficient air pressure to inflate dedicated bladder; no sample collected.														
	12/12/2014	Insufficient air pressure to inflate dedicated bladder; no sample collected.														
	3/20/2015	<0.50	<0.50	<0.50	<0.50	1.6	<0.50	<0.50	29.4	<0.50	<0.50	41.4	<0.50	<0.50	24.3	5.2
	6/19/2015	<0.50	<0.50	<0.50	<0.50	2	<0.50	0.56	38.1	<0.50	<0.50	35.1	<0.50	<0.50	23.5	7.9
	9/25/2015	<0.50	<0.50	<0.50	<0.50	2.5	<0.50	0.5	51.6	<0.50	<0.50	18.4	<0.50	<0.50	15.8	9.7
	12/8/2015	Well Damaged, Unable to Sample														
	6/17/2016	<0.50	<2	<0.50	<0.50	1.1	<0.50	<0.50	19.4	<0.50	<0.50	17.2	<0.50	<0.50	11.8	3.4
	9/30/2016	<0.50	<2	<0.50	<0.50	2	<0.50	<0.50	40	<0.50	<0.50	9.6	<0.50	<0.50	11.5	9.6
	12/16/2016	<0.50	<2	<0.50	<0.50	1.7	<0.50	<0.50	35.3	<0.50	<0.50	40.7	<0.50	<0.50	24.8	1.4
	3/31/2017	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	18.5	<0.5	<0.5	26	<0.5	<0.5	11.2	0.75
	6/15/2017	<2.0	<2.0	<0.50	<0.50	0.88	<1.0	<0.50	20.7	<0.50	<0.50	40.4	<0.50	<0.50	17.3	1.3
	9/29/2017	<2.0	<2.0	<0.50	<0.50	2.30	<1.0	<0.50	30.4	<0.50	<0.50	17.5	<0.50	<0.50	12.0	6.7
	11/9/2017	<2.0	<2.0	<0.50	<0.50	1.80	<0.50	<0.50	30.2	<0.50	<0.50	34.2	<0.50	<0.50	20.1	1.1
	3/22/2018	<0.500	<2.50	<0.500	<0.500	0.82	<0.500	0.244 J	17.3	0.164 J	<0.500	20.6	0.205 J	<0.500	11.6	1.2
	7/1/2018	<0.500	<2.50	<0.500	<0.500	0.73	<0.500	<0.500	14.1	<0.500	<0.500	19.6	0.20	<0.500	10.1	1.6
	12/10/2018	<0.500	<2.50	<0.500	<0.500	2.26	<0.500	0.43	41.7	0.43	<0.500	36.1	<0.400	<0.500	20.7	4.4
	3/25/2019	<1.00	<5.00	<1.00	<1.00	1.86	<0.400	<0.400	36.8	0.415	<0.500	40.1	<0.400	<0.500	23.3	0.773

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MGMS2-3(60) (continued)	6/4/2019	<1.00	<5.00	<1.00	<1.00	0.580	<0.400	<0.400	18.00	<0.400	<0.500	32.3	<0.400	<0.500	15.7	0.420
	9/27/2019	<1.00	<5.00	<1.00	<1.00	1.590	<0.400	<0.400	35.20	0.47	<0.500	25	<0.400	<0.500	13.8	3.080
	12/4/2019	<1.00	<5.00	<1.00	<1.00	2.030	<0.400	0.427	54.50	0.42	<0.500	28.9	<0.400	<0.500	19.4	2.850
	3/12/2020	<1.00	<5.00	<1.00	<1.00	0.541	<0.400	<0.400	12.30	<0.400	<0.500	21.7	<0.400	<0.500	9.24	0.642
	6/16/2020	<1.00	<5.00	<1.00	<1.00	0.820	<0.400	<0.400	16.50	<0.400	<0.500	23.7	<0.400	<0.500	10.4	0.850
	10/6/2020	<1.00	<5.00	<1.00	<1.00	1.21	<0.400	<0.400	28.9	<0.400	<0.500	32.3	<0.400	<0.500	17.9	1.38
	12/8/2020	<2.00	<5.00	<1.00	<1.00	0.860	<0.400	<0.400	20.2	<0.400	<0.500	21.8	<0.400	<0.500	10.5	0.757
	3/4/2021	<1.00	<5.00	<1.00	<1.00	0.455	<0.400	<0.400	10.2	<0.400	<0.500	11.7	<0.400	<0.500	5.95	0.524
	6/17/2021	<1.00	<5.00	<1.00	<1.00	0.621	<0.400	<0.400	11.8	<0.400	<0.500	15.5	<0.400	<0.500	8.23	0.602
	9/16/2021	<1.00	<5.00	<1.00	<1.00	1.290	<0.400	<0.400	26.9	<0.400	<0.500	18.9	<0.400	<0.500	11.5	0.956
	12/7/2021	<1.00	<5.00	<1.00	<1.00	1.570	<0.400	0.41	40.5	<0.400	<0.500	41.8	<0.400	<0.500	21	1.5
	3/10/2022	<1.00	<5.00	<1.00	<1.00	0.530	<0.400	<0.400	11.0	<0.400	<0.500	9.29	<0.400	<0.500	5.21	1.10
	6/14/2022	<1.00	<5.00	<1.00	<1.00	0.490	<0.400	<0.400	15.6	<0.400	<0.500	39.3	<0.400	<0.500	14.7	<0.400
	9/12/2022	<1.00	<5.00	<1.00	<1.00	0.990	<0.400	<0.400	22.4	<0.400	<0.500	18.5	<0.400	<0.500	9.37	0.780
	12/6/2022	<1.00	<5.00	<1.00	<1.00	0.81	<0.400	<0.400	15.2	<0.400	<0.500	26.6	<0.400	<0.500	10.2	<0.400
	3/16/2023	<1.00	<5.00	<1.00	<1.00	0.45	<0.400	<0.400	9.02	<0.400	<0.500	8.98	<0.400	<0.500	4.33	<0.400
	6/13/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	6.8	<0.400	<0.500	8.57	<0.400	<0.500	4.09	<0.400
	9/11/2023	<1.00	<5.00	<1.00	<1.00	0.720	<0.400	<0.400	15.2	<0.400	<0.500	8.63	<0.400	<0.500	5.48	0.530
	12/12/2023	<1.00	<5.00	<1.00	<1.00	1.19	<0.400	<0.400	24.6	<0.400	<0.500	42.3	<0.400	<0.500	18.4	0.460
	3/4/2024	<2.00	<5.00	<1.00	<1.00	0.610	<0.400	<0.400	11.3	<0.400	<0.500	16.2	<0.400	<0.500	8.51	0.240
	6/10/2024	<1.00	<5.00	<1.00	<1.00	0.630	<0.400	<0.400	15.2	<0.400	<0.500	21.0	<0.400	<0.500	9.83	0.230
	9/4/2024	<1.00	<5.00	<1.00	<1.00	0.700	<0.400	<0.400	16.2	<0.400	<0.500	13.3	<0.400	<0.500	7.14	0.310
	12/3/2024	<1.00	<5.00	<1.00	<1.00	0.860	<0.400	<0.400	18.8	<0.400	<0.500	12.5	<0.400	<0.500	8.23	0.290
MGMS2-2(110)	6/28/2000	<1	<5	<0.50	<0.50	<0.50	<0.50	<0.50	12.2	<0.50	<0.50	6.04	<1	--	17.1	<0.50
	8/30/2000	<1	<5	<0.50	<0.50	<0.50	<0.50	<0.50	4.41	<0.50	<0.50	16.4	<1	--	14.7	<0.50
	11/29/2000	<1	<5	<0.50	<0.50	<0.50	<0.50	0.717	8.23	<0.50	<0.50	13	<1	--	19.3	<0.50
	2/27/2001	<1	<5	<0.50	<0.50	<0.50	<0.50	0.756	7.31	<0.50	<0.50	15.2	<1	--	21.6	<0.50
	5/31/2001	<1	<5	<0.50	<0.50	<0.50	<0.50	0.938	10.7	<0.50	<0.50	24.4	1.14	--	29.1	<0.50
	9/24/2001	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.6	6.8	<0.50	<0.50	37	1.1	--	34	<0.50
	12/18/2001	<1	<5	<0.50	<0.50	<0.50	<0.50	0.62	4.91	<0.50	<0.50	35.1	<1	--	27.5	<0.50
	3/19/2002	<1	<0.50	<0.50	<1	<0.50	<0.50	0.61	9.97	<0.50	<0.50	35.6	1.23	--	24.6	<0.50
	5/29/2002	<1	<0.50	<0.50	<1	<0.50	<0.50	1.21	31.9	<0.50	<0.50	114	2.39	--	51	0.61
	1/23/2003	<1	<0.50	<0.50	<1	<0.50	<0.50	1.01	57.1	<0.50	<0.50	47.8	2.79	--	44.1	2.98
	5/28/2003	<1	<0.50	<0.50	<1	0.61	<0.50	0.73	63.9	<0.50	<0.50	54.6	1.98	--	43.1	1.13
	11/11/2003	<1	<1	<1	<1	1.14	<1	<1	76.7	1.07	<1	32.4	2.19	--	30.8	2.03
	1/27/2004	<1	<0.50	<0.50	<1	0.63	<0.50	<0.50	49	<0.50	<0.50	67.9	1.17	--	30	1
	5/3/2004	<1	<1	<1	<1	<1	<1	<1	14	<1	<1	28	<1	--	13.6	<1
	11/15/2004	<0.50	<0.50	<0.50	<0.50	<0.50	0.7	0.62	60	<0.50	<0.50	50	1.6	--	30	<0.50

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MGMS2-2(110) (continued)	5/16/2005	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	27.9	<0.50	<0.50	21.5	0.52	--	10.9	<0.50
	11/16/2005	<1	<0.500	<0.500	<1	<0.500	<0.500	<0.500	15.1	<0.500	<0.500	18	<0.500	--	8.42	<0.500
	6/6/2006	<1	<1	<1	<1	<1	<1	<1	30.9	<1	<1	13.9	<1	--	6.59	<1
	12/5/2006	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	36.2	<0.50	<0.50	17.9	<0.50	--	8.27	<0.50
	9/10/2007	<5	<2.50	<2.50	<5	<2.50	<2.50	3.2	512	<2.50	<2.50	146	5.65	--	94.4	14.9
	3/4/2008	<1	<0.500	<0.500	<1	<0.500	<0.500	<0.500	59.5	<0.500	<0.500	33.4	0.75	<0.500	16.7	2.82
	9/16/2008	<1	<0.500	<0.500	<1	<0.500	<0.500	0.71	77	<0.500	<0.500	44	1.18	<0.500	23.8	3.45
	3/24/2009	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	40	<0.50	<0.50	27	<0.50	<0.50	11	2.5
	6/15/2009	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	31	<0.50	<0.50	20	0.57	<0.50	8.9	2.3
	9/15/2009	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	26	<0.50	<0.50	16	<0.50		6.7	1.8
	3/15/2010	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	28	<0.50	<0.50	21	<0.50	<0.50	8.1	1.6
	9/21/2010	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	33	<0.5	<0.5	34	0.6	<0.5	14	1.3
	3/7/2011	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	24	<0.50	<0.50	26	<0.50	<0.50	8.6	1
	9/12/2011	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	15	<0.50	<0.50	22	<0.50	<0.50	8.3	<0.50
	3/8/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	31	<0.50	<0.50	23	<0.50	<0.50	9.3	2.4
	9/12/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	18	<0.50	<0.50	20	<0.50	<0.50	8.3	1.4
	3/12/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	34	<0.50	<0.50	23	0.52	<0.50	10	2.7
	9/17/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	30	<0.50	<0.50	18	<0.50	<0.50	8.7	2.2
	3/18/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	21	<0.50	<0.50	13	<0.50	<0.50	6.2	2.5
	9/23/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	25	<0.50	<0.50	12	<0.50	<0.50	7.3	4.9
	3/19/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	18.3	<0.50	<0.50	7.9	<0.50	<0.50	4.8	4.6
	9/25/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	15.3	<0.50	<0.50	9.4	<0.50	<0.50	5.9	4.1
	3/9/2016	<0.50	<2	<0.50	<0.50	0.73	<0.50	<0.50	22.6	<0.50	<0.50	7.1	<0.50	<0.50	8	10
	9/29/2016	<0.50	<2	<0.50	<0.50	0.62	<0.50	<0.50	16.8	<0.50	<0.50	6.5	<0.50	<0.50	6.3	5.8
	3/31/2017	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	19.5	<0.5	<0.5	6.4	<0.5	<0.5	6.6	6.4
	9/29/2017	<2.0	<2.0	<0.50	<0.50	2.8	<1.0	<0.50	63.5	<0.50	<0.50	2.2	<0.50	<0.50	5.3	25.0
	11/9/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	6.3	<0.50	<0.50	3.9	<0.50	<0.50	3.1	1.9
	7/1/2018	<0.500	<2.50	<0.500	<0.500	0.446 J	<0.500	<0.500	<0.500	6.7	<0.500	4.4	0.175 J	<0.500	3.4	3.87
	9/28/2018	<1.00	<5.00	<1.00	<1.00	0.4	<0.400	<0.400	11.3	<0.400	<0.500	5.0	<0.400	<0.500	4.3	4.63
	6/4/2019	<4.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	2.37	<0.400	<0.500	3.44	<0.400	<0.500	2.04	0.770
	12/4/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	5.49	<0.400	<0.500	4.29	<0.400	<0.500	2.73	2.320
	6/16/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	2.91	<0.400	<0.500	4.19	<0.400	<0.500	2.5	1.170
	12/8/2020	<2.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	4.63	<0.400	<0.500	3.21	<0.400	<0.500	2.52	1.560
	6/17/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	5.23	<0.400	<0.500	2.89	<0.400	<0.500	3.01	1.74

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MGMS2-2(110) (continued)	12/7/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	5.50	<0.400	<0.500	4.06	<0.400	<0.500	3.23	1.410
	06/14/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	3.51	<0.400	<0.500	3.86	<0.400	<0.500	2.29	0.820
	12/6/2022	<1.00	<5.00	<1.00	<1.00	0.590	<0.400	<0.400	17.6	<0.400	<0.500	3.48	<0.400	<0.500	3.83	3.65
	6/13/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	5.26	<0.400	<0.500	2.31	<0.400	<0.500	1.86	0.720
	12/12/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	4.57	<0.400	<0.500	3.81	<0.400	<0.500	2.16	0.670
	6/10/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	3.94	<0.400	<0.500	3.05	<0.400	<0.500	1.94	0.630
	12/3/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	7.36	<0.400	<0.500	4.61	<0.400	<0.500	3.19	1.17
MGMS2-1(132)	6/28/2000	<1	<5	<0.50	<0.50	1.25	<0.50	1.77	27.6	<0.50	<0.50	27.5	2.06	--	54.3	<0.50
	8/30/2000	<1	<5	<0.50	<0.50	0.903	<0.50	<0.50	23	<0.50	<0.50	77.8	2.47	--	52.9	<0.50
	11/29/2000	<1	<5	<0.50	<0.50	<0.50	<0.50	0.569	12.4	<0.50	<0.50	25.3	<1	--	27.8	<0.50
	2/27/2001	<1	<5	<0.50	<0.50	0.537	<0.50	0.605	11.4	<0.50	<0.50	25.2	<1	--	24.4	2.6
	5/31/2001	<1	<5	<0.50	<0.50	<0.50	<0.50	<0.50	8.86	<0.50	<0.50	25.5	<1	--	24.4	<0.50
	9/24/2001	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.76	7.6	<0.50	<0.50	29	1.1	--	30	<0.50
	12/18/2001	<1	<5	<0.50	<0.50	<0.50	<0.50	0.773	6.81	<0.50	<0.50	26.8	1.36	--	23.8	<0.50
	3/19/2002	<1	<0.50	<0.50	<1	<0.50	<0.50	0.53	8.62	<0.50	<0.50	33.5	0.77	--	24.2	<0.50
	5/29/2002	<1	<0.50	<0.50	<1	<0.50	<0.50	1.29	35.4	0.52	<0.50	117	2.5	--	53.6	0.62
	1/23/2003	<1	<0.50	<0.50	<1	<0.50	<0.50	0.96	57.4	<0.50	<0.50	49.9	2.35	--	46.2	3.19
	5/28/2003	<1	<0.50	<0.50	<1	<0.50	<0.50	0.53	27.2	<0.50	<0.50	29.3	0.98	--	24	1.07
	11/11/2003	<1	<1	<1	<1	<1	<1	<1	46.3	<1	<1	28.8	1.56	--	29.7	1.49
	1/27/2004	<1	<0.50	<0.50	<1	0.63	<0.50	0.56	37.6	<0.50	<0.50	28	0.96	--	22.2	1.51
	5/4/2004	<1	<1	<1	<1	<1	<1	<1	38.2	<1	<1	7.55	<1	--	5.22	<1
	11/15/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.58	62	<0.50	<0.50	38	1.1	--	26	0.85
	5/16/2005	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	29.5	<0.50	<0.50	23.7	0.56	--	15.2	0.86
	11/16/2005	<1	<0.500	<0.500	<1	<0.500	<0.500	<0.500	8.85	<0.500	<0.500	13	<0.500	--	6.06	<0.500
	6/6/2006	<1	<1	<1	<1	<1	<1	<1	23.1	<1	<1	14.8	<1	--	6.71	<1
	12/5/2006	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	27.6	<0.50	<0.50	14.9	<0.50	--	7.89	<0.50
	9/10/2007	<5	<2.50	<2.50	<5	4.55	<2.50	3	615	<2.50	<2.50	93.2	5.5	--	61	21.5
	3/4/2008	<1	<0.500	<0.500	<1	<0.500	<0.500	<0.500	37.3 J	<0.500	<0.500	22.6 J	0.59	<0.500	12.9 J	2.4
	9/16/2008	<1	<0.500	<0.500	<1	0.53	<0.500	1	101	0.56	<0.500	38.3	1.37	<0.500	26.1	6.11
	3/24/2009	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	32	<0.50	<0.50	24	0.57	<0.50	11	1.5
	6/15/2009	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	32	<0.50	<0.50	24	<0.50	<0.50	12	1.6
	9/15/2009	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	26	<0.50	<0.50	18	<0.50		8	1.5
	3/15/2010	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	28	<0.50	<0.50	23	<0.50	<0.50	9.9	1.6
	9/21/2010	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	28	<0.5	<0.5	31	<0.5	<0.5	12	1.1

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MGMS2-1(132)	3/7/2011	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	30	<0.50	<0.50	41	0.56	<0.50	13	0.97
(continued)	3/8/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	26	<0.50	<0.50	24	<0.50	<0.50	9.4	1.8
	9/12/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	22	<0.50	<0.50	22	<0.50	<0.50	9	2
	3/12/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	24	<0.50	<0.50	19	<0.50	<0.50	8.3	1.9
	9/17/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	35	<0.50	<0.50	15	<0.50	<0.50	8.1	2.7
	3/18/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	22	<0.50	<0.50	12	<0.50	<0.50	5.4	2.6
	9/23/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	32	<0.50	<0.50	9.8	<0.50	<0.50	6	5.5
	3/19/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	10.5	<0.50	<0.50	9.4	<0.50	<0.50	4.4	0.75
	3/9/2016	<0.50	<0.50	<0.50	<0.50	0.860	<0.50	<0.50	36.8	<0.50	<0.50	7.9	0.69	<0.50	10.7	12.4
	9/29/2016	<0.50	<0.50	<0.50	<0.50	0.700	<0.50	<0.50	31.4	<0.50	<0.50	6.4	<0.50	<0.50	7.9	8.2
	3/31/2017	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	15.6	<0.5	<0.5	5.2	<0.5	<0.5	4.7	4.8
	9/29/2017	<2.0	<2.0	<0.50	<0.50	2.20	<1.0	<0.50	64.9	<0.50	<0.50	2.4	0.6	<0.50	6.3	19.4
	11/9/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	14.3	<0.50	<0.50	3.6	<0.50	<0.50	4.5	5.0
	7/1/2018	<0.500	<2.50	<0.500	<0.500	0.531	<0.500	<0.500	13.8	<0.500	<0.500	4.5	0.191 J	<0.500	4.9	4.6
	9/28/2018	<1.00	<5.00	<1.00	<1.00	0.520	<0.400	<0.400	17.8	<0.400	<0.500	4.8	<0.400	<0.500	5.6	6.7
	6/4/2019	<4.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	5.43	<0.400	<0.500	2.76	<0.400	<0.500	2.13	2.07
	12/4/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	7.96	<0.400	<0.500	3.66	<0.400	<0.500	3.07	3.29
	6/16/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	4.37	<0.400	<0.500	3.79	<0.400	<0.500	2.50	1.99
	12/8/2020	<2.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	7.82	<0.400	<0.500	3.34	<0.400	<0.500	3.14	2.84
	6/17/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	7.06	<0.400	<0.500	2.9	<0.400	<0.500	3.34	2.54
	12/7/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	7.65	<0.400	<0.500	3.47	<0.400	<0.500	3.4	2.12
	6/14/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	3.34	<0.400	<0.500	2.47	<0.400	<0.500	1.53	0.870
	12/6/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	5.72	<0.400	<0.500	3.3	<0.400	<0.500	2.11	0.98
	6/13/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	6.13	<0.400	<0.500	1.99	<0.400	<0.500	1.76	0.91
	12/12/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	6.65	<0.400	<0.500	2.91	<0.400	<0.500	2.27	1.16
	6/11/20204	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	8.78	<0.400	<0.500	2.43	<0.400	<0.500	2.43	1.17
	12/3/2024	<1.00	<5.00	<1.00	<1.00	0.540	<0.400	<0.400	15.8	<0.400	<0.500	3.45	<0.400	<0.500	4.21	2.46
MGMS3-4(40)	8/30/2000	<10	<50	<5	<5	13.2	<5	5.01	858	14.1	<5	580	10.8	--	205	6.65
	11/29/2000	<20	<100	<10	<10	<10	<10	<10	820	10.6	<10	2,810	<20	--	395	<10
	2/27/2001	<50	<250	<25	<25	39.4	<25	29.2	4,570	<25	<25	2,970	<50	--	756	79.3
	5/31/2001	<50	<250	<25	<25	<25	<25	<25	2,920	38.5	<25	3,960	<50	--	716	<25
	9/24/2001	<2.5	<2.5	<2.5	<2.5	5.8	<2.5	<2.5	730	5.4	<2.5	1,400	9.2	--	230	3.5
	12/18/2001	<50	<250	<25	<25	<25	<25	<25	2,550	<25	<25	3,310	<50	--	631	31
	3/19/2002	<20	<10	<10	<20	34.6	<10	15.4	3,370	30.2	<10	3,560	23.8	--	707	57
	5/29/2002	<50	<25	<25	<50	71.5	<25	26	5,180	38.5	<25	2,470	33.5	--	728	86
	11/11/2002	<50	<25	<25	<50	<25	<25	<25	1,520	<25	<25	2,750	<25	--	309	<25
	1/23/2003	<20	<10	<10	<20	137	<10	38.4	3,530	32.6	<10	2,380	118	--	1,400	83.6

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MGMS3-4(40) (continued)	5/28/2003	<50	<25	<25	<50	56	<25	28.5	1,720	<25	<25	3,560	<25	--	1,470	<25
	11/11/2003	<10	<10	<10	<10	<10	<10	<10	672	<10	<10	58.3	<10	--	32.4	<10
	1/27/2004	<20	<10	<10	<20	20	<10	<10	1,900	19.4	<10	1,350	10	--	246	20
	5/3/2004	<20	<20	<20	<20	50	<20	<20	1,420	<20	<20	2,700	34.2	--	913	24.8
	8/17/2004	<20	<10	<10	<20	71.6	<10	17	3,300	31	<10	1,360	29.2	--	569	45.2
	11/15/2004	<25	<25	<25	<25	<25	<25	<25	1,400	<25	<25	1,600	<25	--	290	<25
	3/24/2005	<20	<10	<10	<20	79.4	<10	30	3,440	34.2	<10	2,330	43.8	--	1,080	60.2
	03/24/2005 DUP	<20	<10	<10	<20	83.2	<10	29.2	3,450	34	<10	2,150	44	--	1,040	58.6
	5/16/2005	<10	<5	<5	<10	7	<5	<5	657	11.3	<5	1,130	8.1	--	224	<5
	11/16/2005	<10	<5	<5	<10	5.8	<5	<5	794	8.4	<5	1,180	7.6	--	210	<5
	3/14/2006	<50	<50	<50	<50	51	<50	<50	4,130	<50	<50	1,410	<50	--	484	<50
	6/6/2006	<20	<20	<20	<20	20.4	<20	<20	2,290	32.2	<20	1,410	<20	--	401	23.6
	12/5/2006	<20	<10	<10	<20	29.8	<10	<10	3,570	29	<10	1,020	<10	--	360	95.4
	5/22/2007	<20	<20	<20	<20	20.8	<20	<20	2,640	20.2	<20	952	<20	--	349	22.6
	9/10/2007	<50	<25	<25	<50	<25	<25	<25	2,340	<25	<25	499	<25	--	215	25.5
	12/12/2007	<50	<25	<25	<50	<25	<25	<25	723	<25	<25	536	<25	--	133	<25
	3/4/2008	<1	<0.500	<0.500	<1	32.4	3.08	22	2,280	25.4	3.86	1,580	27.5	<0.500	972	85.1
	9/16/2008	<50	<25	<25	<50	64.5	<25	<25	2,700	<25	<25	714	<25	<25	462	47
	12/8/2008	<9	<9	<9	<9	24	<9	<9	1,800	20	<9	350	<9	<9	160	90
	3/24/2009	<7	<7	<7	<7	36	<7	7.9	1,600	12	<7	600	11	<7	280	33
	9/15/2009	<5	<5	<5	<5	15	<5	<5	1,500	13	<5	550	<5	<5	180	8.2
	09/15/2009 DUP	<5	<5	<5	<5	15	<5	<5	1,400	13	<5	540	<5	<5	170	9.8
	12/14/2009	<2.5	<2.5	<2.5	<2.5	8.1	<2.5	<2.5	750	5.3	<2.5	180	<2.5	<2.5	74	19
	3/17/2010	<2.5	<2.5	<2.5	<2.5	52	<2.5	14	1,800	18	2.9	810	16	<2.5	490	41
	03/17/2010 DUP	<5	<5	<5	<5	51	<5	14	1,600	18	<5	780	16	<5	470	39
	6/14/2010	<0.90	<0.90	<0.90	<0.90	2.4	<0.90	<0.90	230	2.3	<0.90	300	2.2	<0.90	88	1.5
	9/20/2010	<7	<7	<7	<7	32	<7	8.6	1,800	16	<7	530	7.9	<7	230	31
	09/20/2010 DUP	<6	<6	<6	<6	31	<6	7.4	1,700	15	<6	510	7.4	<6	220	29
	12/7/2010	<2	<2	<2	<2	5.3	<2	<2	460	3.9	<2	330	2.2	<2	95	3.2
	3/7/2011	<2	<2	<2	<2	20	<2	4.7	1,300	10	<2	330	4	<2	140	53
	03/07/2011 DUP	<4	<4	<4	<4	19	<4	4.9	1,200	10	<4	320	<4	<4	140	46
	6/6/2011	<3	<3	<3	<3	6.5	<3	4.1	780	7	<3	370	5.4	<3	150	8.5
	9/13/2011	<5	<5	<5	<5	45	<5	13	1,800	19	<5	560	15	<5	380	29
	09/13/2011 DUP	<7	<7	<7	<7	40	<7	12	1,700	16	<7	570	12	<7	330	23

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MGMS3-4(40)	12/6/2011	<5	<5	<5	<5	14	<5	<5	1,000	9.3	<5	140	<5	<5	64	44
(continued)	3/8/2012	<5	<5	<5	<5	33	<5	13	1,400	14	<5	930	17	<5	450	28
	03/08/2012 DUP	<6	<6	<6	<6	35	<6	14	1,400	14	<6	990	18	<6	480	30
	06/21/2012	<5	<5	<5	<5	22	<5	5.6	1,300	11	<5	220	<5	<5	140	44
	9/12/2012	<5	<5	<5	<5	23	<5	6.2	1,400	13	<5	220	<5	<5	120	85
	09/12/2012 DUP	<5	<5	<5	<5	23	<5	5.3	1,400	13	<5	230	<5	<5	120	86
	12/11/2012	<2	<2	<2	<2	7.1	<2	<2	510	6.5	<2	180	<2	<2	72	6.5
	3/12/2013	<2	<2	<2	<2	30	<2	8.4	1,400	12	<2	510	8.7	<2	260	35
	03/12/2013 DUP	<2	<2	<2	<2	29	<2	8.8	1,300	12	<2	470	8.4	<2	250	35
	6/11/2013	<2.5	<2.5	<2.5	<2.5	11	<2.5	<2.5	740	7.1	<2.5	110	<2.5	<2.5	58	34
	9/16/2013	<2	<2	<2	<2	7.7	<2	<2	360	4.6	<2	100	<2	<2	48	24
	09/16/2013 DUP	<2	<2	<2	<2	8.5	<2	<2	380	5.1	<2	100	<2	<2	49	25
	12/10/2013	<0.90	<0.90	<0.90	<0.90	4.7	<0.90	<0.90	230	2.8	<0.90	60	<0.90	<0.90	29	2
	12/10/2013 DUP	<0.90	<0.90	<0.90	<0.90	4.6	<0.90	<0.90	230	2.7	<0.90	61	<0.90	<0.90	29	1.9
	3/18/2014	<0.90	<0.90	<0.90	<0.90	2.7	<0.90	0.98	280	1.8	0.91	84	<0.90	<0.90	38	<0.90
	3/18/2014 DUP	<0.90	<0.90	<0.90	<0.90	2.6	<0.90	<0.90	280	1.9	0.93	86	<0.90	<0.90	39	<0.90
	6/26/2014	<0.90	<0.90	<0.90	<0.90	12	<0.90	3.5	690	5.7	<0.90	180	1.3	<0.90	100	20
	6/26/2014 DUP	<0.90	<0.90	<0.90	<0.90	11	<0.90	2.8	490	5	<0.90	160	1.1	<0.90	930	14
	9/23/2014	<0.90	<0.90	<0.90	<0.90	10	<0.90	1.7	410	5.8	<0.90	72	<0.90	<0.90	55	74
	9/23/2014 DUP	<0.20	<0.20	<0.20	<0.20	11	<0.20	<0.20	430	5.5	<0.20	70	<0.20	<0.20	53	75
	12/12/2014	<2	<2	<2	<2	7.9	<2	<2	490	4.2	<2	36	<2	<2	28	20
	3/18/2015	<1.6	<1.6	<1.6	<1.6	20	<1.6	3.2	896	7.3	<1.6	249	<1.6	<1.6	159	21.7
	3/18/2015 DUP	<0.50	<0.50	<0.50	<0.50	17	<0.50	2.4	713	5.5	<0.50	194	<0.50	<0.50	124	16.8
	6/19/2015	<0.84	<0.84	<0.84	<0.84	7.2	<0.84	<0.84	339	3.2	<0.84	34.4	<0.84	<0.84	32.8	73.3
	9/22/2015	<0.50	<0.50	<0.50	<0.50	2.8	<0.50	<0.50	164	<0.50	<0.50	2.5	<0.50	<0.50	8.6	61.9
	9/22/2015 DUP	<0.50	<0.50	<0.50	<0.50	2.5	<0.50	<0.50	151	1.2	<0.50	2.3	<0.50	<0.50	7.8	51.9
	12/7/2015	<0.50	<0.50	<0.50	<0.50	9.1	<0.50	2	370	3.1	<0.50	109	<0.50	<0.50	94.8	4
	3/9/2016	<2.5	<10	<2.5	<2.5	11.6	<2.5	<2.5	610	4	<2.5	86.7	<2.5	<2.5	89.7	22.9
	3/8/2016 DUP	<2.5	<10	<2.5	<2.5	12.4	<2.5	<2.5	643	5.4	<2.5	97.4	<2.5	<2.5	102	28
	6/17/2016	<1.2	<5	<1.2	<1.2	24.5	<1.2	6	955	9.1	<1.2	232	<1.2	<1.2	209	85.9
	9/30/2016	<0.50	<2	<0.50	<0.50	4.1	<0.50	0.54	226	1.8	<0.50	1.7	<0.50	<0.50	1.3	45.8
	9/30/2016 DUP	<0.50	<2	<0.50	<0.50	4.5	<0.50	0.6	219	2	<0.50	1.5	<0.50	<0.50	1.4	52.1
	12/16/2016	<0.50	<2	<0.50	<0.50	1	<0.50	<0.50	1.3	0.97	<0.50	0.63	<0.50	<0.50	<0.50	0.88
	3/28/2017	<0.5	<2	<0.5	<0.5	22.5	0.68	2.8	979	5.5	<0.5	1.4	<0.5	<0.5	0.6	257

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MGMS3-4(40)	3/28/2017 DUP	<2.5	<10	<2.5	<2.5	20.7	<2.5	3.3	1,050	6	<2.5	<2.5	<2.5	<2.5	<2.5	323
(continued)	6/12/2017	<0.50	<2.0	<0.50	<0.50	3.3	<0.50	<0.50	1.7	<0.50	<0.50	0.97	<0.50	<0.50	<0.50	<0.50
	9/26/2017	<2.0	<2.0	<0.50	<0.50	1.1	<1.0	<0.50	0.7	<0.50	<0.50	0.79	<0.50	<0.50	<0.50	<0.50
	9/26/2017 DUP	<2.0	<2.0	<0.50	<0.50	1.1	<1.0	<0.50	0.8	<0.50	<0.50	0.86	<0.50	<0.50	<0.50	<0.50
	11/10/2017	<2.0	<2.0	<0.50	<0.50	4.2	<0.50	<0.50	7.6	<0.50	<0.50	0.85	<0.50	<0.50	<0.50	12.80
	11/10/2017 DUP	<2.0	<2.0	<0.50	<0.50	4.3	<0.50	<0.50	8.0	<0.50	<0.50	0.71	<0.50	<0.50	<0.50	15.80
	3/22/2018	<0.500	<2.50	<0.500	<0.500	8.6	<0.500	<0.500	9.8	0.179 J	0.63	1.45	<0.500	<0.500	0.53	39.80
	7/1/2018	<0.500	<2.50	<0.500	<0.500	1.4	<0.500	<0.500	7.6	<0.500	0.279 J	0.498 J	<0.500	<0.500	0.169 J	8.98
	7/1/2018 DUP	<0.500	<2.50	<0.500	<0.500	2.0	<0.500	<0.500	9.4	<0.500	0.318 J	0.63	<0.500	<0.500	0.163 J	17.30
	9/28/2018	<1.00	<5.00	<1.00	<1.00	6.7	<0.400	<0.400	116.0	<0.400	<0.500	0.97	<0.400	<0.500	<0.400	129.0
	9/28/2018 DUP	<1.00	<5.00	<1.00	<1.00	9.1	<0.400	0.56	143.0	<0.400	<0.500	0.69	<0.400	<0.500	<0.400	129.0
	12/10/2018	<1.00	<5.00	<1.00	<1.00	1.5	<0.400	<0.400	1.8	<0.400	<0.500	0.60	<0.400	<0.500	<0.400	5.44
	3/26/2019	<2.00	<5.00	<1.00	<1.00	8.36	<0.400	0.709	117	<0.400	<0.500	0.680	<0.400	<0.500	<0.400	151
	6/3/2019	<2	<5	<0.5	<0.5	7.22	<0.400	0.440	74.7	<0.400	0.520	0.530	<0.400	<0.500	<0.400	157
	6/3/2019 DUP	<2	<5	<0.5	<0.5	7.40	<0.400	0.420	75.6	<0.400	0.610	0.560	<0.400	<0.500	<0.400	144
	9/27/2019	<1.00	<5.00	<1.00	<1.00	5.09	<0.400	<0.400	80.5	<0.400	<0.500	0.497	<0.400	<0.500	<0.400	106
	9/27/2019 DUP	<1.00	<5.00	<1.00	<1.00	5.09	<0.400	0.413	80.4	<0.400	<0.500	0.578	<0.400	<0.500	<0.400	104
	12/4/2019	<1.00	<5.00	<1.00	<1.00	1.63	<0.400	<0.400	2.57	<0.400	<0.500	1.350	<0.400	<0.500	0.45	4.5
	12/4/2019 DUP	<1.00	<5.00	<1.00	<1.00	1.67	<0.400	<0.400	2.66	<0.400	<0.500	1.130	<0.400	<0.500	<0.400	5.79
	3/12/2020	<1.00	<5.00	<1.00	<1.00	12.80	<0.400	2.430	418	0.64	<0.500	0.529	<0.400	<0.500	0.44	330
	6/16/2020	<1.00	<5.00	<1.00	<1.00	3.54	<0.400	<0.400	135	<0.400	0.670	0.660	<0.400	<0.500	<0.400	129
	6/16/2020 DUP	<1.00	<5.00	<1.00	<1.00	3.71	<0.400	<0.400	138	<0.400	0.700	0.600	<0.400	<0.500	<0.400	134
	10/6/2020	<1.00	<5.00	<1.00	<1.00	4.23	<0.400	<0.400	67.2	<0.400	<0.500	0.85	<0.400	<0.500	<0.400	83.9
	10/6/2020 DUP	<1.00	<5.00	<1.00	<1.00	4.38	<0.400	<0.400	66.9	<0.400	<0.500	0.828	<0.400	<0.500	<0.400	84
	12/10/2020	<40.0	<100	<20.0	<20.0	<8.00	<8.00	<8.00	104	<8.00	<10.0	<8.00	<8.00	<10.0	<8.00	131
	12/10/2020 DUP	<40.0	<100	<20.0	<20.0	<8.00	<8.00	<8.00	125	<8.00	<10.0	<8.00	<8.00	<10.0	<8.00	155
	3/4/2021	<1.00	<5.00	<1.00	<1.00	6.69	<0.400	<0.400	111	<0.400	<0.500	0.698	<0.400	<0.500	<0.400	137
	3/4/2021 DUP	<1.00	<5.00	<1.00	<1.00	6.81	<0.400	<0.400	116	<0.400	<0.500	0.617	<0.400	<0.500	<0.400	137
	6/16/2021	<1.00	<5.00	<1.00	<1.00	4.74	<0.400	<0.400	16.3	<0.400	<0.500	0.486	<0.400	<0.500	<0.400	109
	6/16/2021 DUP	<1.00	<5.00	<1.00	<1.00	4.8	<0.400	<0.400	17	<0.400	<0.500	0.466	<0.400	<0.500	<0.400	108
	9/16/2021	<1.00	<5.00	<1.00	<1.00	2.86	<0.400	<0.400	9.61	<0.400	<0.500	0.547	<0.400	<0.500	<0.400	30.7
	9/16/2021 DUP	<1.00	<5.00	<1.00	<1.00	2.86	<0.400	<0.400	9.86	<0.400	<0.500	0.549	<0.400	<0.500	<0.400	30.5
	12/10/2021	<1.00	<5.00	<1.00	<1.00	2.32	<0.400	<0.400	6.02	<0.400	<0.500	0.509	<0.400	<0.500	<0.400	25.7
	12/10/2021 DUP	<1.00	<5.00	<1.00	<1.00	2.13	<0.400	<0.400	5.65	<0.400	<0.500	0.535	<0.400	<0.500	<0.400	24.6
	3/10/2022	<1.00	<5.00	<1.00	<1.00	5.70	<0.400	<0.400	102	<0.400	<0.500	0.510	<0.400	<0.500	<0.400	122
	3/10/2022 DUP	<1.00	<5.00	<1.00	<1.00	6.34	<0.400	0.400	114	<0.400	<0.500	0.870	<0.400	<0.500	0.400	136
	6/14/2022	<1.00	<5.00	<1.00	<1.00	12.8	<0.400	1.85	234	0.560	0.540	0.720	<0.400	<0.500	2.12	267
	6/14/2022	<1.00	<5.00	<1.00	<1.00	12.6	<0.400	1.80	280	0.610	0.520	0.570	<0.400	<0.500	2.15	292
	9/14/2022	<5.00	<25.0	<5.00	<5.00	7.85	<2.00	<2.00	391	<2.00	<2.5	<2.00	<2.00	<2.50	<2.00	171

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MGMS3-4(40) (continued)	9/14/2022 DUP	<5.00	<25.0	<5.00	<5.00	8.9	<2.00	<2.00	391	<2.00	<2.50	<2.00	<2.00	<2.50	<2.00	190
	12/6/2022	<1.00	<5.00	<1.00	<1.00	3.61	<0.400	<0.400	8.19	<0.400	<0.500	0.54	<0.400	<0.500	<0.400	58.5
	12/6/2022 DUP	<1.00	<5.00	<1.00	<1.00	3.78	<0.400	<0.400	7.94	<0.400	<0.500	1.02	<0.400	<0.500	<0.400	59.6
	3/16/2023	<10.0	<50.0	<10.0	<10.0	9.9	<4.00	<4.00	374	<4.00	<5.00	<4.00	<4.00	<5.00	<4.00	270
	3/16/2023 DUP	<10.0	<50.0	<10.0	<10.0	10.2	<4.00	<4.00	394	<4.00	<5.00	<4.00	<4.00	<5.00	<4.00	298
	6/15/2023	<1.00	<5.00	<1.00	<1.00	7.35	<0.400	<0.400	55.7	<0.400	<0.500	0.41	<0.400	<0.500	<0.400	90.1
	6/15/2023 DUP	<1.00	<5.00	<1.00	<1.00	7.81	<0.400	<0.400	56.9	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	92
	9/11/2023	<1.00	<5.00	<1.00	<1.00	3.88	<0.400	<0.400	32.3	<0.400	<0.500	0.410	<0.400	<0.500	<0.400	67.4
	9/11/2023 DUP	<1.00	<5.00	<1.00	<1.00	3.95	<0.400	<0.400	27.0	<0.400	<0.500	0.420	<0.400	<0.500	<0.400	66.0
	12/13/2023	<1.00	<5.00	<1.00	<1.00	7.15	0.420	<0.400	29.2	<0.400	0.580	0.490	<0.400	<0.500	<0.400	173
	12/13/2023 DUP	<1.00	<5.00	<1.00	<1.00	7.99	0.450	<0.400	32.6	<0.400	0.640	0.500	<0.400	<0.500	<0.400	199
	3/4/2024	<2.00	<5.00	<1.00	<1.00	7.74	<0.400	0.780	193	0.480	<0.500	1.34	<0.400	<0.500	0.630	197
	3/4/2024 DUP	<2.00	<5.00	<1.00	<1.00	7.63	<0.400	0.770	183	0.470	<0.500	0.450	<0.400	<0.500	0.440	205
	6/10/2024	<1.00	<5.00	<1.00	<1.00	3.74	<0.400	<0.400	1.95	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	53.4
	6/10/2024 DUP	<1.00	<5.00	<1.00	<1.00	3.82	<0.400	<0.400	2.06	<0.400	<0.500	0.450	<0.400	<0.500	<0.400	54.5
	9/4/2024	<1.00	<5.00	<1.00	<1.00	3.43	<0.400	<0.400	44.8	<0.400	<0.500	0.540	<0.400	<0.500	<0.400	108
	9/4/2024 DUP	<1.00	<5.00	<1.00	<1.00	3.54	<0.400	<0.400	43.5	<0.400	<0.500	0.510	<0.400	<0.500	<0.400	105
	12/2/2024	<1.00	<5.00	<1.00	<1.00	2.45	<0.400	<0.400	0.710	<0.400	<0.500	0.480	<0.400	<0.500	<0.400	12.5
	12/2/2024 DUP	<1.00	<5.00	<1.00	<1.00	2.33	<0.400	<0.400	0.640	<0.400	<0.500 Q-37	0.500	<0.400	<0.500	<0.400	11.5
MGMS3-3(60)	8/30/2000	<1	<5	<0.50	<0.50	<0.50	<0.50	<0.50	7.7	<0.50	<0.50	7.03	<1	--	3.31	<0.50
	11/29/2000	<1	<5	<0.50	<0.50	<0.50	<0.50	<0.50	3.11	<0.50	<0.50	2.8	<1	--	1.28	<0.50
	2/27/2001	<1	<5	<0.50	<0.50	<0.50	<0.50	<0.50	21.5	<0.50	<0.50	14.9	<1	--	7.32	<0.50
	5/31/2001	<1	<5	<0.50	<0.50	<0.50	<0.50	<0.50	10.1	<0.50	<0.50	9.84	<1	--	4.76	<0.50
	9/24/2001	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	7.1	<0.50	<0.50	9.7	<0.50	--	3.7	<0.50
	12/18/2001	<1	<5	<0.50	<0.50	<0.50	<0.50	<0.50	3.26	<0.50	<0.50	17	<1	--	3.84	<0.50
	3/19/2002	<1	<0.50	<0.50	<1	0.68	<0.50	<0.50	17.6	<0.50	<0.50	32.3	0.5	--	14	<0.50
	5/29/2002	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	40.5	<0.50	<0.50	20.8	<0.50	--	7.92	<0.50
	1/23/2003	<1	<0.50	<0.50	<1	0.5	<0.50	<0.50	33.9	<0.50	<0.50	20.3	<0.50	--	12.7	<0.50
	5/28/2003	<1	<0.50	<0.50	<1	0.58	<0.50	<0.50	88.3	0.53	<0.50	16.9	<0.50	--	11.9	0.7
	11/11/2003	<2	<2	<2	<2	<2	<2	<2	298	<2	<2	36.1	<2	--	23	<2
	1/27/2004	<2	<1	<1	<2	1.2	<1	<1	274	1.24	<1	25.2	<1	--	23.4	1.28
	5/3/2004	<2	<2	<2	<2	<2	<2	<2	274	<2	<2	46.6	<2	--	27	<2
	11/15/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	43	<0.50	<0.50	8.8	<0.50	--	3.4	<0.50
	2/1/2005	<2	<1	<1	<2	<1	<1	<1	179	1.72	<1	15.6	<1	--	7.9	<1
	5/16/2005	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	33.8	<0.50	<0.50	5.7	<0.50	--	2.39	<0.50
	8/18/2005	<1	<0.500	<0.500	<1	<0.500	<0.500	<0.500	47.9	<0.500	<0.500	4.39	<0.500	--	1.96	0.66
	11/16/2005	<1	<0.500	<0.500	<1	<0.500	<0.500	<0.500	8.39	<0.500	<0.500	2.59	<0.500	--	0.83	<0.500
	2/21/2006	<5	<2.50	<2.50	<5	2.65	<2.50	<2.50	558	<2.50	<2.50	25	<2.50	--	14.4	21.6

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MGMS3-3(60) (continued)	3/14/2006	<1	<1	<1	<1	2.92	<1	1.37	97.1	<1	<1	50.6	<1	--	39.2	<1
	6/6/2006	<1	<1	<1	<1	<1	<1	<1	7.97	<1	<1	2.84	<1	--	1.04	<1
	9/5/2006	<1	<0.50	<0.50	<1	2.75	<0.50	1.17	108	0.78	<0.50	47.3	0.93	--	34.2	0.65
	12/5/2006	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	19.8	<0.50	<0.50	10.5	<0.50	--	5.57	<0.50
	2/7/2007	<1	<0.50	<0.50	<1	1.08	<0.50	<0.50	44.3	<0.50	<0.50	21.5	<0.50	--	15.4	<0.50
	5/22/2007	<1	<1	<1	<1	<1	<1	<1	32.5	<1	<1	45.2	<1	--	18.2	<1
	9/10/2007	<2	<1	<1	<2	2.98	<1	<1	148	<1	<1	28.8	<1	--	31.6	1.67
	12/12/2007	<2	<1	<1	<2	<1	<1	<1	11.5	<1	<1	4.22	<1	--	1.9	1.18
	3/4/2008	<1	<0.500	<0.500	<1	1.58	<0.500	0.68	72.1	0.6	<0.500	27.2	0.5	<0.500	22.7	2.33
	12/8/2008	<0.50	<0.50	<0.50	<0.50	0.73	<0.50	<0.50	44	<0.50	<0.50	12	<0.50	<0.50	9.2	1.3
	3/24/2009	<0.50	<0.50	<0.50	<0.50	1	<0.50	<0.50	42	<0.50	<0.50	21	<0.50	<0.50	14	0.91
	9/15/2009	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	15	<0.50	<0.50	8.5	<0.50	<0.50	4.3	0.84
	12/14/2009	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	3.8	<0.50	<0.50	2	<0.50	<0.50	0.85	<0.50
	3/17/2010	<0.50	<0.50	<0.50	<0.50	0.69	<0.50	<0.50	25	<0.50	<0.50	17	<0.50	<0.50	10	0.57
	6/14/2010	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	4.8	<0.50	<0.50	2.4	<0.50	<0.50	1.1	0.69
	9/20/2010	<0.5	<0.5	<0.5	<0.5	0.81	<0.5	<0.5	28	<0.5	<0.5	18	<0.5	<0.5	11	0.52
	12/7/2010	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	9	<0.5	<0.5	3.4	<0.5	<0.5	1.5	0.94
	3/7/2011	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	17	<0.50	<0.50	10	<0.50	<0.50	4.6	0.67
	6/6/2011	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	3.9	<0.5	<0.5	2	<0.5	<0.5	0.73	<0.5
	9/13/2011	<0.50	<0.50	<0.50	<0.50	0.94	<0.50	<0.50	34	<0.50	<0.50	17	<0.50	<0.50	12	<0.50
	12/5/2011	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	14	<0.50	<0.50	14	<0.50	<0.50	7.3	<0.50
	3/8/2012	<0.50	<0.50	<0.50	<0.50	0.58	<0.50	<0.50	21	<0.50	<0.50	15	<0.50	<0.50	9	<0.50
	6/21/2012	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	3.9	<0.5	<0.5	3	<0.5	<0.5	1.2	<0.5
	9/12/2012	<0.50	<0.50	<0.50	<0.50	1	<0.50	<0.50	39	<0.50	<0.50	18	<0.50	<0.50	12	<0.50
	12/11/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	3.1	<0.50	<0.50	2.3	<0.50	<0.50	0.9	<0.50
	3/12/2013	<0.50	<0.50	<0.50	<0.50	0.74	<0.50	<0.50	22	<0.50	<0.50	16	<0.50	<0.50	9	<0.50
	6/11/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	16	<0.50	<0.50	11	<0.50	<0.50	5.4	<0.50
	9/16/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	11	<0.50	<0.50	6.8	<0.50	<0.50	3.3	<0.50
	12/10/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	5.1	<0.50	<0.50	3.6	<0.50	<0.50	1.5	<0.50
	3/18/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	4	<0.50	<0.50	2.5	<0.50	<0.50	0.89	<0.50
	6/26/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	4.5	<0.50	<0.50	3.4	<0.50	<0.50	1.4	<0.50
	9/23/2014	<0.50	<0.50	<0.50	<0.50	0.71	<0.50	<0.50	2	<0.50	<0.50	8.8	<0.50	<0.50	4.7	<0.50
	12/12/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.9	<0.50	<0.50	2.2	<0.50	<0.50	0.72	<0.50
	3/18/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	12.2	<0.50	<0.50	6	<0.50	<0.50	3.7	<0.50

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MGMS3-3(60)	6/19/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	6	<0.50	<0.50	3.5	<0.50	<0.50	1.6	<0.50
(continued)	9/22/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	7.7	<0.50	<0.50	3.9	<0.50	<0.50	2	0.6
	12/7/2015	<0.50	<0.50	<0.50	<0.50	0.75	<0.50	<0.50	13.9	<0.50	<0.50	4.2	<0.50	<0.50	2.5	16.7
	3/9/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	1.4	<0.50	<0.50	2.8	<0.50	<0.50	0.78	<0.50
	6/17/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	17.4	<0.50	<0.50	5.8	<0.50	<0.50	5	<0.50
	9/30/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	7.7	<0.50	<0.50	3.7	<0.50	<0.50	1.9	<0.50
	12/16/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	1.4	<0.50	<0.50	1.7	<0.50	<0.50	0.68	<0.50
	3/28/2017	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	0.62	<0.5	<0.5	1.1	<0.5	<0.5	<0.5	<0.5
	6/12/2017	<0.50	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	2.3	<0.50	<0.50	1.3	<0.50	<0.50	0.64	<0.50
	9/26/2017	<2.0	<2.0	<0.50	<0.50	1.20	<1.0	<0.50	34.2	<0.50	<0.50	8.6	<0.50	<0.50	7.80	<0.50
	11/10/2017	<2.0	<2.0	<0.50	<0.50	1.70	<0.50	<0.50	37.6	<0.50	<0.50	0.8	<0.50	<0.50	1.50	13.90
	3/22/2018	<0.500	<2.50	<0.500	<0.500	0.76	<0.500	<0.500	15.6	<0.500	<0.500	2.2	<0.500	<0.500	1.76	5.89
	7/2/2018	<0.500	<2.50 J3	<0.500	<0.500	0.67	<0.500	<0.500	12.7	<0.500	<0.500	2.7	<0.500	<0.500	1.92	3.36
	9/28/2018	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	9.3	<0.400	<0.500	3.3	<0.400	<0.500	2.31	<0.400
	12/10/2018	<1.00	<5.00	<1.00	<1.00	1.21	<0.400	<0.400	17.7	<0.400	<0.500	0.9	<0.400	<0.500	1.16	0.86
	3/26/2019	<2.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	1.23	<0.400	<0.500	1.04	<0.400	<0.500	0.420	<0.400
	6/3/2019	<4.00	<5.00	<1.00	<1.00	0.420	<0.400	<0.400	8.52	<0.400	<0.500	0.790	<0.400	<0.500	0.730	<0.400
	9/27/2019	<1.00	<5.00	<1.00	<1.00	1.130	<0.4	<0.4	21.8	<0.400	<0.500	1.030	<0.400	<0.500	1.230	3.980
	12/4/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	3.62	<0.400	<0.500	1.170	<0.400	<0.500	0.634	<0.400
	3/12/2020	<1.00	<5.00	<1.00	<1.00	0.761	<0.400	<0.400	14.7	<0.400	<0.500	1.660	<0.400	<0.500	1.720	0.659
	6/16/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	3.92	<0.400	<0.500	1.170	<0.400	<0.500	0.510	<0.400
	10/6/2020	<1.00	<5.00	<1.00	<1.00	0.444	<0.400	<0.400	10.9	<0.400	<0.500	2.36	<0.400	<0.500	2.03	<0.400
	12/10/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	5.76	<0.400	<0.500	1.86	<0.400	<0.500	1.11	<0.400
	3/4/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	9.54	<0.400	<0.500	2.44	<0.400	<0.500	1.95	<0.400
	6/16/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	4.65	<0.400	<0.500	1.38	<0.400	<0.500	0.949	<0.400
	9/16/2021	<1.00	<5.00	<1.00	<1.00	0.786	<0.400	<0.400	17.8	<0.400	<0.500	2.06	<0.400	<0.500	1.94	1.59
	12/10/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	1.84	<0.400	<0.500	1.07	<0.400	<0.500	<0.400	0.542
	3/10/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	8.18	<0.400	<0.500	1.60	<0.400	<0.500	1.74	0.410
	6/14/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	0.840	<0.400	<0.500	<0.400	<0.400
	9/14/2022	<1.00	<5.00	<1.00	<1.00	0.45	<0.400	<0.400	15.3	<0.400	<0.500	2.51	<0.400	<0.500	2.62	0.43
	12/6/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	5.2	<0.400	<0.500	1.84	<0.400	<0.500	1.21	0.56
	3/16/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	19.3	<0.400	<0.500	2.73	<0.400	<0.500	2.92	<0.400
	6/15/2023	<1.00	<5.00	<1.00	<1.00	0.42	<0.400	<0.400	9.33	<0.400	<0.500	1.72	<0.400	<0.500	1.19	0.71
	9/11/2023	<1.00	<5.00	<1.00	<1.00	0.400	<0.400	<0.400	17	<0.400	<0.500	2.35	<0.400	<0.500	2.12	<0.200

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MGMS3-3(60) (continued)	12/13/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	0.830	<0.400	<0.500	<0.400	0.200
	3/4/2024	<2.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	6.63	<0.400	<0.500	1.96	<0.400	<0.500	1.57	<0.200
	6/10/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	2.68	<0.400	<0.500	1.43	<0.400	<0.500	0.780	0.350
	9/4/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	7.50	<0.400	<0.500	1.74	<0.400	<0.500	1.24	<0.200
	12/2/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	5.15	<0.400	<0.500	1.51	<0.400	<0.500	0.910	0.410
MGMS3-2(101)	8/30/2000	<10	<50	<5	<5	7.28	<5	<5	120	<5	<5	154	12.1	--	98.2	<5
	11/29/2000	<5	<25	<2.5	<2.5	<2.5	<2.5	<2.5	11.4	<2.5	<2.5	11.5	<5	--	13	<2.5
	2/27/2001	<2	<10	<1	<1	<1	<1	<1	2.4	<1	<1	3.36	<2	--	1.98	<1
	5/31/2001	<1	<5	<0.50	<0.50	<0.50	<0.50	<0.50	4.24	<0.50	<0.50	3.07	<1	--	1.85	<0.50
	9/24/2001	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	3.6	<0.50	<0.50	5.3	<0.50	--	2.4	<0.50
	12/18/2001	<1	<5	<0.50	<0.50	0.864	<0.50	0.913	10.3	<0.50	<0.50	50.9	2.98	--	23.9	<0.50
	3/19/2002	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	4.02	<0.50	<0.50	6.88	<0.50	--	2.54	<0.50
	5/29/2002	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	8.19	<0.50	<0.50	11.5	<0.50	--	3.9	<0.50
	1/23/2003	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	21.2	<0.50	<0.50	17.2	<0.50	--	8.38	<0.50
	5/28/2003	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	28.6	<0.50	<0.50	18.4	<0.50	--	8.76	<0.50
	11/11/2003	<1	<1	<1	<1	<1	<1	<1	53.7	<1	<1	18.3	<1	--	9.3	<1
	1/27/2004	<1	<0.50	<0.50	<1	0.53	<0.50	<0.50	114	0.8	<0.50	24	<0.50	--	15.1	<0.50
	5/3/2004	<1	<1	<1	<1	<1	<1	<1	22.1	<1	<1	6.74	<1	--	4.21	<1
	11/15/2004	<1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	47	<0.50	<0.50	6.3	<0.50	--	2.9	<0.50
	5/16/2005	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	66.5	<0.50	<0.50	3.59	<0.50	--	1.48	0.77
	11/16/2005	<1	<0.500	<0.500	<1	<0.500	<0.500	<0.500	25.3	<0.500	<0.500	4.93	<0.500	--	1.66	0.66
	3/14/2006	<1	<1	<1	<1	<1	<1	<1	23.1	<1	<1	2.91	<1	--	1.14	1.06
	6/6/2006	<1	<1	<1	<1	<1	<1	<1	15.9	<1	<1	3.56	<1	--	1.88	1.06
	12/5/2006	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	32.6	<0.50	<0.50	2.84	<0.50	--	1.17	2.85
	9/10/2007	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	40.4	<0.50	<0.50	6.32	<0.50	--	3.7	13.2
	3/4/2008	<1	<0.500	<0.500	<1	<0.500	<0.500	<0.500	18.1	<0.500	<0.500	3.4	<0.500	<0.500	1.47	5.64
	9/16/2008	<1	<0.500	<0.500	<1	<0.500	<0.500	<0.500	20.4	<0.500	<0.500	6.34	<0.500	<0.500	3.5	4.24
	3/24/2009	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	15	<0.50	<0.50	3	<0.50	<0.50	1.5	2.3
	6/15/2009	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	5.8	<0.50	<0.50	2.4	<0.50	<0.50	1.2	2.2
	9/15/2009	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	14	<0.50	<0.50	3.8	<0.50	<0.50	2.1	3.2
	3/17/2010	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	7	<0.50	<0.50	3.1	<0.50	<0.50	1.8	1.2
	9/20/2010	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	5.5	<0.5	<0.5	3	<0.5	<0.5	1.4	1.2
	3/7/2011	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	5.8	<0.50	<0.50	3.7	<0.50	<0.50	2.2	0.86
	3/8/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	5.9	<0.50	<0.50	5.9	<0.50	<0.50	4.5	<0.50
	9/12/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	4.1	<0.50	<0.50	2.7	<0.50	<0.50	1.3	<0.50
	3/12/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	6.9	<0.50	<0.50	5.6	<0.50	<0.50	4.4	0.59

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MGMS3-2(101) (continued)	9/16/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	3.9	<0.50	<0.50	3.6	<0.50	<0.50	2.1	<0.50
	3/18/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	6.8	<0.50	<0.50	9.1	<0.50	<0.50	6.5	<0.50
	9/23/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	3.7	<0.50	<0.50	3	<0.50	<0.50	1.5	<0.50
	3/18/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	5.1	<0.50	<0.50	4.4	<0.50	<0.50	2.8	<0.50
	9/22/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	5.3	<0.50	<0.50	3.8	<0.50	<0.50	2.6	1.2
	3/9/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	7.3	<0.50	<0.50	7.5	<0.50	<0.50	6.1	<0.50
	9/30/2016	<0.50	<2	<0.50	<0.50	<0.50	<0.50	<0.50	6.5	<0.50	<0.50	4.4	<0.50	<0.50	3	<0.50
	3/28/2017	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	7	<0.5	<0.5	7	<0.5	<0.5	6	<0.5
	9/26/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<1.0	<0.50	5	<0.50	<0.50	0.96	<0.50	<0.50	1	0.9
	11/10/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	2	<0.50	<0.50	2.50	<0.50	<0.50	2	<0.50
	7/1/2018	<0.500	<2.50	<0.500	<0.500	<0.500	<0.500	<0.500	2	<0.500	<0.500	1.82	<0.500	<0.500	1	0.359 J
	9/28/2018	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	2	<0.400	<0.500	1.98	<0.400	<0.500	1	<0.400
	6/3/2019	<4.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	0.930	<0.400	<0.500	1.89	<0.400	<0.500	1.11	<0.400
	12/4/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	0.852	<0.400	<0.500	1.84	<0.400	<0.500	0.958	<0.400
	6/16/2020	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	1.000	<0.400	<0.500	3.01	<0.400	<0.500	1.33	<0.400
	12/10/2020	<2.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	1.45	<0.400	<0.500	<0.400	<0.400
	6/16/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	0.482	<0.400	<0.500	1.34	<0.400	<0.500	0.572	<0.400
	12/10/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	1.480	<0.400	<0.500	3.49	<0.400	<0.500	1.92	<0.400
	6/14/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	3.46	<0.400	<0.500	6.31	<0.400	<0.500	3.61	<0.400
	12/6/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	1.52	<0.400	<0.500	0.46	<0.400
	6/15/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	1.18	<0.400	<0.500	<0.400	<0.400
	12/13/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	1.72	<0.400	<0.500	3.28	<0.400	<0.500	1.90	<0.200
	12/13/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	1.72	<0.400	<0.500	3.28	<0.400	<0.500	1.90	<0.200
	6/10/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	0.400	<0.400	<0.500	1.47	<0.400	<0.500	0.790	<0.200
	12/2/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	1.32	<0.400	<0.500	<0.400	<0.200
MGMS3-1(132)	8/30/2000	<1	<5	<0.50	<0.50	<0.50	<0.50	<0.50	0.53	<0.50	<0.50	5.58	<1	--	0.746	<0.50
	11/29/2000	<1	<5	<0.50	<0.50	<0.50	<0.50	<0.50	2.04	<0.50	<0.50	0.754	<1	--	<0.50	<0.50
	2/27/2001	<1	<5	<0.50	<0.50	<0.50	<0.50	<0.50	1.08	<0.50	<0.50	2.62	<1	--	0.722	<0.50
	5/31/2001	<1	<5	<0.50	<0.50	<0.50	<0.50	<0.50	6.67	<0.50	<0.50	3.13	<1	--	1.44	<0.50
	9/24/2001	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	3.8	<0.50	<0.50	6.1	<0.50	--	1.9	<0.50
	12/18/2001	<1	<5	<0.50	<0.50	<0.50	<0.50	<0.50	4.11	<0.50	<0.50	8.75	<1	--	2.24	<0.50
	3/19/2002	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	4.88	<0.50	<0.50	9.63	<0.50	--	3.02	<0.50
	5/29/2002	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	11.8	<0.50	<0.50	14.6	<0.50	--	4.28	<0.50
	1/23/2003	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	16.8	<0.50	<0.50	11.4	<0.50	--	6.04	<0.50
	5/28/2003	<1	<0.50	<0.50	<1	0.59	<0.50	<0.50	93.3	0.76	<0.50	16.3	<0.50	--	10.1	0.83
	11/11/2003	<1	<1	<1	<1	<1	<1	<1	72.4	<1	<1	12.2	<1	--	8	<1

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MGMS3-1(132)	1/27/2004	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	34.9	0.61	<0.50	12.7	<0.50	--	9.47	<0.50
(continued)	5/3/2004	<1	<1	<1	<1	<1	<1	<1	11.9	<1	<1	<1	<1	--	14.2	<1
	11/15/2004	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	200	<2.5	<2.5	6.2	<2.5	--	3.4	<2.5
	5/16/2005	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	42.6	0.79	<0.50	4.42	<0.50	--	2.23	<0.50
	11/16/2005	<1	<0.500	<0.500	<1	<0.500	<0.500	<0.500	19.9	<0.500	<0.500	2.41	<0.500	--	0.8	<0.500
	3/14/2006	<1	<1	<1	<1	<1	<1	<1	20.3	<1	<1	2.13	<1	--	<1	<1
	6/6/2006	<1	<1	<1	<1	<1	<1	<1	18.6	<1	<1	1.57	<1	--	<1	1.36
	12/5/2006	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	24.1	<0.50	<0.50	3.05	<0.50	--	1.08	4.68
	9/10/2007	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	36.5	<0.50	<0.50	4.69	<0.50	--	3.17	16.8
	3/4/2008	<1	<0.500	<0.500	<1	<0.500	<0.500	<0.500	21.8	<0.500	<0.500	3.37	<0.500	<0.500	1.64	6.83
	9/16/2008	<1	<0.500	<0.500	<1	<0.500	<0.500	<0.500	26	<0.500	<0.500	4.86	<0.500	<0.500	3.52	4.96
	3/24/2009	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	6.3	<0.50	<0.50	1.8	<0.50	<0.50	0.79	2.4
	03/24/2009 DUP	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	5.8	<0.50	<0.50	1.6	<0.50	<0.50	0.78	2.3
	6/15/2009	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	12	<0.50	<0.50	4.3	<0.50	<0.50	1.9	1.6
	9/15/2009	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	7.7	<0.50	<0.50	2.1	<0.50	<0.50	1.2	2
	3/17/2010	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	7.2	<0.50	<0.50	2.6	<0.50	<0.50	1.9	0.92
	9/20/2010	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	6.5	<0.5	<0.5	2.9	<0.5	<0.5	2.3	1.3
	3/7/2011	<0.50	<0.50	<0.50	<0.50	0.64	<0.50	<0.50	18	<0.50	<0.50	4	<0.50	<0.50	3.8	4.3
	9/13/2011	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	5.6	<0.50	<0.50	3.8	<0.50	<0.50	3.4	0.55
	3/8/2012	<0.50	<0.50	<0.50	<0.50	0.5	<0.50	<0.50	9.3	<0.50	<0.50	7	<0.50	<0.50	6.9	0.67
	9/12/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	6	<0.50	<0.50	4.9	<0.50	<0.50	4	<0.50
	3/12/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	9.4	<0.50	<0.50	8.1	<0.50	<0.50	7.2	0.98
	9/16/2013	<0.50	<0.50	<0.50	<0.50	0.58	<0.50	<0.50	9.8	<0.50	<0.50	7.9	<0.50	<0.50	8.1	0.84
	3/18/2014	<0.50	<0.50	<0.50	<0.50	0.62	<0.50	0.51	11	<0.50	<0.50	13	<0.50	<0.50	11	0.76
	9/23/2014	<0.50	<0.50	<0.50	<0.50	0.54	<0.50	<0.50	8.9	<0.50	<0.50	9	<0.50	<0.50	7.9	<0.50
	3/18/2015	<0.50	<0.50	<0.50	<0.50	0.53	<0.50	<0.50	9.3	<0.50	<0.50	6.3	<0.50	<0.50	6	0.56
	9/22/2015	<0.50	<0.50	<0.50	<0.50	0.74	<0.50	<0.50	13.3	<0.50	<0.50	8.1	<0.50	<0.50	8.2	1.2
	3/9/2016	<0.50	<2	<0.50	<0.50	1	<0.50	0.56	14.4	<0.50	<0.50	13.5	0.56	<0.50	12.7	0.8
	9/30/2016	<0.50	<2	<0.50	<0.50	0.84	<0.50	0.54	12.9	<0.50	<0.50	13.8	<0.50	<0.50	11.9	<0.50
	3/28/2017	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	7.9	<0.5	<0.5	13.8	<0.5	<0.5	9.6	<0.5
	9/26/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<1.0	<0.50	3.4	<0.50	<0.50	3.0	<0.50	<0.50	2.8	<0.50
	11/10/2017	<2.0	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	3.3	<0.50	<0.50	5.1	<0.50	<0.50	3.8	<0.50
	7/1/2018	<0.500	<2.50	<0.500	<0.500	0.247 J	<0.500	<0.500	4.0	<0.500	<0.500	5.6	<0.500	<0.500	4.1	0.359 J
	9/28/2018	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	3.5	<0.400	<0.500	3.8	<0.400	<0.500	3.2	<0.400

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MGMS3-1(132) (continued)	6/5/2019	<4.00	<5.00	<1.00	<1.00	0.412	<0.400	<0.400	5.97	<0.400	<0.500	9.45	<0.400	<0.500	6.79	<0.400
	12/4/2019	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	5.34	<0.400	<0.500	8.69	<0.400	<0.500	6.21	<0.400
	6/16/2020	<1.00	<5.00	<1.00	<1.00	0.43	<0.400	<0.400	4.61	<0.400	<0.500	9.87	<0.400	<0.500	6.01	<0.400
	12/10/2020	<2.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	2.73	<0.400	<0.500	3.61	<0.400	<0.500	2.46	<0.400
	12/10/2021	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	4.86	<0.400	<0.500	7.3	<0.400	<0.500	5.35	<0.400
	6/14/2022	<1.00	<5.00	<1.00	<1.00	0.440	<0.400	<0.400	6.23	<0.400	<0.500	11.0	<0.400	<0.500	6.88	<0.400
	12/6/2022	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	1.71	<0.400	<0.500	3.29	<0.400	<0.500	1.85	<0.400
	6/15/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	1.46	<0.400	<0.500	2.83	<0.400	<0.500	1.74	<0.400
	12/13/2023	<1.00	<5.00	<1.00	<1.00	0.480	<0.400	<0.400	5.04	<0.400	<0.500	8.17	<0.400	<0.500	5.20	0.240
	12/13/2023	<1.00	<5.00	<1.00	<1.00	0.480	<0.400	<0.400	5.04	<0.400	<0.500	8.17	<0.400	<0.500	5.20	0.240
	6/10/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	2.40	<0.400	<0.500	3.35	<0.400	<0.500	2.69	<0.200
	12/2/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	0.570	<0.400	<0.500	1.61	<0.400	<0.500	0.820	<0.200
CMT1-1	11/11/2003	<1	<1	2.87	<1	<1	<1	<1	<1	<1	<1	<1	<1	--	<1	<1
	1/26/2004	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--	<0.50	<0.50
	5/3/2004	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	--	<1	<1
	8/19/2004	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--	<0.50	<0.50
	11/17/2004	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	--	<5	<5
	3/23/2005	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--	<0.50	<0.50
	5/17/2005	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--	<0.50	<0.50
	11/17/2005	<1	<0.500	<0.500	<1	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	--	<0.500	<0.500
CMT1-2	5/26/2006	Well Abandoned														
	11/11/2003	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	--	<1	<1
	1/26/2004	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.75	<0.50	--	1.03	<0.50
	5/3/2004	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	--	<1	<1
	8/19/2004	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--	<0.50	<0.50
	11/17/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.7	<0.50	--	0.88	<0.50
	2/1/2005	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.37	<0.50	--	0.99	<0.50
	5/16/2005	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.77	<0.50	--	0.69	<0.50
	11/17/2005	<1	<0.500	<0.500	<1	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	0.6	<0.500	--	<0.500	<0.500
	5/26/2006	Well Abandoned														
CMT1-3	11/11/2003	<2	<2	3.56	<2	<2	<2	<2	<2	<2	<2	<2	<2	--	<2	<2
	1/26/2004	<1	<0.50	1.1	<1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--	<0.50	<0.50
	5/3/2004	<1	<1	2.97	<1	<1	<1	<1	<1	<1	<1	<1	<1	--	<1	<1
	8/19/2004	<1	<0.50	2.16	<1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--	<0.50	<0.50

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
CMT1-3	11/17/2004	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	--	<25	<25
(continued)	5/16/2005	<1	<0.50	<0.50	<1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.6	<0.50	--	<0.50	<0.50
	11/17/2005	<1	<0.500	<0.500	<1	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	--	<0.500	<0.500
	5/26/2006	Well Abandoned														
EX	2/6/2007	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	68.2	<10.0	<10.0	2,810	40.0	<10.0	564	<10.0
	12/9/2008	<15	<15	<15	<15	54	<15	<15	490	<15	<15	4,500	71	<15	830	<15
	3/23/2009	<5	<5	<5	<5	<5	<5	<5	50	<5	<5	1,400	43	<5	420	<5
	6/18/2009	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	4.2	<0.50	<0.50	24	1.1	<0.50	11	<0.50
	9/18/2009	<0.50	<0.50	<0.50	<0.50	4.1	<0.50	3.3	120	0.76	<0.50	2,100	38	<0.50	380	1.1
	12/18/2009	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	5.6	<2.5	<2.5	700	3.7	<2.5	56	<2.5
	3/16/2010	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	20	<0.50	<0.50	150	3.2	<0.50	33	<0.50
	6/17/2010	<0.50	<0.50	<0.50	<0.50	0.97	<0.50	<0.50	92	<0.50	<0.50	150	2.3	<0.50	39	2.2
	9/23/2010	<0.5	<0.5	<0.5	<0.5	1.5	<0.5	1.6	90	0.53	<0.5	2,400	20	<0.5	220	1.8
	12/21/2010	<0.5	<0.5	<0.5	<0.5	0.83	<0.5	0.59	30	<0.50	<0.5	900	6.7	<0.5	99	0.71
	3/31/2011	<4	<4	<4	<4	8.2	<4	8.1	240	<4	<4	6,800	110	<4	910	5.1
	6/7/2011	<4	<4	<4	<4	<4	<4	<4	140	<4	<4	1,400	15	<4	170	<4
	9/19/2011	<5	<5	<5	<5	7.9	<5	11	290	<5	<5	4,100	73	<5	460	14
	12/7/2011	<5	<5	<5	<5	16	<5	19	12,000	9.3	<5	<50	17	<5	<50	140
	3/9/2012	<4	<4	<4	<4	5	<4	<4	1,400	8.6	<4	33	<4	<4	10	290
	6/22/2012	<0.5	5.5	<0.5	<0.5	3.4	<0.5	0.68	170	1.3	<0.5	3	0.59	<0.5	1.1	120
	9/14/2012	<1.5	2.7	<1.5	<1.5	1.5	<1.5	<1.5	320	<1.5	<1.5	3	<1.5	<1.5	<1.5	42
	12/14/2012	<0.50	1.4	<0.50	<0.50	<0.50	<0.50	<0.50	26	<0.50	<0.50	0.87	<0.50	<0.50	<0.50	12
	3/15/2013	<0.50	2.8	<0.50	<0.50	<0.50	<0.50	<0.50	9.5	<0.50	<0.50	1.2	<0.50	<0.50	<0.50	4.4
	6/14/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.6	<0.50	<0.50	0.79	<0.50	<0.50	<0.50	<0.50
	9/20/2013	<0.50	1.9	<0.50	<0.50	1.9	<0.50	0.54	71	0.68	<0.50	4.1	<0.50	<0.50	2.6	30
	12/16/2013	<0.50	1.4	<0.50	<0.50	3.8	<0.50	<0.50	34	<0.50	<0.50	2	<0.50	<0.50	1.4	28
	3/24/2014	<0.50	<0.50	<0.50	<0.50	0.8	<0.50	<0.50	30	<0.50	<0.50	20	<0.50	<0.50	7.5	11
	6/23/2014	<0.50	<0.50	<0.50	<0.50	2.9	<0.50	1.1	160	0.97	<0.50	29	<0.50	<0.50	15	38
	9/30/2014	Insufficient water for sampling .														
	12/15/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	10	<0.50	<0.50	22	<0.50	<0.50	2.7	<0.50
	3/19/2015	<0.50	<0.50	<0.50	<0.50	3.5	<0.50	2.1	688	1.9	<0.50	168	2.5	<0.50	55.8	2.8
	6/18/2015	<0.50	<0.50	<0.50	<0.50	2.6	<0.50	2.6	420	1.6	<0.50	186	0.88	<0.50	42	3.2
	9/22/2015	<0.50	<0.50	<0.50	<0.50	2.9	<0.50	3.7	543	2.6	<0.50	302	0.65	<0.50	61.9	24.4
	12/8/2015	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	427	<0.50	<0.50	94	<0.50	<0.50	21.3	2.1

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
EX (continued)	3/8/2016	<1.2	<5	<1.2	<1.2	4	<1.2	2.9	1,160	3.6	<1.2	274	5	<1.2	71.1	13.3
	6/17/2016	<5	<20	<5	<5	<5	<5	<5	1,040	<5	<5	592	<5	<5	90.8	<5
	9/28/2016	<1.7	<6.7	<1.7	<1.7	4.6	<1.7	3.5	2,230	3.8	<1.7	39.4	2.5	<1.7	549	128
	12/12/2016	<0.50	3.7	<0.50	<0.50	<0.50	<0.50	<0.50	8.1	<0.50	<0.50	4.3	<0.50	<0.50	0.96	51.9
	3/28/2017	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	5.2	<0.5	<0.5	6.1	<0.5	<0.5	1.9	<0.5
	6/14/2017	<2.0	10.2	<0.50	<0.50	10.7	<1.0	<0.50	11.7	0.56	<0.50	9.5	<0.50	<0.50	3.0	1.3
	9/26/2017	<2.0	3.4	<0.50	<0.50	8.8	<1.0	<0.50	6.9	<0.50	<0.50	0.8	<0.50	<0.50	0.6	10.1
	3/21/2018	<0.500	1.45 J	<0.500	<0.500	1.3	<0.500	<0.500	22.6	<0.500	<0.500	1.5	<0.500	<0.500	2.7	10.8
	6/28/2018	<0.500	42.9	<0.500	<0.500	4.6	<0.500	1.11	722.0	8.72	<0.500	1.9	<0.500	<0.500	0.8	424.0
	9/24/2018	<1.00	<5.00	<1.00	<1.00	1.4	<0.400	<0.400	3.4	0.75	<0.500	3.1	<0.400	<0.500	2.4	7.6
	12/4/2018	<1.00	<5.00	<1.00	<1.00	0.9	<0.400	<0.400	8.2	<0.400	<0.500	6.4	<0.400	<0.500	3.6	1.9
	6/17/2021	<1.00	<5.00	<1.00	<1.00	4.55	<0.400	3.90	415	2.33	<0.500	4,570	12.4	<0.500	322	22.2
	9/16/2021	<1.00	<5.00	<1.00	<1.00	11.3	<0.400	7.65	739	6.50	<0.500	2,940	7.80	<0.500	380	20.6
	12/10/2021	<1.00	<5.00	<1.00	<1.00	3.1	<0.400	3.73	198	1.55	<0.500	4,900	10.60	<0.500	268	6.8
	3/8/2022	<1.00	<5.00	<1.00	<1.00	3.27	<0.400	4.40	224	1.74	<0.500	6,930	19.8	<0.500	321	9.0
	6/16/2022	<10.0	<50.0	<10.0	<10.0	22.7	<4.00	7.80	412	8.50	<5.00	1,590	7.20	<5.00	344	7.30
	9/14/2022	<50.0	<250	<50.0	<50.0	<20.0	<20.0	<20.0	466	<20.0	<25.0	2340	<20.0	<25.0	224	24.5
	12/8/2022	<50.0	<250	<50.0	<50.0	<20.0	<20.0	<20.0	608	<20.0	<25.0	4040	<20.0	<25.0	334	<20.0
	3/15/2023	<50.0	<250	<50.0	<50.0	<20.0	<20.0	<20.0	677	<20.0	<25.0	2860	<20.0	<25.0	276	<20.0
	6/14/2023	<50.0	<250	<50.0	<50.0	<20.0	<20.0	<20.0	944	<20.0	<25.0	3120	<20.0	<25.0	402	<20.0
	9/12/2023	<40.0	<100	<20.0	<20.0	<8.00	<8.00	<8.00	562	<8.00	<10.0	2290	<8.00	<10.0	198	6.80
	12/14/2023	<20.0	<100	<20.0	<20.0	<8.00	<8.00	<8.00	83.6	<8.00	<10.0	2450	10.2	<10.0	148	<4.00
	3/6/2024	<2.00	<10.0	<2.00	<2.00	<8.00	<8.00	<8.00	436	<8.00	<10.0	2060	8.60	<10.0	214	5.40
	6/13/2024	<1.00	<5.00	<1.00	<1.00	<4.00	<4.00	<4.00	141	<4.00	<5.00	1850	<4.00	<5.00	113	2.20
	9/4/2024	<10.0	<50.0	<10.0	<10.0	4.50	<4.00	4.50	625	4.50	<5.00	2,060	7.20	<5.00	212	4.40
	12/3/2024	<10.0	<50.0	<10.0	<10.0	<4.00	<4.00	<4.00	248	<4.00	<5.00	2,870	5.70	<5.00	200	6.70
MP-1	2/6/2007	<10.0	<5.00	<5.00	<10.0	18.4	<5.00	<5.00	347	8.50	<5.00	1,610	11.2	<5.00	421	23.6
	12/9/2008	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	70	<5.0	<5.0	1,600	10	<5.0	230	<5.0
	3/23/2009	<4	<4	<4	<4	6	<4	<4	89	<4	<4	1,200	10	<4	180	<4
	6/18/2009	<4	<4	<4	<4	4.3	<4	<4	43	<4	<4	1,500	12	<4	180	<4
	9/18/2009	<4	<4	<4	<4	14	<4	<4	240	8.9	<4	1,100	8.2	<4	310	7.3
	12/18/2009	<4	<4	<4	<4	<4	<4	<4	58	<4	<4	1,000	7.1	<4	180	<4
	3/16/2010	<3	<3	<3	<3	22	<3	4.7	410	13	<3	1,500	8.6	<3	400	10
	6/17/2010	<3	<3	<3	<3	3.2	<3	<3	120	<3	<3	800	5.4	<3	140	<3

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MP-1	9/23/2010	<3	<3	<3	<3	<3	<3	<3	41	<3	<3	730	4	<3	120	<3
(continued)	12/10/2010	<3	<3	<3	<3	<3	<3	<3	27	<3	<3	1,000	4.5	<3	150	<3
	3/14/2011	<3	<3	<3	<3	7.1	<3	<3	150	<3	<3	1,200	6.4	<3	180	5.9
	6/7/2011	<2.5	<2.5	<2.5	<2.5	4.9	<2.5	<2.5	75	<2.5	<2.5	640	3.3	<2.5	130	<2.5
	9/19/2011	<1.5	<1.5	<1.5	<1.5	2.4	<1.5	<1.5	41	<1.5	<1.5	300	1.9	<1.5	72	1.6
	12/7/2011	<2.5	<2.5	<2.5	<2.5	2.6	<2.5	<2.5	49	3.1	<2.5	640	3.1	<2.5	120	<2.5
	3/9/2012	<1.5	<1.5	<1.5	<1.5	9.4	<1.5	2.8	440	6.3	<1.5	490	3.5	<1.5	140	21
	6/22/2012	<2.5	<2.5	<2.5	<2.5	5.6	<2.5	2.8	530	2.9	<2.5	690	12	<2.5	120	48
	9/14/2012	<1.5	<1.5	<1.5	<1.5	4	<1.5	<1.5	170	2.2	<1.5	340	2	<1.5	83	4.5
	12/14/2012	<0.90	<0.90	<0.90	<0.90	2	<0.90	<0.90	170	1.7	<0.90	230	1	<0.90	48	1.8
	3/15/2013	<0.90	<0.90	<0.90	<0.90	5.1	<0.90	0.94	140	2.5	<0.90	230	1	<0.90	69	1.8
	6/14/2013	<0.90	<0.90	<0.90	<0.90	4.5	<0.90	1.4	190	1.6	<0.90	330	1.4	<0.90	70	1.8
	9/20/2013	<0.90	<0.90	<0.90	<0.90	2.9	<0.90	<0.90	77	1.5	<0.90	260	0.95	<0.90	66	<0.90
	12/16/2013	<0.90	<0.90	<0.90	<0.90	1.7	<0.90	1.1	67	0.92	<0.90	290	1.2	<0.90	70	<0.90
	3/24/2014	<1.5	<1.5	<1.5	<1.5	2.2	<1.5	<1.5	240	<1.5	<1.5	360	1.8	<1.5	54	<1.5
	6/23/2014	<1.5	<1.5	<1.5	<1.5	4.9	<1.5	2.3	290	1.7	<1.5	1,200	9.5	<1.5	130	5
	9/30/2014	<2	<2	<2	<2	2.8	<2	<2	110	<2	<2	360	<2	<2	63	16
	12/15/2014	<1.5	<1.5	<1.5	<1.5	1.7	<1.5	<1.5	58	<1.5	<1.5	320	<1.5	<1.5	59	<1.5
	3/20/2015	<1	<1	<1	<1	3.6	<1	1.5	188	1.5	<1	565	1	<1	95.6	24.8
	6/18/2015	<0.84	<0.84	<0.84	<0.84	2.9	<0.84	1.5	91	0.87	<0.84	376	<0.84	<0.84	80.8	<0.84
	9/22/2015	<1.2	<1.2	<1.2	<1.2	1.8	<1.2	1.4	38.3	<1.2	<1.2	343	<1.2	<1.2	68.3	<1.2
	12/8/2015	<1.2	<1.2	<1.2	<1.2	1.8	<1.2	1.5	50.9	<1.2	<1.2	308	<1.2	<1.2	62.6	<1.2
	3/8/2016	<0.84	<3.3	<0.84	<0.84	7.5	<0.84	2.1	148	1.2	<0.84	433	<0.84	<0.84	100	<0.84
	6/17/2016	<0.50	<2	<0.50	<0.50	5	<0.50	1.5	125	0.97	<0.50	206	<0.50	<0.50	67.3	<0.50
	9/28/2016	<0.50	<2	<0.50	<0.50	1.3	<0.50	3.1	40.5	<0.50	<0.50	99.4	<0.50	<0.50	35.5	3.3
	12/13/2016	<0.50	<2	<0.50	<0.50	0.64	<0.50	0.92	209	0.55	<0.50	2.9	<0.50	<0.50	1	4.3
	3/30/2017	<0.5	71.4	<0.5	<0.5	7.5	<0.5	<0.5	177	6	<0.5	<0.5	<0.5	<0.5	0.79	186
	6/14/2017	<2.0	4.0	<0.50	<0.50	2.3	<1.0	<0.50	143	1.9	<0.50	16.2	<0.50	<0.50	8.5	29.4
	9/26/2017	<2.0	<2.0	<0.50	<0.50	3.4	<1.0	4.50	83	0.8	<0.50	307.0	<0.50	<0.50	65.9	2.3
	11/9/2017	<2.0	<2.0	<0.50	<0.50	3.3	<0.50	4.30	105	0.9	<0.50	198.0	<0.50	<0.50	74.0	2.6
	3/21/2018	<0.500	<2.50	<0.500	<0.500	3.2	<0.500	4.04	151	1.0	<0.500	245.0	<0.500	<0.500	64.5	1.6
	6/28/2018	<0.500	<2.50	<0.500	<0.500	10.2	<0.500	9.34	353	1.7	<0.500	747.0	0.56	<0.500	140.0	5.3
	9/26/2018	<20.0	<100	<20.0	<20.0	<8.00	<8.00	<8.00	60	<8.00	<10.0	322.0	<8.00	<10.0	57.0	<8.00
	12/4/2018	<1.00	<5.00	<1.00	<1.00	<0.400	2.79	6.59	130	0.8	<0.500	355.0	<0.400	<0.500	76.7	1.2

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
MP-1 (continued)	3/20/2019	<2.00	<5.00	<1.00	<1.00	1.43	<0.400	3.08	69.0	<0.400	<0.500	146	<0.400	<0.500	36.6	1.55
	6/7/2019	<10	<100	<10	<10	<8.00	<8.00	<8.00	205	<8.00	<10.0	769	<8.00	<10.0	111	<8.00
	9/26/2019	<2.00	<5.00	<2.00	<2.00	1.36	<0.800	1.14	37.1	<0.800	<1.00	176	<0.800	<1.00	26.8	<0.800
	12/3/2019	<2.00	<10.0	<2.00	<2.00	1.57	<0.800	1.8	40.6	<0.800	<1.00	306	<0.800	<1.00	57.8	<0.800
	3/11/2020	<2.00	<10.0	<2.00	<2.00	3.94	<0.800	5.63	177	1.14	<1.00	1370	1.77	<1.00	190	<0.800
	6/17/2020	<10.0	<50.0	<10.0	<10.0	<4.00	<4.00	<4.00	72	<4.00	<5.00	427	<4.00	<5.00	61.2	<4.00
	10/8/2020	<5.00	<25.0	<5.00	<5.00	<2.00	<2.00	<2.00	36.7	<2.00	<2.50	510	<2.00	<2.50	52.3	<2.00
	12/9/2020	<4.00	<10.0	<2.00	<2.00	1.15	<0.800	<0.800	29.5	<0.800	<1.00	362	<0.800	<1.00	41.3	<0.800
	3/3/2021	<5.00	<25.0	<5.00	<5.00	<2.00	<2.00	2.34	70.1	<2.00	<2.5	831	<2.00	<2.5	100	<2.00
	6/16/2021	<10.0	<50.0	<10.0	<10.0	<0.400	<0.400	<0.400	70.7	<4.00	<5.00	309	<4.00	<5.00	52	<4.00
	9/15/2021	<2.00	<10.0	<2.00	<2.00	1.67	<0.800	1.27	38.1	<0.800	<1.00	392	<0.800	<1.00	63.8	<0.800
	12/8/2021	<5.00	<25.0	<5.00	<5.00	<0.400	<2.00	<2.00	9.16	<2.00	<2.50	152	<2.00	<2.50	29.2	<2.00
	3/9/2022	<5.00	<25.0	<5.00	<5.00	<2.00	<2.00	<2.00	33.4	<2.00	<2.50	322	<2.00	<2.50	59.0	<2.00
	6/14/2022	<5.00	<25.0	<5.00	<5.00	<2.00	<2.00	<2.00	40.0	<2.00	<2.50	417	<2.00	<2.50	41.9	<2.00
	9/14/2022	<5.00	<25.0	<5.00	<5.00	<2.00	<2.00	<2.00	24.6	<2.00	<2.50	470	<2.00	<2.50	39.4	<2.00
	12/7/2022	<5.00	<25.0	<5.00	<5.00	<2.00	<2.00	<2.00	27.6	<2.00	<2.50	436	<2.00	<2.50	56.8	<2.00
	3/17/2023	<5.00	<25.0	<5.00	<5.00	<2.00	<2.00	<2.00	11.1	<2.00	<2.50	199	<2.00	<2.50	26.1	<2.00
	6/15/2023	<5.00	<25.0	<5.00	<5.00	3.3	<2.00	<2.00	65.9	<2.00	<2.50	1000	2.850	<2.50	85	<2.00
	9/13/2023	<4.00	<10.0	<2.00	<2.00	<0.800	<0.800	<0.800	13.4	<0.800	<1.00	277	<0.800	<1.00	31.9	<0.800
	12/15/2023	<2.00	<10.0	<2.00	<2.00	<0.800	<0.800	<0.800	6.76	<0.800	<1.00	189	<0.800	<1.00	29.6	<0.400
	3/7/2024	<1.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	9.85	<1.00	<1.25	224	<1.00	<1.25	35.0	<0.500
	6/13/2024	<2.50	<12.5	<2.50	<2.50	<1.00	<1.00	<1.00	10.0	<1.00	<1.25	159	<1.00	<1.25	35.6	<0.500
	9/3/2024	<2.00	<10.0	<2.00	<2.00	<0.800	<0.800	<0.800	4.14	<0.800	<1.00	164	<0.800	<1.00	23.9	<0.400
	12/4/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	0.440	4.78	<0.400	<0.500	168	0.470	<0.500	24.3	<0.200
MP-3	6/28/2018	<0.500	<2.50	<0.500	<0.500	5.24	<0.500	1.78	203	1.31	<0.500	398	1.82	<0.500	65.1	8.96
	9/27/2018	<1.00	<5.00	<1.00	<1.00	4.06	<0.400	3.52	187	1.60	<0.500	721	0.950	<0.500	148	0.730
NKW-1	12/12/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	3.50	<0.400	<0.500	33.8	<0.400	<0.500	11.4	<0.200
	3/5/2024	<25.0	<125	<25.0	<25.0	16.4	<4.00	<4.00	166	<4.00	<5.00	250	<4.00	<5.00	74.8	10.4
	6/11/2024	<1.00	<5.00	<1.00	<1.00	3.05	<0.400	0.64	47.2	<0.400	<0.500	84.3	<0.400	<0.500	27	0.29
	9/3/2024	<1.00	<5.00	<1.00	<1.00	32.4	<0.400	8.08	424	3.07	<0.500	807	2.33	<0.500	238	132
	12/3/2024	<1.00	<5.00	<1.00	<1.00	5.98	<0.400	2.02	134	0.970	<0.500	128	<0.400	<0.500	44.0	7.55

Appendix B

Historical Groundwater Analytical Results

NuStar Vancouver Facility

Vancouver, Washington

Well Number	Sample Date	Concentrations in µg/L (ppb)														
		Bromo-form	Chloro-ethane	Chloro-form	Dibromo-chloro-methane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	Tetra-chloro-ethene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Vinyl Chloride
NKW-2	12/12/2023	<1.00	<5.00	<1.00	<1.00	3.72	<0.400	2.53	147	1.03	<0.500	109	1.40	<0.500	110	0.220
	3/5/2024	<20.0	<50.0	<10.0	<10.0	89.9	<4.00	33.5	4010	41.8	<5.00	38.3	<4.00	<5.00	80.9	12.1
	6/11/2024	<1.00	<5.00	<1.00	<1.00	66.0	<20.0	29.5	2140	27.0	<25.0	55.0	<20.0	<25.0	107	<10.0
	9/3/2024	<10.0	<50.0	<10.0	<10.0	176	<4.00	64.9	6,880	79.8	<5.00	73.0	<4.00	<5.00	202	36.9
	12/3/2024	<20.0	<100	<20.0	<20.0	47.0	<8.00	25.8	1,620	16.4	<10.0	45.2	<8.00	<10.0	66.4	<4.00
KMW-4	12/13/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	16.9	<0.400	<0.500	11.7	<0.200
	6/10/2024	<1.00	<5.00	<1.00	<1.00	0.940	<0.400	0.600	3.12	<0.400	<0.500	27.4	1.28	<0.500	84.7	<0.200
	9/4/2024	<1.00	<5.00	<1.00	<1.00	1.60	<0.400	1.78	13.2	<0.400	<0.500	71.9	2.22	<0.500	165	<0.200
	12/3/2024	<1.00	<5.00	<1.00	<1.00	0.580	<0.400	<0.400	3.15	<0.400	<0.500	66.9	0.740	<0.500	84.3	<0.200
KMW-5	12/13/2023	<1.00	<5.00	<1.00	<1.00	0.430	<0.400	<0.400	3.16	<0.400	<0.500	0.580	<0.400	<0.500	2.08	3.05
	6/10/2024	<1.00	<5.00	<1.00	<1.00	0.410	<0.400	<0.400	4.81	<0.400	<0.500	<0.400	<0.400	<0.500	0.400	2.29
	9/3/2024	<1.00	<5.00	<1.00	<1.00	0.760	<0.400	0.580	4.05	<0.400	<0.500	<0.400	0.410	<0.500	4.51	2.75
	12/3/2024	<1.00	<5.00	<1.00	<1.00	0.430	<0.400	<0.400	3.10	<0.400	<0.500	<0.400	<0.400	<0.500	0.510	2.99
KMW-6	12/13/2023	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
	6/11/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	<0.400	<0.400	<0.500	<0.400	<0.200
	9/3/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	1.76	<0.400	<0.500	1.83	<0.400	<0.500	20.8	<0.200
	12/3/2024	<1.00	<5.00	<1.00	<1.00	<0.400	<0.400	<0.400	<0.400	<0.400	<0.500	0.680	<0.400	<0.500	1.16	<0.200

Notes:

1. HVOCs = Halogenated volatile organic compounds analysis by U.S. Environmental Protection Agency (EPA) Method 8260B; results reported in micrograms per liter (µg/L).
2. TPH = Total petroleum hydrocarbons in the diesel and heavy oil range analysis by Washington Department of Ecology (WDOE) Method TPH-418.1 Results reported in milligrams per liter (mg/L).
3. -- = Not sampled or not analyzed.
4. < = Not detected at or above the specified laboratory method reporting limit (MRL).
5. B = Estimated concentration based on data quality review—similar detection in associated field blank/equipment blanks (less than 5x difference).
6. J = Estimated concentration based on data quality review.
7. n-Propylbenzene, 1,1,1,2-Tetrachloro-ethane, and 1,1,2-Trichloroethane were detected during the first semi-annual 2008 monitoring event. Refer to Table 3 of the *First Semi-Annual 2008 Groundwater Monitoring Report* for detection concentrations.
8. ND = Not detected and no reporting limit specified.
10. E = Chloroform was detected in the equipment blank during the March 2010 and September 2010 sampling events. Chloroform was flagged with an "E" in samples where the concentration was five times or less than the maximum detection in the equipment blank.
11. * = Well EX was decommissioned during the third quarter 2019 and a replacement well was installed adjacent (offset 3–4 ft) in April 2021. Historically the well has been referred to as EX or EX-1.
12. MW-23i - 3Q23 - R-06 Reporting level raised due to possible carryover from a previous sample.

APPENDIX C
Laboratory Analytical Reports and Data Quality Review

APPENDIX C
DATA QUALITY REVIEW

1.0 INTRODUCTION

This appendix documents the results of a quality assurance/quality control (QA/QC) review of the analytical data for groundwater samples collected during the September and December 2024 groundwater sampling events, and air samples collected during the July, September, and December 2024 soil vapor extraction (SVE) effluent sampling events. The samples were collected at the NuStar Terminals Services, Inc. (NuStar) Vancouver Facility (Facility) in Vancouver, Washington, and submitted to Apex Labs in Tigard, Oregon and Eurofins Air Toxics in Folsom, California. A list of the laboratory reports is presented below. A copy of each analytical laboratory report is included in this appendix.

Report	Report Date	Sample Date	Sampling Event
A4I0784	9/18/2024	9/3/2024	Third Quarter Groundwater Monitoring Event
A4I0826	9/19/2024	9/4/2024	Third Quarter Groundwater Monitoring Event
A4I0873	9/23/2024	9/5/2024	Third Quarter Groundwater Monitoring Event
A4I0904	9/20/2024	9/6/2024	Third Quarter Groundwater Monitoring Event
A4L0816	12/18/2024	12/2/2024	Fourth Quarter Groundwater Monitoring Event
A4L0850	12/19/2024	12/3/2024	Fourth Quarter Groundwater Monitoring Event
A4L0895	12/24/2024	12/4/2024	Fourth Quarter Groundwater Monitoring Event
A4L0966	12/20/2024	12/5/2024	Fourth Quarter Groundwater Monitoring Event
A4L1002	12/24/2024	12/6/2024	Fourth Quarter Groundwater Monitoring Event
2407637	8/6/2024	7/22/24	Soil Vapor Extraction System Monitoring
2409274	9/23/2024	9/3/2024	Soil Vapor Extraction System Monitoring
2412146	12/18/2024	12/2/2024	Soil Vapor Extraction System Monitoring

2.0 DATA VALIDATION

The QA review outlines the applicable QC criteria utilized during the data review process, as well as any deviations from those criteria. Examination and validation of the laboratory summary reports include:

- Analytical preparation and quantitation methods;
- Analytical method holding times;
- Sample handling;
- Chain-of-custody (COC) handling;
- Detection and reporting limits;

- Method blank, field blank, equipment blank and trip blank detections;
- Laboratory control samples, matrix spikes and surrogates to assess laboratory accuracy;
- Laboratory control sample duplicates, matrix spike duplicates and laboratory duplicates to assess laboratory precision; and
- Field duplicates to assess sampling and laboratory precision.

The QA review did not include a review of raw data.

3.0 ANALYTICAL METHODS

Chemical analyses for water samples consisted of halogenated volatile organic compounds (HVOCs) by U.S. Environmental Protection Agency (EPA) Method 8260C. Select groundwater samples were also analyzed for total organic carbon (TOC) by EPA Method 5310, ethene by Method RSK-175, ammonia as nitrogen by EPA Method 4500-NH3 G and nitrate as nitrogen and nitrite as nitrogen by EPA Method 300.0. SVE effluent vapor samples were analyzed for HVOCs using EPA Method TO-15.

4.0 QUALITY ASSURANCE OBJECTIVES AND REVIEW

The general QA objectives for this project were to develop and implement procedures for obtaining, evaluating, and confirming the usability of data of a specified quality for monitoring groundwater quality trends at the Facility. To collect such information, analytical data must have an appropriate degree of accuracy and reproducibility, samples collected must be representative of actual field conditions, and samples must be collected and analyzed using unbroken COC procedures.

Reporting limits and analytical results were compared to action levels for each parameter in the media of concern. Precision, accuracy, representativeness, completeness, and comparability parameters used to indicate data quality are defined below.

Sample Receipt. Groundwater samples were received by the laboratory in good condition and on ice. Volatile organic analysis (VOA) containers for HVOC analysis arrived without headspace. One discrepancy was observed and corrected:

- When sampling containers collected from MW-24d were received, they initially were labeled with the date 12/7/24 when it was actually sampled on 12/6/24. The date was amended to 12/6/2024 and is reflected in Report A4L1002.

Reporting Limits. Detection limits are set by the laboratory and are based on instrumentation abilities, sample matrix, and suggested detection limits by the EPA or the Washington State Department of Ecology (Ecology). In some cases, the detection limits may be raised due to high concentrations of analytes in the samples or matrix interferences. Detection limits were generally consistent with industry standards and below promulgated regulatory standards when possible (if not raised, as previously discussed). Reporting limits were reviewed and are generally acceptable for this project. Reporting limits for individual samples are varied based on the magnitude of the chemical impact. It is not expected that any of the raised detection limits would compromise the usability of the data.

Holding Times. Samples were analyzed within the recommended method holding time with the following exceptions for nitrate nitrogen in the December samples:

- MW-7 and MW-7 DUP (Report A4L0820)
- NKW-2 (Report A4L0820)
- MW-12 and MW-12 DUP (Report A4L0895)
- MW-17 (Report A4L0895)

While the samples were analyzed slightly out of hold time, the data for the well are generally consistent with historical results and/or their field duplicate. The results are considered representative for routine monitoring purposes.

Calibration and Analysis. Calibration verification was outside of acceptable limits for select HVOCs in some sample batches. As the corresponding sample results are below method reporting limits and/or are not considered chemicals of concern (COCs) for this project, no data were flagged. Other calibrations were within the control limits for analytes presented in Table 3.

Method Blanks. A method, or laboratory, blank is a sample prepared in the laboratory along with the actual samples, that is analyzed for the same parameters at the same time. It is used to assess if detected contaminants may have been the result of contamination of the samples in the laboratory. No analytes were detected in the laboratory method blanks for the water analyses; therefore, no sample data were flagged.

Laboratory Control Samples and Laboratory Control Sample Duplicate. Laboratory Control Samples (LCS) and Laboratory Control Sample Duplicates (LCSD) were analyzed to assess the accuracy of the analytical equipment and methods. LCS are prepared from an analyte-free matrix that is then spiked with known levels of the constituents of interest (COI; i.e., a standard). The concentrations are measured, and the results compared to the known spiked levels. This comparison is expressed as percent recovery. The LCS recovery for analytes which have not been identified as site COCs (over the monitoring history of the project) were occasionally outside acceptable limits. The LCS and LCSD recovery for site COCs for each QC batch was within acceptable recovery limits, with the following exceptions:

- Report A4I0784. In sample batch 24I0353, 1,1,1-trichloroethane (1,1,1-TCA) was outside acceptable limits but was not detected in associated sample data. Therefore, no sample data were flagged.
- Report A4L0850. The LCS recovery for 1,1-dichloroethane (1,1-DCA), 1,1-dichloroethene (1,1-DCE), and vinyl chloride (VC) were outside acceptable limits for sample batch 24L0305. No associated sample data were detected; therefore, no sample data were flagged.
- Report A4L0895. The LCS recovery for 1,1-DCE was outside acceptable limits for sample batch 24L0411. No associated sample data were detected; therefore, no sample data were flagged.
- Report A4L0966. The LCS recovery for 1,1-DCE was outside acceptable limits for sample batch 24L0411. 1,1-DCE was detected in the December sample collected from MW-21i-105; therefore, a "Q" qualifier was added to the result. The sample result (0.440 Q micrograms per liter [µg/L]) is generally consistent with historical results.

- Report A4L1002. The LCS recovery for 1,1-DCE was outside acceptable limits for sample batch 24L0429. No associated sample data were detected; therefore, no sample data were flagged.

The LCS is then compared to the LCSD of the same batch and expressed as a relative percent difference (RPD) value. The percent recovery and RPD values are then compared to control limits to assess data quality. The RPDs between the LCS and LCSD were within an acceptable range.

Matrix Spike Analyses. A matrix spike QC sample is used to assess the performance of the analytical method by determining potential matrix interferences. Matrix spike (MS) and matrix spike duplicate (MSD) analyses are performed on one environmental sample per analytical batch. An MS sample uses an environmental sample that is spiked with known concentrations of analytes of interest. The MS is then prepared and analyzed with the same analytical procedures as environmental samples in the analytical batch. The resulting concentration of the MS is then compared to the known—or true—values plus the non-spiked environmental sample concentration. This comparison is expressed as a percent recovery. The MSD is then compared to the MS of the same batch and expressed as an RPD value. The percent recovery and RPD values are then compared to control limits to assess data quality. The MS and MSD recovery for analytes which have not been identified as site COCs (over the monitoring history of the project) were occasionally outside acceptable limits.

The recovery of site COCs from the following MS and MSD samples was outside of control limits:

- Report A4I0784. The MS for 1,1-DCA, 1,1-DCE, cis-1,2-dichloroethene (cis-1,2-DCE), tetrachloroethene (PCE), trichloroethene (TCE), and VC was outside control limits in sample batch A4I0784. Associated data for 1,1-DCA and 1,1-DCE in the September sample collected from MW-13 that were detected but were not flagged as LCS recoveries were within acceptable limits. For sample batch 24I0353, the MS for 1,1,1-TCA was outside control limits. No associated sample data were detected; therefore, no sample data were flagged. For sample batch 24I0150, the MS for ammonia was outside control limits. As LCS recoveries were within acceptable limits, no sample data were flagged.
- Report A4I0826. For sample batch 24I0150, the MS for ammonia was outside control limits. As the LCS recovery was within acceptable limits, no sample data were flagged.
- Report A4L0850. For sample batch 24L0155, the MS for 1,1-DCA, 1,1-DCE, and VC was outside control limits. As the LCS recoveries were within acceptable limits, no sample data were flagged. For sample batch 24L0305, the MS for VC was outside control limits. No associated sample data were detected; therefore, no sample data were flagged. For sample batch 24L0411, the MS for 1,1-DCE was outside control limits. As the LCS recovery was within acceptable limits, no sample data were flagged. For sample batch 24L0148, the MS for nitrate was outside control limits. As the LCS recovery was within acceptable limits, no sample data were flagged. For sample batch 24L0094, the MS for nitrate was outside control limits. As the LCS recovery was within acceptable limits, no sample data were flagged.
- Report A4L0895. For sample batch 24L0411, the MS for 1,1-DCE was outside control limits. As the LCS recovery was within acceptable limits, no sample data were flagged. For sample batch 24L0148, the MS for nitrate was outside control limits. As the LCS recovery was within acceptable limits, no sample data were flagged.

- Report A4L0966. For sample batch 24L0411, the MS for 1,1-DCE was outside control limits. As the LCS recovery was within acceptable limits, no sample data were flagged. For sample batch 24L0537, the MS for 1,1-DCE was outside control limits. As the LCS recovery was within acceptable limits, no sample data were flagged.

The RPD between the corresponding MS and MSD samples was within an acceptable range, indicating that the precision of the analysis process was acceptable for site COCs with the following exceptions:

- Report A4I0784. For sample batch 24I0150, the MSD for ammonia was outside control limits. As LCS recoveries were within acceptable limits, no sample data were flagged.
- Report A4I0826. For sample batch 24I0259, the MS percent recovery for 1,1-DCE, cis-1,2-DCE, and TCE were outside of acceptable limits. As the LCS and MS were within control limits, no sample data were flagged. For sample batch 24I0150, the MSD for ammonia was outside control limits. As LCS recoveries were within acceptable limits, no sample data were flagged.

Calibration verification was outside of acceptable limits for select HVOCs in each sample batch. As the corresponding sample results are below method reporting limits and are not considered chemicals of concern for this project, no data were flagged.

Surrogate Recovery. Surrogates are organic compounds that are similar in chemical composition to the COI and are spiked into environmental and batch QC samples prior to sample preparation and analysis. Surrogate recoveries for environmental samples are used to evaluate matrix interference on a sample-specific basis. Surrogate recoveries were within acceptable control limits.

Laboratory Duplicate. A laboratory duplicate is a second analysis of an environmental sample received by the laboratory, which serves as an internal check on laboratory quality as well as potential variability of the sample matrix. The laboratory duplicate concentration is compared to the primary sample concentration to assess the precision of the analytical method. This comparison can be expressed by the RPD between the original and duplicate samples. The laboratory duplicate sample RPD values for site COCs were within the recommended RPD range, with the following exception:

- Reports A4I0873 and A4I0904. In sample batch 24I0402 (using a non-sample delivery group [SDG] sample), VC was not detected in the laboratory duplicate while it was detected at 2.50 µg/L in the non-SDG QC source sample. VC was not detected in associated samples; therefore, no data have been flagged as a result.

Field Duplicate. A field duplicate is a second field sample collected from a selected monitoring point. Field duplicate samples serve as a check on laboratory quality as well as potential variability of the sample matrix. The field duplicate is analyzed and compared with the primary sample to assess the precision of the analytical method. This comparison can be expressed by the RPD between the primary and duplicate samples. The field duplicate sample RPD values were within the recommended limit of plus/minus 30 percent; therefore, no sample data have been flagged.

Conclusion. In conclusion, the overall QA objectives have been met and the data are of adequate quality for use in this project with appropriate qualifiers.

eurofins | Air Toxics

8/6/2024
Mr. Jeff Pratt
GeoEngineers, Inc. (formerly Cascadia Associates, LLC)
5820 SW Kelly Ave
Unit B
Portland OR 97239

Project Name: Van Main South SVE
Project #: 019001-009-34
Workorder #: 2407637

Dear Mr. Jeff Pratt

The following report includes the data for the above referenced project for sample(s) received on 7/24/2024 at Eurofins Air Toxics LLC.

The data and associated QC analyzed by TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics LLC. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Monica Tran at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Monica Tran

Project Manager

eurofins | Air Toxics

WORK ORDER #: 2407637

Work Order Summary

CLIENT:	Mr. Jeff Pratt GeoEngineers, Inc. (formerly Cascadia Associates, LLC) 5820 SW Kelly Ave Unit B Portland, OR 97239	**BILL TO:**	CORP Accounts Payable GeoEngineers, Inc. 8410 154th Avenue NE Redmond, WA 98052
PHONE:	(503)906-6577	**P.O. #**	0060-002-004
FAX:	(503)906-6567	**PROJECT #**	019001-009-34 Van Main South SVE
DATE RECEIVED:	07/24/2024	**CONTACT:**	Monica Tran
DATE COMPLETED:	08/06/2024		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	PreCarbon_SouthSVE_072224	TO-15	13.3 "Hg	1.9 psi
02A	PostCarbon_SouthSVE_072224	TO-15	11.2 "Hg	1.9 psi
03A	Lab Blank	TO-15	NA	NA
04A	CCV	TO-15	NA	NA
05A	LCS	TO-15	NA	NA
05AA	LCSD	TO-15	NA	NA

CERTIFIED BY: Heidi Hayes DATE: 08/06/24

Technical Director

Cert. No.: AZ Licensure-AZ0775, FL NELAP-E87680, LA NELAP–02089, MN NELAP-2703122, NH NELAP–209223-B, NJ NELAP-CA016, NY NELAP-11291, TX NELAP-T104704434, UT NELAP-CA009332023-16, VA NELAP-12695, WA NELAP-C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program) CA300005-20
Eurofins Environment Testing Northern California, LLC certifies that the test results contained in this report meet all requirements of the 2016 TNI Standard.

This report shall not be reproduced, except in full, without the written approval of Eurofins Air Toxics, LLC.

LABORATORY NARRATIVE
EPA Method TO-15
GeoEngineers, Inc. (formerly Cascadia Associates, LLC)
Workorder# 2407637

Two 6 Liter Summa Canister samples were received on July 24, 2024. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

All Quality Control Limit exceedances and affected sample results are noted by flags. Each flag is defined at the bottom of this Case Narrative and on each Sample Result Summary page. Target compound non-detects in the samples that are associated with high bias in QC analyses have not been flagged.

Dilution was performed on samples PreCarbon_SouthSVE_072224 and PostCarbon_SouthSVE_072224 due to the presence of high level target species.

Definition of Data Qualifying Flags

Ten qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

M - Reported value may be biased due to apparent matrix interferences.

CN - See Case Narrative.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

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Summary of Detected Compounds
EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: PreCarbon_SouthSVE_072224

Lab ID#: 2407637-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
cis-1,2-Dichloroethene	14	56	54	220
Trichloroethene	14	180	72	960
Tetrachloroethene	14	4400	92	30000

Client Sample ID: PostCarbon_SouthSVE_072224

Lab ID#: 2407637-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
trans-1,2-Dichloroethene	1.8	1.9	7.1	7.4
cis-1,2-Dichloroethene	1.8	75	7.1	300
1,1,1-Trichloroethane	1.8	56	9.8	300
Trichloroethene	1.8	460	9.7	2500
Tetrachloroethene	1.8	77	12	520

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Client Sample ID: PreCarbon_SouthSVE_072224

Lab ID#: 2407637-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p080532**	**Date of Collection:**	**7/22/24 7:27:00 AM**
Dil. Factor:	**27.0**	**Date of Analysis:**	**8/6/24 08:07 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	14	Not Detected	67	Not Detected
Freon 114	14	Not Detected	94	Not Detected
Chloromethane	140	Not Detected	280	Not Detected
Vinyl Chloride	14	Not Detected	34	Not Detected
Bromomethane	140	Not Detected	520	Not Detected
Chloroethane	54	Not Detected	140	Not Detected
Freon 11	14	Not Detected	76	Not Detected
Freon 113	14	Not Detected	100	Not Detected
1,1-Dichloroethene	14	Not Detected	54	Not Detected
Acetone	140	Not Detected	320	Not Detected
Carbon Disulfide	54	Not Detected	170	Not Detected
Methylene Chloride	140	Not Detected	470	Not Detected
trans-1,2-Dichloroethene	14	Not Detected	54	Not Detected
1,1-Dichloroethane	14	Not Detected	55	Not Detected
2-Butanone (Methyl Ethyl Ketone)	54	Not Detected	160	Not Detected
cis-1,2-Dichloroethene	14	56	54	220
Chloroform	14	Not Detected	66	Not Detected
1,1,1-Trichloroethane	14	Not Detected	74	Not Detected
Carbon Tetrachloride	14	Not Detected	85	Not Detected
Benzene	14	Not Detected	43	Not Detected
1,2-Dichloroethane	14	Not Detected	55	Not Detected
Trichloroethene	14	180	72	960
1,2-Dichloropropane	14	Not Detected	62	Not Detected
Bromodichloromethane	14	Not Detected	90	Not Detected
cis-1,3-Dichloropropene	14	Not Detected	61	Not Detected
4-Methyl-2-pentanone	14	Not Detected	55	Not Detected
Toluene	27	Not Detected	100	Not Detected
trans-1,3-Dichloropropene	14	Not Detected	61	Not Detected
1,1,2-Trichloroethane	14	Not Detected	74	Not Detected
Tetrachloroethene	14	4400	92	30000
2-Hexanone	54	Not Detected	220	Not Detected
Dibromochloromethane	14	Not Detected	120	Not Detected
1,2-Dibromoethane (EDB)	14	Not Detected	100	Not Detected
Chlorobenzene	14	Not Detected	62	Not Detected
Ethyl Benzene	14	Not Detected	59	Not Detected
m,p-Xylene	27	Not Detected	120	Not Detected
o-Xylene	14	Not Detected	59	Not Detected
Styrene	14	Not Detected	58	Not Detected
Bromoform	14	Not Detected	140	Not Detected
1,1,2,2-Tetrachloroethane	14	Not Detected	93	Not Detected
4-Ethyltoluene	14	Not Detected	66	Not Detected
1,3,5-Trimethylbenzene	14	Not Detected	66	Not Detected

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Client Sample ID: PreCarbon_SouthSVE_072224

Lab ID#: 2407637-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p080532**	**Date of Collection: 7/22/24 7:27:00 AM**	
Dil. Factor:	**27.0**	**Date of Analysis: 8/6/24 08:07 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2,4-Trimethylbenzene	14	Not Detected	66	Not Detected
1,3-Dichlorobenzene	14	Not Detected	81	Not Detected
1,4-Dichlorobenzene	14	Not Detected	81	Not Detected
alpha-Chlorotoluene	14	Not Detected	70	Not Detected
1,2-Dichlorobenzene	14	Not Detected	81	Not Detected
1,2,4-Trichlorobenzene	54	Not Detected	400	Not Detected
Hexachlorobutadiene	54	Not Detected	580	Not Detected
Vinyl Acetate	54	Not Detected	190	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	97	70-130
1,2-Dichloroethane-d4	96	70-130
4-Bromofluorobenzene	91	70-130

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Client Sample ID: PostCarbon_SouthSVE_072224

Lab ID#: 2407637-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p080531**	**Date of Collection:**	**7/22/24 7:38:00 AM**
Dil. Factor:	**3.60**	**Date of Analysis:**	**8/6/24 07:39 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.8	Not Detected	8.9	Not Detected
Freon 114	1.8	Not Detected	12	Not Detected
Chloromethane	18	Not Detected	37	Not Detected
Vinyl Chloride	1.8	Not Detected	4.6	Not Detected
Bromomethane	18	Not Detected	70	Not Detected
Chloroethane	7.2	Not Detected	19	Not Detected
Freon 11	1.8	Not Detected	10	Not Detected
Freon 113	1.8	Not Detected	14	Not Detected
1,1-Dichloroethene	1.8	Not Detected	7.1	Not Detected
Acetone	18	Not Detected	43	Not Detected
Carbon Disulfide	7.2	Not Detected	22	Not Detected
Methylene Chloride	18	Not Detected	62	Not Detected
trans-1,2-Dichloroethene	1.8	1.9	7.1	7.4
1,1-Dichloroethane	1.8	Not Detected	7.3	Not Detected
2-Butanone (Methyl Ethyl Ketone)	7.2	Not Detected	21	Not Detected
cis-1,2-Dichloroethene	1.8	75	7.1	300
Chloroform	1.8	Not Detected	8.8	Not Detected
1,1,1-Trichloroethane	1.8	56	9.8	300
Carbon Tetrachloride	1.8	Not Detected	11	Not Detected
Benzene	1.8	Not Detected	5.8	Not Detected
1,2-Dichloroethane	1.8	Not Detected	7.3	Not Detected
Trichloroethene	1.8	460	9.7	2500
1,2-Dichloropropane	1.8	Not Detected	8.3	Not Detected
Bromodichloromethane	1.8	Not Detected	12	Not Detected
cis-1,3-Dichloropropene	1.8	Not Detected	8.2	Not Detected
4-Methyl-2-pentanone	1.8	Not Detected	7.4	Not Detected
Toluene	3.6	Not Detected	14	Not Detected
trans-1,3-Dichloropropene	1.8	Not Detected	8.2	Not Detected
1,1,2-Trichloroethane	1.8	Not Detected	9.8	Not Detected
Tetrachloroethene	1.8	77	12	520
2-Hexanone	7.2	Not Detected	29	Not Detected
Dibromochloromethane	1.8	Not Detected	15	Not Detected
1,2-Dibromoethane (EDB)	1.8	Not Detected	14	Not Detected
Chlorobenzene	1.8	Not Detected	8.3	Not Detected
Ethyl Benzene	1.8	Not Detected	7.8	Not Detected
m,p-Xylene	3.6	Not Detected	16	Not Detected
o-Xylene	1.8	Not Detected	7.8	Not Detected
Styrene	1.8	Not Detected	7.7	Not Detected
Bromoform	1.8	Not Detected	19	Not Detected
1,1,2,2-Tetrachloroethane	1.8	Not Detected	12	Not Detected
4-Ethyltoluene	1.8	Not Detected	8.8	Not Detected
1,3,5-Trimethylbenzene	1.8	Not Detected	8.8	Not Detected

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Client Sample ID: PostCarbon_SouthSVE_072224

Lab ID#: 2407637-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p080531**	**Date of Collection: 7/22/24 7:38:00 AM**	
Dil. Factor:	**3.60**	**Date of Analysis: 8/6/24 07:39 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2,4-Trimethylbenzene	1.8	Not Detected	8.8	Not Detected
1,3-Dichlorobenzene	1.8	Not Detected	11	Not Detected
1,4-Dichlorobenzene	1.8	Not Detected	11	Not Detected
alpha-Chlorotoluene	1.8	Not Detected	9.3	Not Detected
1,2-Dichlorobenzene	1.8	Not Detected	11	Not Detected
1,2,4-Trichlorobenzene	7.2	Not Detected	53	Not Detected
Hexachlorobutadiene	7.2	Not Detected	77	Not Detected
Vinyl Acetate	7.2	Not Detected	25	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	94	70-130
1,2-Dichloroethane-d4	99	70-130
4-Bromofluorobenzene	98	70-130

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Client Sample ID: Lab Blank

Lab ID#: 2407637-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p080508d**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 8/5/24 12:16 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.50	Not Detected	2.5	Not Detected
Freon 114	0.50	Not Detected	3.5	Not Detected
Chloromethane	5.0	Not Detected	10	Not Detected
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
Bromomethane	5.0	Not Detected	19	Not Detected
Chloroethane	2.0	Not Detected	5.3	Not Detected
Freon 11	0.50	Not Detected	2.8	Not Detected
Freon 113	0.50	Not Detected	3.8	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Acetone	5.0	Not Detected	12	Not Detected
Carbon Disulfide	2.0	Not Detected	6.2	Not Detected
Methylene Chloride	5.0	Not Detected	17	Not Detected
trans-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
1,1-Dichloroethane	0.50	Not Detected	2.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	2.0	Not Detected	5.9	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Chloroform	0.50	Not Detected	2.4	Not Detected
1,1,1-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Carbon Tetrachloride	0.50	Not Detected	3.1	Not Detected
Benzene	0.50	Not Detected	1.6	Not Detected
1,2-Dichloroethane	0.50	Not Detected	2.0	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
1,2-Dichloropropane	0.50	Not Detected	2.3	Not Detected
Bromodichloromethane	0.50	Not Detected	3.4	Not Detected
cis-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
4-Methyl-2-pentanone	0.50	Not Detected	2.0	Not Detected
Toluene	1.0	Not Detected	3.8	Not Detected
trans-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
1,1,2-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected
2-Hexanone	2.0	Not Detected	8.2	Not Detected
Dibromochloromethane	0.50	Not Detected	4.2	Not Detected
1,2-Dibromoethane (EDB)	0.50	Not Detected	3.8	Not Detected
Chlorobenzene	0.50	Not Detected	2.3	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
m,p-Xylene	1.0	Not Detected	4.3	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
Styrene	0.50	Not Detected	2.1	Not Detected
Bromoform	0.50	Not Detected	5.2	Not Detected
1,1,2,2-Tetrachloroethane	0.50	Not Detected	3.4	Not Detected
4-Ethyltoluene	0.50	Not Detected	2.4	Not Detected
1,3,5-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected

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Client Sample ID: Lab Blank

Lab ID#: 2407637-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p080508d**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 8/5/24 12:16 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2,4-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,3-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,4-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
alpha-Chlorotoluene	0.50	Not Detected	2.6	Not Detected
1,2-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,2,4-Trichlorobenzene	2.0	Not Detected	15	Not Detected
Hexachlorobutadiene	2.0	Not Detected	21	Not Detected
Vinyl Acetate	2.0	Not Detected	7.0	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	94	70-130
1,2-Dichloroethane-d4	101	70-130
4-Bromofluorobenzene	93	70-130

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Client Sample ID: CCV

Lab ID#: 2407637-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p080506**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 8/5/24 10:58 AM**	

Compound	%Recovery
Freon 12	108
Freon 114	106
Chloromethane	108
Vinyl Chloride	115
Bromomethane	142 Q
Chloroethane	109
Freon 11	102
Freon 113	100
1,1-Dichloroethene	116
Acetone	112
Carbon Disulfide	103
Methylene Chloride	109
trans-1,2-Dichloroethene	114
1,1-Dichloroethane	105
2-Butanone (Methyl Ethyl Ketone)	112
cis-1,2-Dichloroethene	111
Chloroform	100
1,1,1-Trichloroethane	102
Carbon Tetrachloride	99
Benzene	98
1,2-Dichloroethane	95
Trichloroethene	98
1,2-Dichloropropane	92
Bromodichloromethane	91
cis-1,3-Dichloropropene	106
4-Methyl-2-pentanone	106
Toluene	96
trans-1,3-Dichloropropene	108
1,1,2-Trichloroethane	96
Tetrachloroethene	101
2-Hexanone	114
Dibromochloromethane	97
1,2-Dibromoethane (EDB)	100
Chlorobenzene	100
Ethyl Benzene	110
m,p-Xylene	113
o-Xylene	118
Styrene	119
Bromoform	103
1,1,2,2-Tetrachloroethane	94
4-Ethyltoluene	113
1,3,5-Trimethylbenzene	115

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Client Sample ID: CCV

Lab ID#: 2407637-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p080506**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 8/5/24 10:58 AM**	

Compound	%Recovery
1,2,4-Trimethylbenzene	120
1,3-Dichlorobenzene	109
1,4-Dichlorobenzene	112
alpha-Chlorotoluene	113
1,2-Dichlorobenzene	109
1,2,4-Trichlorobenzene	116
Hexachlorobutadiene	105
Vinyl Acetate	123

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	97	70-130
1,2-Dichloroethane-d4	102	70-130
4-Bromofluorobenzene	106	70-130

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Client Sample ID: LCS

Lab ID#: 2407637-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p080504**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 8/5/24 09:43 AM**	

Compound	%Recovery	Method Limits
Freon 12	106	70-130
Freon 114	105	70-130
Chloromethane	106	70-130
Vinyl Chloride	114	70-130
Bromomethane	140 Q	70-130
Chloroethane	105	70-130
Freon 11	102	70-130
Freon 113	96	70-130
1,1-Dichloroethene	110	70-130
Acetone	111	70-130
Carbon Disulfide	102	70-130
Methylene Chloride	109	70-130
trans-1,2-Dichloroethene	113	70-130
1,1-Dichloroethane	104	70-130
2-Butanone (Methyl Ethyl Ketone)	114	70-130
cis-1,2-Dichloroethene	109	70-130
Chloroform	99	70-130
1,1,1-Trichloroethane	102	70-130
Carbon Tetrachloride	98	70-130
Benzene	104	70-130
1,2-Dichloroethane	100	70-130
Trichloroethene	101	70-130
1,2-Dichloropropane	97	70-130
Bromodichloromethane	93	70-130
cis-1,3-Dichloropropene	107	70-130
4-Methyl-2-pentanone	110	70-130
Toluene	98	70-130
trans-1,3-Dichloropropene	110	70-130
1,1,2-Trichloroethane	100	70-130
Tetrachloroethene	103	70-130
2-Hexanone	115	70-130
Dibromochloromethane	99	70-130
1,2-Dibromoethane (EDB)	102	70-130
Chlorobenzene	102	70-130
Ethyl Benzene	114	70-130
m,p-Xylene	116	70-130
o-Xylene	119	70-130
Styrene	122	70-130
Bromoform	103	70-130
1,1,2,2-Tetrachloroethane	98	70-130
4-Ethyltoluene	113	70-130
1,3,5-Trimethylbenzene	118	70-130

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Client Sample ID: LCS

Lab ID#: 2407637-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p080504**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 8/5/24 09:43 AM**	

Compound	%Recovery	Method Limits
1,2,4-Trimethylbenzene	123	70-130
1,3-Dichlorobenzene	112	70-130
1,4-Dichlorobenzene	114	70-130
alpha-Chlorotoluene	114	70-130
1,2-Dichlorobenzene	112	70-130
1,2,4-Trichlorobenzene	127	70-130
Hexachlorobutadiene	117	70-130
Vinyl Acetate	140 Q	70-130

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	103	70-130
4-Bromofluorobenzene	107	70-130

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Client Sample ID: LCSD

Lab ID#: 2407637-05AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p080505**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 8/5/24 10:13 AM**	

Compound	%Recovery	Method Limits
Freon 12	108	70-130
Freon 114	105	70-130
Chloromethane	108	70-130
Vinyl Chloride	115	70-130
Bromomethane	143 Q	70-130
Chloroethane	106	70-130
Freon 11	103	70-130
Freon 113	96	70-130
1,1-Dichloroethene	110	70-130
Acetone	108	70-130
Carbon Disulfide	102	70-130
Methylene Chloride	108	70-130
trans-1,2-Dichloroethene	113	70-130
1,1-Dichloroethane	105	70-130
2-Butanone (Methyl Ethyl Ketone)	111	70-130
cis-1,2-Dichloroethene	111	70-130
Chloroform	98	70-130
1,1,1-Trichloroethane	103	70-130
Carbon Tetrachloride	98	70-130
Benzene	101	70-130
1,2-Dichloroethane	97	70-130
Trichloroethene	99	70-130
1,2-Dichloropropane	95	70-130
Bromodichloromethane	91	70-130
cis-1,3-Dichloropropene	108	70-130
4-Methyl-2-pentanone	109	70-130
Toluene	96	70-130
trans-1,3-Dichloropropene	108	70-130
1,1,2-Trichloroethane	98	70-130
Tetrachloroethene	102	70-130
2-Hexanone	111	70-130
Dibromochloromethane	96	70-130
1,2-Dibromoethane (EDB)	101	70-130
Chlorobenzene	100	70-130
Ethyl Benzene	113	70-130
m,p-Xylene	114	70-130
o-Xylene	117	70-130
Styrene	120	70-130
Bromoform	101	70-130
1,1,2,2-Tetrachloroethane	96	70-130
4-Ethyltoluene	111	70-130
1,3,5-Trimethylbenzene	116	70-130

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Client Sample ID: LCSD

Lab ID#: 2407637-05AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p080505**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 8/5/24 10:13 AM**	

Compound	%Recovery	Method Limits
1,2,4-Trimethylbenzene	121	70-130
1,3-Dichlorobenzene	109	70-130
1,4-Dichlorobenzene	111	70-130
alpha-Chlorotoluene	112	70-130
1,2-Dichlorobenzene	108	70-130
1,2,4-Trichlorobenzene	131 Q	70-130
Hexachlorobutadiene	119	70-130
Vinyl Acetate	145 Q	70-130

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	102	70-130
4-Bromofluorobenzene	106	70-130

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Method : TO-15 (Sp)-GeoEngineers (NuStar)

CAS Number	Compound	Rpt. Limit (ppbv)
75-71-8	Freon 12	0.50
76-14-2	Freon 114	0.50
74-87-3	Chloromethane	5.0
75-01-4	Vinyl Chloride	0.50
74-83-9	Bromomethane	5.0
75-00-3	Chloroethane	2.0
75-69-4	Freon 11	0.50
76-13-1	Freon 113	0.50
75-35-4	1,1-Dichloroethene	0.50
67-64-1	Acetone	5.0
75-15-0	Carbon Disulfide	2.0
75-09-2	Methylene Chloride	5.0
156-60-5	trans-1,2-Dichloroethene	0.50
75-34-3	1,1-Dichloroethane	0.50
78-93-3	2-Butanone (Methyl Ethyl Ketone)	2.0
156-59-2	cis-1,2-Dichloroethene	0.50
67-66-3	Chloroform	0.50
71-55-6	1,1,1-Trichloroethane	0.50
56-23-5	Carbon Tetrachloride	0.50
71-43-2	Benzene	0.50
107-06-2	1,2-Dichloroethane	0.50
79-01-6	Trichloroethene	0.50
78-87-5	1,2-Dichloropropane	0.50
75-27-4	Bromodichloromethane	0.50
10061-01-5	cis-1,3-Dichloropropene	0.50
108-10-1	4-Methyl-2-pentanone	0.50
108-88-3	Toluene	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50
79-00-5	1,1,2-Trichloroethane	0.50
127-18-4	Tetrachloroethene	0.50
591-78-6	2-Hexanone	2.0
124-48-1	Dibromochloromethane	0.50
106-93-4	1,2-Dibromoethane (EDB)	0.50
108-90-7	Chlorobenzene	0.50
100-41-4	Ethyl Benzene	0.50
108-38-3	m,p-Xylene	1.0
95-47-6	o-Xylene	0.50
100-42-5	Styrene	0.50
75-25-2	Bromoform	0.50
79-34-5	1,1,2,2-Tetrachloroethane	0.50
622-96-8	4-Ethyltoluene	0.50
108-67-8	1,3,5-Trimethylbenzene	0.50
95-63-6	1,2,4-Trimethylbenzene	0.50
541-73-1	1,3-Dichlorobenzene	0.50

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Method : TO-15 (Sp)-GeoEngineers (NuStar)

CAS Number	Compound	Rpt. Limit (ppbv)
106-46-7	1,4-Dichlorobenzene	0.50
100-44-7	alpha-Chlorotoluene	0.50
95-50-1	1,2-Dichlorobenzene	0.50
120-82-1	1,2,4-Trichlorobenzene	2.0
87-68-3	Hexachlorobutadiene	2.0
108-05-4	Vinyl Acetate	2.0

	Surrogate	Method Limits
2037-26-5	Toluene-d8	70-130
17060-07-0	1,2-Dichloroethane-d4	70-130
460-00-4	4-Bromofluorobenzene	70-130

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9/23/2024
Mr. Jeff Pratt
GeoEngineers, Inc. (formerly Cascadia Associates, LLC)
5820 SW Kelly Ave
Unit B
Portland OR 97239

Project Name: Van Main S. SVE
Project #:
Workorder #: 2409274

Dear Mr. Jeff Pratt

The following report includes the data for the above referenced project for sample(s) received on 9/7/2024 at Eurofins Air Toxics LLC.

The data and associated QC analyzed by TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics LLC. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Monica Tran at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Monica Tran

Project Manager

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WORK ORDER #: 2409274

Work Order Summary

CLIENT:	Mr. Jeff Pratt GeoEngineers, Inc. (formerly Cascadia Associates, LLC) 5820 SW Kelly Ave Unit B Portland, OR 97239	**BILL TO:**	CORP Accounts Payable GeoEngineers, Inc. 8410 154th Avenue NE Redmond, WA 98052
PHONE:	(503)906-6577	**P.O. #**	0060-002-004
FAX:	(503)906-6567	**PROJECT #**	Van Main S. SVE
DATE RECEIVED:	09/07/2024	**CONTACT:**	Monica Tran
DATE COMPLETED:	09/23/2024		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	PreCarbon_SouthSVE_090324	TO-15	6.1 "Hg	1.9 psi
02A	PostCarbon_SouthSVE_090324	TO-15	5.1 "Hg	1.9 psi
03A	Lab Blank	TO-15	NA	NA
04A	CCV	TO-15	NA	NA
05A	LCS	TO-15	NA	NA
05AA	LCSD	TO-15	NA	NA

CERTIFIED BY: Heidi Hayes DATE: 09/23/24

Technical Director

Cert. No.: AZ Licensure-AZ0775, FL NELAP-E87680, LA NELAP–02089, MN NELAP-2703122, NH NELAP–209223-B, NJ NELAP-CA016, NY NELAP-11291, TX NELAP-T104704434, UT NELAP-CA009332023-16, VA NELAP-12695, WA NELAP-C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program) CA300005-20
Eurofins Environment Testing Northern California, LLC certifies that the test results contained in this report meet all requirements of the 2016 TNI Standard.

This report shall not be reproduced, except in full, without the written approval of Eurofins Air Toxics, LLC.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000

LABORATORY NARRATIVE
EPA Method TO-15
GeoEngineers, Inc. (formerly Cascadia Associates, LLC)
Workorder# 2409274

Two 6 Liter Summa Canister samples were received on September 07, 2024. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

Dilution was performed on samples PreCarbon_SouthSVE_090324 and PostCarbon_SouthSVE_090324 due to the presence of high level target species.

Definition of Data Qualifying Flags

Ten qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

M - Reported value may be biased due to apparent matrix interferences.

CN - See Case Narrative.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

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Summary of Detected Compounds
EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: PreCarbon_SouthSVE_090324

Lab ID#: 2409274-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
cis-1,2-Dichloroethene	5.6	22	22	86
Trichloroethene	5.6	96	30	520
Tetrachloroethene	5.6	2200	38	15000

Client Sample ID: PostCarbon_SouthSVE_090324

Lab ID#: 2409274-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
cis-1,2-Dichloroethene	3.9	28	15	110
1,1,1-Trichloroethane	3.9	12	21	63
Trichloroethene	3.9	420	21	2300
Tetrachloroethene	3.9	1600	26	10000

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Client Sample ID: PreCarbon_SouthSVE_090324

Lab ID#: 2409274-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p092116**	**Date of Collection:**	**9/3/24 11:45:00 AM**
Dil. Factor:	**11.3**	**Date of Analysis:**	**9/21/24 08:40 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	5.6	Not Detected	28	Not Detected
Freon 114	5.6	Not Detected	39	Not Detected
Chloromethane	56	Not Detected	120	Not Detected
Vinyl Chloride	5.6	Not Detected	14	Not Detected
Bromomethane	56	Not Detected	220	Not Detected
Chloroethane	23	Not Detected	60	Not Detected
Freon 11	5.6	Not Detected	32	Not Detected
Freon 113	5.6	Not Detected	43	Not Detected
1,1-Dichloroethene	5.6	Not Detected	22	Not Detected
Acetone	56	Not Detected	130	Not Detected
Carbon Disulfide	23	Not Detected	70	Not Detected
Methylene Chloride	56	Not Detected	200	Not Detected
trans-1,2-Dichloroethene	5.6	Not Detected	22	Not Detected
1,1-Dichloroethane	5.6	Not Detected	23	Not Detected
2-Butanone (Methyl Ethyl Ketone)	23	Not Detected	67	Not Detected
cis-1,2-Dichloroethene	5.6	22	22	86
Chloroform	5.6	Not Detected	28	Not Detected
1,1,1-Trichloroethane	5.6	Not Detected	31	Not Detected
Carbon Tetrachloride	5.6	Not Detected	36	Not Detected
Benzene	5.6	Not Detected	18	Not Detected
1,2-Dichloroethane	5.6	Not Detected	23	Not Detected
Trichloroethene	5.6	96	30	520
1,2-Dichloropropane	5.6	Not Detected	26	Not Detected
Bromodichloromethane	5.6	Not Detected	38	Not Detected
cis-1,3-Dichloropropene	5.6	Not Detected	26	Not Detected
4-Methyl-2-pentanone	5.6	Not Detected	23	Not Detected
Toluene	11	Not Detected	42	Not Detected
trans-1,3-Dichloropropene	5.6	Not Detected	26	Not Detected
1,1,2-Trichloroethane	5.6	Not Detected	31	Not Detected
Tetrachloroethene	5.6	2200	38	15000
2-Hexanone	23	Not Detected	92	Not Detected
Dibromochloromethane	5.6	Not Detected	48	Not Detected
1,2-Dibromoethane (EDB)	5.6	Not Detected	43	Not Detected
Chlorobenzene	5.6	Not Detected	26	Not Detected
Ethyl Benzene	5.6	Not Detected	24	Not Detected
m,p-Xylene	11	Not Detected	49	Not Detected
o-Xylene	5.6	Not Detected	24	Not Detected
Styrene	5.6	Not Detected	24	Not Detected
Bromoform	5.6	Not Detected	58	Not Detected
1,1,2,2-Tetrachloroethane	5.6	Not Detected	39	Not Detected
4-Ethyltoluene	5.6	Not Detected	28	Not Detected
1,3,5-Trimethylbenzene	5.6	Not Detected	28	Not Detected

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Client Sample ID: PreCarbon_SouthSVE_090324

Lab ID#: 2409274-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p092116**	**Date of Collection: 9/3/24 11:45:00 AM**	
Dil. Factor:	**11.3**	**Date of Analysis: 9/21/24 08:40 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2,4-Trimethylbenzene	5.6	Not Detected	28	Not Detected
1,3-Dichlorobenzene	5.6	Not Detected	34	Not Detected
1,4-Dichlorobenzene	5.6	Not Detected	34	Not Detected
alpha-Chlorotoluene	5.6	Not Detected	29	Not Detected
1,2-Dichlorobenzene	5.6	Not Detected	34	Not Detected
1,2,4-Trichlorobenzene	23	Not Detected	170	Not Detected
Hexachlorobutadiene	23	Not Detected	240	Not Detected
Vinyl Acetate	23	Not Detected	80	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
1,2-Dichloroethane-d4	89	70-130
4-Bromofluorobenzene	97	70-130

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Client Sample ID: PostCarbon_SouthSVE_090324

Lab ID#: 2409274-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p092118**	**Date of Collection:**	**9/3/24 11:55:00 AM**
Dil. Factor:	**7.77**	**Date of Analysis:**	**9/21/24 11:12 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	3.9	Not Detected	19	Not Detected
Freon 114	3.9	Not Detected	27	Not Detected
Chloromethane	39	Not Detected	80	Not Detected
Vinyl Chloride	3.9	Not Detected	9.9	Not Detected
Bromomethane	39	Not Detected	150	Not Detected
Chloroethane	16	Not Detected	41	Not Detected
Freon 11	3.9	Not Detected	22	Not Detected
Freon 113	3.9	Not Detected	30	Not Detected
1,1-Dichloroethene	3.9	Not Detected	15	Not Detected
Acetone	39	Not Detected	92	Not Detected
Carbon Disulfide	16	Not Detected	48	Not Detected
Methylene Chloride	39	Not Detected	130	Not Detected
trans-1,2-Dichloroethene	3.9	Not Detected	15	Not Detected
1,1-Dichloroethane	3.9	Not Detected	16	Not Detected
2-Butanone (Methyl Ethyl Ketone)	16	Not Detected	46	Not Detected
cis-1,2-Dichloroethene	3.9	28	15	110
Chloroform	3.9	Not Detected	19	Not Detected
1,1,1-Trichloroethane	3.9	12	21	63
Carbon Tetrachloride	3.9	Not Detected	24	Not Detected
Benzene	3.9	Not Detected	12	Not Detected
1,2-Dichloroethane	3.9	Not Detected	16	Not Detected
Trichloroethene	3.9	420	21	2300
1,2-Dichloropropane	3.9	Not Detected	18	Not Detected
Bromodichloromethane	3.9	Not Detected	26	Not Detected
cis-1,3-Dichloropropene	3.9	Not Detected	18	Not Detected
4-Methyl-2-pentanone	3.9	Not Detected	16	Not Detected
Toluene	7.8	Not Detected	29	Not Detected
trans-1,3-Dichloropropene	3.9	Not Detected	18	Not Detected
1,1,2-Trichloroethane	3.9	Not Detected	21	Not Detected
Tetrachloroethene	3.9	1600	26	10000
2-Hexanone	16	Not Detected	64	Not Detected
Dibromochloromethane	3.9	Not Detected	33	Not Detected
1,2-Dibromoethane (EDB)	3.9	Not Detected	30	Not Detected
Chlorobenzene	3.9	Not Detected	18	Not Detected
Ethyl Benzene	3.9	Not Detected	17	Not Detected
m,p-Xylene	7.8	Not Detected	34	Not Detected
o-Xylene	3.9	Not Detected	17	Not Detected
Styrene	3.9	Not Detected	16	Not Detected
Bromoform	3.9	Not Detected	40	Not Detected
1,1,2,2-Tetrachloroethane	3.9	Not Detected	27	Not Detected
4-Ethyltoluene	3.9	Not Detected	19	Not Detected
1,3,5-Trimethylbenzene	3.9	Not Detected	19	Not Detected

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Client Sample ID: PostCarbon_SouthSVE_090324

Lab ID#: 2409274-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p092118**	**Date of Collection: 9/3/24 11:55:00 AM**	
Dil. Factor:	**7.77**	**Date of Analysis: 9/21/24 11:12 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2,4-Trimethylbenzene	3.9	Not Detected	19	Not Detected
1,3-Dichlorobenzene	3.9	Not Detected	23	Not Detected
1,4-Dichlorobenzene	3.9	Not Detected	23	Not Detected
alpha-Chlorotoluene	3.9	Not Detected	20	Not Detected
1,2-Dichlorobenzene	3.9	Not Detected	23	Not Detected
1,2,4-Trichlorobenzene	16	Not Detected	120	Not Detected
Hexachlorobutadiene	16	Not Detected	160	Not Detected
Vinyl Acetate	16	Not Detected	55	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
1,2-Dichloroethane-d4	92	70-130
4-Bromofluorobenzene	97	70-130

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Client Sample ID: Lab Blank

Lab ID#: 2409274-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p092106d**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/21/24 02:34 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.50	Not Detected	2.5	Not Detected
Freon 114	0.50	Not Detected	3.5	Not Detected
Chloromethane	5.0	Not Detected	10	Not Detected
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
Bromomethane	5.0	Not Detected	19	Not Detected
Chloroethane	2.0	Not Detected	5.3	Not Detected
Freon 11	0.50	Not Detected	2.8	Not Detected
Freon 113	0.50	Not Detected	3.8	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Acetone	5.0	Not Detected	12	Not Detected
Carbon Disulfide	2.0	Not Detected	6.2	Not Detected
Methylene Chloride	5.0	Not Detected	17	Not Detected
trans-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
1,1-Dichloroethane	0.50	Not Detected	2.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	2.0	Not Detected	5.9	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Chloroform	0.50	Not Detected	2.4	Not Detected
1,1,1-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Carbon Tetrachloride	0.50	Not Detected	3.1	Not Detected
Benzene	0.50	Not Detected	1.6	Not Detected
1,2-Dichloroethane	0.50	Not Detected	2.0	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
1,2-Dichloropropane	0.50	Not Detected	2.3	Not Detected
Bromodichloromethane	0.50	Not Detected	3.4	Not Detected
cis-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
4-Methyl-2-pentanone	0.50	Not Detected	2.0	Not Detected
Toluene	1.0	Not Detected	3.8	Not Detected
trans-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
1,1,2-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected
2-Hexanone	2.0	Not Detected	8.2	Not Detected
Dibromochloromethane	0.50	Not Detected	4.2	Not Detected
1,2-Dibromoethane (EDB)	0.50	Not Detected	3.8	Not Detected
Chlorobenzene	0.50	Not Detected	2.3	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
m,p-Xylene	1.0	Not Detected	4.3	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
Styrene	0.50	Not Detected	2.1	Not Detected
Bromoform	0.50	Not Detected	5.2	Not Detected
1,1,2,2-Tetrachloroethane	0.50	Not Detected	3.4	Not Detected
4-Ethyltoluene	0.50	Not Detected	2.4	Not Detected
1,3,5-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected

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Client Sample ID: Lab Blank

Lab ID#: 2409274-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p092106d**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/21/24 02:34 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2,4-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,3-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,4-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
alpha-Chlorotoluene	0.50	Not Detected	2.6	Not Detected
1,2-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,2,4-Trichlorobenzene	2.0	Not Detected	15	Not Detected
Hexachlorobutadiene	2.0	Not Detected	21	Not Detected
Vinyl Acetate	2.0	Not Detected	7.0	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	98	70-130
1,2-Dichloroethane-d4	91	70-130
4-Bromofluorobenzene	99	70-130

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Client Sample ID: CCV

Lab ID#: 2409274-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p092103**	**Date of Collection: NA**
Dil. Factor:	**1.00**	**Date of Analysis: 9/21/24 01:07 PM**

Compound	%Recovery
Freon 12	98
Freon 114	103
Chloromethane	105
Vinyl Chloride	106
Bromomethane	126
Chloroethane	80
Freon 11	97
Freon 113	100
1,1-Dichloroethene	91
Acetone	77
Carbon Disulfide	91
Methylene Chloride	103
trans-1,2-Dichloroethene	96
1,1-Dichloroethane	98
2-Butanone (Methyl Ethyl Ketone)	97
cis-1,2-Dichloroethene	92
Chloroform	91
1,1,1-Trichloroethane	90
Carbon Tetrachloride	95
Benzene	96
1,2-Dichloroethane	97
Trichloroethene	97
1,2-Dichloropropane	101
Bromodichloromethane	98
cis-1,3-Dichloropropene	97
4-Methyl-2-pentanone	92
Toluene	101
trans-1,3-Dichloropropene	94
1,1,2-Trichloroethane	95
Tetrachloroethene	103
2-Hexanone	94
Dibromochloromethane	104
1,2-Dibromoethane (EDB)	99
Chlorobenzene	100
Ethyl Benzene	99
m,p-Xylene	99
o-Xylene	96
Styrene	97
Bromoform	106
1,1,2,2-Tetrachloroethane	98
4-Ethyltoluene	102
1,3,5-Trimethylbenzene	104

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Client Sample ID: CCV

Lab ID#: 2409274-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p092103**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/21/24 01:07 PM**	

Compound	%Recovery
1,2,4-Trimethylbenzene	100
1,3-Dichlorobenzene	108
1,4-Dichlorobenzene	107
alpha-Chlorotoluene	99
1,2-Dichlorobenzene	108
1,2,4-Trichlorobenzene	103
Hexachlorobutadiene	105
Vinyl Acetate	94

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	93	70-130
4-Bromofluorobenzene	105	70-130

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Client Sample ID: LCS

Lab ID#: 2409274-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p092104**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/21/24 01:35 PM**	

Compound	%Recovery	Method Limits
Freon 12	98	70-130
Freon 114	103	70-130
Chloromethane	104	70-130
Vinyl Chloride	106	70-130
Bromomethane	130	70-130
Chloroethane	81	70-130
Freon 11	97	70-130
Freon 113	97	70-130
1,1-Dichloroethene	89	70-130
Acetone	75	70-130
Carbon Disulfide	90	70-130
Methylene Chloride	101	70-130
trans-1,2-Dichloroethene	96	70-130
1,1-Dichloroethane	95	70-130
2-Butanone (Methyl Ethyl Ketone)	93	70-130
cis-1,2-Dichloroethene	90	70-130
Chloroform	88	70-130
1,1,1-Trichloroethane	90	70-130
Carbon Tetrachloride	93	70-130
Benzene	96	70-130
1,2-Dichloroethane	96	70-130
Trichloroethene	95	70-130
1,2-Dichloropropane	100	70-130
Bromodichloromethane	95	70-130
cis-1,3-Dichloropropene	97	70-130
4-Methyl-2-pentanone	89	70-130
Toluene	99	70-130
trans-1,3-Dichloropropene	95	70-130
1,1,2-Trichloroethane	94	70-130
Tetrachloroethene	102	70-130
2-Hexanone	92	70-130
Dibromochloromethane	100	70-130
1,2-Dibromoethane (EDB)	97	70-130
Chlorobenzene	100	70-130
Ethyl Benzene	98	70-130
m,p-Xylene	98	70-130
o-Xylene	96	70-130
Styrene	97	70-130
Bromoform	102	70-130
1,1,2,2-Tetrachloroethane	93	70-130
4-Ethyltoluene	99	70-130
1,3,5-Trimethylbenzene	100	70-130

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Client Sample ID: LCS

Lab ID#: 2409274-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p092104**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/21/24 01:35 PM**	

Compound	%Recovery	Method Limits
1,2,4-Trimethylbenzene	98	70-130
1,3-Dichlorobenzene	104	70-130
1,4-Dichlorobenzene	103	70-130
alpha-Chlorotoluene	93	70-130
1,2-Dichlorobenzene	104	70-130
1,2,4-Trichlorobenzene	107	70-130
Hexachlorobutadiene	111	70-130
Vinyl Acetate	109	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	92	70-130
4-Bromofluorobenzene	105	70-130

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Client Sample ID: LCSD

Lab ID#: 2409274-05AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p092105**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/21/24 02:03 PM**	

Compound	%Recovery	Method Limits
Freon 12	99	70-130
Freon 114	104	70-130
Chloromethane	103	70-130
Vinyl Chloride	108	70-130
Bromomethane	129	70-130
Chloroethane	79	70-130
Freon 11	98	70-130
Freon 113	97	70-130
1,1-Dichloroethene	90	70-130
Acetone	77	70-130
Carbon Disulfide	90	70-130
Methylene Chloride	101	70-130
trans-1,2-Dichloroethene	98	70-130
1,1-Dichloroethane	97	70-130
2-Butanone (Methyl Ethyl Ketone)	96	70-130
cis-1,2-Dichloroethene	92	70-130
Chloroform	90	70-130
1,1,1-Trichloroethane	90	70-130
Carbon Tetrachloride	95	70-130
Benzene	98	70-130
1,2-Dichloroethane	99	70-130
Trichloroethene	96	70-130
1,2-Dichloropropane	101	70-130
Bromodichloromethane	96	70-130
cis-1,3-Dichloropropene	97	70-130
4-Methyl-2-pentanone	91	70-130
Toluene	101	70-130
trans-1,3-Dichloropropene	97	70-130
1,1,2-Trichloroethane	95	70-130
Tetrachloroethene	104	70-130
2-Hexanone	92	70-130
Dibromochloromethane	102	70-130
1,2-Dibromoethane (EDB)	99	70-130
Chlorobenzene	99	70-130
Ethyl Benzene	101	70-130
m,p-Xylene	99	70-130
o-Xylene	98	70-130
Styrene	97	70-130
Bromoform	103	70-130
1,1,2,2-Tetrachloroethane	96	70-130
4-Ethyltoluene	100	70-130
1,3,5-Trimethylbenzene	101	70-130

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Client Sample ID: LCSD

Lab ID#: 2409274-05AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p092105**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/21/24 02:03 PM**	

Compound	%Recovery	Method Limits
1,2,4-Trimethylbenzene	98	70-130
1,3-Dichlorobenzene	105	70-130
1,4-Dichlorobenzene	104	70-130
alpha-Chlorotoluene	94	70-130
1,2-Dichlorobenzene	104	70-130
1,2,4-Trichlorobenzene	112	70-130
Hexachlorobutadiene	114	70-130
Vinyl Acetate	110	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	92	70-130
4-Bromofluorobenzene	104	70-130

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Method : TO-15 (Sp)-GeoEngineers (NuStar)

CAS Number	Compound	Rpt. Limit (ppbv)
75-71-8	Freon 12	0.50
76-14-2	Freon 114	0.50
74-87-3	Chloromethane	5.0
75-01-4	Vinyl Chloride	0.50
74-83-9	Bromomethane	5.0
75-00-3	Chloroethane	2.0
75-69-4	Freon 11	0.50
76-13-1	Freon 113	0.50
75-35-4	1,1-Dichloroethene	0.50
67-64-1	Acetone	5.0
75-15-0	Carbon Disulfide	2.0
75-09-2	Methylene Chloride	5.0
156-60-5	trans-1,2-Dichloroethene	0.50
75-34-3	1,1-Dichloroethane	0.50
78-93-3	2-Butanone (Methyl Ethyl Ketone)	2.0
156-59-2	cis-1,2-Dichloroethene	0.50
67-66-3	Chloroform	0.50
71-55-6	1,1,1-Trichloroethane	0.50
56-23-5	Carbon Tetrachloride	0.50
71-43-2	Benzene	0.50
107-06-2	1,2-Dichloroethane	0.50
79-01-6	Trichloroethene	0.50
78-87-5	1,2-Dichloropropane	0.50
75-27-4	Bromodichloromethane	0.50
10061-01-5	cis-1,3-Dichloropropene	0.50
108-10-1	4-Methyl-2-pentanone	0.50
108-88-3	Toluene	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50
79-00-5	1,1,2-Trichloroethane	0.50
127-18-4	Tetrachloroethene	0.50
591-78-6	2-Hexanone	2.0
124-48-1	Dibromochloromethane	0.50
106-93-4	1,2-Dibromoethane (EDB)	0.50
108-90-7	Chlorobenzene	0.50
100-41-4	Ethyl Benzene	0.50
108-38-3	m,p-Xylene	1.0
95-47-6	o-Xylene	0.50
100-42-5	Styrene	0.50
75-25-2	Bromoform	0.50
79-34-5	1,1,2,2-Tetrachloroethane	0.50
622-96-8	4-Ethyltoluene	0.50
108-67-8	1,3,5-Trimethylbenzene	0.50
95-63-6	1,2,4-Trimethylbenzene	0.50
541-73-1	1,3-Dichlorobenzene	0.50

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Method : TO-15 (Sp)-GeoEngineers (NuStar)

CAS Number	Compound	Rpt. Limit (ppbv)
106-46-7	1,4-Dichlorobenzene	0.50
100-44-7	alpha-Chlorotoluene	0.50
95-50-1	1,2-Dichlorobenzene	0.50
120-82-1	1,2,4-Trichlorobenzene	2.0
87-68-3	Hexachlorobutadiene	2.0
108-05-4	Vinyl Acetate	2.0

	Surrogate	Method Limits
2037-26-5	Toluene-d8	70-130
17060-07-0	1,2-Dichloroethane-d4	70-130
460-00-4	4-Bromofluorobenzene	70-130

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12/18/2024
Mr. Jeff Pratt
GeoEngineers, Inc. (formerly Cascadia Associates, LLC)
5820 SW Kelly Ave
Unit B
Portland OR 97239

Project Name: Van Main South SVE
Project #: 19001-009-34
Workorder #: 2412146

Dear Mr. Jeff Pratt

The following report includes the data for the above referenced project for sample(s) received on 12/5/2024 at Eurofins Air Toxics LLC.

The data and associated QC analyzed by TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics LLC. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Monica Tran at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Monica Tran

Project Manager

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WORK ORDER #: 2412146

Work Order Summary

CLIENT:	Mr. Jeff Pratt GeoEngineers, Inc. (formerly Cascadia Associates, LLC) 5820 SW Kelly Ave Unit B Portland, OR 97239	**BILL TO:**	CORP Accounts Payable GeoEngineers, Inc. 8410 154th Avenue NE Redmond, WA 98052
PHONE:	(503)906-6577	**P.O. #**	0060-002-004
FAX:	(503)906-6567	**PROJECT #**	19001-009-34 Van Main South SVE
DATE RECEIVED:	12/05/2024	**CONTACT:**	Monica Tran
DATE COMPLETED:	12/18/2024		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	Pre-carbon SSVE 20241202	TO-15	6.1 "Hg	1.9 psi
02A	Post-carbon SSVE 20241202	TO-15	5.1 "Hg	1.9 psi
03A	Lab Blank	TO-15	NA	NA
04A	CCV	TO-15	NA	NA
05A	LCS	TO-15	NA	NA
05AA	LCSD	TO-15	NA	NA

CERTIFIED BY: Heidi Hayes DATE: 12/18/24

Technical Director

Cert. No.: AZ Licensure-AZ0775, FL NELAP-E87680, LA NELAP–02089, MN NELAP-2703122, NH NELAP–209223-B, NJ NELAP-CA016, NY NELAP-11291, TX NELAP-T104704434, UT NELAP-CA009332023-16, VA NELAP-12695, WA NELAP-C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program) CA300005-20
Eurofins Environment Testing Northern California, LLC certifies that the test results contained in this report meet all requirements of the 2016 TNI Standard.

This report shall not be reproduced, except in full, without the written approval of Eurofins Air Toxics, LLC.

LABORATORY NARRATIVE
EPA Method TO-15
GeoEngineers, Inc. (formerly Cascadia Associates, LLC)
Workorder# 2412146

Two 6 Liter Summa Canister samples were received on December 05, 2024. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

All Quality Control Limit exceedances and affected sample results are noted by flags. Each flag is defined at the bottom of this Case Narrative and on each Sample Result Summary page.

Dilution was performed on sample Pre-carbon SSVE 20241202 due to the presence of high level target species.

Dilution was performed on sample Post-carbon SSVE 20241202 due to the presence of high level non-target species.

Definition of Data Qualifying Flags

Ten qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

M - Reported value may be biased due to apparent matrix interferences.

CN - See Case Narrative.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

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Summary of Detected Compounds
EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: Pre-carbon SSVE 20241202

Lab ID#: 2412146-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
cis-1,2-Dichloroethene	7.1	33	28	130
1,1,1-Trichloroethane	7.1	7.1	39	39
Trichloroethene	7.1	120	38	640
Tetrachloroethene	7.1	2900	48	20000

Client Sample ID: Post-carbon SSVE 20241202

Lab ID#: 2412146-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	3.4	6.7	11	21

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Client Sample ID: Pre-carbon SSVE 20241202

Lab ID#: 2412146-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17121425**	**Date of Collection:**	**12/2/24 2:27:00 PM**
Dil. Factor:	**14.2**	**Date of Analysis:**	**12/15/24 03:36 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	7.1	Not Detected	35	Not Detected
Freon 114	7.1	Not Detected	50	Not Detected
Chloromethane	71	Not Detected	150	Not Detected
Vinyl Chloride	7.1	Not Detected	18	Not Detected
Bromomethane	71	Not Detected	280	Not Detected
Chloroethane	28	Not Detected	75	Not Detected
Freon 11	7.1	Not Detected	40	Not Detected
Freon 113	7.1	Not Detected	54	Not Detected
1,1-Dichloroethene	7.1	Not Detected	28	Not Detected
Acetone	71	Not Detected	170	Not Detected
Carbon Disulfide	28	Not Detected	88	Not Detected
Methylene Chloride	71	Not Detected	250	Not Detected
trans-1,2-Dichloroethene	7.1	Not Detected	28	Not Detected
1,1-Dichloroethane	7.1	Not Detected	29	Not Detected
2-Butanone (Methyl Ethyl Ketone)	28	Not Detected	84	Not Detected
cis-1,2-Dichloroethene	7.1	33	28	130
Chloroform	7.1	Not Detected	35	Not Detected
1,1,1-Trichloroethane	7.1	7.1	39	39
Carbon Tetrachloride	7.1	Not Detected	45	Not Detected
Benzene	7.1	Not Detected	23	Not Detected
1,2-Dichloroethane	7.1	Not Detected	29	Not Detected
Trichloroethene	7.1	120	38	640
1,2-Dichloropropane	7.1	Not Detected	33	Not Detected
Bromodichloromethane	7.1	Not Detected	48	Not Detected
cis-1,3-Dichloropropene	7.1	Not Detected	32	Not Detected
4-Methyl-2-pentanone	7.1	Not Detected	29	Not Detected
Toluene	14	Not Detected	54	Not Detected
trans-1,3-Dichloropropene	7.1	Not Detected	32	Not Detected
1,1,2-Trichloroethane	7.1	Not Detected	39	Not Detected
Tetrachloroethene	7.1	2900	48	20000
2-Hexanone	28	Not Detected	120	Not Detected
Dibromochloromethane	7.1	Not Detected	60	Not Detected
1,2-Dibromoethane (EDB)	7.1	Not Detected	54	Not Detected
Chlorobenzene	7.1	Not Detected	33	Not Detected
Ethyl Benzene	7.1	Not Detected	31	Not Detected
m,p-Xylene	14	Not Detected	62	Not Detected
o-Xylene	7.1	Not Detected	31	Not Detected
Styrene	7.1	Not Detected	30	Not Detected
Bromoform	7.1	Not Detected	73	Not Detected
1,1,2,2-Tetrachloroethane	7.1	Not Detected	49	Not Detected
4-Ethyltoluene	7.1	Not Detected	35	Not Detected
1,3,5-Trimethylbenzene	7.1	Not Detected	35	Not Detected

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Client Sample ID: Pre-carbon SSVE 20241202

Lab ID#: 2412146-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17121425**	**Date of Collection: 12/2/24 2:27:00 PM**	
Dil. Factor:	**14.2**	**Date of Analysis: 12/15/24 03:36 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2,4-Trimethylbenzene	7.1	Not Detected	35	Not Detected
1,3-Dichlorobenzene	7.1	Not Detected	43	Not Detected
1,4-Dichlorobenzene	7.1	Not Detected	43	Not Detected
alpha-Chlorotoluene	7.1	Not Detected	37	Not Detected
1,2-Dichlorobenzene	7.1	Not Detected	43	Not Detected
1,2,4-Trichlorobenzene	28	Not Detected	210	Not Detected
Hexachlorobutadiene	28	Not Detected	300	Not Detected
Vinyl Acetate	28	Not Detected	100	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
1,2-Dichloroethane-d4	102	70-130
4-Bromofluorobenzene	96	70-130

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Client Sample ID: Post-carbon SSVE 20241202

Lab ID#: 2412146-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17121426**	**Date of Collection:**	**12/2/24 2:38:00 PM**
Dil. Factor:	**6.80**	**Date of Analysis:**	**12/15/24 04:02 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	3.4	Not Detected	17	Not Detected
Freon 114	3.4	Not Detected	24	Not Detected
Chloromethane	34	Not Detected	70	Not Detected
Vinyl Chloride	3.4	Not Detected	8.7	Not Detected
Bromomethane	34	Not Detected	130	Not Detected
Chloroethane	14	Not Detected	36	Not Detected
Freon 11	3.4	Not Detected	19	Not Detected
Freon 113	3.4	Not Detected	26	Not Detected
1,1-Dichloroethene	3.4	Not Detected	13	Not Detected
Acetone	34	Not Detected	81	Not Detected
Carbon Disulfide	14	Not Detected	42	Not Detected
Methylene Chloride	34	Not Detected	120	Not Detected
trans-1,2-Dichloroethene	3.4	Not Detected	13	Not Detected
1,1-Dichloroethane	3.4	Not Detected	14	Not Detected
2-Butanone (Methyl Ethyl Ketone)	14	Not Detected	40	Not Detected
cis-1,2-Dichloroethene	3.4	Not Detected	13	Not Detected
Chloroform	3.4	Not Detected	17	Not Detected
1,1,1-Trichloroethane	3.4	Not Detected	18	Not Detected
Carbon Tetrachloride	3.4	Not Detected	21	Not Detected
Benzene	3.4	6.7	11	21
1,2-Dichloroethane	3.4	Not Detected	14	Not Detected
Trichloroethene	3.4	Not Detected	18	Not Detected
1,2-Dichloropropane	3.4	Not Detected	16	Not Detected
Bromodichloromethane	3.4	Not Detected	23	Not Detected
cis-1,3-Dichloropropene	3.4	Not Detected	15	Not Detected
4-Methyl-2-pentanone	3.4	Not Detected	14	Not Detected
Toluene	6.8	Not Detected	26	Not Detected
trans-1,3-Dichloropropene	3.4	Not Detected	15	Not Detected
1,1,2-Trichloroethane	3.4	Not Detected	18	Not Detected
Tetrachloroethene	3.4	Not Detected	23	Not Detected
2-Hexanone	14	Not Detected	56	Not Detected
Dibromochloromethane	3.4	Not Detected	29	Not Detected
1,2-Dibromoethane (EDB)	3.4	Not Detected	26	Not Detected
Chlorobenzene	3.4	Not Detected	16	Not Detected
Ethyl Benzene	3.4	Not Detected	15	Not Detected
m,p-Xylene	6.8	Not Detected	30	Not Detected
o-Xylene	3.4	Not Detected	15	Not Detected
Styrene	3.4	Not Detected	14	Not Detected
Bromoform	3.4	Not Detected	35	Not Detected
1,1,2,2-Tetrachloroethane	3.4	Not Detected	23	Not Detected
4-Ethyltoluene	3.4	Not Detected	17	Not Detected
1,3,5-Trimethylbenzene	3.4	Not Detected	17	Not Detected

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Client Sample ID: Post-carbon SSVE 20241202

Lab ID#: 2412146-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17121426**	**Date of Collection: 12/2/24 2:38:00 PM**	
Dil. Factor:	**6.80**	**Date of Analysis: 12/15/24 04:02 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2,4-Trimethylbenzene	3.4	Not Detected	17	Not Detected
1,3-Dichlorobenzene	3.4	Not Detected	20	Not Detected
1,4-Dichlorobenzene	3.4	Not Detected	20	Not Detected
alpha-Chlorotoluene	3.4	Not Detected	18	Not Detected
1,2-Dichlorobenzene	3.4	Not Detected	20	Not Detected
1,2,4-Trichlorobenzene	14	Not Detected	100	Not Detected
Hexachlorobutadiene	14	Not Detected	140	Not Detected
Vinyl Acetate	14	Not Detected	48	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
1,2-Dichloroethane-d4	100	70-130
4-Bromofluorobenzene	98	70-130

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Client Sample ID: Lab Blank

Lab ID#: 2412146-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17121407c**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/14/24 06:26 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.50	Not Detected	2.5	Not Detected
Freon 114	0.50	Not Detected	3.5	Not Detected
Chloromethane	5.0	Not Detected	10	Not Detected
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
Bromomethane	5.0	Not Detected	19	Not Detected
Chloroethane	2.0	Not Detected	5.3	Not Detected
Freon 11	0.50	Not Detected	2.8	Not Detected
Freon 113	0.50	Not Detected	3.8	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Acetone	5.0	Not Detected	12	Not Detected
Carbon Disulfide	2.0	Not Detected	6.2	Not Detected
Methylene Chloride	5.0	Not Detected	17	Not Detected
trans-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
1,1-Dichloroethane	0.50	Not Detected	2.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	2.0	Not Detected	5.9	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Chloroform	0.50	Not Detected	2.4	Not Detected
1,1,1-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Carbon Tetrachloride	0.50	Not Detected	3.1	Not Detected
Benzene	0.50	Not Detected	1.6	Not Detected
1,2-Dichloroethane	0.50	Not Detected	2.0	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
1,2-Dichloropropane	0.50	Not Detected	2.3	Not Detected
Bromodichloromethane	0.50	Not Detected	3.4	Not Detected
cis-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
4-Methyl-2-pentanone	0.50	Not Detected	2.0	Not Detected
Toluene	1.0	Not Detected	3.8	Not Detected
trans-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
1,1,2-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected
2-Hexanone	2.0	Not Detected	8.2	Not Detected
Dibromochloromethane	0.50	Not Detected	4.2	Not Detected
1,2-Dibromoethane (EDB)	0.50	Not Detected	3.8	Not Detected
Chlorobenzene	0.50	Not Detected	2.3	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
m,p-Xylene	1.0	Not Detected	4.3	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
Styrene	0.50	Not Detected	2.1	Not Detected
Bromoform	0.50	Not Detected	5.2	Not Detected
1,1,2,2-Tetrachloroethane	0.50	Not Detected	3.4	Not Detected
4-Ethyltoluene	0.50	Not Detected	2.4	Not Detected
1,3,5-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected

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Client Sample ID: Lab Blank

Lab ID#: 2412146-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17121407c**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/14/24 06:26 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2,4-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,3-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,4-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
alpha-Chlorotoluene	0.50	Not Detected	2.6	Not Detected
1,2-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,2,4-Trichlorobenzene	2.0	Not Detected	15	Not Detected
Hexachlorobutadiene	2.0	Not Detected	21	Not Detected
Vinyl Acetate	2.0	Not Detected	7.0	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	100	70-130
4-Bromofluorobenzene	94	70-130

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Client Sample ID: CCV

Lab ID#: 2412146-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17121403**	**Date of Collection: NA**
Dil. Factor:	**1.00**	**Date of Analysis: 12/14/24 03:07 PM**

Compound	%Recovery
Freon 12	112
Freon 114	99
Chloromethane	103
Vinyl Chloride	104
Bromomethane	103
Chloroethane	98
Freon 11	102
Freon 113	103
1,1-Dichloroethene	100
Acetone	101
Carbon Disulfide	100
Methylene Chloride	104
trans-1,2-Dichloroethene	105
1,1-Dichloroethane	103
2-Butanone (Methyl Ethyl Ketone)	108
cis-1,2-Dichloroethene	104
Chloroform	103
1,1,1-Trichloroethane	101
Carbon Tetrachloride	101
Benzene	101
1,2-Dichloroethane	102
Trichloroethene	98
1,2-Dichloropropane	101
Bromodichloromethane	101
cis-1,3-Dichloropropene	102
4-Methyl-2-pentanone	104
Toluene	102
trans-1,3-Dichloropropene	103
1,1,2-Trichloroethane	102
Tetrachloroethene	101
2-Hexanone	104
Dibromochloromethane	102
1,2-Dibromoethane (EDB)	102
Chlorobenzene	102
Ethyl Benzene	99
m,p-Xylene	106
o-Xylene	107
Styrene	110
Bromoform	102
1,1,2,2-Tetrachloroethane	105
4-Ethyltoluene	108
1,3,5-Trimethylbenzene	106

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Client Sample ID: CCV

Lab ID#: 2412146-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17121403**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/14/24 03:07 PM**	

Compound	%Recovery
1,2,4-Trimethylbenzene	108
1,3-Dichlorobenzene	107
1,4-Dichlorobenzene	107
alpha-Chlorotoluene	114
1,2-Dichlorobenzene	106
1,2,4-Trichlorobenzene	114
Hexachlorobutadiene	108
Vinyl Acetate	99

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	101	70-130
4-Bromofluorobenzene	106	70-130

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Client Sample ID: LCS

Lab ID#: 2412146-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17121404**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/14/24 03:34 PM**	

Compound	%Recovery	Method Limits
Freon 12	116	70-130
Freon 114	100	70-130
Chloromethane	107	70-130
Vinyl Chloride	108	70-130
Bromomethane	104	70-130
Chloroethane	102	70-130
Freon 11	100	70-130
Freon 113	99	70-130
1,1-Dichloroethene	95	70-130
Acetone	98	70-130
Carbon Disulfide	98	70-130
Methylene Chloride	101	70-130
trans-1,2-Dichloroethene	106	70-130
1,1-Dichloroethane	99	70-130
2-Butanone (Methyl Ethyl Ketone)	103	70-130
cis-1,2-Dichloroethene	101	70-130
Chloroform	100	70-130
1,1,1-Trichloroethane	101	70-130
Carbon Tetrachloride	98	70-130
Benzene	103	70-130
1,2-Dichloroethane	102	70-130
Trichloroethene	98	70-130
1,2-Dichloropropane	102	70-130
Bromodichloromethane	101	70-130
cis-1,3-Dichloropropene	102	70-130
4-Methyl-2-pentanone	108	70-130
Toluene	102	70-130
trans-1,3-Dichloropropene	105	70-130
1,1,2-Trichloroethane	105	70-130
Tetrachloroethene	103	70-130
2-Hexanone	106	70-130
Dibromochloromethane	102	70-130
1,2-Dibromoethane (EDB)	102	70-130
Chlorobenzene	102	70-130
Ethyl Benzene	106	70-130
m,p-Xylene	108	70-130
o-Xylene	110	70-130
Styrene	110	70-130
Bromoform	101	70-130
1,1,2,2-Tetrachloroethane	104	70-130
4-Ethyltoluene	105	70-130
1,3,5-Trimethylbenzene	106	70-130

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Client Sample ID: LCS

Lab ID#: 2412146-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17121404**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/14/24 03:34 PM**	

Compound	%Recovery	Method Limits
1,2,4-Trimethylbenzene	109	70-130
1,3-Dichlorobenzene	106	70-130
1,4-Dichlorobenzene	105	70-130
alpha-Chlorotoluene	111	70-130
1,2-Dichlorobenzene	105	70-130
1,2,4-Trichlorobenzene	117	70-130
Hexachlorobutadiene	115	70-130
Vinyl Acetate	110	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	98	70-130
4-Bromofluorobenzene	102	70-130

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Client Sample ID: LCSD

Lab ID#: 2412146-05AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17121405**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/14/24 04:01 PM**	

Compound	%Recovery	Method Limits
Freon 12	112	70-130
Freon 114	100	70-130
Chloromethane	105	70-130
Vinyl Chloride	105	70-130
Bromomethane	105	70-130
Chloroethane	98	70-130
Freon 11	100	70-130
Freon 113	98	70-130
1,1-Dichloroethene	96	70-130
Acetone	100	70-130
Carbon Disulfide	98	70-130
Methylene Chloride	102	70-130
trans-1,2-Dichloroethene	105	70-130
1,1-Dichloroethane	99	70-130
2-Butanone (Methyl Ethyl Ketone)	106	70-130
cis-1,2-Dichloroethene	102	70-130
Chloroform	100	70-130
1,1,1-Trichloroethane	102	70-130
Carbon Tetrachloride	99	70-130
Benzene	102	70-130
1,2-Dichloroethane	102	70-130
Trichloroethene	98	70-130
1,2-Dichloropropane	102	70-130
Bromodichloromethane	102	70-130
cis-1,3-Dichloropropene	104	70-130
4-Methyl-2-pentanone	110	70-130
Toluene	104	70-130
trans-1,3-Dichloropropene	106	70-130
1,1,2-Trichloroethane	106	70-130
Tetrachloroethene	104	70-130
2-Hexanone	108	70-130
Dibromochloromethane	104	70-130
1,2-Dibromoethane (EDB)	102	70-130
Chlorobenzene	103	70-130
Ethyl Benzene	107	70-130
m,p-Xylene	110	70-130
o-Xylene	109	70-130
Styrene	111	70-130
Bromoform	102	70-130
1,1,2,2-Tetrachloroethane	103	70-130
4-Ethyltoluene	108	70-130
1,3,5-Trimethylbenzene	106	70-130

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Client Sample ID: LCSD

Lab ID#: 2412146-05AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17121405**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/14/24 04:01 PM**	

Compound	%Recovery	Method Limits
1,2,4-Trimethylbenzene	110	70-130
1,3-Dichlorobenzene	108	70-130
1,4-Dichlorobenzene	106	70-130
alpha-Chlorotoluene	112	70-130
1,2-Dichlorobenzene	105	70-130
1,2,4-Trichlorobenzene	132 Q	70-130
Hexachlorobutadiene	125	70-130
Vinyl Acetate	115	70-130

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	96	70-130
4-Bromofluorobenzene	102	70-130

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Method : TO-15 (Sp)-GeoEngineers (NuStar)

CAS Number	Compound	Rpt. Limit (ppbv)
75-71-8	Freon 12	0.50
76-14-2	Freon 114	0.50
74-87-3	Chloromethane	5.0
75-01-4	Vinyl Chloride	0.50
74-83-9	Bromomethane	5.0
75-00-3	Chloroethane	2.0
75-69-4	Freon 11	0.50
76-13-1	Freon 113	0.50
75-35-4	1,1-Dichloroethene	0.50
67-64-1	Acetone	5.0
75-15-0	Carbon Disulfide	2.0
75-09-2	Methylene Chloride	5.0
156-60-5	trans-1,2-Dichloroethene	0.50
75-34-3	1,1-Dichloroethane	0.50
78-93-3	2-Butanone (Methyl Ethyl Ketone)	2.0
156-59-2	cis-1,2-Dichloroethene	0.50
67-66-3	Chloroform	0.50
71-55-6	1,1,1-Trichloroethane	0.50
56-23-5	Carbon Tetrachloride	0.50
71-43-2	Benzene	0.50
107-06-2	1,2-Dichloroethane	0.50
79-01-6	Trichloroethene	0.50
78-87-5	1,2-Dichloropropane	0.50
75-27-4	Bromodichloromethane	0.50
10061-01-5	cis-1,3-Dichloropropene	0.50
108-10-1	4-Methyl-2-pentanone	0.50
108-88-3	Toluene	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50
79-00-5	1,1,2-Trichloroethane	0.50
127-18-4	Tetrachloroethene	0.50
591-78-6	2-Hexanone	2.0
124-48-1	Dibromochloromethane	0.50
106-93-4	1,2-Dibromoethane (EDB)	0.50
108-90-7	Chlorobenzene	0.50
100-41-4	Ethyl Benzene	0.50
108-38-3	m,p-Xylene	1.0
95-47-6	o-Xylene	0.50
100-42-5	Styrene	0.50
75-25-2	Bromoform	0.50
79-34-5	1,1,2,2-Tetrachloroethane	0.50
622-96-8	4-Ethyltoluene	0.50
108-67-8	1,3,5-Trimethylbenzene	0.50
95-63-6	1,2,4-Trimethylbenzene	0.50
541-73-1	1,3-Dichlorobenzene	0.50

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Method : TO-15 (Sp)-GeoEngineers (NuStar)

CAS Number	Compound	Rpt. Limit (ppbv)
106-46-7	1,4-Dichlorobenzene	0.50
100-44-7	alpha-Chlorotoluene	0.50
95-50-1	1,2-Dichlorobenzene	0.50
120-82-1	1,2,4-Trichlorobenzene	2.0
87-68-3	Hexachlorobutadiene	2.0
108-05-4	Vinyl Acetate	2.0

	Surrogate	Method Limits
2037-26-5	Toluene-d8	70-130
17060-07-0	1,2-Dichloroethane-d4	70-130
460-00-4	4-Bromofluorobenzene	70-130

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Wednesday, September 18, 2024

Stephanie Bosze-Salisbury
GeoEngineers - Portland
5820 S Kelly Ave Unit B
Portland, OR 97239

RE: A4I0784 - Vancouver GWM 3Q24 - 19001-009-33

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A4I0784, which was received by the laboratory on 9/3/2024 at 4:46:00PM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: DAuvil@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of sample receipt, unless prior arrangements have been made.

Cooler Receipt Information
Acceptable Receipt Temperature is less than, or equal to, 6 degC (not frozen), or received on ice the same day as sampling.
(See Cooler Receipt Form for details)
Default Cooler 5.7 degC

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.
All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document(s) and updated by any subsequent written communications. This analytical report must be reproduced in its entirety.

Darrell Auvil, Client Services Manager

Apex Laboratories, LLC
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Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-33**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0784 - 09 18 24 1156**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
KMW-6	A4I0784-01	Water	09/03/24 10:00	09/03/24 16:46
KMW-5	A4I0784-02	Water	09/03/24 11:20	09/03/24 16:46
MW-19	A4I0784-03	Water	09/03/24 12:49	09/03/24 16:46
MW-19 DUP	A4I0784-04	Water	09/03/24 12:49	09/03/24 16:46
MP-1	A4I0784-05	Water	09/03/24 13:01	09/03/24 16:46
NKW-1	A4I0784-06	Water	09/03/24 14:15	09/03/24 16:46
NKW-2	A4I0784-07	Water	09/03/24 15:00	09/03/24 16:46
MW-13	A4I0784-08	Water	09/03/24 14:52	09/03/24 16:46

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Darrell Auvil, Client Services Manager

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-33**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0784 - 09 18 24 1156**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
KMW-6 (A4I0784-01RE1)				**Matrix: Water**		**Batch: 24I0314**		
Bromobenzene	ND	---	0.500	ug/L	1	09/11/24 11:15	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	09/11/24 11:15	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	09/11/24 11:15	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	09/11/24 11:15	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	09/11/24 11:15	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	09/11/24 11:15	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	09/11/24 11:15	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	09/11/24 11:15	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	09/11/24 11:15	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	09/11/24 11:15	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	09/11/24 11:15	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	09/11/24 11:15	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	09/11/24 11:15	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	09/11/24 11:15	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	09/11/24 11:15	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	09/11/24 11:15	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	09/11/24 11:15	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	09/11/24 11:15	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	09/11/24 11:15	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	09/11/24 11:15	EPA 8260D	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	09/11/24 11:15	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	09/11/24 11:15	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	09/11/24 11:15	EPA 8260D	
cis-1,2-Dichloroethene	**1.76**	---	0.400	ug/L	1	09/11/24 11:15	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	09/11/24 11:15	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	09/11/24 11:15	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	09/11/24 11:15	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	09/11/24 11:15	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	09/11/24 11:15	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/11/24 11:15	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/11/24 11:15	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	09/11/24 11:15	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	09/11/24 11:15	EPA 8260D	

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Darrell Auvil, Client Services Manager

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503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-33	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0784 - 09 18 24 1156

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
KMW-6 (A4I0784-01RE1)				**Matrix: Water**		**Batch: 24I0314**		
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	09/11/24 11:15	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	09/11/24 11:15	EPA 8260D	
Tetrachloroethene (PCE)	**1.83**	---	0.400	ug/L	1	09/11/24 11:15	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	09/11/24 11:15	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	09/11/24 11:15	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	09/11/24 11:15	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	09/11/24 11:15	EPA 8260D	
Trichloroethene (TCE)	**20.8**	---	0.400	ug/L	1	09/11/24 11:15	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	09/11/24 11:15	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	09/11/24 11:15	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	09/11/24 11:15	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery: 96 %*		*Limits: 80-120 %*	*1*	*09/11/24 11:15*	*EPA 8260D*	
Toluene-d8 (Surr)		*100 %*		*80-120 %*	*1*	*09/11/24 11:15*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)		*102 %*		*80-120 %*	*1*	*09/11/24 11:15*	*EPA 8260D*	
KMW-5 (A4I0784-02)				**Matrix: Water**		**Batch: 24I0222**		
Bromobenzene	ND	---	0.500	ug/L	1	09/09/24 18:38	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	09/09/24 18:38	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	09/09/24 18:38	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	09/09/24 18:38	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	09/09/24 18:38	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	09/09/24 18:38	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	09/09/24 18:38	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	09/09/24 18:38	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	09/09/24 18:38	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	09/09/24 18:38	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	09/09/24 18:38	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	09/09/24 18:38	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	09/09/24 18:38	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	09/09/24 18:38	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	09/09/24 18:38	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	09/09/24 18:38	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	09/09/24 18:38	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	09/09/24 18:38	EPA 8260D	

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Darrell Auvil, Client Services Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
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503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-33	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0784 - 09 18 24 1156

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
KMW-5 (A4I0784-02)				**Matrix: Water**		**Batch: 24I0222**		
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	09/09/24 18:38	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	09/09/24 18:38	EPA 8260D	
1,1-Dichloroethane	**0.760**	---	0.400	ug/L	1	09/09/24 18:38	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	09/09/24 18:38	EPA 8260D	
1,1-Dichloroethene	**0.580**	---	0.400	ug/L	1	09/09/24 18:38	EPA 8260D	
cis-1,2-Dichloroethene	**4.05**	---	0.400	ug/L	1	09/09/24 18:38	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	09/09/24 18:38	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	09/09/24 18:38	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	09/09/24 18:38	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	09/09/24 18:38	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	09/09/24 18:38	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/09/24 18:38	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/09/24 18:38	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	09/09/24 18:38	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	09/09/24 18:38	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	09/09/24 18:38	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	09/09/24 18:38	EPA 8260D	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	09/09/24 18:38	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	09/09/24 18:38	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	09/09/24 18:38	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	09/09/24 18:38	EPA 8260D	
1,1,1-Trichloroethane	**0.410**	---	0.400	ug/L	1	09/09/24 18:38	EPA 8260D	
Trichloroethene (TCE)	**4.51**	---	0.400	ug/L	1	09/09/24 18:38	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	09/09/24 18:38	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	09/09/24 18:38	EPA 8260D	
Vinyl chloride	**2.75**	---	0.200	ug/L	1	09/09/24 18:38	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*102 %*	*Limits:*	*80-120 %*	*1*	*09/09/24 18:38*	*EPA 8260D*	
Toluene-d8 (Surr)			*106 %*		*80-120 %*	*1*	*09/09/24 18:38*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*99 %*		*80-120 %*	*1*	*09/09/24 18:38*	*EPA 8260D*	
MW-19 (A4I0784-03)				**Matrix: Water**		**Batch: 24I0222**		
Bromobenzene	ND	---	25.0	ug/L	50	09/09/24 19:46	EPA 8260D	
Bromochloromethane	ND	---	50.0	ug/L	50	09/09/24 19:46	EPA 8260D	
Bromodichloromethane	ND	---	50.0	ug/L	50	09/09/24 19:46	EPA 8260D	

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Darrell Auvil, Client Services Manager

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Apex Laboratories, LLC
6700 S.W. Sandburg Street
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503-718-2323
ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-33**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0784 - 09 18 24 1156**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-19 (A4I0784-03)				**Matrix: Water**		**Batch: 24I0222**		
Bromoform	ND	---	50.0	ug/L	50	09/09/24 19:46	EPA 8260D	
Bromomethane	ND	---	250	ug/L	50	09/09/24 19:46	EPA 8260D	
Carbon tetrachloride	ND	---	50.0	ug/L	50	09/09/24 19:46	EPA 8260D	
Chlorobenzene	ND	---	25.0	ug/L	50	09/09/24 19:46	EPA 8260D	
Chloroethane	ND	---	250	ug/L	50	09/09/24 19:46	EPA 8260D	
Chloroform	ND	---	50.0	ug/L	50	09/09/24 19:46	EPA 8260D	
Chloromethane	ND	---	250	ug/L	50	09/09/24 19:46	EPA 8260D	
2-Chlorotoluene	ND	---	50.0	ug/L	50	09/09/24 19:46	EPA 8260D	
4-Chlorotoluene	ND	---	50.0	ug/L	50	09/09/24 19:46	EPA 8260D	
Dibromochloromethane	ND	---	50.0	ug/L	50	09/09/24 19:46	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	250	ug/L	50	09/09/24 19:46	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	25.0	ug/L	50	09/09/24 19:46	EPA 8260D	
Dibromomethane	ND	---	50.0	ug/L	50	09/09/24 19:46	EPA 8260D	
1,2-Dichlorobenzene	ND	---	25.0	ug/L	50	09/09/24 19:46	EPA 8260D	
1,3-Dichlorobenzene	ND	---	25.0	ug/L	50	09/09/24 19:46	EPA 8260D	
1,4-Dichlorobenzene	ND	---	25.0	ug/L	50	09/09/24 19:46	EPA 8260D	
Dichlorodifluoromethane	ND	---	50.0	ug/L	50	09/09/24 19:46	EPA 8260D	
1,1-Dichloroethane	ND	---	20.0	ug/L	50	09/09/24 19:46	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	20.0	ug/L	50	09/09/24 19:46	EPA 8260D	
1,1-Dichloroethene	**32.0**	---	20.0	ug/L	50	09/09/24 19:46	EPA 8260D	
cis-1,2-Dichloroethene	**482**	---	20.0	ug/L	50	09/09/24 19:46	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	20.0	ug/L	50	09/09/24 19:46	EPA 8260D	
1,2-Dichloropropane	ND	---	25.0	ug/L	50	09/09/24 19:46	EPA 8260D	
1,3-Dichloropropane	ND	---	50.0	ug/L	50	09/09/24 19:46	EPA 8260D	
2,2-Dichloropropane	ND	---	50.0	ug/L	50	09/09/24 19:46	EPA 8260D	
1,1-Dichloropropene	ND	---	50.0	ug/L	50	09/09/24 19:46	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	50.0	ug/L	50	09/09/24 19:46	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	50.0	ug/L	50	09/09/24 19:46	EPA 8260D	
Hexachlorobutadiene	ND	---	250	ug/L	50	09/09/24 19:46	EPA 8260D	
Methylene chloride	ND	---	500	ug/L	50	09/09/24 19:46	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	20.0	ug/L	50	09/09/24 19:46	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	25.0	ug/L	50	09/09/24 19:46	EPA 8260D	
Tetrachloroethene (PCE)	**8410**	---	20.0	ug/L	50	09/09/24 19:46	EPA 8260D	

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Darrell Auvil, Client Services Manager

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ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-33	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0784 - 09 18 24 1156

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-19 (A4I0784-03)				**Matrix: Water**		**Batch: 24I0222**		
1,2,3-Trichlorobenzene	ND	---	100	ug/L	50	09/09/24 19:46	EPA 8260D	
1,1,2-Trichloroethane	ND	---	25.0	ug/L	50	09/09/24 19:46	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	100	ug/L	50	09/09/24 19:46	EPA 8260D	
1,1,1-Trichloroethane	**43.0**	---	20.0	ug/L	50	09/09/24 19:46	EPA 8260D	
Trichloroethene (TCE)	**1330**	---	20.0	ug/L	50	09/09/24 19:46	EPA 8260D	
Trichlorofluoromethane	ND	---	100	ug/L	50	09/09/24 19:46	EPA 8260D	
1,2,3-Trichloropropane	ND	---	50.0	ug/L	50	09/09/24 19:46	EPA 8260D	
Vinyl chloride	**47.0**	---	10.0	ug/L	50	09/09/24 19:46	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*107 %*	*Limits: 80-120 %*	*1*	*09/09/24 19:46*	*EPA 8260D*	
Toluene-d8 (Surr)			*105 %*	*80-120 %*	*1*	*09/09/24 19:46*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*99 %*	*80-120 %*	*1*	*09/09/24 19:46*	*EPA 8260D*	
MW-19 DUP (A4I0784-04)				**Matrix: Water**		**Batch: 24I0222**		
Bromobenzene	ND	---	25.0	ug/L	50	09/09/24 20:31	EPA 8260D	
Bromochloromethane	ND	---	50.0	ug/L	50	09/09/24 20:31	EPA 8260D	
Bromodichloromethane	ND	---	50.0	ug/L	50	09/09/24 20:31	EPA 8260D	
Bromoform	ND	---	50.0	ug/L	50	09/09/24 20:31	EPA 8260D	
Bromomethane	ND	---	250	ug/L	50	09/09/24 20:31	EPA 8260D	
Carbon tetrachloride	ND	---	50.0	ug/L	50	09/09/24 20:31	EPA 8260D	
Chlorobenzene	ND	---	25.0	ug/L	50	09/09/24 20:31	EPA 8260D	
Chloroethane	ND	---	250	ug/L	50	09/09/24 20:31	EPA 8260D	
Chloroform	ND	---	50.0	ug/L	50	09/09/24 20:31	EPA 8260D	
Chloromethane	ND	---	250	ug/L	50	09/09/24 20:31	EPA 8260D	
2-Chlorotoluene	ND	---	50.0	ug/L	50	09/09/24 20:31	EPA 8260D	
4-Chlorotoluene	ND	---	50.0	ug/L	50	09/09/24 20:31	EPA 8260D	
Dibromochloromethane	ND	---	50.0	ug/L	50	09/09/24 20:31	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	250	ug/L	50	09/09/24 20:31	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	25.0	ug/L	50	09/09/24 20:31	EPA 8260D	
Dibromomethane	ND	---	50.0	ug/L	50	09/09/24 20:31	EPA 8260D	
1,2-Dichlorobenzene	ND	---	25.0	ug/L	50	09/09/24 20:31	EPA 8260D	
1,3-Dichlorobenzene	ND	---	25.0	ug/L	50	09/09/24 20:31	EPA 8260D	
1,4-Dichlorobenzene	ND	---	25.0	ug/L	50	09/09/24 20:31	EPA 8260D	
Dichlorodifluoromethane	ND	---	50.0	ug/L	50	09/09/24 20:31	EPA 8260D	
1,1-Dichloroethane	ND	---	20.0	ug/L	50	09/09/24 20:31	EPA 8260D	

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Darrell Auvil, Client Services Manager

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-33**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0784 - 09 18 24 1156**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-19 DUP (A4I0784-04)				**Matrix: Water**		**Batch: 24I0222**		
1,2-Dichloroethane (EDC)	ND	---	20.0	ug/L	50	09/09/24 20:31	EPA 8260D	
1,1-Dichloroethene	**38.0**	---	20.0	ug/L	50	09/09/24 20:31	EPA 8260D	
cis-1,2-Dichloroethene	**582**	---	20.0	ug/L	50	09/09/24 20:31	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	20.0	ug/L	50	09/09/24 20:31	EPA 8260D	
1,2-Dichloropropane	ND	---	25.0	ug/L	50	09/09/24 20:31	EPA 8260D	
1,3-Dichloropropane	ND	---	50.0	ug/L	50	09/09/24 20:31	EPA 8260D	
2,2-Dichloropropane	ND	---	50.0	ug/L	50	09/09/24 20:31	EPA 8260D	
1,1-Dichloropropene	ND	---	50.0	ug/L	50	09/09/24 20:31	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	50.0	ug/L	50	09/09/24 20:31	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	50.0	ug/L	50	09/09/24 20:31	EPA 8260D	
Hexachlorobutadiene	ND	---	250	ug/L	50	09/09/24 20:31	EPA 8260D	
Methylene chloride	ND	---	500	ug/L	50	09/09/24 20:31	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	20.0	ug/L	50	09/09/24 20:31	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	25.0	ug/L	50	09/09/24 20:31	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	100	ug/L	50	09/09/24 20:31	EPA 8260D	
1,1,2-Trichloroethane	ND	---	25.0	ug/L	50	09/09/24 20:31	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	100	ug/L	50	09/09/24 20:31	EPA 8260D	
1,1,1-Trichloroethane	**55.0**	---	20.0	ug/L	50	09/09/24 20:31	EPA 8260D	
Trichloroethene (TCE)	**1630**	---	20.0	ug/L	50	09/09/24 20:31	EPA 8260D	
Trichlorofluoromethane	ND	---	100	ug/L	50	09/09/24 20:31	EPA 8260D	
1,2,3-Trichloropropane	ND	---	50.0	ug/L	50	09/09/24 20:31	EPA 8260D	
Vinyl chloride	**59.5**	---	10.0	ug/L	50	09/09/24 20:31	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*108 %*	*Limits:*	*80-120 %*	*1*	*09/09/24 20:31*	*EPA 8260D*	
Toluene-d8 (Surr)			*105 %*		*80-120 %*	*1*	*09/09/24 20:31*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*98 %*		*80-120 %*	*1*	*09/09/24 20:31*	*EPA 8260D*	
MW-19 DUP (A4I0784-04RE1)				**Matrix: Water**		**Batch: 24I0307**		
Tetrachloroethene (PCE)	**9000**	---	40.0	ug/L	100	09/11/24 18:07	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*103 %*	*Limits:*	*80-120 %*	*1*	*09/11/24 18:07*	*EPA 8260D*	
Toluene-d8 (Surr)			*100 %*		*80-120 %*	*1*	*09/11/24 18:07*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*104 %*		*80-120 %*	*1*	*09/11/24 18:07*	*EPA 8260D*	
MP-1 (A4I0784-05RE2)				**Matrix: Water**		**Batch: 24I0353**		
Bromobenzene	ND	---	1.00	ug/L	2	09/12/24 15:25	EPA 8260D	

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Darrell Auvil, Client Services Manager

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-33**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0784 - 09 18 24 1156**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MP-1 (A4I0784-05RE2)				**Matrix: Water**		**Batch: 24I0353**		
Bromochloromethane	ND	---	2.00	ug/L	2	09/12/24 15:25	EPA 8260D	
Bromodichloromethane	ND	---	2.00	ug/L	2	09/12/24 15:25	EPA 8260D	
Bromoform	ND	---	2.00	ug/L	2	09/12/24 15:25	EPA 8260D	
Bromomethane	ND	---	10.0	ug/L	2	09/12/24 15:25	EPA 8260D	
Carbon tetrachloride	ND	---	2.00	ug/L	2	09/12/24 15:25	EPA 8260D	
Chlorobenzene	ND	---	1.00	ug/L	2	09/12/24 15:25	EPA 8260D	
Chloroethane	ND	---	10.0	ug/L	2	09/12/24 15:25	EPA 8260D	
Chloroform	ND	---	2.00	ug/L	2	09/12/24 15:25	EPA 8260D	
Chloromethane	ND	---	10.0	ug/L	2	09/12/24 15:25	EPA 8260D	
2-Chlorotoluene	ND	---	2.00	ug/L	2	09/12/24 15:25	EPA 8260D	
4-Chlorotoluene	ND	---	2.00	ug/L	2	09/12/24 15:25	EPA 8260D	
Dibromochloromethane	ND	---	2.00	ug/L	2	09/12/24 15:25	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	12.0	ug/L	2	09/12/24 15:25	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	1.00	ug/L	2	09/12/24 15:25	EPA 8260D	
Dibromomethane	ND	---	2.00	ug/L	2	09/12/24 15:25	EPA 8260D	
1,2-Dichlorobenzene	ND	---	1.00	ug/L	2	09/12/24 15:25	EPA 8260D	
1,3-Dichlorobenzene	ND	---	1.00	ug/L	2	09/12/24 15:25	EPA 8260D	
1,4-Dichlorobenzene	ND	---	1.00	ug/L	2	09/12/24 15:25	EPA 8260D	
Dichlorodifluoromethane	ND	---	2.00	ug/L	2	09/12/24 15:25	EPA 8260D	
1,1-Dichloroethane	ND	---	0.800	ug/L	2	09/12/24 15:25	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.800	ug/L	2	09/12/24 15:25	EPA 8260D	
1,1-Dichloroethene	ND	---	0.800	ug/L	2	09/12/24 15:25	EPA 8260D	
cis-1,2-Dichloroethene	**4.14**	---	0.800	ug/L	2	09/12/24 15:25	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.800	ug/L	2	09/12/24 15:25	EPA 8260D	
1,2-Dichloropropane	ND	---	1.00	ug/L	2	09/12/24 15:25	EPA 8260D	
1,3-Dichloropropane	ND	---	2.00	ug/L	2	09/12/24 15:25	EPA 8260D	
2,2-Dichloropropane	ND	---	2.00	ug/L	2	09/12/24 15:25	EPA 8260D	
1,1-Dichloropropene	ND	---	2.00	ug/L	2	09/12/24 15:25	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	2.00	ug/L	2	09/12/24 15:25	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	2.00	ug/L	2	09/12/24 15:25	EPA 8260D	
Hexachlorobutadiene	ND	---	10.0	ug/L	2	09/12/24 15:25	EPA 8260D	
Methylene chloride	ND	---	20.0	ug/L	2	09/12/24 15:25	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.800	ug/L	2	09/12/24 15:25	EPA 8260D	

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Darrell Auvil, Client Services Manager

Apex Laboratories, LLC
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503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-33	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0784 - 09 18 24 1156

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MP-1 (A4I0784-05RE2)				**Matrix: Water**		**Batch: 24I0353**		
1,1,2,2-Tetrachloroethane	ND	---	1.00	ug/L	2	09/12/24 15:25	EPA 8260D	
Tetrachloroethene (PCE)	**164**	---	0.800	ug/L	2	09/12/24 15:25	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	4.00	ug/L	2	09/12/24 15:25	EPA 8260D	
1,1,2-Trichloroethane	ND	---	1.00	ug/L	2	09/12/24 15:25	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	4.00	ug/L	2	09/12/24 15:25	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.800	ug/L	2	09/12/24 15:25	EPA 8260D	
Trichloroethene (TCE)	**23.9**	---	0.800	ug/L	2	09/12/24 15:25	EPA 8260D	
Trichlorofluoromethane	ND	---	4.00	ug/L	2	09/12/24 15:25	EPA 8260D	
1,2,3-Trichloropropane	ND	---	2.00	ug/L	2	09/12/24 15:25	EPA 8260D	
Vinyl chloride	ND	---	0.400	ug/L	2	09/12/24 15:25	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*101 %*	*Limits: 80-120 %*	*1*	*09/12/24 15:25*	*EPA 8260D*	
Toluene-d8 (Surr)			*101 %*	*80-120 %*	*1*	*09/12/24 15:25*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*103 %*	*80-120 %*	*1*	*09/12/24 15:25*	*EPA 8260D*	
NKW-1 (A4I0784-06)				**Matrix: Water**		**Batch: 24I0222**		
Bromobenzene	ND	---	0.500	ug/L	1	09/09/24 19:01	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	09/09/24 19:01	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	09/09/24 19:01	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	09/09/24 19:01	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	09/09/24 19:01	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	09/09/24 19:01	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	09/09/24 19:01	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	09/09/24 19:01	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	09/09/24 19:01	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	09/09/24 19:01	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	09/09/24 19:01	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	09/09/24 19:01	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	09/09/24 19:01	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	09/09/24 19:01	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	09/09/24 19:01	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	09/09/24 19:01	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	09/09/24 19:01	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	09/09/24 19:01	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	09/09/24 19:01	EPA 8260D	

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Darrell Auvil, Client Services Manager

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ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-33	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0784 - 09 18 24 1156

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
NKW-1 (A4I0784-06)				**Matrix: Water**		**Batch: 24I0222**		
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	09/09/24 19:01	EPA 8260D	
1,1-Dichloroethane	**32.4**	---	0.400	ug/L	1	09/09/24 19:01	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	09/09/24 19:01	EPA 8260D	
1,1-Dichloroethene	**8.08**	---	0.400	ug/L	1	09/09/24 19:01	EPA 8260D	
trans-1,2-Dichloroethene	**3.07**	---	0.400	ug/L	1	09/09/24 19:01	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	09/09/24 19:01	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	09/09/24 19:01	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	09/09/24 19:01	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	09/09/24 19:01	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/09/24 19:01	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/09/24 19:01	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	09/09/24 19:01	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	09/09/24 19:01	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	09/09/24 19:01	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	09/09/24 19:01	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	09/09/24 19:01	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	09/09/24 19:01	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	09/09/24 19:01	EPA 8260D	
1,1,1-Trichloroethane	**2.33**	---	0.400	ug/L	1	09/09/24 19:01	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	09/09/24 19:01	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	09/09/24 19:01	EPA 8260D	
Vinyl chloride	**132**	---	0.200	ug/L	1	09/09/24 19:01	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*113 %*	*Limits:*	*80-120 %*	*1*	*09/09/24 19:01*	*EPA 8260D*
Toluene-d8 (Surr)			*107 %*		*80-120 %*	*1*	*09/09/24 19:01*	*EPA 8260D*
4-Bromofluorobenzene (Surr)			*99 %*		*80-120 %*	*1*	*09/09/24 19:01*	*EPA 8260D*
NKW-1 (A4I0784-06RE1)				**Matrix: Water**		**Batch: 24I0307**		
cis-1,2-Dichloroethene	**424**	---	4.00	ug/L	10	09/11/24 18:28	EPA 8260D	
Tetrachloroethene (PCE)	**807**	---	4.00	ug/L	10	09/11/24 18:28	EPA 8260D	
Trichloroethene (TCE)	**238**	---	4.00	ug/L	10	09/11/24 18:28	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*99 %*	*Limits:*	*80-120 %*	*1*	*09/11/24 18:28*	*EPA 8260D*
Toluene-d8 (Surr)			*101 %*		*80-120 %*	*1*	*09/11/24 18:28*	*EPA 8260D*
4-Bromofluorobenzene (Surr)			*103 %*		*80-120 %*	*1*	*09/11/24 18:28*	*EPA 8260D*

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Darrell Auvil, Client Services Manager

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6700 S.W. Sandburg Street
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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-33**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0784 - 09 18 24 1156**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
NKW-2 (A4I0784-07)				**Matrix: Water**		**Batch: 24I0307**		
Bromobenzene	ND	---	5.00	ug/L	10	09/11/24 18:49	EPA 8260D	
Bromochloromethane	ND	---	10.0	ug/L	10	09/11/24 18:49	EPA 8260D	
Bromodichloromethane	ND	---	10.0	ug/L	10	09/11/24 18:49	EPA 8260D	
Bromoform	ND	---	10.0	ug/L	10	09/11/24 18:49	EPA 8260D	
Bromomethane	ND	---	50.0	ug/L	10	09/11/24 18:49	EPA 8260D	
Carbon tetrachloride	ND	---	10.0	ug/L	10	09/11/24 18:49	EPA 8260D	
Chlorobenzene	ND	---	5.00	ug/L	10	09/11/24 18:49	EPA 8260D	
Chloroethane	ND	---	50.0	ug/L	10	09/11/24 18:49	EPA 8260D	
Chloroform	ND	---	10.0	ug/L	10	09/11/24 18:49	EPA 8260D	
Chloromethane	ND	---	50.0	ug/L	10	09/11/24 18:49	EPA 8260D	
2-Chlorotoluene	ND	---	10.0	ug/L	10	09/11/24 18:49	EPA 8260D	
4-Chlorotoluene	ND	---	10.0	ug/L	10	09/11/24 18:49	EPA 8260D	
Dibromochloromethane	ND	---	10.0	ug/L	10	09/11/24 18:49	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	50.0	ug/L	10	09/11/24 18:49	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	5.00	ug/L	10	09/11/24 18:49	EPA 8260D	
Dibromomethane	ND	---	10.0	ug/L	10	09/11/24 18:49	EPA 8260D	
1,2-Dichlorobenzene	ND	---	5.00	ug/L	10	09/11/24 18:49	EPA 8260D	
1,3-Dichlorobenzene	ND	---	5.00	ug/L	10	09/11/24 18:49	EPA 8260D	
1,4-Dichlorobenzene	ND	---	5.00	ug/L	10	09/11/24 18:49	EPA 8260D	
Dichlorodifluoromethane	ND	---	10.0	ug/L	10	09/11/24 18:49	EPA 8260D	
1,1-Dichloroethane	**176**	---	4.00	ug/L	10	09/11/24 18:49	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	4.00	ug/L	10	09/11/24 18:49	EPA 8260D	
1,1-Dichloroethene	**64.9**	---	4.00	ug/L	10	09/11/24 18:49	EPA 8260D	
trans-1,2-Dichloroethene	**79.8**	---	4.00	ug/L	10	09/11/24 18:49	EPA 8260D	
1,2-Dichloropropane	ND	---	5.00	ug/L	10	09/11/24 18:49	EPA 8260D	
1,3-Dichloropropane	ND	---	10.0	ug/L	10	09/11/24 18:49	EPA 8260D	
2,2-Dichloropropane	ND	---	10.0	ug/L	10	09/11/24 18:49	EPA 8260D	
1,1-Dichloropropene	ND	---	10.0	ug/L	10	09/11/24 18:49	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	10.0	ug/L	10	09/11/24 18:49	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	10.0	ug/L	10	09/11/24 18:49	EPA 8260D	
Hexachlorobutadiene	ND	---	50.0	ug/L	10	09/11/24 18:49	EPA 8260D	
Methylene chloride	ND	---	100	ug/L	10	09/11/24 18:49	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	4.00	ug/L	10	09/11/24 18:49	EPA 8260D	

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ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-33	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0784 - 09 18 24 1156

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
NKW-2 (A4I0784-07)				**Matrix: Water**		**Batch: 24I0307**		
1,1,2,2-Tetrachloroethane	ND	---	5.00	ug/L	10	09/11/24 18:49	EPA 8260D	
Tetrachloroethene (PCE)	**73.0**	---	4.00	ug/L	10	09/11/24 18:49	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	20.0	ug/L	10	09/11/24 18:49	EPA 8260D	
1,1,2-Trichloroethane	ND	---	5.00	ug/L	10	09/11/24 18:49	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	20.0	ug/L	10	09/11/24 18:49	EPA 8260D	
1,1,1-Trichloroethane	ND	---	4.00	ug/L	10	09/11/24 18:49	EPA 8260D	
Trichloroethene (TCE)	**202**	---	4.00	ug/L	10	09/11/24 18:49	EPA 8260D	
Trichlorofluoromethane	ND	---	20.0	ug/L	10	09/11/24 18:49	EPA 8260D	
1,2,3-Trichloropropane	ND	---	10.0	ug/L	10	09/11/24 18:49	EPA 8260D	
Vinyl chloride	**36.9**	---	2.00	ug/L	10	09/11/24 18:49	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*101 %*	*Limits: 80-120 %*	*1*	*09/11/24 18:49*	*EPA 8260D*	
Toluene-d8 (Surr)			*100 %*	*80-120 %*	*1*	*09/11/24 18:49*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*103 %*	*80-120 %*	*1*	*09/11/24 18:49*	*EPA 8260D*	
NKW-2 (A4I0784-07RE1)				**Matrix: Water**		**Batch: 24I0353**		
cis-1,2-Dichloroethene	**6880**	---	40.0	ug/L	100	09/12/24 16:08	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*100 %*	*Limits: 80-120 %*	*1*	*09/12/24 16:08*	*EPA 8260D*	
Toluene-d8 (Surr)			*100 %*	*80-120 %*	*1*	*09/12/24 16:08*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*102 %*	*80-120 %*	*1*	*09/12/24 16:08*	*EPA 8260D*	
MW-13 (A4I0784-08)				**Matrix: Water**		**Batch: 24I0307**		
Bromobenzene	ND	---	0.500	ug/L	1	09/11/24 16:41	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	09/11/24 16:41	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	09/11/24 16:41	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	09/11/24 16:41	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	09/11/24 16:41	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	09/11/24 16:41	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	09/11/24 16:41	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	09/11/24 16:41	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	09/11/24 16:41	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	09/11/24 16:41	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	09/11/24 16:41	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	09/11/24 16:41	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	09/11/24 16:41	EPA 8260D	

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-33	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0784 - 09 18 24 1156

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-13 (A4I0784-08)				**Matrix: Water**		**Batch: 24I0307**		
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	09/11/24 16:41	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	09/11/24 16:41	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	09/11/24 16:41	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	09/11/24 16:41	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	09/11/24 16:41	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	09/11/24 16:41	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	09/11/24 16:41	EPA 8260D	
1,1-Dichloroethane	**36.5**	---	0.400	ug/L	1	09/11/24 16:41	EPA 8260D	**Q-42**
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	09/11/24 16:41	EPA 8260D	
1,1-Dichloroethene	**29.5**	---	0.400	ug/L	1	09/11/24 16:41	EPA 8260D	**Q-42**
trans-1,2-Dichloroethene	**33.7**	---	0.400	ug/L	1	09/11/24 16:41	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	09/11/24 16:41	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	09/11/24 16:41	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	09/11/24 16:41	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	09/11/24 16:41	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/11/24 16:41	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/11/24 16:41	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	09/11/24 16:41	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	09/11/24 16:41	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	09/11/24 16:41	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	09/11/24 16:41	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	09/11/24 16:41	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	09/11/24 16:41	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	09/11/24 16:41	EPA 8260D	
1,1,1-Trichloroethane	**0.600**	---	0.400	ug/L	1	09/11/24 16:41	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	09/11/24 16:41	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	09/11/24 16:41	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)			*Recovery: 96 %*	*Limits: 80-120 %*	*1*	*09/11/24 16:41*	*EPA 8260D*	
Toluene-d8 (Surr)			*102 %*	*80-120 %*	*1*	*09/11/24 16:41*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*101 %*	*80-120 %*	*1*	*09/11/24 16:41*	*EPA 8260D*	
MW-13 (A4I0784-08RE1)				**Matrix: Water**		**Batch: 24I0353**		
cis-1,2-Dichloroethene	**1960**	---	8.00	ug/L	20	09/12/24 16:29	EPA 8260D	
Tetrachloroethene (PCE)	**1600**	---	8.00	ug/L	20	09/12/24 16:29	EPA 8260D	

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ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-33	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0784 - 09 18 24 1156

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-13 (A4I0784-08RE1)				**Matrix: Water**		**Batch: 24I0353**		
Trichloroethene (TCE)	**928**	---	8.00	ug/L	20	09/12/24 16:29	EPA 8260D	
Vinyl chloride	**321**	---	4.00	ug/L	20	09/12/24 16:29	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery: 96 %*		*Limits: 80-120 %*	*1*	*09/12/24 16:29*	*EPA 8260D*	
Toluene-d8 (Surr)			*100 %*	*80-120 %*	*1*	*09/12/24 16:29*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*99 %*	*80-120 %*	*1*	*09/12/24 16:29*	*EPA 8260D*	

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-33	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0784 - 09 18 24 1156

ANALYTICAL SAMPLE RESULTS

Ammonia by Gas Diffusion and Colorimetric Detection

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
KMW-6 (A4I0784-01)				**Matrix: Water**		**Batch: 24I0150**		
Ammonia as N	ND	---	0.0200	mg/L	1	09/06/24 11:38	SM 4500-NH3 G	
KMW-5 (A4I0784-02RE1)				**Matrix: Water**		**Batch: 24I0175**		
Ammonia as N	**18.2**	---	0.200	mg/L	10	09/06/24 12:59	SM 4500-NH3 G	
MW-19 (A4I0784-03)				**Matrix: Water**		**Batch: 24I0150**		
Ammonia as N	**73.8**	---	1.00	mg/L	50	09/06/24 11:43	SM 4500-NH3 G	
MW-19 DUP (A4I0784-04)				**Matrix: Water**		**Batch: 24I0150**		
Ammonia as N	**64.2**	---	1.00	mg/L	50	09/06/24 11:44	SM 4500-NH3 G	
MP-1 (A4I0784-05)				**Matrix: Water**		**Batch: 24I0150**		
Ammonia as N	**2.32**	---	0.0200	mg/L	1	09/06/24 11:55	SM 4500-NH3 G	
NKW-1 (A4I0784-06RE1)				**Matrix: Water**		**Batch: 24I0175**		
Ammonia as N	**61.5**	---	0.400	mg/L	20	09/06/24 13:00	SM 4500-NH3 G	
NKW-2 (A4I0784-07)				**Matrix: Water**		**Batch: 24I0150**		
Ammonia as N	**40.2**	---	0.200	mg/L	10	09/06/24 11:59	SM 4500-NH3 G	
MW-13 (A4I0784-08RE1)				**Matrix: Water**		**Batch: 24I0175**		
Ammonia as N	**57.9**	---	0.400	mg/L	20	09/06/24 13:02	SM 4500-NH3 G	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-33**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0784 - 09 18 24 1156**

ANALYTICAL SAMPLE RESULTS

Anions by Ion Chromatography

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
KMW-6 (A4I0784-01)				**Matrix: Water**				
Batch: 24I0076								
Nitrate-Nitrogen	**3.47**	---	0.250	mg/L	1	09/04/24 20:42	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	09/04/24 20:42	EPA 300.0	
KMW-5 (A4I0784-02)				**Matrix: Water**				
Batch: 24I0076								
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	09/04/24 21:03	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	09/04/24 21:03	EPA 300.0	
MW-19 (A4I0784-03)				**Matrix: Water**				
Batch: 24I0076								
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	09/04/24 21:25	EPA 300.0	
MW-19 (A4I0784-03RE1)				**Matrix: Water**				
Batch: 24I0076								
Nitrate-Nitrogen	**81.9**	---	5.00	mg/L	20	09/04/24 17:06	EPA 300.0	
MW-19 DUP (A4I0784-04)				**Matrix: Water**				
Batch: 24I0076								
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	09/04/24 21:47	EPA 300.0	
MW-19 DUP (A4I0784-04RE1)				**Matrix: Water**				
Batch: 24I0076								
Nitrate-Nitrogen	**78.9**	---	5.00	mg/L	20	09/04/24 17:28	EPA 300.0	
MP-1 (A4I0784-05)				**Matrix: Water**				
Batch: 24I0076								
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	09/04/24 22:08	EPA 300.0	
MP-1 (A4I0784-05RE1)				**Matrix: Water**				
Batch: 24I0076								
Nitrate-Nitrogen	**26.8**	---	2.50	mg/L	10	09/04/24 17:49	EPA 300.0	
NKW-1 (A4I0784-06)				**Matrix: Water**				
Batch: 24I0076								
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	09/04/24 22:30	EPA 300.0	

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-33	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0784 - 09 18 24 1156

ANALYTICAL SAMPLE RESULTS

Anions by Ion Chromatography

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
NKW-1 (A4I0784-06RE1)				**Matrix: Water**				
Batch: 24I0076								
Nitrate-Nitrogen	**88.4**	---	2.50	mg/L	10	09/04/24 18:11	EPA 300.0	
NKW-2 (A4I0784-07)				**Matrix: Water**				
Batch: 24I0076								
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	09/04/24 22:51	EPA 300.0	
NKW-2 (A4I0784-07RE1)				**Matrix: Water**				
Batch: 24I0104								
Nitrate-Nitrogen	**3.23**	---	0.250	mg/L	1	09/05/24 10:21	EPA 300.0	
MW-13 (A4I0784-08)				**Matrix: Water**				
Batch: 24I0076								
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	09/04/24 23:13	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	09/04/24 23:13	EPA 300.0	

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GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-33**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0784 - 09 18 24 1156**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0222 - EPA 5030C							**Water**					
Blank (24I0222-BLK1)			Prepared: 09/09/24 10:03 Analyzed: 09/09/24 12:12									
EPA 8260D												
Bromobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Bromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromodichloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromoform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromomethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Carbon tetrachloride	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Chloroethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Chloroform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chloromethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
2-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
4-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Dibromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dibromomethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Methylene chloride	ND	---	10.0	ug/L	1	---	---	---	---	---	---	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-33**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0784 - 09 18 24 1156**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0222 - EPA 5030C							**Water**					
Blank (24I0222-BLK1)			Prepared: 09/09/24 10:03 Analyzed: 09/09/24 12:12									
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Vinyl chloride	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 98 %*		*Limits: 80-120 %*			*Dilution: 1x*				
Toluene-d8 (Surr)			*102 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*103 %*		*80-120 %*			*"*				
LCS (24I0222-BS1)			Prepared: 09/09/24 10:03 Analyzed: 09/09/24 11:27									
EPA 8260D												
Bromobenzene	21.1	---	0.500	ug/L	1	20.0	---	106	80-120%	---	---	
Bromochloromethane	23.9	---	1.00	ug/L	1	20.0	---	120	80-120%	---	---	
Bromodichloromethane	23.1	---	1.00	ug/L	1	20.0	---	116	80-120%	---	---	
Bromoform	25.6	---	1.00	ug/L	1	20.0	---	**128**	**80-120%**	---	---	Q-56
Bromomethane	19.0	---	5.00	ug/L	1	20.0	---	95	80-120%	---	---	
Carbon tetrachloride	23.3	---	1.00	ug/L	1	20.0	---	116	80-120%	---	---	
Chlorobenzene	22.1	---	0.500	ug/L	1	20.0	---	111	80-120%	---	---	
Chloroethane	23.7	---	5.00	ug/L	1	20.0	---	119	80-120%	---	---	
Chloroform	22.8	---	1.00	ug/L	1	20.0	---	114	80-120%	---	---	
Chloromethane	21.2	---	5.00	ug/L	1	20.0	---	106	80-120%	---	---	
2-Chlorotoluene	22.4	---	1.00	ug/L	1	20.0	---	112	80-120%	---	---	
4-Chlorotoluene	23.0	---	1.00	ug/L	1	20.0	---	115	80-120%	---	---	
Dibromochloromethane	22.1	---	1.00	ug/L	1	20.0	---	110	80-120%	---	---	
1,2-Dibromo-3-chloropropane	20.8	---	5.00	ug/L	1	20.0	---	104	80-120%	---	---	
1,2-Dibromoethane (EDB)	22.9	---	0.500	ug/L	1	20.0	---	115	80-120%	---	---	
Dibromomethane	22.6	---	1.00	ug/L	1	20.0	---	113	80-120%	---	---	
1,2-Dichlorobenzene	22.6	---	0.500	ug/L	1	20.0	---	113	80-120%	---	---	

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5820 S Kelly Ave Unit B	Project Number: **19001-009-33**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0784 - 09 18 24 1156**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0222 - EPA 5030C							**Water**					
LCS (24I0222-BS1)			Prepared: 09/09/24 10:03 Analyzed: 09/09/24 11:27									
1,3-Dichlorobenzene	22.5	---	0.500	ug/L	1	20.0	---	113	80-120%	---	---	
1,4-Dichlorobenzene	21.9	---	0.500	ug/L	1	20.0	---	109	80-120%	---	---	
Dichlorodifluoromethane	18.2	---	1.00	ug/L	1	20.0	---	91	80-120%	---	---	
1,1-Dichloroethane	22.7	---	0.400	ug/L	1	20.0	---	114	80-120%	---	---	
1,2-Dichloroethane (EDC)	22.9	---	0.400	ug/L	1	20.0	---	114	80-120%	---	---	
1,1-Dichloroethene	23.8	---	0.400	ug/L	1	20.0	---	119	80-120%	---	---	
cis-1,2-Dichloroethene	22.1	---	0.400	ug/L	1	20.0	---	110	80-120%	---	---	
trans-1,2-Dichloroethene	22.8	---	0.400	ug/L	1	20.0	---	114	80-120%	---	---	
1,2-Dichloropropane	22.7	---	0.500	ug/L	1	20.0	---	113	80-120%	---	---	
1,3-Dichloropropane	22.4	---	1.00	ug/L	1	20.0	---	112	80-120%	---	---	
2,2-Dichloropropane	25.6	---	1.00	ug/L	1	20.0	---	**128**	**80-120%**	---	---	Q-56
1,1-Dichloropropene	22.8	---	1.00	ug/L	1	20.0	---	114	80-120%	---	---	
cis-1,3-Dichloropropene	23.3	---	1.00	ug/L	1	20.0	---	116	80-120%	---	---	
trans-1,3-Dichloropropene	24.1	---	1.00	ug/L	1	20.0	---	120	80-120%	---	---	
Hexachlorobutadiene	21.9	---	5.00	ug/L	1	20.0	---	109	80-120%	---	---	
Methylene chloride	21.6	---	10.0	ug/L	1	20.0	---	108	80-120%	---	---	
1,1,1,2-Tetrachloroethane	22.2	---	0.400	ug/L	1	20.0	---	111	80-120%	---	---	
1,1,2,2-Tetrachloroethane	24.2	---	0.500	ug/L	1	20.0	---	**121**	**80-120%**	---	---	Q-56
Tetrachloroethene (PCE)	21.5	---	0.400	ug/L	1	20.0	---	108	80-120%	---	---	
1,2,3-Trichlorobenzene	20.8	---	2.00	ug/L	1	20.0	---	104	80-120%	---	---	
1,1,2-Trichloroethane	22.2	---	0.500	ug/L	1	20.0	---	111	80-120%	---	---	
1,2,4-Trichlorobenzene	20.1	---	2.00	ug/L	1	20.0	---	101	80-120%	---	---	
1,1,1-Trichloroethane	23.2	---	0.400	ug/L	1	20.0	---	116	80-120%	---	---	
Trichloroethene (TCE)	20.9	---	0.400	ug/L	1	20.0	---	105	80-120%	---	---	
Trichlorofluoromethane	24.2	---	2.00	ug/L	1	20.0	---	**121**	**80-120%**	---	---	Q-56
1,2,3-Trichloropropane	22.8	---	1.00	ug/L	1	20.0	---	114	80-120%	---	---	
Vinyl chloride	20.6	---	0.200	ug/L	1	20.0	---	103	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 99 %*		*Limits: 80-120 %*			*Dilution: 1x*				
Toluene-d8 (Surr)			*100 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*96 %*		*80-120 %*			*"*				

Duplicate (24I0222-DUP1) Prepared: 09/09/24 10:03 Analyzed: 09/09/24 20:09

QC Source Sample: MW-19 (A4I0784-03)

EPA 8260D

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Darrell Auvil, Client Services Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project:	Vancouver GWM 3Q24
5820 S Kelly Ave Unit B	Project Number:	19001-009-33
Portland, OR 97239	Project Manager:	Stephanie Bosze-Salisbury

Report ID:
A4I0784 - 09 18 24 1156

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0222 - EPA 5030C							**Water**					
Duplicate (24I0222-DUP1)			Prepared: 09/09/24 10:03 Analyzed: 09/09/24 20:09									
QC Source Sample: MW-19 (A4I0784-03)												
Bromobenzene	ND	---	25.0	ug/L	50	---	ND	---	---	---	30%	
Bromochloromethane	ND	---	50.0	ug/L	50	---	ND	---	---	---	30%	
Bromodichloromethane	ND	---	50.0	ug/L	50	---	ND	---	---	---	30%	
Bromoform	ND	---	50.0	ug/L	50	---	ND	---	---	---	30%	
Bromomethane	ND	---	250	ug/L	50	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	---	50.0	ug/L	50	---	ND	---	---	---	30%	
Chlorobenzene	ND	---	25.0	ug/L	50	---	ND	---	---	---	30%	
Chloroethane	ND	---	250	ug/L	50	---	ND	---	---	---	30%	
Chloroform	ND	---	50.0	ug/L	50	---	ND	---	---	---	30%	
Chloromethane	ND	---	250	ug/L	50	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	---	50.0	ug/L	50	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	---	50.0	ug/L	50	---	ND	---	---	---	30%	
Dibromochloromethane	ND	---	50.0	ug/L	50	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	---	250	ug/L	50	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	---	25.0	ug/L	50	---	ND	---	---	---	30%	
Dibromomethane	ND	---	50.0	ug/L	50	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	---	25.0	ug/L	50	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	---	25.0	ug/L	50	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	---	25.0	ug/L	50	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	---	50.0	ug/L	50	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	---	20.0	ug/L	50	---	11.0	---	---	***	30%	
1,2-Dichloroethane (EDC)	ND	---	20.0	ug/L	50	---	ND	---	---	---	30%	
1,1-Dichloroethene	**34.0**	---	20.0	ug/L	50	---	32.0	---	---	6	30%	
cis-1,2-Dichloroethene	**562**	---	20.0	ug/L	50	---	482	---	---	15	30%	
trans-1,2-Dichloroethene	ND	---	20.0	ug/L	50	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	---	25.0	ug/L	50	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	---	50.0	ug/L	50	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	---	50.0	ug/L	50	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	---	50.0	ug/L	50	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	---	50.0	ug/L	50	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	---	50.0	ug/L	50	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	---	250	ug/L	50	---	ND	---	---	---	30%	
Methylene chloride	ND	---	500	ug/L	50	---	ND	---	---	---	30%	

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Darrell Auvil, Client Services Manager

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6700 S.W. Sandburg Street
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503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project:	Vancouver GWM 3Q24
5820 S Kelly Ave Unit B	Project Number:	19001-009-33
Portland, OR 97239	Project Manager:	Stephanie Bosze-Salisbury

Report ID:
A4I0784 - 09 18 24 1156

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0222 - EPA 5030C							Water					
Duplicate (24I0222-DUP1)			Prepared: 09/09/24 10:03 Analyzed: 09/09/24 20:09									
QC Source Sample: MW-19 (A4I0784-03)												
1,1,1,2-Tetrachloroethane	ND	---	20.0	ug/L	50	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	---	25.0	ug/L	50	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	**10100**	---	20.0	ug/L	50	---	8410	---	---	19	30%	E
1,2,3-Trichlorobenzene	ND	---	100	ug/L	50	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	---	25.0	ug/L	50	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	---	100	ug/L	50	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	**50.0**	---	20.0	ug/L	50	---	43.0	---	---	15	30%	
Trichloroethene (TCE)	**1550**	---	20.0	ug/L	50	---	1330	---	---	16	30%	
Trichlorofluoromethane	ND	---	100	ug/L	50	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	---	50.0	ug/L	50	---	ND	---	---	---	30%	
Vinyl chloride	**54.5**	---	10.0	ug/L	50	---	47.0	---	---	15	30%	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 107 %*		*Limits: 80-120 %*				*Dilution: 1x*			
Toluene-d8 (Surr)			*106 %*		*80-120 %*				*"*			
4-Bromofluorobenzene (Surr)			*99 %*		*80-120 %*				*"*			
Matrix Spike (24I0222-MS1)			Prepared: 09/09/24 10:03 Analyzed: 09/09/24 13:43									
QC Source Sample: Non-SDG (A4H1603-20)												
EPA 8260D												
Bromobenzene	23.0	---	0.500	ug/L	1	24.0	ND	96	80-120%	---	---	
Bromochloromethane	26.4	---	1.00	ug/L	1	24.0	ND	110	78-123%	---	---	
Bromodichloromethane	25.4	---	1.00	ug/L	1	24.0	ND	106	79-125%	---	---	
Bromoform	26.3	---	1.00	ug/L	1	24.0	ND	110	66-130%	---	---	Q-54p
Bromomethane	23.8	---	5.00	ug/L	1	24.0	ND	99	53-141%	---	---	
Carbon tetrachloride	26.4	---	1.00	ug/L	1	24.0	ND	110	72-136%	---	---	
Chlorobenzene	24.3	---	0.500	ug/L	1	24.0	ND	101	80-120%	---	---	
Chloroethane	28.1	---	5.00	ug/L	1	24.0	ND	117	60-138%	---	---	
Chloroform	25.4	---	1.00	ug/L	1	24.0	ND	106	79-124%	---	---	
Chloromethane	23.4	---	5.00	ug/L	1	24.0	ND	97	50-139%	---	---	
2-Chlorotoluene	24.5	---	1.00	ug/L	1	24.0	ND	102	79-122%	---	---	
4-Chlorotoluene	25.7	---	1.00	ug/L	1	24.0	ND	107	78-122%	---	---	
Dibromochloromethane	23.6	---	1.00	ug/L	1	24.0	ND	98	74-126%	---	---	
1,2-Dibromo-3-chloropropane	20.2	---	5.00	ug/L	1	24.0	ND	84	62-128%	---	---	
1,2-Dibromoethane (EDB)	24.3	---	0.500	ug/L	1	24.0	ND	101	77-121%	---	---	

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Darrell Auvil, Client Services Manager

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503-718-2323
ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-33**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0784 - 09 18 24 1156**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0222 - EPA 5030C							**Water**					
Matrix Spike (24I0222-MS1)			Prepared: 09/09/24 10:03		Analyzed: 09/09/24 13:43							
QC Source Sample: Non-SDG (A4H1603-20)												
Dibromomethane	24.0	---	1.00	ug/L	1	24.0	ND	100	79-123%	---	---	
1,2-Dichlorobenzene	24.0	---	0.500	ug/L	1	24.0	ND	100	80-120%	---	---	
1,3-Dichlorobenzene	25.1	---	0.500	ug/L	1	24.0	ND	105	80-120%	---	---	
1,4-Dichlorobenzene	24.4	---	0.500	ug/L	1	24.0	ND	101	79-120%	---	---	
Dichlorodifluoromethane	18.8	---	1.00	ug/L	1	24.0	ND	78	32-152%	---	---	
1,1-Dichloroethane	25.6	---	0.400	ug/L	1	24.0	ND	107	77-125%	---	---	
1,2-Dichloroethane (EDC)	25.3	---	0.400	ug/L	1	24.0	ND	105	73-128%	---	---	
1,1-Dichloroethene	27.4	---	0.400	ug/L	1	24.0	ND	114	71-131%	---	---	
cis-1,2-Dichloroethene	24.2	---	0.400	ug/L	1	24.0	ND	101	78-123%	---	---	
trans-1,2-Dichloroethene	25.6	---	0.400	ug/L	1	24.0	ND	106	75-124%	---	---	
1,2-Dichloropropane	24.8	---	0.500	ug/L	1	24.0	ND	103	78-122%	---	---	
1,3-Dichloropropane	23.9	---	1.00	ug/L	1	24.0	ND	100	80-120%	---	---	
2,2-Dichloropropane	31.3	---	1.00	ug/L	1	24.0	ND	130	60-139%	---	---	Q-54p
1,1-Dichloropropene	26.1	---	1.00	ug/L	1	24.0	ND	109	79-125%	---	---	
cis-1,3-Dichloropropene	22.8	---	1.00	ug/L	1	24.0	ND	95	75-124%	---	---	
trans-1,3-Dichloropropene	26.3	---	1.00	ug/L	1	24.0	ND	110	73-127%	---	---	
Hexachlorobutadiene	23.6	---	5.00	ug/L	1	24.0	ND	98	66-134%	---	---	
Methylene chloride	22.9	---	10.0	ug/L	1	24.0	ND	95	74-124%	---	---	
1,1,1,2-Tetrachloroethane	23.9	---	0.400	ug/L	1	24.0	ND	99	78-124%	---	---	
1,1,2,2-Tetrachloroethane	25.9	---	0.500	ug/L	1	24.0	ND	108	71-121%	---	---	Q-54
Tetrachloroethene (PCE)	24.4	---	0.400	ug/L	1	24.0	ND	102	74-129%	---	---	
1,2,3-Trichlorobenzene	21.1	---	2.00	ug/L	1	24.0	ND	88	69-129%	---	---	
1,1,2-Trichloroethane	23.6	---	0.500	ug/L	1	24.0	ND	98	80-120%	---	---	
1,2,4-Trichlorobenzene	20.7	---	2.00	ug/L	1	24.0	ND	86	69-130%	---	---	
1,1,1-Trichloroethane	26.4	---	0.400	ug/L	1	24.0	ND	110	74-131%	---	---	
Trichloroethene (TCE)	22.4	---	0.400	ug/L	1	24.0	ND	93	79-123%	---	---	
Trichlorofluoromethane	29.9	---	2.00	ug/L	1	24.0	ND	124	65-141%	---	---	Q-54
1,2,3-Trichloropropane	24.1	---	1.00	ug/L	1	24.0	ND	100	73-122%	---	---	
Vinyl chloride	24.1	---	0.200	ug/L	1	24.0	ND	100	58-137%	---	---	

Surr: 1,4-Difluorobenzene (Surr)	*Recovery: 98 %*	*Limits: 80-120 %*	*Dilution: 1x*
Toluene-d8 (Surr)	*100 %*	*80-120 %*	*"*
4-Bromofluorobenzene (Surr)	*94 %*	*80-120 %*	*"*

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Darrell Auvil, Client Services Manager

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-33**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0784 - 09 18 24 1156**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0307 - EPA 5030C							**Water**					
Blank (24I0307-BLK1)			Prepared: 09/11/24 07:19 Analyzed: 09/11/24 09:59									
EPA 8260D												
Bromobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Bromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromodichloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromoform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromomethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Carbon tetrachloride	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Chloroethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Chloroform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chloromethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
2-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
4-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Dibromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dibromomethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Methylene chloride	ND	---	10.0	ug/L	1	---	---	---	---	---	---	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-33**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0784 - 09 18 24 1156**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0307 - EPA 5030C									**Water**			
Blank (24I0307-BLK1)			Prepared: 09/11/24 07:19 Analyzed: 09/11/24 09:59									
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Vinyl chloride	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 96 %*		*Limits: 80-120 %*			*Dilution: 1x*				
Toluene-d8 (Surr)			*101 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*104 %*		*80-120 %*			*"*				
LCS (24I0307-BS1)			Prepared: 09/11/24 07:19 Analyzed: 09/11/24 09:16									
EPA 8260D												
Bromobenzene	18.9	---	0.500	ug/L	1	20.0	---	95	80-120%	---	---	
Bromochloromethane	18.2	---	1.00	ug/L	1	20.0	---	91	80-120%	---	---	
Bromodichloromethane	21.9	---	1.00	ug/L	1	20.0	---	109	80-120%	---	---	
Bromoform	29.6	---	1.00	ug/L	1	20.0	---	**148**	**80-120%**	---	---	Q-56
Bromomethane	16.9	---	5.00	ug/L	1	20.0	---	85	80-120%	---	---	
Carbon tetrachloride	31.2	---	1.00	ug/L	1	20.0	---	**156**	**80-120%**	---	---	Q-56
Chlorobenzene	19.4	---	0.500	ug/L	1	20.0	---	97	80-120%	---	---	
Chloroethane	15.8	---	5.00	ug/L	1	20.0	---	**79**	**80-120%**	---	---	Q-55
Chloroform	18.7	---	1.00	ug/L	1	20.0	---	94	80-120%	---	---	
Chloromethane	16.8	---	5.00	ug/L	1	20.0	---	84	80-120%	---	---	
2-Chlorotoluene	19.1	---	1.00	ug/L	1	20.0	---	96	80-120%	---	---	
4-Chlorotoluene	19.1	---	1.00	ug/L	1	20.0	---	95	80-120%	---	---	
Dibromochloromethane	29.6	---	1.00	ug/L	1	20.0	---	**148**	**80-120%**	---	---	Q-56
1,2-Dibromo-3-chloropropane	25.9	---	5.00	ug/L	1	20.0	---	**129**	**80-120%**	---	---	Q-56
1,2-Dibromoethane (EDB)	24.0	---	0.500	ug/L	1	20.0	---	120	80-120%	---	---	
Dibromomethane	17.8	---	1.00	ug/L	1	20.0	---	89	80-120%	---	---	
1,2-Dichlorobenzene	19.9	---	0.500	ug/L	1	20.0	---	99	80-120%	---	---	

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503-718-2323
ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-33**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0784 - 09 18 24 1156**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0307 - EPA 5030C							**Water**					
LCS (24I0307-BS1)			Prepared: 09/11/24 07:19 Analyzed: 09/11/24 09:16									
1,3-Dichlorobenzene	19.6	---	0.500	ug/L	1	20.0	---	98	80-120%	---	---	
1,4-Dichlorobenzene	18.6	---	0.500	ug/L	1	20.0	---	93	80-120%	---	---	
Dichlorodifluoromethane	16.5	---	1.00	ug/L	1	20.0	---	82	80-120%	---	---	
1,1-Dichloroethane	19.2	---	0.400	ug/L	1	20.0	---	96	80-120%	---	---	
1,2-Dichloroethane (EDC)	18.2	---	0.400	ug/L	1	20.0	---	91	80-120%	---	---	
1,1-Dichloroethene	17.3	---	0.400	ug/L	1	20.0	---	86	80-120%	---	---	
cis-1,2-Dichloroethene	18.5	---	0.400	ug/L	1	20.0	---	92	80-120%	---	---	
trans-1,2-Dichloroethene	17.3	---	0.400	ug/L	1	20.0	---	87	80-120%	---	---	
1,2-Dichloropropane	18.4	---	0.500	ug/L	1	20.0	---	92	80-120%	---	---	
1,3-Dichloropropane	20.2	---	1.00	ug/L	1	20.0	---	101	80-120%	---	---	
2,2-Dichloropropane	29.2	---	1.00	ug/L	1	20.0	---	**146**	**80-120%**	---	---	Q-56
1,1-Dichloropropene	18.4	---	1.00	ug/L	1	20.0	---	92	80-120%	---	---	
cis-1,3-Dichloropropene	22.2	---	1.00	ug/L	1	20.0	---	111	80-120%	---	---	
trans-1,3-Dichloropropene	25.9	---	1.00	ug/L	1	20.0	---	**130**	**80-120%**	---	---	Q-56
Hexachlorobutadiene	19.8	---	5.00	ug/L	1	20.0	---	99	80-120%	---	---	
Methylene chloride	16.6	---	10.0	ug/L	1	20.0	---	83	80-120%	---	---	
1,1,1,2-Tetrachloroethane	29.4	---	0.400	ug/L	1	20.0	---	**147**	**80-120%**	---	---	Q-56
1,1,2,2-Tetrachloroethane	20.9	---	0.500	ug/L	1	20.0	---	104	80-120%	---	---	
Tetrachloroethene (PCE)	19.8	---	0.400	ug/L	1	20.0	---	99	80-120%	---	---	
1,2,3-Trichlorobenzene	19.5	---	2.00	ug/L	1	20.0	---	98	80-120%	---	---	
1,1,2-Trichloroethane	20.4	---	0.500	ug/L	1	20.0	---	102	80-120%	---	---	
1,2,4-Trichlorobenzene	19.3	---	2.00	ug/L	1	20.0	---	96	80-120%	---	---	
1,1,1-Trichloroethane	21.3	---	0.400	ug/L	1	20.0	---	107	80-120%	---	---	
Trichloroethene (TCE)	17.5	---	0.400	ug/L	1	20.0	---	87	80-120%	---	---	
Trichlorofluoromethane	18.2	---	2.00	ug/L	1	20.0	---	91	80-120%	---	---	
1,2,3-Trichloropropane	18.8	---	1.00	ug/L	1	20.0	---	94	80-120%	---	---	
Vinyl chloride	15.9	---	0.200	ug/L	1	20.0	---	80	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 93 %*			*Limits: 80-120 %*			*Dilution: 1x*			
Toluene-d8 (Surr)			*99 %*			*80-120 %*			*"*			
4-Bromofluorobenzene (Surr)			*96 %*			*80-120 %*			*"*			
Duplicate (24I0307-DUP1)			Prepared: 09/11/24 07:19 Analyzed: 09/11/24 19:11									

QC Source Sample: NKW-2 (A4I0784-07)

EPA 8260D

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ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-33	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0784 - 09 18 24 1156

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0307 - EPA 5030C							**Water**					
Duplicate (24I0307-DUP1)			Prepared: 09/11/24 07:19 Analyzed: 09/11/24 19:11									
QC Source Sample: NKW-2 (A4I0784-07)												
Bromobenzene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
Bromochloromethane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Bromodichloromethane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Bromoform	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Bromomethane	ND	---	50.0	ug/L	10	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Chlorobenzene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
Chloroethane	ND	---	50.0	ug/L	10	---	ND	---	---	---	30%	
Chloroform	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Chloromethane	ND	---	50.0	ug/L	10	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Dibromochloromethane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	---	50.0	ug/L	10	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
Dibromomethane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
1,1-Dichloroethane	**167**	---	4.00	ug/L	10	---	176	---	---	5	30%	
1,2-Dichloroethane (EDC)	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
1,1-Dichloroethene	**59.5**	---	4.00	ug/L	10	---	64.9	---	---	9	30%	
cis-1,2-Dichloroethene	**6340**	---	4.00	ug/L	10	---	6540	---	---	3	30%	E
trans-1,2-Dichloroethene	**75.5**	---	4.00	ug/L	10	---	79.8	---	---	6	30%	
1,2-Dichloropropane	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	---	50.0	ug/L	10	---	ND	---	---	---	30%	
Methylene chloride	ND	---	100	ug/L	10	---	ND	---	---	---	30%	

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GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-33**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0784 - 09 18 24 1156**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0307 - EPA 5030C							**Water**					
Duplicate (24I0307-DUP1)			Prepared: 09/11/24 07:19 Analyzed: 09/11/24 19:11									
QC Source Sample: NKW-2 (A4I0784-07)												
1,1,1,2-Tetrachloroethane	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	**69.1**	---	4.00	ug/L	10	---	73.0	---	---	5	30%	
1,2,3-Trichlorobenzene	ND	---	20.0	ug/L	10	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	---	20.0	ug/L	10	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
Trichloroethene (TCE)	**196**	---	4.00	ug/L	10	---	202	---	---	3	30%	
Trichlorofluoromethane	ND	---	20.0	ug/L	10	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Vinyl chloride	**34.7**	---	2.00	ug/L	10	---	36.9	---	---	6	30%	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*101 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*100 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*104 %*		*80-120 %*			*"*				
Matrix Spike (24I0307-MS1)			Prepared: 09/11/24 07:19 Analyzed: 09/11/24 17:03									
QC Source Sample: MW-13 (A4I0784-08)												
EPA 8260D												
Bromobenzene	20.1	---	0.500	ug/L	1	20.0	ND	100	80-120%	---	---	
Bromochloromethane	18.9	---	1.00	ug/L	1	20.0	ND	94	78-123%	---	---	
Bromodichloromethane	25.8	---	1.00	ug/L	1	20.0	ND	**129**	**79-125%**	---	---	Q-01
Bromoform	33.5	---	1.00	ug/L	1	20.0	ND	**168**	**66-130%**	---	---	Q-54g
Bromomethane	20.8	---	5.00	ug/L	1	20.0	ND	104	53-141%	---	---	
Carbon tetrachloride	40.2	---	1.00	ug/L	1	20.0	ND	**201**	**72-136%**	---	---	Q-54i
Chlorobenzene	21.7	---	0.500	ug/L	1	20.0	ND	109	80-120%	---	---	
Chloroethane	21.8	---	5.00	ug/L	1	20.0	ND	109	60-138%	---	---	Q-54r
Chloroform	20.8	---	1.00	ug/L	1	20.0	ND	104	79-124%	---	---	
Chloromethane	20.7	---	5.00	ug/L	1	20.0	ND	104	50-139%	---	---	
2-Chlorotoluene	20.6	---	1.00	ug/L	1	20.0	ND	103	79-122%	---	---	
4-Chlorotoluene	20.8	---	1.00	ug/L	1	20.0	ND	104	78-122%	---	---	
Dibromochloromethane	32.1	---	1.00	ug/L	1	20.0	ND	**160**	**74-126%**	---	---	Q-54g
1,2-Dibromo-3-chloropropane	28.9	---	5.00	ug/L	1	20.0	ND	**145**	**62-128%**	---	---	Q-54q
1,2-Dibromoethane (EDB)	25.1	---	0.500	ug/L	1	20.0	ND	**126**	**77-121%**	---	---	Q-01

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5820 S Kelly Ave Unit B	Project Number: **19001-009-33**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0784 - 09 18 24 1156**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0307 - EPA 5030C							**Water**					
Matrix Spike (24I0307-MS1)			Prepared: 09/11/24 07:19		Analyzed: 09/11/24 17:03							
QC Source Sample: MW-13 (A4I0784-08)												
Dibromomethane	20.4	---	1.00	ug/L	1	20.0	ND	102	79-123%	---	---	
1,2-Dichlorobenzene	21.9	---	0.500	ug/L	1	20.0	ND	110	80-120%	---	---	
1,3-Dichlorobenzene	21.8	---	0.500	ug/L	1	20.0	ND	109	80-120%	---	---	
1,4-Dichlorobenzene	20.8	---	0.500	ug/L	1	20.0	ND	104	79-120%	---	---	
Dichlorodifluoromethane	20.8	---	1.00	ug/L	1	20.0	ND	104	32-152%	---	---	
1,1-Dichloroethane	63.3	---	0.400	ug/L	1	20.0	36.5	**134**	**77-125%**	---	---	Q-01
1,2-Dichloroethane (EDC)	21.1	---	0.400	ug/L	1	20.0	ND	106	73-128%	---	---	
1,1-Dichloroethene	58.2	---	0.400	ug/L	1	20.0	29.5	**143**	**71-131%**	---	---	Q-01
cis-1,2-Dichloroethene	2070	---	0.400	ug/L	1	20.0	1910	**813**	**78-123%**	---	---	E, Q-03
trans-1,2-Dichloroethene	57.3	---	0.400	ug/L	1	20.0	33.7	118	75-124%	---	---	
1,2-Dichloropropane	21.2	---	0.500	ug/L	1	20.0	ND	106	78-122%	---	---	
1,3-Dichloropropane	20.9	---	1.00	ug/L	1	20.0	ND	105	80-120%	---	---	
2,2-Dichloropropane	31.9	---	1.00	ug/L	1	20.0	ND	**159**	**60-139%**	---	---	Q-54e
1,1-Dichloropropene	23.0	---	1.00	ug/L	1	20.0	ND	115	79-125%	---	---	
cis-1,3-Dichloropropene	24.7	---	1.00	ug/L	1	20.0	ND	124	75-124%	---	---	
trans-1,3-Dichloropropene	25.4	---	1.00	ug/L	1	20.0	ND	127	73-127%	---	---	Q-54a
Hexachlorobutadiene	20.5	---	5.00	ug/L	1	20.0	ND	102	66-134%	---	---	
Methylene chloride	21.0	---	10.0	ug/L	1	20.0	ND	105	74-124%	---	---	
1,1,1,2-Tetrachloroethane	33.2	---	0.400	ug/L	1	20.0	ND	**166**	**78-124%**	---	---	Q-54f
1,1,2,2-Tetrachloroethane	22.1	---	0.500	ug/L	1	20.0	ND	111	71-121%	---	---	
Tetrachloroethene (PCE)	1850	---	0.400	ug/L	1	20.0	1700	**787**	**74-129%**	---	---	E, Q-03
1,2,3-Trichlorobenzene	21.7	---	2.00	ug/L	1	20.0	ND	108	69-129%	---	---	
1,1,2-Trichloroethane	21.0	---	0.500	ug/L	1	20.0	ND	105	80-120%	---	---	
1,2,4-Trichlorobenzene	21.5	---	2.00	ug/L	1	20.0	ND	108	69-130%	---	---	
1,1,1-Trichloroethane	26.8	---	0.400	ug/L	1	20.0	0.600	131	74-131%	---	---	
Trichloroethene (TCE)	1100	---	0.400	ug/L	1	20.0	989	**532**	**79-123%**	---	---	E, Q-03
Trichlorofluoromethane	24.7	---	2.00	ug/L	1	20.0	ND	124	65-141%	---	---	
1,2,3-Trichloropropane	20.2	---	1.00	ug/L	1	20.0	ND	101	73-122%	---	---	
Vinyl chloride	370	---	0.200	ug/L	1	20.0	330	**200**	**58-137%**	---	---	E, Q-03
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 96 %*		*Limits: 80-120 %*				*Dilution: 1x*			
Toluene-d8 (Surr)			*100 %*		*80-120 %*				*"*			
4-Bromofluorobenzene (Surr)			*94 %*		*80-120 %*				*"*			

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5820 S Kelly Ave Unit B	Project Number: **19001-009-33**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0784 - 09 18 24 1156**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0314 - EPA 5030C							**Water**					
Blank (24I0314-BLK1)			Prepared: 09/11/24 08:23 Analyzed: 09/11/24 10:31									
EPA 8260D												
Bromobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Bromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromodichloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromoform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromomethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Carbon tetrachloride	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Chloroethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Chloroform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chloromethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
2-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
4-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Dibromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dibromomethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Methylene chloride	ND	---	10.0	ug/L	1	---	---	---	---	---	---	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-33**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0784 - 09 18 24 1156**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0314 - EPA 5030C									Water			
Blank (24I0314-BLK1)			Prepared: 09/11/24 08:23 Analyzed: 09/11/24 10:31									
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Vinyl chloride	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 96 %*		*Limits: 80-120 %*				*Dilution: 1x*			
Toluene-d8 (Surr)			*101 %*		*80-120 %*				*"*			
4-Bromofluorobenzene (Surr)			*105 %*		*80-120 %*				*"*			
LCS (24I0314-BS1)			Prepared: 09/11/24 08:23 Analyzed: 09/11/24 09:48									
EPA 8260D												
Bromobenzene	19.2	---	0.500	ug/L	1	20.0	---	96	80-120%	---	---	
Bromochloromethane	19.1	---	1.00	ug/L	1	20.0	---	95	80-120%	---	---	
Bromodichloromethane	19.4	---	1.00	ug/L	1	20.0	---	97	80-120%	---	---	
Bromoform	21.4	---	1.00	ug/L	1	20.0	---	107	80-120%	---	---	
Bromomethane	17.5	---	5.00	ug/L	1	20.0	---	88	80-120%	---	---	
Carbon tetrachloride	20.8	---	1.00	ug/L	1	20.0	---	104	80-120%	---	---	
Chlorobenzene	19.7	---	0.500	ug/L	1	20.0	---	98	80-120%	---	---	
Chloroethane	21.9	---	5.00	ug/L	1	20.0	---	110	80-120%	---	---	
Chloroform	19.6	---	1.00	ug/L	1	20.0	---	98	80-120%	---	---	
Chloromethane	18.7	---	5.00	ug/L	1	20.0	---	94	80-120%	---	---	
2-Chlorotoluene	19.9	---	1.00	ug/L	1	20.0	---	99	80-120%	---	---	
4-Chlorotoluene	20.4	---	1.00	ug/L	1	20.0	---	102	80-120%	---	---	
Dibromochloromethane	20.6	---	1.00	ug/L	1	20.0	---	103	80-120%	---	---	
1,2-Dibromo-3-chloropropane	19.5	---	5.00	ug/L	1	20.0	---	98	80-120%	---	---	
1,2-Dibromoethane (EDB)	20.0	---	0.500	ug/L	1	20.0	---	100	80-120%	---	---	
Dibromomethane	18.5	---	1.00	ug/L	1	20.0	---	93	80-120%	---	---	
1,2-Dichlorobenzene	19.6	---	0.500	ug/L	1	20.0	---	98	80-120%	---	---	

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ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project:	Vancouver GWM 3Q24
5820 S Kelly Ave Unit B	Project Number:	19001-009-33
Portland, OR 97239	Project Manager:	Stephanie Bosze-Salisbury
		Report ID: A4I0784 - 09 18 24 1156

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0314 - EPA 5030C							Water					
LCS (24I0314-BS1)			Prepared: 09/11/24 08:23 Analyzed: 09/11/24 09:48									
1,3-Dichlorobenzene	19.6	---	0.500	ug/L	1	20.0	---	98	80-120%	---	---	
1,4-Dichlorobenzene	19.6	---	0.500	ug/L	1	20.0	---	98	80-120%	---	---	
Dichlorodifluoromethane	17.3	---	1.00	ug/L	1	20.0	---	87	80-120%	---	---	
1,1-Dichloroethane	18.2	---	0.400	ug/L	1	20.0	---	91	80-120%	---	---	
1,2-Dichloroethane (EDC)	18.6	---	0.400	ug/L	1	20.0	---	93	80-120%	---	---	
1,1-Dichloroethene	18.8	---	0.400	ug/L	1	20.0	---	94	80-120%	---	---	
cis-1,2-Dichloroethene	19.0	---	0.400	ug/L	1	20.0	---	95	80-120%	---	---	
trans-1,2-Dichloroethene	18.7	---	0.400	ug/L	1	20.0	---	94	80-120%	---	---	
1,2-Dichloropropane	17.7	---	0.500	ug/L	1	20.0	---	88	80-120%	---	---	
1,3-Dichloropropane	19.5	---	1.00	ug/L	1	20.0	---	97	80-120%	---	---	
2,2-Dichloropropane	18.7	---	1.00	ug/L	1	20.0	---	94	80-120%	---	---	
1,1-Dichloropropene	18.2	---	1.00	ug/L	1	20.0	---	91	80-120%	---	---	
cis-1,3-Dichloropropene	20.4	---	1.00	ug/L	1	20.0	---	102	80-120%	---	---	
trans-1,3-Dichloropropene	19.7	---	1.00	ug/L	1	20.0	---	99	80-120%	---	---	
Hexachlorobutadiene	18.9	---	5.00	ug/L	1	20.0	---	94	80-120%	---	---	
Methylene chloride	16.3	---	10.0	ug/L	1	20.0	---	82	80-120%	---	---	
1,1,1,2-Tetrachloroethane	21.7	---	0.400	ug/L	1	20.0	---	108	80-120%	---	---	
1,1,2,2-Tetrachloroethane	19.6	---	0.500	ug/L	1	20.0	---	98	80-120%	---	---	
Tetrachloroethene (PCE)	19.1	---	0.400	ug/L	1	20.0	---	96	80-120%	---	---	
1,2,3-Trichlorobenzene	19.4	---	2.00	ug/L	1	20.0	---	97	80-120%	---	---	
1,1,2-Trichloroethane	18.6	---	0.500	ug/L	1	20.0	---	93	80-120%	---	---	
1,2,4-Trichlorobenzene	18.4	---	2.00	ug/L	1	20.0	---	92	80-120%	---	---	
1,1,1-Trichloroethane	19.0	---	0.400	ug/L	1	20.0	---	95	80-120%	---	---	
Trichloroethene (TCE)	17.9	---	0.400	ug/L	1	20.0	---	89	80-120%	---	---	
Trichlorofluoromethane	22.7	---	2.00	ug/L	1	20.0	---	113	80-120%	---	---	
1,2,3-Trichloropropane	19.0	---	1.00	ug/L	1	20.0	---	95	80-120%	---	---	
Vinyl chloride	21.4	---	0.200	ug/L	1	20.0	---	107	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 93 %*			*Limits: 80-120 %*			*Dilution: 1x*			
Toluene-d8 (Surr)			*99 %*			*80-120 %*			*"*			
4-Bromofluorobenzene (Surr)			*98 %*			*80-120 %*			*"*			
Duplicate (24I0314-DUP1)			Prepared: 09/11/24 08:23 Analyzed: 09/11/24 17:45									
QC Source Sample: Non-SDG (A4I0850-03)												
Bromobenzene	ND	---	2.50	ug/L	5	---	ND	---	---	---	30%	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-33**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0784 - 09 18 24 1156**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0314 - EPA 5030C							**Water**					
Duplicate (24I0314-DUP1)			Prepared: 09/11/24 08:23 Analyzed: 09/11/24 17:45									
QC Source Sample: Non-SDG (A4I0850-03)												
Bromochloromethane	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%	
Bromodichloromethane	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%	
Bromoform	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%	
Bromomethane	ND	---	25.0	ug/L	5	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%	
Chlorobenzene	ND	---	2.50	ug/L	5	---	ND	---	---	---	30%	
Chloroethane	**48.3**	---	25.0	ug/L	5	---	45.8	---	---	5	30%	
Chloroform	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%	
Chloromethane	ND	---	25.0	ug/L	5	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%	
Dibromochloromethane	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	---	25.0	ug/L	5	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	---	2.50	ug/L	5	---	ND	---	---	---	30%	
Dibromomethane	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	---	2.50	ug/L	5	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	---	2.50	ug/L	5	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	---	2.50	ug/L	5	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%	
1,1-Dichloroethane	**192**	---	2.00	ug/L	5	---	193	---	---	0.5	30%	
1,2-Dichloroethane (EDC)	ND	---	2.00	ug/L	5	---	ND	---	---	---	30%	
1,1-Dichloroethene	**143**	---	2.00	ug/L	5	---	144	---	---	0.6	30%	
cis-1,2-Dichloroethene	**7.75**	---	2.00	ug/L	5	---	7.15	---	---	8	30%	
trans-1,2-Dichloroethene	ND	---	2.00	ug/L	5	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	---	2.50	ug/L	5	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	---	25.0	ug/L	5	---	ND	---	---	---	30%	
Methylene chloride	ND	---	50.0	ug/L	5	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	---	2.00	ug/L	5	---	ND	---	---	---	30%	

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GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-33**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0784 - 09 18 24 1156**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0314 - EPA 5030C							**Water**					
Duplicate (24I0314-DUP1)			Prepared: 09/11/24 08:23 Analyzed: 09/11/24 17:45									
QC Source Sample: Non-SDG (A4I0850-03)												
1,1,2,2-Tetrachloroethane	ND	---	2.50	ug/L	5	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	**6.15**	---	2.00	ug/L	5	---	5.30	---	---	15	30%	
1,2,3-Trichlorobenzene	ND	---	10.0	ug/L	5	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	---	2.50	ug/L	5	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	---	10.0	ug/L	5	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	**462**	---	2.00	ug/L	5	---	465	---	---	0.6	30%	
Trichloroethene (TCE)	**11.7**	---	2.00	ug/L	5	---	11.0	---	---	6	30%	
Trichlorofluoromethane	ND	---	10.0	ug/L	5	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%	
Vinyl chloride	**19.0**	---	1.00	ug/L	5	---	19.2	---	---	0.8	30%	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 92 %*	*Limits: 80-120 %*			*Dilution: 1x*					
Toluene-d8 (Surr)			*103 %*	*80-120 %*			*"*					
4-Bromofluorobenzene (Surr)			*104 %*	*80-120 %*			*"*					
Matrix Spike (24I0314-MS1)			Prepared: 09/11/24 08:23 Analyzed: 09/11/24 15:34									
QC Source Sample: Non-SDG (A4I0884-05)												
EPA 8260D												
Bromobenzene	19.7	---	0.500	ug/L	1	20.0	ND	98	80-120%	---	---	
Bromochloromethane	20.4	---	1.00	ug/L	1	20.0	ND	102	78-123%	---	---	
Bromodichloromethane	22.4	---	1.00	ug/L	1	20.0	ND	112	79-125%	---	---	
Bromoform	23.5	---	1.00	ug/L	1	20.0	ND	118	66-130%	---	---	
Bromomethane	19.4	---	5.00	ug/L	1	20.0	ND	97	53-141%	---	---	
Carbon tetrachloride	24.0	---	1.00	ug/L	1	20.0	ND	120	72-136%	---	---	
Chlorobenzene	21.9	---	0.500	ug/L	1	20.0	ND	109	80-120%	---	---	
Chloroethane	19.8	---	5.00	ug/L	1	20.0	ND	99	60-138%	---	---	
Chloroform	22.7	---	1.00	ug/L	1	20.0	2.97	99	79-124%	---	---	
Chloromethane	18.8	---	5.00	ug/L	1	20.0	ND	94	50-139%	---	---	
2-Chlorotoluene	21.5	---	1.00	ug/L	1	20.0	ND	108	79-122%	---	---	
4-Chlorotoluene	22.1	---	1.00	ug/L	1	20.0	ND	110	78-122%	---	---	
Dibromochloromethane	23.3	---	1.00	ug/L	1	20.0	ND	117	74-126%	---	---	
1,2-Dibromo-3-chloropropane	20.3	---	5.00	ug/L	1	20.0	ND	102	62-128%	---	---	
1,2-Dibromoethane (EDB)	21.2	---	0.500	ug/L	1	20.0	ND	106	77-121%	---	---	
Dibromomethane	20.7	---	1.00	ug/L	1	20.0	ND	103	79-123%	---	---	

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GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-33**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0784 - 09 18 24 1156**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0314 - EPA 5030C							**Water**					
Matrix Spike (24I0314-MS1)			Prepared: 09/11/24 08:23		Analyzed: 09/11/24 15:34							
QC Source Sample: Non-SDG (A4I0884-05)												
1,2-Dichlorobenzene	20.8	---	0.500	ug/L	1	20.0	ND	104	80-120%	---	---	
1,3-Dichlorobenzene	21.2	---	0.500	ug/L	1	20.0	ND	106	80-120%	---	---	
1,4-Dichlorobenzene	20.9	---	0.500	ug/L	1	20.0	ND	104	79-120%	---	---	
Dichlorodifluoromethane	19.6	---	1.00	ug/L	1	20.0	ND	98	32-152%	---	---	
1,1-Dichloroethane	20.5	---	0.400	ug/L	1	20.0	ND	102	77-125%	---	---	
1,2-Dichloroethane (EDC)	21.0	---	0.400	ug/L	1	20.0	ND	105	73-128%	---	---	
1,1-Dichloroethene	20.8	---	0.400	ug/L	1	20.0	ND	104	71-131%	---	---	
cis-1,2-Dichloroethene	20.8	---	0.400	ug/L	1	20.0	ND	104	78-123%	---	---	
trans-1,2-Dichloroethene	20.8	---	0.400	ug/L	1	20.0	ND	104	75-124%	---	---	
1,2-Dichloropropane	19.7	---	0.500	ug/L	1	20.0	ND	99	78-122%	---	---	
1,3-Dichloropropane	21.3	---	1.00	ug/L	1	20.0	ND	107	80-120%	---	---	
2,2-Dichloropropane	21.6	---	1.00	ug/L	1	20.0	ND	108	60-139%	---	---	
1,1-Dichloropropene	21.3	---	1.00	ug/L	1	20.0	ND	107	79-125%	---	---	
cis-1,3-Dichloropropene	21.6	---	1.00	ug/L	1	20.0	ND	108	75-124%	---	---	
trans-1,3-Dichloropropene	23.0	---	1.00	ug/L	1	20.0	ND	115	73-127%	---	---	
Hexachlorobutadiene	21.9	---	5.00	ug/L	1	20.0	ND	109	66-134%	---	---	
Methylene chloride	17.8	---	10.0	ug/L	1	20.0	ND	89	74-124%	---	---	
1,1,1,2-Tetrachloroethane	23.7	---	0.400	ug/L	1	20.0	ND	118	78-124%	---	---	
1,1,2,2-Tetrachloroethane	22.1	---	0.500	ug/L	1	20.0	ND	111	71-121%	---	---	
Tetrachloroethene (PCE)	22.8	---	0.400	ug/L	1	20.0	ND	114	74-129%	---	---	
1,2,3-Trichlorobenzene	20.3	---	2.00	ug/L	1	20.0	ND	102	69-129%	---	---	
1,1,2-Trichloroethane	21.2	---	0.500	ug/L	1	20.0	ND	106	80-120%	---	---	
1,2,4-Trichlorobenzene	20.5	---	2.00	ug/L	1	20.0	ND	102	69-130%	---	---	
1,1,1-Trichloroethane	22.0	---	0.400	ug/L	1	20.0	ND	110	74-131%	---	---	
Trichloroethene (TCE)	19.3	---	0.400	ug/L	1	20.0	ND	96	79-123%	---	---	
Trichlorofluoromethane	25.0	---	2.00	ug/L	1	20.0	ND	125	65-141%	---	---	
1,2,3-Trichloropropane	20.3	---	1.00	ug/L	1	20.0	ND	101	73-122%	---	---	
Vinyl chloride	21.4	---	0.200	ug/L	1	20.0	ND	107	58-137%	---	---	

Surr: 1,4-Difluorobenzene (Surr)	*Recovery: 92 %*	*Limits: 80-120 %*	*Dilution: 1x*
Toluene-d8 (Surr)	*100 %*	*80-120 %*	*"*
4-Bromofluorobenzene (Surr)	*96 %*	*80-120 %*	*"*

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503-718-2323
ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-33**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0784 - 09 18 24 1156**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0353 - EPA 5030C							**Water**					
Blank (24I0353-BLK1)			Prepared: 09/12/24 06:56 Analyzed: 09/12/24 10:06									
EPA 8260D												
Bromobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Bromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromodichloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromoform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromomethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Carbon tetrachloride	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Chloroethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Chloroform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chloromethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
2-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
4-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Dibromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	---	6.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dibromomethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Methylene chloride	ND	---	10.0	ug/L	1	---	---	---	---	---	---	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-33**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0784 - 09 18 24 1156**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0353 - EPA 5030C									Water			
Blank (24I0353-BLK1)			Prepared: 09/12/24 06:56 Analyzed: 09/12/24 10:06									
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Vinyl chloride	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 98 %*		*Limits: 80-120 %*				*Dilution: 1x*			
Toluene-d8 (Surr)			*101 %*		*80-120 %*				*"*			
4-Bromofluorobenzene (Surr)			*104 %*		*80-120 %*				*"*			
LCS (24I0353-BS1)			Prepared: 09/12/24 06:56 Analyzed: 09/12/24 08:26									
EPA 8260D												
Bromobenzene	19.8	---	0.500	ug/L	1	20.0	---	99	80-120%	---	---	
Bromochloromethane	19.8	---	1.00	ug/L	1	20.0	---	99	80-120%	---	---	
Bromodichloromethane	25.0	---	1.00	ug/L	1	20.0	---	**125**	**80-120%**	---	---	Q-56
Bromoform	32.1	---	1.00	ug/L	1	20.0	---	**161**	**80-120%**	---	---	Q-56
Bromomethane	18.8	---	5.00	ug/L	1	20.0	---	94	80-120%	---	---	
Carbon tetrachloride	37.4	---	1.00	ug/L	1	20.0	---	**187**	**80-120%**	---	---	Q-56
Chlorobenzene	21.1	---	0.500	ug/L	1	20.0	---	106	80-120%	---	---	
Chloroethane	17.4	---	5.00	ug/L	1	20.0	---	87	80-120%	---	---	
Chloroform	20.9	---	1.00	ug/L	1	20.0	---	105	80-120%	---	---	
Chloromethane	17.7	---	5.00	ug/L	1	20.0	---	89	80-120%	---	---	
2-Chlorotoluene	20.7	---	1.00	ug/L	1	20.0	---	104	80-120%	---	---	
4-Chlorotoluene	20.7	---	1.00	ug/L	1	20.0	---	103	80-120%	---	---	
Dibromochloromethane	31.8	---	1.00	ug/L	1	20.0	---	**159**	**80-120%**	---	---	Q-56
1,2-Dibromo-3-chloropropane	27.5	---	6.00	ug/L	1	20.0	---	**138**	**80-120%**	---	---	Q-56
1,2-Dibromoethane (EDB)	25.5	---	0.500	ug/L	1	20.0	---	**128**	**80-120%**	---	---	Q-56
Dibromomethane	19.8	---	1.00	ug/L	1	20.0	---	99	80-120%	---	---	
1,2-Dichlorobenzene	21.3	---	0.500	ug/L	1	20.0	---	106	80-120%	---	---	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-33**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0784 - 09 18 24 1156**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0353 - EPA 5030C							**Water**					
LCS (24I0353-BS1)			Prepared: 09/12/24 06:56 Analyzed: 09/12/24 08:26									
1,3-Dichlorobenzene	21.0	---	0.500	ug/L	1	20.0	---	105	80-120%	---	---	
1,4-Dichlorobenzene	20.6	---	0.500	ug/L	1	20.0	---	103	80-120%	---	---	
Dichlorodifluoromethane	18.6	---	1.00	ug/L	1	20.0	---	93	80-120%	---	---	
1,1-Dichloroethane	21.0	---	0.400	ug/L	1	20.0	---	105	80-120%	---	---	
1,2-Dichloroethane (EDC)	20.6	---	0.400	ug/L	1	20.0	---	103	80-120%	---	---	
1,1-Dichloroethene	19.8	---	0.400	ug/L	1	20.0	---	99	80-120%	---	---	
cis-1,2-Dichloroethene	20.3	---	0.400	ug/L	1	20.0	---	101	80-120%	---	---	
trans-1,2-Dichloroethene	19.6	---	0.400	ug/L	1	20.0	---	98	80-120%	---	---	
1,2-Dichloropropane	20.3	---	0.500	ug/L	1	20.0	---	101	80-120%	---	---	
1,3-Dichloropropane	21.5	---	1.00	ug/L	1	20.0	---	107	80-120%	---	---	
2,2-Dichloropropane	33.9	---	1.00	ug/L	1	20.0	---	**170**	**80-120%**	---	---	Q-56
1,1-Dichloropropene	20.7	---	1.00	ug/L	1	20.0	---	103	80-120%	---	---	
cis-1,3-Dichloropropene	24.4	---	1.00	ug/L	1	20.0	---	**122**	**80-120%**	---	---	Q-56
trans-1,3-Dichloropropene	27.7	---	1.00	ug/L	1	20.0	---	**139**	**80-120%**	---	---	Q-56
Hexachlorobutadiene	21.1	---	5.00	ug/L	1	20.0	---	106	80-120%	---	---	
Methylene chloride	18.8	---	10.0	ug/L	1	20.0	---	94	80-120%	---	---	
1,1,1,2-Tetrachloroethane	32.0	---	0.400	ug/L	1	20.0	---	**160**	**80-120%**	---	---	Q-56
1,1,2,2-Tetrachloroethane	22.2	---	0.500	ug/L	1	20.0	---	111	80-120%	---	---	
Tetrachloroethene (PCE)	21.6	---	0.400	ug/L	1	20.0	---	108	80-120%	---	---	
1,2,3-Trichlorobenzene	20.8	---	2.00	ug/L	1	20.0	---	104	80-120%	---	---	
1,1,2-Trichloroethane	22.0	---	0.500	ug/L	1	20.0	---	110	80-120%	---	---	
1,2,4-Trichlorobenzene	20.2	---	2.00	ug/L	1	20.0	---	101	80-120%	---	---	
1,1,1-Trichloroethane	24.6	---	0.400	ug/L	1	20.0	---	**123**	**80-120%**	---	---	Q-56
Trichloroethene (TCE)	19.1	---	0.400	ug/L	1	20.0	---	95	80-120%	---	---	
Trichlorofluoromethane	22.1	---	2.00	ug/L	1	20.0	---	110	80-120%	---	---	
1,2,3-Trichloropropane	20.9	---	1.00	ug/L	1	20.0	---	105	80-120%	---	---	
Vinyl chloride	17.5	---	0.200	ug/L	1	20.0	---	88	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 97 %*		*Limits: 80-120 %*			*Dilution: 1x*				
Toluene-d8 (Surr)			*100 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*96 %*		*80-120 %*			*"*				
Duplicate (24I0353-DUP1)			Prepared: 09/12/24 06:56 Analyzed: 09/12/24 18:16									
QC Source Sample: Non-SDG (A4I1038-05)												
Bromobenzene	ND	---	50.0	ug/L	100	---	ND	---	---	---	30%	

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GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-33**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0784 - 09 18 24 1156**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0353 - EPA 5030C							**Water**					
Duplicate (24I0353-DUP1)			Prepared: 09/12/24 06:56 Analyzed: 09/12/24 18:16									
QC Source Sample: Non-SDG (A4I1038-05)												
Bromochloromethane	ND	---	100	ug/L	100	---	ND	---	---	---	30%	
Bromodichloromethane	ND	---	100	ug/L	100	---	ND	---	---	---	30%	
Bromoform	ND	---	100	ug/L	100	---	ND	---	---	---	30%	
Bromomethane	ND	---	500	ug/L	100	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	---	100	ug/L	100	---	ND	---	---	---	30%	
Chlorobenzene	ND	---	50.0	ug/L	100	---	ND	---	---	---	30%	
Chloroethane	ND	---	500	ug/L	100	---	ND	---	---	---	30%	
Chloroform	ND	---	100	ug/L	100	---	ND	---	---	---	30%	
Chloromethane	ND	---	500	ug/L	100	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	---	100	ug/L	100	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	---	100	ug/L	100	---	ND	---	---	---	30%	
Dibromochloromethane	ND	---	100	ug/L	100	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	---	600	ug/L	100	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	---	50.0	ug/L	100	---	ND	---	---	---	30%	
Dibromomethane	ND	---	100	ug/L	100	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	---	50.0	ug/L	100	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	---	50.0	ug/L	100	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	---	50.0	ug/L	100	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	---	100	ug/L	100	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	---	40.0	ug/L	100	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	---	40.0	ug/L	100	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	---	40.0	ug/L	100	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	---	40.0	ug/L	100	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	---	40.0	ug/L	100	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	---	50.0	ug/L	100	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	---	100	ug/L	100	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	---	100	ug/L	100	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	---	100	ug/L	100	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	---	100	ug/L	100	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	---	100	ug/L	100	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	---	500	ug/L	100	---	ND	---	---	---	30%	
Methylene chloride	ND	---	1000	ug/L	100	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	---	40.0	ug/L	100	---	ND	---	---	---	30%	

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5820 S Kelly Ave Unit B	Project Number: **19001-009-33**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0784 - 09 18 24 1156**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0353 - EPA 5030C							**Water**					
Duplicate (24I0353-DUP1)			Prepared: 09/12/24 06:56 Analyzed: 09/12/24 18:16									
QC Source Sample: Non-SDG (A4I1038-05)												
1,1,2,2-Tetrachloroethane	ND	---	50.0	ug/L	100	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	---	40.0	ug/L	100	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	---	200	ug/L	100	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	---	50.0	ug/L	100	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	---	200	ug/L	100	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	---	40.0	ug/L	100	---	ND	---	---	---	30%	
Trichloroethene (TCE)	ND	---	40.0	ug/L	100	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	---	200	ug/L	100	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	---	100	ug/L	100	---	ND	---	---	---	30%	
Vinyl chloride	ND	---	20.0	ug/L	100	---	ND	---	---	---	30%	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 98 %*		*Limits: 80-120 %*					*Dilution: 1x*		
Toluene-d8 (Surr)			*102 %*		*80-120 %*					*"*		
4-Bromofluorobenzene (Surr)			*103 %*		*80-120 %*					*"*		
Matrix Spike (24I0353-MS1)			Prepared: 09/12/24 06:56 Analyzed: 09/12/24 14:21									
QC Source Sample: Non-SDG (A4I1068-03)												
EPA 8260D												
Bromobenzene	21.0	---	0.500	ug/L	1	20.0	ND	105	80-120%	---	---	
Bromochloromethane	20.8	---	1.00	ug/L	1	20.0	ND	104	78-123%	---	---	
Bromodichloromethane	25.9	---	1.00	ug/L	1	20.0	ND	**130**	**79-125%**	---	---	Q-54m
Bromoform	31.4	---	1.00	ug/L	1	20.0	ND	**157**	**66-130%**	---	---	Q-54l
Bromomethane	20.6	---	5.00	ug/L	1	20.0	ND	103	53-141%	---	---	
Carbon tetrachloride	41.4	---	1.00	ug/L	1	20.0	ND	**207**	**72-136%**	---	---	Q-54o
Chlorobenzene	21.4	---	0.500	ug/L	1	20.0	ND	107	80-120%	---	---	
Chloroethane	20.1	---	5.00	ug/L	1	20.0	ND	101	60-138%	---	---	
Chloroform	21.7	---	1.00	ug/L	1	20.0	ND	108	79-124%	---	---	
Chloromethane	18.9	---	5.00	ug/L	1	20.0	ND	94	50-139%	---	---	
2-Chlorotoluene	21.4	---	1.00	ug/L	1	20.0	ND	107	79-122%	---	---	
4-Chlorotoluene	21.6	---	1.00	ug/L	1	20.0	ND	108	78-122%	---	---	
Dibromochloromethane	31.0	---	1.00	ug/L	1	20.0	ND	**155**	**74-126%**	---	---	Q-54j
1,2-Dibromo-3-chloropropane	28.8	---	6.00	ug/L	1	20.0	ND	**144**	**62-128%**	---	---	Q-54b
1,2-Dibromoethane (EDB)	25.5	---	0.500	ug/L	1	20.0	ND	**128**	**77-121%**	---	---	Q-54p
Dibromomethane	21.0	---	1.00	ug/L	1	20.0	ND	105	79-123%	---	---	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-33**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0784 - 09 18 24 1156**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0353 - EPA 5030C							**Water**					
Matrix Spike (24I0353-MS1)			Prepared: 09/12/24 06:56 Analyzed: 09/12/24 14:21									
QC Source Sample: Non-SDG (A4I1068-03)												
1,2-Dichlorobenzene	21.9	---	0.500	ug/L	1	20.0	ND	110	80-120%	---	---	
1,3-Dichlorobenzene	22.6	---	0.500	ug/L	1	20.0	ND	113	80-120%	---	---	
1,4-Dichlorobenzene	21.2	---	0.500	ug/L	1	20.0	ND	106	79-120%	---	---	
Dichlorodifluoromethane	20.1	---	1.00	ug/L	1	20.0	ND	101	32-152%	---	---	
1,1-Dichloroethane	22.0	---	0.400	ug/L	1	20.0	ND	110	77-125%	---	---	
1,2-Dichloroethane (EDC)	21.6	---	0.400	ug/L	1	20.0	ND	108	73-128%	---	---	
1,1-Dichloroethene	22.4	---	0.400	ug/L	1	20.0	ND	112	71-131%	---	---	
cis-1,2-Dichloroethene	21.2	---	0.400	ug/L	1	20.0	ND	106	78-123%	---	---	
trans-1,2-Dichloroethene	20.3	---	0.400	ug/L	1	20.0	ND	102	75-124%	---	---	
1,2-Dichloropropane	20.9	---	0.500	ug/L	1	20.0	ND	105	78-122%	---	---	
1,3-Dichloropropane	21.6	---	1.00	ug/L	1	20.0	ND	108	80-120%	---	---	
2,2-Dichloropropane	34.3	---	1.00	ug/L	1	20.0	ND	**172**	**60-139%**	---	---	Q-54n
1,1-Dichloropropene	22.4	---	1.00	ug/L	1	20.0	ND	112	79-125%	---	---	
cis-1,3-Dichloropropene	23.4	---	1.00	ug/L	1	20.0	ND	117	75-124%	---	---	Q-54d
trans-1,3-Dichloropropene	28.2	---	1.00	ug/L	1	20.0	ND	**141**	**73-127%**	---	---	Q-54c
Hexachlorobutadiene	22.8	---	5.00	ug/L	1	20.0	ND	114	66-134%	---	---	
Methylene chloride	19.4	---	10.0	ug/L	1	20.0	ND	97	74-124%	---	---	
1,1,1,2-Tetrachloroethane	33.0	---	0.400	ug/L	1	20.0	ND	**165**	**78-124%**	---	---	Q-54k
1,1,2,2-Tetrachloroethane	23.3	---	0.500	ug/L	1	20.0	ND	116	71-121%	---	---	
Tetrachloroethene (PCE)	22.8	---	0.400	ug/L	1	20.0	ND	114	74-129%	---	---	
1,2,3-Trichlorobenzene	22.2	---	2.00	ug/L	1	20.0	ND	111	69-129%	---	---	
1,1,2-Trichloroethane	22.4	---	0.500	ug/L	1	20.0	ND	112	80-120%	---	---	
1,2,4-Trichlorobenzene	21.1	---	2.00	ug/L	1	20.0	ND	106	69-130%	---	---	
1,1,1-Trichloroethane	27.3	---	0.400	ug/L	1	20.0	ND	**137**	**74-131%**	---	---	Q-54h
Trichloroethene (TCE)	20.8	---	0.400	ug/L	1	20.0	ND	104	79-123%	---	---	
Trichlorofluoromethane	24.0	---	2.00	ug/L	1	20.0	ND	120	65-141%	---	---	
1,2,3-Trichloropropane	20.6	---	1.00	ug/L	1	20.0	ND	103	73-122%	---	---	
Vinyl chloride	19.7	---	0.200	ug/L	1	20.0	ND	98	58-137%	---	---	

Surr: 1,4-Difluorobenzene (Surr)	*Recovery: 99 %*	*Limits: 80-120 %*	*Dilution: 1x*
Toluene-d8 (Surr)	*98 %*	*80-120 %*	*"*
4-Bromofluorobenzene (Surr)	*97 %*	*80-120 %*	*"*

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GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-33**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0784 - 09 18 24 1156**

QUALITY CONTROL (QC) SAMPLE RESULTS

Ammonia by Gas Diffusion and Colorimetric Detection

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0150 - Method Prep: Aq								**Water**				
Blank (24I0150-BLK1)			Prepared: 09/06/24 08:28		Analyzed: 09/06/24 11:26							
SM 4500-NH3 G												
Ammonia as N	ND	---	0.0200	mg/L	1	---	---	---	---	---	---	
LCS (24I0150-BS1)			Prepared: 09/06/24 08:28		Analyzed: 09/06/24 11:28							
SM 4500-NH3 G												
Ammonia as N	2.05	---	0.0200	mg/L	1	2.00	---	103	90-111%	---	---	
Matrix Spike (24I0150-MS1)			Prepared: 09/06/24 08:28		Analyzed: 09/06/24 11:32							
QC Source Sample: Non-SDG (A4I0826-21)												
SM 4500-NH3 G												
Ammonia as N	2.35	---	0.0250	mg/L	1	2.50	0.383	**79**	**90-111%**	---	---	Q-01
Matrix Spike Dup (24I0150-MSD1)			Prepared: 09/06/24 08:28		Analyzed: 09/06/24 11:34							
QC Source Sample: Non-SDG (A4I0826-21)												
Ammonia as N	2.85	---	0.0250	mg/L	1	2.50	0.383	99	90-111%	**19**	**13%**	Q-01

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5820 S Kelly Ave Unit B	Project Number: **19001-009-33**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0784 - 09 18 24 1156**

QUALITY CONTROL (QC) SAMPLE RESULTS

Ammonia by Gas Diffusion and Colorimetric Detection

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0175 - Method Prep: Aq									Water			
Blank (24I0175-BLK1)			Prepared: 09/06/24 12:11		Analyzed: 09/06/24 12:48							
SM 4500-NH3 G												
Ammonia as N	ND	---	0.0200	mg/L	1	---	---	---	---	---	---	
LCS (24I0175-BS1)			Prepared: 09/06/24 12:11		Analyzed: 09/06/24 12:50							
SM 4500-NH3 G												
Ammonia as N	2.02	---	0.0200	mg/L	1	2.00	---	101	90-111%	---	---	
Matrix Spike (24I0175-MS1)			Prepared: 09/06/24 12:11		Analyzed: 09/06/24 12:54							
QC Source Sample: Non-SDG (A4I0826-15)												
SM 4500-NH3 G												
Ammonia as N	5.63	---	0.0250	mg/L	1	2.50	3.11	101	90-111%	---	---	
Matrix Spike Dup (24I0175-MSD1)			Prepared: 09/06/24 12:11		Analyzed: 09/06/24 12:56							
QC Source Sample: Non-SDG (A4I0826-15)												
Ammonia as N	5.60	---	0.0250	mg/L	1	2.50	3.11	100	90-111%	0.6	13%	

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-33	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0784 - 09 18 24 1156

QUALITY CONTROL (QC) SAMPLE RESULTS

Anions by Ion Chromatography

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0076 - Method Prep: Aq									Water			
Blank (24I0076-BLK1)			Prepared: 09/04/24 11:46 Analyzed: 09/04/24 16:23									
EPA 300.0												
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	---	---	---	---	---	---	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	---	---	---	---	---	---	
LCS (24I0076-BS1)			Prepared: 09/04/24 11:46 Analyzed: 09/04/24 16:45									
EPA 300.0												
Nitrate-Nitrogen	2.18	---	0.250	mg/L	1	2.00	---	109	90-110%	---	---	
Nitrite-Nitrogen	2.11	---	0.250	mg/L	1	2.00	---	106	90-110%	---	---	
Duplicate (24I0076-DUP2)			Prepared: 09/04/24 11:46 Analyzed: 09/05/24 00:39									
QC Source Sample: Non-SDG (A4I0797-01)												
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	---	ND	---	---	---	10%	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	---	ND	---	---	---	10%	
Matrix Spike (24I0076-MS2)			Prepared: 09/04/24 11:46 Analyzed: 09/05/24 01:01									
QC Source Sample: Non-SDG (A4I0797-01)												
EPA 300.0												
Nitrate-Nitrogen	2.66	---	0.312	mg/L	1	2.50	ND	106	87-112%	---	---	
Nitrite-Nitrogen	2.59	---	0.312	mg/L	1	2.50	ND	104	90-114%	---	---	

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ANALYTICAL REPORT

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5820 S Kelly Ave Unit B	Project Number: 19001-009-33	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0784 - 09 18 24 1156

QUALITY CONTROL (QC) SAMPLE RESULTS

Anions by Ion Chromatography

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0104 - Method Prep: Aq							Water					
Blank (24I0104-BLK1)			Prepared: 09/05/24 08:31		Analyzed: 09/05/24 09:38							
EPA 300.0												
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	---	---	---	---	---	---	
LCS (24I0104-BS1)			Prepared: 09/05/24 08:31		Analyzed: 09/05/24 09:59							
EPA 300.0												
Nitrate-Nitrogen	2.09	---	0.250	mg/L	1	2.00	---	105	90-110%	---	---	
Duplicate (24I0104-DUP1)			Prepared: 09/05/24 08:31		Analyzed: 09/05/24 11:25							
QC Source Sample: Non-SDG (A4I0826-15)												
Nitrate-Nitrogen	**5.04**	---	0.250	mg/L	1	---	5.01	---	---	0.5	10%	
Duplicate (24I0104-DUP2)			Prepared: 09/05/24 08:31		Analyzed: 09/05/24 15:22							
QC Source Sample: Non-SDG (A4I0826-20)												
Nitrate-Nitrogen	**1.27**	---	0.250	mg/L	1	---	1.27	---	---	0.2	10%	
Matrix Spike (24I0104-MS1)			Prepared: 09/05/24 08:31		Analyzed: 09/05/24 11:47							
QC Source Sample: Non-SDG (A4I0826-15)												
EPA 300.0												
Nitrate-Nitrogen	7.52	---	0.312	mg/L	1	2.50	5.01	101	87-112%	---	---	
Matrix Spike (24I0104-MS2)			Prepared: 09/05/24 08:31		Analyzed: 09/05/24 15:44							
QC Source Sample: Non-SDG (A4I0826-20)												
EPA 300.0												
Nitrate-Nitrogen	3.80	---	0.312	mg/L	1	2.50	1.27	101	87-112%	---	---	

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GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-33	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0784 - 09 18 24 1156

SAMPLE PREPARATION INFORMATION

Halogenated Volatile Organic Compounds by EPA 8260D

Prep: EPA 5030C

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 24I0222							
A4I0784-02	Water	EPA 8260D	09/03/24 11:20	09/09/24 11:46	5mL/5mL	5mL/5mL	1.00
A4I0784-03	Water	EPA 8260D	09/03/24 12:49	09/09/24 11:46	5mL/5mL	5mL/5mL	1.00
A4I0784-04	Water	EPA 8260D	09/03/24 12:49	09/09/24 11:46	5mL/5mL	5mL/5mL	1.00
A4I0784-06	Water	EPA 8260D	09/03/24 14:15	09/09/24 11:46	5mL/5mL	5mL/5mL	1.00
Batch: 24I0307							
A4I0784-04RE1	Water	EPA 8260D	09/03/24 12:49	09/11/24 09:00	5mL/5mL	5mL/5mL	1.00
A4I0784-06RE1	Water	EPA 8260D	09/03/24 14:15	09/11/24 09:00	5mL/5mL	5mL/5mL	1.00
A4I0784-07	Water	EPA 8260D	09/03/24 15:00	09/11/24 09:00	5mL/5mL	5mL/5mL	1.00
A4I0784-08	Water	EPA 8260D	09/03/24 14:52	09/11/24 09:00	5mL/5mL	5mL/5mL	1.00
Batch: 24I0314							
A4I0784-01RE1	Water	EPA 8260D	09/03/24 10:00	09/11/24 10:09	5mL/5mL	5mL/5mL	1.00
Batch: 24I0353							
A4I0784-05RE2	Water	EPA 8260D	09/03/24 13:01	09/12/24 09:17	5mL/5mL	5mL/5mL	1.00
A4I0784-07RE1	Water	EPA 8260D	09/03/24 15:00	09/12/24 09:17	5mL/5mL	5mL/5mL	1.00
A4I0784-08RE1	Water	EPA 8260D	09/03/24 14:52	09/12/24 09:17	5mL/5mL	5mL/5mL	1.00

Ammonia by Gas Diffusion and Colorimetric Detection

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 24I0150							
A4I0784-01	Water	SM 4500-NH3 G	09/03/24 10:00	09/06/24 08:28	10mL/10mL	10mL/10mL	1.00
A4I0784-03	Water	SM 4500-NH3 G	09/03/24 12:49	09/06/24 08:28	10mL/10mL	10mL/10mL	1.00
A4I0784-04	Water	SM 4500-NH3 G	09/03/24 12:49	09/06/24 08:28	10mL/10mL	10mL/10mL	1.00
A4I0784-05	Water	SM 4500-NH3 G	09/03/24 13:01	09/06/24 08:28	10mL/10mL	10mL/10mL	1.00
A4I0784-07	Water	SM 4500-NH3 G	09/03/24 15:00	09/06/24 08:28	10mL/10mL	10mL/10mL	1.00
Batch: 24I0175							
A4I0784-02RE1	Water	SM 4500-NH3 G	09/03/24 11:20	09/06/24 08:28	10mL/10mL	10mL/10mL	1.00
A4I0784-06RE1	Water	SM 4500-NH3 G	09/03/24 14:15	09/06/24 08:28	10mL/10mL	10mL/10mL	1.00
A4I0784-08RE1	Water	SM 4500-NH3 G	09/03/24 14:52	09/06/24 08:28	10mL/10mL	10mL/10mL	1.00

Anions by Ion Chromatography

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-33**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0784 - 09 18 24 1156**

SAMPLE PREPARATION INFORMATION

Anions by Ion Chromatography

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 24I0076							
A4I0784-01	Water	EPA 300.0	09/03/24 10:00	09/04/24 11:46	5mL/5mL	5mL/5mL	1.00
A4I0784-02	Water	EPA 300.0	09/03/24 11:20	09/04/24 11:46	5mL/5mL	5mL/5mL	1.00
A4I0784-03	Water	EPA 300.0	09/03/24 12:49	09/04/24 11:46	5mL/5mL	5mL/5mL	1.00
A4I0784-03RE1	Water	EPA 300.0	09/03/24 12:49	09/04/24 11:46	5mL/5mL	5mL/5mL	1.00
A4I0784-04	Water	EPA 300.0	09/03/24 12:49	09/04/24 11:46	5mL/5mL	5mL/5mL	1.00
A4I0784-04RE1	Water	EPA 300.0	09/03/24 12:49	09/04/24 11:46	5mL/5mL	5mL/5mL	1.00
A4I0784-05	Water	EPA 300.0	09/03/24 13:01	09/04/24 11:46	5mL/5mL	5mL/5mL	1.00
A4I0784-05RE1	Water	EPA 300.0	09/03/24 13:01	09/04/24 11:46	5mL/5mL	5mL/5mL	1.00
A4I0784-06	Water	EPA 300.0	09/03/24 14:15	09/04/24 11:46	5mL/5mL	5mL/5mL	1.00
A4I0784-06RE1	Water	EPA 300.0	09/03/24 14:15	09/04/24 11:46	5mL/5mL	5mL/5mL	1.00
A4I0784-07	Water	EPA 300.0	09/03/24 15:00	09/04/24 11:46	5mL/5mL	5mL/5mL	1.00
A4I0784-08	Water	EPA 300.0	09/03/24 14:52	09/04/24 11:46	5mL/5mL	5mL/5mL	1.00
Batch: 24I0104							
A4I0784-07RE1	Water	EPA 300.0	09/03/24 15:00	09/05/24 08:31	5mL/5mL	5mL/5mL	1.00

Apex Laboratories



Darrell Auvil, Client Services Manager

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Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-33**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0784 - 09 18 24 1156**

QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

Apex Laboratories

E	Estimated Value. The result is above the calibration range of the instrument.
Q-01	Spike recovery and/or RPD is outside acceptance limits.
Q-03	Spike recovery and/or RPD is outside control limits due to the high concentration of analyte present in the sample.
Q-42	Matrix Spike and/or Duplicate analysis was performed on this sample. % Recovery or RPD for this analyte is outside laboratory control limits. (Refer to the QC Section of Analytical Report.)
Q-54	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +1%. The results are reported as Estimated Values.
Q-54a	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +10%. The results are reported as Estimated Values.
Q-54b	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +18%. The results are reported as Estimated Values.
Q-54c	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +19%. The results are reported as Estimated Values.
Q-54d	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +2%. The results are reported as Estimated Values.
Q-54e	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +26%. The results are reported as Estimated Values.
Q-54f	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +27%. The results are reported as Estimated Values.
Q-54g	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +28%. The results are reported as Estimated Values.
Q-54h	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +3%. The results are reported as Estimated Values.
Q-54i	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +36%. The results are reported as Estimated Values.
Q-54j	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +39%. The results are reported as Estimated Values.
Q-54k	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +40%. The results are reported as Estimated Values.
Q-54l	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +41%. The results are reported as Estimated Values.
Q-54m	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +5%. The results are reported as Estimated Values.

Apex Laboratories



Darrell Auvil, Client Services Manager

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GeoEngineers - Portland	Project:	**Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number:	**19001-009-33**	**Report ID:**
Portland, OR 97239	Project Manager:	**Stephanie Bosze-Salisbury**	**A4I0784 - 09 18 24 1156**

Q-54n Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +50%. The results are reported as Estimated Values.

Q-54o Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +67%. The results are reported as Estimated Values.

Q-54p Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +8%. The results are reported as Estimated Values.

Q-54q Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +9%. The results are reported as Estimated Values.

Q-54r Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by -1%. The results are reported as Estimated Values.

Q-55 Daily CCV/LCS recovery for this analyte was below the +/-20% criteria listed in EPA 8260, however there is adequate sensitivity to ensure detection at the reporting level.

Q-56 Daily CCV/LCS recovery for this analyte was above the +/-20% criteria listed in EPA 8260. Samples that are ND (Non-Detect) are not impacted.

Apex Laboratories



Darrell Auvil, Client Services Manager

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-33**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0784 - 09 18 24 1156**

REPORTING NOTES AND CONVENTIONS:

Abbreviations:

DET Analyte DETECTED at or above the detection or reporting limit.

ND Analyte NOT DETECTED at or above the detection or reporting limit.

NR Result Not Reported

RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

Detection Limits: Limit of Detection (LOD)

Validated Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).
If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

Basis: Results for soil samples are generally reported on a 100% dry weight basis.
The Result Basis is listed following the units as " dry", " wet", or " " (blank) designation.

" dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")
See Percent Solids section for details of dry weight analysis.

" wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.

" " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

Results for Volatiles analyses on soils and sediments that are reported on a “dry weight” basis include the water miscible solvent (WMS) correction referenced in the EPA 8000 Method guidance documents. Solid and Liquid samples reported on an “As Received” basis do not have the WMS correction applied, as dry weight was not performed.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) may not be included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

" --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

" *** " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Apex Laboratories



Darrell Auvil, Client Services Manager

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GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-33**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0784 - 09 18 24 1156**

REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to one half of the Reporting Limit (RL).
Blank results for gravimetric analyses are evaluated to the Reporting Level, not to half of the Reporting Level.
-For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.
-For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.
For further details, please request a copy of this document.
-Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.
'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level, if results are not reported to the MDL.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

Apex Laboratories



Darrell Auvil, Client Services Manager

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-33**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0784 - 09 18 24 1156**

LABORATORY ACCREDITATION INFORMATION

ORELAP Certification ID: OR100062 (Primary Accreditation) - EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

Apex Laboratories

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation

All reported analytes are included in Apex Laboratories' current ORELAP scope.

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation.
Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories



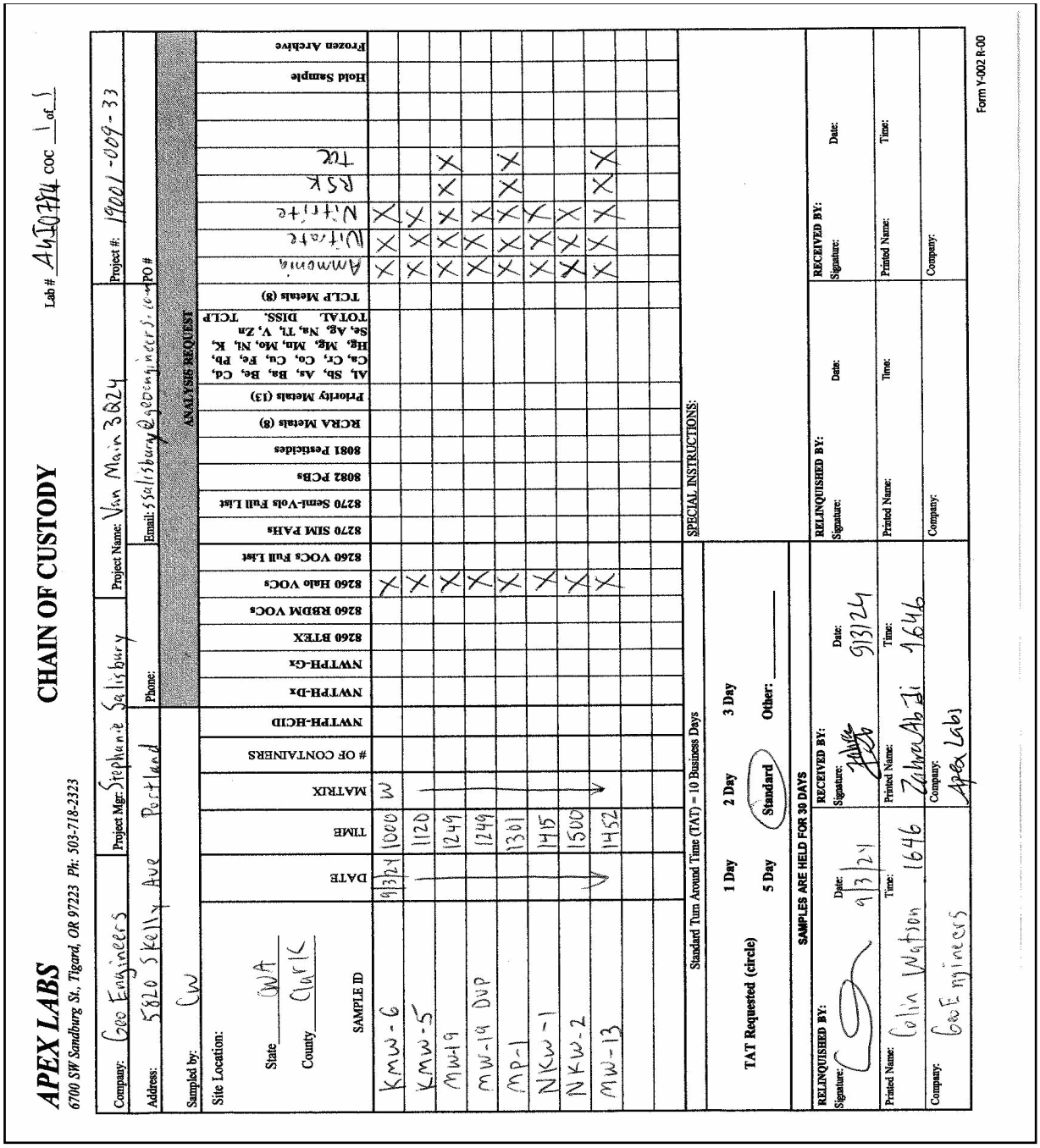
Darrell Auvil, Client Services Manager

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-33**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0784 - 09 18 24 1156**



APEX LABS — 6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323

CHAIN OF CUSTODY — Lab # A4I0784 COC 1 of 1

Company: GeoEngineers | Project Mgr: Stephanie Salisbury | Project Name: Van Main 3Q24 | Project #: 19001-009-33
Address: 5820 S Kelly Ave Portland | Phone: | Email: ssalisbury@geoengineers.com | PO #
Sampled by: CW

Site Location: State WA County Clark

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 BTEX	8260 RBDM VOCs	8260 Halo VOCs	8260 VOCs Full List	8270 SIM PAHs	8270 Semi-Vols Full List	8082 PCBs	8081 Pesticides	RCRA Metals (8)	Priority Metals (13)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS. TCLP	TCLP Metals (8)	Ammonia	Nitrate	Nitrite	RSK	TOC		Hold Sample	Frozen Archive
KMW-6	9/13/24	1000	W							X										X	X	X					
KMW-5	"	1120	"							X										X	X	X					
MW-19	"	1249	"							X										X	X	X					
MW-19 DUP	"	1249	"							X										X	X	X					
MP-1	"	1301	"							X										X	X	X					
NKW-1	"	1415	"							X										X	X	X					
NKW-2	"	1500	"							X										X	X	X					
MW-13	"	1452	"							X										X	X	X					

Standard Turn Around Time (TAT) = 10 Business Days

TAT Requested (circle): 1 Day | 2 Day | 3 Day | 5 Day | Standard | Other: _____

SPECIAL INSTRUCTIONS:

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY:	Date:	RECEIVED BY:	Date:
Signature:	9/13/24	Signature:	9/13/24
Printed Name:	Time: 1646	Printed Name: Colin Watson	Time: 1646
Company: GeoEngineers		Company: Apex Labs	

RELINQUISHED BY:	Date:	RECEIVED BY:	Date:
Signature:		Signature:	
Printed Name:	Time:	Printed Name:	Time:
Company:		Company:	

Form Y-002 R-00

Apex Laboratories

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Darrell Auvil, Client Services Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-33**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0784 - 09 18 24 1156**

APEX LABS COOLER RECEIPT FORM

Client: Geo Engineers Element WO#: A4I0784

Project/Project #: Van Main 3Q24 #19001-009-33

Delivery Info:

Date/time received: 9/3/24 @ 1646 By: ZA

Delivered by: Apex__Client X ESS__FedEx__UPS__Radio__Morgan__SDS__Evergreen__Other__

From USDA Regulated Origin? Yes_____ No X

Cooler Inspection Date/time inspected: 9/3/24 @ 1646 By: ZA

Chain of Custody included? Yes X No_____

Signed/dated by client? Yes X No_____

Contains USDA Reg. Soils? Yes_____ No X Unsure (email RegSoils)_____

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	5.7						
Custody seals? (Y/N)	N						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	Y						
Ice type: (Gel/Real/Other)	Real						
Condition (In/Out):	In						

Cooler out of temp? (Y/N) Possible reason why:_____

Green dots applied to out of temperature samples? Yes/No

Out of temperature samples form initiated? Yes/No

Sample Inspection: Date/time inspected: 9/3/24 @ 1700 By: ZA

All samples intact? Yes X No___ Comments:_____

Bottle labels/COCs agree? Yes X No___ Comments:_____

COC/container discrepancies form initiated? Yes___ No X

Containers/volumes received appropriate for analysis? Yes X No___ Comments:_____

Do VOA vials have visible headspace? Yes___ No X NA____

Comments_____

Water samples: pH checked: Yes X No___NA___ pH appropriate? Yes X No___NA____ pH ID: A23117

Comments:_____

Labeled by: ZA Witness: [signature] Cooler Inspected by: ZA

Form Y-003 R-02

Apex Laboratories

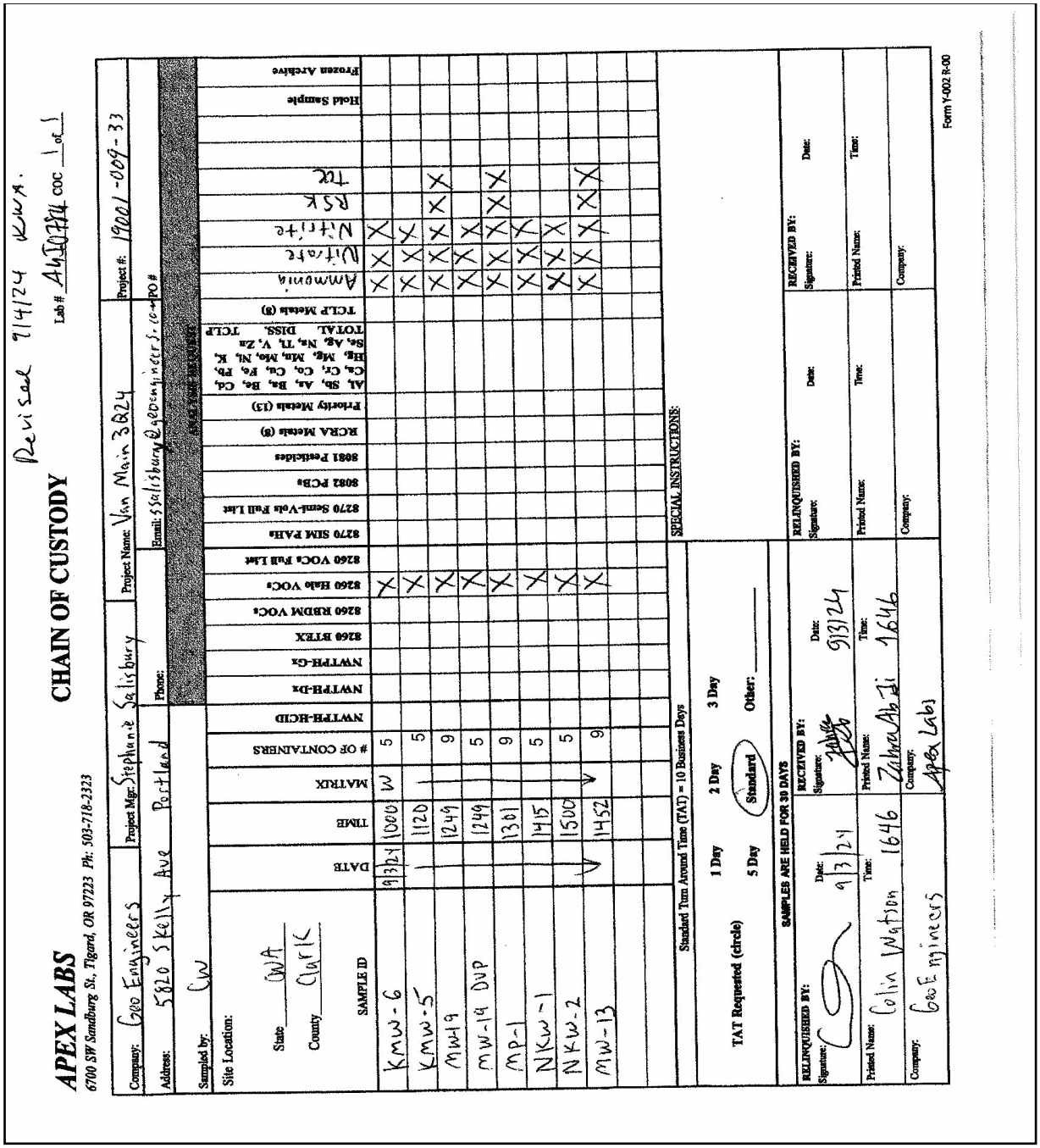
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Darrell Auvil, Client Services Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-33**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0784 - 09 18 24 1156**



APEX LABS
6700 SW Sandburg St., Tigard, OR 97223 PH: 503-718-2323

CHAIN OF CUSTODY

Revised 9/14/24 KMA. Lab # A4I0784 COC 1 of 1

Company: GeoEngineers | Project Mgr: Stephanie Salisbury | Project Name: Van Main 3Q24 | Project #: 19001-009-33
Address: 5820 S Kelly Ave Portland | Phone: | Email: ssalisbury@geoengineers.com | PO #
Sampled by: CW
Site Location: State WA County Clark

SAMPLE ID	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 BTEX	8260 RBDM VOCs	8260 Halo VOCs	8260 VOCs Full List	8270 SIM PAHs	8270 Semi-Vols Full List	8082 PCBs	8081 Pesticides	RCRA Metals (8)	Priority Metals (13)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS. TCLP	TCLP Metals (8)	Ammonia	Nitrate	Nitrite	RSK	TOC	Hold Sample	Frozen Archive
KMW-6	9/13/24	1000	W	5						X										X	X	X	X			
KMW-5	"	1120	"	5						X										X	X	X	X			
MW19		1249		9						X										X	X	X	X			
MW-19 DUP		1249		5						X										X	X	X	X			
MP-1		1301		9						X										X	X	X	X			
NKW-1		1415		5						X										X	X	X	X			
NKW-2		1500		5						X										X	X	X	X			
MW-13		1452		9						X										X	X	X	X			

Standard Turn Around Time (TAT) = 10 Business Days
TAT Requested (circle): 1 Day 2 Day 3 Day 5 Day Standard Other: _____
SPECIAL INSTRUCTIONS:

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY:	Date:	RECEIVED BY:	Date:
Signature:		Signature:	9/13/24
Printed Name:	Time:	Printed Name:	Time: 1646
Company: GeoEngineers		Company: Apex Labs	

RELINQUISHED BY:	Date:	RECEIVED BY:	Date:
Signature:		Signature:	
Printed Name:	Time:	Printed Name:	Time:
Company:		Company:	

Form Y-002 R-00

Apex Laboratories

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Darrell Auvil, Client Services Manager

September 13, 2024 Service Request No:K2409250

Darrell Auvil
Apex Laboratories
6700 SW Sandburg St.
Tigard, OR 97223

Laboratory Results for: A4I0784

Dear Darrell,

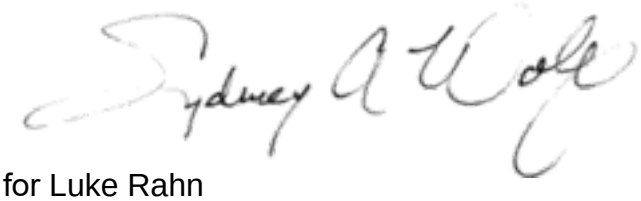
Enclosed are the results of the sample(s) submitted to our laboratory September 05, 2024
For your reference, these analyses have been assigned our service request number **K2409250.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3260. You may also contact me via email at Luke.Rahn@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental



for Luke Rahn
Project Manager

ADDRESS 1317 S. 13th Avenue, Kelso, WA 98626
PHONE +1 360 577 7222 | FAX +1 360 636 1068
ALS Group USA, Corp.
dba ALS Environmental

Narrative Documents

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Apex Laboratories
Project: A4I0784
Sample Matrix: Water

Service Request: K2409250
Date Received: 09/05/2024

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier II level requested by the client.

Sample Receipt:

Three water samples were received for analysis at ALS Environmental on 09/05/2024. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

General Chemistry:

No significant anomalies were noted with this analysis.

Approved by _____ Date 09/13/2024

SAMPLE DETECTION SUMMARY

This form includes only detections above the reporting levels. For a full listing of sample results, continue to the Sample Results section of this Report.

CLIENT ID: MW-19			Lab ID: K2409250-001			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Carbon, Total Organic	2.20		0.08	0.50	mg/L	SM 5310 C

CLIENT ID: MP-1			Lab ID: K2409250-002			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Carbon, Total Organic	0.70		0.08	0.50	mg/L	SM 5310 C

CLIENT ID: MW-13			Lab ID: K2409250-003			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Carbon, Total Organic	2.90		0.08	0.50	mg/L	SM 5310 C

Sample Receipt Information

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client: Apex Laboratories **Service Request:**K2409250

Project: A4I0784

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
K2409250-001	MW-19	9/3/2024	1249
K2409250-002	MP-1	9/3/2024	1301
K2409250-003	MW-13	9/3/2024	1452

V24092S0

SUBCONTRACT ORDER

Apex Laboratories

09/13/24 **A4I0784**

SENDING LABORATORY:	**RECEIVING LABORATORY:**
Apex Laboratories	ALS Group USA - Kelso
6700 S.W. Sandburg Street	1317 S 13th Avenue
Tigard, OR 97223	Kelso, WA 98626
Phone: (503) 718-2323	Phone :(360) 577-7222
Fax: (503) 336-0745	Fax: (360) 636-1068
Project Manager: Darrell Auvil	

Sample Name: MW-19 **Sampled: 09/03/24 12:49** (A4I0784-03)

Analysis	Due	Expires	Comments
Total Organic Carbon - H2O (5310C)	09/16/24 17:00	10/01/24 12:49	ALS Kelso, no data package
Containers Supplied:			
(H)250 mL Poly - Sulfuric (H2SO4)			

Sample Name: MP-1 **Sampled: 09/03/24 13:01** (A4I0784-05)

Analysis	Due	Expires	Comments
Total Organic Carbon - H2O (5310C)	09/16/24 17:00	10/01/24 13:01	ALS Kelso, no data package
Containers Supplied:			
(H)250 mL Poly - Sulfuric (H2SO4)			

Sample Name: MW-13 **Sampled: 09/03/24 14:52** (A4I0784-08)

Analysis	Due	Expires	Comments
Total Organic Carbon - H2O (5310C)	09/16/24 17:00	10/01/24 14:52	ALS Kelso, no data package
Containers Supplied:			
(H)250 mL Amber - HCl			

Standard TAT

Released By	Date	Received By	Date
[signature]	9/5/24 10:44	[signature]	9/5/24 1044
[signature]	9/5/24 1327	[signature]	9/5/24 13:27

PM LH

Cooler Receipt and Preservation Form

Client Apex Service Request K24 09250

Received: 09/05/24 Opened: 09/05/24 By: AD Unloaded: 09/05/24 By: AD

1. Samples were received via? *USPS* *Fed Ex* *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) *Cooler* *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA Y N If yes, how many and where? _____
   If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID / NA	Out of temp indicate with "X"	PM Notified If out of temp	Tracking Number NA	Filed
	1-F	IR06					

4. Was a Temperature Blank present in cooler? NA Y N If yes, notate the temperature in the appropriate column above:
   If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
5. Were samples received within the method specified temperature ranges? NA Y N
   If no, were they received on ice and same day as collected? If not, notate the cooler # above and notify the PM. NA Y N

If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*

6. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
7. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
8. Were samples received in good condition (unbroken) NA Y N
9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA Y N
10. Did all sample labels and tags agree with custody papers? NA Y N
11. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
12. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
13. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
14. Was C12/Res negative? NA Y N
15. Were samples received within the method specified time limit? If not, notate the error below and notify the PM NA Y N
16. Were 100ml sterile microbiology bottles filled exactly to the 100ml mark? NA Y N Underfilled Overfilled

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, Resolutions: _____

G:\SMO\2024 Forms SOP: SMO-GEN Reviewed: NP 1/3/2024

Miscellaneous Forms

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

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Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value over the calibration range.
J	The result is an estimated value between the MDL and the MRL.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Client:	Apex Laboratories	**Service Request:**	K2409250
Project:	A4I0784/		

Sample Name:	MW-19	**Date Collected:**	09/3/24
Lab Code:	K2409250-001	**Date Received:**	09/5/24
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
SM 5310 C		MSPECHT

Sample Name:	MP-1	**Date Collected:**	09/3/24
Lab Code:	K2409250-002	**Date Received:**	09/5/24
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
SM 5310 C		MSPECHT

Sample Name:	MW-13	**Date Collected:**	09/3/24
Lab Code:	K2409250-003	**Date Received:**	09/5/24
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
SM 5310 C		MSPECHT

Sample Results

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
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General Chemistry

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Analytical Report

Client:	Apex Laboratories	**Service Request:**	K2409250
Project:	A4I0784	**Date Collected:**	09/03/24 12:49
Sample Matrix:	Water	**Date Received:**	09/05/24 13:27
Sample Name:	MW-19	**Basis:**	NA
Lab Code:	K2409250-001		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Carbon, Total Organic	SM 5310 C	**2.20**	mg/L	0.50	0.08	1	09/09/24 15:55	

Analytical Report

Client:	Apex Laboratories	**Service Request:**	K2409250
Project:	A4I0784	**Date Collected:**	09/03/24 13:01
Sample Matrix:	Water	**Date Received:**	09/05/24 13:27
Sample Name:	MP-1	**Basis:**	NA
Lab Code:	K2409250-002		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Carbon, Total Organic	SM 5310 C	**0.70**	mg/L	0.50	0.08	1	09/09/24 15:55	

Analytical Report

Client:	Apex Laboratories	**Service Request:**	K2409250
Project:	A4I0784	**Date Collected:**	09/03/24 14:52
Sample Matrix:	Water	**Date Received:**	09/05/24 13:27
Sample Name:	MW-13	**Basis:**	NA
Lab Code:	K2409250-003		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Carbon, Total Organic	SM 5310 C	**2.90**	mg/L	0.50	0.08	1	09/09/24 15:55	

QC Summary Forms

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
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General Chemistry

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Client:	Apex Laboratories	**Service Request:**	K2409250
Project:	A4I0784	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	K2409250-MB		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Carbon, Total Organic	SM 5310 C	ND U	mg/L	0.50	0.08	1	09/09/24 15:55	

Client:	Apex Laboratories	**Service Request:**	K2409250
Project:	A4I0784	**Date Analyzed:**	09/09/24
Sample Matrix:	Water	**Date Extracted:**	NA

Lab Control Sample Summary
Carbon, Total Organic

Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	853405

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K2409250-LCS	25.0	25.0	100	83-117

AirTECHNOLOGY
Laboratories, Inc.

September 26, 2024

LA Cert #04140
EPA Methods TO3, TO14A, TO15, 25C/3C, ASTM D1946, RSK-175

TX Cert T104704450-14-6
EPA Methods TO14A, TO15

UT Cert CA0133332015-3
EPA Methods TO3, TO14A, TO15, RSK-175

ALASKA CS-LAP 24-002
EPA Methods TO14A, TO15

Apex Laboratories
ATTN: Darrell Auvil
6700 S.W. Sandburg St.
Tigard, OR 97223

LABORATORY TEST RESULTS

Project Reference: A4I0784
Lab Number: R090605-01/03

Enclosed are results for sample(s) received 9/06/24 by Air Technology Laboratories. Samples were received intact and chilled to 5° C. Analyses were performed according to specifications on the chain of custody provided with the sample(s).

Report Narrative:

- Unless otherwise noted in the report, sample analyses were performed within method performance criteria and meet all requirements of the TNI Standards.
- The enclosed results relate only to the sample(s).

ATL appreciates the opportunity to provide testing services to your company. If you have any questions regarding these results, please call me at (626) 964-4032.

Sincerely,

Mark Johnson
Operations Manager
MJohnson@AirTechLabs.com

Note: The cover letter is an integral part of this analytical report.

SUBCONTRACT ORDER

Apex Laboratories

9/3/24 **A4I0784** UNAB R090605-01/03

SENDING LABORATORY:

Apex Laboratories
6700 S.W. Sandburg Street
Tigard, OR 97223
Phone: (503) 718-2323
Fax: (503) 336-0745
Project Manager: Darrell Auvil

RECEIVING LABORATORY:

Air Technology Laboratories, Inc
18501 E. Gale Ave Suite 130
City of Industry, CA 91748
Phone :(626) 964-4032
Fax: (626) 964-5832

01 **Sample Name: MW-19** **Water** **Sampled: 09/03/24 12:49** (A4I0784-03)

Analysis	Due	Expires	Comments
RSK 175 Preserved (Meth, Eth, Eth) (Sub)	09/16/24 17:00	09/17/24 12:49	air tech lab
Containers Supplied:			
(D)40 mL VOA - HCL			
(E)40 mL VOA - HCL			
(F)40 mL VOA - HCL			

02 **Sample Name: MP-1** **Water** **Sampled: 09/03/24 13:01** (A4I0784-05)

Analysis	Due	Expires	Comments
RSK 175 Preserved (Meth, Eth, Eth) (Sub)	09/16/24 17:00	09/17/24 13:01	air tech lab
Containers Supplied:			
(D)40 mL VOA - HCL			
(E)40 mL VOA - HCL			
(F)40 mL VOA - HCL			

03 **Sample Name: MW-13** **Water** **Sampled: 09/03/24 14:52** (A4I0784-08)

Analysis	Due	Expires	Comments
RSK 175 Preserved (Meth, Eth, Eth) (Sub)	09/16/24 17:00	09/17/24 14:52	air tech lab
Containers Supplied:			
(D)40 mL VOA - HCL			
(E)40 mL VOA - HCL			
(F)40 mL VOA - HCL			

Standard TAT

5° C
HO

9/4/24		UPS (Shipper)	
Released By	Date	Received By	Date
UPS (Shipper)	9/6/24 10:12		9/6/24 10:12
Released By	Date	Received By	Date

Client: Apex Laboratories
Attn: Darrell Auvil
Project Name: NA
Project No.: A4I0784
Date Received: 09/06/24
Matrix: Water
Reporting Units: ug/L

RSK175

Lab No.:	R090605-01		R090605-02		R090605-03			
Client Sample I.D.:	MW-19 (A4I0784-03)		MP-1 (A4I0784-05)		MW-13 (A4I0784-08)			
Date/Time Sampled:	9/3/24 12:49		9/3/24 13:01		9/3/24 14:52			
Date/Time Analyzed:	9/10/24 10:00		9/10/24 10:12		9/10/24 10:23			
QC Batch No.:	240909GC8A2		240909GC8A2		240909GC8A2			
Analyst Initials:	AS/KD		AS/KD		AS/KD			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Result ug/L	RL ug/L	Result ug/L	RL ug/L	Result ug/L	RL ug/L		
Ethene	1.1	1.0	ND	1.0	5.6	1.0		
Ethane	35	1.0	ND	1.0	25	1.0		
Methane	4,000	1.0	1.1	1.0	1,900	1.0		

ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ **Date** 9/25/24
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

QC Batch No: 240909GC8A2
Matrix: Water
Reporting Units: ug/L

RSK 175
LABORATORY CONTROL SAMPLE SUMMARY

Lab No.:	METHOD BLANK			LCS		LCSD					
Date/Time Analyzed:	9/9/24 15:13			9/9/24 14:39		9/9/24 14:51					
Analyst Initials:	AS/KD			AS/KD		AS/KD					
Dilution Factor:	1.0			1.0		1.0			Limits		
ANALYTE	Result ug/L	RL ug/L	SPIKE AMT. ug/L	Result ug/L	% Rec.	Result ug/L	% Rec.	RPD %	Low %Rec	High %Rec	Max. RPD
Ethene	ND	1.0	1,150	1,010	88	934	82	7.5	70	130	30
Ethane	ND	1.0	1,200	1,100	90	1,020	83	7.2	70	130	30
Methane	ND	1.0	650	588	90	548	84	7.1	70	130	30

ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ **Date** 9/25/24
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Thursday, September 19, 2024

Stephanie Bosze-Salisbury
GeoEngineers - Portland
5820 S Kelly Ave Unit B
Portland, OR 97239

RE: A4I0826 - Vancouver GWM 3Q24 - 19001-009-34

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A4I0826, which was received by the laboratory on 9/4/2024 at 3:57:00PM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: DAuvil@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of sample receipt, unless prior arrangements have been made.

Cooler Receipt Information			
Acceptable Receipt Temperature is less than, or equal to, 6 degC (not frozen), or received on ice the same day as sampling.			
(See Cooler Receipt Form for details)			
Cooler #1	5.6 degC	Cooler #2	2.8 degC

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.
All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document(s) and updated by any subsequent written communications. This analytical report must be reproduced in its entirety.

Darrell Auvil, Client Services Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-34	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0826 - 09 19 24 1607

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Ex	A4I0826-01	Water	09/04/24 14:21	09/04/24 15:57
MW-7	A4I0826-02	Water	09/04/24 14:22	09/04/24 15:57
MW-7 DUP	A4I0826-03	Water	09/04/24 14:22	09/04/24 15:57
MW-10	A4I0826-04	Water	09/04/24 07:57	09/04/24 15:57
MW-14	A4I0826-05	Water	09/04/24 12:31	09/04/24 15:57
MW-17	A4I0826-06	Water	09/04/24 13:26	09/04/24 15:57
MW-25i	A4I0826-07	Water	09/04/24 08:51	09/04/24 15:57
MW-26	A4I0826-08	Water	09/04/24 09:20	09/04/24 15:57
S-1	A4I0826-09	Water	09/04/24 11:24	09/04/24 15:57
S-2	A4I0826-10	Water	09/04/24 10:39	09/04/24 15:57
MW-24i	A4I0826-11	Water	09/04/24 13:33	09/04/24 15:57
MW-24d	A4I0826-12	Water	09/04/24 12:37	09/04/24 15:57
MW-32s	A4I0826-13	Water	09/04/24 11:07	09/04/24 15:57
MGMS1-3(43)	A4I0826-14	Water	09/04/24 10:24	09/04/24 15:57
MGMS1-2(60)	A4I0826-15	Water	09/04/24 10:04	09/04/24 15:57
MGMS2-3(60)	A4I0826-16	Water	09/04/24 09:30	09/04/24 15:57
MGMS2-4(40)	A4I0826-17	Water	09/04/24 09:02	09/04/24 15:57
MGMS3-4(40)	A4I0826-18	Water	09/04/24 07:41	09/04/24 15:57
MGMS3-4(40) DUP	A4I0826-19	Water	09/04/24 07:41	09/04/24 15:57
MGMS3-3(60)	A4I0826-20	Water	09/04/24 08:29	09/04/24 15:57
KMW-4	A4I0826-21	Water	09/04/24 10:30	09/04/24 15:57

Apex Laboratories



Darrell Auvil, Client Services Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document(s) and updated by any subsequent written communications. This analytical report must be reproduced in its entirety.

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Ex (A4I0826-01)				**Matrix: Water**		**Batch: 24I0243**		
Bromobenzene	ND	---	5.00	ug/L	10	09/10/24 02:42	EPA 8260D	
Bromochloromethane	ND	---	10.0	ug/L	10	09/10/24 02:42	EPA 8260D	
Bromodichloromethane	ND	---	10.0	ug/L	10	09/10/24 02:42	EPA 8260D	
Bromoform	ND	---	10.0	ug/L	10	09/10/24 02:42	EPA 8260D	
Bromomethane	ND	---	50.0	ug/L	10	09/10/24 02:42	EPA 8260D	
Carbon tetrachloride	ND	---	10.0	ug/L	10	09/10/24 02:42	EPA 8260D	
Chlorobenzene	ND	---	5.00	ug/L	10	09/10/24 02:42	EPA 8260D	
Chloroethane	ND	---	50.0	ug/L	10	09/10/24 02:42	EPA 8260D	
Chloroform	ND	---	10.0	ug/L	10	09/10/24 02:42	EPA 8260D	
Chloromethane	ND	---	50.0	ug/L	10	09/10/24 02:42	EPA 8260D	
2-Chlorotoluene	ND	---	10.0	ug/L	10	09/10/24 02:42	EPA 8260D	
4-Chlorotoluene	ND	---	10.0	ug/L	10	09/10/24 02:42	EPA 8260D	
Dibromochloromethane	ND	---	10.0	ug/L	10	09/10/24 02:42	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	50.0	ug/L	10	09/10/24 02:42	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	5.00	ug/L	10	09/10/24 02:42	EPA 8260D	
Dibromomethane	ND	---	10.0	ug/L	10	09/10/24 02:42	EPA 8260D	
1,2-Dichlorobenzene	ND	---	5.00	ug/L	10	09/10/24 02:42	EPA 8260D	
1,3-Dichlorobenzene	ND	---	5.00	ug/L	10	09/10/24 02:42	EPA 8260D	
1,4-Dichlorobenzene	ND	---	5.00	ug/L	10	09/10/24 02:42	EPA 8260D	
Dichlorodifluoromethane	ND	---	10.0	ug/L	10	09/10/24 02:42	EPA 8260D	
1,1-Dichloroethane	**4.50**	---	4.00	ug/L	10	09/10/24 02:42	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	4.00	ug/L	10	09/10/24 02:42	EPA 8260D	
1,1-Dichloroethene	**4.50**	---	4.00	ug/L	10	09/10/24 02:42	EPA 8260D	
cis-1,2-Dichloroethene	**625**	---	4.00	ug/L	10	09/10/24 02:42	EPA 8260D	
trans-1,2-Dichloroethene	**4.50**	---	4.00	ug/L	10	09/10/24 02:42	EPA 8260D	
1,2-Dichloropropane	ND	---	5.00	ug/L	10	09/10/24 02:42	EPA 8260D	
1,3-Dichloropropane	ND	---	10.0	ug/L	10	09/10/24 02:42	EPA 8260D	
2,2-Dichloropropane	ND	---	10.0	ug/L	10	09/10/24 02:42	EPA 8260D	
1,1-Dichloropropene	ND	---	10.0	ug/L	10	09/10/24 02:42	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	10.0	ug/L	10	09/10/24 02:42	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	10.0	ug/L	10	09/10/24 02:42	EPA 8260D	
Hexachlorobutadiene	ND	---	50.0	ug/L	10	09/10/24 02:42	EPA 8260D	
Methylene chloride	ND	---	100	ug/L	10	09/10/24 02:42	EPA 8260D	

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Darrell Auvil, Client Services Manager

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ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-34	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0826 - 09 19 24 1607

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Ex (A4I0826-01)				**Matrix: Water**		**Batch: 24I0243**		
1,1,1,2-Tetrachloroethane	ND	---	4.00	ug/L	10	09/10/24 02:42	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	5.00	ug/L	10	09/10/24 02:42	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	20.0	ug/L	10	09/10/24 02:42	EPA 8260D	
1,1,2-Trichloroethane	ND	---	5.00	ug/L	10	09/10/24 02:42	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	20.0	ug/L	10	09/10/24 02:42	EPA 8260D	
1,1,1-Trichloroethane	**7.20**	---	4.00	ug/L	10	09/10/24 02:42	EPA 8260D	
Trichloroethene (TCE)	**212**	---	4.00	ug/L	10	09/10/24 02:42	EPA 8260D	
Trichlorofluoromethane	ND	---	20.0	ug/L	10	09/10/24 02:42	EPA 8260D	
1,2,3-Trichloropropane	ND	---	10.0	ug/L	10	09/10/24 02:42	EPA 8260D	
Vinyl chloride	**4.40**	---	2.00	ug/L	10	09/10/24 02:42	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*94 %*	*Limits: 80-120 %*	*1*	*09/10/24 02:42*	*EPA 8260D*	
Toluene-d8 (Surr)			*100 %*	*80-120 %*	*1*	*09/10/24 02:42*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*102 %*	*80-120 %*	*1*	*09/10/24 02:42*	*EPA 8260D*	
Ex (A4I0826-01RE1)				**Matrix: Water**		**Batch: 24I0314**		
Tetrachloroethene (PCE)	**2060**	---	40.0	ug/L	100	09/11/24 12:41	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*94 %*	*Limits: 80-120 %*	*1*	*09/11/24 12:41*	*EPA 8260D*	
Toluene-d8 (Surr)			*101 %*	*80-120 %*	*1*	*09/11/24 12:41*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*107 %*	*80-120 %*	*1*	*09/11/24 12:41*	*EPA 8260D*	
MW-7 (A4I0826-02RE1)				**Matrix: Water**		**Batch: 24I0314**		
Bromobenzene	ND	---	0.500	ug/L	1	09/11/24 13:46	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	09/11/24 13:46	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	09/11/24 13:46	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	09/11/24 13:46	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	09/11/24 13:46	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	09/11/24 13:46	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	09/11/24 13:46	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	09/11/24 13:46	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	09/11/24 13:46	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	09/11/24 13:46	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	09/11/24 13:46	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	09/11/24 13:46	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	09/11/24 13:46	EPA 8260D	

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GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-7 (A4I0826-02RE1)				**Matrix: Water**		**Batch: 24I0314**		
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	09/11/24 13:46	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	09/11/24 13:46	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	09/11/24 13:46	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	09/11/24 13:46	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	09/11/24 13:46	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	09/11/24 13:46	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	09/11/24 13:46	EPA 8260D	
1,1-Dichloroethane	**2.31**	---	0.400	ug/L	1	09/11/24 13:46	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	09/11/24 13:46	EPA 8260D	
1,1-Dichloroethene	**0.490**	---	0.400	ug/L	1	09/11/24 13:46	EPA 8260D	
cis-1,2-Dichloroethene	**29.8**	---	0.400	ug/L	1	09/11/24 13:46	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	09/11/24 13:46	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	09/11/24 13:46	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	09/11/24 13:46	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	09/11/24 13:46	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	09/11/24 13:46	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/11/24 13:46	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/11/24 13:46	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	09/11/24 13:46	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	09/11/24 13:46	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	09/11/24 13:46	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	09/11/24 13:46	EPA 8260D	
Tetrachloroethene (PCE)	**83.4**	---	0.400	ug/L	1	09/11/24 13:46	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	09/11/24 13:46	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	09/11/24 13:46	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	09/11/24 13:46	EPA 8260D	
1,1,1-Trichloroethane	**0.550**	---	0.400	ug/L	1	09/11/24 13:46	EPA 8260D	
Trichloroethene (TCE)	**32.0**	---	0.400	ug/L	1	09/11/24 13:46	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	09/11/24 13:46	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	09/11/24 13:46	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	09/11/24 13:46	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*96 %*	*Limits:*	*80-120 %*	*1*	*09/11/24 13:46*	*EPA 8260D*	
Toluene-d8 (Surr)			*99 %*		*80-120 %*	*1*	*09/11/24 13:46*	*EPA 8260D*	

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-34	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0826 - 09 19 24 1607

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-7 (A4I0826-02RE1)				**Matrix: Water**		**Batch: 24I0314**		
Surrogate: 4-Bromofluorobenzene (Surr)		*Recovery: 102 %*	*Limits: 80-120 %*		*1*	*09/11/24 13:46*	*EPA 8260D*	
MW-7 DUP (A4I0826-03RE1)				**Matrix: Water**		**Batch: 24I0314**		
Bromobenzene	ND	---	0.500	ug/L	1	09/11/24 13:24	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	09/11/24 13:24	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	09/11/24 13:24	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	09/11/24 13:24	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	09/11/24 13:24	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	09/11/24 13:24	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	09/11/24 13:24	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	09/11/24 13:24	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	09/11/24 13:24	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	09/11/24 13:24	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	09/11/24 13:24	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	09/11/24 13:24	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	09/11/24 13:24	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	09/11/24 13:24	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	09/11/24 13:24	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	09/11/24 13:24	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	09/11/24 13:24	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	09/11/24 13:24	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	09/11/24 13:24	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	09/11/24 13:24	EPA 8260D	
1,1-Dichloroethane	**2.18**	---	0.400	ug/L	1	09/11/24 13:24	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	09/11/24 13:24	EPA 8260D	
1,1-Dichloroethene	**0.510**	---	0.400	ug/L	1	09/11/24 13:24	EPA 8260D	
cis-1,2-Dichloroethene	**28.3**	---	0.400	ug/L	1	09/11/24 13:24	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	09/11/24 13:24	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	09/11/24 13:24	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	09/11/24 13:24	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	09/11/24 13:24	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	09/11/24 13:24	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/11/24 13:24	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/11/24 13:24	EPA 8260D	

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5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-7 DUP (A4I0826-03RE1)				**Matrix: Water**		**Batch: 24I0314**		
Hexachlorobutadiene	ND	---	5.00	ug/L	1	09/11/24 13:24	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	09/11/24 13:24	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	09/11/24 13:24	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	09/11/24 13:24	EPA 8260D	
Tetrachloroethene (PCE)	**80.7**	---	0.400	ug/L	1	09/11/24 13:24	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	09/11/24 13:24	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	09/11/24 13:24	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	09/11/24 13:24	EPA 8260D	
1,1,1-Trichloroethane	**0.500**	---	0.400	ug/L	1	09/11/24 13:24	EPA 8260D	
Trichloroethene (TCE)	**30.0**	---	0.400	ug/L	1	09/11/24 13:24	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	09/11/24 13:24	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	09/11/24 13:24	EPA 8260D	
Vinyl chloride	**0.200**	---	0.200	ug/L	1	09/11/24 13:24	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*95 %*	*Limits:*	*80-120 %*	*1*	*09/11/24 13:24*	*EPA 8260D*	
Toluene-d8 (Surr)			*101 %*		*80-120 %*	*1*	*09/11/24 13:24*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*100 %*		*80-120 %*	*1*	*09/11/24 13:24*	*EPA 8260D*	
MW-10 (A4I0826-04)				**Matrix: Water**		**Batch: 24I0243**		
Bromobenzene	ND	---	0.500	ug/L	1	09/09/24 19:29	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	09/09/24 19:29	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	09/09/24 19:29	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	09/09/24 19:29	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	09/09/24 19:29	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	09/09/24 19:29	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	09/09/24 19:29	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	09/09/24 19:29	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	09/09/24 19:29	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	09/09/24 19:29	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	09/09/24 19:29	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	09/09/24 19:29	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	09/09/24 19:29	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	09/09/24 19:29	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	09/09/24 19:29	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	09/09/24 19:29	EPA 8260D	

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503-718-2323
ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-10 (A4I0826-04)				**Matrix: Water**		**Batch: 24I0243**		
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	09/09/24 19:29	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	09/09/24 19:29	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	09/09/24 19:29	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	09/09/24 19:29	EPA 8260D	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	09/09/24 19:29	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	09/09/24 19:29	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	09/09/24 19:29	EPA 8260D	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	09/09/24 19:29	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	09/09/24 19:29	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	09/09/24 19:29	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	09/09/24 19:29	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	09/09/24 19:29	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	09/09/24 19:29	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/09/24 19:29	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/09/24 19:29	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	09/09/24 19:29	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	09/09/24 19:29	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	09/09/24 19:29	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	09/09/24 19:29	EPA 8260D	
Tetrachloroethene (PCE)	**1.45**	---	0.400	ug/L	1	09/09/24 19:29	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	09/09/24 19:29	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	09/09/24 19:29	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	09/09/24 19:29	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	09/09/24 19:29	EPA 8260D	
Trichloroethene (TCE)	**1.45**	---	0.400	ug/L	1	09/09/24 19:29	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	09/09/24 19:29	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	09/09/24 19:29	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	09/09/24 19:29	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery: 99 %*		*Limits: 80-120 %*	*1*	*09/09/24 19:29*	*EPA 8260D*	
Toluene-d8 (Surr)		*101 %*		*80-120 %*	*1*	*09/09/24 19:29*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)		*104 %*		*80-120 %*	*1*	*09/09/24 19:29*	*EPA 8260D*	
MW-14 (A4I0826-05)				**Matrix: Water**		**Batch: 24I0243**		
Bromobenzene	ND	---	0.500	ug/L	1	09/09/24 19:51	EPA 8260D	

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Darrell Auvil, Client Services Manager

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-14 (A4I0826-05)				**Matrix: Water**		**Batch: 24I0243**		
Bromochloromethane	ND	---	1.00	ug/L	1	09/09/24 19:51	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	09/09/24 19:51	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	09/09/24 19:51	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	09/09/24 19:51	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	09/09/24 19:51	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	09/09/24 19:51	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	09/09/24 19:51	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	09/09/24 19:51	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	09/09/24 19:51	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	09/09/24 19:51	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	09/09/24 19:51	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	09/09/24 19:51	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	09/09/24 19:51	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	09/09/24 19:51	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	09/09/24 19:51	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	09/09/24 19:51	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	09/09/24 19:51	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	09/09/24 19:51	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	09/09/24 19:51	EPA 8260D	
1,1-Dichloroethane	**6.25**	---	0.400	ug/L	1	09/09/24 19:51	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	09/09/24 19:51	EPA 8260D	
1,1-Dichloroethene	**2.63**	---	0.400	ug/L	1	09/09/24 19:51	EPA 8260D	
cis-1,2-Dichloroethene	**96.4**	---	0.400	ug/L	1	09/09/24 19:51	EPA 8260D	
trans-1,2-Dichloroethene	**2.05**	---	0.400	ug/L	1	09/09/24 19:51	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	09/09/24 19:51	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	09/09/24 19:51	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	09/09/24 19:51	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	09/09/24 19:51	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/09/24 19:51	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/09/24 19:51	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	09/09/24 19:51	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	09/09/24 19:51	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	09/09/24 19:51	EPA 8260D	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-14 (A4I0826-05)				**Matrix: Water**		**Batch: 24I0243**		
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	09/09/24 19:51	EPA 8260D	
Tetrachloroethene (PCE)	**128**	---	0.400	ug/L	1	09/09/24 19:51	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	09/09/24 19:51	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	09/09/24 19:51	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	09/09/24 19:51	EPA 8260D	
1,1,1-Trichloroethane	**0.780**	---	0.400	ug/L	1	09/09/24 19:51	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	09/09/24 19:51	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	09/09/24 19:51	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	09/09/24 19:51	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*97 %*	*Limits: 80-120 %*	*1*	*09/09/24 19:51*	*EPA 8260D*	
Toluene-d8 (Surr)			*101 %*	*80-120 %*	*1*	*09/09/24 19:51*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*106 %*	*80-120 %*	*1*	*09/09/24 19:51*	*EPA 8260D*	
MW-14 (A4I0826-05RE1)				**Matrix: Water**		**Batch: 24I0314**		
Trichloroethene (TCE)	**266**	---	4.00	ug/L	10	09/11/24 13:03	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*93 %*	*Limits: 80-120 %*	*1*	*09/11/24 13:03*	*EPA 8260D*	
Toluene-d8 (Surr)			*99 %*	*80-120 %*	*1*	*09/11/24 13:03*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*100 %*	*80-120 %*	*1*	*09/11/24 13:03*	*EPA 8260D*	
MW-17 (A4I0826-06RE1)				**Matrix: Water**		**Batch: 24I0314**		
Bromobenzene	ND	---	0.500	ug/L	1	09/11/24 11:36	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	09/11/24 11:36	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	09/11/24 11:36	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	09/11/24 11:36	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	09/11/24 11:36	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	09/11/24 11:36	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	09/11/24 11:36	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	09/11/24 11:36	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	09/11/24 11:36	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	09/11/24 11:36	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	09/11/24 11:36	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	09/11/24 11:36	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	09/11/24 11:36	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	09/11/24 11:36	EPA 8260D	

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ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-34	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0826 - 09 19 24 1607

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-17 (A4I0826-06RE1)				**Matrix: Water**		**Batch: 24I0314**		
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	09/11/24 11:36	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	09/11/24 11:36	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	09/11/24 11:36	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	09/11/24 11:36	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	09/11/24 11:36	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	09/11/24 11:36	EPA 8260D	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	09/11/24 11:36	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	09/11/24 11:36	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	09/11/24 11:36	EPA 8260D	
cis-1,2-Dichloroethene	**1.24**	---	0.400	ug/L	1	09/11/24 11:36	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	09/11/24 11:36	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	09/11/24 11:36	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	09/11/24 11:36	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	09/11/24 11:36	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	09/11/24 11:36	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/11/24 11:36	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/11/24 11:36	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	09/11/24 11:36	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	09/11/24 11:36	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	09/11/24 11:36	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	09/11/24 11:36	EPA 8260D	
Tetrachloroethene (PCE)	**0.590**	---	0.400	ug/L	1	09/11/24 11:36	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	09/11/24 11:36	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	09/11/24 11:36	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	09/11/24 11:36	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	09/11/24 11:36	EPA 8260D	
Trichloroethene (TCE)	**0.900**	---	0.400	ug/L	1	09/11/24 11:36	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	09/11/24 11:36	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	09/11/24 11:36	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	09/11/24 11:36	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*94 %*	*Limits:*	*80-120 %*	*1*	*09/11/24 11:36*	*EPA 8260D*
Toluene-d8 (Surr)			*100 %*		*80-120 %*	*1*	*09/11/24 11:36*	*EPA 8260D*
4-Bromofluorobenzene (Surr)			*102 %*		*80-120 %*	*1*	*09/11/24 11:36*	*EPA 8260D*

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Darrell Auvil, Client Services Manager

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-25i (A4I0826-07RE1)				**Matrix: Water**		**Batch: 24I0314**		
Bromobenzene	ND	---	0.500	ug/L	1	09/11/24 11:58	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	09/11/24 11:58	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	09/11/24 11:58	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	09/11/24 11:58	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	09/11/24 11:58	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	09/11/24 11:58	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	09/11/24 11:58	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	09/11/24 11:58	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	09/11/24 11:58	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	09/11/24 11:58	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	09/11/24 11:58	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	09/11/24 11:58	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	09/11/24 11:58	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	09/11/24 11:58	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	09/11/24 11:58	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	09/11/24 11:58	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	09/11/24 11:58	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	09/11/24 11:58	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	09/11/24 11:58	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	09/11/24 11:58	EPA 8260D	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	09/11/24 11:58	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	09/11/24 11:58	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	09/11/24 11:58	EPA 8260D	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	09/11/24 11:58	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	09/11/24 11:58	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	09/11/24 11:58	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	09/11/24 11:58	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	09/11/24 11:58	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	09/11/24 11:58	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/11/24 11:58	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/11/24 11:58	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	09/11/24 11:58	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	09/11/24 11:58	EPA 8260D	

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503-718-2323
ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-25i (A4I0826-07RE1)				**Matrix: Water**		**Batch: 24I0314**		
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	09/11/24 11:58	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	09/11/24 11:58	EPA 8260D	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	09/11/24 11:58	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	09/11/24 11:58	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	09/11/24 11:58	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	09/11/24 11:58	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	09/11/24 11:58	EPA 8260D	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	09/11/24 11:58	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	09/11/24 11:58	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	09/11/24 11:58	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	09/11/24 11:58	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*93 %*	*Limits:*	*80-120 %*	*1*	*09/11/24 11:58*	*EPA 8260D*	
Toluene-d8 (Surr)			*99 %*		*80-120 %*	*1*	*09/11/24 11:58*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*101 %*		*80-120 %*	*1*	*09/11/24 11:58*	*EPA 8260D*	
MW-26 (A4I0826-08RE1)				**Matrix: Water**		**Batch: 24I0314**		
Bromobenzene	ND	---	1.00	ug/L	2	09/11/24 14:08	EPA 8260D	
Bromochloromethane	ND	---	2.00	ug/L	2	09/11/24 14:08	EPA 8260D	
Bromodichloromethane	ND	---	2.00	ug/L	2	09/11/24 14:08	EPA 8260D	
Bromoform	ND	---	2.00	ug/L	2	09/11/24 14:08	EPA 8260D	
Bromomethane	ND	---	10.0	ug/L	2	09/11/24 14:08	EPA 8260D	
Carbon tetrachloride	ND	---	2.00	ug/L	2	09/11/24 14:08	EPA 8260D	
Chlorobenzene	ND	---	1.00	ug/L	2	09/11/24 14:08	EPA 8260D	
Chloroethane	ND	---	10.0	ug/L	2	09/11/24 14:08	EPA 8260D	
Chloroform	ND	---	2.00	ug/L	2	09/11/24 14:08	EPA 8260D	
Chloromethane	ND	---	10.0	ug/L	2	09/11/24 14:08	EPA 8260D	
2-Chlorotoluene	ND	---	2.00	ug/L	2	09/11/24 14:08	EPA 8260D	
4-Chlorotoluene	ND	---	2.00	ug/L	2	09/11/24 14:08	EPA 8260D	
Dibromochloromethane	ND	---	2.00	ug/L	2	09/11/24 14:08	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	10.0	ug/L	2	09/11/24 14:08	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	1.00	ug/L	2	09/11/24 14:08	EPA 8260D	
Dibromomethane	ND	---	2.00	ug/L	2	09/11/24 14:08	EPA 8260D	
1,2-Dichlorobenzene	ND	---	1.00	ug/L	2	09/11/24 14:08	EPA 8260D	
1,3-Dichlorobenzene	ND	---	1.00	ug/L	2	09/11/24 14:08	EPA 8260D	

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ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-34	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0826 - 09 19 24 1607

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-26 (A4I0826-08RE1)				**Matrix: Water**		**Batch: 24I0314**		
1,4-Dichlorobenzene	ND	---	1.00	ug/L	2	09/11/24 14:08	EPA 8260D	
Dichlorodifluoromethane	ND	---	2.00	ug/L	2	09/11/24 14:08	EPA 8260D	
1,1-Dichloroethane	**2.74**	---	0.800	ug/L	2	09/11/24 14:08	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.800	ug/L	2	09/11/24 14:08	EPA 8260D	
1,1-Dichloroethene	**0.960**	---	0.800	ug/L	2	09/11/24 14:08	EPA 8260D	
cis-1,2-Dichloroethene	**41.4**	---	0.800	ug/L	2	09/11/24 14:08	EPA 8260D	
trans-1,2-Dichloroethene	**1.42**	---	0.800	ug/L	2	09/11/24 14:08	EPA 8260D	
1,2-Dichloropropane	ND	---	1.00	ug/L	2	09/11/24 14:08	EPA 8260D	
1,3-Dichloropropane	ND	---	2.00	ug/L	2	09/11/24 14:08	EPA 8260D	
2,2-Dichloropropane	ND	---	2.00	ug/L	2	09/11/24 14:08	EPA 8260D	
1,1-Dichloropropene	ND	---	2.00	ug/L	2	09/11/24 14:08	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	2.00	ug/L	2	09/11/24 14:08	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	2.00	ug/L	2	09/11/24 14:08	EPA 8260D	
Hexachlorobutadiene	ND	---	10.0	ug/L	2	09/11/24 14:08	EPA 8260D	
Methylene chloride	ND	---	20.0	ug/L	2	09/11/24 14:08	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.800	ug/L	2	09/11/24 14:08	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	1.00	ug/L	2	09/11/24 14:08	EPA 8260D	
Tetrachloroethene (PCE)	**116**	---	0.800	ug/L	2	09/11/24 14:08	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	4.00	ug/L	2	09/11/24 14:08	EPA 8260D	
1,1,2-Trichloroethane	ND	---	1.00	ug/L	2	09/11/24 14:08	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	4.00	ug/L	2	09/11/24 14:08	EPA 8260D	
1,1,1-Trichloroethane	**1.28**	---	0.800	ug/L	2	09/11/24 14:08	EPA 8260D	
Trichloroethene (TCE)	**182**	---	0.800	ug/L	2	09/11/24 14:08	EPA 8260D	
Trichlorofluoromethane	ND	---	4.00	ug/L	2	09/11/24 14:08	EPA 8260D	
1,2,3-Trichloropropane	ND	---	2.00	ug/L	2	09/11/24 14:08	EPA 8260D	
Vinyl chloride	ND	---	0.400	ug/L	2	09/11/24 14:08	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery: 94 %*		*Limits: 80-120 %*	*1*	*09/11/24 14:08*	*EPA 8260D*	
Toluene-d8 (Surr)		*101 %*		*80-120 %*	*1*	*09/11/24 14:08*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)		*105 %*		*80-120 %*	*1*	*09/11/24 14:08*	*EPA 8260D*	
S-1 (A4I0826-09RE1)				**Matrix: Water**		**Batch: 24I0314**		
Bromobenzene	ND	---	0.500	ug/L	1	09/11/24 12:19	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	09/11/24 12:19	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	09/11/24 12:19	EPA 8260D	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
S-1 (A4I0826-09RE1)				**Matrix: Water**		**Batch: 24I0314**		
Bromoform	ND	---	1.00	ug/L	1	09/11/24 12:19	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	09/11/24 12:19	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	09/11/24 12:19	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	09/11/24 12:19	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	09/11/24 12:19	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	09/11/24 12:19	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	09/11/24 12:19	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	09/11/24 12:19	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	09/11/24 12:19	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	09/11/24 12:19	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	09/11/24 12:19	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	09/11/24 12:19	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	09/11/24 12:19	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	09/11/24 12:19	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	09/11/24 12:19	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	09/11/24 12:19	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	09/11/24 12:19	EPA 8260D	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	09/11/24 12:19	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	09/11/24 12:19	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	09/11/24 12:19	EPA 8260D	
cis-1,2-Dichloroethene	**4.08**	---	0.400	ug/L	1	09/11/24 12:19	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	09/11/24 12:19	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	09/11/24 12:19	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	09/11/24 12:19	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	09/11/24 12:19	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	09/11/24 12:19	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/11/24 12:19	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/11/24 12:19	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	09/11/24 12:19	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	09/11/24 12:19	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	09/11/24 12:19	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	09/11/24 12:19	EPA 8260D	
Tetrachloroethene (PCE)	**0.530**	---	0.400	ug/L	1	09/11/24 12:19	EPA 8260D	

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Darrell Auvil, Client Services Manager

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ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-34	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0826 - 09 19 24 1607

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
S-1 (A4I0826-09RE1)				**Matrix: Water**		**Batch: 24I0314**		
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	09/11/24 12:19	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	09/11/24 12:19	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	09/11/24 12:19	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	09/11/24 12:19	EPA 8260D	
Trichloroethene (TCE)	**0.910**	---	0.400	ug/L	1	09/11/24 12:19	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	09/11/24 12:19	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	09/11/24 12:19	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	09/11/24 12:19	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*93 %*	*Limits: 80-120 %*	*1*	*09/11/24 12:19*	*EPA 8260D*	
Toluene-d8 (Surr)			*101 %*	*80-120 %*	*1*	*09/11/24 12:19*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*105 %*	*80-120 %*	*1*	*09/11/24 12:19*	*EPA 8260D*	
S-2 (A4I0826-10)				**Matrix: Water**		**Batch: 24I0243**		
Bromobenzene	ND	---	0.500	ug/L	1	09/09/24 21:18	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	09/09/24 21:18	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	09/09/24 21:18	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	09/09/24 21:18	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	09/09/24 21:18	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	09/09/24 21:18	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	09/09/24 21:18	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	09/09/24 21:18	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	09/09/24 21:18	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	09/09/24 21:18	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	09/09/24 21:18	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	09/09/24 21:18	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	09/09/24 21:18	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	09/09/24 21:18	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	09/09/24 21:18	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	09/09/24 21:18	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	09/09/24 21:18	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	09/09/24 21:18	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	09/09/24 21:18	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	09/09/24 21:18	EPA 8260D	
1,1-Dichloroethane	**7.40**	---	0.400	ug/L	1	09/09/24 21:18	EPA 8260D	

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ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-34	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0826 - 09 19 24 1607

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
S-2 (A4I0826-10)				**Matrix: Water**		**Batch: 24I0243**		
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	09/09/24 21:18	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	09/09/24 21:18	EPA 8260D	
cis-1,2-Dichloroethene	**40.7**	---	0.400	ug/L	1	09/09/24 21:18	EPA 8260D	
trans-1,2-Dichloroethene	**0.490**	---	0.400	ug/L	1	09/09/24 21:18	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	09/09/24 21:18	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	09/09/24 21:18	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	09/09/24 21:18	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	09/09/24 21:18	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/09/24 21:18	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/09/24 21:18	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	09/09/24 21:18	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	09/09/24 21:18	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	09/09/24 21:18	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	09/09/24 21:18	EPA 8260D	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	09/09/24 21:18	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	09/09/24 21:18	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	09/09/24 21:18	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	09/09/24 21:18	EPA 8260D	
1,1,1-Trichloroethane	**0.740**	---	0.400	ug/L	1	09/09/24 21:18	EPA 8260D	
Trichloroethene (TCE)	**1.54**	---	0.400	ug/L	1	09/09/24 21:18	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	09/09/24 21:18	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	09/09/24 21:18	EPA 8260D	
Vinyl chloride	**0.270**	---	0.200	ug/L	1	09/09/24 21:18	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery: 98 %*		*Limits: 80-120 %*	*1*	*09/09/24 21:18*	*EPA 8260D*	
Toluene-d8 (Surr)		*100 %*		*80-120 %*	*1*	*09/09/24 21:18*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)		*104 %*		*80-120 %*	*1*	*09/09/24 21:18*	*EPA 8260D*	
MW-24i (A4I0826-11)				**Matrix: Water**		**Batch: 24I0243**		
Bromobenzene	ND	---	0.500	ug/L	1	09/09/24 21:39	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	09/09/24 21:39	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	09/09/24 21:39	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	09/09/24 21:39	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	09/09/24 21:39	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	09/09/24 21:39	EPA 8260D	

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6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-34	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0826 - 09 19 24 1607

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-24i (A4I0826-11)				**Matrix: Water**		**Batch: 24I0243**		
Chlorobenzene	ND	---	0.500	ug/L	1	09/09/24 21:39	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	09/09/24 21:39	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	09/09/24 21:39	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	09/09/24 21:39	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	09/09/24 21:39	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	09/09/24 21:39	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	09/09/24 21:39	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	09/09/24 21:39	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	09/09/24 21:39	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	09/09/24 21:39	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	09/09/24 21:39	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	09/09/24 21:39	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	09/09/24 21:39	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	09/09/24 21:39	EPA 8260D	
1,1-Dichloroethane	**1.00**	---	0.400	ug/L	1	09/09/24 21:39	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	09/09/24 21:39	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	09/09/24 21:39	EPA 8260D	
cis-1,2-Dichloroethene	**21.6**	---	0.400	ug/L	1	09/09/24 21:39	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	09/09/24 21:39	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	09/09/24 21:39	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	09/09/24 21:39	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	09/09/24 21:39	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	09/09/24 21:39	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/09/24 21:39	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/09/24 21:39	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	09/09/24 21:39	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	09/09/24 21:39	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	09/09/24 21:39	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	09/09/24 21:39	EPA 8260D	
Tetrachloroethene (PCE)	**22.4**	---	0.400	ug/L	1	09/09/24 21:39	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	09/09/24 21:39	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	09/09/24 21:39	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	09/09/24 21:39	EPA 8260D	

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ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-34	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0826 - 09 19 24 1607

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-24i (A4I0826-11)				**Matrix: Water**		**Batch: 24I0243**		
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	09/09/24 21:39	EPA 8260D	
Trichloroethene (TCE)	**10.0**	---	0.400	ug/L	1	09/09/24 21:39	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	09/09/24 21:39	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	09/09/24 21:39	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	09/09/24 21:39	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*98 %*	*Limits:*	*80-120 %*	*1*	*09/09/24 21:39*	*EPA 8260D*
Toluene-d8 (Surr)			*102 %*		*80-120 %*	*1*	*09/09/24 21:39*	*EPA 8260D*
4-Bromofluorobenzene (Surr)			*106 %*		*80-120 %*	*1*	*09/09/24 21:39*	*EPA 8260D*
MW-24d (A4I0826-12)				**Matrix: Water**		**Batch: 24I0243**		
Bromobenzene	ND	---	0.500	ug/L	1	09/09/24 22:01	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	09/09/24 22:01	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	09/09/24 22:01	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	09/09/24 22:01	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	09/09/24 22:01	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	09/09/24 22:01	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	09/09/24 22:01	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	09/09/24 22:01	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	09/09/24 22:01	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	09/09/24 22:01	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	09/09/24 22:01	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	09/09/24 22:01	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	09/09/24 22:01	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	09/09/24 22:01	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	09/09/24 22:01	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	09/09/24 22:01	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	09/09/24 22:01	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	09/09/24 22:01	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	09/09/24 22:01	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	09/09/24 22:01	EPA 8260D	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	09/09/24 22:01	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	09/09/24 22:01	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	09/09/24 22:01	EPA 8260D	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	09/09/24 22:01	EPA 8260D	

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-34	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0826 - 09 19 24 1607

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-24d (A4I0826-12)				**Matrix: Water**		**Batch: 24I0243**		
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	09/09/24 22:01	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	09/09/24 22:01	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	09/09/24 22:01	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	09/09/24 22:01	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	09/09/24 22:01	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/09/24 22:01	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/09/24 22:01	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	09/09/24 22:01	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	09/09/24 22:01	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	09/09/24 22:01	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	09/09/24 22:01	EPA 8260D	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	09/09/24 22:01	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	09/09/24 22:01	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	09/09/24 22:01	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	09/09/24 22:01	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	09/09/24 22:01	EPA 8260D	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	09/09/24 22:01	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	09/09/24 22:01	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	09/09/24 22:01	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	09/09/24 22:01	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*95 %*	*Limits:*	*80-120 %*	*1*	*09/09/24 22:01*	*EPA 8260D*	
Toluene-d8 (Surr)			*100 %*		*80-120 %*	*1*	*09/09/24 22:01*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*102 %*		*80-120 %*	*1*	*09/09/24 22:01*	*EPA 8260D*	
MW-32s (A4I0826-13)				**Matrix: Water**		**Batch: 24I0243**		
Bromobenzene	ND	---	0.500	ug/L	1	09/09/24 22:23	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	09/09/24 22:23	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	09/09/24 22:23	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	09/09/24 22:23	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	09/09/24 22:23	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	09/09/24 22:23	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	09/09/24 22:23	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	09/09/24 22:23	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	09/09/24 22:23	EPA 8260D	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-32s (A4I0826-13)				**Matrix: Water**		**Batch: 24I0243**		
Chloromethane	ND	---	5.00	ug/L	1	09/09/24 22:23	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	09/09/24 22:23	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	09/09/24 22:23	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	09/09/24 22:23	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	09/09/24 22:23	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	09/09/24 22:23	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	09/09/24 22:23	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	09/09/24 22:23	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	09/09/24 22:23	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	09/09/24 22:23	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	09/09/24 22:23	EPA 8260D	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	09/09/24 22:23	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	09/09/24 22:23	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	09/09/24 22:23	EPA 8260D	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	09/09/24 22:23	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	09/09/24 22:23	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	09/09/24 22:23	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	09/09/24 22:23	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	09/09/24 22:23	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	09/09/24 22:23	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/09/24 22:23	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/09/24 22:23	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	09/09/24 22:23	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	09/09/24 22:23	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	09/09/24 22:23	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	09/09/24 22:23	EPA 8260D	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	09/09/24 22:23	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	09/09/24 22:23	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	09/09/24 22:23	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	09/09/24 22:23	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	09/09/24 22:23	EPA 8260D	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	09/09/24 22:23	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	09/09/24 22:23	EPA 8260D	

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-34	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0826 - 09 19 24 1607

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-32s (A4I0826-13)				**Matrix: Water**		**Batch: 24I0243**		
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	09/09/24 22:23	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	09/09/24 22:23	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*95 %*	*Limits: 80-120 %*	*1*	*09/09/24 22:23*	*EPA 8260D*	
Toluene-d8 (Surr)			*99 %*	*80-120 %*	*1*	*09/09/24 22:23*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*103 %*	*80-120 %*	*1*	*09/09/24 22:23*	*EPA 8260D*	
MGMS1-3(43) (A4I0826-14)				**Matrix: Water**		**Batch: 24I0243**		
Bromobenzene	ND	---	10.0	ug/L	20	09/10/24 01:59	EPA 8260D	
Bromochloromethane	ND	---	20.0	ug/L	20	09/10/24 01:59	EPA 8260D	
Bromodichloromethane	ND	---	20.0	ug/L	20	09/10/24 01:59	EPA 8260D	
Bromoform	ND	---	20.0	ug/L	20	09/10/24 01:59	EPA 8260D	
Bromomethane	ND	---	100	ug/L	20	09/10/24 01:59	EPA 8260D	
Carbon tetrachloride	ND	---	20.0	ug/L	20	09/10/24 01:59	EPA 8260D	
Chlorobenzene	ND	---	10.0	ug/L	20	09/10/24 01:59	EPA 8260D	
Chloroethane	ND	---	100	ug/L	20	09/10/24 01:59	EPA 8260D	
Chloroform	ND	---	20.0	ug/L	20	09/10/24 01:59	EPA 8260D	
Chloromethane	ND	---	100	ug/L	20	09/10/24 01:59	EPA 8260D	
2-Chlorotoluene	ND	---	20.0	ug/L	20	09/10/24 01:59	EPA 8260D	
4-Chlorotoluene	ND	---	20.0	ug/L	20	09/10/24 01:59	EPA 8260D	
Dibromochloromethane	ND	---	20.0	ug/L	20	09/10/24 01:59	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	100	ug/L	20	09/10/24 01:59	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	10.0	ug/L	20	09/10/24 01:59	EPA 8260D	
Dibromomethane	ND	---	20.0	ug/L	20	09/10/24 01:59	EPA 8260D	
1,2-Dichlorobenzene	ND	---	10.0	ug/L	20	09/10/24 01:59	EPA 8260D	
1,3-Dichlorobenzene	ND	---	10.0	ug/L	20	09/10/24 01:59	EPA 8260D	
1,4-Dichlorobenzene	ND	---	10.0	ug/L	20	09/10/24 01:59	EPA 8260D	
Dichlorodifluoromethane	ND	---	20.0	ug/L	20	09/10/24 01:59	EPA 8260D	
1,1-Dichloroethane	**82.2**	---	8.00	ug/L	20	09/10/24 01:59	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	8.00	ug/L	20	09/10/24 01:59	EPA 8260D	
1,1-Dichloroethene	**20.2**	---	8.00	ug/L	20	09/10/24 01:59	EPA 8260D	
cis-1,2-Dichloroethene	**2200**	---	8.00	ug/L	20	09/10/24 01:59	EPA 8260D	
trans-1,2-Dichloroethene	**37.2**	---	8.00	ug/L	20	09/10/24 01:59	EPA 8260D	
1,2-Dichloropropane	ND	---	10.0	ug/L	20	09/10/24 01:59	EPA 8260D	
1,3-Dichloropropane	ND	---	20.0	ug/L	20	09/10/24 01:59	EPA 8260D	

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6700 S.W. Sandburg Street
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503-718-2323
ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MGMS1-3(43) (A4I0826-14)				**Matrix: Water**		**Batch: 24I0243**		
2,2-Dichloropropane	ND	---	20.0	ug/L	20	09/10/24 01:59	EPA 8260D	
1,1-Dichloropropene	ND	---	20.0	ug/L	20	09/10/24 01:59	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	20.0	ug/L	20	09/10/24 01:59	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	20.0	ug/L	20	09/10/24 01:59	EPA 8260D	
Hexachlorobutadiene	ND	---	100	ug/L	20	09/10/24 01:59	EPA 8260D	
Methylene chloride	ND	---	200	ug/L	20	09/10/24 01:59	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	8.00	ug/L	20	09/10/24 01:59	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	10.0	ug/L	20	09/10/24 01:59	EPA 8260D	
Tetrachloroethene (PCE)	**140**	---	8.00	ug/L	20	09/10/24 01:59	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	40.0	ug/L	20	09/10/24 01:59	EPA 8260D	
1,1,2-Trichloroethane	ND	---	10.0	ug/L	20	09/10/24 01:59	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	40.0	ug/L	20	09/10/24 01:59	EPA 8260D	
1,1,1-Trichloroethane	ND	---	8.00	ug/L	20	09/10/24 01:59	EPA 8260D	
Trichloroethene (TCE)	**304**	---	8.00	ug/L	20	09/10/24 01:59	EPA 8260D	
Trichlorofluoromethane	ND	---	40.0	ug/L	20	09/10/24 01:59	EPA 8260D	
1,2,3-Trichloropropane	ND	---	20.0	ug/L	20	09/10/24 01:59	EPA 8260D	
Vinyl chloride	**11.2**	---	4.00	ug/L	20	09/10/24 01:59	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*96 %*	*Limits:*	*80-120 %*	*1*	*09/10/24 01:59*	*EPA 8260D*	
Toluene-d8 (Surr)			*101 %*		*80-120 %*	*1*	*09/10/24 01:59*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*103 %*		*80-120 %*	*1*	*09/10/24 01:59*	*EPA 8260D*	
MGMS1-2(60) (A4I0826-15)				**Matrix: Water**		**Batch: 24I0243**		
Bromobenzene	ND	---	0.500	ug/L	1	09/09/24 22:45	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	09/09/24 22:45	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	09/09/24 22:45	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	09/09/24 22:45	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	09/09/24 22:45	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	09/09/24 22:45	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	09/09/24 22:45	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	09/09/24 22:45	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	09/09/24 22:45	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	09/09/24 22:45	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	09/09/24 22:45	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	09/09/24 22:45	EPA 8260D	

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Darrell Auvil, Client Services Manager

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MGMS1-2(60) (A4I0826-15)				**Matrix: Water**		**Batch: 24I0243**		
Dibromochloromethane	ND	---	1.00	ug/L	1	09/09/24 22:45	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	09/09/24 22:45	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	09/09/24 22:45	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	09/09/24 22:45	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	09/09/24 22:45	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	09/09/24 22:45	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	09/09/24 22:45	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	09/09/24 22:45	EPA 8260D	
1,1-Dichloroethane	**1.24**	---	0.400	ug/L	1	09/09/24 22:45	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	09/09/24 22:45	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	09/09/24 22:45	EPA 8260D	
cis-1,2-Dichloroethene	**16.8**	---	0.400	ug/L	1	09/09/24 22:45	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	09/09/24 22:45	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	09/09/24 22:45	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	09/09/24 22:45	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	09/09/24 22:45	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	09/09/24 22:45	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/09/24 22:45	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/09/24 22:45	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	09/09/24 22:45	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	09/09/24 22:45	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	09/09/24 22:45	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	09/09/24 22:45	EPA 8260D	
Tetrachloroethene (PCE)	**20.3**	---	0.400	ug/L	1	09/09/24 22:45	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	09/09/24 22:45	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	09/09/24 22:45	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	09/09/24 22:45	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	09/09/24 22:45	EPA 8260D	
Trichloroethene (TCE)	**10.1**	---	0.400	ug/L	1	09/09/24 22:45	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	09/09/24 22:45	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	09/09/24 22:45	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	09/09/24 22:45	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery: 98 %*		*Limits: 80-120 %*	*1*	*09/09/24 22:45*	*EPA 8260D*	

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Darrell Auvil, Client Services Manager

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MGMS1-2(60) (A4I0826-15)				**Matrix: Water**		**Batch: 24I0243**		
Surrogate: Toluene-d8 (Surr)			*Recovery: 101 %*	*Limits: 80-120 %*	*1*	*09/09/24 22:45*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*102 %*	*80-120 %*	*1*	*09/09/24 22:45*	*EPA 8260D*	
MGMS2-3(60) (A4I0826-16)				**Matrix: Water**		**Batch: 24I0243**		
Bromobenzene	ND	---	0.500	ug/L	1	09/09/24 23:06	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	09/09/24 23:06	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	09/09/24 23:06	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	09/09/24 23:06	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	09/09/24 23:06	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	09/09/24 23:06	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	09/09/24 23:06	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	09/09/24 23:06	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	09/09/24 23:06	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	09/09/24 23:06	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	09/09/24 23:06	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	09/09/24 23:06	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	09/09/24 23:06	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	09/09/24 23:06	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	09/09/24 23:06	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	09/09/24 23:06	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	09/09/24 23:06	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	09/09/24 23:06	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	09/09/24 23:06	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	09/09/24 23:06	EPA 8260D	
1,1-Dichloroethane	**0.700**	---	0.400	ug/L	1	09/09/24 23:06	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	09/09/24 23:06	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	09/09/24 23:06	EPA 8260D	
cis-1,2-Dichloroethene	**16.2**	---	0.400	ug/L	1	09/09/24 23:06	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	09/09/24 23:06	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	09/09/24 23:06	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	09/09/24 23:06	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	09/09/24 23:06	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	09/09/24 23:06	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/09/24 23:06	EPA 8260D	

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5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MGMS2-3(60) (A4I0826-16)				**Matrix: Water**		**Batch: 24I0243**		
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/09/24 23:06	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	09/09/24 23:06	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	09/09/24 23:06	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	09/09/24 23:06	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	09/09/24 23:06	EPA 8260D	
Tetrachloroethene (PCE)	**13.3**	---	0.400	ug/L	1	09/09/24 23:06	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	09/09/24 23:06	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	09/09/24 23:06	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	09/09/24 23:06	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	09/09/24 23:06	EPA 8260D	
Trichloroethene (TCE)	**7.14**	---	0.400	ug/L	1	09/09/24 23:06	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	09/09/24 23:06	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	09/09/24 23:06	EPA 8260D	
Vinyl chloride	**0.310**	---	0.200	ug/L	1	09/09/24 23:06	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*95 %*	*Limits:*	*80-120 %*	*1*	*09/09/24 23:06*	*EPA 8260D*	
Toluene-d8 (Surr)			*99 %*		*80-120 %*	*1*	*09/09/24 23:06*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*103 %*		*80-120 %*	*1*	*09/09/24 23:06*	*EPA 8260D*	
MGMS2-4(40) (A4I0826-17RE1)				**Matrix: Water**		**Batch: 24I0314**		
Bromobenzene	ND	---	1.00	ug/L	2	09/11/24 14:29	EPA 8260D	
Bromochloromethane	ND	---	2.00	ug/L	2	09/11/24 14:29	EPA 8260D	
Bromodichloromethane	ND	---	2.00	ug/L	2	09/11/24 14:29	EPA 8260D	
Bromoform	ND	---	2.00	ug/L	2	09/11/24 14:29	EPA 8260D	
Bromomethane	ND	---	10.0	ug/L	2	09/11/24 14:29	EPA 8260D	
Carbon tetrachloride	ND	---	2.00	ug/L	2	09/11/24 14:29	EPA 8260D	
Chlorobenzene	ND	---	1.00	ug/L	2	09/11/24 14:29	EPA 8260D	
Chloroethane	ND	---	10.0	ug/L	2	09/11/24 14:29	EPA 8260D	
Chloroform	ND	---	2.00	ug/L	2	09/11/24 14:29	EPA 8260D	
Chloromethane	ND	---	10.0	ug/L	2	09/11/24 14:29	EPA 8260D	
2-Chlorotoluene	ND	---	2.00	ug/L	2	09/11/24 14:29	EPA 8260D	
4-Chlorotoluene	ND	---	2.00	ug/L	2	09/11/24 14:29	EPA 8260D	
Dibromochloromethane	ND	---	2.00	ug/L	2	09/11/24 14:29	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	10.0	ug/L	2	09/11/24 14:29	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	1.00	ug/L	2	09/11/24 14:29	EPA 8260D	

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5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MGMS2-4(40) (A4I0826-17RE1)				**Matrix: Water**		**Batch: 24I0314**		
Dibromomethane	ND	---	2.00	ug/L	2	09/11/24 14:29	EPA 8260D	
1,2-Dichlorobenzene	ND	---	1.00	ug/L	2	09/11/24 14:29	EPA 8260D	
1,3-Dichlorobenzene	ND	---	1.00	ug/L	2	09/11/24 14:29	EPA 8260D	
1,4-Dichlorobenzene	ND	---	1.00	ug/L	2	09/11/24 14:29	EPA 8260D	
Dichlorodifluoromethane	ND	---	2.00	ug/L	2	09/11/24 14:29	EPA 8260D	
1,1-Dichloroethane	**12.5**	---	0.800	ug/L	2	09/11/24 14:29	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.800	ug/L	2	09/11/24 14:29	EPA 8260D	
1,1-Dichloroethene	**8.02**	---	0.800	ug/L	2	09/11/24 14:29	EPA 8260D	
cis-1,2-Dichloroethene	**281**	---	0.800	ug/L	2	09/11/24 14:29	EPA 8260D	
trans-1,2-Dichloroethene	**2.84**	---	0.800	ug/L	2	09/11/24 14:29	EPA 8260D	
1,2-Dichloropropane	ND	---	1.00	ug/L	2	09/11/24 14:29	EPA 8260D	
1,3-Dichloropropane	ND	---	2.00	ug/L	2	09/11/24 14:29	EPA 8260D	
2,2-Dichloropropane	ND	---	2.00	ug/L	2	09/11/24 14:29	EPA 8260D	
1,1-Dichloropropene	ND	---	2.00	ug/L	2	09/11/24 14:29	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	2.00	ug/L	2	09/11/24 14:29	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	2.00	ug/L	2	09/11/24 14:29	EPA 8260D	
Hexachlorobutadiene	ND	---	10.0	ug/L	2	09/11/24 14:29	EPA 8260D	
Methylene chloride	ND	---	20.0	ug/L	2	09/11/24 14:29	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.800	ug/L	2	09/11/24 14:29	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	1.00	ug/L	2	09/11/24 14:29	EPA 8260D	
Tetrachloroethene (PCE)	**215**	---	0.800	ug/L	2	09/11/24 14:29	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	4.00	ug/L	2	09/11/24 14:29	EPA 8260D	
1,1,2-Trichloroethane	ND	---	1.00	ug/L	2	09/11/24 14:29	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	4.00	ug/L	2	09/11/24 14:29	EPA 8260D	
1,1,1-Trichloroethane	**0.820**	---	0.800	ug/L	2	09/11/24 14:29	EPA 8260D	
Trichloroethene (TCE)	**134**	---	0.800	ug/L	2	09/11/24 14:29	EPA 8260D	
Trichlorofluoromethane	ND	---	4.00	ug/L	2	09/11/24 14:29	EPA 8260D	
1,2,3-Trichloropropane	ND	---	2.00	ug/L	2	09/11/24 14:29	EPA 8260D	
Vinyl chloride	ND	---	0.400	ug/L	2	09/11/24 14:29	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*95 %*	*Limits:*	*80-120 %*	*1*	*09/11/24 14:29*	*EPA 8260D*	
Toluene-d8 (Surr)			*101 %*		*80-120 %*	*1*	*09/11/24 14:29*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*102 %*		*80-120 %*	*1*	*09/11/24 14:29*	*EPA 8260D*	
MGMS3-4(40) (A4I0826-18)				**Matrix: Water**		**Batch: 24I0243**		

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Darrell Auvil, Client Services Manager

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MGMS3-4(40) (A4I0826-18)				**Matrix: Water**		**Batch: 24I0243**		
Bromobenzene	ND	---	0.500	ug/L	1	09/09/24 23:28	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	09/09/24 23:28	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	09/09/24 23:28	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	09/09/24 23:28	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	09/09/24 23:28	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	09/09/24 23:28	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	09/09/24 23:28	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	09/09/24 23:28	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	09/09/24 23:28	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	09/09/24 23:28	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	09/09/24 23:28	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	09/09/24 23:28	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	09/09/24 23:28	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	09/09/24 23:28	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	09/09/24 23:28	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	09/09/24 23:28	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	09/09/24 23:28	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	09/09/24 23:28	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	09/09/24 23:28	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	09/09/24 23:28	EPA 8260D	
1,1-Dichloroethane	**3.43**	---	0.400	ug/L	1	09/09/24 23:28	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	09/09/24 23:28	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	09/09/24 23:28	EPA 8260D	
cis-1,2-Dichloroethene	**44.8**	---	0.400	ug/L	1	09/09/24 23:28	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	09/09/24 23:28	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	09/09/24 23:28	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	09/09/24 23:28	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	09/09/24 23:28	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	09/09/24 23:28	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/09/24 23:28	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/09/24 23:28	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	09/09/24 23:28	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	09/09/24 23:28	EPA 8260D	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MGMS3-4(40) (A4I0826-18)				**Matrix: Water**		**Batch: 24I0243**		
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	09/09/24 23:28	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	09/09/24 23:28	EPA 8260D	
Tetrachloroethene (PCE)	**0.540**	---	0.400	ug/L	1	09/09/24 23:28	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	09/09/24 23:28	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	09/09/24 23:28	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	09/09/24 23:28	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	09/09/24 23:28	EPA 8260D	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	09/09/24 23:28	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	09/09/24 23:28	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	09/09/24 23:28	EPA 8260D	
Vinyl chloride	**108**	---	0.200	ug/L	1	09/09/24 23:28	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*96 %*	*Limits:*	*80-120 %*	*1*	*09/09/24 23:28*	*EPA 8260D*	
Toluene-d8 (Surr)			*99 %*		*80-120 %*	*1*	*09/09/24 23:28*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*101 %*		*80-120 %*	*1*	*09/09/24 23:28*	*EPA 8260D*	
MGMS3-4(40) DUP (A4I0826-19)				**Matrix: Water**		**Batch: 24I0243**		
Bromobenzene	ND	---	0.500	ug/L	1	09/09/24 23:49	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	09/09/24 23:49	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	09/09/24 23:49	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	09/09/24 23:49	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	09/09/24 23:49	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	09/09/24 23:49	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	09/09/24 23:49	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	09/09/24 23:49	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	09/09/24 23:49	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	09/09/24 23:49	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	09/09/24 23:49	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	09/09/24 23:49	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	09/09/24 23:49	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	09/09/24 23:49	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	09/09/24 23:49	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	09/09/24 23:49	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	09/09/24 23:49	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	09/09/24 23:49	EPA 8260D	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MGMS3-4(40) DUP (A4I0826-19)				**Matrix: Water**		**Batch: 24I0243**		
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	09/09/24 23:49	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	09/09/24 23:49	EPA 8260D	
1,1-Dichloroethane	**3.54**	---	0.400	ug/L	1	09/09/24 23:49	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	09/09/24 23:49	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	09/09/24 23:49	EPA 8260D	
cis-1,2-Dichloroethene	**43.5**	---	0.400	ug/L	1	09/09/24 23:49	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	09/09/24 23:49	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	09/09/24 23:49	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	09/09/24 23:49	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	09/09/24 23:49	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	09/09/24 23:49	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/09/24 23:49	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/09/24 23:49	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	09/09/24 23:49	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	09/09/24 23:49	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	09/09/24 23:49	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	09/09/24 23:49	EPA 8260D	
Tetrachloroethene (PCE)	**0.510**	---	0.400	ug/L	1	09/09/24 23:49	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	09/09/24 23:49	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	09/09/24 23:49	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	09/09/24 23:49	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	09/09/24 23:49	EPA 8260D	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	09/09/24 23:49	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	09/09/24 23:49	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	09/09/24 23:49	EPA 8260D	
Vinyl chloride	**105**	---	0.200	ug/L	1	09/09/24 23:49	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery: 96 %*		*Limits: 80-120 %*	*1*	*09/09/24 23:49*	*EPA 8260D*	
Toluene-d8 (Surr)		*102 %*		*80-120 %*	*1*	*09/09/24 23:49*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)		*104 %*		*80-120 %*	*1*	*09/09/24 23:49*	*EPA 8260D*	
MGMS3-3(60) (A4I0826-20)				**Matrix: Water**		**Batch: 24I0243**		
Bromobenzene	ND	---	0.500	ug/L	1	09/10/24 00:11	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	09/10/24 00:11	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	09/10/24 00:11	EPA 8260D	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MGMS3-3(60) (A4I0826-20)				**Matrix: Water**		**Batch: 24I0243**		
Bromoform	ND	---	1.00	ug/L	1	09/10/24 00:11	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	09/10/24 00:11	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	09/10/24 00:11	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	09/10/24 00:11	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	09/10/24 00:11	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	09/10/24 00:11	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	09/10/24 00:11	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	09/10/24 00:11	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	09/10/24 00:11	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	09/10/24 00:11	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	09/10/24 00:11	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	09/10/24 00:11	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	09/10/24 00:11	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	09/10/24 00:11	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	09/10/24 00:11	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	09/10/24 00:11	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	09/10/24 00:11	EPA 8260D	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	09/10/24 00:11	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	09/10/24 00:11	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	09/10/24 00:11	EPA 8260D	
cis-1,2-Dichloroethene	**7.50**	---	0.400	ug/L	1	09/10/24 00:11	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	09/10/24 00:11	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	09/10/24 00:11	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	09/10/24 00:11	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	09/10/24 00:11	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	09/10/24 00:11	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/10/24 00:11	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/10/24 00:11	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	09/10/24 00:11	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	09/10/24 00:11	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	09/10/24 00:11	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	09/10/24 00:11	EPA 8260D	
Tetrachloroethene (PCE)	**1.74**	---	0.400	ug/L	1	09/10/24 00:11	EPA 8260D	

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5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MGMS3-3(60) (A4I0826-20)				**Matrix: Water**		**Batch: 24I0243**		
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	09/10/24 00:11	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	09/10/24 00:11	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	09/10/24 00:11	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	09/10/24 00:11	EPA 8260D	
Trichloroethene (TCE)	**1.24**	---	0.400	ug/L	1	09/10/24 00:11	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	09/10/24 00:11	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	09/10/24 00:11	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery: 97 %*		*Limits: 80-120 %*	*1*	*09/10/24 00:11*	*EPA 8260D*	
Toluene-d8 (Surr)			*100 %*	*80-120 %*	*1*	*09/10/24 00:11*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*103 %*	*80-120 %*	*1*	*09/10/24 00:11*	*EPA 8260D*	
MGMS3-3(60) (A4I0826-20RE1)				**Matrix: Water**		**Batch: 24I0314**		
Vinyl chloride	ND	---	0.200	ug/L	1	09/11/24 10:53	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery: 94 %*		*Limits: 80-120 %*	*1*	*09/11/24 10:53*	*EPA 8260D*	
Toluene-d8 (Surr)			*100 %*	*80-120 %*	*1*	*09/11/24 10:53*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*102 %*	*80-120 %*	*1*	*09/11/24 10:53*	*EPA 8260D*	
KMW-4 (A4I0826-21)				**Matrix: Water**		**Batch: 24I0259**		
Bromobenzene	ND	---	0.500	ug/L	1	09/10/24 14:30	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	09/10/24 14:30	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	09/10/24 14:30	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	09/10/24 14:30	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	09/10/24 14:30	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	09/10/24 14:30	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	09/10/24 14:30	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	09/10/24 14:30	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	09/10/24 14:30	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	09/10/24 14:30	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	09/10/24 14:30	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	09/10/24 14:30	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	09/10/24 14:30	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	09/10/24 14:30	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	09/10/24 14:30	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	09/10/24 14:30	EPA 8260D	

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Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-34	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0826 - 09 19 24 1607

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
KMW-4 (A4I0826-21)				**Matrix: Water**		**Batch: 24I0259**		
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	09/10/24 14:30	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	09/10/24 14:30	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	09/10/24 14:30	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	09/10/24 14:30	EPA 8260D	
1,1-Dichloroethane	**1.60**	---	0.400	ug/L	1	09/10/24 14:30	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	09/10/24 14:30	EPA 8260D	
1,1-Dichloroethene	**1.78**	---	0.400	ug/L	1	09/10/24 14:30	EPA 8260D	
cis-1,2-Dichloroethene	**13.2**	---	0.400	ug/L	1	09/10/24 14:30	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	09/10/24 14:30	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	09/10/24 14:30	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	09/10/24 14:30	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	09/10/24 14:30	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	09/10/24 14:30	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/10/24 14:30	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/10/24 14:30	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	09/10/24 14:30	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	09/10/24 14:30	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	09/10/24 14:30	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	09/10/24 14:30	EPA 8260D	
Tetrachloroethene (PCE)	**71.9**	---	0.400	ug/L	1	09/10/24 14:30	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	09/10/24 14:30	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	09/10/24 14:30	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	09/10/24 14:30	EPA 8260D	
1,1,1-Trichloroethane	**2.22**	---	0.400	ug/L	1	09/10/24 14:30	EPA 8260D	
Trichloroethene (TCE)	**165**	---	0.400	ug/L	1	09/10/24 14:30	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	09/10/24 14:30	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	09/10/24 14:30	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	09/10/24 14:30	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery: 99 %*		*Limits: 80-120 %*	*1*	*09/10/24 14:30*	*EPA 8260D*	
Toluene-d8 (Surr)		*101 %*		*80-120 %*	*1*	*09/10/24 14:30*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)		*104 %*		*80-120 %*	*1*	*09/10/24 14:30*	*EPA 8260D*	

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ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-34	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0826 - 09 19 24 1607

ANALYTICAL SAMPLE RESULTS

Ammonia by Gas Diffusion and Colorimetric Detection

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Ex (A4I0826-01)				**Matrix: Water**			**Batch: 24I0288**	
Ammonia as N	**17.7**	---	0.200	mg/L	10	09/10/24 16:13	SM 4500-NH3 G	
MW-7 (A4I0826-02)				**Matrix: Water**			**Batch: 24I0288**	
Ammonia as N	**10.8**	---	0.200	mg/L	10	09/10/24 16:16	SM 4500-NH3 G	
MW-7 DUP (A4I0826-03)				**Matrix: Water**			**Batch: 24I0288**	
Ammonia as N	**10.6**	---	0.200	mg/L	10	09/10/24 16:18	SM 4500-NH3 G	
MW-10 (A4I0826-04)				**Matrix: Water**			**Batch: 24I0175**	
Ammonia as N	**17.5**	---	0.100	mg/L	5	09/06/24 13:05	SM 4500-NH3 G	
MW-14 (A4I0826-05RE1)				**Matrix: Water**			**Batch: 24I0288**	
Ammonia as N	**12.1**	---	0.200	mg/L	10	09/10/24 16:21	SM 4500-NH3 G	
MW-17 (A4I0826-06RE2)				**Matrix: Water**			**Batch: 24I0288**	
Ammonia as N	**7.16**	---	0.100	mg/L	5	09/10/24 16:31	SM 4500-NH3 G	
MW-25i (A4I0826-07RE2)				**Matrix: Water**			**Batch: 24I0288**	
Ammonia as N	ND	---	0.0200	mg/L	1	09/10/24 16:34	SM 4500-NH3 G	
MW-26 (A4I0826-08RE2)				**Matrix: Water**			**Batch: 24I0288**	
Ammonia as N	**187**	---	1.00	mg/L	50	09/10/24 16:36	SM 4500-NH3 G	
S-1 (A4I0826-09RE2)				**Matrix: Water**			**Batch: 24I0288**	
Ammonia as N	ND	---	0.0200	mg/L	1	09/10/24 16:39	SM 4500-NH3 G	
S-2 (A4I0826-10RE2)				**Matrix: Water**			**Batch: 24I0288**	
Ammonia as N	**3.40**	---	0.0200	mg/L	1	09/10/24 16:40	SM 4500-NH3 G	
MW-24i (A4I0826-11RE2)				**Matrix: Water**			**Batch: 24I0288**	
Ammonia as N	ND	---	0.0200	mg/L	1	09/10/24 16:42	SM 4500-NH3 G	
MW-24d (A4I0826-12RE2)				**Matrix: Water**			**Batch: 24I0288**	
Ammonia as N	**0.114**	---	0.0200	mg/L	1	09/10/24 16:43	SM 4500-NH3 G	
MW-32s (A4I0826-13RE2)				**Matrix: Water**			**Batch: 24I0288**	

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

ANALYTICAL SAMPLE RESULTS

Ammonia by Gas Diffusion and Colorimetric Detection

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-32s (A4I0826-13RE2)				**Matrix: Water**		**Batch: 24I0288**		
Ammonia as N	ND	---	0.0200	mg/L	1	09/10/24 16:45	SM 4500-NH3 G	
MGMS1-3(43) (A4I0826-14RE2)				**Matrix: Water**		**Batch: 24I0288**		
Ammonia as N	**197**	---	2.00	mg/L	100	09/10/24 16:48	SM 4500-NH3 G	
MGMS1-2(60) (A4I0826-15)				**Matrix: Water**		**Batch: 24I0175**		
Ammonia as N	**3.11**	---	0.0200	mg/L	1	09/06/24 12:53	SM 4500-NH3 G	
MGMS2-3(60) (A4I0826-16RE3)				**Matrix: Water**		**Batch: 24I0315**		
Ammonia as N	**0.0230**	---	0.0200	mg/L	1	09/11/24 16:18	SM 4500-NH3 G	
MGMS2-4(40) (A4I0826-17RE2)				**Matrix: Water**		**Batch: 24I0315**		
Ammonia as N	**56.0**	---	1.00	mg/L	50	09/11/24 16:15	SM 4500-NH3 G	
MGMS3-4(40) (A4I0826-18RE2)				**Matrix: Water**		**Batch: 24I0315**		
Ammonia as N	**2.18**	---	0.0200	mg/L	1	09/11/24 16:20	SM 4500-NH3 G	
MGMS3-4(40) DUP (A4I0826-19RE1)				**Matrix: Water**		**Batch: 24I0288**		
Ammonia as N	**2.30**	---	0.0200	mg/L	1	09/10/24 17:03	SM 4500-NH3 G	
MGMS3-3(60) (A4I0826-20RE1)				**Matrix: Water**		**Batch: 24I0288**		
Ammonia as N	ND	---	0.0200	mg/L	1	09/10/24 17:04	SM 4500-NH3 G	
KMW-4 (A4I0826-21)				**Matrix: Water**		**Batch: 24I0150**		
Ammonia as N	**0.383**	---	0.0200	mg/L	1	09/06/24 11:31	SM 4500-NH3 G	**Q-42**

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GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

ANALYTICAL SAMPLE RESULTS

Anions by Ion Chromatography

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Ex (A4I0826-01)				**Matrix: Water**				
Batch: 24I0112								
Nitrate-Nitrogen	**20.0**	---	2.50	mg/L	10	09/05/24 16:27	EPA 300.0	
Ex (A4I0826-01RE1)				**Matrix: Water**				
Batch: 24I0112								
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	09/06/24 05:25	EPA 300.0	
MW-7 (A4I0826-02)				**Matrix: Water**				
Batch: 24I0112								
Nitrate-Nitrogen	**50.0**	---	6.25	mg/L	25	09/05/24 16:49	EPA 300.0	
MW-7 (A4I0826-02RE1)				**Matrix: Water**				
Batch: 24I0112								
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	09/06/24 05:47	EPA 300.0	
MW-7 DUP (A4I0826-03)				**Matrix: Water**				
Batch: 24I0112								
Nitrate-Nitrogen	**50.6**	---	6.25	mg/L	25	09/05/24 17:10	EPA 300.0	
MW-7 DUP (A4I0826-03RE1)				**Matrix: Water**				
Batch: 24I0112								
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	09/06/24 06:09	EPA 300.0	
MW-10 (A4I0826-04)				**Matrix: Water**				
Batch: 24I0112								
Nitrate-Nitrogen	**372**	---	25.0	mg/L	100	09/05/24 18:58	EPA 300.0	
MW-10 (A4I0826-04RE1)				**Matrix: Water**				
Batch: 24I0112								
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	09/06/24 02:52	EPA 300.0	
MW-14 (A4I0826-05)				**Matrix: Water**				
Batch: 24I0112								
Nitrate-Nitrogen	**347**	---	25.0	mg/L	100	09/05/24 19:20	EPA 300.0	
MW-14 (A4I0826-05RE1)				**Matrix: Water**				
Batch: 24I0112								

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GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

ANALYTICAL SAMPLE RESULTS

Anions by Ion Chromatography

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-14 (A4I0826-05RE1)				**Matrix: Water**				
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	09/06/24 04:41	EPA 300.0	
MW-17 (A4I0826-06RE1)				**Matrix: Water**				
Batch: 24I0112								
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	09/06/24 05:03	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	09/06/24 05:03	EPA 300.0	
MW-25i (A4I0826-07)				**Matrix: Water**				
Batch: 24I0112								
Nitrate-Nitrogen	**1.31**	---	0.250	mg/L	1	09/05/24 20:03	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	09/05/24 20:03	EPA 300.0	
MW-26 (A4I0826-08)				**Matrix: Water**				
Batch: 24I0112								
Nitrate-Nitrogen	**470**	---	25.0	mg/L	100	09/05/24 20:24	EPA 300.0	
MW-26 (A4I0826-08RE1)				**Matrix: Water**				
Batch: 24I0112								
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	09/06/24 03:36	EPA 300.0	
S-1 (A4I0826-09)				**Matrix: Water**				
Batch: 24I0112								
Nitrate-Nitrogen	**4.16**	---	0.250	mg/L	1	09/05/24 20:46	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	09/05/24 20:46	EPA 300.0	
S-2 (A4I0826-10)				**Matrix: Water**				
Batch: 24I0112								
Nitrate-Nitrogen	**6.62**	---	0.250	mg/L	1	09/05/24 22:34	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	09/05/24 22:34	EPA 300.0	
MW-24i (A4I0826-11)				**Matrix: Water**				
Batch: 24I0112								
Nitrate-Nitrogen	**9.25**	---	0.250	mg/L	1	09/05/24 22:55	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	09/05/24 22:55	EPA 300.0	
MW-24d (A4I0826-12)				**Matrix: Water**				

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GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

ANALYTICAL SAMPLE RESULTS

Anions by Ion Chromatography

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-24d (A4I0826-12)				**Matrix: Water**				
Batch: 24I0112								
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	09/05/24 23:17	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	09/05/24 23:17	EPA 300.0	
MW-32s (A4I0826-13)				**Matrix: Water**				
Batch: 24I0112								
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	09/06/24 00:21	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	09/06/24 00:21	EPA 300.0	
MGMS1-3(43) (A4I0826-14)				**Matrix: Water**				
Batch: 24I0104								
Nitrate-Nitrogen	**41.7**	---	2.50	mg/L	10	09/05/24 10:42	EPA 300.0	
MGMS1-3(43) (A4I0826-14RE1)				**Matrix: Water**				
Batch: 24I0104								
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	09/06/24 03:58	EPA 300.0	
MGMS1-2(60) (A4I0826-15)				**Matrix: Water**				
Batch: 24I0104								
Nitrate-Nitrogen	**5.01**	---	0.250	mg/L	1	09/05/24 11:04	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	09/05/24 11:04	EPA 300.0	
MGMS2-3(60) (A4I0826-16)				**Matrix: Water**				
Batch: 24I0104								
Nitrate-Nitrogen	**1.85**	---	0.250	mg/L	1	09/05/24 12:08	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	09/05/24 12:08	EPA 300.0	
MGMS2-4(40) (A4I0826-17)				**Matrix: Water**				
Batch: 24I0104								
Nitrate-Nitrogen	**48.9**	---	5.00	mg/L	20	09/05/24 13:56	EPA 300.0	
MGMS2-4(40) (A4I0826-17RE1)				**Matrix: Water**				
Batch: 24I0104								
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	09/06/24 03:14	EPA 300.0	
MGMS3-4(40) (A4I0826-18)				**Matrix: Water**				

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-34	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0826 - 09 19 24 1607

ANALYTICAL SAMPLE RESULTS

Anions by Ion Chromatography

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MGMS3-4(40) (A4I0826-18)				**Matrix: Water**				
Batch: 24I0104								
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	09/05/24 14:18	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	09/05/24 14:18	EPA 300.0	
MGMS3-4(40) DUP (A4I0826-19)				**Matrix: Water**				
Batch: 24I0104								
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	09/05/24 14:39	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	09/05/24 14:39	EPA 300.0	
MGMS3-3(60) (A4I0826-20)				**Matrix: Water**				
Batch: 24I0104								
Nitrate-Nitrogen	**1.27**	---	0.250	mg/L	1	09/05/24 15:01	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	09/05/24 15:01	EPA 300.0	
KMW-4 (A4I0826-21)				**Matrix: Water**				
Batch: 24I0104								
Nitrate-Nitrogen	**63.6**	---	2.50	mg/L	10	09/05/24 16:06	EPA 300.0	
KMW-4 (A4I0826-21RE1)				**Matrix: Water**				
Batch: 24I0104								
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	09/06/24 04:20	EPA 300.0	

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GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0243 - EPA 5030C							**Water**					
Blank (24I0243-BLK1)			Prepared: 09/09/24 15:29 Analyzed: 09/09/24 19:07									
EPA 8260D												
Bromobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Bromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromodichloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromoform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromomethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Carbon tetrachloride	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Chloroethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Chloroform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chloromethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
2-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
4-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Dibromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dibromomethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Methylene chloride	ND	---	10.0	ug/L	1	---	---	---	---	---	---	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0243 - EPA 5030C									Water			
Blank (24I0243-BLK1)			Prepared: 09/09/24 15:29 Analyzed: 09/09/24 19:07									
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Vinyl chloride	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 98 %*		*Limits: 80-120 %*				*Dilution: 1x*			
Toluene-d8 (Surr)			*101 %*		*80-120 %*				*"*			
4-Bromofluorobenzene (Surr)			*104 %*		*80-120 %*				*"*			
LCS (24I0243-BS1)			Prepared: 09/09/24 15:29 Analyzed: 09/09/24 18:24									
EPA 8260D												
Bromobenzene	21.3	---	0.500	ug/L	1	20.0	---	107	80-120%	---	---	
Bromochloromethane	19.7	---	1.00	ug/L	1	20.0	---	98	80-120%	---	---	
Bromodichloromethane	20.7	---	1.00	ug/L	1	20.0	---	104	80-120%	---	---	
Bromoform	23.2	---	1.00	ug/L	1	20.0	---	116	80-120%	---	---	
Bromomethane	19.2	---	5.00	ug/L	1	20.0	---	96	80-120%	---	---	
Carbon tetrachloride	21.4	---	1.00	ug/L	1	20.0	---	107	80-120%	---	---	
Chlorobenzene	21.6	---	0.500	ug/L	1	20.0	---	108	80-120%	---	---	
Chloroethane	19.5	---	5.00	ug/L	1	20.0	---	98	80-120%	---	---	
Chloroform	20.9	---	1.00	ug/L	1	20.0	---	104	80-120%	---	---	
Chloromethane	17.6	---	5.00	ug/L	1	20.0	---	88	80-120%	---	---	
2-Chlorotoluene	22.5	---	1.00	ug/L	1	20.0	---	112	80-120%	---	---	
4-Chlorotoluene	22.6	---	1.00	ug/L	1	20.0	---	113	80-120%	---	---	
Dibromochloromethane	22.9	---	1.00	ug/L	1	20.0	---	115	80-120%	---	---	
1,2-Dibromo-3-chloropropane	22.6	---	5.00	ug/L	1	20.0	---	113	80-120%	---	---	
1,2-Dibromoethane (EDB)	21.7	---	0.500	ug/L	1	20.0	---	108	80-120%	---	---	
Dibromomethane	21.0	---	1.00	ug/L	1	20.0	---	105	80-120%	---	---	
1,2-Dichlorobenzene	21.9	---	0.500	ug/L	1	20.0	---	110	80-120%	---	---	

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GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0243 - EPA 5030C							**Water**					
LCS (24I0243-BS1)			Prepared: 09/09/24 15:29 Analyzed: 09/09/24 18:24									
1,3-Dichlorobenzene	22.4	---	0.500	ug/L	1	20.0	---	112	80-120%	---	---	
1,4-Dichlorobenzene	21.8	---	0.500	ug/L	1	20.0	---	109	80-120%	---	---	
Dichlorodifluoromethane	17.4	---	1.00	ug/L	1	20.0	---	87	80-120%	---	---	
1,1-Dichloroethane	19.7	---	0.400	ug/L	1	20.0	---	98	80-120%	---	---	
1,2-Dichloroethane (EDC)	19.6	---	0.400	ug/L	1	20.0	---	98	80-120%	---	---	
1,1-Dichloroethene	19.4	---	0.400	ug/L	1	20.0	---	97	80-120%	---	---	
cis-1,2-Dichloroethene	20.4	---	0.400	ug/L	1	20.0	---	102	80-120%	---	---	
trans-1,2-Dichloroethene	20.0	---	0.400	ug/L	1	20.0	---	100	80-120%	---	---	
1,2-Dichloropropane	19.6	---	0.500	ug/L	1	20.0	---	98	80-120%	---	---	
1,3-Dichloropropane	21.2	---	1.00	ug/L	1	20.0	---	106	80-120%	---	---	
2,2-Dichloropropane	20.3	---	1.00	ug/L	1	20.0	---	102	80-120%	---	---	
1,1-Dichloropropene	19.9	---	1.00	ug/L	1	20.0	---	99	80-120%	---	---	
cis-1,3-Dichloropropene	22.5	---	1.00	ug/L	1	20.0	---	113	80-120%	---	---	
trans-1,3-Dichloropropene	23.1	---	1.00	ug/L	1	20.0	---	115	80-120%	---	---	
Hexachlorobutadiene	21.2	---	5.00	ug/L	1	20.0	---	106	80-120%	---	---	
Methylene chloride	18.4	---	10.0	ug/L	1	20.0	---	92	80-120%	---	---	
1,1,1,2-Tetrachloroethane	22.6	---	0.400	ug/L	1	20.0	---	113	80-120%	---	---	
1,1,2,2-Tetrachloroethane	21.8	---	0.500	ug/L	1	20.0	---	109	80-120%	---	---	
Tetrachloroethene (PCE)	21.2	---	0.400	ug/L	1	20.0	---	106	80-120%	---	---	
1,2,3-Trichlorobenzene	21.5	---	2.00	ug/L	1	20.0	---	108	80-120%	---	---	
1,1,2-Trichloroethane	20.3	---	0.500	ug/L	1	20.0	---	101	80-120%	---	---	
1,2,4-Trichlorobenzene	21.9	---	2.00	ug/L	1	20.0	---	110	80-120%	---	---	
1,1,1-Trichloroethane	20.6	---	0.400	ug/L	1	20.0	---	103	80-120%	---	---	
Trichloroethene (TCE)	19.4	---	0.400	ug/L	1	20.0	---	97	80-120%	---	---	
Trichlorofluoromethane	20.7	---	2.00	ug/L	1	20.0	---	103	80-120%	---	---	
1,2,3-Trichloropropane	21.3	---	1.00	ug/L	1	20.0	---	106	80-120%	---	---	
Vinyl chloride	19.5	---	0.200	ug/L	1	20.0	---	97	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 97 %*			*Limits: 80-120 %*			*Dilution: 1x*			
Toluene-d8 (Surr)			*100 %*			*80-120 %*			*"*			
4-Bromofluorobenzene (Surr)			*100 %*			*80-120 %*			*"*			
Duplicate (24I0243-DUP1)			Prepared: 09/09/24 15:29 Analyzed: 09/10/24 03:04									

QC Source Sample: Ex (A4I0826-01)

EPA 8260D

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0243 - EPA 5030C							**Water**					
Duplicate (24I0243-DUP1)			Prepared: 09/09/24 15:29 Analyzed: 09/10/24 03:04									
QC Source Sample: Ex (A4I0826-01)												
Bromobenzene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
Bromochloromethane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Bromodichloromethane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Bromoform	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Bromomethane	ND	---	50.0	ug/L	10	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Chlorobenzene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
Chloroethane	ND	---	50.0	ug/L	10	---	ND	---	---	---	30%	
Chloroform	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Chloromethane	ND	---	50.0	ug/L	10	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Dibromochloromethane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	---	50.0	ug/L	10	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
Dibromomethane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
1,1-Dichloroethane	**4.30**	---	4.00	ug/L	10	---	4.50	---	---	5	30%	
1,2-Dichloroethane (EDC)	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
1,1-Dichloroethene	**4.80**	---	4.00	ug/L	10	---	4.50	---	---	6	30%	
cis-1,2-Dichloroethene	**630**	---	4.00	ug/L	10	---	625	---	---	0.8	30%	
trans-1,2-Dichloroethene	**4.40**	---	4.00	ug/L	10	---	4.50	---	---	2	30%	
1,2-Dichloropropane	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	---	50.0	ug/L	10	---	ND	---	---	---	30%	
Methylene chloride	ND	---	100	ug/L	10	---	ND	---	---	---	30%	

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ANALYTICAL REPORT

GeoEngineers - Portland	Project:	Vancouver GWM 3Q24
5820 S Kelly Ave Unit B	Project Number:	19001-009-34
Portland, OR 97239	Project Manager:	Stephanie Bosze-Salisbury
		Report ID: A4I0826 - 09 19 24 1607

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0243 - EPA 5030C							Water					
Duplicate (24I0243-DUP1)			Prepared: 09/09/24 15:29 Analyzed: 09/10/24 03:04									
QC Source Sample: Ex (A4I0826-01)												
1,1,1,2-Tetrachloroethane	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	**2290**	---	4.00	ug/L	10	---	2350	---	---	3	30%	E
1,2,3-Trichlorobenzene	ND	---	20.0	ug/L	10	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	---	20.0	ug/L	10	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	**6.70**	---	4.00	ug/L	10	---	7.20	---	---	7	30%	
Trichloroethene (TCE)	**212**	---	4.00	ug/L	10	---	212	---	---	0.3	30%	
Trichlorofluoromethane	ND	---	20.0	ug/L	10	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Vinyl chloride	**5.00**	---	2.00	ug/L	10	---	4.40	---	---	13	30%	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 96 %*		*Limits: 80-120 %*				*Dilution: 1x*			
Toluene-d8 (Surr)			*101 %*		*80-120 %*				*"*			
4-Bromofluorobenzene (Surr)			*104 %*		*80-120 %*				*"*			
Matrix Spike (24I0243-MS1)			Prepared: 09/09/24 15:29 Analyzed: 09/10/24 03:25									
QC Source Sample: MGMS3-3(60) (A4I0826-20)												
EPA 8260D												
Bromobenzene	20.2	---	0.500	ug/L	1	20.0	ND	101	80-120%	---	---	
Bromochloromethane	21.1	---	1.00	ug/L	1	20.0	ND	105	78-123%	---	---	
Bromodichloromethane	22.5	---	1.00	ug/L	1	20.0	ND	112	79-125%	---	---	
Bromoform	22.8	---	1.00	ug/L	1	20.0	ND	114	66-130%	---	---	
Bromomethane	20.8	---	5.00	ug/L	1	20.0	ND	104	53-141%	---	---	
Carbon tetrachloride	24.6	---	1.00	ug/L	1	20.0	ND	123	72-136%	---	---	
Chlorobenzene	21.8	---	0.500	ug/L	1	20.0	ND	109	80-120%	---	---	
Chloroethane	22.4	---	5.00	ug/L	1	20.0	ND	112	60-138%	---	---	
Chloroform	22.4	---	1.00	ug/L	1	20.0	ND	112	79-124%	---	---	
Chloromethane	19.6	---	5.00	ug/L	1	20.0	ND	98	50-139%	---	---	
2-Chlorotoluene	21.8	---	1.00	ug/L	1	20.0	ND	109	79-122%	---	---	
4-Chlorotoluene	22.4	---	1.00	ug/L	1	20.0	ND	112	78-122%	---	---	
Dibromochloromethane	23.0	---	1.00	ug/L	1	20.0	ND	115	74-126%	---	---	
1,2-Dibromo-3-chloropropane	20.0	---	5.00	ug/L	1	20.0	ND	100	62-128%	---	---	
1,2-Dibromoethane (EDB)	21.2	---	0.500	ug/L	1	20.0	ND	106	77-121%	---	---	

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GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0243 - EPA 5030C							**Water**					
Matrix Spike (24I0243-MS1)			Prepared: 09/09/24 15:29 Analyzed: 09/10/24 03:25									
QC Source Sample: MGMS3-3(60) (A4I0826-20)												
Dibromomethane	20.8	---	1.00	ug/L	1	20.0	ND	104	79-123%	---	---	
1,2-Dichlorobenzene	20.9	---	0.500	ug/L	1	20.0	ND	105	80-120%	---	---	
1,3-Dichlorobenzene	21.9	---	0.500	ug/L	1	20.0	ND	109	80-120%	---	---	
1,4-Dichlorobenzene	21.2	---	0.500	ug/L	1	20.0	ND	106	79-120%	---	---	
Dichlorodifluoromethane	21.2	---	1.00	ug/L	1	20.0	ND	106	32-152%	---	---	
1,1-Dichloroethane	21.4	---	0.400	ug/L	1	20.0	0.220	106	77-125%	---	---	
1,2-Dichloroethane (EDC)	21.4	---	0.400	ug/L	1	20.0	ND	107	73-128%	---	---	
1,1-Dichloroethene	21.8	---	0.400	ug/L	1	20.0	ND	109	71-131%	---	---	
cis-1,2-Dichloroethene	29.7	---	0.400	ug/L	1	20.0	7.50	111	78-123%	---	---	
trans-1,2-Dichloroethene	21.7	---	0.400	ug/L	1	20.0	ND	108	75-124%	---	---	
1,2-Dichloropropane	20.1	---	0.500	ug/L	1	20.0	ND	101	78-122%	---	---	
1,3-Dichloropropane	21.2	---	1.00	ug/L	1	20.0	ND	106	80-120%	---	---	
2,2-Dichloropropane	20.6	---	1.00	ug/L	1	20.0	ND	103	60-139%	---	---	
1,1-Dichloropropene	21.4	---	1.00	ug/L	1	20.0	ND	107	79-125%	---	---	
cis-1,3-Dichloropropene	22.1	---	1.00	ug/L	1	20.0	ND	111	75-124%	---	---	
trans-1,3-Dichloropropene	22.5	---	1.00	ug/L	1	20.0	ND	112	73-127%	---	---	
Hexachlorobutadiene	21.2	---	5.00	ug/L	1	20.0	ND	106	66-134%	---	---	
Methylene chloride	18.2	---	10.0	ug/L	1	20.0	ND	91	74-124%	---	---	
1,1,1,2-Tetrachloroethane	23.4	---	0.400	ug/L	1	20.0	ND	117	78-124%	---	---	
1,1,2,2-Tetrachloroethane	22.0	---	0.500	ug/L	1	20.0	ND	110	71-121%	---	---	
Tetrachloroethene (PCE)	24.7	---	0.400	ug/L	1	20.0	1.74	115	74-129%	---	---	
1,2,3-Trichlorobenzene	20.5	---	2.00	ug/L	1	20.0	ND	103	69-129%	---	---	
1,1,2-Trichloroethane	20.5	---	0.500	ug/L	1	20.0	ND	102	80-120%	---	---	
1,2,4-Trichlorobenzene	20.6	---	2.00	ug/L	1	20.0	ND	103	69-130%	---	---	
1,1,1-Trichloroethane	22.3	---	0.400	ug/L	1	20.0	ND	112	74-131%	---	---	
Trichloroethene (TCE)	21.0	---	0.400	ug/L	1	20.0	1.24	99	79-123%	---	---	
Trichlorofluoromethane	25.2	---	2.00	ug/L	1	20.0	ND	126	65-141%	---	---	
1,2,3-Trichloropropane	20.2	---	1.00	ug/L	1	20.0	ND	101	73-122%	---	---	
Vinyl chloride	22.3	---	0.200	ug/L	1	20.0	0.250	110	58-137%	---	---	

Surr: 1,4-Difluorobenzene (Surr)	*Recovery: 95 %*	*Limits: 80-120 %*	*Dilution: 1x*	
Toluene-d8 (Surr)	*98 %*	*80-120 %*	*"*	
4-Bromofluorobenzene (Surr)	*98 %*	*80-120 %*	*"*	

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Darrell Auvil, Client Services Manager

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503-718-2323
ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0259 - EPA 5030C							**Water**					
Blank (24I0259-BLK1)			Prepared: 09/10/24 07:37 Analyzed: 09/10/24 09:46									
EPA 8260D												
Bromobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Bromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromodichloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromoform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromomethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Carbon tetrachloride	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Chloroethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Chloroform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chloromethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
2-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
4-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Dibromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dibromomethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Methylene chloride	ND	---	10.0	ug/L	1	---	---	---	---	---	---	

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Darrell Auvil, Client Services Manager

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0259 - EPA 5030C									Water			
Blank (24I0259-BLK1)			Prepared: 09/10/24 07:37 Analyzed: 09/10/24 09:46									
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Vinyl chloride	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 97 %*		*Limits: 80-120 %*				*Dilution: 1x*			
Toluene-d8 (Surr)			*102 %*		*80-120 %*				*"*			
4-Bromofluorobenzene (Surr)			*102 %*		*80-120 %*				*"*			
LCS (24I0259-BS1)			Prepared: 09/10/24 07:37 Analyzed: 09/10/24 09:03									
EPA 8260D												
Bromobenzene	19.3	---	0.500	ug/L	1	20.0	---	96	80-120%	---	---	
Bromochloromethane	19.4	---	1.00	ug/L	1	20.0	---	97	80-120%	---	---	
Bromodichloromethane	21.3	---	1.00	ug/L	1	20.0	---	106	80-120%	---	---	
Bromoform	22.3	---	1.00	ug/L	1	20.0	---	111	80-120%	---	---	
Bromomethane	18.8	---	5.00	ug/L	1	20.0	---	94	80-120%	---	---	
Carbon tetrachloride	22.4	---	1.00	ug/L	1	20.0	---	112	80-120%	---	---	
Chlorobenzene	20.6	---	0.500	ug/L	1	20.0	---	103	80-120%	---	---	
Chloroethane	18.5	---	5.00	ug/L	1	20.0	---	93	80-120%	---	---	
Chloroform	20.9	---	1.00	ug/L	1	20.0	---	105	80-120%	---	---	
Chloromethane	17.7	---	5.00	ug/L	1	20.0	---	89	80-120%	---	---	
2-Chlorotoluene	20.8	---	1.00	ug/L	1	20.0	---	104	80-120%	---	---	
4-Chlorotoluene	21.5	---	1.00	ug/L	1	20.0	---	107	80-120%	---	---	
Dibromochloromethane	21.8	---	1.00	ug/L	1	20.0	---	109	80-120%	---	---	
1,2-Dibromo-3-chloropropane	20.3	---	5.00	ug/L	1	20.0	---	101	80-120%	---	---	
1,2-Dibromoethane (EDB)	21.4	---	0.500	ug/L	1	20.0	---	107	80-120%	---	---	
Dibromomethane	20.6	---	1.00	ug/L	1	20.0	---	103	80-120%	---	---	
1,2-Dichlorobenzene	20.4	---	0.500	ug/L	1	20.0	---	102	80-120%	---	---	

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503-718-2323
ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0259 - EPA 5030C							**Water**					
LCS (24I0259-BS1)			Prepared: 09/10/24 07:37 Analyzed: 09/10/24 09:03									
1,3-Dichlorobenzene	21.1	---	0.500	ug/L	1	20.0	---	105	80-120%	---	---	
1,4-Dichlorobenzene	20.2	---	0.500	ug/L	1	20.0	---	101	80-120%	---	---	
Dichlorodifluoromethane	18.6	---	1.00	ug/L	1	20.0	---	93	80-120%	---	---	
1,1-Dichloroethane	19.4	---	0.400	ug/L	1	20.0	---	97	80-120%	---	---	
1,2-Dichloroethane (EDC)	19.9	---	0.400	ug/L	1	20.0	---	100	80-120%	---	---	
1,1-Dichloroethene	19.4	---	0.400	ug/L	1	20.0	---	97	80-120%	---	---	
cis-1,2-Dichloroethene	20.1	---	0.400	ug/L	1	20.0	---	100	80-120%	---	---	
trans-1,2-Dichloroethene	19.6	---	0.400	ug/L	1	20.0	---	98	80-120%	---	---	
1,2-Dichloropropane	19.7	---	0.500	ug/L	1	20.0	---	98	80-120%	---	---	
1,3-Dichloropropane	20.6	---	1.00	ug/L	1	20.0	---	103	80-120%	---	---	
2,2-Dichloropropane	21.6	---	1.00	ug/L	1	20.0	---	108	80-120%	---	---	
1,1-Dichloropropene	19.8	---	1.00	ug/L	1	20.0	---	99	80-120%	---	---	
cis-1,3-Dichloropropene	21.8	---	1.00	ug/L	1	20.0	---	109	80-120%	---	---	
trans-1,3-Dichloropropene	22.6	---	1.00	ug/L	1	20.0	---	113	80-120%	---	---	
Hexachlorobutadiene	20.6	---	5.00	ug/L	1	20.0	---	103	80-120%	---	---	
Methylene chloride	17.9	---	10.0	ug/L	1	20.0	---	90	80-120%	---	---	
1,1,1,2-Tetrachloroethane	22.4	---	0.400	ug/L	1	20.0	---	112	80-120%	---	---	
1,1,2,2-Tetrachloroethane	20.4	---	0.500	ug/L	1	20.0	---	102	80-120%	---	---	
Tetrachloroethene (PCE)	20.7	---	0.400	ug/L	1	20.0	---	104	80-120%	---	---	
1,2,3-Trichlorobenzene	20.2	---	2.00	ug/L	1	20.0	---	101	80-120%	---	---	
1,1,2-Trichloroethane	20.2	---	0.500	ug/L	1	20.0	---	101	80-120%	---	---	
1,2,4-Trichlorobenzene	20.6	---	2.00	ug/L	1	20.0	---	103	80-120%	---	---	
1,1,1-Trichloroethane	20.4	---	0.400	ug/L	1	20.0	---	102	80-120%	---	---	
Trichloroethene (TCE)	18.7	---	0.400	ug/L	1	20.0	---	93	80-120%	---	---	
Trichlorofluoromethane	22.7	---	2.00	ug/L	1	20.0	---	114	80-120%	---	---	
1,2,3-Trichloropropane	19.2	---	1.00	ug/L	1	20.0	---	96	80-120%	---	---	
Vinyl chloride	19.6	---	0.200	ug/L	1	20.0	---	98	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 94 %*		*Limits: 80-120 %*			*Dilution: 1x*				
Toluene-d8 (Surr)			*98 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*96 %*		*80-120 %*			*"*				
Duplicate (24I0259-DUP1)			Prepared: 09/10/24 07:37 Analyzed: 09/10/24 14:52									

QC Source Sample: KMW-4 (A4I0826-21)

EPA 8260D

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ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-34	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0826 - 09 19 24 1607

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0259 - EPA 5030C							**Water**					
Duplicate (24I0259-DUP1)			Prepared: 09/10/24 07:37 Analyzed: 09/10/24 14:52									
QC Source Sample: KMW-4 (A4I0826-21)												
Bromobenzene	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
Bromochloromethane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Bromodichloromethane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Bromoform	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Bromomethane	ND	---	5.00	ug/L	1	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Chlorobenzene	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
Chloroethane	ND	---	5.00	ug/L	1	---	ND	---	---	---	30%	
Chloroform	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Chloromethane	ND	---	5.00	ug/L	1	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Dibromochloromethane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
Dibromomethane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
1,1-Dichloroethane	**1.29**	---	0.400	ug/L	1	---	1.60	---	---	21	30%	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	---	ND	---	---	---	30%	
1,1-Dichloroethene	**1.40**	---	0.400	ug/L	1	---	1.78	---	---	24	30%	
cis-1,2-Dichloroethene	**10.8**	---	0.400	ug/L	1	---	13.2	---	---	20	30%	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	---	ND	---	---	---	30%	
Methylene chloride	ND	---	10.0	ug/L	1	---	ND	---	---	---	30%	

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Darrell Auvil, Client Services Manager

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GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0259 - EPA 5030C							**Water**					
Duplicate (24I0259-DUP1)			Prepared: 09/10/24 07:37 Analyzed: 09/10/24 14:52									
QC Source Sample: KMW-4 (A4I0826-21)												
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	**69.6**	---	0.400	ug/L	1	---	71.9	---	---	3	30%	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	**1.97**	---	0.400	ug/L	1	---	2.22	---	---	12	30%	
Trichloroethene (TCE)	**146**	---	0.400	ug/L	1	---	165	---	---	12	30%	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Vinyl chloride	ND	---	0.200	ug/L	1	---	ND	---	---	---	30%	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 96 %*		*Limits: 80-120 %*				*Dilution: 1x*			
Toluene-d8 (Surr)			*99 %*		*80-120 %*				*"*			
4-Bromofluorobenzene (Surr)			*101 %*		*80-120 %*				*"*			
Matrix Spike (24I0259-MS1)			Prepared: 09/10/24 07:37 Analyzed: 09/10/24 18:28									
QC Source Sample: Non-SDG (A4I0800-04)												
EPA 8260D												
Bromobenzene	1060	---	25.0	ug/L	50	1000	ND	106	80-120%	---	---	
Bromochloromethane	1020	---	50.0	ug/L	50	1000	ND	102	78-123%	---	---	
Bromodichloromethane	1110	---	50.0	ug/L	50	1000	ND	111	79-125%	---	---	
Bromoform	1190	---	50.0	ug/L	50	1000	ND	119	66-130%	---	---	
Bromomethane	994	---	250	ug/L	50	1000	ND	99	53-141%	---	---	
Carbon tetrachloride	1190	---	50.0	ug/L	50	1000	ND	119	72-136%	---	---	
Chlorobenzene	1120	---	25.0	ug/L	50	1000	ND	112	80-120%	---	---	
Chloroethane	1070	---	250	ug/L	50	1000	ND	107	60-138%	---	---	
Chloroform	1100	---	50.0	ug/L	50	1000	ND	110	79-124%	---	---	
Chloromethane	926	---	250	ug/L	50	1000	ND	93	50-139%	---	---	
2-Chlorotoluene	1160	---	50.0	ug/L	50	1000	ND	116	79-122%	---	---	
4-Chlorotoluene	1180	---	50.0	ug/L	50	1000	ND	118	78-122%	---	---	
Dibromochloromethane	1170	---	50.0	ug/L	50	1000	ND	117	74-126%	---	---	
1,2-Dibromo-3-chloropropane	1120	---	250	ug/L	50	1000	ND	112	62-128%	---	---	
1,2-Dibromoethane (EDB)	1100	---	25.0	ug/L	50	1000	ND	110	77-121%	---	---	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0259 - EPA 5030C							**Water**					
Matrix Spike (24I0259-MS1)			Prepared: 09/10/24 07:37 Analyzed: 09/10/24 18:28									
QC Source Sample: Non-SDG (A4I0800-04)												
Dibromomethane	1070	---	50.0	ug/L	50	1000	ND	107	79-123%	---	---	
1,2-Dichlorobenzene	1150	---	25.0	ug/L	50	1000	ND	115	80-120%	---	---	
1,3-Dichlorobenzene	1140	---	25.0	ug/L	50	1000	ND	114	80-120%	---	---	
1,4-Dichlorobenzene	1130	---	25.0	ug/L	50	1000	ND	113	79-120%	---	---	
Dichlorodifluoromethane	976	---	50.0	ug/L	50	1000	ND	98	32-152%	---	---	
1,1-Dichloroethane	1200	---	20.0	ug/L	50	1000	192	101	77-125%	---	---	
1,2-Dichloroethane (EDC)	1040	---	20.0	ug/L	50	1000	ND	104	73-128%	---	---	
1,1-Dichloroethene	1790	---	20.0	ug/L	50	1000	773	102	71-131%	---	---	
cis-1,2-Dichloroethene	1340	---	20.0	ug/L	50	1000	286	105	78-123%	---	---	
trans-1,2-Dichloroethene	1010	---	20.0	ug/L	50	1000	ND	101	75-124%	---	---	
1,2-Dichloropropane	1000	---	25.0	ug/L	50	1000	ND	100	78-122%	---	---	
1,3-Dichloropropane	1090	---	50.0	ug/L	50	1000	ND	109	80-120%	---	---	
2,2-Dichloropropane	998	---	50.0	ug/L	50	1000	ND	100	60-139%	---	---	
1,1-Dichloropropene	1060	---	50.0	ug/L	50	1000	ND	106	79-125%	---	---	
cis-1,3-Dichloropropene	1080	---	50.0	ug/L	50	1000	ND	108	75-124%	---	---	
trans-1,3-Dichloropropene	1160	---	50.0	ug/L	50	1000	ND	116	73-127%	---	---	
Hexachlorobutadiene	1170	---	250	ug/L	50	1000	ND	117	66-134%	---	---	
Methylene chloride	934	---	500	ug/L	50	1000	ND	93	74-124%	---	---	
1,1,1,2-Tetrachloroethane	1180	---	20.0	ug/L	50	1000	ND	118	78-124%	---	---	
1,1,2,2-Tetrachloroethane	1210	---	25.0	ug/L	50	1000	ND	121	71-121%	---	---	
Tetrachloroethene (PCE)	1170	---	20.0	ug/L	50	1000	46.5	113	74-129%	---	---	
1,2,3-Trichlorobenzene	1120	---	100	ug/L	50	1000	ND	112	69-129%	---	---	
1,1,2-Trichloroethane	1040	---	25.0	ug/L	50	1000	ND	104	80-120%	---	---	
1,2,4-Trichlorobenzene	1120	---	100	ug/L	50	1000	ND	112	69-130%	---	---	
1,1,1-Trichloroethane	1370	---	20.0	ug/L	50	1000	286	108	74-131%	---	---	
Trichloroethene (TCE)	1220	---	20.0	ug/L	50	1000	263	95	79-123%	---	---	
Trichlorofluoromethane	1220	---	100	ug/L	50	1000	ND	122	65-141%	---	---	
1,2,3-Trichloropropane	1100	---	50.0	ug/L	50	1000	ND	110	73-122%	---	---	
Vinyl chloride	1140	---	10.0	ug/L	50	1000	89.5	105	58-137%	---	---	

Surr: 1,4-Difluorobenzene (Surr)	*Recovery: 93 %*	*Limits: 80-120 %*	*Dilution: 1x*
Toluene-d8 (Surr)	*101 %*	*80-120 %*	*"*
4-Bromofluorobenzene (Surr)	*99 %*	*80-120 %*	*"*

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GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0259 - EPA 5030C							**Water**					
Matrix Spike Dup (24I0259-MSD1)			Prepared: 09/10/24 07:37		Analyzed: 09/10/24 18:50							
QC Source Sample: Non-SDG (A4I0800-04)												
Bromobenzene	836	---	25.0	ug/L	50	1000	ND	84	80-120%	24	30%	
Bromochloromethane	812	---	50.0	ug/L	50	1000	ND	81	78-123%	23	30%	
Bromodichloromethane	878	---	50.0	ug/L	50	1000	ND	88	79-125%	23	30%	
Bromoform	924	---	50.0	ug/L	50	1000	ND	92	66-130%	25	30%	
Bromomethane	778	---	250	ug/L	50	1000	ND	78	53-141%	24	30%	
Carbon tetrachloride	940	---	50.0	ug/L	50	1000	ND	94	72-136%	23	30%	
Chlorobenzene	867	---	25.0	ug/L	50	1000	ND	87	80-120%	25	30%	
Chloroethane	834	---	250	ug/L	50	1000	ND	83	60-138%	25	30%	
Chloroform	852	---	50.0	ug/L	50	1000	ND	85	79-124%	25	30%	
Chloromethane	778	---	250	ug/L	50	1000	ND	78	50-139%	17	30%	
2-Chlorotoluene	890	---	50.0	ug/L	50	1000	ND	89	79-122%	26	30%	
4-Chlorotoluene	904	---	50.0	ug/L	50	1000	ND	90	78-122%	27	30%	
Dibromochloromethane	906	---	50.0	ug/L	50	1000	ND	91	74-126%	25	30%	
1,2-Dibromo-3-chloropropane	832	---	250	ug/L	50	1000	ND	83	62-128%	30	30%	
1,2-Dibromoethane (EDB)	832	---	25.0	ug/L	50	1000	ND	83	77-121%	28	30%	
Dibromomethane	799	---	50.0	ug/L	50	1000	ND	80	79-123%	29	30%	
1,2-Dichlorobenzene	862	---	25.0	ug/L	50	1000	ND	86	80-120%	29	30%	
1,3-Dichlorobenzene	889	---	25.0	ug/L	50	1000	ND	89	80-120%	25	30%	
1,4-Dichlorobenzene	868	---	25.0	ug/L	50	1000	ND	87	79-120%	27	30%	
Dichlorodifluoromethane	800	---	50.0	ug/L	50	1000	ND	80	32-152%	20	30%	
1,1-Dichloroethane	964	---	20.0	ug/L	50	1000	192	77	77-125%	22	30%	
1,2-Dichloroethane (EDC)	799	---	20.0	ug/L	50	1000	ND	80	73-128%	26	30%	
1,1-Dichloroethene	1420	---	20.0	ug/L	50	1000	773	**65**	**71-131%**	23	30%	Q-01
cis-1,2-Dichloroethene	1060	---	20.0	ug/L	50	1000	286	**77**	**78-123%**	23	30%	Q-01
trans-1,2-Dichloroethene	821	---	20.0	ug/L	50	1000	ND	82	75-124%	21	30%	
1,2-Dichloropropane	781	---	25.0	ug/L	50	1000	ND	78	78-122%	25	30%	
1,3-Dichloropropane	848	---	50.0	ug/L	50	1000	ND	85	80-120%	25	30%	
2,2-Dichloropropane	768	---	50.0	ug/L	50	1000	ND	77	60-139%	26	30%	
1,1-Dichloropropene	824	---	50.0	ug/L	50	1000	ND	82	79-125%	25	30%	
cis-1,3-Dichloropropene	829	---	50.0	ug/L	50	1000	ND	83	75-124%	27	30%	
trans-1,3-Dichloropropene	900	---	50.0	ug/L	50	1000	ND	90	73-127%	25	30%	
Hexachlorobutadiene	914	---	250	ug/L	50	1000	ND	91	66-134%	24	30%	
Methylene chloride	732	---	500	ug/L	50	1000	ND	**73**	**74-124%**	24	30%	Q-01

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GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0259 - EPA 5030C							**Water**					
Matrix Spike Dup (24I0259-MSD1)			Prepared: 09/10/24 07:37 Analyzed: 09/10/24 18:50									
QC Source Sample: Non-SDG (A4I0800-04)												
1,1,1,2-Tetrachloroethane	908	---	20.0	ug/L	50	1000	ND	91	78-124%	26	30%	
1,1,2,2-Tetrachloroethane	898	---	25.0	ug/L	50	1000	ND	90	71-121%	29	30%	
Tetrachloroethene (PCE)	906	---	20.0	ug/L	50	1000	46.5	86	74-129%	26	30%	
1,2,3-Trichlorobenzene	862	---	100	ug/L	50	1000	ND	86	69-129%	26	30%	
1,1,2-Trichloroethane	813	---	25.0	ug/L	50	1000	ND	81	80-120%	25	30%	
1,2,4-Trichlorobenzene	863	---	100	ug/L	50	1000	ND	86	69-130%	26	30%	
1,1,1-Trichloroethane	1090	---	20.0	ug/L	50	1000	286	80	74-131%	23	30%	
Trichloroethene (TCE)	977	---	20.0	ug/L	50	1000	263	**71**	**79-123%**	22	30%	Q-01
Trichlorofluoromethane	963	---	100	ug/L	50	1000	ND	96	65-141%	24	30%	
1,2,3-Trichloropropane	811	---	50.0	ug/L	50	1000	ND	81	73-122%	30	30%	
Vinyl chloride	964	---	10.0	ug/L	50	1000	89.5	87	58-137%	17	30%	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 95 %*		*Limits: 80-120 %*				*Dilution: 1x*			
Toluene-d8 (Surr)			*100 %*		*80-120 %*				*"*			
4-Bromofluorobenzene (Surr)			*98 %*		*80-120 %*				*"*			

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GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0314 - EPA 5030C							**Water**					
Blank (24I0314-BLK1)			Prepared: 09/11/24 08:23		Analyzed: 09/11/24 10:31							
EPA 8260D												
Bromobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Bromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromodichloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromoform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromomethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Carbon tetrachloride	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Chloroethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Chloroform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chloromethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
2-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
4-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Dibromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dibromomethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Methylene chloride	ND	---	10.0	ug/L	1	---	---	---	---	---	---	

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5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0314 - EPA 5030C									Water			
Blank (24I0314-BLK1)			Prepared: 09/11/24 08:23 Analyzed: 09/11/24 10:31									
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Vinyl chloride	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 96 %*		*Limits: 80-120 %*				*Dilution: 1x*			
Toluene-d8 (Surr)			*101 %*		*80-120 %*				*"*			
4-Bromofluorobenzene (Surr)			*105 %*		*80-120 %*				*"*			
LCS (24I0314-BS1)			Prepared: 09/11/24 08:23 Analyzed: 09/11/24 09:48									
EPA 8260D												
Bromobenzene	19.2	---	0.500	ug/L	1	20.0	---	96	80-120%	---	---	
Bromochloromethane	19.1	---	1.00	ug/L	1	20.0	---	95	80-120%	---	---	
Bromodichloromethane	19.4	---	1.00	ug/L	1	20.0	---	97	80-120%	---	---	
Bromoform	21.4	---	1.00	ug/L	1	20.0	---	107	80-120%	---	---	
Bromomethane	17.5	---	5.00	ug/L	1	20.0	---	88	80-120%	---	---	
Carbon tetrachloride	20.8	---	1.00	ug/L	1	20.0	---	104	80-120%	---	---	
Chlorobenzene	19.7	---	0.500	ug/L	1	20.0	---	98	80-120%	---	---	
Chloroethane	21.9	---	5.00	ug/L	1	20.0	---	110	80-120%	---	---	
Chloroform	19.6	---	1.00	ug/L	1	20.0	---	98	80-120%	---	---	
Chloromethane	18.7	---	5.00	ug/L	1	20.0	---	94	80-120%	---	---	
2-Chlorotoluene	19.9	---	1.00	ug/L	1	20.0	---	99	80-120%	---	---	
4-Chlorotoluene	20.4	---	1.00	ug/L	1	20.0	---	102	80-120%	---	---	
Dibromochloromethane	20.6	---	1.00	ug/L	1	20.0	---	103	80-120%	---	---	
1,2-Dibromo-3-chloropropane	19.5	---	5.00	ug/L	1	20.0	---	98	80-120%	---	---	
1,2-Dibromoethane (EDB)	20.0	---	0.500	ug/L	1	20.0	---	100	80-120%	---	---	
Dibromomethane	18.5	---	1.00	ug/L	1	20.0	---	93	80-120%	---	---	
1,2-Dichlorobenzene	19.6	---	0.500	ug/L	1	20.0	---	98	80-120%	---	---	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0314 - EPA 5030C							**Water**					
LCS (24I0314-BS1)			Prepared: 09/11/24 08:23 Analyzed: 09/11/24 09:48									
1,3-Dichlorobenzene	19.6	---	0.500	ug/L	1	20.0	---	98	80-120%	---	---	
1,4-Dichlorobenzene	19.6	---	0.500	ug/L	1	20.0	---	98	80-120%	---	---	
Dichlorodifluoromethane	17.3	---	1.00	ug/L	1	20.0	---	87	80-120%	---	---	
1,1-Dichloroethane	18.2	---	0.400	ug/L	1	20.0	---	91	80-120%	---	---	
1,2-Dichloroethane (EDC)	18.6	---	0.400	ug/L	1	20.0	---	93	80-120%	---	---	
1,1-Dichloroethene	18.8	---	0.400	ug/L	1	20.0	---	94	80-120%	---	---	
cis-1,2-Dichloroethene	19.0	---	0.400	ug/L	1	20.0	---	95	80-120%	---	---	
trans-1,2-Dichloroethene	18.7	---	0.400	ug/L	1	20.0	---	94	80-120%	---	---	
1,2-Dichloropropane	17.7	---	0.500	ug/L	1	20.0	---	88	80-120%	---	---	
1,3-Dichloropropane	19.5	---	1.00	ug/L	1	20.0	---	97	80-120%	---	---	
2,2-Dichloropropane	18.7	---	1.00	ug/L	1	20.0	---	94	80-120%	---	---	
1,1-Dichloropropene	18.2	---	1.00	ug/L	1	20.0	---	91	80-120%	---	---	
cis-1,3-Dichloropropene	20.4	---	1.00	ug/L	1	20.0	---	102	80-120%	---	---	
trans-1,3-Dichloropropene	19.7	---	1.00	ug/L	1	20.0	---	99	80-120%	---	---	
Hexachlorobutadiene	18.9	---	5.00	ug/L	1	20.0	---	94	80-120%	---	---	
Methylene chloride	16.3	---	10.0	ug/L	1	20.0	---	82	80-120%	---	---	
1,1,1,2-Tetrachloroethane	21.7	---	0.400	ug/L	1	20.0	---	108	80-120%	---	---	
1,1,2,2-Tetrachloroethane	19.6	---	0.500	ug/L	1	20.0	---	98	80-120%	---	---	
Tetrachloroethene (PCE)	19.1	---	0.400	ug/L	1	20.0	---	96	80-120%	---	---	
1,2,3-Trichlorobenzene	19.4	---	2.00	ug/L	1	20.0	---	97	80-120%	---	---	
1,1,2-Trichloroethane	18.6	---	0.500	ug/L	1	20.0	---	93	80-120%	---	---	
1,2,4-Trichlorobenzene	18.4	---	2.00	ug/L	1	20.0	---	92	80-120%	---	---	
1,1,1-Trichloroethane	19.0	---	0.400	ug/L	1	20.0	---	95	80-120%	---	---	
Trichloroethene (TCE)	17.9	---	0.400	ug/L	1	20.0	---	89	80-120%	---	---	
Trichlorofluoromethane	22.7	---	2.00	ug/L	1	20.0	---	113	80-120%	---	---	
1,2,3-Trichloropropane	19.0	---	1.00	ug/L	1	20.0	---	95	80-120%	---	---	
Vinyl chloride	21.4	---	0.200	ug/L	1	20.0	---	107	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 93 %*		*Limits: 80-120 %*				*Dilution: 1x*			
Toluene-d8 (Surr)			*99 %*		*80-120 %*				*"*			
4-Bromofluorobenzene (Surr)			*98 %*		*80-120 %*				*"*			
Duplicate (24I0314-DUP1)			Prepared: 09/11/24 08:23 Analyzed: 09/11/24 17:45									
QC Source Sample: Non-SDG (A4I0850-03)												
Bromobenzene	ND	---	2.50	ug/L	5	---	ND	---	---	---	30%	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0314 - EPA 5030C							**Water**					
Duplicate (24I0314-DUP1)			Prepared: 09/11/24 08:23 Analyzed: 09/11/24 17:45									
QC Source Sample: Non-SDG (A4I0850-03)												
Bromochloromethane	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%	
Bromodichloromethane	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%	
Bromoform	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%	
Bromomethane	ND	---	25.0	ug/L	5	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%	
Chlorobenzene	ND	---	2.50	ug/L	5	---	ND	---	---	---	30%	
Chloroethane	**48.3**	---	25.0	ug/L	5	---	45.8	---	---	5	30%	
Chloroform	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%	
Chloromethane	ND	---	25.0	ug/L	5	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%	
Dibromochloromethane	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	---	25.0	ug/L	5	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	---	2.50	ug/L	5	---	ND	---	---	---	30%	
Dibromomethane	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	---	2.50	ug/L	5	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	---	2.50	ug/L	5	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	---	2.50	ug/L	5	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%	
1,1-Dichloroethane	**192**	---	2.00	ug/L	5	---	193	---	---	0.5	30%	
1,2-Dichloroethane (EDC)	ND	---	2.00	ug/L	5	---	ND	---	---	---	30%	
1,1-Dichloroethene	**143**	---	2.00	ug/L	5	---	144	---	---	0.6	30%	
cis-1,2-Dichloroethene	**7.75**	---	2.00	ug/L	5	---	7.15	---	---	8	30%	
trans-1,2-Dichloroethene	ND	---	2.00	ug/L	5	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	---	2.50	ug/L	5	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	---	25.0	ug/L	5	---	ND	---	---	---	30%	
Methylene chloride	ND	---	50.0	ug/L	5	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	---	2.00	ug/L	5	---	ND	---	---	---	30%	

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GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0314 - EPA 5030C							**Water**					
Duplicate (24I0314-DUP1)			Prepared: 09/11/24 08:23 Analyzed: 09/11/24 17:45									
QC Source Sample: Non-SDG (A4I0850-03)												
1,1,2,2-Tetrachloroethane	ND	---	2.50	ug/L	5	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	**6.15**	---	2.00	ug/L	5	---	5.30	---	---	15	30%	
1,2,3-Trichlorobenzene	ND	---	10.0	ug/L	5	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	---	2.50	ug/L	5	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	---	10.0	ug/L	5	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	**462**	---	2.00	ug/L	5	---	465	---	---	0.6	30%	
Trichloroethene (TCE)	**11.7**	---	2.00	ug/L	5	---	11.0	---	---	6	30%	
Trichlorofluoromethane	ND	---	10.0	ug/L	5	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%	
Vinyl chloride	**19.0**	---	1.00	ug/L	5	---	19.2	---	---	0.8	30%	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 92 %*	*Limits: 80-120 %*			*Dilution: 1x*					
Toluene-d8 (Surr)			*103 %*	*80-120 %*			*"*					
4-Bromofluorobenzene (Surr)			*104 %*	*80-120 %*			*"*					
Matrix Spike (24I0314-MS1)			Prepared: 09/11/24 08:23 Analyzed: 09/11/24 15:34									
QC Source Sample: Non-SDG (A4I0884-05)												
EPA 8260D												
Bromobenzene	19.7	---	0.500	ug/L	1	20.0	ND	98	80-120%	---	---	
Bromochloromethane	20.4	---	1.00	ug/L	1	20.0	ND	102	78-123%	---	---	
Bromodichloromethane	22.4	---	1.00	ug/L	1	20.0	ND	112	79-125%	---	---	
Bromoform	23.5	---	1.00	ug/L	1	20.0	ND	118	66-130%	---	---	
Bromomethane	19.4	---	5.00	ug/L	1	20.0	ND	97	53-141%	---	---	
Carbon tetrachloride	24.0	---	1.00	ug/L	1	20.0	ND	120	72-136%	---	---	
Chlorobenzene	21.9	---	0.500	ug/L	1	20.0	ND	109	80-120%	---	---	
Chloroethane	19.8	---	5.00	ug/L	1	20.0	ND	99	60-138%	---	---	
Chloroform	22.7	---	1.00	ug/L	1	20.0	2.97	99	79-124%	---	---	
Chloromethane	18.8	---	5.00	ug/L	1	20.0	ND	94	50-139%	---	---	
2-Chlorotoluene	21.5	---	1.00	ug/L	1	20.0	ND	108	79-122%	---	---	
4-Chlorotoluene	22.1	---	1.00	ug/L	1	20.0	ND	110	78-122%	---	---	
Dibromochloromethane	23.3	---	1.00	ug/L	1	20.0	ND	117	74-126%	---	---	
1,2-Dibromo-3-chloropropane	20.3	---	5.00	ug/L	1	20.0	ND	102	62-128%	---	---	
1,2-Dibromoethane (EDB)	21.2	---	0.500	ug/L	1	20.0	ND	106	77-121%	---	---	
Dibromomethane	20.7	---	1.00	ug/L	1	20.0	ND	103	79-123%	---	---	

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GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0314 - EPA 5030C							**Water**					
Matrix Spike (24I0314-MS1)			Prepared: 09/11/24 08:23		Analyzed: 09/11/24 15:34							
QC Source Sample: Non-SDG (A4I0884-05)												
1,2-Dichlorobenzene	20.8	---	0.500	ug/L	1	20.0	ND	104	80-120%	---	---	
1,3-Dichlorobenzene	21.2	---	0.500	ug/L	1	20.0	ND	106	80-120%	---	---	
1,4-Dichlorobenzene	20.9	---	0.500	ug/L	1	20.0	ND	104	79-120%	---	---	
Dichlorodifluoromethane	19.6	---	1.00	ug/L	1	20.0	ND	98	32-152%	---	---	
1,1-Dichloroethane	20.5	---	0.400	ug/L	1	20.0	ND	102	77-125%	---	---	
1,2-Dichloroethane (EDC)	21.0	---	0.400	ug/L	1	20.0	ND	105	73-128%	---	---	
1,1-Dichloroethene	20.8	---	0.400	ug/L	1	20.0	ND	104	71-131%	---	---	
cis-1,2-Dichloroethene	20.8	---	0.400	ug/L	1	20.0	ND	104	78-123%	---	---	
trans-1,2-Dichloroethene	20.8	---	0.400	ug/L	1	20.0	ND	104	75-124%	---	---	
1,2-Dichloropropane	19.7	---	0.500	ug/L	1	20.0	ND	99	78-122%	---	---	
1,3-Dichloropropane	21.3	---	1.00	ug/L	1	20.0	ND	107	80-120%	---	---	
2,2-Dichloropropane	21.6	---	1.00	ug/L	1	20.0	ND	108	60-139%	---	---	
1,1-Dichloropropene	21.3	---	1.00	ug/L	1	20.0	ND	107	79-125%	---	---	
cis-1,3-Dichloropropene	21.6	---	1.00	ug/L	1	20.0	ND	108	75-124%	---	---	
trans-1,3-Dichloropropene	23.0	---	1.00	ug/L	1	20.0	ND	115	73-127%	---	---	
Hexachlorobutadiene	21.9	---	5.00	ug/L	1	20.0	ND	109	66-134%	---	---	
Methylene chloride	17.8	---	10.0	ug/L	1	20.0	ND	89	74-124%	---	---	
1,1,1,2-Tetrachloroethane	23.7	---	0.400	ug/L	1	20.0	ND	118	78-124%	---	---	
1,1,2,2-Tetrachloroethane	22.1	---	0.500	ug/L	1	20.0	ND	111	71-121%	---	---	
Tetrachloroethene (PCE)	22.8	---	0.400	ug/L	1	20.0	ND	114	74-129%	---	---	
1,2,3-Trichlorobenzene	20.3	---	2.00	ug/L	1	20.0	ND	102	69-129%	---	---	
1,1,2-Trichloroethane	21.2	---	0.500	ug/L	1	20.0	ND	106	80-120%	---	---	
1,2,4-Trichlorobenzene	20.5	---	2.00	ug/L	1	20.0	ND	102	69-130%	---	---	
1,1,1-Trichloroethane	22.0	---	0.400	ug/L	1	20.0	ND	110	74-131%	---	---	
Trichloroethene (TCE)	19.3	---	0.400	ug/L	1	20.0	ND	96	79-123%	---	---	
Trichlorofluoromethane	25.0	---	2.00	ug/L	1	20.0	ND	125	65-141%	---	---	
1,2,3-Trichloropropane	20.3	---	1.00	ug/L	1	20.0	ND	101	73-122%	---	---	
Vinyl chloride	21.4	---	0.200	ug/L	1	20.0	ND	107	58-137%	---	---	

Surr: 1,4-Difluorobenzene (Surr)	*Recovery: 92 %*	*Limits: 80-120 %*	*Dilution: 1x*
Toluene-d8 (Surr)	*100 %*	*80-120 %*	*"*
4-Bromofluorobenzene (Surr)	*96 %*	*80-120 %*	*"*

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5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

QUALITY CONTROL (QC) SAMPLE RESULTS

Ammonia by Gas Diffusion and Colorimetric Detection

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0150 - Method Prep: Aq								**Water**				
Blank (24I0150-BLK1)			Prepared: 09/06/24 08:28		Analyzed: 09/06/24 11:26							
SM 4500-NH3 G												
Ammonia as N	ND	---	0.0200	mg/L	1	---	---	---	---	---	---	
LCS (24I0150-BS1)			Prepared: 09/06/24 08:28		Analyzed: 09/06/24 11:28							
SM 4500-NH3 G												
Ammonia as N	2.05	---	0.0200	mg/L	1	2.00	---	103	90-111%	---	---	
Matrix Spike (24I0150-MS1)			Prepared: 09/06/24 08:28		Analyzed: 09/06/24 11:32							
QC Source Sample: KMW-4 (A4I0826-21)												
SM 4500-NH3 G												
Ammonia as N	2.35	---	0.0250	mg/L	1	2.50	0.383	**79**	**90-111%**	---	---	Q-01
Matrix Spike Dup (24I0150-MSD1)			Prepared: 09/06/24 08:28		Analyzed: 09/06/24 11:34							
QC Source Sample: KMW-4 (A4I0826-21)												
SM 4500-NH3 G												
Ammonia as N	2.85	---	0.0250	mg/L	1	2.50	0.383	99	90-111%	**19**	**13%**	Q-01

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-34	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0826 - 09 19 24 1607

QUALITY CONTROL (QC) SAMPLE RESULTS

Ammonia by Gas Diffusion and Colorimetric Detection

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0175 - Method Prep: Aq									Water			
Blank (24I0175-BLK1)			Prepared: 09/06/24 12:11		Analyzed: 09/06/24 12:48							
SM 4500-NH3 G												
Ammonia as N	ND	---	0.0200	mg/L	1	---	---	---	---	---	---	
LCS (24I0175-BS1)			Prepared: 09/06/24 12:11		Analyzed: 09/06/24 12:50							
SM 4500-NH3 G												
Ammonia as N	2.02	---	0.0200	mg/L	1	2.00	---	101	90-111%	---	---	
Matrix Spike (24I0175-MS1)			Prepared: 09/06/24 12:11		Analyzed: 09/06/24 12:54							
QC Source Sample: MGMS1-2(60) (A4I0826-15)												
SM 4500-NH3 G												
Ammonia as N	5.63	---	0.0250	mg/L	1	2.50	3.11	101	90-111%	---	---	
Matrix Spike Dup (24I0175-MSD1)			Prepared: 09/06/24 12:11		Analyzed: 09/06/24 12:56							
QC Source Sample: MGMS1-2(60) (A4I0826-15)												
SM 4500-NH3 G												
Ammonia as N	5.60	---	0.0250	mg/L	1	2.50	3.11	100	90-111%	0.6	13%	

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GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

QUALITY CONTROL (QC) SAMPLE RESULTS

Ammonia by Gas Diffusion and Colorimetric Detection

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0288 - Method Prep: Aq									Water			
Blank (24I0288-BLK1)			Prepared: 09/10/24 12:56 Analyzed: 09/10/24 16:01									
SM 4500-NH3 G												
Ammonia as N	ND	---	0.0200	mg/L	1	---	---	---	---	---	---	
LCS (24I0288-BS1)			Prepared: 09/10/24 12:56 Analyzed: 09/10/24 16:03									
SM 4500-NH3 G												
Ammonia as N	1.97	---	0.0200	mg/L	1	2.00	---	99	90-111%	---	---	
Matrix Spike (24I0288-MS1)			Prepared: 09/10/24 12:56 Analyzed: 09/10/24 16:07									
QC Source Sample: Non-SDG (A4I0809-01)												
SM 4500-NH3 G												
Ammonia as N	2.67	---	0.0250	mg/L	1	2.50	0.180	100	90-111%	---	---	
Matrix Spike Dup (24I0288-MSD1)			Prepared: 09/10/24 12:56 Analyzed: 09/10/24 16:09									
QC Source Sample: Non-SDG (A4I0809-01)												
Ammonia as N	2.74	---	0.0250	mg/L	1	2.50	0.180	102	90-111%	2	13%	

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-34	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0826 - 09 19 24 1607

QUALITY CONTROL (QC) SAMPLE RESULTS

Ammonia by Gas Diffusion and Colorimetric Detection

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0315 - Method Prep: Aq									Water			
Blank (24I0315-BLK1)			Prepared: 09/11/24 08:29 Analyzed: 09/11/24 16:02									
SM 4500-NH3 G												
Ammonia as N	ND	---	0.0200	mg/L	1	---	---	---	---	---	---	
LCS (24I0315-BS1)			Prepared: 09/11/24 08:29 Analyzed: 09/11/24 16:03									
SM 4500-NH3 G												
Ammonia as N	1.99	---	0.0200	mg/L	1	2.00	---	99	90-111%	---	---	
Matrix Spike (24I0315-MS1)			Prepared: 09/11/24 08:29 Analyzed: 09/11/24 16:11									
QC Source Sample: Non-SDG (A4I0805-01)												
SM 4500-NH3 G												
Ammonia as N	2.56	---	0.0250	mg/L	1	2.50	0.0130	102	90-111%	---	---	
Matrix Spike Dup (24I0315-MSD1)			Prepared: 09/11/24 08:29 Analyzed: 09/11/24 16:12									
QC Source Sample: Non-SDG (A4I0805-01)												
Ammonia as N	2.54	---	0.0250	mg/L	1	2.50	0.0130	101	90-111%	0.5	13%	

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GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

QUALITY CONTROL (QC) SAMPLE RESULTS

Anions by Ion Chromatography

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0104 - Method Prep: Aq							Water					
Blank (24I0104-BLK1)			Prepared: 09/05/24 08:31		Analyzed: 09/05/24 09:38							
EPA 300.0												
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	---	---	---	---	---	---	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	---	---	---	---	---	---	
LCS (24I0104-BS1)			Prepared: 09/05/24 08:31		Analyzed: 09/05/24 09:59							
EPA 300.0												
Nitrate-Nitrogen	2.09	---	0.250	mg/L	1	2.00	---	105	90-110%	---	---	
Nitrite-Nitrogen	2.04	---	0.250	mg/L	1	2.00	---	102	90-110%	---	---	
Duplicate (24I0104-DUP1)			Prepared: 09/05/24 08:31		Analyzed: 09/05/24 11:25							
QC Source Sample: MGMS1-2(60) (A4I0826-15)												
EPA 300.0												
Nitrate-Nitrogen	**5.04**	---	0.250	mg/L	1	---	5.01	---	---	0.5	10%	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	---	ND	---	---	---	10%	
Duplicate (24I0104-DUP2)			Prepared: 09/05/24 08:31		Analyzed: 09/05/24 15:22							
QC Source Sample: MGMS3-3(60) (A4I0826-20)												
EPA 300.0												
Nitrate-Nitrogen	**1.27**	---	0.250	mg/L	1	---	1.27	---	---	0.2	10%	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	---	ND	---	---	---	10%	
Matrix Spike (24I0104-MS1)			Prepared: 09/05/24 08:31		Analyzed: 09/05/24 11:47							
QC Source Sample: MGMS1-2(60) (A4I0826-15)												
EPA 300.0												
Nitrate-Nitrogen	7.52	---	0.312	mg/L	1	2.50	5.01	101	87-112%	---	---	
Nitrite-Nitrogen	2.61	---	0.312	mg/L	1	2.50	ND	104	90-114%	---	---	
Matrix Spike (24I0104-MS2)			Prepared: 09/05/24 08:31		Analyzed: 09/05/24 15:44							
QC Source Sample: MGMS3-3(60) (A4I0826-20)												
EPA 300.0												
Nitrate-Nitrogen	3.80	---	0.312	mg/L	1	2.50	1.27	101	87-112%	---	---	
Nitrite-Nitrogen	2.52	---	0.312	mg/L	1	2.50	ND	101	90-114%	---	---	

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

QUALITY CONTROL (QC) SAMPLE RESULTS

Anions by Ion Chromatography

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0112 - Method Prep: Aq									Water			
Blank (24I0112-BLK1)			Prepared: 09/05/24 10:05		Analyzed: 09/05/24 18:15							
EPA 300.0												
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	---	---	---	---	---	---	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	---	---	---	---	---	---	
LCS (24I0112-BS1)			Prepared: 09/05/24 10:05		Analyzed: 09/05/24 18:36							
EPA 300.0												
Nitrate-Nitrogen	2.04	---	0.250	mg/L	1	2.00	---	102	90-110%	---	---	
Nitrite-Nitrogen	2.00	---	0.250	mg/L	1	2.00	---	100	90-110%	---	---	
Duplicate (24I0112-DUP1)			Prepared: 09/05/24 10:05		Analyzed: 09/05/24 21:07							
QC Source Sample: S-1 (A4I0826-09)												
EPA 300.0												
Nitrate-Nitrogen	**4.18**	---	0.250	mg/L	1	---	4.16	---	---	0.3	10%	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	---	ND	---	---	---	10%	
Duplicate (24I0112-DUP2)			Prepared: 09/05/24 10:05		Analyzed: 09/05/24 23:38							
QC Source Sample: MW-24d (A4I0826-12)												
EPA 300.0												
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	---	ND	---	---	---	10%	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	---	ND	---	---	---	10%	
Matrix Spike (24I0112-MS1)			Prepared: 09/05/24 10:05		Analyzed: 09/05/24 21:29							
QC Source Sample: S-1 (A4I0826-09)												
EPA 300.0												
Nitrate-Nitrogen	6.65	---	0.312	mg/L	1	2.50	4.16	99	87-112%	---	---	
Nitrite-Nitrogen	2.52	---	0.312	mg/L	1	2.50	ND	101	90-114%	---	---	
Matrix Spike (24I0112-MS2)			Prepared: 09/05/24 10:05		Analyzed: 09/06/24 00:00							
QC Source Sample: MW-24d (A4I0826-12)												
EPA 300.0												
Nitrate-Nitrogen	2.51	---	0.312	mg/L	1	2.50	ND	100	87-112%	---	---	
Nitrite-Nitrogen	2.48	---	0.312	mg/L	1	2.50	ND	99	90-114%	---	---	

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Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

SAMPLE PREPARATION INFORMATION

Halogenated Volatile Organic Compounds by EPA 8260D

Prep: EPA 5030C

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 24I0243							
A4I0826-01	Water	EPA 8260D	09/04/24 14:21	09/09/24 15:33	5mL/5mL	5mL/5mL	1.00
A4I0826-04	Water	EPA 8260D	09/04/24 07:57	09/09/24 15:33	5mL/5mL	5mL/5mL	1.00
A4I0826-05	Water	EPA 8260D	09/04/24 12:31	09/09/24 15:33	5mL/5mL	5mL/5mL	1.00
A4I0826-10	Water	EPA 8260D	09/04/24 10:39	09/09/24 15:33	5mL/5mL	5mL/5mL	1.00
A4I0826-11	Water	EPA 8260D	09/04/24 13:33	09/09/24 15:33	5mL/5mL	5mL/5mL	1.00
A4I0826-12	Water	EPA 8260D	09/04/24 12:37	09/09/24 15:33	5mL/5mL	5mL/5mL	1.00
A4I0826-13	Water	EPA 8260D	09/04/24 11:07	09/09/24 15:33	5mL/5mL	5mL/5mL	1.00
A4I0826-14	Water	EPA 8260D	09/04/24 10:24	09/09/24 15:33	5mL/5mL	5mL/5mL	1.00
A4I0826-15	Water	EPA 8260D	09/04/24 10:04	09/09/24 15:33	5mL/5mL	5mL/5mL	1.00
A4I0826-16	Water	EPA 8260D	09/04/24 09:30	09/09/24 15:33	5mL/5mL	5mL/5mL	1.00
A4I0826-18	Water	EPA 8260D	09/04/24 07:41	09/09/24 15:33	5mL/5mL	5mL/5mL	1.00
A4I0826-19	Water	EPA 8260D	09/04/24 07:41	09/09/24 15:33	5mL/5mL	5mL/5mL	1.00
A4I0826-20	Water	EPA 8260D	09/04/24 08:29	09/09/24 15:33	5mL/5mL	5mL/5mL	1.00
Batch: 24I0259							
A4I0826-21	Water	EPA 8260D	09/04/24 10:30	09/10/24 09:23	5mL/5mL	5mL/5mL	1.00
Batch: 24I0314							
A4I0826-01RE1	Water	EPA 8260D	09/04/24 14:21	09/11/24 10:09	5mL/5mL	5mL/5mL	1.00
A4I0826-02RE1	Water	EPA 8260D	09/04/24 14:22	09/11/24 10:09	5mL/5mL	5mL/5mL	1.00
A4I0826-03RE1	Water	EPA 8260D	09/04/24 14:22	09/11/24 10:09	5mL/5mL	5mL/5mL	1.00
A4I0826-05RE1	Water	EPA 8260D	09/04/24 12:31	09/11/24 10:09	5mL/5mL	5mL/5mL	1.00
A4I0826-06RE1	Water	EPA 8260D	09/04/24 13:26	09/11/24 10:09	5mL/5mL	5mL/5mL	1.00
A4I0826-07RE1	Water	EPA 8260D	09/04/24 08:51	09/11/24 10:09	5mL/5mL	5mL/5mL	1.00
A4I0826-08RE1	Water	EPA 8260D	09/04/24 09:20	09/11/24 10:09	5mL/5mL	5mL/5mL	1.00
A4I0826-09RE1	Water	EPA 8260D	09/04/24 11:24	09/11/24 10:09	5mL/5mL	5mL/5mL	1.00
A4I0826-17RE1	Water	EPA 8260D	09/04/24 09:02	09/11/24 10:09	5mL/5mL	5mL/5mL	1.00
A4I0826-20RE1	Water	EPA 8260D	09/04/24 08:29	09/11/24 10:09	5mL/5mL	5mL/5mL	1.00

Ammonia by Gas Diffusion and Colorimetric Detection

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 24I0150							
A4I0826-21	Water	SM 4500-NH3 G	09/04/24 10:30	09/06/24 08:28	10mL/10mL	10mL/10mL	1.00
Batch: 24I0175							
A4I0826-04	Water	SM 4500-NH3 G	09/04/24 07:57	09/06/24 08:28	10mL/10mL	10mL/10mL	1.00

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-34	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0826 - 09 19 24 1607

SAMPLE PREPARATION INFORMATION

Ammonia by Gas Diffusion and Colorimetric Detection

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A4I0826-15	Water	SM 4500-NH3 G	09/04/24 10:04	09/06/24 08:28	10mL/10mL	10mL/10mL	1.00
Batch: 24I0288							
A4I0826-01	Water	SM 4500-NH3 G	09/04/24 14:21	09/10/24 12:56	10mL/10mL	10mL/10mL	1.00
A4I0826-02	Water	SM 4500-NH3 G	09/04/24 14:22	09/10/24 12:56	10mL/10mL	10mL/10mL	1.00
A4I0826-03	Water	SM 4500-NH3 G	09/04/24 14:22	09/10/24 12:56	10mL/10mL	10mL/10mL	1.00
A4I0826-05RE1	Water	SM 4500-NH3 G	09/04/24 12:31	09/10/24 12:56	10mL/10mL	10mL/10mL	1.00
A4I0826-06RE2	Water	SM 4500-NH3 G	09/04/24 13:26	09/10/24 12:56	10mL/10mL	10mL/10mL	1.00
A4I0826-07RE2	Water	SM 4500-NH3 G	09/04/24 08:51	09/10/24 12:56	10mL/10mL	10mL/10mL	1.00
A4I0826-08RE2	Water	SM 4500-NH3 G	09/04/24 09:20	09/10/24 12:56	10mL/10mL	10mL/10mL	1.00
A4I0826-09RE2	Water	SM 4500-NH3 G	09/04/24 11:24	09/10/24 12:56	10mL/10mL	10mL/10mL	1.00
A4I0826-10RE2	Water	SM 4500-NH3 G	09/04/24 10:39	09/10/24 12:56	10mL/10mL	10mL/10mL	1.00
A4I0826-11RE2	Water	SM 4500-NH3 G	09/04/24 13:33	09/10/24 12:56	10mL/10mL	10mL/10mL	1.00
A4I0826-12RE2	Water	SM 4500-NH3 G	09/04/24 12:37	09/10/24 12:56	10mL/10mL	10mL/10mL	1.00
A4I0826-13RE2	Water	SM 4500-NH3 G	09/04/24 11:07	09/10/24 12:56	10mL/10mL	10mL/10mL	1.00
A4I0826-14RE2	Water	SM 4500-NH3 G	09/04/24 10:24	09/10/24 12:56	10mL/10mL	10mL/10mL	1.00
A4I0826-19RE1	Water	SM 4500-NH3 G	09/04/24 07:41	09/10/24 12:56	10mL/10mL	10mL/10mL	1.00
A4I0826-20RE1	Water	SM 4500-NH3 G	09/04/24 08:29	09/10/24 12:56	10mL/10mL	10mL/10mL	1.00
Batch: 24I0315							
A4I0826-16RE3	Water	SM 4500-NH3 G	09/04/24 09:30	09/11/24 08:29	10mL/10mL	10mL/10mL	1.00
A4I0826-17RE2	Water	SM 4500-NH3 G	09/04/24 09:02	09/11/24 08:29	10mL/10mL	10mL/10mL	1.00
A4I0826-18RE2	Water	SM 4500-NH3 G	09/04/24 07:41	09/11/24 08:29	10mL/10mL	10mL/10mL	1.00

Anions by Ion Chromatography

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 24I0104							
A4I0826-14	Water	EPA 300.0	09/04/24 10:24	09/05/24 08:31	5mL/5mL	5mL/5mL	1.00
A4I0826-14RE1	Water	EPA 300.0	09/04/24 10:24	09/05/24 08:31	5mL/5mL	5mL/5mL	1.00
A4I0826-15	Water	EPA 300.0	09/04/24 10:04	09/05/24 08:31	5mL/5mL	5mL/5mL	1.00
A4I0826-16	Water	EPA 300.0	09/04/24 09:30	09/05/24 08:31	5mL/5mL	5mL/5mL	1.00
A4I0826-17	Water	EPA 300.0	09/04/24 09:02	09/05/24 08:31	5mL/5mL	5mL/5mL	1.00
A4I0826-17RE1	Water	EPA 300.0	09/04/24 09:02	09/05/24 08:31	5mL/5mL	5mL/5mL	1.00
A4I0826-18	Water	EPA 300.0	09/04/24 07:41	09/05/24 08:31	5mL/5mL	5mL/5mL	1.00
A4I0826-19	Water	EPA 300.0	09/04/24 07:41	09/05/24 08:31	5mL/5mL	5mL/5mL	1.00
A4I0826-20	Water	EPA 300.0	09/04/24 08:29	09/05/24 08:31	5mL/5mL	5mL/5mL	1.00

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5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

SAMPLE PREPARATION INFORMATION

Anions by Ion Chromatography

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A4I0826-21	Water	EPA 300.0	09/04/24 10:30	09/05/24 08:31	5mL/5mL	5mL/5mL	1.00
A4I0826-21RE1	Water	EPA 300.0	09/04/24 10:30	09/05/24 08:31	5mL/5mL	5mL/5mL	1.00
Batch: 24I0112							
A4I0826-01	Water	EPA 300.0	09/04/24 14:21	09/05/24 10:05	5mL/5mL	5mL/5mL	1.00
A4I0826-01RE1	Water	EPA 300.0	09/04/24 14:21	09/05/24 10:05	5mL/5mL	5mL/5mL	1.00
A4I0826-02	Water	EPA 300.0	09/04/24 14:22	09/05/24 10:05	5mL/5mL	5mL/5mL	1.00
A4I0826-02RE1	Water	EPA 300.0	09/04/24 14:22	09/05/24 10:05	5mL/5mL	5mL/5mL	1.00
A4I0826-03	Water	EPA 300.0	09/04/24 14:22	09/05/24 10:05	5mL/5mL	5mL/5mL	1.00
A4I0826-03RE1	Water	EPA 300.0	09/04/24 14:22	09/05/24 10:05	5mL/5mL	5mL/5mL	1.00
A4I0826-04	Water	EPA 300.0	09/04/24 07:57	09/05/24 10:05	5mL/5mL	5mL/5mL	1.00
A4I0826-04RE1	Water	EPA 300.0	09/04/24 07:57	09/05/24 10:05	5mL/5mL	5mL/5mL	1.00
A4I0826-05	Water	EPA 300.0	09/04/24 12:31	09/05/24 10:05	5mL/5mL	5mL/5mL	1.00
A4I0826-05RE1	Water	EPA 300.0	09/04/24 12:31	09/05/24 10:05	5mL/5mL	5mL/5mL	1.00
A4I0826-06RE1	Water	EPA 300.0	09/04/24 13:26	09/05/24 10:05	5mL/5mL	5mL/5mL	1.00
A4I0826-07	Water	EPA 300.0	09/04/24 08:51	09/05/24 10:05	5mL/5mL	5mL/5mL	1.00
A4I0826-08	Water	EPA 300.0	09/04/24 09:20	09/05/24 10:05	5mL/5mL	5mL/5mL	1.00
A4I0826-08RE1	Water	EPA 300.0	09/04/24 09:20	09/05/24 10:05	5mL/5mL	5mL/5mL	1.00
A4I0826-09	Water	EPA 300.0	09/04/24 11:24	09/05/24 10:05	5mL/5mL	5mL/5mL	1.00
A4I0826-10	Water	EPA 300.0	09/04/24 10:39	09/05/24 10:05	5mL/5mL	5mL/5mL	1.00
A4I0826-11	Water	EPA 300.0	09/04/24 13:33	09/05/24 10:05	5mL/5mL	5mL/5mL	1.00
A4I0826-12	Water	EPA 300.0	09/04/24 12:37	09/05/24 10:05	5mL/5mL	5mL/5mL	1.00
A4I0826-13	Water	EPA 300.0	09/04/24 11:07	09/05/24 10:05	5mL/5mL	5mL/5mL	1.00

Apex Laboratories



Darrell Auvil, Client Services Manager

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Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

Apex Laboratories

E	Estimated Value. The result is above the calibration range of the instrument.
Q-01	Spike recovery and/or RPD is outside acceptance limits.
Q-42	Matrix Spike and/or Duplicate analysis was performed on this sample. % Recovery or RPD for this analyte is outside laboratory control limits. (Refer to the QC Section of Analytical Report.)

Apex Laboratories



Darrell Auvil, Client Services Manager

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Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

REPORTING NOTES AND CONVENTIONS:

Abbreviations:

DET Analyte DETECTED at or above the detection or reporting limit.

ND Analyte NOT DETECTED at or above the detection or reporting limit.

NR Result Not Reported

RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

Detection Limits: Limit of Detection (LOD)

Validated Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ). If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

Basis: Results for soil samples are generally reported on a 100% dry weight basis.
The Result Basis is listed following the units as " dry", " wet", or " " (blank) designation.

" dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")
See Percent Solids section for details of dry weight analysis.

" wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.

" " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

Results for Volatiles analyses on soils and sediments that are reported on a “dry weight” basis include the water miscible solvent (WMS) correction referenced in the EPA 8000 Method guidance documents. Solid and Liquid samples reported on an “As Received” basis do not have the WMS correction applied, as dry weight was not performed.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) may not be included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

" --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

" *** " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Apex Laboratories



Darrell Auvil, Client Services Manager

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to one half of the Reporting Limit (RL).
Blank results for gravimetric analyses are evaluated to the Reporting Level, not to half of the Reporting Level.
-For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.
-For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.
For further details, please request a copy of this document.
-Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.
'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level, if results are not reported to the MDL.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

Apex Laboratories



Darrell Auvil, Client Services Manager

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503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

LABORATORY ACCREDITATION INFORMATION

ORELAP Certification ID: OR100062 (Primary Accreditation) - EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

Apex Laboratories

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation

All reported analytes are included in Apex Laboratories' current ORELAP scope.

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation.
Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories



Darrell Auvil, Client Services Manager

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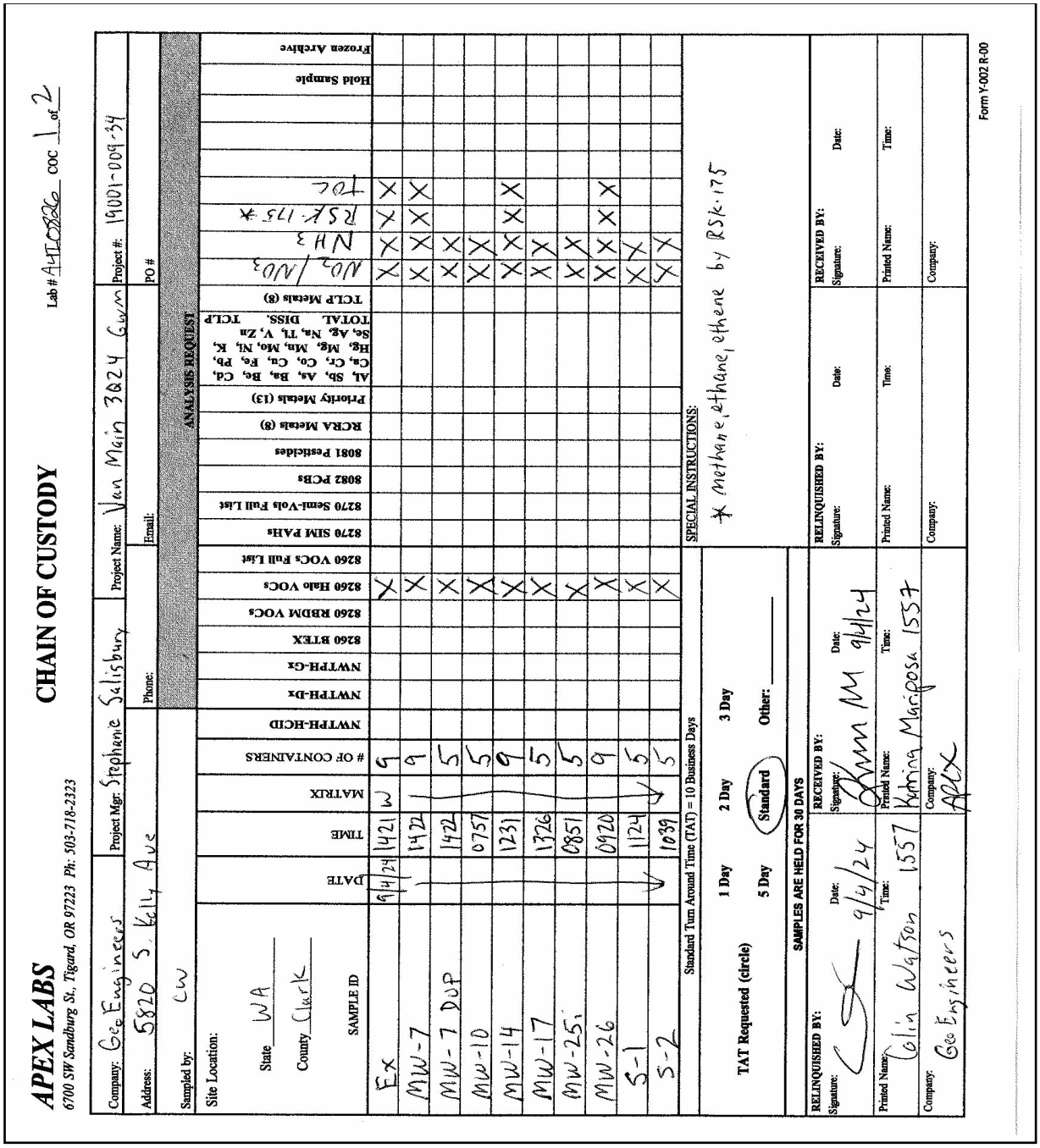
Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

GeoEngineers - Portland
5820 S Kelly Ave Unit B
Portland, OR 97239

Project: **Vancouver GWM 3Q24**
Project Number: **19001-009-34**
Project Manager: **Stephanie Bosze-Salisbury**

Report ID:
A4I0826 - 09 19 24 1607



APEX LABS — 6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323

CHAIN OF CUSTODY

Lab # APEX0826 COC 1 of 2

Company: GeoEngineers | Project Mgr: Stephanie Salisbury | Project Name: Van Main 3Q24 GWM | Project #: 19001-009-34
Address: 5820 S. Kelly Ave | Phone: | Email: | PO #
Sampled by: CW

Site Location: State WA, County Clark

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 BTEX	8260 RBDM VOCs	8260 Halo VOCs	8260 VOCs Full List	8270 SIM PAHs	8270 Semi-Vols Full List	8082 PCBs	8081 Pesticides	RCRA Metals (8)	Priority Metals (13)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS. TCLP	TCLP Metals (8)	NO_2/NO_3	NH_3	RSK-175	TOC	Hold Sample	Frozen Archive
Ex	9/4/24	1421	W	9						X										X	X	X		
MW-7		1422		9						X										X	X	X		
MW-7 DUP		1422		5						X										X	X			
MW-10		0757		5						X										X	X	X		
MW-14		1231		9						X										X	X	X		
MW-17		1326		5						X										X	X			
MW-25		0851		5						X										X	X	X		
MW-26		0920		9						X										X	X	X		
S-1		1124		5						X										X	X			
S-2		1039		5						X										X	X			

Standard Turn Around Time (TAT) = 10 Business Days

TAT Requested (circle): 1 Day | 2 Day | 3 Day | 5 Day | **Standard** | Other: _____

SPECIAL INSTRUCTIONS:
* methane, ethane, ethene by RSK-175

SAMPLES ARE HELD FOR 30 DAYS

	RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature:				
Date:	9/4/24	9/4/24	Date:	Date:
Time:	1557		Time:	Time:
Printed Name:	Colin Watson	Katrina Mariposa	Printed Name:	Printed Name:
Company:	GeoEngineers	APEX	Company:	Company:

Form Y-002 R-00

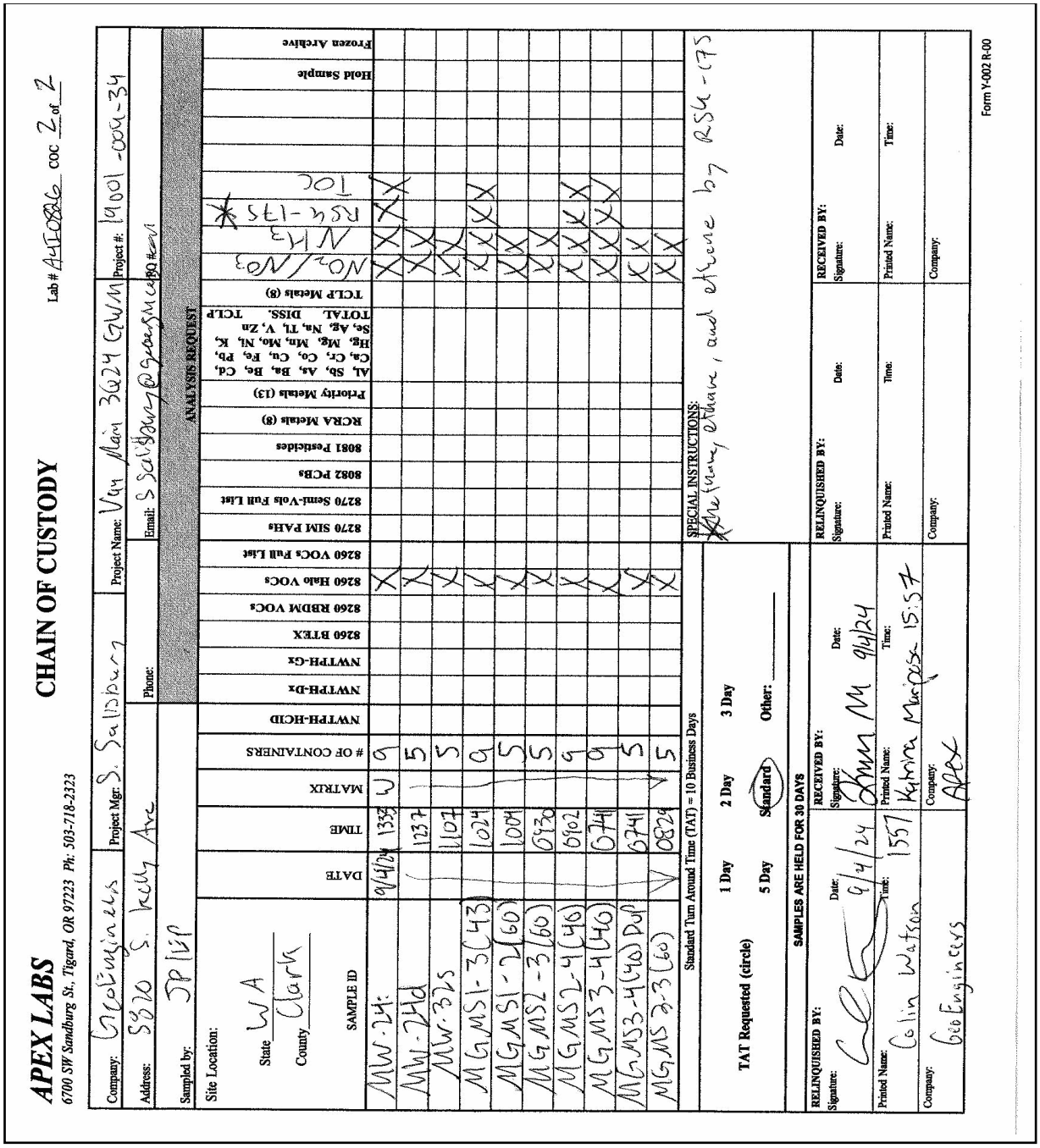
Apex Laboratories

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Darrell Auvil, Client Services Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**



APEX LABS
6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323

CHAIN OF CUSTODY

Lab # A4I0826 COC 2 of 2

Company: GeoEngineers | Project Mgr: S. Salisbury | Project Name: Van Main 3Q24 GWM | Project #: 19001-009-34
Address: 5820 S. Kelly Ave | Phone: | Email: S Salisbury@geoengineers.com
Sampled by: JP Hip

Site Location: State WA County Clark

SAMPLE ID	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 BTEX	8260 RBDM VOCs	8260 Halo VOCs	8260 VOCs Full List	8270 SIM PAHs	8270 Semi-Vols Full List	8082 PCBs	8081 Pesticides	RCRA Metals (8)	Priority Metals (13)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS. TCLP	TCLP Metals (8)	NO2/NO3 NH3 RSK-175 TOC	Hold Sample	Frozen Archive
MW-24:	9/4/24	1332	W	9						X										XX		
MW-24d		1237		5						X										XX		
MW-32S		1107		5						X										XX		
MGMS1-3(43)		1024		9						X										XX		
MGMS1-2(60)		1004		5						X										XX		
MGMS2-3(60)		0930		5						X										XX		
MGMS2-4(46)		0902		9						X										XX		
MGMS3-4(40)		0744		9						X										XX		
MGMS3-4(40) Dup		0741		5						X										XX		
MGMS2-3(60)		0829	V	5						X										XX		

Standard Turn Around Time (TAT) = 10 Business Days

TAT Requested (circle): 1 Day 2 Day 3 Day 5 Day Standard Other: _____

SPECIAL INSTRUCTIONS: Acetone, ethane, and ethene by RSK-175

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY:	Date:	Time:	RECEIVED BY:	Date:	Time:
Signature:	9/4/24		Signature:	9/4/24	
Printed Name: Colin Watson		1557	Printed Name: Katrina Munroe		15:57
Company: GeoEngineers			Company: Apex		

RELINQUISHED BY:	Date:	Time:	RECEIVED BY:	Date:	Time:
Signature:			Signature:		
Printed Name:			Printed Name:		
Company:			Company:		

Form Y-002 R-00

Apex Laboratories

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Darrell Auvil, Client Services Manager

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6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0826 - 09 19 24 1607**

APEX LABS COOLER RECEIPT FORM

Client: GeoEngineers Element WO#: A4I0826

Project/Project #: Van Main 3Q24 GWM / 19001-009-34

Delivery Info:

Date/time received: 9/4/24 @ 1557 By: KAM

Delivered by: Apex__Client X ESS__FedEx__UPS__Radio__Morgan__SDS__Evergreen__Other__

From USDA Regulated Origin? Yes _____ No X

Cooler Inspection Date/time inspected: 9/4/24 @ 15:59 By: KAM

Chain of Custody included? Yes X No _____

Signed/dated by client? Yes X No _____

Contains USDA Reg. Soils? Yes _____ No X Unsure (email RegSoils) _____

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	5.6	2.8					
Custody seals? (Y/N)	N						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	Y						
Ice type: (Gel/Real/Other)	Real						
Condition (In/Out):	In						

Cooler out of temp? (Y/N) Possible reason why: _____

Green dots applied to out of temperature samples? Yes No

Out of temperature samples form initiated? Yes No

Sample Inspection: Date/time inspected: 9/4/24 @ 1650 By: KN

All samples intact? Yes ✓ No ___ Comments: _____

Bottle labels/COCs agree? Yes ___ No ✓ Comments: Received 5 conts for sample "KMW-4" which is not listed on COC. Hold 10:30 9/4 ~~10:40 10:30~~

COC/container discrepancies form initiated? Yes ___ No ✓ 9/4

Containers/volumes received appropriate for analysis? Yes ✓ No ___ Comments: _____

Do VOA vials have visible headspace? Yes ___ No ✓ NA ___

Comments _____

Water samples: pH checked: Yes ✓ No ___ NA ___ pH appropriate? Yes ✓ No ___ NA ___ pH ID: A23I172

Comments: ~~A23I223 KN~~ 9/4/24

Labeled by: KAM Witness: KN Cooler Inspected by: KN

Form Y-003 R-02 -

Apex Laboratories

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Darrell Auvil, Client Services Manager

September 13, 2024 Service Request No:K2409245

Darrell Auvil
Apex Laboratories
6700 SW Sandburg St.
Tigard, OR 97223

Laboratory Results for: A4I0826

Dear Darrell,

Enclosed are the results of the sample(s) submitted to our laboratory September 05, 2024
For your reference, these analyses have been assigned our service request number **K2409245.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3260. You may also contact me via email at Luke.Rahn@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

for Luke Rahn
Project Manager

ADDRESS 1317 S. 13th Avenue, Kelso, WA 98626
PHONE +1 360 577 7222 | FAX +1 360 636 1068
ALS Group USA, Corp.
dba ALS Environmental

Narrative Documents

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Apex Laboratories
Project: A4I0826
Sample Matrix: Water

Service Request: K2409245
Date Received: 09/05/2024

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier II level requested by the client.

Sample Receipt:

Eight water samples were received for analysis at ALS Environmental on 09/05/2024. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

General Chemistry:

No significant anomalies were noted with this analysis.

Approved by _____ Date 09/13/2024

SAMPLE DETECTION SUMMARY

This form includes only detections above the reporting levels. For a full listing of sample results, continue to the Sample Results section of this Report.

CLIENT ID: Ex	Lab ID: K2409245-001					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Carbon, Total Organic	4.50		0.08	0.50	mg/L	SM 5310 C

CLIENT ID: MW-7	Lab ID: K2409245-002					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Carbon, Total Organic	11.9		0.08	0.50	mg/L	SM 5310 C

CLIENT ID: MW-14	Lab ID: K2409245-003					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Carbon, Total Organic	1.90		0.08	0.50	mg/L	SM 5310 C

CLIENT ID: MW-26	Lab ID: K2409245-004					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Carbon, Total Organic	2.20		0.08	0.50	mg/L	SM 5310 C

CLIENT ID: MW-24i	Lab ID: K2409245-005					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Carbon, Total Organic	0.41	J	0.08	0.50	mg/L	SM 5310 C

CLIENT ID: MGMS1-3(43)	Lab ID: K2409245-006					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Carbon, Total Organic	4.20		0.08	0.50	mg/L	SM 5310 C

CLIENT ID: MGMS2-4(40)	Lab ID: K2409245-007					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Carbon, Total Organic	3.60		0.08	0.50	mg/L	SM 5310 C

CLIENT ID: MGMS3-4(40)	Lab ID: K2409245-008					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Carbon, Total Organic	2.40		0.08	0.50	mg/L	SM 5310 C

Sample Receipt Information

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Apex Laboratories **Service Request:**K2409245

Project: A4I0826

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
K2409245-001	Ex	9/4/2024	1421
K2409245-002	MW-7	9/4/2024	1422
K2409245-003	MW-14	9/4/2024	1231
K2409245-004	MW-26	9/4/2024	0920
K2409245-005	MW-24i	9/4/2024	1333
K2409245-006	MGMS1-3(43)	9/4/2024	1024
K2409245-007	MGMS2-4(40)	9/4/2024	0902
K2409245-008	MGMS3-4(40)	9/4/2024	0741

W2409245

SUBCONTRACT ORDER

Apex Laboratories

9/4/24 **A4I0826**

SENDING LABORATORY:

Apex Laboratories
6700 S.W. Sandburg Street
Tigard, OR 97223
Phone: (503) 718-2323
Fax: (503) 336-0745
Project Manager: Darrell Auvil

RECEIVING LABORATORY:

ALS Group USA - Kelso
1317 S 13th Avenue
Kelso, WA 98626
Phone :(360) 577-7222
Fax: (360) 636-1068

Sample Name: Ex **Sampled: 09/04/24 14:21** (A4I0826-01)

Analysis	Due	Expires	Comments
Total Organic Carbon - H2O (5310C) *Containers Supplied:* (G)250 mL Poly - Sulfuric (H2SO4)	09/17/24 17:00	10/02/24 14:21	ALS Kelso, no data package

Sample Name: MW-7 **Sampled: 09/04/24 14:22** (A4I0826-02)

Analysis	Due	Expires	Comments
Total Organic Carbon - H2O (5310C) *Containers Supplied:* (G)250 mL Poly - Sulfuric (H2SO4)	09/17/24 17:00	10/02/24 14:22	ALS Kelso, no data package

Sample Name: MW-14 **Sampled: 09/04/24 12:31** (A4I0826-05)

Analysis	Due	Expires	Comments
Total Organic Carbon - H2O (5310C) *Containers Supplied:* (G)250 mL Poly - Sulfuric (H2SO4)	09/17/24 17:00	10/02/24 12:31	ALS Kelso, no data package

Sample Name: MW-26 **Sampled: 09/04/24 09:20** (A4I0826-08)

Analysis	Due	Expires	Comments
Total Organic Carbon - H2O (5310C) *Containers Supplied:* (G)250 mL Poly - Sulfuric (H2SO4)	09/17/24 17:00	10/02/24 09:20	ALS Kelso, no data package

Standard TAT

Released By	Date	Received By	Date
[signature]	9/5/24 10:44	[signature]	9/5/24 1044
[signature]	9/5/24 1337	[signature]	09/05/24 13:27

M2409245

SUBCONTRACT ORDER

Apex Laboratories

9/4/24 **A4I0826**

Sample Name: MW-24i **Sampled: 09/04/24 13:33** (A4I0826-11)

Analysis	Due	Expires	Comments
Total Organic Carbon - H2O (5310C)	09/17/24 17:00	10/02/24 13:33	ALS Kelso, no data package
Containers Supplied:			
(G)250 mL Poly - Sulfuric (H2SO4)			

Sample Name: MGMS1-3(43) **Sampled: 09/04/24 10:24** (A4I0826-14)

Analysis	Due	Expires	Comments
Total Organic Carbon - H2O (5310C)	09/17/24 17:00	10/02/24 10:24	ALS Kelso, no data package
Containers Supplied:			
(G)250 mL Poly - Sulfuric (H2SO4)			

Sample Name: MGMS2-4(40) **Sampled: 09/04/24 09:02** (A4I0826-17)

Analysis	Due	Expires	Comments
Total Organic Carbon - H2O (5310C)	09/17/24 17:00	10/02/24 09:02	ALS Kelso, no data package
Containers Supplied:			
(G)250 mL Poly - Sulfuric (H2SO4)			

Sample Name: MGMS3-4(40) **Sampled: 09/04/24 07:41** (A4I0826-18)

Analysis	Due	Expires	Comments
Total Organic Carbon - H2O (5310C)	09/17/24 17:00	10/02/24 07:41	ALS Kelso, no data package
Containers Supplied:			
(G)250 mL Poly - Sulfuric (H2SO4)			

Standard TAT

Released By	Date	Received By	Date
[signature]	9/5/24 10:44	[signature]	9/5/24 1044
[signature]	9/5/24 1327	[signature]	09/05/24 13:27

PM LB

Cooler Receipt and Preservation Form

Client Apex Service Request K24 09245

Received: 09/05/24 Opened: 09/05/24 By: AD Unloaded: 09/05/24 By: AD

1. Samples were received via? *USPS* *Fed Ex* *UPS* *DHL* *PDX* (*Courier*) *Hand Delivered*
2. Samples were received in: (circle) (*Cooler*) *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA Y (N) If yes, how many and where? _____
   If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID / NA	Out of temp indicate with "X"	PM Notified If out of temp	Tracking Number NA	Filed
	1.7	IR06					

4. Was a Temperature Blank present in cooler? NA Y (N) If yes, notate the temperature in the appropriate column above:
   If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
5. Were samples received within the method specified temperature ranges? NA (Y) N
   If no, were they received on ice and same day as collected? If not, notate the cooler # above and notify the PM. (NA) Y N

If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*

6. Packing material: *Inserts* (*Baggies*) *Bubble Wrap* *Gel Packs* (*Wet Ice*) *Dry Ice* *Sleeves* _____
7. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
8. Were samples received in good condition (unbroken) NA (Y) N
9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA (Y) N
10. Did all sample labels and tags agree with custody papers? NA (Y) N
11. Were appropriate bottles/containers and volumes received for the tests indicated? NA (Y) N
12. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA (Y) N
13. Were VOA vials received without headspace? *Indicate in the table below.* (NA) Y N
14. Was C12/Res negative? (NA) Y N
15. Were samples received within the method specified time limit? If not, notate the error below and notify the PM (NA) Y N
16. Were 100ml sterile microbiology bottles filled exactly to the 100ml mark? (NA) Y N Underfilled Overfilled

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, Resolutions: _____

G:\SMO\2024 Forms SOP: SMO-GEN Reviewed: NP 1/3/2024

Miscellaneous Forms

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

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Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value over the calibration range.
J	The result is an estimated value between the MDL and the MRL.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Client: Apex Laboratories **Service Request:** K2409245
Project: A4I0826/

Sample Name: Ex **Date Collected:** 09/4/24
Lab Code: K2409245-001 **Date Received:** 09/5/24
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
SM 5310 C		MSPECHT

Sample Name: MW-7 **Date Collected:** 09/4/24
Lab Code: K2409245-002 **Date Received:** 09/5/24
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
SM 5310 C		MSPECHT

Sample Name: MW-14 **Date Collected:** 09/4/24
Lab Code: K2409245-003 **Date Received:** 09/5/24
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
SM 5310 C		MSPECHT

Sample Name: MW-26 **Date Collected:** 09/4/24
Lab Code: K2409245-004 **Date Received:** 09/5/24
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
SM 5310 C		MSPECHT

Sample Name: MW-24i **Date Collected:** 09/4/24
Lab Code: K2409245-005 **Date Received:** 09/5/24
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
SM 5310 C		MSPECHT

Client:	Apex Laboratories	**Service Request:**	K2409245
Project:	A4I0826/		

Sample Name:	MGMS1-3(43)	**Date Collected:**	09/4/24
Lab Code:	K2409245-006	**Date Received:**	09/5/24
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
SM 5310 C		MSPECHT

Sample Name:	MGMS2-4(40)	**Date Collected:**	09/4/24
Lab Code:	K2409245-007	**Date Received:**	09/5/24
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
SM 5310 C		MSPECHT

Sample Name:	MGMS3-4(40)	**Date Collected:**	09/4/24
Lab Code:	K2409245-008	**Date Received:**	09/5/24
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
SM 5310 C		MSPECHT

Sample Results

ALS Environmental—Kelso Laboratory
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General Chemistry

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Analytical Report

Client:	Apex Laboratories	**Service Request:**	K2409245
Project:	A4I0826	**Date Collected:**	09/04/24 14:21
Sample Matrix:	Water	**Date Received:**	09/05/24 13:27
Sample Name:	Ex	**Basis:**	NA
Lab Code:	K2409245-001		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Carbon, Total Organic	SM 5310 C	**4.50**	mg/L	0.50	0.08	1	09/09/24 15:55	

Analytical Report

Client:	Apex Laboratories	**Service Request:**	K2409245
Project:	A4I0826	**Date Collected:**	09/04/24 14:22
Sample Matrix:	Water	**Date Received:**	09/05/24 13:27
Sample Name:	MW-7	**Basis:**	NA
Lab Code:	K2409245-002		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Carbon, Total Organic	SM 5310 C	**11.9**	mg/L	0.50	0.08	1	09/09/24 15:55	

Analytical Report

Client:	Apex Laboratories	**Service Request:**	K2409245
Project:	A4I0826	**Date Collected:**	09/04/24 12:31
Sample Matrix:	Water	**Date Received:**	09/05/24 13:27
Sample Name:	MW-14	**Basis:**	NA
Lab Code:	K2409245-003		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Carbon, Total Organic	SM 5310 C	**1.90**	mg/L	0.50	0.08	1	09/09/24 15:55	

Client:	Apex Laboratories	**Service Request:**	K2409245
Project:	A4I0826	**Date Collected:**	09/04/24 09:20
Sample Matrix:	Water	**Date Received:**	09/05/24 13:27
Sample Name:	MW-26	**Basis:**	NA
Lab Code:	K2409245-004		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Carbon, Total Organic	SM 5310 C	**2.20**	mg/L	0.50	0.08	1	09/09/24 15:55	

Client:	Apex Laboratories	**Service Request:**	K2409245
Project:	A4I0826	**Date Collected:**	09/04/24 13:33
Sample Matrix:	Water	**Date Received:**	09/05/24 13:27
Sample Name:	MW-24i	**Basis:**	NA
Lab Code:	K2409245-005		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Carbon, Total Organic	SM 5310 C	**0.41 J**	mg/L	0.50	0.08	1	09/09/24 15:55	

Analytical Report

Client:	Apex Laboratories	**Service Request:**	K2409245
Project:	A4I0826	**Date Collected:**	09/04/24 10:24
Sample Matrix:	Water	**Date Received:**	09/05/24 13:27
Sample Name:	MGMS1-3(43)	**Basis:**	NA
Lab Code:	K2409245-006		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Carbon, Total Organic	SM 5310 C	**4.20**	mg/L	0.50	0.08	1	09/09/24 15:55	

Analytical Report

Client:	Apex Laboratories	**Service Request:**	K2409245
Project:	A4I0826	**Date Collected:**	09/04/24 09:02
Sample Matrix:	Water	**Date Received:**	09/05/24 13:27
Sample Name:	MGMS2-4(40)	**Basis:**	NA
Lab Code:	K2409245-007		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Carbon, Total Organic	SM 5310 C	**3.60**	mg/L	0.50	0.08	1	09/09/24 15:55	

Analytical Report

Client:	Apex Laboratories	**Service Request:**	K2409245
Project:	A4I0826	**Date Collected:**	09/04/24 07:41
Sample Matrix:	Water	**Date Received:**	09/05/24 13:27
Sample Name:	MGMS3-4(40)	**Basis:**	NA
Lab Code:	K2409245-008		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Carbon, Total Organic	SM 5310 C	**2.40**	mg/L	0.50	0.08	1	09/09/24 15:55	

QC Summary Forms

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General Chemistry

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Analytical Report

Client:	Apex Laboratories	**Service Request:**	K2409245
Project:	A4I0826	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	K2409245-MB		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Carbon, Total Organic	SM 5310 C	ND U	mg/L	0.50	0.08	1	09/09/24 15:55	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Apex Laboratories	**Service Request:**	K2409245
Project:	A4I0826	**Date Collected:**	09/04/24
Sample Matrix:	Water	**Date Received:**	09/05/24
		Date Analyzed:	09/9/24
		Date Extracted:	NA

Matrix Spike Summary
Carbon, Total Organic

Sample Name:	MW-14	**Units:**	mg/L
Lab Code:	K2409245-003	**Basis:**	NA
Analysis Method:	SM 5310 C		
Prep Method:	None		

Matrix Spike
K2409245-003MS

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Carbon, Total Organic	1.90	26.8	25.0	100	83-117

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client:	Apex Laboratories	**Service Request:**	K2409245
Project	A4I0826	**Date Collected:**	09/04/24
Sample Matrix:	Water	**Date Received:**	09/05/24
		Date Analyzed:	09/09/24

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	MW-14	**Units:**	mg/L
Lab Code:	K2409245-003	**Basis:**	NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample K2409245-003DUP Result	Average	RPD	RPD Limit
Carbon, Total Organic	SM 5310 C	0.50	0.08	1.90	2.20	2.05	15 #	10

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Apex Laboratories	**Service Request:**	K2409245
Project:	A4I0826	**Date Analyzed:**	09/09/24
Sample Matrix:	Water	**Date Extracted:**	NA

Lab Control Sample Summary
Carbon, Total Organic

Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	853405

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K2409245-LCS	25.0	25.0	100	83-117

Air TECHNOLOGY
Laboratories, Inc.

September 26, 2024

LA Cert #04140
EPA Methods TO3, TO14A, TO15, 25C/3C, ASTM D1946, RSK-175

TX Cert T104704450-14-6
EPA Methods TO14A, TO15

UT Cert CA0133332015-3
EPA Methods TO3, TO14A, TO15, RSK-175

ALASKA CS-LAP 24-002
EPA Methods TO14A, TO15

Apex Laboratories
ATTN: Darrell Auvil
6700 S.W. Sandburg St.
Tigard, OR 97223

LABORATORY TEST RESULTS

Project Reference: A4I0826
Lab Number: R090604-01/08

Enclosed are results for sample(s) received 9/06/24 by Air Technology Laboratories. Samples were received intact and chilled to 5° C. Analyses were performed according to specifications on the chain of custody provided with the sample(s).

Report Narrative:

- Unless otherwise noted in the report, sample analyses were performed within method performance criteria and meet all requirements of the TNI Standards.
- The enclosed results relate only to the sample(s).

ATL appreciates the opportunity to provide testing services to your company. If you have any questions regarding these results, please call me at (626) 964-4032.

Sincerely,

Mark Johnson
Operations Manager
MJohnson@AirTechLabs.com

Note: The cover letter is an integral part of this analytical report.

SUBCONTRACT ORDER

Apex Laboratories

9/4/24 **A4I0826** R090604-01/08

SENDING LABORATORY:

Apex Laboratories
6700 S.W. Sandburg Street
Tigard, OR 97223
Phone: (503) 718-2323
Fax: (503) 336-0745
Project Manager: Darrell Auvil

RECEIVING LABORATORY:

Air Technology Laboratories, Inc
18501 E. Gale Ave Suite 130
City of Industry, CA 91748
Phone :(626) 964-4032
Fax: (626) 964-5832

01 **Sample Name: Ex** **Water** **Sampled: 09/04/24 14:21** (A4I0826-01)

Analysis	Due	Expires	Comments
RSK 175 Preserved (Meth, Eth, Eth) (Sub)	09/17/24 17:00	09/18/24 14:21	air tech lab
Containers Supplied:			
(D)40 mL VOA - HCL			
(E)40 mL VOA - HCL			
(F)40 mL VOA - HCL			

02 **Sample Name: MW-7** **Water** **Sampled: 09/04/24 14:22** (A4I0826-02)

Analysis	Due	Expires	Comments
RSK 175 Preserved (Meth, Eth, Eth) (Sub)	09/17/24 17:00	09/18/24 14:22	air tech lab
Containers Supplied:			
(D)40 mL VOA - HCL			
(E)40 mL VOA - HCL			
(F)40 mL VOA - HCL			

03 **Sample Name: MW-14** **Water** **Sampled: 09/04/24 12:31** (A4I0826-05)

Analysis	Due	Expires	Comments
RSK 175 Preserved (Meth, Eth, Eth) (Sub)	09/17/24 17:00	09/18/24 12:31	air tech lab
Containers Supplied:			
(D)40 mL VOA - HCL			
(E)40 mL VOA - HCL			
(F)40 mL VOA - HCL			

Standard TAT

5°C HO

Released By	Date	Received By	Date
	9/5/24	UPS (Shipper)	
UPS (Shipper)	9/6/24 10:12		9/6/24 10:12
Released By	Date	Received By	Date

SUBCONTRACT ORDER

Apex Laboratories

9/4/24 **A4I0826** R090604-01/08

04 **Sample Name: MW-26** **Water** **Sampled: 09/04/24 09:20** (A4I0826-08)

Analysis	Due	Expires	Comments
RSK 175 Preserved (Meth, Eth, Eth) (Sub)	09/17/24 17:00	09/18/24 09:20	air tech lab
Containers Supplied:			
(D)40 mL VOA - HCL			
(E)40 mL VOA - HCL			
(F)40 mL VOA - HCL			

05 **Sample Name: MW-24i** **Water** **Sampled: 09/04/24 13:33** (A4I0826-11)

Analysis	Due	Expires	Comments
RSK 175 Preserved (Meth, Eth, Eth) (Sub)	09/17/24 17:00	09/18/24 13:33	air tech lab
Containers Supplied:			
(D)40 mL VOA - HCL			
(E)40 mL VOA - HCL			
(F)40 mL VOA - HCL			

06 **Sample Name: MGMS1-3(43)** **Water** **Sampled: 09/04/24 10:24** (A4I0826-14)

Analysis	Due	Expires	Comments
RSK 175 Preserved (Meth, Eth, Eth) (Sub)	09/17/24 17:00	09/18/24 10:24	air tech lab
Containers Supplied:			
(D)40 mL VOA - HCL			
(E)40 mL VOA - HCL			
(F)40 mL VOA - HCL			

07 **Sample Name: MGMS2-4(40)** **Water** **Sampled: 09/04/24 09:02** (A4I0826-17)

Analysis	Due	Expires	Comments
RSK 175 Preserved (Meth, Eth, Eth) (Sub)	09/17/24 17:00	09/18/24 09:02	air tech lab
Containers Supplied:			
(D)40 mL VOA - HCL			
(E)40 mL VOA - HCL			
(F)40 mL VOA - HCL			

Standard TAT

5°C
#0

Released By	Date	Received By	Date
	9/5/24	UPS (Shipper)	
UPS (Shipper)	9/6/24 10:12		9/6/24 10:12
Released By	Date	Received By	Date

SUBCONTRACT ORDER

Apex Laboratories

9/4/24 **A4I0826** R090604-0108

08 **Sample Name: MGMS3-4(40)** **Water** **Sampled: 09/04/24 07:41** (A4I0826-18)

Analysis	Due	Expires	Comments
RSK 175 Preserved (Meth, Eth, Eth) (Sub)	09/17/24 17:00	09/18/24 07:41	air tech lab
Containers Supplied:			
(D)40 mL VOA - HCL			
(E)40 mL VOA - HCL			
(F)40 mL VOA - HCL			

Standard TAT

5°C
HO

9/5/24

Released By	Date	Received By	Date
UPS (Shipper)		UPS (Shipper)	
Released By	Date 9/6/24 10:12	Received By	Date 9/6/24 10:12

Client: Apex Laboratories
Attn: Darrell Auvil
Project Name: NA
Project No.: A4I0826
Date Received: 09/06/24
Matrix: Water
Reporting Units: ug/L

RSK175

Lab No.:	R090604-01		R090604-02		R090604-03		R090604-04	
Client Sample I.D.:	EX (A4I0826-01)		MW-7 (A4I0826-02)		MW-14 (A4I0826-05)		MW-26 (A4I0826-08)	
Date/Time Sampled:	9/4/24 14:21		9/4/24 14:22		9/4/24 12:31		9/4/24 9:20	
Date/Time Analyzed:	9/10/24 8:25		9/10/24 8:36		9/10/24 8:48		9/10/24 9:00	
QC Batch No.:	240909GC8A2		240909GC8A2		240909GC8A2		240909GC8A2	
Analyst Initials:	AS/KD		AS/KD		AS/KD		AS/KD	
Dilution Factor:	1.0		1.0		1.0		1.0	
ANALYTE	Result ug/L	RL ug/L	Result ug/L	RL ug/L	Result ug/L	RL ug/L	Result ug/L	RL ug/L
Ethene	ND	1.0	ND	1.0	ND	1.0	ND	1.0
Ethane	1.2	1.0	ND	1.0	ND	1.0	ND	1.0
Methane	10	1.0	190	1.0	22	1.0	220	1.0

ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ **Date** 9/25/24
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

Client: Apex Laboratories
Attn: Darrell Auvil
Project Name: NA
Project No.: A4I0826
Date Received: 09/06/24
Matrix: Water
Reporting Units: ug/L

RSK175

Lab No.:	R090604-05		R090604-06		R090604-07		R090604-08	
Client Sample I.D.:	MW-24i (A4I0826-11)		MGMS1-3(43) (A4I0826-14)		MGMS2-4(40) (A4I0826-17)		MGMS3-4(40) (A4I0826-18)	
Date/Time Sampled:	9/4/24 13:33		9/4/24 10:24		9/4/24 9:02		9/4/24 7:41	
Date/Time Analyzed:	9/10/24 9:12		9/10/24 9:24		9/10/24 9:36		9/10/24 9:48	
QC Batch No.:	240909GC8A2		240909GC8A2		240909GC8A2		240909GC8A2	
Analyst Initials:	AS/KD		AS/KD		AS/KD		AS/KD	
Dilution Factor:	1.0		1.0		1.0		1.0	
ANALYTE	Result ug/L	RL ug/L	Result ug/L	RL ug/L	Result ug/L	RL ug/L	Result ug/L	RL ug/L
Ethene	ND	1.0	ND	1.0	ND	1.0	5.6	1.0
Ethane	ND	1.0	13	1.0	10	1.0	51	1.0
Methane	ND	1.0	270	1.0	4.9	1.0	1,700	1.0

ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ **Date** 9/25/24
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

QC Batch No: 240909GC8A2
Matrix: Water
Reporting Units: ug/L

RSK 175
LABORATORY CONTROL SAMPLE SUMMARY

Lab No.:	METHOD BLANK			LCS		LCSD					
Date/Time Analyzed:	9/9/24 15:13			9/9/24 14:39		9/9/24 14:51					
Analyst Initials:	AS/KD			AS/KD		AS/KD					
Dilution Factor:	1.0			1.0		1.0			Limits		
ANALYTE	Result ug/L	RL ug/L	SPIKE AMT. ug/L	Result ug/L	% Rec.	Result ug/L	% Rec.	RPD %	Low %Rec	High %Rec	Max. RPD
Ethene	ND	1.0	1,150	1,010	88	934	82	7.5	70	130	30
Ethane	ND	1.0	1,200	1,100	90	1,020	83	7.2	70	130	30
Methane	ND	1.0	650	588	90	548	84	7.1	70	130	30

ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ **Date** 9/20/24

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Monday, September 23, 2024

Stephanie Bosze-Salisbury
GeoEngineers - Portland
5820 S Kelly Ave Unit B
Portland, OR 97239

RE: A4I0873 - Vancouver GWM 3Q24 - 19001-009-34

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A4I0873, which was received by the laboratory on 9/5/2024 at 2:13:00PM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: DAuvil@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of sample receipt, unless prior arrangements have been made.

Cooler Receipt Information
Acceptable Receipt Temperature is less than, or equal to, 6 degC (not frozen), or received on ice the same day as sampling.
(See Cooler Receipt Form for details)
Default Cooler 4.9 degC

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.
All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document(s) and updated by any subsequent written communications. This analytical report must be reproduced in its entirety.

Darrell Auvil, Client Services Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0873 - 09 23 24 1436**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-22i	A4I0873-01	Water	09/05/24 08:46	09/05/24 14:13
MW-21i-105	A4I0873-02	Water	09/05/24 09:39	09/05/24 14:13
MW-3	A4I0873-03	Water	09/05/24 10:31	09/05/24 14:13
MW-12	A4I0873-04	Water	09/05/24 11:24	09/05/24 14:13
MW-12 DUP	A4I0873-05	Water	09/05/24 11:24	09/05/24 14:13
MW-9	A4I0873-06	Water	09/05/24 12:47	09/05/24 14:13
MW-5	A4I0873-07	Water	09/05/24 11:17	09/05/24 14:13
MW-8	A4I0873-08	Water	09/05/24 10:37	09/05/24 14:13
MW-16	A4I0873-09	Water	09/05/24 09:13	09/05/24 14:13
MW-18i	A4I0873-10	Water	09/05/24 08:39	09/05/24 14:13
MW-19i	A4I0873-11	Water	09/05/24 12:51	09/05/24 14:13
MW-20i	A4I0873-12	Water	09/05/24 09:57	09/05/24 14:13

Apex Laboratories



Darrell Auvil, Client Services Manager

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6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-34	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0873 - 09 23 24 1436

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-22i (A4I0873-01)				**Matrix: Water**		**Batch: 24I0354**		
Bromobenzene	ND	---	0.500	ug/L	1	09/12/24 14:56	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	09/12/24 14:56	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	09/12/24 14:56	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	09/12/24 14:56	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	09/12/24 14:56	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	09/12/24 14:56	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	09/12/24 14:56	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	09/12/24 14:56	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	09/12/24 14:56	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	09/12/24 14:56	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	09/12/24 14:56	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	09/12/24 14:56	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	09/12/24 14:56	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	09/12/24 14:56	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	09/12/24 14:56	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	09/12/24 14:56	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	09/12/24 14:56	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	09/12/24 14:56	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	09/12/24 14:56	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	09/12/24 14:56	EPA 8260D	
1,1-Dichloroethane	**0.430**	---	0.400	ug/L	1	09/12/24 14:56	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	09/12/24 14:56	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	09/12/24 14:56	EPA 8260D	
cis-1,2-Dichloroethene	**14.0**	---	0.400	ug/L	1	09/12/24 14:56	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	09/12/24 14:56	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	09/12/24 14:56	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	09/12/24 14:56	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	09/12/24 14:56	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	09/12/24 14:56	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/12/24 14:56	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/12/24 14:56	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	09/12/24 14:56	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	09/12/24 14:56	EPA 8260D	

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Darrell Auvil, Client Services Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-34	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0873 - 09 23 24 1436

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-22i (A4I0873-01)				**Matrix: Water**		**Batch: 24I0354**		
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	09/12/24 14:56	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	09/12/24 14:56	EPA 8260D	
Tetrachloroethene (PCE)	**1.78**	---	0.400	ug/L	1	09/12/24 14:56	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	09/12/24 14:56	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	09/12/24 14:56	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	09/12/24 14:56	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	09/12/24 14:56	EPA 8260D	
Trichloroethene (TCE)	**3.53**	---	0.400	ug/L	1	09/12/24 14:56	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	09/12/24 14:56	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	09/12/24 14:56	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	09/12/24 14:56	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery: 94 %*		*Limits: 80-120 %*	*1*	*09/12/24 14:56*	*EPA 8260D*	
Toluene-d8 (Surr)			*101 %*	*80-120 %*	*1*	*09/12/24 14:56*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*101 %*	*80-120 %*	*1*	*09/12/24 14:56*	*EPA 8260D*	
MW-21i-105 (A4I0873-02)				**Matrix: Water**		**Batch: 24I0354**		
Bromobenzene	ND	---	0.500	ug/L	1	09/12/24 15:17	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	09/12/24 15:17	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	09/12/24 15:17	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	09/12/24 15:17	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	09/12/24 15:17	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	09/12/24 15:17	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	09/12/24 15:17	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	09/12/24 15:17	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	09/12/24 15:17	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	09/12/24 15:17	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	09/12/24 15:17	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	09/12/24 15:17	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	09/12/24 15:17	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	09/12/24 15:17	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	09/12/24 15:17	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	09/12/24 15:17	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	09/12/24 15:17	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	09/12/24 15:17	EPA 8260D	

Apex Laboratories



Darrell Auvil, Client Services Manager

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Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-34	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0873 - 09 23 24 1436

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-21i-105 (A4I0873-02)				**Matrix: Water**		**Batch: 24I0354**		
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	09/12/24 15:17	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	09/12/24 15:17	EPA 8260D	
1,1-Dichloroethane	**0.700**	---	0.400	ug/L	1	09/12/24 15:17	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	09/12/24 15:17	EPA 8260D	
1,1-Dichloroethene	**0.410**	---	0.400	ug/L	1	09/12/24 15:17	EPA 8260D	
cis-1,2-Dichloroethene	**18.5**	---	0.400	ug/L	1	09/12/24 15:17	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	09/12/24 15:17	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	09/12/24 15:17	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	09/12/24 15:17	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	09/12/24 15:17	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	09/12/24 15:17	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/12/24 15:17	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/12/24 15:17	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	09/12/24 15:17	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	09/12/24 15:17	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	09/12/24 15:17	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	09/12/24 15:17	EPA 8260D	
Tetrachloroethene (PCE)	**31.0**	---	0.400	ug/L	1	09/12/24 15:17	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	09/12/24 15:17	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	09/12/24 15:17	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	09/12/24 15:17	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	09/12/24 15:17	EPA 8260D	
Trichloroethene (TCE)	**11.8**	---	0.400	ug/L	1	09/12/24 15:17	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	09/12/24 15:17	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	09/12/24 15:17	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	09/12/24 15:17	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*94 %*	*Limits:*	*80-120 %*	*1*	*09/12/24 15:17*	*EPA 8260D*
Toluene-d8 (Surr)			*100 %*		*80-120 %*	*1*	*09/12/24 15:17*	*EPA 8260D*
4-Bromofluorobenzene (Surr)			*102 %*		*80-120 %*	*1*	*09/12/24 15:17*	*EPA 8260D*
MW-3 (A4I0873-03)				**Matrix: Water**		**Batch: 24I0354**		
Bromobenzene	ND	---	0.500	ug/L	1	09/12/24 15:39	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	09/12/24 15:39	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	09/12/24 15:39	EPA 8260D	

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Darrell Auvil, Client Services Manager

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0873 - 09 23 24 1436**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-3 (A4I0873-03)				**Matrix: Water**		**Batch: 24I0354**		
Bromoform	ND	---	1.00	ug/L	1	09/12/24 15:39	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	09/12/24 15:39	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	09/12/24 15:39	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	09/12/24 15:39	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	09/12/24 15:39	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	09/12/24 15:39	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	09/12/24 15:39	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	09/12/24 15:39	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	09/12/24 15:39	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	09/12/24 15:39	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	09/12/24 15:39	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	09/12/24 15:39	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	09/12/24 15:39	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	09/12/24 15:39	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	09/12/24 15:39	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	09/12/24 15:39	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	09/12/24 15:39	EPA 8260D	
1,1-Dichloroethane	**1.92**	---	0.400	ug/L	1	09/12/24 15:39	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	09/12/24 15:39	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	09/12/24 15:39	EPA 8260D	
cis-1,2-Dichloroethene	**43.4**	---	0.400	ug/L	1	09/12/24 15:39	EPA 8260D	
trans-1,2-Dichloroethene	**0.640**	---	0.400	ug/L	1	09/12/24 15:39	EPA 8260D	
1,2-Dichloropropane	**0.780**	---	0.500	ug/L	1	09/12/24 15:39	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	09/12/24 15:39	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	09/12/24 15:39	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	09/12/24 15:39	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/12/24 15:39	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/12/24 15:39	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	09/12/24 15:39	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	09/12/24 15:39	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	09/12/24 15:39	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	09/12/24 15:39	EPA 8260D	
Tetrachloroethene (PCE)	**118**	---	0.400	ug/L	1	09/12/24 15:39	EPA 8260D	

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Darrell Auvil, Client Services Manager

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ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-34	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0873 - 09 23 24 1436

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-3 (A4I0873-03)				**Matrix: Water**		**Batch: 24I0354**		
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	09/12/24 15:39	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	09/12/24 15:39	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	09/12/24 15:39	EPA 8260D	
1,1,1-Trichloroethane	**1.14**	---	0.400	ug/L	1	09/12/24 15:39	EPA 8260D	
Trichloroethene (TCE)	**23.8**	---	0.400	ug/L	1	09/12/24 15:39	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	09/12/24 15:39	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	09/12/24 15:39	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	09/12/24 15:39	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*92 %*	*Limits: 80-120 %*	*1*	*09/12/24 15:39*	*EPA 8260D*	
Toluene-d8 (Surr)			*100 %*	*80-120 %*	*1*	*09/12/24 15:39*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*101 %*	*80-120 %*	*1*	*09/12/24 15:39*	*EPA 8260D*	
MW-12 (A4I0873-04)				**Matrix: Water**		**Batch: 24I0354**		
Vinyl chloride	**483**	---	2.00	ug/L	10	09/12/24 18:11	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*92 %*	*Limits: 80-120 %*	*1*	*09/12/24 18:11*	*EPA 8260D*	
Toluene-d8 (Surr)			*101 %*	*80-120 %*	*1*	*09/12/24 18:11*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*104 %*	*80-120 %*	*1*	*09/12/24 18:11*	*EPA 8260D*	
MW-12 (A4I0873-04RE1)				**Matrix: Water**		**Batch: 24I0402**		
Bromobenzene	ND	---	0.500	ug/L	1	09/14/24 05:15	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	09/14/24 05:15	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	09/14/24 05:15	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	09/14/24 05:15	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	09/14/24 05:15	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	09/14/24 05:15	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	09/14/24 05:15	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	09/14/24 05:15	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	09/14/24 05:15	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	09/14/24 05:15	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	09/14/24 05:15	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	09/14/24 05:15	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	09/14/24 05:15	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	09/14/24 05:15	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	09/14/24 05:15	EPA 8260D	

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Darrell Auvil, Client Services Manager

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0873 - 09 23 24 1436**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-12 (A4I0873-04RE1)				**Matrix: Water**		**Batch: 24I0402**		
Dibromomethane	ND	---	1.00	ug/L	1	09/14/24 05:15	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	09/14/24 05:15	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	09/14/24 05:15	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	09/14/24 05:15	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	09/14/24 05:15	EPA 8260D	
1,1-Dichloroethane	**66.7**	---	0.400	ug/L	1	09/14/24 05:15	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	09/14/24 05:15	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	09/14/24 05:15	EPA 8260D	
cis-1,2-Dichloroethene	**33.8**	---	0.400	ug/L	1	09/14/24 05:15	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	09/14/24 05:15	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	09/14/24 05:15	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	09/14/24 05:15	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	09/14/24 05:15	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	09/14/24 05:15	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/14/24 05:15	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/14/24 05:15	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	09/14/24 05:15	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	09/14/24 05:15	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	09/14/24 05:15	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	09/14/24 05:15	EPA 8260D	
Tetrachloroethene (PCE)	**0.630**	---	0.400	ug/L	1	09/14/24 05:15	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	09/14/24 05:15	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	09/14/24 05:15	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	09/14/24 05:15	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	09/14/24 05:15	EPA 8260D	
Trichloroethene (TCE)	**0.600**	---	0.400	ug/L	1	09/14/24 05:15	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	09/14/24 05:15	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	09/14/24 05:15	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery: 93 %*		*Limits: 80-120 %*	*1*	*09/14/24 05:15*	*EPA 8260D*	
Toluene-d8 (Surr)			*101 %*	*80-120 %*	*1*	*09/14/24 05:15*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*105 %*	*80-120 %*	*1*	*09/14/24 05:15*	*EPA 8260D*	
MW-12 DUP (A4I0873-05)				**Matrix: Water**		**Batch: 24I0354**		
Vinyl chloride	**375**	---	2.00	ug/L	10	09/12/24 18:33	EPA 8260D	

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Darrell Auvil, Client Services Manager

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0873 - 09 23 24 1436**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-12 DUP (A4I0873-05)				**Matrix: Water**		**Batch: 24I0354**		
Surrogate: 1,4-Difluorobenzene (Surr)			*Recovery: 91 %*	*Limits: 80-120 %*	*1*	*09/12/24 18:33*	*EPA 8260D*	
Toluene-d8 (Surr)			*100 %*	*80-120 %*	*1*	*09/12/24 18:33*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*100 %*	*80-120 %*	*1*	*09/12/24 18:33*	*EPA 8260D*	
MW-12 DUP (A4I0873-05RE1)				**Matrix: Water**		**Batch: 24I0402**		
Bromobenzene	ND	---	0.500	ug/L	1	09/14/24 05:36	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	09/14/24 05:36	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	09/14/24 05:36	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	09/14/24 05:36	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	09/14/24 05:36	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	09/14/24 05:36	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	09/14/24 05:36	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	09/14/24 05:36	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	09/14/24 05:36	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	09/14/24 05:36	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	09/14/24 05:36	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	09/14/24 05:36	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	09/14/24 05:36	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	09/14/24 05:36	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	09/14/24 05:36	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	09/14/24 05:36	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	09/14/24 05:36	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	09/14/24 05:36	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	09/14/24 05:36	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	09/14/24 05:36	EPA 8260D	
1,1-Dichloroethane	**64.5**	---	0.400	ug/L	1	09/14/24 05:36	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	09/14/24 05:36	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	09/14/24 05:36	EPA 8260D	
cis-1,2-Dichloroethene	**32.4**	---	0.400	ug/L	1	09/14/24 05:36	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	09/14/24 05:36	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	09/14/24 05:36	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	09/14/24 05:36	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	09/14/24 05:36	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	09/14/24 05:36	EPA 8260D	

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ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-34	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0873 - 09 23 24 1436

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-12 DUP (A4I0873-05RE1)				**Matrix: Water**		**Batch: 24I0402**		
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/14/24 05:36	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/14/24 05:36	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	09/14/24 05:36	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	09/14/24 05:36	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	09/14/24 05:36	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	09/14/24 05:36	EPA 8260D	
Tetrachloroethene (PCE)	**0.560**	---	0.400	ug/L	1	09/14/24 05:36	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	09/14/24 05:36	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	09/14/24 05:36	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	09/14/24 05:36	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	09/14/24 05:36	EPA 8260D	
Trichloroethene (TCE)	**0.640**	---	0.400	ug/L	1	09/14/24 05:36	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	09/14/24 05:36	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	09/14/24 05:36	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*89 %*	*Limits:*	*80-120 %*	*1*	*09/14/24 05:36*	*EPA 8260D*	
Toluene-d8 (Surr)			*101 %*		*80-120 %*	*1*	*09/14/24 05:36*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*102 %*		*80-120 %*	*1*	*09/14/24 05:36*	*EPA 8260D*	
MW-9 (A4I0873-06)				**Matrix: Water**		**Batch: 24I0354**		
Bromobenzene	ND	---	0.500	ug/L	1	09/12/24 16:01	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	09/12/24 16:01	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	09/12/24 16:01	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	09/12/24 16:01	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	09/12/24 16:01	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	09/12/24 16:01	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	09/12/24 16:01	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	09/12/24 16:01	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	09/12/24 16:01	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	09/12/24 16:01	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	09/12/24 16:01	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	09/12/24 16:01	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	09/12/24 16:01	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	09/12/24 16:01	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	09/12/24 16:01	EPA 8260D	

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Darrell Auvil, Client Services Manager

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Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0873 - 09 23 24 1436**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-9 (A4I0873-06)				**Matrix: Water**		**Batch: 24I0354**		
Dibromomethane	ND	---	1.00	ug/L	1	09/12/24 16:01	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	09/12/24 16:01	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	09/12/24 16:01	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	09/12/24 16:01	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	09/12/24 16:01	EPA 8260D	
1,1-Dichloroethane	**0.540**	---	0.400	ug/L	1	09/12/24 16:01	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	09/12/24 16:01	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	09/12/24 16:01	EPA 8260D	
cis-1,2-Dichloroethene	**15.0**	---	0.400	ug/L	1	09/12/24 16:01	EPA 8260D	
trans-1,2-Dichloroethene	**1.08**	---	0.400	ug/L	1	09/12/24 16:01	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	09/12/24 16:01	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	09/12/24 16:01	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	09/12/24 16:01	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	09/12/24 16:01	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/12/24 16:01	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/12/24 16:01	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	09/12/24 16:01	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	09/12/24 16:01	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	09/12/24 16:01	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	09/12/24 16:01	EPA 8260D	
Tetrachloroethene (PCE)	**151**	---	0.400	ug/L	1	09/12/24 16:01	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	09/12/24 16:01	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	09/12/24 16:01	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	09/12/24 16:01	EPA 8260D	
1,1,1-Trichloroethane	**2.23**	---	0.400	ug/L	1	09/12/24 16:01	EPA 8260D	
Trichloroethene (TCE)	**40.5**	---	0.400	ug/L	1	09/12/24 16:01	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	09/12/24 16:01	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	09/12/24 16:01	EPA 8260D	
Vinyl chloride	**0.860**	---	0.200	ug/L	1	09/12/24 16:01	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery: 96 %*		*Limits: 80-120 %*	*1*	*09/12/24 16:01*	*EPA 8260D*	
Toluene-d8 (Surr)		*100 %*		*80-120 %*	*1*	*09/12/24 16:01*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)		*103 %*		*80-120 %*	*1*	*09/12/24 16:01*	*EPA 8260D*	
MW-5 (A4I0873-07)				**Matrix: Water**		**Batch: 24I0401**		

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Darrell Auvil, Client Services Manager

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0873 - 09 23 24 1436**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-5 (A4I0873-07)				**Matrix: Water**		**Batch: 24I0401**		
Bromobenzene	ND	---	0.500	ug/L	1	09/13/24 11:55	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	09/13/24 11:55	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	09/13/24 11:55	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	09/13/24 11:55	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	09/13/24 11:55	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	09/13/24 11:55	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	09/13/24 11:55	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	09/13/24 11:55	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	09/13/24 11:55	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	09/13/24 11:55	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	09/13/24 11:55	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	09/13/24 11:55	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	09/13/24 11:55	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	09/13/24 11:55	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	09/13/24 11:55	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	09/13/24 11:55	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	09/13/24 11:55	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	09/13/24 11:55	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	09/13/24 11:55	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	09/13/24 11:55	EPA 8260D	
1,1-Dichloroethane	**0.980**	---	0.400	ug/L	1	09/13/24 11:55	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	09/13/24 11:55	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	09/13/24 11:55	EPA 8260D	
cis-1,2-Dichloroethene	**3.16**	---	0.400	ug/L	1	09/13/24 11:55	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	09/13/24 11:55	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	09/13/24 11:55	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	09/13/24 11:55	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	09/13/24 11:55	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	09/13/24 11:55	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/13/24 11:55	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/13/24 11:55	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	09/13/24 11:55	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	09/13/24 11:55	EPA 8260D	

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503-718-2323
ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0873 - 09 23 24 1436**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-5 (A4I0873-07)				**Matrix: Water**		**Batch: 24I0401**		
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	09/13/24 11:55	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	09/13/24 11:55	EPA 8260D	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	09/13/24 11:55	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	09/13/24 11:55	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	09/13/24 11:55	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	09/13/24 11:55	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	09/13/24 11:55	EPA 8260D	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	09/13/24 11:55	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	09/13/24 11:55	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	09/13/24 11:55	EPA 8260D	
Vinyl chloride	**1.84**	---	0.200	ug/L	1	09/13/24 11:55	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*94 %*	*Limits:*	*80-120 %*	*1*	*09/13/24 11:55*	*EPA 8260D*	
Toluene-d8 (Surr)			*100 %*		*80-120 %*	*1*	*09/13/24 11:55*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*99 %*		*80-120 %*	*1*	*09/13/24 11:55*	*EPA 8260D*	
MW-8 (A4I0873-08)				**Matrix: Water**		**Batch: 24I0401**		
Bromobenzene	ND	---	0.500	ug/L	1	09/13/24 12:17	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	09/13/24 12:17	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	09/13/24 12:17	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	09/13/24 12:17	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	09/13/24 12:17	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	09/13/24 12:17	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	09/13/24 12:17	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	09/13/24 12:17	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	09/13/24 12:17	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	09/13/24 12:17	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	09/13/24 12:17	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	09/13/24 12:17	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	09/13/24 12:17	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	09/13/24 12:17	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	09/13/24 12:17	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	09/13/24 12:17	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	09/13/24 12:17	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	09/13/24 12:17	EPA 8260D	

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503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-34	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0873 - 09 23 24 1436

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-8 (A4I0873-08)				**Matrix: Water**		**Batch: 24I0401**		
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	09/13/24 12:17	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	09/13/24 12:17	EPA 8260D	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	09/13/24 12:17	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	09/13/24 12:17	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	09/13/24 12:17	EPA 8260D	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	09/13/24 12:17	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	09/13/24 12:17	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	09/13/24 12:17	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	09/13/24 12:17	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	09/13/24 12:17	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	09/13/24 12:17	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/13/24 12:17	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/13/24 12:17	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	09/13/24 12:17	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	09/13/24 12:17	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	09/13/24 12:17	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	09/13/24 12:17	EPA 8260D	
Tetrachloroethene (PCE)	**2.71**	---	0.400	ug/L	1	09/13/24 12:17	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	09/13/24 12:17	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	09/13/24 12:17	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	09/13/24 12:17	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	09/13/24 12:17	EPA 8260D	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	09/13/24 12:17	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	09/13/24 12:17	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	09/13/24 12:17	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	09/13/24 12:17	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*93 %*	*Limits:*	*80-120 %*	*1*	*09/13/24 12:17*	*EPA 8260D*	
Toluene-d8 (Surr)			*99 %*		*80-120 %*	*1*	*09/13/24 12:17*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*103 %*		*80-120 %*	*1*	*09/13/24 12:17*	*EPA 8260D*	
MW-16 (A4I0873-09)				**Matrix: Water**		**Batch: 24I0401**		
Bromobenzene	ND	---	0.500	ug/L	1	09/13/24 12:38	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	09/13/24 12:38	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	09/13/24 12:38	EPA 8260D	

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Darrell Auvil, Client Services Manager

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ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-34	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0873 - 09 23 24 1436

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-16 (A4I0873-09)				**Matrix: Water**		**Batch: 24I0401**		
Bromoform	ND	---	1.00	ug/L	1	09/13/24 12:38	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	09/13/24 12:38	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	09/13/24 12:38	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	09/13/24 12:38	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	09/13/24 12:38	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	09/13/24 12:38	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	09/13/24 12:38	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	09/13/24 12:38	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	09/13/24 12:38	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	09/13/24 12:38	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	09/13/24 12:38	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	09/13/24 12:38	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	09/13/24 12:38	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	09/13/24 12:38	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	09/13/24 12:38	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	09/13/24 12:38	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	09/13/24 12:38	EPA 8260D	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	09/13/24 12:38	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	09/13/24 12:38	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	09/13/24 12:38	EPA 8260D	
cis-1,2-Dichloroethene	**29.8**	---	0.400	ug/L	1	09/13/24 12:38	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	09/13/24 12:38	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	09/13/24 12:38	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	09/13/24 12:38	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	09/13/24 12:38	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	09/13/24 12:38	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/13/24 12:38	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/13/24 12:38	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	09/13/24 12:38	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	09/13/24 12:38	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	09/13/24 12:38	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	09/13/24 12:38	EPA 8260D	
Tetrachloroethene (PCE)	**66.6**	---	0.400	ug/L	1	09/13/24 12:38	EPA 8260D	

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Darrell Auvil, Client Services Manager

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503-718-2323
ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0873 - 09 23 24 1436**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-16 (A4I0873-09)				**Matrix: Water**		**Batch: 24I0401**		
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	09/13/24 12:38	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	09/13/24 12:38	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	09/13/24 12:38	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	09/13/24 12:38	EPA 8260D	
Trichloroethene (TCE)	**6.83**	---	0.400	ug/L	1	09/13/24 12:38	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	09/13/24 12:38	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	09/13/24 12:38	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	09/13/24 12:38	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*94 %*	*Limits:* *80-120 %*	*1*	*09/13/24 12:38*	*EPA 8260D*	
Toluene-d8 (Surr)			*101 %*	*80-120 %*	*1*	*09/13/24 12:38*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*103 %*	*80-120 %*	*1*	*09/13/24 12:38*	*EPA 8260D*	
MW-18i (A4I0873-10RE1)				**Matrix: Water**		**Batch: 24I0539**		
Bromobenzene	ND	---	0.500	ug/L	1	09/18/24 09:57	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	09/18/24 09:57	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	09/18/24 09:57	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	09/18/24 09:57	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	09/18/24 09:57	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	09/18/24 09:57	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	09/18/24 09:57	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	09/18/24 09:57	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	09/18/24 09:57	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	09/18/24 09:57	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	09/18/24 09:57	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	09/18/24 09:57	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	09/18/24 09:57	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	09/18/24 09:57	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	09/18/24 09:57	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	09/18/24 09:57	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	09/18/24 09:57	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	09/18/24 09:57	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	09/18/24 09:57	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	09/18/24 09:57	EPA 8260D	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	09/18/24 09:57	EPA 8260D	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0873 - 09 23 24 1436**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-18i (A4I0873-10RE1)				**Matrix: Water**		**Batch: 24I0539**		
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	09/18/24 09:57	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	09/18/24 09:57	EPA 8260D	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	09/18/24 09:57	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	09/18/24 09:57	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	09/18/24 09:57	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	09/18/24 09:57	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	09/18/24 09:57	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	09/18/24 09:57	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/18/24 09:57	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/18/24 09:57	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	09/18/24 09:57	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	09/18/24 09:57	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	09/18/24 09:57	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	09/18/24 09:57	EPA 8260D	
Tetrachloroethene (PCE)	**1.15**	---	0.400	ug/L	1	09/18/24 09:57	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	09/18/24 09:57	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	09/18/24 09:57	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	09/18/24 09:57	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	09/18/24 09:57	EPA 8260D	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	09/18/24 09:57	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	09/18/24 09:57	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	09/18/24 09:57	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	09/18/24 09:57	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*92 %*	*Limits:*	*80-120 %*	*1*	*09/18/24 09:57*	*EPA 8260D*	
Toluene-d8 (Surr)			*100 %*		*80-120 %*	*1*	*09/18/24 09:57*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*102 %*		*80-120 %*	*1*	*09/18/24 09:57*	*EPA 8260D*	
MW-19i (A4I0873-11)				**Matrix: Water**		**Batch: 24I0401**		
Bromobenzene	ND	---	0.500	ug/L	1	09/13/24 13:22	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	09/13/24 13:22	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	09/13/24 13:22	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	09/13/24 13:22	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	09/13/24 13:22	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	09/13/24 13:22	EPA 8260D	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0873 - 09 23 24 1436**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-19i (A4I0873-11)				**Matrix: Water**		**Batch: 24I0401**		
Chlorobenzene	ND	---	0.500	ug/L	1	09/13/24 13:22	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	09/13/24 13:22	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	09/13/24 13:22	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	09/13/24 13:22	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	09/13/24 13:22	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	09/13/24 13:22	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	09/13/24 13:22	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	09/13/24 13:22	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	09/13/24 13:22	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	09/13/24 13:22	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	09/13/24 13:22	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	09/13/24 13:22	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	09/13/24 13:22	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	09/13/24 13:22	EPA 8260D	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	09/13/24 13:22	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	09/13/24 13:22	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	09/13/24 13:22	EPA 8260D	
cis-1,2-Dichloroethene	**0.540**	---	0.400	ug/L	1	09/13/24 13:22	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	09/13/24 13:22	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	09/13/24 13:22	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	09/13/24 13:22	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	09/13/24 13:22	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	09/13/24 13:22	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/13/24 13:22	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/13/24 13:22	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	09/13/24 13:22	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	09/13/24 13:22	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	09/13/24 13:22	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	09/13/24 13:22	EPA 8260D	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	09/13/24 13:22	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	09/13/24 13:22	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	09/13/24 13:22	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	09/13/24 13:22	EPA 8260D	

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-34	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0873 - 09 23 24 1436

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-19i (A4I0873-11)				**Matrix: Water**		**Batch: 24I0401**		
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	09/13/24 13:22	EPA 8260D	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	09/13/24 13:22	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	09/13/24 13:22	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	09/13/24 13:22	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	09/13/24 13:22	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*94 %*	*Limits:*	*80-120 %*	*1*	*09/13/24 13:22*	*EPA 8260D*
Toluene-d8 (Surr)			*101 %*		*80-120 %*	*1*	*09/13/24 13:22*	*EPA 8260D*
4-Bromofluorobenzene (Surr)			*105 %*		*80-120 %*	*1*	*09/13/24 13:22*	*EPA 8260D*
MW-20i (A4I0873-12)				**Matrix: Water**		**Batch: 24I0401**		
Bromobenzene	ND	---	0.500	ug/L	1	09/13/24 13:44	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	09/13/24 13:44	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	09/13/24 13:44	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	09/13/24 13:44	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	09/13/24 13:44	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	09/13/24 13:44	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	09/13/24 13:44	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	09/13/24 13:44	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	09/13/24 13:44	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	09/13/24 13:44	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	09/13/24 13:44	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	09/13/24 13:44	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	09/13/24 13:44	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	09/13/24 13:44	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	09/13/24 13:44	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	09/13/24 13:44	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	09/13/24 13:44	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	09/13/24 13:44	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	09/13/24 13:44	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	09/13/24 13:44	EPA 8260D	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	09/13/24 13:44	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	09/13/24 13:44	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	09/13/24 13:44	EPA 8260D	
cis-1,2-Dichloroethene	**6.30**	---	0.400	ug/L	1	09/13/24 13:44	EPA 8260D	

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-34	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0873 - 09 23 24 1436

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-20i (A4I0873-12)				**Matrix: Water**		**Batch: 24I0401**		
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	09/13/24 13:44	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	09/13/24 13:44	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	09/13/24 13:44	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	09/13/24 13:44	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	09/13/24 13:44	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/13/24 13:44	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/13/24 13:44	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	09/13/24 13:44	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	09/13/24 13:44	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	09/13/24 13:44	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	09/13/24 13:44	EPA 8260D	
Tetrachloroethene (PCE)	**1.47**	---	0.400	ug/L	1	09/13/24 13:44	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	09/13/24 13:44	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	09/13/24 13:44	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	09/13/24 13:44	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	09/13/24 13:44	EPA 8260D	
Trichloroethene (TCE)	**0.930**	---	0.400	ug/L	1	09/13/24 13:44	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	09/13/24 13:44	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	09/13/24 13:44	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	09/13/24 13:44	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*91 %*	*Limits:* *80-120 %*	*1*	*09/13/24 13:44*	*EPA 8260D*	
Toluene-d8 (Surr)			*99 %*	*80-120 %*	*1*	*09/13/24 13:44*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*100 %*	*80-120 %*	*1*	*09/13/24 13:44*	*EPA 8260D*	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0873 - 09 23 24 1436**

ANALYTICAL SAMPLE RESULTS

Ammonia by Gas Diffusion and Colorimetric Detection

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-22i (A4I0873-01)				**Matrix: Water**		**Batch: 24I0315**		
Ammonia as N	**0.369**	---	0.0200	mg/L	1	09/11/24 16:44	SM 4500-NH3 G	
MW-21i-105 (A4I0873-02)				**Matrix: Water**		**Batch: 24I0315**		
Ammonia as N	**1.02**	---	0.0200	mg/L	1	09/11/24 16:47	SM 4500-NH3 G	
MW-3 (A4I0873-03)				**Matrix: Water**		**Batch: 24I0357**		
Ammonia as N	**1.75**	---	0.0200	mg/L	1	09/12/24 12:18	SM 4500-NH3 G	
MW-12 (A4I0873-04)				**Matrix: Water**		**Batch: 24I0357**		
Ammonia as N	**170**	---	1.00	mg/L	50	09/12/24 12:20	SM 4500-NH3 G	
MW-12 DUP (A4I0873-05)				**Matrix: Water**		**Batch: 24I0357**		
Ammonia as N	**174**	---	1.00	mg/L	50	09/12/24 12:21	SM 4500-NH3 G	
MW-9 (A4I0873-06)				**Matrix: Water**		**Batch: 24I0357**		
Ammonia as N	**2.95**	---	0.0200	mg/L	1	09/12/24 12:24	SM 4500-NH3 G	
MW-5 (A4I0873-07RE1)				**Matrix: Water**		**Batch: 24I0377**		
Ammonia as N	**8.28**	---	0.100	mg/L	5	09/12/24 13:48	SM 4500-NH3 G	
MW-8 (A4I0873-08)				**Matrix: Water**		**Batch: 24I0357**		
Ammonia as N	ND	---	0.0200	mg/L	1	09/12/24 12:35	SM 4500-NH3 G	
MW-16 (A4I0873-09)				**Matrix: Water**		**Batch: 24I0357**		
Ammonia as N	ND	---	0.0200	mg/L	1	09/12/24 12:36	SM 4500-NH3 G	
MW-18i (A4I0873-10)				**Matrix: Water**		**Batch: 24I0357**		
Ammonia as N	ND	---	0.0200	mg/L	1	09/12/24 12:38	SM 4500-NH3 G	
MW-19i (A4I0873-11)				**Matrix: Water**		**Batch: 24I0357**		
Ammonia as N	**0.269**	---	0.0200	mg/L	1	09/12/24 12:41	SM 4500-NH3 G	
MW-20i (A4I0873-12)				**Matrix: Water**		**Batch: 24I0357**		
Ammonia as N	ND	---	0.0200	mg/L	1	09/12/24 12:42	SM 4500-NH3 G	

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ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-34	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0873 - 09 23 24 1436

ANALYTICAL SAMPLE RESULTS

Anions by Ion Chromatography

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-22i (A4I0873-01)				**Matrix: Water**				
Batch: 24I0161								
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	09/06/24 20:57	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	09/06/24 20:57	EPA 300.0	
MW-21i-105 (A4I0873-02)				**Matrix: Water**				
Batch: 24I0161								
Nitrate-Nitrogen	**1.28**	---	0.250	mg/L	1	09/06/24 21:40	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	09/06/24 21:40	EPA 300.0	
MW-3 (A4I0873-03)				**Matrix: Water**				
Batch: 24I0161								
Nitrate-Nitrogen	**1.23**	---	0.250	mg/L	1	09/06/24 22:23	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	09/06/24 22:23	EPA 300.0	
MW-12 (A4I0873-04)				**Matrix: Water**				
Batch: 24I0161								
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	09/07/24 00:54	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	09/07/24 00:54	EPA 300.0	
MW-12 DUP (A4I0873-05)				**Matrix: Water**				
Batch: 24I0161								
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	09/07/24 01:16	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	09/07/24 01:16	EPA 300.0	
MW-9 (A4I0873-06)				**Matrix: Water**				
Batch: 24I0161								
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	09/07/24 02:20	EPA 300.0	
MW-9 (A4I0873-06RE1)				**Matrix: Water**				
Batch: 24I0161								
Nitrate-Nitrogen	**84.4**	---	5.00	mg/L	20	09/06/24 17:21	EPA 300.0	
MW-5 (A4I0873-07)				**Matrix: Water**				
Batch: 24I0161								
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	09/06/24 23:49	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	09/06/24 23:49	EPA 300.0	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0873 - 09 23 24 1436**

ANALYTICAL SAMPLE RESULTS

Anions by Ion Chromatography

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-8 (A4I0873-08)				**Matrix: Water**				
Batch: 24I0161								
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	09/06/24 23:06	EPA 300.0	
MW-8 (A4I0873-08RE1)				**Matrix: Water**				
Batch: 24I0161								
Nitrate-Nitrogen	**142**	---	12.5	mg/L	50	09/06/24 17:43	EPA 300.0	
MW-16 (A4I0873-09)				**Matrix: Water**				
Batch: 24I0161								
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	09/06/24 19:09	EPA 300.0	
MW-16 (A4I0873-09RE1)				**Matrix: Water**				
Batch: 24I0161								
Nitrate-Nitrogen	**14.1**	---	1.25	mg/L	5	09/06/24 18:04	EPA 300.0	
MW-18i (A4I0873-10)				**Matrix: Water**				
Batch: 24I0161								
Nitrate-Nitrogen	**1.42**	---	0.250	mg/L	1	09/06/24 17:00	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	09/06/24 17:00	EPA 300.0	
MW-19i (A4I0873-11)				**Matrix: Water**				
Batch: 24I0161								
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	09/07/24 02:42	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	09/07/24 02:42	EPA 300.0	
MW-20i (A4I0873-12)				**Matrix: Water**				
Batch: 24I0161								
Nitrate-Nitrogen	**0.476**	---	0.250	mg/L	1	09/06/24 22:01	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	09/06/24 22:01	EPA 300.0	

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GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0873 - 09 23 24 1436**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0354 - EPA 5030C							**Water**					
Blank (24I0354-BLK1)			Prepared: 09/12/24 08:00 Analyzed: 09/12/24 09:52									
EPA 8260D												
Bromobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Bromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromodichloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromoform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromomethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Carbon tetrachloride	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Chloroethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Chloroform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chloromethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
2-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
4-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Dibromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dibromomethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Methylene chloride	ND	---	10.0	ug/L	1	---	---	---	---	---	---	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0873 - 09 23 24 1436**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0354 - EPA 5030C												**Water**
Blank (24I0354-BLK1)			Prepared: 09/12/24 08:00 Analyzed: 09/12/24 09:52									
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Vinyl chloride	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 93 %*		*Limits: 80-120 %*			*Dilution: 1x*				
Toluene-d8 (Surr)			*102 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*106 %*		*80-120 %*			*"*				
LCS (24I0354-BS1)			Prepared: 09/12/24 08:00 Analyzed: 09/12/24 08:46									
EPA 8260D												
Bromobenzene	20.6	---	0.500	ug/L	1	20.0	---	103	80-120%	---	---	
Bromochloromethane	19.4	---	1.00	ug/L	1	20.0	---	97	80-120%	---	---	
Bromodichloromethane	20.8	---	1.00	ug/L	1	20.0	---	104	80-120%	---	---	
Bromoform	22.6	---	1.00	ug/L	1	20.0	---	113	80-120%	---	---	
Bromomethane	17.3	---	5.00	ug/L	1	20.0	---	87	80-120%	---	---	
Carbon tetrachloride	21.9	---	1.00	ug/L	1	20.0	---	109	80-120%	---	---	
Chlorobenzene	21.2	---	0.500	ug/L	1	20.0	---	106	80-120%	---	---	
Chloroethane	18.8	---	5.00	ug/L	1	20.0	---	94	80-120%	---	---	
Chloroform	20.1	---	1.00	ug/L	1	20.0	---	101	80-120%	---	---	
Chloromethane	16.6	---	5.00	ug/L	1	20.0	---	83	80-120%	---	---	
2-Chlorotoluene	21.9	---	1.00	ug/L	1	20.0	---	110	80-120%	---	---	
4-Chlorotoluene	22.8	---	1.00	ug/L	1	20.0	---	114	80-120%	---	---	
Dibromochloromethane	22.4	---	1.00	ug/L	1	20.0	---	112	80-120%	---	---	
1,2-Dibromo-3-chloropropane	21.0	---	5.00	ug/L	1	20.0	---	105	80-120%	---	---	
1,2-Dibromoethane (EDB)	21.0	---	0.500	ug/L	1	20.0	---	105	80-120%	---	---	
Dibromomethane	19.4	---	1.00	ug/L	1	20.0	---	97	80-120%	---	---	
1,2-Dichlorobenzene	21.9	---	0.500	ug/L	1	20.0	---	110	80-120%	---	---	

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-34	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0873 - 09 23 24 1436

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0354 - EPA 5030C							Water					
LCS (24I0354-BS1)			Prepared: 09/12/24 08:00 Analyzed: 09/12/24 08:46									
1,3-Dichlorobenzene	22.4	---	0.500	ug/L	1	20.0	---	112	80-120%	---	---	
1,4-Dichlorobenzene	21.7	---	0.500	ug/L	1	20.0	---	109	80-120%	---	---	
Dichlorodifluoromethane	18.4	---	1.00	ug/L	1	20.0	---	92	80-120%	---	---	
1,1-Dichloroethane	18.9	---	0.400	ug/L	1	20.0	---	94	80-120%	---	---	
1,2-Dichloroethane (EDC)	20.1	---	0.400	ug/L	1	20.0	---	100	80-120%	---	---	
1,1-Dichloroethene	19.7	---	0.400	ug/L	1	20.0	---	98	80-120%	---	---	
cis-1,2-Dichloroethene	20.1	---	0.400	ug/L	1	20.0	---	100	80-120%	---	---	
trans-1,2-Dichloroethene	19.3	---	0.400	ug/L	1	20.0	---	97	80-120%	---	---	
1,2-Dichloropropane	18.3	---	0.500	ug/L	1	20.0	---	92	80-120%	---	---	
1,3-Dichloropropane	20.7	---	1.00	ug/L	1	20.0	---	104	80-120%	---	---	
2,2-Dichloropropane	21.1	---	1.00	ug/L	1	20.0	---	106	80-120%	---	---	
1,1-Dichloropropene	19.2	---	1.00	ug/L	1	20.0	---	96	80-120%	---	---	
cis-1,3-Dichloropropene	22.2	---	1.00	ug/L	1	20.0	---	111	80-120%	---	---	
trans-1,3-Dichloropropene	23.0	---	1.00	ug/L	1	20.0	---	115	80-120%	---	---	
Hexachlorobutadiene	22.1	---	5.00	ug/L	1	20.0	---	111	80-120%	---	---	
Methylene chloride	17.8	---	10.0	ug/L	1	20.0	---	89	80-120%	---	---	
1,1,1,2-Tetrachloroethane	23.0	---	0.400	ug/L	1	20.0	---	115	80-120%	---	---	
1,1,2,2-Tetrachloroethane	21.2	---	0.500	ug/L	1	20.0	---	106	80-120%	---	---	
Tetrachloroethene (PCE)	21.4	---	0.400	ug/L	1	20.0	---	107	80-120%	---	---	
1,2,3-Trichlorobenzene	21.3	---	2.00	ug/L	1	20.0	---	106	80-120%	---	---	
1,1,2-Trichloroethane	20.0	---	0.500	ug/L	1	20.0	---	100	80-120%	---	---	
1,2,4-Trichlorobenzene	21.2	---	2.00	ug/L	1	20.0	---	106	80-120%	---	---	
1,1,1-Trichloroethane	20.5	---	0.400	ug/L	1	20.0	---	102	80-120%	---	---	
Trichloroethene (TCE)	17.9	---	0.400	ug/L	1	20.0	---	90	80-120%	---	---	
Trichlorofluoromethane	22.9	---	2.00	ug/L	1	20.0	---	115	80-120%	---	---	
1,2,3-Trichloropropane	21.4	---	1.00	ug/L	1	20.0	---	107	80-120%	---	---	
Vinyl chloride	19.0	---	0.200	ug/L	1	20.0	---	95	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 91 %*		*Limits: 80-120 %*			*Dilution: 1x*				
Toluene-d8 (Surr)			*100 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*99 %*		*80-120 %*			*"*				
Duplicate (24I0354-DUP1)			Prepared: 09/12/24 08:00 Analyzed: 09/12/24 13:51									
QC Source Sample: Non-SDG (A4I0850-15)												
Bromobenzene	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	

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Darrell Auvil, Client Services Manager

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503-718-2323
ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0873 - 09 23 24 1436**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0354 - EPA 5030C							**Water**					
Duplicate (24I0354-DUP1)			Prepared: 09/12/24 08:00		Analyzed: 09/12/24 13:51							
QC Source Sample: Non-SDG (A4I0850-15)												
Bromochloromethane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Bromodichloromethane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Bromoform	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Bromomethane	ND	---	5.00	ug/L	1	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Chlorobenzene	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
Chloroethane	**246**	---	5.00	ug/L	1	---	242	---	---	1	30%	E
Chloroform	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Chloromethane	ND	---	5.00	ug/L	1	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Dibromochloromethane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
Dibromomethane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
1,1-Dichloroethane	**8.96**	---	0.400	ug/L	1	---	8.88	---	---	0.9	30%	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	---	ND	---	---	---	30%	
1,1-Dichloroethene	**2.59**	---	0.400	ug/L	1	---	2.94	---	---	13	30%	
cis-1,2-Dichloroethene	**0.690**	---	0.400	ug/L	1	---	0.710	---	---	3	30%	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	---	ND	---	---	---	30%	
Methylene chloride	ND	---	10.0	ug/L	1	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	---	ND	---	---	---	30%	

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Darrell Auvil, Client Services Manager

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503-718-2323
ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0873 - 09 23 24 1436**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0354 - EPA 5030C							**Water**					
Duplicate (24I0354-DUP1)			Prepared: 09/12/24 08:00 Analyzed: 09/12/24 13:51									
QC Source Sample: Non-SDG (A4I0850-15)												
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	**1.42**	---	0.400	ug/L	1	---	1.41	---	---	0.7	30%	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	---	0.250	---	---	***	30%	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Vinyl chloride	**2.37**	---	0.200	ug/L	1	---	2.50	---	---	5	30%	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 93 %*		*Limits: 80-120 %*				*Dilution: 1x*			
Toluene-d8 (Surr)			*98 %*		*80-120 %*				*"*			
4-Bromofluorobenzene (Surr)			*102 %*		*80-120 %*				*"*			
Matrix Spike (24I0354-MS1)			Prepared: 09/12/24 08:00 Analyzed: 09/12/24 20:21									
QC Source Sample: Non-SDG (A4I0800-04RE1)												
EPA 8260D												
Bromobenzene	100	---	2.50	ug/L	5	100	ND	100	80-120%	---	---	
Bromochloromethane	104	---	5.00	ug/L	5	100	ND	104	78-123%	---	---	
Bromodichloromethane	107	---	5.00	ug/L	5	100	ND	107	79-125%	---	---	
Bromoform	114	---	5.00	ug/L	5	100	ND	114	66-130%	---	---	
Bromomethane	93.0	---	25.0	ug/L	5	100	ND	93	53-141%	---	---	
Carbon tetrachloride	116	---	5.00	ug/L	5	100	ND	116	72-136%	---	---	
Chlorobenzene	107	---	2.50	ug/L	5	100	ND	107	80-120%	---	---	
Chloroethane	125	---	25.0	ug/L	5	100	ND	125	60-138%	---	---	
Chloroform	107	---	5.00	ug/L	5	100	ND	107	79-124%	---	---	
Chloromethane	98.3	---	25.0	ug/L	5	100	ND	98	50-139%	---	---	
2-Chlorotoluene	105	---	5.00	ug/L	5	100	ND	105	79-122%	---	---	
4-Chlorotoluene	110	---	5.00	ug/L	5	100	ND	110	78-122%	---	---	
Dibromochloromethane	112	---	5.00	ug/L	5	100	ND	112	74-126%	---	---	
1,2-Dibromo-3-chloropropane	98.1	---	25.0	ug/L	5	100	ND	98	62-128%	---	---	
1,2-Dibromoethane (EDB)	103	---	2.50	ug/L	5	100	ND	103	77-121%	---	---	
Dibromomethane	100	---	5.00	ug/L	5	100	ND	100	79-123%	---	---	

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Darrell Auvil, Client Services Manager

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0873 - 09 23 24 1436**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0354 - EPA 5030C							**Water**					
Matrix Spike (24I0354-MS1)			Prepared: 09/12/24 08:00		Analyzed: 09/12/24 20:21							
QC Source Sample: Non-SDG (A4I0800-04RE1)												
1,2-Dichlorobenzene	105	---	2.50	ug/L	5	100	ND	105	80-120%	---	---	
1,3-Dichlorobenzene	107	---	2.50	ug/L	5	100	ND	107	80-120%	---	---	
1,4-Dichlorobenzene	106	---	2.50	ug/L	5	100	ND	106	79-120%	---	---	
Dichlorodifluoromethane	92.4	---	5.00	ug/L	5	100	ND	92	32-152%	---	---	
1,1-Dichloroethane	272	---	2.00	ug/L	5	100	173	99	77-125%	---	---	
1,2-Dichloroethane (EDC)	101	---	2.00	ug/L	5	100	2.65	98	73-128%	---	---	
1,1-Dichloroethene	786	---	2.00	ug/L	5	100	695	90	71-131%	---	---	
cis-1,2-Dichloroethene	377	---	2.00	ug/L	5	100	272	106	78-123%	---	---	
trans-1,2-Dichloroethene	102	---	2.00	ug/L	5	100	ND	102	75-124%	---	---	
1,2-Dichloropropane	98.0	---	2.50	ug/L	5	100	ND	98	78-122%	---	---	
1,3-Dichloropropane	105	---	5.00	ug/L	5	100	ND	105	80-120%	---	---	
2,2-Dichloropropane	92.2	---	5.00	ug/L	5	100	ND	92	60-139%	---	---	
1,1-Dichloropropene	105	---	5.00	ug/L	5	100	ND	105	79-125%	---	---	
cis-1,3-Dichloropropene	102	---	5.00	ug/L	5	100	ND	102	75-124%	---	---	
trans-1,3-Dichloropropene	112	---	5.00	ug/L	5	100	ND	112	73-127%	---	---	
Hexachlorobutadiene	107	---	25.0	ug/L	5	100	ND	107	66-134%	---	---	
Methylene chloride	91.0	---	50.0	ug/L	5	100	ND	91	74-124%	---	---	
1,1,1,2-Tetrachloroethane	114	---	2.00	ug/L	5	100	ND	114	78-124%	---	---	
1,1,2,2-Tetrachloroethane	110	---	2.50	ug/L	5	100	ND	110	71-121%	---	---	
Tetrachloroethene (PCE)	149	---	2.00	ug/L	5	100	42.0	107	74-129%	---	---	
1,2,3-Trichlorobenzene	103	---	10.0	ug/L	5	100	ND	103	69-129%	---	---	
1,1,2-Trichloroethane	105	---	2.50	ug/L	5	100	3.05	102	80-120%	---	---	
1,2,4-Trichlorobenzene	104	---	10.0	ug/L	5	100	ND	104	69-130%	---	---	
1,1,1-Trichloroethane	370	---	2.00	ug/L	5	100	264	106	74-131%	---	---	
Trichloroethene (TCE)	336	---	2.00	ug/L	5	100	236	100	79-123%	---	---	
Trichlorofluoromethane	122	---	10.0	ug/L	5	100	ND	122	65-141%	---	---	
1,2,3-Trichloropropane	96.2	---	5.00	ug/L	5	100	ND	96	73-122%	---	---	
Vinyl chloride	180	---	1.00	ug/L	5	100	65.7	115	58-137%	---	---	

Surr: 1,4-Difluorobenzene (Surr)	*Recovery: 95 %*	*Limits: 80-120 %*	*Dilution: 1x*
Toluene-d8 (Surr)	*98 %*	*80-120 %*	*"*
4-Bromofluorobenzene (Surr)	*98 %*	*80-120 %*	*"*

Matrix Spike (24I0354-MS2) Prepared: 09/12/24 08:00 Analyzed: 09/12/24 19:37

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0873 - 09 23 24 1436**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0354 - EPA 5030C							**Water**					
Matrix Spike (24I0354-MS2)			Prepared: 09/12/24 08:00		Analyzed: 09/12/24 19:37							
QC Source Sample: Non-SDG (A4I0860-01)												
EPA 8260D												
Bromobenzene	21.1	---	0.500	ug/L	1	20.0	ND	106	80-120%	---	---	
Bromochloromethane	19.8	---	1.00	ug/L	1	20.0	ND	99	78-123%	---	---	
Bromodichloromethane	21.5	---	1.00	ug/L	1	20.0	ND	108	79-125%	---	---	
Bromoform	24.4	---	1.00	ug/L	1	20.0	ND	122	66-130%	---	---	
Bromomethane	19.1	---	5.00	ug/L	1	20.0	ND	96	53-141%	---	---	
Carbon tetrachloride	23.0	---	1.00	ug/L	1	20.0	ND	115	72-136%	---	---	
Chlorobenzene	22.2	---	0.500	ug/L	1	20.0	ND	111	80-120%	---	---	
Chloroethane	20.0	---	5.00	ug/L	1	20.0	ND	100	60-138%	---	---	
Chloroform	21.2	---	1.00	ug/L	1	20.0	ND	106	79-124%	---	---	
Chloromethane	18.1	---	5.00	ug/L	1	20.0	ND	90	50-139%	---	---	
2-Chlorotoluene	22.9	---	1.00	ug/L	1	20.0	ND	114	79-122%	---	---	
4-Chlorotoluene	23.8	---	1.00	ug/L	1	20.0	ND	119	78-122%	---	---	
Dibromochloromethane	24.0	---	1.00	ug/L	1	20.0	ND	120	74-126%	---	---	
1,2-Dibromo-3-chloropropane	22.6	---	5.00	ug/L	1	20.0	ND	113	62-128%	---	---	
1,2-Dibromoethane (EDB)	22.6	---	0.500	ug/L	1	20.0	ND	113	77-121%	---	---	
Dibromomethane	20.1	---	1.00	ug/L	1	20.0	ND	101	79-123%	---	---	
1,2-Dichlorobenzene	22.4	---	0.500	ug/L	1	20.0	ND	112	80-120%	---	---	
1,3-Dichlorobenzene	23.1	---	0.500	ug/L	1	20.0	ND	116	80-120%	---	---	
1,4-Dichlorobenzene	22.7	---	0.500	ug/L	1	20.0	ND	114	79-120%	---	---	
Dichlorodifluoromethane	19.1	---	1.00	ug/L	1	20.0	ND	96	32-152%	---	---	
1,1-Dichloroethane	19.7	---	0.400	ug/L	1	20.0	ND	98	77-125%	---	---	
1,2-Dichloroethane (EDC)	20.5	---	0.400	ug/L	1	20.0	ND	102	73-128%	---	---	
1,1-Dichloroethene	20.8	---	0.400	ug/L	1	20.0	ND	104	71-131%	---	---	
cis-1,2-Dichloroethene	19.9	---	0.400	ug/L	1	20.0	ND	99	78-123%	---	---	
trans-1,2-Dichloroethene	19.8	---	0.400	ug/L	1	20.0	ND	99	75-124%	---	---	
1,2-Dichloropropane	19.0	---	0.500	ug/L	1	20.0	ND	95	78-122%	---	---	
1,3-Dichloropropane	21.7	---	1.00	ug/L	1	20.0	ND	109	80-120%	---	---	
2,2-Dichloropropane	19.1	---	1.00	ug/L	1	20.0	ND	96	60-139%	---	---	
1,1-Dichloropropene	20.8	---	1.00	ug/L	1	20.0	ND	104	79-125%	---	---	
cis-1,3-Dichloropropene	21.8	---	1.00	ug/L	1	20.0	ND	109	75-124%	---	---	
trans-1,3-Dichloropropene	23.4	---	1.00	ug/L	1	20.0	ND	117	73-127%	---	---	
Hexachlorobutadiene	23.8	---	5.00	ug/L	1	20.0	ND	119	66-134%	---	---	

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Darrell Auvil, Client Services Manager

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ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-34	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0873 - 09 23 24 1436

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0354 - EPA 5030C									Water			
Matrix Spike (24I0354-MS2)			Prepared: 09/12/24 08:00 Analyzed: 09/12/24 19:37									
QC Source Sample: Non-SDG (A4I0860-01)												
Methylene chloride	17.0	---	10.0	ug/L	1	20.0	ND	85	74-124%	---	---	
1,1,1,2-Tetrachloroethane	24.0	---	0.400	ug/L	1	20.0	ND	120	78-124%	---	---	
1,1,2,2-Tetrachloroethane	24.1	---	0.500	ug/L	1	20.0	ND	120	71-121%	---	---	
Tetrachloroethene (PCE)	22.4	---	0.400	ug/L	1	20.0	ND	112	74-129%	---	---	
1,2,3-Trichlorobenzene	22.2	---	2.00	ug/L	1	20.0	ND	111	69-129%	---	---	
1,1,2-Trichloroethane	21.2	---	0.500	ug/L	1	20.0	ND	106	80-120%	---	---	
1,2,4-Trichlorobenzene	22.7	---	2.00	ug/L	1	20.0	ND	114	69-130%	---	---	
1,1,1-Trichloroethane	21.3	---	0.400	ug/L	1	20.0	ND	107	74-131%	---	---	
Trichloroethene (TCE)	18.9	---	0.400	ug/L	1	20.0	ND	94	79-123%	---	---	
Trichlorofluoromethane	24.5	---	2.00	ug/L	1	20.0	ND	122	65-141%	---	---	
1,2,3-Trichloropropane	20.8	---	1.00	ug/L	1	20.0	ND	104	73-122%	---	---	
Vinyl chloride	20.9	---	0.200	ug/L	1	20.0	ND	104	58-137%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 89 %*		*Limits: 80-120 %*				*Dilution: 1x*			
Toluene-d8 (Surr)			*100 %*		*80-120 %*				*"*			
4-Bromofluorobenzene (Surr)			*99 %*		*80-120 %*				*"*			
Matrix Spike Dup (24I0354-MSD1)			Prepared: 09/12/24 08:00 Analyzed: 09/12/24 20:42									
QC Source Sample: Non-SDG (A4I0800-04RE1)												
Bromobenzene	97.6	---	2.50	ug/L	5	100	ND	98	80-120%	2	30%	
Bromochloromethane	98.6	---	5.00	ug/L	5	100	ND	99	78-123%	5	30%	
Bromodichloromethane	105	---	5.00	ug/L	5	100	ND	105	79-125%	2	30%	
Bromoform	114	---	5.00	ug/L	5	100	ND	114	66-130%	0	30%	
Bromomethane	93.7	---	25.0	ug/L	5	100	ND	94	53-141%	0.8	30%	
Carbon tetrachloride	114	---	5.00	ug/L	5	100	ND	114	72-136%	2	30%	
Chlorobenzene	107	---	2.50	ug/L	5	100	ND	107	80-120%	0.09	30%	
Chloroethane	116	---	25.0	ug/L	5	100	ND	116	60-138%	8	30%	
Chloroform	103	---	5.00	ug/L	5	100	ND	103	79-124%	4	30%	
Chloromethane	92.0	---	25.0	ug/L	5	100	ND	92	50-139%	7	30%	
2-Chlorotoluene	104	---	5.00	ug/L	5	100	ND	104	79-122%	1	30%	
4-Chlorotoluene	107	---	5.00	ug/L	5	100	ND	107	78-122%	2	30%	
Dibromochloromethane	109	---	5.00	ug/L	5	100	ND	109	74-126%	3	30%	
1,2-Dibromo-3-chloropropane	96.3	---	25.0	ug/L	5	100	ND	96	62-128%	2	30%	
1,2-Dibromoethane (EDB)	103	---	2.50	ug/L	5	100	ND	103	77-121%	0	30%	

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Darrell Auvil, Client Services Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
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503-718-2323
ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0873 - 09 23 24 1436**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0354 - EPA 5030C							**Water**					
Matrix Spike Dup (24I0354-MSD1)			Prepared: 09/12/24 08:00		Analyzed: 09/12/24 20:42							
QC Source Sample: Non-SDG (A4I0800-04RE1)												
Dibromomethane	98.2	---	5.00	ug/L	5	100	ND	98	79-123%	2	30%	
1,2-Dichlorobenzene	99.2	---	2.50	ug/L	5	100	ND	99	80-120%	6	30%	
1,3-Dichlorobenzene	104	---	2.50	ug/L	5	100	ND	104	80-120%	3	30%	
1,4-Dichlorobenzene	102	---	2.50	ug/L	5	100	ND	102	79-120%	3	30%	
Dichlorodifluoromethane	93.0	---	5.00	ug/L	5	100	ND	93	32-152%	0.6	30%	
1,1-Dichloroethane	268	---	2.00	ug/L	5	100	173	95	77-125%	1	30%	
1,2-Dichloroethane (EDC)	101	---	2.00	ug/L	5	100	2.65	98	73-128%	0.1	30%	
1,1-Dichloroethene	789	---	2.00	ug/L	5	100	695	94	71-131%	0.4	30%	
cis-1,2-Dichloroethene	373	---	2.00	ug/L	5	100	272	101	78-123%	1	30%	
trans-1,2-Dichloroethene	101	---	2.00	ug/L	5	100	ND	101	75-124%	2	30%	
1,2-Dichloropropane	97.6	---	2.50	ug/L	5	100	ND	98	78-122%	0.3	30%	
1,3-Dichloropropane	104	---	5.00	ug/L	5	100	ND	104	80-120%	1	30%	
2,2-Dichloropropane	87.6	---	5.00	ug/L	5	100	ND	88	60-139%	5	30%	
1,1-Dichloropropene	102	---	5.00	ug/L	5	100	ND	102	79-125%	2	30%	
cis-1,3-Dichloropropene	102	---	5.00	ug/L	5	100	ND	102	75-124%	0.5	30%	
trans-1,3-Dichloropropene	109	---	5.00	ug/L	5	100	ND	109	73-127%	3	30%	
Hexachlorobutadiene	108	---	25.0	ug/L	5	100	ND	108	66-134%	0.9	30%	
Methylene chloride	87.1	---	50.0	ug/L	5	100	ND	87	74-124%	4	30%	
1,1,1,2-Tetrachloroethane	112	---	2.00	ug/L	5	100	ND	112	78-124%	2	30%	
1,1,2,2-Tetrachloroethane	106	---	2.50	ug/L	5	100	ND	106	71-121%	3	30%	
Tetrachloroethene (PCE)	150	---	2.00	ug/L	5	100	42.0	108	74-129%	0.6	30%	
1,2,3-Trichlorobenzene	98.4	---	10.0	ug/L	5	100	ND	98	69-129%	4	30%	
1,1,2-Trichloroethane	101	---	2.50	ug/L	5	100	3.05	98	80-120%	3	30%	
1,2,4-Trichlorobenzene	101	---	10.0	ug/L	5	100	ND	101	69-130%	3	30%	
1,1,1-Trichloroethane	366	---	2.00	ug/L	5	100	264	103	74-131%	0.8	30%	
Trichloroethene (TCE)	330	---	2.00	ug/L	5	100	236	94	79-123%	2	30%	
Trichlorofluoromethane	119	---	10.0	ug/L	5	100	ND	119	65-141%	3	30%	
1,2,3-Trichloropropane	93.4	---	5.00	ug/L	5	100	ND	93	73-122%	3	30%	
Vinyl chloride	176	---	1.00	ug/L	5	100	65.7	111	58-137%	2	30%	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 95 %*		*Limits: 80-120 %*				*Dilution: 1x*			
Toluene-d8 (Surr)			*100 %*		*80-120 %*				*"*			
4-Bromofluorobenzene (Surr)			*98 %*		*80-120 %*				*"*			

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Darrell Auvil, Client Services Manager

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6700 S.W. Sandburg Street
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503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project:	Vancouver GWM 3Q24
5820 S Kelly Ave Unit B	Project Number:	19001-009-34
Portland, OR 97239	Project Manager:	Stephanie Bosze-Salisbury

Report ID:
A4I0873 - 09 23 24 1436

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0354 - EPA 5030C							**Water**					
Matrix Spike Dup (24I0354-MSD2)			Prepared: 09/12/24 08:00		Analyzed: 09/12/24 19:59							
QC Source Sample: Non-SDG (A4I0860-01)												
Bromobenzene	20.5	---	0.500	ug/L	1	20.0	ND	103	80-120%	3	30%	
Bromochloromethane	21.6	---	1.00	ug/L	1	20.0	ND	108	78-123%	9	30%	
Bromodichloromethane	22.6	---	1.00	ug/L	1	20.0	ND	113	79-125%	5	30%	
Bromoform	24.3	---	1.00	ug/L	1	20.0	ND	122	66-130%	0.2	30%	
Bromomethane	19.6	---	5.00	ug/L	1	20.0	ND	98	53-141%	2	30%	
Carbon tetrachloride	24.6	---	1.00	ug/L	1	20.0	ND	123	72-136%	7	30%	
Chlorobenzene	22.3	---	0.500	ug/L	1	20.0	ND	112	80-120%	0.5	30%	
Chloroethane	21.4	---	5.00	ug/L	1	20.0	ND	107	60-138%	7	30%	
Chloroform	21.9	---	1.00	ug/L	1	20.0	ND	110	79-124%	3	30%	
Chloromethane	20.1	---	5.00	ug/L	1	20.0	ND	101	50-139%	11	30%	
2-Chlorotoluene	21.9	---	1.00	ug/L	1	20.0	ND	109	79-122%	5	30%	
4-Chlorotoluene	22.8	---	1.00	ug/L	1	20.0	ND	114	78-122%	5	30%	
Dibromochloromethane	23.7	---	1.00	ug/L	1	20.0	ND	118	74-126%	1	30%	
1,2-Dibromo-3-chloropropane	20.8	---	5.00	ug/L	1	20.0	ND	104	62-128%	9	30%	
1,2-Dibromoethane (EDB)	22.2	---	0.500	ug/L	1	20.0	ND	111	77-121%	2	30%	
Dibromomethane	20.7	---	1.00	ug/L	1	20.0	ND	104	79-123%	3	30%	
1,2-Dichlorobenzene	21.4	---	0.500	ug/L	1	20.0	ND	107	80-120%	5	30%	
1,3-Dichlorobenzene	21.9	---	0.500	ug/L	1	20.0	ND	109	80-120%	5	30%	
1,4-Dichlorobenzene	21.6	---	0.500	ug/L	1	20.0	ND	108	79-120%	5	30%	
Dichlorodifluoromethane	19.0	---	1.00	ug/L	1	20.0	ND	95	32-152%	0.5	30%	
1,1-Dichloroethane	20.6	---	0.400	ug/L	1	20.0	ND	103	77-125%	5	30%	
1,2-Dichloroethane (EDC)	21.2	---	0.400	ug/L	1	20.0	ND	106	73-128%	3	30%	
1,1-Dichloroethene	22.0	---	0.400	ug/L	1	20.0	ND	110	71-131%	6	30%	
cis-1,2-Dichloroethene	21.5	---	0.400	ug/L	1	20.0	ND	108	78-123%	8	30%	
trans-1,2-Dichloroethene	21.7	---	0.400	ug/L	1	20.0	ND	109	75-124%	9	30%	
1,2-Dichloropropane	20.4	---	0.500	ug/L	1	20.0	ND	102	78-122%	7	30%	
1,3-Dichloropropane	22.3	---	1.00	ug/L	1	20.0	ND	111	80-120%	2	30%	
2,2-Dichloropropane	19.4	---	1.00	ug/L	1	20.0	ND	97	60-139%	1	30%	
1,1-Dichloropropene	21.4	---	1.00	ug/L	1	20.0	ND	107	79-125%	3	30%	
cis-1,3-Dichloropropene	22.2	---	1.00	ug/L	1	20.0	ND	111	75-124%	2	30%	
trans-1,3-Dichloropropene	23.7	---	1.00	ug/L	1	20.0	ND	118	73-127%	1	30%	
Hexachlorobutadiene	22.2	---	5.00	ug/L	1	20.0	ND	111	66-134%	7	30%	
Methylene chloride	18.3	---	10.0	ug/L	1	20.0	ND	92	74-124%	7	30%	

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Darrell Auvil, Client Services Manager

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0873 - 09 23 24 1436**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0354 - EPA 5030C							**Water**					
Matrix Spike Dup (24I0354-MSD2)			Prepared: 09/12/24 08:00		Analyzed: 09/12/24 19:59							
QC Source Sample: Non-SDG (A4I0860-01)												
1,1,1,2-Tetrachloroethane	24.3	---	0.400	ug/L	1	20.0	ND	121	78-124%	1	30%	
1,1,2,2-Tetrachloroethane	22.7	---	0.500	ug/L	1	20.0	ND	114	71-121%	6	30%	
Tetrachloroethene (PCE)	22.7	---	0.400	ug/L	1	20.0	ND	114	74-129%	1	30%	
1,2,3-Trichlorobenzene	21.5	---	2.00	ug/L	1	20.0	ND	107	69-129%	3	30%	
1,1,2-Trichloroethane	21.4	---	0.500	ug/L	1	20.0	ND	107	80-120%	0.7	30%	
1,2,4-Trichlorobenzene	21.6	---	2.00	ug/L	1	20.0	ND	108	69-130%	5	30%	
1,1,1-Trichloroethane	22.2	---	0.400	ug/L	1	20.0	ND	111	74-131%	4	30%	
Trichloroethene (TCE)	19.6	---	0.400	ug/L	1	20.0	ND	98	79-123%	4	30%	
Trichlorofluoromethane	25.4	---	2.00	ug/L	1	20.0	ND	127	65-141%	4	30%	
1,2,3-Trichloropropane	20.3	---	1.00	ug/L	1	20.0	ND	102	73-122%	2	30%	
Vinyl chloride	23.0	---	0.200	ug/L	1	20.0	ND	115	58-137%	10	30%	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 93 %*		*Limits: 80-120 %*				*Dilution: 1x*			
Toluene-d8 (Surr)			*100 %*		*80-120 %*				*"*			
4-Bromofluorobenzene (Surr)			*96 %*		*80-120 %*				*"*			

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0873 - 09 23 24 1436**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0401 - EPA 5030C							**Water**					
Blank (24I0401-BLK1)			Prepared: 09/13/24 06:00		Analyzed: 09/13/24 09:24							
EPA 8260D												
Bromobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Bromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromodichloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromoform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromomethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Carbon tetrachloride	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Chloroethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Chloroform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chloromethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
2-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
4-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Dibromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dibromomethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Methylene chloride	ND	---	10.0	ug/L	1	---	---	---	---	---	---	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0873 - 09 23 24 1436**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0401 - EPA 5030C												**Water**
Blank (24I0401-BLK1)			Prepared: 09/13/24 06:00 Analyzed: 09/13/24 09:24									
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Vinyl chloride	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 92 %*		*Limits: 80-120 %*				*Dilution: 1x*			
Toluene-d8 (Surr)			*98 %*		*80-120 %*				*"*			
4-Bromofluorobenzene (Surr)			*104 %*		*80-120 %*				*"*			
LCS (24I0401-BS1)			Prepared: 09/13/24 06:00 Analyzed: 09/13/24 08:41									
EPA 8260D												
Bromobenzene	20.2	---	0.500	ug/L	1	20.0	---	101	80-120%	---	---	
Bromochloromethane	18.9	---	1.00	ug/L	1	20.0	---	94	80-120%	---	---	
Bromodichloromethane	20.6	---	1.00	ug/L	1	20.0	---	103	80-120%	---	---	
Bromoform	23.4	---	1.00	ug/L	1	20.0	---	117	80-120%	---	---	
Bromomethane	17.6	---	5.00	ug/L	1	20.0	---	88	80-120%	---	---	
Carbon tetrachloride	21.7	---	1.00	ug/L	1	20.0	---	108	80-120%	---	---	
Chlorobenzene	21.4	---	0.500	ug/L	1	20.0	---	107	80-120%	---	---	
Chloroethane	18.9	---	5.00	ug/L	1	20.0	---	95	80-120%	---	---	
Chloroform	20.9	---	1.00	ug/L	1	20.0	---	105	80-120%	---	---	
Chloromethane	16.8	---	5.00	ug/L	1	20.0	---	84	80-120%	---	---	
2-Chlorotoluene	21.7	---	1.00	ug/L	1	20.0	---	109	80-120%	---	---	
4-Chlorotoluene	22.5	---	1.00	ug/L	1	20.0	---	112	80-120%	---	---	
Dibromochloromethane	22.8	---	1.00	ug/L	1	20.0	---	114	80-120%	---	---	
1,2-Dibromo-3-chloropropane	20.2	---	5.00	ug/L	1	20.0	---	101	80-120%	---	---	
1,2-Dibromoethane (EDB)	21.3	---	0.500	ug/L	1	20.0	---	106	80-120%	---	---	
Dibromomethane	19.7	---	1.00	ug/L	1	20.0	---	99	80-120%	---	---	
1,2-Dichlorobenzene	21.4	---	0.500	ug/L	1	20.0	---	107	80-120%	---	---	

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Darrell Auvil, Client Services Manager

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Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0873 - 09 23 24 1436**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0401 - EPA 5030C							**Water**					
LCS (24I0401-BS1)			Prepared: 09/13/24 06:00		Analyzed: 09/13/24 08:41							
1,3-Dichlorobenzene	21.7	---	0.500	ug/L	1	20.0	---	108	80-120%	---	---	
1,4-Dichlorobenzene	21.6	---	0.500	ug/L	1	20.0	---	108	80-120%	---	---	
Dichlorodifluoromethane	16.4	---	1.00	ug/L	1	20.0	---	82	80-120%	---	---	
1,1-Dichloroethane	19.4	---	0.400	ug/L	1	20.0	---	97	80-120%	---	---	
1,2-Dichloroethane (EDC)	19.5	---	0.400	ug/L	1	20.0	---	98	80-120%	---	---	
1,1-Dichloroethene	19.6	---	0.400	ug/L	1	20.0	---	98	80-120%	---	---	
cis-1,2-Dichloroethene	20.1	---	0.400	ug/L	1	20.0	---	101	80-120%	---	---	
trans-1,2-Dichloroethene	19.3	---	0.400	ug/L	1	20.0	---	97	80-120%	---	---	
1,2-Dichloropropane	19.0	---	0.500	ug/L	1	20.0	---	95	80-120%	---	---	
1,3-Dichloropropane	20.9	---	1.00	ug/L	1	20.0	---	104	80-120%	---	---	
2,2-Dichloropropane	21.6	---	1.00	ug/L	1	20.0	---	108	80-120%	---	---	
1,1-Dichloropropene	19.5	---	1.00	ug/L	1	20.0	---	97	80-120%	---	---	
cis-1,3-Dichloropropene	23.0	---	1.00	ug/L	1	20.0	---	115	80-120%	---	---	
trans-1,3-Dichloropropene	23.3	---	1.00	ug/L	1	20.0	---	116	80-120%	---	---	
Hexachlorobutadiene	22.3	---	5.00	ug/L	1	20.0	---	112	80-120%	---	---	
Methylene chloride	17.9	---	10.0	ug/L	1	20.0	---	90	80-120%	---	---	
1,1,1,2-Tetrachloroethane	22.7	---	0.400	ug/L	1	20.0	---	113	80-120%	---	---	
1,1,2,2-Tetrachloroethane	20.9	---	0.500	ug/L	1	20.0	---	104	80-120%	---	---	
Tetrachloroethene (PCE)	21.6	---	0.400	ug/L	1	20.0	---	108	80-120%	---	---	
1,2,3-Trichlorobenzene	20.5	---	2.00	ug/L	1	20.0	---	102	80-120%	---	---	
1,1,2-Trichloroethane	20.6	---	0.500	ug/L	1	20.0	---	103	80-120%	---	---	
1,2,4-Trichlorobenzene	20.9	---	2.00	ug/L	1	20.0	---	104	80-120%	---	---	
1,1,1-Trichloroethane	20.6	---	0.400	ug/L	1	20.0	---	103	80-120%	---	---	
Trichloroethene (TCE)	18.5	---	0.400	ug/L	1	20.0	---	92	80-120%	---	---	
Trichlorofluoromethane	22.7	---	2.00	ug/L	1	20.0	---	113	80-120%	---	---	
1,2,3-Trichloropropane	20.4	---	1.00	ug/L	1	20.0	---	102	80-120%	---	---	
Vinyl chloride	19.6	---	0.200	ug/L	1	20.0	---	98	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 94 %*		*Limits: 80-120 %*			*Dilution: 1x*				
Toluene-d8 (Surr)			*101 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*99 %*		*80-120 %*			*"*				
Duplicate (24I0401-DUP1)			Prepared: 09/13/24 06:00		Analyzed: 09/13/24 10:50							**COMP**
QC Source Sample: Non-SDG (A4I1084-05)												
Bromobenzene	ND	---	1.00	ug/L	2	---	ND	---	---	---	30%	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0873 - 09 23 24 1436**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0401 - EPA 5030C							**Water**					
Duplicate (24I0401-DUP1)			Prepared: 09/13/24 06:00		Analyzed: 09/13/24 10:50							**COMP**
QC Source Sample: Non-SDG (A4I1084-05)												
Bromochloromethane	ND	---	2.00	ug/L	2	---	ND	---	---	---	30%	
Bromodichloromethane	ND	---	2.00	ug/L	2	---	ND	---	---	---	30%	
Bromoform	ND	---	2.00	ug/L	2	---	ND	---	---	---	30%	
Bromomethane	ND	---	10.0	ug/L	2	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	---	2.00	ug/L	2	---	ND	---	---	---	30%	
Chlorobenzene	ND	---	1.00	ug/L	2	---	ND	---	---	---	30%	
Chloroethane	ND	---	10.0	ug/L	2	---	ND	---	---	---	30%	
Chloroform	ND	---	2.00	ug/L	2	---	ND	---	---	---	30%	
Chloromethane	ND	---	10.0	ug/L	2	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	---	2.00	ug/L	2	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	---	2.00	ug/L	2	---	ND	---	---	---	30%	
Dibromochloromethane	ND	---	2.00	ug/L	2	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	---	10.0	ug/L	2	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	---	1.00	ug/L	2	---	ND	---	---	---	30%	
Dibromomethane	ND	---	2.00	ug/L	2	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	---	1.00	ug/L	2	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	---	1.00	ug/L	2	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	---	1.00	ug/L	2	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	---	2.00	ug/L	2	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	---	0.800	ug/L	2	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	---	0.800	ug/L	2	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	---	0.800	ug/L	2	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	---	0.800	ug/L	2	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	---	0.800	ug/L	2	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	---	1.00	ug/L	2	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	---	2.00	ug/L	2	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	---	2.00	ug/L	2	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	---	2.00	ug/L	2	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	---	2.00	ug/L	2	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	---	2.00	ug/L	2	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	---	10.0	ug/L	2	---	ND	---	---	---	30%	
Methylene chloride	ND	---	20.0	ug/L	2	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	---	0.800	ug/L	2	---	ND	---	---	---	30%	

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ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project:	Vancouver GWM 3Q24
5820 S Kelly Ave Unit B	Project Number:	19001-009-34
Portland, OR 97239	Project Manager:	Stephanie Bosze-Salisbury
		Report ID: A4I0873 - 09 23 24 1436

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0401 - EPA 5030C							**Water**					
Duplicate (24I0401-DUP1)			Prepared: 09/13/24 06:00 Analyzed: 09/13/24 10:50									COMP
QC Source Sample: Non-SDG (A4I1084-05)												
1,1,2,2-Tetrachloroethane	ND	---	1.00	ug/L	2	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	---	0.800	ug/L	2	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	---	4.00	ug/L	2	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	---	1.00	ug/L	2	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	---	4.00	ug/L	2	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	---	0.800	ug/L	2	---	ND	---	---	---	30%	
Trichloroethene (TCE)	ND	---	0.800	ug/L	2	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	---	4.00	ug/L	2	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	---	2.00	ug/L	2	---	ND	---	---	---	30%	
Vinyl chloride	ND	---	0.400	ug/L	2	---	ND	---	---	---	30%	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 92 %*		*Limits: 80-120 %*				*Dilution: 1x*			
Toluene-d8 (Surr)			*100 %*		*80-120 %*				*"*			
4-Bromofluorobenzene (Surr)			*104 %*		*80-120 %*				*"*			
Matrix Spike (24I0401-MS1)			Prepared: 09/13/24 06:00 Analyzed: 09/13/24 11:12									COMP
QC Source Sample: Non-SDG (A4I1084-05)												
EPA 8260D												
Bromobenzene	39.8	---	1.00	ug/L	2	40.0	ND	99	80-120%	---	---	
Bromochloromethane	41.0	---	2.00	ug/L	2	40.0	ND	103	78-123%	---	---	
Bromodichloromethane	43.1	---	2.00	ug/L	2	40.0	ND	108	79-125%	---	---	
Bromoform	47.4	---	2.00	ug/L	2	40.0	ND	118	66-130%	---	---	
Bromomethane	36.0	---	10.0	ug/L	2	40.0	ND	90	53-141%	---	---	
Carbon tetrachloride	47.2	---	2.00	ug/L	2	40.0	ND	118	72-136%	---	---	
Chlorobenzene	43.5	---	1.00	ug/L	2	40.0	ND	109	80-120%	---	---	
Chloroethane	40.1	---	10.0	ug/L	2	40.0	ND	100	60-138%	---	---	
Chloroform	41.8	---	2.00	ug/L	2	40.0	ND	105	79-124%	---	---	
Chloromethane	35.1	---	10.0	ug/L	2	40.0	ND	88	50-139%	---	---	
2-Chlorotoluene	42.9	---	2.00	ug/L	2	40.0	ND	107	79-122%	---	---	
4-Chlorotoluene	43.2	---	2.00	ug/L	2	40.0	ND	108	78-122%	---	---	
Dibromochloromethane	46.0	---	2.00	ug/L	2	40.0	ND	115	74-126%	---	---	
1,2-Dibromo-3-chloropropane	39.3	---	10.0	ug/L	2	40.0	ND	98	62-128%	---	---	
1,2-Dibromoethane (EDB)	43.7	---	1.00	ug/L	2	40.0	ND	109	77-121%	---	---	
Dibromomethane	39.9	---	2.00	ug/L	2	40.0	ND	100	79-123%	---	---	

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5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0873 - 09 23 24 1436**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0401 - EPA 5030C							**Water**					
Matrix Spike (24I0401-MS1)			Prepared: 09/13/24 06:00		Analyzed: 09/13/24 11:12							**COMP**
QC Source Sample: Non-SDG (A4I1084-05)												
1,2-Dichlorobenzene	41.2	---	1.00	ug/L	2	40.0	ND	103	80-120%	---	---	
1,3-Dichlorobenzene	41.9	---	1.00	ug/L	2	40.0	ND	105	80-120%	---	---	
1,4-Dichlorobenzene	41.4	---	1.00	ug/L	2	40.0	ND	104	79-120%	---	---	
Dichlorodifluoromethane	37.2	---	2.00	ug/L	2	40.0	ND	93	32-152%	---	---	
1,1-Dichloroethane	40.0	---	0.800	ug/L	2	40.0	ND	100	77-125%	---	---	
1,2-Dichloroethane (EDC)	40.6	---	0.800	ug/L	2	40.0	ND	101	73-128%	---	---	
1,1-Dichloroethene	40.4	---	0.800	ug/L	2	40.0	ND	101	71-131%	---	---	
cis-1,2-Dichloroethene	41.7	---	0.800	ug/L	2	40.0	ND	104	78-123%	---	---	
trans-1,2-Dichloroethene	40.5	---	0.800	ug/L	2	40.0	ND	101	75-124%	---	---	
1,2-Dichloropropane	38.7	---	1.00	ug/L	2	40.0	ND	97	78-122%	---	---	
1,3-Dichloropropane	42.9	---	2.00	ug/L	2	40.0	ND	107	80-120%	---	---	
2,2-Dichloropropane	44.7	---	2.00	ug/L	2	40.0	ND	112	60-139%	---	---	
1,1-Dichloropropene	41.3	---	2.00	ug/L	2	40.0	ND	103	79-125%	---	---	
cis-1,3-Dichloropropene	46.1	---	2.00	ug/L	2	40.0	ND	115	75-124%	---	---	
trans-1,3-Dichloropropene	47.7	---	2.00	ug/L	2	40.0	ND	119	73-127%	---	---	
Hexachlorobutadiene	45.3	---	10.0	ug/L	2	40.0	ND	113	66-134%	---	---	
Methylene chloride	35.8	---	20.0	ug/L	2	40.0	ND	90	74-124%	---	---	
1,1,1,2-Tetrachloroethane	47.4	---	0.800	ug/L	2	40.0	ND	118	78-124%	---	---	
1,1,2,2-Tetrachloroethane	41.9	---	1.00	ug/L	2	40.0	ND	105	71-121%	---	---	
Tetrachloroethene (PCE)	44.6	---	0.800	ug/L	2	40.0	ND	111	74-129%	---	---	
1,2,3-Trichlorobenzene	40.1	---	4.00	ug/L	2	40.0	ND	100	69-129%	---	---	
1,1,2-Trichloroethane	40.8	---	1.00	ug/L	2	40.0	ND	102	80-120%	---	---	
1,2,4-Trichlorobenzene	40.3	---	4.00	ug/L	2	40.0	ND	101	69-130%	---	---	
1,1,1-Trichloroethane	42.8	---	0.800	ug/L	2	40.0	ND	107	74-131%	---	---	
Trichloroethene (TCE)	38.7	---	0.800	ug/L	2	40.0	ND	97	79-123%	---	---	
Trichlorofluoromethane	48.8	---	4.00	ug/L	2	40.0	ND	122	65-141%	---	---	
1,2,3-Trichloropropane	40.1	---	2.00	ug/L	2	40.0	ND	100	73-122%	---	---	
Vinyl chloride	41.7	---	0.400	ug/L	2	40.0	ND	104	58-137%	---	---	

Surr: 1,4-Difluorobenzene (Surr)	*Recovery: 92 %*	*Limits: 80-120 %*	*Dilution: 1x*
Toluene-d8 (Surr)	*100 %*	*80-120 %*	*"*
4-Bromofluorobenzene (Surr)	*96 %*	*80-120 %*	*"*

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5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0873 - 09 23 24 1436**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0402 - EPA 5030C							**Water**					
Blank (24I0402-BLK1)			Prepared: 09/13/24 10:03 Analyzed: 09/13/24 20:58									
EPA 8260D												
Bromobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Bromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromodichloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromoform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromomethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Carbon tetrachloride	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Chloroethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Chloroform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chloromethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
2-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
4-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Dibromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dibromomethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Methylene chloride	ND	---	10.0	ug/L	1	---	---	---	---	---	---	

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Darrell Auvil, Client Services Manager

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0873 - 09 23 24 1436**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0402 - EPA 5030C									Water			
Blank (24I0402-BLK1)			Prepared: 09/13/24 10:03 Analyzed: 09/13/24 20:58									
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Vinyl chloride	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 93 %*		*Limits: 80-120 %*				*Dilution: 1x*			
Toluene-d8 (Surr)			*102 %*		*80-120 %*				*"*			
4-Bromofluorobenzene (Surr)			*105 %*		*80-120 %*				*"*			
LCS (24I0402-BS1)			Prepared: 09/13/24 10:03 Analyzed: 09/13/24 20:15									
EPA 8260D												
Bromobenzene	18.7	---	0.500	ug/L	1	20.0	---	94	80-120%	---	---	
Bromochloromethane	19.5	---	1.00	ug/L	1	20.0	---	98	80-120%	---	---	
Bromodichloromethane	20.0	---	1.00	ug/L	1	20.0	---	100	80-120%	---	---	
Bromoform	22.0	---	1.00	ug/L	1	20.0	---	110	80-120%	---	---	
Bromomethane	18.0	---	5.00	ug/L	1	20.0	---	90	80-120%	---	---	
Carbon tetrachloride	21.7	---	1.00	ug/L	1	20.0	---	108	80-120%	---	---	
Chlorobenzene	20.8	---	0.500	ug/L	1	20.0	---	104	80-120%	---	---	
Chloroethane	18.6	---	5.00	ug/L	1	20.0	---	93	80-120%	---	---	
Chloroform	20.2	---	1.00	ug/L	1	20.0	---	101	80-120%	---	---	
Chloromethane	16.9	---	5.00	ug/L	1	20.0	---	84	80-120%	---	---	
2-Chlorotoluene	19.7	---	1.00	ug/L	1	20.0	---	99	80-120%	---	---	
4-Chlorotoluene	20.6	---	1.00	ug/L	1	20.0	---	103	80-120%	---	---	
Dibromochloromethane	22.3	---	1.00	ug/L	1	20.0	---	111	80-120%	---	---	
1,2-Dibromo-3-chloropropane	18.6	---	5.00	ug/L	1	20.0	---	93	80-120%	---	---	
1,2-Dibromoethane (EDB)	20.8	---	0.500	ug/L	1	20.0	---	104	80-120%	---	---	
Dibromomethane	20.0	---	1.00	ug/L	1	20.0	---	100	80-120%	---	---	
1,2-Dichlorobenzene	19.3	---	0.500	ug/L	1	20.0	---	96	80-120%	---	---	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0873 - 09 23 24 1436**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0402 - EPA 5030C							**Water**					
LCS (24I0402-BS1)			Prepared: 09/13/24 10:03 Analyzed: 09/13/24 20:15									
1,3-Dichlorobenzene	20.1	---	0.500	ug/L	1	20.0	---	101	80-120%	---	---	
1,4-Dichlorobenzene	19.6	---	0.500	ug/L	1	20.0	---	98	80-120%	---	---	
Dichlorodifluoromethane	16.2	---	1.00	ug/L	1	20.0	---	81	80-120%	---	---	
1,1-Dichloroethane	18.9	---	0.400	ug/L	1	20.0	---	94	80-120%	---	---	
1,2-Dichloroethane (EDC)	19.4	---	0.400	ug/L	1	20.0	---	97	80-120%	---	---	
1,1-Dichloroethene	19.0	---	0.400	ug/L	1	20.0	---	95	80-120%	---	---	
cis-1,2-Dichloroethene	19.7	---	0.400	ug/L	1	20.0	---	99	80-120%	---	---	
trans-1,2-Dichloroethene	19.2	---	0.400	ug/L	1	20.0	---	96	80-120%	---	---	
1,2-Dichloropropane	18.7	---	0.500	ug/L	1	20.0	---	93	80-120%	---	---	
1,3-Dichloropropane	20.2	---	1.00	ug/L	1	20.0	---	101	80-120%	---	---	
2,2-Dichloropropane	18.8	---	1.00	ug/L	1	20.0	---	94	80-120%	---	---	
1,1-Dichloropropene	19.4	---	1.00	ug/L	1	20.0	---	97	80-120%	---	---	
cis-1,3-Dichloropropene	21.6	---	1.00	ug/L	1	20.0	---	108	80-120%	---	---	
trans-1,3-Dichloropropene	22.3	---	1.00	ug/L	1	20.0	---	111	80-120%	---	---	
Hexachlorobutadiene	20.1	---	5.00	ug/L	1	20.0	---	101	80-120%	---	---	
Methylene chloride	17.6	---	10.0	ug/L	1	20.0	---	88	80-120%	---	---	
1,1,1,2-Tetrachloroethane	22.3	---	0.400	ug/L	1	20.0	---	111	80-120%	---	---	
1,1,2,2-Tetrachloroethane	20.1	---	0.500	ug/L	1	20.0	---	101	80-120%	---	---	
Tetrachloroethene (PCE)	20.2	---	0.400	ug/L	1	20.0	---	101	80-120%	---	---	
1,2,3-Trichlorobenzene	19.2	---	2.00	ug/L	1	20.0	---	96	80-120%	---	---	
1,1,2-Trichloroethane	19.8	---	0.500	ug/L	1	20.0	---	99	80-120%	---	---	
1,2,4-Trichlorobenzene	18.9	---	2.00	ug/L	1	20.0	---	94	80-120%	---	---	
1,1,1-Trichloroethane	19.9	---	0.400	ug/L	1	20.0	---	99	80-120%	---	---	
Trichloroethene (TCE)	17.5	---	0.400	ug/L	1	20.0	---	87	80-120%	---	---	
Trichlorofluoromethane	21.6	---	2.00	ug/L	1	20.0	---	108	80-120%	---	---	
1,2,3-Trichloropropane	18.1	---	1.00	ug/L	1	20.0	---	90	80-120%	---	---	
Vinyl chloride	18.6	---	0.200	ug/L	1	20.0	---	93	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 92 %*		*Limits: 80-120 %*			*Dilution: 1x*				
Toluene-d8 (Surr)			*100 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*95 %*		*80-120 %*			*"*				
Duplicate (24I0402-DUP1)			Prepared: 09/13/24 10:03 Analyzed: 09/13/24 23:07									
QC Source Sample: Non-SDG (A4I0850-15RE1)												
Bromobenzene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	

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GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0873 - 09 23 24 1436**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0402 - EPA 5030C							**Water**					
Duplicate (24I0402-DUP1)			Prepared: 09/13/24 10:03 Analyzed: 09/13/24 23:07									
QC Source Sample: Non-SDG (A4I0850-15RE1)												
Bromochloromethane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Bromodichloromethane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Bromoform	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Bromomethane	ND	---	50.0	ug/L	10	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Chlorobenzene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
Chloroethane	**239**	---	50.0	ug/L	10	---	213	---	---	12	30%	
Chloroform	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Chloromethane	ND	---	50.0	ug/L	10	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Dibromochloromethane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	---	50.0	ug/L	10	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
Dibromomethane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
1,1-Dichloroethane	**8.00**	---	4.00	ug/L	10	---	8.30	---	---	4	30%	
1,2-Dichloroethane (EDC)	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	---	4.00	ug/L	10	---	2.40	---	---	***	30%	
cis-1,2-Dichloroethene	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	---	50.0	ug/L	10	---	ND	---	---	---	30%	
Methylene chloride	ND	---	100	ug/L	10	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	

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5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0873 - 09 23 24 1436**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0402 - EPA 5030C							**Water**					
Duplicate (24I0402-DUP1)			Prepared: 09/13/24 10:03 Analyzed: 09/13/24 23:07									
QC Source Sample: Non-SDG (A4I0850-15RE1)												
1,1,2,2-Tetrachloroethane	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	---	20.0	ug/L	10	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	---	20.0	ug/L	10	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
Trichloroethene (TCE)	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	---	20.0	ug/L	10	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Vinyl chloride	ND	---	2.00	ug/L	10	---	2.50	---	---	***	**30%**	Q-17
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 93 %*		*Limits: 80-120 %*				*Dilution: 1x*			
Toluene-d8 (Surr)			*100 %*		*80-120 %*				*"*			
4-Bromofluorobenzene (Surr)			*102 %*		*80-120 %*				*"*			
Matrix Spike (24I0402-MS1)			Prepared: 09/13/24 10:03 Analyzed: 09/14/24 04:10									
QC Source Sample: Non-SDG (A4I0972-15)												
EPA 8260D												
Bromobenzene	19.3	---	0.500	ug/L	1	20.0	ND	97	80-120%	---	---	
Bromochloromethane	19.3	---	1.00	ug/L	1	20.0	ND	97	78-123%	---	---	
Bromodichloromethane	20.8	---	1.00	ug/L	1	20.0	ND	104	79-125%	---	---	
Bromoform	22.9	---	1.00	ug/L	1	20.0	ND	114	66-130%	---	---	
Bromomethane	18.3	---	5.00	ug/L	1	20.0	ND	91	53-141%	---	---	
Carbon tetrachloride	22.3	---	1.00	ug/L	1	20.0	ND	111	72-136%	---	---	
Chlorobenzene	21.2	---	0.500	ug/L	1	20.0	ND	106	80-120%	---	---	
Chloroethane	18.0	---	5.00	ug/L	1	20.0	ND	90	60-138%	---	---	
Chloroform	20.6	---	1.00	ug/L	1	20.0	ND	103	79-124%	---	---	
Chloromethane	17.4	---	5.00	ug/L	1	20.0	ND	87	50-139%	---	---	
2-Chlorotoluene	20.5	---	1.00	ug/L	1	20.0	ND	102	79-122%	---	---	
4-Chlorotoluene	21.5	---	1.00	ug/L	1	20.0	ND	108	78-122%	---	---	
Dibromochloromethane	22.8	---	1.00	ug/L	1	20.0	ND	114	74-126%	---	---	
1,2-Dibromo-3-chloropropane	18.5	---	5.00	ug/L	1	20.0	ND	92	62-128%	---	---	
1,2-Dibromoethane (EDB)	20.6	---	0.500	ug/L	1	20.0	ND	103	77-121%	---	---	
Dibromomethane	19.2	---	1.00	ug/L	1	20.0	ND	96	79-123%	---	---	

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QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0402 - EPA 5030C							**Water**					
Matrix Spike (24I0402-MS1)			Prepared: 09/13/24 10:03		Analyzed: 09/14/24 04:10							
QC Source Sample: Non-SDG (A4I0972-15)												
1,2-Dichlorobenzene	20.3	---	0.500	ug/L	1	20.0	ND	102	80-120%	---	---	
1,3-Dichlorobenzene	20.5	---	0.500	ug/L	1	20.0	ND	103	80-120%	---	---	
1,4-Dichlorobenzene	20.2	---	0.500	ug/L	1	20.0	ND	101	79-120%	---	---	
Dichlorodifluoromethane	17.2	---	1.00	ug/L	1	20.0	ND	86	32-152%	---	---	
1,1-Dichloroethane	19.1	---	0.400	ug/L	1	20.0	ND	95	77-125%	---	---	
1,2-Dichloroethane (EDC)	20.2	---	0.400	ug/L	1	20.0	ND	101	73-128%	---	---	
1,1-Dichloroethene	19.8	---	0.400	ug/L	1	20.0	ND	99	71-131%	---	---	
cis-1,2-Dichloroethene	19.8	---	0.400	ug/L	1	20.0	ND	99	78-123%	---	---	
trans-1,2-Dichloroethene	19.5	---	0.400	ug/L	1	20.0	ND	97	75-124%	---	---	
1,2-Dichloropropane	18.8	---	0.500	ug/L	1	20.0	ND	94	78-122%	---	---	
1,3-Dichloropropane	20.8	---	1.00	ug/L	1	20.0	ND	104	80-120%	---	---	
2,2-Dichloropropane	17.2	---	1.00	ug/L	1	20.0	ND	86	60-139%	---	---	
1,1-Dichloropropene	19.5	---	1.00	ug/L	1	20.0	ND	97	79-125%	---	---	
cis-1,3-Dichloropropene	20.9	---	1.00	ug/L	1	20.0	ND	105	75-124%	---	---	
trans-1,3-Dichloropropene	22.2	---	1.00	ug/L	1	20.0	ND	111	73-127%	---	---	
Hexachlorobutadiene	20.2	---	5.00	ug/L	1	20.0	ND	101	66-134%	---	---	
Methylene chloride	16.6	---	10.0	ug/L	1	20.0	ND	83	74-124%	---	---	
1,1,1,2-Tetrachloroethane	23.6	---	0.400	ug/L	1	20.0	ND	118	78-124%	---	---	
1,1,2,2-Tetrachloroethane	21.7	---	0.500	ug/L	1	20.0	ND	108	71-121%	---	---	
Tetrachloroethene (PCE)	21.2	---	0.400	ug/L	1	20.0	ND	106	74-129%	---	---	
1,2,3-Trichlorobenzene	19.4	---	2.00	ug/L	1	20.0	ND	97	69-129%	---	---	
1,1,2-Trichloroethane	19.9	---	0.500	ug/L	1	20.0	ND	100	80-120%	---	---	
1,2,4-Trichlorobenzene	19.5	---	2.00	ug/L	1	20.0	ND	97	69-130%	---	---	
1,1,1-Trichloroethane	20.9	---	0.400	ug/L	1	20.0	ND	104	74-131%	---	---	
Trichloroethene (TCE)	17.4	---	0.400	ug/L	1	20.0	ND	87	79-123%	---	---	
Trichlorofluoromethane	23.6	---	2.00	ug/L	1	20.0	ND	118	65-141%	---	---	
1,2,3-Trichloropropane	19.2	---	1.00	ug/L	1	20.0	ND	96	73-122%	---	---	
Vinyl chloride	20.0	---	0.200	ug/L	1	20.0	ND	100	58-137%	---	---	

Surr: 1,4-Difluorobenzene (Surr)	*Recovery: 90 %*	*Limits: 80-120 %*	*Dilution: 1x*
Toluene-d8 (Surr)	*100 %*	*80-120 %*	*"*
4-Bromofluorobenzene (Surr)	*95 %*	*80-120 %*	*"*

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Darrell Auvil, Client Services Manager

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503-718-2323
ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0873 - 09 23 24 1436**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0539 - EPA 5030C							**Water**					
Blank (24I0539-BLK1)			Prepared: 09/18/24 07:28 Analyzed: 09/18/24 09:35									
EPA 8260D												
Bromobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Bromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromodichloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromoform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromomethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Carbon tetrachloride	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Chloroethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Chloroform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chloromethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
2-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
4-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Dibromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dibromomethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Methylene chloride	ND	---	10.0	ug/L	1	---	---	---	---	---	---	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0873 - 09 23 24 1436**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0539 - EPA 5030C									Water			
Blank (24I0539-BLK1)			Prepared: 09/18/24 07:28 Analyzed: 09/18/24 09:35									
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Vinyl chloride	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 92 %*		*Limits: 80-120 %*			*Dilution: 1x*				
Toluene-d8 (Surr)			*100 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*100 %*		*80-120 %*			*"*				
LCS (24I0539-BS1)			Prepared: 09/18/24 07:28 Analyzed: 09/18/24 08:52									
EPA 8260D												
Bromobenzene	20.2	---	0.500	ug/L	1	20.0	---	101	80-120%	---	---	
Bromochloromethane	18.3	---	1.00	ug/L	1	20.0	---	92	80-120%	---	---	
Bromodichloromethane	20.9	---	1.00	ug/L	1	20.0	---	105	80-120%	---	---	
Bromoform	23.4	---	1.00	ug/L	1	20.0	---	117	80-120%	---	---	
Bromomethane	16.8	---	5.00	ug/L	1	20.0	---	84	80-120%	---	---	
Carbon tetrachloride	21.6	---	1.00	ug/L	1	20.0	---	108	80-120%	---	---	
Chlorobenzene	20.9	---	0.500	ug/L	1	20.0	---	104	80-120%	---	---	
Chloroethane	18.1	---	5.00	ug/L	1	20.0	---	90	80-120%	---	---	
Chloroform	20.2	---	1.00	ug/L	1	20.0	---	101	80-120%	---	---	
Chloromethane	16.9	---	5.00	ug/L	1	20.0	---	85	80-120%	---	---	
2-Chlorotoluene	21.3	---	1.00	ug/L	1	20.0	---	107	80-120%	---	---	
4-Chlorotoluene	22.7	---	1.00	ug/L	1	20.0	---	114	80-120%	---	---	
Dibromochloromethane	22.9	---	1.00	ug/L	1	20.0	---	114	80-120%	---	---	
1,2-Dibromo-3-chloropropane	20.7	---	5.00	ug/L	1	20.0	---	103	80-120%	---	---	
1,2-Dibromoethane (EDB)	21.6	---	0.500	ug/L	1	20.0	---	108	80-120%	---	---	
Dibromomethane	19.2	---	1.00	ug/L	1	20.0	---	96	80-120%	---	---	
1,2-Dichlorobenzene	21.3	---	0.500	ug/L	1	20.0	---	107	80-120%	---	---	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0873 - 09 23 24 1436**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0539 - EPA 5030C							**Water**					
LCS (24I0539-BS1)			Prepared: 09/18/24 07:28 Analyzed: 09/18/24 08:52									
1,3-Dichlorobenzene	22.0	---	0.500	ug/L	1	20.0	---	110	80-120%	---	---	
1,4-Dichlorobenzene	21.3	---	0.500	ug/L	1	20.0	---	106	80-120%	---	---	
Dichlorodifluoromethane	18.1	---	1.00	ug/L	1	20.0	---	90	80-120%	---	---	
1,1-Dichloroethane	18.9	---	0.400	ug/L	1	20.0	---	94	80-120%	---	---	
1,2-Dichloroethane (EDC)	20.3	---	0.400	ug/L	1	20.0	---	102	80-120%	---	---	
1,1-Dichloroethene	19.3	---	0.400	ug/L	1	20.0	---	96	80-120%	---	---	
cis-1,2-Dichloroethene	19.5	---	0.400	ug/L	1	20.0	---	97	80-120%	---	---	
trans-1,2-Dichloroethene	18.6	---	0.400	ug/L	1	20.0	---	93	80-120%	---	---	
1,2-Dichloropropane	18.8	---	0.500	ug/L	1	20.0	---	94	80-120%	---	---	
1,3-Dichloropropane	21.0	---	1.00	ug/L	1	20.0	---	105	80-120%	---	---	
2,2-Dichloropropane	21.0	---	1.00	ug/L	1	20.0	---	105	80-120%	---	---	
1,1-Dichloropropene	18.7	---	1.00	ug/L	1	20.0	---	94	80-120%	---	---	
cis-1,3-Dichloropropene	23.1	---	1.00	ug/L	1	20.0	---	115	80-120%	---	---	
trans-1,3-Dichloropropene	23.7	---	1.00	ug/L	1	20.0	---	118	80-120%	---	---	
Hexachlorobutadiene	22.4	---	5.00	ug/L	1	20.0	---	112	80-120%	---	---	
Methylene chloride	16.3	---	10.0	ug/L	1	20.0	---	82	80-120%	---	---	
1,1,1,2-Tetrachloroethane	23.1	---	0.400	ug/L	1	20.0	---	116	80-120%	---	---	
1,1,2,2-Tetrachloroethane	21.9	---	0.500	ug/L	1	20.0	---	109	80-120%	---	---	
Tetrachloroethene (PCE)	20.6	---	0.400	ug/L	1	20.0	---	103	80-120%	---	---	
1,2,3-Trichlorobenzene	20.9	---	2.00	ug/L	1	20.0	---	105	80-120%	---	---	
1,1,2-Trichloroethane	20.0	---	0.500	ug/L	1	20.0	---	100	80-120%	---	---	
1,2,4-Trichlorobenzene	20.8	---	2.00	ug/L	1	20.0	---	104	80-120%	---	---	
1,1,1-Trichloroethane	19.8	---	0.400	ug/L	1	20.0	---	99	80-120%	---	---	
Trichloroethene (TCE)	17.3	---	0.400	ug/L	1	20.0	---	86	80-120%	---	---	
Trichlorofluoromethane	21.7	---	2.00	ug/L	1	20.0	---	109	80-120%	---	---	
1,2,3-Trichloropropane	20.8	---	1.00	ug/L	1	20.0	---	104	80-120%	---	---	
Vinyl chloride	19.4	---	0.200	ug/L	1	20.0	---	97	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 89 %*		*Limits: 80-120 %*			*Dilution: 1x*				
Toluene-d8 (Surr)			*100 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*99 %*		*80-120 %*			*"*				
Duplicate (24I0539-DUP1)			Prepared: 09/18/24 07:28 Analyzed: 09/18/24 13:11									
QC Source Sample: Non-SDG (A4I1213-04)												
Bromobenzene	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	

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5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0873 - 09 23 24 1436**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0539 - EPA 5030C							**Water**					
Duplicate (24I0539-DUP1)			Prepared: 09/18/24 07:28		Analyzed: 09/18/24 13:11							
QC Source Sample: Non-SDG (A4I1213-04)												
Bromochloromethane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Bromodichloromethane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Bromoform	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Bromomethane	ND	---	5.00	ug/L	1	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Chlorobenzene	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
Chloroethane	ND	---	5.00	ug/L	1	---	ND	---	---	---	30%	
Chloroform	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Chloromethane	ND	---	5.00	ug/L	1	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Dibromochloromethane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
Dibromomethane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	---	ND	---	---	---	30%	
Methylene chloride	ND	---	10.0	ug/L	1	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	---	ND	---	---	---	30%	

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Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0873 - 09 23 24 1436**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0539 - EPA 5030C							**Water**					
Duplicate (24I0539-DUP1)			Prepared: 09/18/24 07:28 Analyzed: 09/18/24 13:11									
QC Source Sample: Non-SDG (A4I1213-04)												
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	---	ND	---	---	---	30%	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Vinyl chloride	ND	---	0.200	ug/L	1	---	ND	---	---	---	30%	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 91 %*		*Limits: 80-120 %*				*Dilution: 1x*			
Toluene-d8 (Surr)			*102 %*		*80-120 %*				*"*			
4-Bromofluorobenzene (Surr)			*104 %*		*80-120 %*				*"*			
Matrix Spike (24I0539-MS1)			Prepared: 09/18/24 07:28 Analyzed: 09/18/24 15:42									
QC Source Sample: Non-SDG (A4I1138-07)												
EPA 8260D												
Bromobenzene	93.4	---	2.50	ug/L	5	100	ND	93	80-120%	---	---	
Bromochloromethane	97.0	---	5.00	ug/L	5	100	ND	97	78-123%	---	---	
Bromodichloromethane	108	---	5.00	ug/L	5	100	ND	108	79-125%	---	---	
Bromoform	118	---	5.00	ug/L	5	100	ND	118	66-130%	---	---	
Bromomethane	93.8	---	25.0	ug/L	5	100	ND	94	53-141%	---	---	
Carbon tetrachloride	115	---	5.00	ug/L	5	100	ND	115	72-136%	---	---	
Chlorobenzene	103	---	2.50	ug/L	5	100	ND	103	80-120%	---	---	
Chloroethane	93.8	---	25.0	ug/L	5	100	ND	94	60-138%	---	---	
Chloroform	106	---	5.00	ug/L	5	100	ND	106	79-124%	---	---	
Chloromethane	90.3	---	25.0	ug/L	5	100	ND	90	50-139%	---	---	
2-Chlorotoluene	102	---	5.00	ug/L	5	100	ND	102	79-122%	---	---	
4-Chlorotoluene	106	---	5.00	ug/L	5	100	ND	106	78-122%	---	---	
Dibromochloromethane	111	---	5.00	ug/L	5	100	ND	111	74-126%	---	---	
1,2-Dibromo-3-chloropropane	96.6	---	25.0	ug/L	5	100	ND	97	62-128%	---	---	
1,2-Dibromoethane (EDB)	105	---	2.50	ug/L	5	100	ND	105	77-121%	---	---	
Dibromomethane	96.8	---	5.00	ug/L	5	100	ND	97	79-123%	---	---	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0873 - 09 23 24 1436**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0539 - EPA 5030C							**Water**					
Matrix Spike (24I0539-MS1)			Prepared: 09/18/24 07:28 Analyzed: 09/18/24 15:42									
QC Source Sample: Non-SDG (A4I1138-07)												
1,2-Dichlorobenzene	98.6	---	2.50	ug/L	5	100	ND	99	80-120%	---	---	
1,3-Dichlorobenzene	102	---	2.50	ug/L	5	100	ND	102	80-120%	---	---	
1,4-Dichlorobenzene	99.2	---	2.50	ug/L	5	100	ND	99	79-120%	---	---	
Dichlorodifluoromethane	97.0	---	5.00	ug/L	5	100	ND	97	32-152%	---	---	
1,1-Dichloroethane	105	---	2.00	ug/L	5	100	7.20	98	77-125%	---	---	
1,2-Dichloroethane (EDC)	102	---	2.00	ug/L	5	100	ND	102	73-128%	---	---	
1,1-Dichloroethene	112	---	2.00	ug/L	5	100	8.05	104	71-131%	---	---	
cis-1,2-Dichloroethene	103	---	2.00	ug/L	5	100	ND	103	78-123%	---	---	
trans-1,2-Dichloroethene	102	---	2.00	ug/L	5	100	ND	102	75-124%	---	---	
1,2-Dichloropropane	92.4	---	2.50	ug/L	5	100	ND	92	78-122%	---	---	
1,3-Dichloropropane	105	---	5.00	ug/L	5	100	ND	105	80-120%	---	---	
2,2-Dichloropropane	112	---	5.00	ug/L	5	100	ND	112	60-139%	---	---	
1,1-Dichloropropene	102	---	5.00	ug/L	5	100	ND	102	79-125%	---	---	
cis-1,3-Dichloropropene	103	---	5.00	ug/L	5	100	ND	103	75-124%	---	---	
trans-1,3-Dichloropropene	116	---	5.00	ug/L	5	100	ND	116	73-127%	---	---	
Hexachlorobutadiene	106	---	25.0	ug/L	5	100	ND	106	66-134%	---	---	
Methylene chloride	85.2	---	50.0	ug/L	5	100	ND	85	74-124%	---	---	
1,1,1,2-Tetrachloroethane	114	---	2.00	ug/L	5	100	ND	114	78-124%	---	---	
1,1,2,2-Tetrachloroethane	107	---	2.50	ug/L	5	100	ND	107	71-121%	---	---	
Tetrachloroethene (PCE)	106	---	2.00	ug/L	5	100	ND	106	74-129%	---	---	
1,2,3-Trichlorobenzene	98.6	---	10.0	ug/L	5	100	ND	99	69-129%	---	---	
1,1,2-Trichloroethane	101	---	2.50	ug/L	5	100	ND	101	80-120%	---	---	
1,2,4-Trichlorobenzene	95.4	---	10.0	ug/L	5	100	ND	95	69-130%	---	---	
1,1,1-Trichloroethane	258	---	2.00	ug/L	5	100	153	105	74-131%	---	---	
Trichloroethene (TCE)	88.4	---	2.00	ug/L	5	100	ND	88	79-123%	---	---	
Trichlorofluoromethane	118	---	10.0	ug/L	5	100	ND	118	65-141%	---	---	
1,2,3-Trichloropropane	97.8	---	5.00	ug/L	5	100	ND	98	73-122%	---	---	
Vinyl chloride	104	---	1.00	ug/L	5	100	ND	104	58-137%	---	---	

Surr: 1,4-Difluorobenzene (Surr)	*Recovery: 91 %*	*Limits: 80-120 %*	*Dilution: 1x*
Toluene-d8 (Surr)	*99 %*	*80-120 %*	*"*
4-Bromofluorobenzene (Surr)	*95 %*	*80-120 %*	*"*

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-34	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0873 - 09 23 24 1436

QUALITY CONTROL (QC) SAMPLE RESULTS

Ammonia by Gas Diffusion and Colorimetric Detection

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0315 - Method Prep: Aq									Water			
Blank (24I0315-BLK1)			Prepared: 09/11/24 08:29 Analyzed: 09/11/24 16:02									
SM 4500-NH3 G												
Ammonia as N	ND	---	0.0200	mg/L	1	---	---	---	---	---	---	
LCS (24I0315-BS1)			Prepared: 09/11/24 08:29 Analyzed: 09/11/24 16:03									
SM 4500-NH3 G												
Ammonia as N	1.99	---	0.0200	mg/L	1	2.00	---	99	90-111%	---	---	
Matrix Spike (24I0315-MS1)			Prepared: 09/11/24 08:29 Analyzed: 09/11/24 16:11									
QC Source Sample: Non-SDG (A4I0805-01)												
SM 4500-NH3 G												
Ammonia as N	2.56	---	0.0250	mg/L	1	2.50	0.0130	102	90-111%	---	---	
Matrix Spike Dup (24I0315-MSD1)			Prepared: 09/11/24 08:29 Analyzed: 09/11/24 16:12									
QC Source Sample: Non-SDG (A4I0805-01)												
Ammonia as N	2.54	---	0.0250	mg/L	1	2.50	0.0130	101	90-111%	0.5	13%	

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5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0873 - 09 23 24 1436**

QUALITY CONTROL (QC) SAMPLE RESULTS

Ammonia by Gas Diffusion and Colorimetric Detection

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0357 - Method Prep: Aq									Water			
Blank (24I0357-BLK1)			Prepared: 09/12/24 08:20 Analyzed: 09/12/24 12:06									
SM 4500-NH3 G												
Ammonia as N	ND	---	0.0200	mg/L	1	---	---	---	---	---	---	
LCS (24I0357-BS1)			Prepared: 09/12/24 08:20 Analyzed: 09/12/24 12:08									
SM 4500-NH3 G												
Ammonia as N	1.88	---	0.0200	mg/L	1	2.00	---	94	90-111%	---	---	
Matrix Spike (24I0357-MS1)			Prepared: 09/12/24 08:20 Analyzed: 09/12/24 12:14									
QC Source Sample: Non-SDG (A4I1039-01)												
SM 4500-NH3 G												
Ammonia as N	38.9	---	0.200	mg/L	10	20.0	18.7	101	90-111%	---	---	
Matrix Spike Dup (24I0357-MSD1)			Prepared: 09/12/24 08:20 Analyzed: 09/12/24 12:15									
QC Source Sample: Non-SDG (A4I1039-01)												
Ammonia as N	38.5	---	0.200	mg/L	10	20.0	18.7	99	90-111%	1	13%	

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QUALITY CONTROL (QC) SAMPLE RESULTS

Ammonia by Gas Diffusion and Colorimetric Detection

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0377 - Method Prep: Aq									Water			
Blank (24I0377-BLK1)			Prepared: 09/12/24 12:12		Analyzed: 09/12/24 13:29							
SM 4500-NH3 G												
Ammonia as N	ND	---	0.0200	mg/L	1	---	---	---	---	---	---	
LCS (24I0377-BS1)			Prepared: 09/12/24 12:12		Analyzed: 09/12/24 13:30							
SM 4500-NH3 G												
Ammonia as N	1.92	---	0.0200	mg/L	1	2.00	---	96	90-111%	---	---	
Matrix Spike (24I0377-MS1)			Prepared: 09/12/24 12:12		Analyzed: 09/12/24 13:35							
QC Source Sample: Non-SDG (A4I0981-01)												
SM 4500-NH3 G												
Ammonia as N	2.47	---	0.0250	mg/L	1	2.50	ND	99	90-111%	---	---	
Matrix Spike Dup (24I0377-MSD1)			Prepared: 09/12/24 12:12		Analyzed: 09/12/24 13:36							
QC Source Sample: Non-SDG (A4I0981-01)												
Ammonia as N	2.49	---	0.0250	mg/L	1	2.50	ND	100	90-111%	0.8	13%	

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5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0873 - 09 23 24 1436**

QUALITY CONTROL (QC) SAMPLE RESULTS

Anions by Ion Chromatography

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0161 - Method Prep: Aq							**Water**					
Blank (24I0161-BLK1)			Prepared: 09/06/24 10:43		Analyzed: 09/06/24 16:16							
EPA 300.0												
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	---	---	---	---	---	---	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	---	---	---	---	---	---	
LCS (24I0161-BS1)			Prepared: 09/06/24 10:43		Analyzed: 09/06/24 16:38							
EPA 300.0												
Nitrate-Nitrogen	2.02	---	0.250	mg/L	1	2.00	---	101	90-110%	---	---	
Nitrite-Nitrogen	1.98	---	0.250	mg/L	1	2.00	---	99	90-110%	---	---	
Duplicate (24I0161-DUP1)			Prepared: 09/06/24 10:43		Analyzed: 09/06/24 18:26							
QC Source Sample: MW-16 (A4I0873-09RE1)												
EPA 300.0												
Nitrate-Nitrogen	**13.7**	---	1.25	mg/L	5	---	14.1	---	---	3	10%	Q-16
Duplicate (24I0161-DUP2)			Prepared: 09/06/24 10:43		Analyzed: 09/06/24 19:31							
QC Source Sample: MW-16 (A4I0873-09)												
EPA 300.0												
Nitrate-Nitrogen	**13.0**	---	0.250	mg/L	1	---	13.0	---	---	0.08	10%	E
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	---	ND	---	---	---	10%	
Matrix Spike (24I0161-MS1)			Prepared: 09/06/24 10:43		Analyzed: 09/06/24 18:47							
QC Source Sample: MW-16 (A4I0873-09RE1)												
EPA 300.0												
Nitrate-Nitrogen	23.6	---	1.25	mg/L	5	10.0	14.1	95	87-112%	---	---	Q-16
Matrix Spike (24I0161-MS2)			Prepared: 09/06/24 10:43		Analyzed: 09/06/24 20:35							
QC Source Sample: MW-16 (A4I0873-09)												
EPA 300.0												
Nitrate-Nitrogen	15.5	---	0.312	mg/L	1	2.50	13.0	101	87-112%	---	---	E
Nitrite-Nitrogen	2.47	---	0.312	mg/L	1	2.50	ND	99	90-114%	---	---	

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5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0873 - 09 23 24 1436**

SAMPLE PREPARATION INFORMATION

Halogenated Volatile Organic Compounds by EPA 8260D

Prep: EPA 5030C

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 24I0354							
A4I0873-01	Water	EPA 8260D	09/05/24 08:46	09/12/24 09:08	5mL/5mL	5mL/5mL	1.00
A4I0873-02	Water	EPA 8260D	09/05/24 09:39	09/12/24 09:08	5mL/5mL	5mL/5mL	1.00
A4I0873-03	Water	EPA 8260D	09/05/24 10:31	09/12/24 09:08	5mL/5mL	5mL/5mL	1.00
A4I0873-04	Water	EPA 8260D	09/05/24 11:24	09/12/24 09:08	5mL/5mL	5mL/5mL	1.00
A4I0873-05	Water	EPA 8260D	09/05/24 11:24	09/12/24 09:08	5mL/5mL	5mL/5mL	1.00
A4I0873-06	Water	EPA 8260D	09/05/24 12:47	09/12/24 09:08	5mL/5mL	5mL/5mL	1.00
Batch: 24I0401							
A4I0873-07	Water	EPA 8260D	09/05/24 11:17	09/13/24 09:07	5mL/5mL	5mL/5mL	1.00
A4I0873-08	Water	EPA 8260D	09/05/24 10:37	09/13/24 09:07	5mL/5mL	5mL/5mL	1.00
A4I0873-09	Water	EPA 8260D	09/05/24 09:13	09/13/24 09:07	5mL/5mL	5mL/5mL	1.00
A4I0873-11	Water	EPA 8260D	09/05/24 12:51	09/13/24 09:07	5mL/5mL	5mL/5mL	1.00
A4I0873-12	Water	EPA 8260D	09/05/24 09:57	09/13/24 09:07	5mL/5mL	5mL/5mL	1.00
Batch: 24I0402							
A4I0873-04RE1	Water	EPA 8260D	09/05/24 11:24	09/13/24 10:03	5mL/5mL	5mL/5mL	1.00
A4I0873-05RE1	Water	EPA 8260D	09/05/24 11:24	09/13/24 10:03	5mL/5mL	5mL/5mL	1.00
Batch: 24I0539							
A4I0873-10RE1	Water	EPA 8260D	09/05/24 08:39	09/18/24 09:17	5mL/5mL	5mL/5mL	1.00

Ammonia by Gas Diffusion and Colorimetric Detection

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 24I0315							
A4I0873-01	Water	SM 4500-NH3 G	09/05/24 08:46	09/11/24 08:29	10mL/10mL	10mL/10mL	1.00
A4I0873-02	Water	SM 4500-NH3 G	09/05/24 09:39	09/11/24 08:29	10mL/10mL	10mL/10mL	1.00
Batch: 24I0357							
A4I0873-03	Water	SM 4500-NH3 G	09/05/24 10:31	09/12/24 08:20	10mL/10mL	10mL/10mL	1.00
A4I0873-04	Water	SM 4500-NH3 G	09/05/24 11:24	09/12/24 08:20	10mL/10mL	10mL/10mL	1.00
A4I0873-05	Water	SM 4500-NH3 G	09/05/24 11:24	09/12/24 08:20	10mL/10mL	10mL/10mL	1.00
A4I0873-06	Water	SM 4500-NH3 G	09/05/24 12:47	09/12/24 08:20	10mL/10mL	10mL/10mL	1.00
A4I0873-08	Water	SM 4500-NH3 G	09/05/24 10:37	09/12/24 08:20	10mL/10mL	10mL/10mL	1.00
A4I0873-09	Water	SM 4500-NH3 G	09/05/24 09:13	09/12/24 08:20	10mL/10mL	10mL/10mL	1.00
A4I0873-10	Water	SM 4500-NH3 G	09/05/24 08:39	09/12/24 08:20	10mL/10mL	10mL/10mL	1.00
A4I0873-11	Water	SM 4500-NH3 G	09/05/24 12:51	09/12/24 08:20	10mL/10mL	10mL/10mL	1.00

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Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0873 - 09 23 24 1436**

SAMPLE PREPARATION INFORMATION

Ammonia by Gas Diffusion and Colorimetric Detection

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A4I0873-12	Water	SM 4500-NH3 G	09/05/24 09:57	09/12/24 08:20	10mL/10mL	10mL/10mL	1.00
Batch: 24I0377							
A4I0873-07RE1	Water	SM 4500-NH3 G	09/05/24 11:17	09/12/24 08:20	10mL/10mL	10mL/10mL	1.00

Anions by Ion Chromatography

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 24I0161							
A4I0873-01	Water	EPA 300.0	09/05/24 08:46	09/06/24 10:43	5mL/5mL	5mL/5mL	1.00
A4I0873-02	Water	EPA 300.0	09/05/24 09:39	09/06/24 10:43	5mL/5mL	5mL/5mL	1.00
A4I0873-03	Water	EPA 300.0	09/05/24 10:31	09/06/24 10:43	5mL/5mL	5mL/5mL	1.00
A4I0873-04	Water	EPA 300.0	09/05/24 11:24	09/06/24 10:43	5mL/5mL	5mL/5mL	1.00
A4I0873-05	Water	EPA 300.0	09/05/24 11:24	09/06/24 10:43	5mL/5mL	5mL/5mL	1.00
A4I0873-06	Water	EPA 300.0	09/05/24 12:47	09/06/24 10:43	5mL/5mL	5mL/5mL	1.00
A4I0873-06RE1	Water	EPA 300.0	09/05/24 12:47	09/06/24 10:43	5mL/5mL	5mL/5mL	1.00
A4I0873-07	Water	EPA 300.0	09/05/24 11:17	09/06/24 10:43	5mL/5mL	5mL/5mL	1.00
A4I0873-08	Water	EPA 300.0	09/05/24 10:37	09/06/24 10:43	5mL/5mL	5mL/5mL	1.00
A4I0873-08RE1	Water	EPA 300.0	09/05/24 10:37	09/06/24 10:43	5mL/5mL	5mL/5mL	1.00
A4I0873-09	Water	EPA 300.0	09/05/24 09:13	09/06/24 10:43	5mL/5mL	5mL/5mL	1.00
A4I0873-09RE1	Water	EPA 300.0	09/05/24 09:13	09/06/24 10:43	5mL/5mL	5mL/5mL	1.00
A4I0873-10	Water	EPA 300.0	09/05/24 08:39	09/06/24 10:43	5mL/5mL	5mL/5mL	1.00
A4I0873-11	Water	EPA 300.0	09/05/24 12:51	09/06/24 10:43	5mL/5mL	5mL/5mL	1.00
A4I0873-12	Water	EPA 300.0	09/05/24 09:57	09/06/24 10:43	5mL/5mL	5mL/5mL	1.00

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GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
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QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

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COMP	Analyzed sample is a composite of discrete samples that was performed in the laboratory.
E	Estimated Value. The result is above the calibration range of the instrument.
Q-16	Reanalysis of an original Batch QC sample.
Q-17	RPD between original and duplicate sample, or spike duplicates, is outside of established control limits.

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GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0873 - 09 23 24 1436**

REPORTING NOTES AND CONVENTIONS:

Abbreviations:

DET Analyte DETECTED at or above the detection or reporting limit.

ND Analyte NOT DETECTED at or above the detection or reporting limit.

NR Result Not Reported

RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

Detection Limits: Limit of Detection (LOD)

Validated Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ). If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

Basis: Results for soil samples are generally reported on a 100% dry weight basis.
The Result Basis is listed following the units as " dry", " wet", or " " (blank) designation.

" dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")
See Percent Solids section for details of dry weight analysis.

" wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.

" " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

Results for Volatiles analyses on soils and sediments that are reported on a “dry weight” basis include the water miscible solvent (WMS) correction referenced in the EPA 8000 Method guidance documents. Solid and Liquid samples reported on an “As Received” basis do not have the WMS correction applied, as dry weight was not performed.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) may not be included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

" --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

" *** " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Apex Laboratories



Darrell Auvil, Client Services Manager

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Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0873 - 09 23 24 1436**

REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to one half of the Reporting Limit (RL).
Blank results for gravimetric analyses are evaluated to the Reporting Level, not to half of the Reporting Level.
-For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.
-For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.
For further details, please request a copy of this document.
-Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.
'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level, if results are not reported to the MDL.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

Apex Laboratories

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0873 - 09 23 24 1436**

LABORATORY ACCREDITATION INFORMATION

ORELAP Certification ID: OR100062 (Primary Accreditation) - EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

Apex Laboratories

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation

All reported analytes are included in Apex Laboratories' current ORELAP scope.

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation.
Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

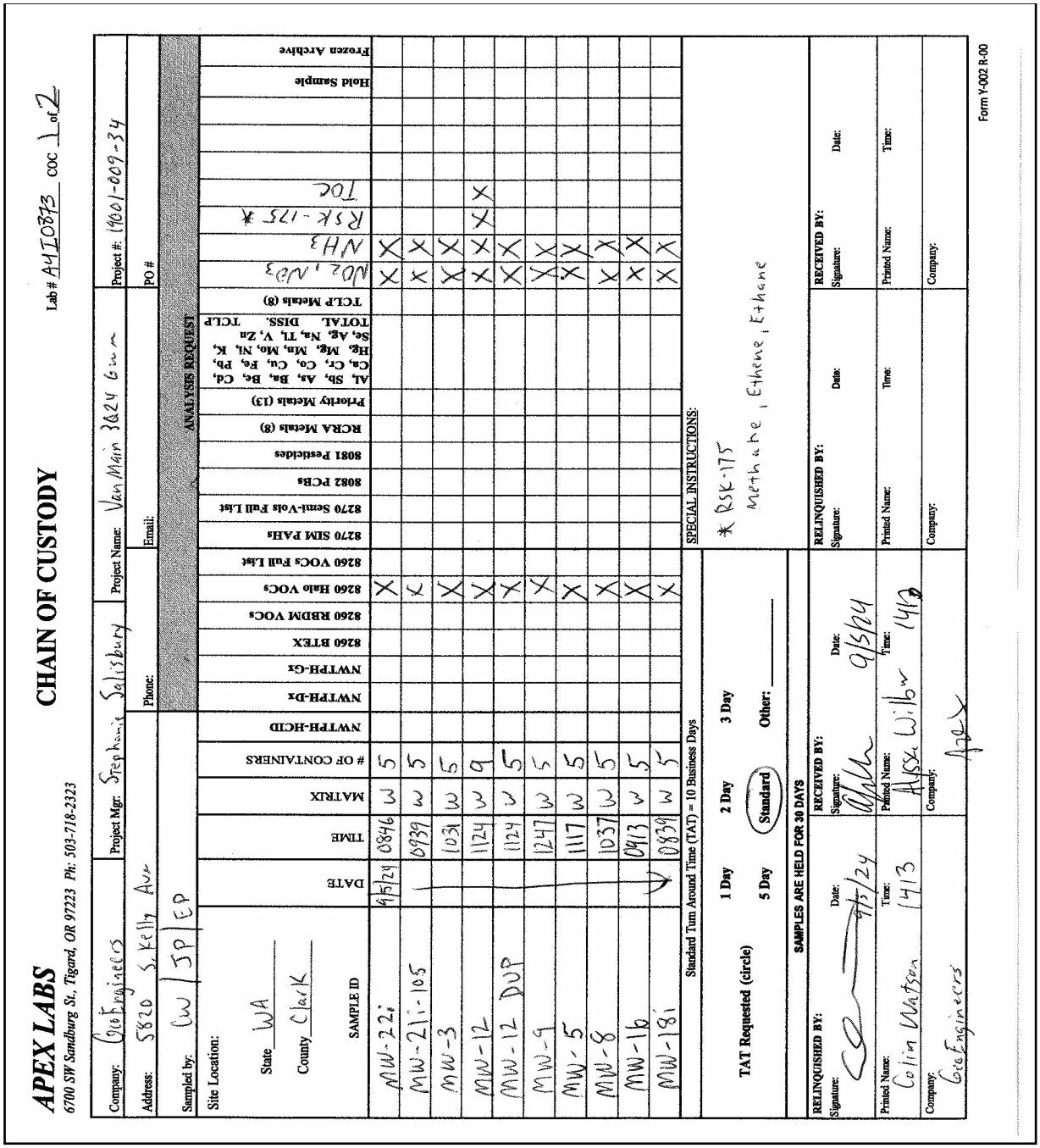


Darrell Auvil, Client Services Manager

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Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0873 - 09 23 24 1436**



APEX LABS — 6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323

CHAIN OF CUSTODY

Lab # A4I0873 COC 1 of 2

Company: GeoEngineers | Project Mgr: Stephanie Salisbury | Project Name: Van Main 3Q24 GWM | Project #: 19001-009-34

Address: 5820 S Kelly Ave | Phone: | Email: | PO #

Sampled by: CW / SP / EP

Site Location: State WA County Clark

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 BTEX	8260 RRDM VOCs	8260 Halo VOCs	8260 VOCs Full List	8270 SIM PAHs	8270 Semi-Vols Full List	8082 PCBs	8081 Pesticides	RCRA Metals (8)	Priority Metals (13)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS. TCLP	TCLP Metals (8)	NO2, NO3	NH3	RSK-175 *	TOC			Hold Sample	Frozen Archive
MW-22i	9/5/24	0846	W	5						X										X	X					
MW-21i-105		0939	W	5						X										X	X					
MW-3		1031	W	5						X										X	X					
MW-12		1124	W	9						X										X	X					
MW-12 DUP		1124	W	5						X										X	X					
MW-9		1247	W	5						X										X	X					
MW-5		1117	W	5						X										X	X					
MW-8		1037	W	5						X										X	X					
MW-16		0913	W	5						X										X	X					
MW-18i	↓	0839	W	5						X										X	X					

Standard Turn Around Time (TAT) = 10 Business Days

TAT Requested (circle): 1 Day | 2 Day | 3 Day | 5 Day | **Standard** | Other: ____

SPECIAL INSTRUCTIONS:
* RSK-175
Methane, Ethene, Ethane

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature:	Signature:	Signature:	Signature:
Date: 9/5/24	Date: 9/5/24	Date:	Date:
Time: 1413	Time: 1413	Time:	Time:
Printed Name: Colin Watson	Printed Name: Alyssa Wilbur	Printed Name:	Printed Name:
Company: GeoEngineers	Company: Apex	Company:	Company:

Form Y-002 R-00

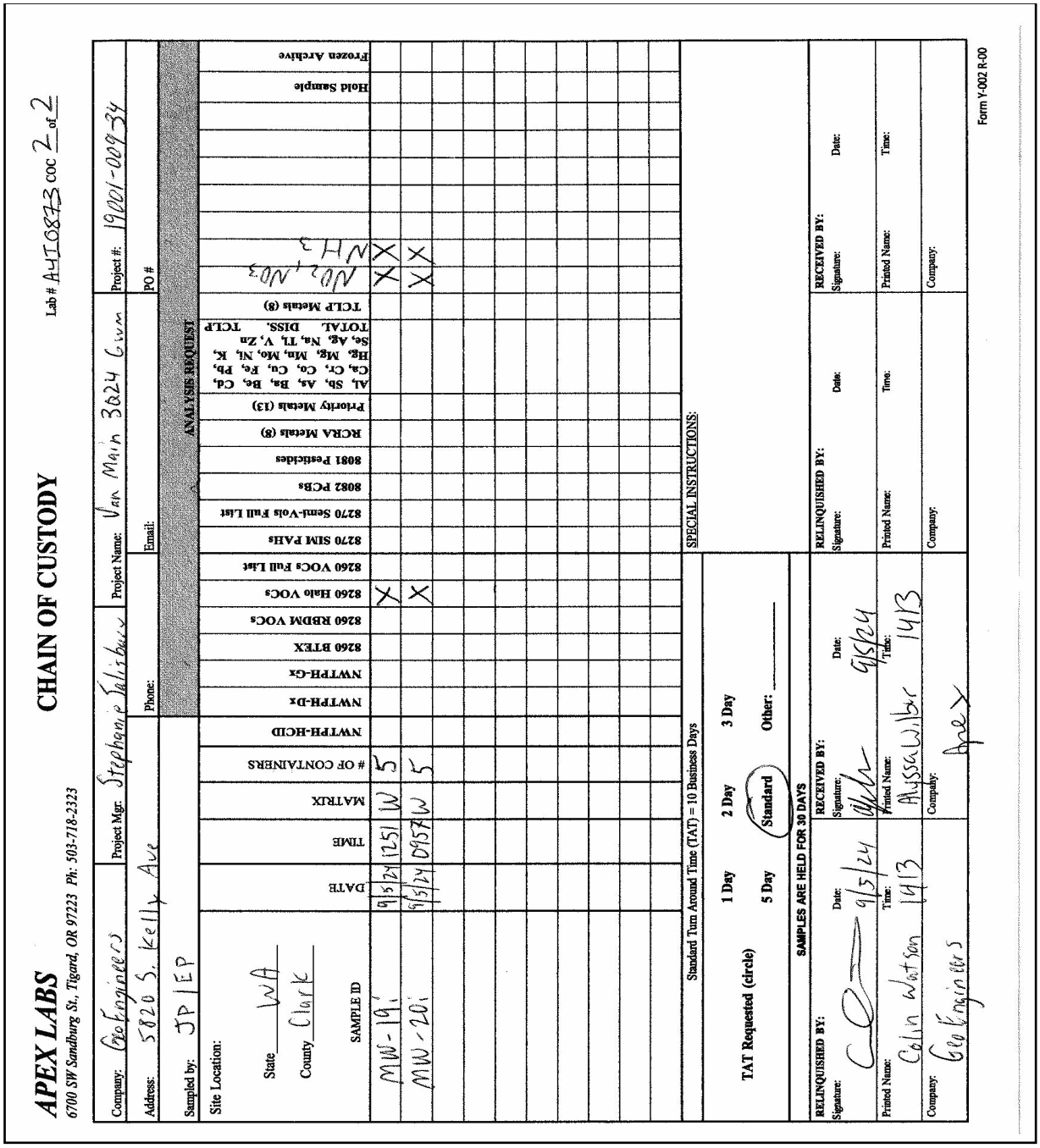
Apex Laboratories

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5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0873 - 09 23 24 1436**



APEX LABS
6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323

CHAIN OF CUSTODY

Lab # A4I0873 COC 2 of 2

Company: GeoEngineers | Project Mgr: Stephanie Salisbury | Project Name: Van Main 3Q24 GWM | Project #: 19001-009-34
Address: 5820 S. Kelly Ave | Phone: | Email: | PO #
Sampled by: JP/EP

Site Location: State WA, County Clark

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	BTEX 8260	RBDM VOCs 8260	Halo VOCs 8260	VOCs Full List 8260	SIM PAHs 8270	Semi-Vols Full List 8270	PCBs 8082	Pesticides 8081	RCRA Metals (8)	Priority Metals (13)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS. TCLP	TCLP Metals (8)	NO2,NO3	NH3	Hold Sample	Frozen Archive
MW-19	9/5/24	1251	W	5						X										X			
MW-20	9/5/24	0957	W	5						X										X			

Standard Turn Around Time (TAT) = 10 Business Days
TAT Requested (circle): 1 Day | 2 Day | 3 Day | 5 Day | Standard | Other: ____

SPECIAL INSTRUCTIONS:

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY:	Date:	Time:	RECEIVED BY:	Date:	Time:
Signature:	9/5/24		Signature:	9/5/24	
Printed Name: Colin Watson		1913	Printed Name: Alyssa Wilbur		1413
Company: GeoEngineers			Company: Apex		

RELINQUISHED BY:	Date:	Time:	RECEIVED BY:	Date:	Time:
Signature:			Signature:		
Printed Name:			Printed Name:		
Company:			Company:		

RELINQUISHED BY:	Date:	Time:	RECEIVED BY:	Date:	Time:
Signature:			Signature:		
Printed Name:			Printed Name:		
Company:			Company:		

Form Y-002 R-00

Apex Laboratories

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Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-34**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0873 - 09 23 24 1436**

APEX LABS COOLER RECEIPT FORM

Client: GeoEngineers Element WO#: A4I0873

Project/Project #: Van Main 3Q24 GWM 19001-009-34

Delivery Info:

Date/time received: 9/5/24 @ 1413 By: [illegible]

Delivered by: Apex__ Client X ESS__ FedEx__ UPS__ Radio__ Morgan__ SDS__ Evergreen__ Other__

From USDA Regulated Origin? Yes _____ No X

Cooler Inspection Date/time inspected: 9/5/24 @ 1413 By: [illegible]

Chain of Custody included? Yes X No _____

Signed/dated by client? Yes X No _____

Contains USDA Reg. Soils? Yes _____ No X Unsure (email RegSoils) _____

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	4.9						
Custody seals? (Y/N)	N						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	Y						
Ice type: (Gel/Real/Other)	Real						
Condition (In/Out):	In						

Cooler out of temp? (Y)(N) Possible reason why: _____

Green dots applied to out of temperature samples? Yes/No

Out of temperature samples form initiated? Yes/No

Sample Inspection: Date/time inspected: 9/5/24 @ 14:49 By: [illegible]

All samples intact? Yes X No ___ Comments: _____

Bottle labels/COCs agree? Yes X No ___ Comments: _____

COC/container discrepancies form initiated? Yes ___ No X

Containers/volumes received appropriate for analysis? Yes X No ___ Comments: _____

Do VOA vials have visible headspace? Yes ___ No X NA X [illegible] 9/5/24

Comments _____

Water samples: pH checked: Yes X No___ NA___ pH appropriate? Yes X No___ NA___ pH ID: A23 I172

Comments: _____

Labeled by: [illegible] Witness: [illegible] Cooler Inspected by: [illegible]

Form Y-003 R-02

Apex Laboratories

[illegible]

Darrell Auvil, Client Services Manager

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September 26, 2024 Service Request No:K2409553

Darrell Auvil
Apex Laboratories
6700 SW Sandburg St.
Tigard, OR 97223

Laboratory Results for: A4I0873

Dear Darrell,

Enclosed are the results of the sample(s) submitted to our laboratory September 12, 2024
For your reference, these analyses have been assigned our service request number **K2409553.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3260. You may also contact me via email at Luke.Rahn@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Luke Rahn
Project Manager

ADDRESS 1317 S. 13th Avenue, Kelso, WA 98626
PHONE +1 360 577 7222 | FAX +1 360 636 1068
ALS Group USA, Corp.
dba ALS Environmental

Narrative Documents

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Apex Laboratories
Project: A4I0873
Sample Matrix: Water

Service Request: K2409553
Date Received: 09/12/2024

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier II level requested by the client.

Sample Receipt:

One water sample was received for analysis at ALS Environmental on 09/12/2024. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The sample was stored at minimum in accordance with the analytical method requirements.

General Chemistry:

No significant anomalies were noted with this analysis.

Approved by  Date 09/26/2024

SAMPLE DETECTION SUMMARY

This form includes only detections above the reporting levels. For a full listing of sample results, continue to the Sample Results section of this Report.

CLIENT ID: MW-12			Lab ID: K2409553-001			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Carbon, Total Organic	27.0		0.8	5.0	mg/L	SM 5310 C

Sample Receipt Information

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Apex Laboratories **Service Request:**K2409553
Project: A4I0873

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
K2409553-001	MW-12	9/5/2024	1124

VA24095S3

SUBCONTRACT ORDER

Apex Laboratories

9/5/24 **A4I0873**

SENDING LABORATORY:	**RECEIVING LABORATORY:**
Apex Laboratories	ALS Group USA - Kelso
6700 S.W. Sandburg Street	1317 S 13th Avenue
Tigard, OR 97223	Kelso, WA 98626
Phone: (503) 718-2323	Phone :(360) 577-7222
Fax: (503) 336-0745	Fax: (360) 636-1068
Project Manager: Darrell Auvil	

Sample Name: MW-12 **Sampled: 09/05/24 11:24** (A4I0873-04)

Analysis	Due	Expires	Comments
Total Organic Carbon - H2O (5310C)	09/18/24 17:00	10/03/24 11:24	ALS Kelso, no data package
Containers Supplied: (G)250 mL Poly - Sulfuric (H2SO4)			

Standard TAT

Released By	Date	Received By	Date
	9/12/24 950		9/12/24 9:50
	9/12/24 12:40		9/12/24 1240

PM LH

Cooler Receipt and Preservation Form

Client APEX Service Request K24 09553

Received: 9/12/24 Opened: 9/12/24 By: VM Unloaded: 9/12/24 By: VM

1. Samples were received via? *USPS* *Fed Ex* *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) *Cooler* *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA Y N If yes, how many and where? _____
   If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID / NA	Out of temp indicate with "X"	PM Notified If out of temp	Tracking Number NA	Filed
	2.3	IR01					

4. Was a Temperature Blank present in cooler? NA Y N If yes, notate the temperature in the appropriate column above:
   If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
5. Were samples received within the method specified temperature ranges? ~~NA~~ Y N
   If no, were they received on ice and same day as collected? If not, notate the cooler # above and notify the PM. NA Y N

If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*

6. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
7. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
8. Were samples received in good condition (unbroken) NA Y N
9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA Y N
10. Did all sample labels and tags agree with custody papers? NA Y N
11. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
12. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
13. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
14. Was C12/Res negative? NA Y N
15. Were samples received within the method specified time limit? If not, notate the error below and notify the PM NA Y N
16. Were 100ml sterile microbiology bottles filled exactly to the 100ml mark? NA Y N Underfilled Overfilled

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, Resolutions: _____

G:\SMO\2024 Forms SOP: SMO-GEN Reviewed: NP 1/3/2024

Miscellaneous Forms

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

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Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value over the calibration range.
J	The result is an estimated value between the MDL and the MRL.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Analyst Summary report

Client:	Apex Laboratories	**Service Request:**	K2409553
Project:	A4I0873/		

Sample Name:	MW-12	**Date Collected:**	09/5/24
Lab Code:	K2409553-001	**Date Received:**	09/12/24
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
SM 5310 C		MSPECHT

Sample Results

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

RIGHT SOLUTIONS | RIGHT PARTNER

General Chemistry

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

RIGHT SOLUTIONS | RIGHT PARTNER

Analytical Report

Client:	Apex Laboratories	**Service Request:**	K2409553
Project:	A4I0873	**Date Collected:**	09/05/24 11:24
Sample Matrix:	Water	**Date Received:**	09/12/24 12:40
Sample Name:	MW-12	**Basis:**	NA
Lab Code:	K2409553-001		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Carbon, Total Organic	SM 5310 C	**27.0**	mg/L	5.0	0.8	10	09/23/24 14:23	

QC Summary Forms

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

RIGHT SOLUTIONS | RIGHT PARTNER

General Chemistry

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

RIGHT SOLUTIONS | RIGHT PARTNER

Client:	Apex Laboratories	**Service Request:**	K2409553
Project:	A4I0873	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	K2409553-MB		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Carbon, Total Organic	SM 5310 C	ND U	mg/L	0.50	0.08	1	09/23/24 14:23	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Apex Laboratories	**Service Request:**	K2409553
Project:	A4I0873	**Date Analyzed:**	09/23/24
Sample Matrix:	Water	**Date Extracted:**	NA

Lab Control Sample Summary
Carbon, Total Organic

Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	855044

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K2409553-LCS	24.4	25.0	98	83-117

Air TECHNOLOGY
Laboratories, Inc.

September 30, 2024

LA Cert #04140
EPA Methods TO3, TO14A, TO15, 25C/3C, ASTM D1946, RSK-175

TX Cert T104704450-14-6
EPA Methods TO14A, TO15

UT Cert CA0133332015-3
EPA Methods TO3, TO14A, TO15, RSK-175

ALASKA CS-LAP 24-002
EPA Methods TO14A, TO15

Apex Laboratories
ATTN: Darrell Auvil
6700 S.W. Sandburg St.
Tigard, OR 97223

LABORATORY TEST RESULTS

Project Reference: A4I0873
Lab Number: R091105-01

Enclosed are results for sample(s) received 9/11/24 by Air Technology Laboratories. Samples were received intact and chilled to 8° C. Analyses were performed according to specifications on the chain of custody provided with the sample(s).

Report Narrative:

- Unless otherwise noted in the report, sample analyses were performed within method performance criteria and meet all requirements of the TNI Standards.
- The enclosed results relate only to the sample(s).

ATL appreciates the opportunity to provide testing services to your company. If you have any questions regarding these results, please call me at (626) 964-4032.

Sincerely,

Mark Johnson
Operations Manager
MJohnson@AirTechLabs.com

Note: The cover letter is an integral part of this analytical report.

SUBCONTRACT ORDER

Apex Laboratories

9/5/24 **A4I0873**

R091105-01

SENDING LABORATORY:

Apex Laboratories
6700 S.W. Sandburg Street
Tigard, OR 97223
Phone: (503) 718-2323
Fax: (503) 336-0745
Project Manager: Darrell Auvil

RECEIVING LABORATORY:

Air Technology Laboratories, Inc
18501 E. Gale Ave Suite 130
City of Industry, CA 91748
Phone :(626) 964-4032
Fax: (626) 964-5832

Sample Name: MW-12 **Water** **Sampled: 09/05/24 11:24** (A4I0873-04)

Analysis	Due	Expires	Comments
RSK 175 Preserved (Meth, Eth, Eth) (Sub)	09/18/24 17:00	09/19/24 11:24	air tech lab
Containers Supplied:			
(D)40 mL VOA - HCL			
(E)40 mL VOA - HCL			
(F)40 mL VOA - HCL			

Standard TAT

8°C HO

Released By	Date	Received By	Date
UPS (Shipper)	9/9/24	UPS (Shipper)	
Released By	Date	Received By	Date
	9/11/24 10:01		9/11/24 10:01

Client: Apex Laboratories
Attn: Darrell Auvil
Project Name: NA
Project No.: A4I0873
Date Received: 09/11/24
Matrix: Water
Reporting Units: ug/L

RSK175

Lab No.:	R091105-01							
Client Sample I.D.:	MW-12 (A4I0873-04)							
Date/Time Sampled:	9/5/24 11:24							
Date/Time Analyzed:	9/16/24 14:37							
QC Batch No.:	240916GC8A2							
Analyst Initials:	AS/KD							
Dilution Factor:	1.0							
ANALYTE	Result ug/L	RL ug/L						
Ethene	91	1.0						
Ethane	170	1.0						
Methane	4,300	1.0						

ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ **Date** 9/30/24
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

QC Batch No: 240916GC8A2
Matrix: Water
Reporting Units: ug/L

RSK 175
LABORATORY CONTROL SAMPLE SUMMARY

Lab No.:	METHOD BLANK			LCS		LCSD					
Date/Time Analyzed:	9/16/24 12:27			9/16/24 11:52		9/16/24 12:04					
Analyst Initials:	AS/KD			AS/KD		AS/KD					
Dilution Factor:	1.0			1.0		1.0			Limits		
ANALYTE	Result ug/L	RL ug/L	SPIKE AMT. ug/L	Result ug/L	% Rec.	Result ug/L	% Rec.	RPD %	Low %Rec	High %Rec	Max. RPD
Ethene	ND	1.0	1,030	1,080	105	1,100	106	1.6	70	130	30
Ethane	ND	1.0	1,100	1,170	106	1,170	106	0.3	70	130	30
Methane	ND	1.0	590	634	108	631	107	0.6	70	130	30

ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ Date 9/30/24
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Friday, September 20, 2024

Stephanie Bosze-Salisbury
GeoEngineers - Portland
5820 S Kelly Ave Unit B
Portland, OR 97239

RE: A4I0904 - Vancouver GWM 3Q24 - 19001-009-31

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A4I0904, which was received by the laboratory on 9/6/2024 at 11:19:00AM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: DAuvil@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of sample receipt, unless prior arrangements have been made.

Cooler Receipt Information
Acceptable Receipt Temperature is less than, or equal to, 6 degC (not frozen), or received on ice the same day as sampling.
(See Cooler Receipt Form for details)
Default Cooler 5.0 degC

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.
All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.

Apex Laboratories

Darrell Auvil, Client Services Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document(s) and updated by any subsequent written communications. This analytical report must be reproduced in its entirety.

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-31**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0904 - 09 20 24 1542**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1	A4I0904-01	Water	09/06/24 08:06	09/06/24 11:19
MW-2	A4I0904-02	Water	09/06/24 09:53	09/06/24 11:19
MW-6	A4I0904-03	Water	09/06/24 08:53	09/06/24 11:19
MW-2li-40	A4I0904-04	Water	09/06/24 09:18	09/06/24 11:19
MW-23i	A4I0904-05	Water	09/06/24 08:42	09/06/24 11:19
EW-1	A4I0904-06	Water	09/06/24 07:45	09/06/24 11:19

Apex Laboratories



Darrell Auvil, Client Services Manager

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Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-31	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0904 - 09 20 24 1542

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-1 (A4I0904-01)				**Matrix: Water**		**Batch: 24I0401**		
Bromobenzene	ND	---	0.500	ug/L	1	09/13/24 15:54	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	09/13/24 15:54	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	09/13/24 15:54	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	09/13/24 15:54	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	09/13/24 15:54	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	09/13/24 15:54	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	09/13/24 15:54	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	09/13/24 15:54	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	09/13/24 15:54	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	09/13/24 15:54	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	09/13/24 15:54	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	09/13/24 15:54	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	09/13/24 15:54	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	09/13/24 15:54	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	09/13/24 15:54	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	09/13/24 15:54	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	09/13/24 15:54	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	09/13/24 15:54	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	09/13/24 15:54	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	09/13/24 15:54	EPA 8260D	
1,1-Dichloroethane	**4.83**	---	0.400	ug/L	1	09/13/24 15:54	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	09/13/24 15:54	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	09/13/24 15:54	EPA 8260D	
cis-1,2-Dichloroethene	**70.1**	---	0.400	ug/L	1	09/13/24 15:54	EPA 8260D	
trans-1,2-Dichloroethene	**0.990**	---	0.400	ug/L	1	09/13/24 15:54	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	09/13/24 15:54	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	09/13/24 15:54	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	09/13/24 15:54	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	09/13/24 15:54	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/13/24 15:54	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/13/24 15:54	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	09/13/24 15:54	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	09/13/24 15:54	EPA 8260D	

Apex Laboratories



Darrell Auvil, Client Services Manager

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Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-31	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0904 - 09 20 24 1542

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-1 (A4I0904-01)				**Matrix: Water**		**Batch: 24I0401**		
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	09/13/24 15:54	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	09/13/24 15:54	EPA 8260D	
Tetrachloroethene (PCE)	**12.4**	---	0.400	ug/L	1	09/13/24 15:54	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	09/13/24 15:54	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	09/13/24 15:54	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	09/13/24 15:54	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	09/13/24 15:54	EPA 8260D	
Trichloroethene (TCE)	**11.3**	---	0.400	ug/L	1	09/13/24 15:54	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	09/13/24 15:54	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	09/13/24 15:54	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	09/13/24 15:54	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*94 %*	*Limits: 80-120 %*	*1*	*09/13/24 15:54*	*EPA 8260D*	
Toluene-d8 (Surr)			*99 %*	*80-120 %*	*1*	*09/13/24 15:54*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*99 %*	*80-120 %*	*1*	*09/13/24 15:54*	*EPA 8260D*	
MW-2 (A4I0904-02)				**Matrix: Water**		**Batch: 24I0401**		
Bromobenzene	ND	---	0.500	ug/L	1	09/13/24 16:16	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	09/13/24 16:16	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	09/13/24 16:16	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	09/13/24 16:16	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	09/13/24 16:16	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	09/13/24 16:16	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	09/13/24 16:16	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	09/13/24 16:16	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	09/13/24 16:16	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	09/13/24 16:16	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	09/13/24 16:16	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	09/13/24 16:16	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	09/13/24 16:16	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	09/13/24 16:16	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	09/13/24 16:16	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	09/13/24 16:16	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	09/13/24 16:16	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	09/13/24 16:16	EPA 8260D	

Apex Laboratories



Darrell Auvil, Client Services Manager

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Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-31	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0904 - 09 20 24 1542

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-2 (A4I0904-02)				**Matrix: Water**		**Batch: 24I0401**		
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	09/13/24 16:16	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	09/13/24 16:16	EPA 8260D	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	09/13/24 16:16	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	09/13/24 16:16	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	09/13/24 16:16	EPA 8260D	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	09/13/24 16:16	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	09/13/24 16:16	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	09/13/24 16:16	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	09/13/24 16:16	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	09/13/24 16:16	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	09/13/24 16:16	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/13/24 16:16	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/13/24 16:16	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	09/13/24 16:16	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	09/13/24 16:16	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	09/13/24 16:16	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	09/13/24 16:16	EPA 8260D	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	09/13/24 16:16	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	09/13/24 16:16	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	09/13/24 16:16	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	09/13/24 16:16	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	09/13/24 16:16	EPA 8260D	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	09/13/24 16:16	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	09/13/24 16:16	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	09/13/24 16:16	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	09/13/24 16:16	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*93 %*	*Limits:*	*80-120 %*	*1*	*09/13/24 16:16*	*EPA 8260D*	
Toluene-d8 (Surr)			*100 %*		*80-120 %*	*1*	*09/13/24 16:16*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*102 %*		*80-120 %*	*1*	*09/13/24 16:16*	*EPA 8260D*	
MW-6 (A4I0904-03)				**Matrix: Water**		**Batch: 24I0401**		
Bromobenzene	ND	---	0.500	ug/L	1	09/13/24 16:38	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	09/13/24 16:38	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	09/13/24 16:38	EPA 8260D	

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Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-31	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0904 - 09 20 24 1542

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-6 (A4I0904-03)				**Matrix: Water**		**Batch: 24I0401**		
Bromoform	ND	---	1.00	ug/L	1	09/13/24 16:38	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	09/13/24 16:38	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	09/13/24 16:38	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	09/13/24 16:38	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	09/13/24 16:38	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	09/13/24 16:38	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	09/13/24 16:38	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	09/13/24 16:38	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	09/13/24 16:38	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	09/13/24 16:38	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	09/13/24 16:38	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	09/13/24 16:38	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	09/13/24 16:38	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	09/13/24 16:38	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	09/13/24 16:38	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	09/13/24 16:38	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	09/13/24 16:38	EPA 8260D	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	09/13/24 16:38	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	09/13/24 16:38	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	09/13/24 16:38	EPA 8260D	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	09/13/24 16:38	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	09/13/24 16:38	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	09/13/24 16:38	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	09/13/24 16:38	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	09/13/24 16:38	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	09/13/24 16:38	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/13/24 16:38	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/13/24 16:38	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	09/13/24 16:38	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	09/13/24 16:38	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	09/13/24 16:38	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	09/13/24 16:38	EPA 8260D	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	09/13/24 16:38	EPA 8260D	

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Darrell Auvil, Client Services Manager

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6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-31	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0904 - 09 20 24 1542

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-6 (A4I0904-03)				**Matrix: Water**		**Batch: 24I0401**		
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	09/13/24 16:38	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	09/13/24 16:38	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	09/13/24 16:38	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	09/13/24 16:38	EPA 8260D	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	09/13/24 16:38	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	09/13/24 16:38	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	09/13/24 16:38	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	09/13/24 16:38	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*93 %*	*Limits: 80-120 %*	*1*	*09/13/24 16:38*	*EPA 8260D*	
Toluene-d8 (Surr)			*100 %*	*80-120 %*	*1*	*09/13/24 16:38*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*104 %*	*80-120 %*	*1*	*09/13/24 16:38*	*EPA 8260D*	
MW-2li-40 (A4I0904-04)				**Matrix: Water**		**Batch: 24I0401**		
Bromobenzene	ND	---	0.500	ug/L	1	09/13/24 17:00	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	09/13/24 17:00	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	09/13/24 17:00	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	09/13/24 17:00	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	09/13/24 17:00	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	09/13/24 17:00	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	09/13/24 17:00	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	09/13/24 17:00	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	09/13/24 17:00	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	09/13/24 17:00	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	09/13/24 17:00	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	09/13/24 17:00	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	09/13/24 17:00	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	09/13/24 17:00	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	09/13/24 17:00	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	09/13/24 17:00	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	09/13/24 17:00	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	09/13/24 17:00	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	09/13/24 17:00	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	09/13/24 17:00	EPA 8260D	
1,1-Dichloroethane	**1.24**	---	0.400	ug/L	1	09/13/24 17:00	EPA 8260D	

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Darrell Auvil, Client Services Manager

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6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-31**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0904 - 09 20 24 1542**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-2Ii-40 (A4I0904-04)				**Matrix: Water**		**Batch: 24I0401**		
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	09/13/24 17:00	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	09/13/24 17:00	EPA 8260D	
cis-1,2-Dichloroethene	**25.1**	---	0.400	ug/L	1	09/13/24 17:00	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	09/13/24 17:00	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	09/13/24 17:00	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	09/13/24 17:00	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	09/13/24 17:00	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	09/13/24 17:00	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/13/24 17:00	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/13/24 17:00	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	09/13/24 17:00	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	09/13/24 17:00	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	09/13/24 17:00	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	09/13/24 17:00	EPA 8260D	
Tetrachloroethene (PCE)	**20.9**	---	0.400	ug/L	1	09/13/24 17:00	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	09/13/24 17:00	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	09/13/24 17:00	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	09/13/24 17:00	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	09/13/24 17:00	EPA 8260D	
Trichloroethene (TCE)	**10.1**	---	0.400	ug/L	1	09/13/24 17:00	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	09/13/24 17:00	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	09/13/24 17:00	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	09/13/24 17:00	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery: 94 %*		*Limits: 80-120 %*	*1*	*09/13/24 17:00*	*EPA 8260D*	
Toluene-d8 (Surr)		*102 %*		*80-120 %*	*1*	*09/13/24 17:00*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)		*102 %*		*80-120 %*	*1*	*09/13/24 17:00*	*EPA 8260D*	
MW-23i (A4I0904-05)				**Matrix: Water**		**Batch: 24I0401**		
Bromobenzene	ND	---	0.500	ug/L	1	09/13/24 17:21	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	09/13/24 17:21	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	09/13/24 17:21	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	09/13/24 17:21	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	09/13/24 17:21	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	09/13/24 17:21	EPA 8260D	

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503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-31	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0904 - 09 20 24 1542

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-23i (A4I0904-05)				**Matrix: Water**		**Batch: 24I0401**		
Chlorobenzene	ND	---	0.500	ug/L	1	09/13/24 17:21	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	09/13/24 17:21	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	09/13/24 17:21	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	09/13/24 17:21	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	09/13/24 17:21	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	09/13/24 17:21	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	09/13/24 17:21	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	09/13/24 17:21	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	09/13/24 17:21	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	09/13/24 17:21	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	09/13/24 17:21	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	09/13/24 17:21	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	09/13/24 17:21	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	09/13/24 17:21	EPA 8260D	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	09/13/24 17:21	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	09/13/24 17:21	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	09/13/24 17:21	EPA 8260D	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	09/13/24 17:21	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	09/13/24 17:21	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	09/13/24 17:21	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	09/13/24 17:21	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	09/13/24 17:21	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	09/13/24 17:21	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/13/24 17:21	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/13/24 17:21	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	09/13/24 17:21	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	09/13/24 17:21	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	09/13/24 17:21	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	09/13/24 17:21	EPA 8260D	
Tetrachloroethene (PCE)	**0.520**	---	0.400	ug/L	1	09/13/24 17:21	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	09/13/24 17:21	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	09/13/24 17:21	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	09/13/24 17:21	EPA 8260D	

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-31**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0904 - 09 20 24 1542**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-23i (A4I0904-05)				**Matrix: Water**		**Batch: 24I0401**		
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	09/13/24 17:21	EPA 8260D	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	09/13/24 17:21	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	09/13/24 17:21	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	09/13/24 17:21	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	09/13/24 17:21	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*92 %*	*Limits:*	*80-120 %*	*09/13/24 17:21*	*EPA 8260D*	
Toluene-d8 (Surr)			*100 %*		*80-120 %*	*09/13/24 17:21*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*101 %*		*80-120 %*	*09/13/24 17:21*	*EPA 8260D*	
EW-1 (A4I0904-06)				**Matrix: Water**		**Batch: 24I0402**		
Bromobenzene	ND	---	0.500	ug/L	1	09/13/24 22:24	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	09/13/24 22:24	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	09/13/24 22:24	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	09/13/24 22:24	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	09/13/24 22:24	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	09/13/24 22:24	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	09/13/24 22:24	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	09/13/24 22:24	EPA 8260D	
Chloroform	**1.45**	---	1.00	ug/L	1	09/13/24 22:24	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	09/13/24 22:24	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	09/13/24 22:24	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	09/13/24 22:24	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	09/13/24 22:24	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	09/13/24 22:24	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	09/13/24 22:24	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	09/13/24 22:24	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	09/13/24 22:24	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	09/13/24 22:24	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	09/13/24 22:24	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	09/13/24 22:24	EPA 8260D	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	09/13/24 22:24	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	09/13/24 22:24	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	09/13/24 22:24	EPA 8260D	
cis-1,2-Dichloroethene	**0.600**	---	0.400	ug/L	1	09/13/24 22:24	EPA 8260D	

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503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-31	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0904 - 09 20 24 1542

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
EW-1 (A4I0904-06)				**Matrix: Water**		**Batch: 24I0402**		
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	09/13/24 22:24	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	09/13/24 22:24	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	09/13/24 22:24	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	09/13/24 22:24	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	09/13/24 22:24	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/13/24 22:24	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	09/13/24 22:24	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	09/13/24 22:24	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	09/13/24 22:24	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	09/13/24 22:24	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	09/13/24 22:24	EPA 8260D	
Tetrachloroethene (PCE)	**14.7**	---	0.400	ug/L	1	09/13/24 22:24	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	09/13/24 22:24	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	09/13/24 22:24	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	09/13/24 22:24	EPA 8260D	
1,1,1-Trichloroethane	**0.430**	---	0.400	ug/L	1	09/13/24 22:24	EPA 8260D	
Trichloroethene (TCE)	**4.63**	---	0.400	ug/L	1	09/13/24 22:24	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	09/13/24 22:24	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	09/13/24 22:24	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	09/13/24 22:24	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*93 %*	*Limits:*	*80-120 %*	*1*	*09/13/24 22:24*	*EPA 8260D*	
Toluene-d8 (Surr)			*101 %*		*80-120 %*	*1*	*09/13/24 22:24*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*103 %*		*80-120 %*	*1*	*09/13/24 22:24*	*EPA 8260D*	

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-31**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0904 - 09 20 24 1542**

ANALYTICAL SAMPLE RESULTS

Ammonia by Gas Diffusion and Colorimetric Detection

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-1 (A4I0904-01)				**Matrix: Water**			**Batch: 24I0357**	
Ammonia as N	**80.6**	---	1.00	mg/L	50	09/12/24 12:48	SM 4500-NH3 G	
MW-2 (A4I0904-02)				**Matrix: Water**			**Batch: 24I0357**	
Ammonia as N	**8.98**	---	0.100	mg/L	5	09/12/24 12:51	SM 4500-NH3 G	
MW-6 (A4I0904-03RE1)				**Matrix: Water**			**Batch: 24I0377**	
Ammonia as N	**14.5**	---	0.400	mg/L	20	09/12/24 14:33	SM 4500-NH3 G	
MW-2li-40 (A4I0904-04RE1)				**Matrix: Water**			**Batch: 24I0481**	
Ammonia as N	ND	---	0.0200	mg/L	1	09/16/24 16:44	SM 4500-NH3 G	
MW-23i (A4I0904-05)				**Matrix: Water**			**Batch: 24I0357**	
Ammonia as N	ND	---	0.0200	mg/L	1	09/12/24 13:07	SM 4500-NH3 G	
EW-1 (A4I0904-06)				**Matrix: Water**			**Batch: 24I0357**	
Ammonia as N	ND	---	0.0200	mg/L	1	09/12/24 13:08	SM 4500-NH3 G	

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-31**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0904 - 09 20 24 1542**

ANALYTICAL SAMPLE RESULTS

Anions by Ion Chromatography

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-1 (A4I0904-01)				**Matrix: Water**				
Batch: 24I0178								
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	09/07/24 07:22	EPA 300.0	
MW-1 (A4I0904-01RE1)				**Matrix: Water**				
Batch: 24I0178								
Nitrate-Nitrogen	**50.5**	---	5.00	mg/L	20	09/07/24 06:17	EPA 300.0	
MW-2 (A4I0904-02)				**Matrix: Water**				
Batch: 24I0178								
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	09/07/24 09:31	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	09/07/24 09:31	EPA 300.0	
MW-6 (A4I0904-03)				**Matrix: Water**				
Batch: 24I0178								
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	09/07/24 09:53	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	09/07/24 09:53	EPA 300.0	
MW-2li-40 (A4I0904-04)				**Matrix: Water**				
Batch: 24I0178								
Nitrate-Nitrogen	**0.809**	---	0.250	mg/L	1	09/07/24 10:15	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	09/07/24 10:15	EPA 300.0	
MW-23i (A4I0904-05)				**Matrix: Water**				
Batch: 24I0178								
Nitrate-Nitrogen	**2.16**	---	0.250	mg/L	1	09/07/24 10:37	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	09/07/24 10:37	EPA 300.0	
EW-1 (A4I0904-06)				**Matrix: Water**				
Batch: 24I0178								
Nitrate-Nitrogen	**3.30**	---	0.250	mg/L	1	09/07/24 10:59	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	09/07/24 10:59	EPA 300.0	

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-31	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0904 - 09 20 24 1542

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0401 - EPA 5030C							Water					
Blank (24I0401-BLK1)			Prepared: 09/13/24 06:00 Analyzed: 09/13/24 09:24									
EPA 8260D												
Bromobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Bromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromodichloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromoform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromomethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Carbon tetrachloride	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Chloroethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Chloroform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chloromethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
2-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
4-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Dibromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dibromomethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Methylene chloride	ND	---	10.0	ug/L	1	---	---	---	---	---	---	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-31**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0904 - 09 20 24 1542**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0401 - EPA 5030C												**Water**
Blank (24I0401-BLK1)			Prepared: 09/13/24 06:00 Analyzed: 09/13/24 09:24									
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Vinyl chloride	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 92 %*		*Limits: 80-120 %*			*Dilution: 1x*				
Toluene-d8 (Surr)			*98 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*104 %*		*80-120 %*			*"*				
LCS (24I0401-BS1)			Prepared: 09/13/24 06:00 Analyzed: 09/13/24 08:41									
EPA 8260D												
Bromobenzene	20.2	---	0.500	ug/L	1	20.0	---	101	80-120%	---	---	
Bromochloromethane	18.9	---	1.00	ug/L	1	20.0	---	94	80-120%	---	---	
Bromodichloromethane	20.6	---	1.00	ug/L	1	20.0	---	103	80-120%	---	---	
Bromoform	23.4	---	1.00	ug/L	1	20.0	---	117	80-120%	---	---	
Bromomethane	17.6	---	5.00	ug/L	1	20.0	---	88	80-120%	---	---	
Carbon tetrachloride	21.7	---	1.00	ug/L	1	20.0	---	108	80-120%	---	---	
Chlorobenzene	21.4	---	0.500	ug/L	1	20.0	---	107	80-120%	---	---	
Chloroethane	18.9	---	5.00	ug/L	1	20.0	---	95	80-120%	---	---	
Chloroform	20.9	---	1.00	ug/L	1	20.0	---	105	80-120%	---	---	
Chloromethane	16.8	---	5.00	ug/L	1	20.0	---	84	80-120%	---	---	
2-Chlorotoluene	21.7	---	1.00	ug/L	1	20.0	---	109	80-120%	---	---	
4-Chlorotoluene	22.5	---	1.00	ug/L	1	20.0	---	112	80-120%	---	---	
Dibromochloromethane	22.8	---	1.00	ug/L	1	20.0	---	114	80-120%	---	---	
1,2-Dibromo-3-chloropropane	20.2	---	5.00	ug/L	1	20.0	---	101	80-120%	---	---	
1,2-Dibromoethane (EDB)	21.3	---	0.500	ug/L	1	20.0	---	106	80-120%	---	---	
Dibromomethane	19.7	---	1.00	ug/L	1	20.0	---	99	80-120%	---	---	
1,2-Dichlorobenzene	21.4	---	0.500	ug/L	1	20.0	---	107	80-120%	---	---	

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-31	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0904 - 09 20 24 1542

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0401 - EPA 5030C							**Water**					
LCS (24I0401-BS1)			Prepared: 09/13/24 06:00 Analyzed: 09/13/24 08:41									
1,3-Dichlorobenzene	21.7	---	0.500	ug/L	1	20.0	---	108	80-120%	---	---	
1,4-Dichlorobenzene	21.6	---	0.500	ug/L	1	20.0	---	108	80-120%	---	---	
Dichlorodifluoromethane	16.4	---	1.00	ug/L	1	20.0	---	82	80-120%	---	---	
1,1-Dichloroethane	19.4	---	0.400	ug/L	1	20.0	---	97	80-120%	---	---	
1,2-Dichloroethane (EDC)	19.5	---	0.400	ug/L	1	20.0	---	98	80-120%	---	---	
1,1-Dichloroethene	19.6	---	0.400	ug/L	1	20.0	---	98	80-120%	---	---	
cis-1,2-Dichloroethene	20.1	---	0.400	ug/L	1	20.0	---	101	80-120%	---	---	
trans-1,2-Dichloroethene	19.3	---	0.400	ug/L	1	20.0	---	97	80-120%	---	---	
1,2-Dichloropropane	19.0	---	0.500	ug/L	1	20.0	---	95	80-120%	---	---	
1,3-Dichloropropane	20.9	---	1.00	ug/L	1	20.0	---	104	80-120%	---	---	
2,2-Dichloropropane	21.6	---	1.00	ug/L	1	20.0	---	108	80-120%	---	---	
1,1-Dichloropropene	19.5	---	1.00	ug/L	1	20.0	---	97	80-120%	---	---	
cis-1,3-Dichloropropene	23.0	---	1.00	ug/L	1	20.0	---	115	80-120%	---	---	
trans-1,3-Dichloropropene	23.3	---	1.00	ug/L	1	20.0	---	116	80-120%	---	---	
Hexachlorobutadiene	22.3	---	5.00	ug/L	1	20.0	---	112	80-120%	---	---	
Methylene chloride	17.9	---	10.0	ug/L	1	20.0	---	90	80-120%	---	---	
1,1,1,2-Tetrachloroethane	22.7	---	0.400	ug/L	1	20.0	---	113	80-120%	---	---	
1,1,2,2-Tetrachloroethane	20.9	---	0.500	ug/L	1	20.0	---	104	80-120%	---	---	
Tetrachloroethene (PCE)	21.6	---	0.400	ug/L	1	20.0	---	108	80-120%	---	---	
1,2,3-Trichlorobenzene	20.5	---	2.00	ug/L	1	20.0	---	102	80-120%	---	---	
1,1,2-Trichloroethane	20.6	---	0.500	ug/L	1	20.0	---	103	80-120%	---	---	
1,2,4-Trichlorobenzene	20.9	---	2.00	ug/L	1	20.0	---	104	80-120%	---	---	
1,1,1-Trichloroethane	20.6	---	0.400	ug/L	1	20.0	---	103	80-120%	---	---	
Trichloroethene (TCE)	18.5	---	0.400	ug/L	1	20.0	---	92	80-120%	---	---	
Trichlorofluoromethane	22.7	---	2.00	ug/L	1	20.0	---	113	80-120%	---	---	
1,2,3-Trichloropropane	20.4	---	1.00	ug/L	1	20.0	---	102	80-120%	---	---	
Vinyl chloride	19.6	---	0.200	ug/L	1	20.0	---	98	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 94 %*		*Limits: 80-120 %*			*Dilution: 1x*				
Toluene-d8 (Surr)			*101 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*99 %*		*80-120 %*			*"*				
Duplicate (24I0401-DUP1)			Prepared: 09/13/24 06:00 Analyzed: 09/13/24 10:50									**COMP**
QC Source Sample: Non-SDG (A4I1084-05)												
Bromobenzene	ND	---	1.00	ug/L	2	---	ND	---	---	---	30%	

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Darrell Auvil, Client Services Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-31**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0904 - 09 20 24 1542**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0401 - EPA 5030C							**Water**					
Duplicate (24I0401-DUP1)			Prepared: 09/13/24 06:00		Analyzed: 09/13/24 10:50							**COMP**
QC Source Sample: Non-SDG (A4I1084-05)												
Bromochloromethane	ND	---	2.00	ug/L	2	---	ND	---	---	---	30%	
Bromodichloromethane	ND	---	2.00	ug/L	2	---	ND	---	---	---	30%	
Bromoform	ND	---	2.00	ug/L	2	---	ND	---	---	---	30%	
Bromomethane	ND	---	10.0	ug/L	2	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	---	2.00	ug/L	2	---	ND	---	---	---	30%	
Chlorobenzene	ND	---	1.00	ug/L	2	---	ND	---	---	---	30%	
Chloroethane	ND	---	10.0	ug/L	2	---	ND	---	---	---	30%	
Chloroform	ND	---	2.00	ug/L	2	---	ND	---	---	---	30%	
Chloromethane	ND	---	10.0	ug/L	2	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	---	2.00	ug/L	2	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	---	2.00	ug/L	2	---	ND	---	---	---	30%	
Dibromochloromethane	ND	---	2.00	ug/L	2	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	---	10.0	ug/L	2	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	---	1.00	ug/L	2	---	ND	---	---	---	30%	
Dibromomethane	ND	---	2.00	ug/L	2	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	---	1.00	ug/L	2	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	---	1.00	ug/L	2	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	---	1.00	ug/L	2	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	---	2.00	ug/L	2	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	---	0.800	ug/L	2	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	---	0.800	ug/L	2	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	---	0.800	ug/L	2	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	---	0.800	ug/L	2	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	---	0.800	ug/L	2	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	---	1.00	ug/L	2	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	---	2.00	ug/L	2	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	---	2.00	ug/L	2	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	---	2.00	ug/L	2	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	---	2.00	ug/L	2	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	---	2.00	ug/L	2	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	---	10.0	ug/L	2	---	ND	---	---	---	30%	
Methylene chloride	ND	---	20.0	ug/L	2	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	---	0.800	ug/L	2	---	ND	---	---	---	30%	

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Darrell Auvil, Client Services Manager

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Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-31	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0904 - 09 20 24 1542

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0401 - EPA 5030C							**Water**					
Duplicate (24I0401-DUP1)			Prepared: 09/13/24 06:00 Analyzed: 09/13/24 10:50									**COMP**
QC Source Sample: Non-SDG (A4I1084-05)												
1,1,2,2-Tetrachloroethane	ND	---	1.00	ug/L	2	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	---	0.800	ug/L	2	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	---	4.00	ug/L	2	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	---	1.00	ug/L	2	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	---	4.00	ug/L	2	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	---	0.800	ug/L	2	---	ND	---	---	---	30%	
Trichloroethene (TCE)	ND	---	0.800	ug/L	2	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	---	4.00	ug/L	2	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	---	2.00	ug/L	2	---	ND	---	---	---	30%	
Vinyl chloride	ND	---	0.400	ug/L	2	---	ND	---	---	---	30%	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 92 %*		*Limits: 80-120 %*				*Dilution: 1x*			
Toluene-d8 (Surr)			*100 %*		*80-120 %*				*"*			
4-Bromofluorobenzene (Surr)			*104 %*		*80-120 %*				*"*			
Matrix Spike (24I0401-MS1)			Prepared: 09/13/24 06:00 Analyzed: 09/13/24 11:12									**COMP**
QC Source Sample: Non-SDG (A4I1084-05)												
EPA 8260D												
Bromobenzene	39.8	---	1.00	ug/L	2	40.0	ND	99	80-120%	---	---	
Bromochloromethane	41.0	---	2.00	ug/L	2	40.0	ND	103	78-123%	---	---	
Bromodichloromethane	43.1	---	2.00	ug/L	2	40.0	ND	108	79-125%	---	---	
Bromoform	47.4	---	2.00	ug/L	2	40.0	ND	118	66-130%	---	---	
Bromomethane	36.0	---	10.0	ug/L	2	40.0	ND	90	53-141%	---	---	
Carbon tetrachloride	47.2	---	2.00	ug/L	2	40.0	ND	118	72-136%	---	---	
Chlorobenzene	43.5	---	1.00	ug/L	2	40.0	ND	109	80-120%	---	---	
Chloroethane	40.1	---	10.0	ug/L	2	40.0	ND	100	60-138%	---	---	
Chloroform	41.8	---	2.00	ug/L	2	40.0	ND	105	79-124%	---	---	
Chloromethane	35.1	---	10.0	ug/L	2	40.0	ND	88	50-139%	---	---	
2-Chlorotoluene	42.9	---	2.00	ug/L	2	40.0	ND	107	79-122%	---	---	
4-Chlorotoluene	43.2	---	2.00	ug/L	2	40.0	ND	108	78-122%	---	---	
Dibromochloromethane	46.0	---	2.00	ug/L	2	40.0	ND	115	74-126%	---	---	
1,2-Dibromo-3-chloropropane	39.3	---	10.0	ug/L	2	40.0	ND	98	62-128%	---	---	
1,2-Dibromoethane (EDB)	43.7	---	1.00	ug/L	2	40.0	ND	109	77-121%	---	---	
Dibromomethane	39.9	---	2.00	ug/L	2	40.0	ND	100	79-123%	---	---	

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Darrell Auvil, Client Services Manager

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503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-31	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0904 - 09 20 24 1542

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0401 - EPA 5030C							**Water**					
Matrix Spike (24I0401-MS1)			Prepared: 09/13/24 06:00		Analyzed: 09/13/24 11:12							**COMP**
QC Source Sample: Non-SDG (A4I1084-05)												
1,2-Dichlorobenzene	41.2	---	1.00	ug/L	2	40.0	ND	103	80-120%	---	---	
1,3-Dichlorobenzene	41.9	---	1.00	ug/L	2	40.0	ND	105	80-120%	---	---	
1,4-Dichlorobenzene	41.4	---	1.00	ug/L	2	40.0	ND	104	79-120%	---	---	
Dichlorodifluoromethane	37.2	---	2.00	ug/L	2	40.0	ND	93	32-152%	---	---	
1,1-Dichloroethane	40.0	---	0.800	ug/L	2	40.0	ND	100	77-125%	---	---	
1,2-Dichloroethane (EDC)	40.6	---	0.800	ug/L	2	40.0	ND	101	73-128%	---	---	
1,1-Dichloroethene	40.4	---	0.800	ug/L	2	40.0	ND	101	71-131%	---	---	
cis-1,2-Dichloroethene	41.7	---	0.800	ug/L	2	40.0	ND	104	78-123%	---	---	
trans-1,2-Dichloroethene	40.5	---	0.800	ug/L	2	40.0	ND	101	75-124%	---	---	
1,2-Dichloropropane	38.7	---	1.00	ug/L	2	40.0	ND	97	78-122%	---	---	
1,3-Dichloropropane	42.9	---	2.00	ug/L	2	40.0	ND	107	80-120%	---	---	
2,2-Dichloropropane	44.7	---	2.00	ug/L	2	40.0	ND	112	60-139%	---	---	
1,1-Dichloropropene	41.3	---	2.00	ug/L	2	40.0	ND	103	79-125%	---	---	
cis-1,3-Dichloropropene	46.1	---	2.00	ug/L	2	40.0	ND	115	75-124%	---	---	
trans-1,3-Dichloropropene	47.7	---	2.00	ug/L	2	40.0	ND	119	73-127%	---	---	
Hexachlorobutadiene	45.3	---	10.0	ug/L	2	40.0	ND	113	66-134%	---	---	
Methylene chloride	35.8	---	20.0	ug/L	2	40.0	ND	90	74-124%	---	---	
1,1,1,2-Tetrachloroethane	47.4	---	0.800	ug/L	2	40.0	ND	118	78-124%	---	---	
1,1,2,2-Tetrachloroethane	41.9	---	1.00	ug/L	2	40.0	ND	105	71-121%	---	---	
Tetrachloroethene (PCE)	44.6	---	0.800	ug/L	2	40.0	ND	111	74-129%	---	---	
1,2,3-Trichlorobenzene	40.1	---	4.00	ug/L	2	40.0	ND	100	69-129%	---	---	
1,1,2-Trichloroethane	40.8	---	1.00	ug/L	2	40.0	ND	102	80-120%	---	---	
1,2,4-Trichlorobenzene	40.3	---	4.00	ug/L	2	40.0	ND	101	69-130%	---	---	
1,1,1-Trichloroethane	42.8	---	0.800	ug/L	2	40.0	ND	107	74-131%	---	---	
Trichloroethene (TCE)	38.7	---	0.800	ug/L	2	40.0	ND	97	79-123%	---	---	
Trichlorofluoromethane	48.8	---	4.00	ug/L	2	40.0	ND	122	65-141%	---	---	
1,2,3-Trichloropropane	40.1	---	2.00	ug/L	2	40.0	ND	100	73-122%	---	---	
Vinyl chloride	41.7	---	0.400	ug/L	2	40.0	ND	104	58-137%	---	---	

Surr: 1,4-Difluorobenzene (Surr)	*Recovery: 92 %*	*Limits: 80-120 %*	*Dilution: 1x*
Toluene-d8 (Surr)	*100 %*	*80-120 %*	*"*
4-Bromofluorobenzene (Surr)	*96 %*	*80-120 %*	*"*

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Darrell Auvil, Client Services Manager

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ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-31	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0904 - 09 20 24 1542

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0402 - EPA 5030C							Water					
Blank (24I0402-BLK1)			Prepared: 09/13/24 10:03 Analyzed: 09/13/24 20:58									
EPA 8260D												
Bromobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Bromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromodichloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromoform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromomethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Carbon tetrachloride	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Chloroethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Chloroform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chloromethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
2-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
4-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Dibromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dibromomethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Methylene chloride	ND	---	10.0	ug/L	1	---	---	---	---	---	---	

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Darrell Auvil, Client Services Manager

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-31**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0904 - 09 20 24 1542**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0402 - EPA 5030C									Water			
Blank (24I0402-BLK1)			Prepared: 09/13/24 10:03 Analyzed: 09/13/24 20:58									
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Vinyl chloride	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 93 %*		*Limits: 80-120 %*				*Dilution: 1x*			
Toluene-d8 (Surr)			*102 %*		*80-120 %*				*"*			
4-Bromofluorobenzene (Surr)			*105 %*		*80-120 %*				*"*			
LCS (24I0402-BS1)			Prepared: 09/13/24 10:03 Analyzed: 09/13/24 20:15									
EPA 8260D												
Bromobenzene	18.7	---	0.500	ug/L	1	20.0	---	94	80-120%	---	---	
Bromochloromethane	19.5	---	1.00	ug/L	1	20.0	---	98	80-120%	---	---	
Bromodichloromethane	20.0	---	1.00	ug/L	1	20.0	---	100	80-120%	---	---	
Bromoform	22.0	---	1.00	ug/L	1	20.0	---	110	80-120%	---	---	
Bromomethane	18.0	---	5.00	ug/L	1	20.0	---	90	80-120%	---	---	
Carbon tetrachloride	21.7	---	1.00	ug/L	1	20.0	---	108	80-120%	---	---	
Chlorobenzene	20.8	---	0.500	ug/L	1	20.0	---	104	80-120%	---	---	
Chloroethane	18.6	---	5.00	ug/L	1	20.0	---	93	80-120%	---	---	
Chloroform	20.2	---	1.00	ug/L	1	20.0	---	101	80-120%	---	---	
Chloromethane	16.9	---	5.00	ug/L	1	20.0	---	84	80-120%	---	---	
2-Chlorotoluene	19.7	---	1.00	ug/L	1	20.0	---	99	80-120%	---	---	
4-Chlorotoluene	20.6	---	1.00	ug/L	1	20.0	---	103	80-120%	---	---	
Dibromochloromethane	22.3	---	1.00	ug/L	1	20.0	---	111	80-120%	---	---	
1,2-Dibromo-3-chloropropane	18.6	---	5.00	ug/L	1	20.0	---	93	80-120%	---	---	
1,2-Dibromoethane (EDB)	20.8	---	0.500	ug/L	1	20.0	---	104	80-120%	---	---	
Dibromomethane	20.0	---	1.00	ug/L	1	20.0	---	100	80-120%	---	---	
1,2-Dichlorobenzene	19.3	---	0.500	ug/L	1	20.0	---	96	80-120%	---	---	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-31**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0904 - 09 20 24 1542**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0402 - EPA 5030C							**Water**					
LCS (24I0402-BS1)			Prepared: 09/13/24 10:03 Analyzed: 09/13/24 20:15									
1,3-Dichlorobenzene	20.1	---	0.500	ug/L	1	20.0	---	101	80-120%	---	---	
1,4-Dichlorobenzene	19.6	---	0.500	ug/L	1	20.0	---	98	80-120%	---	---	
Dichlorodifluoromethane	16.2	---	1.00	ug/L	1	20.0	---	81	80-120%	---	---	
1,1-Dichloroethane	18.9	---	0.400	ug/L	1	20.0	---	94	80-120%	---	---	
1,2-Dichloroethane (EDC)	19.4	---	0.400	ug/L	1	20.0	---	97	80-120%	---	---	
1,1-Dichloroethene	19.0	---	0.400	ug/L	1	20.0	---	95	80-120%	---	---	
cis-1,2-Dichloroethene	19.7	---	0.400	ug/L	1	20.0	---	99	80-120%	---	---	
trans-1,2-Dichloroethene	19.2	---	0.400	ug/L	1	20.0	---	96	80-120%	---	---	
1,2-Dichloropropane	18.7	---	0.500	ug/L	1	20.0	---	93	80-120%	---	---	
1,3-Dichloropropane	20.2	---	1.00	ug/L	1	20.0	---	101	80-120%	---	---	
2,2-Dichloropropane	18.8	---	1.00	ug/L	1	20.0	---	94	80-120%	---	---	
1,1-Dichloropropene	19.4	---	1.00	ug/L	1	20.0	---	97	80-120%	---	---	
cis-1,3-Dichloropropene	21.6	---	1.00	ug/L	1	20.0	---	108	80-120%	---	---	
trans-1,3-Dichloropropene	22.3	---	1.00	ug/L	1	20.0	---	111	80-120%	---	---	
Hexachlorobutadiene	20.1	---	5.00	ug/L	1	20.0	---	101	80-120%	---	---	
Methylene chloride	17.6	---	10.0	ug/L	1	20.0	---	88	80-120%	---	---	
1,1,1,2-Tetrachloroethane	22.3	---	0.400	ug/L	1	20.0	---	111	80-120%	---	---	
1,1,2,2-Tetrachloroethane	20.1	---	0.500	ug/L	1	20.0	---	101	80-120%	---	---	
Tetrachloroethene (PCE)	20.2	---	0.400	ug/L	1	20.0	---	101	80-120%	---	---	
1,2,3-Trichlorobenzene	19.2	---	2.00	ug/L	1	20.0	---	96	80-120%	---	---	
1,1,2-Trichloroethane	19.8	---	0.500	ug/L	1	20.0	---	99	80-120%	---	---	
1,2,4-Trichlorobenzene	18.9	---	2.00	ug/L	1	20.0	---	94	80-120%	---	---	
1,1,1-Trichloroethane	19.9	---	0.400	ug/L	1	20.0	---	99	80-120%	---	---	
Trichloroethene (TCE)	17.5	---	0.400	ug/L	1	20.0	---	87	80-120%	---	---	
Trichlorofluoromethane	21.6	---	2.00	ug/L	1	20.0	---	108	80-120%	---	---	
1,2,3-Trichloropropane	18.1	---	1.00	ug/L	1	20.0	---	90	80-120%	---	---	
Vinyl chloride	18.6	---	0.200	ug/L	1	20.0	---	93	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 92 %*		*Limits: 80-120 %*			*Dilution: 1x*				
Toluene-d8 (Surr)			*100 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*95 %*		*80-120 %*			*"*				
Duplicate (24I0402-DUP1)			Prepared: 09/13/24 10:03 Analyzed: 09/13/24 23:07									
QC Source Sample: Non-SDG (A4I0850-15RE1)												
Bromobenzene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-31**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0904 - 09 20 24 1542**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0402 - EPA 5030C							**Water**					
Duplicate (24I0402-DUP1)			Prepared: 09/13/24 10:03 Analyzed: 09/13/24 23:07									
QC Source Sample: Non-SDG (A4I0850-15RE1)												
Bromochloromethane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Bromodichloromethane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Bromoform	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Bromomethane	ND	---	50.0	ug/L	10	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Chlorobenzene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
Chloroethane	**239**	---	50.0	ug/L	10	---	213	---	---	12	30%	
Chloroform	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Chloromethane	ND	---	50.0	ug/L	10	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Dibromochloromethane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	---	50.0	ug/L	10	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
Dibromomethane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
1,1-Dichloroethane	**8.00**	---	4.00	ug/L	10	---	8.30	---	---	4	30%	
1,2-Dichloroethane (EDC)	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	---	4.00	ug/L	10	---	2.40	---	---	***	30%	
cis-1,2-Dichloroethene	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	---	50.0	ug/L	10	---	ND	---	---	---	30%	
Methylene chloride	ND	---	100	ug/L	10	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-31**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0904 - 09 20 24 1542**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0402 - EPA 5030C							**Water**					
Duplicate (24I0402-DUP1)			Prepared: 09/13/24 10:03 Analyzed: 09/13/24 23:07									
QC Source Sample: Non-SDG (A4I0850-15RE1)												
1,1,2,2-Tetrachloroethane	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	---	20.0	ug/L	10	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	---	20.0	ug/L	10	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
Trichloroethene (TCE)	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	---	20.0	ug/L	10	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Vinyl chloride	ND	---	2.00	ug/L	10	---	2.50	---	---	***	**30%**	Q-17
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 93 %*		*Limits: 80-120 %*				*Dilution: 1x*			
Toluene-d8 (Surr)			*100 %*		*80-120 %*				*"*			
4-Bromofluorobenzene (Surr)			*102 %*		*80-120 %*				*"*			
Matrix Spike (24I0402-MS1)			Prepared: 09/13/24 10:03 Analyzed: 09/14/24 04:10									
QC Source Sample: Non-SDG (A4I0972-15)												
EPA 8260D												
Bromobenzene	19.3	---	0.500	ug/L	1	20.0	ND	97	80-120%	---	---	
Bromochloromethane	19.3	---	1.00	ug/L	1	20.0	ND	97	78-123%	---	---	
Bromodichloromethane	20.8	---	1.00	ug/L	1	20.0	ND	104	79-125%	---	---	
Bromoform	22.9	---	1.00	ug/L	1	20.0	ND	114	66-130%	---	---	
Bromomethane	18.3	---	5.00	ug/L	1	20.0	ND	91	53-141%	---	---	
Carbon tetrachloride	22.3	---	1.00	ug/L	1	20.0	ND	111	72-136%	---	---	
Chlorobenzene	21.2	---	0.500	ug/L	1	20.0	ND	106	80-120%	---	---	
Chloroethane	18.0	---	5.00	ug/L	1	20.0	ND	90	60-138%	---	---	
Chloroform	20.6	---	1.00	ug/L	1	20.0	ND	103	79-124%	---	---	
Chloromethane	17.4	---	5.00	ug/L	1	20.0	ND	87	50-139%	---	---	
2-Chlorotoluene	20.5	---	1.00	ug/L	1	20.0	ND	102	79-122%	---	---	
4-Chlorotoluene	21.5	---	1.00	ug/L	1	20.0	ND	108	78-122%	---	---	
Dibromochloromethane	22.8	---	1.00	ug/L	1	20.0	ND	114	74-126%	---	---	
1,2-Dibromo-3-chloropropane	18.5	---	5.00	ug/L	1	20.0	ND	92	62-128%	---	---	
1,2-Dibromoethane (EDB)	20.6	---	0.500	ug/L	1	20.0	ND	103	77-121%	---	---	
Dibromomethane	19.2	---	1.00	ug/L	1	20.0	ND	96	79-123%	---	---	

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Darrell Auvil, Client Services Manager

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ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project:	Vancouver GWM 3Q24
5820 S Kelly Ave Unit B	Project Number:	19001-009-31
Portland, OR 97239	Project Manager:	Stephanie Bosze-Salisbury

Report ID:
A4I0904 - 09 20 24 1542

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0402 - EPA 5030C							Water					
Matrix Spike (24I0402-MS1)			Prepared: 09/13/24 10:03 Analyzed: 09/14/24 04:10									
QC Source Sample: Non-SDG (A4I0972-15)												
1,2-Dichlorobenzene	20.3	---	0.500	ug/L	1	20.0	ND	102	80-120%	---	---	
1,3-Dichlorobenzene	20.5	---	0.500	ug/L	1	20.0	ND	103	80-120%	---	---	
1,4-Dichlorobenzene	20.2	---	0.500	ug/L	1	20.0	ND	101	79-120%	---	---	
Dichlorodifluoromethane	17.2	---	1.00	ug/L	1	20.0	ND	86	32-152%	---	---	
1,1-Dichloroethane	19.1	---	0.400	ug/L	1	20.0	ND	95	77-125%	---	---	
1,2-Dichloroethane (EDC)	20.2	---	0.400	ug/L	1	20.0	ND	101	73-128%	---	---	
1,1-Dichloroethene	19.8	---	0.400	ug/L	1	20.0	ND	99	71-131%	---	---	
cis-1,2-Dichloroethene	19.8	---	0.400	ug/L	1	20.0	ND	99	78-123%	---	---	
trans-1,2-Dichloroethene	19.5	---	0.400	ug/L	1	20.0	ND	97	75-124%	---	---	
1,2-Dichloropropane	18.8	---	0.500	ug/L	1	20.0	ND	94	78-122%	---	---	
1,3-Dichloropropane	20.8	---	1.00	ug/L	1	20.0	ND	104	80-120%	---	---	
2,2-Dichloropropane	17.2	---	1.00	ug/L	1	20.0	ND	86	60-139%	---	---	
1,1-Dichloropropene	19.5	---	1.00	ug/L	1	20.0	ND	97	79-125%	---	---	
cis-1,3-Dichloropropene	20.9	---	1.00	ug/L	1	20.0	ND	105	75-124%	---	---	
trans-1,3-Dichloropropene	22.2	---	1.00	ug/L	1	20.0	ND	111	73-127%	---	---	
Hexachlorobutadiene	20.2	---	5.00	ug/L	1	20.0	ND	101	66-134%	---	---	
Methylene chloride	16.6	---	10.0	ug/L	1	20.0	ND	83	74-124%	---	---	
1,1,1,2-Tetrachloroethane	23.6	---	0.400	ug/L	1	20.0	ND	118	78-124%	---	---	
1,1,2,2-Tetrachloroethane	21.7	---	0.500	ug/L	1	20.0	ND	108	71-121%	---	---	
Tetrachloroethene (PCE)	21.2	---	0.400	ug/L	1	20.0	ND	106	74-129%	---	---	
1,2,3-Trichlorobenzene	19.4	---	2.00	ug/L	1	20.0	ND	97	69-129%	---	---	
1,1,2-Trichloroethane	19.9	---	0.500	ug/L	1	20.0	ND	100	80-120%	---	---	
1,2,4-Trichlorobenzene	19.5	---	2.00	ug/L	1	20.0	ND	97	69-130%	---	---	
1,1,1-Trichloroethane	20.9	---	0.400	ug/L	1	20.0	ND	104	74-131%	---	---	
Trichloroethene (TCE)	17.4	---	0.400	ug/L	1	20.0	ND	87	79-123%	---	---	
Trichlorofluoromethane	23.6	---	2.00	ug/L	1	20.0	ND	118	65-141%	---	---	
1,2,3-Trichloropropane	19.2	---	1.00	ug/L	1	20.0	ND	96	73-122%	---	---	
Vinyl chloride	20.0	---	0.200	ug/L	1	20.0	ND	100	58-137%	---	---	

Surr: 1,4-Difluorobenzene (Surr)	*Recovery: 90 %*	*Limits: 80-120 %*	*Dilution: 1x*
Toluene-d8 (Surr)	*100 %*	*80-120 %*	*"*
4-Bromofluorobenzene (Surr)	*95 %*	*80-120 %*	*"*

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-31	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0904 - 09 20 24 1542

QUALITY CONTROL (QC) SAMPLE RESULTS

Ammonia by Gas Diffusion and Colorimetric Detection

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0357 - Method Prep: Aq									Water			
Blank (24I0357-BLK1)			Prepared: 09/12/24 08:20 Analyzed: 09/12/24 12:06									
SM 4500-NH3 G												
Ammonia as N	ND	---	0.0200	mg/L	1	---	---	---	---	---	---	
LCS (24I0357-BS1)			Prepared: 09/12/24 08:20 Analyzed: 09/12/24 12:08									
SM 4500-NH3 G												
Ammonia as N	1.88	---	0.0200	mg/L	1	2.00	---	94	90-111%	---	---	
Matrix Spike (24I0357-MS1)			Prepared: 09/12/24 08:20 Analyzed: 09/12/24 12:14									
QC Source Sample: Non-SDG (A4I1039-01)												
SM 4500-NH3 G												
Ammonia as N	38.9	---	0.200	mg/L	10	20.0	18.7	101	90-111%	---	---	
Matrix Spike Dup (24I0357-MSD1)			Prepared: 09/12/24 08:20 Analyzed: 09/12/24 12:15									
QC Source Sample: Non-SDG (A4I1039-01)												
Ammonia as N	38.5	---	0.200	mg/L	10	20.0	18.7	99	90-111%	1	13%	

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: Vancouver GWM 3Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-31	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0904 - 09 20 24 1542

QUALITY CONTROL (QC) SAMPLE RESULTS

Ammonia by Gas Diffusion and Colorimetric Detection

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0377 - Method Prep: Aq									Water			
Blank (24I0377-BLK1)			Prepared: 09/12/24 12:12 Analyzed: 09/12/24 13:29									
SM 4500-NH3 G												
Ammonia as N	ND	---	0.0200	mg/L	1	---	---	---	---	---	---	
LCS (24I0377-BS1)			Prepared: 09/12/24 12:12 Analyzed: 09/12/24 13:30									
SM 4500-NH3 G												
Ammonia as N	1.92	---	0.0200	mg/L	1	2.00	---	96	90-111%	---	---	
Matrix Spike (24I0377-MS1)			Prepared: 09/12/24 12:12 Analyzed: 09/12/24 13:35									
QC Source Sample: Non-SDG (A4I0981-01)												
SM 4500-NH3 G												
Ammonia as N	2.47	---	0.0250	mg/L	1	2.50	ND	99	90-111%	---	---	
Matrix Spike Dup (24I0377-MSD1)			Prepared: 09/12/24 12:12 Analyzed: 09/12/24 13:36									
QC Source Sample: Non-SDG (A4I0981-01)												
Ammonia as N	2.49	---	0.0250	mg/L	1	2.50	ND	100	90-111%	0.8	13%	

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Darrell Auvil, Client Services Manager

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Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-31**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0904 - 09 20 24 1542**

QUALITY CONTROL (QC) SAMPLE RESULTS

Ammonia by Gas Diffusion and Colorimetric Detection

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0481 - Method Prep: Aq									Water			
Blank (24I0481-BLK1)			Prepared: 09/16/24 15:22 Analyzed: 09/16/24 16:39									
SM 4500-NH3 G												
Ammonia as N	ND	---	0.0200	mg/L	1	---	---	---	---	---	---	
LCS (24I0481-BS1)			Prepared: 09/16/24 15:22 Analyzed: 09/16/24 16:41									
SM 4500-NH3 G												
Ammonia as N	2.00	---	0.0200	mg/L	1	2.00	---	100	90-111%	---	---	
Matrix Spike (24I0481-MS1)			Prepared: 09/16/24 15:22 Analyzed: 09/16/24 16:45									
QC Source Sample: MW-2li-40 (A4I0904-04RE1)												
SM 4500-NH3 G												
Ammonia as N	2.54	---	0.0250	mg/L	1	2.50	ND	102	90-111%	---	---	
Matrix Spike Dup (24I0481-MSD1)			Prepared: 09/16/24 15:22 Analyzed: 09/16/24 16:47									
QC Source Sample: MW-2li-40 (A4I0904-04RE1)												
SM 4500-NH3 G												
Ammonia as N	2.49	---	0.0250	mg/L	1	2.50	ND	100	90-111%	2	13%	

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Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0904 - 09 20 24 1542**

QUALITY CONTROL (QC) SAMPLE RESULTS

Anions by Ion Chromatography

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24I0178 - Method Prep: Aq							**Water**					
Blank (24I0178-BLK1)			Prepared: 09/06/24 13:02		Analyzed: 09/07/24 05:13							
EPA 300.0												
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	---	---	---	---	---	---	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	---	---	---	---	---	---	
LCS (24I0178-BS1)			Prepared: 09/06/24 13:02		Analyzed: 09/07/24 05:34							
EPA 300.0												
Nitrate-Nitrogen	2.02	---	0.250	mg/L	1	2.00	---	101	90-110%	---	---	
Nitrite-Nitrogen	1.97	---	0.250	mg/L	1	2.00	---	99	90-110%	---	---	
Duplicate (24I0178-DUP1)			Prepared: 09/06/24 13:02		Analyzed: 09/07/24 06:39							
QC Source Sample: MW-1 (A4I0904-01RE1)												
EPA 300.0												
Nitrate-Nitrogen	**50.0**	---	5.00	mg/L	20	---	50.5	---	---	1	10%	Q-16
Duplicate (24I0178-DUP2)			Prepared: 09/06/24 13:02		Analyzed: 09/07/24 07:44							
QC Source Sample: MW-1 (A4I0904-01)												
EPA 300.0												
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	---	ND	---	---	---	10%	
Matrix Spike (24I0178-MS1)			Prepared: 09/06/24 13:02		Analyzed: 09/07/24 07:01							
QC Source Sample: MW-1 (A4I0904-01RE1)												
EPA 300.0												
Nitrate-Nitrogen	89.6	---	5.00	mg/L	20	40.0	50.5	98	87-112%	---	---	Q-16
Matrix Spike (24I0178-MS2)			Prepared: 09/06/24 13:02		Analyzed: 09/07/24 08:05							
QC Source Sample: MW-1 (A4I0904-01)												
EPA 300.0												
Nitrite-Nitrogen	2.46	---	0.312	mg/L	1	2.50	ND	98	90-114%	---	---	

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ORELAP ID: OR100062

ANALYTICAL REPORT

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5820 S Kelly Ave Unit B	Project Number: 19001-009-31	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4I0904 - 09 20 24 1542

SAMPLE PREPARATION INFORMATION

Halogenated Volatile Organic Compounds by EPA 8260D

Prep: EPA 5030C

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 24I0401							
A4I0904-01	Water	EPA 8260D	09/06/24 08:06	09/13/24 09:07	5mL/5mL	5mL/5mL	1.00
A4I0904-02	Water	EPA 8260D	09/06/24 09:53	09/13/24 09:07	5mL/5mL	5mL/5mL	1.00
A4I0904-03	Water	EPA 8260D	09/06/24 08:53	09/13/24 09:07	5mL/5mL	5mL/5mL	1.00
A4I0904-04	Water	EPA 8260D	09/06/24 09:18	09/13/24 09:07	5mL/5mL	5mL/5mL	1.00
A4I0904-05	Water	EPA 8260D	09/06/24 08:42	09/13/24 09:07	5mL/5mL	5mL/5mL	1.00
Batch: 24I0402							
A4I0904-06	Water	EPA 8260D	09/06/24 07:45	09/13/24 10:03	5mL/5mL	5mL/5mL	1.00

Ammonia by Gas Diffusion and Colorimetric Detection

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 24I0357							
A4I0904-01	Water	SM 4500-NH3 G	09/06/24 08:06	09/12/24 08:20	10mL/10mL	10mL/10mL	1.00
A4I0904-02	Water	SM 4500-NH3 G	09/06/24 09:53	09/12/24 08:20	10mL/10mL	10mL/10mL	1.00
A4I0904-05	Water	SM 4500-NH3 G	09/06/24 08:42	09/12/24 08:20	10mL/10mL	10mL/10mL	1.00
A4I0904-06	Water	SM 4500-NH3 G	09/06/24 07:45	09/12/24 08:20	10mL/10mL	10mL/10mL	1.00
Batch: 24I0377							
A4I0904-03RE1	Water	SM 4500-NH3 G	09/06/24 08:53	09/12/24 08:20	10mL/10mL	10mL/10mL	1.00
Batch: 24I0481							
A4I0904-04RE1	Water	SM 4500-NH3 G	09/06/24 09:18	09/16/24 15:22	10mL/10mL	10mL/10mL	1.00

Anions by Ion Chromatography

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 24I0178							
A4I0904-01	Water	EPA 300.0	09/06/24 08:06	09/06/24 13:02	5mL/5mL	5mL/5mL	1.00
A4I0904-01RE1	Water	EPA 300.0	09/06/24 08:06	09/06/24 13:02	5mL/5mL	5mL/5mL	1.00
A4I0904-02	Water	EPA 300.0	09/06/24 09:53	09/06/24 13:02	5mL/5mL	5mL/5mL	1.00
A4I0904-03	Water	EPA 300.0	09/06/24 08:53	09/06/24 13:02	5mL/5mL	5mL/5mL	1.00
A4I0904-04	Water	EPA 300.0	09/06/24 09:18	09/06/24 13:02	5mL/5mL	5mL/5mL	1.00
A4I0904-05	Water	EPA 300.0	09/06/24 08:42	09/06/24 13:02	5mL/5mL	5mL/5mL	1.00
A4I0904-06	Water	EPA 300.0	09/06/24 07:45	09/06/24 13:02	5mL/5mL	5mL/5mL	1.00

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: **Vancouver GWM 3Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-31**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4I0904 - 09 20 24 1542**

QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

Apex Laboratories

COMP	Analyzed sample is a composite of discrete samples that was performed in the laboratory.
Q-16	Reanalysis of an original Batch QC sample.
Q-17	RPD between original and duplicate sample, or spike duplicates, is outside of established control limits.

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REPORTING NOTES AND CONVENTIONS:

Abbreviations:

DET Analyte DETECTED at or above the detection or reporting limit.

ND Analyte NOT DETECTED at or above the detection or reporting limit.

NR Result Not Reported

RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

Detection Limits: Limit of Detection (LOD)

Validated Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ). If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

Basis: Results for soil samples are generally reported on a 100% dry weight basis.
The Result Basis is listed following the units as " dry", " wet", or " " (blank) designation.

" dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")
See Percent Solids section for details of dry weight analysis.

" wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.

" " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

Results for Volatiles analyses on soils and sediments that are reported on a “dry weight” basis include the water miscible solvent (WMS) correction referenced in the EPA 8000 Method guidance documents. Solid and Liquid samples reported on an “As Received” basis do not have the WMS correction applied, as dry weight was not performed.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) may not be included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

" --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

" *** " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

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REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to one half of the Reporting Limit (RL).
Blank results for gravimetric analyses are evaluated to the Reporting Level, not to half of the Reporting Level.
-For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.
-For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.
For further details, please request a copy of this document.
-Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.
'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level, if results are not reported to the MDL.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

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LABORATORY ACCREDITATION INFORMATION

ORELAP Certification ID: OR100062 (Primary Accreditation) - EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

Apex Laboratories

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation

All reported analytes are included in Apex Laboratories' current ORELAP scope.

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation.
Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories



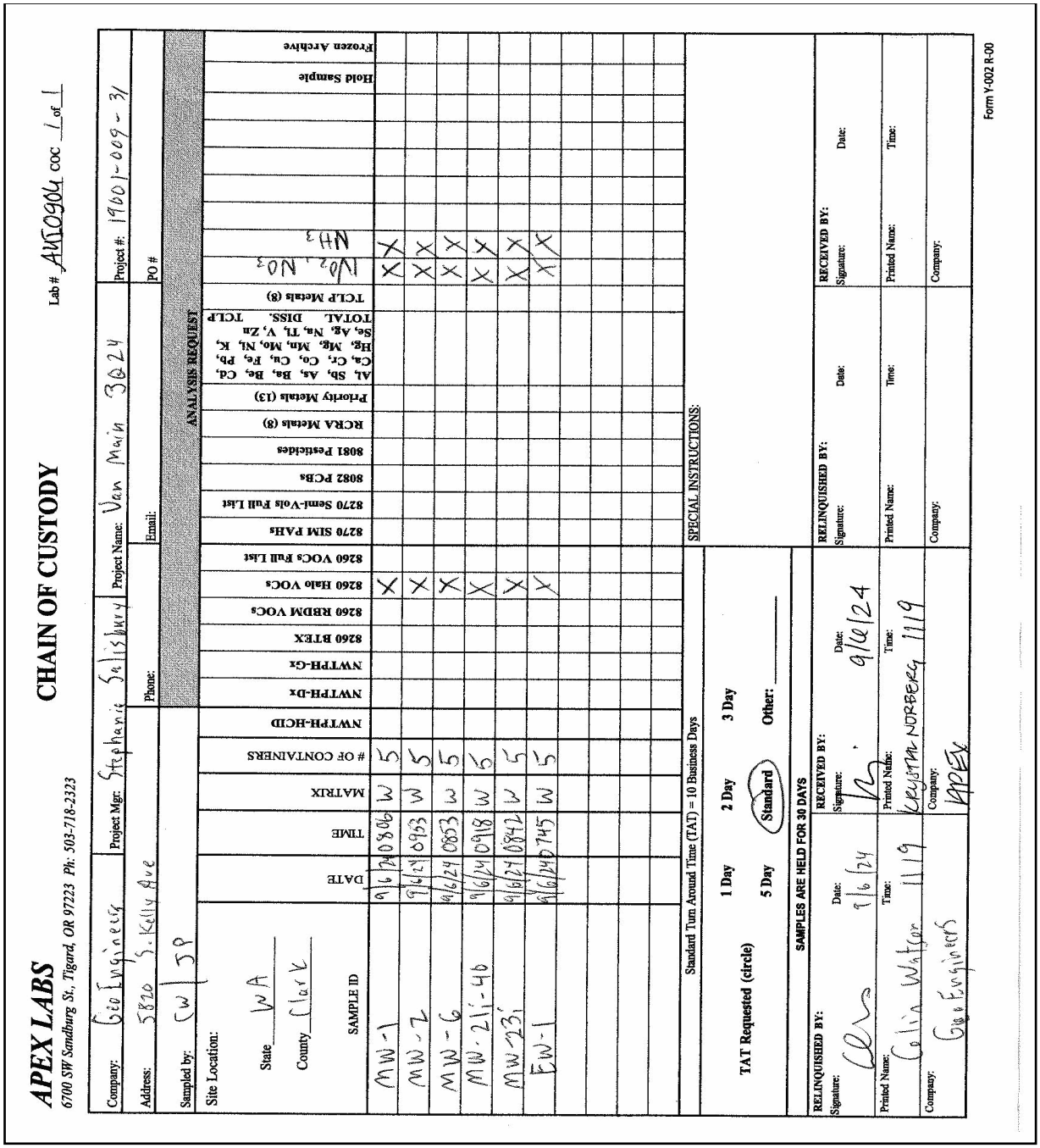
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APEX LABS
6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323

CHAIN OF CUSTODY

Lab # A4I0904 COC 1 of 1

Company: GeoEngineers | Project Mgr: Stephanie Salisbury | Project Name: Van Main 3Q24 | Project #: 19001-009-31
Address: 5820 S. Kelly Ave | Phone: | Email: | PO #
Sampled by: CW | JP
Site Location: State WA County Clark

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	BTEX 8260	RBDM VOCs 8260	Halo VOCs 8260	Full List VOCs 8260	SIM PAHs 8270	Semi-Vols Full List 8270	PCBs 8082	Pesticides 8081	RCRA Metals (8)	Priority Metals (13)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS. TCLP	TCLP Metals (8)	NO_2, NO_3	NH_3	Hold Sample	Frozen Archive
MW-1	9/6/24	0800	W	5						X										X			
MW-7	9/6/24	0923	W	5						X										X			
MW-6	9/6/24	0853	W	5						X										X			
MW-21-46	9/6/24	0918	W	5						X										X			
MW-23	9/6/24	0842	W	5						X										X			
EW-1	9/6/24	0745	W	5						X										X			

Standard Turn Around Time (TAT) = 10 Business Days
TAT Requested (circle): 1 Day | 2 Day | 3 Day | 5 Day | Standard | Other: _____
SAMPLES ARE HELD FOR 30 DAYS

SPECIAL INSTRUCTIONS:

RELINQUISHED BY: Signature:	Date: 9/6/24	RECEIVED BY: Signature:	Date: 9/6/24	RELINQUISHED BY: Signature:	Date:
Printed Name: Colin Walker	Time: 1119	Printed Name: KRISTINA NORBERG	Time: 1119	Printed Name:	Time:
Company: GeoEngineers		Company: APEX		Company:	

RECEIVED BY: Signature: | Date:
Printed Name: | Time:
Company:

Form Y-002 R-00

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APEX LABS COOLER RECEIPT FORM

Client: Geo Engineers Element WO#: A4I0904

Project/Project #: Van Main 3024

Delivery Info:

Date/time received: 9/6/24 @ 1119 By: KN

Delivered by: Apex__Client X ESS__FedEx__UPS__Radio__Morgan__SDS__Evergreen__Other__

From USDA Regulated Origin? Yes _____ No V

Cooler Inspection Date/time inspected: 9/6/24 @ 1119 By: KN

Chain of Custody included? Yes V No _____

Signed/dated by client? Yes V No _____

Contains USDA Reg. Soils? Yes _____ No V Unsure (email RegSoils) _____

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	5.0						
Custody seals? (Y/N)	N						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	N						
Ice type: (Gel/Real/Other)	Real						
Condition (In/Out):	In						

Cooler out of temp? (Y/(N)) Possible reason why: _____

Green dots applied to out of temperature samples? Yes/(No)

Out of temperature samples form initiated? Yes/(No)

Sample Inspection: Date/time inspected: 9/6/24 @ 1135 By: ZA

All samples intact? Yes X No ___ Comments: _____

Bottle labels/COCs agree? Yes X No ___ Comments: _____

COC/container discrepancies form initiated? Yes ___ No X

Containers/volumes received appropriate for analysis? Yes X No ___ Comments: _____

Do VOA vials have visible headspace? Yes ___ No X NA ___

Comments _____

Water samples: pH checked: Yes X No___NA___ pH appropriate? Yes X No___NA___ pH ID: A23172

Comments: _____

Labeled by: ZA Witness: [signature] Cooler Inspected by: ZA

Form Y-003 R-02

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ANALYTICAL REPORT

Wednesday, December 18, 2024

Stephanie Bosze-Salisbury
GeoEngineers - Portland
5820 S Kelly Ave Unit B
Portland, OR 97239

RE: A4L0816 - Sunoco Van Main 4Q24 - 19001-009-

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A4L0816, which was received by the laboratory on 12/2/2024 at 4:40:00PM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: DAuvil@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of sample receipt, unless prior arrangements have been made.

Cooler Receipt Information
Acceptable Receipt Temperature is less than, or equal to, 6 degC (not frozen), or received on ice the same day as sampling.
(See Cooler Receipt Form for details)
Default Cooler 4.4 degC

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.
All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.

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Darrell Auvil, Client Services Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0816 - 12 18 24 0922**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MGMS3-4(40)	A4L0816-01	Water	12/02/24 12:57	12/02/24 16:40
MGMS3-3(60)	A4L0816-02	Water	12/02/24 13:56	12/02/24 16:40
MGMS3-2(101)	A4L0816-03	Water	12/02/24 14:25	12/02/24 16:40
MGMS3-1(132)	A4L0816-04	Water	12/02/24 15:01	12/02/24 16:40
MGMS3-4(40)DUP	A4L0816-05	Water	12/02/24 12:57	12/02/24 16:40

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0816 - 12 18 24 0922**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MGMS3-4(40) (A4L0816-01)				**Matrix: Water**		**Batch: 24L0073**		
Bromobenzene	ND	---	0.500	ug/L	1	12/03/24 15:35	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	12/03/24 15:35	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	12/03/24 15:35	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	12/03/24 15:35	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	12/03/24 15:35	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	12/03/24 15:35	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	12/03/24 15:35	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	12/03/24 15:35	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	12/03/24 15:35	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	12/03/24 15:35	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	12/03/24 15:35	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	12/03/24 15:35	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	12/03/24 15:35	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	12/03/24 15:35	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	12/03/24 15:35	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	12/03/24 15:35	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	12/03/24 15:35	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	12/03/24 15:35	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	12/03/24 15:35	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	12/03/24 15:35	EPA 8260D	
1,1-Dichloroethane	**2.45**	---	0.400	ug/L	1	12/03/24 15:35	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	12/03/24 15:35	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	12/03/24 15:35	EPA 8260D	
cis-1,2-Dichloroethene	**0.710**	---	0.400	ug/L	1	12/03/24 15:35	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	12/03/24 15:35	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	12/03/24 15:35	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	12/03/24 15:35	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	12/03/24 15:35	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	12/03/24 15:35	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/03/24 15:35	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/03/24 15:35	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	12/03/24 15:35	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	12/03/24 15:35	EPA 8260D	

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Darrell Auvil, Client Services Manager

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503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0816 - 12 18 24 0922

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MGMS3-4(40) (A4L0816-01)				**Matrix: Water**		**Batch: 24L0073**		
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	12/03/24 15:35	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	12/03/24 15:35	EPA 8260D	
Tetrachloroethene (PCE)	**0.480**	---	0.400	ug/L	1	12/03/24 15:35	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	12/03/24 15:35	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	12/03/24 15:35	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	12/03/24 15:35	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	12/03/24 15:35	EPA 8260D	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	12/03/24 15:35	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	12/03/24 15:35	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	12/03/24 15:35	EPA 8260D	
Vinyl chloride	**12.5**	---	0.200	ug/L	1	12/03/24 15:35	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*104 %*	*Limits:*	*80-120 %*	*1*	*12/03/24 15:35*	*EPA 8260D*	
Toluene-d8 (Surr)			*101 %*		*80-120 %*	*1*	*12/03/24 15:35*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*97 %*		*80-120 %*	*1*	*12/03/24 15:35*	*EPA 8260D*	
MGMS3-3(60) (A4L0816-02)				**Matrix: Water**		**Batch: 24L0073**		
Bromobenzene	ND	---	0.500	ug/L	1	12/03/24 15:12	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	12/03/24 15:12	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	12/03/24 15:12	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	12/03/24 15:12	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	12/03/24 15:12	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	12/03/24 15:12	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	12/03/24 15:12	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	12/03/24 15:12	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	12/03/24 15:12	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	12/03/24 15:12	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	12/03/24 15:12	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	12/03/24 15:12	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	12/03/24 15:12	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	12/03/24 15:12	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	12/03/24 15:12	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	12/03/24 15:12	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	12/03/24 15:12	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	12/03/24 15:12	EPA 8260D	

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Darrell Auvil, Client Services Manager

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0816 - 12 18 24 0922**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MGMS3-3(60) (A4L0816-02)				**Matrix: Water**		**Batch: 24L0073**		
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	12/03/24 15:12	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	12/03/24 15:12	EPA 8260D	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	12/03/24 15:12	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	12/03/24 15:12	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	12/03/24 15:12	EPA 8260D	
cis-1,2-Dichloroethene	**5.15**	---	0.400	ug/L	1	12/03/24 15:12	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	12/03/24 15:12	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	12/03/24 15:12	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	12/03/24 15:12	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	12/03/24 15:12	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	12/03/24 15:12	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/03/24 15:12	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/03/24 15:12	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	12/03/24 15:12	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	12/03/24 15:12	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	12/03/24 15:12	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	12/03/24 15:12	EPA 8260D	
Tetrachloroethene (PCE)	**1.51**	---	0.400	ug/L	1	12/03/24 15:12	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	12/03/24 15:12	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	12/03/24 15:12	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	12/03/24 15:12	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	12/03/24 15:12	EPA 8260D	
Trichloroethene (TCE)	**0.910**	---	0.400	ug/L	1	12/03/24 15:12	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	12/03/24 15:12	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	12/03/24 15:12	EPA 8260D	
Vinyl chloride	**0.410**	---	0.200	ug/L	1	12/03/24 15:12	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*104 %*	*Limits:*	*80-120 %*	*1*	*12/03/24 15:12*	*EPA 8260D*	
Toluene-d8 (Surr)			*101 %*		*80-120 %*	*1*	*12/03/24 15:12*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*98 %*		*80-120 %*	*1*	*12/03/24 15:12*	*EPA 8260D*	
MGMS3-2(101) (A4L0816-03)				**Matrix: Water**		**Batch: 24L0073**		
Bromobenzene	ND	---	0.500	ug/L	1	12/03/24 14:27	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	12/03/24 14:27	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	12/03/24 14:27	EPA 8260D	

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GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0816 - 12 18 24 0922**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MGMS3-2(101) (A4L0816-03)				**Matrix: Water**		**Batch: 24L0073**		
Bromoform	ND	---	1.00	ug/L	1	12/03/24 14:27	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	12/03/24 14:27	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	12/03/24 14:27	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	12/03/24 14:27	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	12/03/24 14:27	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	12/03/24 14:27	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	12/03/24 14:27	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	12/03/24 14:27	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	12/03/24 14:27	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	12/03/24 14:27	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	12/03/24 14:27	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	12/03/24 14:27	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	12/03/24 14:27	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	12/03/24 14:27	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	12/03/24 14:27	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	12/03/24 14:27	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	12/03/24 14:27	EPA 8260D	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	12/03/24 14:27	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	12/03/24 14:27	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	12/03/24 14:27	EPA 8260D	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	12/03/24 14:27	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	12/03/24 14:27	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	12/03/24 14:27	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	12/03/24 14:27	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	12/03/24 14:27	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	12/03/24 14:27	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/03/24 14:27	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/03/24 14:27	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	12/03/24 14:27	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	12/03/24 14:27	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	12/03/24 14:27	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	12/03/24 14:27	EPA 8260D	
Tetrachloroethene (PCE)	**1.32**	---	0.400	ug/L	1	12/03/24 14:27	EPA 8260D	

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Darrell Auvil, Client Services Manager

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GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0816 - 12 18 24 0922**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MGMS3-2(101) (A4L0816-03)				**Matrix: Water**		**Batch: 24L0073**		
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	12/03/24 14:27	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	12/03/24 14:27	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	12/03/24 14:27	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	12/03/24 14:27	EPA 8260D	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	12/03/24 14:27	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	12/03/24 14:27	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	12/03/24 14:27	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	12/03/24 14:27	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*103 %*	*Limits: 80-120 %*	*1*	*12/03/24 14:27*	*EPA 8260D*	
Toluene-d8 (Surr)			*101 %*	*80-120 %*	*1*	*12/03/24 14:27*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*98 %*	*80-120 %*	*1*	*12/03/24 14:27*	*EPA 8260D*	
MGMS3-1(132) (A4L0816-04)				**Matrix: Water**		**Batch: 24L0073**		
Bromobenzene	ND	---	0.500	ug/L	1	12/03/24 14:50	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	12/03/24 14:50	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	12/03/24 14:50	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	12/03/24 14:50	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	12/03/24 14:50	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	12/03/24 14:50	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	12/03/24 14:50	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	12/03/24 14:50	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	12/03/24 14:50	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	12/03/24 14:50	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	12/03/24 14:50	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	12/03/24 14:50	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	12/03/24 14:50	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	12/03/24 14:50	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	12/03/24 14:50	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	12/03/24 14:50	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	12/03/24 14:50	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	12/03/24 14:50	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	12/03/24 14:50	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	12/03/24 14:50	EPA 8260D	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	12/03/24 14:50	EPA 8260D	

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503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0816 - 12 18 24 0922

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MGMS3-1(132) (A4L0816-04)				**Matrix: Water**		**Batch: 24L0073**		
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	12/03/24 14:50	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	12/03/24 14:50	EPA 8260D	
cis-1,2-Dichloroethene	**0.570**	---	0.400	ug/L	1	12/03/24 14:50	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	12/03/24 14:50	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	12/03/24 14:50	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	12/03/24 14:50	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	12/03/24 14:50	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	12/03/24 14:50	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/03/24 14:50	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/03/24 14:50	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	12/03/24 14:50	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	12/03/24 14:50	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	12/03/24 14:50	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	12/03/24 14:50	EPA 8260D	
Tetrachloroethene (PCE)	**1.61**	---	0.400	ug/L	1	12/03/24 14:50	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	12/03/24 14:50	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	12/03/24 14:50	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	12/03/24 14:50	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	12/03/24 14:50	EPA 8260D	
Trichloroethene (TCE)	**0.820**	---	0.400	ug/L	1	12/03/24 14:50	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	12/03/24 14:50	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	12/03/24 14:50	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	12/03/24 14:50	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*105 %*	*Limits:*	*80-120 %*	*1*	*12/03/24 14:50*	*EPA 8260D*	
Toluene-d8 (Surr)			*101 %*		*80-120 %*	*1*	*12/03/24 14:50*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*97 %*		*80-120 %*	*1*	*12/03/24 14:50*	*EPA 8260D*	
MGMS3-4(40)DUP (A4L0816-05)				**Matrix: Water**		**Batch: 24L0073**		
Bromobenzene	ND	---	0.500	ug/L	1	12/03/24 15:58	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	12/03/24 15:58	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	12/03/24 15:58	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	12/03/24 15:58	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	12/03/24 15:58	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	12/03/24 15:58	EPA 8260D	

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503-718-2323
ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0816 - 12 18 24 0922**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MGMS3-4(40)DUP (A4L0816-05)				**Matrix: Water**		**Batch: 24L0073**		
Chlorobenzene	ND	---	0.500	ug/L	1	12/03/24 15:58	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	12/03/24 15:58	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	12/03/24 15:58	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	12/03/24 15:58	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	12/03/24 15:58	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	12/03/24 15:58	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	12/03/24 15:58	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	12/03/24 15:58	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	12/03/24 15:58	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	12/03/24 15:58	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	12/03/24 15:58	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	12/03/24 15:58	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	12/03/24 15:58	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	12/03/24 15:58	EPA 8260D	
1,1-Dichloroethane	**2.33**	---	0.400	ug/L	1	12/03/24 15:58	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	12/03/24 15:58	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	12/03/24 15:58	EPA 8260D	
cis-1,2-Dichloroethene	**0.640**	---	0.400	ug/L	1	12/03/24 15:58	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	12/03/24 15:58	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	12/03/24 15:58	EPA 8260D	Q-37
1,3-Dichloropropane	ND	---	1.00	ug/L	1	12/03/24 15:58	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	12/03/24 15:58	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	12/03/24 15:58	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/03/24 15:58	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/03/24 15:58	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	12/03/24 15:58	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	12/03/24 15:58	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	12/03/24 15:58	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	12/03/24 15:58	EPA 8260D	
Tetrachloroethene (PCE)	**0.500**	---	0.400	ug/L	1	12/03/24 15:58	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	12/03/24 15:58	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	12/03/24 15:58	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	12/03/24 15:58	EPA 8260D	

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0816 - 12 18 24 0922**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MGMS3-4(40)DUP (A4L0816-05)				**Matrix: Water**		**Batch: 24L0073**		
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	12/03/24 15:58	EPA 8260D	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	12/03/24 15:58	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	12/03/24 15:58	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	12/03/24 15:58	EPA 8260D	
Vinyl chloride	**11.5**	---	0.200	ug/L	1	12/03/24 15:58	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*104 %*	*Limits: 80-120 %*	*1*	*12/03/24 15:58*	*EPA 8260D*	
Toluene-d8 (Surr)			*101 %*	*80-120 %*	*1*	*12/03/24 15:58*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*97 %*	*80-120 %*	*1*	*12/03/24 15:58*	*EPA 8260D*	

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0816 - 12 18 24 0922**

ANALYTICAL SAMPLE RESULTS

Ammonia by Gas Diffusion and Colorimetric Detection

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MGMS3-4(40) (A4L0816-01)				**Matrix: Water**		**Batch: 24L0146**		
Ammonia as N	**1.00**	---	0.0200	mg/L	1	12/05/24 12:18	SM 4500-NH3 G	
MGMS3-3(60) (A4L0816-02)				**Matrix: Water**		**Batch: 24L0146**		
Ammonia as N	ND	---	0.0200	mg/L	1	12/05/24 12:20	SM 4500-NH3 G	
MGMS3-2(101) (A4L0816-03)				**Matrix: Water**		**Batch: 24L0146**		
Ammonia as N	ND	---	0.0200	mg/L	1	12/05/24 12:21	SM 4500-NH3 G	
MGMS3-1(132) (A4L0816-04)				**Matrix: Water**		**Batch: 24L0146**		
Ammonia as N	ND	---	0.0200	mg/L	1	12/05/24 12:24	SM 4500-NH3 G	
MGMS3-4(40)DUP (A4L0816-05)				**Matrix: Water**		**Batch: 24L0146**		
Ammonia as N	**0.852**	---	0.0200	mg/L	1	12/05/24 12:26	SM 4500-NH3 G	

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0816 - 12 18 24 0922**

ANALYTICAL SAMPLE RESULTS

Anions by Ion Chromatography

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MGMS3-4(40) (A4L0816-01)				**Matrix: Water**				
Batch: 24L0050								
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	12/03/24 11:35	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	12/03/24 11:35	EPA 300.0	
MGMS3-3(60) (A4L0816-02)				**Matrix: Water**				
Batch: 24L0050								
Nitrate-Nitrogen	**0.608**	---	0.250	mg/L	1	12/03/24 12:39	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	12/03/24 12:39	EPA 300.0	
MGMS3-2(101) (A4L0816-03)				**Matrix: Water**				
Batch: 24L0050								
Nitrate-Nitrogen	**1.29**	---	0.250	mg/L	1	12/03/24 13:01	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	12/03/24 13:01	EPA 300.0	
MGMS3-1(132) (A4L0816-04)				**Matrix: Water**				
Batch: 24L0050								
Nitrate-Nitrogen	**1.04**	---	0.250	mg/L	1	12/03/24 13:22	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	12/03/24 13:22	EPA 300.0	
MGMS3-4(40)DUP (A4L0816-05)				**Matrix: Water**				
Batch: 24L0050								
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	12/03/24 13:44	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	12/03/24 13:44	EPA 300.0	

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5820 S Kelly Ave Unit B	Project Number: **19001-009-**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0816 - 12 18 24 0922**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0073 - EPA 5030C							**Water**					
Blank (24L0073-BLK1)			Prepared: 12/03/24 11:00 Analyzed: 12/03/24 12:34									
EPA 8260D												
Bromobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Bromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromodichloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromoform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromomethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Carbon tetrachloride	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Chloroethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Chloroform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chloromethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
2-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
4-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Dibromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dibromomethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Methylene chloride	ND	---	10.0	ug/L	1	---	---	---	---	---	---	

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5820 S Kelly Ave Unit B	Project Number: **19001-009-**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0816 - 12 18 24 0922**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0073 - EPA 5030C							**Water**					
Blank (24L0073-BLK1)			Prepared: 12/03/24 11:00 Analyzed: 12/03/24 12:34									
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Vinyl chloride	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*102 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*100 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*100 %*		*80-120 %*			*"*				
LCS (24L0073-BS1)			Prepared: 12/03/24 11:00 Analyzed: 12/03/24 11:49									
EPA 8260D												
Bromobenzene	20.1	---	0.500	ug/L	1	20.0	---	100	80-120%	---	---	
Bromochloromethane	23.7	---	1.00	ug/L	1	20.0	---	118	80-120%	---	---	
Bromodichloromethane	22.5	---	1.00	ug/L	1	20.0	---	112	80-120%	---	---	
Bromoform	22.1	---	1.00	ug/L	1	20.0	---	111	80-120%	---	---	
Bromomethane	25.9	---	5.00	ug/L	1	20.0	---	**130**	**80-120%**	---	---	Q-56
Carbon tetrachloride	20.2	---	1.00	ug/L	1	20.0	---	101	80-120%	---	---	
Chlorobenzene	20.0	---	0.500	ug/L	1	20.0	---	100	80-120%	---	---	
Chloroethane	26.0	---	5.00	ug/L	1	20.0	---	**130**	**80-120%**	---	---	Q-56
Chloroform	21.4	---	1.00	ug/L	1	20.0	---	107	80-120%	---	---	
Chloromethane	12.7	---	5.00	ug/L	1	20.0	---	**63**	**80-120%**	---	---	Q-55
2-Chlorotoluene	20.3	---	1.00	ug/L	1	20.0	---	102	80-120%	---	---	
4-Chlorotoluene	20.3	---	1.00	ug/L	1	20.0	---	102	80-120%	---	---	
Dibromochloromethane	21.0	---	1.00	ug/L	1	20.0	---	105	80-120%	---	---	
1,2-Dibromo-3-chloropropane	19.3	---	5.00	ug/L	1	20.0	---	96	80-120%	---	---	
1,2-Dibromoethane (EDB)	21.1	---	0.500	ug/L	1	20.0	---	106	80-120%	---	---	
Dibromomethane	22.5	---	1.00	ug/L	1	20.0	---	113	80-120%	---	---	
1,2-Dichlorobenzene	20.6	---	0.500	ug/L	1	20.0	---	103	80-120%	---	---	

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Darrell Auvil, Client Services Manager

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Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0816 - 12 18 24 0922**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0073 - EPA 5030C							**Water**					
LCS (24L0073-BS1)			Prepared: 12/03/24 11:00		Analyzed: 12/03/24 11:49							
1,3-Dichlorobenzene	21.1	---	0.500	ug/L	1	20.0	---	106	80-120%	---	---	
1,4-Dichlorobenzene	20.2	---	0.500	ug/L	1	20.0	---	101	80-120%	---	---	
Dichlorodifluoromethane	10.7	---	1.00	ug/L	1	20.0	---	**54**	**80-120%**	---	---	Q-55
1,1-Dichloroethane	21.9	---	0.400	ug/L	1	20.0	---	110	80-120%	---	---	
1,2-Dichloroethane (EDC)	22.4	---	0.400	ug/L	1	20.0	---	112	80-120%	---	---	
1,1-Dichloroethene	22.0	---	0.400	ug/L	1	20.0	---	110	80-120%	---	---	
cis-1,2-Dichloroethene	20.8	---	0.400	ug/L	1	20.0	---	104	80-120%	---	---	
trans-1,2-Dichloroethene	21.0	---	0.400	ug/L	1	20.0	---	105	80-120%	---	---	
1,2-Dichloropropane	21.3	---	0.500	ug/L	1	20.0	---	106	80-120%	---	---	
1,3-Dichloropropane	20.3	---	1.00	ug/L	1	20.0	---	102	80-120%	---	---	
2,2-Dichloropropane	23.2	---	1.00	ug/L	1	20.0	---	116	80-120%	---	---	
1,1-Dichloropropene	20.9	---	1.00	ug/L	1	20.0	---	104	80-120%	---	---	
cis-1,3-Dichloropropene	20.8	---	1.00	ug/L	1	20.0	---	104	80-120%	---	---	
trans-1,3-Dichloropropene	22.1	---	1.00	ug/L	1	20.0	---	111	80-120%	---	---	
Hexachlorobutadiene	19.3	---	5.00	ug/L	1	20.0	---	96	80-120%	---	---	
Methylene chloride	20.2	---	10.0	ug/L	1	20.0	---	101	80-120%	---	---	
1,1,1,2-Tetrachloroethane	20.0	---	0.400	ug/L	1	20.0	---	100	80-120%	---	---	
1,1,2,2-Tetrachloroethane	22.9	---	0.500	ug/L	1	20.0	---	115	80-120%	---	---	
Tetrachloroethene (PCE)	20.4	---	0.400	ug/L	1	20.0	---	102	80-120%	---	---	
1,2,3-Trichlorobenzene	18.8	---	2.00	ug/L	1	20.0	---	94	80-120%	---	---	
1,1,2-Trichloroethane	20.4	---	0.500	ug/L	1	20.0	---	102	80-120%	---	---	
1,2,4-Trichlorobenzene	18.4	---	2.00	ug/L	1	20.0	---	92	80-120%	---	---	
1,1,1-Trichloroethane	22.1	---	0.400	ug/L	1	20.0	---	111	80-120%	---	---	
Trichloroethene (TCE)	20.5	---	0.400	ug/L	1	20.0	---	103	80-120%	---	---	
Trichlorofluoromethane	31.3	---	2.00	ug/L	1	20.0	---	**157**	**80-120%**	---	---	Q-56
1,2,3-Trichloropropane	21.4	---	1.00	ug/L	1	20.0	---	107	80-120%	---	---	
Vinyl chloride	19.2	---	0.200	ug/L	1	20.0	---	96	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 103 %*		*Limits: 80-120 %*			*Dilution: 1x*				
Toluene-d8 (Surr)			*97 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*97 %*		*80-120 %*			*"*				
Duplicate (24L0073-DUP1)			Prepared: 12/03/24 11:00		Analyzed: 12/03/24 16:20							
QC Source Sample: MGMS3-4(40)DUP (A4L0816-05)												
Bromobenzene	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	

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Darrell Auvil, Client Services Manager

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6700 S.W. Sandburg Street
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503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0816 - 12 18 24 0922

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0073 - EPA 5030C							**Water**					
Duplicate (24L0073-DUP1)			Prepared: 12/03/24 11:00 Analyzed: 12/03/24 16:20									
QC Source Sample: MGMS3-4(40)DUP (A4L0816-05)												
Bromochloromethane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Bromodichloromethane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Bromoform	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Bromomethane	ND	---	5.00	ug/L	1	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Chlorobenzene	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
Chloroethane	ND	---	5.00	ug/L	1	---	ND	---	---	---	30%	
Chloroform	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Chloromethane	ND	---	5.00	ug/L	1	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Dibromochloromethane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
Dibromomethane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
1,1-Dichloroethane	**2.52**	---	0.400	ug/L	1	---	2.33	---	---	8	30%	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	**0.560**	---	0.400	ug/L	1	---	0.640	---	---	13	30%	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	---	ND	---	---	**---**	**30%**	Q-17
1,3-Dichloropropane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	---	ND	---	---	---	30%	
Methylene chloride	ND	---	10.0	ug/L	1	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	---	ND	---	---	---	30%	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0816 - 12 18 24 0922**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0073 - EPA 5030C							**Water**					
Duplicate (24L0073-DUP1)			Prepared: 12/03/24 11:00 Analyzed: 12/03/24 16:20									
QC Source Sample: MGMS3-4(40)DUP (A4L0816-05)												
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	**0.430**	---	0.400	ug/L	1	---	0.500	---	---	15	30%	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	---	ND	---	---	---	30%	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Vinyl chloride	**12.8**	---	0.200	ug/L	1	---	11.5	---	---	11	30%	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 105 %*		*Limits: 80-120 %*				*Dilution: 1x*			
Toluene-d8 (Surr)			*101 %*		*80-120 %*				*"*			
4-Bromofluorobenzene (Surr)			*98 %*		*80-120 %*				*"*			
Duplicate (24L0073-DUP2)			Prepared: 12/03/24 11:00 Analyzed: 12/03/24 18:58									
QC Source Sample: Non-SDG (A4L0809-01)												
Bromobenzene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
Bromochloromethane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Bromodichloromethane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Bromoform	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Bromomethane	ND	---	50.0	ug/L	10	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Chlorobenzene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
Chloroethane	ND	---	50.0	ug/L	10	---	ND	---	---	---	30%	
Chloroform	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Chloromethane	ND	---	50.0	ug/L	10	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Dibromochloromethane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	---	50.0	ug/L	10	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
Dibromomethane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0816 - 12 18 24 0922**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0073 - EPA 5030C							**Water**					
Duplicate (24L0073-DUP2)			Prepared: 12/03/24 11:00 Analyzed: 12/03/24 18:58									
QC Source Sample: Non-SDG (A4L0809-01)												
1,3-Dichlorobenzene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	---	50.0	ug/L	10	---	ND	---	---	---	30%	
Methylene chloride	ND	---	100	ug/L	10	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	---	20.0	ug/L	10	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	---	20.0	ug/L	10	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
Trichloroethene (TCE)	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	---	20.0	ug/L	10	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Vinyl chloride	ND	---	2.00	ug/L	10	---	ND	---	---	---	30%	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 105 %*		*Limits: 80-120 %*			*Dilution: 1x*				
Toluene-d8 (Surr)			*101 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*101 %*		*80-120 %*			*"*				
Matrix Spike (24L0073-MS1)			Prepared: 12/03/24 11:00 Analyzed: 12/03/24 22:19									
QC Source Sample: Non-SDG (A4K1540-01)												

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0816 - 12 18 24 0922**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0073 - EPA 5030C							**Water**					
Matrix Spike (24L0073-MS1)			Prepared: 12/03/24 11:00		Analyzed: 12/03/24 22:19							
QC Source Sample: Non-SDG (A4K1540-01)												
EPA 8260D												
Bromobenzene	20.1	---	0.500	ug/L	1	20.0	ND	100	80-120%	---	---	
Bromochloromethane	26.4	---	1.00	ug/L	1	20.0	ND	**132**	**78-123%**	---	---	Q-01
Bromodichloromethane	24.4	---	1.00	ug/L	1	20.0	ND	122	79-125%	---	---	
Bromoform	22.6	---	1.00	ug/L	1	20.0	ND	113	66-130%	---	---	
Bromomethane	33.2	---	5.00	ug/L	1	20.0	ND	**166**	**53-141%**	---	---	Q-54
Carbon tetrachloride	23.1	---	1.00	ug/L	1	20.0	ND	116	72-136%	---	---	
Chlorobenzene	21.3	---	0.500	ug/L	1	20.0	ND	107	80-120%	---	---	
Chloroethane	33.5	---	5.00	ug/L	1	20.0	ND	**167**	**60-138%**	---	---	Q-54
Chloroform	23.4	---	1.00	ug/L	1	20.0	ND	117	79-124%	---	---	
Chloromethane	15.0	---	5.00	ug/L	1	20.0	ND	75	50-139%	---	---	Q-54c
2-Chlorotoluene	20.2	---	1.00	ug/L	1	20.0	ND	101	79-122%	---	---	
4-Chlorotoluene	20.3	---	1.00	ug/L	1	20.0	ND	102	78-122%	---	---	
Dibromochloromethane	22.2	---	1.00	ug/L	1	20.0	ND	111	74-126%	---	---	
1,2-Dibromo-3-chloropropane	18.0	---	5.00	ug/L	1	20.0	ND	90	62-128%	---	---	
1,2-Dibromoethane (EDB)	21.6	---	0.500	ug/L	1	20.0	ND	108	77-121%	---	---	
Dibromomethane	24.6	---	1.00	ug/L	1	20.0	ND	123	79-123%	---	---	
1,2-Dichlorobenzene	20.6	---	0.500	ug/L	1	20.0	ND	103	80-120%	---	---	
1,3-Dichlorobenzene	21.6	---	0.500	ug/L	1	20.0	ND	108	80-120%	---	---	
1,4-Dichlorobenzene	20.8	---	0.500	ug/L	1	20.0	ND	104	79-120%	---	---	
Dichlorodifluoromethane	12.1	---	1.00	ug/L	1	20.0	ND	60	32-152%	---	---	Q-54b
1,1-Dichloroethane	24.4	---	0.400	ug/L	1	20.0	ND	122	77-125%	---	---	
1,2-Dichloroethane (EDC)	24.5	---	0.400	ug/L	1	20.0	ND	122	73-128%	---	---	
1,1-Dichloroethene	25.1	---	0.400	ug/L	1	20.0	ND	126	71-131%	---	---	
cis-1,2-Dichloroethene	21.9	---	0.400	ug/L	1	20.0	ND	109	78-123%	---	---	
trans-1,2-Dichloroethene	22.4	---	0.400	ug/L	1	20.0	ND	112	75-124%	---	---	
1,2-Dichloropropane	22.4	---	0.500	ug/L	1	20.0	ND	112	78-122%	---	---	
1,3-Dichloropropane	20.1	---	1.00	ug/L	1	20.0	ND	101	80-120%	---	---	
2,2-Dichloropropane	21.1	---	1.00	ug/L	1	20.0	ND	105	60-139%	---	---	
1,1-Dichloropropene	22.5	---	1.00	ug/L	1	20.0	ND	112	79-125%	---	---	
cis-1,3-Dichloropropene	17.4	---	1.00	ug/L	1	20.0	ND	87	75-124%	---	---	
trans-1,3-Dichloropropene	21.6	---	1.00	ug/L	1	20.0	ND	108	73-127%	---	---	
Hexachlorobutadiene	17.6	---	5.00	ug/L	1	20.0	ND	88	66-134%	---	---	

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503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0816 - 12 18 24 0922

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0073 - EPA 5030C							**Water**					
Matrix Spike (24L0073-MS1)			Prepared: 12/03/24 11:00			Analyzed: 12/03/24 22:19						
QC Source Sample: Non-SDG (A4K1540-01)												
Methylene chloride	22.1	---	10.0	ug/L	1	20.0	ND	110	74-124%	---	---	
1,1,1,2-Tetrachloroethane	21.4	---	0.400	ug/L	1	20.0	ND	107	78-124%	---	---	
1,1,2,2-Tetrachloroethane	23.2	---	0.500	ug/L	1	20.0	ND	116	71-121%	---	---	
Tetrachloroethene (PCE)	21.5	---	0.400	ug/L	1	20.0	ND	107	74-129%	---	---	
1,2,3-Trichlorobenzene	17.2	---	2.00	ug/L	1	20.0	ND	86	69-129%	---	---	
1,1,2-Trichloroethane	20.9	---	0.500	ug/L	1	20.0	ND	105	80-120%	---	---	
1,2,4-Trichlorobenzene	15.9	---	2.00	ug/L	1	20.0	ND	80	69-130%	---	---	
1,1,1-Trichloroethane	25.1	---	0.400	ug/L	1	20.0	ND	126	74-131%	---	---	
Trichloroethene (TCE)	22.0	---	0.400	ug/L	1	20.0	ND	110	79-123%	---	---	
Trichlorofluoromethane	39.4	---	2.00	ug/L	1	20.0	ND	**197**	**65-141%**	---	---	Q-54a
1,2,3-Trichloropropane	21.7	---	1.00	ug/L	1	20.0	ND	108	73-122%	---	---	
Vinyl chloride	21.4	---	0.200	ug/L	1	20.0	ND	107	58-137%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 105 %*			*Limits: 80-120 %*			*Dilution: 1x*			
Toluene-d8 (Surr)			*96 %*			*80-120 %*			*"*			
4-Bromofluorobenzene (Surr)			*92 %*			*80-120 %*			*"*			

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GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0816 - 12 18 24 0922**

QUALITY CONTROL (QC) SAMPLE RESULTS

Ammonia by Gas Diffusion and Colorimetric Detection

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0146 - Method Prep: Aq								**Water**				
Blank (24L0146-BLK1)			Prepared: 12/05/24 08:19		Analyzed: 12/05/24 11:47							
SM 4500-NH3 G												
Ammonia as N	ND	---	0.0200	mg/L	1	---	---	---	---	---	---	
LCS (24L0146-BS1)			Prepared: 12/05/24 08:19		Analyzed: 12/05/24 11:48							
SM 4500-NH3 G												
Ammonia as N	1.96	---	0.0200	mg/L	1	2.00	---	98	90-111%	---	---	
Matrix Spike (24L0146-MS2)			Prepared: 12/05/24 08:19		Analyzed: 12/05/24 13:07							**Q-16**
QC Source Sample: Non-SDG (A4L0833-02RE1)												
SM 4500-NH3 G												
Ammonia as N	8.13	---	0.0400	mg/L	2	4.00	4.26	97	90-111%	---	---	
Matrix Spike Dup (24L0146-MSD2)			Prepared: 12/05/24 08:19		Analyzed: 12/05/24 13:09							**Q-16**
QC Source Sample: Non-SDG (A4L0833-02RE1)												
Ammonia as N	7.99	---	0.0400	mg/L	2	4.00	4.26	93	90-111%	2	13%	

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ANALYTICAL REPORT

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5820 S Kelly Ave Unit B	Project Number: 19001-009-	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0816 - 12 18 24 0922

QUALITY CONTROL (QC) SAMPLE RESULTS

Anions by Ion Chromatography

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0050 - Method Prep: Aq									Water			
Blank (24L0050-BLK1)			Prepared: 12/03/24 08:13		Analyzed: 12/03/24 10:30							
EPA 300.0												
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	---	---	---	---	---	---	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	---	---	---	---	---	---	
LCS (24L0050-BS1)			Prepared: 12/03/24 08:13		Analyzed: 12/03/24 10:51							
EPA 300.0												
Nitrate-Nitrogen	1.99	---	0.250	mg/L	1	2.00	---	100	90-110%	---	---	
Nitrite-Nitrogen	2.02	---	0.250	mg/L	1	2.00	---	101	90-110%	---	---	
Duplicate (24L0050-DUP1)			Prepared: 12/03/24 08:13		Analyzed: 12/03/24 11:56							
QC Source Sample: MGMS3-4(40) (A4L0816-01)												
EPA 300.0												
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	---	ND	---	---	---	10%	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	---	ND	---	---	---	10%	
Matrix Spike (24L0050-MS1)			Prepared: 12/03/24 08:13		Analyzed: 12/03/24 12:18							
QC Source Sample: MGMS3-4(40) (A4L0816-01)												
EPA 300.0												
Nitrate-Nitrogen	2.53	---	0.312	mg/L	1	2.50	ND	101	87-112%	---	---	
Nitrite-Nitrogen	2.57	---	0.312	mg/L	1	2.50	ND	103	90-114%	---	---	

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SAMPLE PREPARATION INFORMATION

Halogenated Volatile Organic Compounds by EPA 8260D

Prep: EPA 5030C

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 24L0073							
A4L0816-01	Water	EPA 8260D	12/02/24 12:57	12/03/24 12:34	5mL/5mL	5mL/5mL	1.00
A4L0816-02	Water	EPA 8260D	12/02/24 13:56	12/03/24 12:34	5mL/5mL	5mL/5mL	1.00
A4L0816-03	Water	EPA 8260D	12/02/24 14:25	12/03/24 12:34	5mL/5mL	5mL/5mL	1.00
A4L0816-04	Water	EPA 8260D	12/02/24 15:01	12/03/24 12:34	5mL/5mL	5mL/5mL	1.00
A4L0816-05	Water	EPA 8260D	12/02/24 12:57	12/03/24 12:34	5mL/5mL	5mL/5mL	1.00

Ammonia by Gas Diffusion and Colorimetric Detection

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 24L0146							
A4L0816-01	Water	SM 4500-NH3 G	12/02/24 12:57	12/05/24 08:19	10mL/10mL	10mL/10mL	1.00
A4L0816-02	Water	SM 4500-NH3 G	12/02/24 13:56	12/05/24 08:19	10mL/10mL	10mL/10mL	1.00
A4L0816-03	Water	SM 4500-NH3 G	12/02/24 14:25	12/05/24 08:19	10mL/10mL	10mL/10mL	1.00
A4L0816-04	Water	SM 4500-NH3 G	12/02/24 15:01	12/05/24 08:19	10mL/10mL	10mL/10mL	1.00
A4L0816-05	Water	SM 4500-NH3 G	12/02/24 12:57	12/05/24 08:19	10mL/10mL	10mL/10mL	1.00

Anions by Ion Chromatography

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 24L0050							
A4L0816-01	Water	EPA 300.0	12/02/24 12:57	12/03/24 08:13	5mL/5mL	5mL/5mL	1.00
A4L0816-02	Water	EPA 300.0	12/02/24 13:56	12/03/24 08:13	5mL/5mL	5mL/5mL	1.00
A4L0816-03	Water	EPA 300.0	12/02/24 14:25	12/03/24 08:13	5mL/5mL	5mL/5mL	1.00
A4L0816-04	Water	EPA 300.0	12/02/24 15:01	12/03/24 08:13	5mL/5mL	5mL/5mL	1.00
A4L0816-05	Water	EPA 300.0	12/02/24 12:57	12/03/24 08:13	5mL/5mL	5mL/5mL	1.00

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QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

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Q-01	Spike recovery and/or RPD is outside acceptance limits.
Q-16	Reanalysis of an original Batch QC sample.
Q-17	RPD between original and duplicate sample, or spike duplicates, is outside of established control limits.
Q-37	Sample results are less than the Reporting Level (MDL and/or MRL) and Duplicate results exceed this level. See QC Section of the report for Duplicate results. Sample may be non-homogenous, or results may bracket the reporting level.
Q-54	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +10%. The results are reported as Estimated Values.
Q-54a	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +37%. The results are reported as Estimated Values.
Q-54b	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by -16%. The results are reported as Estimated Values.
Q-54c	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by -7%. The results are reported as Estimated Values.
Q-55	Daily CCV/LCS recovery for this analyte was below the +/-20% criteria listed in EPA 8260, however there is adequate sensitivity to ensure detection at the reporting level.
Q-56	Daily CCV/LCS recovery for this analyte was above the +/-20% criteria listed in EPA 8260. Samples that are ND (Non-Detect) are not impacted.

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5820 S Kelly Ave Unit B	Project Number: **19001-009-**	**Report ID:**
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REPORTING NOTES AND CONVENTIONS:

Abbreviations:

DET Analyte DETECTED at or above the detection or reporting limit.

ND Analyte NOT DETECTED at or above the detection or reporting limit.

NR Result Not Reported

RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

Detection Limits: Limit of Detection (LOD)

Validated Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ). If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

Basis: Results for soil samples are generally reported on a 100% dry weight basis.
The Result Basis is listed following the units as " dry", " wet", or " " (blank) designation.

" dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")
See Percent Solids section for details of dry weight analysis.

" wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.

" " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

Results for Volatiles analyses on soils and sediments that are reported on a “dry weight” basis include the water miscible solvent (WMS) correction referenced in the EPA 8000 Method guidance documents. Solid and Liquid samples reported on an “As Received” basis do not have the WMS correction applied, as dry weight was not performed.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) may not be included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

" --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

" *** " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

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REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to one half of the Reporting Limit (RL).
Blank results for gravimetric analyses are evaluated to the Reporting Level, not to half of the Reporting Level.
-For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.
-For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.
For further details, please request a copy of this document.
-Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.
'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level, if results are not reported to the MDL.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

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Decanted Samples:

Soils/Sediments:
Unless TCLP analysis is required or there is notification otherwise for a specific project, all Soil and Sediments containing excess water are decanted prior to analysis in order to provide the most representative sample for analysis.

Water Samples:
Water samples containing solids and sediment may need to be decanted in order to eliminate these particulates from the water extractions. In the case of organics extractions, a solvent rinse of the container will not be performed.

Volatiles Soils (5035s)
Samples that are field preserved by 5035 for volatiles are dry weight corrected using the same dry weight corretion as for normal analyses. In the case of decanted samples, the dry weight may be performed on a decanted sample, while the aliquot for 5035 may not have been treated the same way. If this is a concern, please submit separate containers for dry weight analysis for volatiles can be provided.

All samples decanted in the laboratory are noted in this report with the DCNT qualifier indicating the sample was decanted.

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LABORATORY ACCREDITATION INFORMATION

ORELAP Certification ID: OR100062 (Primary Accreditation) - EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

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Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation

All reported analytes are included in Apex Laboratories' current ORELAP scope.

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation.
Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories



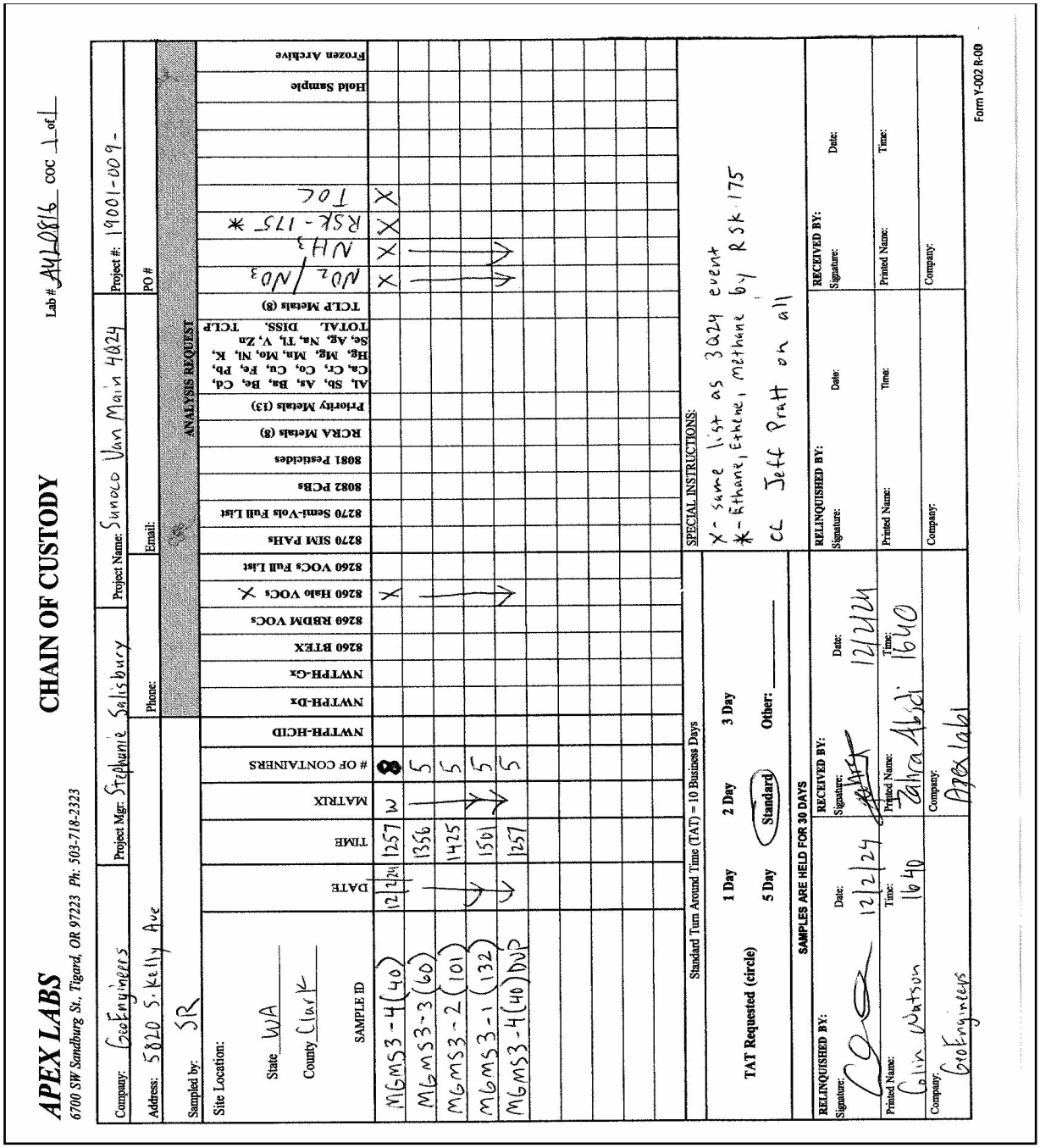
Darrell Auvil, Client Services Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document(s) and updated by any subsequent written communications. This analytical report must be reproduced in its entirety.

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0816 - 12 18 24 0922**



APEX LABS
6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323

CHAIN OF CUSTODY

Lab # A4L0816 COC 1 of 1

Company: GeoEngineers | Project Mgr: Stephanie Salisbury | Project Name: Sunoco Van Main 4Q24 | Project #: 19001-009-
Address: 5820 S. Kelly Ave | Phone: | Email: | PO #
Sampled by: SR

Site Location: State WA County Clark

SAMPLE ID	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 BTEX	8260 RBDM VOCs	8260 Halo VOCs	8260 VOCs Full List	8270 SIM PAHs	8270 Semi-Vols Full List	8082 PCBs	8081 Pesticides	RCRA Metals (8)	Priority Metals (13)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS. TCLP	TCLP Metals (8)	NO_2/NO_3	NH_3	RSK-175 *	TOC	Hold Sample	Frozen Archive
MGMS3-4(40)	12/2/24	1257	W	3						X										X	X	X			
MGMS3-3(60)		1356		5																					
MGMS3-2(101)		1425		5																					
MGMS3-1(132)		1501		5																					
MGMS3-4(40)DUP		1257		5																					

Standard Turn Around Time (TAT) = 10 Business Days
TAT Requested (circle): 1 Day | 2 Day | 3 Day | 5 Day | Standard | Other: _____

SPECIAL INSTRUCTIONS:
X- same list as 3Q24 event
*- Ethane, Ethene, Methane by RSK-175
cc Jeff Pratt on all

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY:	Date:	RECEIVED BY:	Date:
Signature:		Signature:	
Printed Name:		Printed Name:	
Company:		Company:	

RELINQUISHED BY:	Date:	RECEIVED BY:	Date:
Signature:		Signature:	
Printed Name:		Printed Name:	
Company:		Company:	

RELINQUISHED BY:	Date:	RECEIVED BY:	Date:
Signature:	12/2/24	Signature:	12/2/24
Printed Name: Colin Watson	Time: 1640	Printed Name: Zahra Abdi	Time: 1640
Company: GeoEngineers		Company: Apex Labs	

Form Y-002 R-09

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document(s) and updated by any subsequent written communications. This analytical report must be reproduced in its entirety.

Darrell Auvil, Client Services Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0816 - 12 18 24 0922**

APEX LABS COOLER RECEIPT FORM

Client: Geo Engineers Element WO#: A4L0816

Project/Project #: Sunoco Van Main 4Q24 #19001-009

Delivery Info: 12/12/24 acc for 12/12/24

Date/time received: ~~12/12/24~~ @ 1640 By: ZA

Delivered by: Apex__Client_✓ESS___FedEx__UPS__Radio___Morgan ___SDS___Evergreen___Other ___

From USDA Regulated Origin? Yes _____ No ✓

Cooler Inspection Date/time inspected: 12/12/24@1640 By: ZA

Chain of Custody included? Yes ✓ No _____

Signed/dated by client? Yes ✓ No _____

Contains USDA Reg. Soils? Yes _____ No ✓ Unsure (email RegSoils) _____

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	4.4						
Custody seals? (Y/N)	N						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	Y						
Ice type: (Gel/Real/Other)	Real						
Condition (In/Out):	In						

Cooler out of temp? (Y/N) Possible reason why: _____

Green dots applied to out of temperature samples? Yes/No

Out of temperature samples form initiated? Yes/No

Sample Inspection: Date/time inspected: 12/12/24 @ 1656 By: ZA

All samples intact? Yes ✓ No ___ Comments: _____

Bottle labels/COCs agree? Yes ✓ No ___ Comments: _____

COC/container discrepancies form initiated? Yes ___ No ✓

Containers/volumes received appropriate for analysis? Yes ✓ No ___ Comments: _____

Do VOA vials have visible headspace? Yes ___ No ✓ NA ___

Comments _____

Water samples: pH checked: Yes ✓ No ___ NA ___ pH appropriate? Yes ✓ No ___ NA ___ pH ID: A23172

Comments: _____

Labeled by: ZA Witness: ZON Cooler Inspected by: ZA

Form Y-003 R-02

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document(s) and updated by any subsequent written communications. This analytical report must be reproduced in its entirety.

Darrell Auvil, Client Services Manager

December 16, 2024 Service Request No:K2412865

Darrell Auvil
Apex Laboratories
6700 SW Sandburg St.
Tigard, OR 97223

Laboratory Results for: A4L0816

Dear Darrell,

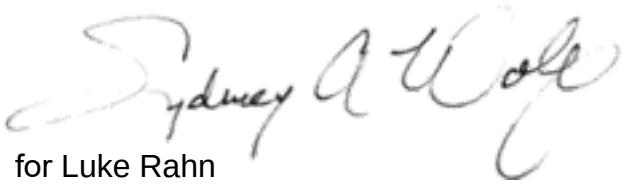
Enclosed are the results of the sample(s) submitted to our laboratory December 05, 2024
For your reference, these analyses have been assigned our service request number **K2412865.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3260. You may also contact me via email at Luke.Rahn@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental



for Luke Rahn
Project Manager

ADDRESS 1317 S. 13th Avenue, Kelso, WA 98626
PHONE +1 360 577 7222 | FAX +1 360 636 1068
ALS Group USA, Corp.
dba ALS Environmental

Narrative Documents

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Apex Laboratories
Project: A4L0816
Sample Matrix: Water

Service Request: K2412865
Date Received: 12/05/2024

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier II level requested by the client.

Sample Receipt:

One water sample was received for analysis at ALS Environmental on 12/05/2024. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

General Chemistry:

No significant anomalies were noted with this analysis.

Approved by Sydney A Wolfe Date 12/16/2024

SAMPLE DETECTION SUMMARY

This form includes only detections above the reporting levels. For a full listing of sample results, continue to the Sample Results section of this Report.

CLIENT ID: MGMS3-4(40)			Lab ID: K2412865-001			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Carbon, Total Organic	1.50		0.08	0.50	mg/L	SM 5310 C

Sample Receipt Information

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client: Apex Laboratories **Service Request:**K2412865

Project: A4L0816

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
K2412865-001	MGMS3-4(40)	12/2/2024	1257

SUBCONTRACT ORDER

Apex Laboratories

A4L0816

SENDING LABORATORY:

Apex Laboratories
6700 S.W. Sandburg Street
Tigard, OR 97223
Phone: (503) 718-2323
Fax: (503) 336-0745
Project Manager: Darrell Auvil

RECEIVING LABORATORY:

ALS Group USA - Kelso
1317 S 13th Avenue
Kelso, WA 98626
Phone :(360) 577-7222
Fax: (360) 636-1068

Sample Name: MGMS3-4(40) **Sampled: 12/02/24 12:57** (A4L0816-01)

Analysis	Due	Expires	Comments
Total Organic Carbon - H2O (5310C)	12/13/24 17:00	12/30/24 12:57	Equis EFWEDD, no data package
Containers Supplied: (F)250 mL Poly - Sulfuric (H2SO4)			

Standard TAT

Released By Date Received By Date

12/5/24 1008 Franklin LaBiche 12/5/24 1008

12/5/24 1230 A Pedersen 12/5/24 1230

Released By Date Received By Date

PM LH

Cooler Receipt and Preservation Form

Client ADEX Service Request K24 128605

Received: 12/5/24 Opened: 12/5/24 By: AP Unloaded: 12/5/24 By: AP

1. Samples were received via? *USPS* *Fed Ex* *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) *Cooler* *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA Y N If yes, how many and where? _____
   If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID / NA	Out of temp Indicate with "X"	PM Notified If out of temp	Tracking Number NA	Filed
	4.1	1802					
	4.3	↓					

4. Was a Temperature Blank present in cooler? NA Y N If yes, notate the temperature in the appropriate column above:
   If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
5. Were samples received within the method specified temperature ranges? NA Y N
   If no, were they received on ice and same day as collected? If not, notate the cooler # above and notify the PM. NA Y N

If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*

6. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
7. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
8. Were samples received in good condition (unbroken) NA Y N
9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA Y N
10. Did all sample labels and tags agree with custody papers? NA Y N
11. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
12. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
13. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
14. Was C12/Res negative? NA Y N
15. Were samples received within the method specified time limit? If not, notate the error below and notify the PM NA Y N
16. Were 100ml sterile microbiology bottles filled exactly to the 100ml mark? NA Y N Underfilled Overfilled

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, Resolutions: _____

G:\SMO\2024 Forms SOP: SMO-GEN Reviewed: NP 1/3/2024

Miscellaneous Forms

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value over the calibration range.
J	The result is an estimated value between the MDL and the MRL.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Analyst Summary report

Client:	Apex Laboratories	**Service Request:**	K2412865
Project:	A4L0816/		

Sample Name:	MGMS3-4(40)	**Date Collected:**	12/2/24
Lab Code:	K2412865-001	**Date Received:**	12/5/24
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
SM 5310 C		MSPECHT

Sample Results

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

RIGHT SOLUTIONS | RIGHT PARTNER

General Chemistry

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

RIGHT SOLUTIONS | RIGHT PARTNER

Analytical Report

Client:	Apex Laboratories	**Service Request:**	K2412865
Project:	A4L0816	**Date Collected:**	12/02/24 12:57
Sample Matrix:	Water	**Date Received:**	12/05/24 12:30
Sample Name:	MGMS3-4(40)	**Basis:**	NA
Lab Code:	K2412865-001		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Carbon, Total Organic	SM 5310 C	**1.50**	mg/L	0.50	0.08	1	12/12/24 14:53	

QC Summary Forms

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

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General Chemistry

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

RIGHT SOLUTIONS | RIGHT PARTNER

Analytical Report

Client:	Apex Laboratories	**Service Request:**	K2412865
Project:	A4L0816	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	K2412865-MB		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Carbon, Total Organic	SM 5310 C	ND U	mg/L	0.50	0.08	1	12/12/24 14:53	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Apex Laboratories	**Service Request:**	K2412865
Project:	A4L0816	**Date Analyzed:**	12/12/24
Sample Matrix:	Water	**Date Extracted:**	NA

Lab Control Sample Summary
Carbon, Total Organic

Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	864098

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K2412865-LCS	24.5	25.0	98	83-117

Air TECHNOLOGY
Laboratories, Inc.

December 18, 2024

LA Cert #04140
EPA Methods TO3, TO14A, TO15, 25C/3C, ASTM D1946, RSK-175

TX Cert T104704450-14-6
EPA Methods TO14A, TO15

UT Cert CA0133332015-3
EPA Methods TO3, TO14A, TO15, RSK-175

ALASKA CS-LAP 24-002
EPA Methods TO14A, TO15

Apex Laboratories
ATTN: Darrell Auvil
6700 S.W. Sandburg St.
Tigard, OR 97223

LABORATORY TEST RESULTS

Project Reference: A4L0816
Lab Number: R120411-01

Enclosed are results for sample(s) received 12/04/24 by Air Technology Laboratories. Samples were received intact and chilled to 3° C. Analyses were performed according to specifications on the chain of custody provided with the sample(s).

Report Narrative:

- Unless otherwise noted in the report, sample analyses were performed within method performance criteria and meet all requirements of the TNI Standards.
- The enclosed results relate only to the sample(s).

ATL appreciates the opportunity to provide testing services to your company. If you have any questions regarding these results, please call me at (626) 964-4032.

Sincerely,

Mark Johnson
Operations Manager
MJohnson@AirTechLabs.com

Note: The cover letter is an integral part of this analytical report.

SUBCONTRACT ORDER

Apex Laboratories

A4L0816

R120411-01

DCC 12/2/24

SENDING LABORATORY:

Apex Laboratories
6700 S.W. Sandburg Street
Tigard, OR 97223
Phone: (503) 718-2323
Fax: (503) 336-0745
Project Manager: Darrell Auvil

RECEIVING LABORATORY:

Air Technology Laboratories, Inc
18501 E. Gale Ave Suite 130
City of Industry, CA 91748
Phone :(626) 964-4032
Fax: (626) 964-5832

Sample Name: MGMS3-4(40) **Water** **Sampled: 12/02/24 12:57** (A4L0816-01)

Analysis	Due	Expires	Comments
RSK 175 Preserved (Meth, Eth, Eth) (Sub) *Containers Supplied:* (D)40 mL VOA - HCL (E)40 mL VOA - HCL	12/13/24 17:00	12/16/24 12:57	air tech lab

Standard TAT

3°C
ms

Released By	Date	Received By	Date
	12/3/24	UPS (Shipper)	
UPS (Shipper)	12/4/24 10:34		12/4/24 10:34
Released By	Date	Received By	Date

Client:	**Apex Laboratories**
Attn:	**Darrell Auvil**
Project Name:	**NA**
Project No.:	**A4L0816**
Date Received:	**12/04/24**
Matrix:	**Water**
Reporting Units:	**ug/L**

RSK175

Lab No.:	**R120411-01**							
Client Sample I.D.:	**MGMS3-4(40) (A4L0816-01)**							
Date/Time Sampled:	**12/2/24 12:57**							
Date/Time Analyzed:	**12/16/24 11:59**							
QC Batch No.:	**241216GC8A1**							
Analyst Initials:	**KD**							
Dilution Factor:	**1.0**							
ANALYTE	**Result ug/L**	**RL ug/L**						
Ethene	**1.1**	1.0						
Ethane	**11**	1.0						
Methane	**750**	1.0						

ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: Annika Stutzkruncher for
Mark Johnson
Operations Manager

Date 12-18-24

The cover letter is an integral part of this analytical report

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

QC Batch No: 241216GC8A1
Matrix: Water
Reporting Units: ug/L

RSK 175
LABORATORY CONTROL SAMPLE SUMMARY

Lab No.:	METHOD BLANK			LCS		LCSD					
Date/Time Analyzed:	12/16/24 11:44			12/16/24 10:46		12/16/24 11:07					
Analyst Initials:	KD			KD		KD					
Dilution Factor:	1.0			1.0		1.0			Limits		
ANALYTE	Result ug/L	RL ug/L	SPIKE AMT. ug/L	Result ug/L	% Rec.	Result ug/L	% Rec.	RPD %	Low %Rec	High %Rec	Max. RPD
Ethene	ND	1.0	1,150	1,150	100	1,070	93	7.0	70	130	30
Ethane	ND	1.0	1,200	1,280	105	1,200	98	6.9	70	130	30
Methane	ND	1.0	650	684	105	629	96	8.4	70	130	30

ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ **Date** 12-18-24
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Thursday, December 19, 2024

Stephanie Bosze-Salisbury
GeoEngineers - Portland
5820 S Kelly Ave Unit B
Portland, OR 97239

RE: A4L0850 - Sunoco Van Main 4Q24 - 019001-009-36/37

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A4L0850, which was received by the laboratory on 12/3/2024 at 5:00:00PM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: DAuvil@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of sample receipt, unless prior arrangements have been made.

Cooler Receipt Information
Acceptable Receipt Temperature is less than, or equal to, 6 degC (not frozen), or received on ice the same day as sampling.
(See Cooler Receipt Form for details)
Default Cooler 5.1 degC

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.
All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.

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Darrell Auvil, Client Services Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 019001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0850 - 12 19 24 1651

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MGMS1-3(43)	A4L0850-01	Water	12/03/24 13:02	12/03/24 17:00
MGMS1-2(60)	A4L0850-02	Water	12/03/24 12:22	12/03/24 17:00
MGMS1-1(110)	A4L0850-03	Water	12/03/24 11:55	12/03/24 17:00
MGMS2-4(40)	A4L0850-04	Water	12/03/24 11:09	12/03/24 17:00
MGMS2-3(60)	A4L0850-05	Water	12/03/24 10:42	12/03/24 17:00
MGMS2-2(110)	A4L0850-06	Water	12/03/24 08:50	12/03/24 17:00
MGMS2-1(132)	A4L0850-07	Water	12/03/24 08:12	12/03/24 17:00
MW-7	A4L0850-08	Water	12/03/24 15:01	12/03/24 17:00
MW-7 DUP	A4L0850-09	Water	12/03/24 15:01	12/03/24 17:00
MW-9	A4L0850-10	Water	12/03/24 14:15	12/03/24 17:00
MW-13	A4L0850-11	Water	12/03/24 11:43	12/03/24 17:00
MW-19	A4L0850-12	Water	12/03/24 10:39	12/03/24 17:00
MW-19 DUP	A4L0850-13	Water	12/03/24 10:39	12/03/24 17:00
MW-24i	A4L0850-14	Water	12/03/24 14:26	12/03/24 17:00
MW-26	A4L0850-15	Water	12/03/24 13:09	12/03/24 17:00
EX	A4L0850-16	Water	12/03/24 15:42	12/03/24 17:00
NKW-1	A4L0850-17	Water	12/03/24 11:45	12/03/24 17:00
NKW-2	A4L0850-18	Water	12/03/24 10:45	12/03/24 17:00
KMW-4	A4L0850-19	Water	12/03/24 10:00	12/03/24 17:00
KMW-5	A4L0850-20	Water	12/03/24 09:15	12/03/24 17:00
KMW-6	A4L0850-21	Water	12/03/24 08:35	12/03/24 17:00

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Darrell Auvil, Client Services Manager

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MGMS1-3(43) (A4L0850-01)				**Matrix: Water**		**Batch: 24L0155**		
Bromobenzene	ND	---	10.0	ug/L	20	12/05/24 13:47	EPA 8260D	
Bromochloromethane	ND	---	20.0	ug/L	20	12/05/24 13:47	EPA 8260D	
Bromodichloromethane	ND	---	20.0	ug/L	20	12/05/24 13:47	EPA 8260D	
Bromoform	ND	---	20.0	ug/L	20	12/05/24 13:47	EPA 8260D	
Bromomethane	ND	---	100	ug/L	20	12/05/24 13:47	EPA 8260D	
Carbon tetrachloride	ND	---	20.0	ug/L	20	12/05/24 13:47	EPA 8260D	
Chlorobenzene	ND	---	10.0	ug/L	20	12/05/24 13:47	EPA 8260D	
Chloroethane	ND	---	100	ug/L	20	12/05/24 13:47	EPA 8260D	
Chloroform	ND	---	20.0	ug/L	20	12/05/24 13:47	EPA 8260D	
Chloromethane	ND	---	100	ug/L	20	12/05/24 13:47	EPA 8260D	
2-Chlorotoluene	ND	---	20.0	ug/L	20	12/05/24 13:47	EPA 8260D	
4-Chlorotoluene	ND	---	20.0	ug/L	20	12/05/24 13:47	EPA 8260D	
Dibromochloromethane	ND	---	20.0	ug/L	20	12/05/24 13:47	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	100	ug/L	20	12/05/24 13:47	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	10.0	ug/L	20	12/05/24 13:47	EPA 8260D	
Dibromomethane	ND	---	20.0	ug/L	20	12/05/24 13:47	EPA 8260D	
1,2-Dichlorobenzene	ND	---	10.0	ug/L	20	12/05/24 13:47	EPA 8260D	
1,3-Dichlorobenzene	ND	---	10.0	ug/L	20	12/05/24 13:47	EPA 8260D	
1,4-Dichlorobenzene	ND	---	10.0	ug/L	20	12/05/24 13:47	EPA 8260D	
Dichlorodifluoromethane	ND	---	20.0	ug/L	20	12/05/24 13:47	EPA 8260D	
1,1-Dichloroethane	**42.6**	---	8.00	ug/L	20	12/05/24 13:47	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	8.00	ug/L	20	12/05/24 13:47	EPA 8260D	
1,1-Dichloroethene	**8.60**	---	8.00	ug/L	20	12/05/24 13:47	EPA 8260D	
cis-1,2-Dichloroethene	**955**	---	8.00	ug/L	20	12/05/24 13:47	EPA 8260D	
trans-1,2-Dichloroethene	**21.6**	---	8.00	ug/L	20	12/05/24 13:47	EPA 8260D	
1,2-Dichloropropane	ND	---	10.0	ug/L	20	12/05/24 13:47	EPA 8260D	
1,3-Dichloropropane	ND	---	20.0	ug/L	20	12/05/24 13:47	EPA 8260D	
2,2-Dichloropropane	ND	---	20.0	ug/L	20	12/05/24 13:47	EPA 8260D	
1,1-Dichloropropene	ND	---	20.0	ug/L	20	12/05/24 13:47	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	20.0	ug/L	20	12/05/24 13:47	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	20.0	ug/L	20	12/05/24 13:47	EPA 8260D	
Hexachlorobutadiene	ND	---	100	ug/L	20	12/05/24 13:47	EPA 8260D	
Methylene chloride	ND	---	200	ug/L	20	12/05/24 13:47	EPA 8260D	

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Darrell Auvil, Client Services Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 019001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0850 - 12 19 24 1651

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MGMS1-3(43) (A4L0850-01)				**Matrix: Water**		**Batch: 24L0155**		
1,1,1,2-Tetrachloroethane	ND	---	8.00	ug/L	20	12/05/24 13:47	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	10.0	ug/L	20	12/05/24 13:47	EPA 8260D	
Tetrachloroethene (PCE)	**66.6**	---	8.00	ug/L	20	12/05/24 13:47	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	40.0	ug/L	20	12/05/24 13:47	EPA 8260D	
1,1,2-Trichloroethane	ND	---	10.0	ug/L	20	12/05/24 13:47	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	40.0	ug/L	20	12/05/24 13:47	EPA 8260D	
1,1,1-Trichloroethane	ND	---	8.00	ug/L	20	12/05/24 13:47	EPA 8260D	
Trichloroethene (TCE)	**168**	---	8.00	ug/L	20	12/05/24 13:47	EPA 8260D	
Trichlorofluoromethane	ND	---	40.0	ug/L	20	12/05/24 13:47	EPA 8260D	
1,2,3-Trichloropropane	ND	---	20.0	ug/L	20	12/05/24 13:47	EPA 8260D	
Vinyl chloride	**14.8**	---	4.00	ug/L	20	12/05/24 13:47	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*107 %*	*Limits: 80-120 %*	*1*	*12/05/24 13:47*	*EPA 8260D*	
Toluene-d8 (Surr)			*104 %*	*80-120 %*	*1*	*12/05/24 13:47*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*98 %*	*80-120 %*	*1*	*12/05/24 13:47*	*EPA 8260D*	
MGMS1-2(60) (A4L0850-02)				**Matrix: Water**		**Batch: 24L0155**		
Bromobenzene	ND	---	0.500	ug/L	1	12/05/24 10:24	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	12/05/24 10:24	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	12/05/24 10:24	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	12/05/24 10:24	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	12/05/24 10:24	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	12/05/24 10:24	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	12/05/24 10:24	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	12/05/24 10:24	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	12/05/24 10:24	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	12/05/24 10:24	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	12/05/24 10:24	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	12/05/24 10:24	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	12/05/24 10:24	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	12/05/24 10:24	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	12/05/24 10:24	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	12/05/24 10:24	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	12/05/24 10:24	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	12/05/24 10:24	EPA 8260D	

Apex Laboratories



Darrell Auvil, Client Services Manager

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Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 019001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0850 - 12 19 24 1651

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MGMS1-2(60) (A4L0850-02)				**Matrix: Water**		**Batch: 24L0155**		
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	12/05/24 10:24	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	12/05/24 10:24	EPA 8260D	
1,1-Dichloroethane	**1.43**	---	0.400	ug/L	1	12/05/24 10:24	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	12/05/24 10:24	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	12/05/24 10:24	EPA 8260D	
cis-1,2-Dichloroethene	**14.6**	---	0.400	ug/L	1	12/05/24 10:24	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	12/05/24 10:24	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	12/05/24 10:24	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	12/05/24 10:24	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	12/05/24 10:24	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	12/05/24 10:24	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/05/24 10:24	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/05/24 10:24	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	12/05/24 10:24	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	12/05/24 10:24	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	12/05/24 10:24	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	12/05/24 10:24	EPA 8260D	
Tetrachloroethene (PCE)	**14.3**	---	0.400	ug/L	1	12/05/24 10:24	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	12/05/24 10:24	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	12/05/24 10:24	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	12/05/24 10:24	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	12/05/24 10:24	EPA 8260D	
Trichloroethene (TCE)	**11.6**	---	0.400	ug/L	1	12/05/24 10:24	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	12/05/24 10:24	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	12/05/24 10:24	EPA 8260D	
Vinyl chloride	**0.370**	---	0.200	ug/L	1	12/05/24 10:24	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*105 %*	*Limits:*	*80-120 %*	*1*	*12/05/24 10:24*	*EPA 8260D*	
Toluene-d8 (Surr)			*104 %*		*80-120 %*	*1*	*12/05/24 10:24*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*101 %*		*80-120 %*	*1*	*12/05/24 10:24*	*EPA 8260D*	
MGMS1-1(110) (A4L0850-03)				**Matrix: Water**		**Batch: 24L0155**		
Bromobenzene	ND	---	0.500	ug/L	1	12/05/24 13:25	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	12/05/24 13:25	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	12/05/24 13:25	EPA 8260D	

Apex Laboratories



Darrell Auvil, Client Services Manager

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503-718-2323
ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MGMS1-1(110) (A4L0850-03)				**Matrix: Water**		**Batch: 24L0155**		
Bromoform	ND	---	1.00	ug/L	1	12/05/24 13:25	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	12/05/24 13:25	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	12/05/24 13:25	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	12/05/24 13:25	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	12/05/24 13:25	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	12/05/24 13:25	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	12/05/24 13:25	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	12/05/24 13:25	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	12/05/24 13:25	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	12/05/24 13:25	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	12/05/24 13:25	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	12/05/24 13:25	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	12/05/24 13:25	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	12/05/24 13:25	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	12/05/24 13:25	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	12/05/24 13:25	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	12/05/24 13:25	EPA 8260D	
1,1-Dichloroethane	**9.79**	---	0.400	ug/L	1	12/05/24 13:25	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	12/05/24 13:25	EPA 8260D	
1,1-Dichloroethene	**1.23**	---	0.400	ug/L	1	12/05/24 13:25	EPA 8260D	
trans-1,2-Dichloroethene	**1.14**	---	0.400	ug/L	1	12/05/24 13:25	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	12/05/24 13:25	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	12/05/24 13:25	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	12/05/24 13:25	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	12/05/24 13:25	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/05/24 13:25	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/05/24 13:25	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	12/05/24 13:25	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	12/05/24 13:25	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	12/05/24 13:25	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	12/05/24 13:25	EPA 8260D	
Tetrachloroethene (PCE)	**22.0**	---	0.400	ug/L	1	12/05/24 13:25	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	12/05/24 13:25	EPA 8260D	

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Darrell Auvil, Client Services Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 019001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0850 - 12 19 24 1651

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MGMS1-1(110) (A4L0850-03)				**Matrix: Water**		**Batch: 24L0155**		
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	12/05/24 13:25	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	12/05/24 13:25	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	12/05/24 13:25	EPA 8260D	
Trichloroethene (TCE)	**51.6**	---	0.400	ug/L	1	12/05/24 13:25	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	12/05/24 13:25	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	12/05/24 13:25	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	12/05/24 13:25	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*111 %*	*Limits: 80-120 %*	*1*	*12/05/24 13:25*	*EPA 8260D*	
Toluene-d8 (Surr)			*105 %*	*80-120 %*	*1*	*12/05/24 13:25*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*99 %*	*80-120 %*	*1*	*12/05/24 13:25*	*EPA 8260D*	
MGMS1-1(110) (A4L0850-03RE1)				**Matrix: Water**		**Batch: 24L0305**		
cis-1,2-Dichloroethene	**194**	---	4.00	ug/L	10	12/09/24 19:48	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*110 %*	*Limits: 80-120 %*	*1*	*12/09/24 19:48*	*EPA 8260D*	
Toluene-d8 (Surr)			*99 %*	*80-120 %*	*1*	*12/09/24 19:48*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*95 %*	*80-120 %*	*1*	*12/09/24 19:48*	*EPA 8260D*	
MGMS2-4(40) (A4L0850-04)				**Matrix: Water**		**Batch: 24L0155**		
Bromobenzene	ND	---	2.50	ug/L	5	12/05/24 14:32	EPA 8260D	
Bromochloromethane	ND	---	5.00	ug/L	5	12/05/24 14:32	EPA 8260D	
Bromodichloromethane	ND	---	5.00	ug/L	5	12/05/24 14:32	EPA 8260D	
Bromoform	ND	---	5.00	ug/L	5	12/05/24 14:32	EPA 8260D	
Bromomethane	ND	---	25.0	ug/L	5	12/05/24 14:32	EPA 8260D	
Carbon tetrachloride	ND	---	5.00	ug/L	5	12/05/24 14:32	EPA 8260D	
Chlorobenzene	ND	---	2.50	ug/L	5	12/05/24 14:32	EPA 8260D	
Chloroethane	ND	---	25.0	ug/L	5	12/05/24 14:32	EPA 8260D	
Chloroform	ND	---	5.00	ug/L	5	12/05/24 14:32	EPA 8260D	
Chloromethane	ND	---	25.0	ug/L	5	12/05/24 14:32	EPA 8260D	
2-Chlorotoluene	ND	---	5.00	ug/L	5	12/05/24 14:32	EPA 8260D	
4-Chlorotoluene	ND	---	5.00	ug/L	5	12/05/24 14:32	EPA 8260D	
Dibromochloromethane	ND	---	5.00	ug/L	5	12/05/24 14:32	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	25.0	ug/L	5	12/05/24 14:32	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	2.50	ug/L	5	12/05/24 14:32	EPA 8260D	
Dibromomethane	ND	---	5.00	ug/L	5	12/05/24 14:32	EPA 8260D	

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Darrell Auvil, Client Services Manager

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ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 019001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0850 - 12 19 24 1651

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MGMS2-4(40) (A4L0850-04)				**Matrix: Water**		**Batch: 24L0155**		
1,2-Dichlorobenzene	ND	---	2.50	ug/L	5	12/05/24 14:32	EPA 8260D	
1,3-Dichlorobenzene	ND	---	2.50	ug/L	5	12/05/24 14:32	EPA 8260D	
1,4-Dichlorobenzene	ND	---	2.50	ug/L	5	12/05/24 14:32	EPA 8260D	
Dichlorodifluoromethane	ND	---	5.00	ug/L	5	12/05/24 14:32	EPA 8260D	
1,1-Dichloroethane	**21.0**	---	2.00	ug/L	5	12/05/24 14:32	EPA 8260D	**Q-42**
1,2-Dichloroethane (EDC)	ND	---	2.00	ug/L	5	12/05/24 14:32	EPA 8260D	
1,1-Dichloroethene	**12.1**	---	2.00	ug/L	5	12/05/24 14:32	EPA 8260D	**Q-42**
cis-1,2-Dichloroethene	**385**	---	2.00	ug/L	5	12/05/24 14:32	EPA 8260D	
trans-1,2-Dichloroethene	**3.85**	---	2.00	ug/L	5	12/05/24 14:32	EPA 8260D	**Q-42**
1,2-Dichloropropane	ND	---	2.50	ug/L	5	12/05/24 14:32	EPA 8260D	
1,3-Dichloropropane	ND	---	5.00	ug/L	5	12/05/24 14:32	EPA 8260D	
2,2-Dichloropropane	ND	---	5.00	ug/L	5	12/05/24 14:32	EPA 8260D	
1,1-Dichloropropene	ND	---	5.00	ug/L	5	12/05/24 14:32	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	5.00	ug/L	5	12/05/24 14:32	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	5.00	ug/L	5	12/05/24 14:32	EPA 8260D	
Hexachlorobutadiene	ND	---	25.0	ug/L	5	12/05/24 14:32	EPA 8260D	
Methylene chloride	ND	---	50.0	ug/L	5	12/05/24 14:32	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	2.00	ug/L	5	12/05/24 14:32	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	2.50	ug/L	5	12/05/24 14:32	EPA 8260D	
Tetrachloroethene (PCE)	**285**	---	2.00	ug/L	5	12/05/24 14:32	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	10.0	ug/L	5	12/05/24 14:32	EPA 8260D	
1,1,2-Trichloroethane	ND	---	2.50	ug/L	5	12/05/24 14:32	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	10.0	ug/L	5	12/05/24 14:32	EPA 8260D	
1,1,1-Trichloroethane	ND	---	2.00	ug/L	5	12/05/24 14:32	EPA 8260D	
Trichloroethene (TCE)	**183**	---	2.00	ug/L	5	12/05/24 14:32	EPA 8260D	
Trichlorofluoromethane	ND	---	10.0	ug/L	5	12/05/24 14:32	EPA 8260D	
1,2,3-Trichloropropane	ND	---	5.00	ug/L	5	12/05/24 14:32	EPA 8260D	
Vinyl chloride	ND	---	1.00	ug/L	5	12/05/24 14:32	EPA 8260D	Q-42
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*111 %*	*Limits:*	*80-120 %*	*1*	*12/05/24 14:32*	*EPA 8260D*	
Toluene-d8 (Surr)			*102 %*		*80-120 %*	*1*	*12/05/24 14:32*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*98 %*		*80-120 %*	*1*	*12/05/24 14:32*	*EPA 8260D*	
MGMS2-3(60) (A4L0850-05)				**Matrix: Water**		**Batch: 24L0155**		
Bromobenzene	ND	---	0.500	ug/L	1	12/05/24 10:47	EPA 8260D	

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Darrell Auvil, Client Services Manager

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ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 019001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0850 - 12 19 24 1651

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MGMS2-3(60) (A4L0850-05)				**Matrix: Water**		**Batch: 24L0155**		
Bromochloromethane	ND	---	1.00	ug/L	1	12/05/24 10:47	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	12/05/24 10:47	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	12/05/24 10:47	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	12/05/24 10:47	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	12/05/24 10:47	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	12/05/24 10:47	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	12/05/24 10:47	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	12/05/24 10:47	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	12/05/24 10:47	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	12/05/24 10:47	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	12/05/24 10:47	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	12/05/24 10:47	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	12/05/24 10:47	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	12/05/24 10:47	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	12/05/24 10:47	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	12/05/24 10:47	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	12/05/24 10:47	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	12/05/24 10:47	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	12/05/24 10:47	EPA 8260D	
1,1-Dichloroethane	**0.860**	---	0.400	ug/L	1	12/05/24 10:47	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	12/05/24 10:47	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	12/05/24 10:47	EPA 8260D	
cis-1,2-Dichloroethene	**18.8**	---	0.400	ug/L	1	12/05/24 10:47	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	12/05/24 10:47	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	12/05/24 10:47	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	12/05/24 10:47	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	12/05/24 10:47	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	12/05/24 10:47	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/05/24 10:47	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/05/24 10:47	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	12/05/24 10:47	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	12/05/24 10:47	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	12/05/24 10:47	EPA 8260D	

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 019001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0850 - 12 19 24 1651

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MGMS2-3(60) (A4L0850-05)				**Matrix: Water**		**Batch: 24L0155**		
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	12/05/24 10:47	EPA 8260D	
Tetrachloroethene (PCE)	**12.5**	---	0.400	ug/L	1	12/05/24 10:47	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	12/05/24 10:47	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	12/05/24 10:47	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	12/05/24 10:47	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	12/05/24 10:47	EPA 8260D	
Trichloroethene (TCE)	**8.23**	---	0.400	ug/L	1	12/05/24 10:47	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	12/05/24 10:47	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	12/05/24 10:47	EPA 8260D	
Vinyl chloride	**0.290**	---	0.200	ug/L	1	12/05/24 10:47	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*103 %*	*Limits: 80-120 %*	*1*	*12/05/24 10:47*	*EPA 8260D*	
Toluene-d8 (Surr)			*104 %*	*80-120 %*	*1*	*12/05/24 10:47*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*100 %*	*80-120 %*	*1*	*12/05/24 10:47*	*EPA 8260D*	
MGMS2-2(110) (A4L0850-06)				**Matrix: Water**		**Batch: 24L0155**		
Bromobenzene	ND	---	0.500	ug/L	1	12/05/24 11:09	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	12/05/24 11:09	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	12/05/24 11:09	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	12/05/24 11:09	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	12/05/24 11:09	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	12/05/24 11:09	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	12/05/24 11:09	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	12/05/24 11:09	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	12/05/24 11:09	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	12/05/24 11:09	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	12/05/24 11:09	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	12/05/24 11:09	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	12/05/24 11:09	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	12/05/24 11:09	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	12/05/24 11:09	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	12/05/24 11:09	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	12/05/24 11:09	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	12/05/24 11:09	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	12/05/24 11:09	EPA 8260D	

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 019001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0850 - 12 19 24 1651

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MGMS2-2(110) (A4L0850-06)				**Matrix: Water**		**Batch: 24L0155**		
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	12/05/24 11:09	EPA 8260D	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	12/05/24 11:09	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	12/05/24 11:09	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	12/05/24 11:09	EPA 8260D	
cis-1,2-Dichloroethene	**7.36**	---	0.400	ug/L	1	12/05/24 11:09	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	12/05/24 11:09	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	12/05/24 11:09	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	12/05/24 11:09	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	12/05/24 11:09	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	12/05/24 11:09	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/05/24 11:09	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/05/24 11:09	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	12/05/24 11:09	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	12/05/24 11:09	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	12/05/24 11:09	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	12/05/24 11:09	EPA 8260D	
Tetrachloroethene (PCE)	**4.61**	---	0.400	ug/L	1	12/05/24 11:09	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	12/05/24 11:09	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	12/05/24 11:09	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	12/05/24 11:09	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	12/05/24 11:09	EPA 8260D	
Trichloroethene (TCE)	**3.19**	---	0.400	ug/L	1	12/05/24 11:09	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	12/05/24 11:09	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	12/05/24 11:09	EPA 8260D	
Vinyl chloride	**1.17**	---	0.200	ug/L	1	12/05/24 11:09	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*103 %*	*Limits: 80-120 %*	*1*	*12/05/24 11:09*	*EPA 8260D*	
Toluene-d8 (Surr)			*105 %*	*80-120 %*	*1*	*12/05/24 11:09*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*99 %*	*80-120 %*	*1*	*12/05/24 11:09*	*EPA 8260D*	
MGMS2-1(132) (A4L0850-07)				**Matrix: Water**		**Batch: 24L0155**		
Bromobenzene	ND	---	0.500	ug/L	1	12/05/24 11:32	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	12/05/24 11:32	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	12/05/24 11:32	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	12/05/24 11:32	EPA 8260D	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MGMS2-1(132) (A4L0850-07)				**Matrix: Water**		**Batch: 24L0155**		
Bromomethane	ND	---	5.00	ug/L	1	12/05/24 11:32	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	12/05/24 11:32	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	12/05/24 11:32	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	12/05/24 11:32	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	12/05/24 11:32	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	12/05/24 11:32	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	12/05/24 11:32	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	12/05/24 11:32	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	12/05/24 11:32	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	12/05/24 11:32	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	12/05/24 11:32	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	12/05/24 11:32	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	12/05/24 11:32	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	12/05/24 11:32	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	12/05/24 11:32	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	12/05/24 11:32	EPA 8260D	
1,1-Dichloroethane	**0.540**	---	0.400	ug/L	1	12/05/24 11:32	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	12/05/24 11:32	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	12/05/24 11:32	EPA 8260D	
cis-1,2-Dichloroethene	**15.8**	---	0.400	ug/L	1	12/05/24 11:32	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	12/05/24 11:32	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	12/05/24 11:32	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	12/05/24 11:32	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	12/05/24 11:32	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	12/05/24 11:32	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/05/24 11:32	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/05/24 11:32	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	12/05/24 11:32	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	12/05/24 11:32	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	12/05/24 11:32	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	12/05/24 11:32	EPA 8260D	
Tetrachloroethene (PCE)	**3.45**	---	0.400	ug/L	1	12/05/24 11:32	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	12/05/24 11:32	EPA 8260D	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MGMS2-1(132) (A4L0850-07)				**Matrix: Water**		**Batch: 24L0155**		
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	12/05/24 11:32	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	12/05/24 11:32	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	12/05/24 11:32	EPA 8260D	
Trichloroethene (TCE)	**4.21**	---	0.400	ug/L	1	12/05/24 11:32	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	12/05/24 11:32	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	12/05/24 11:32	EPA 8260D	
Vinyl chloride	**2.46**	---	0.200	ug/L	1	12/05/24 11:32	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*104 %*	*Limits: 80-120 %*	*1*	*12/05/24 11:32*	*EPA 8260D*	
Toluene-d8 (Surr)			*104 %*	*80-120 %*	*1*	*12/05/24 11:32*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*101 %*	*80-120 %*	*1*	*12/05/24 11:32*	*EPA 8260D*	
MW-7 (A4L0850-08)				**Matrix: Water**		**Batch: 24L0155**		
Bromobenzene	ND	---	1.00	ug/L	2	12/05/24 15:40	EPA 8260D	
Bromochloromethane	ND	---	2.00	ug/L	2	12/05/24 15:40	EPA 8260D	
Bromodichloromethane	ND	---	2.00	ug/L	2	12/05/24 15:40	EPA 8260D	
Bromoform	ND	---	2.00	ug/L	2	12/05/24 15:40	EPA 8260D	
Bromomethane	ND	---	10.0	ug/L	2	12/05/24 15:40	EPA 8260D	
Carbon tetrachloride	ND	---	2.00	ug/L	2	12/05/24 15:40	EPA 8260D	
Chlorobenzene	ND	---	1.00	ug/L	2	12/05/24 15:40	EPA 8260D	
Chloroethane	ND	---	10.0	ug/L	2	12/05/24 15:40	EPA 8260D	
Chloroform	ND	---	2.00	ug/L	2	12/05/24 15:40	EPA 8260D	
Chloromethane	ND	---	10.0	ug/L	2	12/05/24 15:40	EPA 8260D	
2-Chlorotoluene	ND	---	2.00	ug/L	2	12/05/24 15:40	EPA 8260D	
4-Chlorotoluene	ND	---	2.00	ug/L	2	12/05/24 15:40	EPA 8260D	
Dibromochloromethane	ND	---	2.00	ug/L	2	12/05/24 15:40	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	10.0	ug/L	2	12/05/24 15:40	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	1.00	ug/L	2	12/05/24 15:40	EPA 8260D	
Dibromomethane	ND	---	2.00	ug/L	2	12/05/24 15:40	EPA 8260D	
1,2-Dichlorobenzene	ND	---	1.00	ug/L	2	12/05/24 15:40	EPA 8260D	
1,3-Dichlorobenzene	ND	---	1.00	ug/L	2	12/05/24 15:40	EPA 8260D	
1,4-Dichlorobenzene	ND	---	1.00	ug/L	2	12/05/24 15:40	EPA 8260D	
Dichlorodifluoromethane	ND	---	2.00	ug/L	2	12/05/24 15:40	EPA 8260D	
1,1-Dichloroethane	**9.32**	---	0.800	ug/L	2	12/05/24 15:40	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.800	ug/L	2	12/05/24 15:40	EPA 8260D	

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Darrell Auvil, Client Services Manager

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ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 019001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0850 - 12 19 24 1651

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-7 (A4L0850-08)				**Matrix: Water**		**Batch: 24L0155**		
1,1-Dichloroethene	**2.30**	---	0.800	ug/L	2	12/05/24 15:40	EPA 8260D	
cis-1,2-Dichloroethene	**87.8**	---	0.800	ug/L	2	12/05/24 15:40	EPA 8260D	
trans-1,2-Dichloroethene	**1.62**	---	0.800	ug/L	2	12/05/24 15:40	EPA 8260D	
1,2-Dichloropropane	ND	---	1.00	ug/L	2	12/05/24 15:40	EPA 8260D	
1,3-Dichloropropane	ND	---	2.00	ug/L	2	12/05/24 15:40	EPA 8260D	
2,2-Dichloropropane	ND	---	2.00	ug/L	2	12/05/24 15:40	EPA 8260D	
1,1-Dichloropropene	ND	---	2.00	ug/L	2	12/05/24 15:40	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	2.00	ug/L	2	12/05/24 15:40	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	2.00	ug/L	2	12/05/24 15:40	EPA 8260D	
Hexachlorobutadiene	ND	---	10.0	ug/L	2	12/05/24 15:40	EPA 8260D	
Methylene chloride	ND	---	20.0	ug/L	2	12/05/24 15:40	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.800	ug/L	2	12/05/24 15:40	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	1.00	ug/L	2	12/05/24 15:40	EPA 8260D	
Tetrachloroethene (PCE)	**251**	---	0.800	ug/L	2	12/05/24 15:40	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	4.00	ug/L	2	12/05/24 15:40	EPA 8260D	
1,1,2-Trichloroethane	ND	---	1.00	ug/L	2	12/05/24 15:40	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	4.00	ug/L	2	12/05/24 15:40	EPA 8260D	
1,1,1-Trichloroethane	**2.46**	---	0.800	ug/L	2	12/05/24 15:40	EPA 8260D	
Trichloroethene (TCE)	**122**	---	0.800	ug/L	2	12/05/24 15:40	EPA 8260D	
Trichlorofluoromethane	ND	---	4.00	ug/L	2	12/05/24 15:40	EPA 8260D	
1,2,3-Trichloropropane	ND	---	2.00	ug/L	2	12/05/24 15:40	EPA 8260D	
Vinyl chloride	**1.26**	---	0.400	ug/L	2	12/05/24 15:40	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*113 %*	*Limits: 80-120 %*	*1*	*12/05/24 15:40*	*EPA 8260D*	
Toluene-d8 (Surr)			*103 %*	*80-120 %*	*1*	*12/05/24 15:40*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*101 %*	*80-120 %*	*1*	*12/05/24 15:40*	*EPA 8260D*	
MW-7 DUP (A4L0850-09)				**Matrix: Water**		**Batch: 24L0155**		
Bromobenzene	ND	---	1.00	ug/L	2	12/05/24 16:02	EPA 8260D	
Bromochloromethane	ND	---	2.00	ug/L	2	12/05/24 16:02	EPA 8260D	
Bromodichloromethane	ND	---	2.00	ug/L	2	12/05/24 16:02	EPA 8260D	
Bromoform	ND	---	2.00	ug/L	2	12/05/24 16:02	EPA 8260D	
Bromomethane	ND	---	10.0	ug/L	2	12/05/24 16:02	EPA 8260D	
Carbon tetrachloride	ND	---	2.00	ug/L	2	12/05/24 16:02	EPA 8260D	
Chlorobenzene	ND	---	1.00	ug/L	2	12/05/24 16:02	EPA 8260D	

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503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 019001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0850 - 12 19 24 1651

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-7 DUP (A4L0850-09)				**Matrix: Water**		**Batch: 24L0155**		
Chloroethane	ND	---	10.0	ug/L	2	12/05/24 16:02	EPA 8260D	
Chloroform	ND	---	2.00	ug/L	2	12/05/24 16:02	EPA 8260D	
Chloromethane	ND	---	10.0	ug/L	2	12/05/24 16:02	EPA 8260D	
2-Chlorotoluene	ND	---	2.00	ug/L	2	12/05/24 16:02	EPA 8260D	
4-Chlorotoluene	ND	---	2.00	ug/L	2	12/05/24 16:02	EPA 8260D	
Dibromochloromethane	ND	---	2.00	ug/L	2	12/05/24 16:02	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	10.0	ug/L	2	12/05/24 16:02	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	1.00	ug/L	2	12/05/24 16:02	EPA 8260D	
Dibromomethane	ND	---	2.00	ug/L	2	12/05/24 16:02	EPA 8260D	
1,2-Dichlorobenzene	ND	---	1.00	ug/L	2	12/05/24 16:02	EPA 8260D	
1,3-Dichlorobenzene	ND	---	1.00	ug/L	2	12/05/24 16:02	EPA 8260D	
1,4-Dichlorobenzene	ND	---	1.00	ug/L	2	12/05/24 16:02	EPA 8260D	
Dichlorodifluoromethane	ND	---	2.00	ug/L	2	12/05/24 16:02	EPA 8260D	
1,1-Dichloroethane	**10.3**	---	0.800	ug/L	2	12/05/24 16:02	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.800	ug/L	2	12/05/24 16:02	EPA 8260D	
1,1-Dichloroethene	**2.32**	---	0.800	ug/L	2	12/05/24 16:02	EPA 8260D	
cis-1,2-Dichloroethene	**95.8**	---	0.800	ug/L	2	12/05/24 16:02	EPA 8260D	
trans-1,2-Dichloroethene	**1.72**	---	0.800	ug/L	2	12/05/24 16:02	EPA 8260D	
1,2-Dichloropropane	ND	---	1.00	ug/L	2	12/05/24 16:02	EPA 8260D	
1,3-Dichloropropane	ND	---	2.00	ug/L	2	12/05/24 16:02	EPA 8260D	
2,2-Dichloropropane	ND	---	2.00	ug/L	2	12/05/24 16:02	EPA 8260D	
1,1-Dichloropropene	ND	---	2.00	ug/L	2	12/05/24 16:02	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	2.00	ug/L	2	12/05/24 16:02	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	2.00	ug/L	2	12/05/24 16:02	EPA 8260D	
Hexachlorobutadiene	ND	---	10.0	ug/L	2	12/05/24 16:02	EPA 8260D	
Methylene chloride	ND	---	20.0	ug/L	2	12/05/24 16:02	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.800	ug/L	2	12/05/24 16:02	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	1.00	ug/L	2	12/05/24 16:02	EPA 8260D	
Tetrachloroethene (PCE)	**278**	---	0.800	ug/L	2	12/05/24 16:02	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	4.00	ug/L	2	12/05/24 16:02	EPA 8260D	
1,1,2-Trichloroethane	ND	---	1.00	ug/L	2	12/05/24 16:02	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	4.00	ug/L	2	12/05/24 16:02	EPA 8260D	
1,1,1-Trichloroethane	**2.62**	---	0.800	ug/L	2	12/05/24 16:02	EPA 8260D	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-7 DUP (A4L0850-09)				**Matrix: Water**		**Batch: 24L0155**		
Trichloroethene (TCE)	**133**	---	0.800	ug/L	2	12/05/24 16:02	EPA 8260D	
Trichlorofluoromethane	ND	---	4.00	ug/L	2	12/05/24 16:02	EPA 8260D	
1,2,3-Trichloropropane	ND	---	2.00	ug/L	2	12/05/24 16:02	EPA 8260D	
Vinyl chloride	**1.30**	---	0.400	ug/L	2	12/05/24 16:02	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*114 %*	*Limits: 80-120 %*	*1*	*12/05/24 16:02*	*EPA 8260D*	
Toluene-d8 (Surr)			*103 %*	*80-120 %*	*1*	*12/05/24 16:02*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*100 %*	*80-120 %*	*1*	*12/05/24 16:02*	*EPA 8260D*	
MW-9 (A4L0850-10)				**Matrix: Water**		**Batch: 24L0155**		
Bromobenzene	ND	---	0.500	ug/L	1	12/05/24 13:02	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	12/05/24 13:02	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	12/05/24 13:02	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	12/05/24 13:02	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	12/05/24 13:02	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	12/05/24 13:02	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	12/05/24 13:02	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	12/05/24 13:02	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	12/05/24 13:02	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	12/05/24 13:02	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	12/05/24 13:02	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	12/05/24 13:02	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	12/05/24 13:02	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	12/05/24 13:02	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	12/05/24 13:02	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	12/05/24 13:02	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	12/05/24 13:02	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	12/05/24 13:02	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	12/05/24 13:02	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	12/05/24 13:02	EPA 8260D	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	12/05/24 13:02	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	12/05/24 13:02	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	12/05/24 13:02	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	12/05/24 13:02	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	12/05/24 13:02	EPA 8260D	

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Darrell Auvil, Client Services Manager

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ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 019001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0850 - 12 19 24 1651

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-9 (A4L0850-10)				**Matrix: Water**		**Batch: 24L0155**		
1,3-Dichloropropane	ND	---	1.00	ug/L	1	12/05/24 13:02	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	12/05/24 13:02	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	12/05/24 13:02	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/05/24 13:02	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/05/24 13:02	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	12/05/24 13:02	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	12/05/24 13:02	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	12/05/24 13:02	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	12/05/24 13:02	EPA 8260D	
Tetrachloroethene (PCE)	**65.5**	---	0.400	ug/L	1	12/05/24 13:02	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	12/05/24 13:02	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	12/05/24 13:02	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	12/05/24 13:02	EPA 8260D	
1,1,1-Trichloroethane	**1.09**	---	0.400	ug/L	1	12/05/24 13:02	EPA 8260D	
Trichloroethene (TCE)	**17.3**	---	0.400	ug/L	1	12/05/24 13:02	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	12/05/24 13:02	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	12/05/24 13:02	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	12/05/24 13:02	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*109 %*	*Limits: 80-120 %*	*1*	*12/05/24 13:02*	*EPA 8260D*	
Toluene-d8 (Surr)			*107 %*	*80-120 %*	*1*	*12/05/24 13:02*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*101 %*	*80-120 %*	*1*	*12/05/24 13:02*	*EPA 8260D*	
MW-9 (A4L0850-10RE1)				**Matrix: Water**		**Batch: 24L0305**		
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	12/09/24 14:56	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*111 %*	*Limits: 80-120 %*	*1*	*12/09/24 14:56*	*EPA 8260D*	
Toluene-d8 (Surr)			*99 %*	*80-120 %*	*1*	*12/09/24 14:56*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*101 %*	*80-120 %*	*1*	*12/09/24 14:56*	*EPA 8260D*	
MW-13 (A4L0850-11RE1)				**Matrix: Water**		**Batch: 24L0318**		
Bromobenzene	ND	---	0.500	ug/L	1	12/10/24 11:35	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	12/10/24 11:35	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	12/10/24 11:35	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	12/10/24 11:35	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	12/10/24 11:35	EPA 8260D	

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Darrell Auvil, Client Services Manager

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-13 (A4L0850-11RE1)				**Matrix: Water**		**Batch: 24L0318**		
Carbon tetrachloride	ND	---	1.00	ug/L	1	12/10/24 11:35	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	12/10/24 11:35	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	12/10/24 11:35	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	12/10/24 11:35	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	12/10/24 11:35	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	12/10/24 11:35	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	12/10/24 11:35	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	12/10/24 11:35	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	12/10/24 11:35	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	12/10/24 11:35	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	12/10/24 11:35	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	12/10/24 11:35	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	12/10/24 11:35	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	12/10/24 11:35	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	12/10/24 11:35	EPA 8260D	
1,1-Dichloroethane	**1.79**	---	0.400	ug/L	1	12/10/24 11:35	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	12/10/24 11:35	EPA 8260D	
1,1-Dichloroethene	**1.67**	---	0.400	ug/L	1	12/10/24 11:35	EPA 8260D	
cis-1,2-Dichloroethene	**96.8**	---	0.400	ug/L	1	12/10/24 11:35	EPA 8260D	
trans-1,2-Dichloroethene	**1.79**	---	0.400	ug/L	1	12/10/24 11:35	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	12/10/24 11:35	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	12/10/24 11:35	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	12/10/24 11:35	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	12/10/24 11:35	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/10/24 11:35	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/10/24 11:35	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	12/10/24 11:35	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	12/10/24 11:35	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	12/10/24 11:35	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	12/10/24 11:35	EPA 8260D	
Tetrachloroethene (PCE)	**192**	---	0.400	ug/L	1	12/10/24 11:35	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	12/10/24 11:35	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	12/10/24 11:35	EPA 8260D	

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Darrell Auvil, Client Services Manager

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ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 019001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0850 - 12 19 24 1651

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-13 (A4L0850-11RE1)				**Matrix: Water**		**Batch: 24L0318**		
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	12/10/24 11:35	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	12/10/24 11:35	EPA 8260D	
Trichloroethene (TCE)	**84.6**	---	0.400	ug/L	1	12/10/24 11:35	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	12/10/24 11:35	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	12/10/24 11:35	EPA 8260D	
Vinyl chloride	**15.6**	---	0.200	ug/L	1	12/10/24 11:35	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*115 %*	*Limits: 80-120 %*	*1*	*12/10/24 11:35*	*EPA 8260D*	
Toluene-d8 (Surr)			*105 %*	*80-120 %*	*1*	*12/10/24 11:35*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*103 %*	*80-120 %*	*1*	*12/10/24 11:35*	*EPA 8260D*	
MW-19 (A4L0850-12)				**Matrix: Water**		**Batch: 24L0155**		
Bromobenzene	ND	---	5.00	ug/L	10	12/05/24 16:47	EPA 8260D	
Bromochloromethane	ND	---	10.0	ug/L	10	12/05/24 16:47	EPA 8260D	
Bromodichloromethane	ND	---	10.0	ug/L	10	12/05/24 16:47	EPA 8260D	
Bromoform	ND	---	10.0	ug/L	10	12/05/24 16:47	EPA 8260D	
Bromomethane	ND	---	50.0	ug/L	10	12/05/24 16:47	EPA 8260D	
Carbon tetrachloride	ND	---	10.0	ug/L	10	12/05/24 16:47	EPA 8260D	
Chlorobenzene	ND	---	5.00	ug/L	10	12/05/24 16:47	EPA 8260D	
Chloroethane	ND	---	50.0	ug/L	10	12/05/24 16:47	EPA 8260D	
Chloroform	ND	---	10.0	ug/L	10	12/05/24 16:47	EPA 8260D	
Chloromethane	ND	---	50.0	ug/L	10	12/05/24 16:47	EPA 8260D	
2-Chlorotoluene	ND	---	10.0	ug/L	10	12/05/24 16:47	EPA 8260D	
4-Chlorotoluene	ND	---	10.0	ug/L	10	12/05/24 16:47	EPA 8260D	
Dibromochloromethane	ND	---	10.0	ug/L	10	12/05/24 16:47	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	50.0	ug/L	10	12/05/24 16:47	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	5.00	ug/L	10	12/05/24 16:47	EPA 8260D	
Dibromomethane	ND	---	10.0	ug/L	10	12/05/24 16:47	EPA 8260D	
1,2-Dichlorobenzene	ND	---	5.00	ug/L	10	12/05/24 16:47	EPA 8260D	
1,3-Dichlorobenzene	ND	---	5.00	ug/L	10	12/05/24 16:47	EPA 8260D	
1,4-Dichlorobenzene	ND	---	5.00	ug/L	10	12/05/24 16:47	EPA 8260D	
Dichlorodifluoromethane	ND	---	10.0	ug/L	10	12/05/24 16:47	EPA 8260D	
1,1-Dichloroethane	**51.5**	---	4.00	ug/L	10	12/05/24 16:47	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	4.00	ug/L	10	12/05/24 16:47	EPA 8260D	
1,1-Dichloroethene	**16.6**	---	4.00	ug/L	10	12/05/24 16:47	EPA 8260D	

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ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 019001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0850 - 12 19 24 1651

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-19 (A4L0850-12)				**Matrix: Water**		**Batch: 24L0155**		
cis-1,2-Dichloroethene	**692**	---	4.00	ug/L	10	12/05/24 16:47	EPA 8260D	
trans-1,2-Dichloroethene	**6.10**	---	4.00	ug/L	10	12/05/24 16:47	EPA 8260D	
1,2-Dichloropropane	ND	---	5.00	ug/L	10	12/05/24 16:47	EPA 8260D	
1,3-Dichloropropane	ND	---	10.0	ug/L	10	12/05/24 16:47	EPA 8260D	
2,2-Dichloropropane	ND	---	10.0	ug/L	10	12/05/24 16:47	EPA 8260D	
1,1-Dichloropropene	ND	---	10.0	ug/L	10	12/05/24 16:47	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	10.0	ug/L	10	12/05/24 16:47	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	10.0	ug/L	10	12/05/24 16:47	EPA 8260D	
Hexachlorobutadiene	ND	---	50.0	ug/L	10	12/05/24 16:47	EPA 8260D	
Methylene chloride	ND	---	100	ug/L	10	12/05/24 16:47	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	4.00	ug/L	10	12/05/24 16:47	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	5.00	ug/L	10	12/05/24 16:47	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	20.0	ug/L	10	12/05/24 16:47	EPA 8260D	
1,1,2-Trichloroethane	ND	---	5.00	ug/L	10	12/05/24 16:47	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	20.0	ug/L	10	12/05/24 16:47	EPA 8260D	
1,1,1-Trichloroethane	**10.5**	---	4.00	ug/L	10	12/05/24 16:47	EPA 8260D	
Trichloroethene (TCE)	**708**	---	4.00	ug/L	10	12/05/24 16:47	EPA 8260D	
Trichlorofluoromethane	ND	---	20.0	ug/L	10	12/05/24 16:47	EPA 8260D	
1,2,3-Trichloropropane	ND	---	10.0	ug/L	10	12/05/24 16:47	EPA 8260D	
Vinyl chloride	**16.7**	---	2.00	ug/L	10	12/05/24 16:47	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*113 %*	*Limits:*	*80-120 %*	*1*	*12/05/24 16:47*	*EPA 8260D*	
Toluene-d8 (Surr)			*103 %*		*80-120 %*	*1*	*12/05/24 16:47*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*97 %*		*80-120 %*	*1*	*12/05/24 16:47*	*EPA 8260D*	
MW-19 (A4L0850-12RE1)				**Matrix: Water**		**Batch: 24L0305**		
Tetrachloroethene (PCE)	**2570**	---	40.0	ug/L	100	12/09/24 20:11	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*111 %*	*Limits:*	*80-120 %*	*1*	*12/09/24 20:11*	*EPA 8260D*	
Toluene-d8 (Surr)			*99 %*		*80-120 %*	*1*	*12/09/24 20:11*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*96 %*		*80-120 %*	*1*	*12/09/24 20:11*	*EPA 8260D*	
MW-19 DUP (A4L0850-13)				**Matrix: Water**		**Batch: 24L0155**		
Bromobenzene	ND	---	5.00	ug/L	10	12/05/24 17:10	EPA 8260D	
Bromochloromethane	ND	---	10.0	ug/L	10	12/05/24 17:10	EPA 8260D	
Bromodichloromethane	ND	---	10.0	ug/L	10	12/05/24 17:10	EPA 8260D	

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Darrell Auvil, Client Services Manager

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503-718-2323
ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-19 DUP (A4L0850-13)				**Matrix: Water**		**Batch: 24L0155**		
Bromoform	ND	---	10.0	ug/L	10	12/05/24 17:10	EPA 8260D	
Bromomethane	ND	---	50.0	ug/L	10	12/05/24 17:10	EPA 8260D	
Carbon tetrachloride	ND	---	10.0	ug/L	10	12/05/24 17:10	EPA 8260D	
Chlorobenzene	ND	---	5.00	ug/L	10	12/05/24 17:10	EPA 8260D	
Chloroethane	ND	---	50.0	ug/L	10	12/05/24 17:10	EPA 8260D	
Chloroform	ND	---	10.0	ug/L	10	12/05/24 17:10	EPA 8260D	
Chloromethane	ND	---	50.0	ug/L	10	12/05/24 17:10	EPA 8260D	
2-Chlorotoluene	ND	---	10.0	ug/L	10	12/05/24 17:10	EPA 8260D	
4-Chlorotoluene	ND	---	10.0	ug/L	10	12/05/24 17:10	EPA 8260D	
Dibromochloromethane	ND	---	10.0	ug/L	10	12/05/24 17:10	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	50.0	ug/L	10	12/05/24 17:10	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	5.00	ug/L	10	12/05/24 17:10	EPA 8260D	
Dibromomethane	ND	---	10.0	ug/L	10	12/05/24 17:10	EPA 8260D	
1,2-Dichlorobenzene	ND	---	5.00	ug/L	10	12/05/24 17:10	EPA 8260D	
1,3-Dichlorobenzene	ND	---	5.00	ug/L	10	12/05/24 17:10	EPA 8260D	
1,4-Dichlorobenzene	ND	---	5.00	ug/L	10	12/05/24 17:10	EPA 8260D	
Dichlorodifluoromethane	ND	---	10.0	ug/L	10	12/05/24 17:10	EPA 8260D	
1,1-Dichloroethane	**57.0**	---	4.00	ug/L	10	12/05/24 17:10	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	4.00	ug/L	10	12/05/24 17:10	EPA 8260D	
1,1-Dichloroethene	**17.5**	---	4.00	ug/L	10	12/05/24 17:10	EPA 8260D	
cis-1,2-Dichloroethene	**752**	---	4.00	ug/L	10	12/05/24 17:10	EPA 8260D	
trans-1,2-Dichloroethene	**7.20**	---	4.00	ug/L	10	12/05/24 17:10	EPA 8260D	
1,2-Dichloropropane	ND	---	5.00	ug/L	10	12/05/24 17:10	EPA 8260D	
1,3-Dichloropropane	ND	---	10.0	ug/L	10	12/05/24 17:10	EPA 8260D	
2,2-Dichloropropane	ND	---	10.0	ug/L	10	12/05/24 17:10	EPA 8260D	
1,1-Dichloropropene	ND	---	10.0	ug/L	10	12/05/24 17:10	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	10.0	ug/L	10	12/05/24 17:10	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	10.0	ug/L	10	12/05/24 17:10	EPA 8260D	
Hexachlorobutadiene	ND	---	50.0	ug/L	10	12/05/24 17:10	EPA 8260D	
Methylene chloride	ND	---	100	ug/L	10	12/05/24 17:10	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	4.00	ug/L	10	12/05/24 17:10	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	5.00	ug/L	10	12/05/24 17:10	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	20.0	ug/L	10	12/05/24 17:10	EPA 8260D	

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Darrell Auvil, Client Services Manager

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-19 DUP (A4L0850-13)				**Matrix: Water**		**Batch: 24L0155**		
1,1,2-Trichloroethane	ND	---	5.00	ug/L	10	12/05/24 17:10	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	20.0	ug/L	10	12/05/24 17:10	EPA 8260D	
1,1,1-Trichloroethane	**11.0**	---	4.00	ug/L	10	12/05/24 17:10	EPA 8260D	
Trichloroethene (TCE)	**739**	---	4.00	ug/L	10	12/05/24 17:10	EPA 8260D	
Trichlorofluoromethane	ND	---	20.0	ug/L	10	12/05/24 17:10	EPA 8260D	
1,2,3-Trichloropropane	ND	---	10.0	ug/L	10	12/05/24 17:10	EPA 8260D	
Vinyl chloride	**18.6**	---	2.00	ug/L	10	12/05/24 17:10	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*113 %*	*Limits: 80-120 %*	*1*	*12/05/24 17:10*	*EPA 8260D*	
Toluene-d8 (Surr)			*103 %*	*80-120 %*	*1*	*12/05/24 17:10*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*97 %*	*80-120 %*	*1*	*12/05/24 17:10*	*EPA 8260D*	
MW-19 DUP (A4L0850-13RE1)				**Matrix: Water**		**Batch: 24L0305**		
Tetrachloroethene (PCE)	**2510**	---	40.0	ug/L	100	12/09/24 20:33	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*112 %*	*Limits: 80-120 %*	*1*	*12/09/24 20:33*	*EPA 8260D*	
Toluene-d8 (Surr)			*99 %*	*80-120 %*	*1*	*12/09/24 20:33*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*96 %*	*80-120 %*	*1*	*12/09/24 20:33*	*EPA 8260D*	
MW-24i (A4L0850-14RE1)				**Matrix: Water**		**Batch: 24L0318**		
Bromobenzene	ND	---	0.500	ug/L	1	12/10/24 10:40	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	12/10/24 10:40	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	12/10/24 10:40	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	12/10/24 10:40	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	12/10/24 10:40	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	12/10/24 10:40	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	12/10/24 10:40	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	12/10/24 10:40	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	12/10/24 10:40	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	12/10/24 10:40	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	12/10/24 10:40	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	12/10/24 10:40	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	12/10/24 10:40	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	12/10/24 10:40	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	12/10/24 10:40	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	12/10/24 10:40	EPA 8260D	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-24i (A4L0850-14RE1)				**Matrix: Water**		**Batch: 24L0318**		
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	12/10/24 10:40	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	12/10/24 10:40	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	12/10/24 10:40	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	12/10/24 10:40	EPA 8260D	
1,1-Dichloroethane	**1.17**	---	0.400	ug/L	1	12/10/24 10:40	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	12/10/24 10:40	EPA 8260D	
1,1-Dichloroethene	**0.440**	---	0.400	ug/L	1	12/10/24 10:40	EPA 8260D	
cis-1,2-Dichloroethene	**18.2**	---	0.400	ug/L	1	12/10/24 10:40	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	12/10/24 10:40	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	12/10/24 10:40	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	12/10/24 10:40	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	12/10/24 10:40	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	12/10/24 10:40	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/10/24 10:40	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/10/24 10:40	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	12/10/24 10:40	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	12/10/24 10:40	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	12/10/24 10:40	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	12/10/24 10:40	EPA 8260D	
Tetrachloroethene (PCE)	**21.7**	---	0.400	ug/L	1	12/10/24 10:40	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	12/10/24 10:40	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	12/10/24 10:40	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	12/10/24 10:40	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	12/10/24 10:40	EPA 8260D	
Trichloroethene (TCE)	**9.31**	---	0.400	ug/L	1	12/10/24 10:40	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	12/10/24 10:40	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	12/10/24 10:40	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	12/10/24 10:40	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*111 %*	*Limits:*	*80-120 %*	*1*	*12/10/24 10:40*	*EPA 8260D*	
Toluene-d8 (Surr)			*101 %*		*80-120 %*	*1*	*12/10/24 10:40*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*103 %*		*80-120 %*	*1*	*12/10/24 10:40*	*EPA 8260D*	
MW-26 (A4L0850-15)				**Matrix: Water**		**Batch: 24L0155**		
Bromobenzene	ND	---	1.25	ug/L	2.5	12/05/24 17:54	EPA 8260D	

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Darrell Auvil, Client Services Manager

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-26 (A4L0850-15)				**Matrix: Water**		**Batch: 24L0155**		
Bromochloromethane	ND	---	2.50	ug/L	2.5	12/05/24 17:54	EPA 8260D	
Bromodichloromethane	ND	---	2.50	ug/L	2.5	12/05/24 17:54	EPA 8260D	
Bromoform	ND	---	2.50	ug/L	2.5	12/05/24 17:54	EPA 8260D	
Bromomethane	ND	---	12.5	ug/L	2.5	12/05/24 17:54	EPA 8260D	
Carbon tetrachloride	ND	---	2.50	ug/L	2.5	12/05/24 17:54	EPA 8260D	
Chlorobenzene	ND	---	1.25	ug/L	2.5	12/05/24 17:54	EPA 8260D	
Chloroethane	ND	---	12.5	ug/L	2.5	12/05/24 17:54	EPA 8260D	
Chloroform	ND	---	2.50	ug/L	2.5	12/05/24 17:54	EPA 8260D	
Chloromethane	ND	---	12.5	ug/L	2.5	12/05/24 17:54	EPA 8260D	
2-Chlorotoluene	ND	---	2.50	ug/L	2.5	12/05/24 17:54	EPA 8260D	
4-Chlorotoluene	ND	---	2.50	ug/L	2.5	12/05/24 17:54	EPA 8260D	
Dibromochloromethane	ND	---	2.50	ug/L	2.5	12/05/24 17:54	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	12.5	ug/L	2.5	12/05/24 17:54	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	1.25	ug/L	2.5	12/05/24 17:54	EPA 8260D	
Dibromomethane	ND	---	2.50	ug/L	2.5	12/05/24 17:54	EPA 8260D	
1,2-Dichlorobenzene	ND	---	1.25	ug/L	2.5	12/05/24 17:54	EPA 8260D	
1,3-Dichlorobenzene	ND	---	1.25	ug/L	2.5	12/05/24 17:54	EPA 8260D	
1,4-Dichlorobenzene	ND	---	1.25	ug/L	2.5	12/05/24 17:54	EPA 8260D	
Dichlorodifluoromethane	ND	---	2.50	ug/L	2.5	12/05/24 17:54	EPA 8260D	
1,1-Dichloroethane	**3.02**	---	1.00	ug/L	2.5	12/05/24 17:54	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	1.00	ug/L	2.5	12/05/24 17:54	EPA 8260D	
1,1-Dichloroethene	**1.15**	---	1.00	ug/L	2.5	12/05/24 17:54	EPA 8260D	
cis-1,2-Dichloroethene	**46.6**	---	1.00	ug/L	2.5	12/05/24 17:54	EPA 8260D	
trans-1,2-Dichloroethene	**1.90**	---	1.00	ug/L	2.5	12/05/24 17:54	EPA 8260D	
1,2-Dichloropropane	ND	---	1.25	ug/L	2.5	12/05/24 17:54	EPA 8260D	
1,3-Dichloropropane	ND	---	2.50	ug/L	2.5	12/05/24 17:54	EPA 8260D	
2,2-Dichloropropane	ND	---	2.50	ug/L	2.5	12/05/24 17:54	EPA 8260D	
1,1-Dichloropropene	ND	---	2.50	ug/L	2.5	12/05/24 17:54	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	2.50	ug/L	2.5	12/05/24 17:54	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	2.50	ug/L	2.5	12/05/24 17:54	EPA 8260D	
Hexachlorobutadiene	ND	---	12.5	ug/L	2.5	12/05/24 17:54	EPA 8260D	
Methylene chloride	ND	---	25.0	ug/L	2.5	12/05/24 17:54	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	1.00	ug/L	2.5	12/05/24 17:54	EPA 8260D	

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ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 019001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0850 - 12 19 24 1651

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-26 (A4L0850-15)				**Matrix: Water**		**Batch: 24L0155**		
1,1,2,2-Tetrachloroethane	ND	---	1.25	ug/L	2.5	12/05/24 17:54	EPA 8260D	
Tetrachloroethene (PCE)	**193**	---	1.00	ug/L	2.5	12/05/24 17:54	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	5.00	ug/L	2.5	12/05/24 17:54	EPA 8260D	
1,1,2-Trichloroethane	ND	---	1.25	ug/L	2.5	12/05/24 17:54	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	5.00	ug/L	2.5	12/05/24 17:54	EPA 8260D	
1,1,1-Trichloroethane	**1.88**	---	1.00	ug/L	2.5	12/05/24 17:54	EPA 8260D	
Trichloroethene (TCE)	**237**	---	1.00	ug/L	2.5	12/05/24 17:54	EPA 8260D	
Trichlorofluoromethane	ND	---	5.00	ug/L	2.5	12/05/24 17:54	EPA 8260D	
1,2,3-Trichloropropane	ND	---	2.50	ug/L	2.5	12/05/24 17:54	EPA 8260D	
Vinyl chloride	ND	---	0.500	ug/L	2.5	12/05/24 17:54	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*115 %*	*Limits:*	*80-120 %*	*1*	*12/05/24 17:54*	*EPA 8260D*	
Toluene-d8 (Surr)			*103 %*		*80-120 %*	*1*	*12/05/24 17:54*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*98 %*		*80-120 %*	*1*	*12/05/24 17:54*	*EPA 8260D*	
EX (A4L0850-16)				**Matrix: Water**		**Batch: 24L0155**		
Bromobenzene	ND	---	5.00	ug/L	10	12/05/24 18:17	EPA 8260D	
Bromochloromethane	ND	---	10.0	ug/L	10	12/05/24 18:17	EPA 8260D	
Bromodichloromethane	ND	---	10.0	ug/L	10	12/05/24 18:17	EPA 8260D	
Bromoform	ND	---	10.0	ug/L	10	12/05/24 18:17	EPA 8260D	
Bromomethane	ND	---	50.0	ug/L	10	12/05/24 18:17	EPA 8260D	
Carbon tetrachloride	ND	---	10.0	ug/L	10	12/05/24 18:17	EPA 8260D	
Chlorobenzene	ND	---	5.00	ug/L	10	12/05/24 18:17	EPA 8260D	
Chloroethane	ND	---	50.0	ug/L	10	12/05/24 18:17	EPA 8260D	
Chloroform	ND	---	10.0	ug/L	10	12/05/24 18:17	EPA 8260D	
Chloromethane	ND	---	50.0	ug/L	10	12/05/24 18:17	EPA 8260D	
2-Chlorotoluene	ND	---	10.0	ug/L	10	12/05/24 18:17	EPA 8260D	
4-Chlorotoluene	ND	---	10.0	ug/L	10	12/05/24 18:17	EPA 8260D	
Dibromochloromethane	ND	---	10.0	ug/L	10	12/05/24 18:17	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	50.0	ug/L	10	12/05/24 18:17	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	5.00	ug/L	10	12/05/24 18:17	EPA 8260D	
Dibromomethane	ND	---	10.0	ug/L	10	12/05/24 18:17	EPA 8260D	
1,2-Dichlorobenzene	ND	---	5.00	ug/L	10	12/05/24 18:17	EPA 8260D	
1,3-Dichlorobenzene	ND	---	5.00	ug/L	10	12/05/24 18:17	EPA 8260D	
1,4-Dichlorobenzene	ND	---	5.00	ug/L	10	12/05/24 18:17	EPA 8260D	

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 019001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0850 - 12 19 24 1651

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
EX (A4L0850-16)				**Matrix: Water**		**Batch: 24L0155**		
Dichlorodifluoromethane	ND	---	10.0	ug/L	10	12/05/24 18:17	EPA 8260D	
1,1-Dichloroethane	ND	---	4.00	ug/L	10	12/05/24 18:17	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	4.00	ug/L	10	12/05/24 18:17	EPA 8260D	
1,1-Dichloroethene	ND	---	4.00	ug/L	10	12/05/24 18:17	EPA 8260D	
cis-1,2-Dichloroethene	**248**	---	4.00	ug/L	10	12/05/24 18:17	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	4.00	ug/L	10	12/05/24 18:17	EPA 8260D	
1,2-Dichloropropane	ND	---	5.00	ug/L	10	12/05/24 18:17	EPA 8260D	
1,3-Dichloropropane	ND	---	10.0	ug/L	10	12/05/24 18:17	EPA 8260D	
2,2-Dichloropropane	ND	---	10.0	ug/L	10	12/05/24 18:17	EPA 8260D	
1,1-Dichloropropene	ND	---	10.0	ug/L	10	12/05/24 18:17	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	10.0	ug/L	10	12/05/24 18:17	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	10.0	ug/L	10	12/05/24 18:17	EPA 8260D	
Hexachlorobutadiene	ND	---	50.0	ug/L	10	12/05/24 18:17	EPA 8260D	
Methylene chloride	ND	---	100	ug/L	10	12/05/24 18:17	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	4.00	ug/L	10	12/05/24 18:17	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	5.00	ug/L	10	12/05/24 18:17	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	20.0	ug/L	10	12/05/24 18:17	EPA 8260D	
1,1,2-Trichloroethane	ND	---	5.00	ug/L	10	12/05/24 18:17	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	20.0	ug/L	10	12/05/24 18:17	EPA 8260D	
1,1,1-Trichloroethane	**5.70**	---	4.00	ug/L	10	12/05/24 18:17	EPA 8260D	
Trichloroethene (TCE)	**200**	---	4.00	ug/L	10	12/05/24 18:17	EPA 8260D	
Trichlorofluoromethane	ND	---	20.0	ug/L	10	12/05/24 18:17	EPA 8260D	
1,2,3-Trichloropropane	ND	---	10.0	ug/L	10	12/05/24 18:17	EPA 8260D	
Vinyl chloride	**6.70**	---	2.00	ug/L	10	12/05/24 18:17	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*110 %*	*Limits:*	*80-120 %*	*1*	*12/05/24 18:17*	*EPA 8260D*	
Toluene-d8 (Surr)			*103 %*		*80-120 %*	*1*	*12/05/24 18:17*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*98 %*		*80-120 %*	*1*	*12/05/24 18:17*	*EPA 8260D*	
EX (A4L0850-16RE1)				**Matrix: Water**		**Batch: 24L0305**		
Tetrachloroethene (PCE)	**2870**	---	40.0	ug/L	100	12/09/24 21:18	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*113 %*	*Limits:*	*80-120 %*	*1*	*12/09/24 21:18*	*EPA 8260D*	
Toluene-d8 (Surr)			*100 %*		*80-120 %*	*1*	*12/09/24 21:18*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*98 %*		*80-120 %*	*1*	*12/09/24 21:18*	*EPA 8260D*	

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Darrell Auvil, Client Services Manager

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6700 S.W. Sandburg Street
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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
NKW-1 (A4L0850-17)				**Matrix: Water**		**Batch: 24L0155**		
Bromobenzene	ND	---	0.500	ug/L	1	12/05/24 12:40	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	12/05/24 12:40	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	12/05/24 12:40	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	12/05/24 12:40	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	12/05/24 12:40	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	12/05/24 12:40	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	12/05/24 12:40	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	12/05/24 12:40	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	12/05/24 12:40	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	12/05/24 12:40	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	12/05/24 12:40	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	12/05/24 12:40	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	12/05/24 12:40	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	12/05/24 12:40	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	12/05/24 12:40	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	12/05/24 12:40	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	12/05/24 12:40	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	12/05/24 12:40	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	12/05/24 12:40	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	12/05/24 12:40	EPA 8260D	
1,1-Dichloroethane	**5.98**	---	0.400	ug/L	1	12/05/24 12:40	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	12/05/24 12:40	EPA 8260D	
1,1-Dichloroethene	**2.02**	---	0.400	ug/L	1	12/05/24 12:40	EPA 8260D	
cis-1,2-Dichloroethene	**134**	---	0.400	ug/L	1	12/05/24 12:40	EPA 8260D	
trans-1,2-Dichloroethene	**0.970**	---	0.400	ug/L	1	12/05/24 12:40	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	12/05/24 12:40	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	12/05/24 12:40	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	12/05/24 12:40	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	12/05/24 12:40	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/05/24 12:40	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/05/24 12:40	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	12/05/24 12:40	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	12/05/24 12:40	EPA 8260D	

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Darrell Auvil, Client Services Manager

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
NKW-1 (A4L0850-17)				**Matrix: Water**		**Batch: 24L0155**		
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	12/05/24 12:40	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	12/05/24 12:40	EPA 8260D	
Tetrachloroethene (PCE)	**128**	---	0.400	ug/L	1	12/05/24 12:40	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	12/05/24 12:40	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	12/05/24 12:40	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	12/05/24 12:40	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	12/05/24 12:40	EPA 8260D	
Trichloroethene (TCE)	**44.0**	---	0.400	ug/L	1	12/05/24 12:40	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	12/05/24 12:40	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	12/05/24 12:40	EPA 8260D	
Vinyl chloride	**7.55**	---	0.200	ug/L	1	12/05/24 12:40	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*110 %*	*Limits:*	*80-120 %*	*1*	*12/05/24 12:40*	*EPA 8260D*	
Toluene-d8 (Surr)			*106 %*		*80-120 %*	*1*	*12/05/24 12:40*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*100 %*		*80-120 %*	*1*	*12/05/24 12:40*	*EPA 8260D*	
NKW-2 (A4L0850-18RE1)				**Matrix: Water**		**Batch: 24L0318**		
Bromobenzene	ND	---	10.0	ug/L	20	12/10/24 11:08	EPA 8260D	
Bromochloromethane	ND	---	20.0	ug/L	20	12/10/24 11:08	EPA 8260D	
Bromodichloromethane	ND	---	20.0	ug/L	20	12/10/24 11:08	EPA 8260D	
Bromoform	ND	---	20.0	ug/L	20	12/10/24 11:08	EPA 8260D	
Bromomethane	ND	---	100	ug/L	20	12/10/24 11:08	EPA 8260D	
Carbon tetrachloride	ND	---	20.0	ug/L	20	12/10/24 11:08	EPA 8260D	
Chlorobenzene	ND	---	10.0	ug/L	20	12/10/24 11:08	EPA 8260D	
Chloroethane	ND	---	100	ug/L	20	12/10/24 11:08	EPA 8260D	
Chloroform	ND	---	20.0	ug/L	20	12/10/24 11:08	EPA 8260D	
Chloromethane	ND	---	100	ug/L	20	12/10/24 11:08	EPA 8260D	
2-Chlorotoluene	ND	---	20.0	ug/L	20	12/10/24 11:08	EPA 8260D	
4-Chlorotoluene	ND	---	20.0	ug/L	20	12/10/24 11:08	EPA 8260D	
Dibromochloromethane	ND	---	20.0	ug/L	20	12/10/24 11:08	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	100	ug/L	20	12/10/24 11:08	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	10.0	ug/L	20	12/10/24 11:08	EPA 8260D	
Dibromomethane	ND	---	20.0	ug/L	20	12/10/24 11:08	EPA 8260D	
1,2-Dichlorobenzene	ND	---	10.0	ug/L	20	12/10/24 11:08	EPA 8260D	
1,3-Dichlorobenzene	ND	---	10.0	ug/L	20	12/10/24 11:08	EPA 8260D	

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ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 019001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0850 - 12 19 24 1651

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
NKW-2 (A4L0850-18RE1)				**Matrix: Water**		**Batch: 24L0318**		
1,4-Dichlorobenzene	ND	---	10.0	ug/L	20	12/10/24 11:08	EPA 8260D	
Dichlorodifluoromethane	ND	---	20.0	ug/L	20	12/10/24 11:08	EPA 8260D	
1,1-Dichloroethane	**47.0**	---	8.00	ug/L	20	12/10/24 11:08	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	8.00	ug/L	20	12/10/24 11:08	EPA 8260D	
1,1-Dichloroethene	**25.8**	---	8.00	ug/L	20	12/10/24 11:08	EPA 8260D	
cis-1,2-Dichloroethene	**1620**	---	8.00	ug/L	20	12/10/24 11:08	EPA 8260D	
trans-1,2-Dichloroethene	**16.4**	---	8.00	ug/L	20	12/10/24 11:08	EPA 8260D	
1,2-Dichloropropane	ND	---	10.0	ug/L	20	12/10/24 11:08	EPA 8260D	
1,3-Dichloropropane	ND	---	20.0	ug/L	20	12/10/24 11:08	EPA 8260D	
2,2-Dichloropropane	ND	---	20.0	ug/L	20	12/10/24 11:08	EPA 8260D	
1,1-Dichloropropene	ND	---	20.0	ug/L	20	12/10/24 11:08	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	20.0	ug/L	20	12/10/24 11:08	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	20.0	ug/L	20	12/10/24 11:08	EPA 8260D	
Hexachlorobutadiene	ND	---	100	ug/L	20	12/10/24 11:08	EPA 8260D	
Methylene chloride	ND	---	200	ug/L	20	12/10/24 11:08	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	8.00	ug/L	20	12/10/24 11:08	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	10.0	ug/L	20	12/10/24 11:08	EPA 8260D	
Tetrachloroethene (PCE)	**45.2**	---	8.00	ug/L	20	12/10/24 11:08	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	40.0	ug/L	20	12/10/24 11:08	EPA 8260D	
1,1,2-Trichloroethane	ND	---	10.0	ug/L	20	12/10/24 11:08	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	40.0	ug/L	20	12/10/24 11:08	EPA 8260D	
1,1,1-Trichloroethane	ND	---	8.00	ug/L	20	12/10/24 11:08	EPA 8260D	
Trichloroethene (TCE)	**66.4**	---	8.00	ug/L	20	12/10/24 11:08	EPA 8260D	
Trichlorofluoromethane	ND	---	40.0	ug/L	20	12/10/24 11:08	EPA 8260D	
1,2,3-Trichloropropane	ND	---	20.0	ug/L	20	12/10/24 11:08	EPA 8260D	
Vinyl chloride	ND	---	4.00	ug/L	20	12/10/24 11:08	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*107 %*	*Limits:*	*80-120 %*	*1*	*12/10/24 11:08*	*EPA 8260D*
Toluene-d8 (Surr)			*103 %*		*80-120 %*	*1*	*12/10/24 11:08*	*EPA 8260D*
4-Bromofluorobenzene (Surr)			*104 %*		*80-120 %*	*1*	*12/10/24 11:08*	*EPA 8260D*
KMW-4 (A4L0850-19)				**Matrix: Water**		**Batch: 24L0155**		
Bromobenzene	ND	---	0.500	ug/L	1	12/05/24 12:17	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	12/05/24 12:17	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	12/05/24 12:17	EPA 8260D	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
KMW-4 (A4L0850-19)				**Matrix: Water**		**Batch: 24L0155**		
Bromoform	ND	---	1.00	ug/L	1	12/05/24 12:17	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	12/05/24 12:17	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	12/05/24 12:17	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	12/05/24 12:17	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	12/05/24 12:17	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	12/05/24 12:17	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	12/05/24 12:17	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	12/05/24 12:17	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	12/05/24 12:17	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	12/05/24 12:17	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	12/05/24 12:17	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	12/05/24 12:17	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	12/05/24 12:17	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	12/05/24 12:17	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	12/05/24 12:17	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	12/05/24 12:17	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	12/05/24 12:17	EPA 8260D	
1,1-Dichloroethane	**0.580**	---	0.400	ug/L	1	12/05/24 12:17	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	12/05/24 12:17	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	12/05/24 12:17	EPA 8260D	
cis-1,2-Dichloroethene	**3.15**	---	0.400	ug/L	1	12/05/24 12:17	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	12/05/24 12:17	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	12/05/24 12:17	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	12/05/24 12:17	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	12/05/24 12:17	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	12/05/24 12:17	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/05/24 12:17	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/05/24 12:17	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	12/05/24 12:17	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	12/05/24 12:17	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	12/05/24 12:17	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	12/05/24 12:17	EPA 8260D	
Tetrachloroethene (PCE)	**66.9**	---	0.400	ug/L	1	12/05/24 12:17	EPA 8260D	

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Darrell Auvil, Client Services Manager

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 019001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0850 - 12 19 24 1651

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
KMW-4 (A4L0850-19)				**Matrix: Water**		**Batch: 24L0155**		
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	12/05/24 12:17	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	12/05/24 12:17	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	12/05/24 12:17	EPA 8260D	
1,1,1-Trichloroethane	**0.740**	---	0.400	ug/L	1	12/05/24 12:17	EPA 8260D	
Trichloroethene (TCE)	**84.3**	---	0.400	ug/L	1	12/05/24 12:17	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	12/05/24 12:17	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	12/05/24 12:17	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	12/05/24 12:17	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*114 %*	*Limits: 80-120 %*	*1*	*12/05/24 12:17*	*EPA 8260D*	
Toluene-d8 (Surr)			*104 %*	*80-120 %*	*1*	*12/05/24 12:17*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*100 %*	*80-120 %*	*1*	*12/05/24 12:17*	*EPA 8260D*	
KMW-5 (A4L0850-20)				**Matrix: Water**		**Batch: 24L0155**		
Bromobenzene	ND	---	0.500	ug/L	1	12/05/24 11:54	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	12/05/24 11:54	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	12/05/24 11:54	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	12/05/24 11:54	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	12/05/24 11:54	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	12/05/24 11:54	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	12/05/24 11:54	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	12/05/24 11:54	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	12/05/24 11:54	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	12/05/24 11:54	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	12/05/24 11:54	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	12/05/24 11:54	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	12/05/24 11:54	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	12/05/24 11:54	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	12/05/24 11:54	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	12/05/24 11:54	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	12/05/24 11:54	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	12/05/24 11:54	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	12/05/24 11:54	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	12/05/24 11:54	EPA 8260D	
1,1-Dichloroethane	**0.430**	---	0.400	ug/L	1	12/05/24 11:54	EPA 8260D	

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Darrell Auvil, Client Services Manager

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
KMW-5 (A4L0850-20)				**Matrix: Water**		**Batch: 24L0155**		
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	12/05/24 11:54	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	12/05/24 11:54	EPA 8260D	
cis-1,2-Dichloroethene	**3.10**	---	0.400	ug/L	1	12/05/24 11:54	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	12/05/24 11:54	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	12/05/24 11:54	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	12/05/24 11:54	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	12/05/24 11:54	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	12/05/24 11:54	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/05/24 11:54	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/05/24 11:54	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	12/05/24 11:54	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	12/05/24 11:54	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	12/05/24 11:54	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	12/05/24 11:54	EPA 8260D	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	12/05/24 11:54	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	12/05/24 11:54	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	12/05/24 11:54	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	12/05/24 11:54	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	12/05/24 11:54	EPA 8260D	
Trichloroethene (TCE)	**0.510**	---	0.400	ug/L	1	12/05/24 11:54	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	12/05/24 11:54	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	12/05/24 11:54	EPA 8260D	
Vinyl chloride	**2.99**	---	0.200	ug/L	1	12/05/24 11:54	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*105 %*	*Limits:*	*80-120 %*	*1*	*12/05/24 11:54*	*EPA 8260D*	
Toluene-d8 (Surr)			*104 %*		*80-120 %*	*1*	*12/05/24 11:54*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*99 %*		*80-120 %*	*1*	*12/05/24 11:54*	*EPA 8260D*	
KMW-6 (A4L0850-21RE1)				**Matrix: Water**		**Batch: 24L0411**		
Bromobenzene	ND	---	0.500	ug/L	1	12/11/24 19:32	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	12/11/24 19:32	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	12/11/24 19:32	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	12/11/24 19:32	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	12/11/24 19:32	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	12/11/24 19:32	EPA 8260D	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
KMW-6 (A4L0850-21RE1)				**Matrix: Water**		**Batch: 24L0411**		
Chlorobenzene	ND	---	0.500	ug/L	1	12/11/24 19:32	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	12/11/24 19:32	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	12/11/24 19:32	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	12/11/24 19:32	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	12/11/24 19:32	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	12/11/24 19:32	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	12/11/24 19:32	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	12/11/24 19:32	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	12/11/24 19:32	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	12/11/24 19:32	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	12/11/24 19:32	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	12/11/24 19:32	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	12/11/24 19:32	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	12/11/24 19:32	EPA 8260D	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	12/11/24 19:32	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	12/11/24 19:32	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	12/11/24 19:32	EPA 8260D	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	12/11/24 19:32	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	12/11/24 19:32	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	12/11/24 19:32	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	12/11/24 19:32	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	12/11/24 19:32	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	12/11/24 19:32	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/11/24 19:32	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/11/24 19:32	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	12/11/24 19:32	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	12/11/24 19:32	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	12/11/24 19:32	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	12/11/24 19:32	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	12/11/24 19:32	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	12/11/24 19:32	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	12/11/24 19:32	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	12/11/24 19:32	EPA 8260D	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
KMW-6 (A4L0850-21RE1)				**Matrix: Water**		**Batch: 24L0411**		
Trichlorofluoromethane	ND	---	2.00	ug/L	1	12/11/24 19:32	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	12/11/24 19:32	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	12/11/24 19:32	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*109 %*	*Limits: 80-120 %*	*1*	*12/11/24 19:32*	*EPA 8260D*	
Toluene-d8 (Surr)			*105 %*	*80-120 %*	*1*	*12/11/24 19:32*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*102 %*	*80-120 %*	*1*	*12/11/24 19:32*	*EPA 8260D*	
KMW-6 (A4L0850-21RE2)				**Matrix: Water**		**Batch: 24L0429**		
Tetrachloroethene (PCE)	**0.680**	---	0.400	ug/L	1	12/12/24 11:12	EPA 8260D	
Trichloroethene (TCE)	**1.16**	---	0.400	ug/L	1	12/12/24 11:12	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*109 %*	*Limits: 80-120 %*	*1*	*12/12/24 11:12*	*EPA 8260D*	
Toluene-d8 (Surr)			*101 %*	*80-120 %*	*1*	*12/12/24 11:12*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*102 %*	*80-120 %*	*1*	*12/12/24 11:12*	*EPA 8260D*	

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5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

ANALYTICAL SAMPLE RESULTS

Ammonia by Gas Diffusion and Colorimetric Detection

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MGMS1-3(43) (A4L0850-01RE1)				**Matrix: Water**		**Batch: 24L0260**		
Ammonia as N	**70.6**	---	0.400	mg/L	20	12/09/24 11:28	SM 4500-NH3 G	
MGMS1-2(60) (A4L0850-02)				**Matrix: Water**		**Batch: 24L0170**		
Ammonia as N	**0.103**	---	0.0200	mg/L	1	12/05/24 13:24	SM 4500-NH3 G	
MGMS1-1(110) (A4L0850-03)				**Matrix: Water**		**Batch: 24L0170**		
Ammonia as N	**0.292**	---	0.0200	mg/L	1	12/05/24 13:31	SM 4500-NH3 G	
MGMS2-4(40) (A4L0850-04)				**Matrix: Water**		**Batch: 24L0170**		
Ammonia as N	**52.8**	---	0.400	mg/L	20	12/05/24 13:34	SM 4500-NH3 G	
MGMS2-3(60) (A4L0850-05)				**Matrix: Water**		**Batch: 24L0170**		
Ammonia as N	**0.0300**	---	0.0200	mg/L	1	12/05/24 13:37	SM 4500-NH3 G	
MGMS2-2(110) (A4L0850-06)				**Matrix: Water**		**Batch: 24L0170**		
Ammonia as N	ND	---	0.0200	mg/L	1	12/05/24 13:39	SM 4500-NH3 G	
MGMS2-1(132) (A4L0850-07)				**Matrix: Water**		**Batch: 24L0170**		
Ammonia as N	**0.0280**	---	0.0200	mg/L	1	12/05/24 13:49	SM 4500-NH3 G	
MW-7 (A4L0850-08RE1)				**Matrix: Water**		**Batch: 24L0260**		
Ammonia as N	**64.9**	---	0.400	mg/L	20	12/09/24 11:30	SM 4500-NH3 G	
MW-7 DUP (A4L0850-09)				**Matrix: Water**		**Batch: 24L0170**		
Ammonia as N	**47.2**	---	0.200	mg/L	10	12/05/24 13:52	SM 4500-NH3 G	
MW-9 (A4L0850-10)				**Matrix: Water**		**Batch: 24L0170**		
Ammonia as N	ND	---	0.0200	mg/L	1	12/05/24 13:55	SM 4500-NH3 G	
MW-13 (A4L0850-11)				**Matrix: Water**		**Batch: 24L0170**		
Ammonia as N	**3.13**	---	0.100	mg/L	5	12/05/24 13:57	SM 4500-NH3 G	
MW-19 (A4L0850-12)				**Matrix: Water**		**Batch: 24L0170**		
Ammonia as N	**71.8**	---	2.00	mg/L	100	12/05/24 14:00	SM 4500-NH3 G	
MW-19 DUP (A4L0850-13)				**Matrix: Water**		**Batch: 24L0170**		

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GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

ANALYTICAL SAMPLE RESULTS

Ammonia by Gas Diffusion and Colorimetric Detection

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-19 DUP (A4L0850-13)				**Matrix: Water**		**Batch: 24L0170**		
Ammonia as N	**72.8**	---	2.00	mg/L	100	12/05/24 14:01	SM 4500-NH3 G	
MW-24i (A4L0850-14)				**Matrix: Water**		**Batch: 24L0146**		
Ammonia as N	ND	---	0.0200	mg/L	1	12/05/24 12:29	SM 4500-NH3 G	
MW-26 (A4L0850-15)				**Matrix: Water**		**Batch: 24L0146**		
Ammonia as N	**96.0**	---	1.00	mg/L	50	12/05/24 12:30	SM 4500-NH3 G	
EX (A4L0850-16)				**Matrix: Water**		**Batch: 24L0146**		
Ammonia as N	**13.4**	---	0.200	mg/L	10	12/05/24 12:33	SM 4500-NH3 G	
NKW-1 (A4L0850-17)				**Matrix: Water**		**Batch: 24L0146**		
Ammonia as N	**1.82**	---	0.0400	mg/L	2	12/05/24 12:35	SM 4500-NH3 G	
NKW-2 (A4L0850-18)				**Matrix: Water**		**Batch: 24L0146**		
Ammonia as N	**18.1**	---	0.200	mg/L	10	12/05/24 12:45	SM 4500-NH3 G	
KMW-4 (A4L0850-19)				**Matrix: Water**		**Batch: 24L0146**		
Ammonia as N	ND	---	0.0200	mg/L	1	12/05/24 12:47	SM 4500-NH3 G	
KMW-5 (A4L0850-20RE1)				**Matrix: Water**		**Batch: 24L0260**		
Ammonia as N	**8.56**	---	0.100	mg/L	5	12/09/24 11:33	SM 4500-NH3 G	
KMW-6 (A4L0850-21)				**Matrix: Water**		**Batch: 24L0170**		
Ammonia as N	ND	---	0.0200	mg/L	1	12/05/24 14:04	SM 4500-NH3 G	

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GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

ANALYTICAL SAMPLE RESULTS

Anions by Ion Chromatography

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MGMS1-3(43) (A4L0850-01)				**Matrix: Water**				
Batch: 24L0094								
Nitrate-Nitrogen	**6.23**	---	1.25	mg/L	5	12/04/24 12:25	EPA 300.0	
MGMS1-3(43) (A4L0850-01RE1)				**Matrix: Water**				
Batch: 24L0095								
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	12/05/24 02:25	EPA 300.0	
MGMS1-2(60) (A4L0850-02)				**Matrix: Water**				
Batch: 24L0094								
Nitrate-Nitrogen	**1.37**	---	0.250	mg/L	1	12/04/24 12:47	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	12/04/24 12:47	EPA 300.0	
MGMS1-1(110) (A4L0850-03)				**Matrix: Water**				
Batch: 24L0094								
Nitrate-Nitrogen	**0.426**	---	0.250	mg/L	1	12/04/24 13:52	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	12/04/24 13:52	EPA 300.0	
MGMS2-4(40) (A4L0850-04)				**Matrix: Water**				
Batch: 24L0094								
Nitrate-Nitrogen	**86.3**	---	5.00	mg/L	20	12/04/24 14:13	EPA 300.0	
MGMS2-4(40) (A4L0850-04RE1)				**Matrix: Water**				
Batch: 24L0095								
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	12/05/24 03:30	EPA 300.0	
MGMS2-3(60) (A4L0850-05)				**Matrix: Water**				
Batch: 24L0094								
Nitrate-Nitrogen	**1.31**	---	0.250	mg/L	1	12/04/24 14:35	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	12/04/24 14:35	EPA 300.0	
MGMS2-2(110) (A4L0850-06)				**Matrix: Water**				
Batch: 24L0094								
Nitrate-Nitrogen	**2.40**	---	0.250	mg/L	1	12/04/24 14:56	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	12/04/24 14:56	EPA 300.0	
MGMS2-1(132) (A4L0850-07)				**Matrix: Water**				

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

ANALYTICAL SAMPLE RESULTS

Anions by Ion Chromatography

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MGMS2-1(132) (A4L0850-07)				**Matrix: Water**				
Batch: 24L0094								
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	12/04/24 16:01	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	12/04/24 16:01	EPA 300.0	
MW-7 (A4L0850-08RE1)				**Matrix: Water**				
Batch: 24L0095								
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	12/05/24 03:52	EPA 300.0	
MW-7 (A4L0850-08RE2)				**Matrix: Water**				
Batch: 24L0176								
Nitrate-Nitrogen	**487**	---	25.0	mg/L	100	12/05/24 16:12	EPA 300.0	**H-01**
MW-7 DUP (A4L0850-09RE1)				**Matrix: Water**				
Batch: 24L0095								
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	12/05/24 04:56	EPA 300.0	
MW-7 DUP (A4L0850-09RE2)				**Matrix: Water**				
Batch: 24L0176								
Nitrate-Nitrogen	**383**	---	25.0	mg/L	100	12/05/24 16:42	EPA 300.0	**H-01**
MW-9 (A4L0850-10)				**Matrix: Water**				
Batch: 24L0094								
Nitrate-Nitrogen	**96.7**	---	5.00	mg/L	20	12/04/24 17:05	EPA 300.0	
MW-9 (A4L0850-10RE1)				**Matrix: Water**				
Batch: 24L0095								
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	12/05/24 05:18	EPA 300.0	
MW-13 (A4L0850-11)				**Matrix: Water**				
Batch: 24L0094								
Nitrate-Nitrogen	**36.5**	---	5.00	mg/L	20	12/04/24 17:27	EPA 300.0	
MW-13 (A4L0850-11RE1)				**Matrix: Water**				
Batch: 24L0095								
Nitrite-Nitrogen	**0.725**	---	0.250	mg/L	1	12/05/24 05:39	EPA 300.0	

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GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

ANALYTICAL SAMPLE RESULTS

Anions by Ion Chromatography

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-19 (A4L0850-12)				**Matrix: Water**				
Batch: 24L0094								
Nitrate-Nitrogen	**112**	---	5.00	mg/L	20	12/04/24 17:48	EPA 300.0	
MW-19 (A4L0850-12RE1)				**Matrix: Water**				
Batch: 24L0095								
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	12/05/24 06:01	EPA 300.0	
MW-19 DUP (A4L0850-13)				**Matrix: Water**				
Batch: 24L0094								
Nitrate-Nitrogen	**105**	---	5.00	mg/L	20	12/04/24 18:10	EPA 300.0	
MW-19 DUP (A4L0850-13RE1)				**Matrix: Water**				
Batch: 24L0095								
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	12/05/24 06:23	EPA 300.0	
MW-24i (A4L0850-14)				**Matrix: Water**				
Batch: 24L0094								
Nitrate-Nitrogen	**11.0**	---	1.25	mg/L	5	12/04/24 18:31	EPA 300.0	
MW-24i (A4L0850-14RE1)				**Matrix: Water**				
Batch: 24L0095								
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	12/05/24 06:44	EPA 300.0	
MW-26 (A4L0850-15)				**Matrix: Water**				
Batch: 24L0094								
Nitrate-Nitrogen	**397**	---	25.0	mg/L	100	12/04/24 18:53	EPA 300.0	
MW-26 (A4L0850-15RE1)				**Matrix: Water**				
Batch: 24L0095								
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	12/05/24 07:06	EPA 300.0	
EX (A4L0850-16)				**Matrix: Water**				
Batch: 24L0094								
Nitrate-Nitrogen	**18.1**	---	2.50	mg/L	10	12/04/24 19:14	EPA 300.0	
EX (A4L0850-16RE1)				**Matrix: Water**				
Batch: 24L0095								

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

ANALYTICAL SAMPLE RESULTS

Anions by Ion Chromatography

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
EX (A4L0850-16RE1)				**Matrix: Water**				
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	12/05/24 07:27	EPA 300.0	
NKW-1 (A4L0850-17)				**Matrix: Water**				
Batch: 24L0094								
Nitrate-Nitrogen	**18.3**	---	5.00	mg/L	20	12/04/24 20:19	EPA 300.0	
NKW-1 (A4L0850-17RE1)				**Matrix: Water**				
Batch: 24L0095								
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	12/05/24 07:49	EPA 300.0	
NKW-2 (A4L0850-18)				**Matrix: Water**				
Batch: 24L0094								
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	12/04/24 20:40	EPA 300.0	
NKW-2 (A4L0850-18RE1)				**Matrix: Water**				
Batch: 24L0148								
Nitrate-Nitrogen	**32.1**	---	2.50	mg/L	10	12/05/24 19:34	EPA 300.0	**H-01**
KMW-4 (A4L0850-19)				**Matrix: Water**				
Batch: 24L0094								
Nitrate-Nitrogen	**11.4**	---	5.00	mg/L	20	12/04/24 21:45	EPA 300.0	
KMW-4 (A4L0850-19RE1)				**Matrix: Water**				
Batch: 24L0095								
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	12/05/24 08:10	EPA 300.0	
KMW-5 (A4L0850-20)				**Matrix: Water**				
Batch: 24L0094								
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	12/04/24 22:07	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	12/04/24 22:07	EPA 300.0	
KMW-6 (A4L0850-21)				**Matrix: Water**				
Batch: 24L0095								
Nitrate-Nitrogen	**1.60**	---	0.250	mg/L	1	12/04/24 23:11	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	12/04/24 23:11	EPA 300.0	

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GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0155 - EPA 5030C							**Water**					
Blank (24L0155-BLK1)			Prepared: 12/05/24 06:30 Analyzed: 12/05/24 10:02									
EPA 8260D												
Bromobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Bromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromodichloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromoform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromomethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Carbon tetrachloride	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Chloroethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Chloroform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chloromethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
2-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
4-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Dibromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dibromomethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Methylene chloride	ND	---	10.0	ug/L	1	---	---	---	---	---	---	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0155 - EPA 5030C								**Water**				
Blank (24L0155-BLK1)			Prepared: 12/05/24 06:30 Analyzed: 12/05/24 10:02									
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Vinyl chloride	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*102 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*105 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*101 %*		*80-120 %*			*"*				
LCS (24L0155-BS1)			Prepared: 12/05/24 06:30 Analyzed: 12/05/24 09:17									
EPA 8260D												
Bromobenzene	18.1	---	0.500	ug/L	1	20.0	---	90	80-120%	---	---	
Bromochloromethane	26.2	---	1.00	ug/L	1	20.0	---	**131**	**80-120%**	---	---	Q-56
Bromodichloromethane	22.4	---	1.00	ug/L	1	20.0	---	112	80-120%	---	---	
Bromoform	21.6	---	1.00	ug/L	1	20.0	---	108	80-120%	---	---	
Bromomethane	30.5	---	5.00	ug/L	1	20.0	---	**153**	**80-120%**	---	---	Q-56
Carbon tetrachloride	17.1	---	1.00	ug/L	1	20.0	---	86	80-120%	---	---	
Chlorobenzene	20.3	---	0.500	ug/L	1	20.0	---	101	80-120%	---	---	
Chloroethane	27.8	---	5.00	ug/L	1	20.0	---	**139**	**80-120%**	---	---	Q-56
Chloroform	21.5	---	1.00	ug/L	1	20.0	---	108	80-120%	---	---	
Chloromethane	17.2	---	5.00	ug/L	1	20.0	---	86	80-120%	---	---	
2-Chlorotoluene	18.0	---	1.00	ug/L	1	20.0	---	90	80-120%	---	---	
4-Chlorotoluene	19.4	---	1.00	ug/L	1	20.0	---	97	80-120%	---	---	
Dibromochloromethane	21.4	---	1.00	ug/L	1	20.0	---	107	80-120%	---	---	
1,2-Dibromo-3-chloropropane	18.1	---	5.00	ug/L	1	20.0	---	90	80-120%	---	---	
1,2-Dibromoethane (EDB)	22.0	---	0.500	ug/L	1	20.0	---	110	80-120%	---	---	
Dibromomethane	22.7	---	1.00	ug/L	1	20.0	---	114	80-120%	---	---	
1,2-Dichlorobenzene	19.6	---	0.500	ug/L	1	20.0	---	98	80-120%	---	---	

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5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0155 - EPA 5030C							**Water**					
LCS (24L0155-BS1)			Prepared: 12/05/24 06:30 Analyzed: 12/05/24 09:17									
1,3-Dichlorobenzene	20.1	---	0.500	ug/L	1	20.0	---	101	80-120%	---	---	
1,4-Dichlorobenzene	19.6	---	0.500	ug/L	1	20.0	---	98	80-120%	---	---	
Dichlorodifluoromethane	15.9	---	1.00	ug/L	1	20.0	---	80	80-120%	---	---	
1,1-Dichloroethane	22.6	---	0.400	ug/L	1	20.0	---	113	80-120%	---	---	
1,2-Dichloroethane (EDC)	24.5	---	0.400	ug/L	1	20.0	---	**123**	**80-120%**	---	---	Q-56
1,1-Dichloroethene	21.3	---	0.400	ug/L	1	20.0	---	106	80-120%	---	---	
cis-1,2-Dichloroethene	21.3	---	0.400	ug/L	1	20.0	---	107	80-120%	---	---	
trans-1,2-Dichloroethene	20.8	---	0.400	ug/L	1	20.0	---	104	80-120%	---	---	
1,2-Dichloropropane	22.3	---	0.500	ug/L	1	20.0	---	112	80-120%	---	---	
1,3-Dichloropropane	21.2	---	1.00	ug/L	1	20.0	---	106	80-120%	---	---	
2,2-Dichloropropane	18.7	---	1.00	ug/L	1	20.0	---	94	80-120%	---	---	
1,1-Dichloropropene	18.8	---	1.00	ug/L	1	20.0	---	94	80-120%	---	---	
cis-1,3-Dichloropropene	20.3	---	1.00	ug/L	1	20.0	---	102	80-120%	---	---	
trans-1,3-Dichloropropene	21.8	---	1.00	ug/L	1	20.0	---	109	80-120%	---	---	
Hexachlorobutadiene	14.4	---	5.00	ug/L	1	20.0	---	**72**	**80-120%**	---	---	Q-55
Methylene chloride	20.9	---	10.0	ug/L	1	20.0	---	105	80-120%	---	---	
1,1,1,2-Tetrachloroethane	18.7	---	0.400	ug/L	1	20.0	---	93	80-120%	---	---	
1,1,2,2-Tetrachloroethane	24.2	---	0.500	ug/L	1	20.0	---	**121**	**80-120%**	---	---	Q-56
Tetrachloroethene (PCE)	17.7	---	0.400	ug/L	1	20.0	---	88	80-120%	---	---	
1,2,3-Trichlorobenzene	16.3	---	2.00	ug/L	1	20.0	---	82	80-120%	---	---	
1,1,2-Trichloroethane	21.4	---	0.500	ug/L	1	20.0	---	107	80-120%	---	---	
1,2,4-Trichlorobenzene	15.1	---	2.00	ug/L	1	20.0	---	**75**	**80-120%**	---	---	Q-55
1,1,1-Trichloroethane	19.4	---	0.400	ug/L	1	20.0	---	97	80-120%	---	---	
Trichloroethene (TCE)	18.5	---	0.400	ug/L	1	20.0	---	92	80-120%	---	---	
Trichlorofluoromethane	28.0	---	2.00	ug/L	1	20.0	---	**140**	**80-120%**	---	---	Q-56
1,2,3-Trichloropropane	21.6	---	1.00	ug/L	1	20.0	---	108	80-120%	---	---	
Vinyl chloride	21.1	---	0.200	ug/L	1	20.0	---	105	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 103 %*		*Limits: 80-120 %*			*Dilution: 1x*				
Toluene-d8 (Surr)			*100 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*95 %*		*80-120 %*			*"*				
Duplicate (24L0155-DUP1)			Prepared: 12/05/24 06:30 Analyzed: 12/05/24 14:10									

QC Source Sample: MGMS1-3(43) (A4L0850-01)

EPA 8260D

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0155 - EPA 5030C							**Water**					
Duplicate (24L0155-DUP1)			Prepared: 12/05/24 06:30 Analyzed: 12/05/24 14:10									
QC Source Sample: MGMS1-3(43) (A4L0850-01)												
Bromobenzene	ND	---	10.0	ug/L	20	---	ND	---	---	---	30%	
Bromochloromethane	ND	---	20.0	ug/L	20	---	ND	---	---	---	30%	
Bromodichloromethane	ND	---	20.0	ug/L	20	---	ND	---	---	---	30%	
Bromoform	ND	---	20.0	ug/L	20	---	ND	---	---	---	30%	
Bromomethane	ND	---	100	ug/L	20	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	---	20.0	ug/L	20	---	ND	---	---	---	30%	
Chlorobenzene	ND	---	10.0	ug/L	20	---	ND	---	---	---	30%	
Chloroethane	ND	---	100	ug/L	20	---	ND	---	---	---	30%	
Chloroform	ND	---	20.0	ug/L	20	---	ND	---	---	---	30%	
Chloromethane	ND	---	100	ug/L	20	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	---	20.0	ug/L	20	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	---	20.0	ug/L	20	---	ND	---	---	---	30%	
Dibromochloromethane	ND	---	20.0	ug/L	20	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	---	100	ug/L	20	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	---	10.0	ug/L	20	---	ND	---	---	---	30%	
Dibromomethane	ND	---	20.0	ug/L	20	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	---	10.0	ug/L	20	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	---	10.0	ug/L	20	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	---	10.0	ug/L	20	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	---	20.0	ug/L	20	---	ND	---	---	---	30%	
1,1-Dichloroethane	**44.8**	---	8.00	ug/L	20	---	42.6	---	---	5	30%	
1,2-Dichloroethane (EDC)	ND	---	8.00	ug/L	20	---	ND	---	---	---	30%	
1,1-Dichloroethene	**9.00**	---	8.00	ug/L	20	---	8.60	---	---	5	30%	
cis-1,2-Dichloroethene	**984**	---	8.00	ug/L	20	---	955	---	---	3	30%	
trans-1,2-Dichloroethene	**21.8**	---	8.00	ug/L	20	---	21.6	---	---	0.9	30%	
1,2-Dichloropropane	ND	---	10.0	ug/L	20	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	---	20.0	ug/L	20	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	---	20.0	ug/L	20	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	---	20.0	ug/L	20	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	---	20.0	ug/L	20	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	---	20.0	ug/L	20	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	---	100	ug/L	20	---	ND	---	---	---	30%	
Methylene chloride	ND	---	200	ug/L	20	---	ND	---	---	---	30%	

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Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0155 - EPA 5030C							**Water**					
Duplicate (24L0155-DUP1)			Prepared: 12/05/24 06:30 Analyzed: 12/05/24 14:10									
QC Source Sample: MGMS1-3(43) (A4L0850-01)												
1,1,1,2-Tetrachloroethane	ND	---	8.00	ug/L	20	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	---	10.0	ug/L	20	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	**67.6**	---	8.00	ug/L	20	---	66.6	---	---	1	30%	
1,2,3-Trichlorobenzene	ND	---	40.0	ug/L	20	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	---	10.0	ug/L	20	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	---	40.0	ug/L	20	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	---	8.00	ug/L	20	---	ND	---	---	---	30%	
Trichloroethene (TCE)	**176**	---	8.00	ug/L	20	---	168	---	---	4	30%	
Trichlorofluoromethane	ND	---	40.0	ug/L	20	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	---	20.0	ug/L	20	---	ND	---	---	---	30%	
Vinyl chloride	**16.8**	---	4.00	ug/L	20	---	14.8	---	---	13	30%	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*108 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*104 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*99 %*		*80-120 %*			*"*				
Matrix Spike (24L0155-MS1)			Prepared: 12/05/24 06:30 Analyzed: 12/05/24 14:55									
QC Source Sample: MGMS2-4(40) (A4L0850-04)												
EPA 8260D												
Bromobenzene	95.4	---	2.50	ug/L	5	100	ND	95	80-120%	---	---	
Bromochloromethane	144	---	5.00	ug/L	5	100	ND	**144**	**78-123%**	---	---	Q-54b
Bromodichloromethane	124	---	5.00	ug/L	5	100	ND	124	79-125%	---	---	
Bromoform	110	---	5.00	ug/L	5	100	ND	110	66-130%	---	---	
Bromomethane	212	---	25.0	ug/L	5	100	ND	**212**	**53-141%**	---	---	Q-54j
Carbon tetrachloride	119	---	5.00	ug/L	5	100	ND	119	72-136%	---	---	
Chlorobenzene	113	---	2.50	ug/L	5	100	ND	113	80-120%	---	---	
Chloroethane	192	---	25.0	ug/L	5	100	ND	**192**	**60-138%**	---	---	Q-54e
Chloroform	124	---	5.00	ug/L	5	100	ND	124	79-124%	---	---	
Chloromethane	111	---	25.0	ug/L	5	100	ND	111	50-139%	---	---	
2-Chlorotoluene	98.8	---	5.00	ug/L	5	100	ND	99	79-122%	---	---	
4-Chlorotoluene	106	---	5.00	ug/L	5	100	ND	106	78-122%	---	---	
Dibromochloromethane	109	---	5.00	ug/L	5	100	ND	109	74-126%	---	---	
1,2-Dibromo-3-chloropropane	85.7	---	25.0	ug/L	5	100	ND	86	62-128%	---	---	
1,2-Dibromoethane (EDB)	110	---	2.50	ug/L	5	100	ND	110	77-121%	---	---	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0155 - EPA 5030C							**Water**					
Matrix Spike (24L0155-MS1)			Prepared: 12/05/24 06:30 Analyzed: 12/05/24 14:55									
QC Source Sample: MGMS2-4(40) (A4L0850-04)												
Dibromomethane	121	---	5.00	ug/L	5	100	ND	121	79-123%	---	---	
1,2-Dichlorobenzene	103	---	2.50	ug/L	5	100	ND	103	80-120%	---	---	
1,3-Dichlorobenzene	108	---	2.50	ug/L	5	100	ND	108	80-120%	---	---	
1,4-Dichlorobenzene	106	---	2.50	ug/L	5	100	ND	106	79-120%	---	---	
Dichlorodifluoromethane	128	---	5.00	ug/L	5	100	ND	128	32-152%	---	---	
1,1-Dichloroethane	152	---	2.00	ug/L	5	100	21.0	**131**	**77-125%**	---	---	Q-01
1,2-Dichloroethane (EDC)	131	---	2.00	ug/L	5	100	ND	**131**	**73-128%**	---	---	Q-54i
1,1-Dichloroethene	153	---	2.00	ug/L	5	100	12.1	**141**	**71-131%**	---	---	Q-01
cis-1,2-Dichloroethene	500	---	2.00	ug/L	5	100	385	116	78-123%	---	---	
trans-1,2-Dichloroethene	130	---	2.00	ug/L	5	100	3.85	**127**	**75-124%**	---	---	Q-01
1,2-Dichloropropane	120	---	2.50	ug/L	5	100	ND	120	78-122%	---	---	
1,3-Dichloropropane	108	---	5.00	ug/L	5	100	ND	108	80-120%	---	---	
2,2-Dichloropropane	118	---	5.00	ug/L	5	100	ND	118	60-139%	---	---	
1,1-Dichloropropene	123	---	5.00	ug/L	5	100	ND	123	79-125%	---	---	
cis-1,3-Dichloropropene	91.6	---	5.00	ug/L	5	100	ND	92	75-124%	---	---	
trans-1,3-Dichloropropene	111	---	5.00	ug/L	5	100	ND	111	73-127%	---	---	
Hexachlorobutadiene	96.9	---	25.0	ug/L	5	100	ND	97	66-134%	---	---	Q-54v
Methylene chloride	118	---	50.0	ug/L	5	100	ND	118	74-124%	---	---	
1,1,1,2-Tetrachloroethane	103	---	2.00	ug/L	5	100	ND	103	78-124%	---	---	
1,1,2,2-Tetrachloroethane	122	---	2.50	ug/L	5	100	ND	**122**	**71-121%**	---	---	Q-54
Tetrachloroethene (PCE)	377	---	2.00	ug/L	5	100	285	92	74-129%	---	---	
1,2,3-Trichlorobenzene	87.0	---	10.0	ug/L	5	100	ND	87	69-129%	---	---	
1,1,2-Trichloroethane	110	---	2.50	ug/L	5	100	ND	110	80-120%	---	---	
1,2,4-Trichlorobenzene	78.5	---	10.0	ug/L	5	100	ND	78	69-130%	---	---	Q-54u
1,1,1-Trichloroethane	127	---	2.00	ug/L	5	100	1.80	125	74-131%	---	---	
Trichloroethene (TCE)	294	---	2.00	ug/L	5	100	183	111	79-123%	---	---	
Trichlorofluoromethane	217	---	10.0	ug/L	5	100	ND	**217**	**65-141%**	---	---	Q-54g
1,2,3-Trichloropropane	106	---	5.00	ug/L	5	100	ND	106	73-122%	---	---	
Vinyl chloride	146	---	1.00	ug/L	5	100	0.600	**145**	**58-137%**	---	---	Q-01
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 107 %*		*Limits: 80-120 %*			*Dilution: 1x*				
Toluene-d8 (Surr)			*98 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*92 %*		*80-120 %*			*"*				

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GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0305 - EPA 5030C							**Water**					
Blank (24L0305-BLK1)			Prepared: 12/09/24 10:00		Analyzed: 12/09/24 14:22							
EPA 8260D												
Bromobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Bromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromodichloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromoform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromomethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Carbon tetrachloride	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Chloroethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Chloroform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chloromethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
2-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
4-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Dibromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dibromomethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Methylene chloride	ND	---	10.0	ug/L	1	---	---	---	---	---	---	

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5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0305 - EPA 5030C							**Water**					
Blank (24L0305-BLK1)			Prepared: 12/09/24 10:00 Analyzed: 12/09/24 14:22									
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Vinyl chloride	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 108 %*		*Limits: 80-120 %*			*Dilution: 1x*				
Toluene-d8 (Surr)			*99 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*99 %*		*80-120 %*			*"*				
LCS (24L0305-BS1)			Prepared: 12/09/24 10:00 Analyzed: 12/09/24 13:37									
EPA 8260D												
Bromobenzene	18.8	---	0.500	ug/L	1	20.0	---	94	80-120%	---	---	
Bromochloromethane	26.0	---	1.00	ug/L	1	20.0	---	**130**	**80-120%**	---	---	Q-56
Bromodichloromethane	23.6	---	1.00	ug/L	1	20.0	---	118	80-120%	---	---	
Bromoform	21.7	---	1.00	ug/L	1	20.0	---	109	80-120%	---	---	
Bromomethane	37.4	---	5.00	ug/L	1	20.0	---	**187**	**80-120%**	---	---	Q-56
Carbon tetrachloride	22.1	---	1.00	ug/L	1	20.0	---	110	80-120%	---	---	
Chlorobenzene	20.9	---	0.500	ug/L	1	20.0	---	105	80-120%	---	---	
Chloroethane	32.9	---	5.00	ug/L	1	20.0	---	**164**	**80-120%**	---	---	Q-56
Chloroform	23.3	---	1.00	ug/L	1	20.0	---	116	80-120%	---	---	
Chloromethane	18.8	---	5.00	ug/L	1	20.0	---	94	80-120%	---	---	
2-Chlorotoluene	19.6	---	1.00	ug/L	1	20.0	---	98	80-120%	---	---	
4-Chlorotoluene	19.8	---	1.00	ug/L	1	20.0	---	99	80-120%	---	---	
Dibromochloromethane	21.5	---	1.00	ug/L	1	20.0	---	107	80-120%	---	---	
1,2-Dibromo-3-chloropropane	18.0	---	5.00	ug/L	1	20.0	---	90	80-120%	---	---	
1,2-Dibromoethane (EDB)	21.0	---	0.500	ug/L	1	20.0	---	105	80-120%	---	---	
Dibromomethane	23.5	---	1.00	ug/L	1	20.0	---	117	80-120%	---	---	
1,2-Dichlorobenzene	20.0	---	0.500	ug/L	1	20.0	---	100	80-120%	---	---	

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GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0305 - EPA 5030C							**Water**					
LCS (24L0305-BS1)			Prepared: 12/09/24 10:00 Analyzed: 12/09/24 13:37									
1,3-Dichlorobenzene	21.0	---	0.500	ug/L	1	20.0	---	105	80-120%	---	---	
1,4-Dichlorobenzene	20.2	---	0.500	ug/L	1	20.0	---	101	80-120%	---	---	
Dichlorodifluoromethane	20.9	---	1.00	ug/L	1	20.0	---	105	80-120%	---	---	
1,1-Dichloroethane	24.3	---	0.400	ug/L	1	20.0	---	**121**	**80-120%**	---	---	Q-56
1,2-Dichloroethane (EDC)	24.4	---	0.400	ug/L	1	20.0	---	**122**	**80-120%**	---	---	Q-56
1,1-Dichloroethene	24.8	---	0.400	ug/L	1	20.0	---	**124**	**80-120%**	---	---	Q-56
cis-1,2-Dichloroethene	22.2	---	0.400	ug/L	1	20.0	---	111	80-120%	---	---	
trans-1,2-Dichloroethene	22.8	---	0.400	ug/L	1	20.0	---	114	80-120%	---	---	
1,2-Dichloropropane	22.5	---	0.500	ug/L	1	20.0	---	112	80-120%	---	---	
1,3-Dichloropropane	19.6	---	1.00	ug/L	1	20.0	---	98	80-120%	---	---	
2,2-Dichloropropane	24.2	---	1.00	ug/L	1	20.0	---	**121**	**80-120%**	---	---	Q-56
1,1-Dichloropropene	22.1	---	1.00	ug/L	1	20.0	---	110	80-120%	---	---	
cis-1,3-Dichloropropene	19.8	---	1.00	ug/L	1	20.0	---	99	80-120%	---	---	
trans-1,3-Dichloropropene	21.3	---	1.00	ug/L	1	20.0	---	106	80-120%	---	---	
Hexachlorobutadiene	18.2	---	5.00	ug/L	1	20.0	---	91	80-120%	---	---	
Methylene chloride	21.9	---	10.0	ug/L	1	20.0	---	110	80-120%	---	---	
1,1,1,2-Tetrachloroethane	19.9	---	0.400	ug/L	1	20.0	---	100	80-120%	---	---	
1,1,2,2-Tetrachloroethane	22.1	---	0.500	ug/L	1	20.0	---	111	80-120%	---	---	
Tetrachloroethene (PCE)	20.6	---	0.400	ug/L	1	20.0	---	103	80-120%	---	---	
1,2,3-Trichlorobenzene	16.9	---	2.00	ug/L	1	20.0	---	85	80-120%	---	---	
1,1,2-Trichloroethane	20.6	---	0.500	ug/L	1	20.0	---	103	80-120%	---	---	
1,2,4-Trichlorobenzene	15.9	---	2.00	ug/L	1	20.0	---	80	80-120%	---	---	
1,1,1-Trichloroethane	23.6	---	0.400	ug/L	1	20.0	---	118	80-120%	---	---	
Trichloroethene (TCE)	22.4	---	0.400	ug/L	1	20.0	---	112	80-120%	---	---	
Trichlorofluoromethane	39.4	---	2.00	ug/L	1	20.0	---	**197**	**80-120%**	---	---	Q-56
1,2,3-Trichloropropane	20.5	---	1.00	ug/L	1	20.0	---	103	80-120%	---	---	
Vinyl chloride	25.0	---	0.200	ug/L	1	20.0	---	**125**	**80-120%**	---	---	Q-56
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 107 %*		*Limits: 80-120 %*			*Dilution: 1x*				
Toluene-d8 (Surr)			*96 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*92 %*		*80-120 %*			*"*				
Duplicate (24L0305-DUP1)			Prepared: 12/09/24 10:00 Analyzed: 12/09/24 20:56									
QC Source Sample: MW-19 DUP (A4L0850-13RE1)												
Bromobenzene	ND	---	50.0	ug/L	100	---	ND	---	---	---	30%	

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Darrell Auvil, Client Services Manager

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0305 - EPA 5030C							**Water**					
Duplicate (24L0305-DUP1)			Prepared: 12/09/24 10:00 Analyzed: 12/09/24 20:56									
QC Source Sample: MW-19 DUP (A4L0850-13RE1)												
Bromochloromethane	ND	---	100	ug/L	100	---	ND	---	---	---	30%	
Bromodichloromethane	ND	---	100	ug/L	100	---	ND	---	---	---	30%	
Bromoform	ND	---	100	ug/L	100	---	ND	---	---	---	30%	
Bromomethane	ND	---	500	ug/L	100	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	---	100	ug/L	100	---	ND	---	---	---	30%	
Chlorobenzene	ND	---	50.0	ug/L	100	---	ND	---	---	---	30%	
Chloroethane	ND	---	500	ug/L	100	---	ND	---	---	---	30%	
Chloroform	ND	---	100	ug/L	100	---	ND	---	---	---	30%	
Chloromethane	ND	---	500	ug/L	100	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	---	100	ug/L	100	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	---	100	ug/L	100	---	ND	---	---	---	30%	
Dibromochloromethane	ND	---	100	ug/L	100	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	---	500	ug/L	100	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	---	50.0	ug/L	100	---	ND	---	---	---	30%	
Dibromomethane	ND	---	100	ug/L	100	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	---	50.0	ug/L	100	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	---	50.0	ug/L	100	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	---	50.0	ug/L	100	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	---	100	ug/L	100	---	ND	---	---	---	30%	
1,1-Dichloroethane	**53.0**	---	40.0	ug/L	100	---	55.0	---	---	4	30%	Q-54
1,2-Dichloroethane (EDC)	ND	---	40.0	ug/L	100	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	---	40.0	ug/L	100	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	**581**	---	40.0	ug/L	100	---	587	---	---	1	30%	
trans-1,2-Dichloroethene	ND	---	40.0	ug/L	100	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	---	50.0	ug/L	100	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	---	100	ug/L	100	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	---	100	ug/L	100	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	---	100	ug/L	100	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	---	100	ug/L	100	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	---	100	ug/L	100	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	---	500	ug/L	100	---	ND	---	---	---	30%	
Methylene chloride	ND	---	1000	ug/L	100	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	---	40.0	ug/L	100	---	ND	---	---	---	30%	

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GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0305 - EPA 5030C							**Water**					
Duplicate (24L0305-DUP1)			Prepared: 12/09/24 10:00 Analyzed: 12/09/24 20:56									
QC Source Sample: MW-19 DUP (A4L0850-13RE1)												
1,1,2,2-Tetrachloroethane	ND	---	50.0	ug/L	100	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	**2500**	---	40.0	ug/L	100	---	2510	---	---	0.5	30%	
1,2,3-Trichlorobenzene	ND	---	200	ug/L	100	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	---	50.0	ug/L	100	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	---	200	ug/L	100	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	---	40.0	ug/L	100	---	ND	---	---	---	30%	
Trichloroethene (TCE)	**661**	---	40.0	ug/L	100	---	674	---	---	2	30%	
Trichlorofluoromethane	ND	---	200	ug/L	100	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	---	100	ug/L	100	---	ND	---	---	---	30%	
Vinyl chloride	ND	---	20.0	ug/L	100	---	15.0	---	---	***	30%	Q-54o
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 111 %*		*Limits: 80-120 %*					*Dilution: 1x*		
Toluene-d8 (Surr)			*100 %*		*80-120 %*					*"*		
4-Bromofluorobenzene (Surr)			*97 %*		*80-120 %*					*"*		
Matrix Spike (24L0305-MS1)			Prepared: 12/09/24 10:00 Analyzed: 12/09/24 17:56									
QC Source Sample: Non-SDG (A4L0976-18)												
EPA 8260D												
Bromobenzene	17.8	---	0.500	ug/L	1	20.0	ND	89	80-120%	---	---	
Bromochloromethane	26.9	---	1.00	ug/L	1	20.0	ND	**135**	**78-123%**	---	---	Q-54a
Bromodichloromethane	24.4	---	1.00	ug/L	1	20.0	ND	122	79-125%	---	---	
Bromoform	21.7	---	1.00	ug/L	1	20.0	ND	108	66-130%	---	---	
Bromomethane	42.4	---	5.00	ug/L	1	20.0	ND	**212**	**53-141%**	---	---	Q-54p
Carbon tetrachloride	24.5	---	1.00	ug/L	1	20.0	ND	123	72-136%	---	---	
Chlorobenzene	21.0	---	0.500	ug/L	1	20.0	ND	105	80-120%	---	---	
Chloroethane	37.6	---	5.00	ug/L	1	20.0	ND	**188**	**60-138%**	---	---	Q-54n
Chloroform	24.5	---	1.00	ug/L	1	20.0	ND	122	79-124%	---	---	
Chloromethane	20.6	---	5.00	ug/L	1	20.0	ND	103	50-139%	---	---	
2-Chlorotoluene	18.5	---	1.00	ug/L	1	20.0	ND	93	79-122%	---	---	
4-Chlorotoluene	18.7	---	1.00	ug/L	1	20.0	ND	94	78-122%	---	---	
Dibromochloromethane	21.3	---	1.00	ug/L	1	20.0	ND	107	74-126%	---	---	
1,2-Dibromo-3-chloropropane	15.9	---	5.00	ug/L	1	20.0	ND	80	62-128%	---	---	
1,2-Dibromoethane (EDB)	20.6	---	0.500	ug/L	1	20.0	ND	103	77-121%	---	---	
Dibromomethane	24.2	---	1.00	ug/L	1	20.0	ND	121	79-123%	---	---	

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5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0305 - EPA 5030C							**Water**					
Matrix Spike (24L0305-MS1)			Prepared: 12/09/24 10:00		Analyzed: 12/09/24 17:56							
QC Source Sample: Non-SDG (A4L0976-18)												
1,2-Dichlorobenzene	18.8	---	0.500	ug/L	1	20.0	ND	94	80-120%	---	---	
1,3-Dichlorobenzene	20.2	---	0.500	ug/L	1	20.0	ND	101	80-120%	---	---	
1,4-Dichlorobenzene	19.6	---	0.500	ug/L	1	20.0	ND	98	79-120%	---	---	
Dichlorodifluoromethane	24.6	---	1.00	ug/L	1	20.0	ND	123	32-152%	---	---	
1,1-Dichloroethane	25.2	---	0.400	ug/L	1	20.0	ND	**126**	**77-125%**	---	---	Q-54
1,2-Dichloroethane (EDC)	24.8	---	0.400	ug/L	1	20.0	ND	124	73-128%	---	---	Q-54f
1,1-Dichloroethene	27.0	---	0.400	ug/L	1	20.0	ND	**135**	**71-131%**	---	---	Q-54l
cis-1,2-Dichloroethene	22.2	---	0.400	ug/L	1	20.0	ND	111	78-123%	---	---	
trans-1,2-Dichloroethene	23.9	---	0.400	ug/L	1	20.0	ND	120	75-124%	---	---	
1,2-Dichloropropane	23.0	---	0.500	ug/L	1	20.0	ND	115	78-122%	---	---	
1,3-Dichloropropane	19.3	---	1.00	ug/L	1	20.0	ND	97	80-120%	---	---	
2,2-Dichloropropane	24.2	---	1.00	ug/L	1	20.0	ND	121	60-139%	---	---	Q-54
1,1-Dichloropropene	23.6	---	1.00	ug/L	1	20.0	ND	118	79-125%	---	---	
cis-1,3-Dichloropropene	16.8	---	1.00	ug/L	1	20.0	ND	84	75-124%	---	---	
trans-1,3-Dichloropropene	20.7	---	1.00	ug/L	1	20.0	ND	104	73-127%	---	---	
Hexachlorobutadiene	14.8	---	5.00	ug/L	1	20.0	ND	74	66-134%	---	---	
Methylene chloride	22.8	---	10.0	ug/L	1	20.0	ND	114	74-124%	---	---	
1,1,1,2-Tetrachloroethane	20.2	---	0.400	ug/L	1	20.0	ND	101	78-124%	---	---	
1,1,2,2-Tetrachloroethane	22.0	---	0.500	ug/L	1	20.0	ND	110	71-121%	---	---	
Tetrachloroethene (PCE)	21.1	---	0.400	ug/L	1	20.0	ND	106	74-129%	---	---	
1,2,3-Trichlorobenzene	15.1	---	2.00	ug/L	1	20.0	ND	76	69-129%	---	---	
1,1,2-Trichloroethane	20.4	---	0.500	ug/L	1	20.0	ND	102	80-120%	---	---	
1,2,4-Trichlorobenzene	13.7	---	2.00	ug/L	1	20.0	ND	**68**	**69-130%**	---	---	Q-01
1,1,1-Trichloroethane	25.8	---	0.400	ug/L	1	20.0	ND	129	74-131%	---	---	
Trichloroethene (TCE)	22.6	---	0.400	ug/L	1	20.0	ND	113	79-123%	---	---	
Trichlorofluoromethane	47.1	---	2.00	ug/L	1	20.0	ND	**235**	**65-141%**	---	---	Q-54q
1,2,3-Trichloropropane	19.2	---	1.00	ug/L	1	20.0	ND	96	73-122%	---	---	
Vinyl chloride	27.8	---	0.200	ug/L	1	20.0	ND	**139**	**58-137%**	---	---	Q-54o
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 110 %*		*Limits: 80-120 %*				*Dilution: 1x*			
Toluene-d8 (Surr)			*94 %*		*80-120 %*				*"*			
4-Bromofluorobenzene (Surr)			*90 %*		*80-120 %*				*"*			

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5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0318 - EPA 5030C							**Water**					
Blank (24L0318-BLK1)			Prepared: 12/10/24 07:15 Analyzed: 12/10/24 10:13									
EPA 8260D												
Bromobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Bromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromodichloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromoform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromomethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Carbon tetrachloride	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Chloroethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Chloroform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chloromethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
2-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
4-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Dibromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dibromomethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Methylene chloride	ND	---	10.0	ug/L	1	---	---	---	---	---	---	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0318 - EPA 5030C							**Water**					
Blank (24L0318-BLK1)			Prepared: 12/10/24 07:15 Analyzed: 12/10/24 10:13									
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Vinyl chloride	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*109 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*101 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*102 %*		*80-120 %*			*"*				
LCS (24L0318-BS1)			Prepared: 12/10/24 07:15 Analyzed: 12/10/24 09:06									
EPA 8260D												
Bromobenzene	16.7	---	0.500	ug/L	1	20.0	---	84	80-120%	---	---	
Bromochloromethane	19.2	---	1.00	ug/L	1	20.0	---	96	80-120%	---	---	
Bromodichloromethane	20.5	---	1.00	ug/L	1	20.0	---	103	80-120%	---	---	
Bromoform	20.3	---	1.00	ug/L	1	20.0	---	102	80-120%	---	---	
Bromomethane	25.8	---	5.00	ug/L	1	20.0	---	**129**	**80-120%**	---	---	Q-56
Carbon tetrachloride	23.2	---	1.00	ug/L	1	20.0	---	116	80-120%	---	---	
Chlorobenzene	19.2	---	0.500	ug/L	1	20.0	---	96	80-120%	---	---	
Chloroethane	26.8	---	5.00	ug/L	1	20.0	---	**134**	**80-120%**	---	---	Q-56
Chloroform	19.8	---	1.00	ug/L	1	20.0	---	99	80-120%	---	---	
Chloromethane	19.6	---	5.00	ug/L	1	20.0	---	98	80-120%	---	---	
2-Chlorotoluene	17.0	---	1.00	ug/L	1	20.0	---	85	80-120%	---	---	
4-Chlorotoluene	18.6	---	1.00	ug/L	1	20.0	---	93	80-120%	---	---	
Dibromochloromethane	20.0	---	1.00	ug/L	1	20.0	---	100	80-120%	---	---	
1,2-Dibromo-3-chloropropane	17.9	---	5.00	ug/L	1	20.0	---	89	80-120%	---	---	
1,2-Dibromoethane (EDB)	19.8	---	0.500	ug/L	1	20.0	---	99	80-120%	---	---	
Dibromomethane	20.6	---	1.00	ug/L	1	20.0	---	103	80-120%	---	---	
1,2-Dichlorobenzene	18.8	---	0.500	ug/L	1	20.0	---	94	80-120%	---	---	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0318 - EPA 5030C							**Water**					
LCS (24L0318-BS1)			Prepared: 12/10/24 07:15		Analyzed: 12/10/24 09:06							
1,3-Dichlorobenzene	19.6	---	0.500	ug/L	1	20.0	---	98	80-120%	---	---	
1,4-Dichlorobenzene	18.7	---	0.500	ug/L	1	20.0	---	94	80-120%	---	---	
Dichlorodifluoromethane	21.3	---	1.00	ug/L	1	20.0	---	106	80-120%	---	---	
1,1-Dichloroethane	19.5	---	0.400	ug/L	1	20.0	---	98	80-120%	---	---	
1,2-Dichloroethane (EDC)	19.6	---	0.400	ug/L	1	20.0	---	98	80-120%	---	---	
1,1-Dichloroethene	23.7	---	0.400	ug/L	1	20.0	---	118	80-120%	---	---	
cis-1,2-Dichloroethene	17.0	---	0.400	ug/L	1	20.0	---	85	80-120%	---	---	
trans-1,2-Dichloroethene	18.3	---	0.400	ug/L	1	20.0	---	92	80-120%	---	---	
1,2-Dichloropropane	17.8	---	0.500	ug/L	1	20.0	---	89	80-120%	---	---	
1,3-Dichloropropane	18.0	---	1.00	ug/L	1	20.0	---	90	80-120%	---	---	
2,2-Dichloropropane	24.1	---	1.00	ug/L	1	20.0	---	120	80-120%	---	---	
1,1-Dichloropropene	20.7	---	1.00	ug/L	1	20.0	---	104	80-120%	---	---	
cis-1,3-Dichloropropene	18.4	---	1.00	ug/L	1	20.0	---	92	80-120%	---	---	
trans-1,3-Dichloropropene	20.6	---	1.00	ug/L	1	20.0	---	103	80-120%	---	---	
Hexachlorobutadiene	20.6	---	5.00	ug/L	1	20.0	---	103	80-120%	---	---	
Methylene chloride	20.5	---	10.0	ug/L	1	20.0	---	102	80-120%	---	---	
1,1,1,2-Tetrachloroethane	19.3	---	0.400	ug/L	1	20.0	---	97	80-120%	---	---	
1,1,2,2-Tetrachloroethane	20.8	---	0.500	ug/L	1	20.0	---	104	80-120%	---	---	
Tetrachloroethene (PCE)	20.2	---	0.400	ug/L	1	20.0	---	101	80-120%	---	---	
1,2,3-Trichlorobenzene	18.4	---	2.00	ug/L	1	20.0	---	92	80-120%	---	---	
1,1,2-Trichloroethane	19.1	---	0.500	ug/L	1	20.0	---	95	80-120%	---	---	
1,2,4-Trichlorobenzene	16.0	---	2.00	ug/L	1	20.0	---	80	80-120%	---	---	
1,1,1-Trichloroethane	21.0	---	0.400	ug/L	1	20.0	---	105	80-120%	---	---	
Trichloroethene (TCE)	17.6	---	0.400	ug/L	1	20.0	---	88	80-120%	---	---	
Trichlorofluoromethane	28.8	---	2.00	ug/L	1	20.0	---	**144**	**80-120%**	---	---	Q-56
1,2,3-Trichloropropane	17.6	---	1.00	ug/L	1	20.0	---	88	80-120%	---	---	
Vinyl chloride	19.4	---	0.200	ug/L	1	20.0	---	97	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 103 %*		*Limits: 80-120 %*			*Dilution: 1x*				
Toluene-d8 (Surr)			*95 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*93 %*		*80-120 %*			*"*				
Duplicate (24L0318-DUP1)			Prepared: 12/10/24 07:15		Analyzed: 12/10/24 18:57							
QC Source Sample: Non-SDG (A4L0895-13)												
Bromobenzene	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	

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GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0318 - EPA 5030C							**Water**					
Duplicate (24L0318-DUP1)			Prepared: 12/10/24 07:15		Analyzed: 12/10/24 18:57							
QC Source Sample: Non-SDG (A4L0895-13)												
Bromochloromethane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Bromodichloromethane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Bromoform	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Bromomethane	ND	---	5.00	ug/L	1	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Chlorobenzene	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
Chloroethane	ND	---	5.00	ug/L	1	---	ND	---	---	---	30%	
Chloroform	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Chloromethane	ND	---	5.00	ug/L	1	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Dibromochloromethane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
Dibromomethane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	---	0.280	---	---	***	30%	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	---	ND	---	---	---	30%	
1,1-Dichloroethene	**0.450**	---	0.400	ug/L	1	---	0.440	---	---	2	30%	
cis-1,2-Dichloroethene	**4.71**	---	0.400	ug/L	1	---	4.78	---	---	1	30%	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	0.280	---	---	***	30%	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	---	ND	---	---	---	30%	
Methylene chloride	ND	---	10.0	ug/L	1	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	---	ND	---	---	---	30%	

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5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
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QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0318 - EPA 5030C							**Water**					
Duplicate (24L0318-DUP1)			Prepared: 12/10/24 07:15 Analyzed: 12/10/24 18:57									
QC Source Sample: Non-SDG (A4L0895-13)												
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	**169**	---	0.400	ug/L	1	---	168	---	---	0.7	30%	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	**0.450**	---	0.400	ug/L	1	---	0.470	---	---	4	30%	
Trichloroethene (TCE)	**24.0**	---	0.400	ug/L	1	---	24.3	---	---	1	30%	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Vinyl chloride	ND	---	0.200	ug/L	1	---	ND	---	---	---	30%	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*118 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*104 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*102 %*		*80-120 %*			*"*				
Matrix Spike (24L0318-MS1)			Prepared: 12/10/24 07:15 Analyzed: 12/10/24 21:43									**T-02**
QC Source Sample: Non-SDG (A4L0966-01)												
EPA 8260D												
Bromobenzene	16.4	---	0.500	ug/L	1	20.0	ND	82	80-120%	---	---	
Bromochloromethane	19.5	---	1.00	ug/L	1	20.0	ND	97	78-123%	---	---	
Bromodichloromethane	20.5	---	1.00	ug/L	1	20.0	ND	103	79-125%	---	---	
Bromoform	20.2	---	1.00	ug/L	1	20.0	ND	101	66-130%	---	---	
Bromomethane	27.2	---	5.00	ug/L	1	20.0	ND	136	53-141%	---	---	Q-54s
Carbon tetrachloride	24.1	---	1.00	ug/L	1	20.0	ND	120	72-136%	---	---	
Chlorobenzene	19.0	---	0.500	ug/L	1	20.0	ND	95	80-120%	---	---	
Chloroethane	28.9	---	5.00	ug/L	1	20.0	ND	**145**	**60-138%**	---	---	Q-54d
Chloroform	20.2	---	1.00	ug/L	1	20.0	ND	101	79-124%	---	---	
Chloromethane	19.0	---	5.00	ug/L	1	20.0	ND	95	50-139%	---	---	
2-Chlorotoluene	16.8	---	1.00	ug/L	1	20.0	ND	84	79-122%	---	---	
4-Chlorotoluene	18.0	---	1.00	ug/L	1	20.0	ND	90	78-122%	---	---	
Dibromochloromethane	19.7	---	1.00	ug/L	1	20.0	ND	98	74-126%	---	---	
1,2-Dibromo-3-chloropropane	16.8	---	5.00	ug/L	1	20.0	ND	84	62-128%	---	---	
1,2-Dibromoethane (EDB)	19.3	---	0.500	ug/L	1	20.0	ND	96	77-121%	---	---	
Dibromomethane	21.1	---	1.00	ug/L	1	20.0	ND	105	79-123%	---	---	

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QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0318 - EPA 5030C							**Water**					
Matrix Spike (24L0318-MS1)			Prepared: 12/10/24 07:15		Analyzed: 12/10/24 21:43							**T-02**
QC Source Sample: Non-SDG (A4L0966-01)												
1,2-Dichlorobenzene	18.4	---	0.500	ug/L	1	20.0	ND	92	80-120%	---	---	
1,3-Dichlorobenzene	19.0	---	0.500	ug/L	1	20.0	ND	95	80-120%	---	---	
1,4-Dichlorobenzene	18.0	---	0.500	ug/L	1	20.0	ND	90	79-120%	---	---	
Dichlorodifluoromethane	21.9	---	1.00	ug/L	1	20.0	ND	110	32-152%	---	---	
1,1-Dichloroethane	19.4	---	0.400	ug/L	1	20.0	ND	97	77-125%	---	---	
1,2-Dichloroethane (EDC)	19.8	---	0.400	ug/L	1	20.0	ND	99	73-128%	---	---	
1,1-Dichloroethene	26.1	---	0.400	ug/L	1	20.0	ND	130	71-131%	---	---	
cis-1,2-Dichloroethene	17.2	---	0.400	ug/L	1	20.0	ND	86	78-123%	---	---	
trans-1,2-Dichloroethene	20.1	---	0.400	ug/L	1	20.0	ND	101	75-124%	---	---	
1,2-Dichloropropane	17.7	---	0.500	ug/L	1	20.0	ND	89	78-122%	---	---	
1,3-Dichloropropane	17.8	---	1.00	ug/L	1	20.0	ND	89	80-120%	---	---	
2,2-Dichloropropane	18.4	---	1.00	ug/L	1	20.0	ND	92	60-139%	---	---	
1,1-Dichloropropene	21.0	---	1.00	ug/L	1	20.0	ND	105	79-125%	---	---	
cis-1,3-Dichloropropene	14.3	---	1.00	ug/L	1	20.0	ND	**72**	**75-124%**	---	---	Q-01
trans-1,3-Dichloropropene	19.5	---	1.00	ug/L	1	20.0	ND	98	73-127%	---	---	
Hexachlorobutadiene	17.5	---	5.00	ug/L	1	20.0	ND	88	66-134%	---	---	
Methylene chloride	21.3	---	10.0	ug/L	1	20.0	ND	107	74-124%	---	---	
1,1,1,2-Tetrachloroethane	19.0	---	0.400	ug/L	1	20.0	ND	95	78-124%	---	---	
1,1,2,2-Tetrachloroethane	21.9	---	0.500	ug/L	1	20.0	ND	109	71-121%	---	---	
Tetrachloroethene (PCE)	21.4	---	0.400	ug/L	1	20.0	ND	106	74-129%	---	---	
1,2,3-Trichlorobenzene	17.2	---	2.00	ug/L	1	20.0	ND	86	69-129%	---	---	
1,1,2-Trichloroethane	19.4	---	0.500	ug/L	1	20.0	ND	97	80-120%	---	---	
1,2,4-Trichlorobenzene	14.5	---	2.00	ug/L	1	20.0	ND	72	69-130%	---	---	
1,1,1-Trichloroethane	21.3	---	0.400	ug/L	1	20.0	ND	106	74-131%	---	---	
Trichloroethene (TCE)	17.4	---	0.400	ug/L	1	20.0	ND	87	79-123%	---	---	
Trichlorofluoromethane	30.3	---	2.00	ug/L	1	20.0	ND	**152**	**65-141%**	---	---	Q-54h
1,2,3-Trichloropropane	17.5	---	1.00	ug/L	1	20.0	ND	88	73-122%	---	---	
Vinyl chloride	20.0	---	0.200	ug/L	1	20.0	ND	100	58-137%	---	---	

Surr: 1,4-Difluorobenzene (Surr)	*Recovery: 102 %*	*Limits: 80-120 %*	*Dilution: 1x*
Toluene-d8 (Surr)	*93 %*	*80-120 %*	*"*
4-Bromofluorobenzene (Surr)	*91 %*	*80-120 %*	*"*

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Darrell Auvil, Client Services Manager

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503-718-2323
ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0411 - EPA 5030C							**Water**					
Blank (24L0411-BLK1)			Prepared: 12/11/24 13:12 Analyzed: 12/11/24 18:09									
EPA 8260D												
Bromobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Bromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromodichloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromoform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromomethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Carbon tetrachloride	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Chloroethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Chloroform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chloromethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
2-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
4-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Dibromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dibromomethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Methylene chloride	ND	---	10.0	ug/L	1	---	---	---	---	---	---	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0411 - EPA 5030C							**Water**					
Blank (24L0411-BLK1)			Prepared: 12/11/24 13:12 Analyzed: 12/11/24 18:09									
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Vinyl chloride	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*109 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*100 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*103 %*		*80-120 %*			*"*				
LCS (24L0411-BS1)			Prepared: 12/11/24 13:12 Analyzed: 12/11/24 17:14									
EPA 8260D												
Bromobenzene	16.7	---	0.500	ug/L	1	20.0	---	83	80-120%	---	---	
Bromochloromethane	19.0	---	1.00	ug/L	1	20.0	---	95	80-120%	---	---	
Bromodichloromethane	20.4	---	1.00	ug/L	1	20.0	---	102	80-120%	---	---	
Bromoform	20.6	---	1.00	ug/L	1	20.0	---	103	80-120%	---	---	
Bromomethane	26.3	---	5.00	ug/L	1	20.0	---	**131**	**80-120%**	---	---	Q-56
Carbon tetrachloride	24.5	---	1.00	ug/L	1	20.0	---	**122**	**80-120%**	---	---	Q-56
Chlorobenzene	18.9	---	0.500	ug/L	1	20.0	---	94	80-120%	---	---	
Chloroethane	26.4	---	5.00	ug/L	1	20.0	---	**132**	**80-120%**	---	---	Q-56
Chloroform	19.7	---	1.00	ug/L	1	20.0	---	98	80-120%	---	---	
Chloromethane	18.7	---	5.00	ug/L	1	20.0	---	94	80-120%	---	---	
2-Chlorotoluene	17.2	---	1.00	ug/L	1	20.0	---	86	80-120%	---	---	
4-Chlorotoluene	18.1	---	1.00	ug/L	1	20.0	---	90	80-120%	---	---	
Dibromochloromethane	19.8	---	1.00	ug/L	1	20.0	---	99	80-120%	---	---	
1,2-Dibromo-3-chloropropane	17.4	---	5.00	ug/L	1	20.0	---	87	80-120%	---	---	
1,2-Dibromoethane (EDB)	19.6	---	0.500	ug/L	1	20.0	---	98	80-120%	---	---	
Dibromomethane	20.3	---	1.00	ug/L	1	20.0	---	102	80-120%	---	---	
1,2-Dichlorobenzene	18.7	---	0.500	ug/L	1	20.0	---	93	80-120%	---	---	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0411 - EPA 5030C							**Water**					
LCS (24L0411-BS1)			Prepared: 12/11/24 13:12 Analyzed: 12/11/24 17:14									
1,3-Dichlorobenzene	19.5	---	0.500	ug/L	1	20.0	---	97	80-120%	---	---	
1,4-Dichlorobenzene	18.5	---	0.500	ug/L	1	20.0	---	92	80-120%	---	---	
Dichlorodifluoromethane	23.6	---	1.00	ug/L	1	20.0	---	118	80-120%	---	---	
1,1-Dichloroethane	19.2	---	0.400	ug/L	1	20.0	---	96	80-120%	---	---	
1,2-Dichloroethane (EDC)	19.9	---	0.400	ug/L	1	20.0	---	99	80-120%	---	---	
1,1-Dichloroethene	25.5	---	0.400	ug/L	1	20.0	---	**128**	**80-120%**	---	---	Q-56
cis-1,2-Dichloroethene	16.8	---	0.400	ug/L	1	20.0	---	84	80-120%	---	---	
trans-1,2-Dichloroethene	18.2	---	0.400	ug/L	1	20.0	---	91	80-120%	---	---	
1,2-Dichloropropane	17.5	---	0.500	ug/L	1	20.0	---	87	80-120%	---	---	
1,3-Dichloropropane	17.6	---	1.00	ug/L	1	20.0	---	88	80-120%	---	---	
2,2-Dichloropropane	23.3	---	1.00	ug/L	1	20.0	---	116	80-120%	---	---	
1,1-Dichloropropene	21.1	---	1.00	ug/L	1	20.0	---	106	80-120%	---	---	
cis-1,3-Dichloropropene	17.7	---	1.00	ug/L	1	20.0	---	88	80-120%	---	---	
trans-1,3-Dichloropropene	19.8	---	1.00	ug/L	1	20.0	---	99	80-120%	---	---	
Hexachlorobutadiene	22.4	---	5.00	ug/L	1	20.0	---	112	80-120%	---	---	
Methylene chloride	20.3	---	10.0	ug/L	1	20.0	---	102	80-120%	---	---	
1,1,1,2-Tetrachloroethane	18.9	---	0.400	ug/L	1	20.0	---	95	80-120%	---	---	
1,1,2,2-Tetrachloroethane	20.3	---	0.500	ug/L	1	20.0	---	102	80-120%	---	---	
Tetrachloroethene (PCE)	20.6	---	0.400	ug/L	1	20.0	---	103	80-120%	---	---	
1,2,3-Trichlorobenzene	18.1	---	2.00	ug/L	1	20.0	---	91	80-120%	---	---	
1,1,2-Trichloroethane	19.1	---	0.500	ug/L	1	20.0	---	95	80-120%	---	---	
1,2,4-Trichlorobenzene	15.6	---	2.00	ug/L	1	20.0	---	**78**	**80-120%**	---	---	Q-55
1,1,1-Trichloroethane	21.4	---	0.400	ug/L	1	20.0	---	107	80-120%	---	---	
Trichloroethene (TCE)	17.6	---	0.400	ug/L	1	20.0	---	88	80-120%	---	---	
Trichlorofluoromethane	32.1	---	2.00	ug/L	1	20.0	---	**161**	**80-120%**	---	---	Q-56
1,2,3-Trichloropropane	17.6	---	1.00	ug/L	1	20.0	---	88	80-120%	---	---	
Vinyl chloride	19.6	---	0.200	ug/L	1	20.0	---	98	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 103 %*		*Limits: 80-120 %*			*Dilution: 1x*				
Toluene-d8 (Surr)			*93 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*93 %*		*80-120 %*			*"*				
Duplicate (24L0411-DUP1)			Prepared: 12/11/24 13:12 Analyzed: 12/12/24 03:49									
QC Source Sample: Non-SDG (A4L0987-03)												
Bromobenzene	ND	---	1000	ug/L	2000	---	ND	---	---	---	30%	

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GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0411 - EPA 5030C							**Water**					
Duplicate (24L0411-DUP1)			Prepared: 12/11/24 13:12		Analyzed: 12/12/24 03:49							
QC Source Sample: Non-SDG (A4L0987-03)												
Bromochloromethane	ND	---	2000	ug/L	2000	---	ND	---	---	---	30%	
Bromodichloromethane	ND	---	2000	ug/L	2000	---	ND	---	---	---	30%	
Bromoform	ND	---	2000	ug/L	2000	---	ND	---	---	---	30%	
Bromomethane	ND	---	10000	ug/L	2000	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	---	2000	ug/L	2000	---	ND	---	---	---	30%	
Chlorobenzene	ND	---	1000	ug/L	2000	---	ND	---	---	---	30%	
Chloroethane	ND	---	10000	ug/L	2000	---	ND	---	---	---	30%	
Chloroform	ND	---	2000	ug/L	2000	---	ND	---	---	---	30%	
Chloromethane	ND	---	10000	ug/L	2000	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	---	2000	ug/L	2000	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	---	2000	ug/L	2000	---	ND	---	---	---	30%	
Dibromochloromethane	ND	---	2000	ug/L	2000	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	---	10000	ug/L	2000	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	---	1000	ug/L	2000	---	ND	---	---	---	30%	
Dibromomethane	ND	---	2000	ug/L	2000	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	---	1000	ug/L	2000	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	---	1000	ug/L	2000	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	---	1000	ug/L	2000	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	---	2000	ug/L	2000	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	---	800	ug/L	2000	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	---	800	ug/L	2000	---	ND	---	---	---	30%	
1,1-Dichloroethene	**2440**	---	800	ug/L	2000	---	2360	---	---	3	30%	Q-54r
cis-1,2-Dichloroethene	**450000**	---	800	ug/L	2000	---	435000	---	---	3	30%	E
trans-1,2-Dichloroethene	ND	---	800	ug/L	2000	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	---	1000	ug/L	2000	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	---	2000	ug/L	2000	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	---	2000	ug/L	2000	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	---	2000	ug/L	2000	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	---	2000	ug/L	2000	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	---	2000	ug/L	2000	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	---	10000	ug/L	2000	---	ND	---	---	---	30%	
Methylene chloride	ND	---	20000	ug/L	2000	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	---	800	ug/L	2000	---	ND	---	---	---	30%	

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5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0411 - EPA 5030C							**Water**					
Duplicate (24L0411-DUP1)			Prepared: 12/11/24 13:12 Analyzed: 12/12/24 03:49									
QC Source Sample: Non-SDG (A4L0987-03)												
1,1,2,2-Tetrachloroethane	ND	---	1000	ug/L	2000	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	---	800	ug/L	2000	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	---	4000	ug/L	2000	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	---	1000	ug/L	2000	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	---	4000	ug/L	2000	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	---	800	ug/L	2000	---	ND	---	---	---	30%	
Trichloroethene (TCE)	**7220**	---	800	ug/L	2000	---	7100	---	---	2	30%	
Trichlorofluoromethane	ND	---	4000	ug/L	2000	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	---	2000	ug/L	2000	---	ND	---	---	---	30%	
Vinyl chloride	**2920**	---	400	ug/L	2000	---	3260	---	---	11	30%	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery: 106 %*	*Limits: 80-120 %*		*Dilution: 1x*							
Toluene-d8 (Surr)			*99 %*	*80-120 %*		*"*						
4-Bromofluorobenzene (Surr)			*105 %*	*80-120 %*		*"*						
Matrix Spike (24L0411-MS1)			Prepared: 12/11/24 13:12 Analyzed: 12/12/24 05:12									
QC Source Sample: Non-SDG (A4L0966-11)												
EPA 8260D												
Bromobenzene	16.9	---	0.500	ug/L	1	20.0	ND	85	80-120%	---	---	
Bromochloromethane	19.1	---	1.00	ug/L	1	20.0	ND	96	78-123%	---	---	
Bromodichloromethane	21.3	---	1.00	ug/L	1	20.0	ND	107	79-125%	---	---	
Bromoform	22.1	---	1.00	ug/L	1	20.0	ND	110	66-130%	---	---	
Bromomethane	26.8	---	5.00	ug/L	1	20.0	ND	134	53-141%	---	---	Q-54b
Carbon tetrachloride	25.4	---	1.00	ug/L	1	20.0	ND	127	72-136%	---	---	Q-54f
Chlorobenzene	19.9	---	0.500	ug/L	1	20.0	ND	99	80-120%	---	---	
Chloroethane	30.2	---	5.00	ug/L	1	20.0	ND	**151**	**60-138%**	---	---	Q-54c
Chloroform	20.6	---	1.00	ug/L	1	20.0	ND	103	79-124%	---	---	
Chloromethane	18.0	---	5.00	ug/L	1	20.0	ND	90	50-139%	---	---	
2-Chlorotoluene	17.5	---	1.00	ug/L	1	20.0	ND	88	79-122%	---	---	
4-Chlorotoluene	18.2	---	1.00	ug/L	1	20.0	ND	91	78-122%	---	---	
Dibromochloromethane	21.0	---	1.00	ug/L	1	20.0	ND	105	74-126%	---	---	
1,2-Dibromo-3-chloropropane	17.9	---	5.00	ug/L	1	20.0	ND	89	62-128%	---	---	
1,2-Dibromoethane (EDB)	20.6	---	0.500	ug/L	1	20.0	ND	103	77-121%	---	---	
Dibromomethane	21.2	---	1.00	ug/L	1	20.0	ND	106	79-123%	---	---	

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Darrell Auvil, Client Services Manager

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503-718-2323
ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0411 - EPA 5030C							**Water**					
Matrix Spike (24L0411-MS1)			Prepared: 12/11/24 13:12		Analyzed: 12/12/24 05:12							
QC Source Sample: Non-SDG (A4L0966-11)												
1,2-Dichlorobenzene	19.2	---	0.500	ug/L	1	20.0	ND	96	80-120%	---	---	
1,3-Dichlorobenzene	19.9	---	0.500	ug/L	1	20.0	ND	99	80-120%	---	---	
1,4-Dichlorobenzene	18.7	---	0.500	ug/L	1	20.0	ND	94	79-120%	---	---	
Dichlorodifluoromethane	22.6	---	1.00	ug/L	1	20.0	ND	113	32-152%	---	---	
1,1-Dichloroethane	19.4	---	0.400	ug/L	1	20.0	ND	97	77-125%	---	---	
1,2-Dichloroethane (EDC)	20.7	---	0.400	ug/L	1	20.0	ND	104	73-128%	---	---	
1,1-Dichloroethene	26.8	---	0.400	ug/L	1	20.0	ND	**134**	**71-131%**	---	---	Q-54r
cis-1,2-Dichloroethene	18.1	---	0.400	ug/L	1	20.0	0.830	87	78-123%	---	---	
trans-1,2-Dichloroethene	19.4	---	0.400	ug/L	1	20.0	ND	97	75-124%	---	---	
1,2-Dichloropropane	17.7	---	0.500	ug/L	1	20.0	ND	88	78-122%	---	---	
1,3-Dichloropropane	18.3	---	1.00	ug/L	1	20.0	ND	92	80-120%	---	---	
2,2-Dichloropropane	17.6	---	1.00	ug/L	1	20.0	ND	88	60-139%	---	---	
1,1-Dichloropropene	21.4	---	1.00	ug/L	1	20.0	ND	107	79-125%	---	---	
cis-1,3-Dichloropropene	15.7	---	1.00	ug/L	1	20.0	ND	79	75-124%	---	---	
trans-1,3-Dichloropropene	20.1	---	1.00	ug/L	1	20.0	ND	100	73-127%	---	---	
Hexachlorobutadiene	19.3	---	5.00	ug/L	1	20.0	ND	96	66-134%	---	---	
Methylene chloride	21.2	---	10.0	ug/L	1	20.0	ND	106	74-124%	---	---	
1,1,1,2-Tetrachloroethane	20.4	---	0.400	ug/L	1	20.0	ND	102	78-124%	---	---	
1,1,2,2-Tetrachloroethane	21.2	---	0.500	ug/L	1	20.0	ND	106	71-121%	---	---	
Tetrachloroethene (PCE)	22.1	---	0.400	ug/L	1	20.0	0.760	107	74-129%	---	---	
1,2,3-Trichlorobenzene	18.0	---	2.00	ug/L	1	20.0	ND	90	69-129%	---	---	
1,1,2-Trichloroethane	20.3	---	0.500	ug/L	1	20.0	ND	102	80-120%	---	---	
1,2,4-Trichlorobenzene	15.1	---	2.00	ug/L	1	20.0	ND	75	69-130%	---	---	Q-54t
1,1,1-Trichloroethane	22.3	---	0.400	ug/L	1	20.0	ND	111	74-131%	---	---	
Trichloroethene (TCE)	18.2	---	0.400	ug/L	1	20.0	0.650	88	79-123%	---	---	
Trichlorofluoromethane	32.6	---	2.00	ug/L	1	20.0	ND	**163**	**65-141%**	---	---	Q-54m
1,2,3-Trichloropropane	17.6	---	1.00	ug/L	1	20.0	ND	88	73-122%	---	---	
Vinyl chloride	19.5	---	0.200	ug/L	1	20.0	ND	98	58-137%	---	---	

Surr: 1,4-Difluorobenzene (Surr)	*Recovery: 100 %*	*Limits: 80-120 %*	*Dilution: 1x*
Toluene-d8 (Surr)	*93 %*	*80-120 %*	*"*
4-Bromofluorobenzene (Surr)	*91 %*	*80-120 %*	*"*

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503-718-2323
ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0429 - EPA 5030C							**Water**					
Blank (24L0429-BLK1)			Prepared: 12/12/24 07:59 Analyzed: 12/12/24 10:43									
EPA 8260D												
Bromobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Bromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromodichloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromoform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromomethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Carbon tetrachloride	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Chloroethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Chloroform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chloromethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
2-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
4-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Dibromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dibromomethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Methylene chloride	ND	---	10.0	ug/L	1	---	---	---	---	---	---	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0429 - EPA 5030C								**Water**				
Blank (24L0429-BLK1)			Prepared: 12/12/24 07:59 Analyzed: 12/12/24 10:43									
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Vinyl chloride	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*107 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*99 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*100 %*		*80-120 %*			*"*				
LCS (24L0429-BS1)			Prepared: 12/12/24 07:59 Analyzed: 12/12/24 09:41									
EPA 8260D												
Bromobenzene	16.6	---	0.500	ug/L	1	20.0	---	83	80-120%	---	---	
Bromochloromethane	18.7	---	1.00	ug/L	1	20.0	---	93	80-120%	---	---	
Bromodichloromethane	20.6	---	1.00	ug/L	1	20.0	---	103	80-120%	---	---	
Bromoform	21.5	---	1.00	ug/L	1	20.0	---	107	80-120%	---	---	
Bromomethane	26.8	---	5.00	ug/L	1	20.0	---	**134**	**80-120%**	---	---	Q-56
Carbon tetrachloride	24.4	---	1.00	ug/L	1	20.0	---	**122**	**80-120%**	---	---	Q-56
Chlorobenzene	19.3	---	0.500	ug/L	1	20.0	---	96	80-120%	---	---	
Chloroethane	26.8	---	5.00	ug/L	1	20.0	---	**134**	**80-120%**	---	---	Q-56
Chloroform	19.8	---	1.00	ug/L	1	20.0	---	99	80-120%	---	---	
Chloromethane	18.1	---	5.00	ug/L	1	20.0	---	90	80-120%	---	---	
2-Chlorotoluene	17.0	---	1.00	ug/L	1	20.0	---	85	80-120%	---	---	
4-Chlorotoluene	18.0	---	1.00	ug/L	1	20.0	---	90	80-120%	---	---	
Dibromochloromethane	20.8	---	1.00	ug/L	1	20.0	---	104	80-120%	---	---	
1,2-Dibromo-3-chloropropane	18.2	---	5.00	ug/L	1	20.0	---	91	80-120%	---	---	
1,2-Dibromoethane (EDB)	20.1	---	0.500	ug/L	1	20.0	---	100	80-120%	---	---	
Dibromomethane	20.9	---	1.00	ug/L	1	20.0	---	105	80-120%	---	---	
1,2-Dichlorobenzene	19.1	---	0.500	ug/L	1	20.0	---	96	80-120%	---	---	

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5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0429 - EPA 5030C							**Water**					
LCS (24L0429-BS1)			Prepared: 12/12/24 07:59 Analyzed: 12/12/24 09:41									
1,3-Dichlorobenzene	19.6	---	0.500	ug/L	1	20.0	---	98	80-120%	---	---	
1,4-Dichlorobenzene	18.6	---	0.500	ug/L	1	20.0	---	93	80-120%	---	---	
Dichlorodifluoromethane	22.4	---	1.00	ug/L	1	20.0	---	112	80-120%	---	---	
1,1-Dichloroethane	18.4	---	0.400	ug/L	1	20.0	---	92	80-120%	---	---	
1,2-Dichloroethane (EDC)	20.1	---	0.400	ug/L	1	20.0	---	100	80-120%	---	---	
1,1-Dichloroethene	24.5	---	0.400	ug/L	1	20.0	---	**122**	**80-120%**	---	---	Q-56
cis-1,2-Dichloroethene	16.5	---	0.400	ug/L	1	20.0	---	83	80-120%	---	---	
trans-1,2-Dichloroethene	17.3	---	0.400	ug/L	1	20.0	---	86	80-120%	---	---	
1,2-Dichloropropane	17.1	---	0.500	ug/L	1	20.0	---	86	80-120%	---	---	
1,3-Dichloropropane	17.6	---	1.00	ug/L	1	20.0	---	88	80-120%	---	---	
2,2-Dichloropropane	24.0	---	1.00	ug/L	1	20.0	---	120	80-120%	---	---	
1,1-Dichloropropene	20.0	---	1.00	ug/L	1	20.0	---	100	80-120%	---	---	
cis-1,3-Dichloropropene	17.6	---	1.00	ug/L	1	20.0	---	88	80-120%	---	---	
trans-1,3-Dichloropropene	20.6	---	1.00	ug/L	1	20.0	---	103	80-120%	---	---	
Hexachlorobutadiene	21.2	---	5.00	ug/L	1	20.0	---	106	80-120%	---	---	
Methylene chloride	20.4	---	10.0	ug/L	1	20.0	---	102	80-120%	---	---	
1,1,1,2-Tetrachloroethane	19.7	---	0.400	ug/L	1	20.0	---	98	80-120%	---	---	
1,1,2,2-Tetrachloroethane	20.2	---	0.500	ug/L	1	20.0	---	101	80-120%	---	---	
Tetrachloroethene (PCE)	20.6	---	0.400	ug/L	1	20.0	---	103	80-120%	---	---	
1,2,3-Trichlorobenzene	19.1	---	2.00	ug/L	1	20.0	---	95	80-120%	---	---	
1,1,2-Trichloroethane	19.4	---	0.500	ug/L	1	20.0	---	97	80-120%	---	---	
1,2,4-Trichlorobenzene	16.0	---	2.00	ug/L	1	20.0	---	80	80-120%	---	---	
1,1,1-Trichloroethane	21.3	---	0.400	ug/L	1	20.0	---	106	80-120%	---	---	
Trichloroethene (TCE)	17.3	---	0.400	ug/L	1	20.0	---	87	80-120%	---	---	
Trichlorofluoromethane	31.1	---	2.00	ug/L	1	20.0	---	**155**	**80-120%**	---	---	Q-56
1,2,3-Trichloropropane	18.3	---	1.00	ug/L	1	20.0	---	92	80-120%	---	---	
Vinyl chloride	18.3	---	0.200	ug/L	1	20.0	---	91	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 101 %*		*Limits: 80-120 %*			*Dilution: 1x*				
Toluene-d8 (Surr)			*93 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*93 %*		*80-120 %*			*"*				
Duplicate (24L0429-DUP1)			Prepared: 12/12/24 07:59 Analyzed: 12/12/24 21:24									
QC Source Sample: Non-SDG (A4L0987-13)												
Bromobenzene	ND	---	500	ug/L	1000	---	ND	---	---	---	30%	

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5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0429 - EPA 5030C							**Water**					
Duplicate (24L0429-DUP1)			Prepared: 12/12/24 07:59 Analyzed: 12/12/24 21:24									
QC Source Sample: Non-SDG (A4L0987-13)												
Bromochloromethane	ND	---	1000	ug/L	1000	---	ND	---	---	---	30%	
Bromodichloromethane	ND	---	1000	ug/L	1000	---	ND	---	---	---	30%	
Bromoform	ND	---	1000	ug/L	1000	---	ND	---	---	---	30%	
Bromomethane	ND	---	5000	ug/L	1000	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	---	1000	ug/L	1000	---	ND	---	---	---	30%	
Chlorobenzene	ND	---	500	ug/L	1000	---	ND	---	---	---	30%	
Chloroethane	ND	---	5000	ug/L	1000	---	ND	---	---	---	30%	
Chloroform	ND	---	1000	ug/L	1000	---	ND	---	---	---	30%	
Chloromethane	ND	---	5000	ug/L	1000	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	---	1000	ug/L	1000	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	---	1000	ug/L	1000	---	ND	---	---	---	30%	
Dibromochloromethane	ND	---	1000	ug/L	1000	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	---	5000	ug/L	1000	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	---	500	ug/L	1000	---	ND	---	---	---	30%	
Dibromomethane	ND	---	1000	ug/L	1000	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	---	500	ug/L	1000	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	---	500	ug/L	1000	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	---	500	ug/L	1000	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	---	1000	ug/L	1000	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	---	400	ug/L	1000	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	---	400	ug/L	1000	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	---	400	ug/L	1000	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	---	400	ug/L	1000	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	---	400	ug/L	1000	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	---	500	ug/L	1000	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	---	1000	ug/L	1000	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	---	1000	ug/L	1000	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	---	1000	ug/L	1000	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	---	1000	ug/L	1000	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	---	1000	ug/L	1000	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	---	5000	ug/L	1000	---	ND	---	---	---	30%	
Methylene chloride	ND	---	10000	ug/L	1000	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	---	400	ug/L	1000	---	ND	---	---	---	30%	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0429 - EPA 5030C							**Water**					
Duplicate (24L0429-DUP1)			Prepared: 12/12/24 07:59 Analyzed: 12/12/24 21:24									
QC Source Sample: Non-SDG (A4L0987-13)												
1,1,2,2-Tetrachloroethane	ND	---	500	ug/L	1000	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	---	400	ug/L	1000	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	---	2000	ug/L	1000	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	---	500	ug/L	1000	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	---	2000	ug/L	1000	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	---	400	ug/L	1000	---	ND	---	---	---	30%	
Trichloroethene (TCE)	ND	---	400	ug/L	1000	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	---	2000	ug/L	1000	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	---	1000	ug/L	1000	---	ND	---	---	---	30%	
Vinyl chloride	**1050**	---	200	ug/L	1000	---	1250	---	---	17	30%	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*110 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*100 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*105 %*		*80-120 %*			*"*				
Matrix Spike (24L0429-MS1)			Prepared: 12/12/24 07:59 Analyzed: 12/12/24 21:51									**T-02**
QC Source Sample: Non-SDG (A4L1002-01)												
EPA 8260D												
Bromobenzene	16.0	---	0.500	ug/L	1	20.0	ND	80	80-120%	---	---	
Bromochloromethane	17.7	---	1.00	ug/L	1	20.0	ND	89	78-123%	---	---	
Bromodichloromethane	20.0	---	1.00	ug/L	1	20.0	ND	100	79-125%	---	---	
Bromoform	21.2	---	1.00	ug/L	1	20.0	ND	106	66-130%	---	---	
Bromomethane	24.4	---	5.00	ug/L	1	20.0	ND	122	53-141%	---	---	Q-54d
Carbon tetrachloride	24.5	---	1.00	ug/L	1	20.0	ND	122	72-136%	---	---	Q-54f
Chlorobenzene	19.0	---	0.500	ug/L	1	20.0	ND	95	80-120%	---	---	
Chloroethane	29.4	---	5.00	ug/L	1	20.0	ND	**147**	**60-138%**	---	---	Q-54d
Chloroform	19.3	---	1.00	ug/L	1	20.0	ND	96	79-124%	---	---	
Chloromethane	16.8	---	5.00	ug/L	1	20.0	ND	84	50-139%	---	---	
2-Chlorotoluene	16.6	---	1.00	ug/L	1	20.0	ND	83	79-122%	---	---	
4-Chlorotoluene	17.3	---	1.00	ug/L	1	20.0	ND	87	78-122%	---	---	
Dibromochloromethane	20.1	---	1.00	ug/L	1	20.0	ND	100	74-126%	---	---	
1,2-Dibromo-3-chloropropane	16.9	---	5.00	ug/L	1	20.0	ND	84	62-128%	---	---	
1,2-Dibromoethane (EDB)	19.7	---	0.500	ug/L	1	20.0	ND	99	77-121%	---	---	
Dibromomethane	20.0	---	1.00	ug/L	1	20.0	ND	100	79-123%	---	---	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0429 - EPA 5030C							**Water**					
Matrix Spike (24L0429-MS1)			Prepared: 12/12/24 07:59		Analyzed: 12/12/24 21:51							**T-02**
QC Source Sample: Non-SDG (A4L1002-01)												
1,2-Dichlorobenzene	18.2	---	0.500	ug/L	1	20.0	ND	91	80-120%	---	---	
1,3-Dichlorobenzene	18.8	---	0.500	ug/L	1	20.0	ND	94	80-120%	---	---	
1,4-Dichlorobenzene	18.0	---	0.500	ug/L	1	20.0	ND	90	79-120%	---	---	
Dichlorodifluoromethane	23.2	---	1.00	ug/L	1	20.0	ND	116	32-152%	---	---	
1,1-Dichloroethane	18.3	---	0.400	ug/L	1	20.0	ND	92	77-125%	---	---	
1,2-Dichloroethane (EDC)	19.6	---	0.400	ug/L	1	20.0	ND	98	73-128%	---	---	
1,1-Dichloroethene	26.0	---	0.400	ug/L	1	20.0	ND	130	71-131%	---	---	Q-54f
cis-1,2-Dichloroethene	15.6	---	0.400	ug/L	1	20.0	ND	78	78-123%	---	---	
trans-1,2-Dichloroethene	18.2	---	0.400	ug/L	1	20.0	ND	91	75-124%	---	---	
1,2-Dichloropropane	15.9	---	0.500	ug/L	1	20.0	ND	79	78-122%	---	---	
1,3-Dichloropropane	17.2	---	1.00	ug/L	1	20.0	ND	86	80-120%	---	---	
2,2-Dichloropropane	19.4	---	1.00	ug/L	1	20.0	ND	97	60-139%	---	---	
1,1-Dichloropropene	19.6	---	1.00	ug/L	1	20.0	ND	98	79-125%	---	---	
cis-1,3-Dichloropropene	13.8	---	1.00	ug/L	1	20.0	ND	**69**	**75-124%**	---	---	Q-01
trans-1,3-Dichloropropene	19.0	---	1.00	ug/L	1	20.0	ND	95	73-127%	---	---	
Hexachlorobutadiene	18.2	---	5.00	ug/L	1	20.0	ND	91	66-134%	---	---	
Methylene chloride	19.8	---	10.0	ug/L	1	20.0	ND	99	74-124%	---	---	
1,1,1,2-Tetrachloroethane	19.3	---	0.400	ug/L	1	20.0	ND	97	78-124%	---	---	
1,1,2,2-Tetrachloroethane	20.6	---	0.500	ug/L	1	20.0	ND	103	71-121%	---	---	
Tetrachloroethene (PCE)	20.7	---	0.400	ug/L	1	20.0	ND	104	74-129%	---	---	
1,2,3-Trichlorobenzene	17.2	---	2.00	ug/L	1	20.0	ND	86	69-129%	---	---	
1,1,2-Trichloroethane	18.8	---	0.500	ug/L	1	20.0	ND	94	80-120%	---	---	
1,2,4-Trichlorobenzene	14.2	---	2.00	ug/L	1	20.0	ND	71	69-130%	---	---	
1,1,1-Trichloroethane	21.3	---	0.400	ug/L	1	20.0	ND	107	74-131%	---	---	
Trichloroethene (TCE)	16.1	---	0.400	ug/L	1	20.0	ND	81	79-123%	---	---	
Trichlorofluoromethane	32.0	---	2.00	ug/L	1	20.0	ND	**160**	**65-141%**	---	---	Q-54k
1,2,3-Trichloropropane	17.0	---	1.00	ug/L	1	20.0	ND	85	73-122%	---	---	
Vinyl chloride	18.6	---	0.200	ug/L	1	20.0	ND	93	58-137%	---	---	

Surr: 1,4-Difluorobenzene (Surr)	*Recovery: 99 %*	*Limits: 80-120 %*	*Dilution: 1x*
Toluene-d8 (Surr)	*93 %*	*80-120 %*	*"*
4-Bromofluorobenzene (Surr)	*92 %*	*80-120 %*	*"*

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 019001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0850 - 12 19 24 1651

QUALITY CONTROL (QC) SAMPLE RESULTS

Ammonia by Gas Diffusion and Colorimetric Detection

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0146 - Method Prep: Aq									Water			
Blank (24L0146-BLK1)			Prepared: 12/05/24 08:19		Analyzed: 12/05/24 11:47							
SM 4500-NH3 G												
Ammonia as N	ND	---	0.0200	mg/L	1	---	---	---	---	---	---	
LCS (24L0146-BS1)			Prepared: 12/05/24 08:19		Analyzed: 12/05/24 11:48							
SM 4500-NH3 G												
Ammonia as N	1.96	---	0.0200	mg/L	1	2.00	---	98	90-111%	---	---	
Matrix Spike (24L0146-MS2)			Prepared: 12/05/24 08:19		Analyzed: 12/05/24 13:07							Q-16
QC Source Sample: Non-SDG (A4L0833-02RE1)												
SM 4500-NH3 G												
Ammonia as N	8.13	---	0.0400	mg/L	2	4.00	4.26	97	90-111%	---	---	
Matrix Spike Dup (24L0146-MSD2)			Prepared: 12/05/24 08:19		Analyzed: 12/05/24 13:09							Q-16
QC Source Sample: Non-SDG (A4L0833-02RE1)												
Ammonia as N	7.99	---	0.0400	mg/L	2	4.00	4.26	93	90-111%	2	13%	

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 019001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0850 - 12 19 24 1651

QUALITY CONTROL (QC) SAMPLE RESULTS

Ammonia by Gas Diffusion and Colorimetric Detection

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0170 - Method Prep: Aq									Water			
Blank (24L0170-BLK1)			Prepared: 12/05/24 11:54		Analyzed: 12/05/24 13:19							
SM 4500-NH3 G												
Ammonia as N	ND	---	0.0200	mg/L	1	---	---	---	---	---	---	
LCS (24L0170-BS1)			Prepared: 12/05/24 11:54		Analyzed: 12/05/24 13:21							
SM 4500-NH3 G												
Ammonia as N	1.92	---	0.0200	mg/L	1	2.00	---	96	90-111%	---	---	
Matrix Spike (24L0170-MS1)			Prepared: 12/05/24 11:54		Analyzed: 12/05/24 13:25							
QC Source Sample: MGMS1-2(60) (A4L0850-02)												
SM 4500-NH3 G												
Ammonia as N	2.56	---	0.0250	mg/L	1	2.50	0.103	98	90-111%	---	---	
Matrix Spike Dup (24L0170-MSD1)			Prepared: 12/05/24 11:54		Analyzed: 12/05/24 13:27							
QC Source Sample: MGMS1-2(60) (A4L0850-02)												
SM 4500-NH3 G												
Ammonia as N	2.49	---	0.0250	mg/L	1	2.50	0.103	96	90-111%	2	13%	

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GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

QUALITY CONTROL (QC) SAMPLE RESULTS

Ammonia by Gas Diffusion and Colorimetric Detection

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0260 - Method Prep: Aq							**Water**					
Blank (24L0260-BLK1)			Prepared: 12/09/24 07:30 Analyzed: 12/09/24 11:17									
SM 4500-NH3 G												
Ammonia as N	ND	---	0.0200	mg/L	1	---	---	---	---	---	---	
LCS (24L0260-BS1)			Prepared: 12/09/24 07:30 Analyzed: 12/09/24 11:19									
SM 4500-NH3 G												
Ammonia as N	1.98	---	0.0200	mg/L	1	2.00	---	99	90-111%	---	---	
Matrix Spike (24L0260-MS1)			Prepared: 12/09/24 07:30 Analyzed: 12/09/24 11:24									
QC Source Sample: Non-SDG (A4L0812-01RE1)												
SM 4500-NH3 G												
Ammonia as N	15.7	---	0.100	mg/L	5	10.0	5.84	99	90-111%	---	---	
Matrix Spike Dup (24L0260-MSD1)			Prepared: 12/09/24 07:30 Analyzed: 12/09/24 11:25									
QC Source Sample: Non-SDG (A4L0812-01RE1)												
Ammonia as N	15.8	---	0.100	mg/L	5	10.0	5.84	99	90-111%	0.1	13%	

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

QUALITY CONTROL (QC) SAMPLE RESULTS

Anions by Ion Chromatography

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0094 - Method Prep: Aq							**Water**					
Blank (24L0094-BLK1)			Prepared: 12/04/24 08:22		Analyzed: 12/04/24 11:42							
EPA 300.0												
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	---	---	---	---	---	---	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	---	---	---	---	---	---	
LCS (24L0094-BS1)			Prepared: 12/04/24 08:22		Analyzed: 12/04/24 12:04							
EPA 300.0												
Nitrate-Nitrogen	2.00	---	0.250	mg/L	1	2.00	---	100	90-110%	---	---	
Nitrite-Nitrogen	2.04	---	0.250	mg/L	1	2.00	---	102	90-110%	---	---	
Duplicate (24L0094-DUP1)			Prepared: 12/04/24 08:22		Analyzed: 12/04/24 13:08							
QC Source Sample: MGMS1-2(60) (A4L0850-02)												
EPA 300.0												
Nitrate-Nitrogen	**1.37**	---	0.250	mg/L	1	---	1.37	---	---	0.01	10%	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	---	ND	---	---	---	10%	
Duplicate (24L0094-DUP2)			Prepared: 12/04/24 08:22		Analyzed: 12/04/24 21:02							
QC Source Sample: NKW-2 (A4L0850-18)												
EPA 300.0												
Nitrate-Nitrogen	**26.7**	---	0.250	mg/L	1	---	26.7	---	---	0.02	10%	E
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	---	ND	---	---	---	10%	
Matrix Spike (24L0094-MS1)			Prepared: 12/04/24 08:22		Analyzed: 12/04/24 13:30							
QC Source Sample: MGMS1-2(60) (A4L0850-02)												
EPA 300.0												
Nitrate-Nitrogen	3.88	---	0.312	mg/L	1	2.50	1.37	100	87-112%	---	---	
Nitrite-Nitrogen	2.54	---	0.312	mg/L	1	2.50	ND	102	90-114%	---	---	
Matrix Spike (24L0094-MS2)			Prepared: 12/04/24 08:22		Analyzed: 12/04/24 21:24							
QC Source Sample: NKW-2 (A4L0850-18)												
EPA 300.0												
Nitrate-Nitrogen	30.1	---	0.312	mg/L	1	2.50	26.7	**137**	**87-112%**	---	---	E
Nitrite-Nitrogen	2.50	---	0.312	mg/L	1	2.50	ND	100	90-114%	---	---	

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5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

QUALITY CONTROL (QC) SAMPLE RESULTS

Anions by Ion Chromatography

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0095 - Method Prep: Aq							Water					
Blank (24L0095-BLK1)			Prepared: 12/04/24 15:00		Analyzed: 12/04/24 22:28							
EPA 300.0												
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	---	---	---	---	---	---	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	---	---	---	---	---	---	
LCS (24L0095-BS1)			Prepared: 12/04/24 15:00		Analyzed: 12/04/24 22:50							
EPA 300.0												
Nitrate-Nitrogen	1.98	---	0.250	mg/L	1	2.00	---	99	90-110%	---	---	
Nitrite-Nitrogen	2.02	---	0.250	mg/L	1	2.00	---	101	90-110%	---	---	
Duplicate (24L0095-DUP1)			Prepared: 12/04/24 15:00		Analyzed: 12/04/24 23:33							
QC Source Sample: KMW-6 (A4L0850-21)												
EPA 300.0												
Nitrate-Nitrogen	**1.57**	---	0.250	mg/L	1	---	1.60	---	---	2	10%	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	---	ND	---	---	---	10%	
Duplicate (24L0095-DUP2)			Prepared: 12/04/24 15:00		Analyzed: 12/05/24 02:47							
QC Source Sample: MGMS1-3(43) (A4L0850-01RE1)												
EPA 300.0												
Nitrate-Nitrogen	**5.97**	---	0.250	mg/L	1	---	6.01	---	---	0.6	10%	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	---	ND	---	---	---	10%	
Matrix Spike (24L0095-MS1)			Prepared: 12/04/24 15:00		Analyzed: 12/05/24 00:38							
QC Source Sample: KMW-6 (A4L0850-21)												
EPA 300.0												
Nitrate-Nitrogen	4.05	---	0.312	mg/L	1	2.50	1.60	98	87-112%	---	---	
Nitrite-Nitrogen	2.52	---	0.312	mg/L	1	2.50	ND	101	90-114%	---	---	
Matrix Spike (24L0095-MS2)			Prepared: 12/04/24 15:00		Analyzed: 12/05/24 03:09							
QC Source Sample: MGMS1-3(43) (A4L0850-01RE1)												
EPA 300.0												
Nitrate-Nitrogen	8.47	---	0.312	mg/L	1	2.50	6.01	98	87-112%	---	---	
Nitrite-Nitrogen	2.61	---	0.312	mg/L	1	2.50	ND	104	90-114%	---	---	

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6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

QUALITY CONTROL (QC) SAMPLE RESULTS

Anions by Ion Chromatography

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0148 - Method Prep: Aq							**Water**					
Blank (24L0148-BLK1)			Prepared: 12/05/24 08:54		Analyzed: 12/05/24 18:51							
EPA 300.0												
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	---	---	---	---	---	---	
LCS (24L0148-BS1)			Prepared: 12/05/24 08:54		Analyzed: 12/05/24 19:13							
EPA 300.0												
Nitrate-Nitrogen	2.03	---	0.250	mg/L	1	2.00	---	102	90-110%	---	---	
Duplicate (24L0148-DUP1)			Prepared: 12/05/24 08:54		Analyzed: 12/05/24 21:00							
QC Source Sample: Non-SDG (A4L0895-03)												
Nitrate-Nitrogen	**29.8**	---	0.250	mg/L	1	---	29.8	---	---	0.01	10%	E
Duplicate (24L0148-DUP2)			Prepared: 12/05/24 08:54		Analyzed: 12/06/24 00:58							
QC Source Sample: Non-SDG (A4L0895-10)												
Nitrate-Nitrogen	**0.425**	---	0.250	mg/L	1	---	0.424	---	---	0.3	10%	
Matrix Spike (24L0148-MS1)			Prepared: 12/05/24 08:54		Analyzed: 12/05/24 21:22							
QC Source Sample: Non-SDG (A4L0895-03)												
EPA 300.0												
Nitrate-Nitrogen	32.9	---	0.312	mg/L	1	2.50	29.8	**123**	**87-112%**	---	---	E
Matrix Spike (24L0148-MS2)			Prepared: 12/05/24 08:54		Analyzed: 12/06/24 01:19							
QC Source Sample: Non-SDG (A4L0895-10)												
EPA 300.0												
Nitrate-Nitrogen	2.97	---	0.312	mg/L	1	2.50	0.424	102	87-112%	---	---	

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ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 019001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0850 - 12 19 24 1651

QUALITY CONTROL (QC) SAMPLE RESULTS

Anions by Ion Chromatography

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0176 - Method Prep: Aq									Water			
Blank (24L0176-BLK1)			Prepared: 12/05/24 14:02		Analyzed: 12/05/24 15:29							
EPA 300.0												
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	---	---	---	---	---	---	
LCS (24L0176-BS1)			Prepared: 12/05/24 14:02		Analyzed: 12/05/24 15:51							
EPA 300.0												
Nitrate-Nitrogen	2.04	---	0.250	mg/L	1	2.00	---	102	90-110%	---	---	
Duplicate (24L0176-DUP1)			Prepared: 12/05/24 14:02		Analyzed: 12/05/24 17:25							
QC Source Sample: Non-SDG (A4L0881-01RE1)												
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	---	ND	---	---	---	10%	
Matrix Spike (24L0176-MS1)			Prepared: 12/05/24 14:02		Analyzed: 12/05/24 17:46							
QC Source Sample: Non-SDG (A4L0881-01RE1)												
EPA 300.0												
Nitrate-Nitrogen	2.69	---	0.312	mg/L	1	2.50	ND	108	87-112%	---	---	

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5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

SAMPLE PREPARATION INFORMATION

Halogenated Volatile Organic Compounds by EPA 8260D

Prep: EPA 5030C

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 24L0155							
A4L0850-01	Water	EPA 8260D	12/03/24 13:02	12/05/24 09:39	5mL/5mL	5mL/5mL	1.00
A4L0850-02	Water	EPA 8260D	12/03/24 12:22	12/05/24 09:39	5mL/5mL	5mL/5mL	1.00
A4L0850-03	Water	EPA 8260D	12/03/24 11:55	12/05/24 09:39	5mL/5mL	5mL/5mL	1.00
A4L0850-04	Water	EPA 8260D	12/03/24 11:09	12/05/24 09:39	5mL/5mL	5mL/5mL	1.00
A4L0850-05	Water	EPA 8260D	12/03/24 10:42	12/05/24 09:39	5mL/5mL	5mL/5mL	1.00
A4L0850-06	Water	EPA 8260D	12/03/24 08:50	12/05/24 09:39	5mL/5mL	5mL/5mL	1.00
A4L0850-07	Water	EPA 8260D	12/03/24 08:12	12/05/24 09:39	5mL/5mL	5mL/5mL	1.00
A4L0850-08	Water	EPA 8260D	12/03/24 15:01	12/05/24 09:39	5mL/5mL	5mL/5mL	1.00
A4L0850-09	Water	EPA 8260D	12/03/24 15:01	12/05/24 09:39	5mL/5mL	5mL/5mL	1.00
A4L0850-10	Water	EPA 8260D	12/03/24 14:15	12/05/24 09:39	5mL/5mL	5mL/5mL	1.00
A4L0850-12	Water	EPA 8260D	12/03/24 10:39	12/05/24 09:39	5mL/5mL	5mL/5mL	1.00
A4L0850-13	Water	EPA 8260D	12/03/24 10:39	12/05/24 09:39	5mL/5mL	5mL/5mL	1.00
A4L0850-15	Water	EPA 8260D	12/03/24 13:09	12/05/24 09:39	5mL/5mL	5mL/5mL	1.00
A4L0850-16	Water	EPA 8260D	12/03/24 15:42	12/05/24 09:39	5mL/5mL	5mL/5mL	1.00
A4L0850-17	Water	EPA 8260D	12/03/24 11:45	12/05/24 09:39	5mL/5mL	5mL/5mL	1.00
A4L0850-19	Water	EPA 8260D	12/03/24 10:00	12/05/24 09:39	5mL/5mL	5mL/5mL	1.00
A4L0850-20	Water	EPA 8260D	12/03/24 09:15	12/05/24 09:39	5mL/5mL	5mL/5mL	1.00
Batch: 24L0305							
A4L0850-03RE1	Water	EPA 8260D	12/03/24 11:55	12/09/24 14:17	5mL/5mL	5mL/5mL	1.00
A4L0850-10RE1	Water	EPA 8260D	12/03/24 14:15	12/09/24 14:17	5mL/5mL	5mL/5mL	1.00
A4L0850-12RE1	Water	EPA 8260D	12/03/24 10:39	12/09/24 14:17	5mL/5mL	5mL/5mL	1.00
A4L0850-13RE1	Water	EPA 8260D	12/03/24 10:39	12/09/24 14:17	5mL/5mL	5mL/5mL	1.00
A4L0850-16RE1	Water	EPA 8260D	12/03/24 15:42	12/09/24 14:17	5mL/5mL	5mL/5mL	1.00
Batch: 24L0318							
A4L0850-11RE1	Water	EPA 8260D	12/03/24 11:43	12/10/24 10:00	5mL/5mL	5mL/5mL	1.00
A4L0850-14RE1	Water	EPA 8260D	12/03/24 14:26	12/10/24 10:00	5mL/5mL	5mL/5mL	1.00
A4L0850-18RE1	Water	EPA 8260D	12/03/24 10:45	12/10/24 10:00	5mL/5mL	5mL/5mL	1.00
Batch: 24L0411							
A4L0850-21RE1	Water	EPA 8260D	12/03/24 08:35	12/11/24 12:03	5mL/5mL	5mL/5mL	1.00
Batch: 24L0429							
A4L0850-21RE2	Water	EPA 8260D	12/03/24 08:35	12/12/24 08:03	5mL/5mL	5mL/5mL	1.00

Ammonia by Gas Diffusion and Colorimetric Detection

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GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

SAMPLE PREPARATION INFORMATION

Ammonia by Gas Diffusion and Colorimetric Detection

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 24L0146							
A4L0850-14	Water	SM 4500-NH3 G	12/03/24 14:26	12/05/24 08:19	10mL/10mL	10mL/10mL	1.00
A4L0850-15	Water	SM 4500-NH3 G	12/03/24 13:09	12/05/24 08:19	10mL/10mL	10mL/10mL	1.00
A4L0850-16	Water	SM 4500-NH3 G	12/03/24 15:42	12/05/24 08:19	10mL/10mL	10mL/10mL	1.00
A4L0850-17	Water	SM 4500-NH3 G	12/03/24 11:45	12/05/24 08:19	10mL/10mL	10mL/10mL	1.00
A4L0850-18	Water	SM 4500-NH3 G	12/03/24 10:45	12/05/24 08:19	10mL/10mL	10mL/10mL	1.00
A4L0850-19	Water	SM 4500-NH3 G	12/03/24 10:00	12/05/24 08:19	10mL/10mL	10mL/10mL	1.00
Batch: 24L0170							
A4L0850-02	Water	SM 4500-NH3 G	12/03/24 12:22	12/05/24 11:54	10mL/10mL	10mL/10mL	1.00
A4L0850-03	Water	SM 4500-NH3 G	12/03/24 11:55	12/05/24 11:54	10mL/10mL	10mL/10mL	1.00
A4L0850-04	Water	SM 4500-NH3 G	12/03/24 11:09	12/05/24 11:54	10mL/10mL	10mL/10mL	1.00
A4L0850-05	Water	SM 4500-NH3 G	12/03/24 10:42	12/05/24 11:54	10mL/10mL	10mL/10mL	1.00
A4L0850-06	Water	SM 4500-NH3 G	12/03/24 08:50	12/05/24 11:54	10mL/10mL	10mL/10mL	1.00
A4L0850-07	Water	SM 4500-NH3 G	12/03/24 08:12	12/05/24 11:54	10mL/10mL	10mL/10mL	1.00
A4L0850-09	Water	SM 4500-NH3 G	12/03/24 15:01	12/05/24 11:54	10mL/10mL	10mL/10mL	1.00
A4L0850-10	Water	SM 4500-NH3 G	12/03/24 14:15	12/05/24 11:54	10mL/10mL	10mL/10mL	1.00
A4L0850-11	Water	SM 4500-NH3 G	12/03/24 11:43	12/05/24 11:54	10mL/10mL	10mL/10mL	1.00
A4L0850-12	Water	SM 4500-NH3 G	12/03/24 10:39	12/05/24 11:54	10mL/10mL	10mL/10mL	1.00
A4L0850-13	Water	SM 4500-NH3 G	12/03/24 10:39	12/05/24 11:54	10mL/10mL	10mL/10mL	1.00
A4L0850-21	Water	SM 4500-NH3 G	12/03/24 08:35	12/05/24 11:54	10mL/10mL	10mL/10mL	1.00
Batch: 24L0260							
A4L0850-01RE1	Water	SM 4500-NH3 G	12/03/24 13:02	12/09/24 07:30	10mL/10mL	10mL/10mL	1.00
A4L0850-08RE1	Water	SM 4500-NH3 G	12/03/24 15:01	12/09/24 07:30	10mL/10mL	10mL/10mL	1.00
A4L0850-20RE1	Water	SM 4500-NH3 G	12/03/24 09:15	12/09/24 07:30	10mL/10mL	10mL/10mL	1.00

Anions by Ion Chromatography

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 24L0094							
A4L0850-01	Water	EPA 300.0	12/03/24 13:02	12/04/24 08:22	5mL/5mL	5mL/5mL	1.00
A4L0850-02	Water	EPA 300.0	12/03/24 12:22	12/04/24 08:22	5mL/5mL	5mL/5mL	1.00
A4L0850-03	Water	EPA 300.0	12/03/24 11:55	12/04/24 08:22	5mL/5mL	5mL/5mL	1.00
A4L0850-04	Water	EPA 300.0	12/03/24 11:09	12/04/24 08:22	5mL/5mL	5mL/5mL	1.00
A4L0850-05	Water	EPA 300.0	12/03/24 10:42	12/04/24 08:22	5mL/5mL	5mL/5mL	1.00
A4L0850-06	Water	EPA 300.0	12/03/24 08:50	12/04/24 08:22	5mL/5mL	5mL/5mL	1.00

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5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

SAMPLE PREPARATION INFORMATION

Anions by Ion Chromatography

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A4L0850-07	Water	EPA 300.0	12/03/24 08:12	12/04/24 08:22	5mL/5mL	5mL/5mL	1.00
A4L0850-10	Water	EPA 300.0	12/03/24 14:15	12/04/24 08:22	5mL/5mL	5mL/5mL	1.00
A4L0850-11	Water	EPA 300.0	12/03/24 11:43	12/04/24 08:22	5mL/5mL	5mL/5mL	1.00
A4L0850-12	Water	EPA 300.0	12/03/24 10:39	12/04/24 08:22	5mL/5mL	5mL/5mL	1.00
A4L0850-13	Water	EPA 300.0	12/03/24 10:39	12/04/24 08:22	5mL/5mL	5mL/5mL	1.00
A4L0850-14	Water	EPA 300.0	12/03/24 14:26	12/04/24 08:22	5mL/5mL	5mL/5mL	1.00
A4L0850-15	Water	EPA 300.0	12/03/24 13:09	12/04/24 08:22	5mL/5mL	5mL/5mL	1.00
A4L0850-16	Water	EPA 300.0	12/03/24 15:42	12/04/24 08:22	5mL/5mL	5mL/5mL	1.00
A4L0850-17	Water	EPA 300.0	12/03/24 11:45	12/04/24 08:22	5mL/5mL	5mL/5mL	1.00
A4L0850-18	Water	EPA 300.0	12/03/24 10:45	12/04/24 08:22	5mL/5mL	5mL/5mL	1.00
A4L0850-19	Water	EPA 300.0	12/03/24 10:00	12/04/24 08:22	5mL/5mL	5mL/5mL	1.00
A4L0850-20	Water	EPA 300.0	12/03/24 09:15	12/04/24 08:22	5mL/5mL	5mL/5mL	1.00
Batch: 24L0095							
A4L0850-01RE1	Water	EPA 300.0	12/03/24 13:02	12/04/24 15:00	5mL/5mL	5mL/5mL	1.00
A4L0850-04RE1	Water	EPA 300.0	12/03/24 11:09	12/04/24 15:00	5mL/5mL	5mL/5mL	1.00
A4L0850-08RE1	Water	EPA 300.0	12/03/24 15:01	12/04/24 15:00	5mL/5mL	5mL/5mL	1.00
A4L0850-09RE1	Water	EPA 300.0	12/03/24 15:01	12/04/24 15:00	5mL/5mL	5mL/5mL	1.00
A4L0850-10RE1	Water	EPA 300.0	12/03/24 14:15	12/04/24 15:00	5mL/5mL	5mL/5mL	1.00
A4L0850-11RE1	Water	EPA 300.0	12/03/24 11:43	12/04/24 15:00	5mL/5mL	5mL/5mL	1.00
A4L0850-12RE1	Water	EPA 300.0	12/03/24 10:39	12/04/24 15:00	5mL/5mL	5mL/5mL	1.00
A4L0850-13RE1	Water	EPA 300.0	12/03/24 10:39	12/04/24 15:00	5mL/5mL	5mL/5mL	1.00
A4L0850-14RE1	Water	EPA 300.0	12/03/24 14:26	12/04/24 15:00	5mL/5mL	5mL/5mL	1.00
A4L0850-15RE1	Water	EPA 300.0	12/03/24 13:09	12/04/24 15:00	5mL/5mL	5mL/5mL	1.00
A4L0850-16RE1	Water	EPA 300.0	12/03/24 15:42	12/04/24 15:00	5mL/5mL	5mL/5mL	1.00
A4L0850-17RE1	Water	EPA 300.0	12/03/24 11:45	12/04/24 15:00	5mL/5mL	5mL/5mL	1.00
A4L0850-19RE1	Water	EPA 300.0	12/03/24 10:00	12/04/24 15:00	5mL/5mL	5mL/5mL	1.00
A4L0850-21	Water	EPA 300.0	12/03/24 08:35	12/04/24 15:00	5mL/5mL	5mL/5mL	1.00
Batch: 24L0148							
A4L0850-18RE1	Water	EPA 300.0	12/03/24 10:45	12/05/24 08:54	5mL/5mL	5mL/5mL	1.00
Batch: 24L0176							
A4L0850-08RE2	Water	EPA 300.0	12/03/24 15:01	12/04/24 08:22	5mL/5mL	5mL/5mL	1.00
A4L0850-09RE2	Water	EPA 300.0	12/03/24 15:01	12/04/24 08:22	5mL/5mL	5mL/5mL	1.00

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5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

Apex Laboratories

E	Estimated Value. The result is above the calibration range of the instrument.
H-01	Analyzed outside the recommended holding time.
Q-01	Spike recovery and/or RPD is outside acceptance limits.
Q-16	Reanalysis of an original Batch QC sample.
Q-42	Matrix Spike and/or Duplicate analysis was performed on this sample. % Recovery or RPD for this analyte is outside laboratory control limits. (Refer to the QC Section of Analytical Report.)
Q-54	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +1%. The results are reported as Estimated Values.
Q-54a	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +10%. The results are reported as Estimated Values.
Q-54b	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +11%. The results are reported as Estimated Values.
Q-54c	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +12%. The results are reported as Estimated Values.
Q-54d	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +14%. The results are reported as Estimated Values.
Q-54e	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +19%. The results are reported as Estimated Values.
Q-54f	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +2%. The results are reported as Estimated Values.
Q-54g	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +20%. The results are reported as Estimated Values.
Q-54h	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +24%. The results are reported as Estimated Values.
Q-54i	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +3%. The results are reported as Estimated Values.
Q-54j	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +33%. The results are reported as Estimated Values.
Q-54k	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +35%. The results are reported as Estimated Values.
Q-54l	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +4%. The results are reported as Estimated Values.

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5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

Q-54m	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +41%. The results are reported as Estimated Values.
Q-54n	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +44%. The results are reported as Estimated Values.
Q-54o	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +5%. The results are reported as Estimated Values.
Q-54p	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +67%. The results are reported as Estimated Values.
Q-54q	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +77%. The results are reported as Estimated Values.
Q-54r	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +8%. The results are reported as Estimated Values.
Q-54s	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +9%. The results are reported as Estimated Values.
Q-54t	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by -2%. The results are reported as Estimated Values.
Q-54u	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by -5%. The results are reported as Estimated Values.
Q-54v	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by -8%. The results are reported as Estimated Values.
Q-55	Daily CCV/LCS recovery for this analyte was below the +/-20% criteria listed in EPA 8260, however there is adequate sensitivity to ensure detection at the reporting level.
Q-56	Daily CCV/LCS recovery for this analyte was above the +/-20% criteria listed in EPA 8260. Samples that are ND (Non-Detect) are not impacted.
T-02	This Batch QC sample was analyzed outside of the method specified 12 hour analysis window. Results are estimated.

Apex Laboratories



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Darrell Auvil, Client Services Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

REPORTING NOTES AND CONVENTIONS:

Abbreviations:

DET Analyte DETECTED at or above the detection or reporting limit.

ND Analyte NOT DETECTED at or above the detection or reporting limit.

NR Result Not Reported

RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

Detection Limits: Limit of Detection (LOD)

Validated Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).
If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

Basis: Results for soil samples are generally reported on a 100% dry weight basis.
The Result Basis is listed following the units as " dry", " wet", or " " (blank) designation.

" dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")
See Percent Solids section for details of dry weight analysis.

" wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.

" " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

Results for Volatiles analyses on soils and sediments that are reported on a “dry weight” basis include the water miscible solvent (WMS) correction referenced in the EPA 8000 Method guidance documents. Solid and Liquid samples reported on an “As Received” basis do not have the WMS correction applied, as dry weight was not performed.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) may not be included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

" --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

" *** " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Apex Laboratories



Darrell Auvil, Client Services Manager

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Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to one half of the Reporting Limit (RL).
Blank results for gravimetric analyses are evaluated to the Reporting Level, not to half of the Reporting Level.
-For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.
-For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.
For further details, please request a copy of this document.
-Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.
'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level, if results are not reported to the MDL.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

Apex Laboratories

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GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

Decanted Samples:

Soils/Sediments:
Unless TCLP analysis is required or there is notification otherwise for a specific project, all Soil and Sediments containing excess water are decanted prior to analysis in order to provide the most representative sample for analysis.

Water Samples:
Water samples containing solids and sediment may need to be decanted in order to eliminate these particulates from the water extractions. In the case of organics extractions, a solvent rinse of the container will not be performed.

Volatiles Soils (5035s)
Samples that are field preserved by 5035 for volatiles are dry weight corrected using the same dry weight corretion as for normal analyses. In the case of decanted samples, the dry weight may be performed on a decanted sample, while the aliquot for 5035 may not have been treated the same way. If this is a concern, please submit separate containers for dry weight analysis for volatiles can be provided.

All samples decanted in the laboratory are noted in this report with the DCNT qualifier indicating the sample was decanted.

Apex Laboratories

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Darrell Auvil, Client Services Manager

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

LABORATORY ACCREDITATION INFORMATION

ORELAP Certification ID: OR100062 (Primary Accreditation) - EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

Apex Laboratories

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation

All reported analytes are included in Apex Laboratories' current ORELAP scope.

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation.
Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

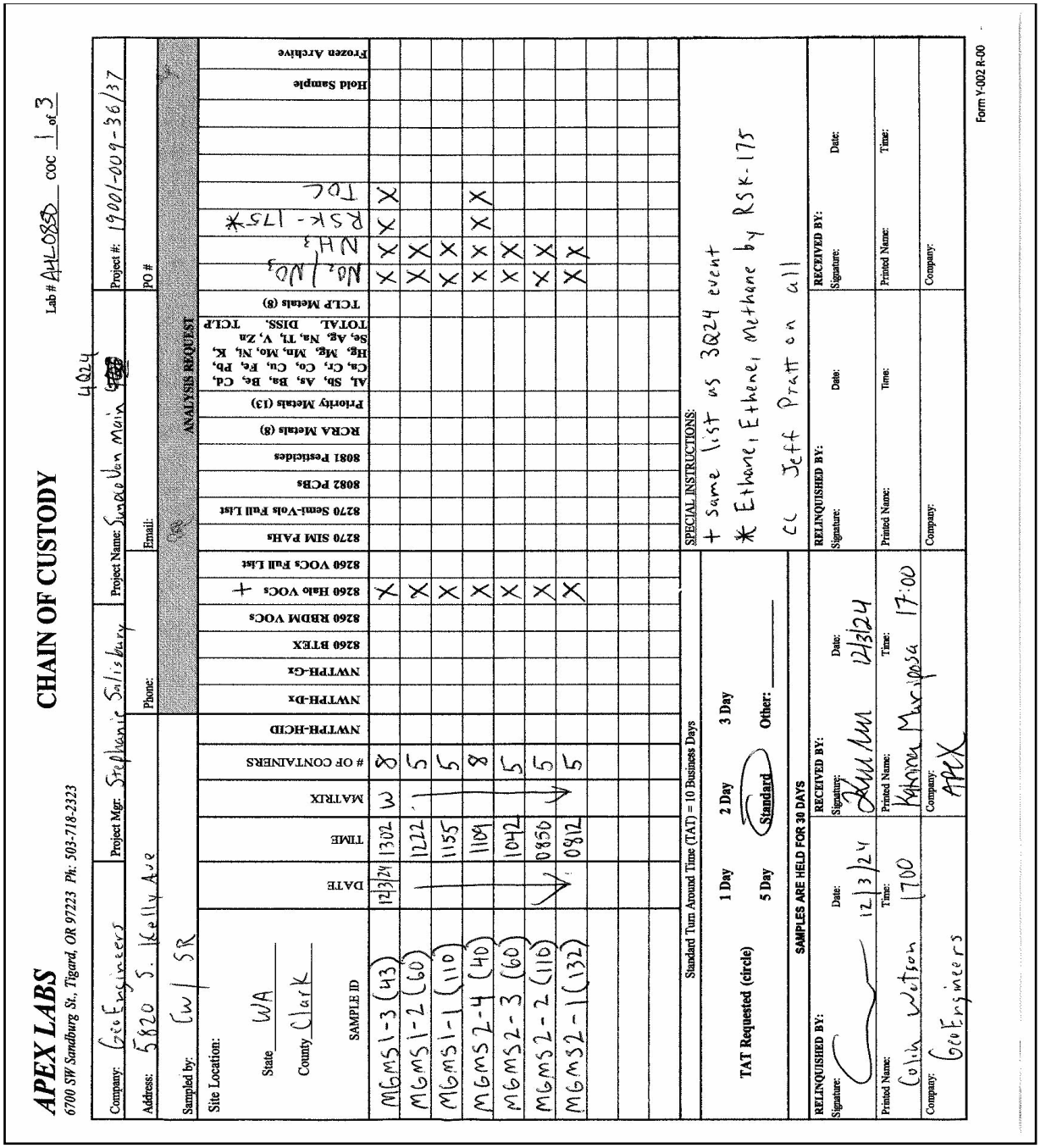


Darrell Auvil, Client Services Manager

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503-718-2323
ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**



APEX LABS
6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323

CHAIN OF CUSTODY

Lab # A4L0850 COC 1 of 3

4Q24

Company: GeoEngineers | Project Mgr: Stephanie Salisbury | Project Name: Sunoco Van Main (4Q24) | Project #: 19001-009-36/37
Address: 5820 S. Kelly Ave | Phone: | Email: | PO #
Sampled by: CW / SR

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 BTEX	8260 RBDM VOCs	8260 Halo VOCs +	8260 VOCs Full List	8270 SIM PAHs	8270 Semi-Vols Full List	8082 PCBs	8081 Pesticides	RCRA Metals (8)	Priority Metals (13)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS. TCLP	TCLP Metals (8)	NO_2 / NO_3	NH_3	RSK-175*	TOC			Hold Sample	Frozen Archive
MGMS1-3 (43)	12/3/24	1302	W	8						X										X	X	X				
MGMS1-2 (60)		1222		5						X										X	X					
MGMS1-1 (110)		1155		5						X										X	X					
MGMS2-4 (40)		1109		8						X										X	X	X				
MGMS2-3 (60)		1042		5						X										X	X					
MGMS2-2 (110)		0850		5						X										X	X					
MGMS2-1 (132)		0912		5						X										X	X					

SPECIAL INSTRUCTIONS:
+ Same list as 3Q24 event
* Ethane, Ethene, Methane by RSK-175
cc Jeff Pratt on all

Standard Turn Around Time (TAT) = 10 Business Days
TAT Requested (circle): 1 Day | 2 Day | 3 Day | 5 Day | Standard | Other: _____

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY:	Date:	Time:	RECEIVED BY:	Date:	Time:	RELINQUISHED BY:	Date:	Time:	RECEIVED BY:	Date:	Time:
Signature:	12/3/24		Signature:	12/3/24		Signature:			Signature:		
Printed Name: Colin Watson		1700	Printed Name: Kianna Marsiglia		17:00	Printed Name:			Printed Name:		
Company: GeoEngineers			Company: APEX			Company:			Company:		

Form Y-002 R-00

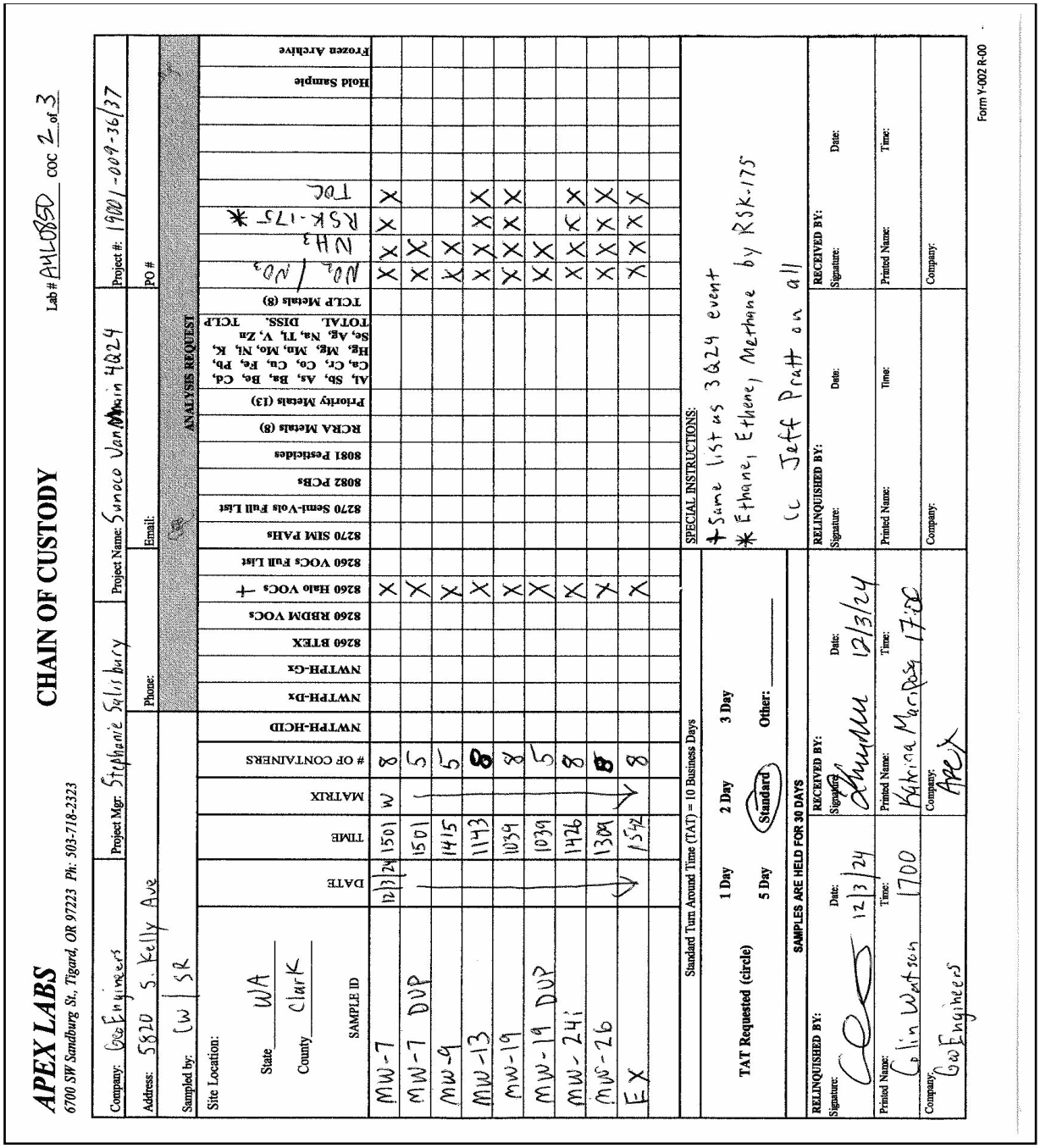
Apex Laboratories

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Darrell Auvil, Client Services Manager

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503-718-2323
ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**



APEX LABS
6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323

CHAIN OF CUSTODY

Lab # A4L0850 COC 2 of 3

Company: GeoEngineers | Project Mgr.: Stephanie Salisbury | Project Name: Sunoco Van Main 4Q24 | Project #: 19001-009-36/37
Address: 5820 S. Kelly Ave | Phone: | Email: | PO #
Sampled by: CW | SR

Site Location: State WA County Clark

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 BTEX	8260 RBDM VOCs	8260 Halo VOCs +	8260 VOCs Full List	8270 SIM PAHs	8270 Semi-Vols Full List	8082 PCBs	8081 Pesticides	RCRA Metals (8)	Priority Metals (13)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS. TCLP	TCLP Metals (8)	NO3 / NO2	NH3	RSK-175 *	TOC			Hold Sample	Frozen Archive
MW-7	12/3/24	1501	W	8						X										X	X	X	X			
MW-7 DUP		1501		5						X										X	X	X	X			
MW-9		1415		5						X										X	X	X				
MW-13		1143		8						X										X	X	X	X			
MW-19		1039		8						X										X	X	X	X			
MW-19 DUP		1039		5						X										X	X	X				
MW-24		1426		8						X										X	X	X	X			
MW-26		1309		8						X										X	X	X	X			
EX	↓	1542	↓	8						X										X	X	X	X			

Standard Turn Around Time (TAT) = 10 Business Days

TAT Requested (circle): 1 Day | 2 Day | 3 Day | 5 Day | Standard | Other: ____

SPECIAL INSTRUCTIONS:
+ Same list as 3Q24 event
* Ethane, Ethene, Methane by RSK-175
cc Jeff Pratt on all

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature:	Signature:	Signature:	Signature:
Date: 12/3/24	Date: 12/3/24	Date:	Date:
Time: 1700	Time: 17:20	Time:	Time:
Printed Name: Colin Watson	Printed Name: Katrina Murdock	Printed Name:	Printed Name:
Company: GeoEngineers	Company: Apex	Company:	Company:

Form Y-002 R-00

Apex Laboratories

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Darrell Auvil, Client Services Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

APEX LABS
6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323

CHAIN OF CUSTODY

Lab # 4L0850 COC 3 of 3

Company: GeoEngineers | Project Mgr: Stephanie Salisbury | Project Name: Sunoco Van Main 4Q24 | Project #: 19001-009-36/37

Address: 5820 S. Kelly Ave | Phone: | Email: | PO #

Sampled by: CW | SR

Site Location: State WA, County Clark

SAMPLE ID	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 BTEX	8260 RBDM VOCs	8260 Halo VOCs +	8260 VOCs Full List	8270 SIM PAHs	8270 Semi-Vols Full List	8082 PCBs	8081 Pesticides	RCRA Metals (8)	Priority Metals (13)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS. TCLP	TCLP Metals (8)	NO2/NO3	NH3	RSK-175* TOC	Hold Sample	Frozen Archive
NKW-1	12/3/24	1145	W	5						X										X	X	X	
NKW-2	"	1045	"	5						X										X	X	X	
KMW-4	"	1000	"	5						X										X	X	X	
KMW-5	"	0915	"	5						X										X	X	X	
KMW-6	"	0935	"	5						X										X	X	X	

Standard Turn Around Time (TAT) = 10 Business Days

TAT Requested (circle): 1 Day | 2 Day | 3 Day | 5 Day | Standard | Other: ____

SPECIAL INSTRUCTIONS:
+ Same list as 3Q24 event
* Ethane, Ethene, Methane by RSK-175
cc Jeff Pratt on all

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature:	Signature:	Signature:	Signature:
Date: 12/3/24	Date: 12/3/24	Date:	Date:
Time: 1700	Time: 17:00	Time:	Time:
Printed Name: Colin Watson	Printed Name: Katrina Mastoras	Printed Name:	Printed Name:
Company: GeoEngineers	Company: APEX	Company:	Company:

Form Y-002 R-00

Apex Laboratories

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GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0850 - 12 19 24 1651**

APEX LABS COOLER RECEIPT FORM

Client: GeoEngineers Element WO#: A4 L0850

Project/Project #: Sunoco Van Main 4Q24 / 19001-009-36/37

Delivery Info:

Date/time received: 12/3/24 @ 17:00 By: KAM

Delivered by: Apex__Client X ESS__FedEx__UPS__Radio__Morgan__SDS__Evergreen__Other__

From USDA Regulated Origin? Yes _____ No X

Cooler Inspection Date/time inspected: 12/3/24 @ 17:00 By: KAM

Chain of Custody included? Yes X No _____

Signed/dated by client? Yes X No _____

Contains USDA Reg. Soils? Yes _____ No X Unsure (email RegSoils) _____

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	5.1						
Custody seals? (Y/N)	N						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	Y						
Ice type: (Gel/Real/Other)	Real						
Condition (In/Out):	In						

Cooler out of temp? (Y/N) Possible reason why: _____

Green dots applied to out of temperature samples? Yes (No)

Out of temperature samples form initiated? Yes (No)

Sample Inspection: Date/time inspected: 12/3/24 @ 18:01 By: KAM

All samples intact? Yes X No ___ Comments: _____

Bottle labels/COCs agree? Yes X No ___ Comments: _____

COC/container discrepancies form initiated? Yes ___ No X

Containers/volumes received appropriate for analysis? Yes X No ___ Comments: _____

Do VOA vials have visible headspace? Yes ___ No X NA X KAM 12/3/24

Comments _____

Water samples: pH checked: Yes X No___NA___ pH appropriate? Yes X No___NA___ pH ID: A23J172

Comments: _____

Labeled by: KAM Witness: JA Cooler Inspected by: KAM

Form Y-003 R-02

Apex Laboratories

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Darrell Auvil, Client Services Manager

Air TECHNOLOGY
Laboratories, Inc.

December 19, 2024

LA Cert #04140
EPA Methods TO3, TO14A, TO15, 25C/3C, ASTM D1946, RSK-175

TX Cert T104704450-14-6
EPA Methods TO14A, TO15

UT Cert CA0133332015-3
EPA Methods TO3, TO14A, TO15, RSK-175

ALASKA CS-LAP 24-002
EPA Methods TO14A, TO15

Apex Laboratories
ATTN: Darrell Auvil
6700 S.W. Sandburg St.
Tigard, OR 97223

LABORATORY TEST RESULTS

Project Reference: A4L0850
Lab Number: R120505-01/08

Enclosed are results for sample(s) received 12/05/24 by Air Technology Laboratories. Samples were received intact and chilled to 4° C. Analyses were performed according to specifications on the chain of custody provided with the sample(s).

Report Narrative:

- Unless otherwise noted in the report, sample analyses were performed within method performance criteria and meet all requirements of the TNI Standards.
- The enclosed results relate only to the sample(s).

ATL appreciates the opportunity to provide testing services to your company. If you have any questions regarding these results, please call me at (626) 964-4032.

Sincerely,

Mark Johnson
Operations Manager
MJohnson@AirTechLabs.com

Note: The cover letter is an integral part of this analytical report.

R120505-01/08

SUBCONTRACT ORDER

Apex Laboratories

A4L0850

Acc 12/4/24

JA 12/4/24

SENDING LABORATORY:

Apex Laboratories
6700 S.W. Sandburg Street
Tigard, OR 97223
Phone: (503) 718-2323
Fax: (503) 336-0745
Project Manager: Darrell Auvil

RECEIVING LABORATORY:

Air Technology Laboratories, Inc
18501 E. Gale Ave Suite 130
City of Industry, CA 91748
Phone :(626) 964-4032
Fax: (626) 964-5832

01 **Sample Name: MGMS1-3(43)** **Water** **Sampled: 12/03/24 13:02** (A4L0850-01)

Analysis	Due	Expires	Comments
RSK 175 Preserved (Meth, Eth, Eth) (Sub)	12/16/24 17:00	12/17/24 13:02	air tech lab
Containers Supplied:			
(D)40 mL VOA - HCL			
(E)40 mL VOA - HCL			

02 **Sample Name: MGMS2-4(40)** **Water** **Sampled: 12/03/24 11:09** (A4L0850-04)

Analysis	Due	Expires	Comments
RSK 175 Preserved (Meth, Eth, Eth) (Sub)	12/16/24 17:00	12/17/24 11:09	air tech lab
Containers Supplied:			
(D)40 mL VOA - HCL			
(E)40 mL VOA - HCL			

03 **Sample Name: MW-7** **Water** **Sampled: 12/03/24 15:01** (A4L0850-08)

Analysis	Due	Expires	Comments
RSK 175 Preserved (Meth, Eth, Eth) (Sub)	12/16/24 17:00	12/17/24 15:01	air tech lab
Containers Supplied:			
(D)40 mL VOA - HCL			
(E)40 mL VOA - HCL			

04 **Sample Name: MW-13** **Water** **Sampled: 12/03/24 11:43** (A4L0850-11)

Analysis	Due	Expires	Comments
RSK 175 Preserved (Meth, Eth, Eth) (Sub)	12/16/24 17:00	12/17/24 11:43	air tech lab
Containers Supplied:			
(D)40 mL VOA - HCL			
(E)40 mL VOA - HCL			

STandard TAT

4°C HD

Released By	Date	Received By	Date
	12/4/24	UPS (Shipper)	
UPS (Shipper)	12/5/24 10:27		12/5/24 10:27
Released By	Date	Received By	Date

SUBCONTRACT ORDER

Apex Laboratories

A4L0850

R120505-01108

05 **Sample Name: MW-19** **Water** **Sampled: 12/03/24 10:39** (A4L0850-12)

Analysis	Due	Expires	Comments
RSK 175 Preserved (Meth, Eth, Eth) (Sub)	12/16/24 17:00	12/17/24 10:39	air tech lab
Containers Supplied:			
(D)40 mL VOA - HCL			
(E)40 mL VOA - HCL			

06 **Sample Name: MW-24i** **Water** **Sampled: 12/03/24 14:26** (A4L0850-14)

Analysis	Due	Expires	Comments
RSK 175 Preserved (Meth, Eth, Eth) (Sub)	12/16/24 17:00	12/17/24 14:26	air tech lab
Containers Supplied:			
(D)40 mL VOA - HCL			
(E)40 mL VOA - HCL			

07 **Sample Name: MW-26** **Water** **Sampled: 12/03/24 13:09** (A4L0850-15)

Analysis	Due	Expires	Comments
RSK 175 Preserved (Meth, Eth, Eth) (Sub)	12/16/24 17:00	12/17/24 13:09	air tech lab
Containers Supplied:			
(D)40 mL VOA - HCL			
(E)40 mL VOA - HCL			

08 **Sample Name: EX** **Water** **Sampled: 12/03/24 15:42** (A4L0850-16)

Analysis	Due	Expires	Comments
RSK 175 Preserved (Meth, Eth, Eth) (Sub)	12/16/24 17:00	12/17/24 15:42	air tech lab
Containers Supplied:			
(D)40 mL VOA - HCL			
(E)40 mL VOA - HCL			

Standard TAT

4°C

Released By	Date	Received By	Date
	12/4/24	UPS (Shipper)	
UPS (Shipper)	12/5/24 10:27		12/5/24 10:27
Released By	Date	Received By	Date

Client: Apex Laboratories
Attn: Darrell Auvil
Project Name: NA
Project No.: A4L0850
Date Received: 12/05/24
Matrix: Water
Reporting Units: ug/L

RSK175

Lab No.:	R120505-01		R120505-02		R120505-03		R120505-04	
Client Sample I.D.:	MGMS1-3(43) (A4L0850-01)		MGMS2-4(40) (A4L0850-04)		MW-7 (A4L0850-08)		MW-13 (A4L0850-11)	
Date/Time Sampled:	12/3/24 13:02		12/3/24 11:09		12/3/24 15:01		12/3/24 11:43	
Date/Time Analyzed:	12/17/24 10:28		12/17/24 10:40		12/17/24 10:52		12/17/24 11:03	
QC Batch No.:	241217GC8A1		241217GC8A1		241217GC8A1		241217GC8A1	
Analyst Initials:	KD		KD		KD		KD	
Dilution Factor:	1.0		1.0		1.0		1.0	
ANALYTE	Result ug/L	RL ug/L	Result ug/L	RL ug/L	Result ug/L	RL ug/L	Result ug/L	RL ug/L
Ethene	ND	1.0	ND	1.0	ND	1.0	ND	1.0
Ethane	ND	1.0	ND	1.0	ND	1.0	ND	1.0
Methane	4.6	1.0	6.0	1.0	500	1.0	9.9	1.0

ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ Date 12-18-24
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client: Apex Laboratories
Attn: Darrell Auvil
Project Name: NA
Project No.: A4L0850
Date Received: 12/05/24
Matrix: Water
Reporting Units: ug/L

RSK175

Lab No.:	R120505-05		R120505-06		R120505-07		R120505-08	
Client Sample I.D.:	MW-19 (A4L0850-12)		MW-24i (A4L0850-14)		MW-26 (A4L0850-15)		EX (A4L0850-16)	
Date/Time Sampled:	12/3/24 10:39		12/3/24 14:26		12/3/24 13:09		12/3/24 15:42	
Date/Time Analyzed:	12/17/24 11:16		12/17/24 11:28		12/17/24 11:40		12/17/24 11:51	
QC Batch No.:	241217GC8A1		241217GC8A1		241217GC8A1		241217GC8A1	
Analyst Initials:	KD		KD		KD		KD	
Dilution Factor:	1.0		1.0		1.0		1.0	
ANALYTE	Result ug/L	RL ug/L	Result ug/L	RL ug/L	Result ug/L	RL ug/L	Result ug/L	RL ug/L
Ethene	ND	1.0	ND	1.0	ND	1.0	ND	1.0
Ethane	21	1.0	ND	1.0	ND	1.0	2.1	1.0
Methane	1,400	1.0	ND	1.0	170	1.0	40	1.0

ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: Annika Sotelo Sanchez
Mark Johnson
Operations Manager

Date 12-18-24

The cover letter is an integral part of this analytical report

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

QC Batch No: 241217GC8A1
Matrix: Water
Reporting Units: ug/L

RSK 175
LABORATORY CONTROL SAMPLE SUMMARY

Lab No.:	METHOD BLANK			LCS		LCSD					
Date/Time Analyzed:	12/17/24 10:15			12/17/24 9:41		12/17/24 9:53					
Analyst Initials:	KD			KD		KD					
Dilution Factor:	1.0			1.0		1.0			Limits		
ANALYTE	Result ug/L	RL ug/L	SPIKE AMT. ug/L	Result ug/L	% Rec.	Result ug/L	% Rec.	RPD %	Low %Rec	High %Rec	Max. RPD
Ethene	ND	1.0	1,150	1,040	91	1,060	93	2.4	70	130	30
Ethane	ND	1.0	1,200	1,150	94	1,180	96	2.5	70	130	30
Methane	ND	1.0	650	621	95	639	98	2.8	70	130	30

ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: Annika Sotelo Sanchez

Date 12-16-24

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

December 19, 2024 Service Request No:K2412870

Darrell Auvil
Apex Laboratories
6700 SW Sandburg St.
Tigard, OR 97223

Laboratory Results for: A4L0850

Dear Darrell,

Enclosed are the results of the sample(s) submitted to our laboratory December 05, 2024
For your reference, these analyses have been assigned our service request number **K2412870.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3260. You may also contact me via email at Luke.Rahn@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental



Luke Rahn
Project Manager

ADDRESS 1317 S. 13th Avenue, Kelso, WA 98626
PHONE +1 360 577 7222 | FAX +1 360 636 1068
ALS Group USA, Corp.
dba ALS Environmental

Narrative Documents

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

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Client: Apex Laboratories
Project: A4L0850
Sample Matrix: Water

Service Request: K2412870
Date Received: 12/05/2024

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier II level requested by the client.

Sample Receipt:

Eight water samples were received for analysis at ALS Environmental on 12/05/2024. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

General Chemistry:

No significant anomalies were noted with this analysis.

Approved by  Date 12/19/2024

SAMPLE DETECTION SUMMARY

This form includes only detections above the reporting levels. For a full listing of sample results, continue to the Sample Results section of this Report.

CLIENT ID: MGMS1-3(43)			Lab ID: K2412870-001			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Carbon, Total Organic	2.00		0.08	0.50	mg/L	SM 5310 C

CLIENT ID: MGMS2-4(40)			Lab ID: K2412870-002			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Carbon, Total Organic	3.00		0.08	0.50	mg/L	SM 5310 C

CLIENT ID: MW-7			Lab ID: K2412870-003			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Carbon, Total Organic	4.50		0.08	0.50	mg/L	SM 5310 C

CLIENT ID: MW-13			Lab ID: K2412870-004			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Carbon, Total Organic	1.80		0.08	0.50	mg/L	SM 5310 C

CLIENT ID: MW-19			Lab ID: K2412870-005			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Carbon, Total Organic	4.60		0.08	0.50	mg/L	SM 5310 C

CLIENT ID: MW-24i			Lab ID: K2412870-006			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Carbon, Total Organic	0.45	J	0.08	0.50	mg/L	SM 5310 C

CLIENT ID: MW-26			Lab ID: K2412870-007			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Carbon, Total Organic	1.70		0.08	0.50	mg/L	SM 5310 C

CLIENT ID: EX			Lab ID: K2412870-008			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Carbon, Total Organic	1.50		0.08	0.50	mg/L	SM 5310 C

Sample Receipt Information

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

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Client: Apex Laboratories **Service Request:**K2412870

Project: A4L0850

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
K2412870-001	MGMS1-3(43)	12/3/2024	1302
K2412870-002	MGMS2-4(40)	12/3/2024	1109
K2412870-003	MW-7	12/3/2024	1501
K2412870-004	MW-13	12/3/2024	1143
K2412870-005	MW-19	12/3/2024	1039
K2412870-006	MW-24i	12/3/2024	1426
K2412870-007	MW-26	12/3/2024	1309
K2412870-008	EX	12/3/2024	1542

SUBCONTRACT ORDER

Apex Laboratories

A4L0850

WO#24128710

SENDING LABORATORY:

Apex Laboratories
6700 S.W. Sandburg Street
Tigard, OR 97223
Phone: (503) 718-2323
Fax: (503) 336-0745
Project Manager: Darrell Auvil

RECEIVING LABORATORY:

ALS Group USA - Kelso
1317 S 13th Avenue
Kelso, WA 98626
Phone :(360) 577-7222
Fax: (360) 636-1068

Sample Name: MGMS1-3(43) **Sampled: 12/03/24 13:02** (A4L0850-01)

Analysis	Due	Expires	Comments
Total Organic Carbon - H2O (5310C)	12/16/24 17:00	12/31/24 13:02	Equis EFWEDD, no data package
Containers Supplied: (G)250 mL Poly - Sulfuric (H2SO4)			

Sample Name: MGMS2-4(40) **Sampled: 12/03/24 11:09** (A4L0850-04)

Analysis	Due	Expires	Comments
Total Organic Carbon - H2O (5310C)	12/16/24 17:00	12/31/24 11:09	Equis EFWEDD, no data package
Containers Supplied: (G)250 mL Poly - Sulfuric (H2SO4)			

Sample Name: MW-7 **Sampled: 12/03/24 15:01** (A4L0850-08)

Analysis	Due	Expires	Comments
Total Organic Carbon - H2O (5310C)	12/16/24 17:00	12/31/24 15:01	Equis EFWEDD, no data package
Containers Supplied: (G)250 mL Poly - Sulfuric (H2SO4)			

Sample Name: MW-13 **Sampled: 12/03/24 11:43** (A4L0850-11)

Analysis	Due	Expires	Comments
Total Organic Carbon - H2O (5310C)	12/16/24 17:00	12/31/24 11:43	Equis EFWEDD, no data package
Containers Supplied: (G)250 mL Poly - Sulfuric (H2SO4)			

Standard TAT

Released By	Date	Received By	Date
[signature]	12/5/24 1008	Franklin LaBuche	12/5/24 1008
[signature]	12/5/24 1230	[signature]	12/5/24 1230

SUBCONTRACT ORDER

Apex Laboratories

A4L0850

VN2412870

Sample Name: MW-19 **Sampled: 12/03/24 10:39** (A4L0850-12)

Analysis	Due	Expires	Comments
Total Organic Carbon - H2O (5310C) *Containers Supplied:* (G)250 mL Poly - Sulfuric (H2SO4)	12/16/24 17:00	12/31/24 10:39	Equis EFWEDD, no data package

Sample Name: MW-24i **Sampled: 12/03/24 14:26** (A4L0850-14)

Analysis	Due	Expires	Comments
Total Organic Carbon - H2O (5310C) *Containers Supplied:* (G)250 mL Poly - Sulfuric (H2SO4)	12/16/24 17:00	12/31/24 14:26	Equis EFWEDD, no data package

Sample Name: MW-26 **Sampled: 12/03/24 13:09** (A4L0850-15)

Analysis	Due	Expires	Comments
Total Organic Carbon - H2O (5310C) *Containers Supplied:* (G)250 mL Poly - Sulfuric (H2SO4)	12/16/24 17:00	12/31/24 13:09	Equis EFWEDD, no data package

Sample Name: EX **Sampled: 12/03/24 15:42** (A4L0850-16)

Analysis	Due	Expires	Comments
Total Organic Carbon - H2O (5310C) *Containers Supplied:* (G)250 mL Poly - Sulfuric (H2SO4)	12/16/24 17:00	12/31/24 15:42	Equis EFWEDD, no data package

Standard TAT

Released By	Date	Received By	Date
[signature]	12/5/24 1008	Franklin LaBeck	12/5/24 1008
[signature]	12/5/24 1230	[signature]	12/5/24 1230

Report is complete only if it includes ALS-Kelso and Air Technology Laboratories' Data.

PM LH

Cooler Receipt and Preservation Form

Client APEX Service Request K24 12870

Received: 12/5/24 Opened: 12/5/24 By: AP Unloaded: 12/5/24 By: AP

1. Samples were received via? *USPS* *Fed Ex* *UPS* *DHL* *PDX* (*Courier*) *Hand Delivered*
2. Samples were received in: (circle) (*Cooler*) *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA Y (N) If yes, how many and where? _____
   If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID / NA	Out of temp indicate with "X"	PM Notified if out of temp	Tracking Number NA	Filed
	4.1	1802					
	4.3	↓					

4. Was a Temperature Blank present in cooler? NA Y (N) If yes, notate the temperature in the appropriate column above:
   If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
5. Were samples received within the method specified temperature ranges? NA (Y) N
   If no, were they received on ice and same day as collected? If not, notate the cooler # above and notify the PM. (NA) Y N

If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*

6. Packing material: *Inserts* (*Baggies*) *Bubble Wrap* *Gel Packs* (*Wet Ice*) *Dry Ice* *Sleeves* _____
7. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
8. Were samples received in good condition (unbroken) NA (Y) N
9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA (Y) N
10. Did all sample labels and tags agree with custody papers? NA (Y) N
11. Were appropriate bottles/containers and volumes received for the tests indicated? NA (Y) N
12. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA (Y) N
13. Were VOA vials received without headspace? *Indicate in the table below.* (NA) Y N
14. Was C12/Res negative? (NA) Y N
15. Were samples received within the method specified time limit? If not, notate the error below and notify the PM (NA) Y N
16. Were 100ml sterile microbiology bottles filled exactly to the 100ml mark? (NA) Y N Underfilled Overfilled

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, Resolutions: _____

G:\SMO\2024 Forms SOP: SMO-GEN Reviewed: NP 1/3/2024

Miscellaneous Forms

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

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Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value over the calibration range.
J	The result is an estimated value between the MDL and the MRL.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Client: Apex Laboratories **Service Request:** K2412870
Project: A4L0850/

Sample Name: MGMS1-3(43) **Date Collected:** 12/3/24
Lab Code: K2412870-001 **Date Received:** 12/5/24
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
SM 5310 C		MSPECHT

Sample Name: MGMS2-4(40) **Date Collected:** 12/3/24
Lab Code: K2412870-002 **Date Received:** 12/5/24
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
SM 5310 C		MSPECHT

Sample Name: MW-7 **Date Collected:** 12/3/24
Lab Code: K2412870-003 **Date Received:** 12/5/24
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
SM 5310 C		MSPECHT

Sample Name: MW-13 **Date Collected:** 12/3/24
Lab Code: K2412870-004 **Date Received:** 12/5/24
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
SM 5310 C		MSPECHT

Sample Name: MW-19 **Date Collected:** 12/3/24
Lab Code: K2412870-005 **Date Received:** 12/5/24
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
SM 5310 C		MSPECHT

Client:	Apex Laboratories	**Service Request:**	K2412870
Project:	A4L0850/		

Sample Name:	MW-24i	**Date Collected:**	12/3/24
Lab Code:	K2412870-006	**Date Received:**	12/5/24
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
SM 5310 C		MSPECHT

Sample Name:	MW-26	**Date Collected:**	12/3/24
Lab Code:	K2412870-007	**Date Received:**	12/5/24
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
SM 5310 C		MSPECHT

Sample Name:	EX	**Date Collected:**	12/3/24
Lab Code:	K2412870-008	**Date Received:**	12/5/24
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
SM 5310 C		MSPECHT

Sample Results

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Analytical Report

Client:	Apex Laboratories	**Service Request:**	K2412870
Project:	A4L0850	**Date Collected:**	12/03/24 13:02
Sample Matrix:	Water	**Date Received:**	12/05/24 12:30
Sample Name:	MGMS1-3(43)	**Basis:**	NA
Lab Code:	K2412870-001		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Carbon, Total Organic	SM 5310 C	**2.00**	mg/L	0.50	0.08	1	12/16/24 15:33	

Analytical Report

Client:	Apex Laboratories	**Service Request:**	K2412870
Project:	A4L0850	**Date Collected:**	12/03/24 11:09
Sample Matrix:	Water	**Date Received:**	12/05/24 12:30
Sample Name:	MGMS2-4(40)	**Basis:**	NA
Lab Code:	K2412870-002		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Carbon, Total Organic	SM 5310 C	**3.00**	mg/L	0.50	0.08	1	12/16/24 15:33	

Analytical Report

Client:	Apex Laboratories	**Service Request:**	K2412870
Project:	A4L0850	**Date Collected:**	12/03/24 15:01
Sample Matrix:	Water	**Date Received:**	12/05/24 12:30
Sample Name:	MW-7	**Basis:**	NA
Lab Code:	K2412870-003		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Carbon, Total Organic	SM 5310 C	**4.50**	mg/L	0.50	0.08	1	12/16/24 15:33	

Analytical Report

Client:	Apex Laboratories	**Service Request:**	K2412870
Project:	A4L0850	**Date Collected:**	12/03/24 11:43
Sample Matrix:	Water	**Date Received:**	12/05/24 12:30
Sample Name:	MW-13	**Basis:**	NA
Lab Code:	K2412870-004		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Carbon, Total Organic	SM 5310 C	**1.80**	mg/L	0.50	0.08	1	12/16/24 15:33	

Analytical Report

Client:	Apex Laboratories	**Service Request:**	K2412870
Project:	A4L0850	**Date Collected:**	12/03/24 10:39
Sample Matrix:	Water	**Date Received:**	12/05/24 12:30
Sample Name:	MW-19	**Basis:**	NA
Lab Code:	K2412870-005		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Carbon, Total Organic	SM 5310 C	**4.60**	mg/L	0.50	0.08	1	12/16/24 15:33	

Analytical Report

Client:	Apex Laboratories	**Service Request:**	K2412870
Project:	A4L0850	**Date Collected:**	12/03/24 14:26
Sample Matrix:	Water	**Date Received:**	12/05/24 12:30
Sample Name:	MW-24i	**Basis:**	NA
Lab Code:	K2412870-006		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Carbon, Total Organic	SM 5310 C	**0.45 J**	mg/L	0.50	0.08	1	12/16/24 15:33	

Analytical Report

Client:	Apex Laboratories	**Service Request:**	K2412870
Project:	A4L0850	**Date Collected:**	12/03/24 13:09
Sample Matrix:	Water	**Date Received:**	12/05/24 12:30
Sample Name:	MW-26	**Basis:**	NA
Lab Code:	K2412870-007		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Carbon, Total Organic	SM 5310 C	**1.70**	mg/L	0.50	0.08	1	12/16/24 15:33	

Analytical Report

Client:	Apex Laboratories	**Service Request:**	K2412870
Project:	A4L0850	**Date Collected:**	12/03/24 15:42
Sample Matrix:	Water	**Date Received:**	12/05/24 12:30
Sample Name:	EX	**Basis:**	NA
Lab Code:	K2412870-008		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Carbon, Total Organic	SM 5310 C	**1.50**	mg/L	0.50	0.08	1	12/16/24 15:33	

QC Summary Forms

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Analytical Report

Client:	Apex Laboratories	**Service Request:**	K2412870
Project:	A4L0850	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	K2412870-MB		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Carbon, Total Organic	SM 5310 C	ND U	mg/L	0.50	0.08	1	12/16/24 15:33	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Apex Laboratories	**Service Request:**	K2412870
Project:	A4L0850	**Date Collected:**	12/03/24
Sample Matrix:	Water	**Date Received:**	12/05/24
		Date Analyzed:	12/16/24
		Date Extracted:	NA

Matrix Spike Summary
Carbon, Total Organic

Sample Name:	MGMS2-4(40)	**Units:**	mg/L
Lab Code:	K2412870-002	**Basis:**	NA
Analysis Method:	SM 5310 C		
Prep Method:	None		

Matrix Spike
K2412870-002MS

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Carbon, Total Organic	3.00	28.1	25.0	100	83-117

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client:	Apex Laboratories	**Service Request:**	K2412870
Project	A4L0850	**Date Collected:**	12/03/24
Sample Matrix:	Water	**Date Received:**	12/05/24
		Date Analyzed:	12/16/24

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	MGMS2-4(40)	**Units:**	mg/L
Lab Code:	K2412870-002	**Basis:**	NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample K2412870-002DUP Result	Average	RPD	RPD Limit
Carbon, Total Organic	SM 5310 C	0.50	0.08	3.00	3.10	3.05	3	10

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Apex Laboratories	**Service Request:**	K2412870
Project:	A4L0850	**Date Analyzed:**	12/16/24
Sample Matrix:	Water	**Date Extracted:**	NA

Lab Control Sample Summary
Carbon, Total Organic

Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	864444

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K2412870-LCS	24.2	25.0	97	83-117

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

Tuesday, December 24, 2024

Stephanie Bosze-Salisbury
GeoEngineers - Portland
5820 S Kelly Ave Unit B
Portland, OR 97239

RE: A4L0895 - Sunoco Van Main 4Q24 - 19001-009-36/37

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A4L0895, which was received by the laboratory on 12/4/2024 at 3:03:00PM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: DAuvil@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of sample receipt, unless prior arrangements have been made.

Cooler Receipt Information
Acceptable Receipt Temperature is less than, or equal to, 6 degC (not frozen), or received on ice the same day as sampling.
(See Cooler Receipt Form for details)
Default Cooler 2.8 degC

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.
All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.

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The results in this report apply to the samples analyzed in accordance with the chain of custody document(s) and updated by any subsequent written communications. This analytical report must be reproduced in its entirety.

Darrell Auvil, Client Services Manager

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ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0895 - 12 24 24 1135

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1	A4L0895-01	Water	12/04/24 13:39	12/04/24 15:03
MW-10	A4L0895-02	Water	12/04/24 12:18	12/04/24 15:03
MW-12	A4L0895-03	Water	12/04/24 08:25	12/04/24 15:03
MW-12 DUP	A4L0895-04	Water	12/04/24 08:25	12/04/24 15:03
MW-14	A4L0895-05	Water	12/04/24 09:29	12/04/24 15:03
MW-16	A4L0895-06	Water	12/04/24 09:59	12/04/24 15:03
MW-17	A4L0895-07	Water	12/04/24 10:18	12/04/24 15:03
MW-18i	A4L0895-08	Water	12/04/24 11:30	12/04/24 15:03
MW-19i	A4L0895-09	Water	12/04/24 08:43	12/04/24 15:03
MW-20i	A4L0895-10	Water	12/04/24 13:12	12/04/24 15:03
MW-21i-40	A4L0895-11	Water	12/04/24 12:26	12/04/24 15:03
MW-25i	A4L0895-12	Water	12/04/24 11:18	12/04/24 15:03
MP-1	A4L0895-13	Water	12/04/24 12:57	12/04/24 15:03

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Darrell Auvil, Client Services Manager

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GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0895 - 12 24 24 1135**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-1 (A4L0895-01)				**Matrix: Water**		**Batch: 24L0318**		
Bromobenzene	ND	---	0.500	ug/L	1	12/10/24 16:12	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	12/10/24 16:12	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	12/10/24 16:12	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	12/10/24 16:12	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	12/10/24 16:12	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	12/10/24 16:12	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	12/10/24 16:12	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	12/10/24 16:12	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	12/10/24 16:12	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	12/10/24 16:12	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	12/10/24 16:12	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	12/10/24 16:12	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	12/10/24 16:12	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	12/10/24 16:12	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	12/10/24 16:12	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	12/10/24 16:12	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	12/10/24 16:12	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	12/10/24 16:12	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	12/10/24 16:12	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	12/10/24 16:12	EPA 8260D	
1,1-Dichloroethane	**4.78**	---	0.400	ug/L	1	12/10/24 16:12	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	12/10/24 16:12	EPA 8260D	
1,1-Dichloroethene	**0.670**	---	0.400	ug/L	1	12/10/24 16:12	EPA 8260D	
cis-1,2-Dichloroethene	**74.0**	---	0.400	ug/L	1	12/10/24 16:12	EPA 8260D	
trans-1,2-Dichloroethene	**1.31**	---	0.400	ug/L	1	12/10/24 16:12	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	12/10/24 16:12	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	12/10/24 16:12	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	12/10/24 16:12	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	12/10/24 16:12	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/10/24 16:12	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/10/24 16:12	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	12/10/24 16:12	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	12/10/24 16:12	EPA 8260D	

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Darrell Auvil, Client Services Manager

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0895 - 12 24 24 1135

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-1 (A4L0895-01)				**Matrix: Water**		**Batch: 24L0318**		
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	12/10/24 16:12	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	12/10/24 16:12	EPA 8260D	
Tetrachloroethene (PCE)	**19.1**	---	0.400	ug/L	1	12/10/24 16:12	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	12/10/24 16:12	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	12/10/24 16:12	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	12/10/24 16:12	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	12/10/24 16:12	EPA 8260D	
Trichloroethene (TCE)	**13.7**	---	0.400	ug/L	1	12/10/24 16:12	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	12/10/24 16:12	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	12/10/24 16:12	EPA 8260D	
Vinyl chloride	**0.360**	---	0.200	ug/L	1	12/10/24 16:12	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*115 %*	*Limits: 80-120 %*	*1*	*12/10/24 16:12*	*EPA 8260D*	
Toluene-d8 (Surr)			*104 %*	*80-120 %*	*1*	*12/10/24 16:12*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*102 %*	*80-120 %*	*1*	*12/10/24 16:12*	*EPA 8260D*	
MW-10 (A4L0895-02)				**Matrix: Water**		**Batch: 24L0318**		
Bromobenzene	ND	---	0.500	ug/L	1	12/10/24 12:59	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	12/10/24 12:59	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	12/10/24 12:59	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	12/10/24 12:59	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	12/10/24 12:59	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	12/10/24 12:59	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	12/10/24 12:59	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	12/10/24 12:59	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	12/10/24 12:59	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	12/10/24 12:59	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	12/10/24 12:59	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	12/10/24 12:59	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	12/10/24 12:59	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	12/10/24 12:59	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	12/10/24 12:59	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	12/10/24 12:59	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	12/10/24 12:59	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	12/10/24 12:59	EPA 8260D	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0895 - 12 24 24 1135**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-10 (A4L0895-02)				**Matrix: Water**		**Batch: 24L0318**		
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	12/10/24 12:59	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	12/10/24 12:59	EPA 8260D	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	12/10/24 12:59	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	12/10/24 12:59	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	12/10/24 12:59	EPA 8260D	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	12/10/24 12:59	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	12/10/24 12:59	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	12/10/24 12:59	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	12/10/24 12:59	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	12/10/24 12:59	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	12/10/24 12:59	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/10/24 12:59	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/10/24 12:59	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	12/10/24 12:59	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	12/10/24 12:59	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	12/10/24 12:59	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	12/10/24 12:59	EPA 8260D	
Tetrachloroethene (PCE)	**3.60**	---	0.400	ug/L	1	12/10/24 12:59	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	12/10/24 12:59	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	12/10/24 12:59	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	12/10/24 12:59	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	12/10/24 12:59	EPA 8260D	
Trichloroethene (TCE)	**1.60**	---	0.400	ug/L	1	12/10/24 12:59	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	12/10/24 12:59	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	12/10/24 12:59	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	12/10/24 12:59	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*112 %*	*Limits:*	*80-120 %*	*1*	*12/10/24 12:59*	*EPA 8260D*	
Toluene-d8 (Surr)			*101 %*		*80-120 %*	*1*	*12/10/24 12:59*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*102 %*		*80-120 %*	*1*	*12/10/24 12:59*	*EPA 8260D*	
MW-12 (A4L0895-03)				**Matrix: Water**		**Batch: 24L0318**		
Bromobenzene	ND	---	0.500	ug/L	1	12/10/24 16:40	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	12/10/24 16:40	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	12/10/24 16:40	EPA 8260D	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0895 - 12 24 24 1135**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-12 (A4L0895-03)				**Matrix: Water**		**Batch: 24L0318**		
Bromoform	ND	---	1.00	ug/L	1	12/10/24 16:40	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	12/10/24 16:40	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	12/10/24 16:40	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	12/10/24 16:40	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	12/10/24 16:40	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	12/10/24 16:40	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	12/10/24 16:40	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	12/10/24 16:40	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	12/10/24 16:40	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	12/10/24 16:40	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	12/10/24 16:40	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	12/10/24 16:40	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	12/10/24 16:40	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	12/10/24 16:40	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	12/10/24 16:40	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	12/10/24 16:40	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	12/10/24 16:40	EPA 8260D	
1,1-Dichloroethane	**3.00**	---	0.400	ug/L	1	12/10/24 16:40	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	12/10/24 16:40	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	12/10/24 16:40	EPA 8260D	
cis-1,2-Dichloroethene	**9.99**	---	0.400	ug/L	1	12/10/24 16:40	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	12/10/24 16:40	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	12/10/24 16:40	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	12/10/24 16:40	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	12/10/24 16:40	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	12/10/24 16:40	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/10/24 16:40	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/10/24 16:40	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	12/10/24 16:40	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	12/10/24 16:40	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	12/10/24 16:40	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	12/10/24 16:40	EPA 8260D	
Tetrachloroethene (PCE)	**11.2**	---	0.400	ug/L	1	12/10/24 16:40	EPA 8260D	

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ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0895 - 12 24 24 1135

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-12 (A4L0895-03)				**Matrix: Water**		**Batch: 24L0318**		
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	12/10/24 16:40	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	12/10/24 16:40	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	12/10/24 16:40	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	12/10/24 16:40	EPA 8260D	
Trichloroethene (TCE)	**6.11**	---	0.400	ug/L	1	12/10/24 16:40	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	12/10/24 16:40	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	12/10/24 16:40	EPA 8260D	
Vinyl chloride	**7.63**	---	0.200	ug/L	1	12/10/24 16:40	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*110 %*	*Limits: 80-120 %*	*1*	*12/10/24 16:40*	*EPA 8260D*	
Toluene-d8 (Surr)			*104 %*	*80-120 %*	*1*	*12/10/24 16:40*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*105 %*	*80-120 %*	*1*	*12/10/24 16:40*	*EPA 8260D*	
MW-12 DUP (A4L0895-04)				**Matrix: Water**		**Batch: 24L0318**		
Bromobenzene	ND	---	0.500	ug/L	1	12/10/24 17:07	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	12/10/24 17:07	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	12/10/24 17:07	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	12/10/24 17:07	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	12/10/24 17:07	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	12/10/24 17:07	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	12/10/24 17:07	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	12/10/24 17:07	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	12/10/24 17:07	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	12/10/24 17:07	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	12/10/24 17:07	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	12/10/24 17:07	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	12/10/24 17:07	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	12/10/24 17:07	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	12/10/24 17:07	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	12/10/24 17:07	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	12/10/24 17:07	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	12/10/24 17:07	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	12/10/24 17:07	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	12/10/24 17:07	EPA 8260D	
1,1-Dichloroethane	**2.88**	---	0.400	ug/L	1	12/10/24 17:07	EPA 8260D	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0895 - 12 24 24 1135**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-12 DUP (A4L0895-04)				**Matrix: Water**		**Batch: 24L0318**		
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	12/10/24 17:07	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	12/10/24 17:07	EPA 8260D	
cis-1,2-Dichloroethene	**9.52**	---	0.400	ug/L	1	12/10/24 17:07	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	12/10/24 17:07	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	12/10/24 17:07	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	12/10/24 17:07	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	12/10/24 17:07	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	12/10/24 17:07	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/10/24 17:07	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/10/24 17:07	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	12/10/24 17:07	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	12/10/24 17:07	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	12/10/24 17:07	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	12/10/24 17:07	EPA 8260D	
Tetrachloroethene (PCE)	**10.6**	---	0.400	ug/L	1	12/10/24 17:07	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	12/10/24 17:07	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	12/10/24 17:07	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	12/10/24 17:07	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	12/10/24 17:07	EPA 8260D	
Trichloroethene (TCE)	**6.11**	---	0.400	ug/L	1	12/10/24 17:07	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	12/10/24 17:07	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	12/10/24 17:07	EPA 8260D	
Vinyl chloride	**7.28**	---	0.200	ug/L	1	12/10/24 17:07	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*112 %*	*Limits:*	*80-120 %*	*1*	*12/10/24 17:07*	*EPA 8260D*	
Toluene-d8 (Surr)			*102 %*		*80-120 %*	*1*	*12/10/24 17:07*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*103 %*		*80-120 %*	*1*	*12/10/24 17:07*	*EPA 8260D*	
MW-14 (A4L0895-05)				**Matrix: Water**		**Batch: 24L0318**		
Bromobenzene	ND	---	0.500	ug/L	1	12/10/24 17:35	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	12/10/24 17:35	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	12/10/24 17:35	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	12/10/24 17:35	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	12/10/24 17:35	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	12/10/24 17:35	EPA 8260D	

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ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0895 - 12 24 24 1135

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-14 (A4L0895-05)				**Matrix: Water**		**Batch: 24L0318**		
Chlorobenzene	ND	---	0.500	ug/L	1	12/10/24 17:35	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	12/10/24 17:35	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	12/10/24 17:35	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	12/10/24 17:35	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	12/10/24 17:35	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	12/10/24 17:35	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	12/10/24 17:35	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	12/10/24 17:35	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	12/10/24 17:35	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	12/10/24 17:35	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	12/10/24 17:35	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	12/10/24 17:35	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	12/10/24 17:35	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	12/10/24 17:35	EPA 8260D	
1,1-Dichloroethane	**4.28**	---	0.400	ug/L	1	12/10/24 17:35	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	12/10/24 17:35	EPA 8260D	
1,1-Dichloroethene	**2.82**	---	0.400	ug/L	1	12/10/24 17:35	EPA 8260D	
cis-1,2-Dichloroethene	**69.5**	---	0.400	ug/L	1	12/10/24 17:35	EPA 8260D	
trans-1,2-Dichloroethene	**1.86**	---	0.400	ug/L	1	12/10/24 17:35	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	12/10/24 17:35	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	12/10/24 17:35	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	12/10/24 17:35	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	12/10/24 17:35	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/10/24 17:35	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/10/24 17:35	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	12/10/24 17:35	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	12/10/24 17:35	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	12/10/24 17:35	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	12/10/24 17:35	EPA 8260D	
Tetrachloroethene (PCE)	**144**	---	0.400	ug/L	1	12/10/24 17:35	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	12/10/24 17:35	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	12/10/24 17:35	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	12/10/24 17:35	EPA 8260D	

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503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0895 - 12 24 24 1135

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-14 (A4L0895-05)				**Matrix: Water**		**Batch: 24L0318**		
1,1,1-Trichloroethane	**0.570**	---	0.400	ug/L	1	12/10/24 17:35	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	12/10/24 17:35	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	12/10/24 17:35	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	12/10/24 17:35	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*118 %*	*Limits: 80-120 %*	*1*	*12/10/24 17:35*	*EPA 8260D*	
Toluene-d8 (Surr)			*99 %*	*80-120 %*	*1*	*12/10/24 17:35*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*105 %*	*80-120 %*	*1*	*12/10/24 17:35*	*EPA 8260D*	
MW-14 (A4L0895-05RE1)				**Matrix: Water**		**Batch: 24L0411**		
Trichloroethene (TCE)	**239**	---	4.00	ug/L	10	12/11/24 20:27	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*116 %*	*Limits: 80-120 %*	*1*	*12/11/24 20:27*	*EPA 8260D*	
Toluene-d8 (Surr)			*100 %*	*80-120 %*	*1*	*12/11/24 20:27*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*103 %*	*80-120 %*	*1*	*12/11/24 20:27*	*EPA 8260D*	
MW-16 (A4L0895-06)				**Matrix: Water**		**Batch: 24L0318**		
Bromobenzene	ND	---	0.500	ug/L	1	12/10/24 18:02	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	12/10/24 18:02	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	12/10/24 18:02	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	12/10/24 18:02	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	12/10/24 18:02	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	12/10/24 18:02	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	12/10/24 18:02	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	12/10/24 18:02	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	12/10/24 18:02	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	12/10/24 18:02	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	12/10/24 18:02	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	12/10/24 18:02	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	12/10/24 18:02	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	12/10/24 18:02	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	12/10/24 18:02	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	12/10/24 18:02	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	12/10/24 18:02	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	12/10/24 18:02	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	12/10/24 18:02	EPA 8260D	

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6700 S.W. Sandburg Street
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503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0895 - 12 24 24 1135

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-16 (A4L0895-06)				**Matrix: Water**		**Batch: 24L0318**		
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	12/10/24 18:02	EPA 8260D	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	12/10/24 18:02	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	12/10/24 18:02	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	12/10/24 18:02	EPA 8260D	
cis-1,2-Dichloroethene	**14.0**	---	0.400	ug/L	1	12/10/24 18:02	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	12/10/24 18:02	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	12/10/24 18:02	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	12/10/24 18:02	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	12/10/24 18:02	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	12/10/24 18:02	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/10/24 18:02	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/10/24 18:02	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	12/10/24 18:02	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	12/10/24 18:02	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	12/10/24 18:02	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	12/10/24 18:02	EPA 8260D	
Tetrachloroethene (PCE)	**47.8**	---	0.400	ug/L	1	12/10/24 18:02	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	12/10/24 18:02	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	12/10/24 18:02	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	12/10/24 18:02	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	12/10/24 18:02	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	12/10/24 18:02	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	12/10/24 18:02	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	12/10/24 18:02	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*111 %*	*Limits: 80-120 %*	*1*	*12/10/24 18:02*	*EPA 8260D*	
Toluene-d8 (Surr)			*100 %*	*80-120 %*	*1*	*12/10/24 18:02*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*102 %*	*80-120 %*	*1*	*12/10/24 18:02*	*EPA 8260D*	
MW-16 (A4L0895-06RE1)				**Matrix: Water**		**Batch: 24L0411**		
Trichloroethene (TCE)	**3.76**	---	0.400	ug/L	1	12/11/24 20:00	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*110 %*	*Limits: 80-120 %*	*1*	*12/11/24 20:00*	*EPA 8260D*	
Toluene-d8 (Surr)			*99 %*	*80-120 %*	*1*	*12/11/24 20:00*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*103 %*	*80-120 %*	*1*	*12/11/24 20:00*	*EPA 8260D*	

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Darrell Auvil, Client Services Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0895 - 12 24 24 1135**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-17 (A4L0895-07)				**Matrix: Water**		**Batch: 24L0318**		
Bromobenzene	ND	---	0.500	ug/L	1	12/10/24 13:26	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	12/10/24 13:26	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	12/10/24 13:26	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	12/10/24 13:26	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	12/10/24 13:26	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	12/10/24 13:26	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	12/10/24 13:26	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	12/10/24 13:26	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	12/10/24 13:26	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	12/10/24 13:26	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	12/10/24 13:26	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	12/10/24 13:26	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	12/10/24 13:26	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	12/10/24 13:26	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	12/10/24 13:26	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	12/10/24 13:26	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	12/10/24 13:26	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	12/10/24 13:26	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	12/10/24 13:26	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	12/10/24 13:26	EPA 8260D	
1,1-Dichloroethane	**0.420**	---	0.400	ug/L	1	12/10/24 13:26	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	12/10/24 13:26	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	12/10/24 13:26	EPA 8260D	
cis-1,2-Dichloroethene	**11.8**	---	0.400	ug/L	1	12/10/24 13:26	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	12/10/24 13:26	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	12/10/24 13:26	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	12/10/24 13:26	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	12/10/24 13:26	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	12/10/24 13:26	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/10/24 13:26	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/10/24 13:26	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	12/10/24 13:26	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	12/10/24 13:26	EPA 8260D	

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Darrell Auvil, Client Services Manager

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ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0895 - 12 24 24 1135

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-17 (A4L0895-07)				**Matrix: Water**		**Batch: 24L0318**		
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	12/10/24 13:26	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	12/10/24 13:26	EPA 8260D	
Tetrachloroethene (PCE)	**3.49**	---	0.400	ug/L	1	12/10/24 13:26	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	12/10/24 13:26	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	12/10/24 13:26	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	12/10/24 13:26	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	12/10/24 13:26	EPA 8260D	
Trichloroethene (TCE)	**5.95**	---	0.400	ug/L	1	12/10/24 13:26	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	12/10/24 13:26	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	12/10/24 13:26	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	12/10/24 13:26	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*113 %*	*Limits: 80-120 %*	*1*	*12/10/24 13:26*	*EPA 8260D*	
Toluene-d8 (Surr)			*103 %*	*80-120 %*	*1*	*12/10/24 13:26*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*104 %*	*80-120 %*	*1*	*12/10/24 13:26*	*EPA 8260D*	
MW-18i (A4L0895-08)				**Matrix: Water**		**Batch: 24L0318**		
Bromobenzene	ND	---	0.500	ug/L	1	12/10/24 13:54	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	12/10/24 13:54	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	12/10/24 13:54	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	12/10/24 13:54	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	12/10/24 13:54	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	12/10/24 13:54	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	12/10/24 13:54	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	12/10/24 13:54	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	12/10/24 13:54	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	12/10/24 13:54	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	12/10/24 13:54	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	12/10/24 13:54	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	12/10/24 13:54	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	12/10/24 13:54	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	12/10/24 13:54	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	12/10/24 13:54	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	12/10/24 13:54	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	12/10/24 13:54	EPA 8260D	

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0895 - 12 24 24 1135

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-18i (A4L0895-08)				**Matrix: Water**		**Batch: 24L0318**		
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	12/10/24 13:54	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	12/10/24 13:54	EPA 8260D	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	12/10/24 13:54	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	12/10/24 13:54	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	12/10/24 13:54	EPA 8260D	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	12/10/24 13:54	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	12/10/24 13:54	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	12/10/24 13:54	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	12/10/24 13:54	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	12/10/24 13:54	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	12/10/24 13:54	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/10/24 13:54	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/10/24 13:54	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	12/10/24 13:54	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	12/10/24 13:54	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	12/10/24 13:54	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	12/10/24 13:54	EPA 8260D	
Tetrachloroethene (PCE)	**1.58**	---	0.400	ug/L	1	12/10/24 13:54	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	12/10/24 13:54	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	12/10/24 13:54	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	12/10/24 13:54	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	12/10/24 13:54	EPA 8260D	
Trichloroethene (TCE)	**0.460**	---	0.400	ug/L	1	12/10/24 13:54	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	12/10/24 13:54	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	12/10/24 13:54	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	12/10/24 13:54	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*112 %*	*Limits: 80-120 %*	*1*	*12/10/24 13:54*	*EPA 8260D*	
Toluene-d8 (Surr)			*102 %*	*80-120 %*	*1*	*12/10/24 13:54*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*103 %*	*80-120 %*	*1*	*12/10/24 13:54*	*EPA 8260D*	
MW-19i (A4L0895-09)				**Matrix: Water**		**Batch: 24L0318**		
Bromobenzene	ND	---	0.500	ug/L	1	12/10/24 14:22	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	12/10/24 14:22	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	12/10/24 14:22	EPA 8260D	

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Darrell Auvil, Client Services Manager

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0895 - 12 24 24 1135**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-19i (A4L0895-09)				**Matrix: Water**		**Batch: 24L0318**		
Bromoform	ND	---	1.00	ug/L	1	12/10/24 14:22	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	12/10/24 14:22	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	12/10/24 14:22	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	12/10/24 14:22	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	12/10/24 14:22	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	12/10/24 14:22	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	12/10/24 14:22	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	12/10/24 14:22	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	12/10/24 14:22	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	12/10/24 14:22	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	12/10/24 14:22	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	12/10/24 14:22	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	12/10/24 14:22	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	12/10/24 14:22	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	12/10/24 14:22	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	12/10/24 14:22	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	12/10/24 14:22	EPA 8260D	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	12/10/24 14:22	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	12/10/24 14:22	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	12/10/24 14:22	EPA 8260D	
cis-1,2-Dichloroethene	**0.470**	---	0.400	ug/L	1	12/10/24 14:22	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	12/10/24 14:22	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	12/10/24 14:22	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	12/10/24 14:22	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	12/10/24 14:22	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	12/10/24 14:22	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/10/24 14:22	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/10/24 14:22	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	12/10/24 14:22	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	12/10/24 14:22	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	12/10/24 14:22	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	12/10/24 14:22	EPA 8260D	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	12/10/24 14:22	EPA 8260D	

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Darrell Auvil, Client Services Manager

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0895 - 12 24 24 1135**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-19i (A4L0895-09)				**Matrix: Water**		**Batch: 24L0318**		
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	12/10/24 14:22	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	12/10/24 14:22	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	12/10/24 14:22	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	12/10/24 14:22	EPA 8260D	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	12/10/24 14:22	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	12/10/24 14:22	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	12/10/24 14:22	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	12/10/24 14:22	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*112 %*	*Limits: 80-120 %*	*1*	*12/10/24 14:22*	*EPA 8260D*	
Toluene-d8 (Surr)			*101 %*	*80-120 %*	*1*	*12/10/24 14:22*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*102 %*	*80-120 %*	*1*	*12/10/24 14:22*	*EPA 8260D*	
MW-20i (A4L0895-10)				**Matrix: Water**		**Batch: 24L0318**		
Bromobenzene	ND	---	0.500	ug/L	1	12/10/24 14:49	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	12/10/24 14:49	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	12/10/24 14:49	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	12/10/24 14:49	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	12/10/24 14:49	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	12/10/24 14:49	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	12/10/24 14:49	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	12/10/24 14:49	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	12/10/24 14:49	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	12/10/24 14:49	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	12/10/24 14:49	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	12/10/24 14:49	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	12/10/24 14:49	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	12/10/24 14:49	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	12/10/24 14:49	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	12/10/24 14:49	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	12/10/24 14:49	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	12/10/24 14:49	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	12/10/24 14:49	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	12/10/24 14:49	EPA 8260D	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	12/10/24 14:49	EPA 8260D	

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Darrell Auvil, Client Services Manager

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0895 - 12 24 24 1135

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-20i (A4L0895-10)				**Matrix: Water**		**Batch: 24L0318**		
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	12/10/24 14:49	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	12/10/24 14:49	EPA 8260D	
cis-1,2-Dichloroethene	**5.69**	---	0.400	ug/L	1	12/10/24 14:49	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	12/10/24 14:49	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	12/10/24 14:49	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	12/10/24 14:49	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	12/10/24 14:49	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	12/10/24 14:49	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/10/24 14:49	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/10/24 14:49	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	12/10/24 14:49	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	12/10/24 14:49	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	12/10/24 14:49	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	12/10/24 14:49	EPA 8260D	
Tetrachloroethene (PCE)	**1.87**	---	0.400	ug/L	1	12/10/24 14:49	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	12/10/24 14:49	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	12/10/24 14:49	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	12/10/24 14:49	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	12/10/24 14:49	EPA 8260D	
Trichloroethene (TCE)	**1.21**	---	0.400	ug/L	1	12/10/24 14:49	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	12/10/24 14:49	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	12/10/24 14:49	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	12/10/24 14:49	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*111 %*	*Limits:*	*80-120 %*	*1*	*12/10/24 14:49*	*EPA 8260D*	
Toluene-d8 (Surr)			*108 %*		*80-120 %*	*1*	*12/10/24 14:49*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*103 %*		*80-120 %*	*1*	*12/10/24 14:49*	*EPA 8260D*	
MW-21i-40 (A4L0895-11)				**Matrix: Water**		**Batch: 24L0318**		
Bromobenzene	ND	---	0.500	ug/L	1	12/10/24 15:45	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	12/10/24 15:45	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	12/10/24 15:45	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	12/10/24 15:45	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	12/10/24 15:45	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	12/10/24 15:45	EPA 8260D	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0895 - 12 24 24 1135**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-21i-40 (A4L0895-11)				**Matrix: Water**		**Batch: 24L0318**		
Chlorobenzene	ND	---	0.500	ug/L	1	12/10/24 15:45	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	12/10/24 15:45	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	12/10/24 15:45	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	12/10/24 15:45	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	12/10/24 15:45	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	12/10/24 15:45	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	12/10/24 15:45	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	12/10/24 15:45	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	12/10/24 15:45	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	12/10/24 15:45	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	12/10/24 15:45	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	12/10/24 15:45	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	12/10/24 15:45	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	12/10/24 15:45	EPA 8260D	
1,1-Dichloroethane	**1.19**	---	0.400	ug/L	1	12/10/24 15:45	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	12/10/24 15:45	EPA 8260D	
1,1-Dichloroethene	**0.440**	---	0.400	ug/L	1	12/10/24 15:45	EPA 8260D	
cis-1,2-Dichloroethene	**20.3**	---	0.400	ug/L	1	12/10/24 15:45	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	12/10/24 15:45	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	12/10/24 15:45	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	12/10/24 15:45	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	12/10/24 15:45	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	12/10/24 15:45	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/10/24 15:45	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/10/24 15:45	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	12/10/24 15:45	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	12/10/24 15:45	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	12/10/24 15:45	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	12/10/24 15:45	EPA 8260D	
Tetrachloroethene (PCE)	**20.8**	---	0.400	ug/L	1	12/10/24 15:45	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	12/10/24 15:45	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	12/10/24 15:45	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	12/10/24 15:45	EPA 8260D	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0895 - 12 24 24 1135**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-21i-40 (A4L0895-11)				**Matrix: Water**		**Batch: 24L0318**		
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	12/10/24 15:45	EPA 8260D	
Trichloroethene (TCE)	**9.85**	---	0.400	ug/L	1	12/10/24 15:45	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	12/10/24 15:45	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	12/10/24 15:45	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	12/10/24 15:45	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*112 %*	*Limits: 80-120 %*	*1*	*12/10/24 15:45*	*EPA 8260D*	
Toluene-d8 (Surr)			*101 %*	*80-120 %*	*1*	*12/10/24 15:45*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*102 %*	*80-120 %*	*1*	*12/10/24 15:45*	*EPA 8260D*	
MW-25i (A4L0895-12)				**Matrix: Water**		**Batch: 24L0318**		
Bromobenzene	ND	---	0.500	ug/L	1	12/10/24 15:17	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	12/10/24 15:17	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	12/10/24 15:17	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	12/10/24 15:17	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	12/10/24 15:17	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	12/10/24 15:17	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	12/10/24 15:17	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	12/10/24 15:17	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	12/10/24 15:17	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	12/10/24 15:17	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	12/10/24 15:17	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	12/10/24 15:17	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	12/10/24 15:17	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	12/10/24 15:17	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	12/10/24 15:17	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	12/10/24 15:17	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	12/10/24 15:17	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	12/10/24 15:17	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	12/10/24 15:17	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	12/10/24 15:17	EPA 8260D	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	12/10/24 15:17	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	12/10/24 15:17	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	12/10/24 15:17	EPA 8260D	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	12/10/24 15:17	EPA 8260D	

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GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0895 - 12 24 24 1135**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-25i (A4L0895-12)				**Matrix: Water**		**Batch: 24L0318**		
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	12/10/24 15:17	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	12/10/24 15:17	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	12/10/24 15:17	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	12/10/24 15:17	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	12/10/24 15:17	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/10/24 15:17	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/10/24 15:17	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	12/10/24 15:17	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	12/10/24 15:17	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	12/10/24 15:17	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	12/10/24 15:17	EPA 8260D	
Tetrachloroethene (PCE)	**0.640**	---	0.400	ug/L	1	12/10/24 15:17	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	12/10/24 15:17	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	12/10/24 15:17	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	12/10/24 15:17	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	12/10/24 15:17	EPA 8260D	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	12/10/24 15:17	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	12/10/24 15:17	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	12/10/24 15:17	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	12/10/24 15:17	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*111 %*	*Limits: 80-120 %*	*1*	*12/10/24 15:17*	*EPA 8260D*	
Toluene-d8 (Surr)			*102 %*	*80-120 %*	*1*	*12/10/24 15:17*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*102 %*	*80-120 %*	*1*	*12/10/24 15:17*	*EPA 8260D*	
MP-1 (A4L0895-13)				**Matrix: Water**		**Batch: 24L0318**		
Bromobenzene	ND	---	0.500	ug/L	1	12/10/24 18:30	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	12/10/24 18:30	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	12/10/24 18:30	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	12/10/24 18:30	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	12/10/24 18:30	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	12/10/24 18:30	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	12/10/24 18:30	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	12/10/24 18:30	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	12/10/24 18:30	EPA 8260D	

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503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0895 - 12 24 24 1135

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MP-1 (A4L0895-13)				**Matrix: Water**		**Batch: 24L0318**		
Chloromethane	ND	---	5.00	ug/L	1	12/10/24 18:30	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	12/10/24 18:30	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	12/10/24 18:30	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	12/10/24 18:30	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	12/10/24 18:30	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	12/10/24 18:30	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	12/10/24 18:30	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	12/10/24 18:30	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	12/10/24 18:30	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	12/10/24 18:30	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	12/10/24 18:30	EPA 8260D	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	12/10/24 18:30	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	12/10/24 18:30	EPA 8260D	
1,1-Dichloroethene	**0.440**	---	0.400	ug/L	1	12/10/24 18:30	EPA 8260D	
cis-1,2-Dichloroethene	**4.78**	---	0.400	ug/L	1	12/10/24 18:30	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	12/10/24 18:30	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	12/10/24 18:30	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	12/10/24 18:30	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	12/10/24 18:30	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	12/10/24 18:30	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/10/24 18:30	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/10/24 18:30	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	12/10/24 18:30	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	12/10/24 18:30	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	12/10/24 18:30	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	12/10/24 18:30	EPA 8260D	
Tetrachloroethene (PCE)	**168**	---	0.400	ug/L	1	12/10/24 18:30	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	12/10/24 18:30	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	12/10/24 18:30	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	12/10/24 18:30	EPA 8260D	
1,1,1-Trichloroethane	**0.470**	---	0.400	ug/L	1	12/10/24 18:30	EPA 8260D	
Trichloroethene (TCE)	**24.3**	---	0.400	ug/L	1	12/10/24 18:30	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	12/10/24 18:30	EPA 8260D	

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ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0895 - 12 24 24 1135

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MP-1 (A4L0895-13)				**Matrix: Water**		**Batch: 24L0318**		
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	12/10/24 18:30	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	12/10/24 18:30	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*120 %*	*Limits: 80-120 %*	*1*	*12/10/24 18:30*	*EPA 8260D*	
Toluene-d8 (Surr)			*99 %*	*80-120 %*	*1*	*12/10/24 18:30*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*102 %*	*80-120 %*	*1*	*12/10/24 18:30*	*EPA 8260D*	

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0895 - 12 24 24 1135

ANALYTICAL SAMPLE RESULTS

Ammonia by Gas Diffusion and Colorimetric Detection

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-1 (A4L0895-01)				**Matrix: Water**		**Batch: 24L0260**		
Ammonia as N	**135**	---	1.00	mg/L	50	12/09/24 11:36	SM 4500-NH3 G	
MW-10 (A4L0895-02RE1)				**Matrix: Water**		**Batch: 24L0294**		
Ammonia as N	**11.1**	---	0.100	mg/L	5	12/09/24 13:37	SM 4500-NH3 G	
MW-12 (A4L0895-03RE1)				**Matrix: Water**		**Batch: 24L0294**		
Ammonia as N	**7.53**	---	0.200	mg/L	10	12/09/24 13:38	SM 4500-NH3 G	
MW-12 DUP (A4L0895-04RE1)				**Matrix: Water**		**Batch: 24L0294**		
Ammonia as N	**7.81**	---	0.200	mg/L	10	12/09/24 13:40	SM 4500-NH3 G	
MW-14 (A4L0895-05RE1)				**Matrix: Water**		**Batch: 24L0294**		
Ammonia as N	**7.34**	---	0.100	mg/L	5	12/09/24 13:43	SM 4500-NH3 G	
MW-16 (A4L0895-06)				**Matrix: Water**		**Batch: 24L0260**		
Ammonia as N	ND	---	0.0200	mg/L	1	12/09/24 11:55	SM 4500-NH3 G	
MW-17 (A4L0895-07)				**Matrix: Water**		**Batch: 24L0260**		
Ammonia as N	**1.85**	---	0.0200	mg/L	1	12/09/24 11:57	SM 4500-NH3 G	
MW-18i (A4L0895-08)				**Matrix: Water**		**Batch: 24L0170**		
Ammonia as N	ND	---	0.0200	mg/L	1	12/05/24 14:07	SM 4500-NH3 G	
MW-19i (A4L0895-09)				**Matrix: Water**		**Batch: 24L0170**		
Ammonia as N	**0.263**	---	0.0200	mg/L	1	12/05/24 14:09	SM 4500-NH3 G	
MW-20i (A4L0895-10RE1)				**Matrix: Water**		**Batch: 24L0260**		
Ammonia as N	ND	---	0.0200	mg/L	1	12/09/24 12:00	SM 4500-NH3 G	
MW-21i-40 (A4L0895-11RE1)				**Matrix: Water**		**Batch: 24L0260**		
Ammonia as N	ND	---	0.0200	mg/L	1	12/09/24 12:01	SM 4500-NH3 G	
MW-25i (A4L0895-12RE1)				**Matrix: Water**		**Batch: 24L0260**		
Ammonia as N	ND	---	0.0200	mg/L	1	12/09/24 12:04	SM 4500-NH3 G	
MP-1 (A4L0895-13RE1)				**Matrix: Water**		**Batch: 24L0260**		

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0895 - 12 24 24 1135**

ANALYTICAL SAMPLE RESULTS

Ammonia by Gas Diffusion and Colorimetric Detection

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MP-1 (A4L0895-13RE1)				**Matrix: Water**		**Batch: 24L0260**		
Ammonia as N	**0.153**	---	0.0200	mg/L	1	12/09/24 12:06	SM 4500-NH3 G	

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GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0895 - 12 24 24 1135**

ANALYTICAL SAMPLE RESULTS

Anions by Ion Chromatography

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-1 (A4L0895-01)				**Matrix: Water**				
Batch: 24L0148								
Nitrate-Nitrogen	**113**	---	5.00	mg/L	20	12/05/24 19:56	EPA 300.0	
MW-1 (A4L0895-01RE1)				**Matrix: Water**				
Batch: 24L0148								
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	12/06/24 03:28	EPA 300.0	
MW-10 (A4L0895-02)				**Matrix: Water**				
Batch: 24L0148								
Nitrate-Nitrogen	**357**	---	25.0	mg/L	100	12/05/24 20:17	EPA 300.0	
MW-10 (A4L0895-02RE1)				**Matrix: Water**				
Batch: 24L0148								
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	12/06/24 03:50	EPA 300.0	
MW-12 (A4L0895-03)				**Matrix: Water**				
Batch: 24L0148								
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	12/05/24 20:39	EPA 300.0	
MW-12 (A4L0895-03RE2)				**Matrix: Water**				
Batch: 24L0211								
Nitrate-Nitrogen	**35.1**	---	2.50	mg/L	10	12/06/24 12:14	EPA 300.0	**H-01**
MW-12 DUP (A4L0895-04)				**Matrix: Water**				
Batch: 24L0148								
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	12/05/24 21:44	EPA 300.0	
MW-12 DUP (A4L0895-04RE2)				**Matrix: Water**				
Batch: 24L0211								
Nitrate-Nitrogen	**35.3**	---	2.50	mg/L	10	12/06/24 12:35	EPA 300.0	**H-01**
MW-14 (A4L0895-05)				**Matrix: Water**				
Batch: 24L0148								
Nitrate-Nitrogen	**305**	---	25.0	mg/L	100	12/05/24 22:05	EPA 300.0	
MW-14 (A4L0895-05RE1)				**Matrix: Water**				
Batch: 24L0148								

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GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0895 - 12 24 24 1135**

ANALYTICAL SAMPLE RESULTS

Anions by Ion Chromatography

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-14 (A4L0895-05RE1)				**Matrix: Water**				
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	12/06/24 04:12	EPA 300.0	
MW-16 (A4L0895-06)				**Matrix: Water**				
Batch: 24L0148								
Nitrate-Nitrogen	**13.8**	---	1.25	mg/L	5	12/05/24 23:10	EPA 300.0	
MW-16 (A4L0895-06RE1)				**Matrix: Water**				
Batch: 24L0148								
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	12/06/24 04:33	EPA 300.0	
MW-17 (A4L0895-07)				**Matrix: Water**				
Batch: 24L0148								
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	12/05/24 23:31	EPA 300.0	
MW-17 (A4L0895-07RE2)				**Matrix: Water**				
Batch: 24L0211								
Nitrate-Nitrogen	**17.9**	---	1.25	mg/L	5	12/06/24 12:57	EPA 300.0	**H-01**
MW-18i (A4L0895-08)				**Matrix: Water**				
Batch: 24L0148								
Nitrate-Nitrogen	**2.01**	---	0.250	mg/L	1	12/05/24 23:53	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	12/05/24 23:53	EPA 300.0	
MW-19i (A4L0895-09)				**Matrix: Water**				
Batch: 24L0148								
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	12/06/24 00:14	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	12/06/24 00:14	EPA 300.0	
MW-20i (A4L0895-10)				**Matrix: Water**				
Batch: 24L0148								
Nitrate-Nitrogen	**0.424**	---	0.250	mg/L	1	12/06/24 00:36	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	12/06/24 00:36	EPA 300.0	
MW-21i-40 (A4L0895-11)				**Matrix: Water**				
Batch: 24L0148								
Nitrate-Nitrogen	**1.75**	---	0.250	mg/L	1	12/06/24 01:41	EPA 300.0	

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0895 - 12 24 24 1135

ANALYTICAL SAMPLE RESULTS

Anions by Ion Chromatography

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-21i-40 (A4L0895-11)				**Matrix: Water**				
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	12/06/24 01:41	EPA 300.0	
MW-25i (A4L0895-12)				**Matrix: Water**				
Batch: 24L0148								
Nitrate-Nitrogen	**1.72**	---	0.250	mg/L	1	12/06/24 02:02	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	12/06/24 02:02	EPA 300.0	
MP-1 (A4L0895-13)				**Matrix: Water**				
Batch: 24L0148								
Nitrate-Nitrogen	**17.0**	---	1.25	mg/L	5	12/06/24 02:24	EPA 300.0	
MP-1 (A4L0895-13RE1)				**Matrix: Water**				
Batch: 24L0148								
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	12/06/24 04:55	EPA 300.0	

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GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0895 - 12 24 24 1135**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0318 - EPA 5030C							**Water**					
Blank (24L0318-BLK1)			Prepared: 12/10/24 07:15 Analyzed: 12/10/24 10:13									
EPA 8260D												
Bromobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Bromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromodichloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromoform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromomethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Carbon tetrachloride	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Chloroethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Chloroform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chloromethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
2-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
4-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Dibromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dibromomethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Methylene chloride	ND	---	10.0	ug/L	1	---	---	---	---	---	---	

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Darrell Auvil, Client Services Manager

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ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0895 - 12 24 24 1135

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0318 - EPA 5030C									Water			
Blank (24L0318-BLK1)			Prepared: 12/10/24 07:15 Analyzed: 12/10/24 10:13									
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Vinyl chloride	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*109 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*101 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*102 %*		*80-120 %*			*"*				
LCS (24L0318-BS1)			Prepared: 12/10/24 07:15 Analyzed: 12/10/24 09:06									
EPA 8260D												
Bromobenzene	16.7	---	0.500	ug/L	1	20.0	---	84	80-120%	---	---	
Bromochloromethane	19.2	---	1.00	ug/L	1	20.0	---	96	80-120%	---	---	
Bromodichloromethane	20.5	---	1.00	ug/L	1	20.0	---	103	80-120%	---	---	
Bromoform	20.3	---	1.00	ug/L	1	20.0	---	102	80-120%	---	---	
Bromomethane	25.8	---	5.00	ug/L	1	20.0	---	**129**	**80-120%**	---	---	Q-56
Carbon tetrachloride	23.2	---	1.00	ug/L	1	20.0	---	116	80-120%	---	---	
Chlorobenzene	19.2	---	0.500	ug/L	1	20.0	---	96	80-120%	---	---	
Chloroethane	26.8	---	5.00	ug/L	1	20.0	---	**134**	**80-120%**	---	---	Q-56
Chloroform	19.8	---	1.00	ug/L	1	20.0	---	99	80-120%	---	---	
Chloromethane	19.6	---	5.00	ug/L	1	20.0	---	98	80-120%	---	---	
2-Chlorotoluene	17.0	---	1.00	ug/L	1	20.0	---	85	80-120%	---	---	
4-Chlorotoluene	18.6	---	1.00	ug/L	1	20.0	---	93	80-120%	---	---	
Dibromochloromethane	20.0	---	1.00	ug/L	1	20.0	---	100	80-120%	---	---	
1,2-Dibromo-3-chloropropane	17.9	---	5.00	ug/L	1	20.0	---	89	80-120%	---	---	
1,2-Dibromoethane (EDB)	19.8	---	0.500	ug/L	1	20.0	---	99	80-120%	---	---	
Dibromomethane	20.6	---	1.00	ug/L	1	20.0	---	103	80-120%	---	---	
1,2-Dichlorobenzene	18.8	---	0.500	ug/L	1	20.0	---	94	80-120%	---	---	

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Darrell Auvil, Client Services Manager

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503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0895 - 12 24 24 1135

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0318 - EPA 5030C							**Water**					
LCS (24L0318-BS1)			Prepared: 12/10/24 07:15 Analyzed: 12/10/24 09:06									
1,3-Dichlorobenzene	19.6	---	0.500	ug/L	1	20.0	---	98	80-120%	---	---	
1,4-Dichlorobenzene	18.7	---	0.500	ug/L	1	20.0	---	94	80-120%	---	---	
Dichlorodifluoromethane	21.3	---	1.00	ug/L	1	20.0	---	106	80-120%	---	---	
1,1-Dichloroethane	19.5	---	0.400	ug/L	1	20.0	---	98	80-120%	---	---	
1,2-Dichloroethane (EDC)	19.6	---	0.400	ug/L	1	20.0	---	98	80-120%	---	---	
1,1-Dichloroethene	23.7	---	0.400	ug/L	1	20.0	---	118	80-120%	---	---	
cis-1,2-Dichloroethene	17.0	---	0.400	ug/L	1	20.0	---	85	80-120%	---	---	
trans-1,2-Dichloroethene	18.3	---	0.400	ug/L	1	20.0	---	92	80-120%	---	---	
1,2-Dichloropropane	17.8	---	0.500	ug/L	1	20.0	---	89	80-120%	---	---	
1,3-Dichloropropane	18.0	---	1.00	ug/L	1	20.0	---	90	80-120%	---	---	
2,2-Dichloropropane	24.1	---	1.00	ug/L	1	20.0	---	120	80-120%	---	---	
1,1-Dichloropropene	20.7	---	1.00	ug/L	1	20.0	---	104	80-120%	---	---	
cis-1,3-Dichloropropene	18.4	---	1.00	ug/L	1	20.0	---	92	80-120%	---	---	
trans-1,3-Dichloropropene	20.6	---	1.00	ug/L	1	20.0	---	103	80-120%	---	---	
Hexachlorobutadiene	20.6	---	5.00	ug/L	1	20.0	---	103	80-120%	---	---	
Methylene chloride	20.5	---	10.0	ug/L	1	20.0	---	102	80-120%	---	---	
1,1,1,2-Tetrachloroethane	19.3	---	0.400	ug/L	1	20.0	---	97	80-120%	---	---	
1,1,2,2-Tetrachloroethane	20.8	---	0.500	ug/L	1	20.0	---	104	80-120%	---	---	
Tetrachloroethene (PCE)	20.2	---	0.400	ug/L	1	20.0	---	101	80-120%	---	---	
1,2,3-Trichlorobenzene	18.4	---	2.00	ug/L	1	20.0	---	92	80-120%	---	---	
1,1,2-Trichloroethane	19.1	---	0.500	ug/L	1	20.0	---	95	80-120%	---	---	
1,2,4-Trichlorobenzene	16.0	---	2.00	ug/L	1	20.0	---	80	80-120%	---	---	
1,1,1-Trichloroethane	21.0	---	0.400	ug/L	1	20.0	---	105	80-120%	---	---	
Trichloroethene (TCE)	17.6	---	0.400	ug/L	1	20.0	---	88	80-120%	---	---	
Trichlorofluoromethane	28.8	---	2.00	ug/L	1	20.0	---	**144**	**80-120%**	---	---	Q-56
1,2,3-Trichloropropane	17.6	---	1.00	ug/L	1	20.0	---	88	80-120%	---	---	
Vinyl chloride	19.4	---	0.200	ug/L	1	20.0	---	97	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 103 %*		*Limits: 80-120 %*			*Dilution: 1x*				
Toluene-d8 (Surr)			*95 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*93 %*		*80-120 %*			*"*				

Duplicate (24L0318-DUP1) Prepared: 12/10/24 07:15 Analyzed: 12/10/24 18:57

QC Source Sample: MP-1 (A4L0895-13)

EPA 8260D

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Darrell Auvil, Client Services Manager

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0895 - 12 24 24 1135

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0318 - EPA 5030C							**Water**					
Duplicate (24L0318-DUP1)			Prepared: 12/10/24 07:15 Analyzed: 12/10/24 18:57									
QC Source Sample: MP-1 (A4L0895-13)												
Bromobenzene	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
Bromochloromethane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Bromodichloromethane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Bromoform	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Bromomethane	ND	---	5.00	ug/L	1	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Chlorobenzene	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
Chloroethane	ND	---	5.00	ug/L	1	---	ND	---	---	---	30%	
Chloroform	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Chloromethane	ND	---	5.00	ug/L	1	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Dibromochloromethane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
Dibromomethane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	---	0.280	---	---	***	30%	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	---	ND	---	---	---	30%	
1,1-Dichloroethene	**0.450**	---	0.400	ug/L	1	---	0.440	---	---	2	30%	
cis-1,2-Dichloroethene	**4.71**	---	0.400	ug/L	1	---	4.78	---	---	1	30%	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	0.280	---	---	***	30%	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	---	ND	---	---	---	30%	
Methylene chloride	ND	---	10.0	ug/L	1	---	ND	---	---	---	30%	

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0895 - 12 24 24 1135

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0318 - EPA 5030C							**Water**					
Duplicate (24L0318-DUP1)			Prepared: 12/10/24 07:15 Analyzed: 12/10/24 18:57									
QC Source Sample: MP-1 (A4L0895-13)												
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	**169**	---	0.400	ug/L	1	---	168	---	---	0.7	30%	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	**0.450**	---	0.400	ug/L	1	---	0.470	---	---	4	30%	
Trichloroethene (TCE)	**24.0**	---	0.400	ug/L	1	---	24.3	---	---	1	30%	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Vinyl chloride	ND	---	0.200	ug/L	1	---	ND	---	---	---	30%	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*118 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*104 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*102 %*		*80-120 %*			*"*				
Matrix Spike (24L0318-MS1)			Prepared: 12/10/24 07:15 Analyzed: 12/10/24 21:43									T-02
QC Source Sample: Non-SDG (A4L0966-01)												
EPA 8260D												
Bromobenzene	16.4	---	0.500	ug/L	1	20.0	ND	82	80-120%	---	---	
Bromochloromethane	19.5	---	1.00	ug/L	1	20.0	ND	97	78-123%	---	---	
Bromodichloromethane	20.5	---	1.00	ug/L	1	20.0	ND	103	79-125%	---	---	
Bromoform	20.2	---	1.00	ug/L	1	20.0	ND	101	66-130%	---	---	
Bromomethane	27.2	---	5.00	ug/L	1	20.0	ND	136	53-141%	---	---	Q-54g
Carbon tetrachloride	24.1	---	1.00	ug/L	1	20.0	ND	120	72-136%	---	---	
Chlorobenzene	19.0	---	0.500	ug/L	1	20.0	ND	95	80-120%	---	---	
Chloroethane	28.9	---	5.00	ug/L	1	20.0	ND	**145**	**60-138%**	---	---	Q-54b
Chloroform	20.2	---	1.00	ug/L	1	20.0	ND	101	79-124%	---	---	
Chloromethane	19.0	---	5.00	ug/L	1	20.0	ND	95	50-139%	---	---	
2-Chlorotoluene	16.8	---	1.00	ug/L	1	20.0	ND	84	79-122%	---	---	
4-Chlorotoluene	18.0	---	1.00	ug/L	1	20.0	ND	90	78-122%	---	---	
Dibromochloromethane	19.7	---	1.00	ug/L	1	20.0	ND	98	74-126%	---	---	
1,2-Dibromo-3-chloropropane	16.8	---	5.00	ug/L	1	20.0	ND	84	62-128%	---	---	
1,2-Dibromoethane (EDB)	19.3	---	0.500	ug/L	1	20.0	ND	96	77-121%	---	---	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0895 - 12 24 24 1135**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0318 - EPA 5030C							**Water**					
Matrix Spike (24L0318-MS1)			Prepared: 12/10/24 07:15		Analyzed: 12/10/24 21:43							**T-02**
QC Source Sample: Non-SDG (A4L0966-01)												
Dibromomethane	21.1	---	1.00	ug/L	1	20.0	ND	105	79-123%	---	---	
1,2-Dichlorobenzene	18.4	---	0.500	ug/L	1	20.0	ND	92	80-120%	---	---	
1,3-Dichlorobenzene	19.0	---	0.500	ug/L	1	20.0	ND	95	80-120%	---	---	
1,4-Dichlorobenzene	18.0	---	0.500	ug/L	1	20.0	ND	90	79-120%	---	---	
Dichlorodifluoromethane	21.9	---	1.00	ug/L	1	20.0	ND	110	32-152%	---	---	
1,1-Dichloroethane	19.4	---	0.400	ug/L	1	20.0	ND	97	77-125%	---	---	
1,2-Dichloroethane (EDC)	19.8	---	0.400	ug/L	1	20.0	ND	99	73-128%	---	---	
1,1-Dichloroethene	26.1	---	0.400	ug/L	1	20.0	ND	130	71-131%	---	---	
cis-1,2-Dichloroethene	17.2	---	0.400	ug/L	1	20.0	ND	86	78-123%	---	---	
trans-1,2-Dichloroethene	20.1	---	0.400	ug/L	1	20.0	ND	101	75-124%	---	---	
1,2-Dichloropropane	17.7	---	0.500	ug/L	1	20.0	ND	89	78-122%	---	---	
1,3-Dichloropropane	17.8	---	1.00	ug/L	1	20.0	ND	89	80-120%	---	---	
2,2-Dichloropropane	18.4	---	1.00	ug/L	1	20.0	ND	92	60-139%	---	---	
1,1-Dichloropropene	21.0	---	1.00	ug/L	1	20.0	ND	105	79-125%	---	---	
cis-1,3-Dichloropropene	14.3	---	1.00	ug/L	1	20.0	ND	**72**	**75-124%**	---	---	Q-01
trans-1,3-Dichloropropene	19.5	---	1.00	ug/L	1	20.0	ND	98	73-127%	---	---	
Hexachlorobutadiene	17.5	---	5.00	ug/L	1	20.0	ND	88	66-134%	---	---	
Methylene chloride	21.3	---	10.0	ug/L	1	20.0	ND	107	74-124%	---	---	
1,1,1,2-Tetrachloroethane	19.0	---	0.400	ug/L	1	20.0	ND	95	78-124%	---	---	
1,1,2,2-Tetrachloroethane	21.9	---	0.500	ug/L	1	20.0	ND	109	71-121%	---	---	
Tetrachloroethene (PCE)	21.4	---	0.400	ug/L	1	20.0	ND	106	74-129%	---	---	
1,2,3-Trichlorobenzene	17.2	---	2.00	ug/L	1	20.0	ND	86	69-129%	---	---	
1,1,2-Trichloroethane	19.4	---	0.500	ug/L	1	20.0	ND	97	80-120%	---	---	
1,2,4-Trichlorobenzene	14.5	---	2.00	ug/L	1	20.0	ND	72	69-130%	---	---	
1,1,1-Trichloroethane	21.3	---	0.400	ug/L	1	20.0	ND	106	74-131%	---	---	
Trichloroethene (TCE)	17.4	---	0.400	ug/L	1	20.0	ND	87	79-123%	---	---	
Trichlorofluoromethane	30.3	---	2.00	ug/L	1	20.0	ND	**152**	**65-141%**	---	---	Q-54d
1,2,3-Trichloropropane	17.5	---	1.00	ug/L	1	20.0	ND	88	73-122%	---	---	
Vinyl chloride	20.0	---	0.200	ug/L	1	20.0	ND	100	58-137%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 102 %*		*Limits: 80-120 %*			*Dilution: 1x*				
Toluene-d8 (Surr)			*93 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*91 %*		*80-120 %*			*"*				

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503-718-2323
ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0895 - 12 24 24 1135**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0411 - EPA 5030C							**Water**					
Blank (24L0411-BLK1)			Prepared: 12/11/24 13:12		Analyzed: 12/11/24 18:09							
EPA 8260D												
Bromobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Bromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromodichloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromoform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromomethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Carbon tetrachloride	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Chloroethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Chloroform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chloromethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
2-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
4-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Dibromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dibromomethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Methylene chloride	ND	---	10.0	ug/L	1	---	---	---	---	---	---	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0895 - 12 24 24 1135**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0411 - EPA 5030C							**Water**					
Blank (24L0411-BLK1)			Prepared: 12/11/24 13:12 Analyzed: 12/11/24 18:09									
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Vinyl chloride	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*109 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*100 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*103 %*		*80-120 %*			*"*				
LCS (24L0411-BS1)			Prepared: 12/11/24 13:12 Analyzed: 12/11/24 17:14									
EPA 8260D												
Bromobenzene	16.7	---	0.500	ug/L	1	20.0	---	83	80-120%	---	---	
Bromochloromethane	19.0	---	1.00	ug/L	1	20.0	---	95	80-120%	---	---	
Bromodichloromethane	20.4	---	1.00	ug/L	1	20.0	---	102	80-120%	---	---	
Bromoform	20.6	---	1.00	ug/L	1	20.0	---	103	80-120%	---	---	
Bromomethane	26.3	---	5.00	ug/L	1	20.0	---	**131**	**80-120%**	---	---	Q-56
Carbon tetrachloride	24.5	---	1.00	ug/L	1	20.0	---	**122**	**80-120%**	---	---	Q-56
Chlorobenzene	18.9	---	0.500	ug/L	1	20.0	---	94	80-120%	---	---	
Chloroethane	26.4	---	5.00	ug/L	1	20.0	---	**132**	**80-120%**	---	---	Q-56
Chloroform	19.7	---	1.00	ug/L	1	20.0	---	98	80-120%	---	---	
Chloromethane	18.7	---	5.00	ug/L	1	20.0	---	94	80-120%	---	---	
2-Chlorotoluene	17.2	---	1.00	ug/L	1	20.0	---	86	80-120%	---	---	
4-Chlorotoluene	18.1	---	1.00	ug/L	1	20.0	---	90	80-120%	---	---	
Dibromochloromethane	19.8	---	1.00	ug/L	1	20.0	---	99	80-120%	---	---	
1,2-Dibromo-3-chloropropane	17.4	---	5.00	ug/L	1	20.0	---	87	80-120%	---	---	
1,2-Dibromoethane (EDB)	19.6	---	0.500	ug/L	1	20.0	---	98	80-120%	---	---	
Dibromomethane	20.3	---	1.00	ug/L	1	20.0	---	102	80-120%	---	---	
1,2-Dichlorobenzene	18.7	---	0.500	ug/L	1	20.0	---	93	80-120%	---	---	

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0895 - 12 24 24 1135**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0411 - EPA 5030C							**Water**					
LCS (24L0411-BS1)			Prepared: 12/11/24 13:12 Analyzed: 12/11/24 17:14									
1,3-Dichlorobenzene	19.5	---	0.500	ug/L	1	20.0	---	97	80-120%	---	---	
1,4-Dichlorobenzene	18.5	---	0.500	ug/L	1	20.0	---	92	80-120%	---	---	
Dichlorodifluoromethane	23.6	---	1.00	ug/L	1	20.0	---	118	80-120%	---	---	
1,1-Dichloroethane	19.2	---	0.400	ug/L	1	20.0	---	96	80-120%	---	---	
1,2-Dichloroethane (EDC)	19.9	---	0.400	ug/L	1	20.0	---	99	80-120%	---	---	
1,1-Dichloroethene	25.5	---	0.400	ug/L	1	20.0	---	**128**	**80-120%**	---	---	Q-56
cis-1,2-Dichloroethene	16.8	---	0.400	ug/L	1	20.0	---	84	80-120%	---	---	
trans-1,2-Dichloroethene	18.2	---	0.400	ug/L	1	20.0	---	91	80-120%	---	---	
1,2-Dichloropropane	17.5	---	0.500	ug/L	1	20.0	---	87	80-120%	---	---	
1,3-Dichloropropane	17.6	---	1.00	ug/L	1	20.0	---	88	80-120%	---	---	
2,2-Dichloropropane	23.3	---	1.00	ug/L	1	20.0	---	116	80-120%	---	---	
1,1-Dichloropropene	21.1	---	1.00	ug/L	1	20.0	---	106	80-120%	---	---	
cis-1,3-Dichloropropene	17.7	---	1.00	ug/L	1	20.0	---	88	80-120%	---	---	
trans-1,3-Dichloropropene	19.8	---	1.00	ug/L	1	20.0	---	99	80-120%	---	---	
Hexachlorobutadiene	22.4	---	5.00	ug/L	1	20.0	---	112	80-120%	---	---	
Methylene chloride	20.3	---	10.0	ug/L	1	20.0	---	102	80-120%	---	---	
1,1,1,2-Tetrachloroethane	18.9	---	0.400	ug/L	1	20.0	---	95	80-120%	---	---	
1,1,2,2-Tetrachloroethane	20.3	---	0.500	ug/L	1	20.0	---	102	80-120%	---	---	
Tetrachloroethene (PCE)	20.6	---	0.400	ug/L	1	20.0	---	103	80-120%	---	---	
1,2,3-Trichlorobenzene	18.1	---	2.00	ug/L	1	20.0	---	91	80-120%	---	---	
1,1,2-Trichloroethane	19.1	---	0.500	ug/L	1	20.0	---	95	80-120%	---	---	
1,2,4-Trichlorobenzene	15.6	---	2.00	ug/L	1	20.0	---	**78**	**80-120%**	---	---	Q-55
1,1,1-Trichloroethane	21.4	---	0.400	ug/L	1	20.0	---	107	80-120%	---	---	
Trichloroethene (TCE)	17.6	---	0.400	ug/L	1	20.0	---	88	80-120%	---	---	
Trichlorofluoromethane	32.1	---	2.00	ug/L	1	20.0	---	**161**	**80-120%**	---	---	Q-56
1,2,3-Trichloropropane	17.6	---	1.00	ug/L	1	20.0	---	88	80-120%	---	---	
Vinyl chloride	19.6	---	0.200	ug/L	1	20.0	---	98	80-120%	---	---	

Surr: 1,4-Difluorobenzene (Surr) Recovery: 103 % Limits: 80-120 % Dilution: 1x
Toluene-d8 (Surr) 93 % 80-120 % "
4-Bromofluorobenzene (Surr) 93 % 80-120 % "

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Duplicate (24L0411-DUP1)			Prepared: 12/11/24 13:12 Analyzed: 12/12/24 03:49									
QC Source Sample: Non-SDG (A4L0987-03)												
Bromobenzene	ND	---	1000	ug/L	2000	---	ND	---	---	---	30%	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0895 - 12 24 24 1135**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0411 - EPA 5030C							**Water**					
Duplicate (24L0411-DUP1)			Prepared: 12/11/24 13:12 Analyzed: 12/12/24 03:49									
QC Source Sample: Non-SDG (A4L0987-03)												
Bromochloromethane	ND	---	2000	ug/L	2000	---	ND	---	---	---	30%	
Bromodichloromethane	ND	---	2000	ug/L	2000	---	ND	---	---	---	30%	
Bromoform	ND	---	2000	ug/L	2000	---	ND	---	---	---	30%	
Bromomethane	ND	---	10000	ug/L	2000	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	---	2000	ug/L	2000	---	ND	---	---	---	30%	
Chlorobenzene	ND	---	1000	ug/L	2000	---	ND	---	---	---	30%	
Chloroethane	ND	---	10000	ug/L	2000	---	ND	---	---	---	30%	
Chloroform	ND	---	2000	ug/L	2000	---	ND	---	---	---	30%	
Chloromethane	ND	---	10000	ug/L	2000	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	---	2000	ug/L	2000	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	---	2000	ug/L	2000	---	ND	---	---	---	30%	
Dibromochloromethane	ND	---	2000	ug/L	2000	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	---	10000	ug/L	2000	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	---	1000	ug/L	2000	---	ND	---	---	---	30%	
Dibromomethane	ND	---	2000	ug/L	2000	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	---	1000	ug/L	2000	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	---	1000	ug/L	2000	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	---	1000	ug/L	2000	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	---	2000	ug/L	2000	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	---	800	ug/L	2000	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	---	800	ug/L	2000	---	ND	---	---	---	30%	
1,1-Dichloroethene	**2440**	---	800	ug/L	2000	---	2360	---	---	3	30%	Q-54f
cis-1,2-Dichloroethene	**450000**	---	800	ug/L	2000	---	435000	---	---	3	30%	E
trans-1,2-Dichloroethene	ND	---	800	ug/L	2000	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	---	1000	ug/L	2000	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	---	2000	ug/L	2000	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	---	2000	ug/L	2000	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	---	2000	ug/L	2000	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	---	2000	ug/L	2000	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	---	2000	ug/L	2000	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	---	10000	ug/L	2000	---	ND	---	---	---	30%	
Methylene chloride	ND	---	20000	ug/L	2000	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	---	800	ug/L	2000	---	ND	---	---	---	30%	

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Darrell Auvil, Client Services Manager

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GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0895 - 12 24 24 1135**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0411 - EPA 5030C							**Water**					
Duplicate (24L0411-DUP1)			Prepared: 12/11/24 13:12 Analyzed: 12/12/24 03:49									
QC Source Sample: Non-SDG (A4L0987-03)												
1,1,2,2-Tetrachloroethane	ND	---	1000	ug/L	2000	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	---	800	ug/L	2000	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	---	4000	ug/L	2000	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	---	1000	ug/L	2000	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	---	4000	ug/L	2000	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	---	800	ug/L	2000	---	ND	---	---	---	30%	
Trichloroethene (TCE)	**7220**	---	800	ug/L	2000	---	7100	---	---	2	30%	
Trichlorofluoromethane	ND	---	4000	ug/L	2000	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	---	2000	ug/L	2000	---	ND	---	---	---	30%	
Vinyl chloride	**2920**	---	400	ug/L	2000	---	3260	---	---	11	30%	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery: 106 %*		*Limits: 80-120 %*			*Dilution: 1x*					
Toluene-d8 (Surr)			*99 %*		*80-120 %*		*"*					
4-Bromofluorobenzene (Surr)			*105 %*		*80-120 %*		*"*					
Matrix Spike (24L0411-MS1)			Prepared: 12/11/24 13:12 Analyzed: 12/12/24 05:12									
QC Source Sample: Non-SDG (A4L0966-11)												
EPA 8260D												
Bromobenzene	16.9	---	0.500	ug/L	1	20.0	ND	85	80-120%	---	---	
Bromochloromethane	19.1	---	1.00	ug/L	1	20.0	ND	96	78-123%	---	---	
Bromodichloromethane	21.3	---	1.00	ug/L	1	20.0	ND	107	79-125%	---	---	
Bromoform	22.1	---	1.00	ug/L	1	20.0	ND	110	66-130%	---	---	
Bromomethane	26.8	---	5.00	ug/L	1	20.0	ND	134	53-141%	---	---	Q-54
Carbon tetrachloride	25.4	---	1.00	ug/L	1	20.0	ND	127	72-136%	---	---	Q-54c
Chlorobenzene	19.9	---	0.500	ug/L	1	20.0	ND	99	80-120%	---	---	
Chloroethane	30.2	---	5.00	ug/L	1	20.0	ND	**151**	**60-138%**	---	---	Q-54a
Chloroform	20.6	---	1.00	ug/L	1	20.0	ND	103	79-124%	---	---	
Chloromethane	18.0	---	5.00	ug/L	1	20.0	ND	90	50-139%	---	---	
2-Chlorotoluene	17.5	---	1.00	ug/L	1	20.0	ND	88	79-122%	---	---	
4-Chlorotoluene	18.2	---	1.00	ug/L	1	20.0	ND	91	78-122%	---	---	
Dibromochloromethane	21.0	---	1.00	ug/L	1	20.0	ND	105	74-126%	---	---	
1,2-Dibromo-3-chloropropane	17.9	---	5.00	ug/L	1	20.0	ND	89	62-128%	---	---	
1,2-Dibromoethane (EDB)	20.6	---	0.500	ug/L	1	20.0	ND	103	77-121%	---	---	
Dibromomethane	21.2	---	1.00	ug/L	1	20.0	ND	106	79-123%	---	---	

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GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0895 - 12 24 24 1135**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0411 - EPA 5030C							**Water**					
Matrix Spike (24L0411-MS1)			Prepared: 12/11/24 13:12		Analyzed: 12/12/24 05:12							
QC Source Sample: Non-SDG (A4L0966-11)												
1,2-Dichlorobenzene	19.2	---	0.500	ug/L	1	20.0	ND	96	80-120%	---	---	
1,3-Dichlorobenzene	19.9	---	0.500	ug/L	1	20.0	ND	99	80-120%	---	---	
1,4-Dichlorobenzene	18.7	---	0.500	ug/L	1	20.0	ND	94	79-120%	---	---	
Dichlorodifluoromethane	22.6	---	1.00	ug/L	1	20.0	ND	113	32-152%	---	---	
1,1-Dichloroethane	19.4	---	0.400	ug/L	1	20.0	ND	97	77-125%	---	---	
1,2-Dichloroethane (EDC)	20.7	---	0.400	ug/L	1	20.0	ND	104	73-128%	---	---	
1,1-Dichloroethene	26.8	---	0.400	ug/L	1	20.0	ND	**134**	**71-131%**	---	---	Q-54f
cis-1,2-Dichloroethene	18.1	---	0.400	ug/L	1	20.0	0.830	87	78-123%	---	---	
trans-1,2-Dichloroethene	19.4	---	0.400	ug/L	1	20.0	ND	97	75-124%	---	---	
1,2-Dichloropropane	17.7	---	0.500	ug/L	1	20.0	ND	88	78-122%	---	---	
1,3-Dichloropropane	18.3	---	1.00	ug/L	1	20.0	ND	92	80-120%	---	---	
2,2-Dichloropropane	17.6	---	1.00	ug/L	1	20.0	ND	88	60-139%	---	---	
1,1-Dichloropropene	21.4	---	1.00	ug/L	1	20.0	ND	107	79-125%	---	---	
cis-1,3-Dichloropropene	15.7	---	1.00	ug/L	1	20.0	ND	79	75-124%	---	---	
trans-1,3-Dichloropropene	20.1	---	1.00	ug/L	1	20.0	ND	100	73-127%	---	---	
Hexachlorobutadiene	19.3	---	5.00	ug/L	1	20.0	ND	96	66-134%	---	---	
Methylene chloride	21.2	---	10.0	ug/L	1	20.0	ND	106	74-124%	---	---	
1,1,1,2-Tetrachloroethane	20.4	---	0.400	ug/L	1	20.0	ND	102	78-124%	---	---	
1,1,2,2-Tetrachloroethane	21.2	---	0.500	ug/L	1	20.0	ND	106	71-121%	---	---	
Tetrachloroethene (PCE)	22.1	---	0.400	ug/L	1	20.0	0.760	107	74-129%	---	---	
1,2,3-Trichlorobenzene	18.0	---	2.00	ug/L	1	20.0	ND	90	69-129%	---	---	
1,1,2-Trichloroethane	20.3	---	0.500	ug/L	1	20.0	ND	102	80-120%	---	---	
1,2,4-Trichlorobenzene	15.1	---	2.00	ug/L	1	20.0	ND	75	69-130%	---	---	Q-54h
1,1,1-Trichloroethane	22.3	---	0.400	ug/L	1	20.0	ND	111	74-131%	---	---	
Trichloroethene (TCE)	18.2	---	0.400	ug/L	1	20.0	0.650	88	79-123%	---	---	
Trichlorofluoromethane	32.6	---	2.00	ug/L	1	20.0	ND	**163**	**65-141%**	---	---	Q-54e
1,2,3-Trichloropropane	17.6	---	1.00	ug/L	1	20.0	ND	88	73-122%	---	---	
Vinyl chloride	19.5	---	0.200	ug/L	1	20.0	ND	98	58-137%	---	---	

Surr: 1,4-Difluorobenzene (Surr)	*Recovery: 100 %*	*Limits: 80-120 %*	*Dilution: 1x*
Toluene-d8 (Surr)	*93 %*	*80-120 %*	*"*
4-Bromofluorobenzene (Surr)	*91 %*	*80-120 %*	*"*

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GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0895 - 12 24 24 1135**

QUALITY CONTROL (QC) SAMPLE RESULTS

Ammonia by Gas Diffusion and Colorimetric Detection

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0170 - Method Prep: Aq								**Water**				
Blank (24L0170-BLK1)			Prepared: 12/05/24 11:54 Analyzed: 12/05/24 13:19									
SM 4500-NH3 G												
Ammonia as N	ND	---	0.0200	mg/L	1	---	---	---	---	---	---	
LCS (24L0170-BS1)			Prepared: 12/05/24 11:54 Analyzed: 12/05/24 13:21									
SM 4500-NH3 G												
Ammonia as N	1.92	---	0.0200	mg/L	1	2.00	---	96	90-111%	---	---	
Matrix Spike (24L0170-MS1)			Prepared: 12/05/24 11:54 Analyzed: 12/05/24 13:25									
QC Source Sample: Non-SDG (A4L0850-02)												
SM 4500-NH3 G												
Ammonia as N	2.56	---	0.0250	mg/L	1	2.50	0.103	98	90-111%	---	---	
Matrix Spike Dup (24L0170-MSD1)			Prepared: 12/05/24 11:54 Analyzed: 12/05/24 13:27									
QC Source Sample: Non-SDG (A4L0850-02)												
Ammonia as N	2.49	---	0.0250	mg/L	1	2.50	0.103	96	90-111%	2	13%	

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0895 - 12 24 24 1135

QUALITY CONTROL (QC) SAMPLE RESULTS

Ammonia by Gas Diffusion and Colorimetric Detection

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0260 - Method Prep: Aq									Water			
Blank (24L0260-BLK1)			Prepared: 12/09/24 07:30 Analyzed: 12/09/24 11:17									
SM 4500-NH3 G												
Ammonia as N	ND	---	0.0200	mg/L	1	---	---	---	---	---	---	
LCS (24L0260-BS1)			Prepared: 12/09/24 07:30 Analyzed: 12/09/24 11:19									
SM 4500-NH3 G												
Ammonia as N	1.98	---	0.0200	mg/L	1	2.00	---	99	90-111%	---	---	
Matrix Spike (24L0260-MS1)			Prepared: 12/09/24 07:30 Analyzed: 12/09/24 11:24									
QC Source Sample: Non-SDG (A4L0812-01RE1)												
SM 4500-NH3 G												
Ammonia as N	15.7	---	0.100	mg/L	5	10.0	5.84	99	90-111%	---	---	
Matrix Spike Dup (24L0260-MSD1)			Prepared: 12/09/24 07:30 Analyzed: 12/09/24 11:25									
QC Source Sample: Non-SDG (A4L0812-01RE1)												
Ammonia as N	15.8	---	0.100	mg/L	5	10.0	5.84	99	90-111%	0.1	13%	

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5820 S Kelly Ave Unit B	Project Number: **19001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0895 - 12 24 24 1135**

QUALITY CONTROL (QC) SAMPLE RESULTS

Ammonia by Gas Diffusion and Colorimetric Detection

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0294 - Method Prep: Aq								**Water**				
Blank (24L0294-BLK1)			Prepared: 12/09/24 11:32 Analyzed: 12/09/24 12:38									
SM 4500-NH3 G												
Ammonia as N	ND	---	0.0200	mg/L	1	---	---	---	---	---	---	
LCS (24L0294-BS1)			Prepared: 12/09/24 11:32 Analyzed: 12/09/24 12:40									
SM 4500-NH3 G												
Ammonia as N	1.88	---	0.0200	mg/L	1	2.00	---	94	90-111%	---	---	
Matrix Spike (24L0294-MS1)			Prepared: 12/09/24 11:32 Analyzed: 12/09/24 12:44									
QC Source Sample: Non-SDG (A4L0937-02)												
SM 4500-NH3 G												
Ammonia as N	2.52	---	0.0250	mg/L	1	2.50	0.0350	99	90-111%	---	---	
Matrix Spike Dup (24L0294-MSD1)			Prepared: 12/09/24 11:32 Analyzed: 12/09/24 12:46									
QC Source Sample: Non-SDG (A4L0937-02)												
Ammonia as N	2.53	---	0.0250	mg/L	1	2.50	0.0350	100	90-111%	0.3	13%	

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ANALYTICAL REPORT

GeoEngineers - Portland	Project:	Sunoco Van Main 4Q24
5820 S Kelly Ave Unit B	Project Number:	19001-009-36/37
Portland, OR 97239	Project Manager:	Stephanie Bosze-Salisbury

Report ID:
A4L0895 - 12 24 24 1135

QUALITY CONTROL (QC) SAMPLE RESULTS

Anions by Ion Chromatography

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0148 - Method Prep: Aq							Water					
Blank (24L0148-BLK1)			Prepared: 12/05/24 08:54		Analyzed: 12/05/24 18:51							
EPA 300.0												
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	---	---	---	---	---	---	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	---	---	---	---	---	---	
LCS (24L0148-BS1)			Prepared: 12/05/24 08:54		Analyzed: 12/05/24 19:13							
EPA 300.0												
Nitrate-Nitrogen	2.03	---	0.250	mg/L	1	2.00	---	102	90-110%	---	---	
Nitrite-Nitrogen	2.07	---	0.250	mg/L	1	2.00	---	103	90-110%	---	---	
Duplicate (24L0148-DUP1)			Prepared: 12/05/24 08:54		Analyzed: 12/05/24 21:00							
QC Source Sample: MW-12 (A4L0895-03)												
EPA 300.0												
Nitrate-Nitrogen	**29.8**	---	0.250	mg/L	1	---	29.8	---	---	0.01	10%	E
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	---	ND	---	---	---	10%	
Duplicate (24L0148-DUP2)			Prepared: 12/05/24 08:54		Analyzed: 12/06/24 00:58							
QC Source Sample: MW-20i (A4L0895-10)												
EPA 300.0												
Nitrate-Nitrogen	**0.425**	---	0.250	mg/L	1	---	0.424	---	---	0.3	10%	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	---	ND	---	---	---	10%	
Matrix Spike (24L0148-MS1)			Prepared: 12/05/24 08:54		Analyzed: 12/05/24 21:22							
QC Source Sample: MW-12 (A4L0895-03)												
EPA 300.0												
Nitrate-Nitrogen	32.9	---	0.312	mg/L	1	2.50	29.8	**123**	**87-112%**	---	---	E
Nitrite-Nitrogen	2.59	---	0.312	mg/L	1	2.50	ND	103	90-114%	---	---	
Matrix Spike (24L0148-MS2)			Prepared: 12/05/24 08:54		Analyzed: 12/06/24 01:19							
QC Source Sample: MW-20i (A4L0895-10)												
EPA 300.0												
Nitrate-Nitrogen	2.97	---	0.312	mg/L	1	2.50	0.424	102	87-112%	---	---	
Nitrite-Nitrogen	2.58	---	0.312	mg/L	1	2.50	ND	103	90-114%	---	---	

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ANALYTICAL REPORT

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5820 S Kelly Ave Unit B	Project Number: 19001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0895 - 12 24 24 1135

QUALITY CONTROL (QC) SAMPLE RESULTS

Anions by Ion Chromatography

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0211 - Method Prep: Aq							Water					
Blank (24L0211-BLK1)			Prepared: 12/06/24 10:00		Analyzed: 12/06/24 11:30							
EPA 300.0												
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	---	---	---	---	---	---	
LCS (24L0211-BS1)			Prepared: 12/06/24 10:00		Analyzed: 12/06/24 11:52							
EPA 300.0												
Nitrate-Nitrogen	2.07	---	0.250	mg/L	1	2.00	---	103	90-110%	---	---	
Duplicate (24L0211-DUP1)			Prepared: 12/06/24 10:00		Analyzed: 12/06/24 13:40							
QC Source Sample: Non-SDG (A4L0966-01)												
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	---	ND	---	---	---	10%	
Duplicate (24L0211-DUP2)			Prepared: 12/06/24 10:00		Analyzed: 12/06/24 18:42							
QC Source Sample: Non-SDG (A4L0966-11)												
Nitrate-Nitrogen	**3.12**	---	0.250	mg/L	1	---	3.13	---	---	0.09	10%	
Matrix Spike (24L0211-MS1)			Prepared: 12/06/24 10:00		Analyzed: 12/06/24 14:01							
QC Source Sample: Non-SDG (A4L0966-01)												
EPA 300.0												
Nitrate-Nitrogen	2.61	---	0.312	mg/L	1	2.50	ND	104	87-112%	---	---	
Matrix Spike (24L0211-MS2)			Prepared: 12/06/24 10:00		Analyzed: 12/06/24 19:03							
QC Source Sample: Non-SDG (A4L0966-11)												
EPA 300.0												
Nitrate-Nitrogen	5.78	---	0.312	mg/L	1	2.50	3.13	106	87-112%	---	---	

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5820 S Kelly Ave Unit B	Project Number: **19001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0895 - 12 24 24 1135**

SAMPLE PREPARATION INFORMATION

Halogenated Volatile Organic Compounds by EPA 8260D

Prep: EPA 5030C

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 24L0318							
A4L0895-01	Water	EPA 8260D	12/04/24 13:39	12/10/24 10:00	5mL/5mL	5mL/5mL	1.00
A4L0895-02	Water	EPA 8260D	12/04/24 12:18	12/10/24 10:00	5mL/5mL	5mL/5mL	1.00
A4L0895-03	Water	EPA 8260D	12/04/24 08:25	12/10/24 10:00	5mL/5mL	5mL/5mL	1.00
A4L0895-04	Water	EPA 8260D	12/04/24 08:25	12/10/24 10:00	5mL/5mL	5mL/5mL	1.00
A4L0895-05	Water	EPA 8260D	12/04/24 09:29	12/10/24 10:00	5mL/5mL	5mL/5mL	1.00
A4L0895-06	Water	EPA 8260D	12/04/24 09:59	12/10/24 10:00	5mL/5mL	5mL/5mL	1.00
A4L0895-07	Water	EPA 8260D	12/04/24 10:18	12/10/24 10:00	5mL/5mL	5mL/5mL	1.00
A4L0895-08	Water	EPA 8260D	12/04/24 11:30	12/10/24 10:00	5mL/5mL	5mL/5mL	1.00
A4L0895-09	Water	EPA 8260D	12/04/24 08:43	12/10/24 10:00	5mL/5mL	5mL/5mL	1.00
A4L0895-10	Water	EPA 8260D	12/04/24 13:12	12/10/24 10:00	5mL/5mL	5mL/5mL	1.00
A4L0895-11	Water	EPA 8260D	12/04/24 12:26	12/10/24 10:00	5mL/5mL	5mL/5mL	1.00
A4L0895-12	Water	EPA 8260D	12/04/24 11:18	12/10/24 10:00	5mL/5mL	5mL/5mL	1.00
A4L0895-13	Water	EPA 8260D	12/04/24 12:57	12/10/24 10:00	5mL/5mL	5mL/5mL	1.00
Batch: 24L0411							
A4L0895-05RE1	Water	EPA 8260D	12/04/24 09:29	12/11/24 12:03	5mL/5mL	5mL/5mL	1.00
A4L0895-06RE1	Water	EPA 8260D	12/04/24 09:59	12/11/24 12:03	5mL/5mL	5mL/5mL	1.00

Ammonia by Gas Diffusion and Colorimetric Detection

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 24L0170							
A4L0895-08	Water	SM 4500-NH3 G	12/04/24 11:30	12/05/24 11:54	10mL/10mL	10mL/10mL	1.00
A4L0895-09	Water	SM 4500-NH3 G	12/04/24 08:43	12/05/24 11:54	10mL/10mL	10mL/10mL	1.00
Batch: 24L0260							
A4L0895-01	Water	SM 4500-NH3 G	12/04/24 13:39	12/09/24 07:30	10mL/10mL	10mL/10mL	1.00
A4L0895-06	Water	SM 4500-NH3 G	12/04/24 09:59	12/09/24 07:30	10mL/10mL	10mL/10mL	1.00
A4L0895-07	Water	SM 4500-NH3 G	12/04/24 10:18	12/09/24 07:30	10mL/10mL	10mL/10mL	1.00
A4L0895-10RE1	Water	SM 4500-NH3 G	12/04/24 13:12	12/09/24 07:30	10mL/10mL	10mL/10mL	1.00
A4L0895-11RE1	Water	SM 4500-NH3 G	12/04/24 12:26	12/09/24 07:30	10mL/10mL	10mL/10mL	1.00
A4L0895-12RE1	Water	SM 4500-NH3 G	12/04/24 11:18	12/09/24 07:30	10mL/10mL	10mL/10mL	1.00
A4L0895-13RE1	Water	SM 4500-NH3 G	12/04/24 12:57	12/09/24 07:30	10mL/10mL	10mL/10mL	1.00
Batch: 24L0294							
A4L0895-02RE1	Water	SM 4500-NH3 G	12/04/24 12:18	12/09/24 11:32	10mL/10mL	10mL/10mL	1.00
A4L0895-03RE1	Water	SM 4500-NH3 G	12/04/24 08:25	12/09/24 11:32	10mL/10mL	10mL/10mL	1.00

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Darrell Auvil, Client Services Manager

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6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0895 - 12 24 24 1135**

SAMPLE PREPARATION INFORMATION

Ammonia by Gas Diffusion and Colorimetric Detection

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A4L0895-04RE1	Water	SM 4500-NH3 G	12/04/24 08:25	12/09/24 11:32	10mL/10mL	10mL/10mL	1.00
A4L0895-05RE1	Water	SM 4500-NH3 G	12/04/24 09:29	12/09/24 11:32	10mL/10mL	10mL/10mL	1.00

Anions by Ion Chromatography

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 24L0148							
A4L0895-01	Water	EPA 300.0	12/04/24 13:39	12/05/24 08:54	5mL/5mL	5mL/5mL	1.00
A4L0895-01RE1	Water	EPA 300.0	12/04/24 13:39	12/05/24 08:54	5mL/5mL	5mL/5mL	1.00
A4L0895-02	Water	EPA 300.0	12/04/24 12:18	12/05/24 08:54	5mL/5mL	5mL/5mL	1.00
A4L0895-02RE1	Water	EPA 300.0	12/04/24 12:18	12/05/24 08:54	5mL/5mL	5mL/5mL	1.00
A4L0895-03	Water	EPA 300.0	12/04/24 08:25	12/05/24 08:54	5mL/5mL	5mL/5mL	1.00
A4L0895-04	Water	EPA 300.0	12/04/24 08:25	12/05/24 08:54	5mL/5mL	5mL/5mL	1.00
A4L0895-05	Water	EPA 300.0	12/04/24 09:29	12/05/24 08:54	5mL/5mL	5mL/5mL	1.00
A4L0895-05RE1	Water	EPA 300.0	12/04/24 09:29	12/05/24 08:54	5mL/5mL	5mL/5mL	1.00
A4L0895-06	Water	EPA 300.0	12/04/24 09:59	12/05/24 08:54	5mL/5mL	5mL/5mL	1.00
A4L0895-06RE1	Water	EPA 300.0	12/04/24 09:59	12/05/24 08:54	5mL/5mL	5mL/5mL	1.00
A4L0895-07	Water	EPA 300.0	12/04/24 10:18	12/05/24 08:54	5mL/5mL	5mL/5mL	1.00
A4L0895-08	Water	EPA 300.0	12/04/24 11:30	12/05/24 08:54	5mL/5mL	5mL/5mL	1.00
A4L0895-09	Water	EPA 300.0	12/04/24 08:43	12/05/24 08:54	5mL/5mL	5mL/5mL	1.00
A4L0895-10	Water	EPA 300.0	12/04/24 13:12	12/05/24 08:54	5mL/5mL	5mL/5mL	1.00
A4L0895-11	Water	EPA 300.0	12/04/24 12:26	12/05/24 08:54	5mL/5mL	5mL/5mL	1.00
A4L0895-12	Water	EPA 300.0	12/04/24 11:18	12/05/24 08:54	5mL/5mL	5mL/5mL	1.00
A4L0895-13	Water	EPA 300.0	12/04/24 12:57	12/05/24 08:54	5mL/5mL	5mL/5mL	1.00
A4L0895-13RE1	Water	EPA 300.0	12/04/24 12:57	12/05/24 08:54	5mL/5mL	5mL/5mL	1.00
Batch: 24L0211							
A4L0895-03RE2	Water	EPA 300.0	12/04/24 08:25	12/06/24 10:00	5mL/5mL	5mL/5mL	1.00
A4L0895-04RE2	Water	EPA 300.0	12/04/24 08:25	12/06/24 10:00	5mL/5mL	5mL/5mL	1.00
A4L0895-07RE2	Water	EPA 300.0	12/04/24 10:18	12/06/24 10:00	5mL/5mL	5mL/5mL	1.00

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Darrell Auvil, Client Services Manager

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0895 - 12 24 24 1135**

QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

Apex Laboratories

E	Estimated Value. The result is above the calibration range of the instrument.
H-01	Analyzed outside the recommended holding time.
Q-01	Spike recovery and/or RPD is outside acceptance limits.
Q-54	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +11%. The results are reported as Estimated Values.
Q-54a	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +12%. The results are reported as Estimated Values.
Q-54b	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +14%. The results are reported as Estimated Values.
Q-54c	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +2%. The results are reported as Estimated Values.
Q-54d	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +24%. The results are reported as Estimated Values.
Q-54e	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +41%. The results are reported as Estimated Values.
Q-54f	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +8%. The results are reported as Estimated Values.
Q-54g	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +9%. The results are reported as Estimated Values.
Q-54h	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by -2%. The results are reported as Estimated Values.
Q-55	Daily CCV/LCS recovery for this analyte was below the +/-20% criteria listed in EPA 8260, however there is adequate sensitivity to ensure detection at the reporting level.
Q-56	Daily CCV/LCS recovery for this analyte was above the +/-20% criteria listed in EPA 8260. Samples that are ND (Non-Detect) are not impacted.
T-02	This Batch QC sample was analyzed outside of the method specified 12 hour analysis window. Results are estimated.

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ANALYTICAL REPORT

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Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0895 - 12 24 24 1135**

REPORTING NOTES AND CONVENTIONS:

Abbreviations:

DET Analyte DETECTED at or above the detection or reporting limit.

ND Analyte NOT DETECTED at or above the detection or reporting limit.

NR Result Not Reported

RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

Detection Limits: Limit of Detection (LOD)

Validated Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ). If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

Basis: Results for soil samples are generally reported on a 100% dry weight basis.
The Result Basis is listed following the units as " dry", " wet", or " " (blank) designation.

" dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")
See Percent Solids section for details of dry weight analysis.

" wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.

" " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

Results for Volatiles analyses on soils and sediments that are reported on a “dry weight” basis include the water miscible solvent (WMS) correction referenced in the EPA 8000 Method guidance documents. Solid and Liquid samples reported on an “As Received” basis do not have the WMS correction applied, as dry weight was not performed.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) may not be included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

" --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

" *** " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

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5820 S Kelly Ave Unit B	Project Number: **19001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0895 - 12 24 24 1135**

REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to one half of the Reporting Limit (RL).
Blank results for gravimetric analyses are evaluated to the Reporting Level, not to half of the Reporting Level.
-For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.
-For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.
For further details, please request a copy of this document.
-Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.
'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level, if results are not reported to the MDL.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

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5820 S Kelly Ave Unit B	Project Number: **19001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0895 - 12 24 24 1135**

Decanted Samples:

Soils/Sediments:
Unless TCLP analysis is required or there is notification otherwise for a specific project, all Soil and Sediments containing excess water are decanted prior to analysis in order to provide the most representative sample for analysis.

Water Samples:
Water samples containing solids and sediment may need to be decanted in order to eliminate these particulates from the water extractions. In the case of organics extractions, a solvent rinse of the container will not be performed.

Volatiles Soils (5035s)
Samples that are field preserved by 5035 for volatiles are dry weight corrected using the same dry weight corretion as for normal analyses. In the case of decanted samples, the dry weight may be performed on a decanted sample, while the aliquot for 5035 may not have been treated the same way. If this is a concern, please submit separate containers for dry weight analysis for volatiles can be provided.

All samples decanted in the laboratory are noted in this report with the DCNT qualifier indicating the sample was decanted.

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0895 - 12 24 24 1135**

LABORATORY ACCREDITATION INFORMATION

ORELAP Certification ID: OR100062 (Primary Accreditation) - EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

Apex Laboratories

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation

All reported analytes are included in Apex Laboratories' current ORELAP scope.

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation.
Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

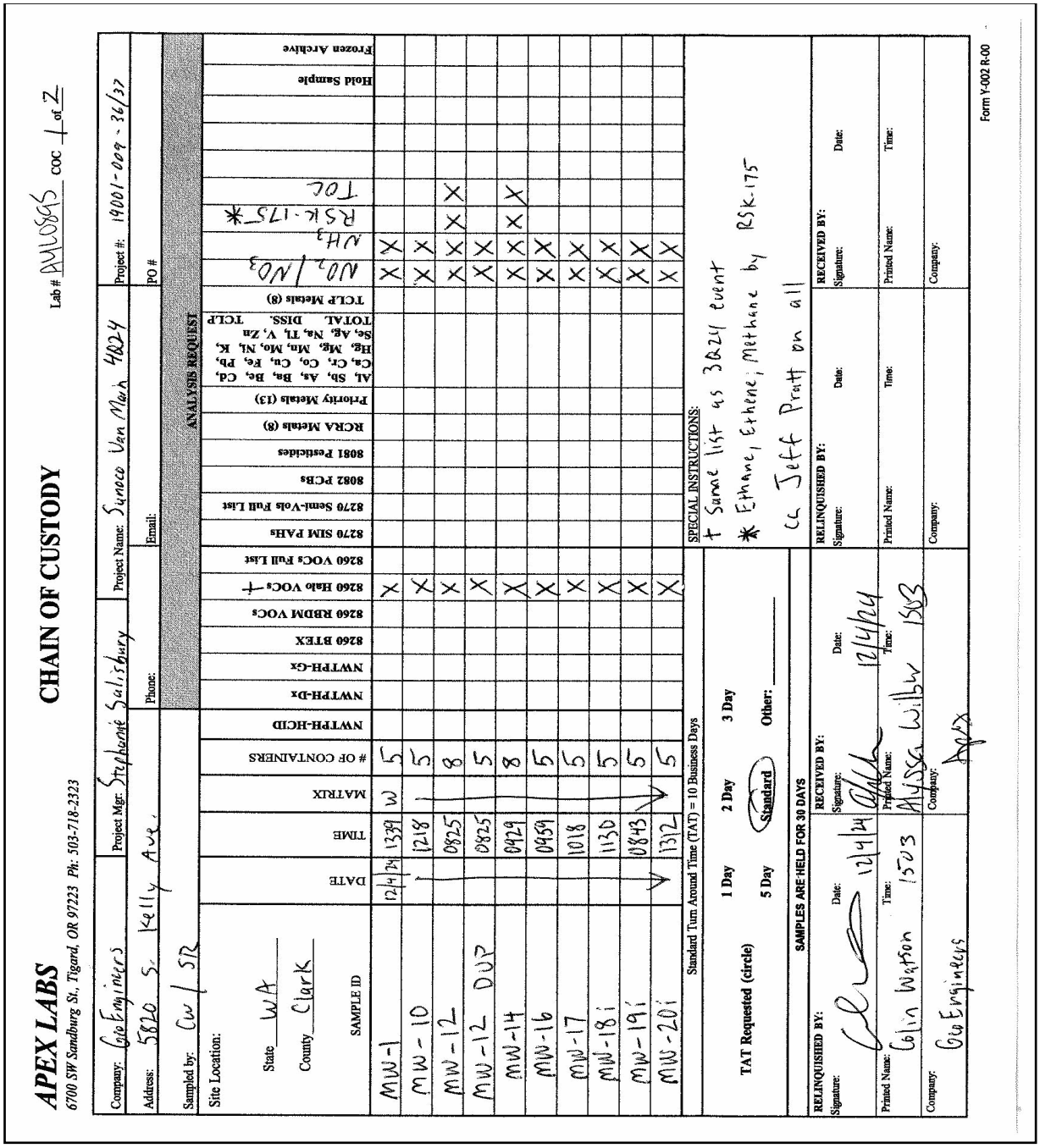


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Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0895 - 12 24 24 1135**



APEX LABS — 6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323

CHAIN OF CUSTODY

Lab # A4L0895 COC 1 of 2

Company: GeoEngineers | Project Mgr: Stephanie Salisbury | Project Name: Sunoco Van Main 4Q24 | Project #: 19001-009-36/37

Address: 5820 S. Kelly Ave. | Phone: | Email: | PO #

Sampled by: CW / SR

Site Location: State WA County Clark

SAMPLE ID	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 BTEX	8260 RBDM VOCs	8260 Halo VOCs +	8260 VOCs Full List	8270 SIM PAHs	8270 Semi-Vols Full List	8082 PCBs	8081 Pesticides	RCRA Metals (8)	Priority Metals (13)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS. TCLP	TCLP Metals (8)	NO2/NO3	NH3	RSK-175* TOC	Hold Sample	Frozen Archive
MW-1	12/4/24	1339	W	5						X										X	X		
MW-10	"	1218	"	5						X										X	X		
MW-12	"	0825	"	8						X										X	X		
MW-12 DUP	"	0825	"	5						X										X	X		
MW-14	"	0929	"	8						X										X	X		
MW-16	"	0959	"	5						X										X	X		
MW-17	"	1018	"	5						X										X	X		
MW-18i	"	1130	"	5						X										X	X		
MW-19i	"	0843	"	5						X										X	X		
MW-20i	"	1312	"	5						X										X	X		

Standard Turn Around Time (TAT) = 10 Business Days

TAT Requested (circle): 1 Day 2 Day 3 Day 5 Day Standard Other: _____

SPECIAL INSTRUCTIONS:
+ Same list as 3Q24 event
* Ethane, Ethene, Methane by RSK-175
cc Jeff Pratt on all

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY: Signature: Date: 12/4/24 Time: 1503 Printed Name: Colin Watson Company: GeoEngineers

RECEIVED BY: Signature: Date: 12/4/24 Time: 1503 Printed Name: Alyssa Wilbur Company: APEX

RELINQUISHED BY: Signature: Date: Time: Printed Name: Company:

RECEIVED BY: Signature: Date: Time: Printed Name: Company:

Form Y-002 R-00

Apex Laboratories

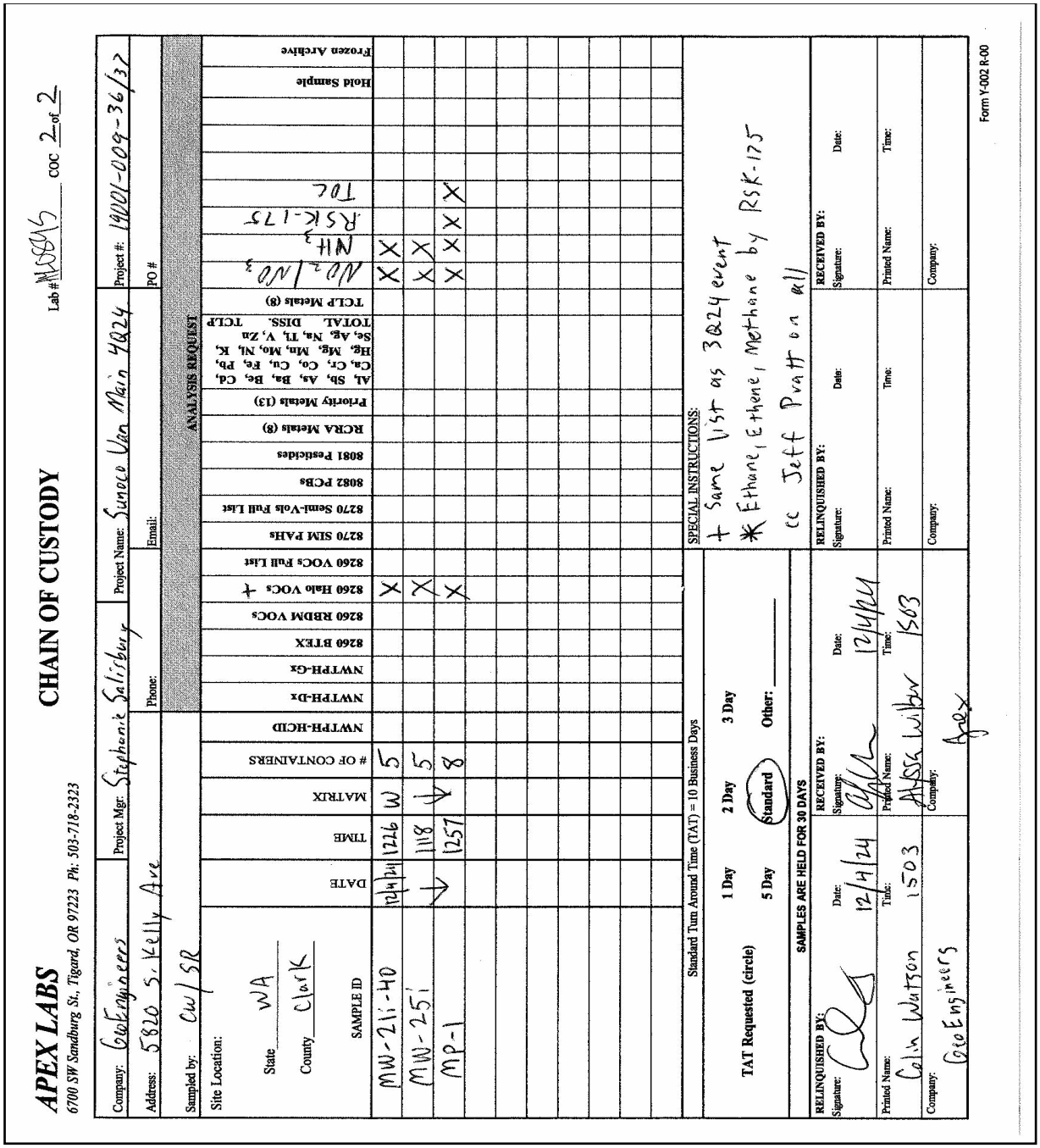
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503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0895 - 12 24 24 1135**



APEX LABS
6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323

CHAIN OF CUSTODY

Lab # WSSAS COC 2 of 2

Company: GeoEngineers | Project Mgr: Stephanie Salisbury | Project Name: Sunoco Van Main 4Q24 | Project #: 19001-009-36/32
Address: 5820 S. Kelly Ave | Phone: | Email: | PO #
Sampled by: CW/SR

ANALYSES REQUEST

SAMPLE ID	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 BTEX	8260 RBDM VOCs	8260 Halo VOCs +	8260 VOCs Full List	8270 SIM PAHs	8270 Semi-Vols Full List	8082 PCBs	8081 Pesticides	RCRA Metals (8)	Priority Metals (13)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS. TCLP	TCLP Metals (8)	NO_2/NO_3	NH3	RSK-175	TOC	Hold Sample	Frozen Archive
MW-21-40	12/4/24	1226	W	5						X										X	X	X		
MW-25'		1118		5						X										X	X	X		
MP-1		1257		8						X										X	X	X		

Standard Turn Around Time (TAT) = 10 Business Days
TAT Requested (circle): 1 Day | 2 Day | 3 Day | 5 Day | Standard | Other: _____

SPECIAL INSTRUCTIONS:
+ Same list as 3Q24 event
* Ethane, Ethene, Methane by RSK-175
cc Jeff Pratt on all

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY:	Date:	Time:	RECEIVED BY:	Date:	Time:
Signature:	12/4/24		Signature:	12/4/24	
Printed Name:		1503	Printed Name:		1503
Company:	GeoEngineers		Company:	Apex	

RELINQUISHED BY:	Date:	Time:	RECEIVED BY:	Date:	Time:
Signature:			Signature:		
Printed Name:			Printed Name:		
Company:			Company:		

RELINQUISHED BY:	Date:	Time:	RECEIVED BY:	Date:	Time:
Signature:			Signature:		
Printed Name:			Printed Name:		
Company:			Company:		

Form Y-002 R-00

Apex Laboratories

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5820 S Kelly Ave Unit B	Project Number: **19001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0895 - 12 24 24 1135**

APEX LABS COOLER RECEIPT FORM

Client: GeoEngineers Element WO#: A4L0895

Project/Project #: Sunoco Van Main 4Q24 19001-009-36/37

Delivery Info:

Date/time received: 12/4/24 @ 1503 By: AMW

Delivered by: Apex__Client__ESS__FedEx__UPS__Radio__Morgan__SDS__Evergreen__Other__

From USDA Regulated Origin? Yes _____ No X

Cooler Inspection Date/time inspected: 12/4/24 @ 1503 By: AMW

Chain of Custody included? Yes X No _____

Signed/dated by client? Yes X No _____

Contains USDA Reg. Soils? Yes _____ No X Unsure (email RegSoils) _____

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	2-8						
Custody seals? (Y/N)	N						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	N						
Ice type: (Gel/Real/Other)	Real						
Condition (In/Out):	In						

Cooler out of temp? (Y/N) Possible reason why: _____

Green dots applied to out of temperature samples? Yes/No

Out of temperature samples form initiated? Yes/No

Sample Inspection: Date/time inspected: 12/4/24 @ 1613 By: AMW

All samples intact? Yes X No ___ Comments: _____

Bottle labels/COCs agree? Yes X No ___ Comments: _____

COC/container discrepancies form initiated? Yes ___ No X

Containers/volumes received appropriate for analysis? Yes X No ___ Comments: _____

Do VOA vials have visible headspace? Yes ___ No X NA ___

Comments _____

Water samples: pH checked: Yes X No ___ NA ___ pH appropriate? Yes X No ___ NA ___ pH ID: MASTR

Comments: _____

Labeled by: AMW Witness: AMW Cooler Inspected by: AMW

Form Y-003 R-02

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document(s) and updated by any subsequent written communications. This analytical report must be reproduced in its entirety.

Darrell Auvil, Client Services Manager

December 19, 2024 Service Request No:K2412891

Darrell Auvil
Apex Laboratories
6700 SW Sandburg St.
Tigard, OR 97223

Laboratory Results for: A4L0895

Dear Darrell,

Enclosed are the results of the sample(s) submitted to our laboratory December 05, 2024
For your reference, these analyses have been assigned our service request number **K2412891.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3260. You may also contact me via email at Luke.Rahn@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental



Luke Rahn
Project Manager

ADDRESS 1317 S. 13th Avenue, Kelso, WA 98626
PHONE +1 360 577 7222 | FAX +1 360 636 1068
ALS Group USA, Corp.
dba ALS Environmental

Narrative Documents

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

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Client: Apex Laboratories
Project: A4L0895
Sample Matrix: Water

Service Request: K2412891
Date Received: 12/05/2024

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier II level requested by the client.

Sample Receipt:

Three water samples were received for analysis at ALS Environmental on 12/05/2024. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

General Chemistry:

No significant anomalies were noted with this analysis.

Approved by _____ Date 12/19/2024

SAMPLE DETECTION SUMMARY

This form includes only detections above the reporting levels. For a full listing of sample results, continue to the Sample Results section of this Report.

CLIENT ID: MW-12			Lab ID: K2412891-001			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Carbon, Total Organic	1.80		0.08	0.50	mg/L	SM 5310 C

CLIENT ID: MW-14			Lab ID: K2412891-002			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Carbon, Total Organic	1.70		0.08	0.50	mg/L	SM 5310 C

CLIENT ID: MP-1			Lab ID: K2412891-003			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Carbon, Total Organic	0.60		0.08	0.50	mg/L	SM 5310 C

Sample Receipt Information

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

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Client: Apex Laboratories **Service Request:**K2412891

Project: A4L0895

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
K2412891-001	MW-12	12/4/2024	0825
K2412891-002	MW-14	12/4/2024	0929
K2412891-003	MP-1	12/4/2024	1257

SUBCONTRACT ORDER

Apex Laboratories

A4L0895

ALC 12/4/24

K2412891

SENDING LABORATORY:

Apex Laboratories
6700 S.W. Sandburg Street
Tigard, OR 97223
Phone: (503) 718-2323
Fax: (503) 336-0745
Project Manager: Darrell Auvil

RECEIVING LABORATORY:

ALS Group USA - Kelso
1317 S 13th Avenue
Kelso, WA 98626
Phone :(360) 577-7222
Fax: (360) 636-1068

Sample Name: MW-12 **Sampled: 12/04/24 08:25** (A4L0895-03)

Analysis	Due	Expires	Comments
Total Organic Carbon - H2O (5310C)	12/17/24 17:00	01/01/25 08:25	Equis EFWEDD, no data package
Containers Supplied:			
(F)250 mL Poly - Sulfuric (H2SO4)			

Sample Name: MW-14 **Sampled: 12/04/24 09:29** (A4L0895-05)

Analysis	Due	Expires	Comments
Total Organic Carbon - H2O (5310C)	12/17/24 17:00	01/01/25 09:29	Equis EFWEDD, no data package
Containers Supplied:			
(F)250 mL Poly - Sulfuric (H2SO4)			

Sample Name: MP-1 **Sampled: 12/04/24 12:57** (A4L0895-13)

Analysis	Due	Expires	Comments
Total Organic Carbon - H2O (5310C)	12/17/24 17:00	01/01/25 12:57	Equis EFWEDD, no data package
Containers Supplied:			
(F)250 mL Poly - Sulfuric (H2SO4)			

Standard TAT

Released By	Date	Received By	Date
	12/5/24 1008	Franklin Jr Richardson	12/5/24 1008
FJ	12/5/24 1230	Alexander	12/5/24 1230

PM LR

Cooler Receipt and Preservation Form

Client ADE X Service Request K24 12891

Received: 12/5/24 Opened: 12/5/24 By: AP Unloaded: 12/5/24 By: AP

1. Samples were received via? *USPS* *Fed Ex* *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) *Cooler* *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA Y N If yes, how many and where? _____
   If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID / NA	Out of temp Indicate with "X"	PM Notified If out of temp	Tracking Number NA	Filed
	4.1	IR07					
	4.3	↓					

4. Was a Temperature Blank present in cooler? NA Y N If yes, notate the temperature in the appropriate column above:
   If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
5. Were samples received within the method specified temperature ranges? NA Y N
   If no, were they received on ice and same day as collected? If not, notate the cooler # above and notify the PM. NA Y N

If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*

6. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
7. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
8. Were samples received in good condition (unbroken) NA Y N
9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA Y N
10. Did all sample labels and tags agree with custody papers? NA Y N
11. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
12. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
13. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
14. Was C12/Res negative? NA Y N
15. Were samples received within the method specified time limit? If not, notate the error below and notify the PM NA Y N
16. Were 100ml sterile microbiology bottles filled exactly to the 100ml mark? NA Y N Underfilled Overfilled

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, Resolutions: _____

G:\SMO\2024 Forms SOP: SMO-GEN Reviewed: NP 1/3/2024

Miscellaneous Forms

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

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Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value over the calibration range.
J	The result is an estimated value between the MDL and the MRL.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Client:	Apex Laboratories	**Service Request:**	K2412891
Project:	A4L0895/		

Sample Name:	MW-12	**Date Collected:**	12/4/24
Lab Code:	K2412891-001	**Date Received:**	12/5/24
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
SM 5310 C		MSPECHT

Sample Name:	MW-14	**Date Collected:**	12/4/24
Lab Code:	K2412891-002	**Date Received:**	12/5/24
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
SM 5310 C		MSPECHT

Sample Name:	MP-1	**Date Collected:**	12/4/24
Lab Code:	K2412891-003	**Date Received:**	12/5/24
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
SM 5310 C		MSPECHT

Sample Results

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

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General Chemistry

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Analytical Report

Client:	Apex Laboratories	**Service Request:**	K2412891
Project:	A4L0895	**Date Collected:**	12/04/24 08:25
Sample Matrix:	Water	**Date Received:**	12/05/24 12:30
Sample Name:	MW-12	**Basis:**	NA
Lab Code:	K2412891-001		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Carbon, Total Organic	SM 5310 C	**1.80**	mg/L	0.50	0.08	1	12/16/24 15:33	

Analytical Report

Client:	Apex Laboratories	**Service Request:**	K2412891
Project:	A4L0895	**Date Collected:**	12/04/24 09:29
Sample Matrix:	Water	**Date Received:**	12/05/24 12:30
Sample Name:	MW-14	**Basis:**	NA
Lab Code:	K2412891-002		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Carbon, Total Organic	SM 5310 C	**1.70**	mg/L	0.50	0.08	1	12/16/24 15:33	

Analytical Report

Client:	Apex Laboratories	**Service Request:**	K2412891
Project:	A4L0895	**Date Collected:**	12/04/24 12:57
Sample Matrix:	Water	**Date Received:**	12/05/24 12:30
Sample Name:	MP-1	**Basis:**	NA
Lab Code:	K2412891-003		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Carbon, Total Organic	SM 5310 C	**0.60**	mg/L	0.50	0.08	1	12/16/24 15:33	

QC Summary Forms

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

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General Chemistry

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Analytical Report

Client:	Apex Laboratories	**Service Request:**	K2412891
Project:	A4L0895	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	K2412891-MB		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Carbon, Total Organic	SM 5310 C	ND U	mg/L	0.50	0.08	1	12/16/24 15:33	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Apex Laboratories	**Service Request:**	K2412891
Project:	A4L0895	**Date Analyzed:**	12/16/24
Sample Matrix:	Water	**Date Extracted:**	NA

Lab Control Sample Summary
Carbon, Total Organic

Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	864444

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K2412891-LCS	24.2	25.0	97	83-117

Air TECHNOLOGY
Laboratories, Inc.

December 20, 2024

LA Cert #04140
EPA Methods TO3, TO14A, TO15, 25C/3C, ASTM D1946, RSK-175

TX Cert T104704450-14-6
EPA Methods TO14A, TO15

UT Cert CA0133332015-3
EPA Methods TO3, TO14A, TO15, RSK-175

ALASKA CS-LAP 24-002
EPA Methods TO14A, TO15

Apex Laboratories
ATTN: Darrell Auvil
6700 S.W. Sandburg St.
Tigard, OR 97223

LABORATORY TEST RESULTS

Project Reference: A4L0895
Lab Number: R120604-01/03

Enclosed are results for sample(s) received 12/06/24 by Air Technology Laboratories. Samples were received intact and chilled to 1° C. Analyses were performed according to specifications on the chain of custody provided with the sample(s).

Report Narrative:

- Unless otherwise noted in the report, sample analyses were performed within method performance criteria and meet all requirements of the TNI Standards.
- The enclosed results relate only to the sample(s).

ATL appreciates the opportunity to provide testing services to your company. If you have any questions regarding these results, please call me at (626) 964-4032.

Sincerely,

Mark Johnson
Operations Manager
MJohnson@AirTechLabs.com

Note: The cover letter is an integral part of this analytical report.

SUBCONTRACT ORDER

Apex Laboratories

A4L0895

Rec 12/4/24

R120604-01/03

SENDING LABORATORY:

Apex Laboratories
6700 S.W. Sandburg Street
Tigard, OR 97223
Phone: (503) 718-2323
Fax: (503) 336-0745
Project Manager: Darrell Auvil

RECEIVING LABORATORY:

Air Technology Laboratories, Inc
18501 E. Gale Ave Suite 130
City of Industry, CA 91748
Phone :(626) 964-4032
Fax: (626) 964-5832

Sample Name: MW-12 **Water** **Sampled: 12/04/24 08:25** (A4L0895-03)

Analysis	Due	Expires	Comments
RSK 175 Preserved (Meth, Eth, Eth) (Sub)	12/17/24 17:00	12/18/24 08:25	air tech lab
Containers Supplied:			
(D)40 mL VOA - HCL			
(E)40 mL VOA - HCL			

Sample Name: MW-14 **Water** **Sampled: 12/04/24 09:29** (A4L0895-05)

Analysis	Due	Expires	Comments
RSK 175 Preserved (Meth, Eth, Eth) (Sub)	12/17/24 17:00	12/18/24 09:29	air tech lab
Containers Supplied:			
(D)40 mL VOA - HCL			
(E)40 mL VOA - HCL			

Sample Name: MP-1 **Water** **Sampled: 12/04/24 12:57** (A4L0895-13)

Analysis	Due	Expires	Comments
RSK 175 Preserved (Meth, Eth, Eth) (Sub)	12/17/24 17:00	12/18/24 12:57	air tech lab
Containers Supplied:			
(D)40 mL VOA - HCL			
(E)40 mL VOA - HCL			

Standard TAT

1 0C
HO

Released By	Date	Received By	Date
	12/5/24	UPS (Shipper)	
UPS (Shipper)	12/6/24 10:58		12/6/24 10:50
Released By	Date	Received By	Date

Client:	**Apex Laboratories**
Attn:	**Darrell Auvil**
Project Name:	**NA**
Project No.:	**A4L0895**
Date Received:	**12/06/24**
Matrix:	**Water**
Reporting Units:	**ug/L**

RSK175

Lab No.:	R120604-01		R120604-02		R120604-03			
Client Sample I.D.:	MW-12 (A4L0895-03)		MW-14 (A4L0895-05)		MP-1 (A4L0895-13)			
Date/Time Sampled:	12/4/24 8:25		12/4/24 9:29		12/4/24 12:57			
Date/Time Analyzed:	12/16/24 12:12		12/16/24 12:23		12/16/24 12:37			
QC Batch No.:	241216GC8A1		241216GC8A1		241216GC8A1			
Analyst Initials:	KD		KD		KD			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	**Result ug/L**	**RL ug/L**	**Result ug/L**	**RL ug/L**	**Result ug/L**	**RL ug/L**		
Ethene	1.3	1.0	ND	1.0	ND	1.0		
Ethane	100	1.0	ND	1.0	ND	1.0		
Methane	2,600	1.0	4.6	1.0	ND	1.0		

ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ **Date** 12/19/24

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

QC Batch No: 241216GC8A1
Matrix: Water
Reporting Units: ug/L

RSK 175
LABORATORY CONTROL SAMPLE SUMMARY

Lab No.:	METHOD BLANK			LCS		LCSD					
Date/Time Analyzed:	12/16/24 11:44			12/16/24 10:46		12/16/24 11:07					
Analyst Initials:	KD			KD		KD					
Dilution Factor:	1.0			1.0		1.0			Limits		
ANALYTE	Result ug/L	RL ug/L	SPIKE AMT. ug/L	Result ug/L	% Rec.	Result ug/L	% Rec.	RPD %	Low %Rec	High %Rec	Max. RPD
Ethene	ND	1.0	1,150	1,150	100	1,070	93	7.0	70	130	30
Ethane	ND	1.0	1,200	1,280	105	1,200	98	6.9	70	130	30
Methane	ND	1.0	650	684	105	629	96	8.4	70	130	30

ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ **Date** 12/19/24

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Friday, December 20, 2024

Stephanie Bosze-Salisbury
GeoEngineers - Portland
5820 S Kelly Ave Unit B
Portland, OR 97239

RE: A4L0966 - Sunoco Van Main 4Q24 - 019001-009-36/37

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A4L0966, which was received by the laboratory on 12/5/2024 at 5:39:00PM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: DAuvil@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of sample receipt, unless prior arrangements have been made.

Cooler Receipt Information
Acceptable Receipt Temperature is less than, or equal to, 6 degC (not frozen), or received on ice the same day as sampling.
(See Cooler Receipt Form for details)
Default Cooler 1.1 degC

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.
All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.

Apex Laboratories

Darrell Auvil, Client Services Manager

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Apex Laboratories, LLC
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Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 019001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0966 - 12 20 24 1503

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-2	A4L0966-01	Water	12/05/24 15:02	12/05/24 17:39
MW-3	A4L0966-02	Water	12/05/24 13:06	12/05/24 17:39
MW-5	A4L0966-03	Water	12/05/24 08:25	12/05/24 17:39
MW-6	A4L0966-04	Water	12/05/24 13:58	12/05/24 17:39
MW-8	A4L0966-05	Water	12/05/24 10:48	12/05/24 17:39
MW-15	A4L0966-06	Water	12/05/24 11:41	12/05/24 17:39
MW-21i-105	A4L0966-07	Water	12/05/24 12:20	12/05/24 17:39
MW-22i	A4L0966-08	Water	12/05/24 10:40	12/05/24 17:39
MW-23i	A4L0966-09	Water	12/05/24 12:35	12/05/24 17:39
EW-1	A4L0966-10	Water	12/05/24 09:48	12/05/24 17:39
S-1	A4L0966-11	Water	12/05/24 09:44	12/05/24 17:39
S-2	A4L0966-12	Water	12/05/24 08:44	12/05/24 17:39

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 019001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0966 - 12 20 24 1503

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-2 (A4L0966-01)				**Matrix: Water**		**Batch: 24L0318**		
Bromobenzene	ND	---	0.500	ug/L	1	12/10/24 20:48	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	12/10/24 20:48	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	12/10/24 20:48	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	12/10/24 20:48	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	12/10/24 20:48	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	12/10/24 20:48	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	12/10/24 20:48	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	12/10/24 20:48	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	12/10/24 20:48	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	12/10/24 20:48	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	12/10/24 20:48	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	12/10/24 20:48	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	12/10/24 20:48	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	12/10/24 20:48	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	12/10/24 20:48	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	12/10/24 20:48	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	12/10/24 20:48	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	12/10/24 20:48	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	12/10/24 20:48	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	12/10/24 20:48	EPA 8260D	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	12/10/24 20:48	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	12/10/24 20:48	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	12/10/24 20:48	EPA 8260D	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	12/10/24 20:48	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	12/10/24 20:48	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	12/10/24 20:48	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	12/10/24 20:48	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	12/10/24 20:48	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	12/10/24 20:48	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/10/24 20:48	EPA 8260D	Q-42
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/10/24 20:48	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	12/10/24 20:48	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	12/10/24 20:48	EPA 8260D	

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Darrell Auvil, Client Services Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0966 - 12 20 24 1503**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-2 (A4L0966-01)				**Matrix: Water**		**Batch: 24L0318**		
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	12/10/24 20:48	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	12/10/24 20:48	EPA 8260D	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	12/10/24 20:48	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	12/10/24 20:48	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	12/10/24 20:48	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	12/10/24 20:48	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	12/10/24 20:48	EPA 8260D	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	12/10/24 20:48	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	12/10/24 20:48	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	12/10/24 20:48	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	12/10/24 20:48	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*111 %*	*Limits: 80-120 %*	*1*	*12/10/24 20:48*	*EPA 8260D*	
Toluene-d8 (Surr)			*102 %*	*80-120 %*	*1*	*12/10/24 20:48*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*103 %*	*80-120 %*	*1*	*12/10/24 20:48*	*EPA 8260D*	
MW-3 (A4L0966-02RE1)				**Matrix: Water**		**Batch: 24L0411**		
Bromobenzene	ND	---	0.500	ug/L	1	12/11/24 19:04	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	12/11/24 19:04	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	12/11/24 19:04	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	12/11/24 19:04	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	12/11/24 19:04	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	12/11/24 19:04	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	12/11/24 19:04	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	12/11/24 19:04	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	12/11/24 19:04	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	12/11/24 19:04	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	12/11/24 19:04	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	12/11/24 19:04	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	12/11/24 19:04	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	12/11/24 19:04	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	12/11/24 19:04	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	12/11/24 19:04	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	12/11/24 19:04	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	12/11/24 19:04	EPA 8260D	

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Darrell Auvil, Client Services Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 019001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0966 - 12 20 24 1503

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-3 (A4L0966-02RE1)				**Matrix: Water**		**Batch: 24L0411**		
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	12/11/24 19:04	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	12/11/24 19:04	EPA 8260D	
1,1-Dichloroethane	**0.580**	---	0.400	ug/L	1	12/11/24 19:04	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	12/11/24 19:04	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	12/11/24 19:04	EPA 8260D	
cis-1,2-Dichloroethene	**17.8**	---	0.400	ug/L	1	12/11/24 19:04	EPA 8260D	
trans-1,2-Dichloroethene	**1.22**	---	0.400	ug/L	1	12/11/24 19:04	EPA 8260D	
1,2-Dichloropropane	**0.500**	---	0.500	ug/L	1	12/11/24 19:04	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	12/11/24 19:04	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	12/11/24 19:04	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	12/11/24 19:04	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/11/24 19:04	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/11/24 19:04	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	12/11/24 19:04	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	12/11/24 19:04	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	12/11/24 19:04	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	12/11/24 19:04	EPA 8260D	
Tetrachloroethene (PCE)	**160**	---	0.400	ug/L	1	12/11/24 19:04	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	12/11/24 19:04	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	12/11/24 19:04	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	12/11/24 19:04	EPA 8260D	
1,1,1-Trichloroethane	**1.88**	---	0.400	ug/L	1	12/11/24 19:04	EPA 8260D	
Trichloroethene (TCE)	**28.9**	---	0.400	ug/L	1	12/11/24 19:04	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	12/11/24 19:04	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	12/11/24 19:04	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	12/11/24 19:04	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*113 %*	*Limits:*	*80-120 %*	*1*	*12/11/24 19:04*	*EPA 8260D*	
Toluene-d8 (Surr)			*102 %*		*80-120 %*	*1*	*12/11/24 19:04*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*102 %*		*80-120 %*	*1*	*12/11/24 19:04*	*EPA 8260D*	
MW-5 (A4L0966-03)				**Matrix: Water**		**Batch: 24L0411**		
Bromobenzene	ND	---	0.500	ug/L	1	12/12/24 01:03	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	12/12/24 01:03	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	12/12/24 01:03	EPA 8260D	

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Darrell Auvil, Client Services Manager

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 019001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0966 - 12 20 24 1503

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-5 (A4L0966-03)				**Matrix: Water**		**Batch: 24L0411**		
Bromoform	ND	---	1.00	ug/L	1	12/12/24 01:03	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	12/12/24 01:03	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	12/12/24 01:03	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	12/12/24 01:03	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	12/12/24 01:03	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	12/12/24 01:03	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	12/12/24 01:03	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	12/12/24 01:03	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	12/12/24 01:03	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	12/12/24 01:03	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	12/12/24 01:03	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	12/12/24 01:03	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	12/12/24 01:03	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	12/12/24 01:03	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	12/12/24 01:03	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	12/12/24 01:03	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	12/12/24 01:03	EPA 8260D	
1,1-Dichloroethane	**1.92**	---	0.400	ug/L	1	12/12/24 01:03	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	12/12/24 01:03	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	12/12/24 01:03	EPA 8260D	
cis-1,2-Dichloroethene	**24.2**	---	0.400	ug/L	1	12/12/24 01:03	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	12/12/24 01:03	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	12/12/24 01:03	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	12/12/24 01:03	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	12/12/24 01:03	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	12/12/24 01:03	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/12/24 01:03	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/12/24 01:03	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	12/12/24 01:03	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	12/12/24 01:03	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	12/12/24 01:03	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	12/12/24 01:03	EPA 8260D	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	12/12/24 01:03	EPA 8260D	

Apex Laboratories



Darrell Auvil, Client Services Manager

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503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 019001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0966 - 12 20 24 1503

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-5 (A4L0966-03)				**Matrix: Water**		**Batch: 24L0411**		
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	12/12/24 01:03	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	12/12/24 01:03	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	12/12/24 01:03	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	12/12/24 01:03	EPA 8260D	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	12/12/24 01:03	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	12/12/24 01:03	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	12/12/24 01:03	EPA 8260D	
Vinyl chloride	**2.99**	---	0.200	ug/L	1	12/12/24 01:03	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*106 %*	*Limits: 80-120 %*	*1*	*12/12/24 01:03*	*EPA 8260D*	
Toluene-d8 (Surr)			*102 %*	*80-120 %*	*1*	*12/12/24 01:03*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*104 %*	*80-120 %*	*1*	*12/12/24 01:03*	*EPA 8260D*	
MW-6 (A4L0966-04)				**Matrix: Water**		**Batch: 24L0411**		
Bromobenzene	ND	---	0.500	ug/L	1	12/11/24 21:22	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	12/11/24 21:22	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	12/11/24 21:22	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	12/11/24 21:22	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	12/11/24 21:22	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	12/11/24 21:22	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	12/11/24 21:22	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	12/11/24 21:22	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	12/11/24 21:22	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	12/11/24 21:22	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	12/11/24 21:22	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	12/11/24 21:22	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	12/11/24 21:22	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	12/11/24 21:22	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	12/11/24 21:22	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	12/11/24 21:22	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	12/11/24 21:22	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	12/11/24 21:22	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	12/11/24 21:22	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	12/11/24 21:22	EPA 8260D	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	12/11/24 21:22	EPA 8260D	

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Darrell Auvil, Client Services Manager

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0966 - 12 20 24 1503**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-6 (A4L0966-04)				**Matrix: Water**		**Batch: 24L0411**		
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	12/11/24 21:22	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	12/11/24 21:22	EPA 8260D	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	12/11/24 21:22	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	12/11/24 21:22	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	12/11/24 21:22	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	12/11/24 21:22	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	12/11/24 21:22	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	12/11/24 21:22	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/11/24 21:22	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/11/24 21:22	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	12/11/24 21:22	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	12/11/24 21:22	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	12/11/24 21:22	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	12/11/24 21:22	EPA 8260D	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	12/11/24 21:22	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	12/11/24 21:22	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	12/11/24 21:22	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	12/11/24 21:22	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	12/11/24 21:22	EPA 8260D	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	12/11/24 21:22	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	12/11/24 21:22	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	12/11/24 21:22	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	12/11/24 21:22	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*110 %*	*Limits:* *80-120 %*	*1*	*12/11/24 21:22*	*EPA 8260D*	
Toluene-d8 (Surr)			*104 %*	*80-120 %*	*1*	*12/11/24 21:22*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*102 %*	*80-120 %*	*1*	*12/11/24 21:22*	*EPA 8260D*	
MW-8 (A4L0966-05)				**Matrix: Water**		**Batch: 24L0411**		
Bromobenzene	ND	---	0.500	ug/L	1	12/11/24 21:50	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	12/11/24 21:50	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	12/11/24 21:50	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	12/11/24 21:50	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	12/11/24 21:50	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	12/11/24 21:50	EPA 8260D	

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Darrell Auvil, Client Services Manager

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0966 - 12 20 24 1503**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-8 (A4L0966-05)				**Matrix: Water**		**Batch: 24L0411**		
Chlorobenzene	ND	---	0.500	ug/L	1	12/11/24 21:50	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	12/11/24 21:50	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	12/11/24 21:50	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	12/11/24 21:50	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	12/11/24 21:50	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	12/11/24 21:50	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	12/11/24 21:50	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	12/11/24 21:50	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	12/11/24 21:50	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	12/11/24 21:50	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	12/11/24 21:50	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	12/11/24 21:50	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	12/11/24 21:50	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	12/11/24 21:50	EPA 8260D	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	12/11/24 21:50	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	12/11/24 21:50	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	12/11/24 21:50	EPA 8260D	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	12/11/24 21:50	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	12/11/24 21:50	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	12/11/24 21:50	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	12/11/24 21:50	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	12/11/24 21:50	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	12/11/24 21:50	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/11/24 21:50	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/11/24 21:50	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	12/11/24 21:50	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	12/11/24 21:50	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	12/11/24 21:50	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	12/11/24 21:50	EPA 8260D	
Tetrachloroethene (PCE)	**3.48**	---	0.400	ug/L	1	12/11/24 21:50	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	12/11/24 21:50	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	12/11/24 21:50	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	12/11/24 21:50	EPA 8260D	

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0966 - 12 20 24 1503**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-8 (A4L0966-05)				**Matrix: Water**		**Batch: 24L0411**		
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	12/11/24 21:50	EPA 8260D	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	12/11/24 21:50	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	12/11/24 21:50	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	12/11/24 21:50	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	12/11/24 21:50	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*112 %*	*Limits: 80-120 %*	*1*	*12/11/24 21:50*	*EPA 8260D*	
Toluene-d8 (Surr)			*103 %*	*80-120 %*	*1*	*12/11/24 21:50*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*103 %*	*80-120 %*	*1*	*12/11/24 21:50*	*EPA 8260D*	
MW-15 (A4L0966-06)				**Matrix: Water**		**Batch: 24L0411**		
Bromobenzene	ND	---	0.500	ug/L	1	12/11/24 22:18	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	12/11/24 22:18	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	12/11/24 22:18	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	12/11/24 22:18	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	12/11/24 22:18	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	12/11/24 22:18	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	12/11/24 22:18	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	12/11/24 22:18	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	12/11/24 22:18	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	12/11/24 22:18	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	12/11/24 22:18	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	12/11/24 22:18	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	12/11/24 22:18	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	12/11/24 22:18	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	12/11/24 22:18	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	12/11/24 22:18	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	12/11/24 22:18	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	12/11/24 22:18	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	12/11/24 22:18	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	12/11/24 22:18	EPA 8260D	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	12/11/24 22:18	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	12/11/24 22:18	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	12/11/24 22:18	EPA 8260D	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	12/11/24 22:18	EPA 8260D	

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ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 019001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0966 - 12 20 24 1503

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-15 (A4L0966-06)				**Matrix: Water**		**Batch: 24L0411**		
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	12/11/24 22:18	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	12/11/24 22:18	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	12/11/24 22:18	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	12/11/24 22:18	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	12/11/24 22:18	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/11/24 22:18	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/11/24 22:18	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	12/11/24 22:18	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	12/11/24 22:18	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	12/11/24 22:18	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	12/11/24 22:18	EPA 8260D	
Tetrachloroethene (PCE)	**0.590**	---	0.400	ug/L	1	12/11/24 22:18	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	12/11/24 22:18	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	12/11/24 22:18	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	12/11/24 22:18	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	12/11/24 22:18	EPA 8260D	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	12/11/24 22:18	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	12/11/24 22:18	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	12/11/24 22:18	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	12/11/24 22:18	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*108 %*	*Limits: 80-120 %*	*1*	*12/11/24 22:18*	*EPA 8260D*	
Toluene-d8 (Surr)			*104 %*	*80-120 %*	*1*	*12/11/24 22:18*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*100 %*	*80-120 %*	*1*	*12/11/24 22:18*	*EPA 8260D*	
MW-21i-105 (A4L0966-07)				**Matrix: Water**		**Batch: 24L0411**		
Bromobenzene	ND	---	0.500	ug/L	1	12/12/24 01:31	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	12/12/24 01:31	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	12/12/24 01:31	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	12/12/24 01:31	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	12/12/24 01:31	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	12/12/24 01:31	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	12/12/24 01:31	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	12/12/24 01:31	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	12/12/24 01:31	EPA 8260D	

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 019001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0966 - 12 20 24 1503

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-21i-105 (A4L0966-07)				**Matrix: Water**		**Batch: 24L0411**		
Chloromethane	ND	---	5.00	ug/L	1	12/12/24 01:31	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	12/12/24 01:31	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	12/12/24 01:31	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	12/12/24 01:31	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	12/12/24 01:31	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	12/12/24 01:31	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	12/12/24 01:31	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	12/12/24 01:31	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	12/12/24 01:31	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	12/12/24 01:31	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	12/12/24 01:31	EPA 8260D	
1,1-Dichloroethane	**0.540**	---	0.400	ug/L	1	12/12/24 01:31	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	12/12/24 01:31	EPA 8260D	
cis-1,2-Dichloroethene	**11.0**	---	0.400	ug/L	1	12/12/24 01:31	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	12/12/24 01:31	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	12/12/24 01:31	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	12/12/24 01:31	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	12/12/24 01:31	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	12/12/24 01:31	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/12/24 01:31	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/12/24 01:31	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	12/12/24 01:31	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	12/12/24 01:31	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	12/12/24 01:31	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	12/12/24 01:31	EPA 8260D	
Tetrachloroethene (PCE)	**30.3**	---	0.400	ug/L	1	12/12/24 01:31	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	12/12/24 01:31	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	12/12/24 01:31	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	12/12/24 01:31	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	12/12/24 01:31	EPA 8260D	
Trichloroethene (TCE)	**9.33**	---	0.400	ug/L	1	12/12/24 01:31	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	12/12/24 01:31	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	12/12/24 01:31	EPA 8260D	

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6700 S.W. Sandburg Street
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503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 019001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0966 - 12 20 24 1503

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-21i-105 (A4L0966-07)				**Matrix: Water**		**Batch: 24L0411**		
Vinyl chloride	ND	---	0.200	ug/L	1	12/12/24 01:31	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*111 %*	*Limits: 80-120 %*	*1*	*12/12/24 01:31*	*EPA 8260D*	
Toluene-d8 (Surr)			*104 %*	*80-120 %*	*1*	*12/12/24 01:31*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*102 %*	*80-120 %*	*1*	*12/12/24 01:31*	*EPA 8260D*	
MW-21i-105 (A4L0966-07RE1)				**Matrix: Water**		**Batch: 24L0537**		
1,1-Dichloroethene	**0.440**	---	0.400	ug/L	1	12/14/24 13:22	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*102 %*	*Limits: 80-120 %*	*1*	*12/14/24 13:22*	*EPA 8260D*	
Toluene-d8 (Surr)			*101 %*	*80-120 %*	*1*	*12/14/24 13:22*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*101 %*	*80-120 %*	*1*	*12/14/24 13:22*	*EPA 8260D*	
MW-22i (A4L0966-08)				**Matrix: Water**		**Batch: 24L0411**		
Bromobenzene	ND	---	0.500	ug/L	1	12/11/24 23:40	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	12/11/24 23:40	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	12/11/24 23:40	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	12/11/24 23:40	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	12/11/24 23:40	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	12/11/24 23:40	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	12/11/24 23:40	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	12/11/24 23:40	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	12/11/24 23:40	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	12/11/24 23:40	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	12/11/24 23:40	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	12/11/24 23:40	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	12/11/24 23:40	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	12/11/24 23:40	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	12/11/24 23:40	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	12/11/24 23:40	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	12/11/24 23:40	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	12/11/24 23:40	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	12/11/24 23:40	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	12/11/24 23:40	EPA 8260D	
1,1-Dichloroethane	**0.400**	---	0.400	ug/L	1	12/11/24 23:40	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	12/11/24 23:40	EPA 8260D	

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Darrell Auvil, Client Services Manager

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0966 - 12 20 24 1503**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-22i (A4L0966-08)				**Matrix: Water**		**Batch: 24L0411**		
1,1-Dichloroethene	ND	---	0.400	ug/L	1	12/11/24 23:40	EPA 8260D	
cis-1,2-Dichloroethene	**10.3**	---	0.400	ug/L	1	12/11/24 23:40	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	12/11/24 23:40	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	12/11/24 23:40	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	12/11/24 23:40	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	12/11/24 23:40	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	12/11/24 23:40	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/11/24 23:40	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/11/24 23:40	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	12/11/24 23:40	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	12/11/24 23:40	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	12/11/24 23:40	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	12/11/24 23:40	EPA 8260D	
Tetrachloroethene (PCE)	**1.73**	---	0.400	ug/L	1	12/11/24 23:40	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	12/11/24 23:40	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	12/11/24 23:40	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	12/11/24 23:40	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	12/11/24 23:40	EPA 8260D	
Trichloroethene (TCE)	**3.55**	---	0.400	ug/L	1	12/11/24 23:40	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	12/11/24 23:40	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	12/11/24 23:40	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	12/11/24 23:40	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*109 %*	*Limits:* *80-120 %*	*1*	*12/11/24 23:40*	*EPA 8260D*	
Toluene-d8 (Surr)			*103 %*	*80-120 %*	*1*	*12/11/24 23:40*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*101 %*	*80-120 %*	*1*	*12/11/24 23:40*	*EPA 8260D*	
MW-23i (A4L0966-09)				**Matrix: Water**		**Batch: 24L0411**		
Bromobenzene	ND	---	0.500	ug/L	1	12/11/24 22:45	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	12/11/24 22:45	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	12/11/24 22:45	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	12/11/24 22:45	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	12/11/24 22:45	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	12/11/24 22:45	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	12/11/24 22:45	EPA 8260D	

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ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 019001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0966 - 12 20 24 1503

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-23i (A4L0966-09)				**Matrix: Water**		**Batch: 24L0411**		
Chloroethane	ND	---	5.00	ug/L	1	12/11/24 22:45	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	12/11/24 22:45	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	12/11/24 22:45	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	12/11/24 22:45	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	12/11/24 22:45	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	12/11/24 22:45	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	12/11/24 22:45	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	12/11/24 22:45	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	12/11/24 22:45	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	12/11/24 22:45	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	12/11/24 22:45	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	12/11/24 22:45	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	12/11/24 22:45	EPA 8260D	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	12/11/24 22:45	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	12/11/24 22:45	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	12/11/24 22:45	EPA 8260D	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	12/11/24 22:45	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	12/11/24 22:45	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	12/11/24 22:45	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	12/11/24 22:45	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	12/11/24 22:45	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	12/11/24 22:45	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/11/24 22:45	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/11/24 22:45	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	12/11/24 22:45	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	12/11/24 22:45	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	12/11/24 22:45	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	12/11/24 22:45	EPA 8260D	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	12/11/24 22:45	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	12/11/24 22:45	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	12/11/24 22:45	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	12/11/24 22:45	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	12/11/24 22:45	EPA 8260D	

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 019001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0966 - 12 20 24 1503

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-23i (A4L0966-09)				**Matrix: Water**		**Batch: 24L0411**		
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	12/11/24 22:45	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	12/11/24 22:45	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	12/11/24 22:45	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	12/11/24 22:45	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*108 %*	*Limits: 80-120 %*	*1*	*12/11/24 22:45*	*EPA 8260D*	
Toluene-d8 (Surr)			*103 %*	*80-120 %*	*1*	*12/11/24 22:45*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*102 %*	*80-120 %*	*1*	*12/11/24 22:45*	*EPA 8260D*	
EW-1 (A4L0966-10)				**Matrix: Water**		**Batch: 24L0411**		
Bromobenzene	ND	---	0.500	ug/L	1	12/12/24 00:08	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	12/12/24 00:08	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	12/12/24 00:08	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	12/12/24 00:08	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	12/12/24 00:08	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	12/12/24 00:08	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	12/12/24 00:08	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	12/12/24 00:08	EPA 8260D	
Chloroform	**1.10**	---	1.00	ug/L	1	12/12/24 00:08	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	12/12/24 00:08	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	12/12/24 00:08	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	12/12/24 00:08	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	12/12/24 00:08	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	12/12/24 00:08	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	12/12/24 00:08	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	12/12/24 00:08	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	12/12/24 00:08	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	12/12/24 00:08	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	12/12/24 00:08	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	12/12/24 00:08	EPA 8260D	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	12/12/24 00:08	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	12/12/24 00:08	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	12/12/24 00:08	EPA 8260D	
cis-1,2-Dichloroethene	**1.07**	---	0.400	ug/L	1	12/12/24 00:08	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	12/12/24 00:08	EPA 8260D	

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Darrell Auvil, Client Services Manager

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 019001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0966 - 12 20 24 1503

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
EW-1 (A4L0966-10)				**Matrix: Water**		**Batch: 24L0411**		
1,2-Dichloropropane	ND	---	0.500	ug/L	1	12/12/24 00:08	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	12/12/24 00:08	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	12/12/24 00:08	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	12/12/24 00:08	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/12/24 00:08	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/12/24 00:08	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	12/12/24 00:08	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	12/12/24 00:08	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	12/12/24 00:08	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	12/12/24 00:08	EPA 8260D	
Tetrachloroethene (PCE)	**32.2**	---	0.400	ug/L	1	12/12/24 00:08	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	12/12/24 00:08	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	12/12/24 00:08	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	12/12/24 00:08	EPA 8260D	
1,1,1-Trichloroethane	**0.900**	---	0.400	ug/L	1	12/12/24 00:08	EPA 8260D	
Trichloroethene (TCE)	**6.98**	---	0.400	ug/L	1	12/12/24 00:08	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	12/12/24 00:08	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	12/12/24 00:08	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	12/12/24 00:08	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*113 %*	*Limits: 80-120 %*	*1*	*12/12/24 00:08*	*EPA 8260D*	
Toluene-d8 (Surr)			*105 %*	*80-120 %*	*1*	*12/12/24 00:08*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*104 %*	*80-120 %*	*1*	*12/12/24 00:08*	*EPA 8260D*	
S-1 (A4L0966-11)				**Matrix: Water**		**Batch: 24L0411**		
Bromobenzene	ND	---	0.500	ug/L	1	12/11/24 23:13	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	12/11/24 23:13	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	12/11/24 23:13	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	12/11/24 23:13	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	12/11/24 23:13	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	12/11/24 23:13	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	12/11/24 23:13	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	12/11/24 23:13	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	12/11/24 23:13	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	12/11/24 23:13	EPA 8260D	

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6700 S.W. Sandburg Street
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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0966 - 12 20 24 1503**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
S-1 (A4L0966-11)				**Matrix: Water**		**Batch: 24L0411**		
2-Chlorotoluene	ND	---	1.00	ug/L	1	12/11/24 23:13	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	12/11/24 23:13	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	12/11/24 23:13	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	12/11/24 23:13	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	12/11/24 23:13	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	12/11/24 23:13	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	12/11/24 23:13	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	12/11/24 23:13	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	12/11/24 23:13	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	12/11/24 23:13	EPA 8260D	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	12/11/24 23:13	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	12/11/24 23:13	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	12/11/24 23:13	EPA 8260D	
cis-1,2-Dichloroethene	**0.830**	---	0.400	ug/L	1	12/11/24 23:13	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	12/11/24 23:13	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	12/11/24 23:13	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	12/11/24 23:13	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	12/11/24 23:13	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	12/11/24 23:13	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/11/24 23:13	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/11/24 23:13	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	12/11/24 23:13	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	12/11/24 23:13	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	12/11/24 23:13	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	12/11/24 23:13	EPA 8260D	
Tetrachloroethene (PCE)	**0.760**	---	0.400	ug/L	1	12/11/24 23:13	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	12/11/24 23:13	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	12/11/24 23:13	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	12/11/24 23:13	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	12/11/24 23:13	EPA 8260D	
Trichloroethene (TCE)	**0.650**	---	0.400	ug/L	1	12/11/24 23:13	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	12/11/24 23:13	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	12/11/24 23:13	EPA 8260D	

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ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 019001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0966 - 12 20 24 1503

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
S-1 (A4L0966-11)				**Matrix: Water**		**Batch: 24L0411**		
Vinyl chloride	ND	---	0.200	ug/L	1	12/11/24 23:13	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*111 %*	*Limits: 80-120 %*	*1*	*12/11/24 23:13*	*EPA 8260D*	
Toluene-d8 (Surr)			*100 %*	*80-120 %*	*1*	*12/11/24 23:13*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*103 %*	*80-120 %*	*1*	*12/11/24 23:13*	*EPA 8260D*	
S-2 (A4L0966-12)				**Matrix: Water**		**Batch: 24L0411**		
Bromobenzene	ND	---	0.500	ug/L	1	12/12/24 00:36	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	12/12/24 00:36	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	12/12/24 00:36	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	12/12/24 00:36	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	12/12/24 00:36	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	12/12/24 00:36	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	12/12/24 00:36	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	12/12/24 00:36	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	12/12/24 00:36	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	12/12/24 00:36	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	12/12/24 00:36	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	12/12/24 00:36	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	12/12/24 00:36	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	12/12/24 00:36	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	12/12/24 00:36	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	12/12/24 00:36	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	12/12/24 00:36	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	12/12/24 00:36	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	12/12/24 00:36	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	12/12/24 00:36	EPA 8260D	
1,1-Dichloroethane	**5.61**	---	0.400	ug/L	1	12/12/24 00:36	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	12/12/24 00:36	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	12/12/24 00:36	EPA 8260D	
cis-1,2-Dichloroethene	**26.9**	---	0.400	ug/L	1	12/12/24 00:36	EPA 8260D	
trans-1,2-Dichloroethene	**0.410**	---	0.400	ug/L	1	12/12/24 00:36	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	12/12/24 00:36	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	12/12/24 00:36	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	12/12/24 00:36	EPA 8260D	

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 019001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0966 - 12 20 24 1503

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
S-2 (A4L0966-12)				**Matrix: Water**		**Batch: 24L0411**		
1,1-Dichloropropene	ND	---	1.00	ug/L	1	12/12/24 00:36	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/12/24 00:36	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/12/24 00:36	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	12/12/24 00:36	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	12/12/24 00:36	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	12/12/24 00:36	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	12/12/24 00:36	EPA 8260D	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	12/12/24 00:36	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	12/12/24 00:36	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	12/12/24 00:36	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	12/12/24 00:36	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	12/12/24 00:36	EPA 8260D	
Trichloroethene (TCE)	**0.730**	---	0.400	ug/L	1	12/12/24 00:36	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	12/12/24 00:36	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	12/12/24 00:36	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	12/12/24 00:36	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*107 %*	*Limits: 80-120 %*	*1*	*12/12/24 00:36*	*EPA 8260D*	
Toluene-d8 (Surr)			*103 %*	*80-120 %*	*1*	*12/12/24 00:36*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*102 %*	*80-120 %*	*1*	*12/12/24 00:36*	*EPA 8260D*	

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ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 019001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0966 - 12 20 24 1503

ANALYTICAL SAMPLE RESULTS

Ammonia by Gas Diffusion and Colorimetric Detection

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-2 (A4L0966-01)				**Matrix: Water**		**Batch: 24L0294**		
Ammonia as N	**9.13**	---	0.100	mg/L	5	12/09/24 12:53	SM 4500-NH3 G	
MW-3 (A4L0966-02)				**Matrix: Water**		**Batch: 24L0294**		
Ammonia as N	ND	---	0.0200	mg/L	1	12/09/24 12:56	SM 4500-NH3 G	
MW-5 (A4L0966-03)				**Matrix: Water**		**Batch: 24L0294**		
Ammonia as N	**0.448**	---	0.0200	mg/L	1	12/09/24 12:58	SM 4500-NH3 G	
MW-6 (A4L0966-04)				**Matrix: Water**		**Batch: 24L0294**		
Ammonia as N	**1.05**	---	0.0200	mg/L	1	12/09/24 13:08	SM 4500-NH3 G	
MW-8 (A4L0966-05)				**Matrix: Water**		**Batch: 24L0294**		
Ammonia as N	ND	---	0.0200	mg/L	1	12/09/24 13:10	SM 4500-NH3 G	
MW-15 (A4L0966-06)				**Matrix: Water**		**Batch: 24L0294**		
Ammonia as N	ND	---	0.0200	mg/L	1	12/09/24 13:11	SM 4500-NH3 G	
MW-21i-105 (A4L0966-07)				**Matrix: Water**		**Batch: 24L0294**		
Ammonia as N	**0.954**	---	0.0200	mg/L	1	12/09/24 13:14	SM 4500-NH3 G	
MW-22i (A4L0966-08)				**Matrix: Water**		**Batch: 24L0294**		
Ammonia as N	**0.384**	---	0.0200	mg/L	1	12/09/24 13:16	SM 4500-NH3 G	
MW-23i (A4L0966-09)				**Matrix: Water**		**Batch: 24L0294**		
Ammonia as N	ND	---	0.0200	mg/L	1	12/09/24 13:17	SM 4500-NH3 G	
EW-1 (A4L0966-10)				**Matrix: Water**		**Batch: 24L0294**		
Ammonia as N	ND	---	0.0200	mg/L	1	12/09/24 13:20	SM 4500-NH3 G	
S-1 (A4L0966-11)				**Matrix: Water**		**Batch: 24L0294**		
Ammonia as N	ND	---	0.0200	mg/L	1	12/09/24 13:22	SM 4500-NH3 G	
S-2 (A4L0966-12)				**Matrix: Water**		**Batch: 24L0294**		
Ammonia as N	**3.16**	---	0.0200	mg/L	1	12/09/24 13:25	SM 4500-NH3 G	

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 019001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0966 - 12 20 24 1503

ANALYTICAL SAMPLE RESULTS

Anions by Ion Chromatography

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-2 (A4L0966-01)				**Matrix: Water**				
Batch: 24L0211								
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	12/06/24 13:18	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	12/06/24 13:18	EPA 300.0	
MW-3 (A4L0966-02)				**Matrix: Water**				
Batch: 24L0211								
Nitrate-Nitrogen	**5.80**	---	0.250	mg/L	1	12/06/24 14:23	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	12/06/24 14:23	EPA 300.0	
MW-5 (A4L0966-03)				**Matrix: Water**				
Batch: 24L0211								
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	12/06/24 14:44	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	12/06/24 14:44	EPA 300.0	
MW-6 (A4L0966-04)				**Matrix: Water**				
Batch: 24L0211								
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	12/06/24 15:49	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	12/06/24 15:49	EPA 300.0	
MW-8 (A4L0966-05RE1)				**Matrix: Water**				
Batch: 24L0211								
Nitrate-Nitrogen	**201**	---	12.5	mg/L	50	12/06/24 20:51	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	12/06/24 21:13	EPA 300.0	
MW-15 (A4L0966-06)				**Matrix: Water**				
Batch: 24L0211								
Nitrate-Nitrogen	**4.93**	---	0.250	mg/L	1	12/06/24 16:32	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	12/06/24 16:32	EPA 300.0	
MW-21i-105 (A4L0966-07)				**Matrix: Water**				
Batch: 24L0211								
Nitrate-Nitrogen	**1.62**	---	0.250	mg/L	1	12/06/24 16:54	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	12/06/24 16:54	EPA 300.0	
MW-22i (A4L0966-08)				**Matrix: Water**				
Batch: 24L0211								

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0966 - 12 20 24 1503**

ANALYTICAL SAMPLE RESULTS

Anions by Ion Chromatography

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-22i (A4L0966-08)				**Matrix: Water**				
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	12/06/24 17:15	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	12/06/24 17:15	EPA 300.0	
MW-23i (A4L0966-09)				**Matrix: Water**				
Batch: 24L0211								
Nitrate-Nitrogen	**1.28**	---	0.250	mg/L	1	12/06/24 17:37	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	12/06/24 17:37	EPA 300.0	
EW-1 (A4L0966-10)				**Matrix: Water**				
Batch: 24L0211								
Nitrate-Nitrogen	**4.62**	---	0.250	mg/L	1	12/06/24 17:58	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	12/06/24 17:58	EPA 300.0	
S-1 (A4L0966-11)				**Matrix: Water**				
Batch: 24L0211								
Nitrate-Nitrogen	**3.13**	---	0.250	mg/L	1	12/06/24 18:20	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	12/06/24 18:20	EPA 300.0	
S-2 (A4L0966-12)				**Matrix: Water**				
Batch: 24L0211								
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	12/06/24 20:08	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	12/06/24 20:08	EPA 300.0	

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Darrell Auvil, Client Services Manager

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503-718-2323
ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0966 - 12 20 24 1503**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0318 - EPA 5030C							**Water**					
Blank (24L0318-BLK1)			Prepared: 12/10/24 07:15 Analyzed: 12/10/24 10:13									
EPA 8260D												
Bromobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Bromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromodichloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromoform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromomethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Carbon tetrachloride	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Chloroethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Chloroform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chloromethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
2-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
4-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Dibromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dibromomethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Methylene chloride	ND	---	10.0	ug/L	1	---	---	---	---	---	---	

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ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 019001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0966 - 12 20 24 1503

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0318 - EPA 5030C							Water					
Blank (24L0318-BLK1)			Prepared: 12/10/24 07:15 Analyzed: 12/10/24 10:13									
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Vinyl chloride	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*109 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*101 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*102 %*		*80-120 %*			*"*				
LCS (24L0318-BS1)			Prepared: 12/10/24 07:15 Analyzed: 12/10/24 09:06									
EPA 8260D												
Bromobenzene	16.7	---	0.500	ug/L	1	20.0	---	84	80-120%	---	---	
Bromochloromethane	19.2	---	1.00	ug/L	1	20.0	---	96	80-120%	---	---	
Bromodichloromethane	20.5	---	1.00	ug/L	1	20.0	---	103	80-120%	---	---	
Bromoform	20.3	---	1.00	ug/L	1	20.0	---	102	80-120%	---	---	
Bromomethane	25.8	---	5.00	ug/L	1	20.0	---	**129**	**80-120%**	---	---	Q-56
Carbon tetrachloride	23.2	---	1.00	ug/L	1	20.0	---	116	80-120%	---	---	
Chlorobenzene	19.2	---	0.500	ug/L	1	20.0	---	96	80-120%	---	---	
Chloroethane	26.8	---	5.00	ug/L	1	20.0	---	**134**	**80-120%**	---	---	Q-56
Chloroform	19.8	---	1.00	ug/L	1	20.0	---	99	80-120%	---	---	
Chloromethane	19.6	---	5.00	ug/L	1	20.0	---	98	80-120%	---	---	
2-Chlorotoluene	17.0	---	1.00	ug/L	1	20.0	---	85	80-120%	---	---	
4-Chlorotoluene	18.6	---	1.00	ug/L	1	20.0	---	93	80-120%	---	---	
Dibromochloromethane	20.0	---	1.00	ug/L	1	20.0	---	100	80-120%	---	---	
1,2-Dibromo-3-chloropropane	17.9	---	5.00	ug/L	1	20.0	---	89	80-120%	---	---	
1,2-Dibromoethane (EDB)	19.8	---	0.500	ug/L	1	20.0	---	99	80-120%	---	---	
Dibromomethane	20.6	---	1.00	ug/L	1	20.0	---	103	80-120%	---	---	
1,2-Dichlorobenzene	18.8	---	0.500	ug/L	1	20.0	---	94	80-120%	---	---	

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ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project:	Sunoco Van Main 4Q24
5820 S Kelly Ave Unit B	Project Number:	019001-009-36/37
Portland, OR 97239	Project Manager:	Stephanie Bosze-Salisbury
		Report ID: A4L0966 - 12 20 24 1503

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0318 - EPA 5030C							**Water**					
LCS (24L0318-BS1)			Prepared: 12/10/24 07:15 Analyzed: 12/10/24 09:06									
1,3-Dichlorobenzene	19.6	---	0.500	ug/L	1	20.0	---	98	80-120%	---	---	
1,4-Dichlorobenzene	18.7	---	0.500	ug/L	1	20.0	---	94	80-120%	---	---	
Dichlorodifluoromethane	21.3	---	1.00	ug/L	1	20.0	---	106	80-120%	---	---	
1,1-Dichloroethane	19.5	---	0.400	ug/L	1	20.0	---	98	80-120%	---	---	
1,2-Dichloroethane (EDC)	19.6	---	0.400	ug/L	1	20.0	---	98	80-120%	---	---	
1,1-Dichloroethene	23.7	---	0.400	ug/L	1	20.0	---	118	80-120%	---	---	
cis-1,2-Dichloroethene	17.0	---	0.400	ug/L	1	20.0	---	85	80-120%	---	---	
trans-1,2-Dichloroethene	18.3	---	0.400	ug/L	1	20.0	---	92	80-120%	---	---	
1,2-Dichloropropane	17.8	---	0.500	ug/L	1	20.0	---	89	80-120%	---	---	
1,3-Dichloropropane	18.0	---	1.00	ug/L	1	20.0	---	90	80-120%	---	---	
2,2-Dichloropropane	24.1	---	1.00	ug/L	1	20.0	---	120	80-120%	---	---	
1,1-Dichloropropene	20.7	---	1.00	ug/L	1	20.0	---	104	80-120%	---	---	
cis-1,3-Dichloropropene	18.4	---	1.00	ug/L	1	20.0	---	92	80-120%	---	---	
trans-1,3-Dichloropropene	20.6	---	1.00	ug/L	1	20.0	---	103	80-120%	---	---	
Hexachlorobutadiene	20.6	---	5.00	ug/L	1	20.0	---	103	80-120%	---	---	
Methylene chloride	20.5	---	10.0	ug/L	1	20.0	---	102	80-120%	---	---	
1,1,1,2-Tetrachloroethane	19.3	---	0.400	ug/L	1	20.0	---	97	80-120%	---	---	
1,1,2,2-Tetrachloroethane	20.8	---	0.500	ug/L	1	20.0	---	104	80-120%	---	---	
Tetrachloroethene (PCE)	20.2	---	0.400	ug/L	1	20.0	---	101	80-120%	---	---	
1,2,3-Trichlorobenzene	18.4	---	2.00	ug/L	1	20.0	---	92	80-120%	---	---	
1,1,2-Trichloroethane	19.1	---	0.500	ug/L	1	20.0	---	95	80-120%	---	---	
1,2,4-Trichlorobenzene	16.0	---	2.00	ug/L	1	20.0	---	80	80-120%	---	---	
1,1,1-Trichloroethane	21.0	---	0.400	ug/L	1	20.0	---	105	80-120%	---	---	
Trichloroethene (TCE)	17.6	---	0.400	ug/L	1	20.0	---	88	80-120%	---	---	
Trichlorofluoromethane	28.8	---	2.00	ug/L	1	20.0	---	**144**	**80-120%**	---	---	Q-56
1,2,3-Trichloropropane	17.6	---	1.00	ug/L	1	20.0	---	88	80-120%	---	---	
Vinyl chloride	19.4	---	0.200	ug/L	1	20.0	---	97	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 103 %*		*Limits: 80-120 %*			*Dilution: 1x*				
Toluene-d8 (Surr)			*95 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*93 %*		*80-120 %*			*"*				
Duplicate (24L0318-DUP1)			Prepared: 12/10/24 07:15 Analyzed: 12/10/24 18:57									
QC Source Sample: Non-SDG (A4L0895-13)												
Bromobenzene	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0966 - 12 20 24 1503**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0318 - EPA 5030C							**Water**					
Duplicate (24L0318-DUP1)			Prepared: 12/10/24 07:15		Analyzed: 12/10/24 18:57							
QC Source Sample: Non-SDG (A4L0895-13)												
Bromochloromethane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Bromodichloromethane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Bromoform	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Bromomethane	ND	---	5.00	ug/L	1	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Chlorobenzene	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
Chloroethane	ND	---	5.00	ug/L	1	---	ND	---	---	---	30%	
Chloroform	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Chloromethane	ND	---	5.00	ug/L	1	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Dibromochloromethane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
Dibromomethane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	---	0.280	---	---	***	30%	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	---	ND	---	---	---	30%	
1,1-Dichloroethene	**0.450**	---	0.400	ug/L	1	---	0.440	---	---	2	30%	
cis-1,2-Dichloroethene	**4.71**	---	0.400	ug/L	1	---	4.78	---	---	1	30%	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	0.280	---	---	***	30%	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	---	ND	---	---	---	30%	
Methylene chloride	ND	---	10.0	ug/L	1	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	---	ND	---	---	---	30%	

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Darrell Auvil, Client Services Manager

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 019001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0966 - 12 20 24 1503

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0318 - EPA 5030C							**Water**					
Duplicate (24L0318-DUP1)			Prepared: 12/10/24 07:15 Analyzed: 12/10/24 18:57									
QC Source Sample: Non-SDG (A4L0895-13)												
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	**169**	---	0.400	ug/L	1	---	168	---	---	0.7	30%	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	**0.450**	---	0.400	ug/L	1	---	0.470	---	---	4	30%	
Trichloroethene (TCE)	**24.0**	---	0.400	ug/L	1	---	24.3	---	---	1	30%	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Vinyl chloride	ND	---	0.200	ug/L	1	---	ND	---	---	---	30%	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*118 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*104 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*102 %*		*80-120 %*			*"*				
Matrix Spike (24L0318-MS1)			Prepared: 12/10/24 07:15 Analyzed: 12/10/24 21:43									T-02
QC Source Sample: MW-2 (A4L0966-01)												
EPA 8260D												
Bromobenzene	16.4	---	0.500	ug/L	1	20.0	ND	82	80-120%	---	---	
Bromochloromethane	19.5	---	1.00	ug/L	1	20.0	ND	97	78-123%	---	---	
Bromodichloromethane	20.5	---	1.00	ug/L	1	20.0	ND	103	79-125%	---	---	
Bromoform	20.2	---	1.00	ug/L	1	20.0	ND	101	66-130%	---	---	
Bromomethane	27.2	---	5.00	ug/L	1	20.0	ND	136	53-141%	---	---	Q-54g
Carbon tetrachloride	24.1	---	1.00	ug/L	1	20.0	ND	120	72-136%	---	---	
Chlorobenzene	19.0	---	0.500	ug/L	1	20.0	ND	95	80-120%	---	---	
Chloroethane	28.9	---	5.00	ug/L	1	20.0	ND	**145**	**60-138%**	---	---	Q-54b
Chloroform	20.2	---	1.00	ug/L	1	20.0	ND	101	79-124%	---	---	
Chloromethane	19.0	---	5.00	ug/L	1	20.0	ND	95	50-139%	---	---	
2-Chlorotoluene	16.8	---	1.00	ug/L	1	20.0	ND	84	79-122%	---	---	
4-Chlorotoluene	18.0	---	1.00	ug/L	1	20.0	ND	90	78-122%	---	---	
Dibromochloromethane	19.7	---	1.00	ug/L	1	20.0	ND	98	74-126%	---	---	
1,2-Dibromo-3-chloropropane	16.8	---	5.00	ug/L	1	20.0	ND	84	62-128%	---	---	
1,2-Dibromoethane (EDB)	19.3	---	0.500	ug/L	1	20.0	ND	96	77-121%	---	---	
Dibromomethane	21.1	---	1.00	ug/L	1	20.0	ND	105	79-123%	---	---	

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6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0966 - 12 20 24 1503**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0318 - EPA 5030C							**Water**					
Matrix Spike (24L0318-MS1)			Prepared: 12/10/24 07:15		Analyzed: 12/10/24 21:43							**T-02**
QC Source Sample: MW-2 (A4L0966-01)												
1,2-Dichlorobenzene	18.4	---	0.500	ug/L	1	20.0	ND	92	80-120%	---	---	
1,3-Dichlorobenzene	19.0	---	0.500	ug/L	1	20.0	ND	95	80-120%	---	---	
1,4-Dichlorobenzene	18.0	---	0.500	ug/L	1	20.0	ND	90	79-120%	---	---	
Dichlorodifluoromethane	21.9	---	1.00	ug/L	1	20.0	ND	110	32-152%	---	---	
1,1-Dichloroethane	19.4	---	0.400	ug/L	1	20.0	ND	97	77-125%	---	---	
1,2-Dichloroethane (EDC)	19.8	---	0.400	ug/L	1	20.0	ND	99	73-128%	---	---	
1,1-Dichloroethene	26.1	---	0.400	ug/L	1	20.0	ND	130	71-131%	---	---	
cis-1,2-Dichloroethene	17.2	---	0.400	ug/L	1	20.0	ND	86	78-123%	---	---	
trans-1,2-Dichloroethene	20.1	---	0.400	ug/L	1	20.0	ND	101	75-124%	---	---	
1,2-Dichloropropane	17.7	---	0.500	ug/L	1	20.0	ND	89	78-122%	---	---	
1,3-Dichloropropane	17.8	---	1.00	ug/L	1	20.0	ND	89	80-120%	---	---	
2,2-Dichloropropane	18.4	---	1.00	ug/L	1	20.0	ND	92	60-139%	---	---	
1,1-Dichloropropene	21.0	---	1.00	ug/L	1	20.0	ND	105	79-125%	---	---	
cis-1,3-Dichloropropene	14.3	---	1.00	ug/L	1	20.0	ND	**72**	**75-124%**	---	---	Q-01
trans-1,3-Dichloropropene	19.5	---	1.00	ug/L	1	20.0	ND	98	73-127%	---	---	
Hexachlorobutadiene	17.5	---	5.00	ug/L	1	20.0	ND	88	66-134%	---	---	
Methylene chloride	21.3	---	10.0	ug/L	1	20.0	ND	107	74-124%	---	---	
1,1,1,2-Tetrachloroethane	19.0	---	0.400	ug/L	1	20.0	ND	95	78-124%	---	---	
1,1,2,2-Tetrachloroethane	21.9	---	0.500	ug/L	1	20.0	ND	109	71-121%	---	---	
Tetrachloroethene (PCE)	21.4	---	0.400	ug/L	1	20.0	ND	106	74-129%	---	---	
1,2,3-Trichlorobenzene	17.2	---	2.00	ug/L	1	20.0	ND	86	69-129%	---	---	
1,1,2-Trichloroethane	19.4	---	0.500	ug/L	1	20.0	ND	97	80-120%	---	---	
1,2,4-Trichlorobenzene	14.5	---	2.00	ug/L	1	20.0	ND	72	69-130%	---	---	
1,1,1-Trichloroethane	21.3	---	0.400	ug/L	1	20.0	ND	106	74-131%	---	---	
Trichloroethene (TCE)	17.4	---	0.400	ug/L	1	20.0	ND	87	79-123%	---	---	
Trichlorofluoromethane	30.3	---	2.00	ug/L	1	20.0	ND	**152**	**65-141%**	---	---	Q-54d
1,2,3-Trichloropropane	17.5	---	1.00	ug/L	1	20.0	ND	88	73-122%	---	---	
Vinyl chloride	20.0	---	0.200	ug/L	1	20.0	ND	100	58-137%	---	---	

Surr: 1,4-Difluorobenzene (Surr)	*Recovery: 102 %*	*Limits: 80-120 %*	*Dilution: 1x*
Toluene-d8 (Surr)	*93 %*	*80-120 %*	*"*
4-Bromofluorobenzene (Surr)	*91 %*	*80-120 %*	*"*

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Darrell Auvil, Client Services Manager

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503-718-2323
ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0966 - 12 20 24 1503**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0411 - EPA 5030C							**Water**					
Blank (24L0411-BLK1)			Prepared: 12/11/24 13:12 Analyzed: 12/11/24 18:09									
EPA 8260D												
Bromobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Bromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromodichloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromoform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromomethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Carbon tetrachloride	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Chloroethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Chloroform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chloromethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
2-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
4-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Dibromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dibromomethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Methylene chloride	ND	---	10.0	ug/L	1	---	---	---	---	---	---	

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Darrell Auvil, Client Services Manager

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Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 019001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0966 - 12 20 24 1503

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0411 - EPA 5030C									Water			
Blank (24L0411-BLK1)			Prepared: 12/11/24 13:12 Analyzed: 12/11/24 18:09									
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Vinyl chloride	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*109 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*100 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*103 %*		*80-120 %*			*"*				
LCS (24L0411-BS1)			Prepared: 12/11/24 13:12 Analyzed: 12/11/24 17:14									
EPA 8260D												
Bromobenzene	16.7	---	0.500	ug/L	1	20.0	---	83	80-120%	---	---	
Bromochloromethane	19.0	---	1.00	ug/L	1	20.0	---	95	80-120%	---	---	
Bromodichloromethane	20.4	---	1.00	ug/L	1	20.0	---	102	80-120%	---	---	
Bromoform	20.6	---	1.00	ug/L	1	20.0	---	103	80-120%	---	---	
Bromomethane	26.3	---	5.00	ug/L	1	20.0	---	**131**	**80-120%**	---	---	Q-56
Carbon tetrachloride	24.5	---	1.00	ug/L	1	20.0	---	**122**	**80-120%**	---	---	Q-56
Chlorobenzene	18.9	---	0.500	ug/L	1	20.0	---	94	80-120%	---	---	
Chloroethane	26.4	---	5.00	ug/L	1	20.0	---	**132**	**80-120%**	---	---	Q-56
Chloroform	19.7	---	1.00	ug/L	1	20.0	---	98	80-120%	---	---	
Chloromethane	18.7	---	5.00	ug/L	1	20.0	---	94	80-120%	---	---	
2-Chlorotoluene	17.2	---	1.00	ug/L	1	20.0	---	86	80-120%	---	---	
4-Chlorotoluene	18.1	---	1.00	ug/L	1	20.0	---	90	80-120%	---	---	
Dibromochloromethane	19.8	---	1.00	ug/L	1	20.0	---	99	80-120%	---	---	
1,2-Dibromo-3-chloropropane	17.4	---	5.00	ug/L	1	20.0	---	87	80-120%	---	---	
1,2-Dibromoethane (EDB)	19.6	---	0.500	ug/L	1	20.0	---	98	80-120%	---	---	
Dibromomethane	20.3	---	1.00	ug/L	1	20.0	---	102	80-120%	---	---	
1,2-Dichlorobenzene	18.7	---	0.500	ug/L	1	20.0	---	93	80-120%	---	---	

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Darrell Auvil, Client Services Manager

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ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 019001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0966 - 12 20 24 1503

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0411 - EPA 5030C							**Water**					
LCS (24L0411-BS1)			Prepared: 12/11/24 13:12 Analyzed: 12/11/24 17:14									
1,3-Dichlorobenzene	19.5	---	0.500	ug/L	1	20.0	---	97	80-120%	---	---	
1,4-Dichlorobenzene	18.5	---	0.500	ug/L	1	20.0	---	92	80-120%	---	---	
Dichlorodifluoromethane	23.6	---	1.00	ug/L	1	20.0	---	118	80-120%	---	---	
1,1-Dichloroethane	19.2	---	0.400	ug/L	1	20.0	---	96	80-120%	---	---	
1,2-Dichloroethane (EDC)	19.9	---	0.400	ug/L	1	20.0	---	99	80-120%	---	---	
1,1-Dichloroethene	25.5	---	0.400	ug/L	1	20.0	---	**128**	**80-120%**	---	---	Q-56
cis-1,2-Dichloroethene	16.8	---	0.400	ug/L	1	20.0	---	84	80-120%	---	---	
trans-1,2-Dichloroethene	18.2	---	0.400	ug/L	1	20.0	---	91	80-120%	---	---	
1,2-Dichloropropane	17.5	---	0.500	ug/L	1	20.0	---	87	80-120%	---	---	
1,3-Dichloropropane	17.6	---	1.00	ug/L	1	20.0	---	88	80-120%	---	---	
2,2-Dichloropropane	23.3	---	1.00	ug/L	1	20.0	---	116	80-120%	---	---	
1,1-Dichloropropene	21.1	---	1.00	ug/L	1	20.0	---	106	80-120%	---	---	
cis-1,3-Dichloropropene	17.7	---	1.00	ug/L	1	20.0	---	88	80-120%	---	---	
trans-1,3-Dichloropropene	19.8	---	1.00	ug/L	1	20.0	---	99	80-120%	---	---	
Hexachlorobutadiene	22.4	---	5.00	ug/L	1	20.0	---	112	80-120%	---	---	
Methylene chloride	20.3	---	10.0	ug/L	1	20.0	---	102	80-120%	---	---	
1,1,1,2-Tetrachloroethane	18.9	---	0.400	ug/L	1	20.0	---	95	80-120%	---	---	
1,1,2,2-Tetrachloroethane	20.3	---	0.500	ug/L	1	20.0	---	102	80-120%	---	---	
Tetrachloroethene (PCE)	20.6	---	0.400	ug/L	1	20.0	---	103	80-120%	---	---	
1,2,3-Trichlorobenzene	18.1	---	2.00	ug/L	1	20.0	---	91	80-120%	---	---	
1,1,2-Trichloroethane	19.1	---	0.500	ug/L	1	20.0	---	95	80-120%	---	---	
1,2,4-Trichlorobenzene	15.6	---	2.00	ug/L	1	20.0	---	**78**	**80-120%**	---	---	Q-55
1,1,1-Trichloroethane	21.4	---	0.400	ug/L	1	20.0	---	107	80-120%	---	---	
Trichloroethene (TCE)	17.6	---	0.400	ug/L	1	20.0	---	88	80-120%	---	---	
Trichlorofluoromethane	32.1	---	2.00	ug/L	1	20.0	---	**161**	**80-120%**	---	---	Q-56
1,2,3-Trichloropropane	17.6	---	1.00	ug/L	1	20.0	---	88	80-120%	---	---	
Vinyl chloride	19.6	---	0.200	ug/L	1	20.0	---	98	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 103 %*		*Limits: 80-120 %*			*Dilution: 1x*				
Toluene-d8 (Surr)			*93 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*93 %*		*80-120 %*			*"*				
Duplicate (24L0411-DUP1)			Prepared: 12/11/24 13:12 Analyzed: 12/12/24 03:49									
QC Source Sample: Non-SDG (A4L0987-03)												
Bromobenzene	ND	---	1000	ug/L	2000	---	ND	---	---	---	30%	

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Darrell Auvil, Client Services Manager

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ANALYTICAL REPORT

GeoEngineers - Portland	Project:	Sunoco Van Main 4Q24
5820 S Kelly Ave Unit B	Project Number:	019001-009-36/37
Portland, OR 97239	Project Manager:	Stephanie Bosze-Salisbury

Report ID:
A4L0966 - 12 20 24 1503

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0411 - EPA 5030C							**Water**					
Duplicate (24L0411-DUP1)			Prepared: 12/11/24 13:12 Analyzed: 12/12/24 03:49									
QC Source Sample: Non-SDG (A4L0987-03)												
Bromochloromethane	ND	---	2000	ug/L	2000	---	ND	---	---	---	30%	
Bromodichloromethane	ND	---	2000	ug/L	2000	---	ND	---	---	---	30%	
Bromoform	ND	---	2000	ug/L	2000	---	ND	---	---	---	30%	
Bromomethane	ND	---	10000	ug/L	2000	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	---	2000	ug/L	2000	---	ND	---	---	---	30%	
Chlorobenzene	ND	---	1000	ug/L	2000	---	ND	---	---	---	30%	
Chloroethane	ND	---	10000	ug/L	2000	---	ND	---	---	---	30%	
Chloroform	ND	---	2000	ug/L	2000	---	ND	---	---	---	30%	
Chloromethane	ND	---	10000	ug/L	2000	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	---	2000	ug/L	2000	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	---	2000	ug/L	2000	---	ND	---	---	---	30%	
Dibromochloromethane	ND	---	2000	ug/L	2000	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	---	10000	ug/L	2000	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	---	1000	ug/L	2000	---	ND	---	---	---	30%	
Dibromomethane	ND	---	2000	ug/L	2000	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	---	1000	ug/L	2000	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	---	1000	ug/L	2000	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	---	1000	ug/L	2000	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	---	2000	ug/L	2000	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	---	800	ug/L	2000	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	---	800	ug/L	2000	---	ND	---	---	---	30%	
1,1-Dichloroethene	**2440**	---	800	ug/L	2000	---	2360	---	---	3	30%	Q-54f
cis-1,2-Dichloroethene	**450000**	---	800	ug/L	2000	---	435000	---	---	3	30%	E
trans-1,2-Dichloroethene	ND	---	800	ug/L	2000	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	---	1000	ug/L	2000	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	---	2000	ug/L	2000	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	---	2000	ug/L	2000	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	---	2000	ug/L	2000	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	---	2000	ug/L	2000	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	---	2000	ug/L	2000	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	---	10000	ug/L	2000	---	ND	---	---	---	30%	
Methylene chloride	ND	---	20000	ug/L	2000	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	---	800	ug/L	2000	---	ND	---	---	---	30%	

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Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 019001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0966 - 12 20 24 1503

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0411 - EPA 5030C							**Water**					
Duplicate (24L0411-DUP1)			Prepared: 12/11/24 13:12 Analyzed: 12/12/24 03:49									
QC Source Sample: Non-SDG (A4L0987-03)												
1,1,2,2-Tetrachloroethane	ND	---	1000	ug/L	2000	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	---	800	ug/L	2000	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	---	4000	ug/L	2000	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	---	1000	ug/L	2000	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	---	4000	ug/L	2000	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	---	800	ug/L	2000	---	ND	---	---	---	30%	
Trichloroethene (TCE)	**7220**	---	800	ug/L	2000	---	7100	---	---	2	30%	
Trichlorofluoromethane	ND	---	4000	ug/L	2000	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	---	2000	ug/L	2000	---	ND	---	---	---	30%	
Vinyl chloride	**2920**	---	400	ug/L	2000	---	3260	---	---	11	30%	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*106 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*99 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*105 %*		*80-120 %*			*"*				
Matrix Spike (24L0411-MS1)			Prepared: 12/11/24 13:12 Analyzed: 12/12/24 05:12									
QC Source Sample: S-1 (A4L0966-11)												
EPA 8260D												
Bromobenzene	16.9	---	0.500	ug/L	1	20.0	ND	85	80-120%	---	---	
Bromochloromethane	19.1	---	1.00	ug/L	1	20.0	ND	96	78-123%	---	---	
Bromodichloromethane	21.3	---	1.00	ug/L	1	20.0	ND	107	79-125%	---	---	
Bromoform	22.1	---	1.00	ug/L	1	20.0	ND	110	66-130%	---	---	
Bromomethane	26.8	---	5.00	ug/L	1	20.0	ND	134	53-141%	---	---	Q-54
Carbon tetrachloride	25.4	---	1.00	ug/L	1	20.0	ND	127	72-136%	---	---	Q-54c
Chlorobenzene	19.9	---	0.500	ug/L	1	20.0	ND	99	80-120%	---	---	
Chloroethane	30.2	---	5.00	ug/L	1	20.0	ND	**151**	**60-138%**	---	---	Q-54a
Chloroform	20.6	---	1.00	ug/L	1	20.0	ND	103	79-124%	---	---	
Chloromethane	18.0	---	5.00	ug/L	1	20.0	ND	90	50-139%	---	---	
2-Chlorotoluene	17.5	---	1.00	ug/L	1	20.0	ND	88	79-122%	---	---	
4-Chlorotoluene	18.2	---	1.00	ug/L	1	20.0	ND	91	78-122%	---	---	
Dibromochloromethane	21.0	---	1.00	ug/L	1	20.0	ND	105	74-126%	---	---	
1,2-Dibromo-3-chloropropane	17.9	---	5.00	ug/L	1	20.0	ND	89	62-128%	---	---	
1,2-Dibromoethane (EDB)	20.6	---	0.500	ug/L	1	20.0	ND	103	77-121%	---	---	
Dibromomethane	21.2	---	1.00	ug/L	1	20.0	ND	106	79-123%	---	---	

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Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project:	Sunoco Van Main 4Q24
5820 S Kelly Ave Unit B	Project Number:	019001-009-36/37
Portland, OR 97239	Project Manager:	Stephanie Bosze-Salisbury

Report ID:
A4L0966 - 12 20 24 1503

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0411 - EPA 5030C							**Water**					
Matrix Spike (24L0411-MS1)			Prepared: 12/11/24 13:12		Analyzed: 12/12/24 05:12							
QC Source Sample: S-1 (A4L0966-11)												
1,2-Dichlorobenzene	19.2	---	0.500	ug/L	1	20.0	ND	96	80-120%	---	---	
1,3-Dichlorobenzene	19.9	---	0.500	ug/L	1	20.0	ND	99	80-120%	---	---	
1,4-Dichlorobenzene	18.7	---	0.500	ug/L	1	20.0	ND	94	79-120%	---	---	
Dichlorodifluoromethane	22.6	---	1.00	ug/L	1	20.0	ND	113	32-152%	---	---	
1,1-Dichloroethane	19.4	---	0.400	ug/L	1	20.0	ND	97	77-125%	---	---	
1,2-Dichloroethane (EDC)	20.7	---	0.400	ug/L	1	20.0	ND	104	73-128%	---	---	
1,1-Dichloroethene	26.8	---	0.400	ug/L	1	20.0	ND	**134**	**71-131%**	---	---	Q-54f
cis-1,2-Dichloroethene	18.1	---	0.400	ug/L	1	20.0	0.830	87	78-123%	---	---	
trans-1,2-Dichloroethene	19.4	---	0.400	ug/L	1	20.0	ND	97	75-124%	---	---	
1,2-Dichloropropane	17.7	---	0.500	ug/L	1	20.0	ND	88	78-122%	---	---	
1,3-Dichloropropane	18.3	---	1.00	ug/L	1	20.0	ND	92	80-120%	---	---	
2,2-Dichloropropane	17.6	---	1.00	ug/L	1	20.0	ND	88	60-139%	---	---	
1,1-Dichloropropene	21.4	---	1.00	ug/L	1	20.0	ND	107	79-125%	---	---	
cis-1,3-Dichloropropene	15.7	---	1.00	ug/L	1	20.0	ND	79	75-124%	---	---	
trans-1,3-Dichloropropene	20.1	---	1.00	ug/L	1	20.0	ND	100	73-127%	---	---	
Hexachlorobutadiene	19.3	---	5.00	ug/L	1	20.0	ND	96	66-134%	---	---	
Methylene chloride	21.2	---	10.0	ug/L	1	20.0	ND	106	74-124%	---	---	
1,1,1,2-Tetrachloroethane	20.4	---	0.400	ug/L	1	20.0	ND	102	78-124%	---	---	
1,1,2,2-Tetrachloroethane	21.2	---	0.500	ug/L	1	20.0	ND	106	71-121%	---	---	
Tetrachloroethene (PCE)	22.1	---	0.400	ug/L	1	20.0	0.760	107	74-129%	---	---	
1,2,3-Trichlorobenzene	18.0	---	2.00	ug/L	1	20.0	ND	90	69-129%	---	---	
1,1,2-Trichloroethane	20.3	---	0.500	ug/L	1	20.0	ND	102	80-120%	---	---	
1,2,4-Trichlorobenzene	15.1	---	2.00	ug/L	1	20.0	ND	75	69-130%	---	---	Q-54h
1,1,1-Trichloroethane	22.3	---	0.400	ug/L	1	20.0	ND	111	74-131%	---	---	
Trichloroethene (TCE)	18.2	---	0.400	ug/L	1	20.0	0.650	88	79-123%	---	---	
Trichlorofluoromethane	32.6	---	2.00	ug/L	1	20.0	ND	**163**	**65-141%**	---	---	Q-54e
1,2,3-Trichloropropane	17.6	---	1.00	ug/L	1	20.0	ND	88	73-122%	---	---	
Vinyl chloride	19.5	---	0.200	ug/L	1	20.0	ND	98	58-137%	---	---	

Surr: 1,4-Difluorobenzene (Surr)	*Recovery: 100 %*	*Limits: 80-120 %*	*Dilution: 1x*
Toluene-d8 (Surr)	*93 %*	*80-120 %*	*"*
4-Bromofluorobenzene (Surr)	*91 %*	*80-120 %*	*"*

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Darrell Auvil, Client Services Manager

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0966 - 12 20 24 1503**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0537 - EPA 5030C												**Water**
Blank (24L0537-BLK1)			Prepared: 12/14/24 10:16 Analyzed: 12/14/24 12:17									
EPA 8260D												
1,1-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Vinyl chloride	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*101 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*101 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*100 %*		*80-120 %*			*"*				
LCS (24L0537-BS1)			Prepared: 12/14/24 10:16 Analyzed: 12/14/24 11:34									
EPA 8260D												
1,1-Dichloroethene	21.6	---	0.400	ug/L	1	20.0	---	108	80-120%	---	---	
cis-1,2-Dichloroethene	21.2	---	0.400	ug/L	1	20.0	---	106	80-120%	---	---	
trans-1,2-Dichloroethene	21.8	---	0.400	ug/L	1	20.0	---	109	80-120%	---	---	
Trichloroethene (TCE)	20.4	---	0.400	ug/L	1	20.0	---	102	80-120%	---	---	
Vinyl chloride	21.2	---	0.200	ug/L	1	20.0	---	106	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*100 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*100 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*98 %*		*80-120 %*			*"*				
Duplicate (24L0537-DUP1)			Prepared: 12/14/24 10:16 Analyzed: 12/14/24 18:26									
QC Source Sample: Non-SDG (A4L1065-06RE1)												
1,1-Dichloroethene	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	---	4.00	ug/L	10	---	2.40	---	---	***	30%	
trans-1,2-Dichloroethene	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
Trichloroethene (TCE)	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
Vinyl chloride	ND	---	2.00	ug/L	10	---	1.20	---	---	***	30%	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*101 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*101 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*98 %*		*80-120 %*			*"*				
Matrix Spike (24L0537-MS1)			Prepared: 12/14/24 10:16 Analyzed: 12/14/24 20:35									

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ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0966 - 12 20 24 1503**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0537 - EPA 5030C							**Water**					
Matrix Spike (24L0537-MS1)			Prepared: 12/14/24 10:16 Analyzed: 12/14/24 20:35									
QC Source Sample: Non-SDG (A4L1065-01RE1)												
EPA 8260D												
1,1-Dichloroethene	1400	---	20.0	ug/L	50	1000	ND	**140**	**71-131%**	---	---	Q-01
cis-1,2-Dichloroethene	1190	---	20.0	ug/L	50	1000	ND	119	78-123%	---	---	
trans-1,2-Dichloroethene	1220	---	20.0	ug/L	50	1000	ND	122	75-124%	---	---	
Trichloroethene (TCE)	1120	---	20.0	ug/L	50	1000	ND	112	79-123%	---	---	
Vinyl chloride	1300	---	10.0	ug/L	50	1000	ND	130	58-137%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 101 %*		*Limits: 80-120 %*			*Dilution: 1x*				
Toluene-d8 (Surr)			*100 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*95 %*		*80-120 %*			*"*				
Matrix Spike Dup (24L0537-MSD1)			Prepared: 12/14/24 10:16 Analyzed: 12/14/24 20:57									
QC Source Sample: Non-SDG (A4L1065-01RE1)												
1,1-Dichloroethene	1270	---	20.0	ug/L	50	1000	ND	127	71-131%	10	30%	
cis-1,2-Dichloroethene	1090	---	20.0	ug/L	50	1000	ND	109	78-123%	9	30%	
trans-1,2-Dichloroethene	1110	---	20.0	ug/L	50	1000	ND	111	75-124%	10	30%	
Trichloroethene (TCE)	1030	---	20.0	ug/L	50	1000	ND	103	79-123%	8	30%	
Vinyl chloride	1210	---	10.0	ug/L	50	1000	ND	121	58-137%	7	30%	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 101 %*		*Limits: 80-120 %*			*Dilution: 1x*				
Toluene-d8 (Surr)			*99 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*97 %*		*80-120 %*			*"*				

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ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 019001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0966 - 12 20 24 1503

QUALITY CONTROL (QC) SAMPLE RESULTS

Ammonia by Gas Diffusion and Colorimetric Detection

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0294 - Method Prep: Aq									Water			
Blank (24L0294-BLK1)			Prepared: 12/09/24 11:32 Analyzed: 12/09/24 12:38									
SM 4500-NH3 G												
Ammonia as N	ND	---	0.0200	mg/L	1	---	---	---	---	---	---	
LCS (24L0294-BS1)			Prepared: 12/09/24 11:32 Analyzed: 12/09/24 12:40									
SM 4500-NH3 G												
Ammonia as N	1.88	---	0.0200	mg/L	1	2.00	---	94	90-111%	---	---	
Matrix Spike (24L0294-MS1)			Prepared: 12/09/24 11:32 Analyzed: 12/09/24 12:44									
QC Source Sample: Non-SDG (A4L0937-02)												
SM 4500-NH3 G												
Ammonia as N	2.52	---	0.0250	mg/L	1	2.50	0.0350	99	90-111%	---	---	
Matrix Spike Dup (24L0294-MSD1)			Prepared: 12/09/24 11:32 Analyzed: 12/09/24 12:46									
QC Source Sample: Non-SDG (A4L0937-02)												
Ammonia as N	2.53	---	0.0250	mg/L	1	2.50	0.0350	100	90-111%	0.3	13%	

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 019001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0966 - 12 20 24 1503

QUALITY CONTROL (QC) SAMPLE RESULTS

Anions by Ion Chromatography

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0211 - Method Prep: Aq							Water					
Blank (24L0211-BLK1)			Prepared: 12/06/24 10:00		Analyzed: 12/06/24 11:30							
EPA 300.0												
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	---	---	---	---	---	---	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	---	---	---	---	---	---	
LCS (24L0211-BS1)			Prepared: 12/06/24 10:00		Analyzed: 12/06/24 11:52							
EPA 300.0												
Nitrate-Nitrogen	2.07	---	0.250	mg/L	1	2.00	---	103	90-110%	---	---	
Nitrite-Nitrogen	2.10	---	0.250	mg/L	1	2.00	---	105	90-110%	---	---	
Duplicate (24L0211-DUP1)			Prepared: 12/06/24 10:00		Analyzed: 12/06/24 13:40							
QC Source Sample: MW-2 (A4L0966-01)												
EPA 300.0												
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	---	ND	---	---	---	10%	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	---	ND	---	---	---	10%	
Duplicate (24L0211-DUP2)			Prepared: 12/06/24 10:00		Analyzed: 12/06/24 18:42							
QC Source Sample: S-1 (A4L0966-11)												
EPA 300.0												
Nitrate-Nitrogen	**3.12**	---	0.250	mg/L	1	---	3.13	---	---	0.09	10%	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	---	ND	---	---	---	10%	
Matrix Spike (24L0211-MS1)			Prepared: 12/06/24 10:00		Analyzed: 12/06/24 14:01							
QC Source Sample: MW-2 (A4L0966-01)												
EPA 300.0												
Nitrate-Nitrogen	2.61	---	0.312	mg/L	1	2.50	ND	104	87-112%	---	---	
Nitrite-Nitrogen	2.66	---	0.312	mg/L	1	2.50	ND	106	90-114%	---	---	
Matrix Spike (24L0211-MS2)			Prepared: 12/06/24 10:00		Analyzed: 12/06/24 19:03							
QC Source Sample: S-1 (A4L0966-11)												
EPA 300.0												
Nitrate-Nitrogen	5.78	---	0.312	mg/L	1	2.50	3.13	106	87-112%	---	---	
Nitrite-Nitrogen	2.61	---	0.312	mg/L	1	2.50	ND	104	90-114%	---	---	

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Darrell Auvil, Client Services Manager

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Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 019001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0966 - 12 20 24 1503

SAMPLE PREPARATION INFORMATION

Halogenated Volatile Organic Compounds by EPA 8260D

Prep: EPA 5030C

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 24L0318							
A4L0966-01	Water	EPA 8260D	12/05/24 15:02	12/10/24 10:00	5mL/5mL	5mL/5mL	1.00
Batch: 24L0411							
A4L0966-02RE1	Water	EPA 8260D	12/05/24 13:06	12/11/24 12:03	5mL/5mL	5mL/5mL	1.00
A4L0966-03	Water	EPA 8260D	12/05/24 08:25	12/11/24 12:03	5mL/5mL	5mL/5mL	1.00
A4L0966-04	Water	EPA 8260D	12/05/24 13:58	12/11/24 12:03	5mL/5mL	5mL/5mL	1.00
A4L0966-05	Water	EPA 8260D	12/05/24 10:48	12/11/24 12:03	5mL/5mL	5mL/5mL	1.00
A4L0966-06	Water	EPA 8260D	12/05/24 11:41	12/11/24 12:03	5mL/5mL	5mL/5mL	1.00
A4L0966-07	Water	EPA 8260D	12/05/24 12:20	12/11/24 12:03	5mL/5mL	5mL/5mL	1.00
A4L0966-08	Water	EPA 8260D	12/05/24 10:40	12/11/24 12:03	5mL/5mL	5mL/5mL	1.00
A4L0966-09	Water	EPA 8260D	12/05/24 12:35	12/11/24 12:03	5mL/5mL	5mL/5mL	1.00
A4L0966-10	Water	EPA 8260D	12/05/24 09:48	12/11/24 12:03	5mL/5mL	5mL/5mL	1.00
A4L0966-11	Water	EPA 8260D	12/05/24 09:44	12/11/24 12:03	5mL/5mL	5mL/5mL	1.00
A4L0966-12	Water	EPA 8260D	12/05/24 08:44	12/11/24 12:03	5mL/5mL	5mL/5mL	1.00
Batch: 24L0537							
A4L0966-07RE1	Water	EPA 8260D	12/05/24 12:20	12/14/24 10:26	5mL/5mL	5mL/5mL	1.00

Ammonia by Gas Diffusion and Colorimetric Detection

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 24L0294							
A4L0966-01	Water	SM 4500-NH3 G	12/05/24 15:02	12/09/24 11:32	10mL/10mL	10mL/10mL	1.00
A4L0966-02	Water	SM 4500-NH3 G	12/05/24 13:06	12/09/24 11:32	10mL/10mL	10mL/10mL	1.00
A4L0966-03	Water	SM 4500-NH3 G	12/05/24 08:25	12/09/24 11:32	10mL/10mL	10mL/10mL	1.00
A4L0966-04	Water	SM 4500-NH3 G	12/05/24 13:58	12/09/24 11:32	10mL/10mL	10mL/10mL	1.00
A4L0966-05	Water	SM 4500-NH3 G	12/05/24 10:48	12/09/24 11:32	10mL/10mL	10mL/10mL	1.00
A4L0966-06	Water	SM 4500-NH3 G	12/05/24 11:41	12/09/24 11:32	10mL/10mL	10mL/10mL	1.00
A4L0966-07	Water	SM 4500-NH3 G	12/05/24 12:20	12/09/24 11:32	10mL/10mL	10mL/10mL	1.00
A4L0966-08	Water	SM 4500-NH3 G	12/05/24 10:40	12/09/24 11:32	10mL/10mL	10mL/10mL	1.00
A4L0966-09	Water	SM 4500-NH3 G	12/05/24 12:35	12/09/24 11:32	10mL/10mL	10mL/10mL	1.00
A4L0966-10	Water	SM 4500-NH3 G	12/05/24 09:48	12/09/24 11:32	10mL/10mL	10mL/10mL	1.00
A4L0966-11	Water	SM 4500-NH3 G	12/05/24 09:44	12/09/24 11:32	10mL/10mL	10mL/10mL	1.00
A4L0966-12	Water	SM 4500-NH3 G	12/05/24 08:44	12/09/24 11:32	10mL/10mL	10mL/10mL	1.00

Anions by Ion Chromatography

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Darrell Auvil, Client Services Manager

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503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 019001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L0966 - 12 20 24 1503

SAMPLE PREPARATION INFORMATION

Anions by Ion Chromatography

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 24L0211							
A4L0966-01	Water	EPA 300.0	12/05/24 15:02	12/06/24 10:00	5mL/5mL	5mL/5mL	1.00
A4L0966-02	Water	EPA 300.0	12/05/24 13:06	12/06/24 10:00	5mL/5mL	5mL/5mL	1.00
A4L0966-03	Water	EPA 300.0	12/05/24 08:25	12/06/24 10:00	5mL/5mL	5mL/5mL	1.00
A4L0966-04	Water	EPA 300.0	12/05/24 13:58	12/06/24 10:00	5mL/5mL	5mL/5mL	1.00
A4L0966-05RE1	Water	EPA 300.0	12/05/24 10:48	12/06/24 10:00	5mL/5mL	5mL/5mL	1.00
A4L0966-06	Water	EPA 300.0	12/05/24 11:41	12/06/24 10:00	5mL/5mL	5mL/5mL	1.00
A4L0966-07	Water	EPA 300.0	12/05/24 12:20	12/06/24 10:00	5mL/5mL	5mL/5mL	1.00
A4L0966-08	Water	EPA 300.0	12/05/24 10:40	12/06/24 10:00	5mL/5mL	5mL/5mL	1.00
A4L0966-09	Water	EPA 300.0	12/05/24 12:35	12/06/24 10:00	5mL/5mL	5mL/5mL	1.00
A4L0966-10	Water	EPA 300.0	12/05/24 09:48	12/06/24 10:00	5mL/5mL	5mL/5mL	1.00
A4L0966-11	Water	EPA 300.0	12/05/24 09:44	12/06/24 10:00	5mL/5mL	5mL/5mL	1.00
A4L0966-12	Water	EPA 300.0	12/05/24 08:44	12/06/24 10:00	5mL/5mL	5mL/5mL	1.00

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GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0966 - 12 20 24 1503**

QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

Apex Laboratories

E	Estimated Value. The result is above the calibration range of the instrument.
Q-01	Spike recovery and/or RPD is outside acceptance limits.
Q-42	Matrix Spike and/or Duplicate analysis was performed on this sample. % Recovery or RPD for this analyte is outside laboratory control limits. (Refer to the QC Section of Analytical Report.)
Q-54	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +11%. The results are reported as Estimated Values.
Q-54a	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +12%. The results are reported as Estimated Values.
Q-54b	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +14%. The results are reported as Estimated Values.
Q-54c	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +2%. The results are reported as Estimated Values.
Q-54d	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +24%. The results are reported as Estimated Values.
Q-54e	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +41%. The results are reported as Estimated Values.
Q-54f	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +8%. The results are reported as Estimated Values.
Q-54g	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +9%. The results are reported as Estimated Values.
Q-54h	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by -2%. The results are reported as Estimated Values.
Q-55	Daily CCV/LCS recovery for this analyte was below the +/-20% criteria listed in EPA 8260, however there is adequate sensitivity to ensure detection at the reporting level.
Q-56	Daily CCV/LCS recovery for this analyte was above the +/-20% criteria listed in EPA 8260. Samples that are ND (Non-Detect) are not impacted.
T-02	This Batch QC sample was analyzed outside of the method specified 12 hour analysis window. Results are estimated.

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REPORTING NOTES AND CONVENTIONS:

Abbreviations:

DET Analyte DETECTED at or above the detection or reporting limit.

ND Analyte NOT DETECTED at or above the detection or reporting limit.

NR Result Not Reported

RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

Detection Limits: Limit of Detection (LOD)

Validated Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ). If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

Basis: Results for soil samples are generally reported on a 100% dry weight basis.
The Result Basis is listed following the units as " dry", " wet", or " " (blank) designation.

" dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")
See Percent Solids section for details of dry weight analysis.

" wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.

" " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

Results for Volatiles analyses on soils and sediments that are reported on a “dry weight” basis include the water miscible solvent (WMS) correction referenced in the EPA 8000 Method guidance documents. Solid and Liquid samples reported on an “As Received” basis do not have the WMS correction applied, as dry weight was not performed.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) may not be included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

" --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

" *** " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

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5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0966 - 12 20 24 1503**

REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to one half of the Reporting Limit (RL).
Blank results for gravimetric analyses are evaluated to the Reporting Level, not to half of the Reporting Level.
-For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.
-For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.
For further details, please request a copy of this document.
-Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.
'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level, if results are not reported to the MDL.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

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GeoEngineers - Portland	Project:	**Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number:	**019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager:	**Stephanie Bosze-Salisbury**	**A4L0966 - 12 20 24 1503**

Decanted Samples:

Soils/Sediments:
Unless TCLP analysis is required or there is notification otherwise for a specific project, all Soil and Sediments containing excess water are decanted prior to analysis in order to provide the most representative sample for analysis.

Water Samples:
Water samples containing solids and sediment may need to be decanted in order to eliminate these particulates from the water extractions. In the case of organics extractions, a solvent rinse of the container will not be performed.

Volatiles Soils (5035s)
Samples that are field preserved by 5035 for volatiles are dry weight corrected using the same dry weight corretion as for normal analyses. In the case of decanted samples, the dry weight may be performed on a decanted sample, while the aliquot for 5035 may not have been treated the same way. If this is a concern, please submit separate containers for dry weight analysis for volatiles can be provided.

All samples decanted in the laboratory are noted in this report with the DCNT qualifier indicating the sample was decanted.

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0966 - 12 20 24 1503**

LABORATORY ACCREDITATION INFORMATION

ORELAP Certification ID: OR100062 (Primary Accreditation) - EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

Apex Laboratories

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation

All reported analytes are included in Apex Laboratories' current ORELAP scope.

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation.
Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories



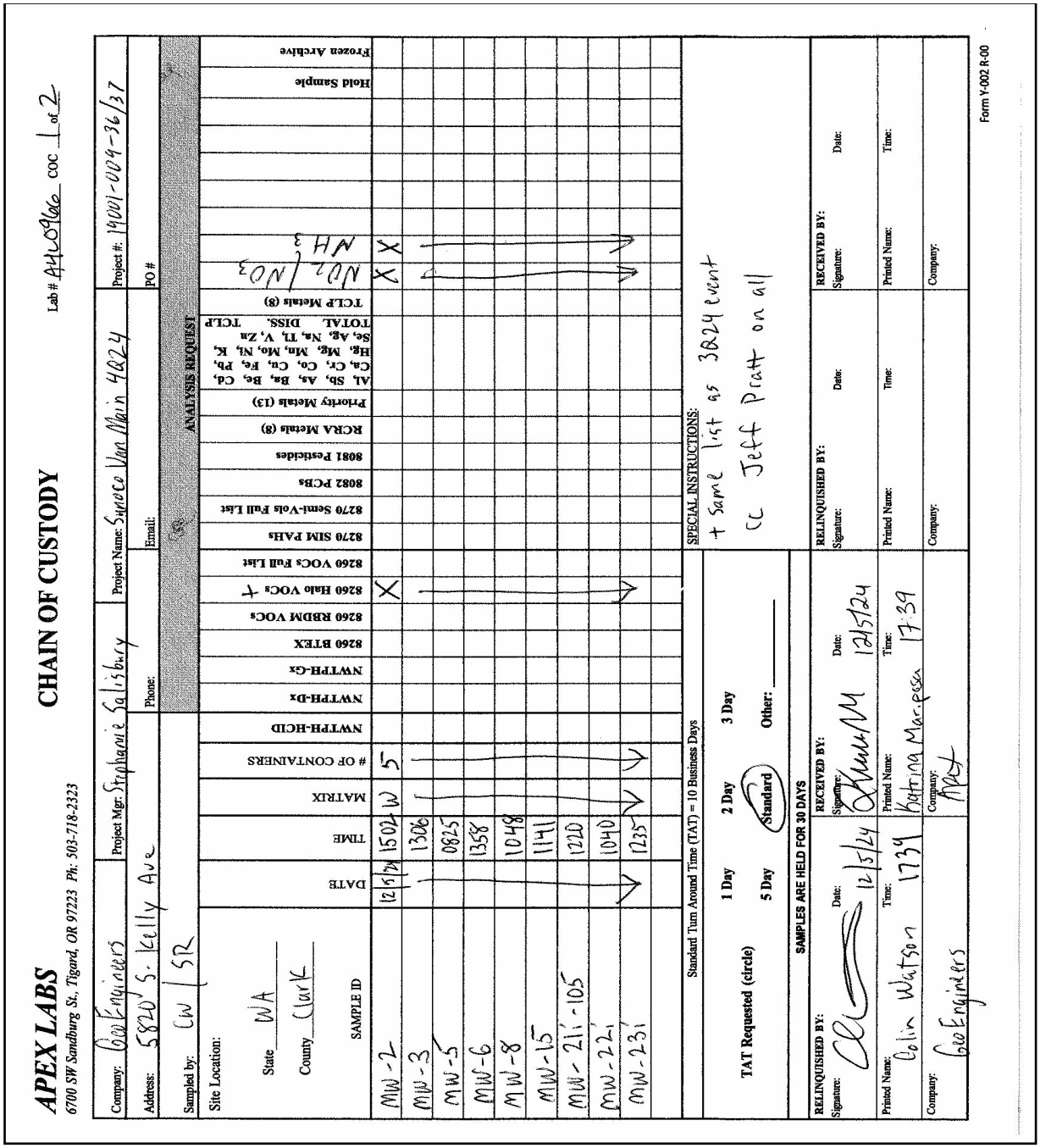
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ANALYTICAL REPORT

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0966 - 12 20 24 1503**



APEX LABS
6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323

CHAIN OF CUSTODY

Lab # A4L0966 COC 1 of 2

Company: GeoEngineers | Project Mgr.: Stephanie Salisbury | Phone: | Project Name: Sunoco Van Main 4Q24 | Project #: 19001-009-36/37
Address: 5820 S. Kelly Ave | Email: | PO #
Sampled by: CW / SR | ANALYSIS REQUEST
Site Location: State WA County Clark

SAMPLE ID	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 BTEX	8260 RBDM VOCs	8260 Halo VOCs +	8260 VOCs Full List	8270 SIM PAHs	8270 Semi-Vols Full List	8082 PCBs	8081 Pesticides	RCRA Metals (8)	Priority Metals (13)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS. TCLP	TCLP Metals (8)	NO2/NO3	NH3	Hold Sample	Frozen Archive
MW-2	12/5/24	1502	W	5						X										X	X	
MW-3		1306																				
MW-5		0825																				
MW-6		1358																				
MW-8		1048																				
MW-15		1141																				
MW-21'-105		1220																				
MW-22'		1040																				
MW-23'		1235																				

Standard Turn Around Time (TAT) = 10 Business Days
TAT Requested (circle): 1 Day | 2 Day | 3 Day | 5 Day | Standard | Other: ____

SPECIAL INSTRUCTIONS:
+ Same list as 3824 event
cc Jeff Pratt on all

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY:	Date:	Time:	RECEIVED BY:	Date:	Time:
Signature:	12/5/24		Signature:	12/5/24	
Printed Name: Colin Watson		1739	Printed Name: Katrina Marcesa		17:39
Company: GeoEngineers			Company: Apex		

RELINQUISHED BY:	Date:	Time:	RECEIVED BY:	Date:	Time:
Signature:			Signature:		
Printed Name:			Printed Name:		
Company:			Company:		

RELINQUISHED BY:	Date:	Time:	RECEIVED BY:	Date:	Time:
Signature:			Signature:		
Printed Name:			Printed Name:		
Company:			Company:		

Form Y-002 R-00

Apex Laboratories

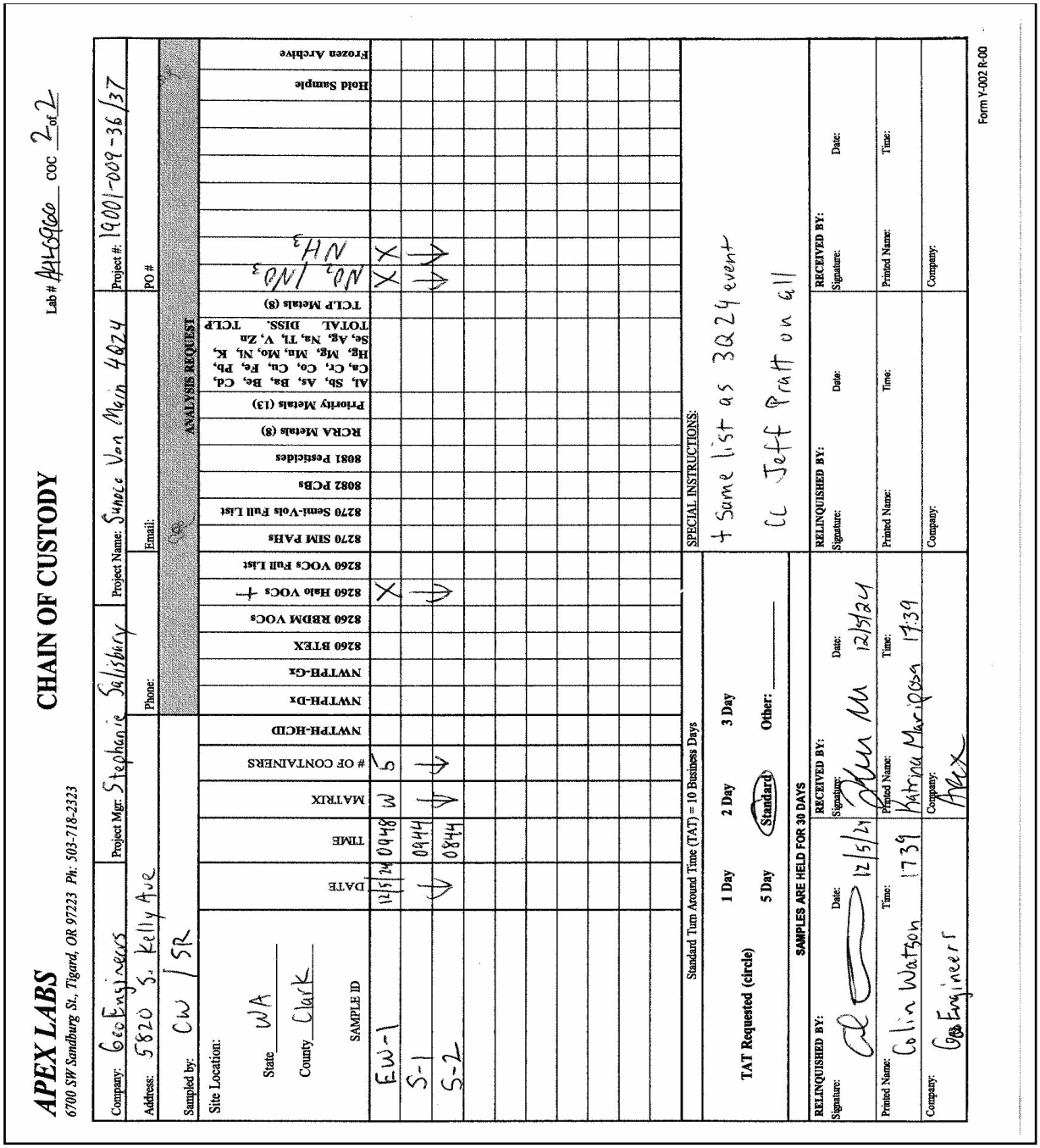
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Darrell Auvil, Client Services Manager

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0966 - 12 20 24 1503**



APEX LABS
6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323

CHAIN OF CUSTODY

Lab # 4L0966 COC 2 of 2

Company: GeoEngineers | Project Mgr: Stephanie Salisbury | Project Name: Sunoco Van Main 4Q24 | Project #: 19001-009-36/37
Address: 5820 S. Kelly Ave | Phone: | Email: | PO #
Sampled by: CW / SR

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	# OF CONTAINERS	8260 Halo VOCs +	Hold Sample	Frozen Archive
EW-1	12/5/24	0948	W	5	X	X	
S-1	"	0944	"	"	"	X	
S-2	"	0844	"	"	"	"	

Site Location: State WA, County Clark

Standard Turn Around Time (TAT) = 10 Business Days
TAT Requested (circle): 1 Day | 2 Day | 3 Day | 5 Day | Standard | Other: _____

SPECIAL INSTRUCTIONS:
+ Same list as 3Q24 event
cc Jeff Pratt on all

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY:	Date:	Time:	RECEIVED BY:	Date:	Time:
Signature:	12/5/24		Signature:	12/5/24	
Printed Name: Colin Watson		1739	Printed Name: Katrina Mariposa		1739
Company: GeoEngineers			Company: Apex		

RELINQUISHED BY:	Date:	Time:	RECEIVED BY:	Date:	Time:
Signature:			Signature:		
Printed Name:			Printed Name:		
Company:			Company:		

RELINQUISHED BY:	Date:	Time:	RECEIVED BY:	Date:	Time:
Signature:			Signature:		
Printed Name:			Printed Name:		
Company:			Company:		

Form Y-002 R-00

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Darrell Auvil, Client Services Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **019001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L0966 - 12 20 24 1503**

APEX LABS COOLER RECEIPT FORM

Client: GeoEngineers Element WO#: A4L0966

Project/Project #: Sunoco Van Main 4Q24 / 19001-009-36/37

Delivery Info:

Date/time received: 12/5/24 @ 17:39 By: KAM

Delivered by: Apex__Client X ESS__FedEx__UPS__Radio__Morgan__SDS__Evergreen__Other__

From USDA Regulated Origin? Yes _____ No X

Cooler Inspection Date/time inspected: 12/5/24 @ 17:39 By: KAM

Chain of Custody included? Yes X No _____

Signed/dated by client? Yes X No _____

Contains USDA Reg. Soils? Yes _____ No X Unsure (email RegSoils) _____

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	1.1						
Custody seals? (Y/N)	N						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	Y						
Ice type: (Gel/Real/Other)	Real						
Condition (In/Out):	In						

Cooler out of temp? (Y/N) Possible reason why: _____

Green dots applied to out of temperature samples? Yes/No

Out of temperature samples form initiated? Yes/No

Sample Inspection: Date/time inspected: 12/5/24 @ 18:10 By: KAM

All samples intact? Yes X No ___ Comments: _____

Bottle labels/COCs agree? Yes X No ___ Comments: _____

COC/container discrepancies form initiated? Yes ___ No X

Containers/volumes received appropriate for analysis? Yes X No ___ Comments: _____

Do VOA vials have visible headspace? Yes ___ No X NA ___

Comments _____

Water samples: pH checked: Yes X No ___ NA ___ pH appropriate? Yes X No ___ NA ___ pH ID: 423172

Comments: _____

Labeled by: KAM Witness: Cooler Inspected by: KAM

Form Y-003 R-02

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ANALYTICAL REPORT

Tuesday, December 24, 2024

Stephanie Bosze-Salisbury
GeoEngineers - Portland
5820 S Kelly Ave Unit B
Portland, OR 97239

RE: A4L1002 - Sunoco Van Main 4Q24 - 19001-009-36/37

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A4L1002, which was received by the laboratory on 12/6/2024 at 2:40:00PM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: DAuvil@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of sample receipt, unless prior arrangements have been made.

Cooler Receipt Information
Acceptable Receipt Temperature is less than, or equal to, 6 degC (not frozen), or received on ice the same day as sampling.
(See Cooler Receipt Form for details)
Default Cooler 2.1 degC

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.
All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L1002 - 12 24 24 1201**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-24d	**A4L1002-01**	**Water**	**12/06/24 10:11**	**12/06/24 14:40**

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L1002 - 12 24 24 1201

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-24d (A4L1002-01)				**Matrix: Water**		**Batch: 24L0429**		
Bromobenzene	ND	---	0.500	ug/L	1	12/12/24 11:40	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	12/12/24 11:40	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	12/12/24 11:40	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	12/12/24 11:40	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	12/12/24 11:40	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	12/12/24 11:40	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	12/12/24 11:40	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	12/12/24 11:40	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	12/12/24 11:40	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	12/12/24 11:40	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	12/12/24 11:40	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	12/12/24 11:40	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	12/12/24 11:40	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	12/12/24 11:40	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	12/12/24 11:40	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	12/12/24 11:40	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	12/12/24 11:40	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	12/12/24 11:40	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	12/12/24 11:40	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	12/12/24 11:40	EPA 8260D	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	12/12/24 11:40	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	12/12/24 11:40	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	12/12/24 11:40	EPA 8260D	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	12/12/24 11:40	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	12/12/24 11:40	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	12/12/24 11:40	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	12/12/24 11:40	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	12/12/24 11:40	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	12/12/24 11:40	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/12/24 11:40	EPA 8260D	Q-42
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	12/12/24 11:40	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	12/12/24 11:40	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	12/12/24 11:40	EPA 8260D	

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Darrell Auvil, Client Services Manager

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L1002 - 12 24 24 1201**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-24d (A4L1002-01)				**Matrix: Water**		**Batch: 24L0429**		
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	12/12/24 11:40	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	12/12/24 11:40	EPA 8260D	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	12/12/24 11:40	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	12/12/24 11:40	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	12/12/24 11:40	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	12/12/24 11:40	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	12/12/24 11:40	EPA 8260D	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	12/12/24 11:40	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	12/12/24 11:40	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	12/12/24 11:40	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	12/12/24 11:40	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*109 %*	*Limits: 80-120 %*	*1*	*12/12/24 11:40*	*EPA 8260D*	
Toluene-d8 (Surr)			*105 %*	*80-120 %*	*1*	*12/12/24 11:40*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*103 %*	*80-120 %*	*1*	*12/12/24 11:40*	*EPA 8260D*	

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L1002 - 12 24 24 1201**

ANALYTICAL SAMPLE RESULTS

Ammonia by Gas Diffusion and Colorimetric Detection

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-24d (A4L1002-01)				**Matrix: Water**		**Batch: 24L0294**		
Ammonia as N	**0.105**	---	0.0200	mg/L	1	12/09/24 13:26	SM 4500-NH3 G	

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L1002 - 12 24 24 1201**

ANALYTICAL SAMPLE RESULTS

Anions by Ion Chromatography

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-24d (A4L1002-01)				**Matrix: Water**				
Batch: 24L0211								
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	12/06/24 20:29	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	12/06/24 20:29	EPA 300.0	

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L1002 - 12 24 24 1201

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0429 - EPA 5030C							Water					
Blank (24L0429-BLK1)			Prepared: 12/12/24 07:59 Analyzed: 12/12/24 10:43									
EPA 8260D												
Bromobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Bromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromodichloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromoform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromomethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Carbon tetrachloride	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Chloroethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Chloroform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chloromethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
2-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
4-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Dibromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dibromomethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Methylene chloride	ND	---	10.0	ug/L	1	---	---	---	---	---	---	

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ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L1002 - 12 24 24 1201

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0429 - EPA 5030C									Water			
Blank (24L0429-BLK1)			Prepared: 12/12/24 07:59 Analyzed: 12/12/24 10:43									
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Vinyl chloride	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*107 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*99 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*100 %*		*80-120 %*			*"*				
LCS (24L0429-BS1)			Prepared: 12/12/24 07:59 Analyzed: 12/12/24 09:41									
EPA 8260D												
Bromobenzene	16.6	---	0.500	ug/L	1	20.0	---	83	80-120%	---	---	
Bromochloromethane	18.7	---	1.00	ug/L	1	20.0	---	93	80-120%	---	---	
Bromodichloromethane	20.6	---	1.00	ug/L	1	20.0	---	103	80-120%	---	---	
Bromoform	21.5	---	1.00	ug/L	1	20.0	---	107	80-120%	---	---	
Bromomethane	26.8	---	5.00	ug/L	1	20.0	---	**134**	**80-120%**	---	---	Q-56
Carbon tetrachloride	24.4	---	1.00	ug/L	1	20.0	---	**122**	**80-120%**	---	---	Q-56
Chlorobenzene	19.3	---	0.500	ug/L	1	20.0	---	96	80-120%	---	---	
Chloroethane	26.8	---	5.00	ug/L	1	20.0	---	**134**	**80-120%**	---	---	Q-56
Chloroform	19.8	---	1.00	ug/L	1	20.0	---	99	80-120%	---	---	
Chloromethane	18.1	---	5.00	ug/L	1	20.0	---	90	80-120%	---	---	
2-Chlorotoluene	17.0	---	1.00	ug/L	1	20.0	---	85	80-120%	---	---	
4-Chlorotoluene	18.0	---	1.00	ug/L	1	20.0	---	90	80-120%	---	---	
Dibromochloromethane	20.8	---	1.00	ug/L	1	20.0	---	104	80-120%	---	---	
1,2-Dibromo-3-chloropropane	18.2	---	5.00	ug/L	1	20.0	---	91	80-120%	---	---	
1,2-Dibromoethane (EDB)	20.1	---	0.500	ug/L	1	20.0	---	100	80-120%	---	---	
Dibromomethane	20.9	---	1.00	ug/L	1	20.0	---	105	80-120%	---	---	
1,2-Dichlorobenzene	19.1	---	0.500	ug/L	1	20.0	---	96	80-120%	---	---	

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503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project:	Sunoco Van Main 4Q24
5820 S Kelly Ave Unit B	Project Number:	19001-009-36/37
Portland, OR 97239	Project Manager:	Stephanie Bosze-Salisbury

Report ID:
A4L1002 - 12 24 24 1201

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0429 - EPA 5030C							**Water**					
LCS (24L0429-BS1)			Prepared: 12/12/24 07:59 Analyzed: 12/12/24 09:41									
1,3-Dichlorobenzene	19.6	---	0.500	ug/L	1	20.0	---	98	80-120%	---	---	
1,4-Dichlorobenzene	18.6	---	0.500	ug/L	1	20.0	---	93	80-120%	---	---	
Dichlorodifluoromethane	22.4	---	1.00	ug/L	1	20.0	---	112	80-120%	---	---	
1,1-Dichloroethane	18.4	---	0.400	ug/L	1	20.0	---	92	80-120%	---	---	
1,2-Dichloroethane (EDC)	20.1	---	0.400	ug/L	1	20.0	---	100	80-120%	---	---	
1,1-Dichloroethene	24.5	---	0.400	ug/L	1	20.0	---	**122**	**80-120%**	---	---	Q-56
cis-1,2-Dichloroethene	16.5	---	0.400	ug/L	1	20.0	---	83	80-120%	---	---	
trans-1,2-Dichloroethene	17.3	---	0.400	ug/L	1	20.0	---	86	80-120%	---	---	
1,2-Dichloropropane	17.1	---	0.500	ug/L	1	20.0	---	86	80-120%	---	---	
1,3-Dichloropropane	17.6	---	1.00	ug/L	1	20.0	---	88	80-120%	---	---	
2,2-Dichloropropane	24.0	---	1.00	ug/L	1	20.0	---	120	80-120%	---	---	
1,1-Dichloropropene	20.0	---	1.00	ug/L	1	20.0	---	100	80-120%	---	---	
cis-1,3-Dichloropropene	17.6	---	1.00	ug/L	1	20.0	---	88	80-120%	---	---	
trans-1,3-Dichloropropene	20.6	---	1.00	ug/L	1	20.0	---	103	80-120%	---	---	
Hexachlorobutadiene	21.2	---	5.00	ug/L	1	20.0	---	106	80-120%	---	---	
Methylene chloride	20.4	---	10.0	ug/L	1	20.0	---	102	80-120%	---	---	
1,1,1,2-Tetrachloroethane	19.7	---	0.400	ug/L	1	20.0	---	98	80-120%	---	---	
1,1,2,2-Tetrachloroethane	20.2	---	0.500	ug/L	1	20.0	---	101	80-120%	---	---	
Tetrachloroethene (PCE)	20.6	---	0.400	ug/L	1	20.0	---	103	80-120%	---	---	
1,2,3-Trichlorobenzene	19.1	---	2.00	ug/L	1	20.0	---	95	80-120%	---	---	
1,1,2-Trichloroethane	19.4	---	0.500	ug/L	1	20.0	---	97	80-120%	---	---	
1,2,4-Trichlorobenzene	16.0	---	2.00	ug/L	1	20.0	---	80	80-120%	---	---	
1,1,1-Trichloroethane	21.3	---	0.400	ug/L	1	20.0	---	106	80-120%	---	---	
Trichloroethene (TCE)	17.3	---	0.400	ug/L	1	20.0	---	87	80-120%	---	---	
Trichlorofluoromethane	31.1	---	2.00	ug/L	1	20.0	---	**155**	**80-120%**	---	---	Q-56
1,2,3-Trichloropropane	18.3	---	1.00	ug/L	1	20.0	---	92	80-120%	---	---	
Vinyl chloride	18.3	---	0.200	ug/L	1	20.0	---	91	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 101 %*		*Limits: 80-120 %*			*Dilution: 1x*				
Toluene-d8 (Surr)			*93 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*93 %*		*80-120 %*			*"*				
Duplicate (24L0429-DUP1)			Prepared: 12/12/24 07:59 Analyzed: 12/12/24 21:24									
QC Source Sample: Non-SDG (A4L0987-13)												
Bromobenzene	ND	---	500	ug/L	1000	---	ND	---	---	---	30%	

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Darrell Auvil, Client Services Manager

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503-718-2323
ORELAP ID: **OR100062**

GeoEngineers - Portland	Project: **Sunoco Van Main 4Q24**	
5820 S Kelly Ave Unit B	Project Number: **19001-009-36/37**	**Report ID:**
Portland, OR 97239	Project Manager: **Stephanie Bosze-Salisbury**	**A4L1002 - 12 24 24 1201**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0429 - EPA 5030C							**Water**					
Duplicate (24L0429-DUP1)			Prepared: 12/12/24 07:59 Analyzed: 12/12/24 21:24									
QC Source Sample: Non-SDG (A4L0987-13)												
Bromochloromethane	ND	---	1000	ug/L	1000	---	ND	---	---	---	30%	
Bromodichloromethane	ND	---	1000	ug/L	1000	---	ND	---	---	---	30%	
Bromoform	ND	---	1000	ug/L	1000	---	ND	---	---	---	30%	
Bromomethane	ND	---	5000	ug/L	1000	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	---	1000	ug/L	1000	---	ND	---	---	---	30%	
Chlorobenzene	ND	---	500	ug/L	1000	---	ND	---	---	---	30%	
Chloroethane	ND	---	5000	ug/L	1000	---	ND	---	---	---	30%	
Chloroform	ND	---	1000	ug/L	1000	---	ND	---	---	---	30%	
Chloromethane	ND	---	5000	ug/L	1000	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	---	1000	ug/L	1000	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	---	1000	ug/L	1000	---	ND	---	---	---	30%	
Dibromochloromethane	ND	---	1000	ug/L	1000	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	---	5000	ug/L	1000	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	---	500	ug/L	1000	---	ND	---	---	---	30%	
Dibromomethane	ND	---	1000	ug/L	1000	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	---	500	ug/L	1000	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	---	500	ug/L	1000	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	---	500	ug/L	1000	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	---	1000	ug/L	1000	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	---	400	ug/L	1000	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	---	400	ug/L	1000	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	---	400	ug/L	1000	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	---	400	ug/L	1000	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	---	400	ug/L	1000	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	---	500	ug/L	1000	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	---	1000	ug/L	1000	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	---	1000	ug/L	1000	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	---	1000	ug/L	1000	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	---	1000	ug/L	1000	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	---	1000	ug/L	1000	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	---	5000	ug/L	1000	---	ND	---	---	---	30%	
Methylene chloride	ND	---	10000	ug/L	1000	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	---	400	ug/L	1000	---	ND	---	---	---	30%	

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Darrell Auvil, Client Services Manager

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ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L1002 - 12 24 24 1201

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0429 - EPA 5030C							**Water**					
Duplicate (24L0429-DUP1)			Prepared: 12/12/24 07:59 Analyzed: 12/12/24 21:24									
QC Source Sample: Non-SDG (A4L0987-13)												
1,1,2,2-Tetrachloroethane	ND	---	500	ug/L	1000	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	---	400	ug/L	1000	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	---	2000	ug/L	1000	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	---	500	ug/L	1000	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	---	2000	ug/L	1000	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	---	400	ug/L	1000	---	ND	---	---	---	30%	
Trichloroethene (TCE)	ND	---	400	ug/L	1000	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	---	2000	ug/L	1000	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	---	1000	ug/L	1000	---	ND	---	---	---	30%	
Vinyl chloride	**1050**	---	200	ug/L	1000	---	1250	---	---	17	30%	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*110 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*100 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*105 %*		*80-120 %*			*"*				
Matrix Spike (24L0429-MS1)			Prepared: 12/12/24 07:59 Analyzed: 12/12/24 21:51									**T-02**
QC Source Sample: MW-24d (A4L1002-01)												
EPA 8260D												
Bromobenzene	16.0	---	0.500	ug/L	1	20.0	ND	80	80-120%	---	---	
Bromochloromethane	17.7	---	1.00	ug/L	1	20.0	ND	89	78-123%	---	---	
Bromodichloromethane	20.0	---	1.00	ug/L	1	20.0	ND	100	79-125%	---	---	
Bromoform	21.2	---	1.00	ug/L	1	20.0	ND	106	66-130%	---	---	
Bromomethane	24.4	---	5.00	ug/L	1	20.0	ND	122	53-141%	---	---	Q-54
Carbon tetrachloride	24.5	---	1.00	ug/L	1	20.0	ND	122	72-136%	---	---	Q-54a
Chlorobenzene	19.0	---	0.500	ug/L	1	20.0	ND	95	80-120%	---	---	
Chloroethane	29.4	---	5.00	ug/L	1	20.0	ND	**147**	**60-138%**	---	---	Q-54
Chloroform	19.3	---	1.00	ug/L	1	20.0	ND	96	79-124%	---	---	
Chloromethane	16.8	---	5.00	ug/L	1	20.0	ND	84	50-139%	---	---	
2-Chlorotoluene	16.6	---	1.00	ug/L	1	20.0	ND	83	79-122%	---	---	
4-Chlorotoluene	17.3	---	1.00	ug/L	1	20.0	ND	87	78-122%	---	---	
Dibromochloromethane	20.1	---	1.00	ug/L	1	20.0	ND	100	74-126%	---	---	
1,2-Dibromo-3-chloropropane	16.9	---	5.00	ug/L	1	20.0	ND	84	62-128%	---	---	
1,2-Dibromoethane (EDB)	19.7	---	0.500	ug/L	1	20.0	ND	99	77-121%	---	---	
Dibromomethane	20.0	---	1.00	ug/L	1	20.0	ND	100	79-123%	---	---	

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L1002 - 12 24 24 1201

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0429 - EPA 5030C							**Water**					
Matrix Spike (24L0429-MS1)			Prepared: 12/12/24 07:59		Analyzed: 12/12/24 21:51							T-02
QC Source Sample: MW-24d (A4L1002-01)												
1,2-Dichlorobenzene	18.2	---	0.500	ug/L	1	20.0	ND	91	80-120%	---	---	
1,3-Dichlorobenzene	18.8	---	0.500	ug/L	1	20.0	ND	94	80-120%	---	---	
1,4-Dichlorobenzene	18.0	---	0.500	ug/L	1	20.0	ND	90	79-120%	---	---	
Dichlorodifluoromethane	23.2	---	1.00	ug/L	1	20.0	ND	116	32-152%	---	---	
1,1-Dichloroethane	18.3	---	0.400	ug/L	1	20.0	ND	92	77-125%	---	---	
1,2-Dichloroethane (EDC)	19.6	---	0.400	ug/L	1	20.0	ND	98	73-128%	---	---	
1,1-Dichloroethene	26.0	---	0.400	ug/L	1	20.0	ND	130	71-131%	---	---	Q-54a
cis-1,2-Dichloroethene	15.6	---	0.400	ug/L	1	20.0	ND	78	78-123%	---	---	
trans-1,2-Dichloroethene	18.2	---	0.400	ug/L	1	20.0	ND	91	75-124%	---	---	
1,2-Dichloropropane	15.9	---	0.500	ug/L	1	20.0	ND	79	78-122%	---	---	
1,3-Dichloropropane	17.2	---	1.00	ug/L	1	20.0	ND	86	80-120%	---	---	
2,2-Dichloropropane	19.4	---	1.00	ug/L	1	20.0	ND	97	60-139%	---	---	
1,1-Dichloropropene	19.6	---	1.00	ug/L	1	20.0	ND	98	79-125%	---	---	
cis-1,3-Dichloropropene	13.8	---	1.00	ug/L	1	20.0	ND	**69**	**75-124%**	---	---	Q-01
trans-1,3-Dichloropropene	19.0	---	1.00	ug/L	1	20.0	ND	95	73-127%	---	---	
Hexachlorobutadiene	18.2	---	5.00	ug/L	1	20.0	ND	91	66-134%	---	---	
Methylene chloride	19.8	---	10.0	ug/L	1	20.0	ND	99	74-124%	---	---	
1,1,1,2-Tetrachloroethane	19.3	---	0.400	ug/L	1	20.0	ND	97	78-124%	---	---	
1,1,2,2-Tetrachloroethane	20.6	---	0.500	ug/L	1	20.0	ND	103	71-121%	---	---	
Tetrachloroethene (PCE)	20.7	---	0.400	ug/L	1	20.0	ND	104	74-129%	---	---	
1,2,3-Trichlorobenzene	17.2	---	2.00	ug/L	1	20.0	ND	86	69-129%	---	---	
1,1,2-Trichloroethane	18.8	---	0.500	ug/L	1	20.0	ND	94	80-120%	---	---	
1,2,4-Trichlorobenzene	14.2	---	2.00	ug/L	1	20.0	ND	71	69-130%	---	---	
1,1,1-Trichloroethane	21.3	---	0.400	ug/L	1	20.0	ND	107	74-131%	---	---	
Trichloroethene (TCE)	16.1	---	0.400	ug/L	1	20.0	ND	81	79-123%	---	---	
Trichlorofluoromethane	32.0	---	2.00	ug/L	1	20.0	ND	**160**	**65-141%**	---	---	Q-54b
1,2,3-Trichloropropane	17.0	---	1.00	ug/L	1	20.0	ND	85	73-122%	---	---	
Vinyl chloride	18.6	---	0.200	ug/L	1	20.0	ND	93	58-137%	---	---	

Surr: 1,4-Difluorobenzene (Surr)	*Recovery: 99 %*	*Limits: 80-120 %*	*Dilution: 1x*
Toluene-d8 (Surr)	*93 %*	*80-120 %*	*"*
4-Bromofluorobenzene (Surr)	*92 %*	*80-120 %*	*"*

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L1002 - 12 24 24 1201

QUALITY CONTROL (QC) SAMPLE RESULTS

Ammonia by Gas Diffusion and Colorimetric Detection

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0294 - Method Prep: Aq									Water			
Blank (24L0294-BLK1)			Prepared: 12/09/24 11:32 Analyzed: 12/09/24 12:38									
SM 4500-NH3 G												
Ammonia as N	ND	---	0.0200	mg/L	1	---	---	---	---	---	---	
LCS (24L0294-BS1)			Prepared: 12/09/24 11:32 Analyzed: 12/09/24 12:40									
SM 4500-NH3 G												
Ammonia as N	1.88	---	0.0200	mg/L	1	2.00	---	94	90-111%	---	---	
Matrix Spike (24L0294-MS1)			Prepared: 12/09/24 11:32 Analyzed: 12/09/24 12:44									
QC Source Sample: Non-SDG (A4L0937-02)												
SM 4500-NH3 G												
Ammonia as N	2.52	---	0.0250	mg/L	1	2.50	0.0350	99	90-111%	---	---	
Matrix Spike Dup (24L0294-MSD1)			Prepared: 12/09/24 11:32 Analyzed: 12/09/24 12:46									
QC Source Sample: Non-SDG (A4L0937-02)												
Ammonia as N	2.53	---	0.0250	mg/L	1	2.50	0.0350	100	90-111%	0.3	13%	

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ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L1002 - 12 24 24 1201

QUALITY CONTROL (QC) SAMPLE RESULTS

Anions by Ion Chromatography

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24L0211 - Method Prep: Aq									Water			
Blank (24L0211-BLK1)			Prepared: 12/06/24 10:00		Analyzed: 12/06/24 11:30							
EPA 300.0												
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	---	---	---	---	---	---	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	---	---	---	---	---	---	
LCS (24L0211-BS1)			Prepared: 12/06/24 10:00		Analyzed: 12/06/24 11:52							
EPA 300.0												
Nitrate-Nitrogen	2.07	---	0.250	mg/L	1	2.00	---	103	90-110%	---	---	
Nitrite-Nitrogen	2.10	---	0.250	mg/L	1	2.00	---	105	90-110%	---	---	
Duplicate (24L0211-DUP1)			Prepared: 12/06/24 10:00		Analyzed: 12/06/24 13:40							
QC Source Sample: Non-SDG (A4L0966-01)												
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	---	ND	---	---	---	10%	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	---	ND	---	---	---	10%	
Duplicate (24L0211-DUP2)			Prepared: 12/06/24 10:00		Analyzed: 12/06/24 18:42							
QC Source Sample: Non-SDG (A4L0966-11)												
Nitrate-Nitrogen	**3.12**	---	0.250	mg/L	1	---	3.13	---	---	0.09	10%	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	---	ND	---	---	---	10%	
Matrix Spike (24L0211-MS1)			Prepared: 12/06/24 10:00		Analyzed: 12/06/24 14:01							
QC Source Sample: Non-SDG (A4L0966-01)												
EPA 300.0												
Nitrate-Nitrogen	2.61	---	0.312	mg/L	1	2.50	ND	104	87-112%	---	---	
Nitrite-Nitrogen	2.66	---	0.312	mg/L	1	2.50	ND	106	90-114%	---	---	
Matrix Spike (24L0211-MS2)			Prepared: 12/06/24 10:00		Analyzed: 12/06/24 19:03							
QC Source Sample: Non-SDG (A4L0966-11)												
EPA 300.0												
Nitrate-Nitrogen	5.78	---	0.312	mg/L	1	2.50	3.13	106	87-112%	---	---	
Nitrite-Nitrogen	2.61	---	0.312	mg/L	1	2.50	ND	104	90-114%	---	---	

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Darrell Auvil, Client Services Manager

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6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

GeoEngineers - Portland	Project: Sunoco Van Main 4Q24	
5820 S Kelly Ave Unit B	Project Number: 19001-009-36/37	Report ID:
Portland, OR 97239	Project Manager: Stephanie Bosze-Salisbury	A4L1002 - 12 24 24 1201

SAMPLE PREPARATION INFORMATION

Halogenated Volatile Organic Compounds by EPA 8260D

Prep: EPA 5030C

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 24L0429							
A4L1002-01	Water	EPA 8260D	12/06/24 10:11	12/12/24 08:03	5mL/5mL	5mL/5mL	1.00

Ammonia by Gas Diffusion and Colorimetric Detection

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 24L0294							
A4L1002-01	Water	SM 4500-NH3 G	12/06/24 10:11	12/09/24 11:32	10mL/10mL	10mL/10mL	1.00

Anions by Ion Chromatography

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 24L0211							
A4L1002-01	Water	EPA 300.0	12/06/24 10:11	12/06/24 12:00	5mL/5mL	5mL/5mL	1.00

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QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

Apex Laboratories

Q-01	Spike recovery and/or RPD is outside acceptance limits.
Q-42	Matrix Spike and/or Duplicate analysis was performed on this sample. % Recovery or RPD for this analyte is outside laboratory control limits. (Refer to the QC Section of Analytical Report.)
Q-54	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +14%. The results are reported as Estimated Values.
Q-54a	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +2%. The results are reported as Estimated Values.
Q-54b	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +35%. The results are reported as Estimated Values.
Q-56	Daily CCV/LCS recovery for this analyte was above the +/-20% criteria listed in EPA 8260. Samples that are ND (Non-Detect) are not impacted.
T-02	This Batch QC sample was analyzed outside of the method specified 12 hour analysis window. Results are estimated.

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REPORTING NOTES AND CONVENTIONS:

Abbreviations:

DET Analyte DETECTED at or above the detection or reporting limit.

ND Analyte NOT DETECTED at or above the detection or reporting limit.

NR Result Not Reported

RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

Detection Limits: Limit of Detection (LOD)

Validated Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ). If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

Basis: Results for soil samples are generally reported on a 100% dry weight basis.
The Result Basis is listed following the units as " dry", " wet", or " " (blank) designation.

" dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")
See Percent Solids section for details of dry weight analysis.

" wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.

" " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

Results for Volatiles analyses on soils and sediments that are reported on a “dry weight” basis include the water miscible solvent (WMS) correction referenced in the EPA 8000 Method guidance documents. Solid and Liquid samples reported on an “As Received” basis do not have the WMS correction applied, as dry weight was not performed.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) may not be included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

" --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

" *** " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

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REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to one half of the Reporting Limit (RL).
Blank results for gravimetric analyses are evaluated to the Reporting Level, not to half of the Reporting Level.
-For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.
-For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.
For further details, please request a copy of this document.
-Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.
'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level, if results are not reported to the MDL.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

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Decanted Samples:

Soils/Sediments:
Unless TCLP analysis is required or there is notification otherwise for a specific project, all Soil and Sediments containing excess water are decanted prior to analysis in order to provide the most representative sample for analysis.

Water Samples:
Water samples containing solids and sediment may need to be decanted in order to eliminate these particulates from the water extractions. In the case of organics extractions, a solvent rinse of the container will not be performed.

Volatiles Soils (5035s)
Samples that are field preserved by 5035 for volatiles are dry weight corrected using the same dry weight corretion as for normal analyses. In the case of decanted samples, the dry weight may be performed on a decanted sample, while the aliquot for 5035 may not have been treated the same way. If this is a concern, please submit separate containers for dry weight analysis for volatiles can be provided.

All samples decanted in the laboratory are noted in this report with the DCNT qualifier indicating the sample was decanted.

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LABORATORY ACCREDITATION INFORMATION

ORELAP Certification ID: OR100062 (Primary Accreditation) - EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

Apex Laboratories

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation

All reported analytes are included in Apex Laboratories' current ORELAP scope.

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation.
Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories



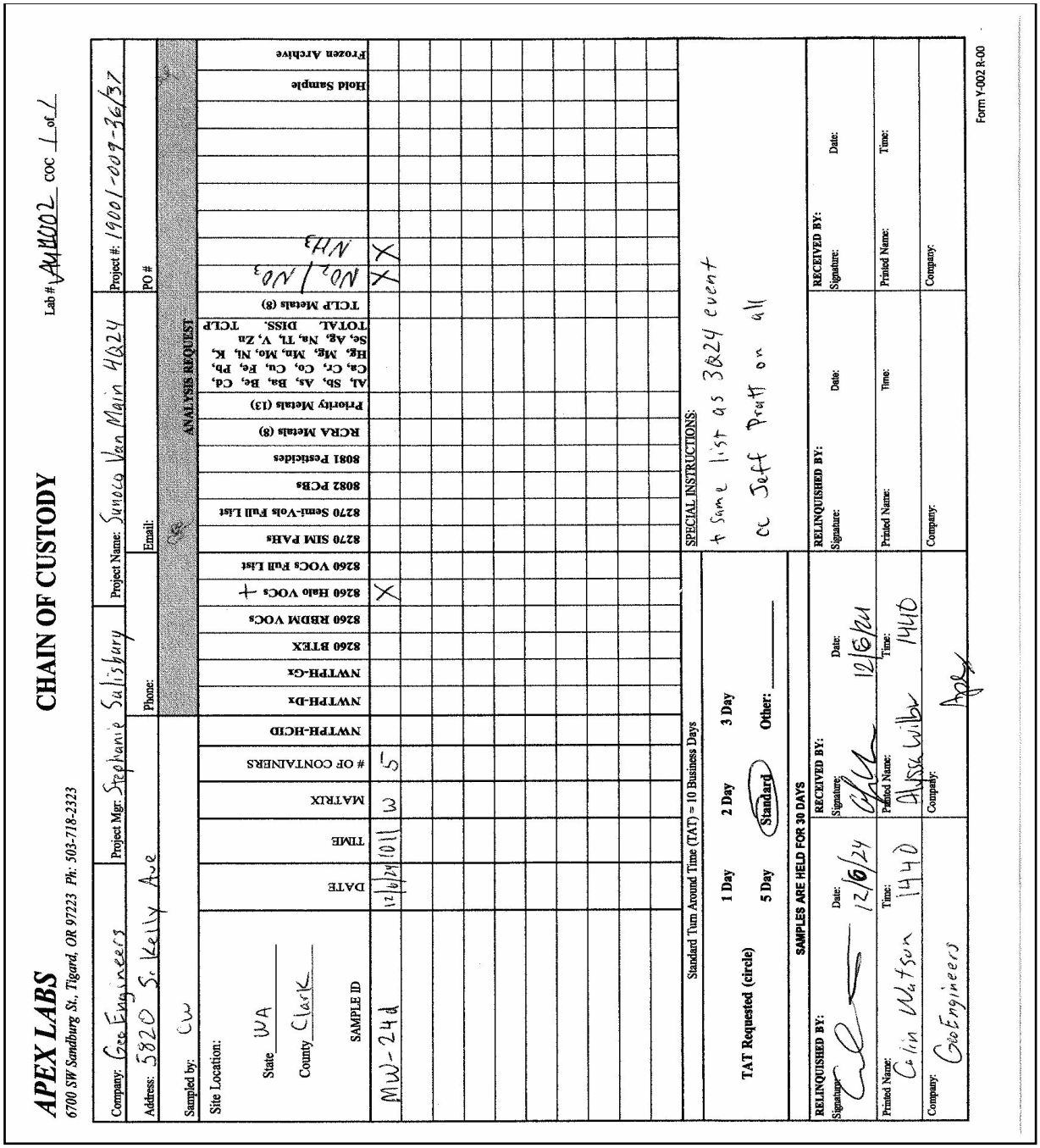
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APEX LABS
6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323

CHAIN OF CUSTODY

Lab # A4L1002 COC 1 of 1

Company: GeoEngineers | Project Mgr: Stephanie Salisbury | Project Name: Sunoco Van Main 4Q24 | Project #: 19001-009-36/37
Address: 5820 S. Kelly Ave | Phone: | Email: | PO #
Sampled by: CW

Site Location: State WA County Clark

SAMPLE ID	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 BTEX	8260 RBDM VOCs	8260 Halo VOCs +	8260 VOCs Full List	8270 SIM PAHs	8270 Semi-Vols Full List	8082 PCBs	8081 Pesticides	RCRA Metals (8)	Priority Metals (13)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS. TCLP	TCLP Metals (8)	NO2/NO3	NH3	Hold Sample	Frozen Archive
MW-24d	12/6/24	1011	W	5						X										X	X	

ANALYSIS REQUEST

Standard Turn Around Time (TAT) = 10 Business Days
TAT Requested (circle): 1 Day | 2 Day | 3 Day | 5 Day | Standard | Other: ____

SPECIAL INSTRUCTIONS:
+ same list as 3824 event
cc Jeff Pratt on all

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY:	Date:	Time:	RECEIVED BY:	Date:	Time:
Signature:	12/6/24		Signature:	12/6/24	
Printed Name: Colin Watson		1440	Printed Name: Alyssa Wilbur		1440
Company: GeoEngineers			Company:		

RELINQUISHED BY:	Date:	Time:	RECEIVED BY:	Date:	Time:
Signature:			Signature:		
Printed Name:			Printed Name:		
Company:			Company:		

Form Y-002 R-00

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APEX LABS COOLER RECEIPT FORM

Client: GeoEngineers Element WO#: A4L1002

Project/Project #: Sunoco Van Main 4Q24 19001-009-36/37

Delivery Info:

Date/time received: 12/6/24 @ 1440 By: DRW

Delivered by: Apex__Client X ESS__FedEx__UPS__Radio__Morgan__SDS__Evergreen__Other__

From USDA Regulated Origin? Yes ____ No X

Cooler Inspection Date/time inspected: 12/6/24 @ 1440 By: DRW

Chain of Custody included? Yes X No ____

Signed/dated by client? Yes X No ____

Contains USDA Reg. Soils? Yes ____ No X Unsure (email RegSoils) ____

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	2.1						
Custody seals? (Y/N)	N						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	Y						
Ice type: (Gel/Real/Other)	Real						
Condition (In/Out):	In						

Cooler out of temp? (Y/N) Possible reason why: ____

Green dots applied to out of temperature samples? Yes/No

Out of temperature samples form initiated? Yes/No

Sample Inspection: Date/time inspected: 12/6/24 @ 1500 By: ZA

All samples intact? Yes ✓ No ___ Comments: ____

Bottle labels/COCs agree? Yes ___ No ___ ✓ Comments: Date on cont. reads 12/7/24.

COC/container discrepancies form initiated? Yes ___ No ✓

Containers/volumes received appropriate for analysis? Yes ✓ No ___ Comments: ____

Do VOA vials have visible headspace? Yes ___ No ✓ NA ___

Comments ____

Water samples: pH checked: Yes ✓ No ___ NA ___ pH appropriate? Yes ✓ No ___ NA ___ pH ID: A23172

Comments: ____

Labeled by: ZA Witness: JS Cooler Inspected by: ZA

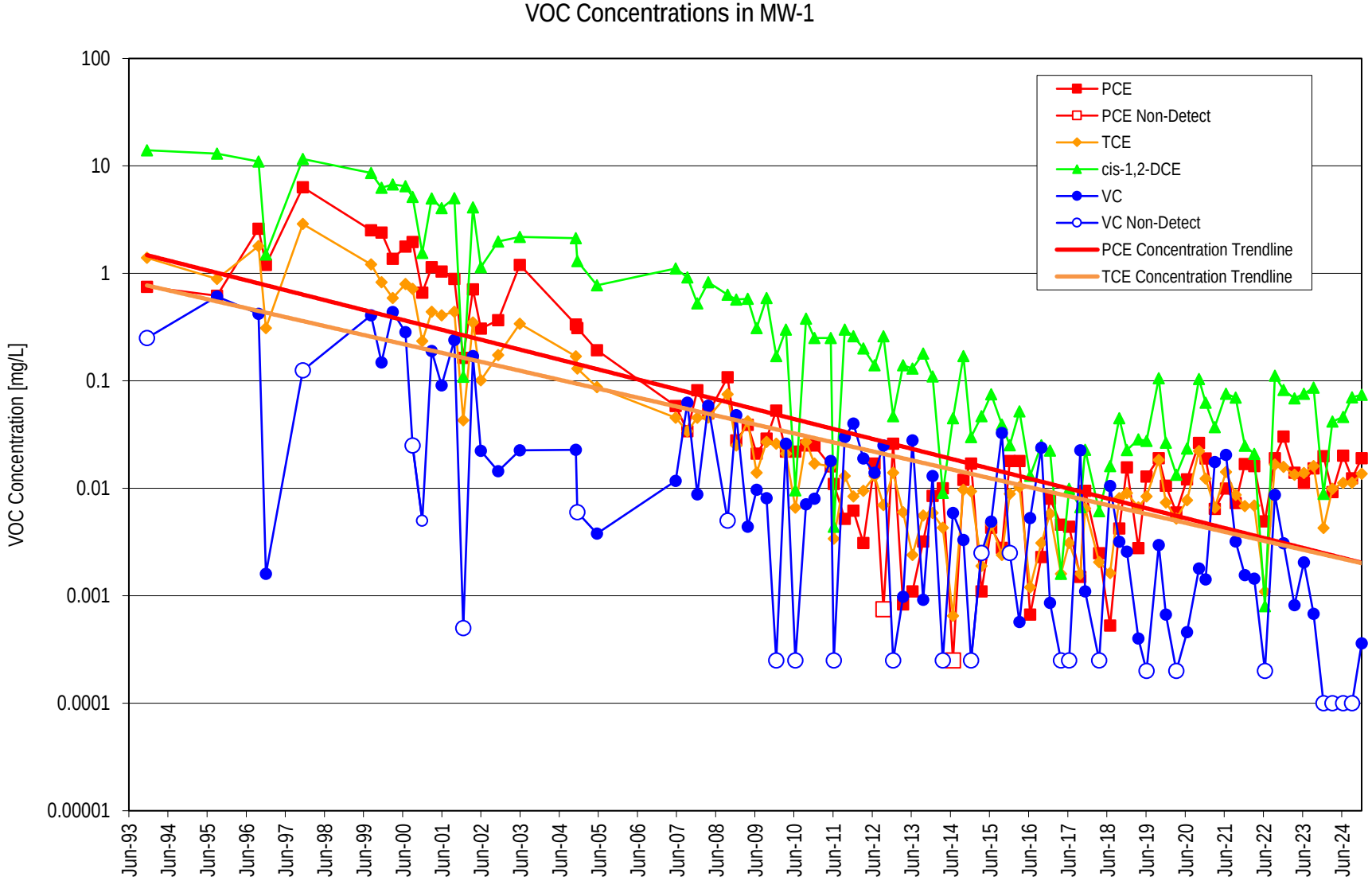
Form Y-003 R-02

Apex Laboratories

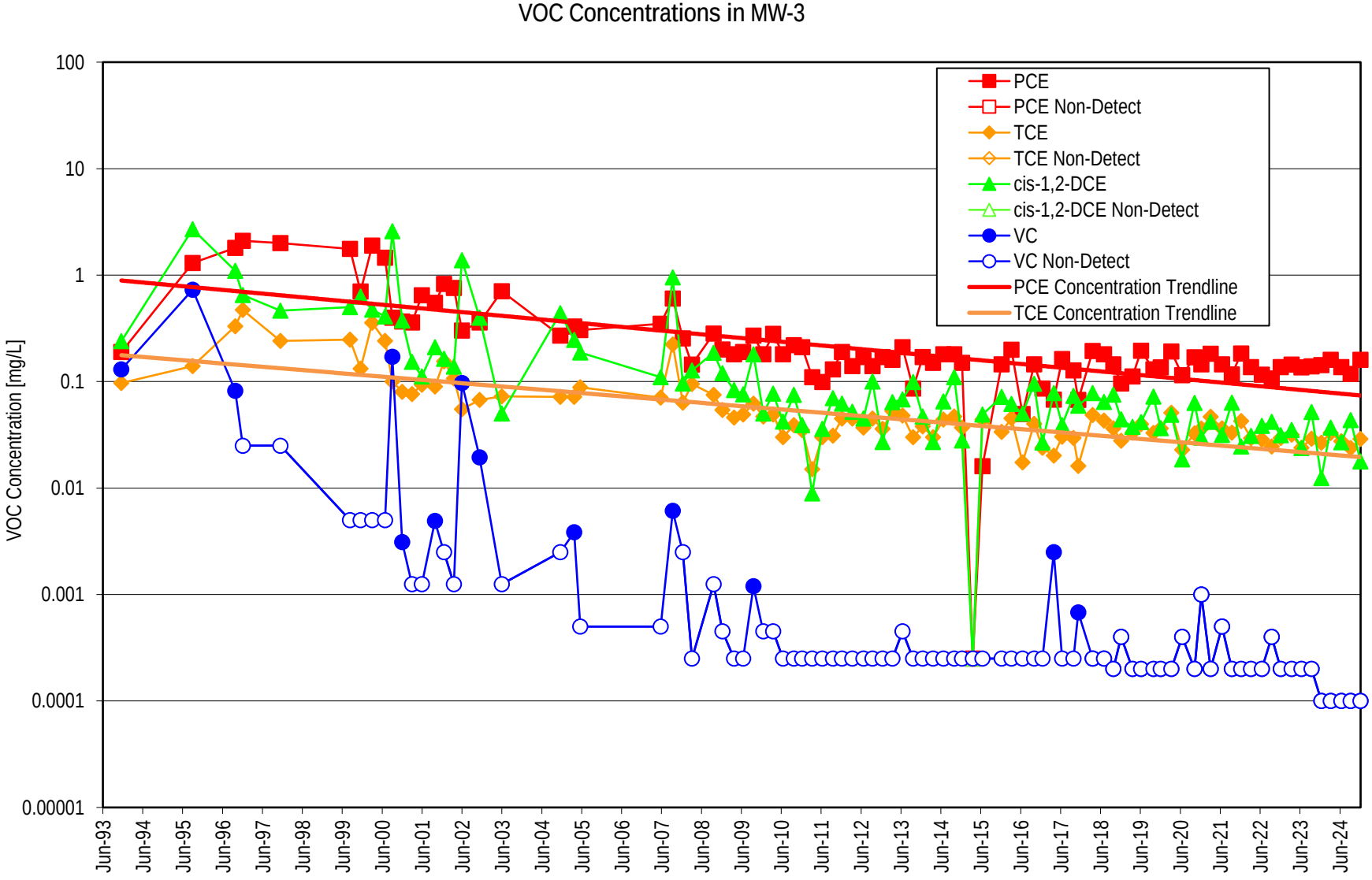
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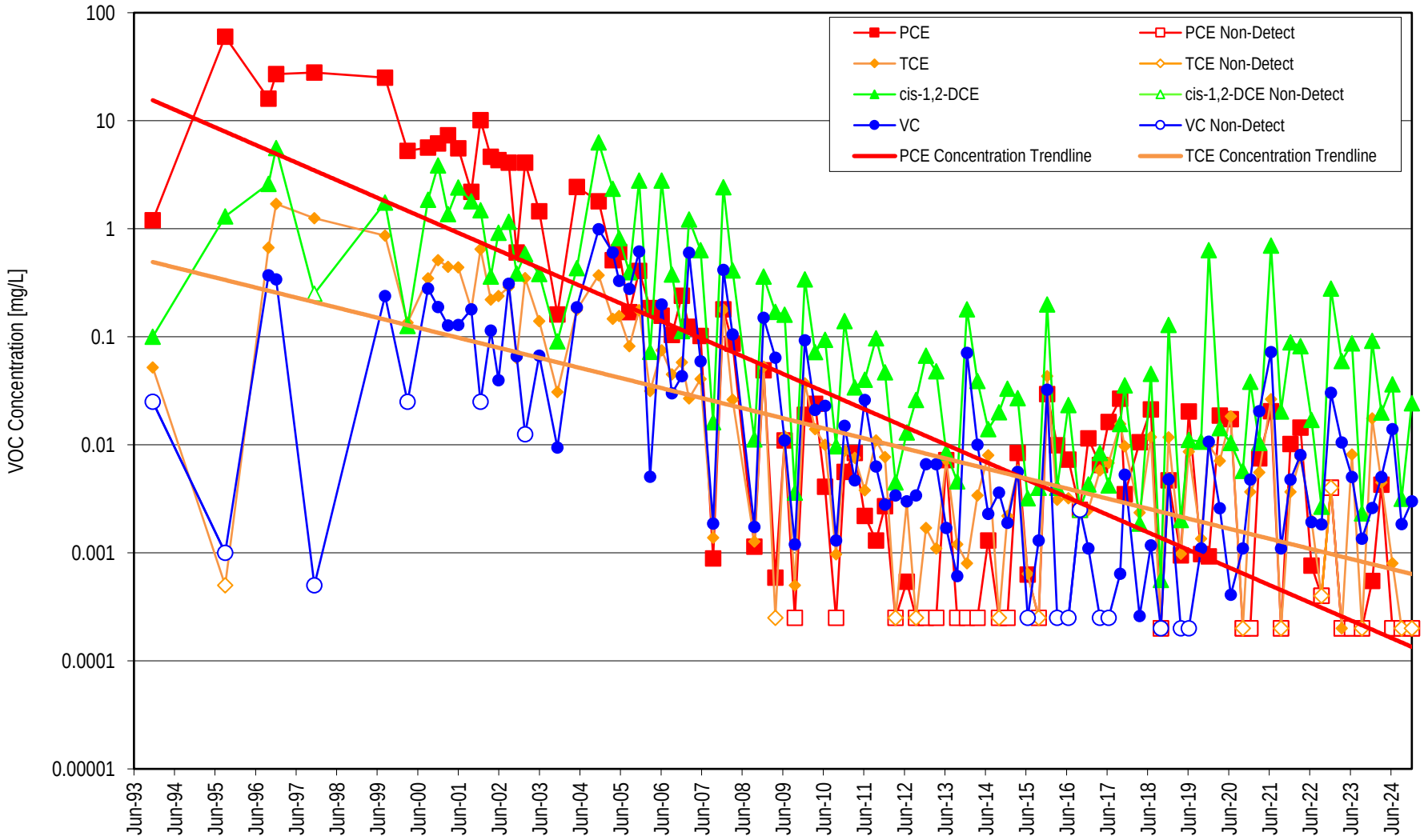
APPENDIX D
HVOC Concentration Trend Plots



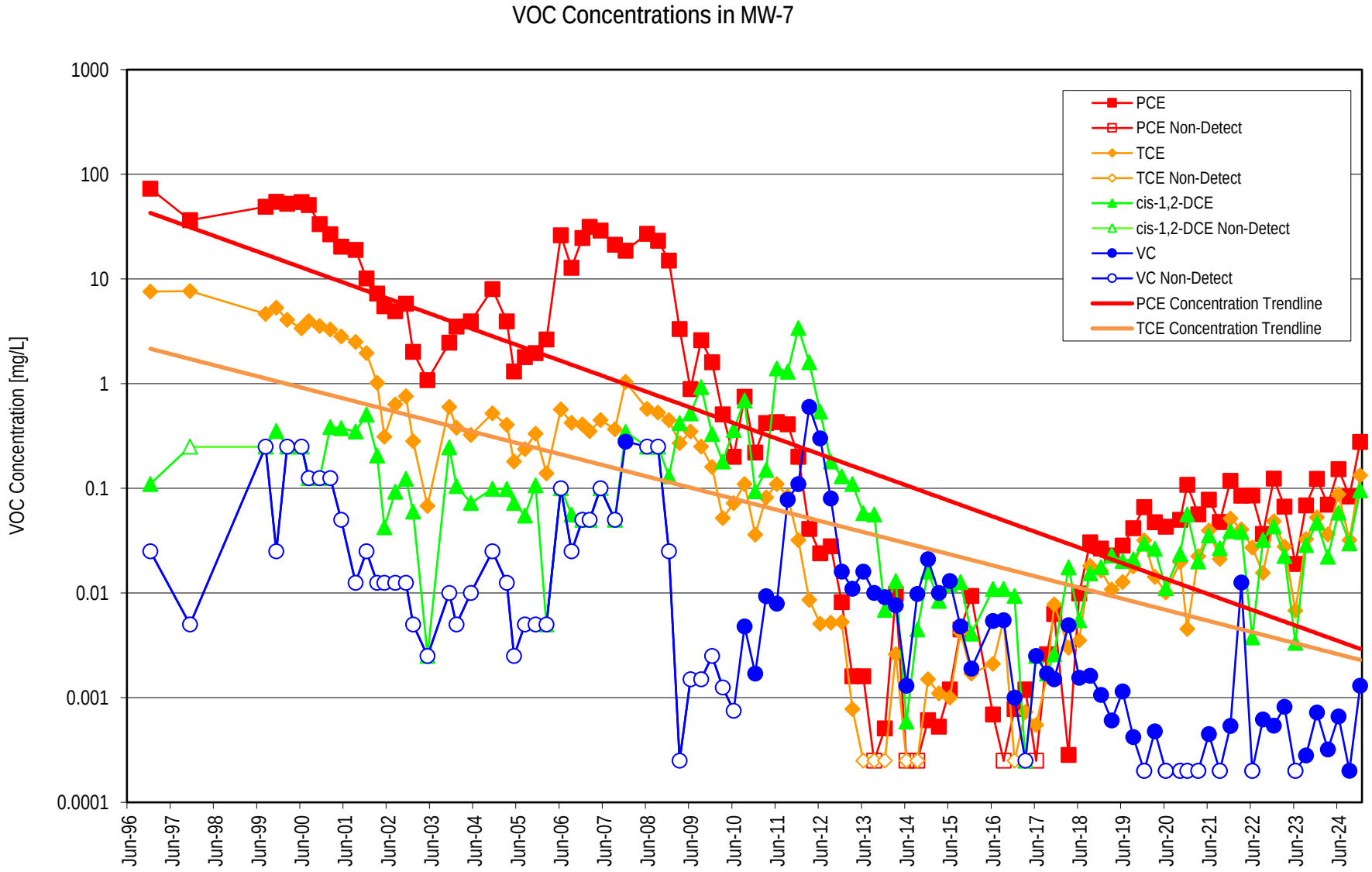
Note: Not detected values plotted at 1/2 the reporting limit.



Note: Not detected values plotted at 1/2 the reporting limit.

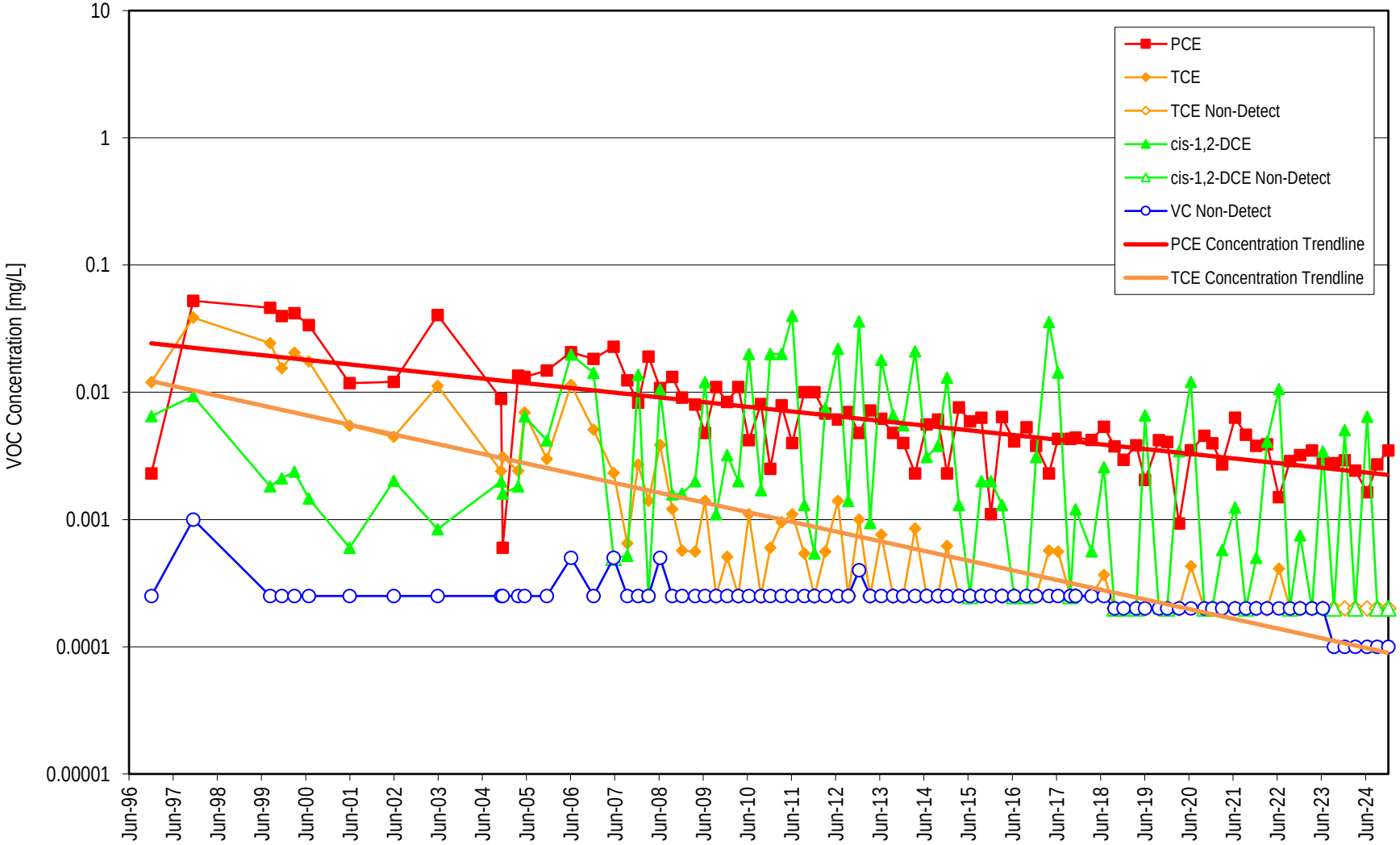


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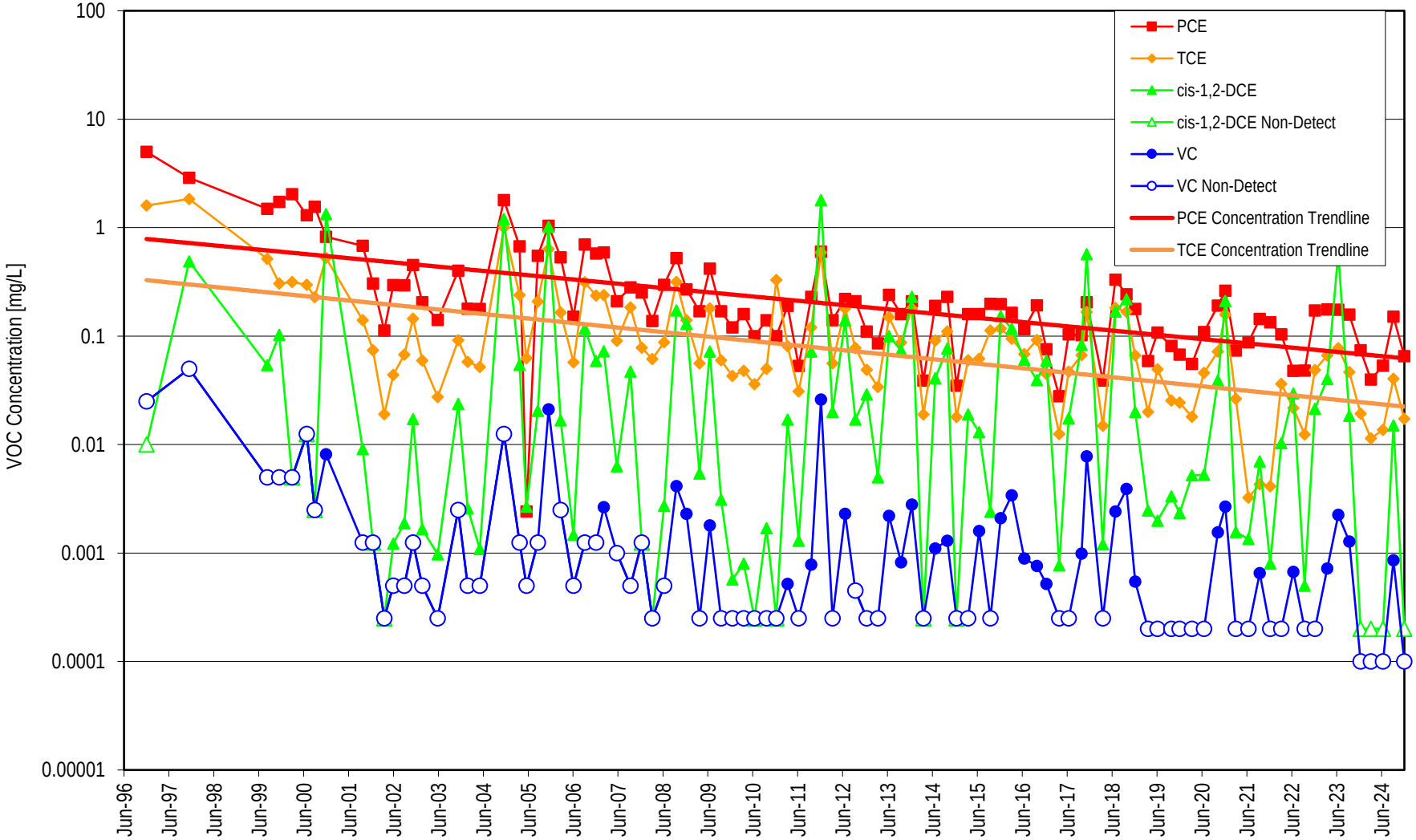
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VOC Concentrations in MW-8



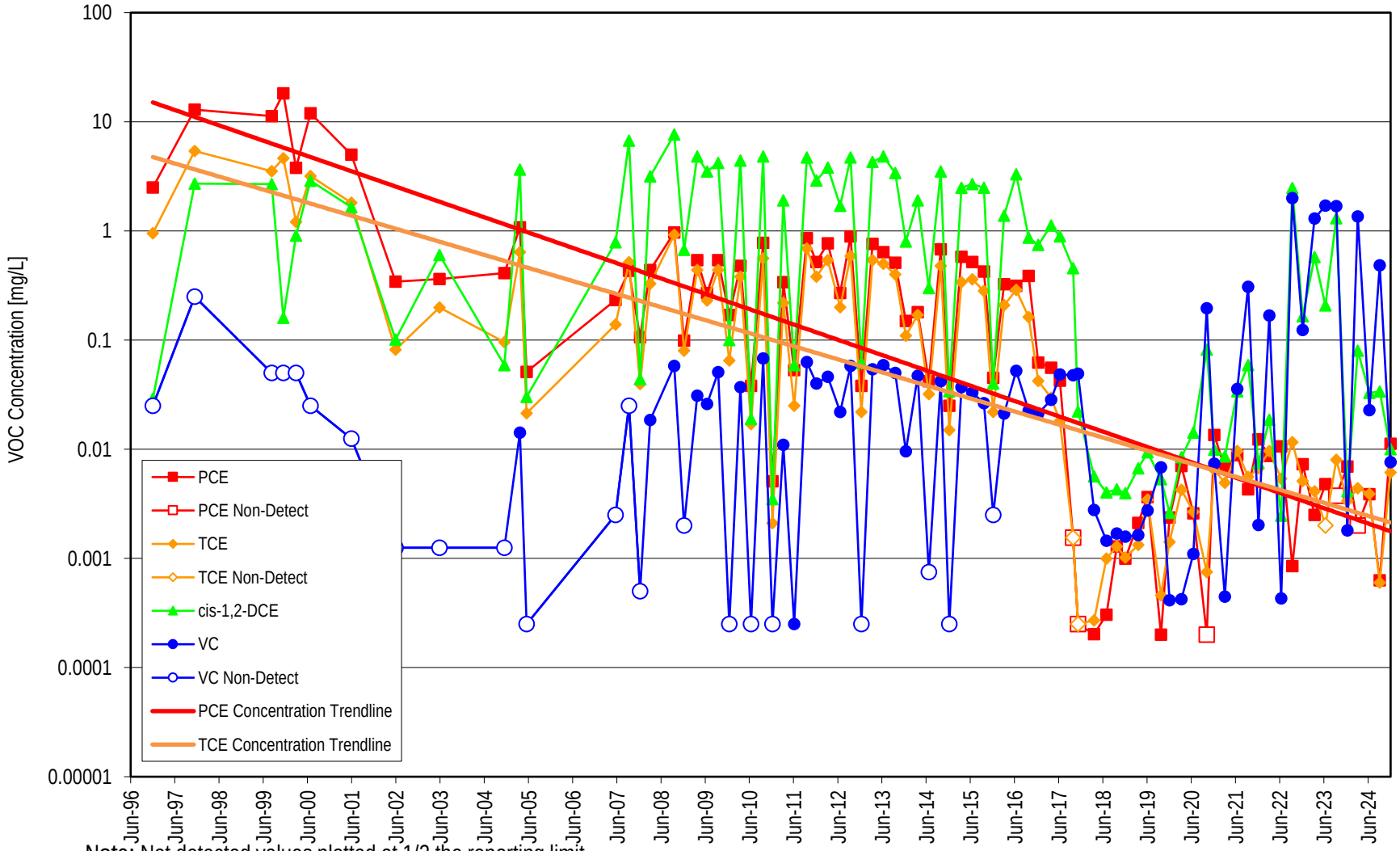
Note: Not detected values plotted at 1/2 the reporting limit.

VOC Concentrations in MW-9



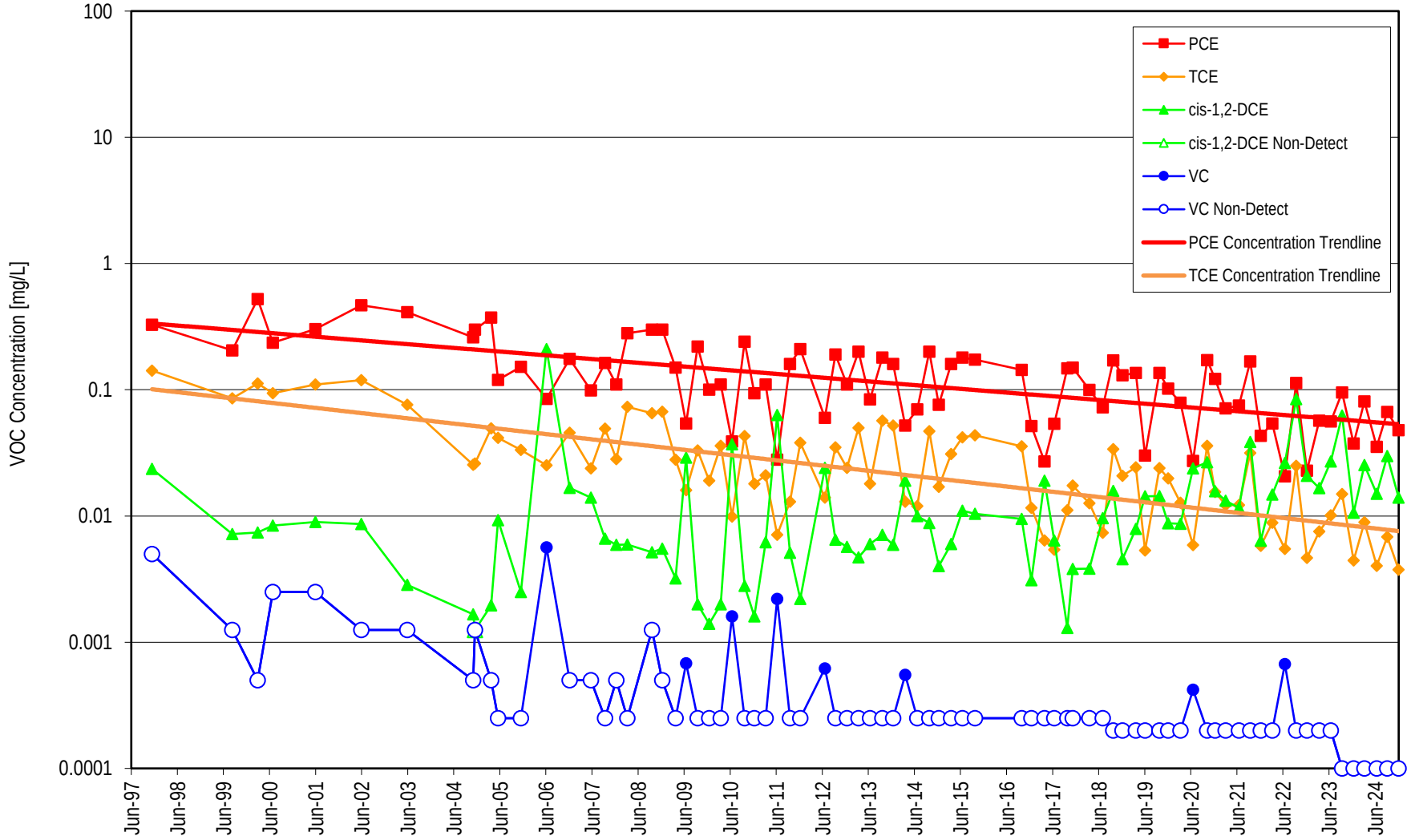
Note: Not detected values plotted at 1/2 the reporting limit.

VOC Concentrations in MW-12



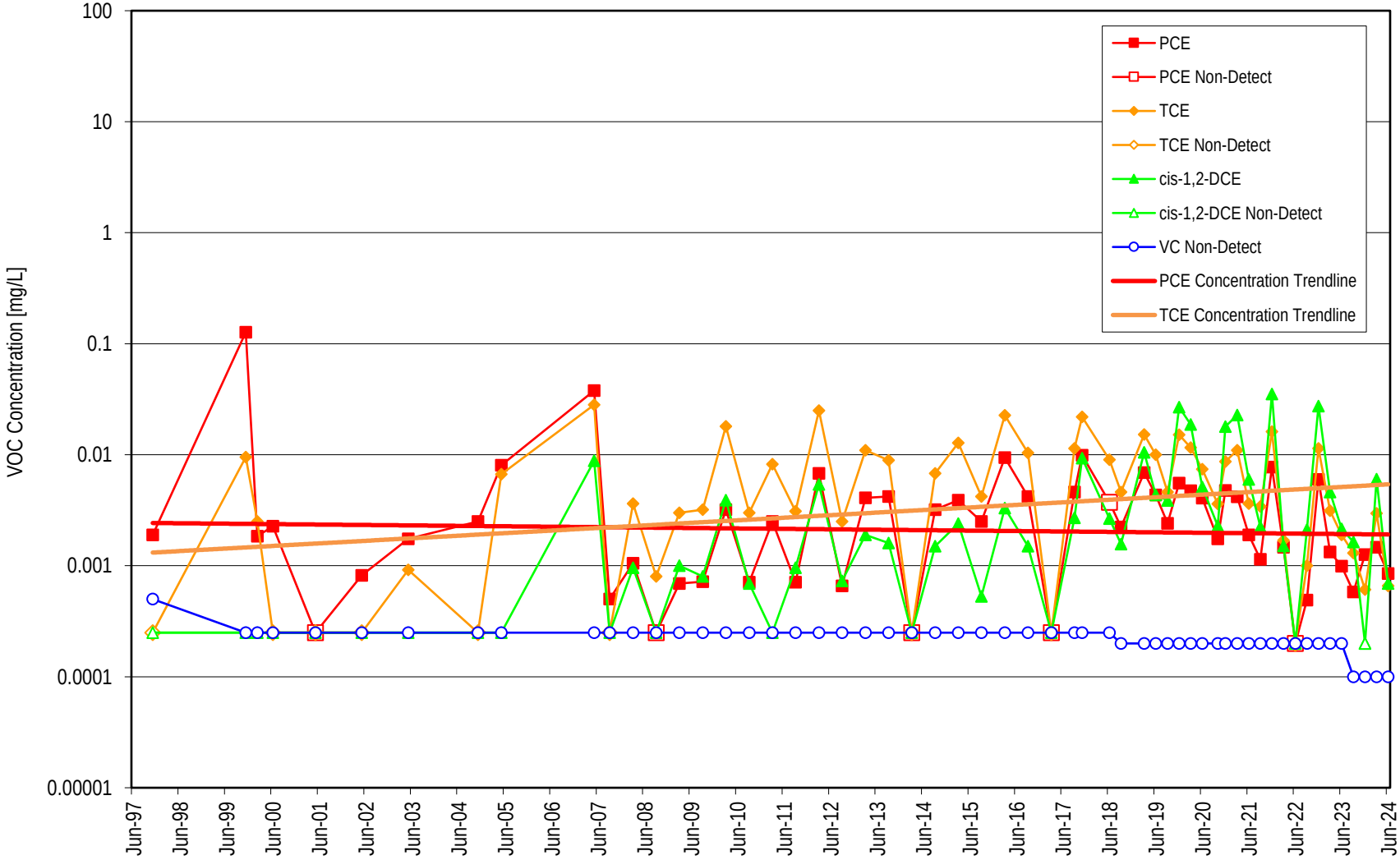
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VOC Concentrations in MW-16

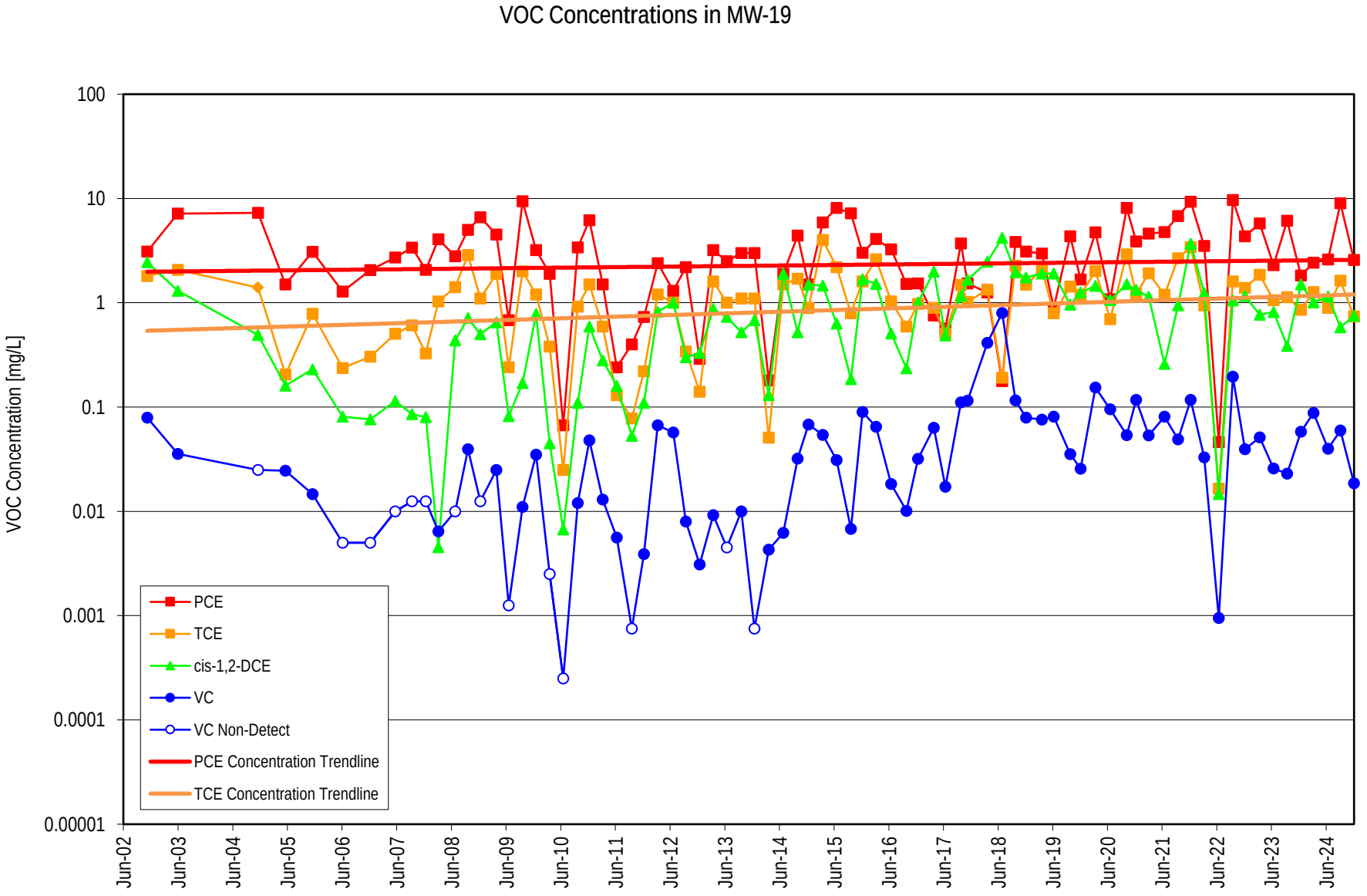


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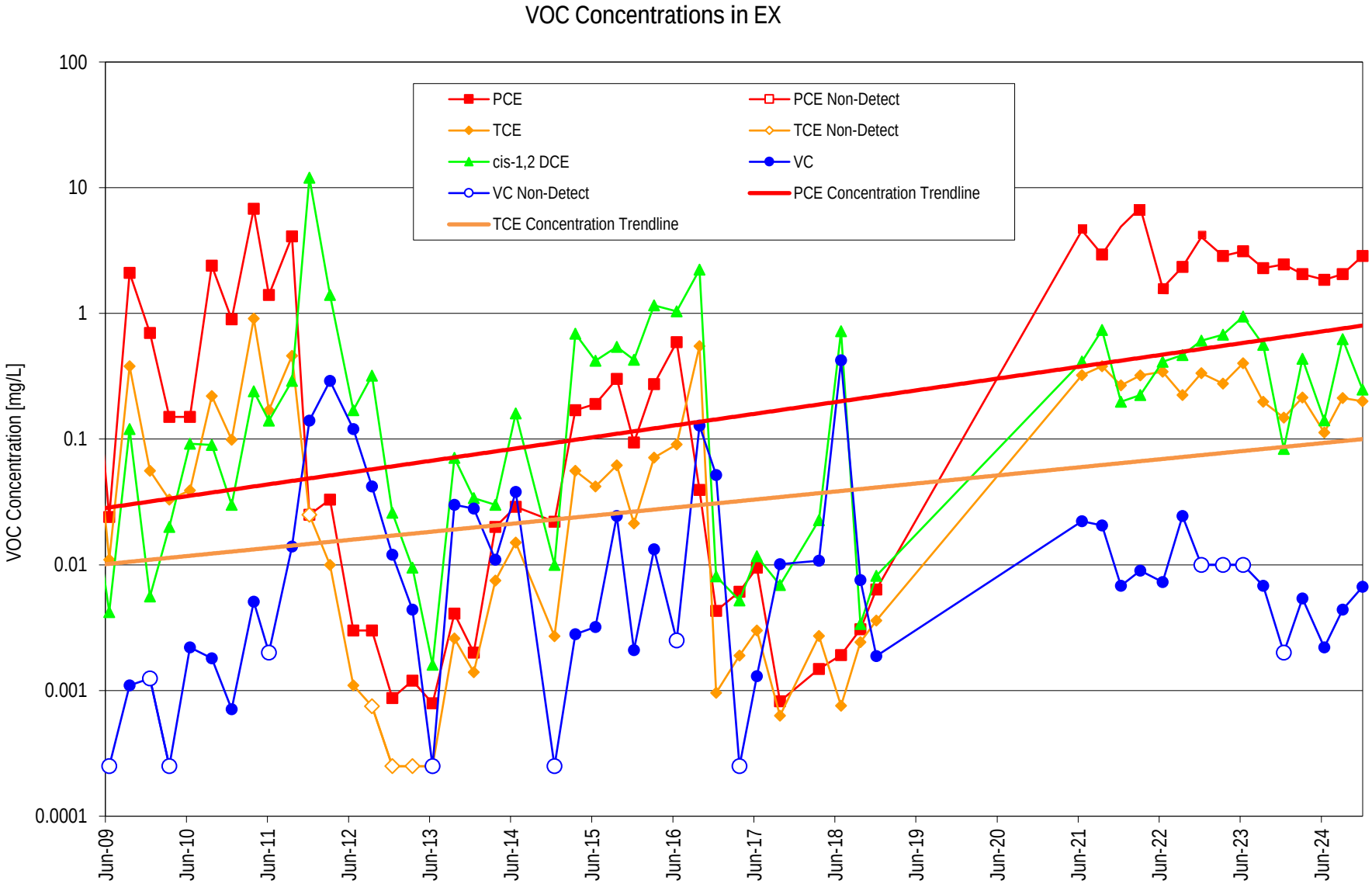
VOC Concentrations in MW-17



Note: Not detected values plotted at 1/2 the reporting limit.

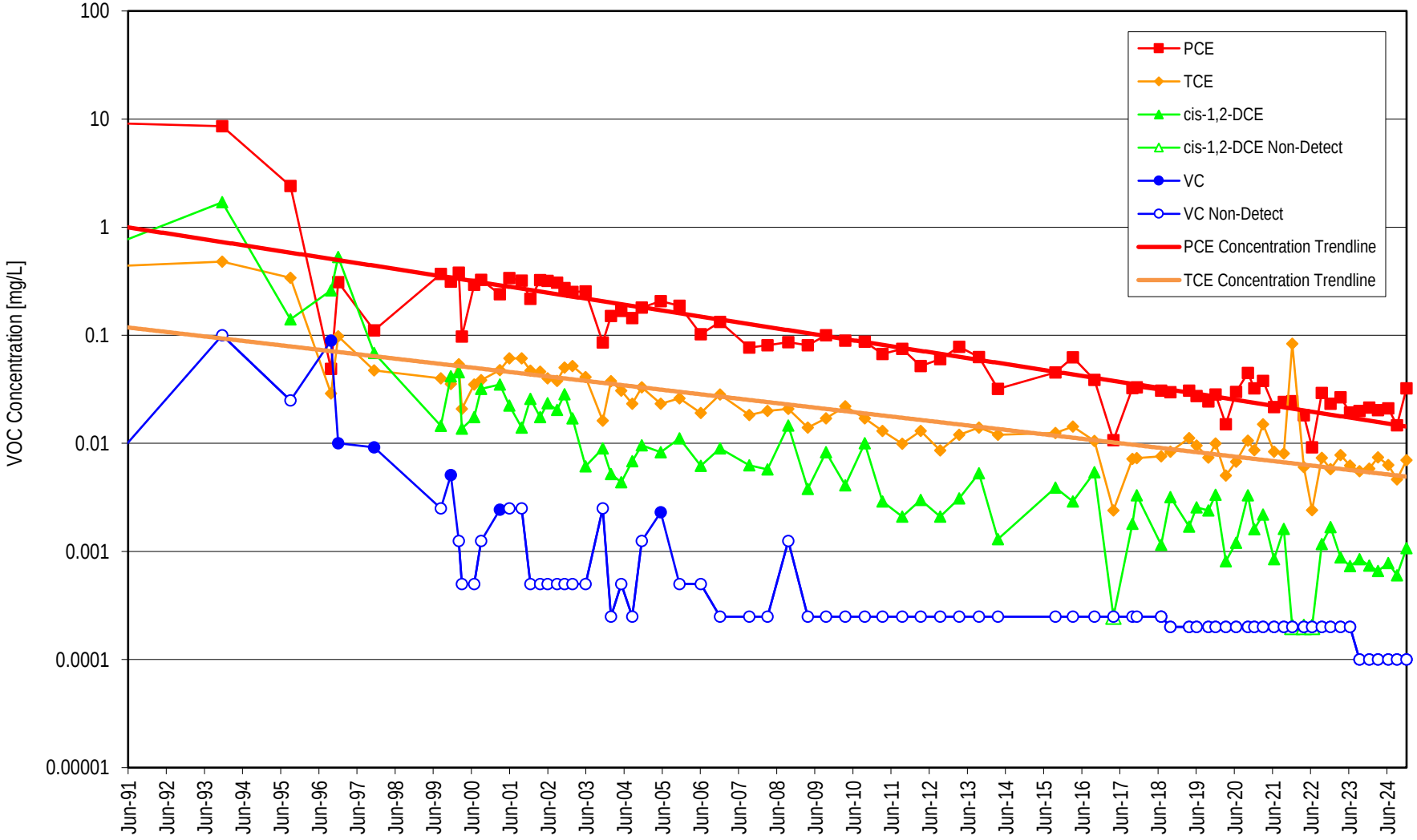


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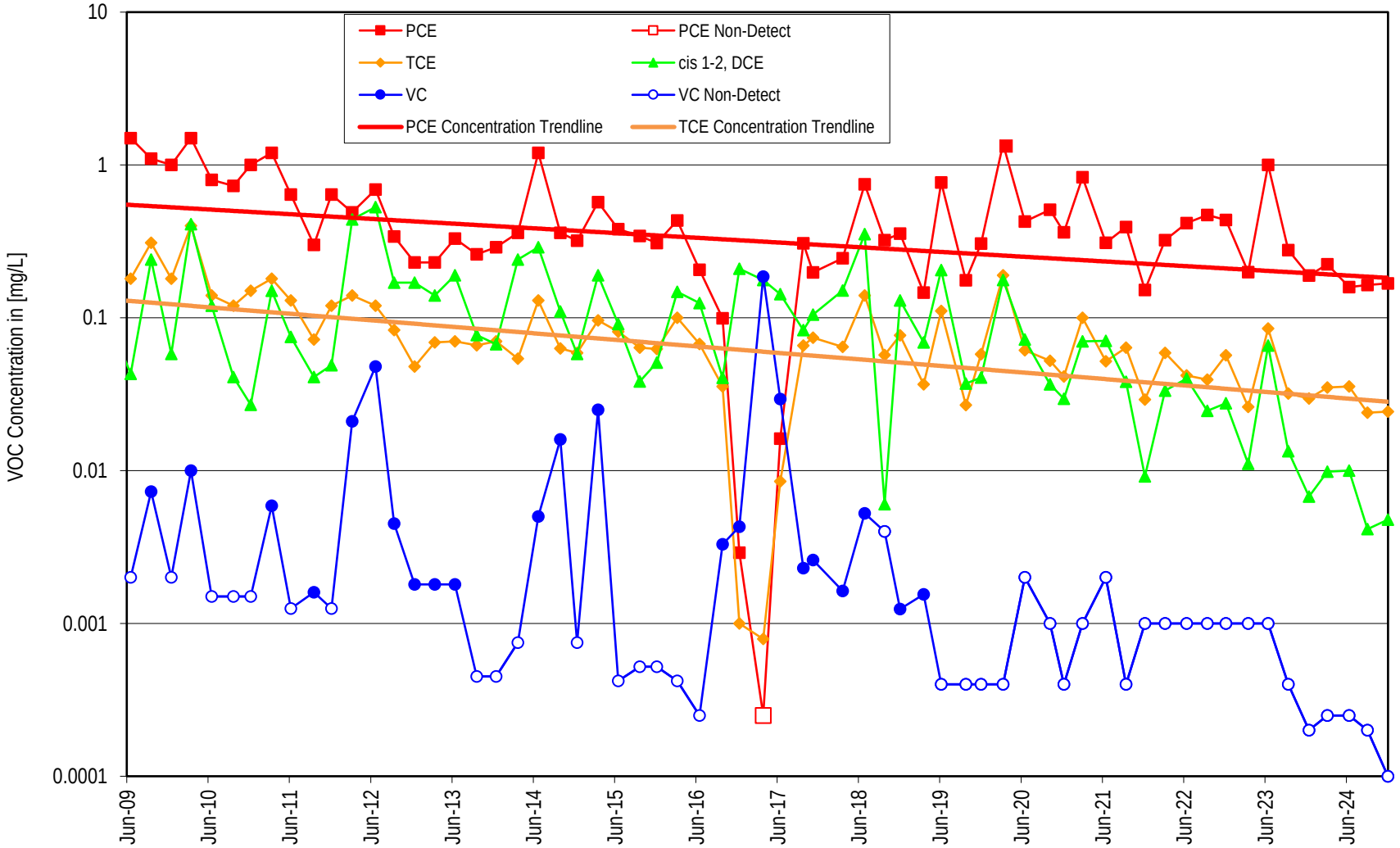
Note: Not detected values plotted at 1/2 the reporting limit.

VOC Concentrations in EW-1



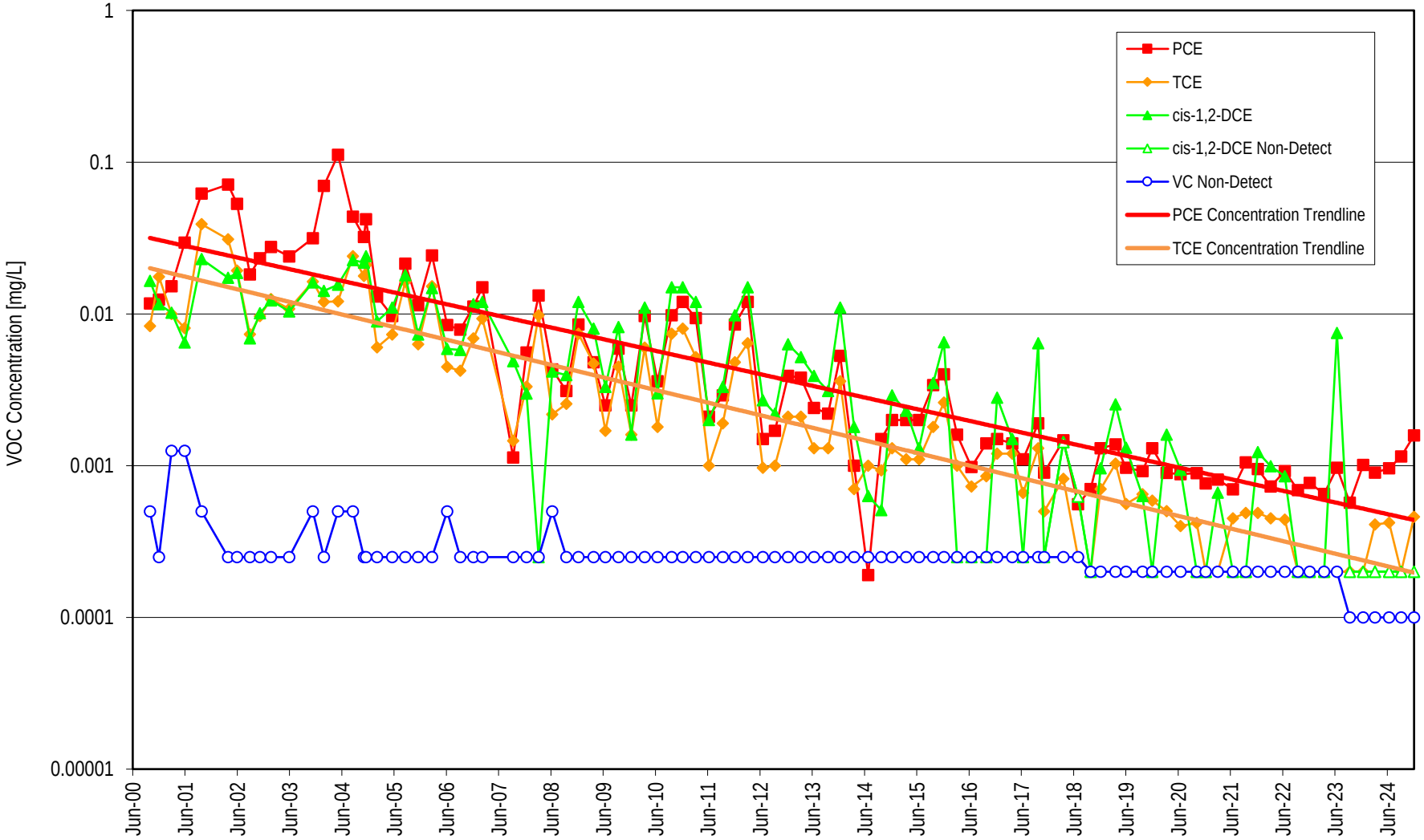
Note: Not detected values plotted at 1/2 the reporting limit.

VOC Concentrations in MP-1



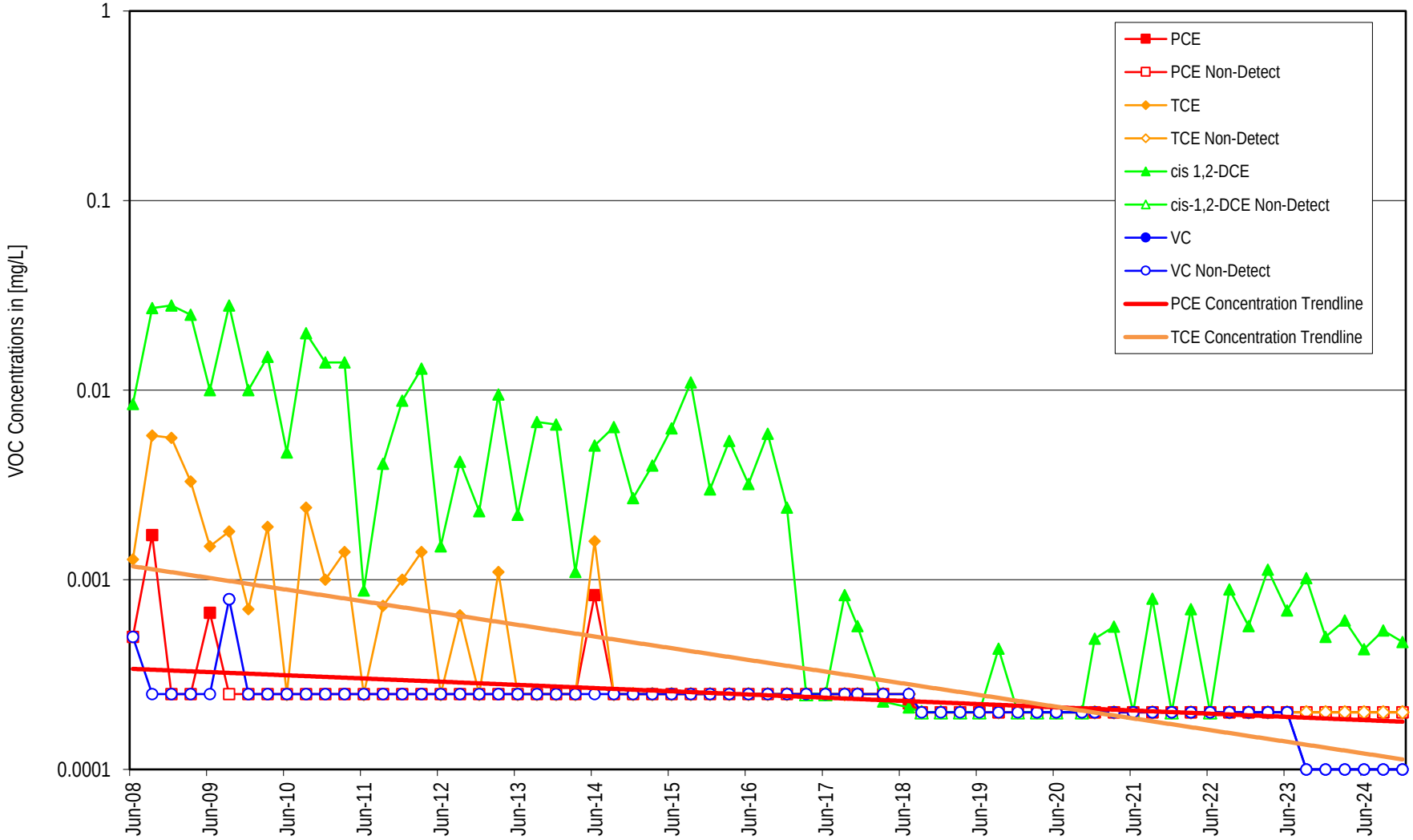
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VOC Concentrations in MW-18i



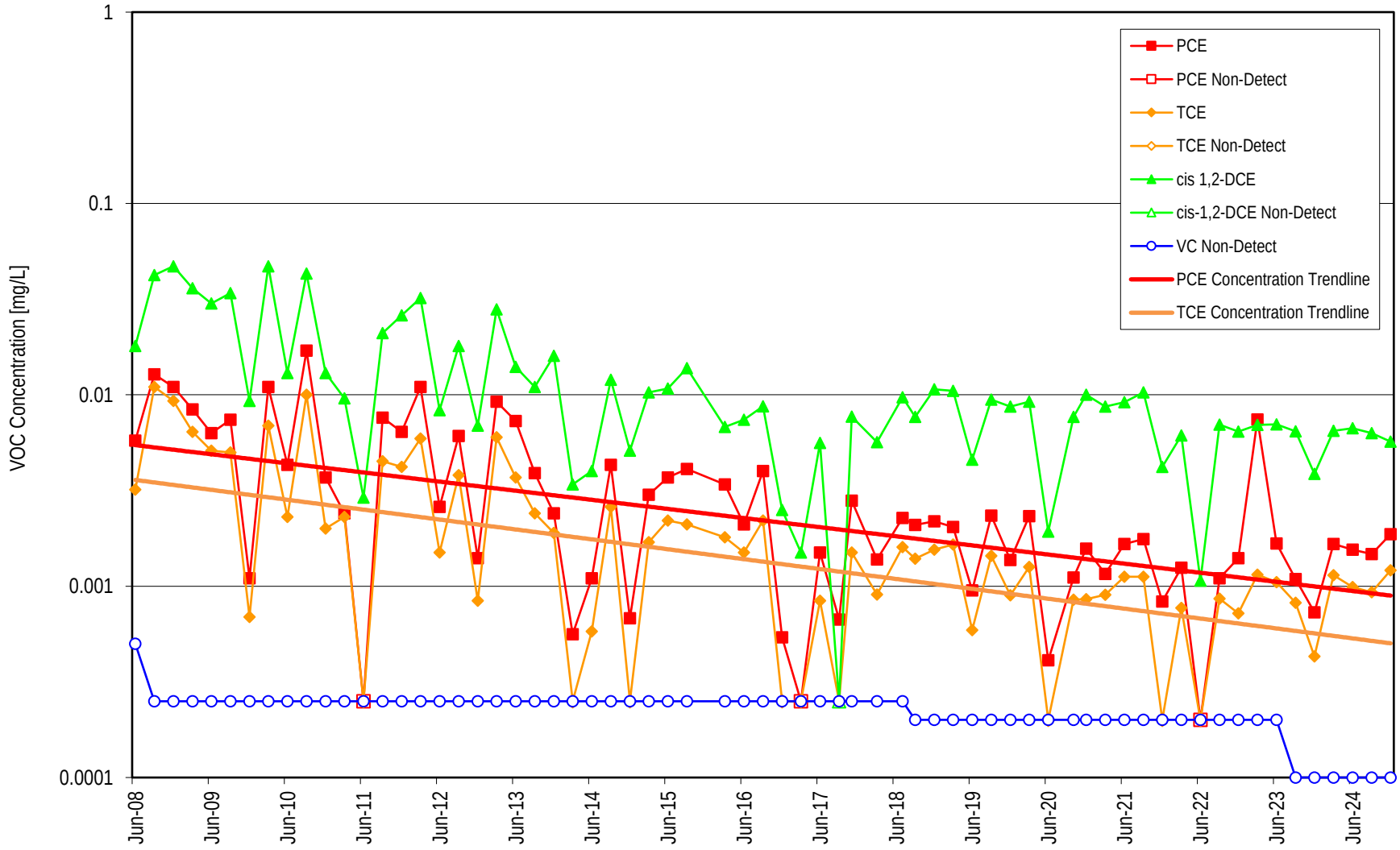
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VOC Concentrations in MW-19i



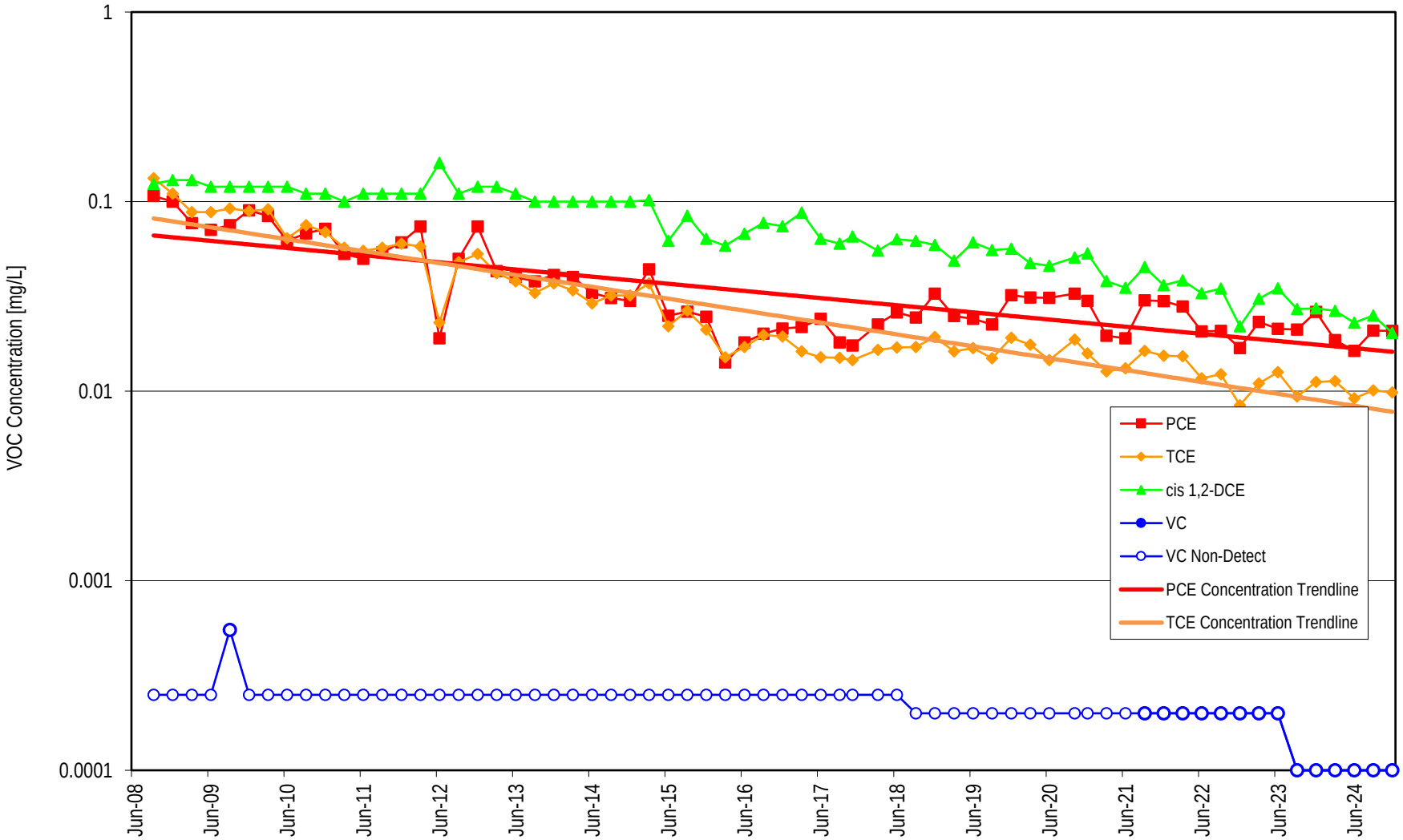
Note: Not detected values plotted at 1/2 the reporting limit.

VOC Concentrations in MW-20i



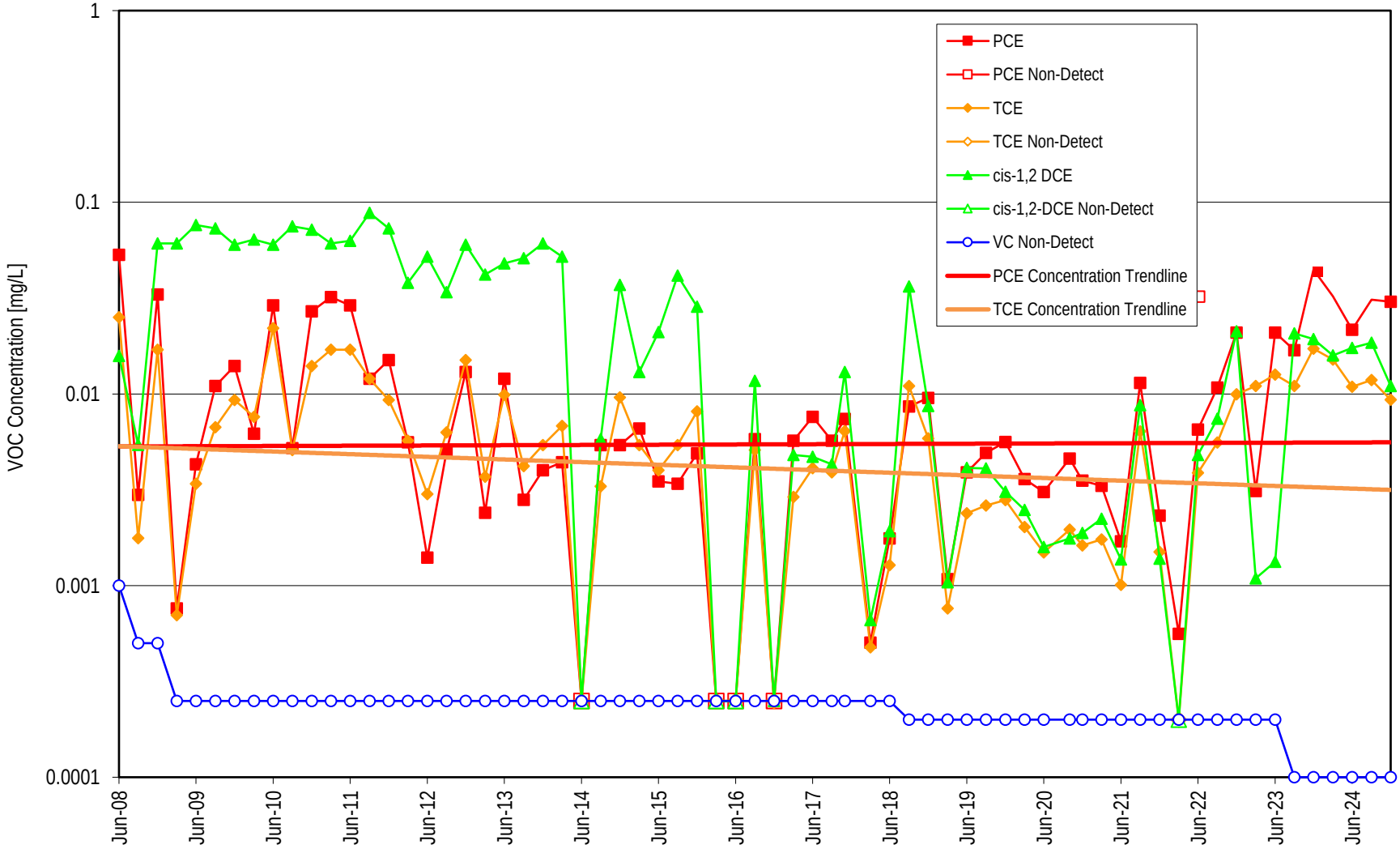
Note: Not detected values plotted at 1/2 the reporting limit.

VOC Concentrations in MW-21i-40



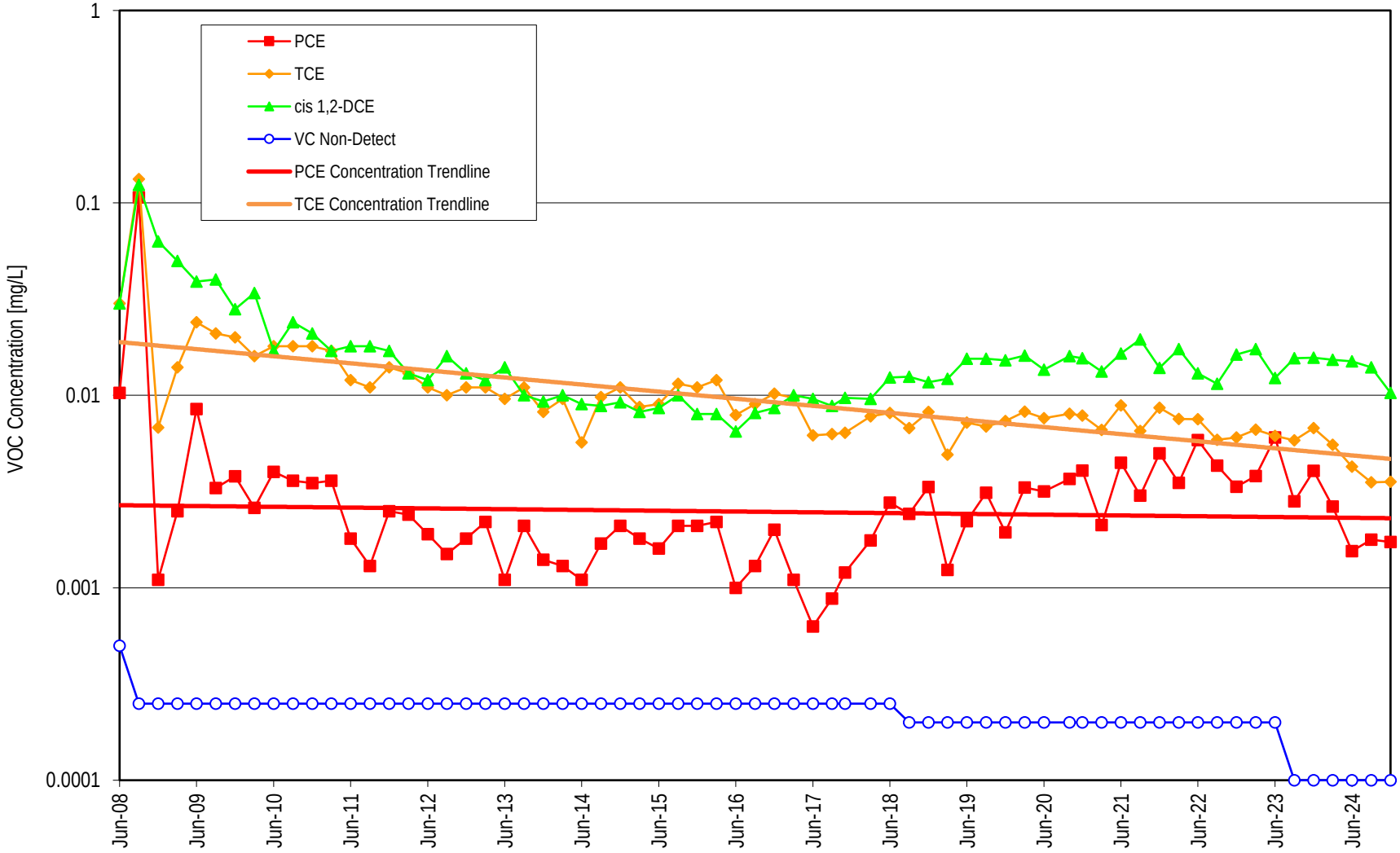
Note: Not detected values plotted at 1/2 the reporting limit.

VOC Concentrations in MW-21i-105

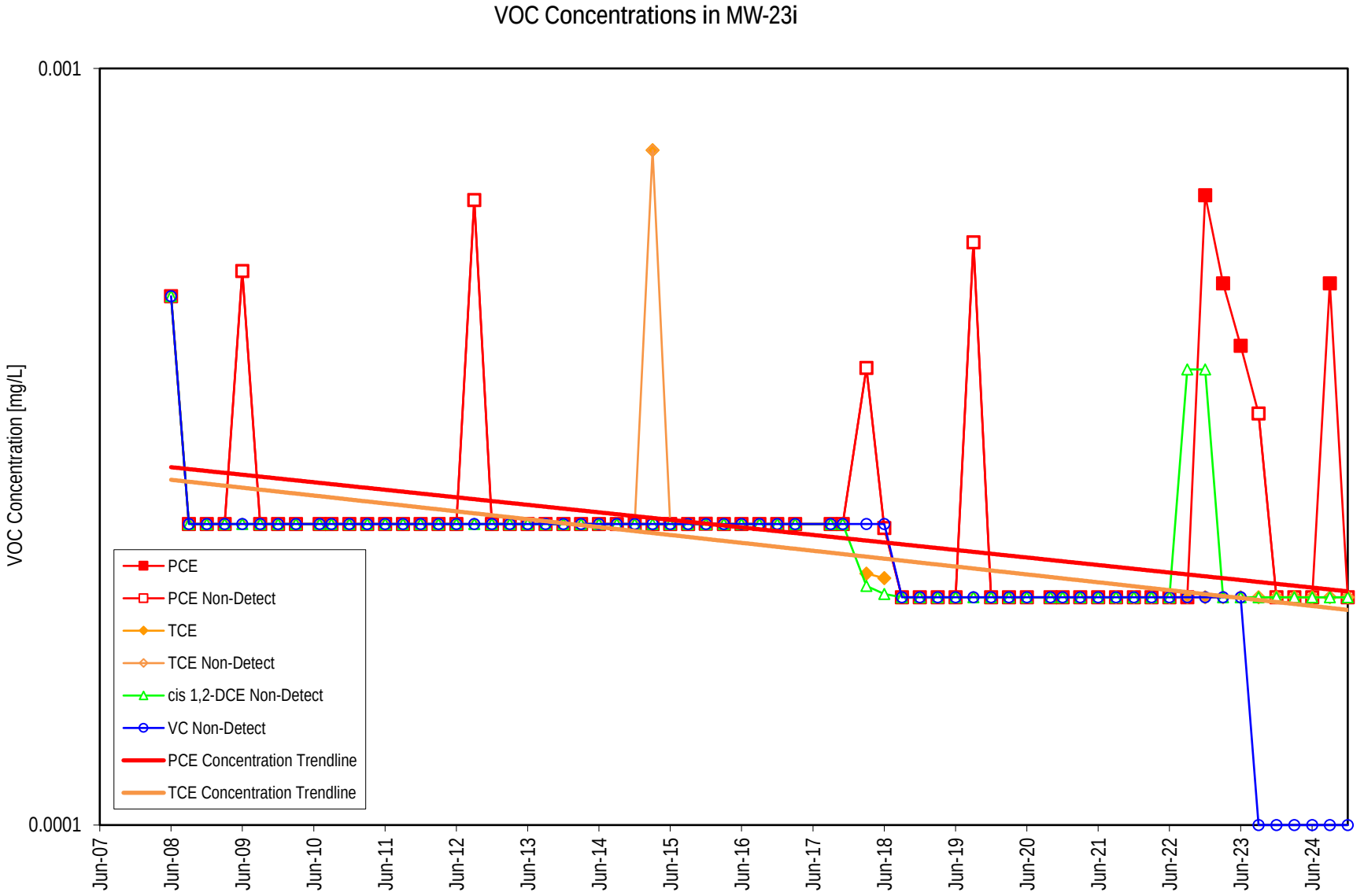


Note: Not detected values plotted at 1/2 the reporting limit.

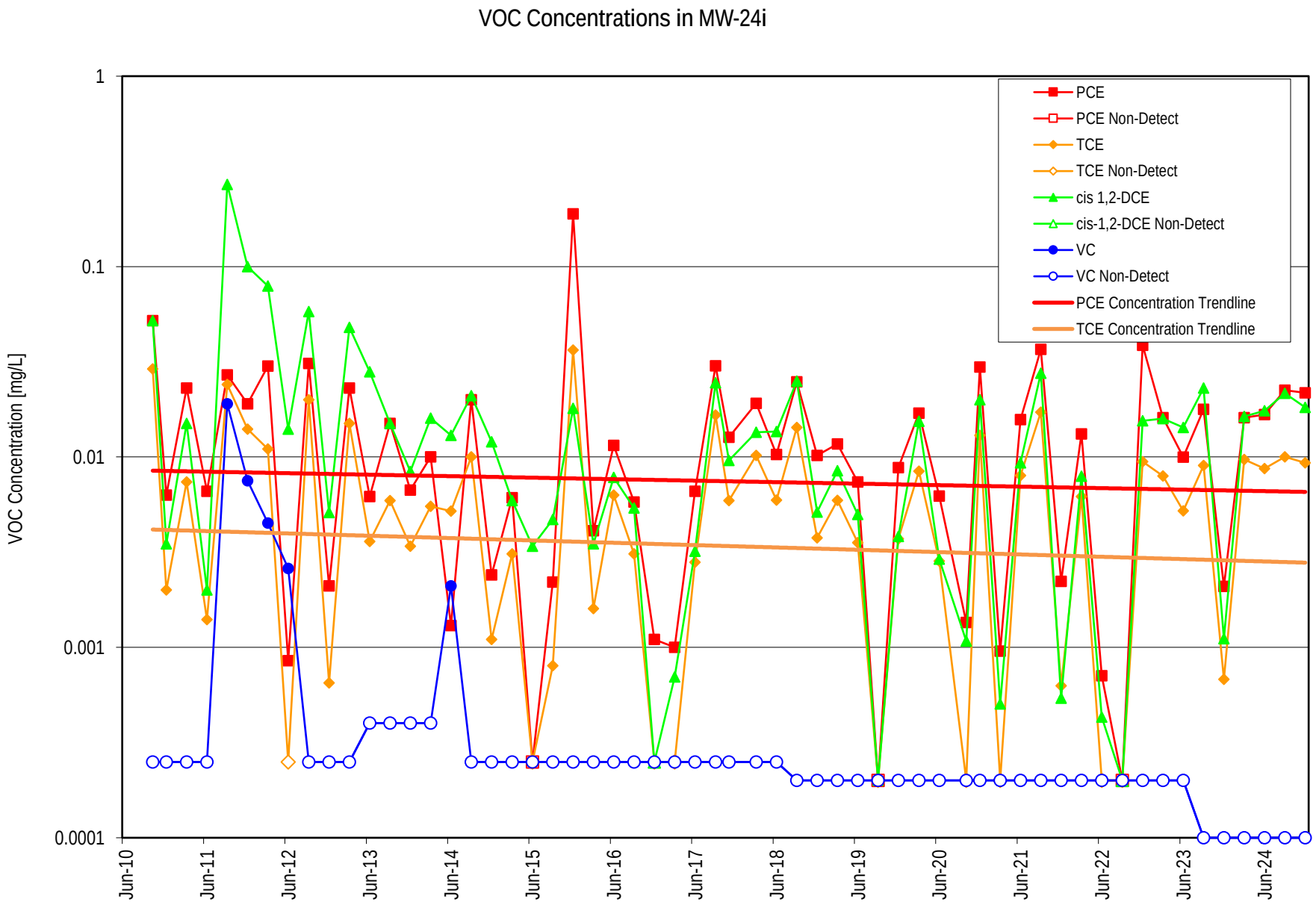
VOC Concentrations in MW-22i



Note: Not detected values plotted at 1/2 the reporting limit.

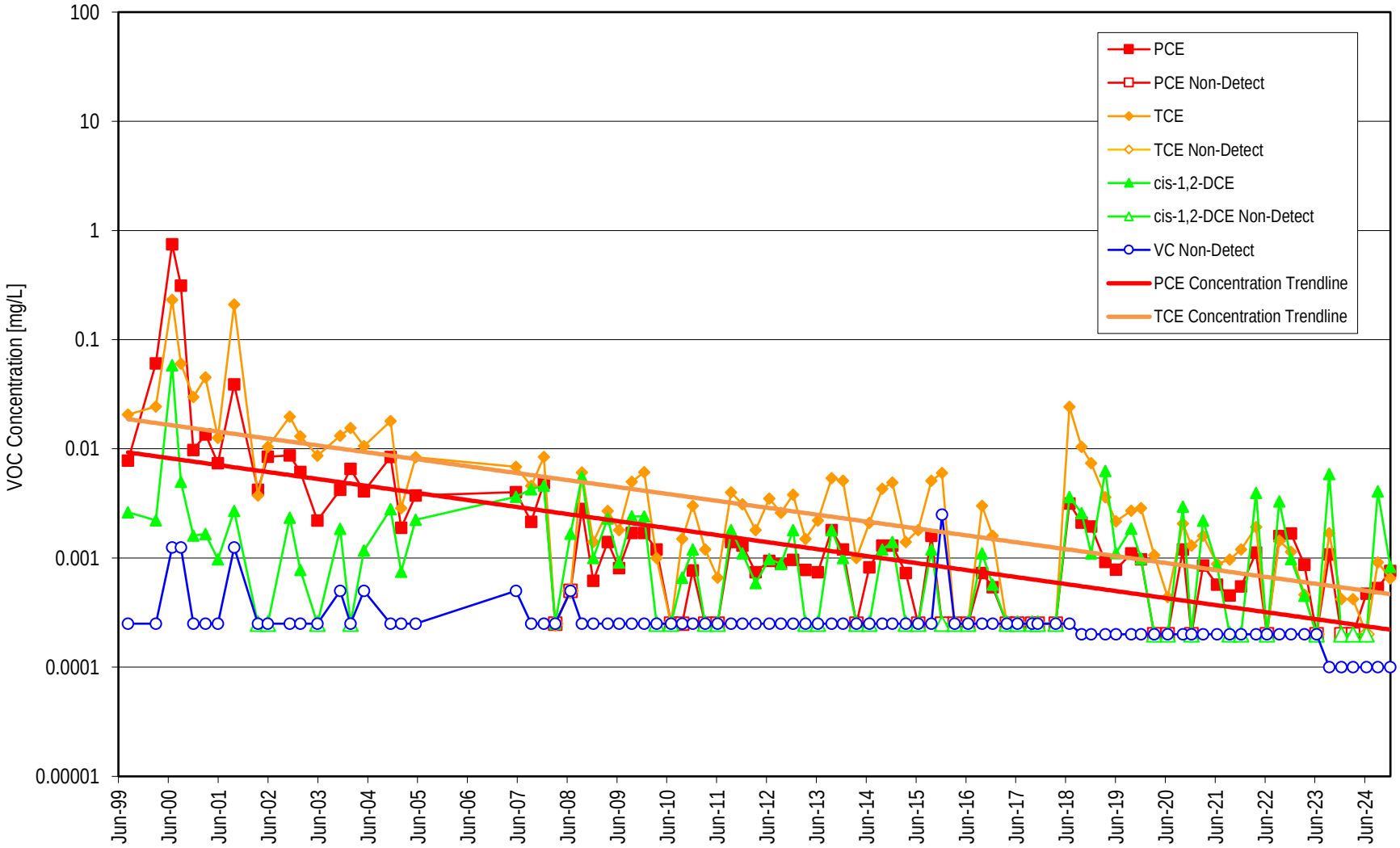


Note: Not detected values plotted at 1/2 the reporting limit.



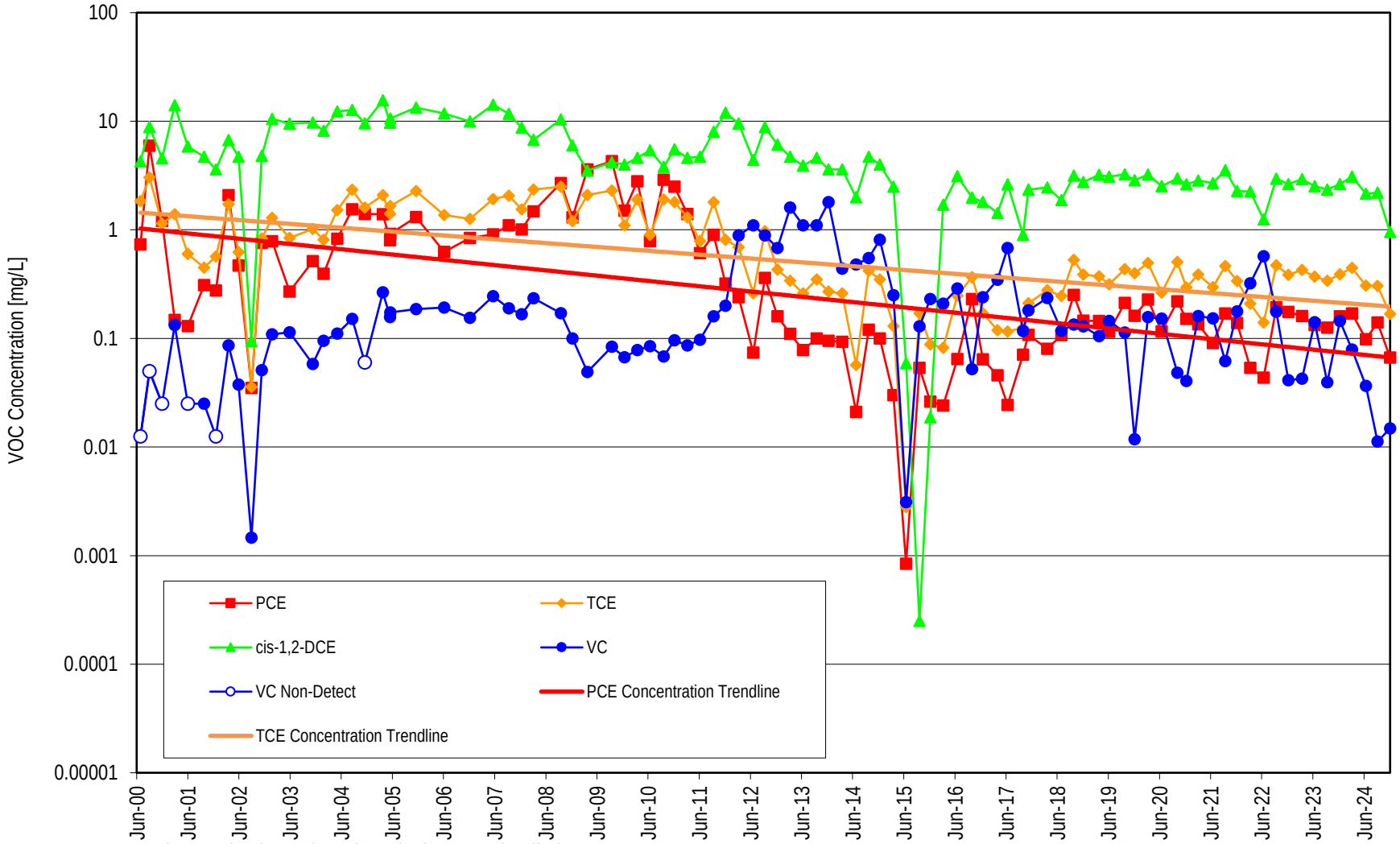
Note: Not detected values plotted at 1/2 the reporting limit.

VOC Concentrations in S-1

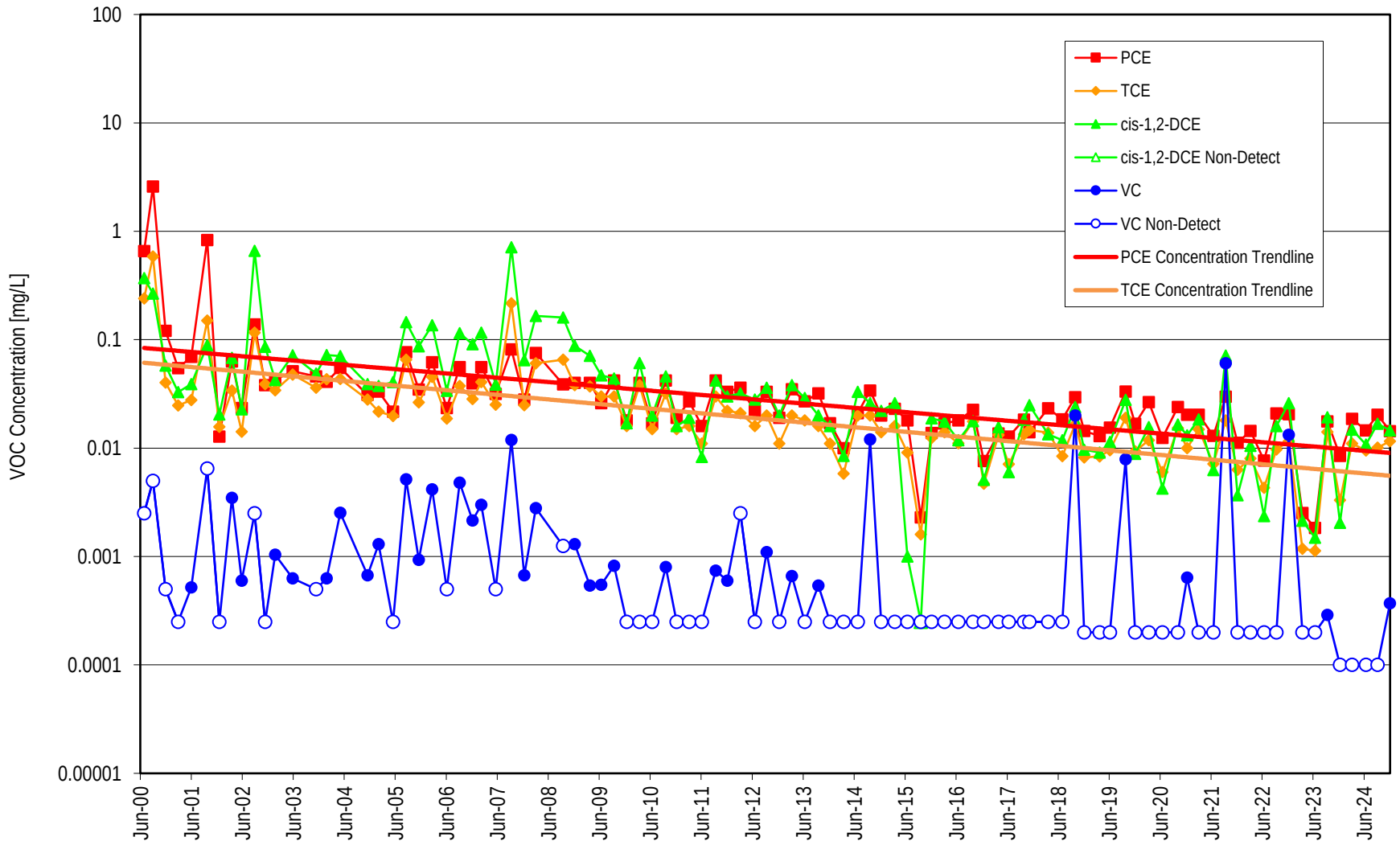


Note: Not detected values plotted at 1/2 the reporting limit.

VOC Concentrations in MGMS1-43

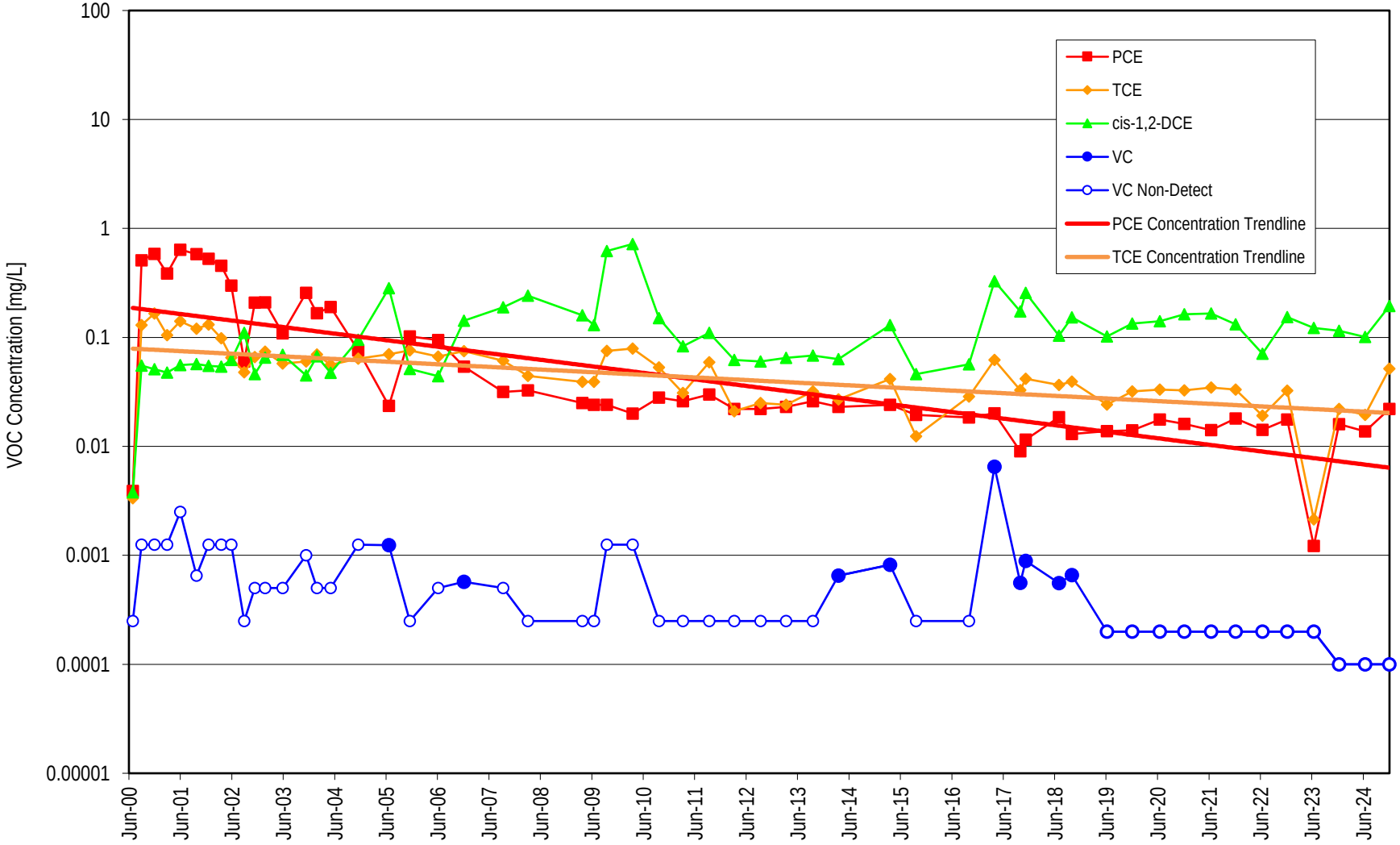


Note: Not detected values plotted at 1/2 the reporting limit.



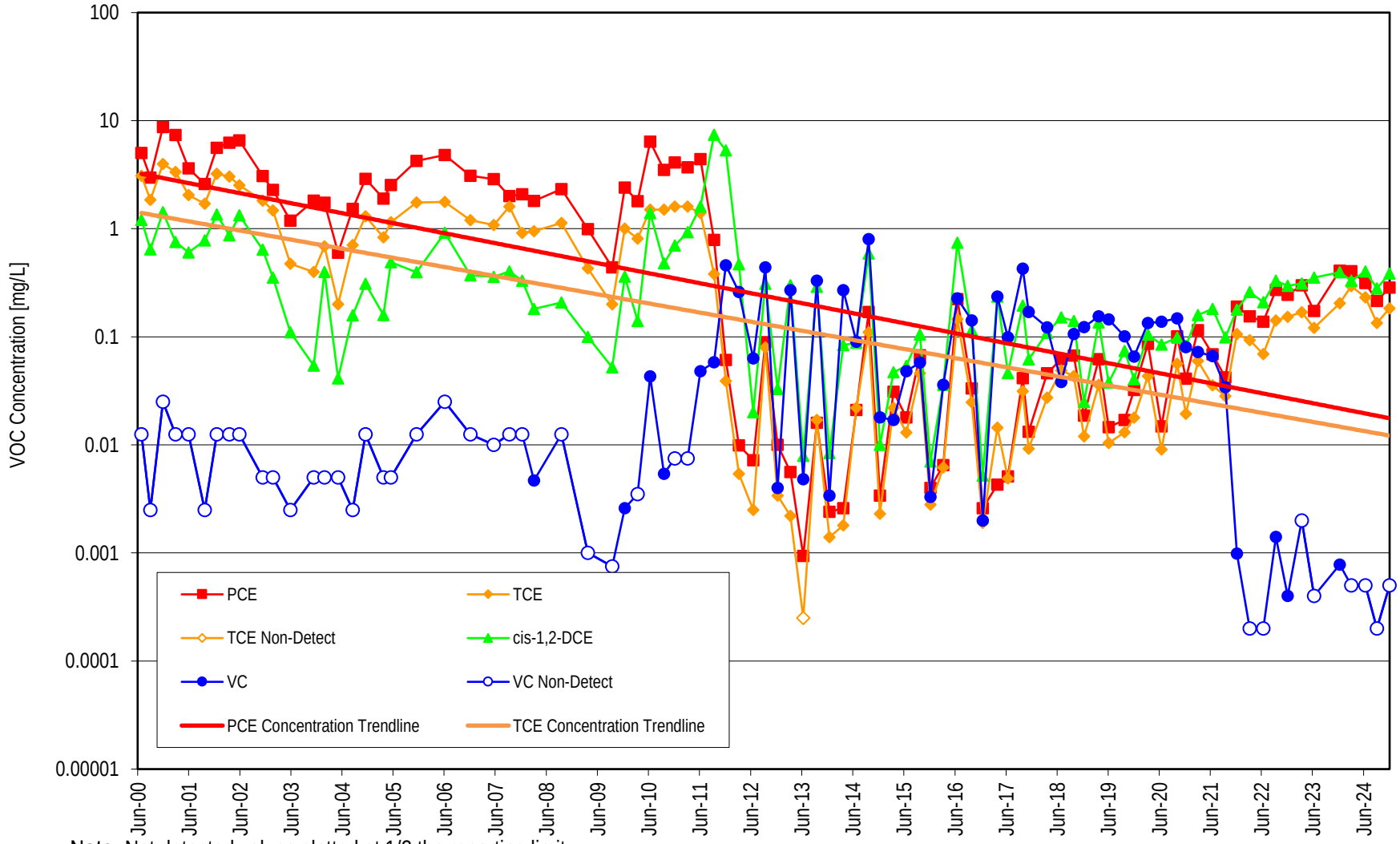
Note: Not detected values plotted at 1/2 the reporting limit.

VOC Concentrations in MGMS1-110

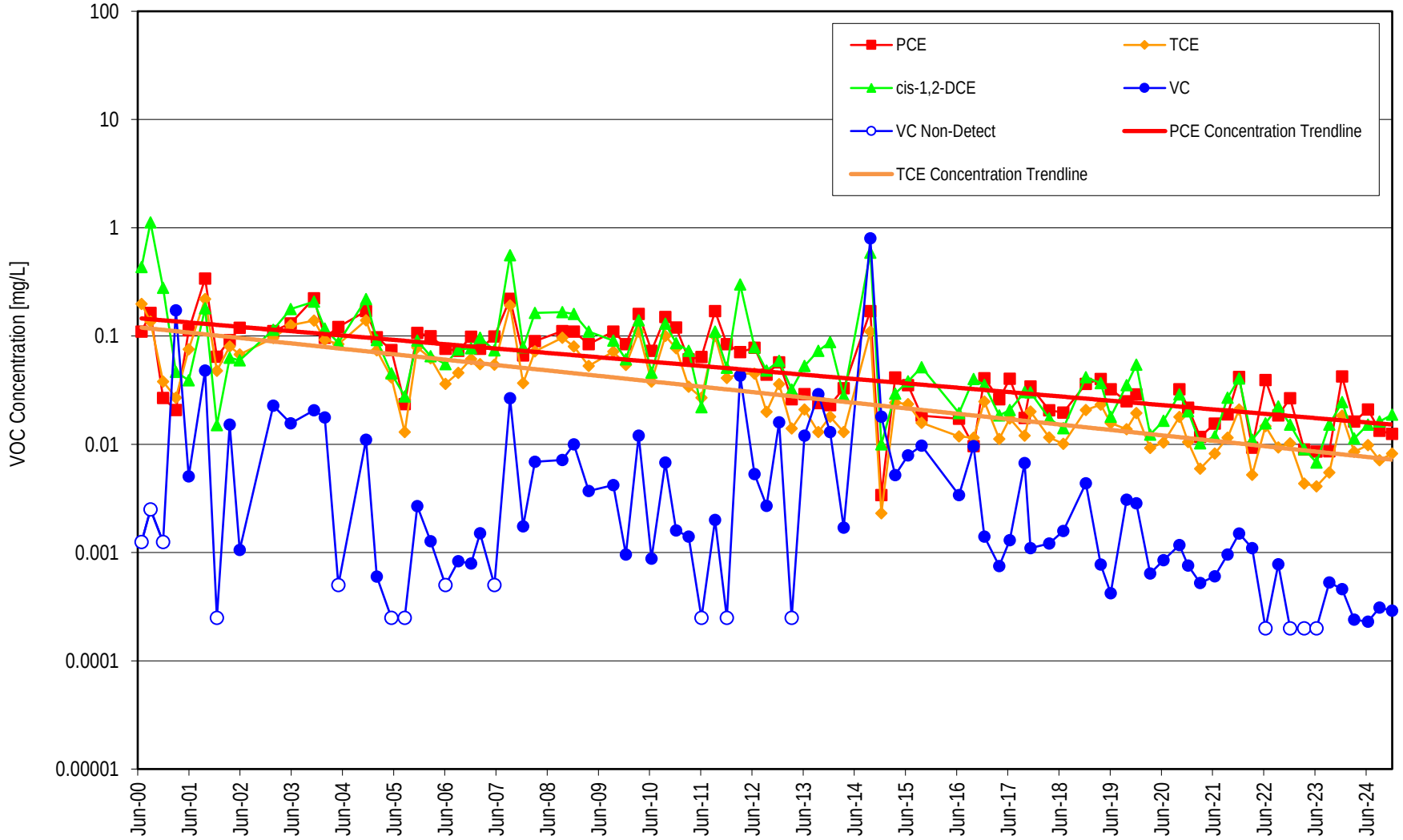


Note: Not detected values plotted at 1/2 the reporting limit.

VOC Concentrations in MGMS2-40

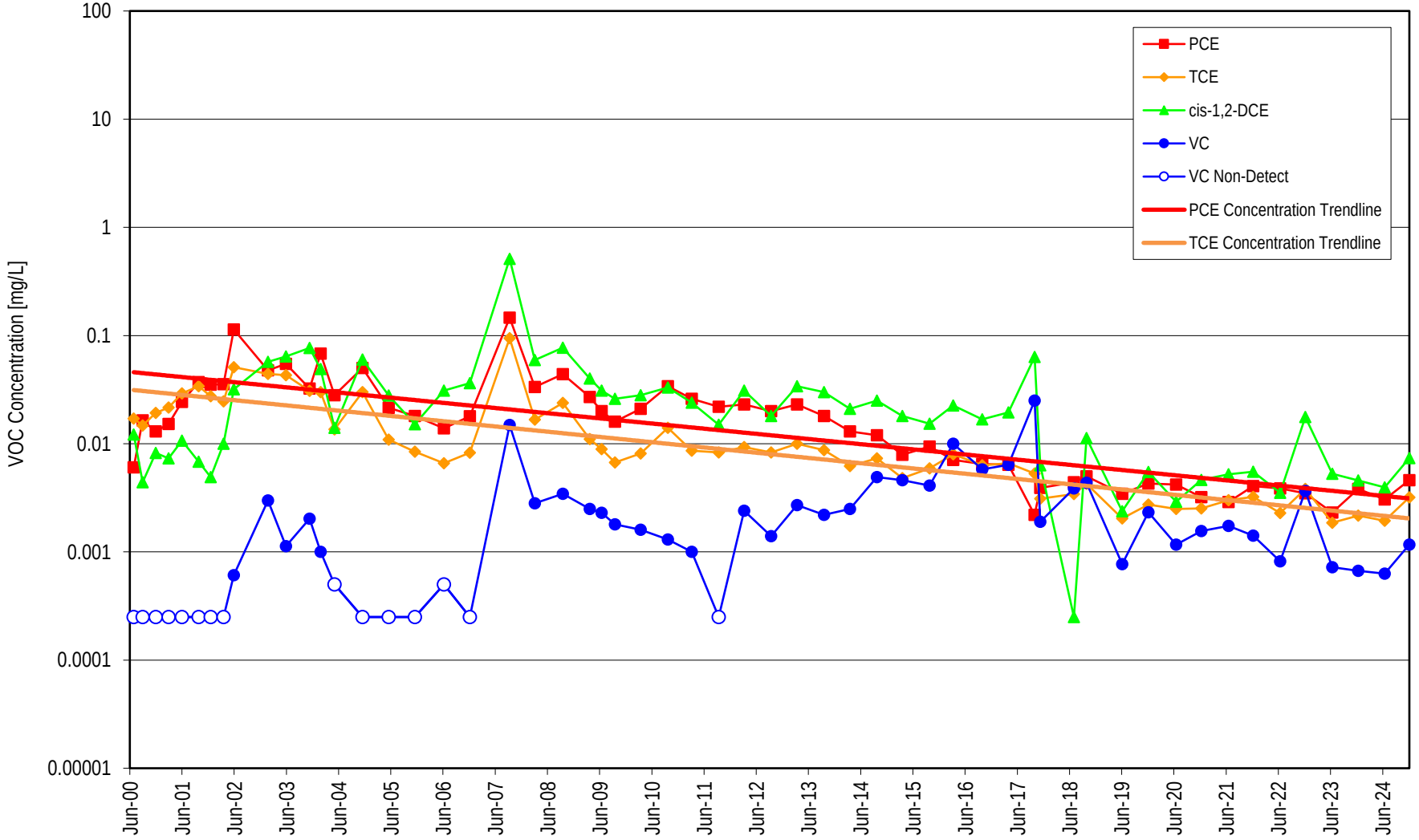


Note: Not detected values plotted at 1/2 the reporting limit.



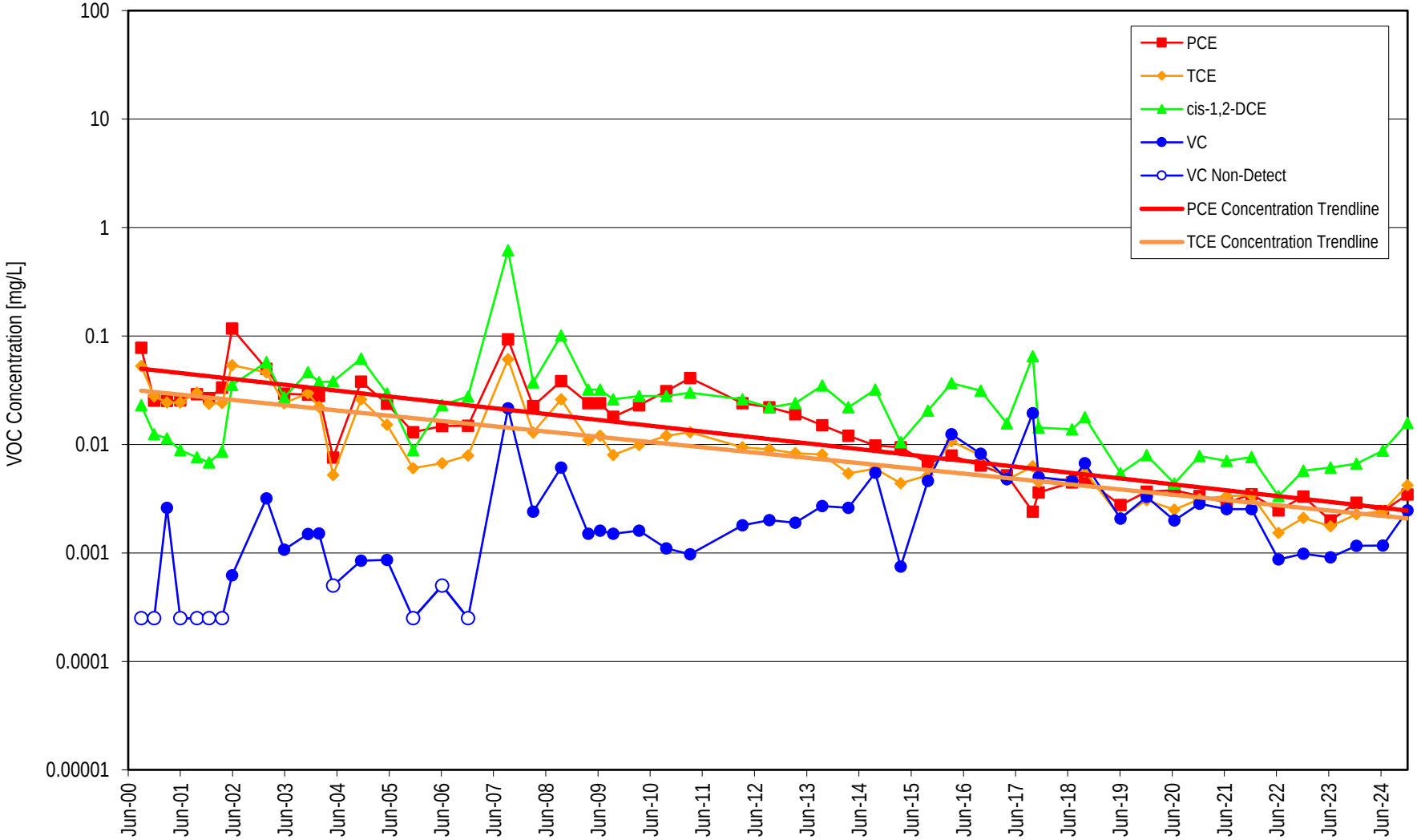
Note: Not detected values plotted at 1/2 the reporting limit.

VOC Concentrations in MGMS2-110

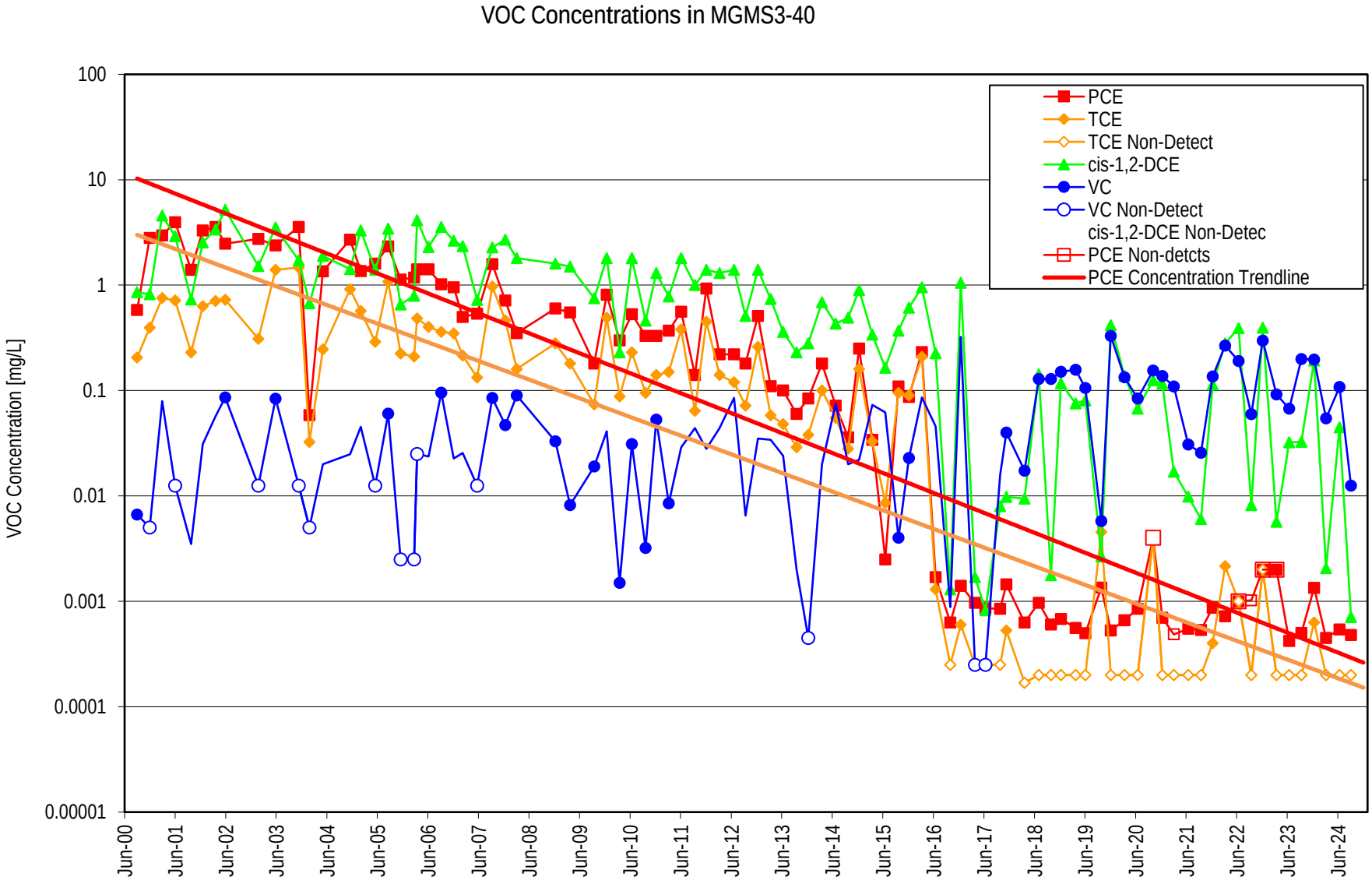


Note: Not detected values plotted at 1/2 the reporting limit.

VOC Concentrations in MGMS2-132

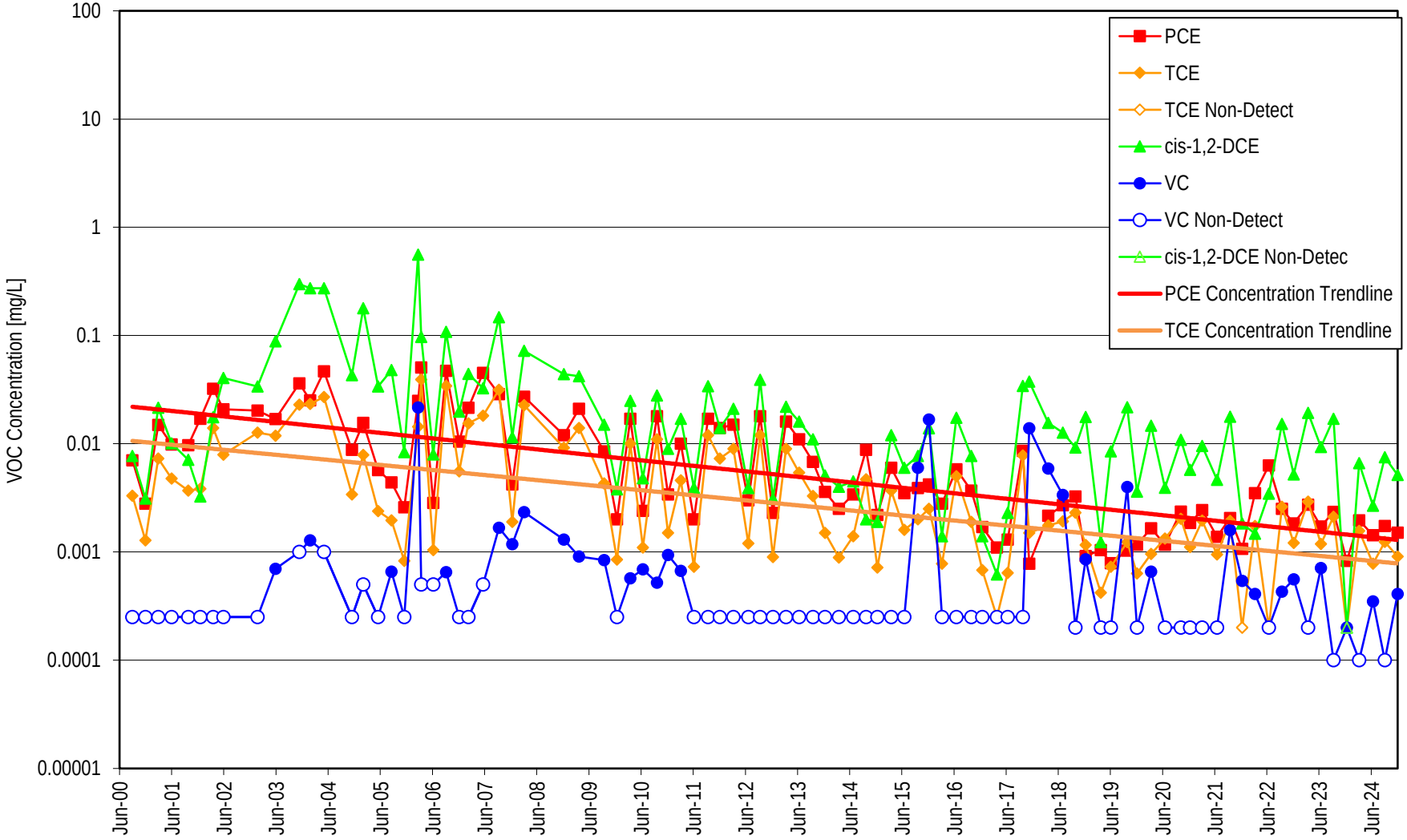


Note: Not detected values plotted at 1/2 the reporting limit.



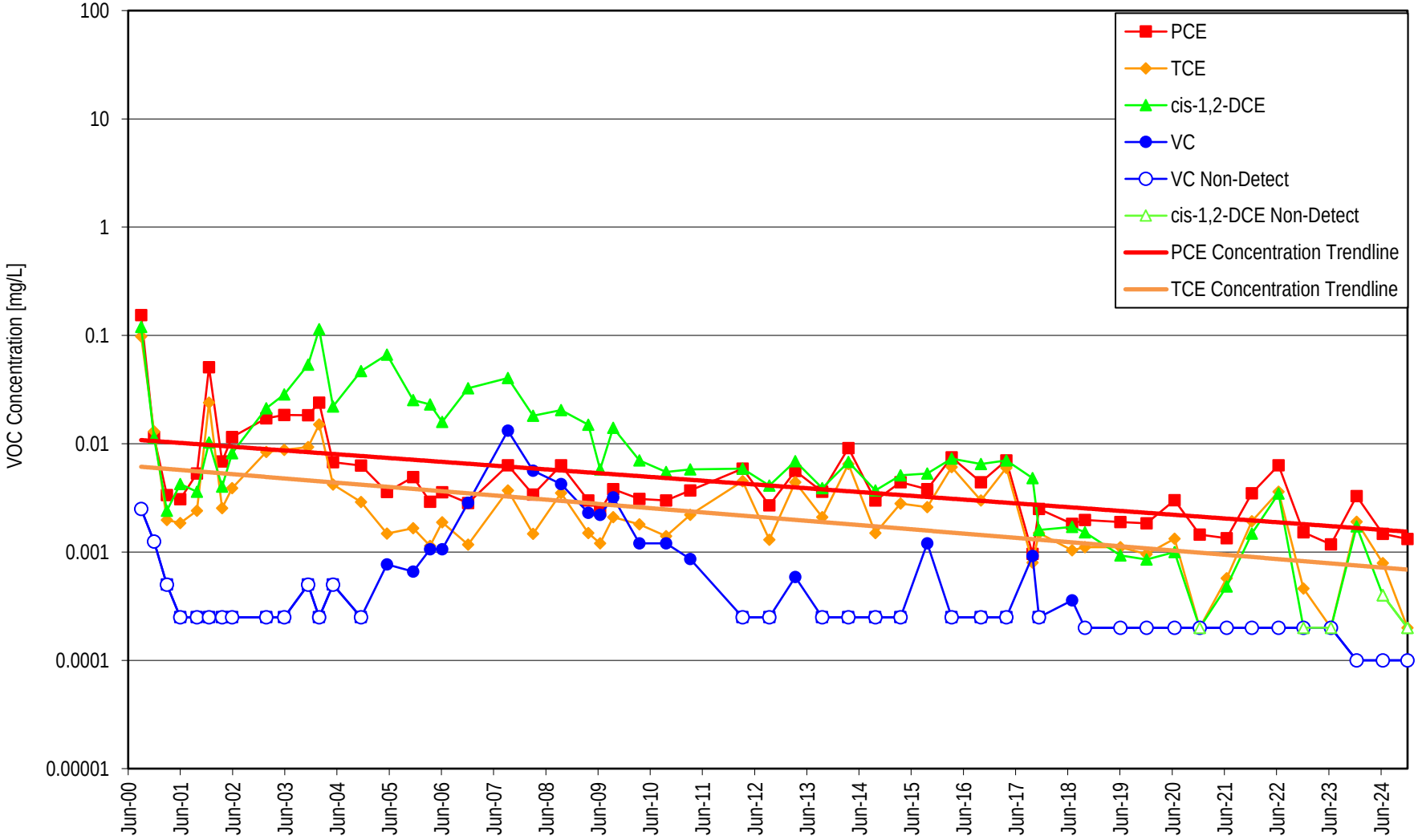
Note: Not detected values plotted at 1/2 the reporting limit.

VOC Concentrations in MGMS3-60



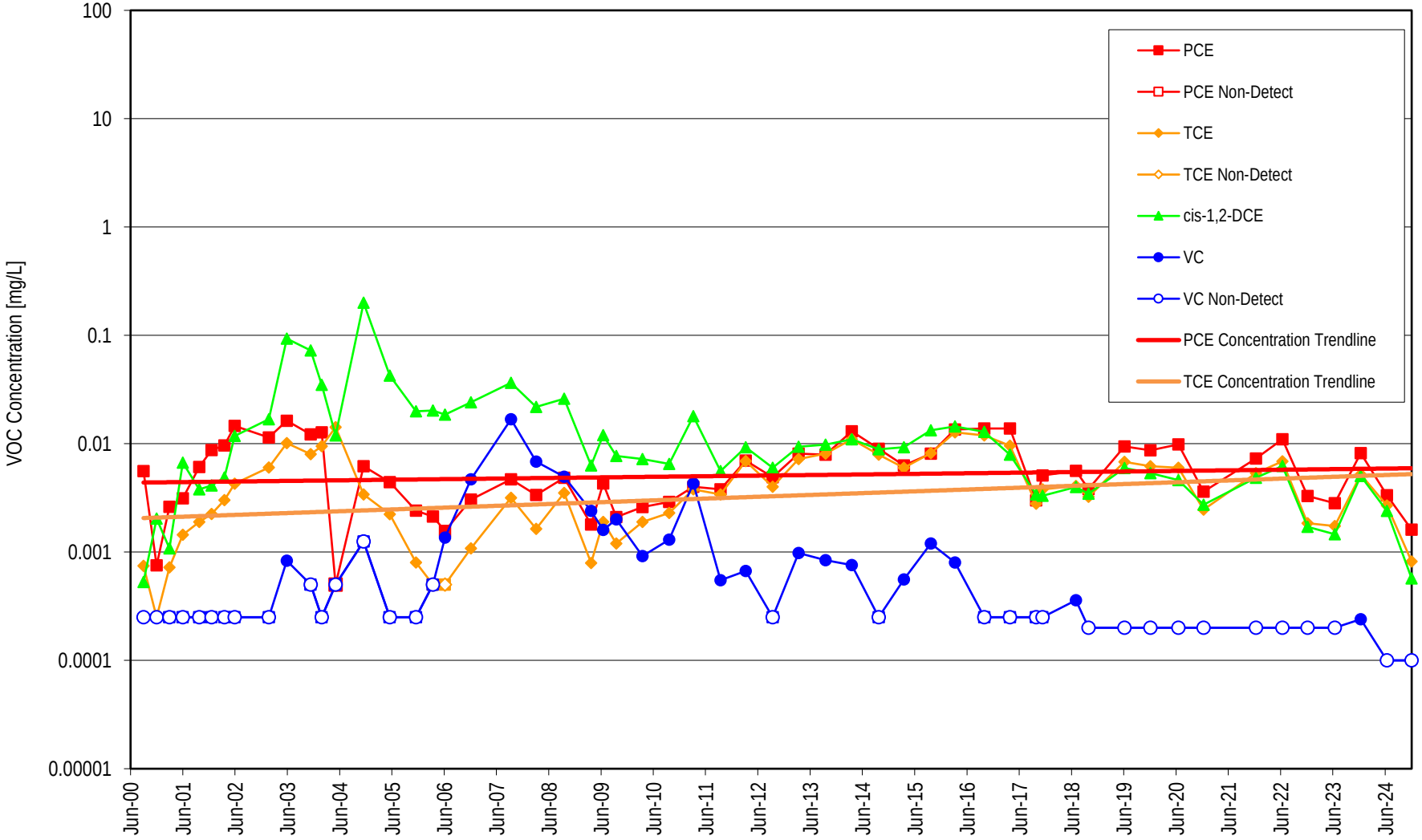
Note: Not detected values plotted at 1/2 the reporting limit.

VOC Concentrations in MGMS3-101



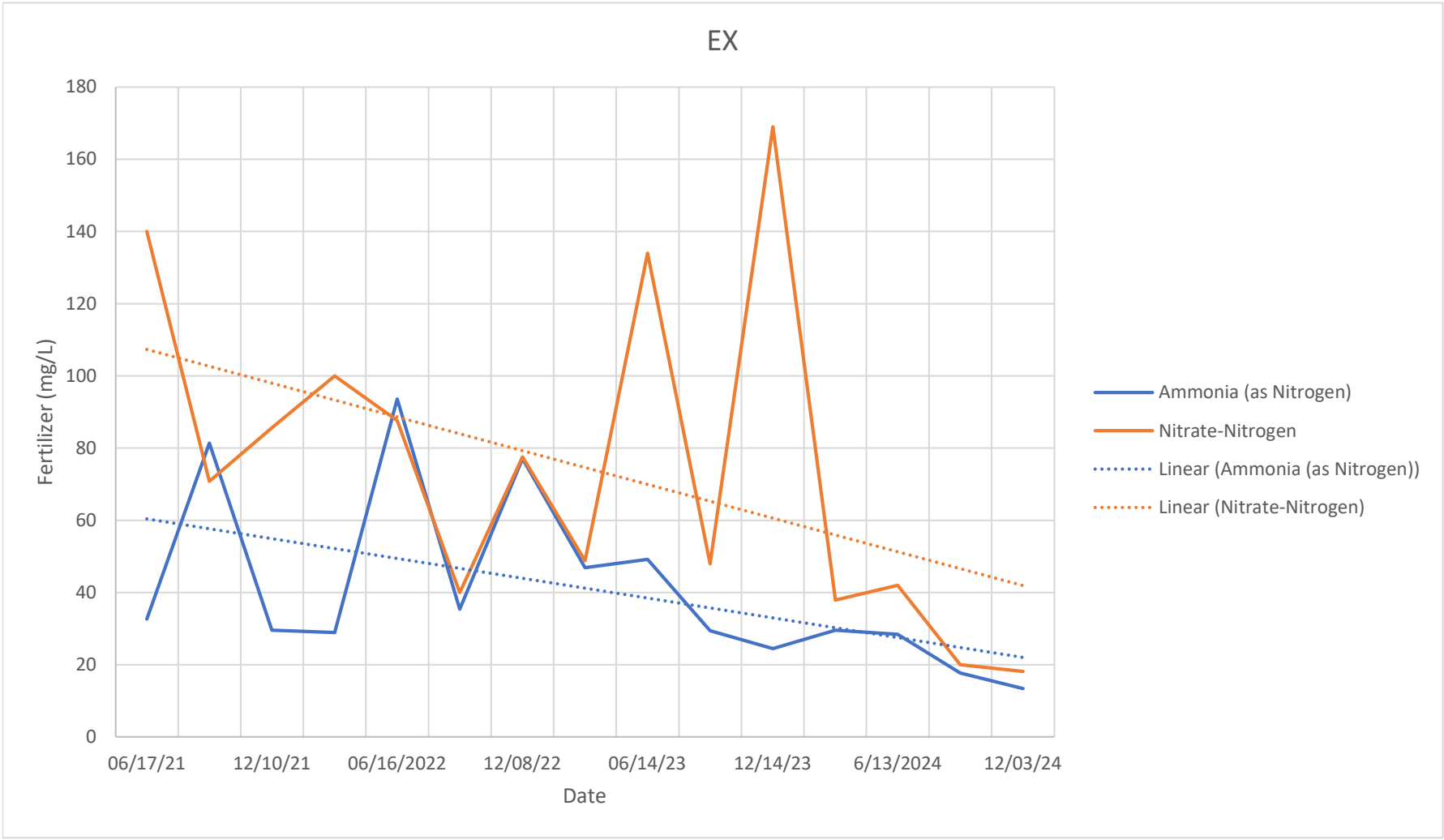
Note: Not detected values plotted at 1/2 the reporting limit.

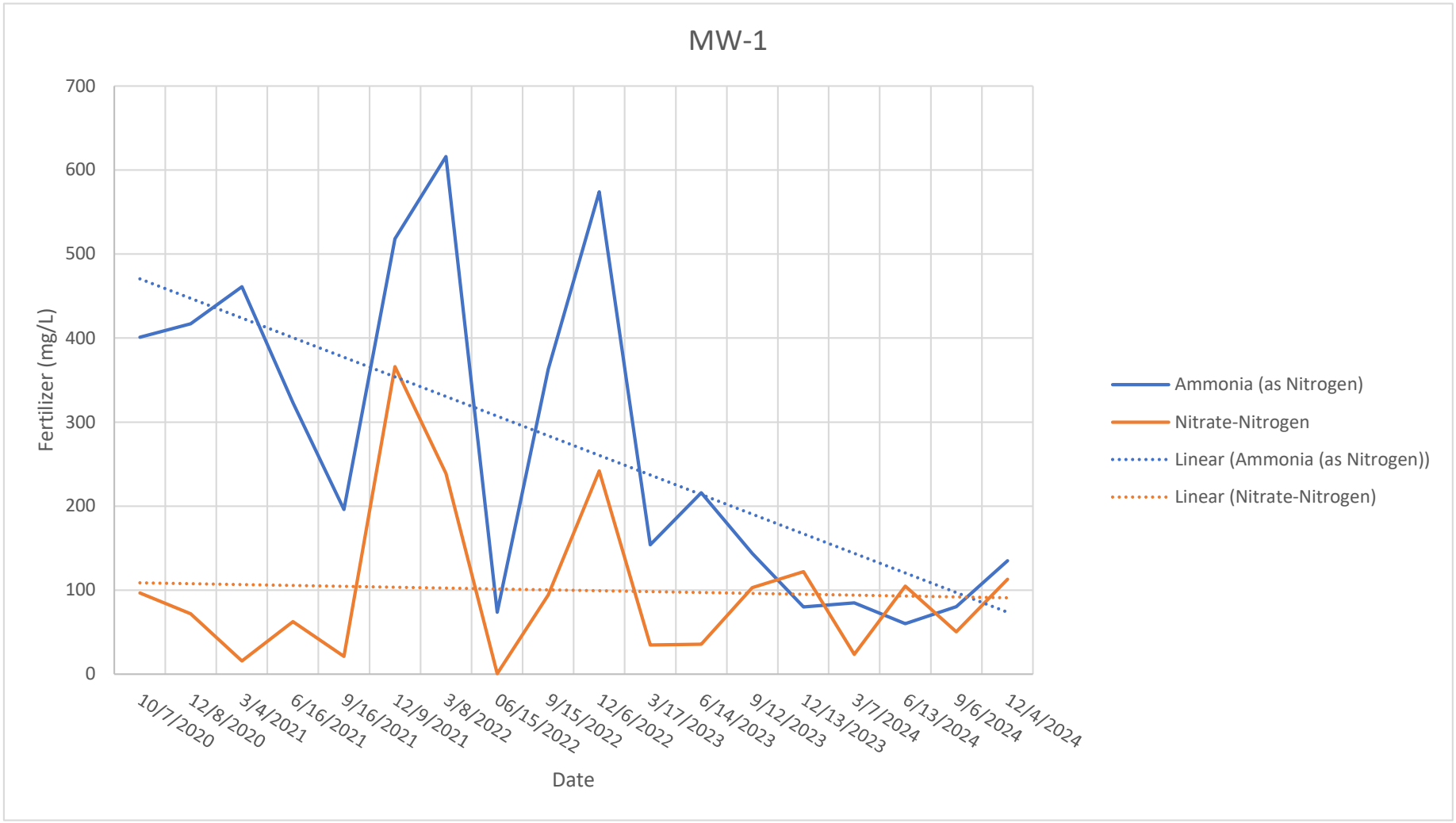
VOC Concentrations in MGMS3-132

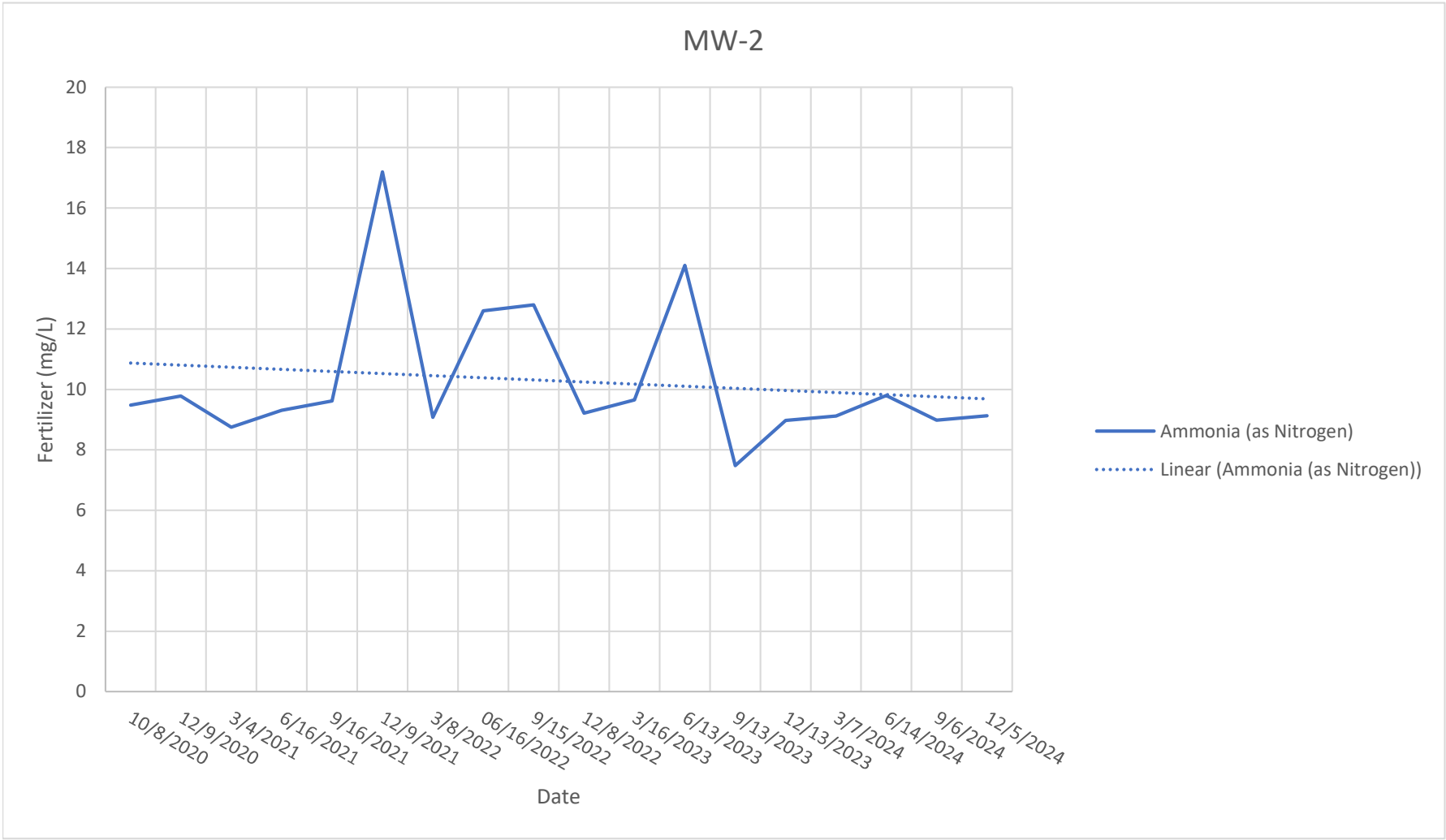


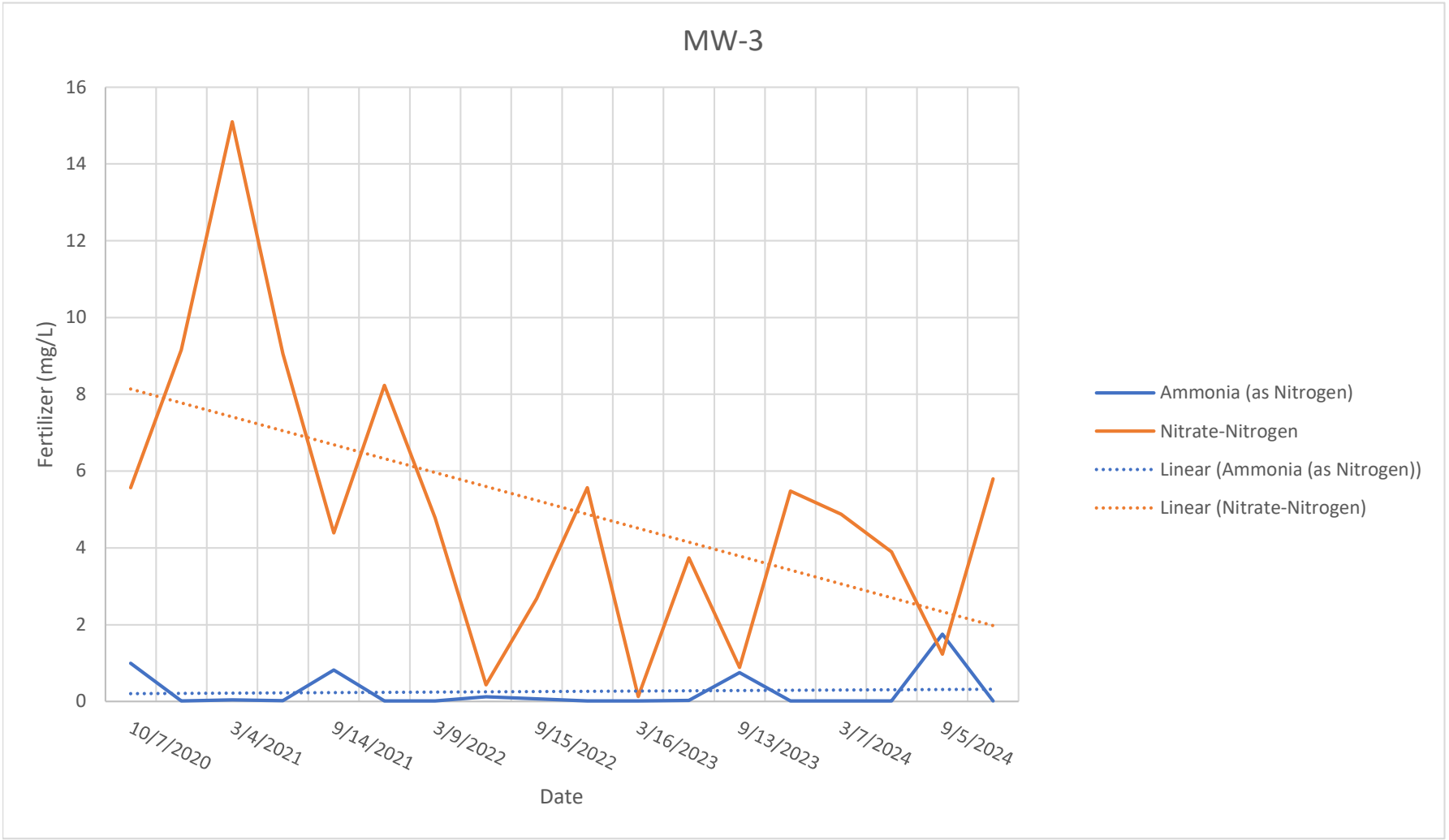
Note: Not detected values plotted at 1/2 the reporting limit.

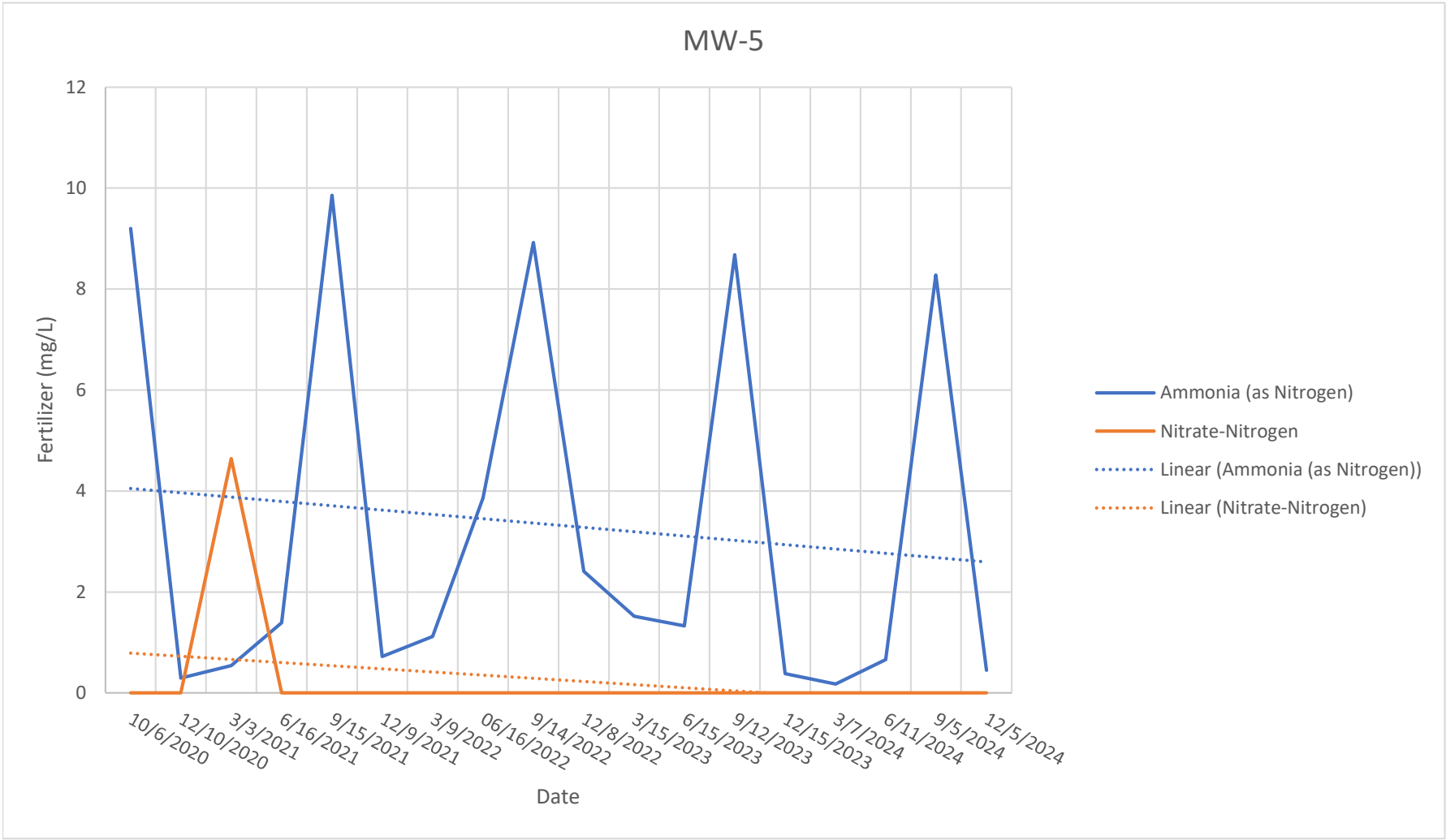
APPENDIX E
Nitrate and Ammonia Trend Plots

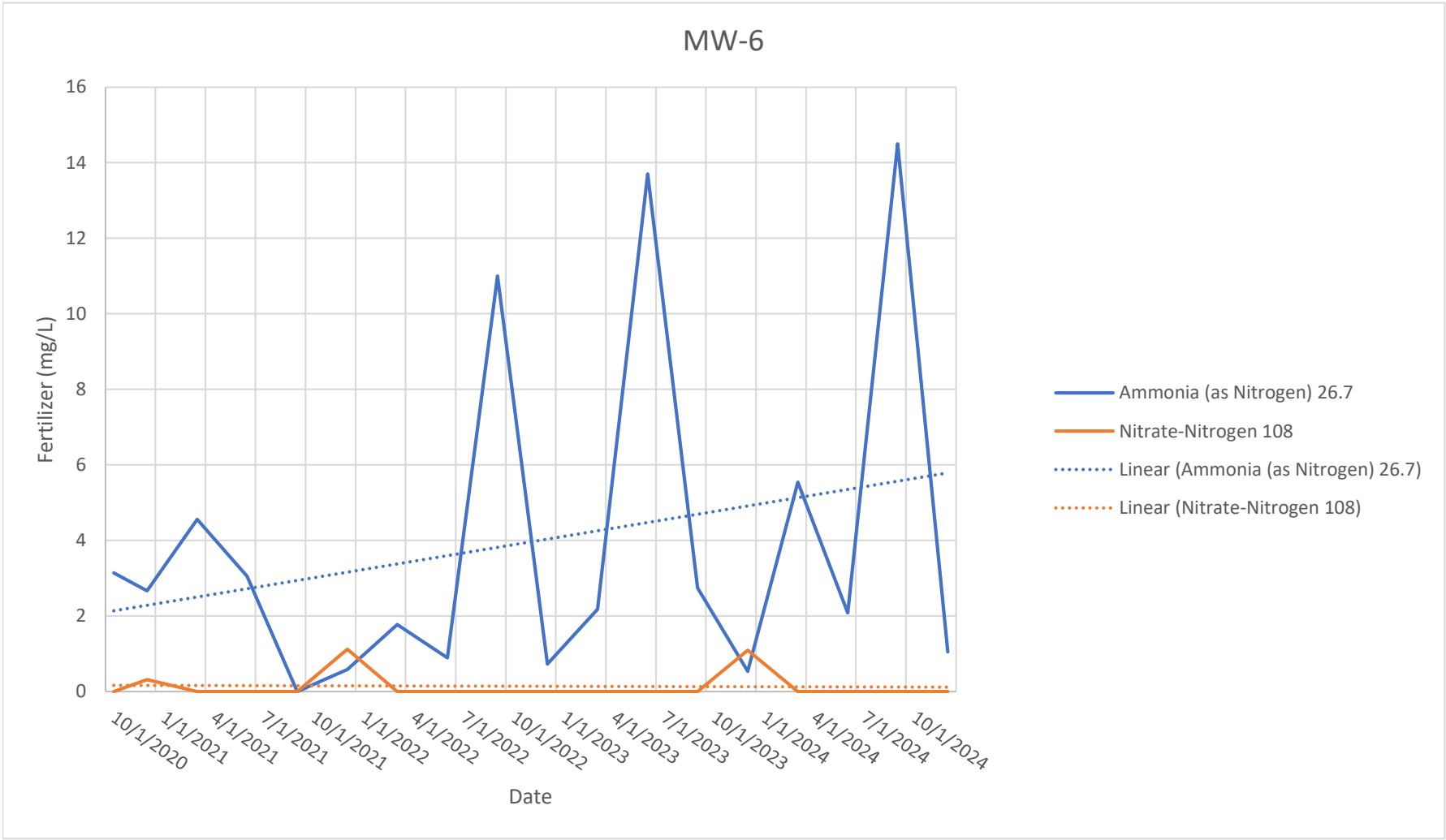

EX
Fertilizer (mg/L)
180
160
140
120
100
80
60
40
20
0
06/17/21
12/10/21
06/16/2022
12/08/22
06/14/23
12/14/23
6/13/2024
12/03/24
Date
Ammonia (as Nitrogen)
Nitrate-Nitrogen
Linear (Ammonia (as Nitrogen))
Linear (Nitrate-Nitrogen)

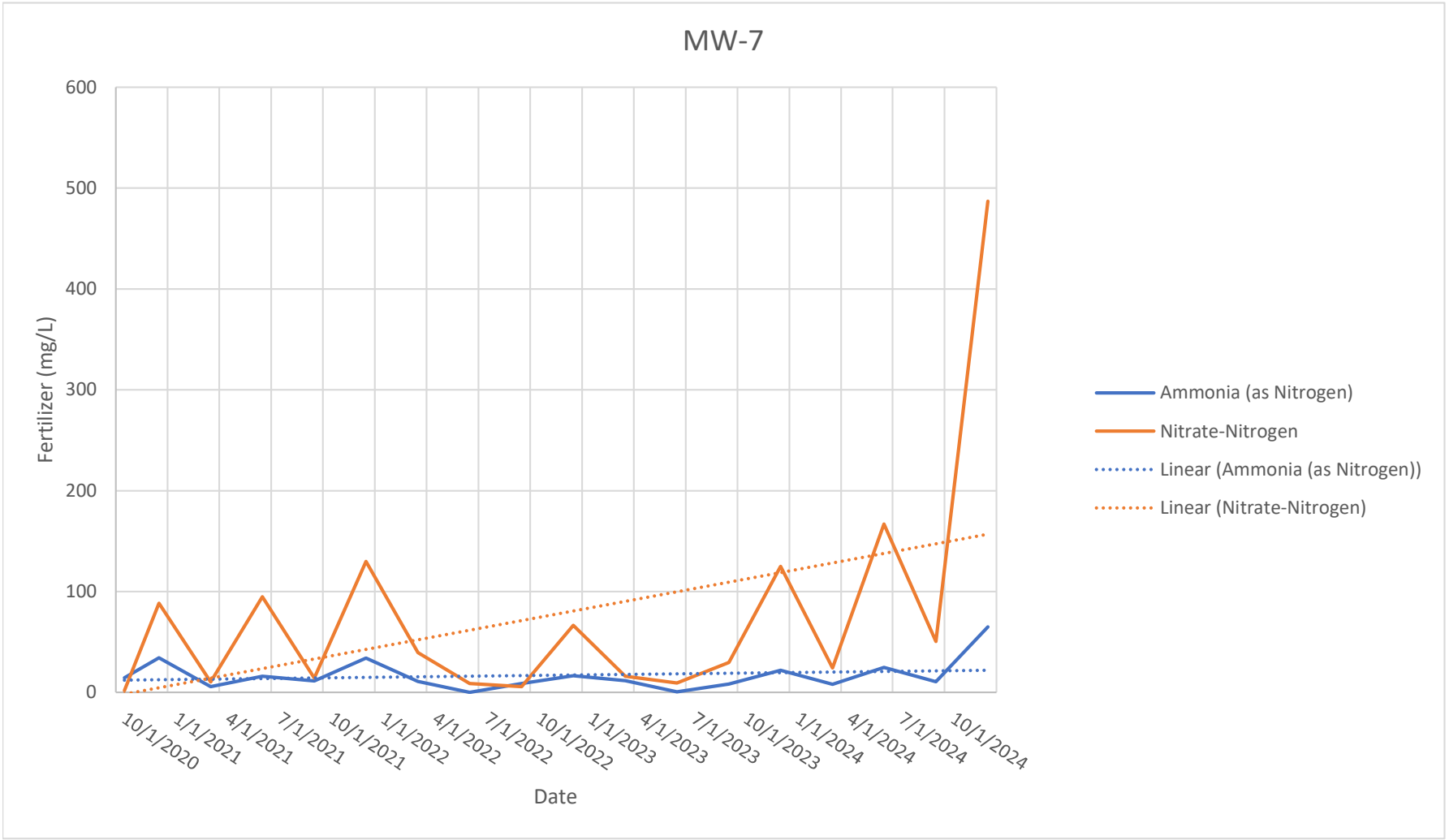

MW-1
Fertilizer (mg/L)
700
600
500
400
300
200
100
0
10/7/2020
12/8/2020
3/4/2021
6/16/2021
9/16/2021
12/9/2021
3/8/2022
06/15/2022
9/15/2022
12/6/2022
3/17/2023
6/14/2023
9/12/2023
12/13/2023
3/7/2024
6/13/2024
9/6/2024
12/4/2024
Date
Ammonia (as Nitrogen)
Nitrate-Nitrogen
Linear (Ammonia (as Nitrogen))
Linear (Nitrate-Nitrogen)

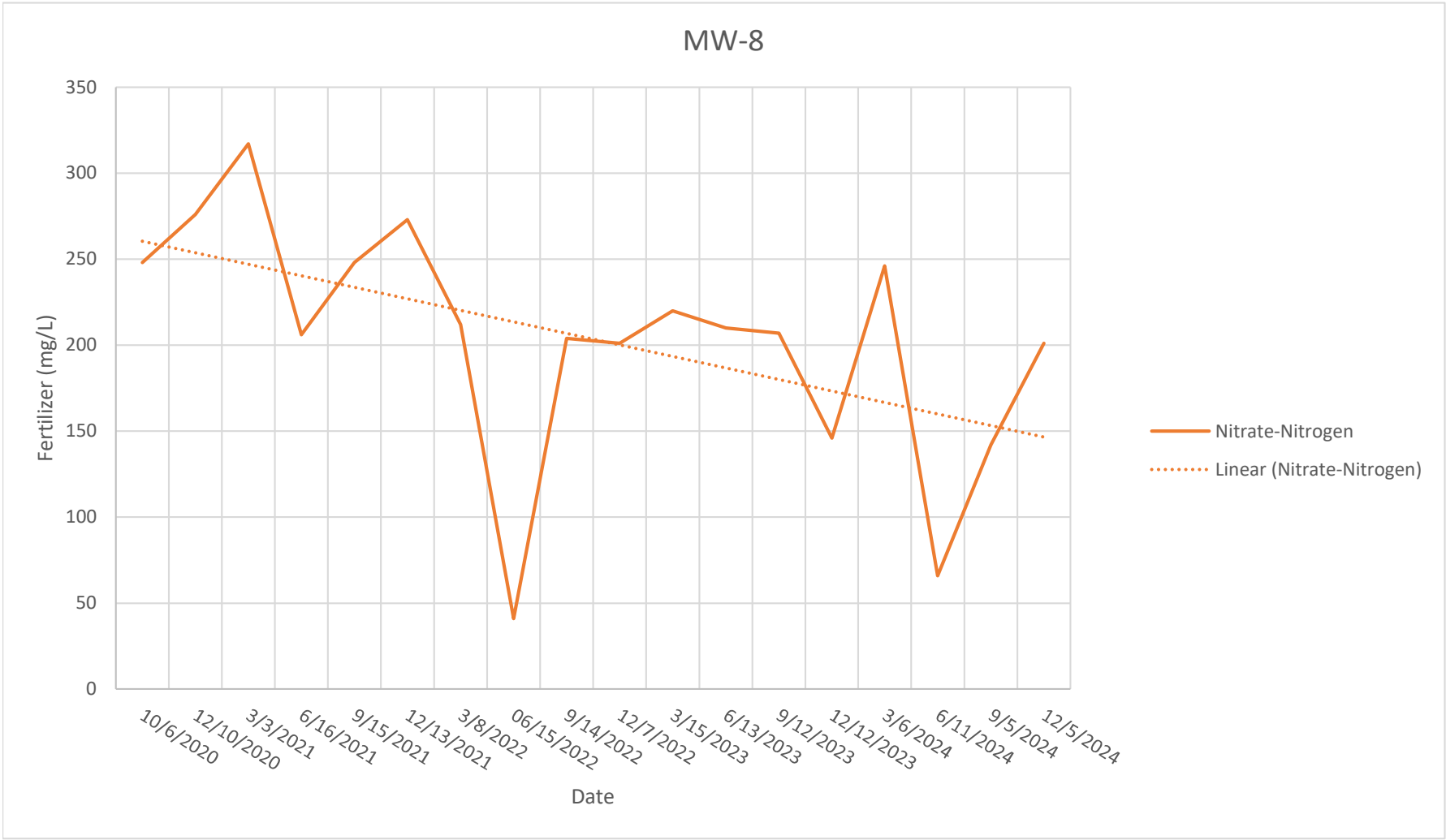

MW-2
Fertilizer (mg/L)
20
18
16
14
12
10
8
6
4
2
0
10/8/2020
12/9/2020
3/4/2021
6/16/2021
9/16/2021
12/9/2021
3/8/2022
06/16/2022
9/15/2022
12/8/2022
3/16/2023
6/13/2023
9/13/2023
12/13/2023
3/7/2024
6/14/2024
9/6/2024
12/5/2024
Date
Ammonia (as Nitrogen)
Linear (Ammonia (as Nitrogen))

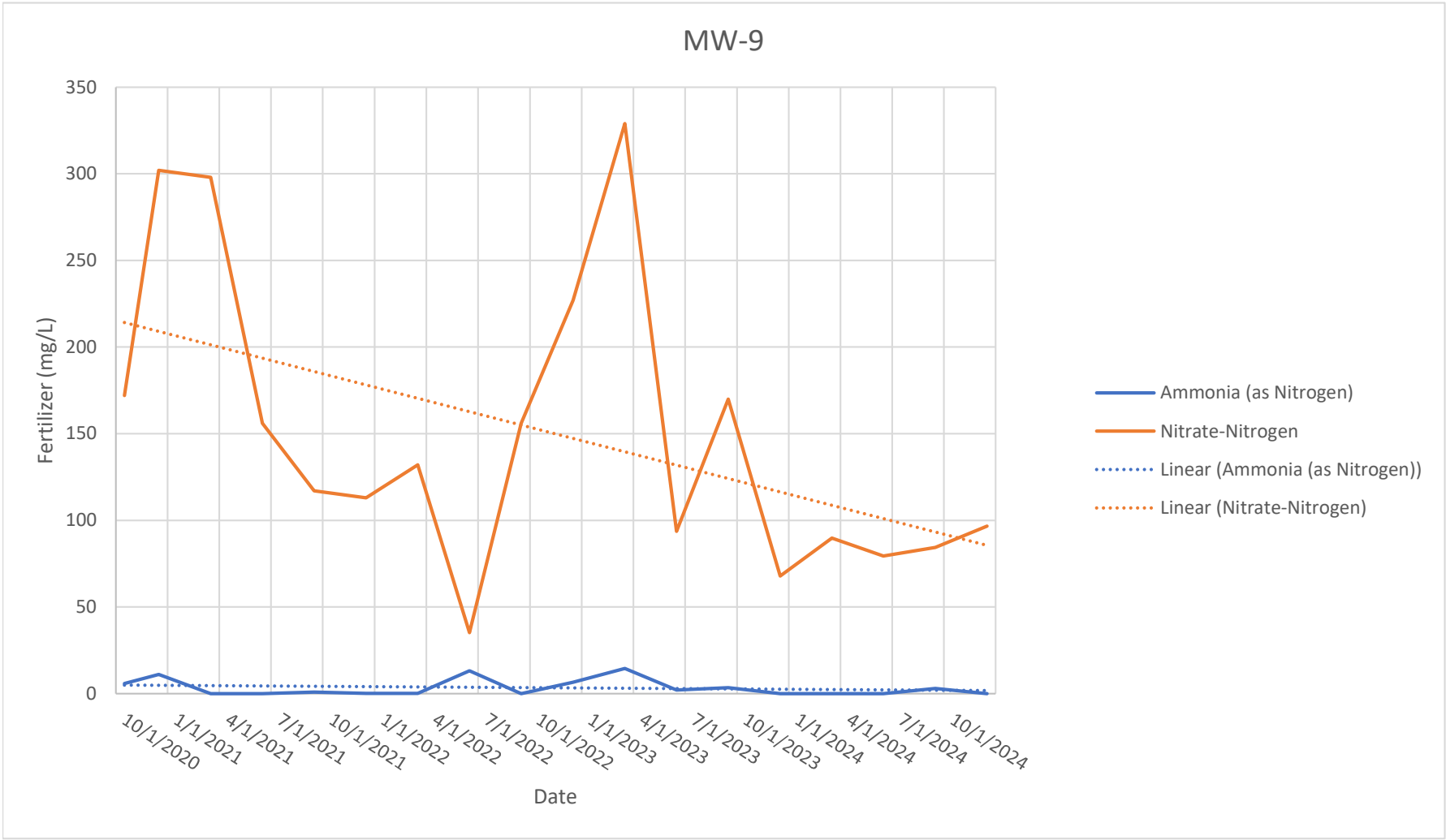

MW-3
Fertilizer (mg/L)
16
14
12
10
8
6
4
2
0
10/7/2020
3/4/2021
9/14/2021
3/9/2022
9/15/2022
3/16/2023
9/13/2023
3/7/2024
9/5/2024
Date
Ammonia (as Nitrogen)
Nitrate-Nitrogen
Linear (Ammonia (as Nitrogen))
Linear (Nitrate-Nitrogen)

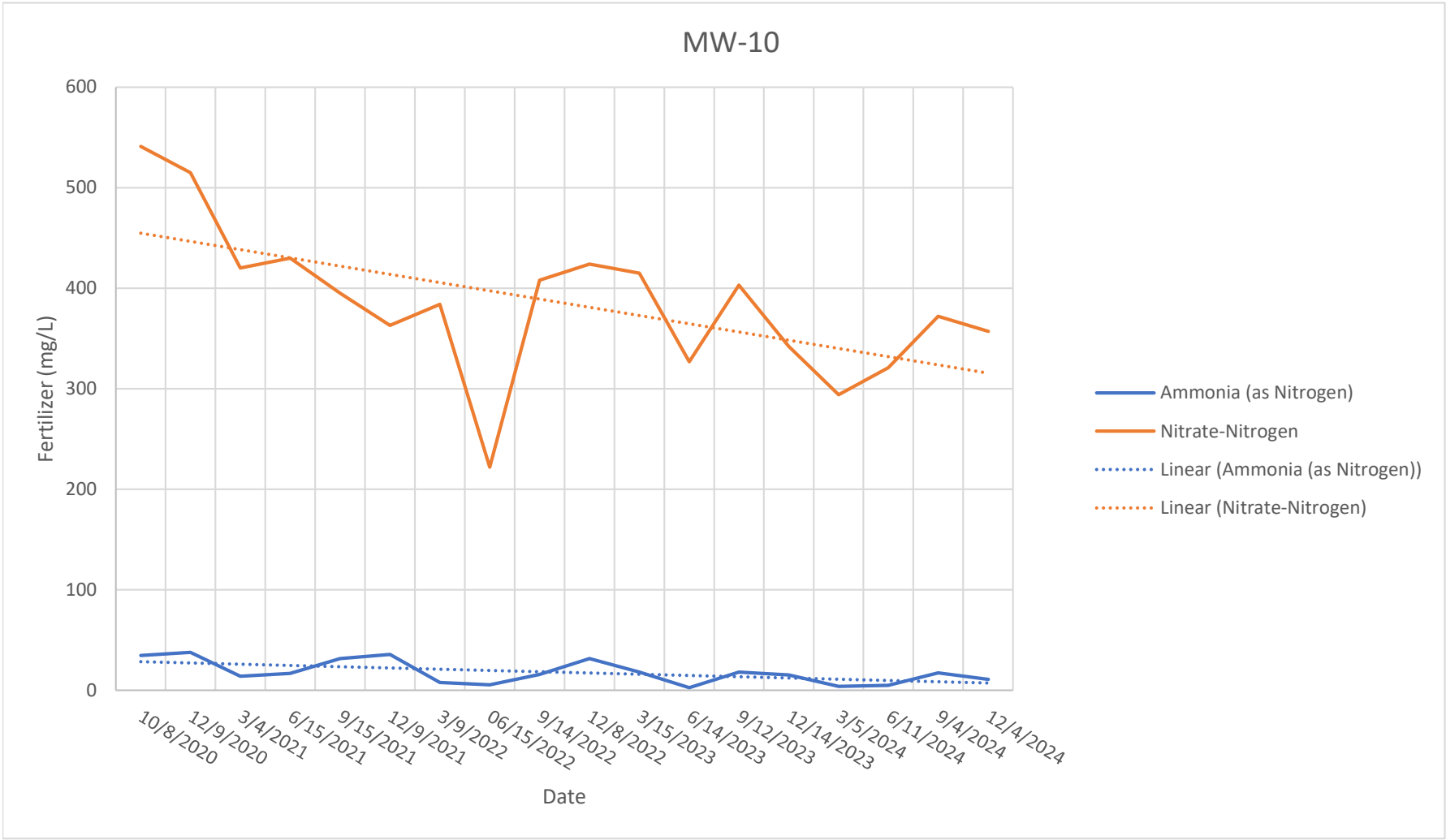

MW-5
Fertilizer (mg/L)
12
10
8
6
4
2
0
10/6/2020
12/10/2020
3/3/2021
6/16/2021
9/15/2021
12/9/2021
3/9/2022
06/16/2022
9/14/2022
12/8/2022
3/15/2023
6/15/2023
9/12/2023
12/15/2023
3/7/2024
6/11/2024
9/5/2024
12/5/2024
Date
Ammonia (as Nitrogen)
Nitrate-Nitrogen
Linear (Ammonia (as Nitrogen))
Linear (Nitrate-Nitrogen)

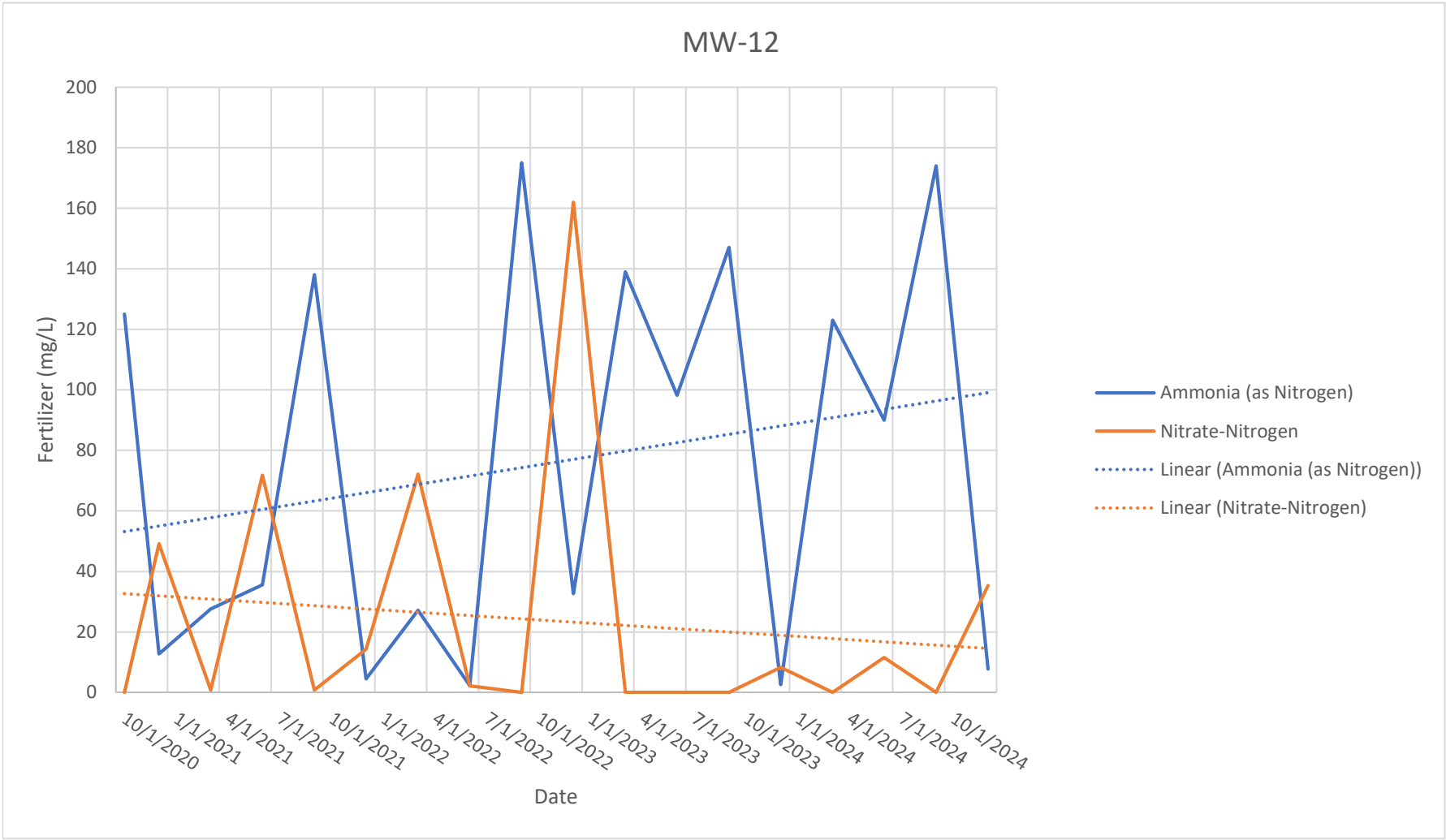

MW-6
Fertilizer (mg/L)
16
14
12
10
8
6
4
2
0
10/1/2020
1/1/2021
4/1/2021
7/1/2021
10/1/2021
1/1/2022
4/1/2022
7/1/2022
10/1/2022
1/1/2023
4/1/2023
7/1/2023
10/1/2023
1/1/2024
4/1/2024
7/1/2024
10/1/2024
Date
Ammonia (as Nitrogen) 26.7
Nitrate-Nitrogen 108
Linear (Ammonia (as Nitrogen) 26.7)
Linear (Nitrate-Nitrogen 108)

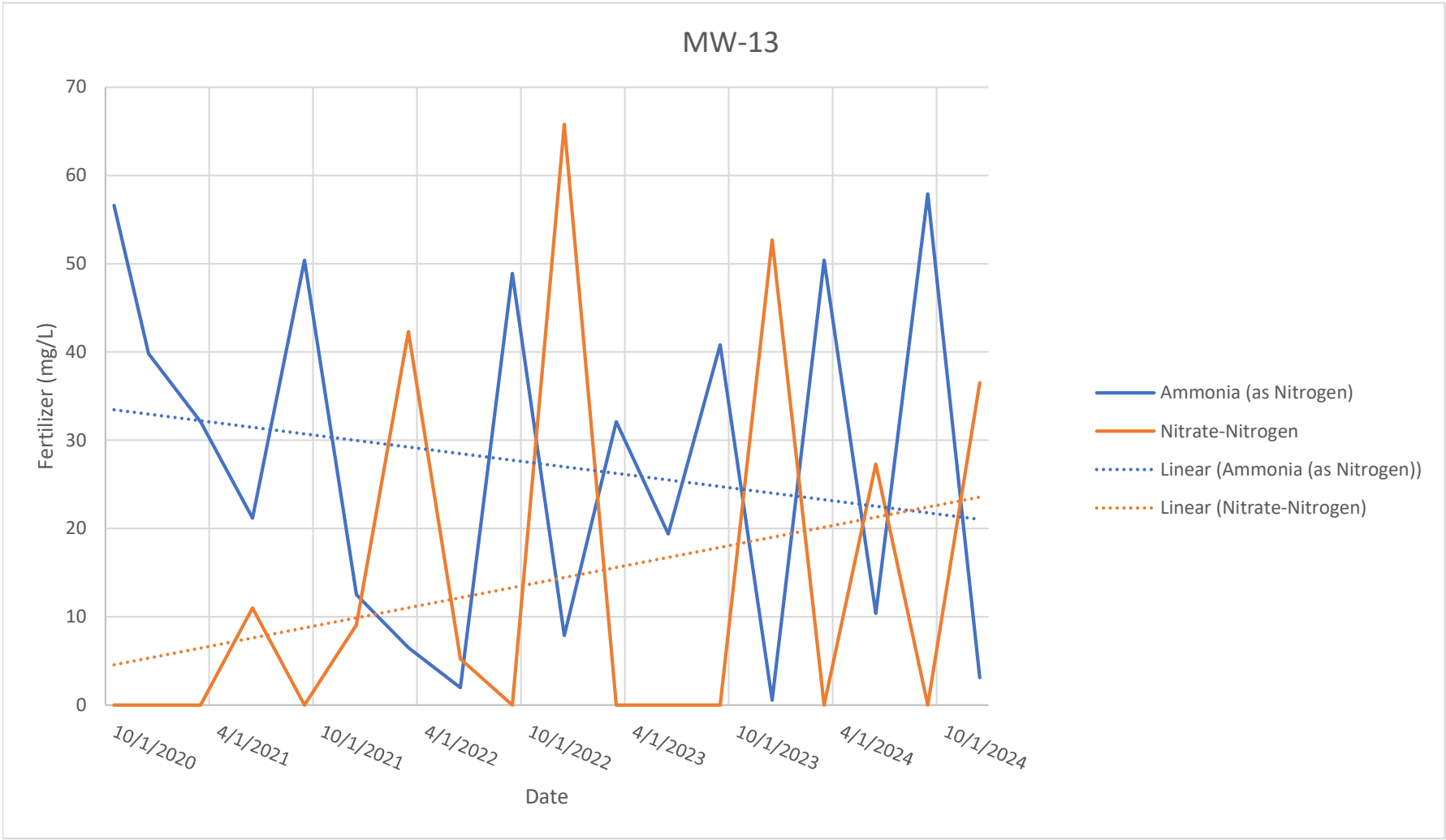

MW-7
600
500
400
300
200
100
0
Fertilizer (mg/L)
10/1/2020
1/1/2021
4/1/2021
7/1/2021
10/1/2021
1/1/2022
4/1/2022
7/1/2022
10/1/2022
1/1/2023
4/1/2023
7/1/2023
10/1/2023
1/1/2024
4/1/2024
7/1/2024
10/1/2024
Date
Ammonia (as Nitrogen)
Nitrate-Nitrogen
Linear (Ammonia (as Nitrogen))
Linear (Nitrate-Nitrogen)

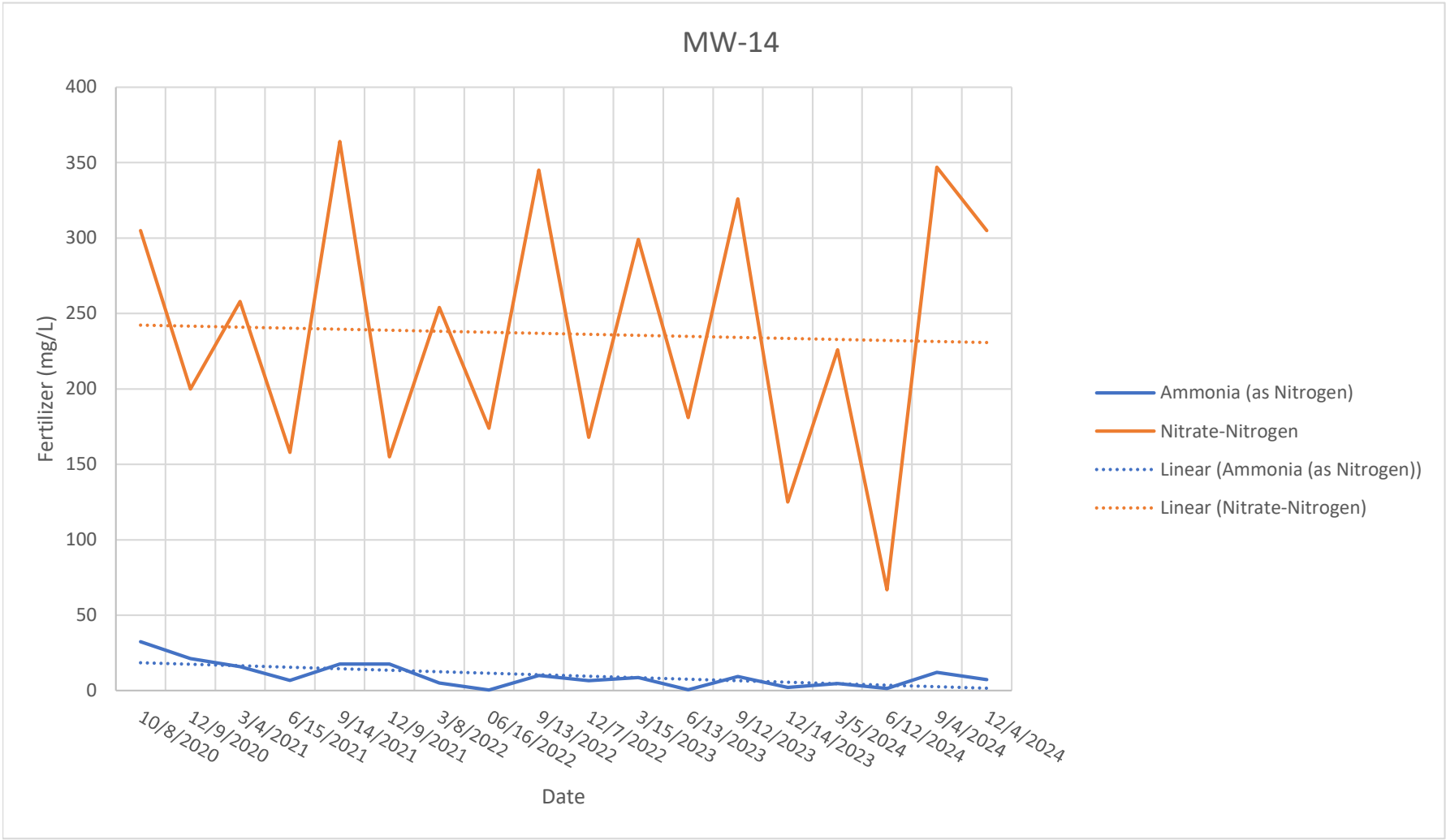

MW-8
Fertilizer (mg/L)
350
300
250
200
150
100
50
0
10/6/2020
12/10/2020
3/3/2021
6/16/2021
9/15/2021
12/13/2021
3/8/2022
06/15/2022
9/14/2022
12/7/2022
3/15/2023
6/13/2023
9/12/2023
12/12/2023
3/6/2024
6/11/2024
9/5/2024
12/5/2024
Date
Nitrate-Nitrogen
Linear (Nitrate-Nitrogen)

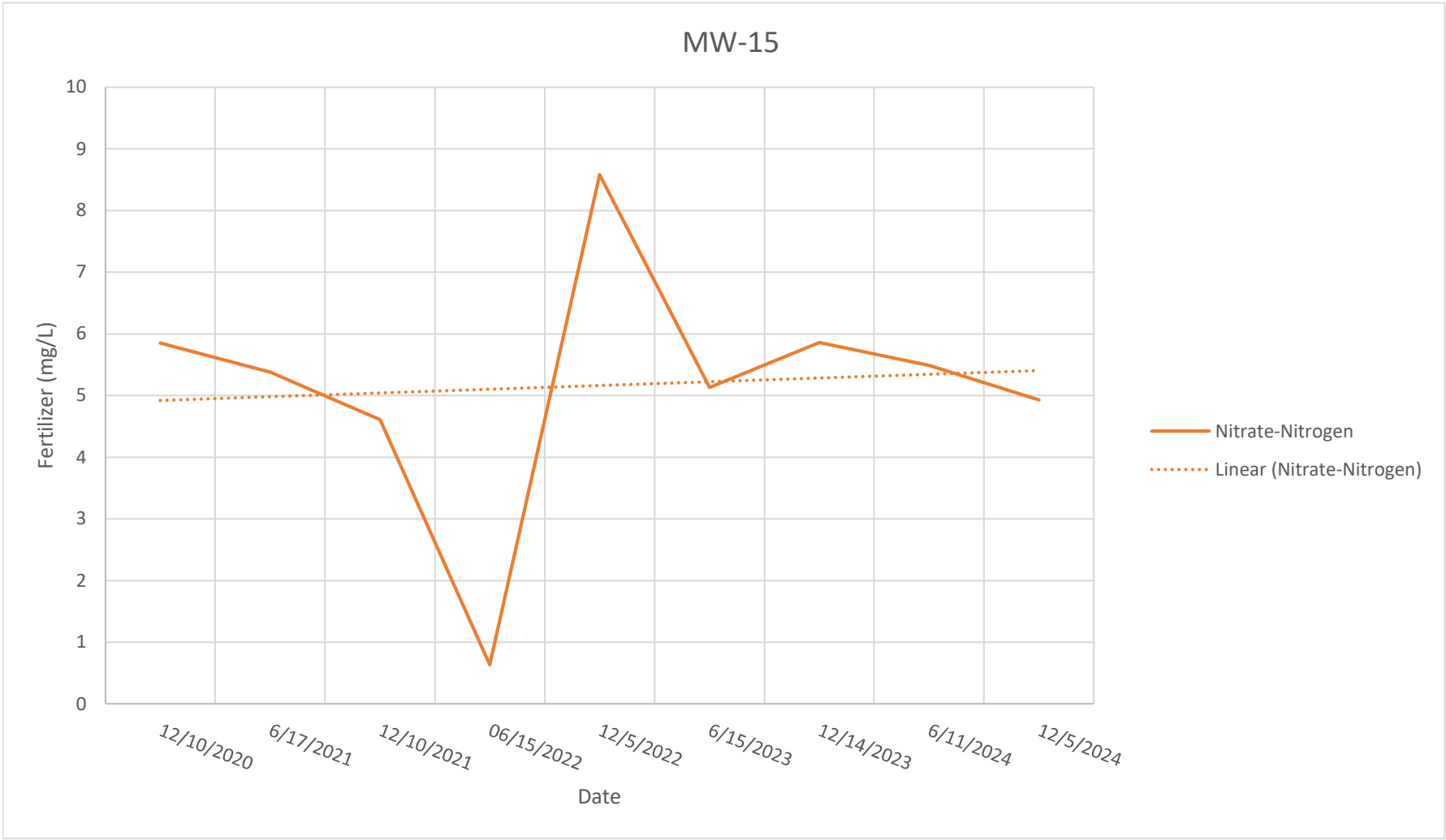

MW-9
Fertilizer (mg/L)
350
300
250
200
150
100
50
0
10/1/2020
1/1/2021
4/1/2021
7/1/2021
10/1/2021
1/1/2022
4/1/2022
7/1/2022
10/1/2022
1/1/2023
4/1/2023
7/1/2023
10/1/2023
1/1/2024
4/1/2024
7/1/2024
10/1/2024
Date
Ammonia (as Nitrogen)
Nitrate-Nitrogen
Linear (Ammonia (as Nitrogen))
Linear (Nitrate-Nitrogen)

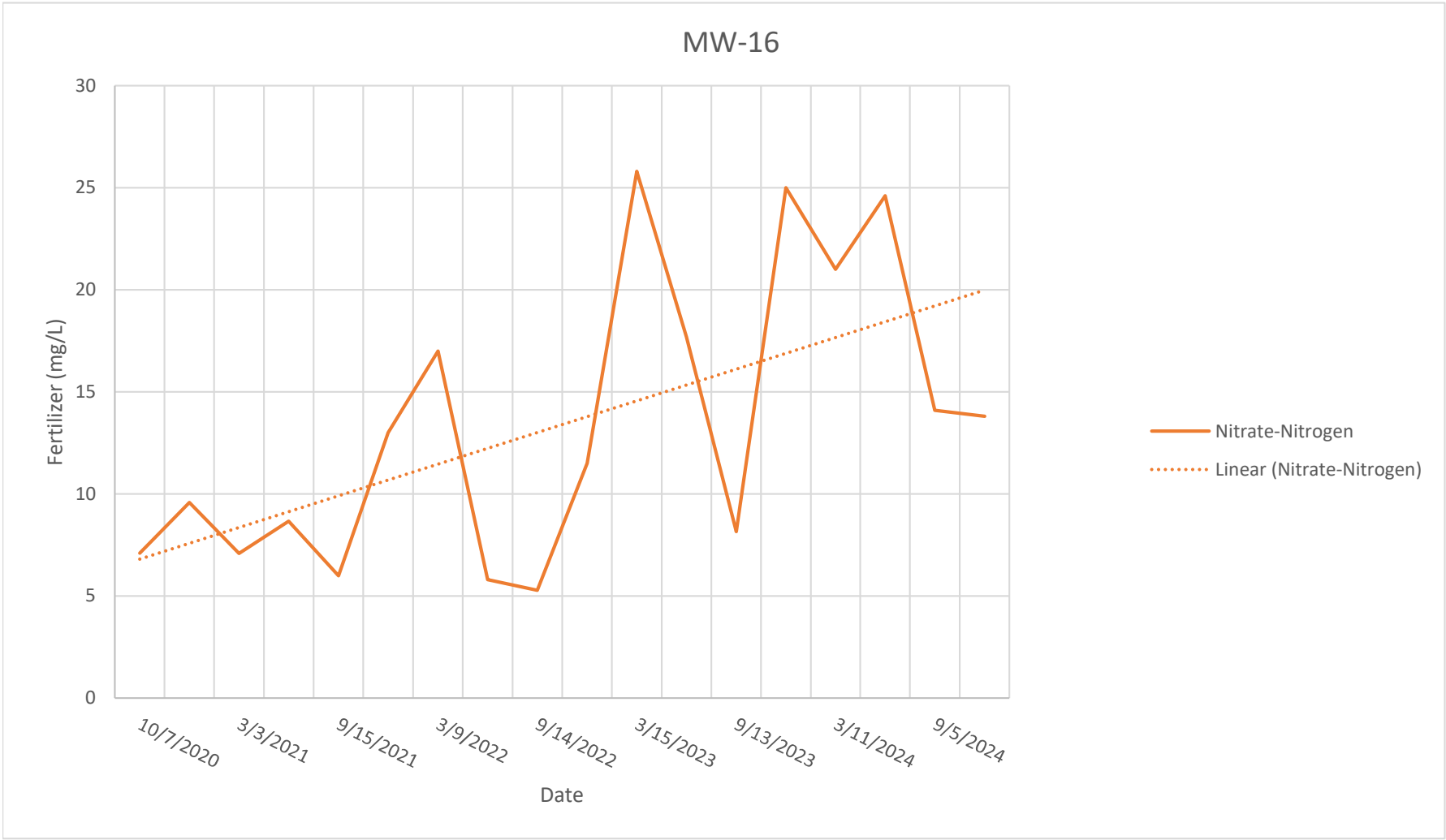

MW-10
600
500
400
300
200
100
0
Fertilizer (mg/L)
10/8/2020
12/9/2020
3/4/2021
6/15/2021
9/15/2021
12/9/2021
3/9/2022
06/15/2022
9/14/2022
12/8/2022
3/15/2023
6/14/2023
9/12/2023
12/14/2023
3/5/2024
6/11/2024
9/4/2024
12/4/2024
Date
Ammonia (as Nitrogen)
Nitrate-Nitrogen
Linear (Ammonia (as Nitrogen))
Linear (Nitrate-Nitrogen)

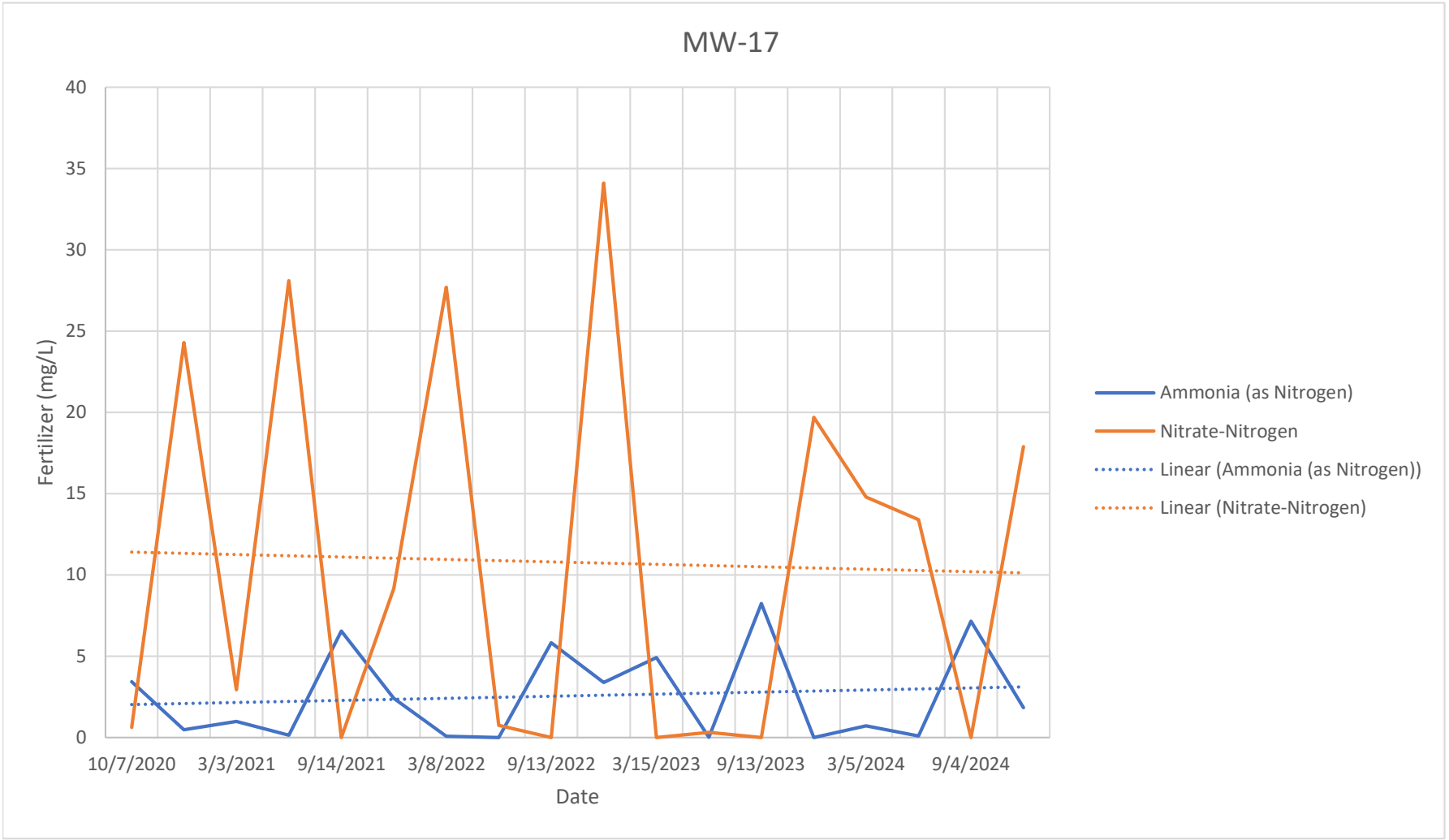

MW-12
Fertilizer (mg/L)
200
180
160
140
120
100
80
60
40
20
0
10/1/2020
1/1/2021
4/1/2021
7/1/2021
10/1/2021
1/1/2022
4/1/2022
7/1/2022
10/1/2022
1/1/2023
4/1/2023
7/1/2023
10/1/2023
1/1/2024
4/1/2024
7/1/2024
10/1/2024
Date
Ammonia (as Nitrogen)
Nitrate-Nitrogen
Linear (Ammonia (as Nitrogen))
Linear (Nitrate-Nitrogen)

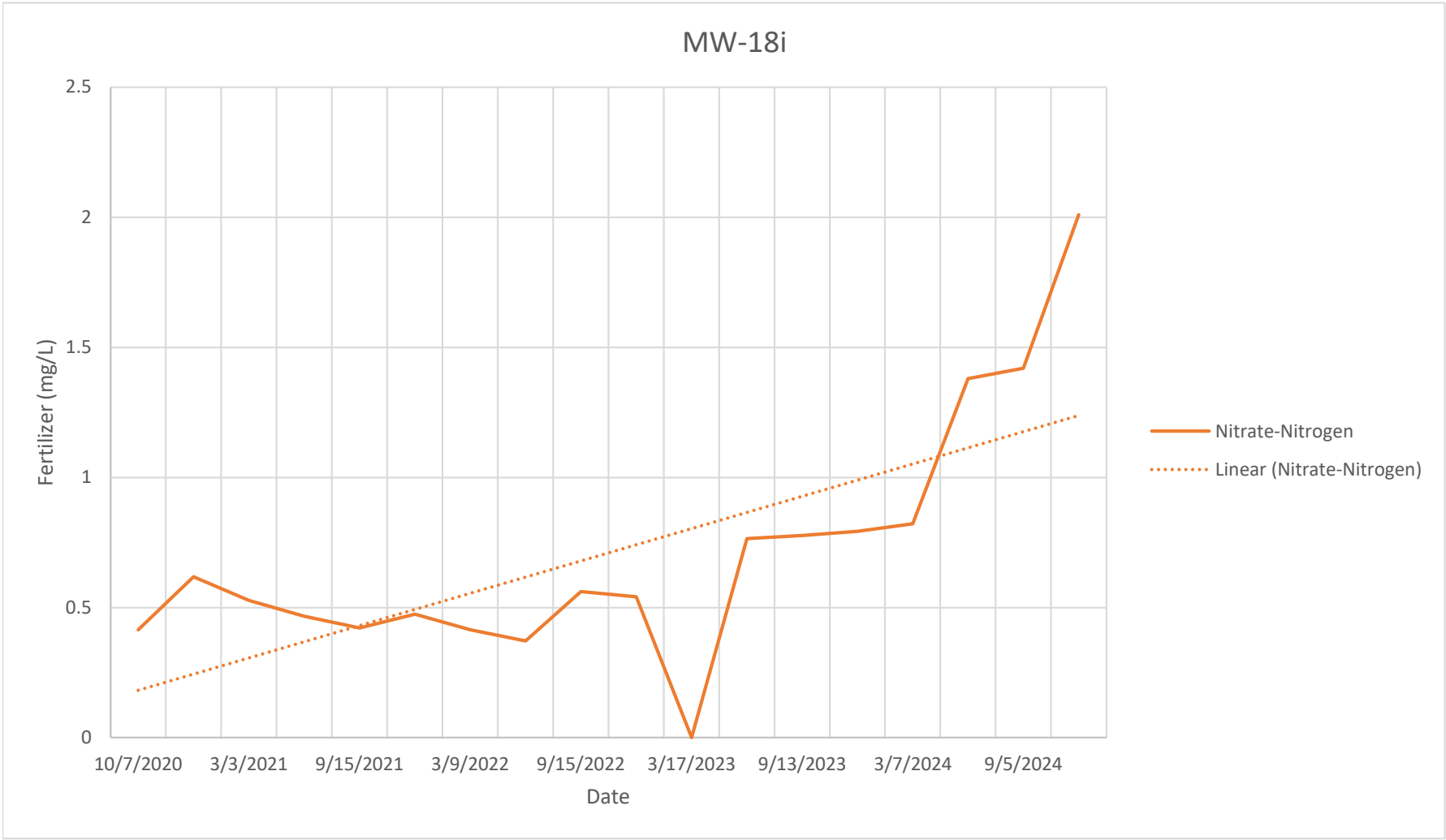

MW-13
Fertilizer (mg/L)
70
60
50
40
30
20
10
0
10/1/2020
4/1/2021
10/1/2021
4/1/2022
10/1/2022
4/1/2023
10/1/2023
4/1/2024
10/1/2024
Date
Ammonia (as Nitrogen)
Nitrate-Nitrogen
Linear (Ammonia (as Nitrogen))
Linear (Nitrate-Nitrogen)

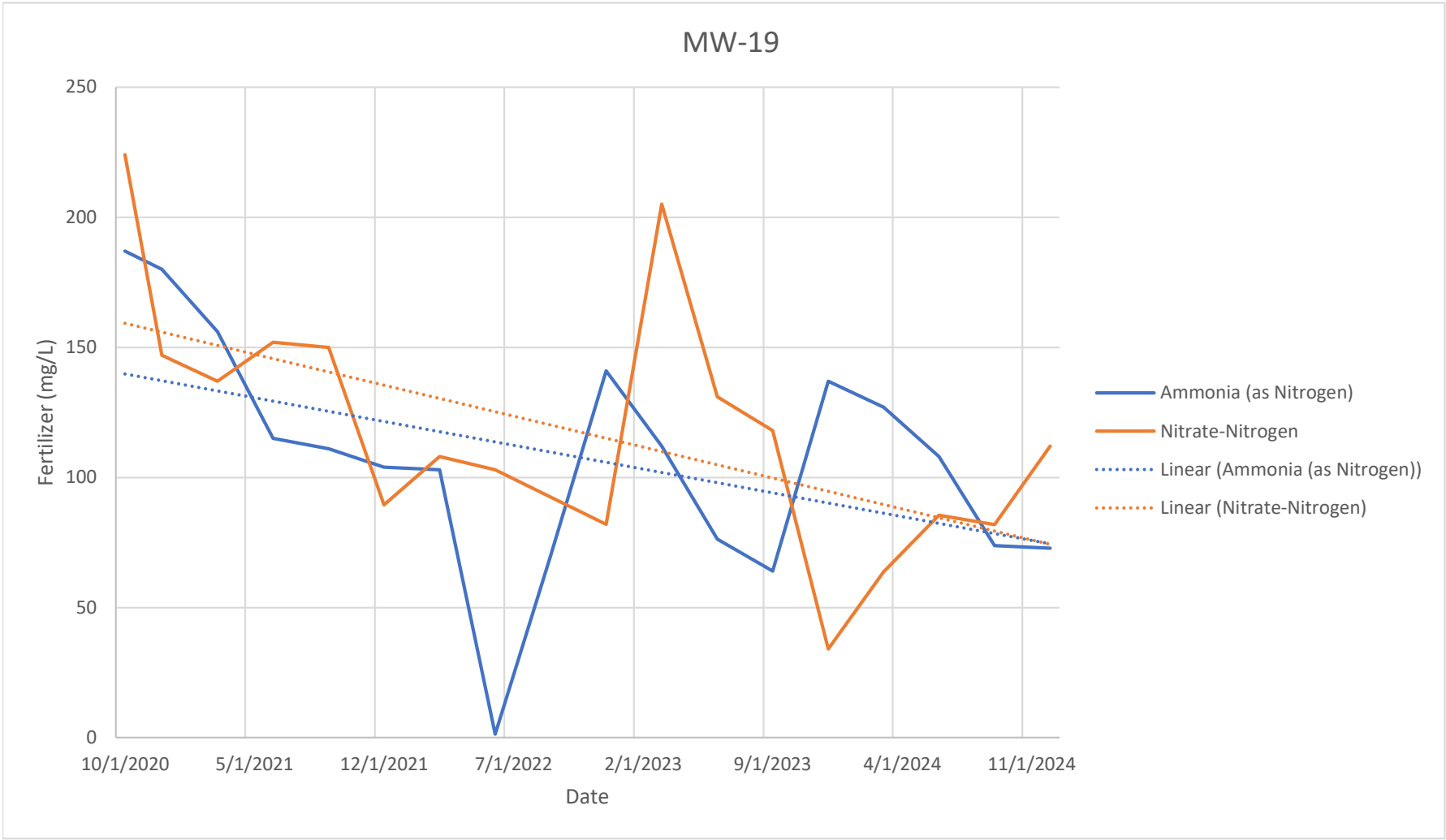

MW-14
Fertilizer (mg/L)
400
350
300
250
200
150
100
50
0
10/8/2020
12/9/2020
3/4/2021
6/15/2021
9/14/2021
12/9/2021
3/8/2022
06/16/2022
9/13/2022
12/7/2022
3/15/2023
6/13/2023
9/12/2023
12/14/2023
3/5/2024
6/12/2024
9/4/2024
12/4/2024
Date
Ammonia (as Nitrogen)
Nitrate-Nitrogen
Linear (Ammonia (as Nitrogen))
Linear (Nitrate-Nitrogen)

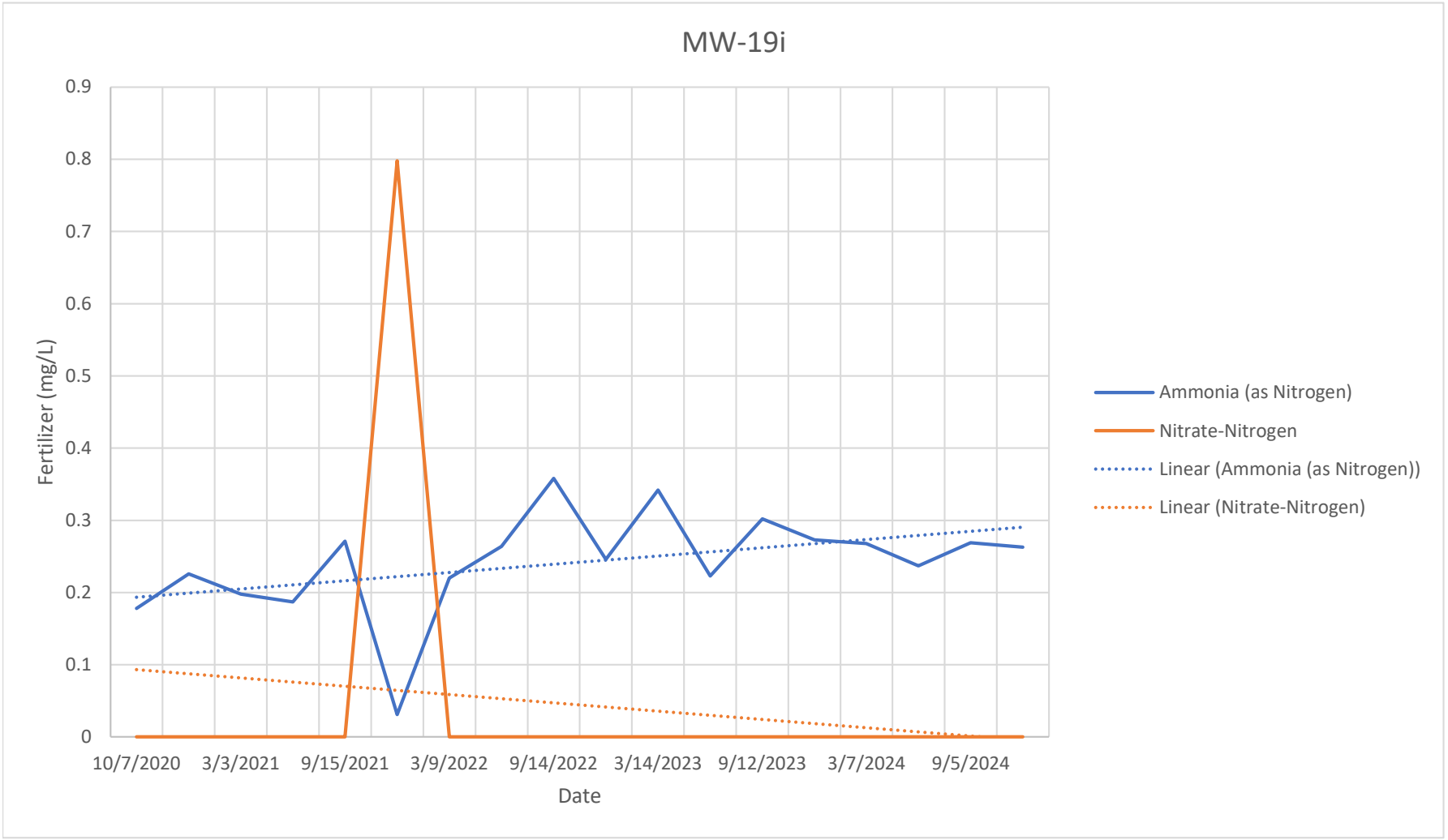

MW-15
Fertilizer (mg/L)
10
9
8
7
6
5
4
3
2
1
0
12/10/2020
6/17/2021
12/10/2021
06/15/2022
12/5/2022
6/15/2023
12/14/2023
6/11/2024
12/5/2024
Date
Nitrate-Nitrogen
Linear (Nitrate-Nitrogen)

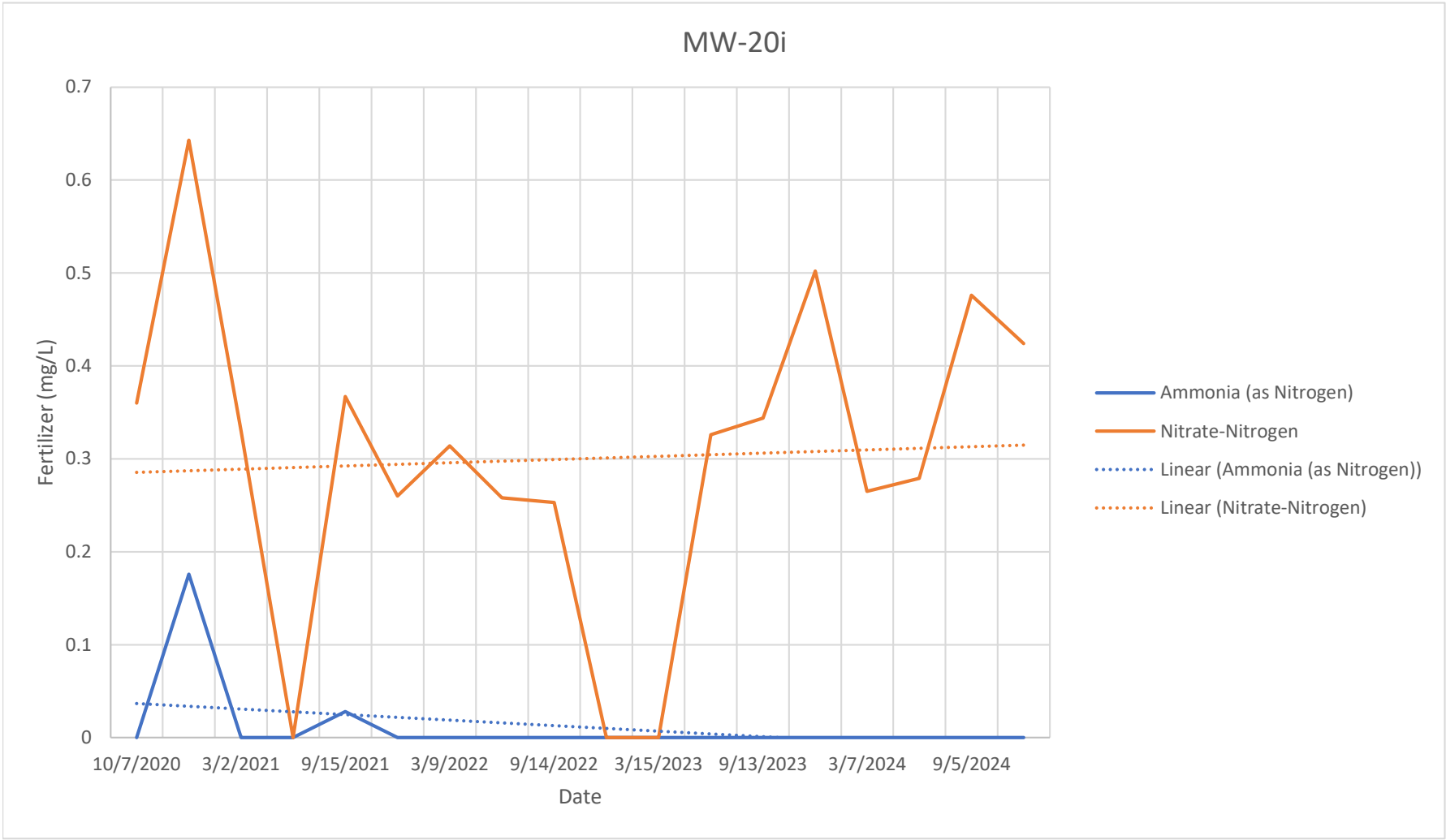

MW-16
30
25
20
15
10
5
0
Fertilizer (mg/L)
10/7/2020
3/3/2021
9/15/2021
3/9/2022
9/14/2022
3/15/2023
9/13/2023
3/11/2024
9/5/2024
Date
Nitrate-Nitrogen
Linear (Nitrate-Nitrogen)

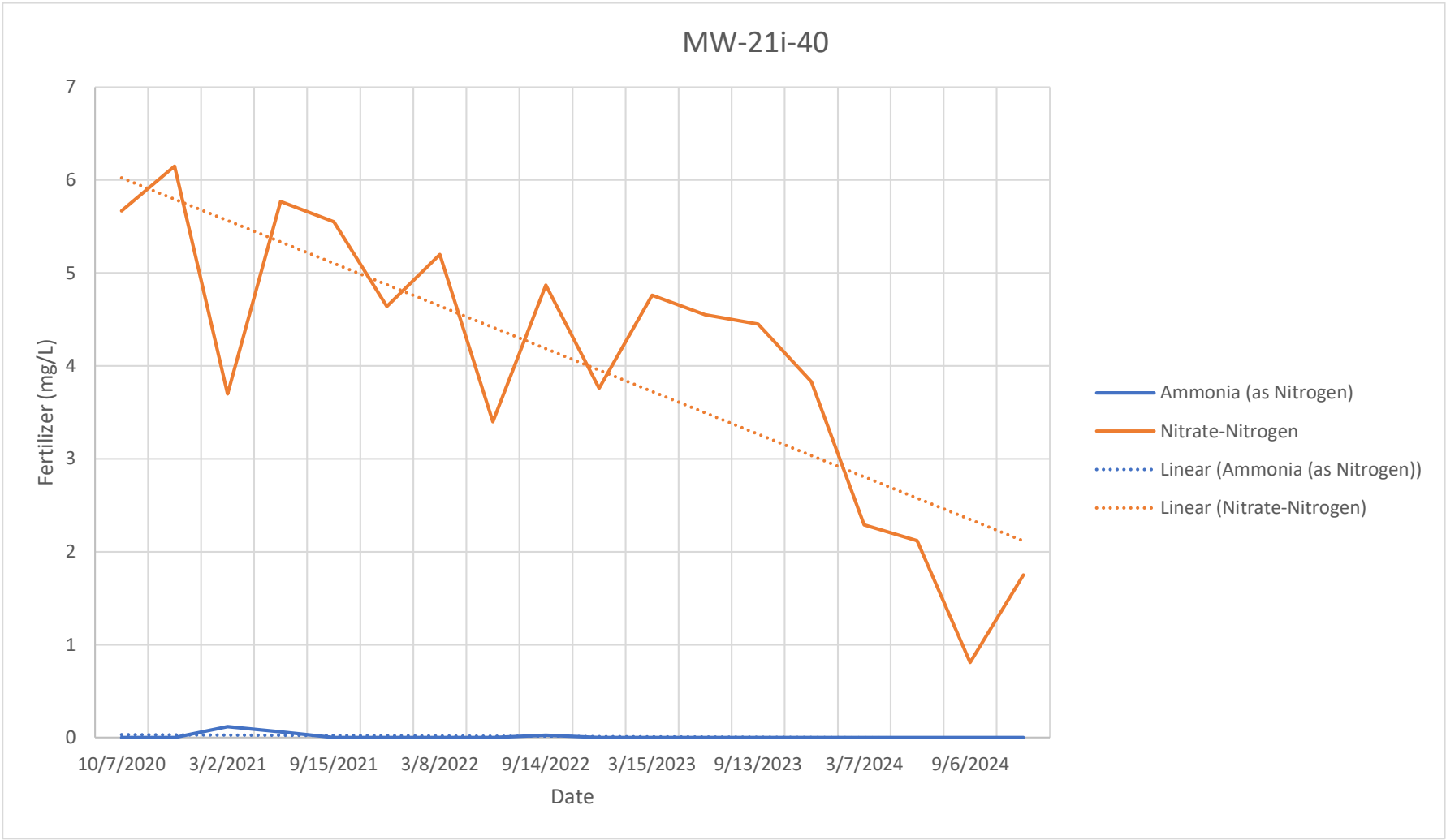

MW-17
Fertilizer (mg/L)
40
35
30
25
20
15
10
5
0
10/7/2020
3/3/2021
9/14/2021
3/8/2022
9/13/2022
3/15/2023
9/13/2023
3/5/2024
9/4/2024
Date
Ammonia (as Nitrogen)
Nitrate-Nitrogen
Linear (Ammonia (as Nitrogen))
Linear (Nitrate-Nitrogen)

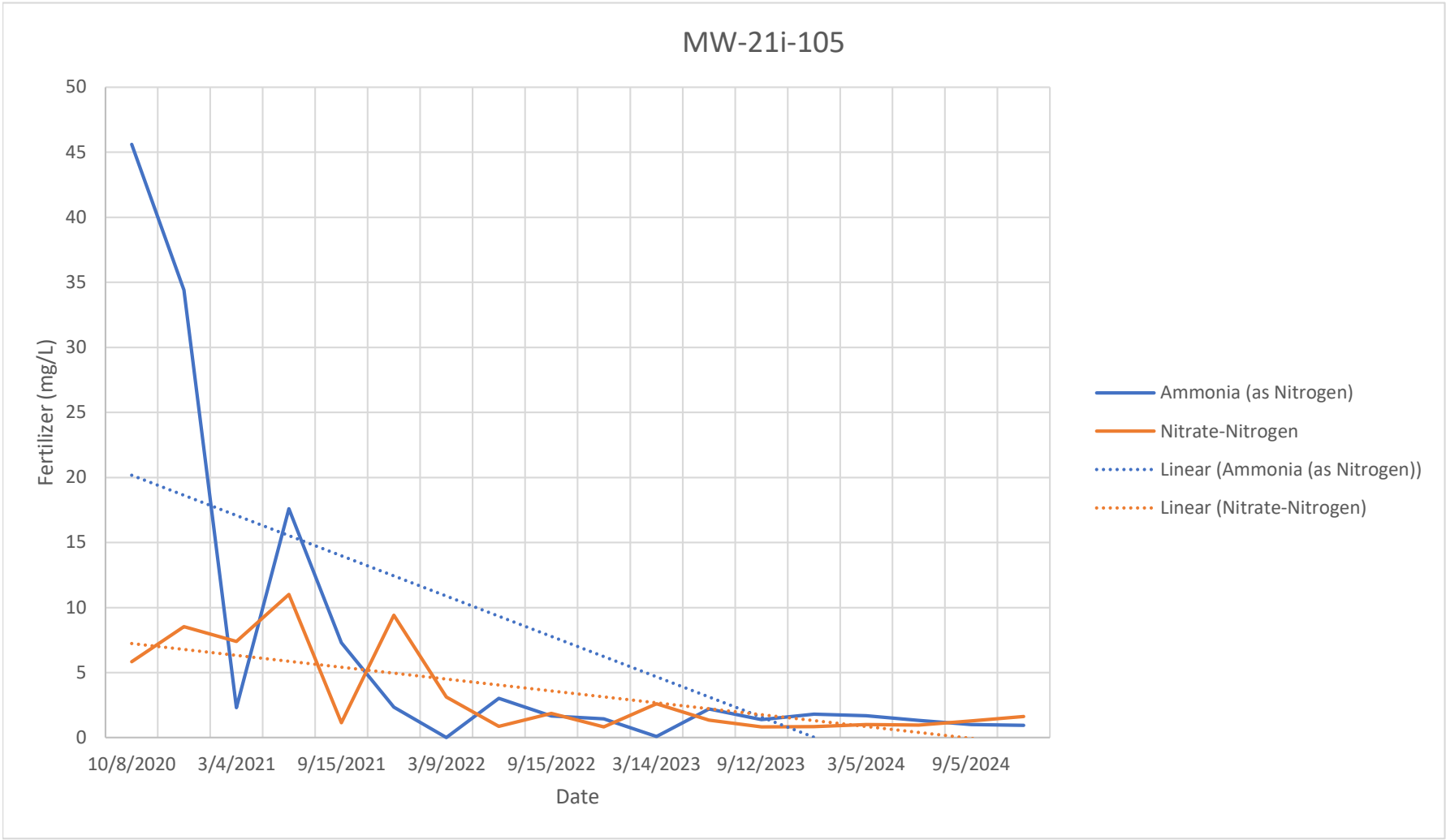

MW-18i
2.5
2
1.5
1
0.5
0
Fertilizer (mg/L)
10/7/2020
3/3/2021
9/15/2021
3/9/2022
9/15/2022
3/17/2023
9/13/2023
3/7/2024
9/5/2024
Date
Nitrate-Nitrogen
Linear (Nitrate-Nitrogen)

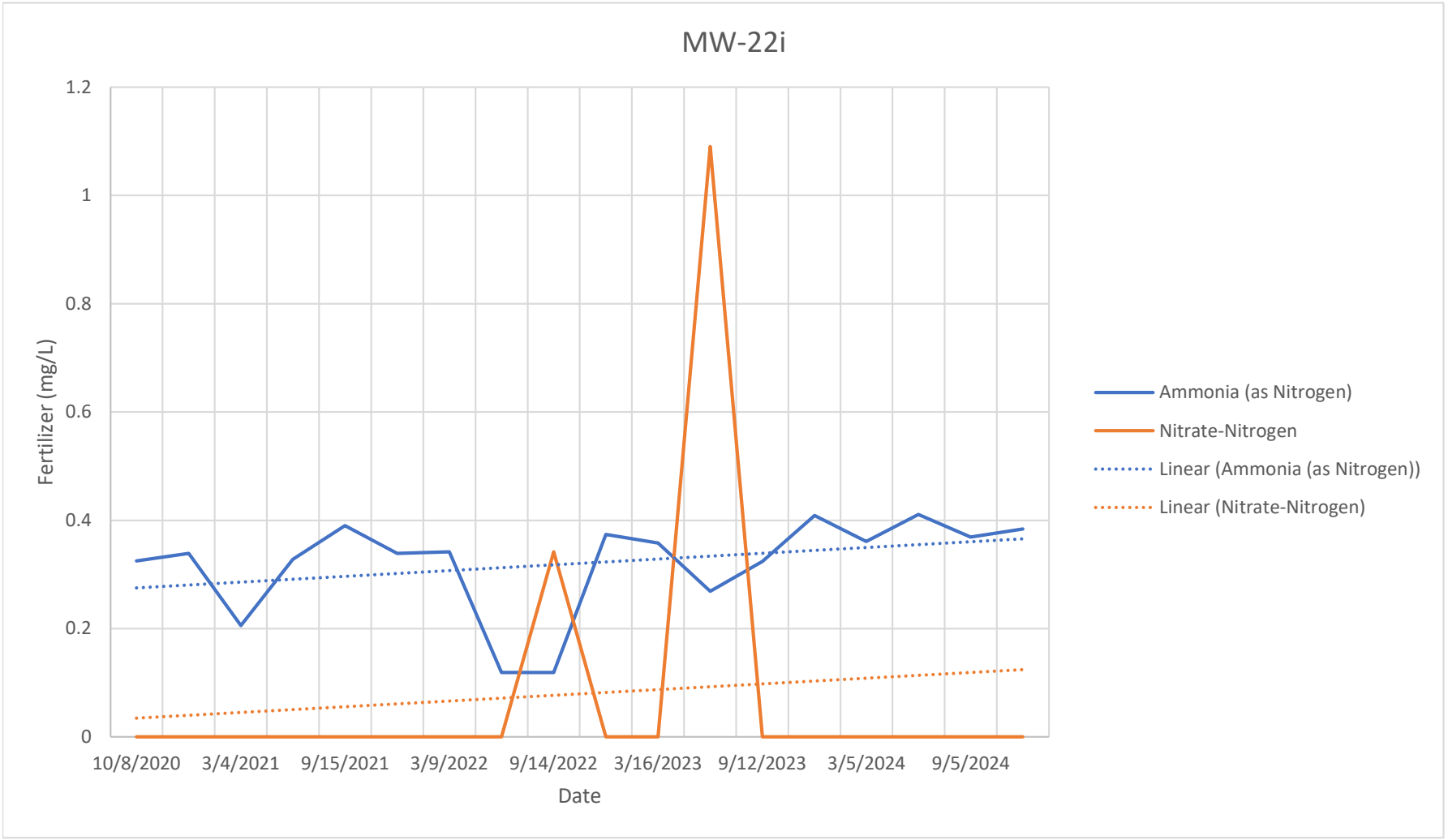

MW-19
250
200
150
100
50
0
Fertilizer (mg/L)
10/1/2020
5/1/2021
12/1/2021
7/1/2022
2/1/2023
9/1/2023
4/1/2024
11/1/2024
Date
Ammonia (as Nitrogen)
Nitrate-Nitrogen
Linear (Ammonia (as Nitrogen))
Linear (Nitrate-Nitrogen)

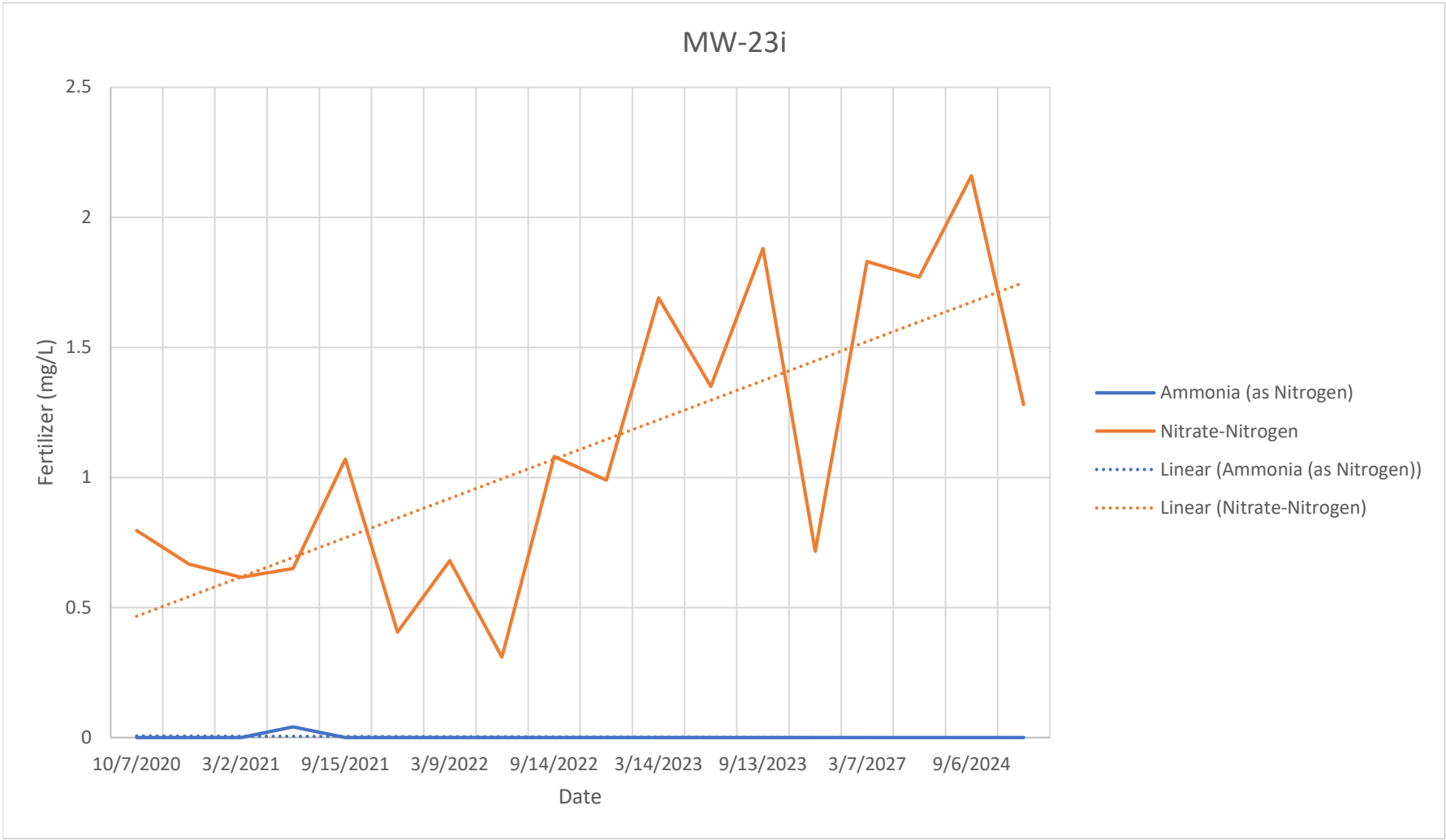

MW-19i
Fertilizer (mg/L)
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
10/7/2020
3/3/2021
9/15/2021
3/9/2022
9/14/2022
3/14/2023
9/12/2023
3/7/2024
9/5/2024
Date
Ammonia (as Nitrogen)
Nitrate-Nitrogen
Linear (Ammonia (as Nitrogen))
Linear (Nitrate-Nitrogen)

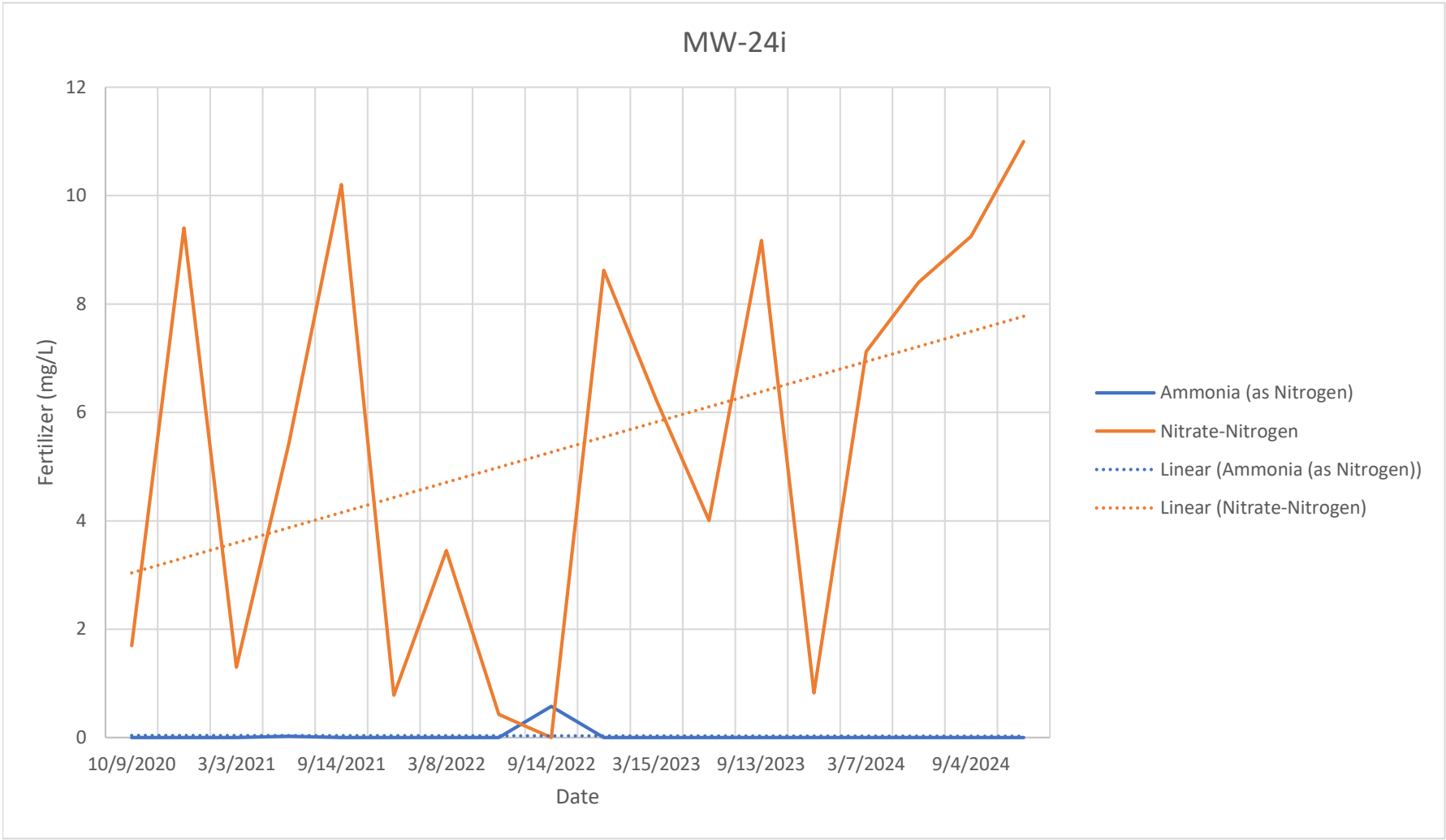

MW-20i
Fertilizer (mg/L)
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
10/7/2020
3/2/2021
9/15/2021
3/9/2022
9/14/2022
3/15/2023
9/13/2023
3/7/2024
9/5/2024
Date
Ammonia (as Nitrogen)
Nitrate-Nitrogen
Linear (Ammonia (as Nitrogen))
Linear (Nitrate-Nitrogen)

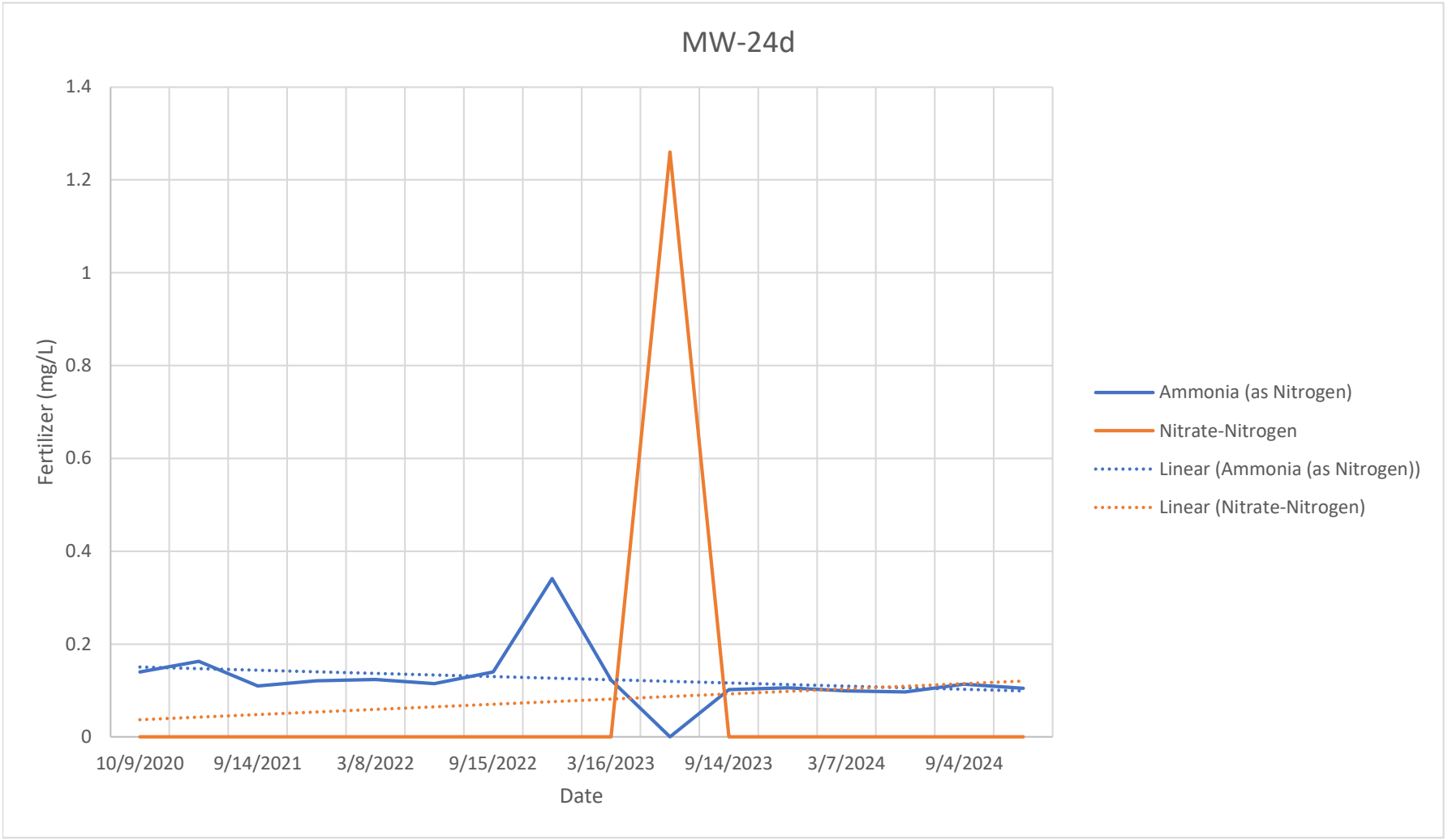

MW-21i-40
Fertilizer (mg/L)
7
6
5
4
3
2
1
0
10/7/2020
3/2/2021
9/15/2021
3/8/2022
9/14/2022
3/15/2023
9/13/2023
3/7/2024
9/6/2024
Date
Ammonia (as Nitrogen)
Nitrate-Nitrogen
Linear (Ammonia (as Nitrogen))
Linear (Nitrate-Nitrogen)

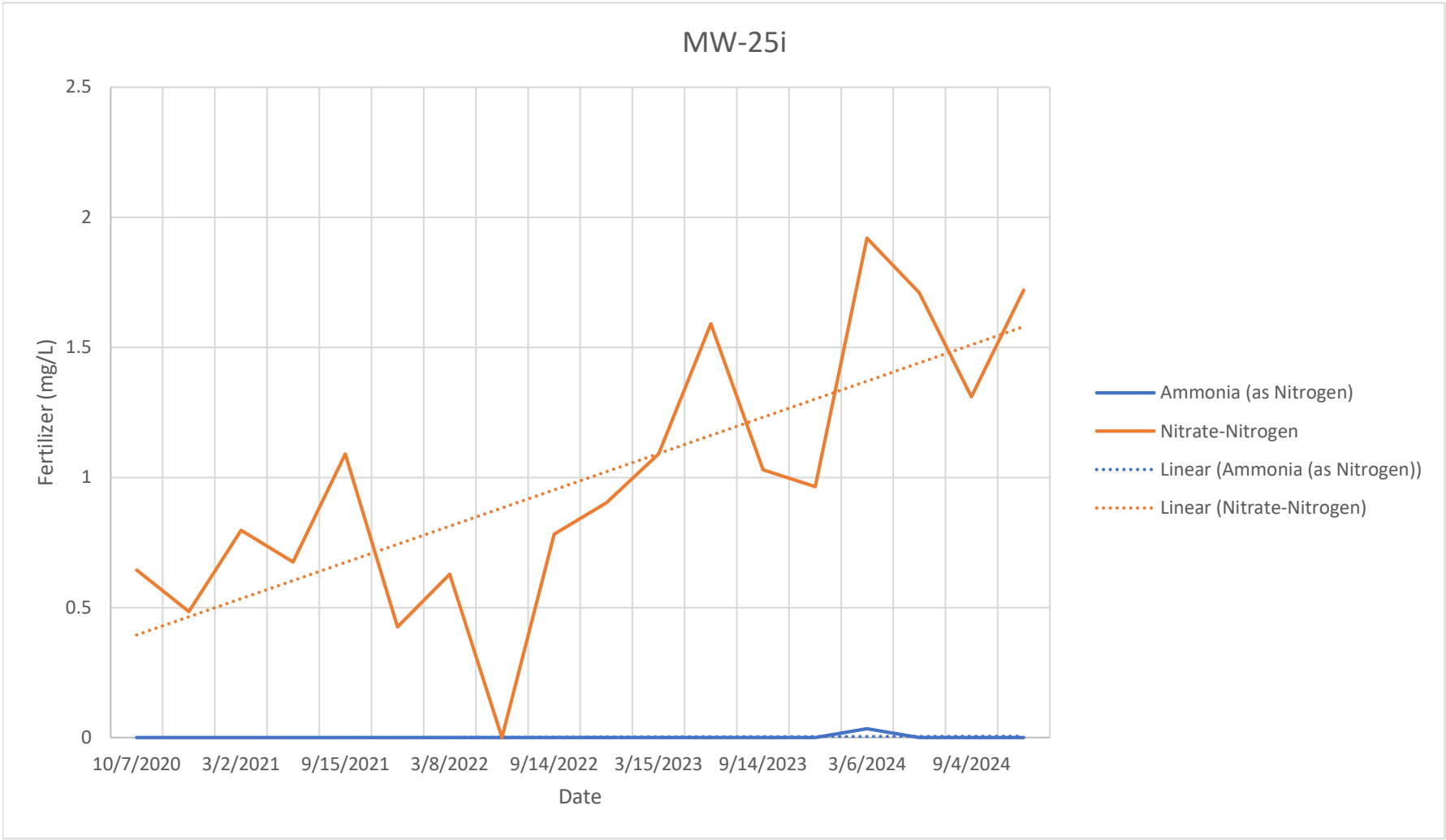

MW-21i-105
Fertilizer (mg/L)
50
45
40
35
30
25
20
15
10
5
0
10/8/2020
3/4/2021
9/15/2021
3/9/2022
9/15/2022
3/14/2023
9/12/2023
3/5/2024
9/5/2024
Date
Ammonia (as Nitrogen)
Nitrate-Nitrogen
Linear (Ammonia (as Nitrogen))
Linear (Nitrate-Nitrogen)

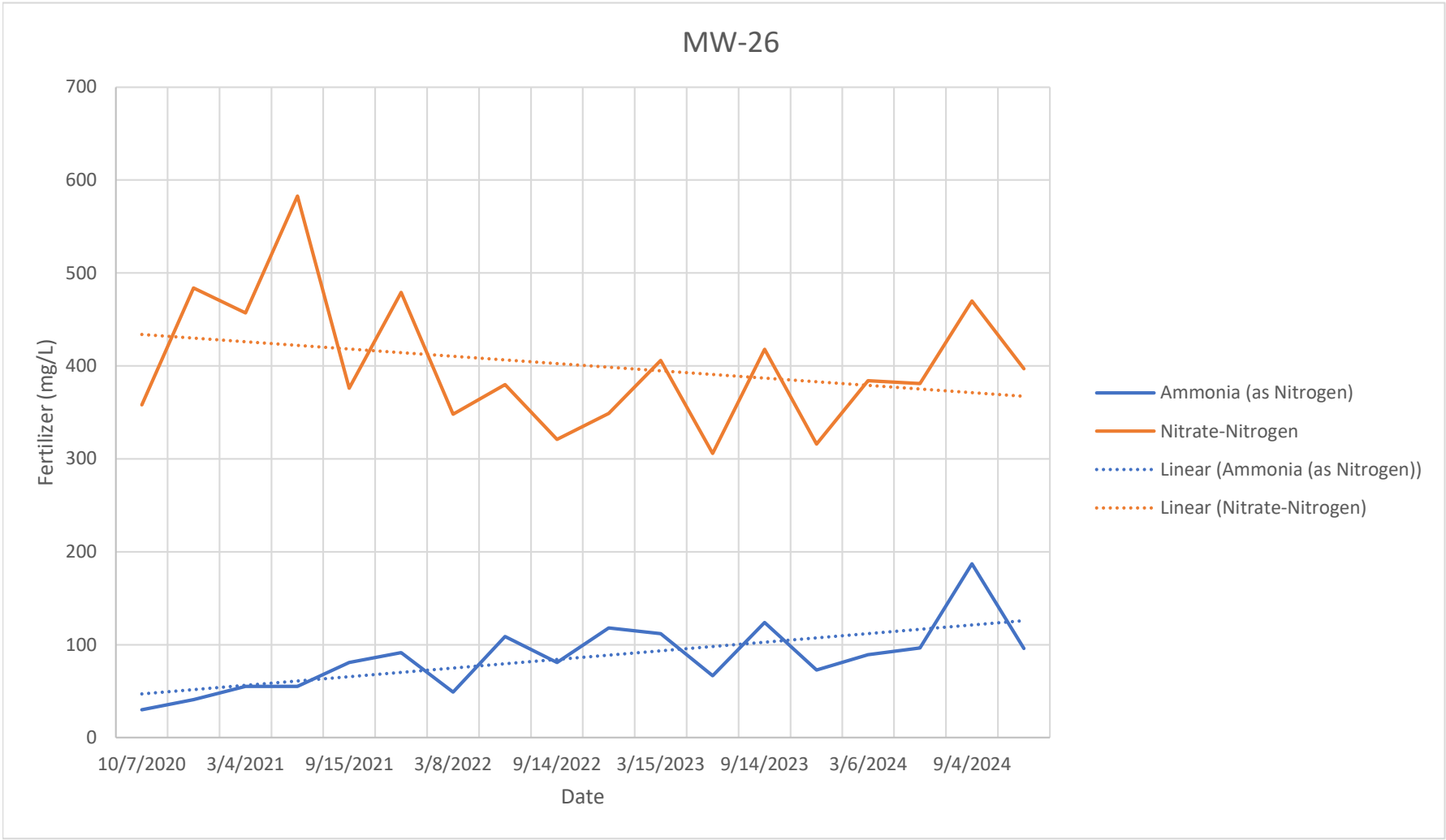

MW-22i
1.2
1
0.8
0.6
0.4
0.2
0
Fertilizer (mg/L)
10/8/2020
3/4/2021
9/15/2021
3/9/2022
9/14/2022
3/16/2023
9/12/2023
3/5/2024
9/5/2024
Date
Ammonia (as Nitrogen)
Nitrate-Nitrogen
Linear (Ammonia (as Nitrogen))
Linear (Nitrate-Nitrogen)

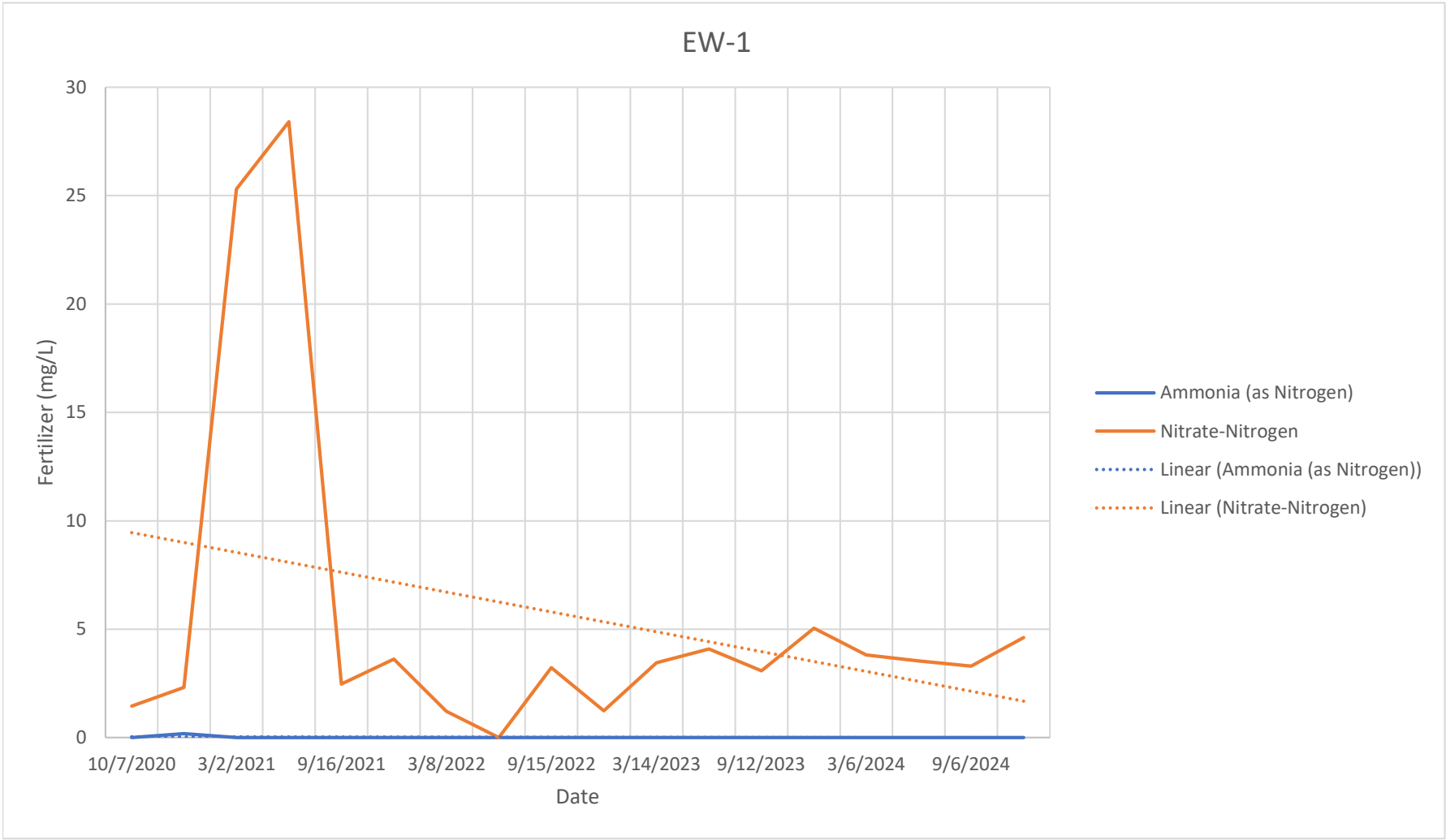

MW-23i
2.5
2
1.5
1
0.5
0
Fertilizer (mg/L)
10/7/2020
3/2/2021
9/15/2021
3/9/2022
9/14/2022
3/14/2023
9/13/2023
3/7/2027
9/6/2024
Date
Ammonia (as Nitrogen)
Nitrate-Nitrogen
Linear (Ammonia (as Nitrogen))
Linear (Nitrate-Nitrogen)

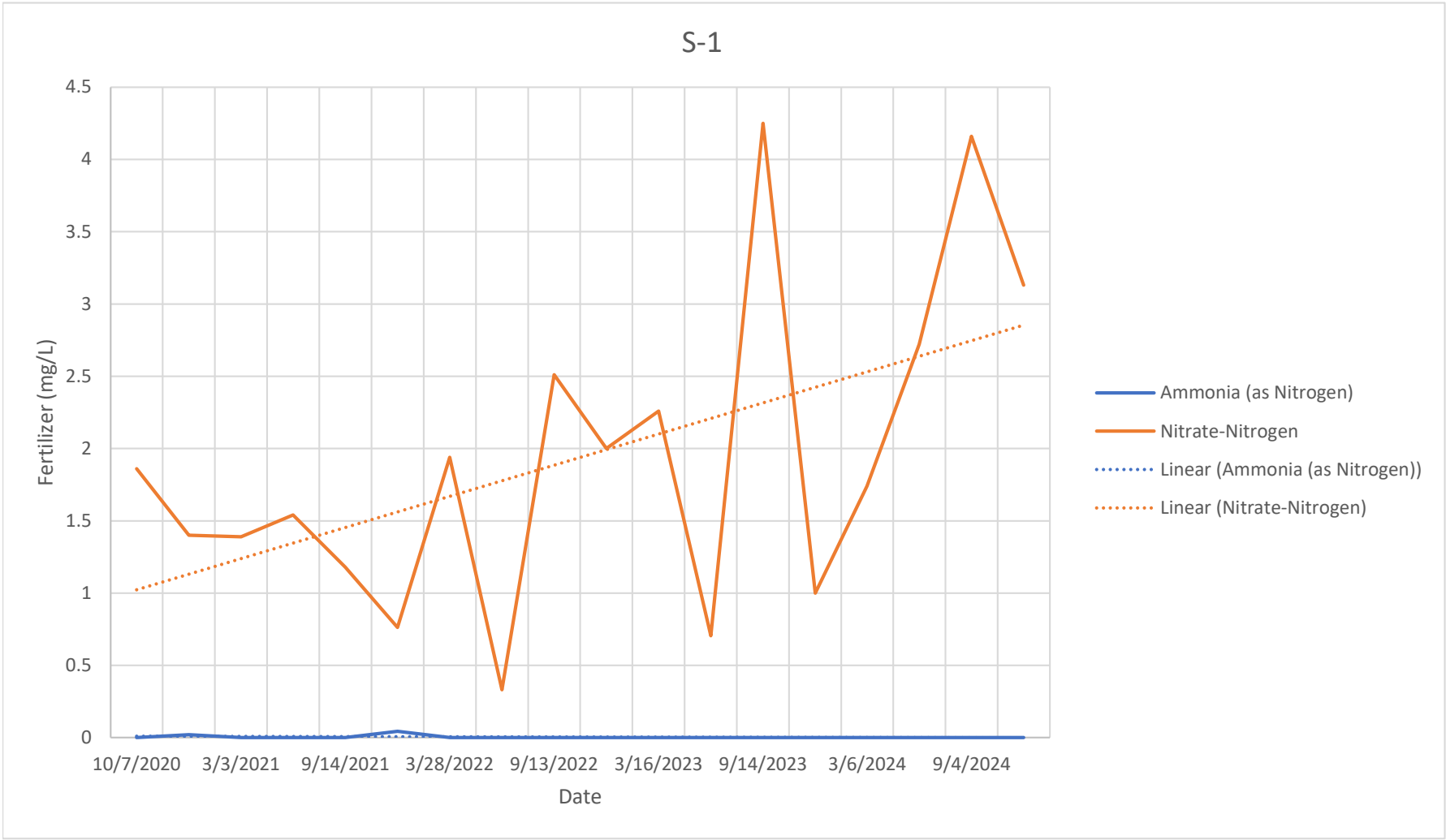

MW-24i
Fertilizer (mg/L)
12
10
8
6
4
2
0
10/9/2020
3/3/2021
9/14/2021
3/8/2022
9/14/2022
3/15/2023
9/13/2023
3/7/2024
9/4/2024
Date
Ammonia (as Nitrogen)
Nitrate-Nitrogen
Linear (Ammonia (as Nitrogen))
Linear (Nitrate-Nitrogen)

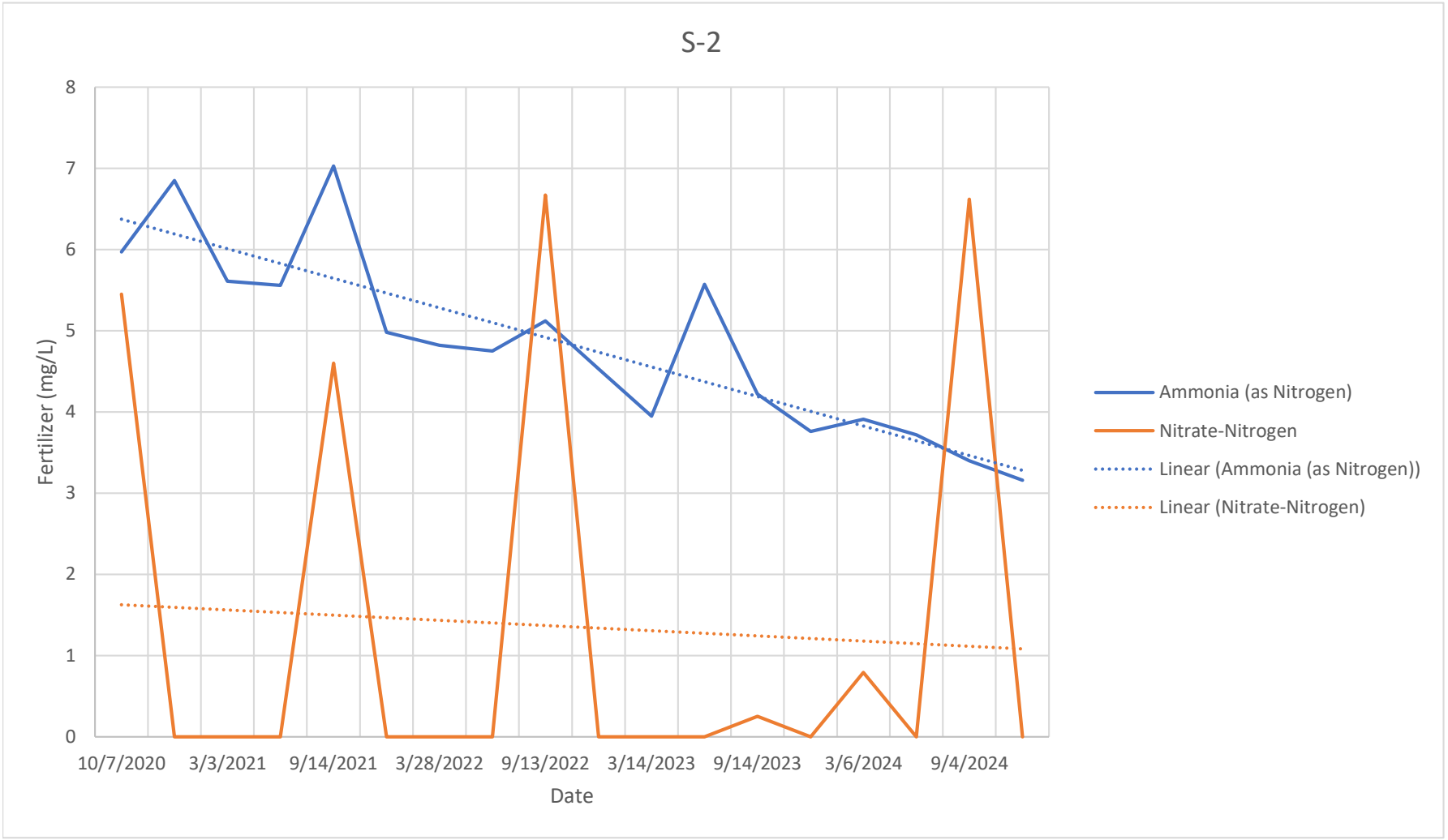

MW-24d
Fertilizer (mg/L)
1.4
1.2
1
0.8
0.6
0.4
0.2
0
10/9/2020
9/14/2021
3/8/2022
9/15/2022
3/16/2023
9/14/2023
3/7/2024
9/4/2024
Date
Ammonia (as Nitrogen)
Nitrate-Nitrogen
Linear (Ammonia (as Nitrogen))
Linear (Nitrate-Nitrogen)

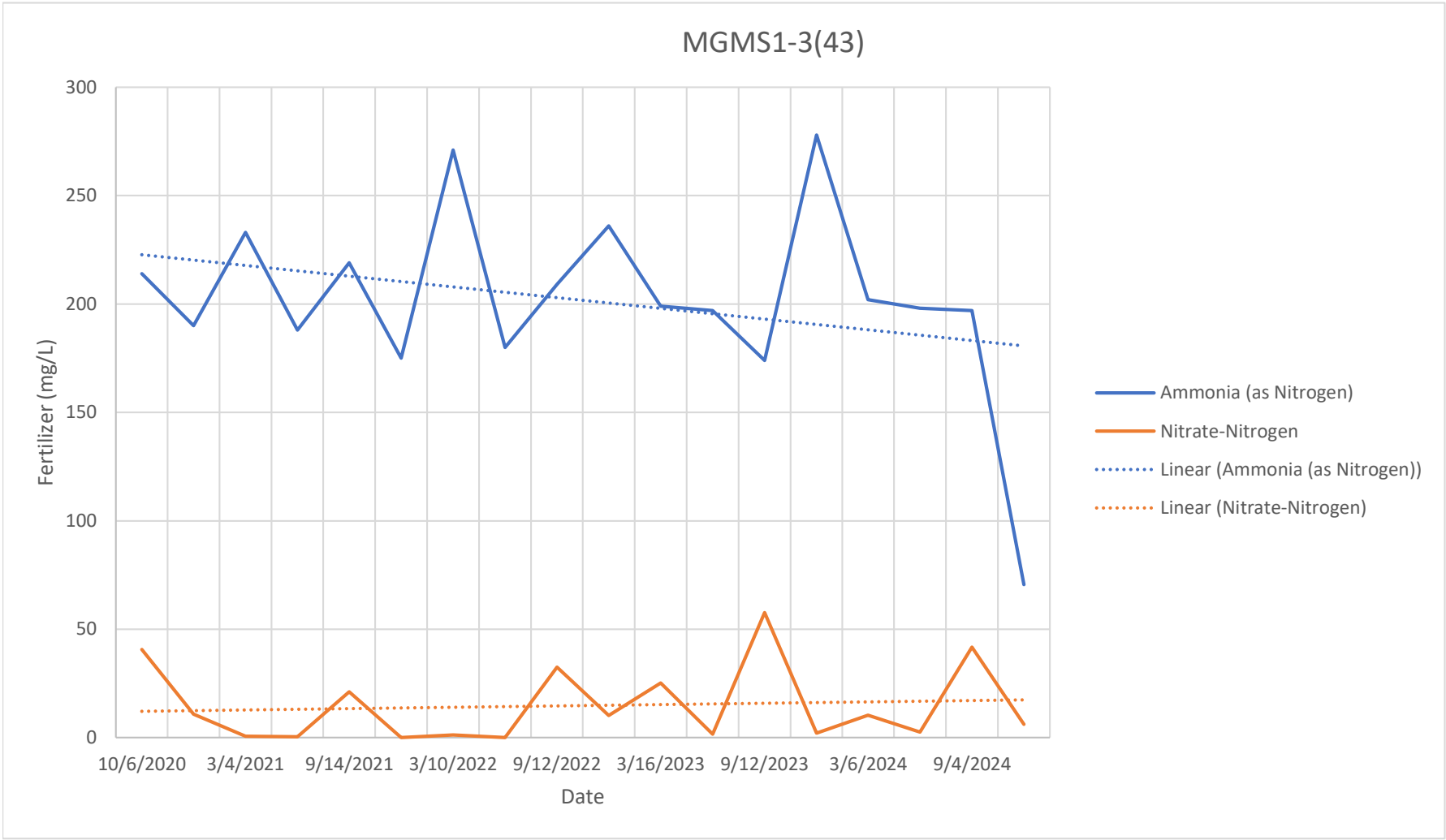

MW-25i
Fertilizer (mg/L)
2.5
2
1.5
1
0.5
0
10/7/2020
3/2/2021
9/15/2021
3/8/2022
9/14/2022
3/15/2023
9/14/2023
3/6/2024
9/4/2024
Date
Ammonia (as Nitrogen)
Nitrate-Nitrogen
Linear (Ammonia (as Nitrogen))
Linear (Nitrate-Nitrogen)

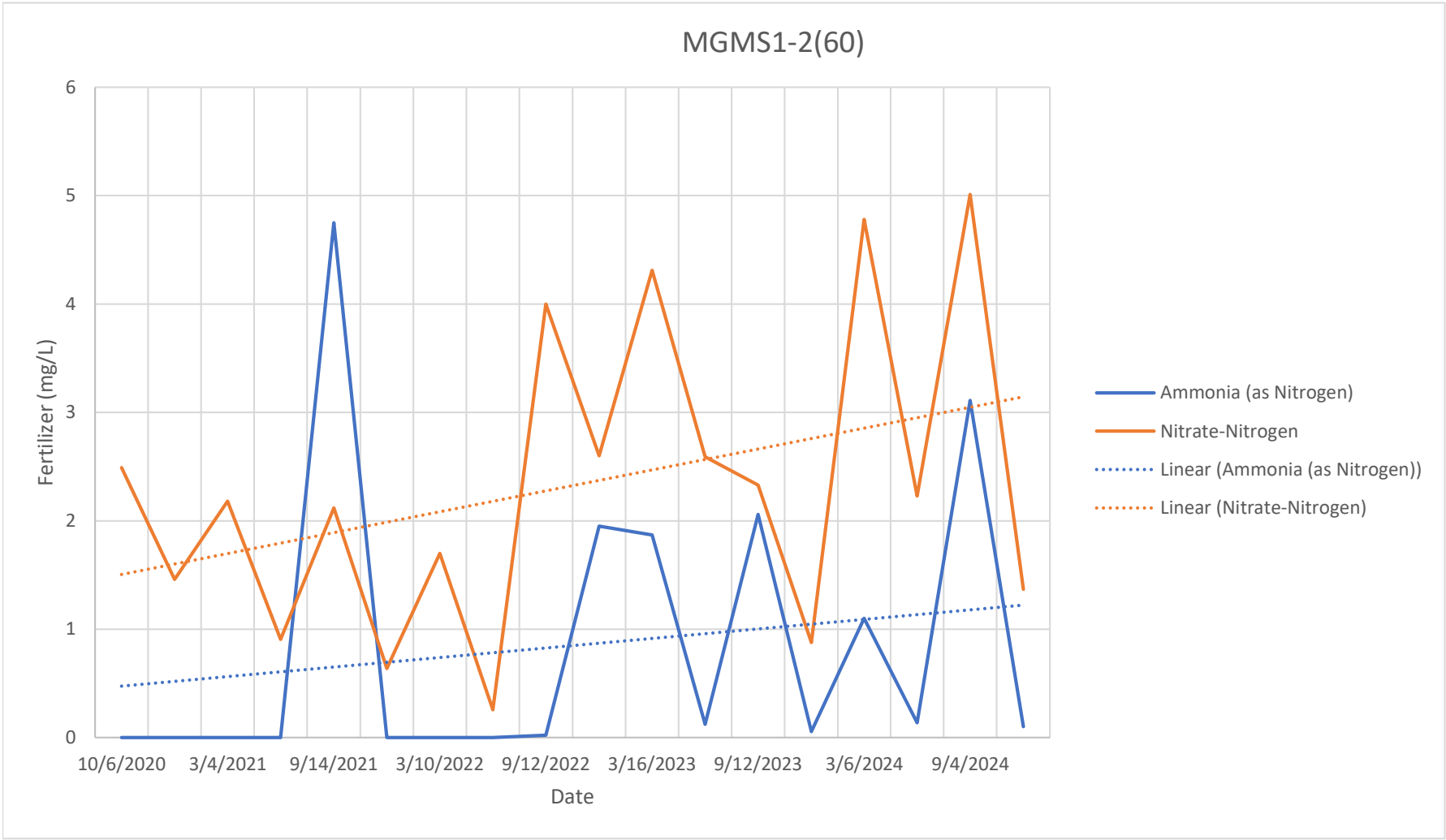

MW-26
Fertilizer (mg/L)
700
600
500
400
300
200
100
0
10/7/2020
3/4/2021
9/15/2021
3/8/2022
9/14/2022
3/15/2023
9/14/2023
3/6/2024
9/4/2024
Date
Ammonia (as Nitrogen)
Nitrate-Nitrogen
Linear (Ammonia (as Nitrogen))
Linear (Nitrate-Nitrogen)

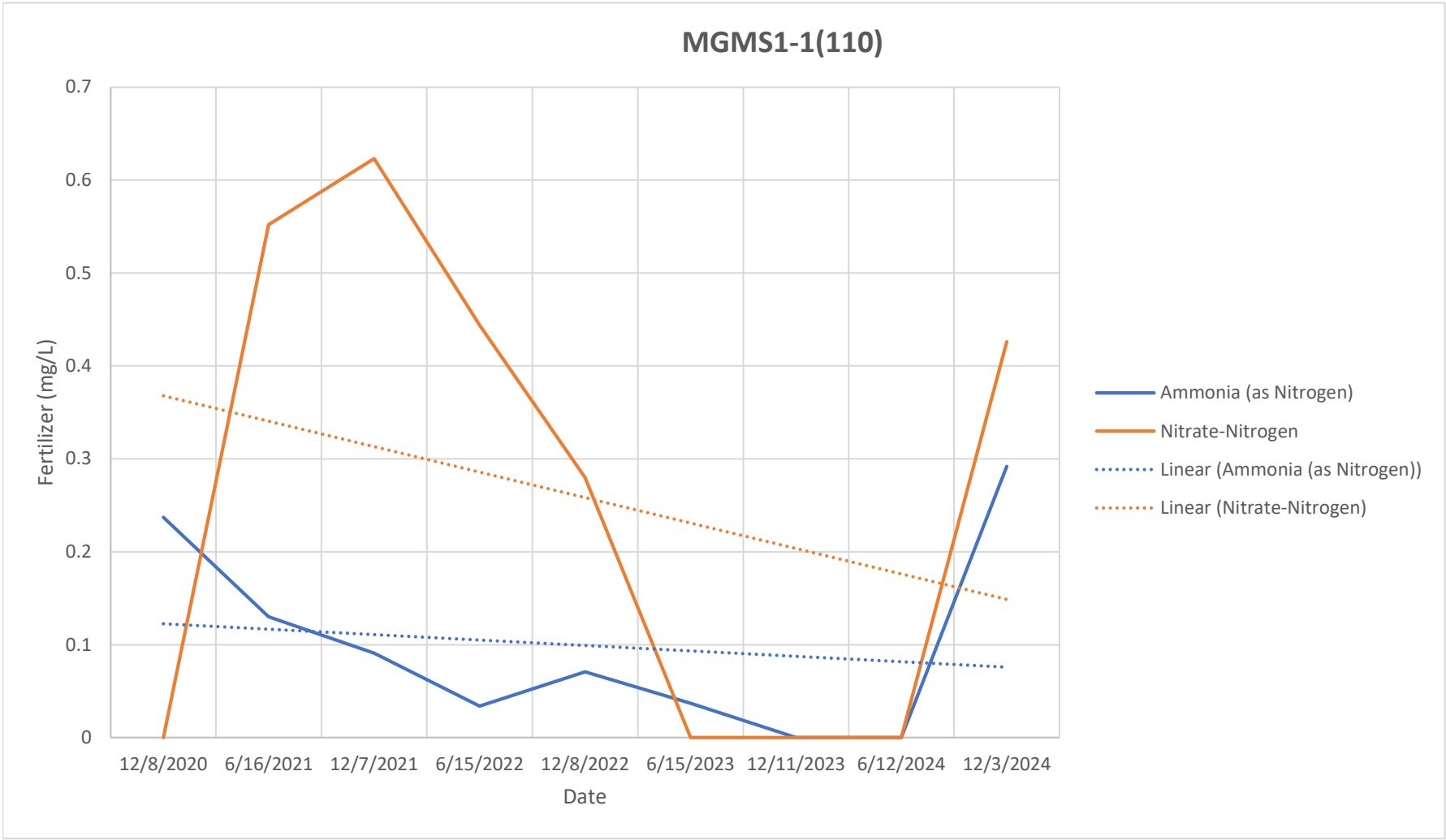

EW-1
30
25
20
15
10
5
0
Fertilizer (mg/L)
10/7/2020
3/2/2021
9/16/2021
3/8/2022
9/15/2022
3/14/2023
9/12/2023
3/6/2024
9/6/2024
Date
Ammonia (as Nitrogen)
Nitrate-Nitrogen
Linear (Ammonia (as Nitrogen))
Linear (Nitrate-Nitrogen)

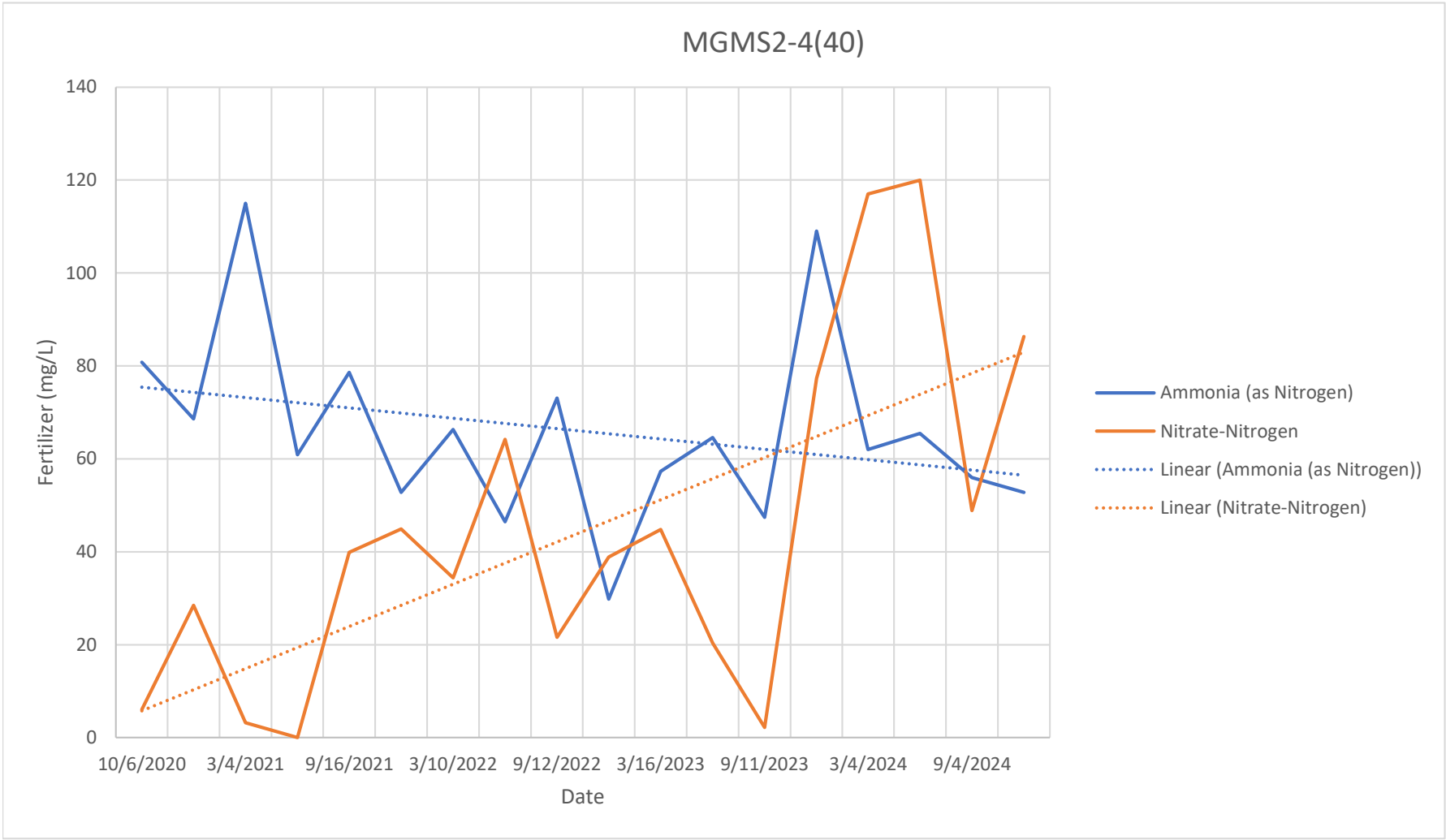

S-1
Fertilizer (mg/L)
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
10/7/2020
3/3/2021
9/14/2021
3/28/2022
9/13/2022
3/16/2023
9/14/2023
3/6/2024
9/4/2024
Date
Ammonia (as Nitrogen)
Nitrate-Nitrogen
Linear (Ammonia (as Nitrogen))
Linear (Nitrate-Nitrogen)

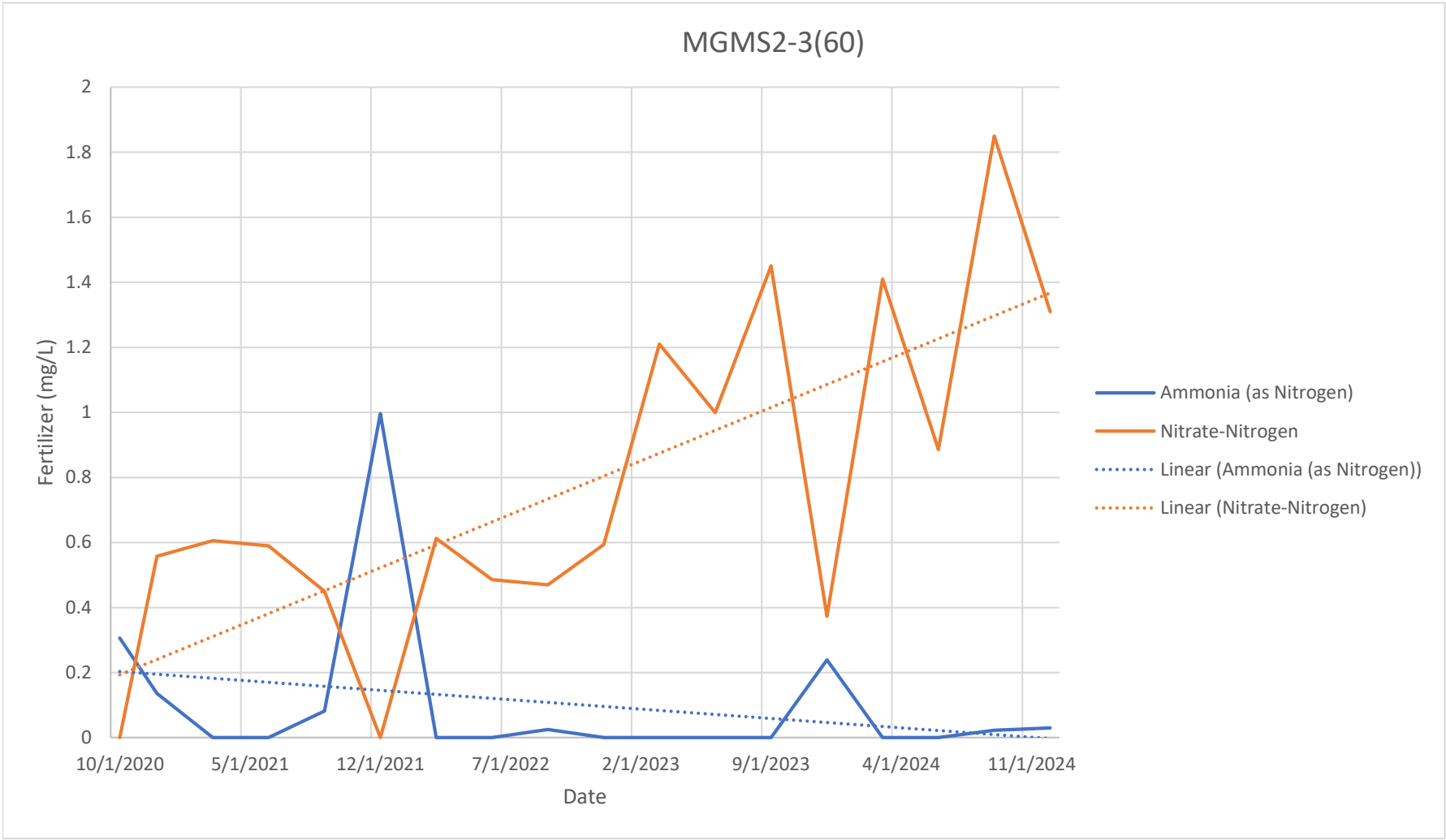

S-2
Fertilizer (mg/L)
8
7
6
5
4
3
2
1
0
10/7/2020
3/3/2021
9/14/2021
3/28/2022
9/13/2022
3/14/2023
9/14/2023
3/6/2024
9/4/2024
Date
Ammonia (as Nitrogen)
Nitrate-Nitrogen
Linear (Ammonia (as Nitrogen))
Linear (Nitrate-Nitrogen)

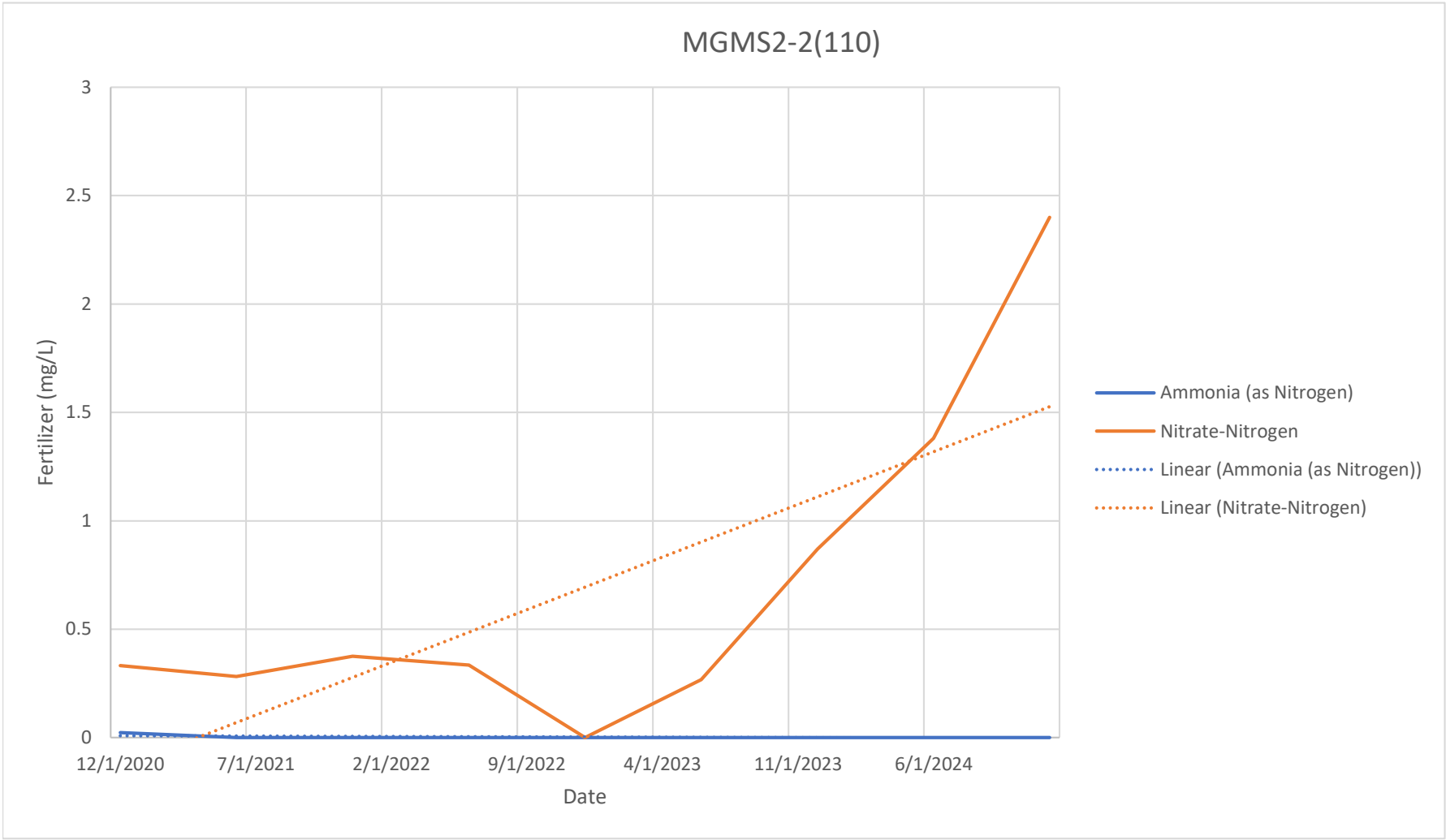

MGMS1-3(43)
Fertilizer (mg/L)
300
250
200
150
100
50
0
10/6/2020
3/4/2021
9/14/2021
3/10/2022
9/12/2022
3/16/2023
9/12/2023
3/6/2024
9/4/2024
Date
Ammonia (as Nitrogen)
Nitrate-Nitrogen
Linear (Ammonia (as Nitrogen))
Linear (Nitrate-Nitrogen)

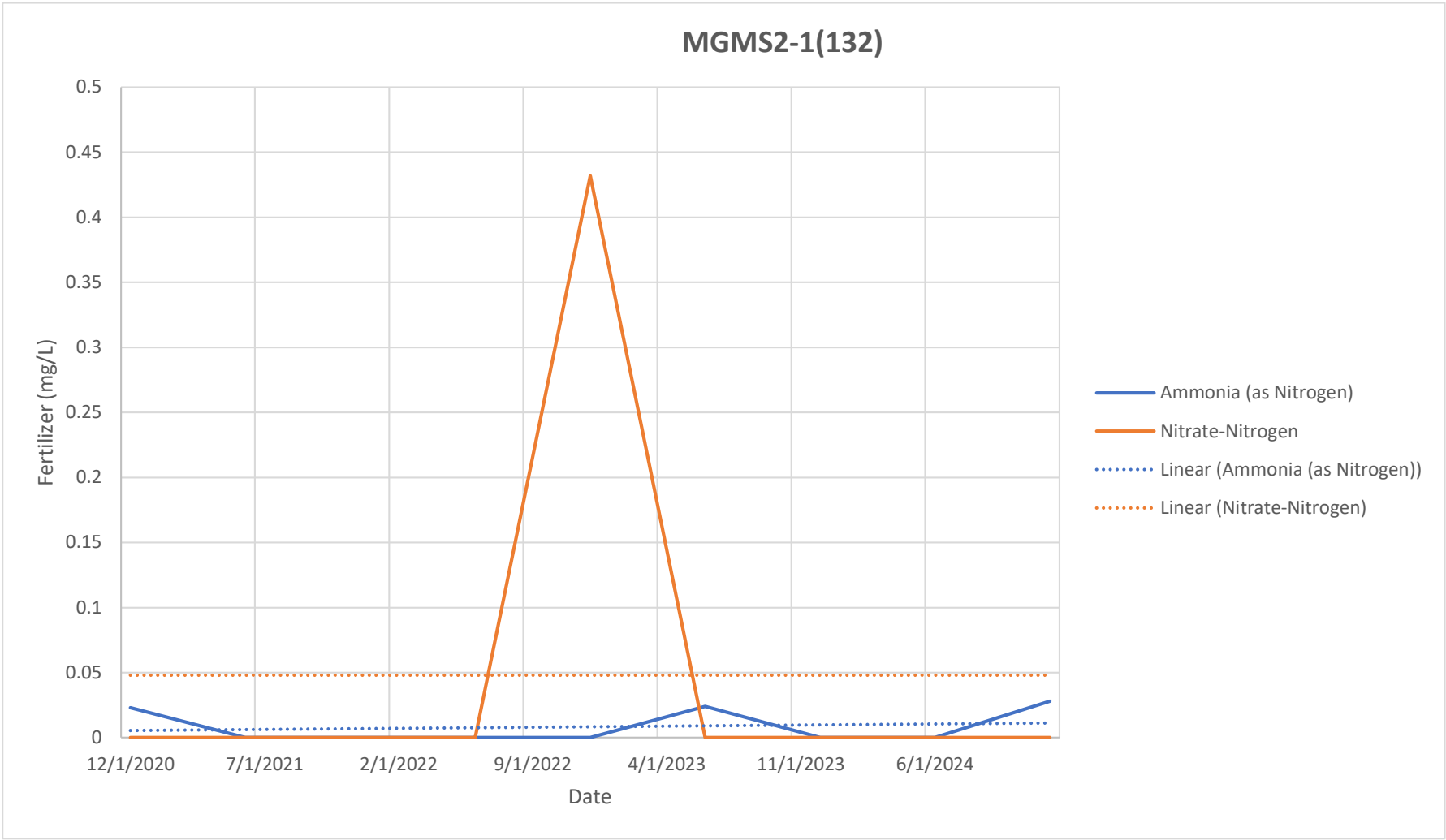

MGMS1-2(60)
Fertilizer (mg/L)
0
1
2
3
4
5
6
10/6/2020
3/4/2021
9/14/2021
3/10/2022
9/12/2022
3/16/2023
9/12/2023
3/6/2024
9/4/2024
Date
Ammonia (as Nitrogen)
Nitrate-Nitrogen
Linear (Ammonia (as Nitrogen))
Linear (Nitrate-Nitrogen)

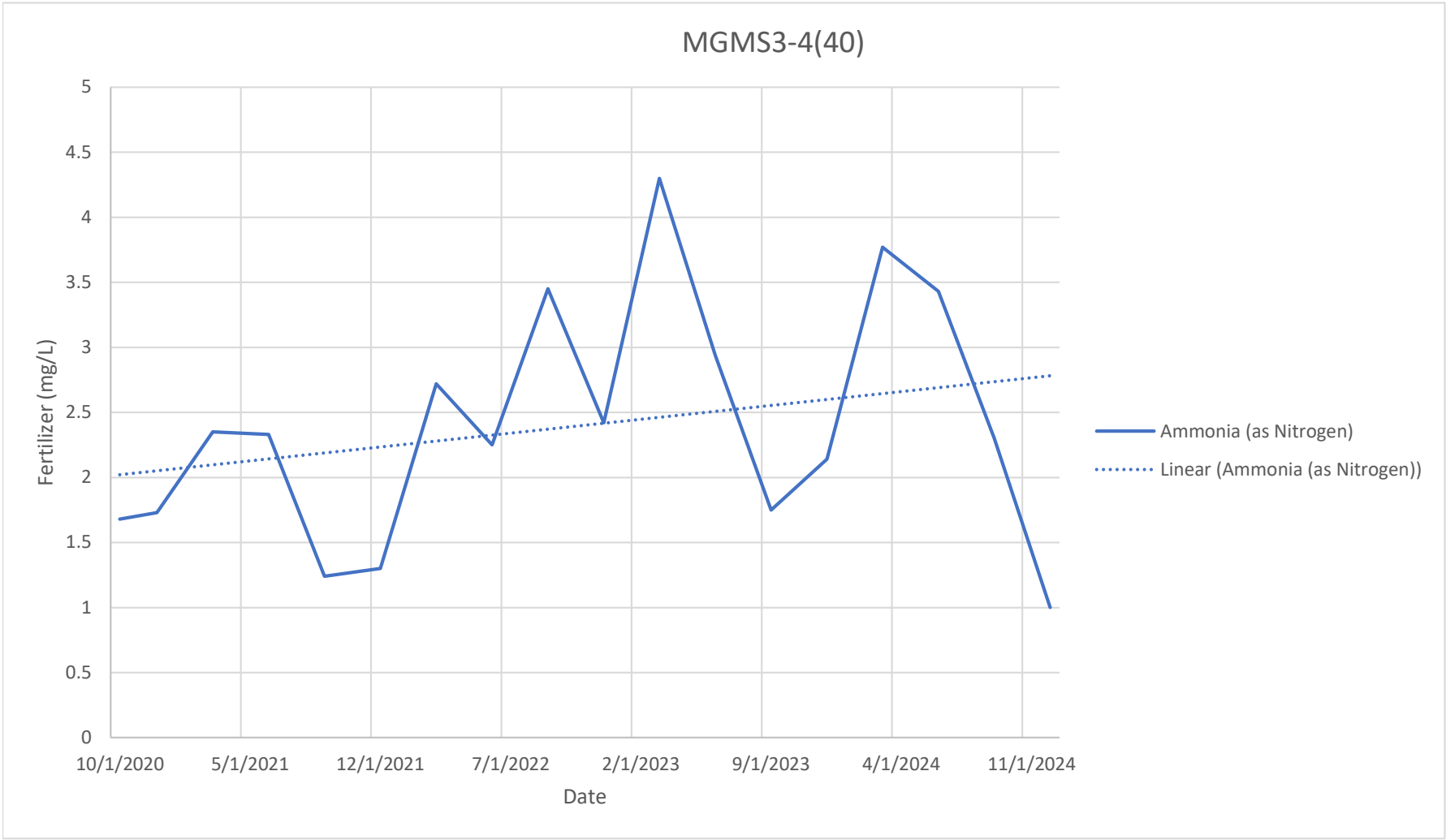

MGMS1-1(110)
Fertilizer (mg/L)
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
12/8/2020
6/16/2021
12/7/2021
6/15/2022
12/8/2022
6/15/2023
12/11/2023
6/12/2024
12/3/2024
Date
Ammonia (as Nitrogen)
Nitrate-Nitrogen
Linear (Ammonia (as Nitrogen))
Linear (Nitrate-Nitrogen)

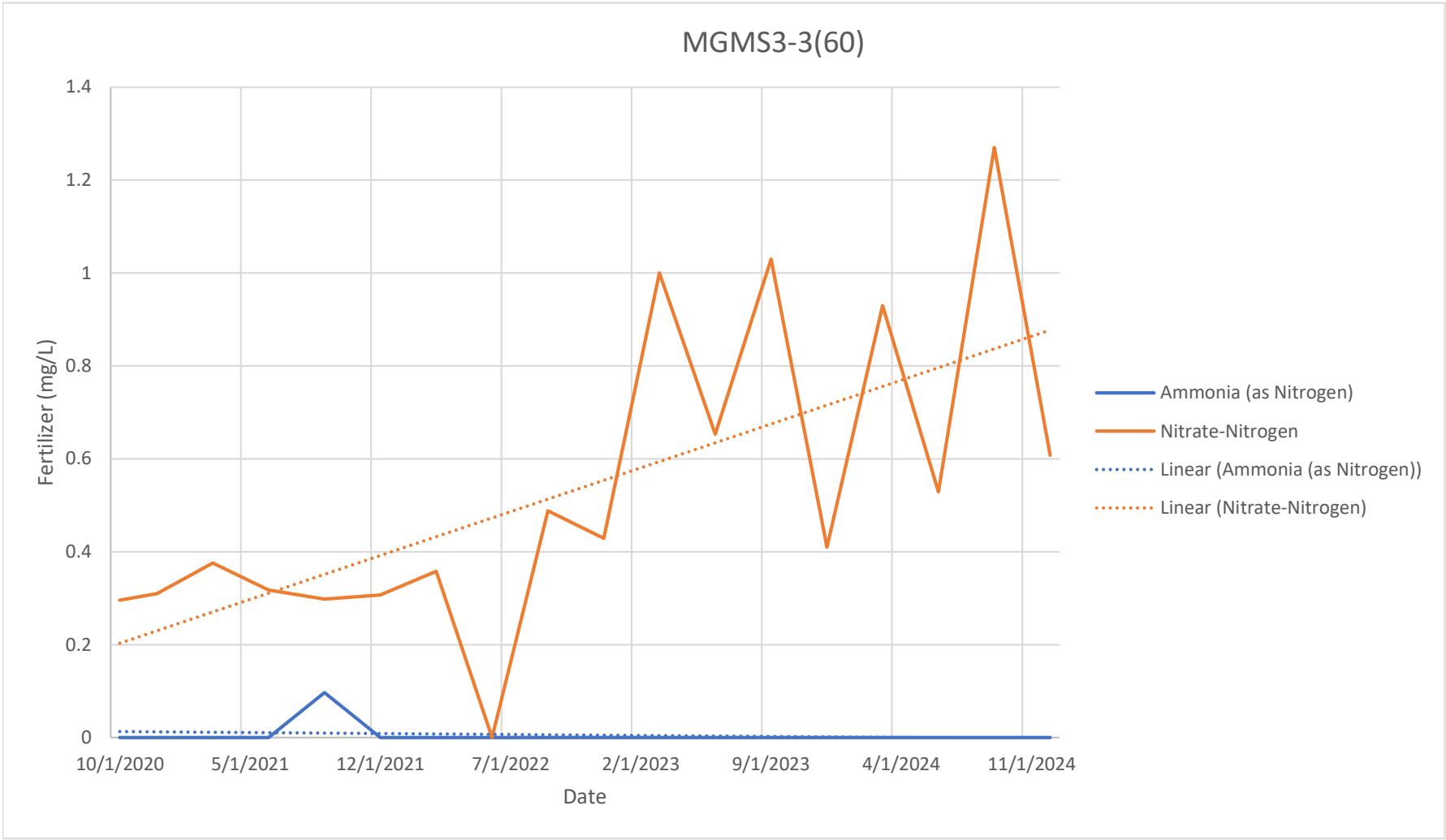

MGMS2-4(40)
Fertilizer (mg/L)
140
120
100
80
60
40
20
0
10/6/2020
3/4/2021
9/16/2021
3/10/2022
9/12/2022
3/16/2023
9/11/2023
3/4/2024
9/4/2024
Date
Ammonia (as Nitrogen)
Nitrate-Nitrogen
Linear (Ammonia (as Nitrogen))
Linear (Nitrate-Nitrogen)

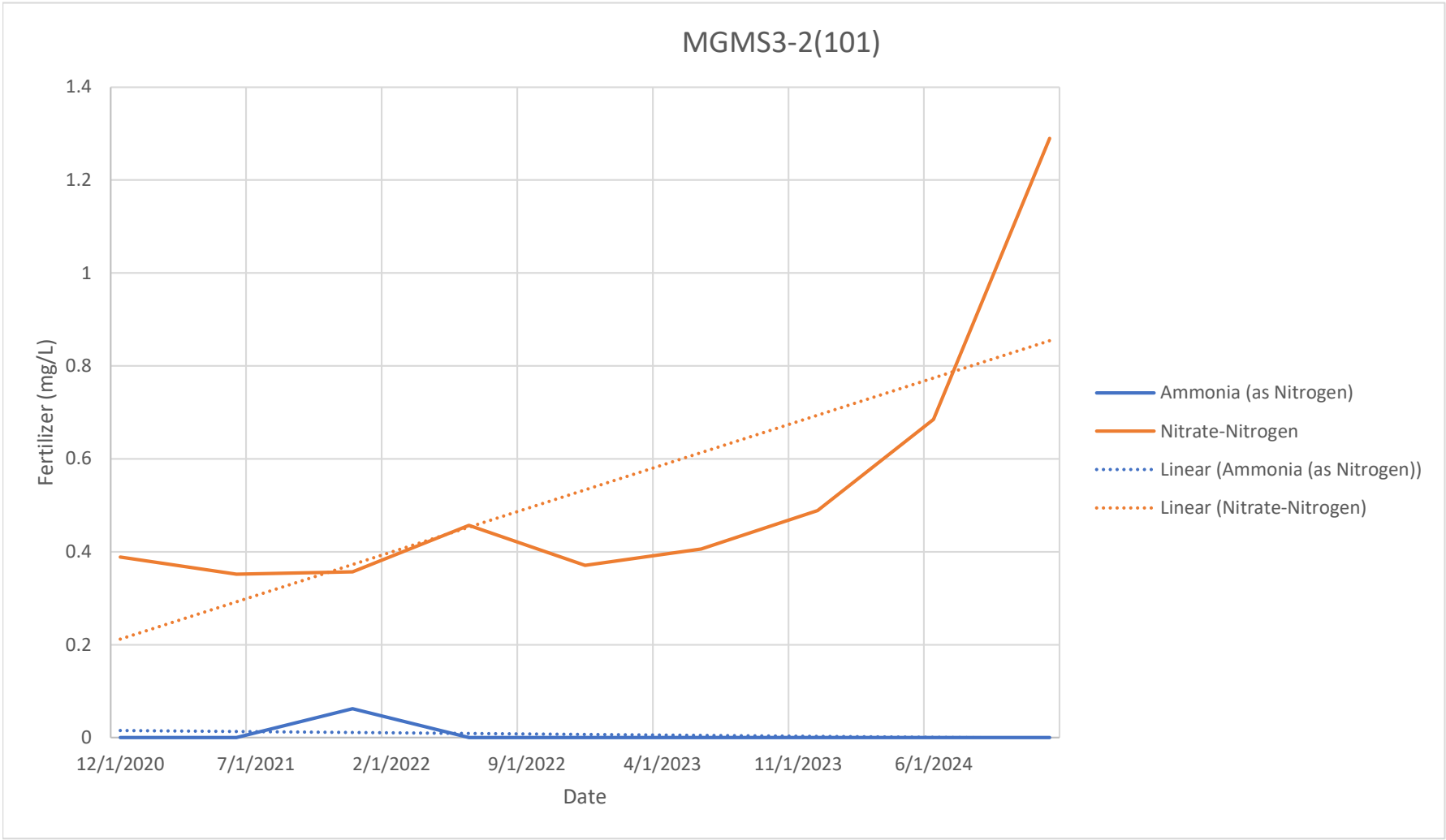

MGMS2-3(60)
Fertilizer (mg/L)
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
10/1/2020
5/1/2021
12/1/2021
7/1/2022
2/1/2023
9/1/2023
4/1/2024
11/1/2024
Date
Ammonia (as Nitrogen)
Nitrate-Nitrogen
Linear (Ammonia (as Nitrogen))
Linear (Nitrate-Nitrogen)

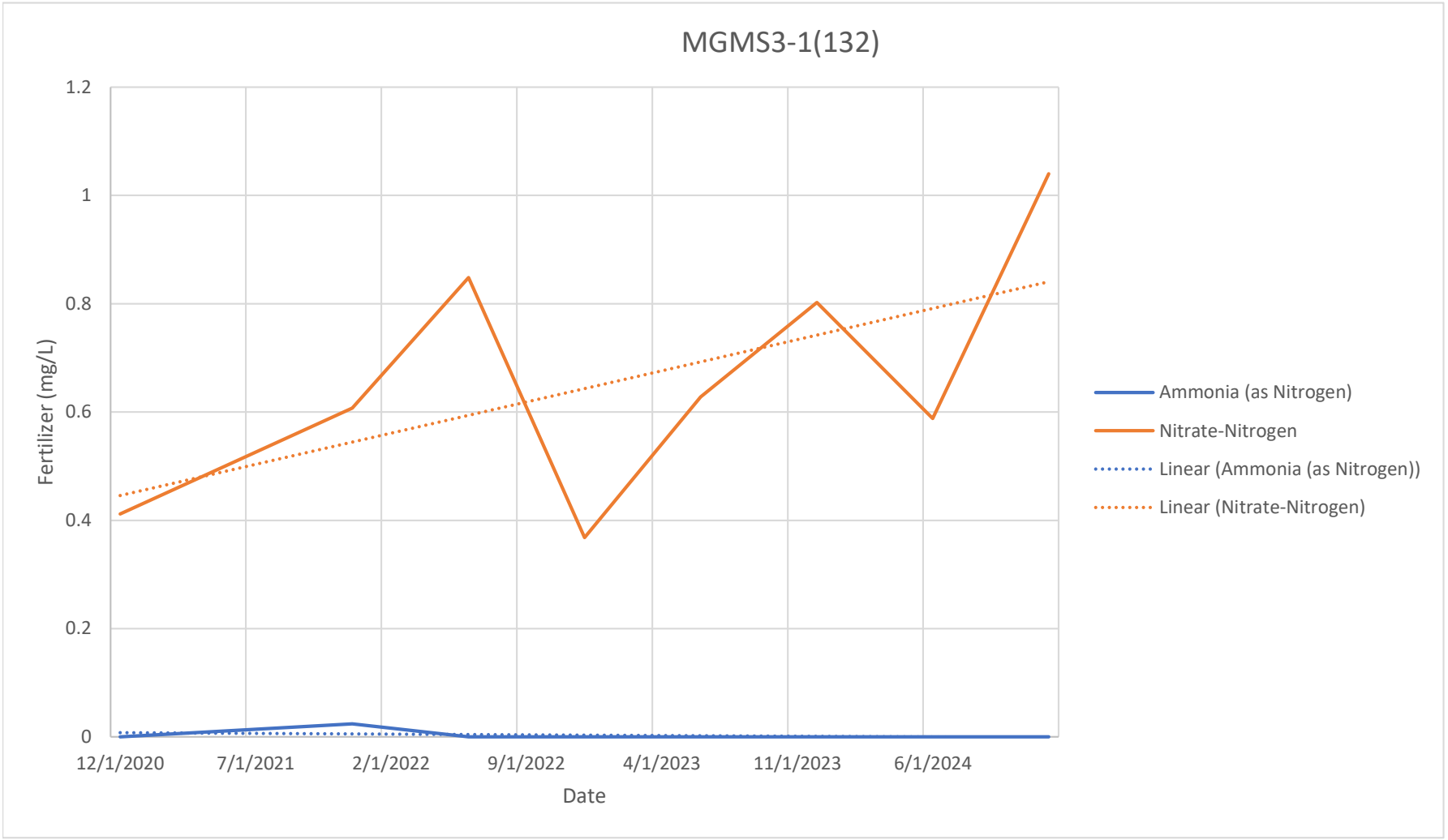

MGMS2-2(110)
Fertilizer (mg/L)
3
2.5
2
1.5
1
0.5
0
12/1/2020
7/1/2021
2/1/2022
9/1/2022
4/1/2023
11/1/2023
6/1/2024
Date
Ammonia (as Nitrogen)
Nitrate-Nitrogen
Linear (Ammonia (as Nitrogen))
Linear (Nitrate-Nitrogen)

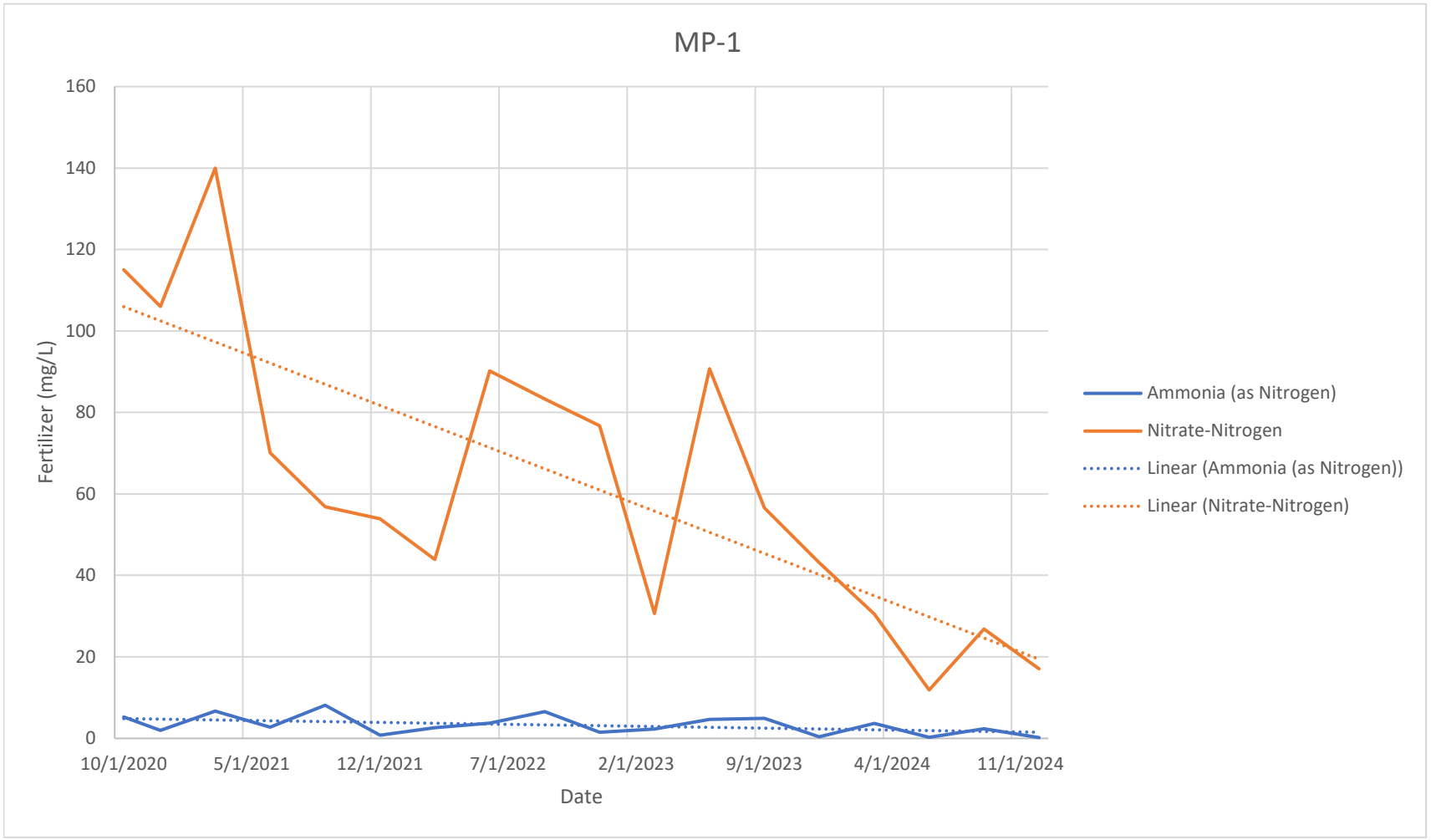

MGMS2-1(132)
0.5
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
Fertilizer (mg/L)
12/1/2020
7/1/2021
2/1/2022
9/1/2022
4/1/2023
11/1/2023
6/1/2024
Date
Ammonia (as Nitrogen)
Nitrate-Nitrogen
Linear (Ammonia (as Nitrogen))
Linear (Nitrate-Nitrogen)


MGMS3-4(40)
Fertilizer (mg/L)
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
10/1/2020
5/1/2021
12/1/2021
7/1/2022
2/1/2023
9/1/2023
4/1/2024
11/1/2024
Date
Ammonia (as Nitrogen)
Linear (Ammonia (as Nitrogen))

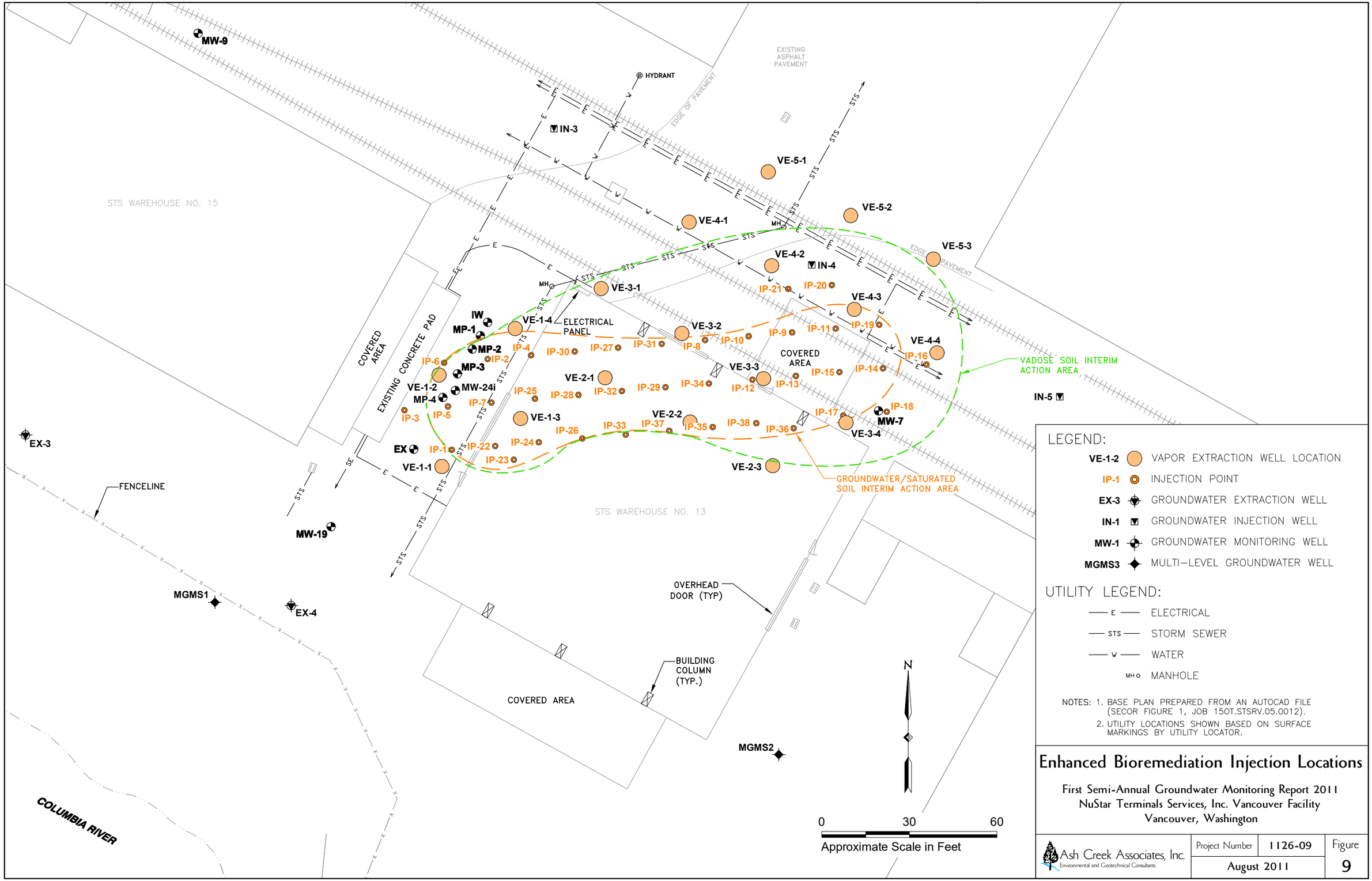

MGMS3-3(60)
Fertilizer (mg/L)
1.4
1.2
1
0.8
0.6
0.4
0.2
0
10/1/2020
5/1/2021
12/1/2021
7/1/2022
2/1/2023
9/1/2023
4/1/2024
11/1/2024
Date
Ammonia (as Nitrogen)
Nitrate-Nitrogen
Linear (Ammonia (as Nitrogen))
Linear (Nitrate-Nitrogen)


MGMS3-2(101)
Fertilizer (mg/L)
1.4
1.2
1
0.8
0.6
0.4
0.2
0
12/1/2020
7/1/2021
2/1/2022
9/1/2022
4/1/2023
11/1/2023
6/1/2024
Date
Ammonia (as Nitrogen)
Nitrate-Nitrogen
Linear (Ammonia (as Nitrogen))
Linear (Nitrate-Nitrogen)


MGMS3-1(132)
1.2
1
0.8
0.6
0.4
0.2
0
Fertilizer (mg/L)
12/1/2020
7/1/2021
2/1/2022
9/1/2022
4/1/2023
11/1/2023
6/1/2024
Date
Ammonia (as Nitrogen)
Nitrate-Nitrogen
Linear (Ammonia (as Nitrogen))
Linear (Nitrate-Nitrogen)


MP-1
160
140
120
100
80
60
40
20
0
Fertilizer (mg/L)
10/1/2020
5/1/2021
12/1/2021
7/1/2022
2/1/2023
9/1/2023
4/1/2024
11/1/2024
Date
Ammonia (as Nitrogen)
Nitrate-Nitrogen
Linear (Ammonia (as Nitrogen))
Linear (Nitrate-Nitrogen)

APPENDIX F
2008—SVE and Bioremediation Injection Layout and Mass Removal Chart



LEGEND:

- VE-1-2 — VAPOR EXTRACTION WELL LOCATION
- IP-1 — INJECTION POINT
- EX-3 — GROUNDWATER EXTRACTION WELL
- IN-1 — GROUNDWATER INJECTION WELL
- MW-1 — GROUNDWATER MONITORING WELL
- MGMS3 — MULTI-LEVEL GROUNDWATER WELL

UTILITY LEGEND:

- E — ELECTRICAL
- STS — STORM SEWER
- W — WATER
- MH — MANHOLE

NOTES:
1. BASE PLAN PREPARED FROM AN AUTOCAD FILE (SECOR FIGURE 1, JOB 150T.STSRV.05.0012).
2. UTILITY LOCATIONS SHOWN BASED ON SURFACE MARKINGS BY UTILITY LOCATOR.

Enhanced Bioremediation Injection Locations

First Semi-Annual Groundwater Monitoring Report 2011
NuStar Terminals Services, Inc. Vancouver Facility
Vancouver, Washington

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

Project Number	1126-09	Figure
August 2011		9

SOIL VAPOR EXTRACTION SYSTEM
(SEE FIGURES 7 and 8)

ELECTRICAL SERVICE
INSTALLED FROM EXISTING
BUILDING SERVICE

VAPOR EXTRACTION
PIPING IN TRENCH
(TYPICAL OF 5
ZONES).

WELL VAULT INSTALLED
AT EACH WELLHEAD
(TYPICAL OF 18).

VADOSE SOIL INTERIM
ACTION AREA

SOIL VAPOR
EXTRACTION WELL
(TYPICAL OF 18;
NUMBER REPRESENTS
MANIFOLD ZONE).

IN-1 IN-2 IN-3 IN-4 IN-5

MW-9 MW-13 MW-19 MW-24i MW-7 MW-12

EX-3 EX-4 EX-5 EX MP-1 MP-2 MP-3 MP4 IW

MGMS1 MGMS2

VE-1-1 VE-1-2 VE-1-3 VE-1-4
VE-2-1 VE-2-2 VE-2-3
VE-3-1 VE-3-2 VE-3-3 VE-3-4
VE-4-1 VE-4-2 VE-4-3 VE-4-4
VE-5-1 VE-5-2 VE-5-3

STS WAREHOUSE NO. 15
STS WAREHOUSE NO. 13
COVERED AREA
EXISTING CONCRETE PAD
ELECTRICAL PANEL
EXISTING ASPHALT PAVEMENT
EDGE OF PAVEMENT
HYDRANT
OVERHEAD DOOR (TYP)
BUILDING COLUMN (TYP.)
COVERED AREA
COLUMBIA RIVER

N

0 40 80
Approximate Scale in Feet

LEGEND:

VE-1-2	VAPOR EXTRACTION WELL LOCATION
EX-3	GROUNDWATER EXTRACTION WELL
IN-1	GROUNDWATER INJECTION WELL
MW-1	GROUNDWATER MONITORING WELL
MGMS3	MULTI-LEVEL GROUNDWATER WELL

UTILITY LEGEND:

E	ELECTRICAL
SS	STORM SEWER
W	WATER
MH	MANHOLE

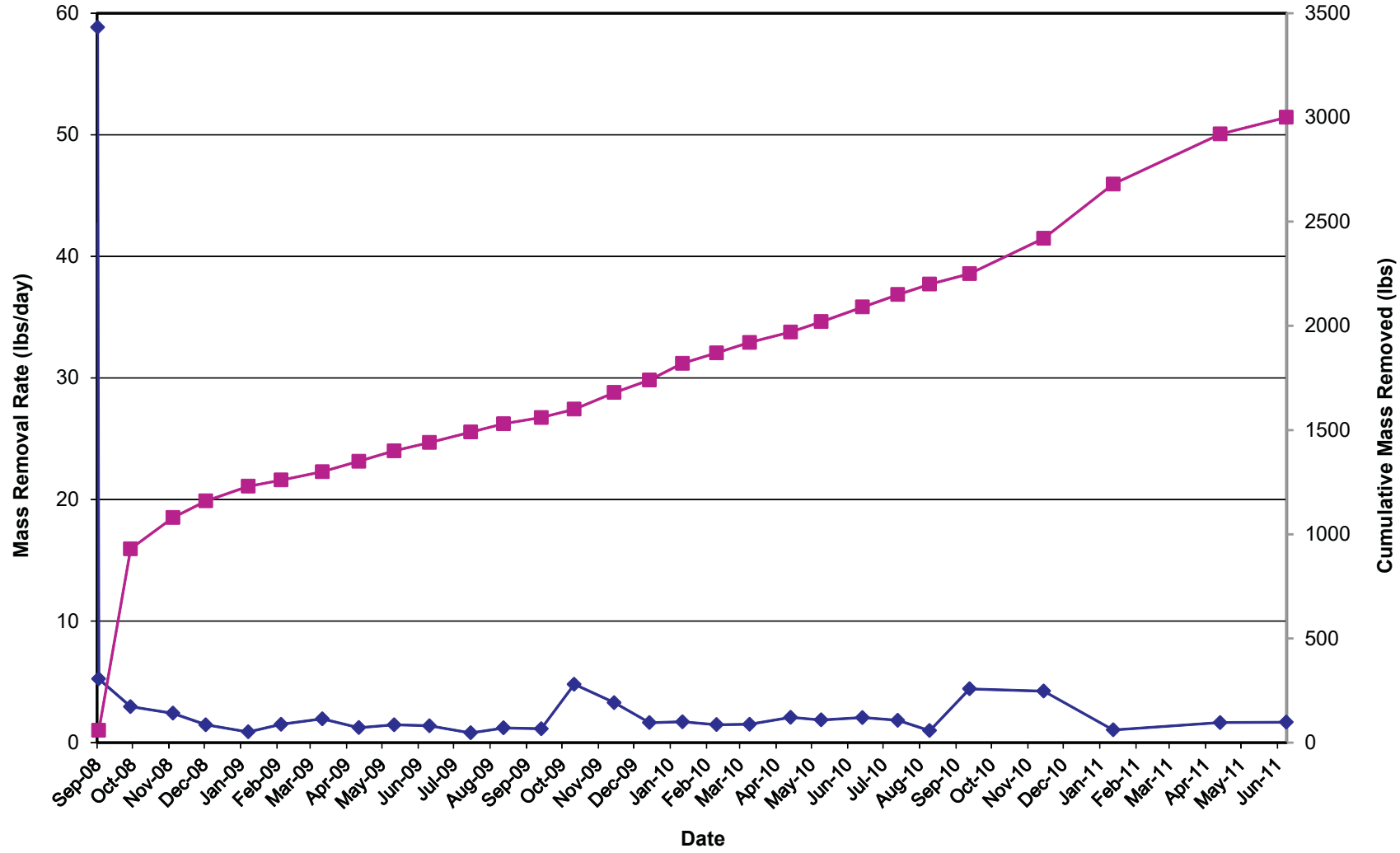
NOTES:
1. BASE PLAN PREPARED FROM AN AUTOCAD FILE (SECOR FIGURE 1, JOB 150T.STSRV.05.0012).
2. UTILITY LOCATIONS SHOWN BASED ON SURFACE MARKINGS BY UTILITY LOCATOR.
3. INJECTION LOCATIONS BASED ON FIELD MEASUREMENTS TO EXISTING SITE STRUCTURES.

Soil Vapor Extraction System Site Plan

First Semi-Annual Groundwater Monitoring Report 2011
NuStar Terminals Services, Inc. Vancouver Facility
Vancouver, Washington

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

Project Number	1126-09	Figure
August 2011		10



Legend:

Removal Rate (lbs/day)

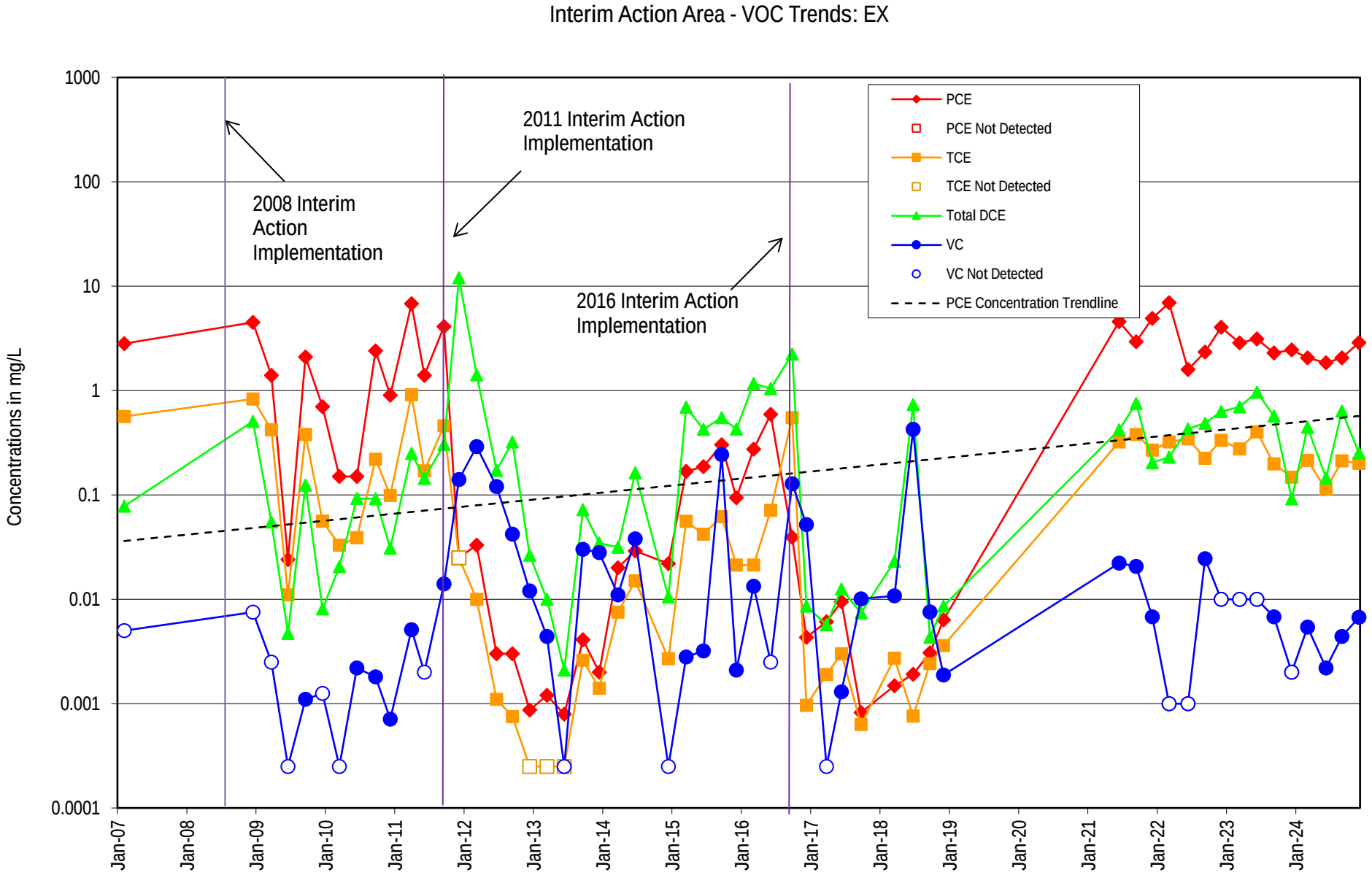
Cumulative Mass Removal

2008 SVE System - VOC Mass Removal

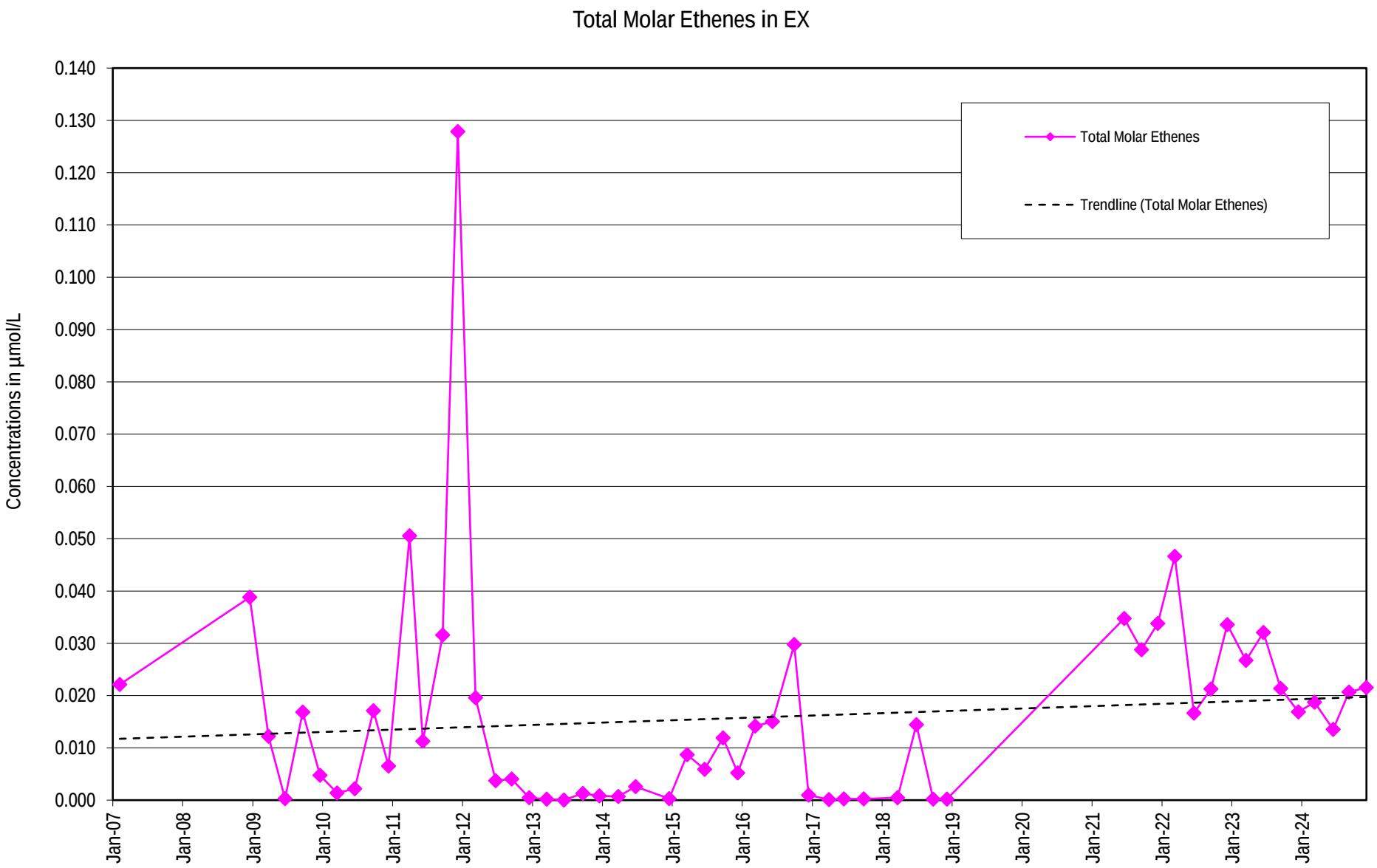
Second Semi-Annual Groundwater Monitoring Report 2011
NuStar Terminals Services, Inc. Vancouver Facility
Vancouver, Washington

Ash Creek Associates, Inc. Environmental and Geotechnical Consultants	Project Number	1126-09	Figure 11
	January 2012		

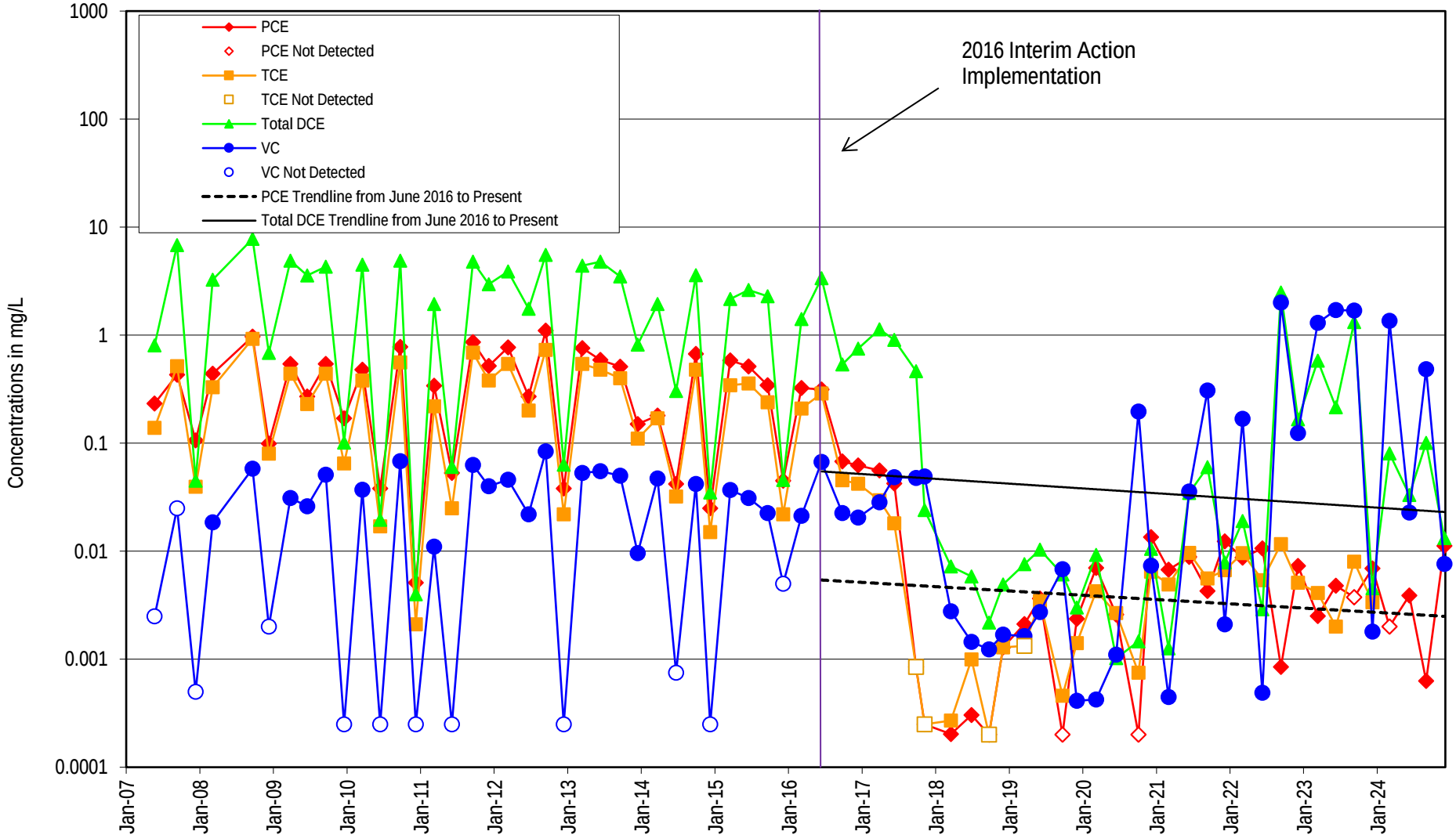
APPENDIX G
Molar Concentration Trend Plots—Interim Action Wells



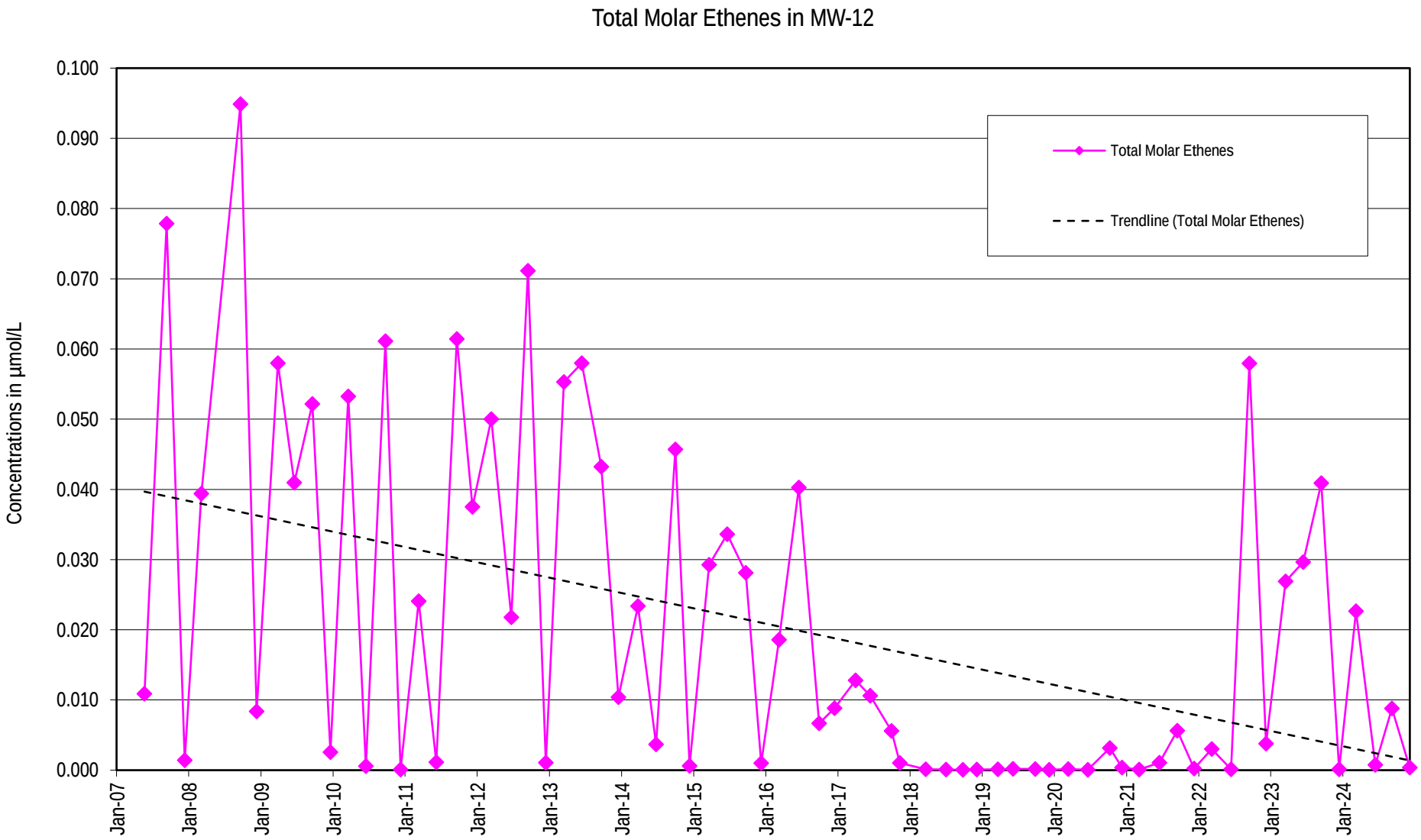
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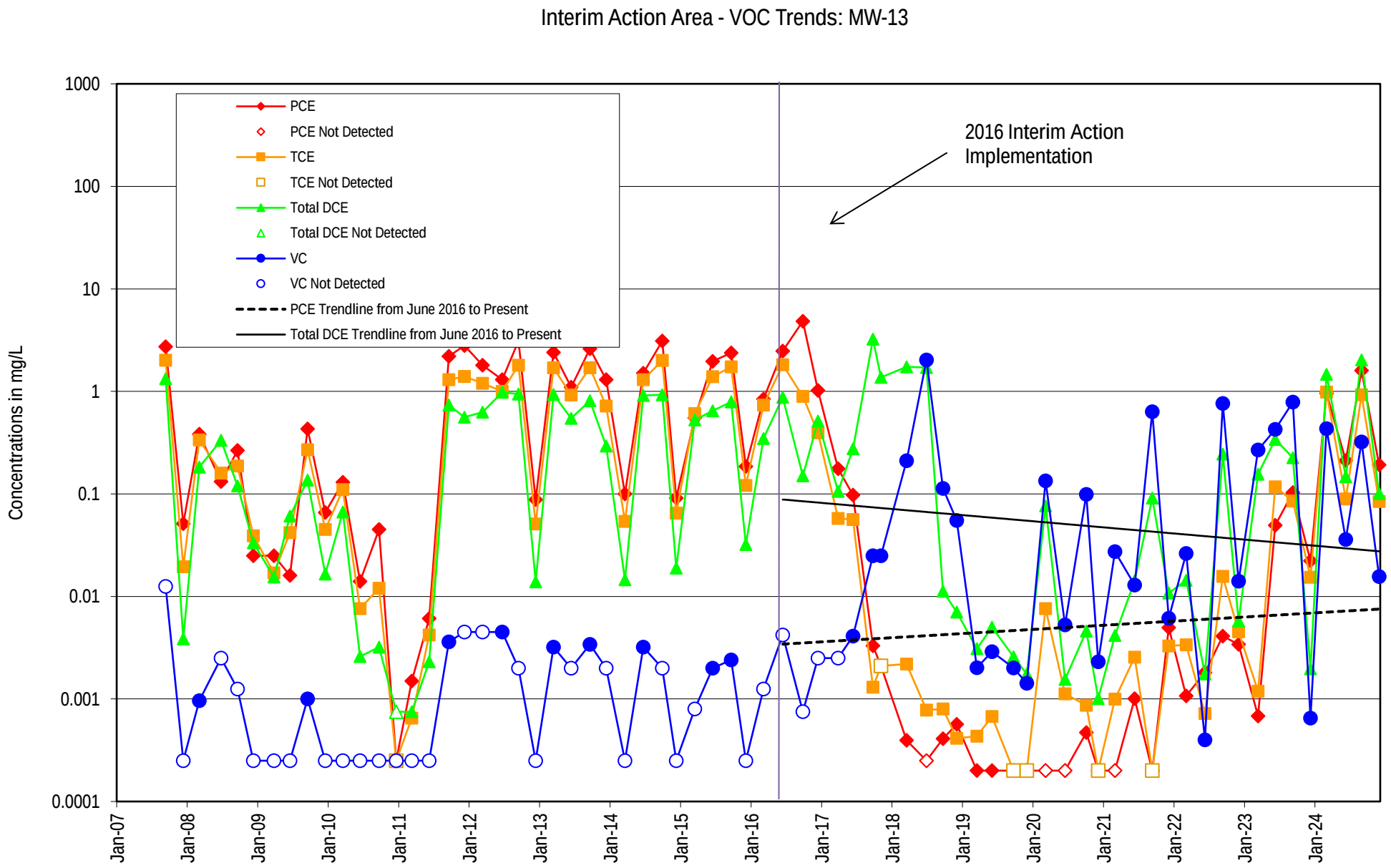

Total Molar Ethenes in EX
Concentrations in µmol/L
0.140
0.130
0.120
0.110
0.100
0.090
0.080
0.070
0.060
0.050
0.040
0.030
0.020
0.010
0.000
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18
Jan-19
Jan-20
Jan-21
Jan-22
Jan-23
Jan-24
Total Molar Ethenes
Trendline (Total Molar Ethenes)

Interim Action Area - VOC Trends: MW-12

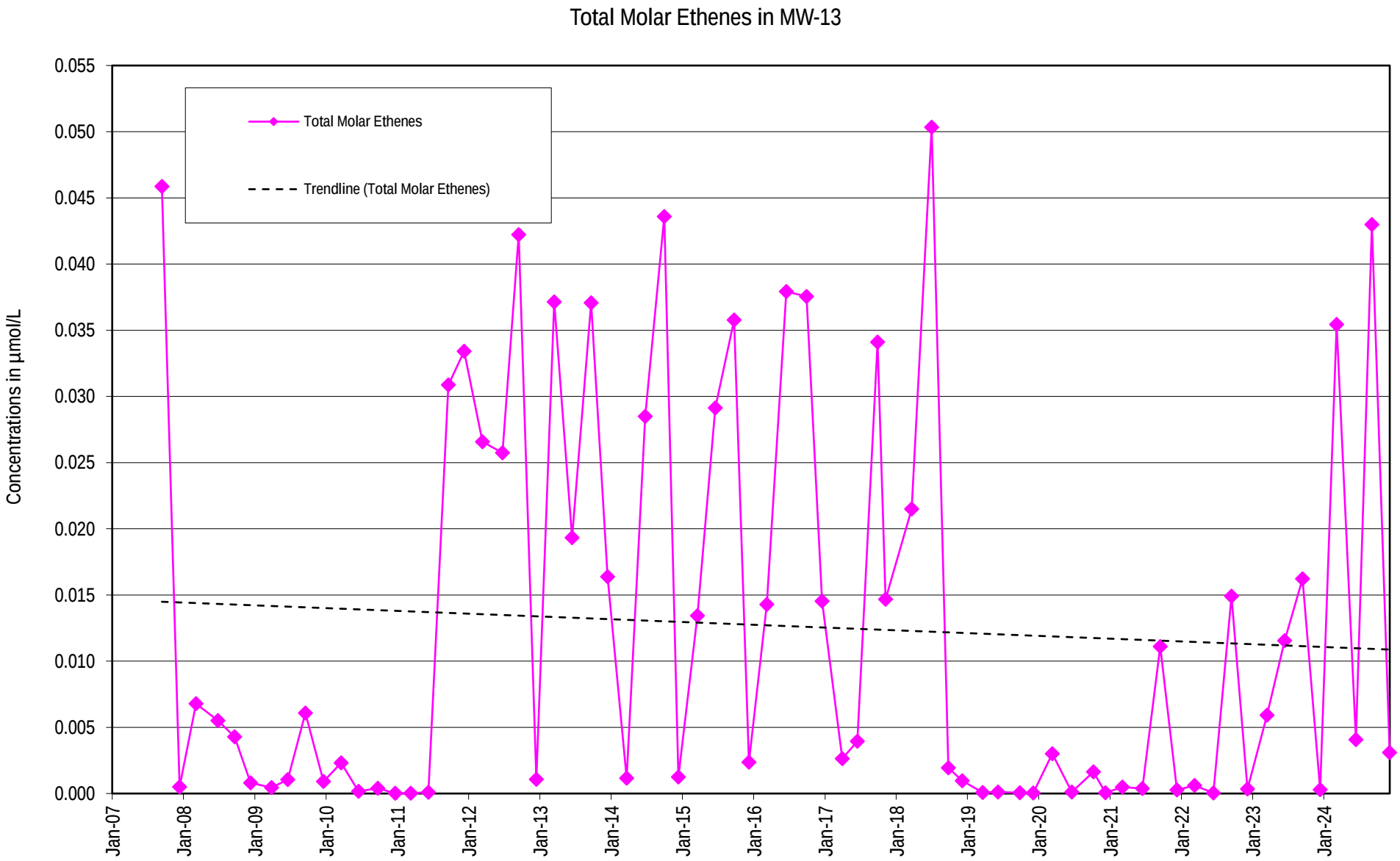


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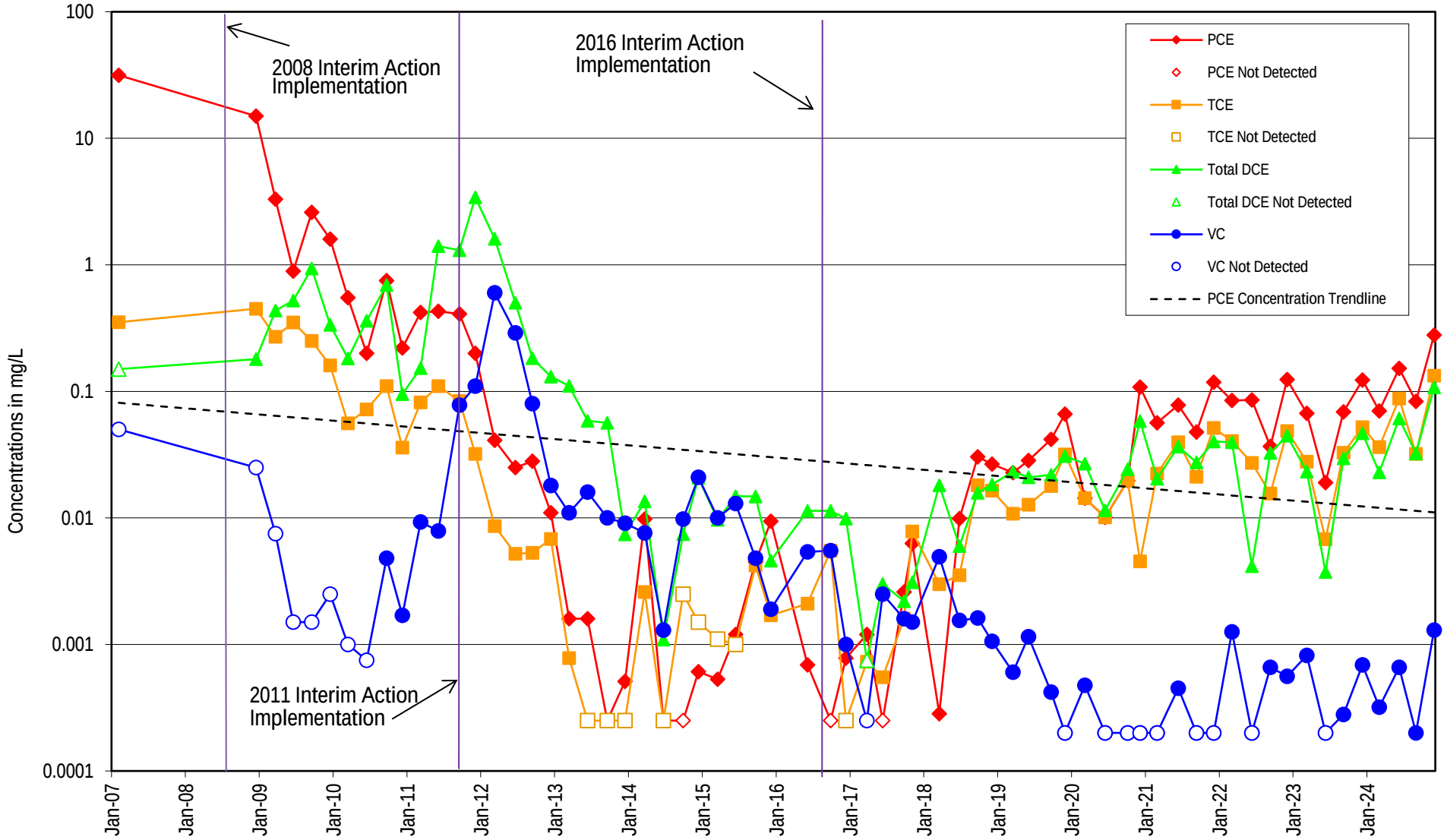

Total Molar Ethenes in MW-12
Concentrations in µmol/L
0.100
0.090
0.080
0.070
0.060
0.050
0.040
0.030
0.020
0.010
0.000
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18
Jan-19
Jan-20
Jan-21
Jan-22
Jan-23
Jan-24
Total Molar Ethenes
Trendline (Total Molar Ethenes)



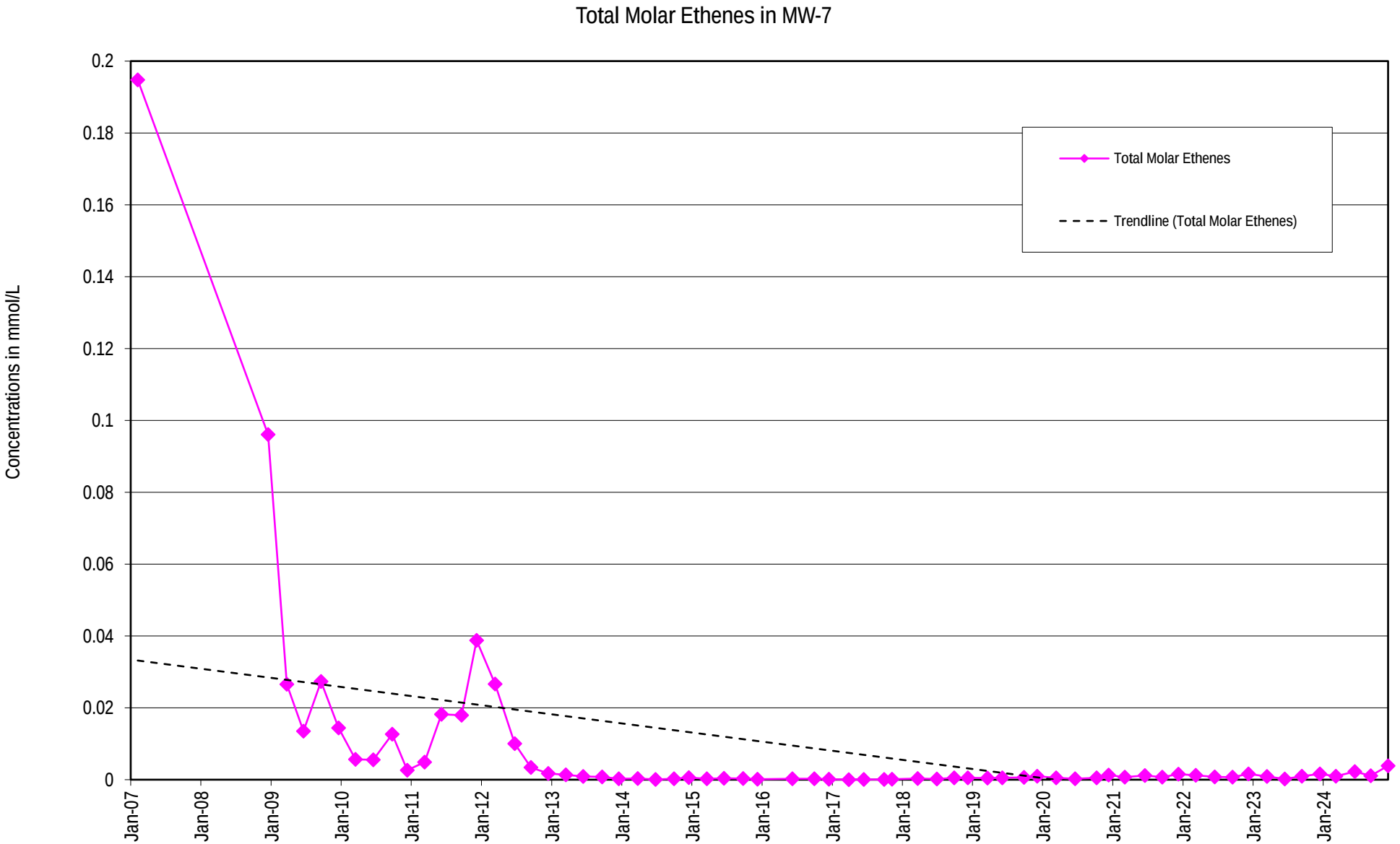
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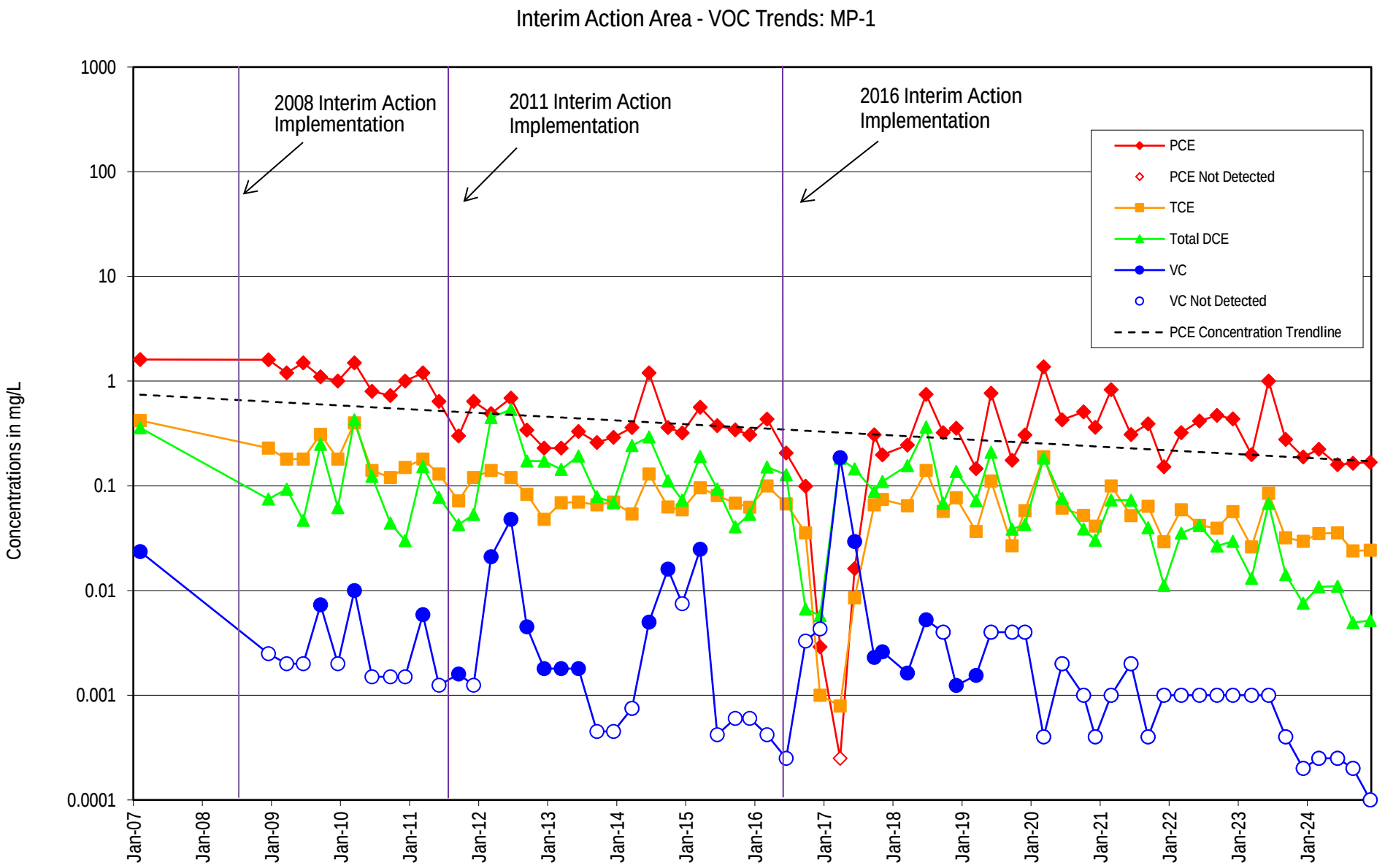

Total Molar Ethenes in MW-13
Total Molar Ethenes
Trendline (Total Molar Ethenes)
Concentrations in µmol/L
0.055
0.050
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18
Jan-19
Jan-20
Jan-21
Jan-22
Jan-23
Jan-24

Interim Action Area - VOC Trends: MW-7

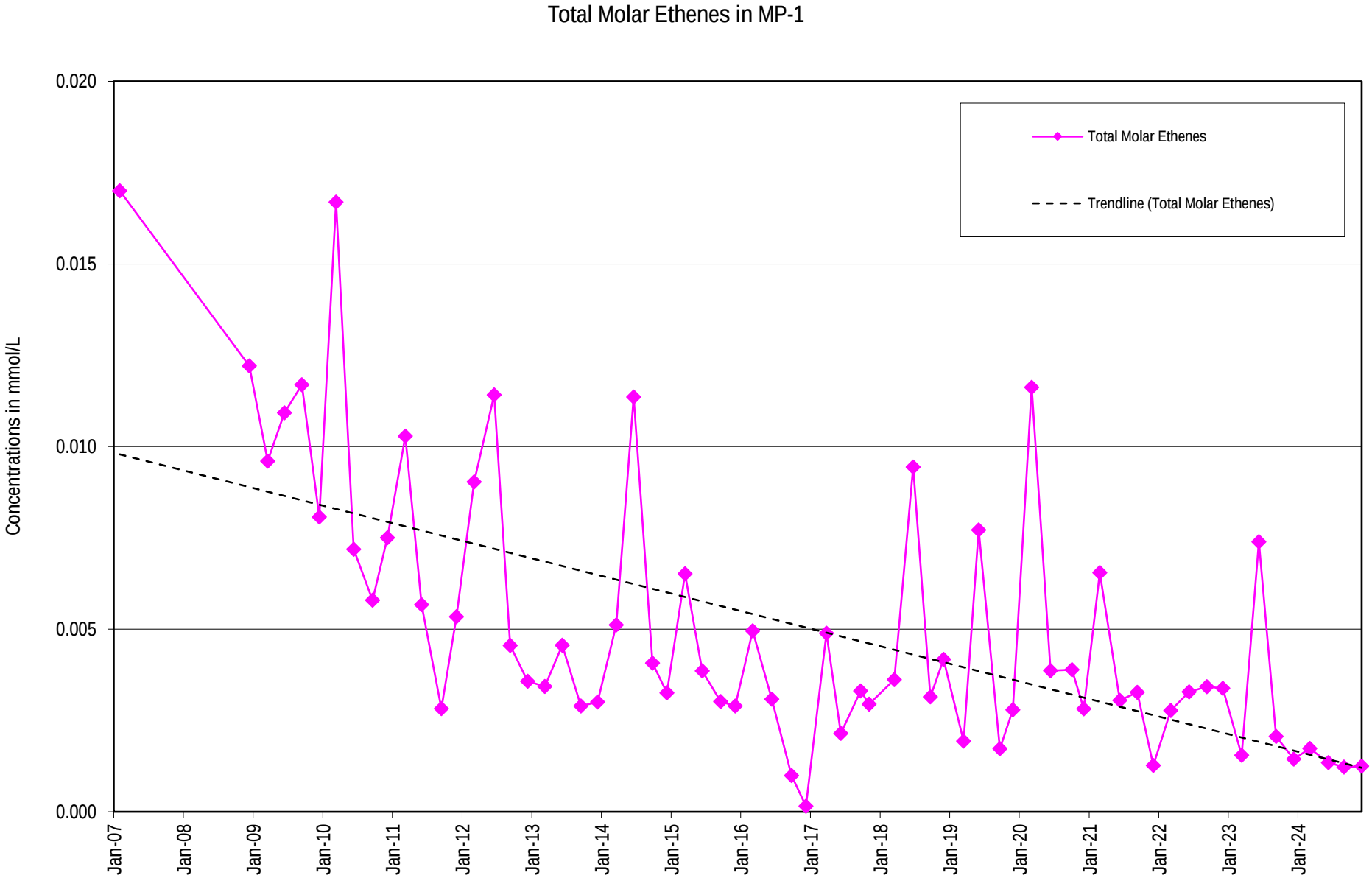


Notes: Not detected values plotted at 1/2 the reporting limit.

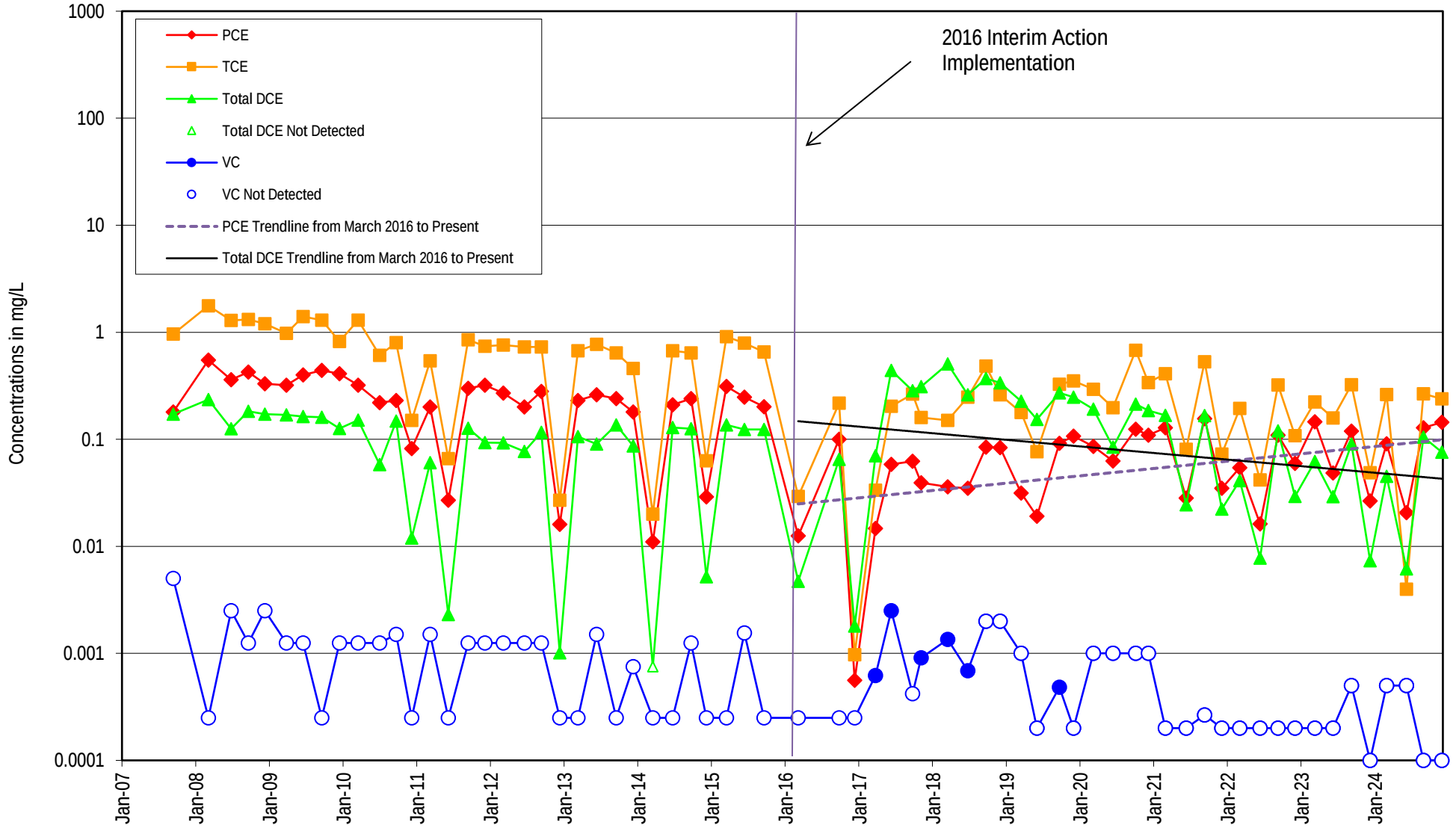

Total Molar Ethenes in MW-7
Concentrations in mmol/L
0.2
0.18
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18
Jan-19
Jan-20
Jan-21
Jan-22
Jan-23
Jan-24
Total Molar Ethenes
Trendline (Total Molar Ethenes)



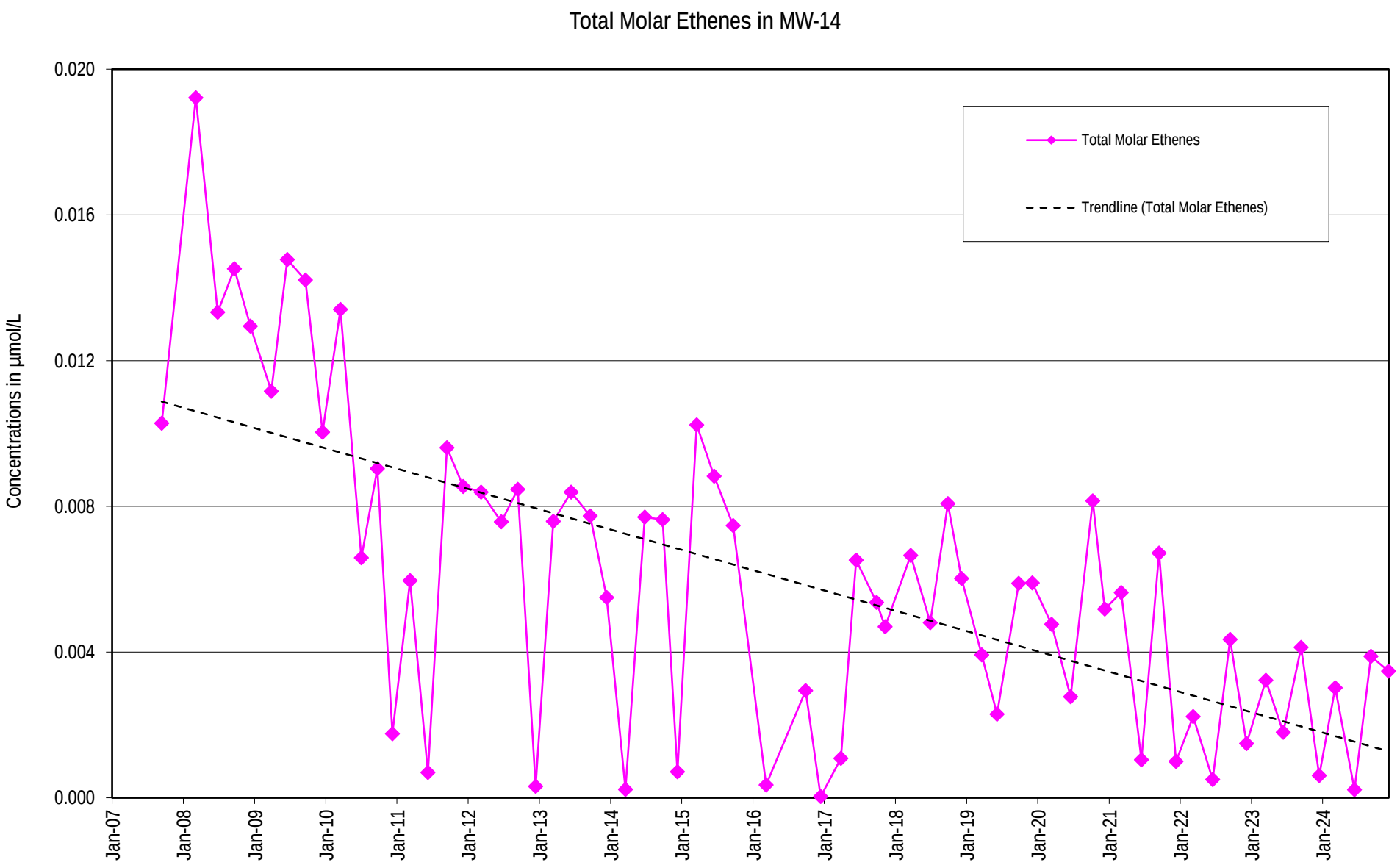
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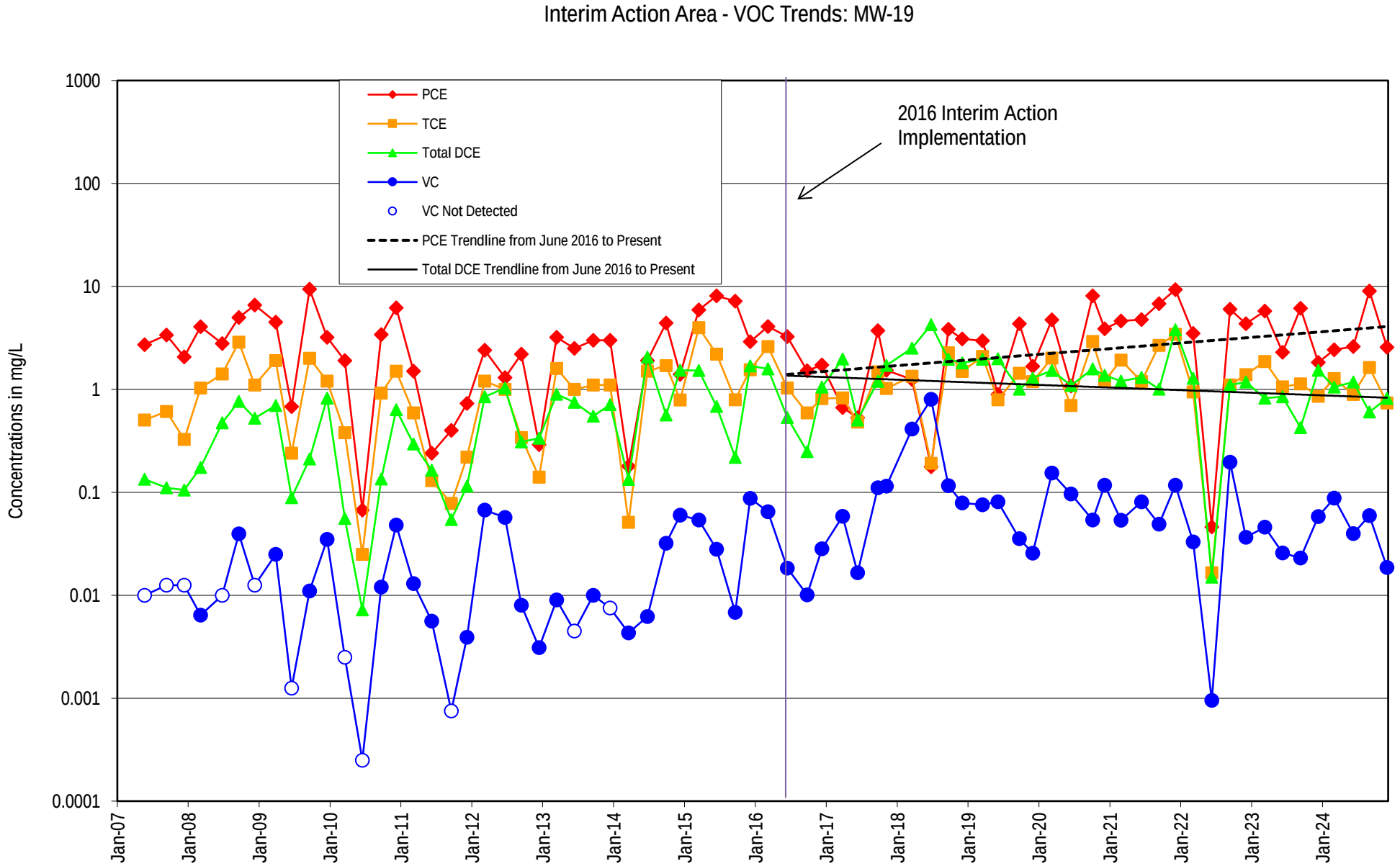

Total Molar Ethenes in MP-1
Concentrations in mmol/L
0.020
0.015
0.010
0.005
0.000
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18
Jan-19
Jan-20
Jan-21
Jan-22
Jan-23
Jan-24
Total Molar Ethenes
Trendline (Total Molar Ethenes)

Interim Action Area - VOC Trends: MW-14

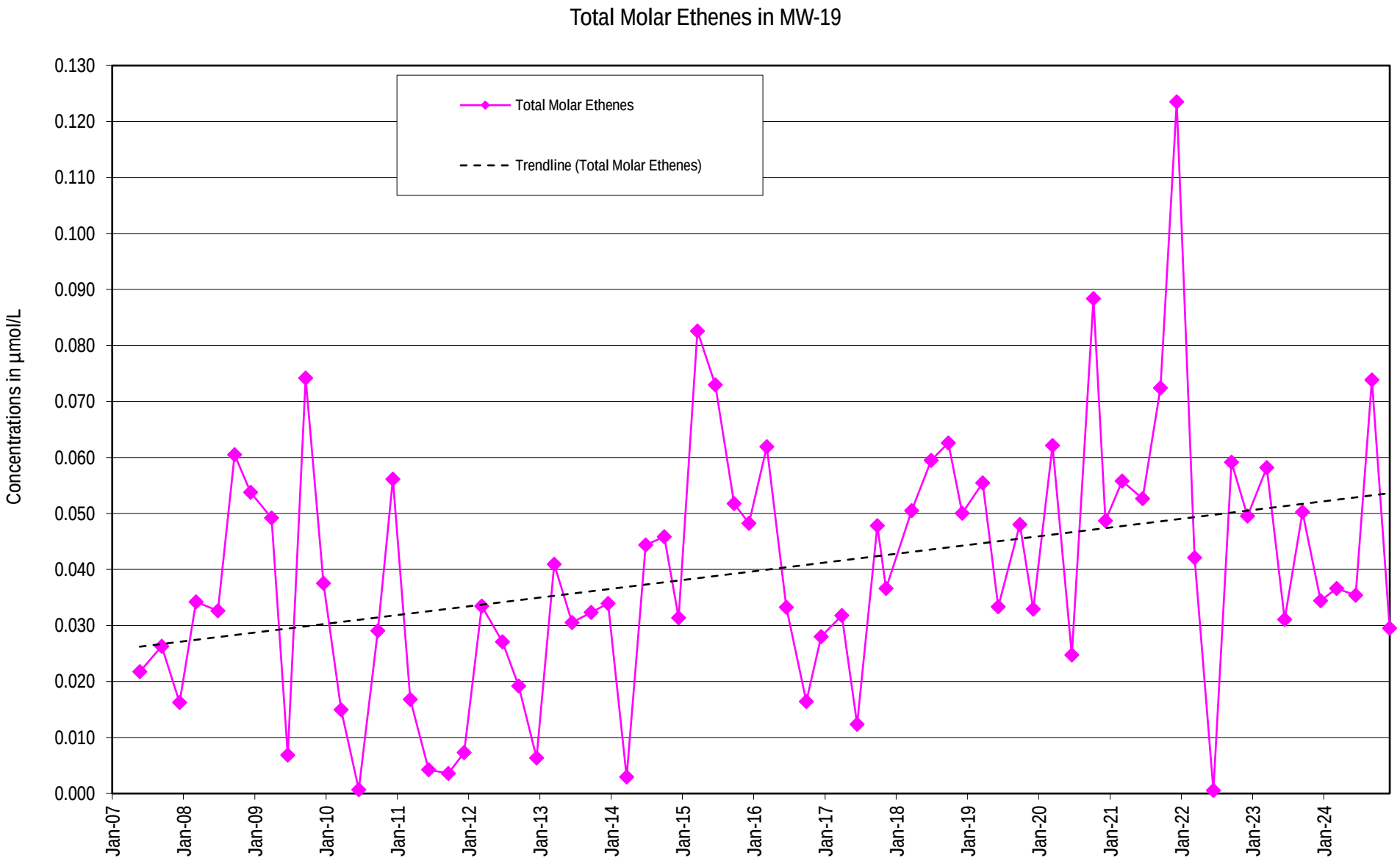


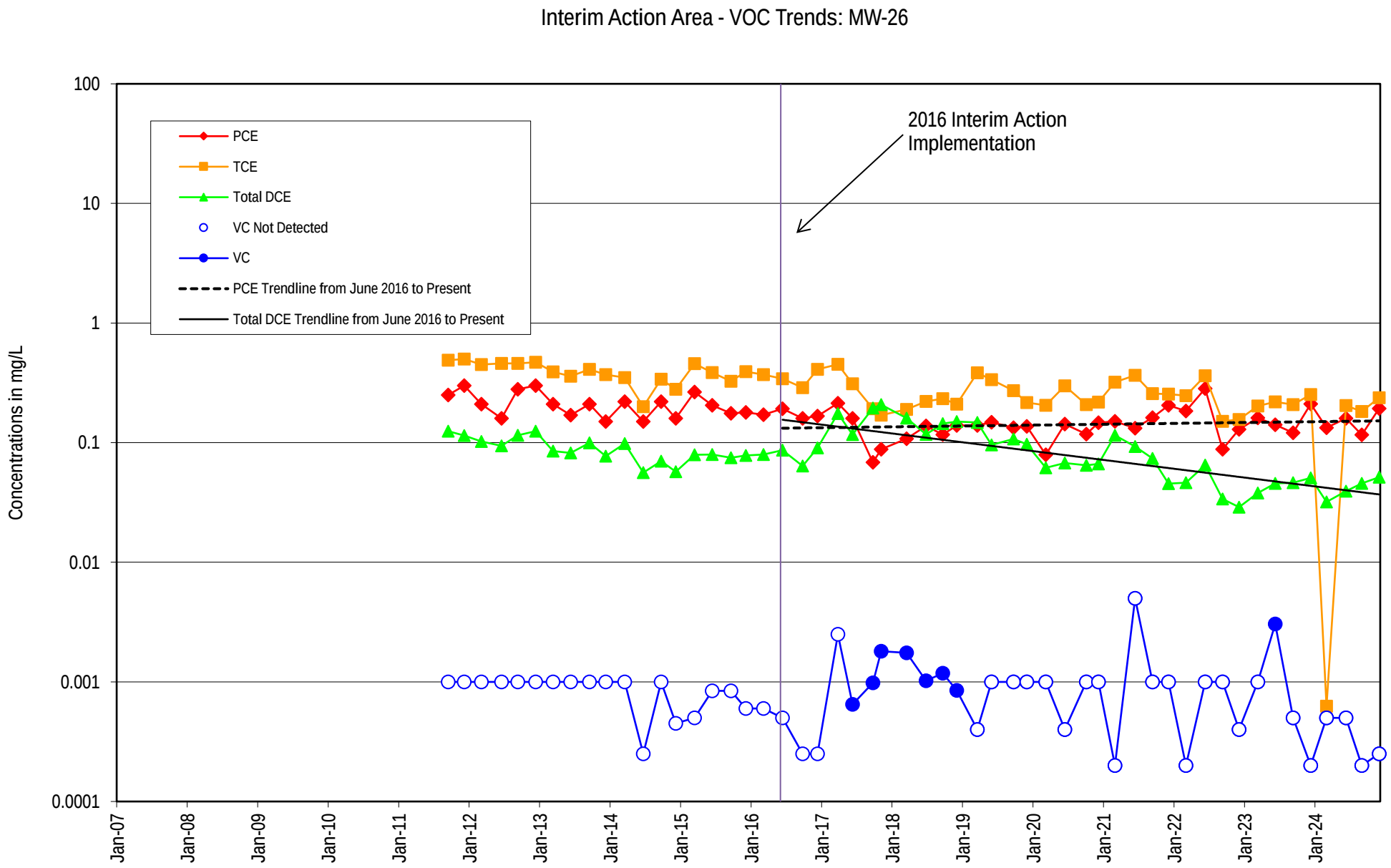
Note: Not detected values plotted at 1/2 the reporting limit.


Total Molar Ethenes in MW-14
Concentrations in µmol/L
0.020
0.016
0.012
0.008
0.004
0.000
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18
Jan-19
Jan-20
Jan-21
Jan-22
Jan-23
Jan-24
Total Molar Ethenes
Trendline (Total Molar Ethenes)

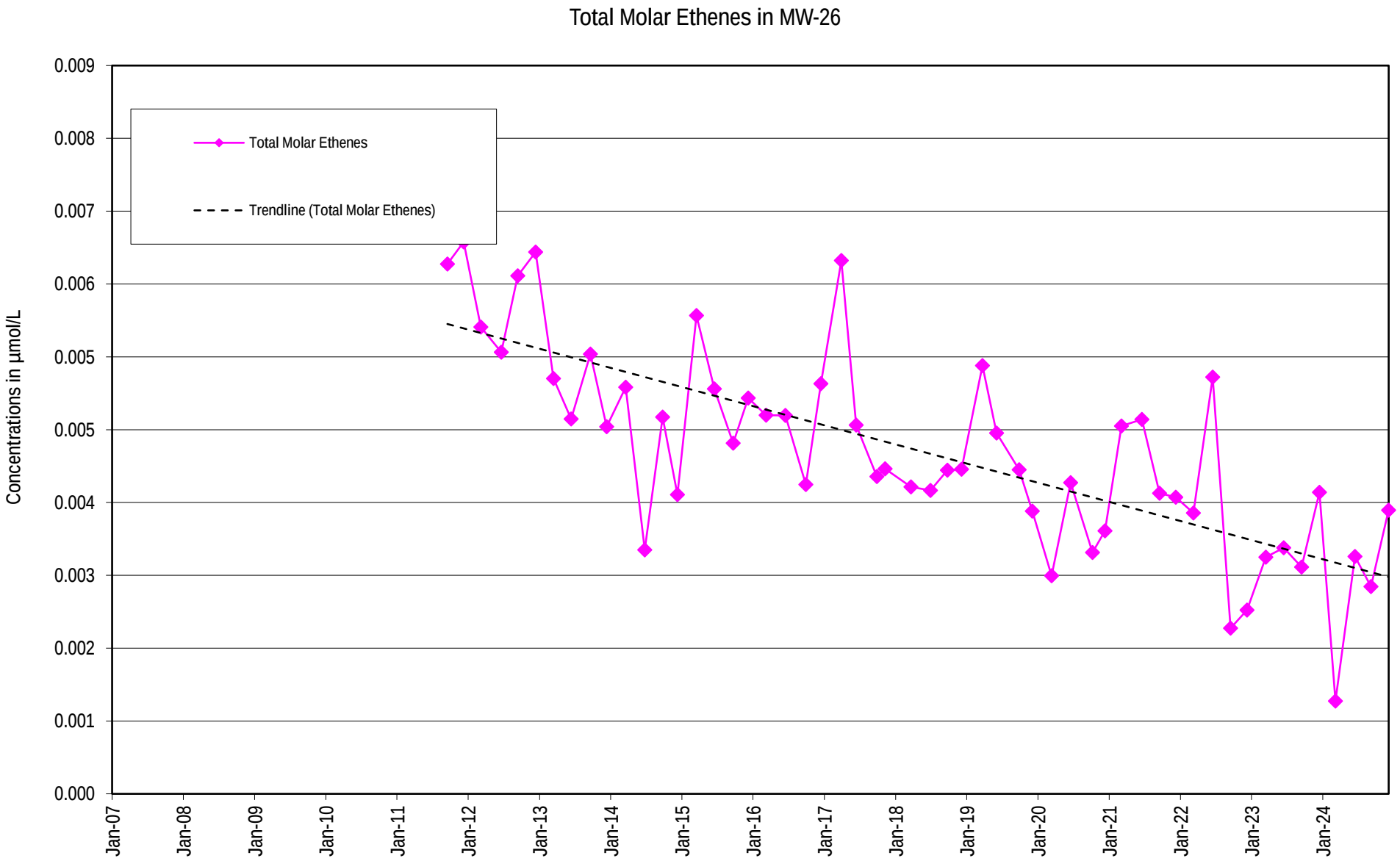


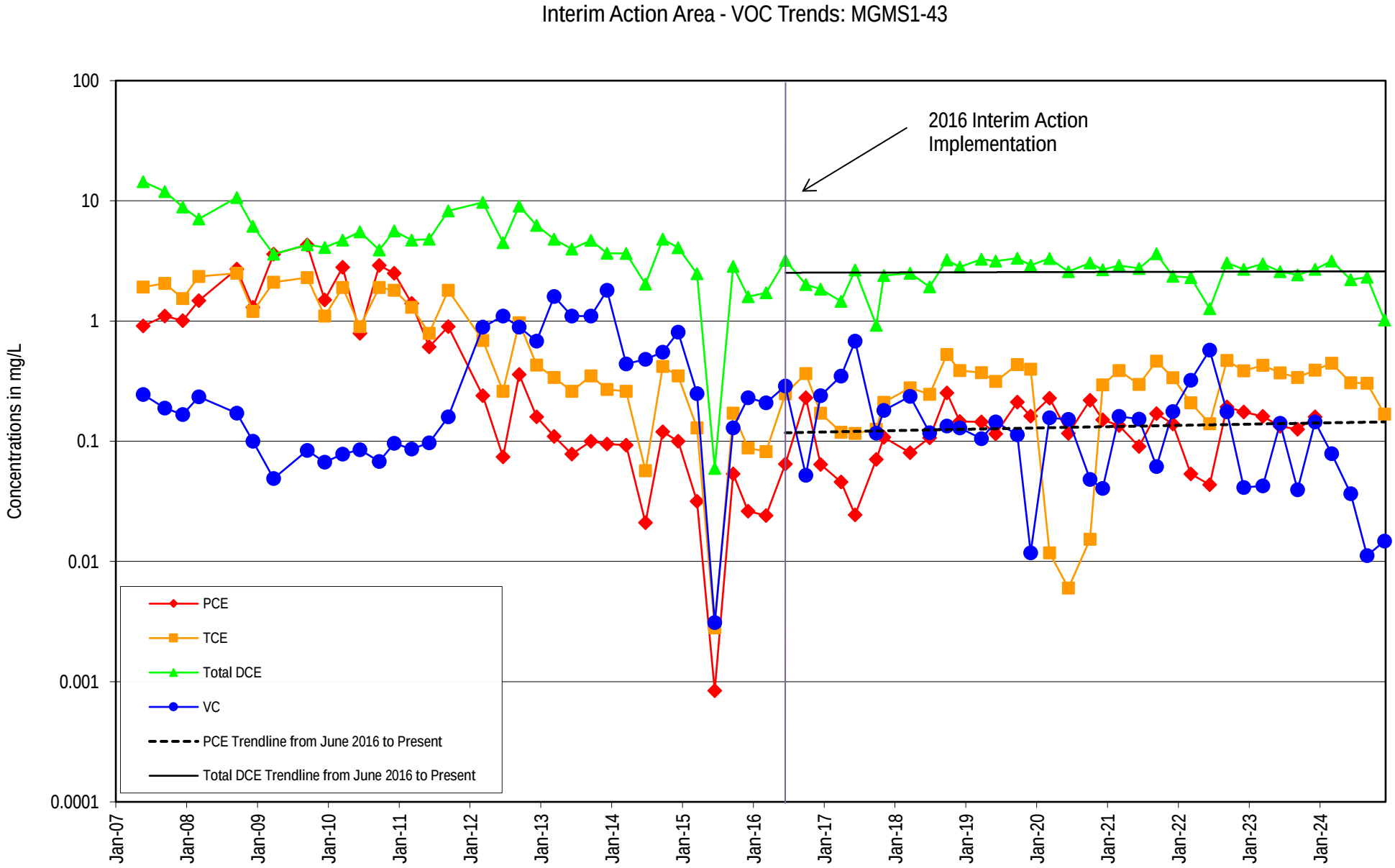
Note: Not detected values plotted at 1/2 the reporting limit.


Total Molar Ethenes in MW-19
Total Molar Ethenes
Trendline (Total Molar Ethenes)
Concentrations in µmol/L
0.130
0.120
0.110
0.100
0.090
0.080
0.070
0.060
0.050
0.040
0.030
0.020
0.010
0.000
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18
Jan-19
Jan-20
Jan-21
Jan-22
Jan-23
Jan-24

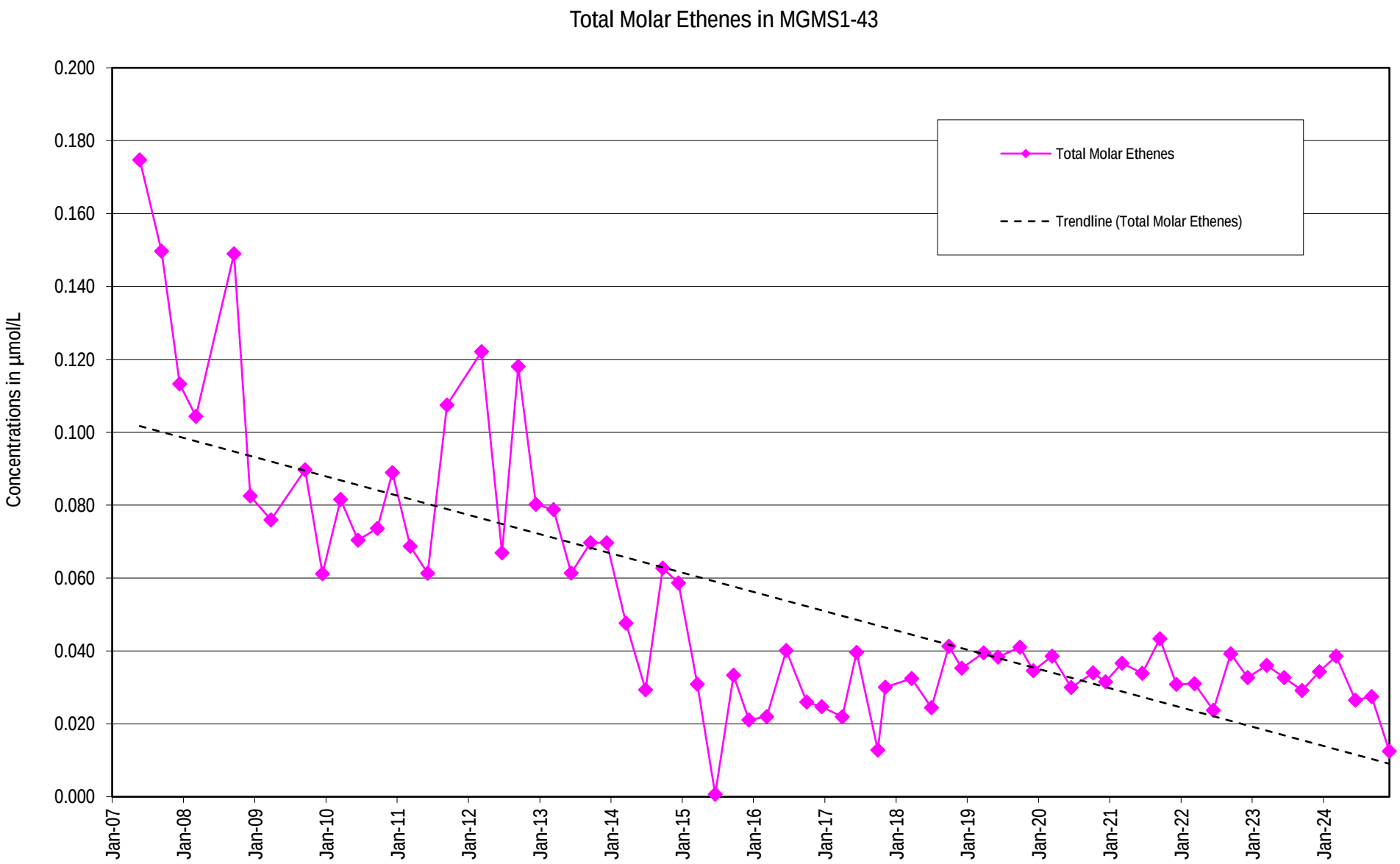


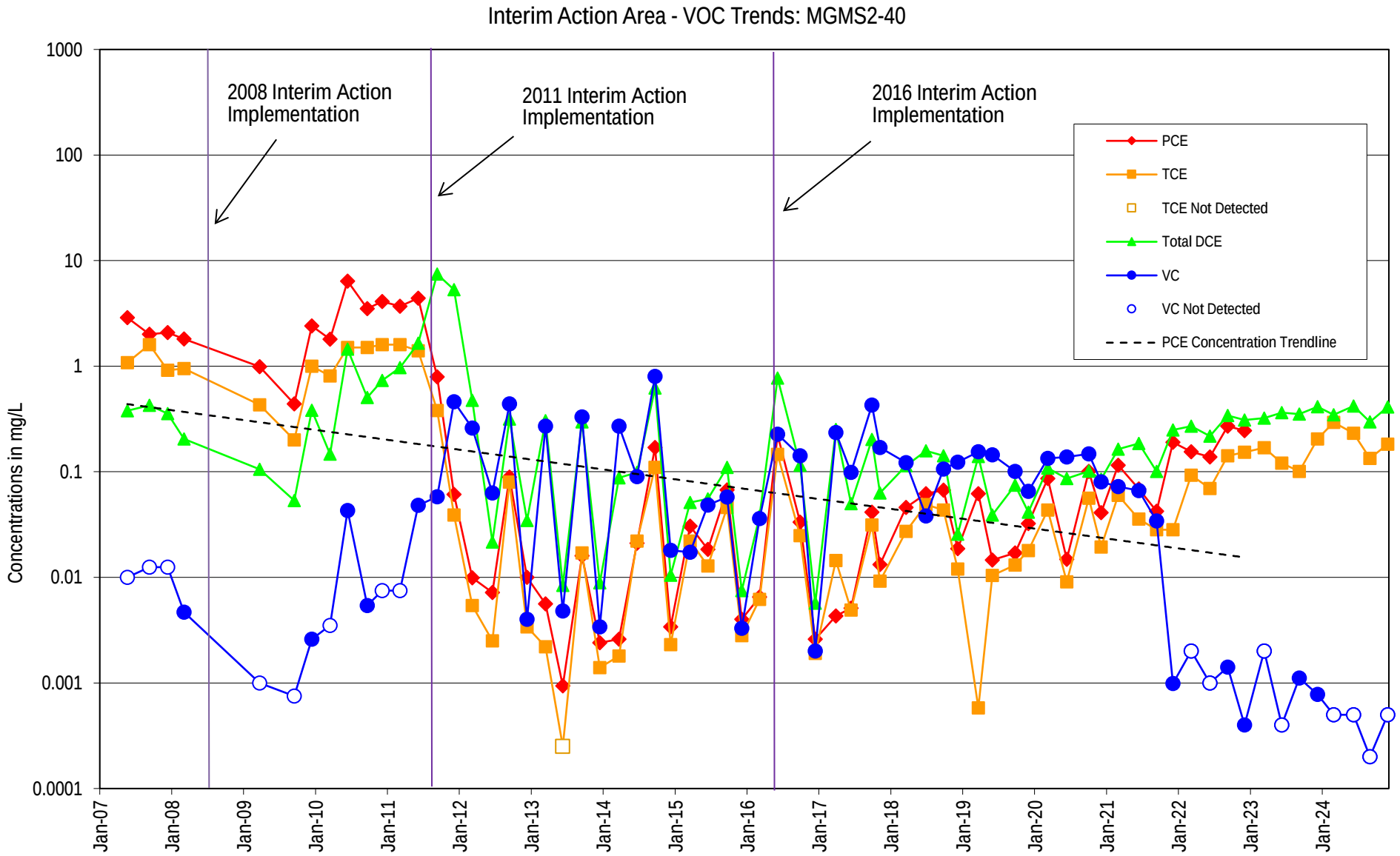
Note: Not detected values plotted at 1/2 the reporting limit.


Total Molar Ethenes in MW-26
Total Molar Ethenes
Trendline (Total Molar Ethenes)
Concentrations in µmol/L
0.009
0.008
0.007
0.006
0.005
0.005
0.004
0.003
0.002
0.001
0.000
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18
Jan-19
Jan-20
Jan-21
Jan-22
Jan-23
Jan-24

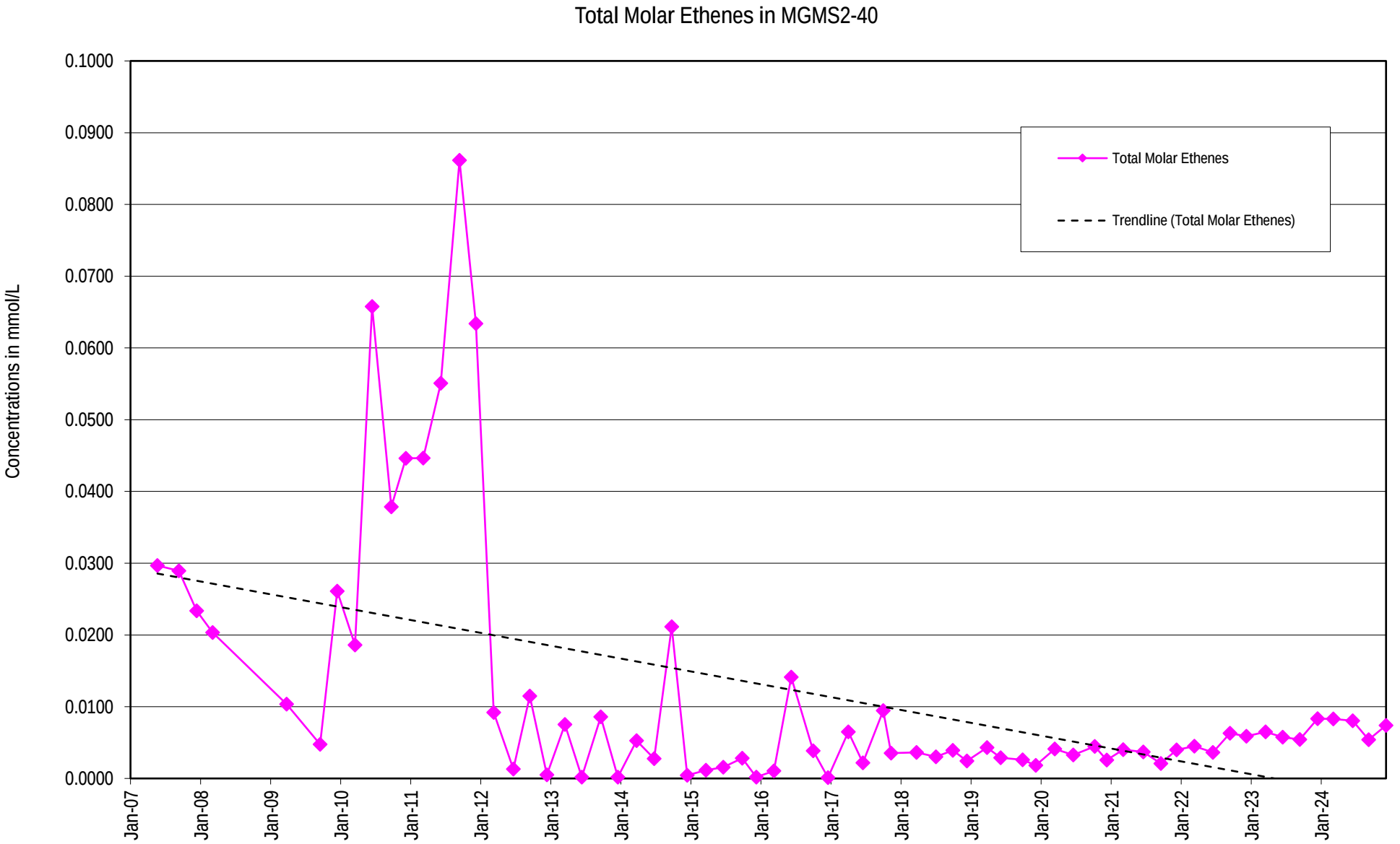


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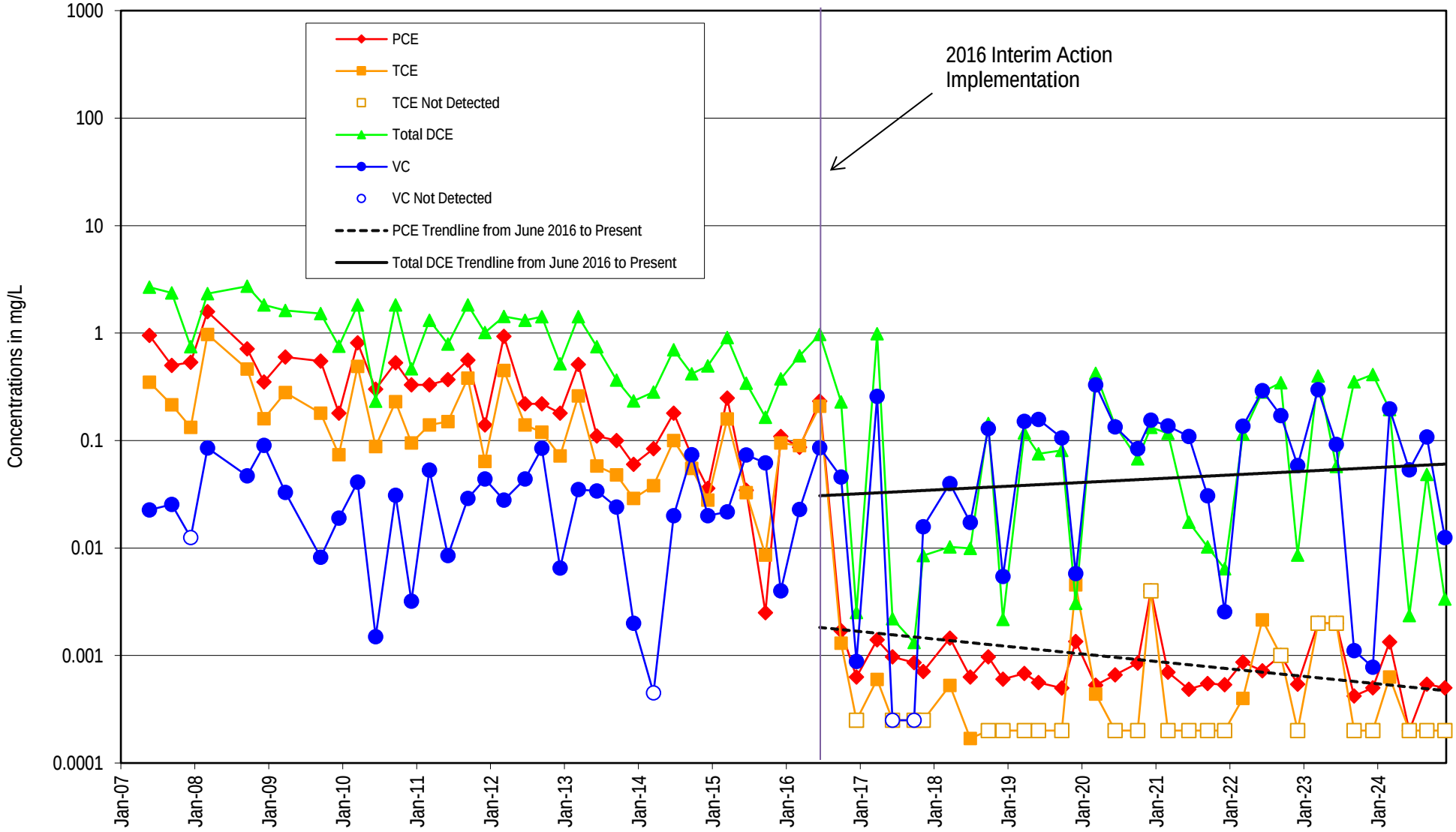

Total Molar Ethenes in MGMS1-43
Concentrations in µmol/L
0.200
0.180
0.160
0.140
0.120
0.100
0.080
0.060
0.040
0.020
0.000
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18
Jan-19
Jan-20
Jan-21
Jan-22
Jan-23
Jan-24
Total Molar Ethenes
Trendline (Total Molar Ethenes)



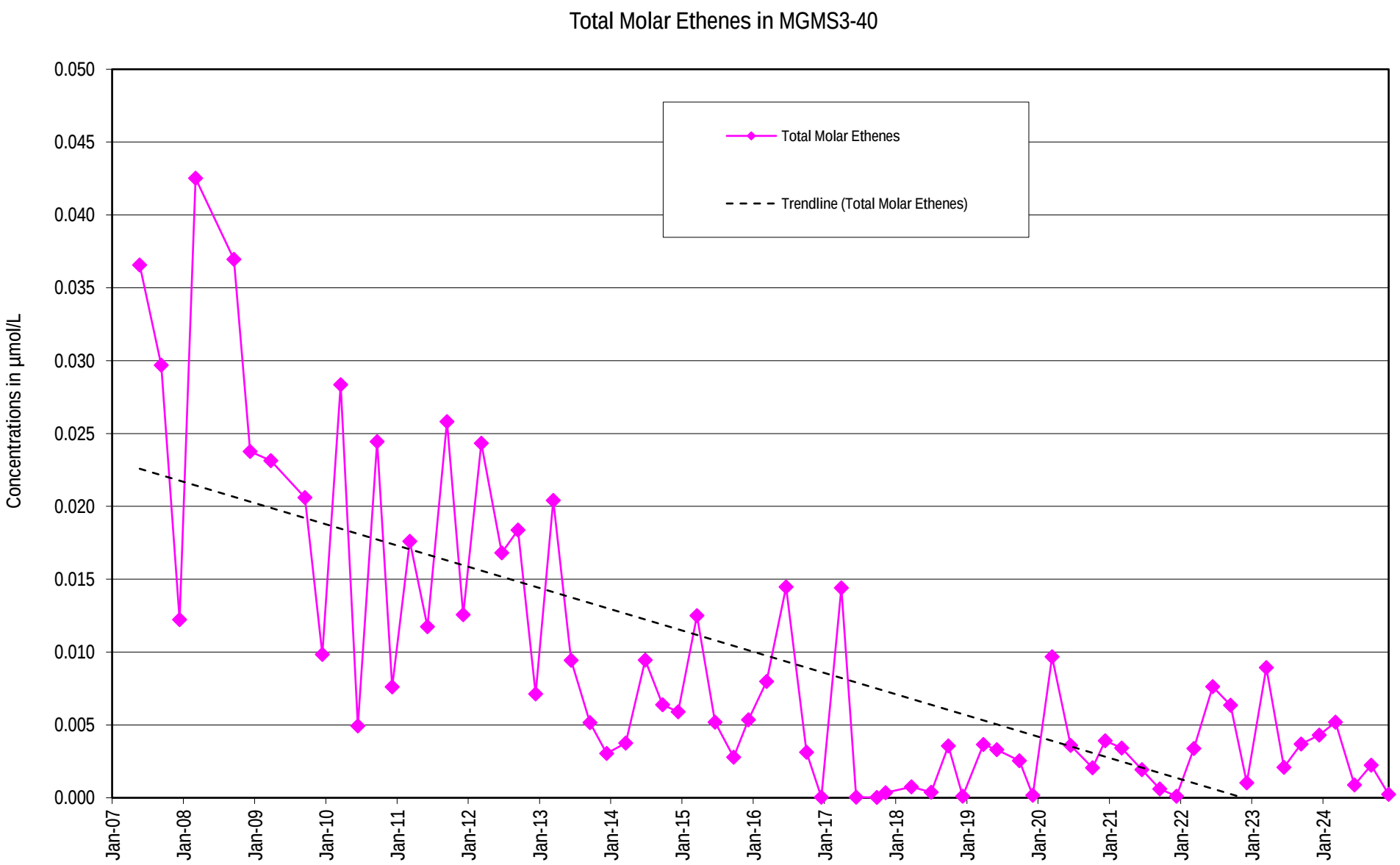
Note: Not detected values plotted at 1/2 the reporting limit.


Total Molar Ethenes in MGMS2-40
Concentrations in mmol/L
0.1000
0.0900
0.0800
0.0700
0.0600
0.0500
0.0400
0.0300
0.0200
0.0100
0.0000
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18
Jan-19
Jan-20
Jan-21
Jan-22
Jan-23
Jan-24
Total Molar Ethenes
Trendline (Total Molar Ethenes)

Interim Action Area - VOC Trends: MGMS3-40



Note: Not detected values plotted at 1/2 the reporting limit.


Total Molar Ethenes in MGMS3-40
Concentrations in µmol/L
0.050
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
Total Molar Ethenes
Trendline (Total Molar Ethenes)
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18
Jan-19
Jan-20
Jan-21
Jan-22
Jan-23
Jan-24

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