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FIRST AND SECOND QUARTER 2022 GROUNDWATER MONITORING AND TREATMENT SYSTEM OPERATION AND MAINTENANCE REPORT

CHS AUBURN SITE
AUBURN, WASHINGTON

Submitted by:
Farallon Consulting, L.L.C.
975 5th Avenue Northwest
Issaquah, Washington 98027

Farallon PN: 301-004

For:
CHS Inc.
763 Willoughby Lane
Stevensville, Montana 59870

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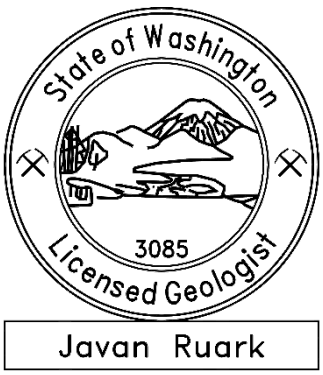
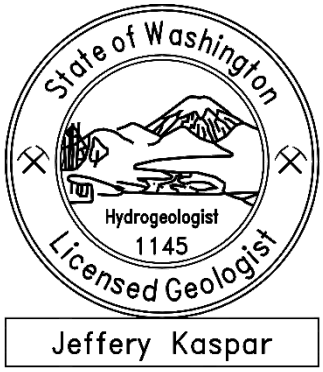
Prepared by:

Javan Ruark, L.G.
Associate Geologist



Reviewed by:

Jeff Kaspar, L.G., L.H.G.
Principal Geologist



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1.0 INTRODUCTION

Farallon Consulting, L.L.C. (Farallon) has prepared this report on behalf of CHS Inc. (CHS) to document air sparge (AS) and soil vapor extraction (SVE) system routine operation and maintenance (O&M) and optimization activities for the period from November 17, 2021 through July 8, 2022 (herein referred to as the reporting period) for the central portion of the CHS Auburn site in Auburn, Washington (herein referred to as the Site), and groundwater monitoring activities conducted on May 25 and 26, 2022 at the Site. For the purpose of this report, the groundwater monitoring and sampling activities conducted on May 25 and 26, 2022 are referred to herein as the May 2022 monitoring event. A Site vicinity map is provided on Figure 1, and a Site plan is provided on Figure 2. The Site is listed in the Washington State Department of Ecology (Ecology) Confirmed and Suspected Contaminated Sites List database as Cenex Valley Supply Coop, and has been assigned Site Identification No. 2487.

A Remedial Investigation/Feasibility Study for the Site was conducted in accordance with the Washington State Model Toxics Control Act Cleanup Regulation (MTCA), as established in Chapter 173-340 of the Washington Administrative Code, and pursuant to the requirements of Agreed Order No. 4033 entered into between CHS and Ecology on June 12, 2007. The Remedial Investigation Report was submitted to Ecology on July 20, 2011 (Farallon 2011). A *Feasibility Study* for the Site was submitted to Ecology (Farallon 2014). A working draft of the *Draft Cleanup Action Plan* was submitted for Ecology review on May 28, 2015 (Farallon 2015). The public review and comment period for the Draft Cleanup Action Plan and for Draft Consent Decree No. 18-2-15430-8 issued by Ecology was completed on May 7, 2018. The *Final Cleanup Action Plan, CHS Auburn Site, 238 8th Street Southeast and Contiguous Areas, Auburn, Washington, Agreed Order No. 4033, Facility Site No. 2487* dated May 8, 2018 issued by Ecology (Final Cleanup Action Plan) was included as Exhibit B of Consent Decree No. 18-2-15430-8 between Ecology and CHS, with an effective date of June 20, 2018.

The scope of work for the May 2022 monitoring event and the AS/SVE system O&M and optimization activities was conducted in accordance with the *Performance Monitoring Plan, CHS Auburn Site, Auburn, Washington, Facility Site No. 2487, Consent Decree No. 18-2-15430-8* dated February 15, 2019 prepared by Farallon (2019) (Performance Monitoring Plan) that was approved by Ecology (2019).

This report is organized into the following sections:

- **Section 2**, **Treatment System Operation, Maintenance, and Optimization**, provides details on the operation, maintenance, and optimization of the AS/SVE system.
- **Section 3**, **Groundwater Monitoring Methods**, describes the sampling protocols and the selected monitoring wells and analyses for the May 2022 monitoring event.
- **Section 4**, **Groundwater Monitoring Results**, presents groundwater elevations and Site-wide analytical results from the May 2022 monitoring event, and the data validation conducted.

- **Section 5**, **Discussion**, presents a summary of contaminant distribution in groundwater at the Site prior to and after start-up of the reconfigured AS/SVE system in June 2019.
- **Section 6**, **Ongoing and Planned Activities**, discusses planned activities for the second semiannual 2022 groundwater monitoring event scheduled for November 2022, and routine O&M of the AS/SVE system at the Site.
- **Section 7**, **References**, provides a list of the documents cited in this report.

2.0 TREATMENT SYSTEM OPERATION, MAINTENANCE, AND OPTIMIZATION

This section provides details regarding the O&M and optimization of the AS/SVE system in the central area of the Site during the reporting period (Figure 3). A summary of AS/SVE system operational parameters from June 16, 2021 through November 16, 2021 was included in the Third and Fourth Quarter 2021 Groundwater Monitoring, and Treatment System Operation and Maintenance Report (Farallon 2022).

As detailed in the Final Cleanup Action Plan, the purpose of the AS/SVE system is to reduce concentrations of total petroleum hydrocarbons as diesel-range organics (DRO), as oil-range organics (ORO), and as gasoline-range organics (GRO); and benzene, toluene, ethylbenzene, and xylenes (BTEX) (collectively referred to herein as the constituents of concern [COCs]) in groundwater that is down-gradient and beyond the area of influence of the AS wells in the central area of the Site to less than MTCA Method A cleanup levels within a reasonable restoration time frame.

2.1 AS/SVE SYSTEM OPERATION, MAINTENANCE, AND OPTIMIZATION

Routine O&M of the AS/SVE system was conducted bimonthly or in response to AS/SVE system shut-downs to measure and record operational parameter readings, which typically consisted of the following:

- AS compressor motor frequency, amperage, and total run time;
- SVE blower motor frequency, amperage, and total run time;
- SVE system total vacuum and flow rate;
- SVE system exhaust temperature;
- SVE well air flow, vacuum, and vapor volatile organic compound concentration measured by a photoionization detector;
- AS system pressure and temperature from the pre- and post-cooling piping array; and
- AS well airflow and pressure.

A summary of AS/SVE system operational parameters is provided in Tables 1 and 2. Based on the flow rates from or to individual AS and SVE wells and the pressure to individual AS wells, AS/SVE system operational settings were adjusted periodically to optimize flow and pressure to treat COCs in the subsurface more efficiently. AS/SVE system operational parameters for the reporting period are summarized as follows:

- Operating time (run time) totaled approximately 4,675 hours for the AS compressor and the SVE blower;
- Total vacuum for the SVE system ranged from 8.2 to 16.5 inches of water;

- The total flow rate for the SVE system ranged from 79 to 98 standard cubic feet per minute;
- Total AS system pressure ranged from 19.5 to 20.0 pounds per square inch; and
- The total AS system flow rate ranged from 33.2 to 35.1 standard cubic feet per minute.

Automatic shut-down of the AS/SVE system occurred periodically during the reporting period, which was attributed to power outages and high-temperature alarms inside the treatment building. Each time the AS/SVE system shut down, Farallon personnel were alerted via the telemetry system, and if the AS/SVE system could not be restarted remotely, trained personnel mobilized to the Site in a reasonable time frame to inspect the system, diagnose the alarm condition, and restart the system, when appropriate.

SVE system effluent air samples were collected during the February 23 and May 12, 2022, O&M site visits. The air samples were collected from the SVE system exhaust stack for each event using a 1-liter Summa canister and were delivered under standard chain-of-custody protocols to Friedman and Bruya, Inc. of Seattle, Washington for analysis for COCs by U.S. Environmental Protection Agency Method TO-15. Analytical results from the SVE system effluent air sampling are provided in Table 3. The laboratory analytical reports are provided in Appendix A. SVE system effluent air sampling data and the amount of benzene removed by the SVE system during the reporting period are summarized as follows:

- GRO was detected at a concentration of 1.70 nanoliters per microliter in the effluent air sample collected during the February 23, 2022 sampling event. GRO was not detected at a concentration exceeding the laboratory reporting limit in the effluent air sample collected during the May 12, 2022 sampling event.
- Total xylenes were detected at a concentration of 0.00210 nanoliters per microliter in the effluent air sample collected on February 23, 2022. Total xylenes were not detected at concentrations exceeding laboratory reporting limits in the effluent air sample collected on May 12, 2022.
- Benzene, toluene, and ethylbenzene were not detected at a concentration exceeding laboratory reporting limits.
- The calculated amount of benzene removed during this period is estimated at 0.0024 pound for an estimate total benzene removal of 2.83 pounds since starting up the AS/SVE system on May 29, 2019 (Table 1).

3.0 GROUNDWATER MONITORING METHODS

This section summarizes the sampling protocols and the selected monitoring wells and analyses for the May 2022 monitoring event conducted at the Site.

3.1 SAMPLING PROTOCOLS

Groundwater samples were collected on May 25 and 26, 2022 using low-flow sampling methods as described in the Performance Monitoring Plan (Farallon 2019). Before sampling was initiated, groundwater elevations and dissolved-oxygen content in groundwater were measured at select well locations on May 25, 2022. The groundwater elevation at each monitoring well also was measured during sampling. The depth to groundwater in each monitoring well was measured to the nearest 0.01 foot using an electronic water-level measuring device from the surveyed location on the top of the well casing. Measurements of dissolved-oxygen levels in groundwater were obtained using an InsiteIG Model 3100 dissolved-oxygen analyzer and optical fluorescence down-hole probe. Depth-to-groundwater measurements and the water-level elevations obtained prior to sampling for the groundwater monitoring events conducted from January 2018 through May 2022 are presented in Table 4 and the May 2022 elevations are shown on Figure 4. The dissolved-oxygen measurements obtained concurrently with initial water-level measurements for the same time period are presented in Table 5.

Before the monitoring wells were purged, the intake of the dedicated polyethylene tubing was placed in the approximate middle of the saturated portion of the well screen. Before sampling was initiated, groundwater was purged from each monitoring well at flow rates ranging from 150 to 350 milliliters per minute. Field measurements for pH, temperature, specific conductivity, dissolved oxygen, and oxidation-reduction potential (ORP) were recorded during purging using a YSI Model ProDSS water-quality analyzer equipped with a flow-through cell. Water-quality parameter geochemical measurements are summarized in Table 5. Groundwater samples were collected after the pH, temperature, and specific conductivity measurements stabilized. Stabilization was determined for pH as a change of +/-0.1 pH unit between readings for three consecutive measurements, and for temperature and specific conductivity as a relative percent difference of less than 3 percent between readings for three consecutive measurements.

Following stabilization of the water-quality parameters, samples were collected by pumping groundwater directly from each monitoring well through dedicated polyethylene tubing into laboratory-prepared containers, with care taken to minimize turbulence. Care was taken to not handle the container seal or lid when the samples were placed into the containers. The containers were filled to eliminate headspace, and the seal and the lid were secured. The samples were placed on ice in a cooler under standard chain-of-custody protocols, and delivered to OnSite Environmental Inc. of Redmond, Washington (OnSite) for laboratory analysis. Wastewater generated during purging of the monitoring wells is temporarily stored in a labeled 55-gallon drum in a secure area of the Site.

3.2 SELECTED MONITORING WELLS AND ANALYSES

Groundwater samples were collected from monitoring wells CMW-2, CMW-8, CMW-10, CMW-12, CMW-13, CMW-25 through CMW-31, HMW-9 through HMW-11, and HMW-13, and were analyzed for the following:

- DRO and ORO by Northwest Method NWTPH-Dx with and without silica gel cleanup procedure;
- GRO by Northwest Method NWTPH-Gx; and
- BTEX constituents by U.S. Environmental Protection Agency Method 8021B.

Field duplicate groundwater samples were collected from monitoring wells CMW-12 and CMW-27 for quality assurance/quality control (QA/QC) purposes. The silica gel cleanup procedure was run without using sulfuric acid as had been used previously when the silica gel cleanup was employed prior to DRO and ORO analyses.

4.0 GROUNDWATER MONITORING RESULTS

This section presents groundwater elevations, geochemical parameters, and analytical results from the May 2022 monitoring event, and the data validation conducted.

4.1 GROUNDWATER ELEVATIONS

Groundwater elevations measured in the Site monitoring wells on May 25, 2022, ranged from 68.69 feet above mean sea level in monitoring well CMW-8 to 72.00 feet above mean sea level in monitoring well HMW-13 (Figure 4; Table 4). The groundwater flow direction was to the northeast, with an average gradient of 0.002 foot per foot. Groundwater elevations measured on May 25, 2022 were approximately 1.02 foot higher on average than those measured during the previous monitoring event, conducted on November 29, 2021 (Table 4).

4.2 SITE-WIDE MONITORING ANALYTICAL RESULTS

The analytical results from the May 2022 monitoring event are discussed in the following sections. Comparison of analytical results for DRO, ORO, GRO, and BTEX constituents to MTCA Method A groundwater cleanup levels is shown in Table 6. Comparison of analytical results for DRO with and without the silica gel cleanup procedure to MTCA Method A groundwater cleanup levels is shown in Table 7. Analytical results for DRO, ORO, GRO, and BTEX constituents for the May 2022 monitoring event are presented on Figure 5. Analytical results for DRO and ORO with and without the silica gel cleanup procedure for the May 2022 monitoring event are presented on Figure 6. The laboratory analytical report is provided in Appendix A.

4.2.1 Diesel-Range Organics

For the samples analyzed without the silica gel cleanup procedure, DRO was detected at concentrations exceeding the MTCA Method A cleanup level of 0.5 milligrams per liter (mg/l) in groundwater samples collected from 10 of the 16 monitoring wells sampled (Tables 6 and 7) and in the QA/QC samples collected from monitoring wells CMW-12 and CMW-27. Concentrations of DRO exceeding the MTCA Method A cleanup level ranged from 0.62 mg/l in the groundwater sample collected from monitoring well CMW-10 to 2.5 mg/l in the groundwater sample collected from monitoring well HMW-11.

For the samples analyzed using the silica gel cleanup procedure, DRO was not detected at a concentration exceeding the MTCA Method A cleanup level of 0.5 mg/l in any of the monitoring wells sampled during the May 2022 monitoring event (Table 7).

4.2.2 Oil-Range Organics

For the samples analyzed without the silica gel cleanup procedure, ORO was detected at concentrations exceeding the MTCA Method A cleanup level of 0.5 mg/l in groundwater samples collected from nine of the 16 monitoring wells sampled (Tables 6 and 7) and in the QA/QC sample collected from monitoring well CMW-27. Concentrations of ORO exceeding the MTCA Method

A cleanup level ranged from 0.51 mg/l in the groundwater sample collected from monitoring well CMW-10 to 1.4 mg/l in the groundwater sample collected from monitoring well HMW-11.

For the samples analyzed using the silica gel cleanup procedure, ORO was not detected at or exceeding the laboratory reporting limit in all groundwater samples collected during the May 2022 sampling event (Table 7).

4.2.3 Gasoline-Range Organics

GRO was not detected at or exceeding the laboratory reporting limit in all groundwater samples collected during the May 2022 sampling event (Table 6).

4.2.4 Benzene, Toluene, Ethylbenzene, and Xylenes

BTEX constituents were not detected at or exceeding the laboratory reporting limit in all groundwater samples collected during the May 2022 sampling event (Table 6).

4.2.5 Groundwater Geochemical Parameters

The groundwater geochemical parameters measured in the field were pH, ORP, and dissolved oxygen content. The results for these geochemical parameters are presented in Table 5 and summarized in the following sections.

4.2.5.1 pH

The pH measurements for groundwater samples ranged from 5.86 pH units at monitoring well CMW-28 to 6.37 pH units at monitoring well CMW-27.

4.2.5.2 Oxidation-Reduction Potential

ORP readings in groundwater ranged from -202.6 millivolts at monitoring well HMW-9 to 526.1 millivolts at monitoring well CMW-13.

4.2.5.3 Dissolved Oxygen

The dissolved oxygen readings ranged from 0.62 mg/l at monitoring well HMW-9 to 6.48 mg/l at monitoring well CMW-25.

4.3 DATA VALIDATION

Farallon reviewed the analytical data package provided by OnSite for sample delivery 2205-297. The groundwater samples from this group were analyzed for DRO, ORO, GRO, and BTEX constituents by the methods cited in Section 3.2, Selected Monitoring Wells and Analyses, within the prescribed method holding times. The QA/QC testing performed by OnSite included evaluation of surrogate recoveries and matrix spike/matrix spike duplicates. Results from the QA/QC testing were within established laboratory control limits. Based on Farallon's review of the QA/QC data generated during the May 2022 monitoring event, the groundwater analytical results are acceptable for use in characterizing groundwater quality at the Site relative to the groundwater quality cleanup levels used for comparative purposes in this report. The laboratory analytical report for the samples analyzed by OnSite is provided in Appendix A.

5.0 DISCUSSION

This section provides a summary of the distribution of DRO, ORO, GRO, and BTEX constituents detected in groundwater at the Site during the May 2022 monitoring event relative to the monitoring event in November 2021 and the pre-AS/SVE system start-up monitoring event conducted in January 2019. Trends in COC concentrations relative to groundwater elevation changes since 2018 also are discussed where trends appear evident. Data trends of select COC concentrations in groundwater for key monitoring wells are shown on Charts 1 through 8. Note that the DRO and ORO results provided in the discussion and used to construct the charts are for samples analyzed without the silica gel cleanup procedure.

Concentrations of DRO, ORO, GRO, and BTEX constituents detected in groundwater samples collected from Site monitoring wells during the May 2022 monitoring event varied from those detected during the 2018 through November 2021 monitoring events as follows:

- **Monitoring Well CMW-2:** DRO and ORO concentrations decreased between November 2021 and May 2022. DRO and ORO were the only constituents detected at concentrations exceeding the laboratory reporting limit at this location during the May 2022 monitoring event.

  Following start-up of the reconfigured AS/SVE system in June 2019, concentrations of DRO and ORO have shown an overall decreasing trend during the monitoring events conducted from November 2019 to May 2022. An evident correlation between COC concentrations and groundwater elevations in monitoring well CMW-2 is not apparent (Chart 1).

- **Monitoring Well CMW-8:** DRO and ORO concentrations increased between November 2021 and May 2022. DRO and ORO were the only constituents detected at concentrations exceeding the MTCA Method A cleanup level at this location during the May 2022 monitoring event.

  A concentration trend chart was not prepared for monitoring well CMW-8, because it is located 376 feet down-gradient of the active AS/SVE system; therefore, it likely is beyond the area of influence of the system.

- **Monitoring Well CMW-10:** DRO and ORO concentrations decreased between November 2021 and May 2022. DRO and ORO were the only constituents detected at concentrations exceeding the MTCA Method A cleanup level at this location during the May 2022 monitoring event.

  Following start-up of the reconfigured AS/SVE system in June 2019, concentrations of DRO and ORO have fluctuated during the groundwater monitoring events conducted from August 2019 through May 2022, with the highest concentrations detected during the May 2020 monitoring event (Chart 2).

- **Monitoring Well CMW-12:** DRO and ORO concentrations increased slightly between November 2021 and May 2022 monitoring events. DRO was the only constituent detected at a concentration exceeding the MTCA Method A cleanup level at this location during the May 2022 monitoring event.

  Following start-up of the reconfigured AS/SVE system in June 2019, concentrations of DRO, ORO, and GRO have shown an overall decreasing trend during the monitoring events conducted from February 2020 to May 2022. Elevated concentrations of DRO, ORO, and GRO detected in monitoring well CMW-12 generally have correlated with seasonally higher groundwater elevations over the past 3 years (Chart 3).

- **Monitoring Well CMW-13:** DRO and ORO concentrations increased between the November 2021 and May 2022 monitoring events. DRO and ORO were the only constituents detected at concentrations exceeding the MTCA Method A cleanup level at this location during the May 2022 monitoring event.

  Following start-up of the reconfigured AS/SVE system in June 2019, concentrations of DRO have fluctuated during the groundwater monitoring events conducted from August 2019 through May 2022. Elevated concentrations of DRO detected in monitoring well CMW-13 generally have correlated with seasonally higher groundwater elevations over the past 3 years (Chart 4).

- **Monitoring Well CMW-25:** None of the constituents analyzed for at this location was detected at a concentration exceeding MTCA Method A cleanup levels during the May 2022 monitoring event.

  A concentration trend chart was not prepared for monitoring well CMW-25, because concentrations detected from January 2018 to August 2019 and from February 2020 to May 2022 did not exceed laboratory reporting limits (Table 6).

- **Monitoring Well CMW-26:** None of the constituents analyzed for at this location was detected at a concentration exceeding MTCA Method A cleanup levels during the May 2022 monitoring event.

  A concentration trend chart was not prepared for monitoring well CMW-26, because concentrations detected from January 2018 to May 2022 did not exceed laboratory reporting limits (Table 6).

- **Monitoring Well CMW-27:** DRO, ORO, ethylbenzene, and total xylene concentrations decreased between November 2021 and May 2022 monitoring events. DRO and ORO were the only constituents detected at concentrations exceeding the MTCA Method A cleanup level at this location during the May 2022 monitoring event.

  Following start-up of the reconfigured AS/SVE system in June 2019, concentrations of DRO and ORO have shown an overall increasing trend during the monitoring events conducted from August 2019 to November 2021, followed by decreases in May 2022. GRO concentrations have fluctuated during the groundwater monitoring events conducted from

August 2018 through May 2022 (Chart 5). Concentrations of DRO, ORO, and GRO in monitoring well CMW-27 have not appeared to correlate with fluctuations in groundwater elevations over the past 3 years.

- **Monitoring Well CMW-28:** DRO and ORO concentrations increased between November 2021 and May 2022 monitoring events. DRO and ORO were the only constituents detected at concentrations exceeding the MTCA Method A cleanup level at this location during the May 2022 monitoring event.

  Following start-up of the reconfigured AS/SVE system in June 2019, concentrations of DRO and ORO have shown an overall increasing trend during the monitoring events conducted from August 2019 to November 2019, followed by an overall decreasing trend to November 2021. Concentrations of DRO and ORO increased during the May 2022 monitoring event. An evident correlation between DRO and ORO concentrations and groundwater elevations in monitoring well CMW-28 is not apparent over the past 3 years (Chart 6).

- **Monitoring Well CMW-29:** DRO concentrations remained the same between November 2021 and May 2022, while ORO concentration decreased between November 2021 and May 2022. DRO and ORO were the only constituents detected at concentrations exceeding the MTCA Method A cleanup level at this location during the May 2022 monitoring event.

  A concentration trend chart was not prepared for monitoring well CMW-29, because it is located 120 feet up-gradient of the active AS/SVE system and most likely is not affected by the system operation.

- **Monitoring Well CMW-30:** DRO and ORO concentrations increased slightly between November 2021 and May 2022. None of the constituents analyzed for was detected at a concentration exceeding MTCA Method A cleanup levels during the May 2022 monitoring event.

  A concentration trend chart was not prepared for monitoring well CMW-30, because it is located 220 feet up-gradient of the active AS/SVE system and likely is not affected by system operation.

- **Monitoring Well CMW-31:** None of the constituents analyzed for at this location was detected at a concentration exceeding the laboratory reporting limit during the May 2022 monitoring event.

  A concentration trend chart was not prepared for monitoring well CMW-31, because it is located 420 feet down-gradient of the active AS/SVE system and likely is beyond the area of influence of the system.

- **Monitoring Well HMW-9:** DRO and ORO concentrations increased between November and May 2022. DRO and ORO were the only constituents detected at concentrations

exceeding the MTCA Method A cleanup level at this location during the May 2022 monitoring event.

A concentration trend chart was not prepared for monitoring well HMW-9, because it is located 250 feet down-gradient of the active AS/SVE system and likely is beyond the area of influence of the system.

- **Monitoring Well HMW-10:** DRO and ORO concentrations increased between November 2021 and May 2022. DRO and ORO were the only constituents detected at concentrations exceeding the MTCA Method A cleanup level at this location during the May 2022 monitoring event.

  Following start-up of the reconfigured AS/SVE system in June 2019, concentrations of DRO and ORO have shown an overall increasing trend during the monitoring events conducted from August 2019 to November 2019, followed by an overall decreasing trend to the November 2021 monitoring event and slight increases during the May 2022 monitoring event. Elevated concentrations of DRO and ORO in monitoring well HMW-10 generally have not appeared to correlate with seasonally lower groundwater elevations since reconfigured system start-up (Chart 7).

- **Monitoring Well HMW-11:** DRO and ORO concentrations increased between November 2021 and May 2022. DRO and ORO were the only constituents detected at concentrations exceeding the MTCA Method A cleanup level at this location during the May 2022 monitoring event.

  Following start-up of the reconfigured AS/SVE system in June 2019, concentrations of DRO and ORO fluctuated through May 2022, with the highest concentrations detected during the February 2020 monitoring event (Chart 8). Concentrations of GRO have shown an overall decreasing trend since the start-up of the reconfigured AS/SVE system in June 2019 (Chart 8).

- **Monitoring Well HMW-13:** None of the constituents analyzed for at this location was detected at a concentration exceeding MTCA Method A cleanup levels during the May 2022 monitoring event.

  A concentration trend chart was not prepared for monitoring well HMW-13, because concentrations detected since January 2018 have not exceeded MTCA Method A cleanup levels and have remained near or below laboratory reporting limits (Table 6).

In summary, GRO and BTEX constituents were not detected at concentrations exceeding MTCA Method A cleanup levels in any of the monitoring wells sampled during the May 2022 monitoring event. The expanded area of influence of the reconfigured AS/SVE system appears to continue to mobilize some dissolved-phase DRO and ORO from the smear zone soil as shown by increases in several monitoring wells, most notably CMW-12, CMW-13, CMW-28, HMW-10, and HMW-11. DRO and ORO concentrations at monitoring well CMW-10 decreased during the May 2022 monitoring event but still exceeded MTCA cleanup levels. Decreases in concentrations of DRO

and ORO relative to those detected during the November 2021 monitoring event were observed in groundwater at most of the Site monitoring wells during the May 2022 monitoring event.

Except for intermittent shut-downs, the current configuration of the AS/SVE system has operated continuously from start-up in June 2019 through May 2022 and has removed a total of 2.83 pounds of benzene from the vadose zone at the Site. The removal rate of benzene has decreased to asymptotic levels since June 2019 and demonstrates that the AS/SVE system no longer is removing significant benzene mass from the vadose zone at the Site (Table 1). Based on the concentration trends for GRO and BTEX constituents observed in groundwater at the Site, Farallon recommends discontinuing operation of the AS/SVE system in conjunction with implementation of a monitored natural attenuation study to assess the viability of natural attenuation as a feasible step to achieve the cleanup objectives for the Site.

On October 20, 2021, Ecology suggested that DRO and ORO groundwater samples collected during future monitoring events could be analyzed both with and without using the silica gel cleanup procedure in accordance with recent Ecology guidance (2021). Details of the Ecology request were provided in the email regarding CHS Quarterly Progress Report 7/1 through 9/30/2021 dated October 20, 2021 from Jerome Cruz of Ecology to Javan Ruark of Farallon(Ecology 2021). The purpose of the additional analysis was to evaluate whether comparison of the DRO results with and without the silica gel cleanup procedure suggest that the residual DRO concentrations in groundwater may be attributed to polar metabolites resulting from biodegradation of the dissolved DRO plume. Groundwater samples collected for DRO and ORO during May 2022 monitoring event also were analyzed both with and without using the silica gel cleanup procedure. The silica gel cleanup procedure was run during the May 2022 monitoring event without using sulfuric acid, as had been used previously when the silica gel cleanup was employed prior to DRO and ORO analyses, including the November 2021 monitoring event. The omission of the sulfuric acid did not appear to have an appreciable effect on DRO and ORO results analyzed using the silica gel cleanup procedure. Neither DRO nor ORO was detected at concentrations exceeding MTCA Method A cleanup levels during the November 2021 or May 2022 monitoring events in samples analyzed using the silica gel cleanup procedure.

The DRO analytical results from the May 2022 monitoring event further suggest a highly weathered DRO footprint in groundwater at the Site. In the samples analyzed using the silica gel cleanup procedure, DRO was detected at a concentration slightly exceeding the laboratory reporting limit in the groundwater sample collected from monitoring well CMW-27. DRO and ORO were not detected at concentrations exceeding the laboratory reporting limits in any of the remaining groundwater samples analyzed using the silica gel cleanup procedure. Further discussion with Ecology is warranted to achieve the cleanup objectives for the Site based on historical groundwater data and recent application of the silica gel cleanup procedure for the DRO and ORO groundwater analyses. Farallon recommends continued analysis of DRO and ORO samples both with and without the silica gel cleanup procedure as part of the proposed monitored natural attenuation study to be conducted following shut-down of the AS/SVE system.

6.0 ONGOING AND PLANNED ACTIVITIES

As detailed in Table 3 in the Final Cleanup Action Plan, quarterly performance groundwater monitoring and routine O&M of the AS/SVE system was conducted for the first four quarters following start-up of the AS/SVE system and is to be conducted semiannually thereafter. The May 2022 monitoring event was the fourth semiannual groundwater monitoring event; the fifth is scheduled for November 2022. Conducting routine O&M of the AS/SVE system will continue on a bimonthly basis. Farallon recommends a meeting with Ecology and CHS to discuss the path forward for closure of the Site, including potential shut-down of the AS/SVE system in conjunction with a monitored natural attenuation study.

7.0 REFERENCES

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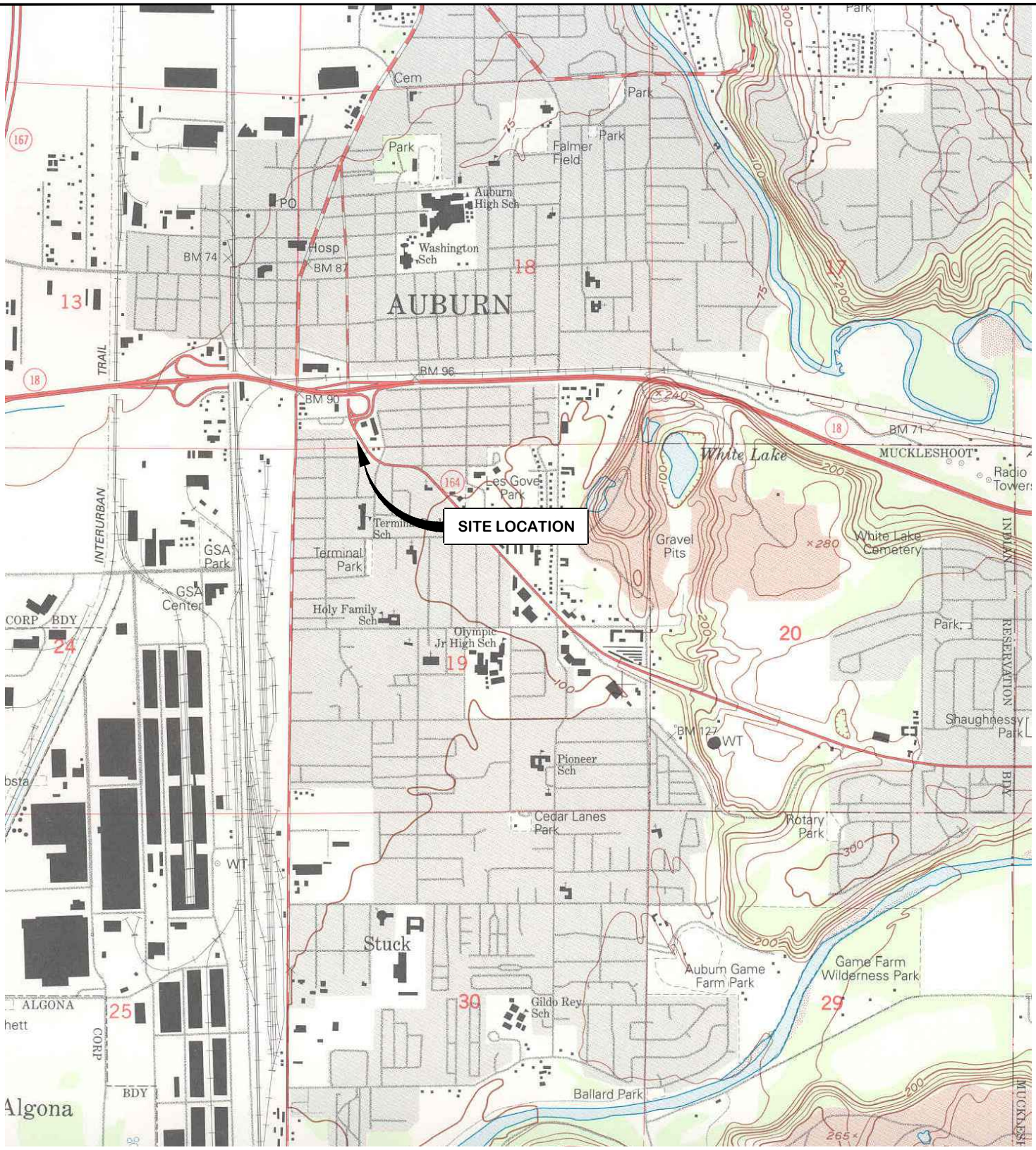
FIGURES

FIRST AND SECOND QUARTER 2022
GROUNDWATER MONITORING AND TREATMENT SYSTEM
OPERATION AND MAINTENANCE REPORT
CHS Auburn Site
Auburn, Washington

Farallon PN: 301-004



REFERENCE: 7.5 MINUTE USGS QUADRANGLE AUBURN, WASHINGTON. DATED 1949 AND PHOTOREVISED 1994

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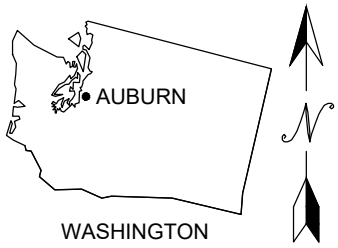

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FIGURE 1

SITE VICINITY MAP
CHS AUBURN SITE
AUBURN, WASHINGTON

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STATE ROUTE - 18

AUBURN WAY SOUTH

6th STREET SOUTHEAST

7th STREET SOUTHEAST

8th STREET SOUTHEAST

FIRE HOUSE SQUARE

D STREET SOUTHEAST

C STREET SOUTHEAST

SCHUCKS

MCDONALD'S

THAI RESTAURANT

AS/SVE EQUIPMENT BUILDING

BIG-O TIRES

CHS AUBURN FACILITY

CHS MAIN BUILDING

CSVE-9 WSIADA

CMW-20 CMW-23 CMW-22 CMW-19 DAS-13 DAS-14 DSVE-15 DSVE-16 CMW-32 CMW-14 CMW-17 CMW-21 CMW-9 CMW-15 CMW-8 CMW-31 CMW-5 HMW-12 HMW-9 HMW-5 HMW-6 HMW-8 HMW-10 CMW-12 CRW-2 HMW-11 CMW-6 CMW-13 CMW-7 CAS-14 CAS-15 CMW-27 CAS-17 CAS-16 CAS-18 CAS-20 CMW-2 CAS-19 CAS-3 CAS-21 CAS-1 CSVE-1 CSVE-10 CMW-10 CAS-2 CRW-1 CMW-11 CSVE-7 CAS-12 CAS-22 CAS-4 CSVE-8 CAS-10 CAS-11 CAS-13 CSVE-4 CAS-5 CMW-25 CAS-8 CMW-28 CSVE-6 CAS-9 CAS-7 CSVE-5 HMW-13 CMW-4 CMW-29 CMW-26 CMW-3 CMW-1 CMW-30 CMW-24 HMW-14

0 100

APPROXIMATE SCALE IN FEET

LEGEND

CMW-25	CHS MONITORING WELL
CRW-2	CHS RECOVERY WELL
HMW-13	HILLMAN MONITORING WELL
CAS-13	AS WELL AS/SVE CENTRAL SYSTEM
DAS-13	AS WELL AS/SVE DOWN-GRADIENT SYSTEM (LOST)
CSVE-3	SVE WELL AS/SVE CENTRAL SYSTEM
DSVE-16	SVE WELL AS/SVE DOWN-GRADIENT SYSTEM (LOST)
CMW-9	LOST OR ABANDONED MONITORING WELL
RED	NON-OPERATIONAL WELL

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FIGURE 2

SITE PLAN
CHS AUBURN SITE
AUBURN, WASHINGTON

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7th STREET SOUTHEAST

CRW–2

HMW–11

CAS–14

CAS–15

CAS–17

CAS–16

CAS–18

CMW–27

CSVE–9

AUBURN WAY SOUTH

CMW–13

WSIADA

CAS–20

CAS–19

CSVE–10

CAS–21

CMW–2

CAS–1

CSVE–1

CAS–2

CAS–3

CMW–10

CMW–11

CRW–1

CAS–22

CAS–12
CSVE–7

CAS–4

CAS–10
CSVE–8

CAS–11

CSVE–4

CAS–5

AS/SVE EQUIPMENT BUILDING

CAS–13

CMW–28

THAI
RESTAURANT

CMW–25

CAS–8

CAS–7

CSVE–5

CSVE–6
CAS–9

8th STREET SOUTHEAST

LEGEND

CMW–25	CHS MONITORING WELL
CRW–2	CHS RECOVERY WELL
HMW–13	HILLMAN MONITORING WELL
CAS–13	AS WELL AS/SVE CENTRAL SYSTEM
CSVE–3	SVE WELL AS/SVE CENTRAL SYSTEM
CAS–12 CSVE–7	DUAL COMPLETION SVE AND AS SYSTEM WELL
RED	NON-OPERATIONAL WELL

0 30

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FIGURE 3

SITE PLAN SHOWING DETAIL OF THE
CENTRAL AREA OF THE SITE
CHS AUBURN SITE
AUBURN, WASHINGTON

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STATE ROUTE - 18

AUBURN WAY SOUTH

6th STREET SOUTHEAST

7th STREET SOUTHEAST

8th STREET SOUTHEAST

D STREET SOUTHEAST

C STREET SOUTHEAST

FIRE HOUSE SQUARE

SCHUCKS

MCDONALD'S

THAI RESTAURANT

AS/SVE EQUIPMENT BUILDING

CSVE-9 WSIADA

BIG-O TIRES

CHS AUBURN FACILITY

CHS MAIN BUILDING

CMW-19
DAS-13
DAS-14
DSVE-15
DSVE-16
CMW-9
CMW-15
CMW-22
CMW-32
CMW-14
CMW-17
CMW-21
CMW-8 (68.69)
CMW-31 (68.80)
68.80
69.00
69.20
69.40
69.60
CMW-5
HMW-12
HMW-9 (68.89)
HMW-5
HMW-6
HMW-8
HMW-10 (69.14)
CMW-12 (69.34)
CRW-2
HMW-11
CMW-7
CAS-14
CAS-15
CAS-17
CAS-16
CMW-27 (69.54)
CAS-18
CAS-20
CMW-2
CAS-19 (69.73)
CAS-3
CAS-21
CMW-10
CAS-1
CSVE-1
CSVE-10
CAS-2
CRW-1
CMW-11
CSVE-7
CAS-12
CAS-22
CAS-4
CSVE-8
CAS-10
CMW-25
CAS-11
CAS-13
CSVE-4
CAS-5
CAS-8
CSVE-6
CAS-9
CMW-28 (69.71)
CAS-7
CSVE-5
CMW-6
CMW-13 (69.34)
HMW-13 [72.00]*
CMW-4
CMW-29 (69.93)
CMW-26 (69.90)
70.00
CMW-3
CMW-1
CMW-30 (70.13)
CMW-24
HMW-14

LEGEND

CMW-26	CHS MONITORING WELL
HMW-13	HILLMAN MONITORING WELL
CAS-13	AS WELL AS/SVE CENTRAL SYSTEM
CSVE-9	SVE WELL
RED	NON-OPERATIONAL WELL
CRW-2	CHS RECOVERY WELL
DAS-13	AS WELL AS/SVE DOWN-GRADIENT SYSTEM (LOST)
DSVE-15	SVE WELL AS/SVE DOWN-GRADIENT SYSTEM (LOST)
(70.13)	GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
69.00	GROUNDWATER ELEVATION CONTOUR DASHED WHERE INFERRED
	APPROXIMATE DIRECTION OF GROUNDWATER FLOW
[72.00]*	GROUNDWATER ELEVATION NOT USED IN CONTOUR

0 100

APPROXIMATE SCALE IN FEET

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FIGURE 4

GROUNDWATER ELEVATION CONTOUR MAP
MAY 2022
CHS AUBURN SITE
AUBURN, WASHINGTON

FARALLON PN: 301-004

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STATE ROUTE - 18

AUBURN WAY SOUTH

6th STREET SOUTHEAST

7th STREET SOUTHEAST

8th STREET SOUTHEAST

SCHUCKS

FIRE HOUSE SQUARE

D STREET SOUTHEAST

AS/SVE EQUIPMENT BUILDING

THAI RESTAURANT

CHS AUBURN FACILITY

CHS MAIN BUILDING

C STREET SOUTHEAST

CMW-20 CMW-23 CMW-22 CMW-19 DAS-13 DAS-14 DSVE-15 DSVE-16 CMW-32 CMW-14 CMW-17 CMW-21 CMW-9 CMW-15 CMW-8 CMW-31 CMW-5 HMW-12 HMW-9 HMW-5 HMW-6 HMW-8 HMW-10 CMW-12 CRW-2 HMW-11 CMW-7 CAS-14 CAS-15 CMW-27 CAS-16 CAS-17 CAS-18 CAS-20 CAS-19 CAS-3 CAS-21 CMW-10 CMW-6 CMW-13 CSVE-9 WSIADA CMW-2 CAS-1 CSVE-10 CAS-2 CRW-1 CSVE-7 CAS-12 CAS-22 CAS-4 CSVE-4 CAS-5 CSVE-8 CAS-10 CAS-11 CAS-13 CMW-25 CAS-8 CSVE-6 CMW-28 CAS-7 CSVE-5 HMW-13 CMW-29 CMW-4 CMW-26 CMW-3 CMW-1 CMW-30 CMW-24 HMW-14

DRO	ORO	GRO	B	T	E	X
0.79	**0.60**	<100	<1.0	<1.0	<1.0	<2.0

DRO	ORO	GRO	B	T	E	X
<0.10	<0.20	<100	<1.0	<1.0	<1.0	<2.0

DRO	ORO	GRO	B	T	E	X
0.77	**0.65**	<100	<1.0	<1.0	<1.0	<2.0

DRO	ORO	GRO	B	T	E	X
0.80	0.44	<100	<1.0	<1.0	<1.0	<2.0

DRO	ORO	GRO	B	T	E	X
1.5	**0.75**	<100	<1.0	<1.0	<1.0	<2.0

DRO	ORO	GRO	B	T	E	X
2.5	**1.4**	<100	<1.0	<1.0	<1.0	<2.0

DRO	ORO	GRO	B	T	E	X
1.4	**0.67**	<100	<1.0	<1.0	<1.0	<2.0

DRO	ORO	GRO	B	T	E	X
1.6	**1.0**	<100	<1.0	<1.0	<1.0	<2.0

DRO	ORO	GRO	B	T	E	X
0.20	0.25	<100	<1.0	<1.0	<1.0	<2.0

DRO	ORO	GRO	B	T	E	X
0.62	**0.51**	<100	<1.0	<1.0	<1.0	<2.0

DRO	ORO	GRO	B	T	E	X
1.1	**0.68**	<100	<1.0	<1.0	<1.0	<2.0

DRO	ORO	GRO	B	T	E	X
<0.11	<0.22	<100	<1.0	<1.0	<1.0	<2.0

DRO	ORO	GRO	B	T	E	X
<0.11	<0.22	<100	<1.0	<1.0	<1.0	<2.0

DRO	ORO	GRO	B	T	E	X
0.74	**0.56**	<100	<1.0	<1.0	<1.0	<2.0

DRO	ORO	GRO	B	T	E	X
<0.11	<0.21	<100	<1.0	<1.0	<1.0	<2.0

DRO	ORO	GRO	B	T	E	X
0.40	0.29	<100	<1.0	<1.0	<1.0	<2.0

LEGEND

CMW-26 CHS MONITORING WELL
HMW-13 HILLMAN MONITORING WELL
CAS-13 AS WELL AS/SVE CENTRAL SYSTEM
CSVE-9 SVE WELL
RED NON-OPERATIONAL WELL
CRW-2 CHS RECOVERY WELL
DAS-13 AS WELL AS/SVE DOWN-GRADIENT SYSTEM (LOST)
DSVE-15 SVE WELL AS/SVE DOWN-GRADIENT SYSTEM (LOST)

NOTES:

ANALYTICAL UNITS FOR DRO AND ORO ARE IN MILLIGRAMS PER LITER.
ANALYTICAL UNITS FOR GRO AND BTEX ARE IN MICROGRAMS PER LITER
< = DENOTES ANALYTE NOT DETECTED AT OR EXCEEDING THE PRACTICAL QUANTITATION LIMIT LISTED.
BOLD = INDICATES CONCENTRATION EXCEEDS WASHINGTON STATE MODEL TOXICS CONTROL ACT CLEANUP REGULATION (MTCA) METHOD A CLEANUP LEVEL
DRO = TOTAL PETROLEUM HYDROCARBONS (TPH) AS DIESEL-RANGE ORGANICS
ORO = TPH AS OIL-RANGE ORGANICS
GRO = TPH AS GASOLINE-RANGE ORGANICS
B = BENZENE E = ETHYLBENZENE
T = TOLUENE X = XYLENES

0 100
APPROXIMATE SCALE IN FEET

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FIGURE 5

MAY 2022 GROUNDWATER ANALYTICAL RESULTS
FOR DRO, ORO, GRO, AND BTEX
CHS AUBURN SITE
AUBURN, WASHINGTON

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STATE ROUTE - 18

AUBURN WAY SOUTH

6th STREET SOUTHEAST

7th STREET SOUTHEAST

8th STREET SOUTHEAST

SCHUCKS

FIRE HOUSE SQUARE

MCDONALD'S

THAI RESTAURANT

AS/SVE EQUIPMENT BUILDING

CHS AUBURN FACILITY

C STREET SOUTHEAST

D STREET SOUTHEAST

WSIADA

CMW-20 CMW-23 CMW-22 CMW-19 DAS-13 DAS-14 DSVE-15 DSVE-16 CMW-32 CMW-14 CMW-17 CMW-21 CMW-9 CMW-15 CMW-8 CMW-31 CMW-5 HMW-12 HMW-9 HMW-6 HMW-8 HMW-10 CMW-12 CRW-2 HMW-11 CMW-7 CAS-14 CAS-15 CMW-27 CAS-16 CAS-17 CAS-18 CMW-13 CMW-6 CAS-20 CAS-19 CMW-2 CAS-1 CAS-3 CAS-21 CSVE-10 CMW-10 CAS-2 CRW-1 CMW-11 CSVE-7 CAS-12 CAS-22 CAS-4 CSVE-8 CAS-10 CAS-11 CAS-13 CSVE-4 CAS-5 CMW-25 CAS-8 CMW-28 CSVE-6 CAS-9 CAS-7 CSVE-5 HMW-13 CMW-29 CMW-3 CMW-1 CMW-30 CMW-24 CMW-4 CMW-26 HMW-14

WITHOUT SILICA GEL		WITH SILICA GEL	
DRO	ORO	DRO	ORO
0.79	**0.60**	<0.20	<0.20

WITHOUT SILICA GEL		WITH SILICA GEL	
DRO	ORO	DRO	ORO
<0.10	<0.20	<0.20	<0.20

WITHOUT SILICA GEL		WITH SILICA GEL	
DRO	ORO	DRO	ORO
0.77	**0.65**	<0.21	<0.21

WITHOUT SILICA GEL		WITH SILICA GEL	
DRO	ORO	DRO	ORO
1.5	**0.75**	<0.20	<0.20

WITHOUT SILICA GEL		WITH SILICA GEL	
DRO	ORO	DRO	ORO
0.80	0.44	<0.22	<0.22

WITHOUT SILICA GEL		WITH SILICA GEL	
DRO	ORO	DRO	ORO
2.5	**1.4**	<0.20	<0.20

WITHOUT SILICA GEL		WITH SILICA GEL	
DRO	ORO	DRO	ORO
1.4	**0.67**	<0.22	<0.22

WITHOUT SILICA GEL		WITH SILICA GEL	
DRO	ORO	DRO	ORO
1.6	**1.0**	0.28	<0.22

WITHOUT SILICA GEL		WITH SILICA GEL	
DRO	ORO	DRO	ORO
0.2	0.25	<0.24	<0.24

WITHOUT SILICA GEL		WITH SILICA GEL	
DRO	ORO	DRO	ORO
0.62	**0.51**	<0.23	<0.23

WITHOUT SILICA GEL		WITH SILICA GEL	
DRO	ORO	DRO	ORO
1.1	**0.68**	<0.23	<0.23

WITHOUT SILICA GEL		WITH SILICA GEL	
DRO	ORO	DRO	ORO
<0.11	<0.22	<0.22	<0.22

WITHOUT SILICA GEL		WITH SILICA GEL	
DRO	ORO	DRO	ORO
<0.11	<0.22	<0.22	<0.22

WITHOUT SILICA GEL		WITH SILICA GEL	
DRO	ORO	DRO	ORO
0.74	**0.56**	<0.23	<0.23

WITHOUT SILICA GEL		WITH SILICA GEL	
DRO	ORO	DRO	ORO
0.40	0.29	<0.21	<0.21

WITHOUT SILICA GEL		WITH SILICA GEL	
DRO	ORO	DRO	ORO
<0.11	<0.21	<0.21	<0.21

LEGEND

- CMW-26 — CHS MONITORING WELL
- HMW-13 — HILLMAN MONITORING WELL
- CAS-13 — AS WELL AS/SVE CENTRAL SYSTEM
- CSVE-9 — SVE WELL
- RED — NON-OPERATIONAL WELL
- CRW-2 — CHS RECOVERY WELL
- DAS-13 — AS WELL AS/SVE DOWN-GRADIENT SYSTEM (LOST)
- DSVE-15 — SVE WELL AS/SVE DOWN-GRADIENT SYSTEM (LOST)

NOTES:

ANALYTICAL UNITS FOR DRO AND ORO ARE IN MILLIGRAMS PER LITER.

< = DENOTES ANALYTE NOT DETECTED AT OR EXCEEDING THE LABORATORY REPORTING LIMIT LISTED.

BOLD = INDICATES CONCENTRATION EXCEEDS WASHINGTON STATE MODEL TOXICS CONTROL ACT CLEANUP REGULATION (MTCA) METHOD A CLEANUP LEVEL

DRO = TOTAL PETROLEUM HYDROCARBONS (TPH) AS DIESEL-RANGE ORGANICS

ORO = TPH AS OIL-RANGE ORGANICS

0 100

APPROXIMATE SCALE IN FEET

FIGURE PRODUCED IN COLOR. GRAYSCALE COPIES MAY NOT REPRODUCE ALL ORIGINAL INFORMATION

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FIGURE 6

MAY 2022 GROUNDWATER ANALYTICAL RESULTS
FOR DRO AND ORO WITH AND WITHOUT SILICA GEL
CLEANUP PROCEDURE
CHS AUBURN SITE
AUBURN, WASHINGTON

FARALLON PN: 301-004

Drawn By: NM Checked By: JR Date: 06/17/2022 Disk Reference: 301-004

TABLES

FIRST AND SECOND QUARTER 2022
GROUNDWATER MONITORING AND TREATMENT SYSTEM
OPERATION AND MAINTENANCE REPORT
CHS Auburn Site
Auburn, Washington

Farallon PN: 301-004

Table 1
Soil Vapor Extraction System and Well Data
Cenex Auburn Site
Auburn, Washington
Farallon PN: 301-004

Date	Time	System Vacuum, pre-KO (IOW)	System Vacuum, post-KO (IOW)	System Flow Rate, Stack (dp)	System Flow Rate, Stack (SCFM)	Total Blower Run Time (hours)	Blower Running (Amps)	Blower Frequency (Hz)	Blower Effluent Temperature (F)	VOC Concentration, Vent Stack (ppm)	CSVE-1				CSVE-5				CSVE-7				CSVE-9				CSVE-10				Benzene Analytical Results (ug/m3)	Benzene Analytical Results (nl/ml)	Benzene Concentration[1] (mg/m3)	Benzene Removal Rate[2] (lbs/day)	Amount of Benzene Removed Between Testing[3] (lbs)	Total Amount of Benzene Removed to Date[4] (lbs)
											Well Vacuum (IOW)	Flow Rate (dp)	Flow Rate (SCFM)	PID Reading (ppm)	Well Vacuum (IOW)	Flow Rate (dp)	Flow Rate (SCFM)	PID Reading (ppm)	Well Vacuum (IOW)	Flow Rate (dp)	Flow Rate (SCFM)	PID Reading (ppm)	Well Vacuum (IOW)	Flow Rate (dp)	Flow Rate (SCFM)	PID Reading (ppm)	Well Vacuum (IOW)	Flow Rate (dp)	Flow Rate (SCFM)	PID Reading (ppm)						
5/29/2019	1210	6.0	--	0.32	133	--	--	--	--	130	6.0	0.157	23.46	62	6.0	0.355	35.28	50	6.0	0.015	7.25	250	6.0	0.204	26.75	35	5.6	0.315	33.23	1.2	-	-	-	-	-	-
	1240	6.0	--	0.32	133	--	--	--	--	32	5.8	0.21	27.14	42	5.6	0.33	34.02	17.9	6.0	0.023	8.98	110	6.0	0.210	27.14	24	6.0	0.340	34.53	1.0	-	-	-	-	-	-
	1400	5.8	--	0.306	130	--	--	--	--	18.5	5.8	0.21	27.14	30.2	5.9	0.41	37.92	4.8	6.0	0.032	10.6	44	6.0	0.190	25.81	19.5	5.2	0.320	33.50	1.3	-	-	-	-	-	-
	1500	5.9	--	0.32	133	--	--	--	--	23	5.2	0.21	27.14	21	5.5	0.37	36.02	4	5.4	0.020	8.37	16	5.7	0.200	26.48	95	6.0	0.330	34.02	1.4	-	<0.31	0.49	0.006	-	-
6/13/2019	1415	--	0.1	--	--	87	2.7	50	--	14	8.5	0.21	27.1	3.2	5.0	0.32	33.5	1.8	4.1	0.050	13.24	0.1	4.7	0.200	26.50	56	5.0	0.320	33.50	1.4	-	-	-	-	-	-
6/24/2019	--	--	--	--	130[1]	351	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-	0.72	2.30	0.269	2.01	2.01
7/16/2019	--	--	--	--	--	440	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-	-	-	-	-	-
7/18/2019	1540	3.8	--	0.31	131	498	2.7	50	95	44	3.4	0.10	18.73	0.3	3.2	0.38	36.5	5.8	3.3	0.160	23.69	34.4	3.5	0.110	19.64	165	3.4	0.160	23.69	48.1	0.578	-	0.0006	0.0000	0.821	2.8297
8/23/2019	1130	4.4	--	0.32	128	643	2.8	50	95	21	4.0	0.16	23.12	87.7	3.8	0.53	42.3	6.1	4.1	0.020	8.20	7.3	4.2	0.143	21.92	12.5	4.0	0.239	28.35	0.0	0.372	-	0.0004	0.0000	0.000	2.8297
9/18/2019	945	4.2	--	0.25	114	769	2.7	50	--	3.7	3.8	0.16	23.35	19.2	3.6	0.44	39.11	0.9	3.9	0.025	9.32	1.0	3.9	0.145	22.44	1.2	3.8	0.246	29.23	0.0	-	-	-	-	-	-
9/23/2019	930	4.8	--	0.26	117	887	2.7	50	90	71.9	4.3	0.18	24.78	32.2	4.1	0.58	45.02	2.8	4.5	0.032	10.53	181	4.5	0.166	23.99	235.2	4.5	0.165	23.92	33.9	<0.286	-	0.0001	0.0000	0.000	2.8298
10/22/2019	1120	13.1	--	0.29	122	1585	2.9	50	90	23.8	13.0	0.22	27.27	12.8	11.9	1.48	71.03	2.8	12.3	0.129	20.94	121	12.5	0.039	11.51	20.7	13.1	0.004	3.68	0.4	<2.86	-	0.0014	0.0000	0.000	2.8300
11/27/2019	1045	17.4	--	0.18	97	2237	3.0	50	80	1.3	14.5	0.25	29.13	2.7	14.3	2.17	85.59	0.4	14.2	0.123	20.40	1.1	17.3	0.004	3.66	0.8	16.7	0.022	8.60	0.4	-	-	-	-	-	-
12/18/2019	1010	10.2	--	0.17	95	2280	2.3	40	--	0.6	10.3	0.03	10.46	0.1	9.8	1.5	71.65	0.1	10.4	0.018	7.84	0.1	10.9	0.003	3.20	0.1	10.2	0.005	4.13	0.1	<0.286	-	0.0001	0.0000	0.000	2.8303
2/4/2020	1000	16.8	--	0.12	82	3432	2.4	40	--	--	16.2	0.41	37.15	--	15.7	0.7	47.53	--	17.2	0.003	3.17	--	16.4	0.000	0.00	--	17.1	0.003	3.17	--	<0.286	-	0.0001	0.0000	0.000	2.8303
2/21/2020	1200	--	--	--	--	3842	2.7	40	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-	-	-	-	-	-
2/26/2020	930	28.8	--	0.06	57	3842	2.7	40	80	0.1	24.8	0.27	29.84	0.0	27.3	0.021	8.29	0.0	27.5	0.070	15.14	0.0	27.2	0.101	18.18	0.3	27.4	0.010	5.72	0.2	-	-	-	-	-	-
4/1/2020	910	11.9	--	0.14	85	4680	2.3	40	75	0.2	11.4	2.46	91.64	0.1	10.4	0.612	45.73	0.2	11.5	0.067	15.11	0.1	11.5	0.832	53.24	0.1	11.7	0.081	16.61	0.1	<0.286	-	0.0001	0.0000	0.000	2.8304
5/7/2020	820	7.8	--	0.19	101	5450	2.2	40	80.5	0.0	7.2	0.26	29.93	0.3	7.1	1.03	59.57	0.2	7.0	0.003	3.22	0.3	7.7	0.007	4.91	0.2	7.4	0.000	0.00	0.3	<0.286	-	0.0001	0.0000	0.000	2.8304
6/2/2020	852	5.9	--	0.20	102	6011	2.2	40	--	0.0	5.6	0.22	27.52	0.0	5.2	0.75	50.89	0.0	6.5	0.013	6.70	0.0	5.8	0.113	19.76	0.2	6.0	0.003	3.22	0.0	<0.286	-	0.0001	0.0000	0.000	2.8304
7/31/2020	1200	5.0	--	0.20	102	7175	2.2	40	--	0.0	4.6	0.19	25.46	0.0	4.3	0.70	49.32	0.0	4.8	0.000	0.00	0.0	4.7	0.182	25.12	0.0	4.8	0.000	0.00	0.0	-	-	-	-	-	-
8/5/2020	1100	4.8	--	0.20	103	7179	2.2	40	--	--	4.5	0.19	25.31	--	4.1	0.70	48.61	--	4.7	0.000	5.01	--	4.6	0.19	25.30	--	4.7	0.000	4.78	--	-	-	-	-	-	-
10/2/2020	1245	5.1	--	0.21	105	8293	2.2	40	85	1.9	4.8	0.19	25.46	8.4	4.5	0.75	51.10	0.2	5.0	0.000	6.41	0.0	4.9	0.17	24.41	0.1	5.0	0.000	6.06	0.1	-	-	-	-	-	-
11/6/2020	900	11.7	--	0.17	94	9129	2.3	40	78	0.9	10.9	0.09	16.95	2.5	9.7	1.44	69.87	0.0	10.9	0.000	12.98	0.0	11.5	0.03	9.72	0.0	10.9	0.000	13.34	0.0	-	-	0.0001	0.0000	0.000	2.8306
12/9/2020	1309	13.5	--	0.15	90	9775	2.4	40	77.9	0.7	13.9	0.06	14.38	0.1	12.3	1.66	76.28	0.5	12.8	0.000	14.61	0.1	13.8	0.00	15.03	0.2	12.9	0.000	14.19	0.1	-	-	-	-	-	-
1/7/2021	1049	14.9	--	0.185	99	10314	2.4	40	--	0.1	13.8	0.14	21.78	1.1	13.2	1.66	75.05	0.0	14.4	0.000	--	0.0	14.2	0.0	--	0.0	14.6	0.000	--	0.0	-	-	-	-	-	-
3/2/2021	1400	18.9	--	0.077	64	11602	2.5	40	--	0.0	17.8	0.22	26.91	0.0	17.0	0.611	45.31	0.0	18.3	0.000	18.53	0.0	17.8	0.000	18.04	0.1	18.2	0.000	18.78	0.2	<0.319	-	0.0002	0.0000	0.000	2.8307
4/7/2021	930	10.1	--	0.112	80	12460	2.3	40	63.4	0.0	9.8	0.20	26.36	0.0	9.1	1.216	64.56	0.1	10.0	0.000	5.80	0.0	10.2	0.0	6.2	0.0	10.2	0.000	5.92	0.0	-	-	-	-	-	-

Table 1
Soil Vapor Extraction System and Well Data
Cenex Auburn Site
Auburn, Washington
Farallon PN: 301-004

											CSVE-1				CSVE-5				CSVE-7				CSVE-9				CSVE-10									
Date	Time	System Vacuum, pre-KO (IOW)	System Vacuum, post-KO (IOW)	System Flow Rate, Stack (dp)	System Flow Rate, Stack (SCFM)	Total Blower Run Time (hours)	Blower Running (Amps)	Blower Frequency (Hz)	Blower Effluent Temperature (F)	VOC Concentration, Vent Stack (ppm)	Well Vacuum (IOW)	Flow Rate (dp)	Flow Rate (SCFM)	PID Reading (ppm)	Well Vacuum (IOW)	Flow Rate (dp)	Flow Rate (SCFM)	PID Reading (ppm)	Well Vacuum (IOW)	Flow Rate (dp)	Flow Rate (SCFM)	PID Reading (ppm)	Well Vacuum (IOW)	Flow Rate (dp)	Flow Rate (SCFM)	PID Reading (ppm)	Well Vacuum (IOW)	Flow Rate (dp)	Flow Rate (SCFM)	PID Reading (ppm)	Benzene Analytical Results (ug/m3)	Benzene Analytical Results (nl/ml)	Benzene Concentration[1] (mg/m3)	Benzene Removal Rate[2] (lbs/day)	Amount of Benzene Removed Between Testing[3] (lbs)	Total Amount of Benzene Removed to Date[4] (lbs)
5/17/2021	930	8.1	--	0.115	78	13393	2.2	40	69	0.0	7.5	0.32	33.19	0.0	7.1	1.02	59.28	0.0	7.8	0.000	4.78	0.0	8.1	0.0	4.85	0.0	8.0	0.000	4.68	0.0	<2.6	-	0.0013	0.0000	0.000	2.8311
6/15/2021	1100	7.9	--	0.111	77	13834	2.2	40	75.1	0.1	7.4	0.32	32.93	0.0	7.0	1.015	59.14	0.0	7.7	0.000	4.66	0.0	7.8	0.0	4.57	0.0	7.8	0.007	4.91	0.0	<5.8	-	0.0029	0.0000	0.000	2.8314
8/25/2021	1240	7.9	--	0.133	85	14237	2.2	40	--	1.3	7.3	0.33	33.86	3.2	6.9	1.074	60.85	0.2	7.7	0.000	--	0.0	7.8	0.0	--	0.0	7.8	0.000	--	0.0		-	0.0010	0.0000	0.000	2.8316
10/13/2021	1205	11.4	--	0.135	85	15268	2.3	40	80.9	2.0	10.9	0.12	20.07	3.9	10.1	1.411	69.46	0.0	11.1	0.000	17.00	0.0	11.2	0.0	21.09	0.0	11.2	0.000	35.2	0.0	-	-	-	-	-	-
1/3/2022	1330	16.5	--	0.119	79	16682	2.4	40	77.1	0.0	16.2	0.05	12.71	0.2	14.7	1.553	72.45	0.2	15.5	0.000	16.22	0.2	15.9	0.0	15.96	0.2	16.0	0.000	17.52	0.1	-	-	-	-	-	-
2/23/2022	1135	12.6	--	0.157	97	17904	2.3	40	72	0.0	12.6	0.25	29.20	0.1	11.7	0.894	55.18	0.0	12.9	0.000	11.65	0.0	12.8	0.0	6.06	0.0	12.8	0.000	6.76	0.0	<1.9	-	0.0010	0.0000	0.001	2.8328
5/12/2022	915	9.2	--	0.167	94	19747	2.2	40	81.5	0.1	8.7	0.29	31.33	0.0	8.2	1.025	59.34	0.1	8.9	0.000	10.88	0.0	9.1	0.0	11.23	0.0	9.0	0.000	11.42	0.0	<1.5	-	0.0008	0.0000	0.001	2.8340
5/26/2022	1404	8.2	--	0.18	98	19943	2.3	40	83	--	7.8	0.29	31.36	--	7.7	1.07	60.67	--	8.5	0.000	1.40	--	8.6	0.0	1.28	--	8.6	0.000	1.35	--	-	-	-	-	-	-

NOTES:

[1]Flow rate not measured, assumed value for performance calculation.

- denotes not calculated

-- denotes not collected

CALCULATIONS:

[2]Benzene concentration (mg/m^3) = either ug/l = mg/m^3 or (ppmv)*3.19

[3]Benzene removal rate (lbs/day) = (Flow rate scfm)*(Benzene concentration mg/m^3)*(1/35.3 m3/ft^3)*(1440 minutes/day)*(1/453592.4 lbs/mg)

[4]Benzene removed (lbs) = average (Benzene removal rate lbs/day)*(operating hours between sampling events)(1 day/24 hours)

dp = differential pressure
F = degrees Fahrenheit
ft^3 = cubic feet
Hz = hertz
IOW = inches of water
KO = knockout
l = liter
lbs = pounds
m^3 = cubic meters
µg = microgram
mg = milligrams
ml - milliliter
nl = nonoliter
ppm = parts per million measured by photoionization detector (PID) calibrated using isobutylene span gas
photoionization detector (PID) calibrated using isobutylene span gas
ppmv = parts per million volume
psi = pounds per square inch
SCFM = standard cubic feet per minute
SVE = soil vapor extraction
VOC = volatile organic compound

Table 2
Air Sparge System and Well Data
Cenex Auburn Site
Auburn, Washington
Farallon PN: 301-004

Date	Time	Compressor Total Run Time (hrs)	Compressor Running Amps	Compressor Frequency (Hz)	Pre-Cooling Temperature (F)	Post-Cooling Temperature (F)	System Pressure (psi)	CAS-1		CAS-2		CAS-3		CAS-4		CAS-5		CAS-7		CAS-12		CAS-14		CAS-15		CAS-16		CAS-17		CAS-18		CAS-19		CAS-20		CAS-21		CAS-22		TOTAL Flow Rate (SCFM)
								Well Pressure (psi)	Flow Rate (SCFM)	Well Pressure (psi)	Flow Rate (SCFM)	Well Pressure (psi)	Flow Rate (SCFM)	Well Pressure (psi)	Flow Rate (SCFM)	Well Pressure (psi)	Flow Rate (SCFM)	Well Pressure (psi)	Flow Rate (SCFM)	Well Pressure (psi)	Flow Rate (SCFM)	Well Pressure (psi)	Flow Rate (SCFM)	Well Pressure (psi)	Flow Rate (SCFM)	Well Pressure (psi)	Flow Rate (SCFM)	Well Pressure (psi)	Flow Rate (SCFM)	Well Pressure (psi)	Flow Rate (SCFM)	Well Pressure (psi)	Flow Rate (SCFM)	Well Pressure (psi)	Flow Rate (SCFM)	Well Pressure (psi)	Flow Rate (SCFM)	
5/29/2019	1415	--	--	--	152	105	9.2	0.0	2.8	9.9	0.8	8.3	0.9	9.8	0.0	8.9	0.0	3.0	3.1	10.3	0.0	9.1	6.2	8.2	2.9	8.9	3.2	9.9	0.0	9.0	3.7	6.7	3.2	5.9	2.9	6.8	3.1	8.1	3.0	35.8
	1600	--	--	--	--	--	--	8.9	0.6	9.1	0.8	7.7	2.8	9.3	0.7	8.0	3.1	3.0	3.0	10.2	0.6	6.0	3	7.0	2.9	7.7	3.3	9.1	0.8	6.2	3.1	5.5	3.2	4.0	3.1	5.5	3.0	7.0	3.4	37.4
6/13/2019	1415	70.0	8.3	60	--	--	9.0	9.2	0.0	9.2	0.0	5.3	3.3	9	3	7.5	3	9.5	1.7	0.0	0.0	5.2	2.9	6.8	2.5	7.1	2.9	9.2	1.2	5.9	3.2	5	3	4.3	2.9	5.3	2.4	6.9	3.0	35.0
7/18/2019	1540	496.0	8.3	60	160	120	10.0	8.9	0.0	9.0	0.0	7.1	3.1	9.0	3.3	7.5	2.9	9.1	2.3	0.0	0.0	5.0	2.5	6.8	2.7	7.0	2.9	9.7	1.7	5.0	2.9	4.5	3.0	4.2	3.0	5.0	2.4	7.0	2.5	35.2
7/19/2019	1230	517.8	8.3	60	155	110	10.9	9.8	0.0	9.0	0.0	8.0	3.1	9.0	3.7	8.0	2.9	10.9	2.8	0.0	0.0	5.5	2.6	7.0	2.7	7.2	3.0	9.7	1.7	5.9	3.0	5.0	3.0	5.0	3.1	5.4	2.4	7.0	2.5	36.5
8/23/2019	1130	641.0	8.5	60	155	114	10.2	9.6	0.0	9.0	0.0	7.8	2.9	9.0	2.3	7.9	3.0	10.1	3.4	10.0	0.0	5.1	2.5	7.0	2.8	7.1	2.9	9.1	1.7	5.7	3.0	4.9	3.0	5.0	3.1	5.2	2.4	7.0	2.7	35.7
9/18/2019	1005	766.8	8.3	60	145	105	11.2	10.0	0.0	9.0	0.0	8.1	3.4	9.0	2.6	8.3	3.5	10.1	3.7	10.0	0.0	5.7	2.6	7.1	2.9	7.5	3.1	9.6	2.2	6.1	3.1	5.2	3.1	5.3	2.9	5.8	2.2	7.8	0.0	35.3
9/23/2019	1030	885.1	8.3	60	147	104	11.4	10.0	0.0	9.0	0.0	8.4	3.5	9.1	3.0	8.6	2.9	10.1	3.2	10.0	0.0	5.9	2.7	7.2	2.8	7.7	3.2	9.9	2.3	6.0	3.1	5.2	3.1	5.5	2.9	5.9	2.3	7.4	0.0	35.0
10/22/2019	1205	1583	8.3	60	147	105	12.2	10.5	0.0	9.1	0.0	9.1	3.5	9.8	3.2	9.0	3.4	10.2	3.2	10.0	0.0	6.2	2.6	8.0	2.9	8.2	3.1	10.1	2.4	7.0	3.0	6.0	3.1	6.2	2.8	6.0	2.2	8.0	2.6	38.0
	1355	--	--	--	--	--	--	Closed		9.1	2.9	9.0	2.9	9.7	2.8	9.0	3.4	10.2	2.4	10.2	1.6	6.2	2.5	8.0	2.9	8.1	3.0	10.0	2.4	7.0	3.0	6.0	3.0	6.1	2.8	6.0	2.2	8.0	2.6	40.4
11/27/2019	1045	2235	8.6	60	95	55	14.7	Closed		10.8	3.3	11.0	3.2	11.0	2.7	11.1	3.1	10.8	1.9	10.6	1.9	8.0	2.6	9.7	2.7	9.8	3.0	11.2	1.6	9.0	3.0	8.0	2.8	8.9	2.8	7.5	1.9	9.9	2.7	39.2
12/18/2019	1010	2278	8.3	60	135	92	12.0	Closed		9.9	3.5	10.0	3.5	10.5	2.8	10.1	3.1	11.0	1.2	10.6	1.9	7.1	2.7	9.0	2.8	9.0	3.2	11.0	1.9	8.0	3.1	7.0	2.8	7.1	2.8	6.9	1.9	8.9	2.7	39.9
2/4/2020	1030	3430	8.5	60	150	98	14.0	Closed		12.4	3.5	12.2	2.9	13.0	2.6	12.3	3.0	13.1	1.2	13.0	1.9	9.4	2.5	11.0	2.6	11.2	3.0	13.0	2.0	9.9	2.9	9.0	2.6	9.2	2.7	9.1	1.8	11.0	2.7	37.9
2/21/2020	1200	3840	8.6	60	160	110	--	--		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2/26/2020	930	3840	8.8	60	150	100	15.0	Closed		14.5	3.5	14.6	3.2	14.5	2.6	15.0	3.5	13.5	2.4	13.5	1.7	11.0	1.5	13.0	2.1	13.0	3.0	15.0	1.6	12.5	2.7	11.5	2.6	12.2	2.8	10.5	1.7	13.3	2.6	37.5
4/1/2020	910	4679	8.5	60	150	106	14.0	Closed		12.2	3.3	12.0	3.2	12.6	2.5	12.0	3.5	12.9	2.3	12.9	1.7	9.0	1.7	10.9	2.2	11.0	3.0	12.9	1.7	9.5	2.9	8.8	2.6	9.0	2.8	8.9	1.7	10.9	2.6	37.7
5/7/2020	910	5448	8.4	60	150	111	13.6	Closed		11.9	3.5	11.3	3.2	12.1	2.5	11.3	3.5	12.3	2.3	12.2	1.7	8.3	1.1	10.1	2.1	10.4	3.0	12.1	1.9	8.8	2.7	8.0	2.6	8.1	2.9	8.1	1.7	10.1	2.6	37.3
6/2/2020	852	6009	8.4	60	155	110	13.2	Closed		11.5	3.4	11.1	3.1	11.9	2.5	11.1	3.5	12.0	2.3	11.9	1.9	7.9	1.2	9.7	2.2	10.0	3.0	12.0	2.0	8.4	2.7	7.8	2.5	8.0	2.8	7.8	1.7	9.9	2.6	37.4
7/31/2020	1200	7173	8.4	60	155	113	13.2	Closed		10.2	4.6	10.2	3.3	10.9	2.6	10.4	3.5	11.3	1.9	11.1	1.8	6.8	1.2	8.3	2.2	9.1	2.9	11.9	2.0	7.0	2.7	6.2	2.5	7.1	2.8	7.0	1.7	9.0	2.0	37.7
8/5/2020	1100	7177	8.6	60	148	110	13.8	Closed		7.3	3.0	11.1	2.9	11.3	2.5	11.4	2.8	11.2	2.6	11.0	2.2	7.2	1.0	9.1	2.2	10.0	2.9	11.5	2.5	8.9	2.7	7.6	2.5	8.8	2.7	7.7	1.7	9.8	2.0	36.2
10/2/2020	1245	8291	8.3	60	155	110	12.2	Closed		4.9	2.9	10.2	2.8	10.8	2.5	10.0	3.2	10.8	3.2	10.5	2.7	6.2	1.2	8.7	2.2	9.2	2.9	11.1	2.6	7.9	2.7	6.8	2.5	7.8	2.9	6.4	1.8	8.9	1.9	38.0
11/6/2020	900	9128	8.3	60	145	95	12.5	Closed		5.6	3.0	11.4	3.1	11.3	2.5	11.1	3.2	11.0	3.0	10.8	2.7	7.1	1.1	9.7	2.2	10.0	3.0	11.9	2.6	9.0	2.7	8.0	2.4	9.1	3.0	7.2	1.7	9.8	1.8	38.0
12/9/2020	1309	9768	8.4	60	150	100	13.5	Closed		Closed		11.7	3.3	11.5	2.3	11.5	3.7	11.6	4.0	11.1	2.7	8.9	1.1	10.0	2.1	10.2	3.0	12.3	3.1	8.9	2.7	7.9	2.4	8.8	3.0	7.9	1.9	9.9	1.8	37.1
1/7/2021	1049	10307	8.6	60	135	81	14.1	Closed		Closed		13.8	3.1	13.1	2.4	13.9	3.4	14.0	3.1	14.0	2.7	9.9	2.1	12.0	2.3	12.1	3.0	14.1	3.0	11.5	2.6	10.1	2.4	11.1	3.0	9.5	1.6	11.7	1.7	36.4
2/1/2021	1400	--	--	--	160	105	15.1	12.8	0.6	13.1	0.6	13.2	3.0	13.1	2.4	13.3	3.2	14.0	3.4	14.0	2.8	9.4	1.9	11.4	2.3	12.0	3.0	13.9	3.0	10.3	2.6	9.7	2.3	10.6	2.9	9.6	1.8	11.7	1.7	37.5
3/2/2021	1400	11595	8.6	60	160	107	15.1	12.9	0.6	13.1	0.6	13.2	3.0	13.2	2.4	13.3	3.2	14.2	3.5	14.2	2.8	9.5	1.9	11.5	2.2	12.0	3.0	14.0	3.0	10.2	2.7	9.7	2.3	10.3	2.9	9.6	1.7	11.8	1.7	37.5
4/7/2021	930	12454	8.5	60	155	100	15.0	12.2	0.0	13.0	0.0	12.7	3.3	12.9	2.3	13.1	3.0	14.1	2.2	14.0	2.2	9.0	2.0	11.9	2.4	11.1	3.0	13.4	3.4	9.8	2.7	8.9	2.3	9.9	3.1	8.9	1.9	11.0	1.7	35.5
5/17/2021	930	13386	8.4	60	159	110	14.0	11.1	0.0	11.9	0.8	11.7	3.3	12.0	2.1	12.0	3.0	13.2	2.3	13.0	2.7	8.0	1.9	9.9	2.3	10.2	3.0	12.5	3.3	8.6	2.7	8.9	2.3	8.9	3.1	9.0	1.9	9.9	1.7	36.4
6/15/2021	1100	13827	8.4	60	165	120	14.0	11.1	0.0	11.5	0.9	11.5	3.1	11.9	2.2	11.2	3.1	12.9	2.4	12.1	2.7	7.9	1.9	9.9	2.3	10.4	2.9	12.6	3.0	8.9	2.7	7.9	2.3	8.4	3.0	7.8	1.9	9.6	1.7	36.1
8/17/2021	1402	14181	9.0	60	183	115	18.5	15.8	0.5	10.1	1.0	Closed		Closed		Closed		Closed		Closed		6.9	3.2	8.9	4.0	10.0	6.0	11.2	4.0	9.1	7.0	7.0	5.1	7.5	4.7	Closed		Closed		35.5
8/25/2021	1240	14230	8.8	60	190	130	17.8	14.2	0.5	9.5	1.4	Closed		Closed		Closed		Closed		Closed		5.9	3.3	7.9	3.8	9.1	5.9	10.4	3.5	8.0	7.5	6.0	5.0	6.1	4.4	Closed		Closed		35.3

Table 2
Air Sparge System and Well Data
Cenex Auburn Site
Auburn, Washington
Farallon PN: 301-004

Date	Time	Compressor Total Run Time (hrs)	Compressor Running Amps	Compressor Frequency (Hz)	Pre-Cooling Temperature (F)	Post-Cooling Temperature (F)	System Pressure (psi)	CAS-1		CAS-2		CAS-3		CAS-4		CAS-5		CAS-7		CAS-12		CAS-14		CAS-15		CAS-16		CAS-17		CAS-18		CAS-19		CAS-20		CAS-21		CAS-22		TOTAL Flow Rate (SCFM)
								Well Pressure (psi)	Flow Rate (SCFM)	Well Pressure (psi)	Flow Rate (SCFM)	Well Pressure (psi)	Flow Rate (SCFM)	Well Pressure (psi)	Flow Rate (SCFM)	Well Pressure (psi)	Flow Rate (SCFM)	Well Pressure (psi)	Flow Rate (SCFM)	Well Pressure (psi)	Flow Rate (SCFM)	Well Pressure (psi)	Flow Rate (SCFM)	Well Pressure (psi)	Flow Rate (SCFM)	Well Pressure (psi)	Flow Rate (SCFM)	Well Pressure (psi)	Flow Rate (SCFM)	Well Pressure (psi)	Flow Rate (SCFM)	Well Pressure (psi)	Flow Rate (SCFM)	Well Pressure (psi)	Flow Rate (SCFM)	Well Pressure (psi)	Flow Rate (SCFM)	
10/13/2021	1205	15261	7.9	60	132	96	18.0	Closed		11.0	1.4	Closed		Closed		Closed		Closed		Closed		8.0	3.4	10.1	4.0	11.2	5.9	12.3	3.7	12.5	7.0	9.0	5.0	10.2	4.5	Closed		Closed		34.9
1/3/2022	1330	16676	8.9	60	175	105	19.5	15.6	2.3	13.0	1.3	Closed		Closed		Closed		Closed		Closed		9.9	3.1	12.0	3.7	13.0	5.2	14.1	3.3	12.9	7.1	10.6	4.1	10.8	4.1	Closed		Closed		34.2
2/23/2022	1135	17897	9.1	60	170	110	20.0	18.0	1.9	13.9	1.2	Closed		Closed		Closed		Closed		Closed		10.9	3.1	12.9	3.9	13.5	5.3	14.9	3.6	13.5	7.3	11.1	4.6	11.3	4.2	Closed		Closed		35.1
5/12/2022	915	19740	9.0	60	185	110	20.0	17.5	2.1	13.0	1.3	Closed		Closed		Closed		Closed		Closed		9.5	2.7	11.5	3.9	12.5	5.5	14.0	3.5	12.8	7.2	10.0	4.7	10.6	4.2	Closed		Closed		35.1
5/26/2022	1404	19936	9.1	60	145	86	19.5	16.8	1.0	12.1	2.0	Closed		Closed		Closed		Closed		Closed		10.0	3.4	12.1	3.8	12.8	5.1	14.1	3.2	13.9	6.4	10.2	4.4	10.1	3.9	Closed		Closed		33.2

NOTES:

-- denotes not collected

AS = air sparge
dp = differential pressure
F = degrees Fahrenheit
hrs = hours
Hz - hertz
IOW = inches of water
psi = pounds per square inch
SCFM = standard cubic feet per minute

Table 3
SVE System Air Analytical Data
Cenex Auburn Site
Auburn, Washington
Farallon PN: 301-004

Sample Location	Sample Identification	Sample Methodology	Sample Date	Analytical Results (nanoliter per microliter [ppmv])				
				Benzene	Toluene	Ethylbenzene	Total Xylenes	GRO
SVE System	EFFLUENT-052919	EPA 2021B	5/29/2019	< 0.31	< 0.26	< 0.23	< 0.46	< 21
	EFFLUENT-062419	EPA 2021B	6/24/2019	0.72	< 0.26	<0.23	< 0.46	< 21
	EFFLUENT-071819	EPA TO-15	7/18/2019	0.000181	0.000623	0.00171	0.0031	8.030[E*]
	EFFLUENT-082319	EPA TO-15	8/23/2019	0.000116	0.000610	0.00287	0.0126	0.647
	EFFLUENT-092319	EPA TO-15	9/23/2019	< 0.0000895	< 0.0004	0.00294	0.0075	36.9[E]
	EFFLUENT-102219	EPA TO-15	10/22/2019	< 0.000895	< 0.0040	< 0.0040	< 0.016	27.0[E]
	EFFLUENT-121819	EPA TO-15	12/18/2019	< 0.0000895	< 0.00040	< 0.00040	< 0.0016	0.205
	EFFLUENT-020420	EPA TO-15	2/4/2020	< 0.0000895	< 0.00040	< 0.00040	< 0.0016	0.026
	EFFLUENT-040120	EPA TO-15	4/1/2020	< 0.0000895	< 0.00040	< 0.00040	< 0.0016	0.011
	EFFLUENT-050720	EPA TO-15	5/7/2020	< 0.0000895	< 0.00040	< 0.00040	< 0.0016	0.007
	EFFLUENT-060220	EPA TO-15	6/2/2020	< 0.0000895	< 0.00040	< 0.00040	< 0.0016	0.057
	EFFLUENT-110620	EPA TO-15	11/6/2020	< 0.0000895	< 0.00040	< 0.00040	< 0.0016	0.385
	INFLUENT-030221	EPA TO-15	3/2/2021	< 0.000100	< 0.00100	< 0.00400	< 0.0060	< 0.040
	INFLUENT-051721	EPA TO-15	5/17/2021	< 0.0008	< 0.04	< 0.0008	0.00323	14
	EFFLUENT-061521	EPA TO-15	6/15/2021	<0.0018	<0.09	<0.0018	<0.0054	21
	EFFLUENT-082521	EPA TO-15	8/25/2021	<0.00061	<0.03	<0.00061	<0.00181	0.87
	INFLUENT-022322	EPA TO-15	2/23/2022	<0.0006	<0.03	<0.0006	0.00210	1.70
	INFLUENT-051222	EPA TO-15	5/12/2022	<0.00046	<0.023	<0.00046	<0.00138	<0.370

NOTES:

< denotes analyte not detected at or exceeding the reporting limit listed

E denotes estimated analytical value, result exceeds the linear working range of the laboratory equipment

* denotes result not within established laboratory control limits

EPA = U.S. Environmental Protection Agency

GRO = total petroleum hydrocarbons as gasoline-range organics

ppmv = parts per million volume

SVE = soil vapor extraction

Table 4
Summary of Groundwater Elevation Data – January 2018 through May 2022
CHS Auburn Site
Auburn, Washington
Farallon PN: 301-004

Well Identification	Elevation Top of Well Casing (feet)[1]	Measurement Date	Depth to Water (feet)[2]	Elevation (feet)[1]
CMW-2	88.9	1/17/2018	18.52	70.38
		7/31/2018	23.24	65.66
		1/22/2019	20.92	67.98
		8/21/2019	24.51	64.39
		11/25/2019	23.92	64.98
		2/25/2020	16.80	72.10
		5/27/2020	20.77	68.13
		11/11/2020	23.52	65.38
		5/24/2021	21.05	67.85
		11/29/2021	20.07	68.83
		5/26/2022	19.17	69.73
CMW-4	90.68	1/17/2018	20.08	70.60
		7/31/2018	25.60	65.08
CMW-6	90.66	1/17/2018	20.94	69.72
		7/31/2018	dry	dry
CMW-8	89.94	1/17/2018	20.55	69.39
		7/31/2018	25.31	64.63
		1/22/2019	22.95	66.99
		8/21/2019	26.52	63.42
		11/25/2019	25.90	64.04
		2/24/2020	18.88	71.06
		5/27/2020	22.86	67.08
		11/11/2020	25.45	64.49
		5/24/2021	23.12	66.82
		11/29/2021	22.23	67.71
		5/25/2022	21.25	68.69
CMW-10	NS	1/17/2018	18.80	NS
		7/31/2018	23.71	NS
		1/22/2019	21.32	NS
		8/21/2019	24.96	NS
		11/25/2019	24.40	NS
		2/25/2020	17.20	NS
		5/27/2020	21.23	NS
		11/11/2020	24.00	NS
		5/24/2021	21.48	NS
		11/29/2021	20.61	NS
		5/25/2022	19.57	NS
CMW-12	90.02	1/17/2018	20.12	69.90
		7/31/2018	25.84	64.18
		1/22/2019	22.45	67.57
		8/21/2019	26.07	63.95
		11/25/2019	25.47	64.55
		2/25/2020	18.43	71.59
		5/27/2020	22.35	67.67
		11/11/2020	25.04	64.98
		5/24/2021	22.60	67.42
		11/29/2021	21.77	68.25
		5/25/2022	20.68	69.34

Table 4
Summary of Groundwater Elevation Data – January 2018 through May 2022
CHS Auburn Site
Auburn, Washington
Farallon PN: 301-004

Well Identification	Elevation Top of Well Casing (feet)[1]	Measurement Date	Depth to Water (feet)[2]	Elevation (feet)[1]
CMW-13	89.67	1/17/2018	19.63	70.04
		7/31/2018	22.48[3]	67.19[3]
		1/22/2019	22.03	67.64
		8/21/2019	25.71	63.96
		11/25/2019	25.06	64.61
		2/25/2020	17.89	71.78
		5/27/2020	21.91	67.76
		11/11/2020	24.65	65.02
		5/24/2021	22.16	67.51
		11/29/2021	21.32	68.35
		5/25/2022	20.33	69.34
CMW-15	87.22	1/17/2018	17.78	69.44
		7/31/2018	22.53	64.69
CMW-25	NS	1/17/2018	18.96	NS
		7/31/2018	23.64	NS
		1/22/2019	21.35	NS
		8/21/2019	24.91	NS
		11/25/2019	24.40	NS
		2/24/2020	17.25	NS
		5/27/2020	21.16	NS
		11/11/2020	23.98	NS
		5/24/2021	21.44	NS
		11/29/2021	20.63	NS
		5/25/2022	19.57	NS
CMW-26	87.80	1/17/2018	17.31	70.49
		7/31/2018	21.97	65.83
		1/22/2019	19.64	68.16
		8/21/2019	23.24	64.56
		11/25/2019	22.67	65.13
		2/25/2020	15.56	72.24
		5/27/2020	19.50	68.30
		11/11/2020	22.30	65.50
		5/24/2021	19.74	68.06
		11/29/2021	18.93	68.87
		5/25/2022	17.90	69.90
CMW-27	89.10	1/17/2018	18.79	70.31
		7/31/2018	23.70	65.40
		1/22/2019	21.35	67.75
		8/21/2019	24.96	64.14
		11/25/2019	24.37	64.73
		2/25/2020	17.17	71.93
		5/27/2020	21.22	67.88
		11/11/2020	23.97	65.13
		5/24/2021	21.47	67.63
		11/29/2021	20.68	68.42
		5/25/2022	19.56	69.54

Table 4
Summary of Groundwater Elevation Data – January 2018 through May 2022
CHS Auburn Site
Auburn, Washington
Farallon PN: 301-004

Well Identification	Elevation Top of Well Casing (feet)[1]	Measurement Date	Depth to Water (feet)[2]	Elevation (feet)[1]
CMW-28	89.48	1/17/2018	19.13	70.35
		7/31/2018	23.89	65.59
		1/22/2019	21.55	67.93
		8/21/2019	25.14	64.34
		11/25/2019	24.56	64.92
		2/24/2020	17.39	72.09
		5/27/2020	21.39	68.09
		11/11/2020	24.15	65.33
		5/24/2021	21.64	67.84
		11/29/2021	20.80	68.68
		5/25/2022	19.77	69.71
CMW-29	88.03	1/17/2018	17.48	70.55
		7/31/2018	22.19	65.84
		1/22/2019	19.85	68.18
		8/21/2019	23.47	64.56
		11/25/2019	22.91	65.12
		2/24/2020	15.76	72.27
		5/27/2020	19.66	68.37
		11/11/2020	22.51	65.52
		5/24/2021	19.93	68.10
		11/29/2021	19.13	68.90
		5/25/2022	18.10	69.93
CMW-30	87.58	1/17/2018	16.82	70.76
		7/31/2018	21.52	66.06
		1/22/2019	19.19	68.39
		8/21/2019	22.84	64.74
		11/25/2019	22.28	65.30
		2/25/2020	15.16	72.42
		5/27/2020	19.02	68.56
		11/11/2020	21.88	65.70
		5/24/2021	19.28	68.30
		11/29/2021	18.53	69.05
		5/25/2022	17.45	70.13
CMW-31	89.02	1/17/2018	19.49	69.53
		7/31/2018	24.32	64.70
		1/22/2019	21.90	67.12
		8/21/2019	25.54	63.48
		11/25/2019	24.91	64.11
		2/24/2020	17.80	71.22
		5/27/2020	21.81	67.21
		11/11/2020	24.43	64.59
		5/24/2021	22.06	66.96
		11/29/2021	21.18	67.84
		5/25/2022	20.22	68.80

Table 4
Summary of Groundwater Elevation Data – January 2018 through May 2022
CHS Auburn Site
Auburn, Washington
Farallon PN: 301-004

Well Identification	Elevation Top of Well Casing (feet)[1]	Measurement Date	Depth to Water (feet)[2]	Elevation (feet)[1]
HMW-9	89.07	1/17/2018	19.47	69.60
		7/31/2018	24.25	64.82
		1/22/2019	21.85	67.22
		8/21/2019	25.45	63.62
		11/25/2019	24.84	64.23
		2/25/2020	17.84	71.23
		5/27/2020	21.76	67.31
		11/11/2020	24.40	64.67
		5/24/2021	22.00	67.07
		11/29/2021	21.18	67.89
		5/25/2022	20.18	68.89
HMW-10	89.18	1/17/2018	19.40	69.78
		7/31/2018	24.13	65.05
		1/22/2019	21.77	67.41
		8/21/2019	23.35	65.83
		11/25/2019	24.78	64.40
		2/24/2020	17.70	71.48
		5/27/2020	21.66	67.52
		11/11/2020	24.34	64.84
		5/24/2021	21.91	67.27
		11/29/2021	21.08	68.10
		5/25/2022	20.04	69.14
HMW-11	NS	1/17/2018	17.51	NS
		7/31/2018	22.27	NS
		1/22/2019	19.89	NS
		8/21/2019	23.30	NS
		11/25/2019	22.87	NS
		2/25/2020	15.82	NS
		5/27/2020	19.76	NS
		11/11/2020	22.46	NS
		5/24/2021	20.03	NS
		11/29/2021	19.25	NS
		5/25/2022	18.21	NS
HMW-13	88.32	1/17/2018	17.82	70.50
		7/31/2018	22.51	65.81
		1/22/2019	20.21	68.11
		8/21/2019	23.80	64.52
		11/25/2019	23.24	65.08
		2/24/2020	16.13	72.19
		5/27/2020	20.02	68.30
		11/11/2020	22.85	65.47
		5/24/2021	16.00	72.32
		11/29/2021	19.50	68.82
		5/25/2022	16.32	72.00

NOTES:

[1]Elevation in feet above mean sea level.

[2]Depth to water in feet below the top of the well casing.

[3]Depth to water measurement appears to be erroneous;

NS = well not surveyed; groundwater elevation could not be determined

Table 5
Summary of Groundwater Geochemical Data – January 2018 through May 2022
CHS Auburn Site
Auburn, Washington
Farallon PN: 301-004

Sample Location	Date[1]	Temperature[2] (°Celsius)	pH[2]	ORP[2] (millivolts)	Dissolved Oxygen[1] (milligrams per liter)
CMW-2	1/18/2018	13.5	6.03	252.3	1.15
	7/31/2018	15.5	6.14	164.0	0.47
	1/22/2019	12.9	5.99	214.1	1.20
	8/22/2019	14.7	6.16	175.1	2.09
	11/26/2019	13.8	6.20	44.5	3.29
	2/25/2020	12.2	6.60	143.6	6.76
	5/28/2020	14.8	7.32	201.4	8.58
	11/12/2020	13.4	6.23	17.5	0.95
	5/25/2021	13.7	6.49	354.9	7.03
	11/30/2021	14.6	6.48	238.3	4.52
	5/26/2022	14.9	6.12	505.8	3.76
CMW-4	1/17/2018	—	—	—	4.52
CMW-6	1/17/2018	—	—	—	4.09
CMW-8	1/18/2018	12.0	6.66	-14.3	0.29
	8/1/2018	14.5	6.33	-32.3	0.52
	1/22/2019	12.2	6.29	8.8	0.64
	8/21/2019	13.9	6.21	8.4	1.71
	11/25/2019	12.6	6.37	21.8	1.05
	2/25/2020	12.5	6.27	-1.3	0.99
	5/28/2020	13.3	6.52	-9.9	0.60
	11/11/2020	12.3	6.31	-31.9	6.67
	5/24/2021	13.3	6.08	41.2	0.75
	11/30/2021	12.9	6.51	-12.5	1.17
	5/25/2022	15.7	6.09	328.8	0.93
CMW-10	1/18/2018	13.4	6.12	194.4	0.70
	8/1/2018	14.9	6.12	-40.1	0.26
	1/23/2019	13.0	5.76	176.7	0.75
	8/22/2019	14.3	6.00	-37.4	0.76
	11/25/2019	14.6	4.87	87.3	1.18
	2/25/2020	13.3	6.08	158	5.58
	5/28/2020	15.2	6.52	120.8	2.27
	11/12/2020	13.1	5.75	36.6	1.20
	5/25/2021	14.1	6.13	319.2	1.36
	11/30/2021	15.1	6.25	174.8	1.56
	5/26/2022	15.1	6.12	463.7	1.58
CMW-12	1/18/2018	12.8	6.46	-47.0	0.18
	8/1/2018	15.8	6.19	-22.5	0.41
	1/23/2019	12.5	6.36	-25.7	0.60
	8/22/2019	15.1	6.25	-61.5	1.71
	11/26/2019	12.4	6.36	-6.5	0.97
	2/25/2020	12.8	6.12	-13.9	1.01
	5/28/2020	18.3	6.50	-35.5	0.59
	11/12/2020	13.6	6.29	-93.6	0.73
	5/25/2021	14.6	6.13	86.8	0.86
	11/30/2021	13.9	6.38	93.4	2.17
	5/26/2022	15.8	6.21	-121.8	0.84

Table 5
Summary of Groundwater Geochemical Data – January 2018 through May 2022
CHS Auburn Site
Auburn, Washington
Farallon PN: 301-004

Sample Location	Date[1]	Temperature[2] (°Celsius)	pH[2]	ORP[2] (millivolts)	Dissolved Oxygen[1] (milligrams per liter)
CMW-13	1/18/2018	13.1	6.30	107.2	1.25
	7/31/2018	15.9	6.18	-40.3	0.26
	1/23/2019	12.5	5.91	78.6	1.28
	8/22/2019	14.5	6.34	-31.7	1.85
	11/26/2019	13.1	6.41	-0.9	1.51
	2/25/2020	12.8	6.13	155.9	1.54
	5/28/2020	16.5	6.17	77.5	0.71
	11/12/2020	13.3	6.44	-80.0	2.30
	5/24/2021	14.5	5.79	116.3	1.15
	11/30/2021	14.3	6.27	60.3	4.52
	5/25/2022	16.4	6.08	526.1	0.66
CMW-15	1/17/2018	—	—	—	0.37
CMW-25	1/18/2018	12.7	6.14	269.4	4.68
	7/31/2018	16.3	6.03	88.5	0.75
	1/22/2019	12.4	6.03	315.1	4.59
	8/21/2019	15.6	6.03	117.8	1.03
	11/25/2019	12.8	6.13	63.5	1.74
	2/24/2020	12.1	6.00	114.2	8.05
	5/27/2020	15.1	6.18	251.5	4.24
	11/12/2020	12.5	5.97	12.4	1.32
	5/24/2021	13.2	5.77	345.6	4.00
	11/29/2021	15.0	6.19	279.6	6.85
	5/25/2022	14.9	6.02	519.7	6.48
CMW-26	1/18/2018	10.7	6.44	233.6	4.04
	8/1/2018	16.0	6.22	160.6	4.32
	1/22/2019	11.9	6.07	98.6	4.08
	8/21/2019	16.0	6.05	206.1	4.18
	11/26/2019	11.6	6.27	218.2	2.98
	2/25/2020	11.4	6.33	155.2	4.61
	5/27/2020	16.4	6.35	266.0	4.21
	11/11/2020	12.5	6.05	49.6	0.77
	5/25/2021	13.0	6.05	338.3	4.53
	11/29/2021	14.0	6.36	273.5	4.61
	5/25/2022	16.2	6.24	503.0	4.40
CMW-27	1/18/2018	14.0	6.12	155.5	0.44
	8/1/2018	16.0	6.05	-26.7	0.21
	1/23/2019	12.7	6.27	-106.1	0.73
	8/22/2019	16.7	6.45	-53.7	0.69
	11/26/2019	14.6	6.29	-156.8	0.47
	2/25/2020	13.9	6.14	276.2	1.95
	5/28/2020	16.1	6.49	-31.0	0.76
	11/12/2020	14.5	6.28	-73.2	0.90
	5/25/2021	14.5	6.11	29.2	0.63
	11/30/2021	15.2	6.18	50.9	0.99
	5/26/2022	14.7	6.37	87.2	0.77

Table 5
Summary of Groundwater Geochemical Data – January 2018 through May 2022
CHS Auburn Site
Auburn, Washington
Farallon PN: 301-004

Sample Location	Date[1]	Temperature[2] (°Celsius)	pH[2]	ORP[2] (millivolts)	Dissolved Oxygen[1] (milligrams per liter)
CMW-28	1/18/2018	9.3	6.17	204.4	2.04
	8/1/2018	15.2	5.98	44.9	0.52
	1/23/2019	12.0	5.56	184.9	1.87
	8/21/2019	15.2	5.65	161.3	1.55
	11/26/2019	14.8	5.66	245.0	1.93
	2/24/2020	11.1	5.54	146.7	7.51
	5/27/2020	15.5	6.03	292.3	7.44
	11/12/2020	14.2	5.90	52.1	3.91
	5/25/2021	13.6	5.63	296.5	3.08
	11/30/2021	14.1	6.04	286.6	1.15
	5/25/2022	15.8	5.86	520.4	3.54
CMW-29	1/17/2018	11.9	6.15	109.6	0.55
	7/31/2018	16.7	6.07	43.2	0.41
	1/22/2019	13.1	5.90	180.3	1.28
	8/22/2019	14.1	5.59	103.4	0.87
	11/25/2019	13.6	5.94	112.3	0.85
	2/24/2020	13.1	6.03	90.0	1.49
	5/27/2020	17.4	6.05	243.7	1.66
	11/11/2020	13.1	5.72	24.2	5.06
	5/24/2021	14.0	5.60	267.0	7.19
	11/29/2021	15.3	5.96	294.7	1.53
	5/25/2022	15.2	5.98	492.8	0.88
CMW-30	1/17/2018	—	—	—	1.11
	1/22/2019	13.4	6.19	179.1	0.91
	8/21/2019	15.1	5.90	163.9	0.90
	11/25/2019	14.5	6.09	124.4	0.56
	2/25/2020	12.0	6.20	148.2	2.26
	5/27/2020	15.6	6.29	193.3	0.71
	11/11/2020	14.3	6.03	15.0	0.89
	5/24/2021	13.9	5.80	241.9	0.40
	11/29/2021	15.1	6.24	210.2	0.93
	5/25/2022	13.9	6.08	505.5	1.08
CMW-31	1/18/2018	12.0	6.34	153.3	2.90
	7/31/2018	14.6	6.03	97.6	0.71
	1/22/2019	12.7	5.95	161.2	3.34
	8/22/2019	13.5	6.11	143.8	2.07
	11/25/2019	12.3	6.20	109.3	1.60
	2/24/2020	12.5	5.88	277.9	3.91
	5/28/2020	13.9	6.21	163.2	1.17
	11/11/2020	12.6	6.08	53.4	1.11
	5/24/2021	13.7	6.15	270.8	1.09
	11/29/2021	14.1	6.15	297.5	1.28
	5/25/2022	15.5	6.13	321.7	1.87

Table 5
Summary of Groundwater Geochemical Data – January 2018 through May 2022
CHS Auburn Site
Auburn, Washington
Farallon PN: 301-004

Sample Location	Date[1]	Temperature[2] (°Celsius)	pH[2]	ORP[2] (millivolts)	Dissolved Oxygen[1] (milligrams per liter)
HMW-9	1/18/2018	12.6	6.51	-13.0	0.51
	8/1/2018	14.8	6.23	-20.0	0.25
	1/22/2019	13.3	6.16	28.8	0.59
	8/21/2019	16.7	6.23	-5.1	1.89
	11/25/2019	14.0	6.25	25.3	0.33
	2/25/2020	13.0	6.18	35.7	2.84
	5/28/2020	14.0	6.38	-18.7	0.88
	11/11/2020	13.9	6.23	-67.3	3.82
	5/25/2021	14.9	5.99	36.6	2.66
	11/30/2021	14.1	6.44	13	1.1
	5/26/2022	14.6	6.00	-202.6	0.62
HMW-10	1/17/2018	12.3	6.49	-38.1	0.47
	7/31/2018	14.8	6.22	-43.1	0.26
	1/22/2019	13.0	6.14	30.5	0.53
	8/21/2019	14.6	6.25	-26.0	2.02
	11/25/2019	13.3	6.18	27.3	2.76
	2/24/2020	13.5	6.07	7.8	7.1
	5/28/2020	14.1	6.43	-9.0	0.59
	11/12/2020	13.1	6.26	-57.4	2.70
	5/24/2021	14.6	5.85	26.7	0.80
	11/30/2021	13.5	6.48	-7.8	0.85
	5/26/2022	15.0	6.32	-162.1	0.64
HMW-11	1/18/2018	13.7	6.07	176.6	0.46
	8/1/2018	15.3	6.20	-27.6	0.29
	1/23/2019	12.9	6.30	-30.4	0.96
	8/22/2019	14.6	6.20	-40.1	1.70
	11/26/2019	13.3	6.35	-3.9	0.78
	2/25/2020	14.1	6.00	188.7	0.63
	5/28/2020	16.2	6.38	-16.6	0.70
	11/12/2020	13.8	6.37	-108.8	0.67
	5/25/2021	14.6	6.22	1.6	1.10
	11/30/2021	15.3	6.23	255.3	4.12
	5/26/2022	15.3	6.07	-62.7	0.98

Table 5
Summary of Groundwater Geochemical Data – January 2018 through May 2022
CHS Auburn Site
Auburn, Washington
Farallon PN: 301-004

Sample Location	Date[1]	Temperature[2] (°Celsius)	pH[2]	ORP[2] (millivolts)	Dissolved Oxygen[1] (milligrams per liter)
HMW-13	1/18/2018	12.2	6.18	233.4	0.55
	8/1/2018	14.7	5.95	157.5	0.85
	1/23/2019	12.5	5.64	196.8	1.23
	8/21/2019	15.9	5.97	211.9	2.72
	11/26/2019	12.1	6.06	235.3	1.51
	2/24/2020	11.7	5.89	140.1	2.92
	5/27/2020	16.8	6.16	233.0	1.10
	11/11/2020	12.6	5.77	59.2	2.70
	5/25/2021	14.7	5.96	250.9	1.93
	11/30/2021	13.6	6.19	281.1	1.86
	5/26/2022	16.1	6.10	-36.1	1.89

NOTES:

-- = not measured

ORP = oxidation-reduction potential

[1]Date shown represents date of groundwater sample collection. Dissolved-oxygen measurements typically were collected 1 to 2 days prior using a dissolved-oxygen analyzer with a down-hole probe.

[2]Temperature, pH, and ORP were measured using a YSI or Horiba multiparameter water-quality analyzer.

[3]Not measured due to malfunctioning pH meter.

[4]pH readings did not stabilize.

Table 6
Summary of Laboratory Analytical Results for TPH and BTEX in Groundwater – January 2018 through May 2022
CHS Auburn Site
Auburn, Washington
Farallon PN: 301-004

Well Identification	Sample Identification	Sample Date	Analytical Results (milligrams per liter)		Analytical Results (micrograms per liter)				
			DRO[1]	ORO[1]	GRO[2]	Benzene[3]	Toluene[3]	Ethylbenzene[3]	Total Xylenes[3]
CMW-2	CMW-2-011818	1/18/2018	**0.93**	**<0.62**[4]	<100	<1.0	<1.0	<1.0	<2.0
	CMW-2-073118	7/31/2018	**0.63**	<0.41	<100	<1.0	<1.0	<1.0	<2.0
	CMW-2-012219	1/22/2019	**2.2**	**1.1**[5]	<100	<1.0	<1.0	<1.0	<2.0
	CMW-2-082219	8/22/2019	**1.0**	**0.69**[5]	<100	<1.0	<1.0	<1.0	<2.0
	CMW-2-112619	11/26/2019	**5.2**	**3.3**[5]	<100	<1.0	<1.0	<1.0	<2.0
	CMW-2-022520	2/25/2020	**0.63**	**1.0**	<100	<1.0	<1.0	<1.0	<2.0
	CMW-2-052820	5/28/2020	**0.76**	**0.94**	<100	<1.0	<1.0	<1.0	<2.0
	CMW-2-111220	11/12/2020	**1.9**	**1.1**[5]	<100	<1.0	<1.0	<1.0	<2.0
	CMW-2-052521	5/25/2021	0.34	**0.63**	<100	<1.0	<1.0	<1.0	<2.0
	CMW-2-113021	11/30/2021	**1.4**	**1.2**	<100	<1.0	<1.0	<1.0	<2.0
	CMW-2-052622	5/26/2022	0.20	0.25	<100	<1.0	<1.0	<1.0	<2.0
CMW-8	CMW-8-011818	1/18/2018	0.38	<0.41	<100	<1.0	<1.0	<1.0	<2.0
	CMW-8-080118	8/1/2018	0.31	<0.42	<100	<1.0	<1.0	<1.0	<2.0
	CMW-8-012219	1/22/2019	**0.50**	<0.41	<100	<1.0	<1.0	<1.0	<2.0
	CMW-8-082119	8/21/2019	**0.51**	<0.40	<100	<1.0	<1.0	<1.0	<2.0
	CMW-8-112519	11/25/2019	**0.53**	0.36	<100	<1.0	<1.0	<1.0	<2.0
	CMW-8-022420	2/24/2020	**0.60**	0.25	<100	<1.0	<1.0	<1.0	<2.0
	CMW-8-052820	5/28/2020	**0.97**	**0.56**	<100	<1.0	<1.0	<1.0	<2.0
	CMW-8-111120	11/11/2020	0.47	0.22[5]	<100	<1.0	<1.0	<1.0	<2.0
	CMW-8-052421	5/24/2021	**0.53**	0.26	<100	<1.0	<1.0	<1.0	<2.0
	CMW-8-113021	11/30/2021	**0.58**	0.35	<100	<1.0	<1.0	<1.0	<2.0
	CMW-8-052522	5/25/2022	**0.79**	**0.60**	<100	<1.0	<1.0	<1.0	<2.0

Table 6
Summary of Laboratory Analytical Results for TPH and BTEX in Groundwater – January 2018 through May 2022
CHS Auburn Site
Auburn, Washington
Farallon PN: 301-004

Well Identification	Sample Identification	Sample Date	Analytical Results (milligrams per liter)		Analytical Results (micrograms per liter)				
			DRO[1]	ORO[1]	GRO[2]	Benzene[3]	Toluene[3]	Ethylbenzene[3]	Total Xylenes[3]
CMW-10	CMW-10-011818	1/18/2018	**1.4**	**<0.89**[4]	<100	<1.0	<1.0	<1.0	<2.0
	CMW-10-080118	8/1/2018	**1.5**	**0.67**[5]	<100	<1.0	<1.0	<1.0	<2.0
	CMW-10-012319	1/23/2019	**2.1**	**1.4**[5]	<100	<1.0	<1.0	<1.0	<2.0
	CMW-10-082219	8/22/2019	**2.9**	**0.80**[5]	<400	<4.0	<4.0	<4.0	<8.0
	CMW-10-112519	11/25/2019	**0.73**	0.37	<100	<1.0	<1.0	<1.0	<2.0
	CMW-10-022520	2/25/2020	**2.3**	**1.4**	<100	<1.0	<1.0	<1.0	<2.0
	CMW-10-052820	5/28/2020	**3.4**	**2.9**	<100	<1.0	<1.0	<1.0	<2.0
	CMW-10-111220	11/12/2020	**1.6**	**0.70**[5]	<100	<1.0	<1.0	<1.0	<2.0
	CMW-10-052521	5/25/2021	**2.1**	**3.1**	<100	<1.0	<1.0	<1.0	<2.0
	CMW-10-113021	11/30/2021	**2.8**	**2.9**	<100	<1.0	<1.0	<1.0	<2.0
	CMW-10-052622	5/26/2022	**0.62**	**0.51**	<100	<1.0	<1.0	<1.0	<2.0
A Cleanup Levels for Groundwater[6]			**0.5**	**0.5**	**800**	**5**	**1,000**	**700**	**1,000**
CMW-12	CMW-12-011818	1/18/2018	**2.1**[11]	**<0.55**[4]	**1,300**	3.0	<1.0	<1.0	<2.0
	QA/QC-1-011818[9]	1/18/2018	**2.2**[11]	**<0.70**[4]	**1,200**	2.6	<1.0	<1.0	<2.0
	CMW-12-080118	8/1/2018	**1.5**[11]	**0.77**[5]	**1,500**	1.2	<1.0	<1.0	1.6
	QA/QC-1-080118[9]	8/1/2018	**1.4**[11]	**0.56**[5]	**1,500**	1.1	<1.0	<1.0	1.9
	CMW-12-012319	1/23/2019	**1.6**[11]	0.43[5]	**1,500**[8]	1.7	<1.0	<1.0	<2.0
	QA/QC-1-012319[9]	1/23/2019	**1.6**[11]	<0.42	**1,500**[8]	1.6	<1.0	<1.0	<2.0
	CMW-12-082219	8/22/2019	**2.5**[11]	**0.51**[5]	**920**	<4.0	<4.0	<4.0	<8.0
	QA/QC-1-082219[9]	8/22/2019	**2.1**[11]	<0.41	**950**	<4.0	<4.0	<4.0	<8.0
	CMW-12-112619	11/26/2019	**2.3**[11]	**0.51**[5]	620[8]	<1.0	<1.0	<1.0	<2.0
	QA/QC-1-112619[9]	11/26/2019	**2.3**[11]	0.46[5]	620[8]	<1.0	<1.0	<1.0	<2.0
	CMW-12-022520	2/25/2020	**4.2**	**1.4**	**1,000**	2.0	1.8	<1.0	<2.0
	QAQC-1-022520[9]	2/25/2020	**4.2**	**1.5**	**950**	2.0	1.8	<1.0	<2.0
	CMW-12-052820	5/28/2020	**2.4**[11]	**1.1**	510[8]	<1.0	<1.0	<1.0	<2.0
	QA/QC-2-052820[9]	5/28/2020	**2.3**[11]	**1.1**	490[8]	<1.0	<1.0	<1.0	<2.0
	CMW-12-111220	11/12/2020	**0.85**[11]	0.34[5]	200[8]	<1.0	<1.0	<1.0	<2.0
	QA/QC-1-111220[9]	11/12/2020	**0.90**[11]	0.37[5]	200[8]	<1.0	<1.0	<1.0	<2.0
	CMW-12-052521	5/25/2021	**1.1**	**0.95**	<130[4]	<1.0	<1.0	<1.0	<2.0
	QA/QC-1-052521[9]	5/25/2021	**1.0**	**0.98**	<120[4]	<1.0	<1.0	<1.0	<2.0
	CMW-12-113021	11/30/2021	**0.64**	0.33	<100	<1.0	<1.0	<1.0	<2.0
	QA/QC-1-113021[9]	11/30/2021	**0.65**	0.32	<100	<1.0	<1.0	<1.0	<2.0
	CMW-12-052622	5/26/2022	**0.80**	0.44	<100	<1.0	<1.0	<1.0	<2.0
	QA/QC-2-052622[9]	5/26/2022	**0.84**	0.49	<100	<1.0	<1.0	<1.0	<2.0

Table 6
Summary of Laboratory Analytical Results for TPH and BTEX in Groundwater – January 2018 through May 2022
CHS Auburn Site
Auburn, Washington
Farallon PN: 301-004

Well Identification	Sample Identification	Sample Date	Analytical Results (milligrams per liter)		Analytical Results (micrograms per liter)				
			DRO[1]	ORO[1]	GRO[2]	Benzene[3]	Toluene[3]	Ethylbenzene[3]	Total Xylenes[3]
CMW-13	CMW-13-011818	1/18/2018	0.29	<0.41	<100	<1.0	<1.0	<1.0	<2.0
	CMW-13-073118	7/31/2018	**0.62**[11]	<0.41	240	1.1	<1.0	<1.0	<2.0
	CMW-13-012319	1/23/2019	**0.57**	<0.41	<100	<1.0	<1.0	<1.0	<2.0
	CMW-13-082219	8/22/2019	0.38	<0.41	<400	<4.0	<4.0	<4.0	<8.0
	CMW-13-112619	11/26/2019	**0.70**	0.35[5]	<100	<1.0	<1.0	<1.0	<2.0
	CMW-13-022520	2/25/2020	**3.3**	**2.0**	<100	<1.0	<1.0	<1.0	<2.0
	CMW-13-052820	5/28/2020	**1.7**	**1.1**	<100	<1.0	<1.0	<1.0	<2.0
	CMW-13-111220	11/12/2020	0.48	0.25[5]	<100	<1.0	<1.0	<1.0	<2.0
	CMW-13-052421	5/24/2021	**1.4**	**0.72**	<100	<1.0	<1.0	<1.0	<2.0
	CMW-13-113021	11/30/2021	**0.57**	0.34	<100	<1.0	<1.0	<1.0	<2.0
	CMW-13-052522	5/25/2022	**1.4**	**0.67**	<100	<1.0	<1.0	<1.0	<2.0
CMW-25	CMW-25-011818	1/18/2018	<0.26	<0.41	<100	<1.0	<1.0	<1.0	<2.0
	CMW-25-073118	7/31/2018	<0.26	<0.42	<100	<1.0	<1.0	<1.0	<2.0
	CMW-25-012219	1/22/2019	<0.26	<0.41	<100	<1.0	<1.0	<1.0	<2.0
	CMW-25-082119	8/21/2019	<0.25	<0.41	<100	<1.0	<1.0	<1.0	<2.0
	CMW-25-112519	11/25/2019	0.14	0.22	<100	<1.0	<1.0	<1.0	<2.0
	CMW-25-022420	2/24/2020	<0.21	<0.21	<100	<1.0	<1.0	<1.0	<2.0
	CMW-25-052720	5/27/2020	<0.21	<0.21	<100	<1.0	<1.0	<1.0	<2.0
	CMW-25-111220	11/12/2020	<0.21	<0.21	<100	<1.0	<1.0	<1.0	<2.0
	CMW-25-052421	5/24/2021	<0.20	<0.20	<100	<1.0	<1.0	<1.0	<2.0
	CMW-25-112921	11/29/2021	<0.20	<0.20	<100	<1.0	<1.0	<1.0	<2.0
	CMW-25-052522	5/25/2022	<0.11	<0.22	<100	<1.0	<1.0	<1.0	<2.0
MTCA Method A Cleanup Levels for Groundwater[6]			**0.5**	**0.5**	**800**	**5**	**1,000**	**700**	**1,000**
CMW-26	CMW-26-011818	1/18/2018	<0.26	<0.42	<100	<1.0	<1.0	<1.0	<2.0
	CMW-26-080118	8/1/2018	<0.26	<0.42	<100	<1.0	<1.0	<1.0	<2.0
	CMW-26-012219	1/22/2019	<0.26	<0.41	<100	<1.0	<1.0	<1.0	<2.0
	CMW-26-082119	8/21/2019	<0.25	<0.41	<100	<1.0	<1.0	<1.0	<2.0
	CMW-26-112619	11/26/2019	<0.21	<0.21	<100	<1.0	<1.0	<1.0	<2.0
	CMW-26-022520	2/25/2020	<0.21	<0.21	<100	<1.0	<1.0	<1.0	<2.0
	CMW-26-052720	5/27/2020	<0.21	<0.21	<100	<1.0	<1.0	<1.0	<2.0
	CMW-26-111120	11/11/2020	<0.21	<0.21	<100	<1.0	<1.0	<1.0	<2.0
	CMW-26-052521	5/25/2021	<0.20	<0.20	<100	<1.0	<1.0	<1.0	<2.0
	CMW-26-112921	11/29/2021	<0.20	<0.20	<100	<1.0	<1.0	<1.0	<2.0
	CMW-26-052522	5/25/2022	<0.11	<0.21	<100	<1.0	<1.0	<1.0	<2.0

Table 6
Summary of Laboratory Analytical Results for TPH and BTEX in Groundwater – January 2018 through May 2022
CHS Auburn Site
Auburn, Washington
Farallon PN: 301-004

Well Identification	Sample Identification	Sample Date	Analytical Results (milligrams per liter)		Analytical Results (micrograms per liter)				
			DRO[1]	ORO[1]	GRO[2]	Benzene[3]	Toluene[3]	Ethylbenzene[3]	Total Xylenes[3]
CMW-27	CMW-27-011818	1/18/2018	**1.7**	**<1.0**[4]	<100	<1.0	<1.0	<1.0	<2.0
	QA/QC-2-011818[9]	1/18/2018	**1.6**	**<0.96**[4]	<100	<1.0	<1.0	<1.0	<2.0
	CMW-27-080118	8/1/2018	**2.7**[11]	**1.0**[5]	**1,000**	<1.0	1.3	5.9	7.4
	QA/QC-2-080118[9]	8/1/2018	**2.6**[11]	**0.89**[5]	**1,100**	<1.0	1.3	5.8	7.8
	CMW-27-012319	1/23/2019	**6.9**[11]	**1.6**[5]	**900**[8]	1.5	3.4	19	17
	QA/QC-2-012319[9]	1/23/2019	**6.9**[11]	**1.5**[5]	**940**[8]	1.3	3.3	20	17
	CMW-27-082219	8/22/2019	**2.7**[11]	**0.56**[5]	**1,500**	1.2	<1.0	5.2	7.9
	QA/QC-2-082219[9]	8/22/2019	**3.4**[11]	**0.82**[5]	**1,300**	<4.0	<4.0	4.9	5.9
	CMW-27-112619	11/26/2019	**3.3**[11]	**0.94**[5]	**860**[8]	<1.0	1.2	<1.0	2.0
	QA/QC-2-112619[9]	11/26/2019	**3.9**[11]	**1.1**[5]	**940**[8]	<1.0	1.6	1.3	2.5
	CMW-27-022520	2/25/2020	**1.2**	**1.2**	<100	<1.0	<1.0	<1.0	<2.0
	QAQC-2-022520[9]	2/25/2020	**1.0**	**1.1**	<100	<1.0	<1.0	<1.0	<2.0
	CMW-27-052820	5/28/2020	**3.5**[11]	**2.0**	**1,300**[8]	<1.0	3.4	16	4.1
	QA/QC-1-052820[9]	5/28/2020	**4.5**[11]	**2.4**	**1,000**[8]	<1.0	2.6	13	3.6
	CMW-27-111220	11/12/2020	**2.1**[11]	**0.70**[5]	**1,700**[8]	<1.0	<1.0	1.8	3.9
	QA/QC-2-111220[9]	11/12/2020	**2.4**[11]	**0.76**[5]	**1,800**[8]	<1.0	<1.0	1.8	4.0
	CMW-27-052521	5/25/2021	**3.1**[11]	**1.4**	**1,100**[8]	<1.0	<1.0	15	3.5
	QA/QC-2-052521[9]	5/25/2021	**3.1**[11]	**2.3**	**1,200**[8]	3.9	<1.0	15	3.4
	CMW-27-113021	11/30/2021	**8.9**[11]	**4.8**	770	<1.0	<1.0	5.0	1.7
	QA/QC-2-113021[9]	11/30/2021	**6.7**[11]	**2.8**	**960**	1.2	<1.0	6.5	2.1
	CMW-27-052622	5/26/2022	**1.6**	**1.0**	<100	<1.0	<1.0	<1.0	<2.0
	QA/QC-1-052622[9]	5/26/2022	**1.6**	**1.1**	<100	<1.0	<1.0	<1.0	<2.0
CMW-28	CMW-28-011818	1/18/2018	<0.26	<0.42	<100	<1.0	<1.0	<1.0	<2.0
	CMW-28-080118	8/1/2018	**0.81**	**0.52**[5]	<100	<1.0	<1.0	<1.0	<2.0
	CMW-28-012319	1/23/2019	<0.26	<0.41	<100	<1.0	<1.0	<1.0	<2.0
	CMW-28-082119	8/21/2019	**0.63**	<0.44	<100	<1.0	<1.0	<1.0	<2.0
	CMW-28-112619	11/26/2019	**2.8**	**1.9**[5]	<100	<1.0	<1.0	<1.0	<2.0
	CMW-28-022420	2/24/2020	0.45	0.32	<100	<1.0	<1.0	<1.0	<2.0
	CMW-28-052720	5/27/2020	<0.21	0.23	<100	<1.0	<1.0	<1.0	<2.0
	CMW-28-111220	11/12/2020	**0.70**	0.42[5]	<100	<1.0	<1.0	<1.0	<2.0
	CMW-28-052521	5/25/2021	0.49	0.43	<100	<1.0	<1.0	<1.0	<2.0
	CMW-28-113021	11/30/2021	<0.20	<0.20	<100	<1.0	<1.0	<1.0	<2.0
	CMW-28-052522	5/25/2022	**1.1**	**0.68**	<100	<1.0	<1.0	<1.0	<2.0
MTCA Method A Cleanup Levels for Groundwater[6]			**0.5**	**0.5**	**800**	**5**	**1,000**	**700**	**1,000**

Table 6
Summary of Laboratory Analytical Results for TPH and BTEX in Groundwater – January 2018 through May 2022
CHS Auburn Site
Auburn, Washington
Farallon PN: 301-004

Well Identification	Sample Identification	Sample Date	Analytical Results (milligrams per liter)		Analytical Results (micrograms per liter)				
			DRO[1]	ORO[1]	GRO[2]	Benzene[3]	Toluene[3]	Ethylbenzene[3]	Total Xylenes[3]
CMW-29	CMW-29-011718	1/17/2018	**0.70**	**<0.54**[4]	<100	<1.0	<1.0	<1.0	<2.0
	CMW-29-073118	7/31/2018	0.33	<0.41	<100	<1.0	<1.0	<1.0	<2.0
	CMW-29-012219	1/22/2019	**1.0**	0.50[5]	<100	<1.0	<1.0	<1.0	<2.0
	CMW-29-082219	8/22/2019	<0.25	<0.41	<100	<1.0	<1.0	<1.0	<2.0
	CMW-29-112519	11/25/2019	**0.55**	0.38	<100	<1.0	<1.0	<1.0	<2.0
	CMW-29-022420	2/24/2020	**0.67**	0.28	<100	<1.0	<1.0	<1.0	<2.0
	CMW-29-052720	5/27/2020	**0.97**	**0.71**	<100	<1.0	<1.0	<1.0	<2.0
	CMW-29-111120	11/11/2020	0.25	<0.20	<100	<1.0	<1.0	<1.0	<2.0
	CMW-29-052421	5/24/2021	**0.71**	0.43	<100	<1.0	<1.0	<1.0	<2.0
	CMW-29-112921	11/29/2021	**0.74**	**0.87**	<100	<1.0	<1.0	<1.0	<2.0
	CMW-29-052522	5/25/2022	**0.74**	**0.56**	<100	<1.0	<1.0	<1.0	<2.0
CMW-30	CMW-30-012219	1/22/2019	0.26	<0.42	<100	<1.0	<1.0	<1.0	<2.0
	CMW-30-082119	8/21/2019	<0.25	<0.40	<100	<1.0	<1.0	<1.0	<2.0
	CMW-30-112519	11/25/2019	0.19	0.22	<100	<1.0	<1.0	<1.0	<2.0
	CMW-30-022520	2/25/2020	<0.20	<0.20	<100	<1.0	<1.0	<1.0	<2.0
	CMW-30-052720	5/27/2020	0.36	0.30	<100	<1.0	<1.0	<1.0	<2.0
	CMW-30-111120	11/11/2020	0.22	<0.20	<100	<1.0	<1.0	<1.0	<2.0
	CMW-30-052421	5/24/2021	0.29	<0.21	<100	<1.0	<1.0	<1.0	<2.0
	CMW-30-112921	11/29/2021	0.23	<0.20	<100	<1.0	<1.0	<1.0	<2.0
	CMW-30-052522	5/25/2022	0.40	0.29	<100	<1.0	<1.0	<1.0	<2.0
CMW-31	CMW-31-011818	1/18/2018	<0.26	<0.41	<100	<1.0	<1.0	<1.0	<2.0
	CMW-31-073118	7/31/2018	<0.26	<0.41	<100	<1.0	<1.0	<1.0	<2.0
	CMW-31-012219	1/22/2019	<0.26	<0.41	<100	<1.0	<1.0	<1.0	<2.0
	CMW-31-082219	8/22/2019	0.34	<0.45	<100	<1.0	<1.0	<1.0	<2.0
	CMW-31-112519	11/25/2019	0.22	0.27	<100	<1.0	<1.0	<1.0	<2.0
	CMW-31-022420	2/24/2020	<0.21	<0.21	<100	<1.0	<1.0	<1.0	<2.0
	CMW-31-052820	5/28/2020	<0.21	0.32	<100	<1.0	<1.0	<1.0	<2.0
	CMW-31-111120	11/11/2020	0.29	<0.20	<100	<1.0	<1.0	<1.0	<2.0
	CMW-31-052421	5/24/2021	<0.20	0.27	<100	<1.0	<1.0	<1.0	<2.0
	CMW-31-112921	11/29/2021	<0.20	<0.20	<100	<1.0	<1.0	<1.0	<2.0
	CMW-31-052522	5/25/2022	<0.10	<0.20	<100	<1.0	<1.0	<1.0	<2.0
HMW-9	HMW-9-011818	1/18/2018	0.35	<0.41	<100	<1.0	<1.0	<1.0	<2.0
	HMW-9-080118	8/1/2018	0.46	<0.41	<100	<1.0	<1.0	<1.0	<2.0
	HMW-9-012219	1/22/2019	0.26	<0.41	<100	<1.0	<1.0	<1.0	<2.0
	HMW-9-082119	8/21/2019	0.34	<0.44	<100	<1.0	<1.0	<1.0	<2.0
	HMW-9-112519	11/25/2019	0.40	0.42	<100	<1.0	<1.0	<1.0	<2.0
	HMW-9-022520	2/25/2020	0.39	**1.2**	<100	<1.0	<1.0	<1.0	<2.0
	HMW-9-052820	5/28/2020	**0.98**	**2.1**	<100	<1.0	<1.0	<1.0	<2.0
	HMW-9-111120	11/11/2020	0.47	**0.69**	<100	<1.0	<1.0	<1.0	<2.0
	HMW-9-052521	5/25/2021	**0.55**	**1.2**	<100	<1.0	<1.0	<1.0	<2.0
	HMW-9-113021	11/30/2021	0.30	0.32	<100	<1.0	<1.0	<1.0	<2.0
	HMW-9-052622	5/26/2022	**0.77**	**0.65**	<100	<1.0	<1.0	<1.0	<2.0
A Cleanup Levels for Groundwater[6]			**0.5**	**0.5**	**800**	**5**	**1,000**	**700**	**1,000**

Table 6
Summary of Laboratory Analytical Results for TPH and BTEX in Groundwater – January 2018 through May 2022
CHS Auburn Site
Auburn, Washington
Farallon PN: 301-004

Well Identification	Sample Identification	Sample Date	Analytical Results (milligrams per liter)		Analytical Results (micrograms per liter)				
			DRO[1]	ORO[1]	GRO[2]	Benzene[3]	Toluene[3]	Ethylbenzene[3]	Total Xylenes[3]
HMW-10	HMW-10-011718	1/17/2018	**0.72**	<0.41	<100	<1.0	<1.0	<1.0	<2.0
	HMW-10-073118	7/31/2018	**0.60**[11]	<0.40	<100	<1.0	<1.0	<1.0	<2.0
	HMW-10-012219	1/22/2019	0.38	<0.41	<100	<1.0	<1.0	<1.0	<2.0
	HMW-10-082119	8/21/2019	**0.51**	<0.41	<400	<4.0	<4.0	<4.0	<8.0
	HMW-10-112519	11/25/2019	**5.0**	**1.7**[5]	<100	<1.0	<1.0	<1.0	<2.0
	HMW-10-022420	2/24/2020	**0.71**	0.34	<100	<1.0	<1.0	<1.0	<2.0
	HMW-10-052820	5/28/2020	**1.2**	**0.77**	<100	<1.0	<1.0	<1.0	<2.0
	HMW-10-111220	11/12/2020	0.50	<0.21	<100	<1.0	<1.0	<1.0	<2.0
	HMW-10-052421	5/24/2021	**0.95**	**0.51**	<100	<1.0	<1.0	<1.0	<2.0
	HMW-10-113021	11/30/2021	0.50	0.23	<100	<1.0	<1.0	<1.0	<2.0
	HMW-10-052622	5/26/2022	**1.5**	**0.75**	<100	<1.0	<1.0	<1.0	<2.0
HMW-11	HMW-11-011818	1/18/2018	**2.5**	**<1.3**[4]	<100	<1.0	<1.0	<1.0	<2.0
	HMW-11-080118	8/1/2018	**1.6**[11]	0.48[5]	**1,600**	1.0	<1.0	<1.0	<2.0
	HMW-11-012319	1/23/2019	**1.9**[11]	<0.41	**1,900**[8]	1.4	<1.0	1.2	<2.0
	HMW-11-082219	8/22/2019	**3.3**[11]	0.49[5]	**1,400**	<4.0	<4.0	<4.0	<8.0
	HMW-11-112619	11/26/2019	**3.2**[11]	**0.63**[5]	**1,200**[8]	1.0	1.0	<1.0	<2.0
	HMW-11-022520	2/25/2020	**4.9**	**2.1**	<100	<1.0	<1.0	<1.0	<2.0
	HMW-11-052820	5/28/2020	**4.1**[11]	**2.1**	**920**[8]	<1.0	1.5	<1.0	<2.0
	HMW-11-111220	11/12/2020	**1.4**[11]	**0.51**[5]	410[8]	<1.0	<1.0	<1.0	<2.0
	HMW-11-052521	5/25/2021	**3.5**[11]	**1.1**	730[8]	<1.0	<1.0	<1.0	<2.0
	HMW-11-113021	11/30/2021	0.36	0.38	<100	<1.0	<1.0	<1.0	<2.0
	HMW-11-052622	5/26/2022	**2.5**	**1.4**	<100	<1.0	<1.0	<1.0	<2.0

Table 6
Summary of Laboratory Analytical Results for TPH and BTEX in Groundwater – January 2018 through May 2022
CHS Auburn Site
Auburn, Washington
Farallon PN: 301-004

Well Identification	Sample Identification	Sample Date	Analytical Results (milligrams per liter)		Analytical Results (micrograms per liter)				
			DRO[1]	ORO[1]	GRO[2]	Benzene[3]	Toluene[3]	Ethylbenzene[3]	Total Xylenes[3]
HMW-13	HMW-13-011818	1/18/2018	<0.26	<0.41	<100	<1.0	<1.0	<1.0	<2.0
	HMW-13-080118	8/1/2018	<0.26	<0.41	<100	<1.0	<1.0	<1.0	<2.0
	HMW-13-012319	1/23/2019	<0.26	<0.41	<100	<1.0	<1.0	<1.0	<2.0
	HMW-13-082119	8/21/2019	<0.30	<0.48	<100	<1.0	<1.0	<1.0	<2.0
	HMW-13-112619	11/26/2019	0.27	<0.21	<100	<1.0	<1.0	<1.0	<2.0
	HMW-13-022420	2/24/2020	<0.21	0.22	<100	<1.0	<1.0	<1.0	<2.0
	HMW-13-052720	5/27/2020	<0.21	0.24	<100	<1.0	<1.0	<1.0	<2.0
	HMW-13-111120	11/11/2020	<0.20	<0.20	<100	<1.0	<1.0	<1.0	<2.0
	HMW-13-052521	5/25/2021	<0.20	0.24	<100	<1.0	<1.0	<1.0	<2.0
	HMW-13-113021	11/30/2021	<0.20	<0.20	<100	<1.0	<1.0	<1.0	<2.0
	HMW-13-052622	5/26/2022	<0.11	<0.22	<100	<1.0	<1.0	<1.0	<2.0
MTCA Method A Cleanup Levels for Groundwater[6]			**0.5**	**0.5**	**800**	**5**	**1,000**	**700**	**1,000**

NOTES:

<denotes analyte not detected at or exceeding the laboratory reporting limit listed.

Results in **bold** denote sample result or reporting limit exceeds applicable MTCA Method A cleanup levels for groundwater.

[1]Analyzed by Northwest Method NWTPH-Dx. Samples analyzed by OnSite Environmental Inc. between June 2008 and November 2016 were analyzed using acid silica gel cleanup procedure.

[2]Analyzed by Northwest Method NWTPH-Gx.

[3]Analyzed by U.S. Environmental Protection Agency Method 8021B.

[4]The practical quantitation limit is elevated due to interferences in the sample.

[5]Hydrocarbons in the diesel range are impacting the oil-range result.

[6]MTCA Method A Cleanup Levels for Groundwater, Table 720-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code, as revised 2013.

[7]Sample collected using a disposable bailer.

[8]Hydrocarbons indicative of heavier fuels present in the sample are impacting the gasoline result.

[9]Quality assurance/quality control field duplicate sample.

[10]Duplicate sample analyzed at TestAmerica Laboratories Inc.

[11]Hydrocarbons in the gasoline-range are impacting the diesel-range result.

BTEX = benzene, toluene, ethylbenzene, and xylenes

DRO = TPH as diesel-range organics

GRO = TPH as gasoline-range organics

MTCA = Washington State Model Toxics Control Act Cleanup Regulation

ORO = TPH as oil-range organics

TPH = total petroleum hydrocarbons

Table 7
Summary of Laboratory Analytical Results for DRO and ORO in Groundwater – November 2021 through May 2022
CHS Auburn Site
Auburn, Washington
Farallon PN: 301-004

Well Identification	Sample Identification	Sample Date	Analytical Results (milligrams per liter)			
			NWTPH-Dx without Sulfuric Acid Silica Gel or Silica Gel[1]		NWTPH-Dx with Sulfuric Acid Silica Gel or Silica Gel	
			DRO	ORO	DRO	ORO
CMW-2	CMW-2-113021	11/30/2021	**1.4**	**1.2**	<0.20[2]	<0.20[2]
	CMW-2-052622	5/26/2022	0.20	0.25	<0.24[3]	<0.24[3]
CMW-8	CMW-8-113021	11/30/2021	**0.58**	0.35	<0.20[2]	<0.20[2]
	CMW-8-052522	5/25/2022	**0.79**	**0.60**	<0.20[3]	<0.20[3]
CMW-10	CMW-10-113021	11/30/2021	**2.8**	**2.9**	<0.20[2]	<0.20[2]
	CMW-10-052622	5/26/2022	**0.62**	**0.51**	<0.23[3]	<0.23[3]
CMW-12	CMW-12-113021	11/30/2021	**0.64**	0.33	<0.20[2]	<0.20[2]
	QA/QC-1-113021[4]	11/30/2021	**0.65**	0.32	<0.21[2]	<0.21[2]
	CMW-12-052622	5/26/2022	**0.80**	0.44	<0.22[3]	<0.22[3]
	QA/QC-2-052622[4]	5/26/2022	**0.84**	0.49	<0.20[3]	<0.20[3]
CMW-13	CMW-13-113021	11/30/2021	**0.57**	0.34	<0.21[2]	<0.21[2]
	CMW-13-052522	5/25/2022	**1.4**	**0.67**	<0.22[3]	<0.22[3]
CMW-25	CMW-25-112921	11/29/2021	<0.20	<0.20	<0.20[2]	<0.20[2]
	CMW-25-052522	5/25/2022	<0.11	<0.22	<0.22[3]	<0.22[3]
CMW-26	CMW-26-112921	11/29/2021	<0.20	<0.20	<0.20[2]	<0.20[2]
	CMW-26-052522	5/25/2022	<0.11	<0.21	<0.21[3]	<0.21[3]
CMW-27	CMW-27-113021	11/30/2021	**8.9**[5]	**4.8**	**0.88**[5,2]	<0.21[2]
	QA/QC-2-113021[4]	11/30/2021	**6.7**[5]	**2.8**	**0.93**[5,2]	<0.21[2]
	CMW-27-052622	5/26/2022	**1.6**	**1.0**	0.28[3]	<0.22[3]
	QA/QC-1-052622[4]	5/26/2022	**1.6**	**1.1**	0.32[3]	<0.23[3]
CMW-28	CMW-28-113021	11/30/2021	<0.20	<0.20	<0.20[2]	<0.20[2]
	CMW-28-052522	5/25/2022	**1.1**	**0.68**	<0.23[3]	<0.23[3]
CMW-29	CMW-29-112921	11/29/2021	**0.74**	**0.87**	<0.20[2]	<0.20[2]
	CMW-29-052522	5/25/2022	**0.74**	**0.56**	<0.23[3]	<0.23[3]
CMW-30	CMW-30-112921	11/29/2021	0.23	<0.20	<0.20[2]	<0.20[2]
	CMW-30-052522	5/25/2022	0.40	0.29	<0.21[3]	<0.21[3]
CMW-31	CMW-31-112921	11/29/2021	<0.20	<0.20	<0.20[2]	<0.20[2]
	CMW-31-052522	5/25/2022	<0.10	<0.20	<0.20[3]	<0.20[3]

Table 7
Summary of Laboratory Analytical Results for DRO and ORO in Groundwater – November 2021 through May 2022
CHS Auburn Site
Auburn, Washington
Farallon PN: 301-004

Well Identification	Sample Identification	Sample Date	Analytical Results (milligrams per liter)			
			NWTPH-Dx without Sulfuric Acid Silica Gel or Silica Gel[1]		NWTPH-Dx with Sulfuric Acid Silica Gel or Silica Gel	
			DRO	ORO	DRO	ORO
HMW-9	HMW-9-113021	11/30/2021	0.30	0.32	<0.21[2]	<0.21[2]
	HMW-9-052622	5/26/2022	**0.77**	**0.65**	<0.21[3]	<0.21[3]
MTCA Method A Cleanup Levels for Groundwater[6]			**0.5**	**0.5**	**0.5**	**0.5**
HMW-10	HMW-10-113021	11/30/2021	0.50	0.23	<0.20[2]	<0.20[2]
	HMW-10-052622	5/26/2022	**1.5**	**0.75**	<0.20[3]	<0.20[3]
HMW-11	HMW-11-113021	11/30/2021	0.36	0.38	<0.20[2]	<0.20[2]
	HMW-11-052622	5/26/2022	**2.5**	**1.4**	<0.20[3]	<0.20[3]
HMW-13	HMW-13-113021	11/30/2021	<0.20	<0.20	<0.20[2]	<0.20[2]
	HMW-13-052622	5/26/2022	<0.11	<0.22	<0.22[3]	<0.22[3]
MTCA Method A Cleanup Levels for Groundwater[6]			**0.5**	**0.5**	**0.5**	**0.5**

NOTES:

<denotes analyte not detected at or exceeding the laboratory reporting limit listed.

Results in **bold** denote sample result or reporting limit exceeds applicable MTCA Method A cleanup levels for groundwater.

[1]Analyzed by Northwest Method NWTPH-Dx without a sulfuric acid/silica gel or silica gel cleanup procedure.

[2]Analyzed by Northwest Method NWTPH-Dx with a sulfuric acid/silica gel cleanup procedure.

[3]Analyzed by Northwest Method NWTPH-Dx with a silica gel cleanup procedure.

[4]Quality assurance/quality control field duplicate sample.

[5]Hydrocarbons in the gasoline-range are impacting the diesel-range result.

[6]MTCA Method A Cleanup Levels for Groundwater, Table 720-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code, as revised 2013.

DRO = TPH as diesel-range organics

MTCA = Washington State Model Toxics Control Act

ORO = TPH as oil-range organics

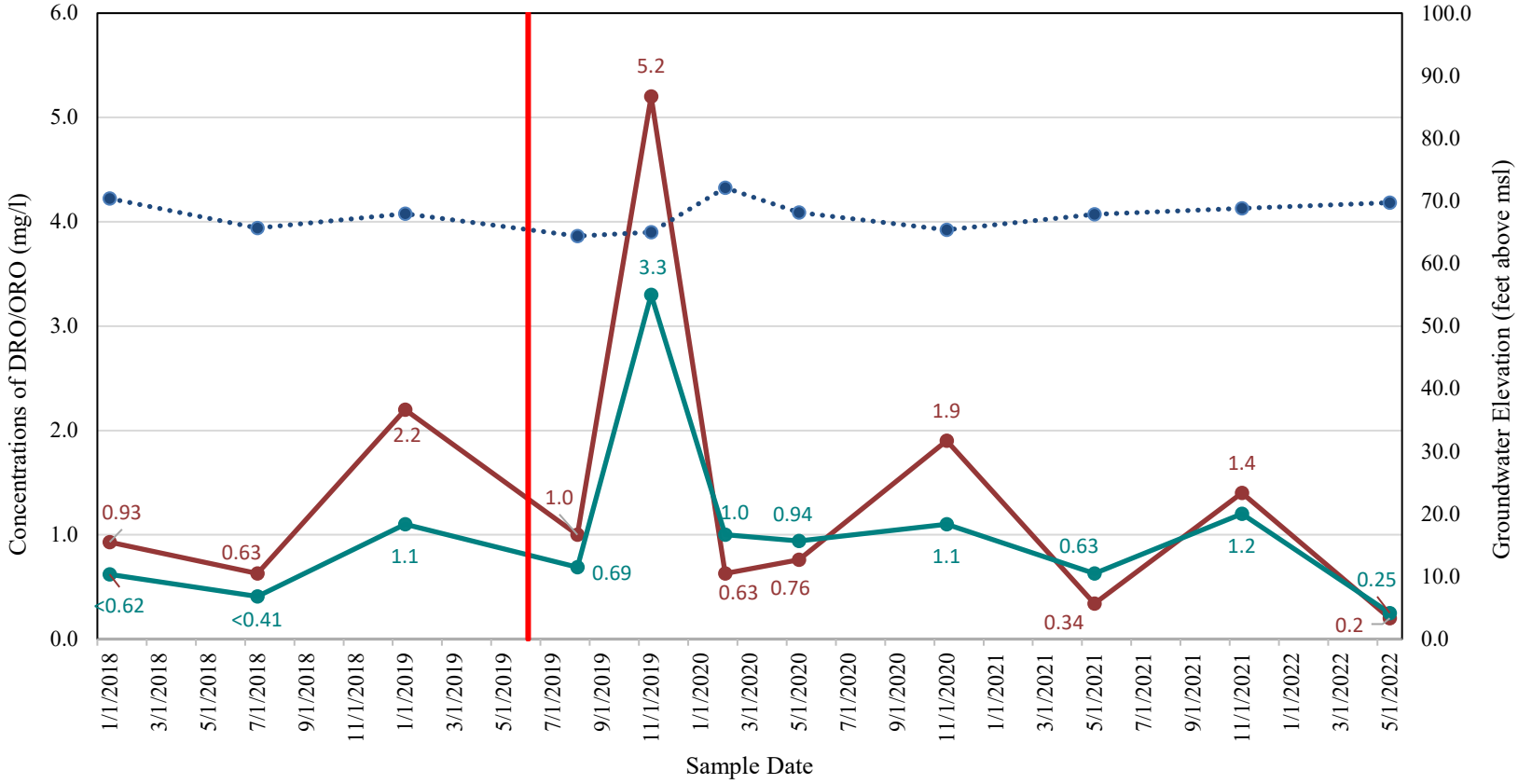
TPH = total petroleum hydrocarbons

CHARTS

FIRST AND SECOND QUARTER 2022
GROUNDWATER MONITORING AND TREATMENT SYSTEM
OPERATION AND MAINTENANCE REPORT
CHS Auburn Site
Auburn, Washington

Farallon PN: 301-004

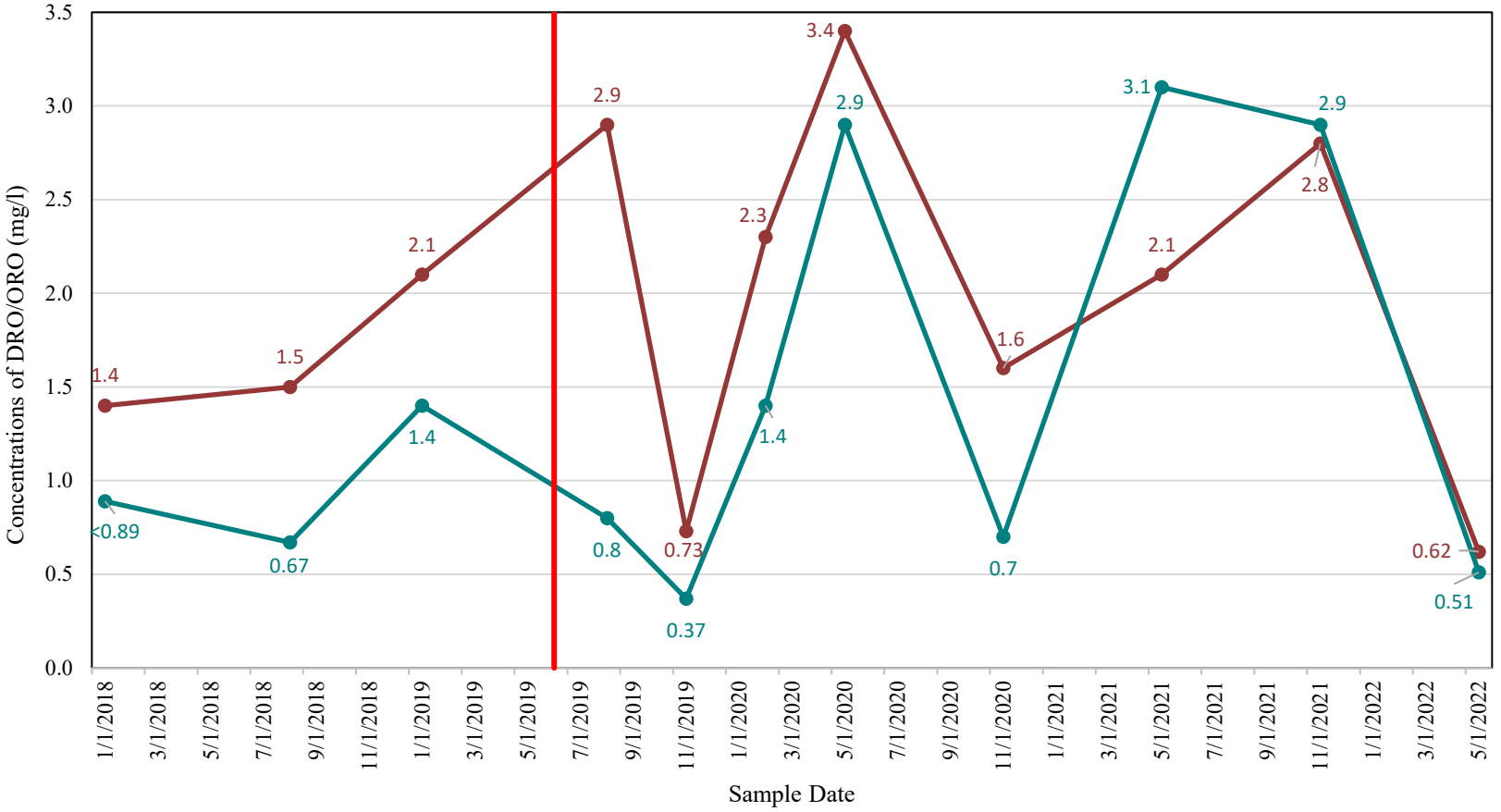
Chart 1
DRO and ORO Concentration Data Trends for Monitoring Well CMW-2
CHS Auburn Site
Auburn, Washington
Farallon PN: 301-004



Total Petroleum Hydrocarbons (TPH) as Diesel-Range Organics (DRO) (mg/l)
TPH as Oil-Range Organics (ORO) (mg/l)
Groundwater Elevation
Air Sparge/Soil Vapor Extraction System Start-up

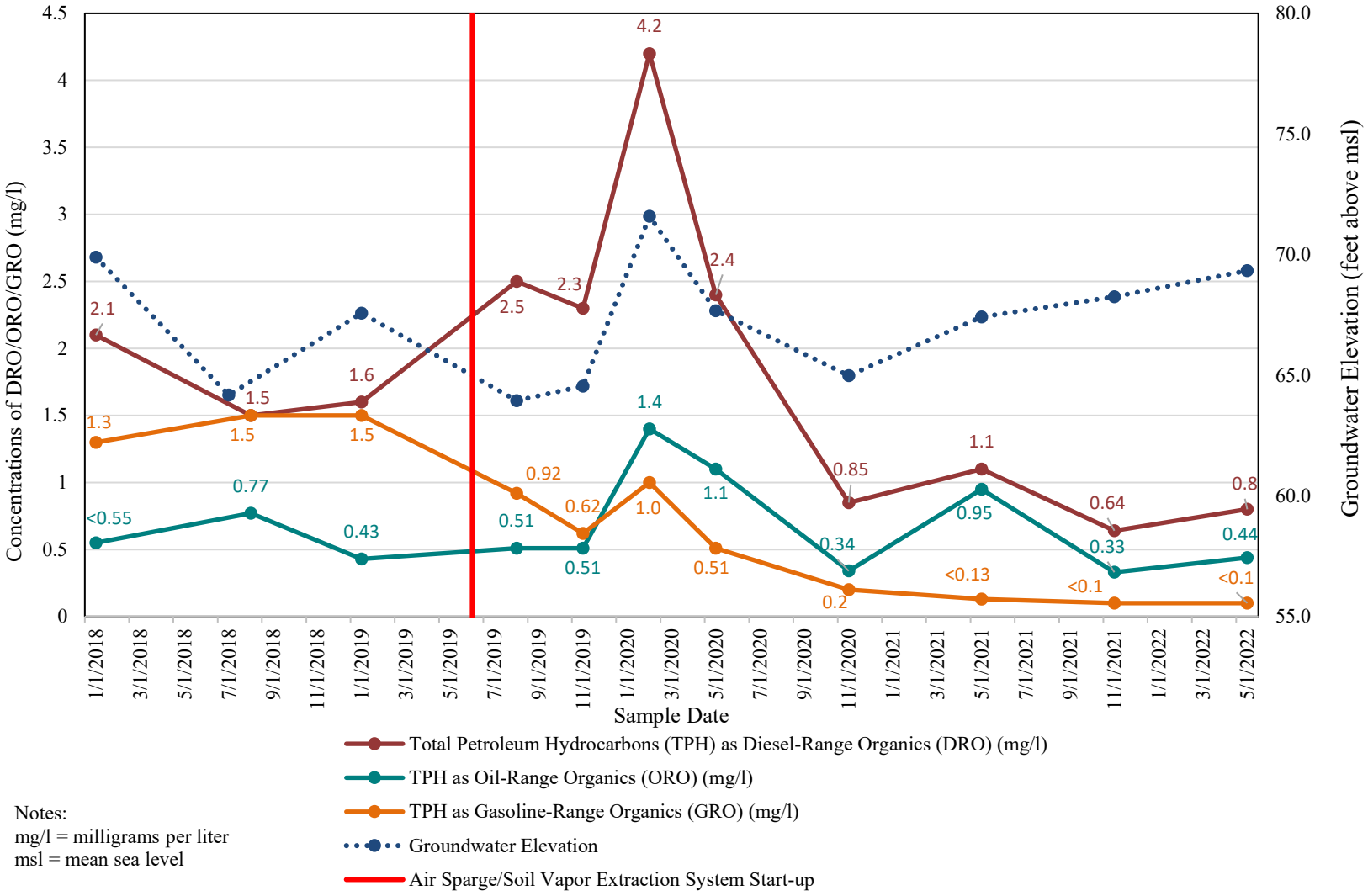
Notes:
mg/l = milligrams per liter
msl = mean sea level

Chart 2
DRO and ORO Concentration Data Trends for Monitoring Well CMW-10
CHS Auburn Site
Auburn, Washington
Farallon PN: 301-004



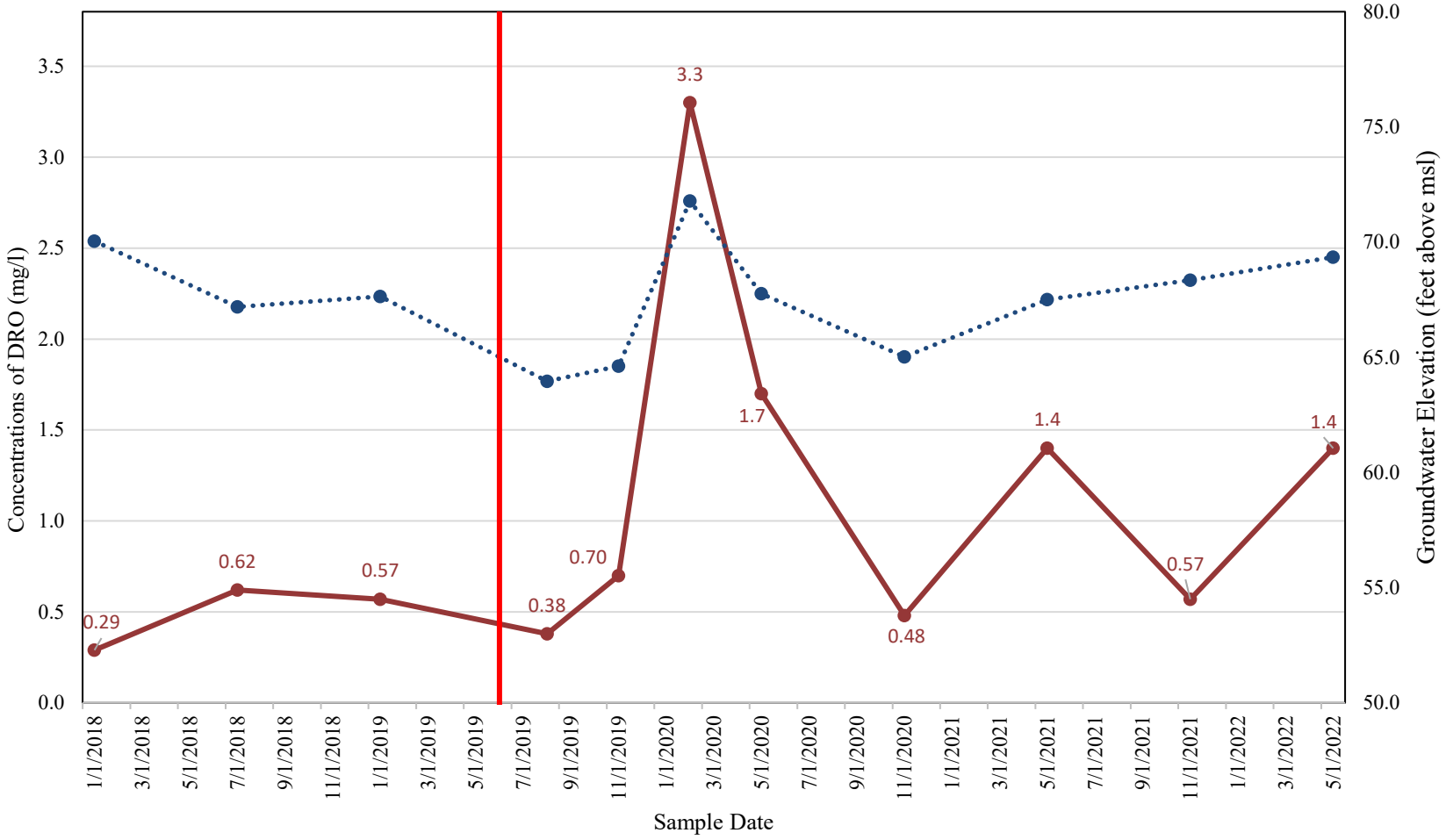
Notes:
mg/l = milligrams per liter

Chart 3
DRO, ORO, and GRO Concentration Data Trends for Monitoring Well CMW-12
CHS Auburn Site
Auburn, Washington
Farallon PN: 301-004



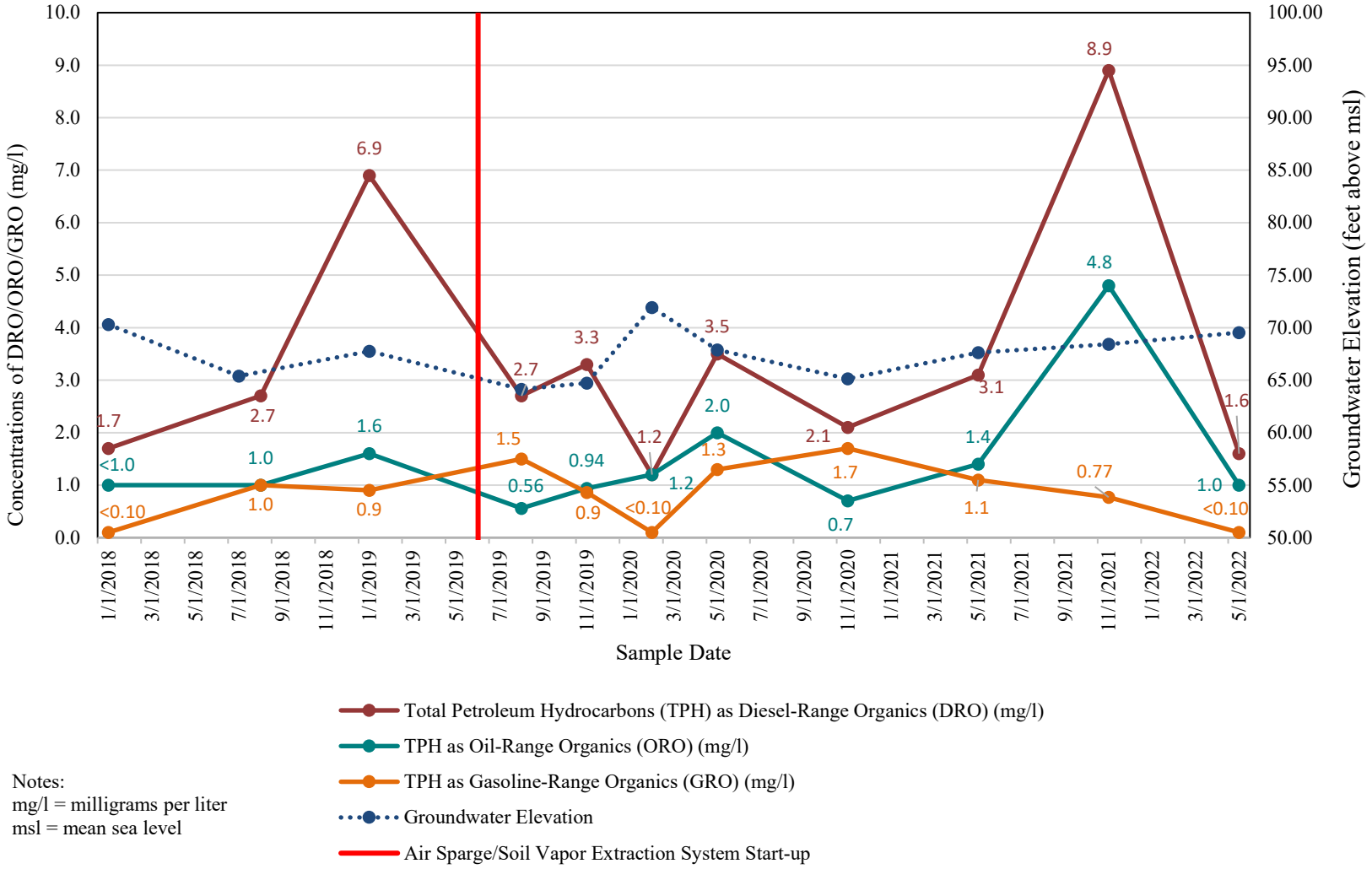
Notes:
mg/l = milligrams per liter
msl = mean sea level

Chart 4
DRO Concentration Data Trend for Monitoring Well CMW-13
CHS Auburn Site
Auburn, Washington
Farallon PN: 301-004



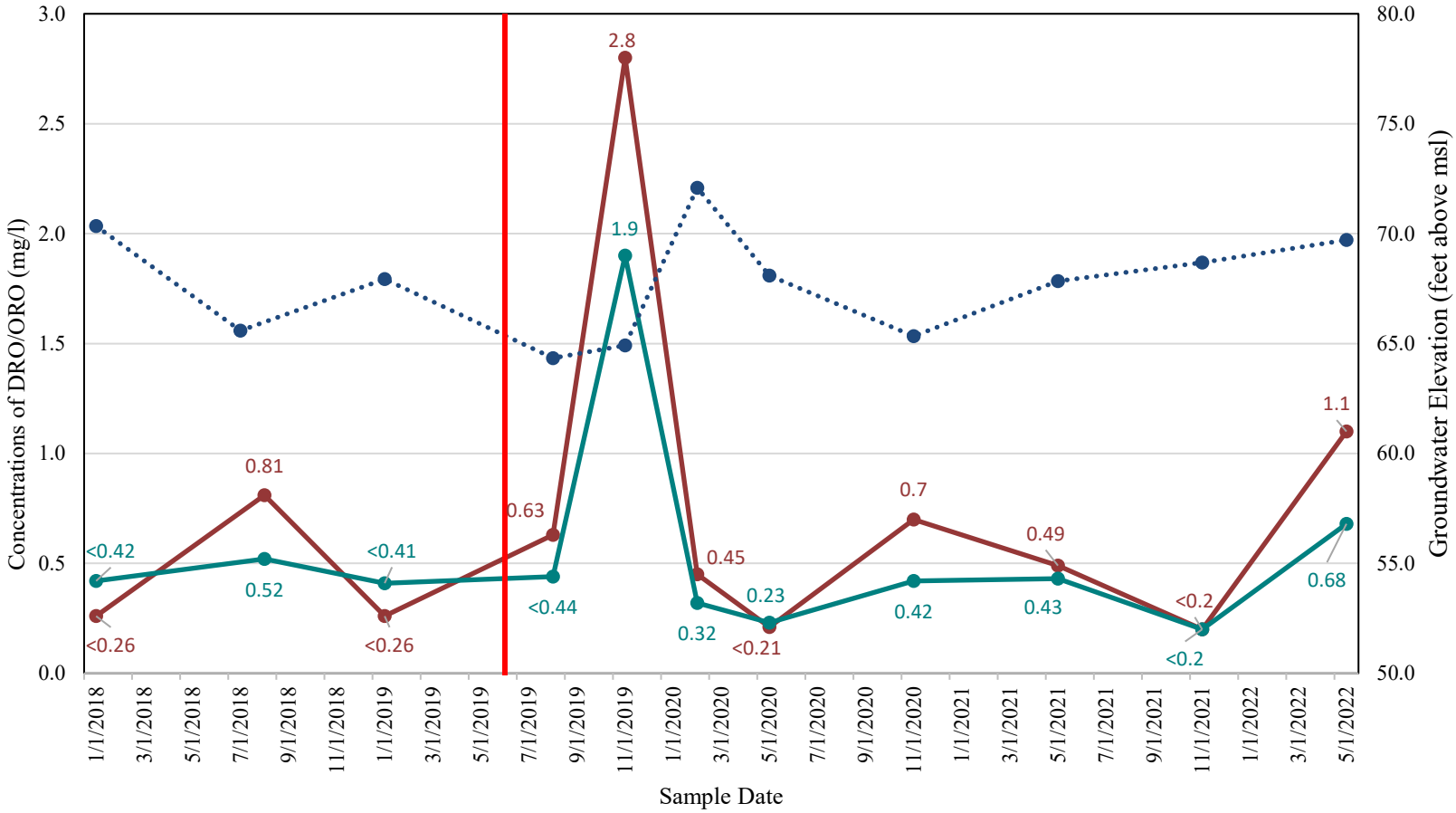
Notes:
mg/l = milligrams per liter
msl = mean sea level

Chart 5
DRO, ORO, and GRO Concentration Data Trends for Monitoring Well CMW-27
CHS Auburn Site
Auburn, Washington
Farallon PN: 301-004



Notes:
mg/l = milligrams per liter
msl = mean sea level

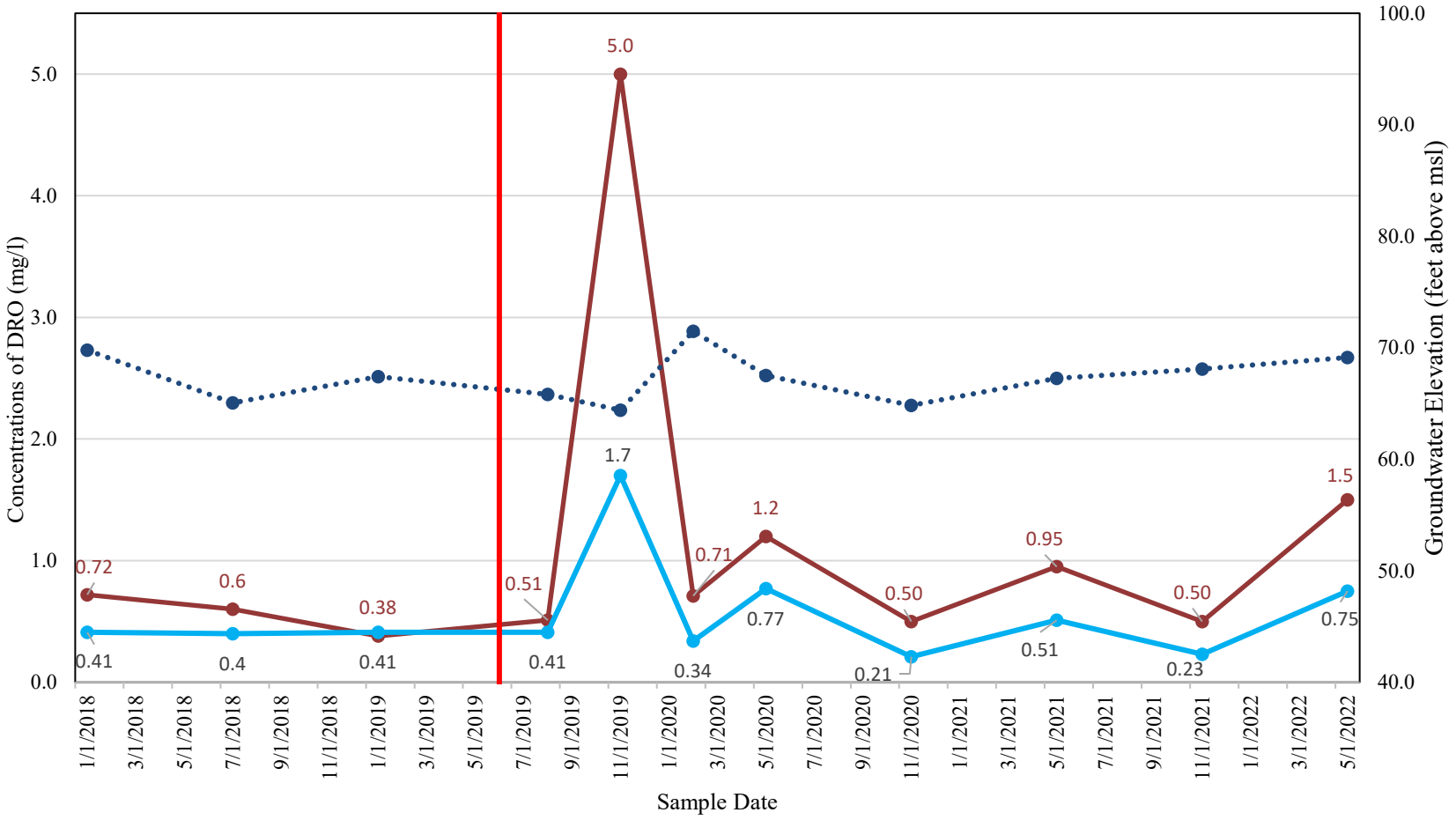
Chart 6
DRO and ORO Concentration Data Trends for Monitoring Well CMW-28
CHS Auburn Site
Auburn, Washington
Farallon PN: 301-004



Total Petroleum Hydrocarbons (TPH) as Diesel-Range Organics (DRO) (mg/l)
TPH as Oil-Range Organics (ORO) (mg/l)
Groundwater Elevation
Air Sparge/Soil Vapor Extraction System Start-up

Notes:
mg/l = milligrams per liter
msl = mean sea level

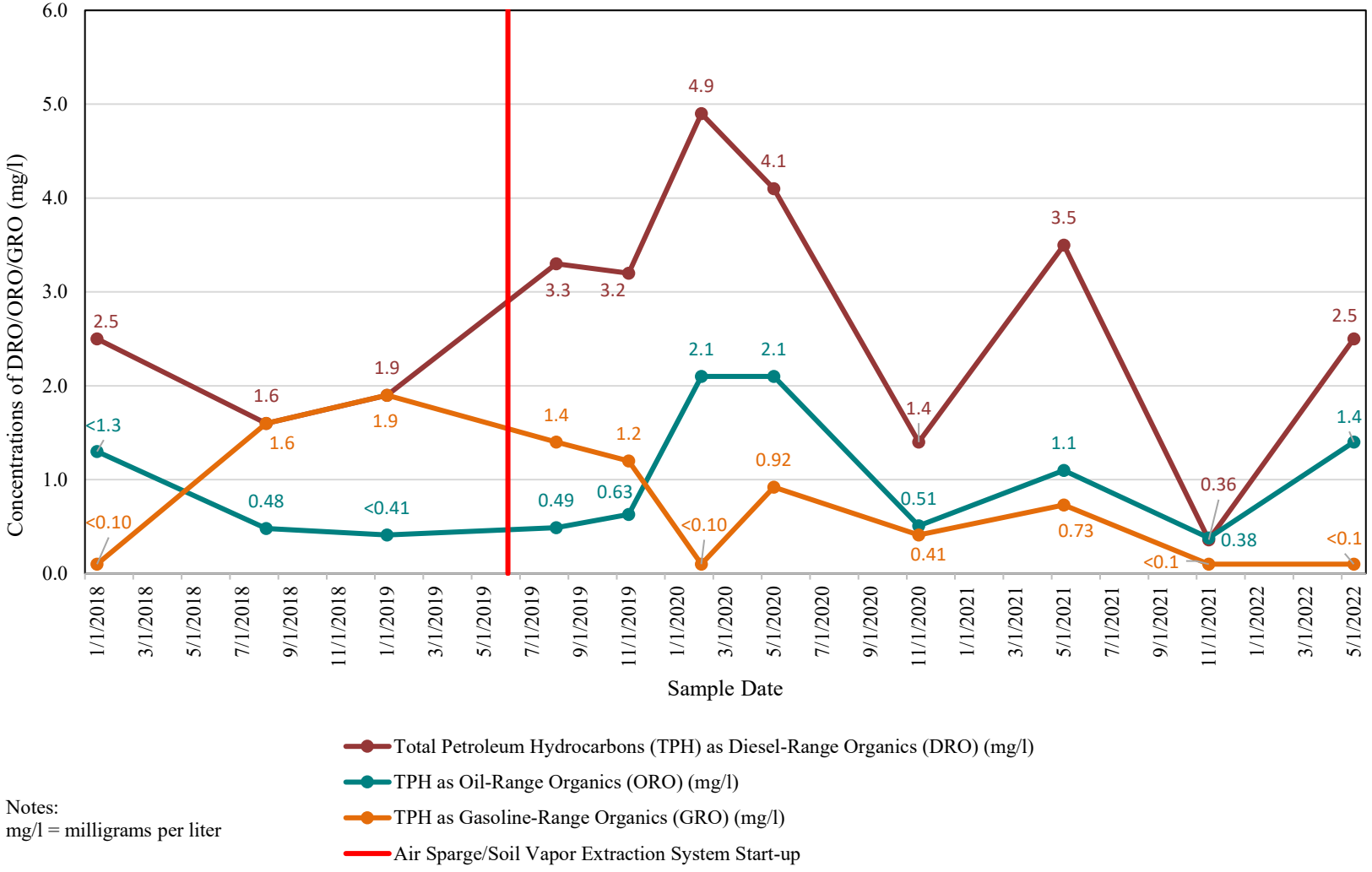
Chart 7
DRO Concentration Data Trend for Monitoring Well HMW-10
CHS Auburn Site
Auburn, Washington
Farallon PN: 301-004



Notes:
mg/l = milligrams per liter
msl = mean sea level

- Total Petroleum Hydrocarbons (TPH) as Diesel-Range Organics (DRO) (mg/l)
- TPH as Oil-Range Organics (ORO) (mg/l)
- Groundwater Elevation
- Air Sparge/Soil Vapor Extraction System Start-up

Chart 8
DRO, ORO, and GRO Concentration Data Trends for Monitoring Well HMW-11
CHS Auburn Site
Auburn, Washington
Farallon PN: 301-004



Notes:
mg/l = milligrams per liter

APPENDIX A
LABORATORY ANALYTICAL REPORTS

FIRST AND SECOND QUARTER 2022
GROUNDWATER MONITORING AND TREATMENT SYSTEM
OPERATION AND MAINTENANCE REPORT
CHS Auburn Site
Auburn, Washington

Farallon PN: 301-004

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

March 10, 2022

Javan Ruark, Project Manager
Farallon Consulting, LLC
975 5th Avenue Northwest
Issaquah, WA 98027

Dear Mr Ruark:

Included are the results from the testing of material submitted on February 23, 2022 from the Cenex Auburn 301-004, F&BI 202436 project. There are 6 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Farallon Data
FLN0310R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on February 23, 2022 by Friedman & Bruya, Inc. from the Farallon Consulting, LLC Cenex Auburn 301-004, F&BI 202436 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Farallon Consulting, LLC
202436 -01	Influent-022322

All quality control requirements were acceptable.

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Influent-022322	Client:	Farallon Consulting, LLC
Date Received:	02/23/22	Project:	Cenex Auburn 301-004, F&BI 202436
Date Collected:	02/23/22	Lab ID:	202436-01 1/6
Date Analyzed:	03/05/22	Data File:	030428.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	90	70	130

Compounds:	Concentration ug/m3	ppbv
Benzene	<1.9	<0.6
Toluene	<110	<30
Ethylbenzene	<2.6	<0.6
m,p-Xylene	7.6	1.8
o-Xylene	<2.6	<0.6
Gasoline Range Organics	6,900	1,700

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Method Blank	Client:	Farallon Consulting, LLC
Date Received:	Not Applicable	Project:	Cenex Auburn 301-004, F&BI 202436
Date Collected:	03/04/22	Lab ID:	02-0546 MB
Date Analyzed:	03/04/22	Data File:	030411.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	93	70	130

Compounds:	Concentration ug/m3	ppbv
Benzene	<0.32	<0.1
Toluene	<19	<5
Ethylbenzene	<0.43	<0.1
m,p-Xylene	<0.87	<0.2
o-Xylene	<0.43	<0.1
Gasoline Range Organics	<330	<80

Date of Report: 03/10/22
Date Received: 02/23/22
Project: Cenex Auburn 301-004, F&BI 202436

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: 203076-01 1/6.2 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 30)
Benzene	ug/m3	<2	<2	nm
Toluene	ug/m3	<120	<120	nm
Ethylbenzene	ug/m3	<2.7	<2.7	nm
m,p-Xylene	ug/m3	<5.4	<5.4	nm
o-Xylene	ug/m3	<2.7	<2.7	nm

Date of Report: 03/10/22
Date Received: 02/23/22
Project: Cenex Auburn 301-004, F&BI 202436

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	ug/m3	43	99	70-130
Toluene	ug/m3	51	97	70-130
Ethylbenzene	ug/m3	59	89	70-130
m,p-Xylene	ug/m3	120	92	70-130
o-Xylene	ug/m3	59	93	70-130

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

SAMPLE CHAIN OF CUSTODY

02-23-22

202436

Report To Jason Ruark; Russell Lutthen

Company Farallon

Address

City, State, ZIP

JRuark ; RLutthen @ farallonconsulting.com

Phone Email

SAMPLERS (*signature*)

PROJECT NAME & ADDRESS	PO #
Cemex Auburn	301-004
NOTES: * GRO/BTEX	INVOICE TO: AP

Page # 1 of 1

TURNAROUND TIME
- X Standard
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Default: Clean after 3 days
- ☐ Archive (Fee may apply)

SAMPLE INFORMATION										ANALYSIS REQUESTED						
Sample Name	Lab ID	Canister ID	Flow Cont. ID	Reporting Level: IA=Indoor Air SG=Soil Gas (Circle One)	Date Sampled	Initial Vac. ("Hg)	Field Initial Time	Final Vac. ("Hg)	Field Final Time	TO15 Full Scan	TO15 BTEXN	TO15 cVOCs	APH	Helium		Notes
Influent-022322	01	3672	18	IA / (SG)	2/23/22	30+	1252	5.0	1259		X					
				IA / SG												
				IA / SG												
				IA / SG												
				IA / SG												
				IA / SG												
				IA / SG												
				IA / SG												

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Lisa Thompson	Farallon	2/23/22	1712
Received by:	Mac Goldman	F&BI	2/23/22	1712
Relinquished by:				
Received by:				

Sample 18 c

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

June 7, 2022

Javan Ruark
Farallon Consulting
975 5th Avenue NW
Issaquah, WA 98027

Re: Analytical Data for Project 301-004
Laboratory Reference No. 2205-297

Dear Javan:

Enclosed are the analytical results and associated quality control data for samples submitted on May 26, 2022.

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

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

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: June 7, 2022
Samples Submitted: May 26, 2022
Laboratory Reference: 2205-297
Project: 301-004

Case Narrative

Samples were collected on May 25, and 26, 2022 and received by the laboratory on May 26, 2022. They were maintained at the laboratory at a temperature of 2°C to 6°C.

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

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

Date of Report: June 7, 2022
Samples Submitted: May 26, 2022
Laboratory Reference: 2205-297
Project: 301-004

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CMW-29-052522**					
Laboratory ID:	05-297-01					
Benzene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Toluene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Ethylbenzene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
o-Xylene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Gasoline	**ND**	100	NWTPH-Gx	5-27-22	5-27-22	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*90*	*65-122*				
Client ID:	**CMW-30-052522**					
Laboratory ID:	05-297-02					
Benzene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Toluene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Ethylbenzene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
o-Xylene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Gasoline	**ND**	100	NWTPH-Gx	5-27-22	5-27-22	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*90*	*65-122*				
Client ID:	**CMW-26-052522**					
Laboratory ID:	05-297-03					
Benzene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Toluene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Ethylbenzene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
o-Xylene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Gasoline	**ND**	100	NWTPH-Gx	5-27-22	5-27-22	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*90*	*65-122*				

Date of Report: June 7, 2022
Samples Submitted: May 26, 2022
Laboratory Reference: 2205-297
Project: 301-004

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CMW-25-052522**					
Laboratory ID:	05-297-04					
Benzene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Toluene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Ethylbenzene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
o-Xylene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Gasoline	**ND**	100	NWTPH-Gx	5-27-22	5-27-22	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*96*	*65-122*				
Client ID:	**CMW-8-052522**					
Laboratory ID:	05-297-05					
Benzene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Toluene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Ethylbenzene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
o-Xylene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Gasoline	**ND**	100	NWTPH-Gx	5-27-22	5-27-22	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*95*	*65-122*				
Client ID:	**CMW-28-052522**					
Laboratory ID:	05-297-06					
Benzene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Toluene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Ethylbenzene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
o-Xylene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Gasoline	**ND**	100	NWTPH-Gx	5-27-22	5-27-22	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*95*	*65-122*				

Date of Report: June 7, 2022
Samples Submitted: May 26, 2022
Laboratory Reference: 2205-297
Project: 301-004

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CMW-31-052522**					
Laboratory ID:	05-297-07					
Benzene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Toluene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Ethylbenzene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
o-Xylene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Gasoline	**ND**	100	NWTPH-Gx	5-27-22	5-27-22	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*95*	*65-122*				
Client ID:	**CMW-13-052522**					
Laboratory ID:	05-297-08					
Benzene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Toluene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Ethylbenzene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
o-Xylene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Gasoline	**ND**	100	NWTPH-Gx	5-27-22	5-27-22	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*97*	*65-122*				
Client ID:	**QA/QC-1-052622**					
Laboratory ID:	05-297-09					
Benzene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Toluene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Ethylbenzene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
o-Xylene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Gasoline	**ND**	100	NWTPH-Gx	5-27-22	5-27-22	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*96*	*65-122*				

Date of Report: June 7, 2022
Samples Submitted: May 26, 2022
Laboratory Reference: 2205-297
Project: 301-004

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CMW-27-052622**					
Laboratory ID:	05-297-10					
Benzene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Toluene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Ethylbenzene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
o-Xylene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Gasoline	**ND**	100	NWTPH-Gx	5-27-22	5-27-22	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*95*	*65-122*				
Client ID:	**HMW-9-052622**					
Laboratory ID:	05-297-11					
Benzene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Toluene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Ethylbenzene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
o-Xylene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Gasoline	**ND**	100	NWTPH-Gx	5-27-22	5-27-22	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*99*	*65-122*				
Client ID:	**HMW-10-052622**					
Laboratory ID:	05-297-12					
Benzene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Toluene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Ethylbenzene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
o-Xylene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Gasoline	**ND**	100	NWTPH-Gx	5-27-22	5-27-22	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*97*	*65-122*				

Date of Report: June 7, 2022
Samples Submitted: May 26, 2022
Laboratory Reference: 2205-297
Project: 301-004

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CMW-12-052622**					
Laboratory ID:	05-297-13					
Benzene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Toluene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Ethylbenzene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
o-Xylene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Gasoline	**ND**	100	NWTPH-Gx	5-27-22	5-27-22	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*96*	*65-122*				
Client ID:	**CMW-10-052622**					
Laboratory ID:	05-297-14					
Benzene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Toluene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Ethylbenzene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
o-Xylene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Gasoline	**ND**	100	NWTPH-Gx	5-27-22	5-27-22	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*98*	*65-122*				
Client ID:	**QA/QC-2-052622**					
Laboratory ID:	05-297-15					
Benzene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Toluene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Ethylbenzene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
o-Xylene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Gasoline	**ND**	100	NWTPH-Gx	5-27-22	5-27-22	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*95*	*65-122*				

Date of Report: June 7, 2022
Samples Submitted: May 26, 2022
Laboratory Reference: 2205-297
Project: 301-004

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**HMW-11-052622**					
Laboratory ID:	05-297-16					
Benzene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Toluene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Ethylbenzene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
o-Xylene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Gasoline	**ND**	100	NWTPH-Gx	5-27-22	5-27-22	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*97*	*65-122*				
Client ID:	**HMW-13-052622**					
Laboratory ID:	05-297-17					
Benzene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Toluene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Ethylbenzene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
o-Xylene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Gasoline	**ND**	100	NWTPH-Gx	5-27-22	5-27-22	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*96*	*65-122*				
Client ID:	**CMW-2-052622**					
Laboratory ID:	05-297-18					
Benzene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Toluene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Ethylbenzene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
o-Xylene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Gasoline	**ND**	100	NWTPH-Gx	5-27-22	5-27-22	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*97*	*65-122*				

Date of Report: June 7, 2022
Samples Submitted: May 26, 2022
Laboratory Reference: 2205-297
Project: 301-004

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0527W1					
Benzene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Toluene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Ethylbenzene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
o-Xylene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Gasoline	**ND**	100	NWTPH-Gx	5-27-22	5-27-22	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*92*	*65-122*				
Laboratory ID:	MB0527W2					
Benzene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Toluene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Ethylbenzene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
o-Xylene	**ND**	1.0	EPA 8021B	5-27-22	5-27-22	
Gasoline	**ND**	100	NWTPH-Gx	5-27-22	5-27-22	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*91*	*65-122*				

Date of Report: June 7, 2022
Samples Submitted: May 26, 2022
Laboratory Reference: 2205-297
Project: 301-004

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	05-297-01										
	ORIG	DUP									
Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Toluene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Ethylbenzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
m,p-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
o-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Gasoline	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Surrogate:											
Fluorobenzene						*90*	*90*	*65-122*			
Laboratory ID:	05-297-02										
	ORIG	DUP									
Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Toluene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Ethylbenzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
m,p-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
o-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Gasoline	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Surrogate:											
Fluorobenzene						*90*	*90*	*65-122*			
SPIKE BLANKS											
Laboratory ID:	SB0527W1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**50.7**	**51.2**	50.0	50.0		**101**	**102**	80-116	1	12	
Toluene	**51.1**	**51.4**	50.0	50.0		**102**	**103**	82-118	1	12	
Ethylbenzene	**51.9**	**52.0**	50.0	50.0		**104**	**104**	82-118	0	12	
m,p-Xylene	**51.4**	**51.3**	50.0	50.0		**103**	**103**	81-118	0	12	
o-Xylene	**51.5**	**51.7**	50.0	50.0		**103**	**103**	81-116	0	11	
Surrogate:											
Fluorobenzene						*98*	*103*	*65-122*			

Date of Report: June 7, 2022
Samples Submitted: May 26, 2022
Laboratory Reference: 2205-297
Project: 301-004

DIESEL AND HEAVY OIL RANGE ORGANICS
NWTPH-Dx

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CMW-29-052522**					
Laboratory ID:	05-297-01					
Diesel Range Organics	**0.74**	0.12	NWTPH-Dx	6-3-22	6-6-22	
Lube Oil Range Organics	**0.56**	0.24	NWTPH-Dx	6-3-22	6-6-22	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*114*	*50-150*				
Client ID:	**CMW-29-052522**					
Laboratory ID:	05-297-01					
Diesel Range Organics	**ND**	0.23	NWTPH-Dx	6-3-22	6-6-22	X2
Lube Oil Range Organics	**ND**	0.23	NWTPH-Dx	6-3-22	6-6-22	X2
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*120*	*50-150*				
Client ID:	**CMW-30-052522**					
Laboratory ID:	05-297-02					
Diesel Range Organics	**0.40**	0.10	NWTPH-Dx	6-3-22	6-6-22	
Lube Oil Range Organics	**0.29**	0.21	NWTPH-Dx	6-3-22	6-6-22	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*116*	*50-150*				
Client ID:	**CMW-30-052522**					
Laboratory ID:	05-297-02					
Diesel Range Organics	**ND**	0.21	NWTPH-Dx	6-3-22	6-6-22	X2
Lube Oil Range Organics	**ND**	0.21	NWTPH-Dx	6-3-22	6-6-22	X2
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*120*	*50-150*				
Client ID:	**CMW-26-052522**					
Laboratory ID:	05-297-03					
Diesel Range Organics	**ND**	0.11	NWTPH-Dx	6-3-22	6-6-22	
Lube Oil Range Organics	**ND**	0.21	NWTPH-Dx	6-3-22	6-6-22	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*108*	*50-150*				
Client ID:	**CMW-26-052522**					
Laboratory ID:	05-297-03					
Diesel Range Organics	**ND**	0.21	NWTPH-Dx	6-3-22	6-6-22	X2
Lube Oil Range Organics	**ND**	0.21	NWTPH-Dx	6-3-22	6-6-22	X2
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*117*	*50-150*				

Date of Report: June 7, 2022
Samples Submitted: May 26, 2022
Laboratory Reference: 2205-297
Project: 301-004

DIESEL AND HEAVY OIL RANGE ORGANICS
NWTPH-Dx

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CMW-25-052522**					
Laboratory ID:	05-297-04					
Diesel Range Organics	**ND**	0.11	NWTPH-Dx	6-3-22	6-6-22	
Lube Oil Range Organics	**ND**	0.22	NWTPH-Dx	6-3-22	6-6-22	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*116*	*50-150*				
Client ID:	**CMW-25-052522**					
Laboratory ID:	05-297-04					
Diesel Range Organics	**ND**	0.22	NWTPH-Dx	6-3-22	6-6-22	X2
Lube Oil Range Organics	**ND**	0.22	NWTPH-Dx	6-3-22	6-6-22	X2
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*122*	*50-150*				
Client ID:	**CMW-8-052522**					
Laboratory ID:	05-297-05					
Diesel Range Organics	**0.79**	0.10	NWTPH-Dx	6-3-22	6-6-22	
Lube Oil Range Organics	**0.60**	0.20	NWTPH-Dx	6-3-22	6-6-22	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*107*	*50-150*				
Client ID:	**CMW-8-052522**					
Laboratory ID:	05-297-05					
Diesel Range Organics	**ND**	0.20	NWTPH-Dx	6-3-22	6-6-22	X2
Lube Oil Range Organics	**ND**	0.20	NWTPH-Dx	6-3-22	6-6-22	X2
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*110*	*50-150*				
Client ID:	**CMW-28-052522**					
Laboratory ID:	05-297-06					
Diesel Range Organics	**1.1**	0.11	NWTPH-Dx	6-3-22	6-6-22	
Lube Oil Range Organics	**0.68**	0.23	NWTPH-Dx	6-3-22	6-6-22	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*107*	*50-150*				
Client ID:	**CMW-28-052522**					
Laboratory ID:	05-297-06					
Diesel Range Organics	**ND**	0.23	NWTPH-Dx	6-3-22	6-6-22	X2
Lube Oil Range Organics	**ND**	0.23	NWTPH-Dx	6-3-22	6-6-22	X2
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*115*	*50-150*				

Date of Report: June 7, 2022
Samples Submitted: May 26, 2022
Laboratory Reference: 2205-297
Project: 301-004

DIESEL AND HEAVY OIL RANGE ORGANICS
NWTPH-Dx

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CMW-31-052522**					
Laboratory ID:	05-297-07					
Diesel Range Organics	**ND**	0.10	NWTPH-Dx	6-3-22	6-6-22	
Lube Oil Range Organics	**ND**	0.20	NWTPH-Dx	6-3-22	6-6-22	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*92*	*50-150*				
Client ID:	**CMW-31-052522**					
Laboratory ID:	05-297-07					
Diesel Range Organics	**ND**	0.20	NWTPH-Dx	6-3-22	6-6-22	X2
Lube Oil Range Organics	**ND**	0.20	NWTPH-Dx	6-3-22	6-6-22	X2
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*95*	*50-150*				
Client ID:	**CMW-13-052522**					
Laboratory ID:	05-297-08					
Diesel Range Organics	**1.4**	0.11	NWTPH-Dx	6-3-22	6-6-22	
Lube Oil Range Organics	**0.67**	0.22	NWTPH-Dx	6-3-22	6-6-22	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*94*	*50-150*				
Client ID:	**CMW-13-052522**					
Laboratory ID:	05-297-08					
Diesel Range Organics	**ND**	0.22	NWTPH-Dx	6-3-22	6-6-22	X2
Lube Oil Range Organics	**ND**	0.22	NWTPH-Dx	6-3-22	6-6-22	X2
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*96*	*50-150*				
Client ID:	**QA/QC-1-052622**					
Laboratory ID:	05-297-09					
Diesel Range Organics	**1.6**	0.12	NWTPH-Dx	6-3-22	6-6-22	
Lube Oil Range Organics	**1.1**	0.23	NWTPH-Dx	6-3-22	6-6-22	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*87*	*50-150*				
Client ID:	**QA/QC-1-052622**					
Laboratory ID:	05-297-09					
Diesel Range Organics	**0.32**	0.23	NWTPH-Dx	6-3-22	6-6-22	X2
Lube Oil Range Organics	**ND**	0.23	NWTPH-Dx	6-3-22	6-6-22	X2
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*97*	*50-150*				

Date of Report: June 7, 2022
Samples Submitted: May 26, 2022
Laboratory Reference: 2205-297
Project: 301-004

DIESEL AND HEAVY OIL RANGE ORGANICS
NWTPH-Dx

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CMW-27-052622**					
Laboratory ID:	05-297-10					
Diesel Range Organics	**1.6**	0.11	NWTPH-Dx	6-3-22	6-6-22	
Lube Oil Range Organics	**1.0**	0.22	NWTPH-Dx	6-3-22	6-6-22	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*87*	*50-150*				
Client ID:	**CMW-27-052622**					
Laboratory ID:	05-297-10					
Diesel Range Organics	**0.28**	0.22	NWTPH-Dx	6-3-22	6-6-22	X2
Lube Oil Range Organics	**ND**	0.22	NWTPH-Dx	6-3-22	6-6-22	X2
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*88*	*50-150*				
Client ID:	**HMW-9-052622**					
Laboratory ID:	05-297-11					
Diesel Range Organics	**0.77**	0.11	NWTPH-Dx	6-3-22	6-6-22	
Lube Oil Range Organics	**0.65**	0.21	NWTPH-Dx	6-3-22	6-6-22	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*83*	*50-150*				
Client ID:	**HMW-9-052622**					
Laboratory ID:	05-297-11					
Diesel Range Organics	**ND**	0.21	NWTPH-Dx	6-3-22	6-6-22	X2
Lube Oil Range Organics	**ND**	0.21	NWTPH-Dx	6-3-22	6-6-22	X2
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*85*	*50-150*				
Client ID:	**HMW-10-052622**					
Laboratory ID:	05-297-12					
Diesel Range Organics	**1.5**	0.10	NWTPH-Dx	6-3-22	6-6-22	
Lube Oil Range Organics	**0.75**	0.20	NWTPH-Dx	6-3-22	6-6-22	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*99*	*50-150*				
Client ID:	**HMW-10-052622**					
Laboratory ID:	05-297-12					
Diesel Range Organics	**ND**	0.20	NWTPH-Dx	6-3-22	6-6-22	X2
Lube Oil Range Organics	**ND**	0.20	NWTPH-Dx	6-3-22	6-6-22	X2
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*105*	*50-150*				

Date of Report: June 7, 2022
Samples Submitted: May 26, 2022
Laboratory Reference: 2205-297
Project: 301-004

DIESEL AND HEAVY OIL RANGE ORGANICS
NWTPH-Dx

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CMW-12-052622**					
Laboratory ID:	05-297-13					
Diesel Range Organics	**0.80**	0.11	NWTPH-Dx	6-3-22	6-6-22	
Lube Oil Range Organics	**0.44**	0.22	NWTPH-Dx	6-3-22	6-6-22	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*101*	*50-150*				
Client ID:	**CMW-12-052622**					
Laboratory ID:	05-297-13					
Diesel Range Organics	**ND**	0.22	NWTPH-Dx	6-3-22	6-6-22	X2
Lube Oil Range Organics	**ND**	0.22	NWTPH-Dx	6-3-22	6-6-22	X2
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*105*	*50-150*				
Client ID:	**CMW-10-052622**					
Laboratory ID:	05-297-14					
Diesel Range Organics	**0.62**	0.12	NWTPH-Dx	6-3-22	6-6-22	
Lube Oil Range Organics	**0.51**	0.23	NWTPH-Dx	6-3-22	6-6-22	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*110*	*50-150*				
Client ID:	**CMW-10-052622**					
Laboratory ID:	05-297-14					
Diesel Range Organics	**ND**	0.23	NWTPH-Dx	6-3-22	6-6-22	X2
Lube Oil Range Organics	**ND**	0.23	NWTPH-Dx	6-3-22	6-6-22	X2
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*114*	*50-150*				
Client ID:	**QA/QC-2-052622**					
Laboratory ID:	05-297-15					
Diesel Range Organics	**0.84**	0.10	NWTPH-Dx	6-3-22	6-6-22	
Lube Oil Range Organics	**0.49**	0.20	NWTPH-Dx	6-3-22	6-6-22	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*104*	*50-150*				
Client ID:	**QA/QC-2-052622**					
Laboratory ID:	05-297-15					
Diesel Range Organics	**ND**	0.20	NWTPH-Dx	6-3-22	6-6-22	X2
Lube Oil Range Organics	**ND**	0.20	NWTPH-Dx	6-3-22	6-6-22	X2
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*102*	*50-150*				

Date of Report: June 7, 2022
Samples Submitted: May 26, 2022
Laboratory Reference: 2205-297
Project: 301-004

DIESEL AND HEAVY OIL RANGE ORGANICS
NWTPH-Dx

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**HMW-11-052622**					
Laboratory ID:	05-297-16					
Diesel Range Organics	**2.5**	0.10	NWTPH-Dx	6-3-22	6-6-22	
Lube Oil Range Organics	**1.4**	0.20	NWTPH-Dx	6-3-22	6-6-22	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*105*	*50-150*				
Client ID:	**HMW-11-052622**					
Laboratory ID:	05-297-16					
Diesel Range Organics	**ND**	0.20	NWTPH-Dx	6-3-22	6-6-22	X2
Lube Oil Range Organics	**ND**	0.20	NWTPH-Dx	6-3-22	6-6-22	X2
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*110*	*50-150*				
Client ID:	**HMW-13-052622**					
Laboratory ID:	05-297-17					
Diesel Range Organics	**ND**	0.11	NWTPH-Dx	6-3-22	6-6-22	
Lube Oil Range Organics	**ND**	0.22	NWTPH-Dx	6-3-22	6-6-22	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*111*	*50-150*				
Client ID:	**HMW-13-052622**					
Laboratory ID:	05-297-17					
Diesel Range Organics	**ND**	0.22	NWTPH-Dx	6-3-22	6-6-22	X2
Lube Oil Range Organics	**ND**	0.22	NWTPH-Dx	6-3-22	6-6-22	X2
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*117*	*50-150*				
Client ID:	**CMW-2-052622**					
Laboratory ID:	05-297-18					
Diesel Range Organics	**0.20**	0.12	NWTPH-Dx	6-3-22	6-6-22	
Lube Oil Range Organics	**0.25**	0.24	NWTPH-Dx	6-3-22	6-6-22	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*101*	*50-150*				
Client ID:	**CMW-2-052622**					
Laboratory ID:	05-297-18					
Diesel Range Organics	**ND**	0.24	NWTPH-Dx	6-3-22	6-6-22	X2
Lube Oil Range Organics	**ND**	0.24	NWTPH-Dx	6-3-22	6-6-22	X2
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*101*	*50-150*				

Date of Report: June 7, 2022
Samples Submitted: May 26, 2022
Laboratory Reference: 2205-297
Project: 301-004

DIESEL AND HEAVY OIL RANGE ORGANICS
NWTPH-Dx
QUALITY CONTROL

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0603W1					
Diesel Range Organics	**ND**	0.080	NWTPH-Dx	6-3-22	6-6-22	
Lube Oil Range Organics	**ND**	0.16	NWTPH-Dx	6-3-22	6-6-22	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*105*	*50-150*				
Laboratory ID:	MB0603W1					
Diesel Range Organics	**ND**	0.16	NWTPH-Dx	6-3-22	6-6-22	X2
Lube Oil Range Organics	**ND**	0.16	NWTPH-Dx	6-3-22	6-6-22	X2
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*107*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	SB0603W1										
	ORIG	DUP									
Diesel Fuel #2	**0.541**	**0.531**	NA	NA		NA		NA	2	NA	
Surrogate:											
o-Terphenyl						*106*	*99*	*50-150*			
Laboratory ID:	SB0603W1										
	ORIG	DUP									
Diesel Fuel #2	**0.442**	**0.444**	NA	NA		NA		NA	0	NA	X2
Surrogate:											
o-Terphenyl						*90*	*85*	*50-150*			
Laboratory ID:	05-297-01										
	ORIG	DUP									
Diesel Range Organics	**0.735**	**0.692**	NA	NA		NA		NA	6	NA	
Lube Oil Range Organics	**0.557**	**0.502**	NA	NA		NA		NA	10	NA	
Surrogate:											
o-Terphenyl						*114*	*114*	*50-150*			
Laboratory ID:	05-297-01										
	ORIG	DUP									
Diesel Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	X2
Lube Oil Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	X2
Surrogate:											
o-Terphenyl						*120*	*119*	*50-150*			

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

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

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

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

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

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

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

I - Compound recovery is outside of the control limits.

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

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

L - The RPD is outside of the control limits.

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

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

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

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

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

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

Q - Surrogate recovery is outside of the control limits.

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

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

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

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

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

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

X - Sample extract treated with a mercury cleanup procedure.

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

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

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

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

Z -

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

Chain of Custody

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

Company: FARALLON
Project Number: 301-004
Project Name: CHS Auburn
Project Manager: Jevan Rust
Sampled by: Braeden Lokkari, Kevas Zygas

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

Laboratory Number: 05-297

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX (8021B/ 8260☐)	NWTPH-Gx	NWTPH-Dx (Acid / SG Clean-up ☑) *	Volatiles 8260	Halogenated Volatiles 8260	EDB EPA 8011 (Waters Only)	Semivolatiles 8270/SIM (with low-level PAHs)	PAHs 8270/SIM (low-level)	PCBs 8082	Organochlorine Pesticides 8081	Organophosphorus Pesticides 8270/SIM	Chlorinated Acid Herbicides 8151	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664	% Moisture
1	CMW-29-052522	5/25/22	1150	H2O	S		X	X	X														
2	CMW-30-052522	5/25/22	1250	H2O	S		X	X	X														
3	CMW-26-052522	5/25/22	1345	H2O	S		X	X	X														
4	CMW-25-052522	5/25/22	1445	H2O	S		X	X	X														
5	CMW-8-052522	5/25/22	1503	H2O	S		X	X	X														
6	CMW-28-052522	5/25/22	1535	H2O	S		X	X	X														
7	CMW-31-052522	5/25/22	1605	H2O	S		X	X	X														
8	CMW-13-052522	5/25/22	1645	H2O	S		X	X	X														
9	QA/QC-1-052622	5/26/22	0800	H2O	S		X	X	X														
10	CMW-27-052622	5/26/22	1020	H2O	S		X	X	X														

	Signature	Company	Date	Time
Relinquished		Farallon	5/26/22	1652
Received		OSE	5/26/22	1652
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions
* No acid for silica gel cleanup
** VOA's didn't have HCl

Data Package: Standard ☐ Level III ☐ Level IV ☐
Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

Chain of Custody

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

Company: Farallon
Project Number: 301-004
Project Name: CHS Auburn
Project Manager: Javan Ruark
Sampled by: Braden Lukkari, Kaos Zygas

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

Laboratory Number: 05-297

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX (8021B/8260☐)	NWTPH-Gx	NWTPH-Dx (Acid / SG Clean-up ☑ *)	Volatiles 8260	Halogenated Volatiles 8260	EDB EPA 8011 (Waters Only)	Semivolatiles 8270/SIM (with low-level PAHs)	PAHs 8270/SIM (low-level)	PCBs 8082	Organochlorine Pesticides 8081	Organophosphorus Pesticides 8270/SIM	Chlorinated Acid Herbicides 8151	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664					% Moisture
11	HMW-9-052622	5/26/22	0923	H2O	5		X		X																		
12	HMW-10-052622	5/26/22	1013	H2O	5		X		X																		
13	CMW-12-052622	5/26/22	1125	H2O	5		X		X																		
14	CMW-10-052622	5/26/22	1145	H2O	5		X		X																		
15	QA/QC-2-052622	5/26/22	1125	H2O	5		X		X																		
16	HMW-11-052622	5/26/22	1225	H2O	5		X		X																		
17	HMW-13-052622	5/26/22	1325	H2O	5		X		X																		
18	CMW-2-052622	5/26/22	1340	H2O	5		X		X																		

	Signature	Company	Date	Time
Relinquished	[signature]	Farallon	5/26/22	1652
Received	[signature]	ONE	5/26/22	1652
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions
*No acid for silica gel cleanup

Data Package: Standard ☐ Level III ☐ Level IV ☐

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

May 27, 2022

Javan Ruark, Project Manager
Farallon Consulting, LLC
975 5th Avenue Northwest
Issaquah, WA 98027

Dear Mr Ruark:

Included are the results from the testing of material submitted on May 12, 2022 from the Cenex Auburn 301-004, F&BI 205231 project. There are 5 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Farallon Data, Russell Luiten, Braeden Lukkari
FLN0527R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on May 12, 2022 by Friedman & Bruya, Inc. from the Farallon Consulting, LLC Cenex Auburn 301-004, F&BI 205231 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Farallon Consulting, LLC
205231 -01	INFLUENT-051222

The TO-15 gasoline range concentrations were quantified using a single point calibration at 80 ppbv.

All quality control requirements were acceptable.

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	INFLUENT-051222	Client:	Farallon Consulting, LLC
Date Received:	05/12/22	Project:	301-004, F&BI 205231
Date Collected:	05/12/22	Lab ID:	205231-01 1/4.6
Date Analyzed:	05/20/22	Data File:	051932.D
Matrix:	Air	Instrument:	GCMS8
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	91	70	130

Compounds:	Concentration ug/m3	ppbv
Benzene	<1.5	<0.46
Toluene	<87	<23
Ethylbenzene	<2	<0.46
m,p-Xylene	<4	<0.92
o-Xylene	<2	<0.46
Gasoline Range Organics	<1,500	<370

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Method Blank	Client:	Farallon Consulting, LLC
Date Received:	Not Applicable	Project:	301-004, F&BI 205231
Date Collected:	Not Applicable	Lab ID:	02-1094 MB
Date Analyzed:	05/19/22	Data File:	051911.D
Matrix:	Air	Instrument:	GCMS8
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	91	70	130

Compounds:	Concentration ug/m3	ppbv
Benzene	<0.32	<0.1
Toluene	<19	<5
Ethylbenzene	<0.43	<0.1
m,p-Xylene	<0.87	<0.2
o-Xylene	<0.43	<0.1
Gasoline Range Organics	<330	<80

Date of Report: 05/27/22
Date Received: 05/12/22
Project: Cenex Auburn 301-004, F&BI 205231

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: 205247-01 1/4.9 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 30)
Benzene	ug/m3	2.6	2.6	0
Toluene	ug/m3	<92	<92	nm
Ethylbenzene	ug/m3	48	49	2
m,p-Xylene	ug/m3	130	130	0
o-Xylene	ug/m3	38	38	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	ug/m3	43	93	70-130
Toluene	ug/m3	51	93	70-130
Ethylbenzene	ug/m3	59	86	70-130
m,p-Xylene	ug/m3	120	92	70-130
o-Xylene	ug/m3	59	96	70-130

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

SAMPLE CHAIN OF CUSTODY

205231

Report To Javan Rusk, Russell Luiten, Braeden Lukstein

Company Farallon

Address

City, State, ZIP

Phone Email JRusk, RLuiten, BLukstein@farallonconsulting.com

SAMPLERS (signature) [signature] ~~GMB~~ 5-12-22

PROJECT NAME & ADDRESS: Cenex Auburn

PO #: 301-004

NOTES: * GRO + BTEX

INVOICE TO: AP

Page # 1 of 1

TURNAROUND TIME
- ☑ Standard
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Default: Clean after 3 days
- ☐ Archive (Fee may apply)

SAMPLE INFORMATION										ANALYSIS REQUESTED						
Sample Name	Lab ID	Canister ID	Flow Cont. ID	Reporting Level: IA=Indoor Air SG=Soil Gas (Circle One)	Date Sampled	Initial Vac. ("Hg)	Field Initial Time	Final Vac. ("Hg)	Field Final Time	TO15 Full Scan	*TO15 BTEXN	TO15 cVOCs	APH	Helium		Notes
INFLUENT-051222	01	8209	07	IA / (SG)	5/12/22	29.5	1015	5.0	1021		X					
				IA / SG												
				IA / SG												
				IA / SG												
				IA / SG												
				IA / SG												
				IA / SG											Samples received at 18 °C	
				IA / SG											Samples received at °C	
				IA / SG												

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	[signature]	Braeden Lukstein	Farallon	5/12/22	1541
Received by:	Windy Madden	Windy Madden	FB+I	5/12/22	1541
Relinquished by:					
Received by:					

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