AECOM

Environment

Prepared for
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Submitted to
Washington Department of Ecology

Submitted by
AECOM
888 SW 5th Avenue
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February 2024

2023 Annual Progress Report

Chevron Pipe Line Company Pasco Bulk Terminal

Pasco, Washington
Ecology Cleanup Site ID: 4867
Ecology Facility Site ID: 55763995
Agreed Order No. DE 21664

AECOM
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Transmitted via Electronic Mail

February 29, 2024

Mr. Christer Loftenius
Washington State Department of Ecology
Toxics Cleanup Program
4601 North Monroe Street
Spokane, WA
clof461@ecy.wa.gov

Re: 2023 Annual Progress Report
Chevron Pipe Line Company Pasco Bulk Terminal
Ecology Cleanup Site ID: 4867
Ecology Facility Site ID: 55763995
Agreed Order No. DE 21664

Dear Mr. Loftenius:

The attached report has been prepared on behalf of Tesoro Logistics Operations LLC (Tesoro) to document the cleanup actions conducted from July 1 through December 31, 2023, at the Chevron Pipe Line Company Pasco Bulk Terminal (herein referred to as the Site). This report was prepared following the requirements of Section VI of Agreed Order Number (No.) DE 21664 (Order) dated April 11, 2023, between the Washington State Department of Ecology (Ecology) and Tesoro.

If you have any questions regarding this progress report, please contact the AECOM Project Manager, Nicky Moody, at (503) 969-6310.

Sincerely,

AECOM Technical Services, Inc

KEITH WILLIAM FOX
STATE OF WASHINGTON
2/29/24
49679
REGISTERED
PROFESSIONAL ENGINEER

Nicky Moody
Project Manager

Keith Fox, PE
Environmental Engineer

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Table of Contents

1 Introduction

This Annual Progress Report has been prepared by AECOM Technical Services, Inc. (AECOM) for the Washington Department of Ecology (Ecology) Cleanup Site named "Chevron Pipe Line Company Pasco Bulk Terminal" (herein referred to as the Site) to document compliance monitoring in accordance with the requirements of Agreed Order Number (No.) DE 21664 dated April 11, 2023 (Order) between Ecology and Tesoro Logistics Operations LLC (Tesoro) (an indirect subsidiary of Marathon Petroleum Corporation) (Ecology, 2023b). The goal of compliance monitoring is to monitor the effectiveness of natural attenuation as one of the selected cleanup actions for the Site. Natural attenuation parameters and chemical analytical results from the 2023 semi-annual monitoring events are presented in this report.

1.1 Terminal, Site, and Tidewater Site

The Site is located within the boundary of the larger Pasco Terminal, which is owned and operated by Tesoro; the Pasco Terminal is herein referred to as the Terminal. Chevron Pipe Line Company (CPL) initially owned and operated the Terminal since its construction in 1950 until Tesoro purchased the Terminal in June 2013. In Figures 1 and 2, the Terminal is shown with the brownish orange highlighted area, and the Site is shown with the **red line**. Most of the Terminal is located on top of the bluffs overlooking the Lake Wallula segment of the Snake River adjacent to the south. Sacajawea Park Road and a Burlington Northern Santa Fe (BNSF) rail spur bisect the Terminal with northeast-southwest orientations. The Terminal operations predominantly take place to the south of Sacajawea Park Road over approximately 33 acres; however, the entire Terminal property covers approximately 120 acres. The Terminal includes unimproved land to the southwest, north, and northeast.

The Terminal is developed with aboveground storage tanks (ASTs), loading racks, pumping stations, underground and aboveground pipelines, a barge loading dock, a lined evaporation pond, and terminal offices. The ASTs are used to store diesel, gasoline, jet fuel, and ethanol (AECOM, 2021). The Terminal has been an active fuel terminal since September 1950. The Terminal receives fuel products transferred through underground pipelines and by barge. Nineteen aboveground bulk storage tanks (with storage capacities ranging between 588,000 and 2,520,000 gallons), eight fuel additive tanks (with storage capacities ranging between 500 and 12,000 gallons), and one 23,000-gallon relief tank are present at the Terminal (AECOM, 2021).

The elevations at the Site range from approximately 356 feet National Geodetic Vertical Datum (NGVD) along the Snake River to approximately 425 feet NGVD in the upland portion of the Site (AECOM, 2021).

In Figure 2, the **orange line** labeled as the Tidewater site shows the boundary of the separate Ecology Cleanup Site with Facility Site Name "Tidewater Fuel Line Leak". The Tidewater Terminal Company, Inc. (Tidewater) is responsible for managing ongoing environmental activities in this area associated with a pipeline fuel release (FSID: 39378684; CSID: 2331). The Tidewater site includes fuel pipelines owned and operated by Tidewater, which transfer products between this Terminal and the Tidewater Terminal, located approximately ¾-mile upstream along the Snake River at 671 Tank Farm Road in Pasco, Washington.

1.2 Purpose

As stated in the Order, the *Cleanup Action Plan* (CAP) sets cleanup standards and selects the cleanup action that meets the cleanup standards for the Site (Ecology, 2023a). The CAP indicates that the Ecology-selected cleanup action for the Site is institutional controls (ICs), monitored natural attenuation (MNA), and enhanced bioremediation using oxygen-releasing compounds (ORCs). As described in the *Compliance Monitoring Plan* (CMP) and *Engineering Design Report* (EDR), the purpose of semi-annual monitoring at the Site is to monitor indicator hazardous substances (IHSs) for the effectiveness of MNA and enhanced bioremediation (AECOM, 2024a).

IHSs from the CAP include benzene, toluene, ethylbenzene, and total xylenes (BTEX), naphthalene, and diesel- and motor oil-range total petroleum hydrocarbons (TPH-d and TPH-o). Natural attenuation (NA) parameters,

including ferrous iron, nitrate, alkalinity, sulfate, methane, dissolved manganese, dissolved oxygen (DO), oxidation reduction potential (ORP), and pH, will be used to evaluate the effectiveness of MNA at the Site.

The CAP, CMP, and EDR provide the cleanup levels for the Site IHSs (Table 1 of the CMP). The *Sampling and Analysis Plan* (SAP) (Appendix A of the CMP, Table A-4) provides a full list of analytical parameters.

The CMP provides additional information describing groundwater monitoring locations, methods, frequency, analytical parameters, and reporting obligations required to ensure that the cleanup objectives established in the CAP are met. The performance monitoring schedule is also summarized in the CMP and listed below:

- Performance monitoring will begin with semi-annual events during the spring (first semi-annual [1SA]) and fall (second semi-annual [2SA]) of 2023 before ORC deployment (Table 1).
- Performance monitoring during ORC deployment starting in 2024 will continue with semi-annual events during spring and fall (Table 2) until the IHS concentrations are below the cleanup levels for two sequential events.
- Performance monitoring will then continue without ORC deployment for one additional year before transitioning to confirmation monitoring.

The EDR provides the conceptual design for the implementation of the enhanced bioremediation alternative with the deployment and retrieval of the ORC product in source area compliance monitoring wells. The *Operations and Maintenance Plan* (O&M Plan) (Appendix B of the EDR) includes the procedures for handling of the ORC product and the procedures for the inspection and maintenance of the compliance monitoring wells, dedicated bladder pumps, and hangers used for the deployment of the ORC product.

1.3 Objectives

As required by the Order and defined in the CAP, the CMP describes the monitoring locations, methods, frequency, analytical parameters, and reporting obligations required to ensure that the Ecology-selected cleanup objectives established in the CAP are eventually met (i.e., MNA, coupled with enhanced bioremediation using ORCs and institutional controls). To this end, this Annual Progress Report summarizes the results of performance monitoring within and surrounding the three upland source areas (Figure 2) near the historical releases. The sampling approach is described in the SAP (Appendix A) of the CMP (AECOM, 2024a) and was designed to collect samples from compliance monitoring wells located within the Site monitoring network (Figure 2).

This Annual Progress Report includes a summary of field activities, sampling methods, field observations, and a summary of analytical results. All fieldwork and laboratory analyses were performed in general accordance with the SAP as included in the 2024 CMP.

Per Section VI of the Order, the Progress Reports are required to include the following six elements:

1. A list of on-Site activities conducted during the last six months.
2. Detailed descriptions of any deviations from required tasks not otherwise documented in project plans or amendment requests.
3. Descriptions of all deviations from the Scope of Work and Schedule of the Order during the current six months and any planned deviations in the upcoming six months.
4. For any deviations in the schedule, a plan for recovering lost time and maintaining compliance with the schedule.
5. All raw data (including laboratory analysis) received during the previous period (if not previously submitted to Ecology), together with a detailed description of the underlying samples collected.
6. A list of deliverables for the upcoming six months.

2 Field and Other Site-Related Activities

This section includes a list of field and other Site related activities completed in 2023.

AECOM conducted the 1SA event, as outlined in Table 1, between April 24 and 26, 2023.

- Depth-to-groundwater (DTW) measurements and groundwater samples were collected at 19 compliance monitoring wells (MW-02 through MW-08, MW-10 through MW-12, and MW-14).
- Additionally, DTW measurements were collected at two Tidewater monitoring wells (AR-11 and TMW-05).
- Field quality assurance and quality control samples for this reporting period included one field duplicate and two trip blanks.
- The 20 groundwater samples (19 primary and one field duplicate) and two trip blanks were submitted to Pace Analytical National, LLC (Pace) located in Mount Juliet, Tennessee.

AECOM conducted the 2SA event, as outlined in Table 1, between October 10 and 13, 2023.

- DTW measurements and groundwater samples were collected at 19 compliance monitoring wells (MW-02 through MW-08, MW-10 through MW-12, and MW-14).
- Additionally, DTW measurements were collected at two Tidewater monitoring wells (AR-11 and TMW-05).
- Field quality assurance and quality control samples for this reporting period included one field duplicate and one trip blank.
- The 20 groundwater samples (19 primary and one field duplicate) and one trip blank were submitted to Pace located in Mount Juliet, Tennessee.

2.1 Monitoring Well Gauging

Prior to purging and sampling, AECOM measured depth-to-groundwater at 19 Site wells and two Tidewater wells. Depth-to-groundwater measurements were collected from the well top of casing (TOC) using an electronic water level meter and recorded digitally on Groundwater Monitoring Field Forms. Field forms are included in Appendix A.

The depth-to-groundwater measurements and groundwater elevations (calculated from the surveyed TOC elevations) for the 1SA and 2SA monitoring events are listed in Table 2 and Table B1 in Appendix B. Groundwater elevation contour maps produced using groundwater elevations from 1SA and 2SA events are presented in Figures 3 and 4, respectively.

- In April 2023 (1SA), groundwater elevations ranged from 342.32 feet[a] at MW-6 to 344.44 feet[a] at AR-11
- In October 2023 (2SA), groundwater elevations ranged from 341.73 feet[a] at MW-6 to 344.44 feet[a] at AR-11

The gradient between MW-6 and AR-11 for the 1SA and 2SA events was 0.0018 feet/feet and 0.0015 feet/feet, respectively. Groundwater at the Site appears to generally flow to the southeast, towards Lake Wallula. The nearby Lake Wallula has a strong influence on groundwater elevation at the Site. Lake Wallula is created by the McNary Dam south of the Site in Umatilla, extending to the Ice Harbor Lock and Dam to the northeast of the Site. The Lake Wallula water elevation is controlled by McNary Dam operations. In December 2019, United States Geological Survey (USGS) elevation station 12514500 for Lake Wallula was permanently closed due to a lapse in funding. The average surface water elevation for the final 10 years the USGS station operated is approximately

[a] North American Vertical Datum of 1929 (NAVD29)

339.36 feet while the historical minimum and maximum elevations were 335.17 feet and 343.71 feet, respectively (USGS, 2020). Surface water elevations are expected to remain relatively stable near the 10-year average.

2.2 Groundwater Sampling

As stated above, AECOM collected groundwater samples from the 19 compliance monitoring wells during both monitoring events. During well purging, AECOM collected field parameter measurements for pH, conductivity, dissolved oxygen (DO), temperature, and oxidation reduction potential (ORP) in real time using a field instrument (e.g. Horiba U-50 series) with multiple calibrated sensors. AECOM measured concentrations of two geochemical indicators (ferrous iron and nitrate) using field test kits. Field parameters, and the concentrations of ferrous iron and nitrate are recorded on the Monitoring Well Sampling Field Logs included in Appendix A. The final stabilized field parameters and geochemical indicator concentrations are tabulated in Table 4 and Table B2 (Appendix B).

AECOM field personnel wore disposable nitrile gloves while collecting and managing the groundwater samples. The sample containers were tightly sealed, uniquely labeled, and stored on ice for transportation to the laboratory. AECOM shipped samples to Pace in Mount Juliet, Tennessee. AECOM followed chain-of-custody procedures from sample collection to sample analysis as outlined in the Quality Assurance Project Plan (QAPP) (Appendix B of the CAP; AECOM, 2024a). Copies of the chain-of-custody forms are included in Appendix C within the laboratory reports.

2.3 Quality Assurance Samples

Quality assurance (QA) samples were collected to meet data quality objectives outlined in the QAPP (AECOM, 2024a). One field duplicate and at least one trip blank were submitted for analysis for both the 1SA and 2SA monitoring events. A detailed review of the QA samples collected and/or analyzed by AECOM and Pace is included in the data quality review memorandums in Appendix D. Analytical data reported for both monitoring events met data quality objectives for the Site as outlined in the QAPP (AECOM, 2024a).

2.4 Raw Field Data

Field forms and field data generated during the reporting period are listed below.

- Groundwater level form and groundwater sampling logs (Appendix A, Field Forms)
- Tabulated DTW measurements, calculated groundwater elevations, and analytical results for this reporting period (Table 3 and in Table B1 in Appendix B with the 2014 to 2023 data)
- Tabulated field (pH, temperature, conductivity, dissolved oxygen, and oxidation-reduction potential) and natural attenuation parameter results for this reporting period (Table 4 and in Table B2 in Appendix B with the 2014 to 2023 data)

2.5 Operations and Maintenance

In 2023, AECOM completed typical bladder pump and well monument maintenance activities following the O&M Plan. AECOM also procured from Field Environmental Instruments the ORC hangers and Provect-ORS™ sleeves (herein referred to as ORC sleeves), which include the active compound inside a filter sock, deployed inside a reusable polyvinyl chloride (PVC) canister. The ORC hangers were custom-built to the specifications in the EDR for each of the six compliance monitoring wells: MW-02, MW-03, MW-11, MW-12, MW-17, and MW-19. The ORC sleeves, canisters, and hangers are currently stored at the AECOM warehouse in Portland, Oregon awaiting deployment to the Site in March or April 2024.

2.6 Investigation-Derived Waste

During the 1SA and 2SA monitoring events, the field activities generated the following investigation-derived waste: purge water and miscellaneous wastes (sample tubing, gloves, paper towels, etc.). The purge water was disposed of in the facilities process-water treatment system. Miscellaneous wastes were managed as solid waste.

2.7 Permits

Prior to generation of this report, AECOM completed the following steps for the underground injection chambers (UIC) permitting task as required in Section 4.7 of the EDR:

- Registered the six compliance monitoring wells (MW-02, MW-03, MW-11, MW-12, MW-17, and MW-19) as underground injection chambers (UIC) with Ecology in accordance with WAC 173-218-060;
- Uploaded all relevant documents with the UIC application; and
- Notified the Ecology Site manager that the task was complete.

3 Groundwater Results

During the 1SA and 2SA monitoring events in 2023, AECOM collected groundwater samples from the 19 compliance monitoring wells (Table 1). Groundwater samples were submitted for analysis of IHSs and NA parameters.

- The primary and field duplicate samples were submitted for analysis of the Site IHSs (listed below).
  - BTEX and naphthalene by US Environmental Protection Agency (EPA) Method 8260D
  - TPH-d and TPH-o by Ecology Methods NWTPH-Dx (diesel-range and heavy oil-range TPH)
- The primary and field duplicate samples were submitted for analysis of NA parameters (listed below).
  - Dissolved gases (methane, ethane, and ethene) by EPA Method RSK-175
  - Dissolved manganese by EPA Method 6010B
  - Sulfate by EPA Method 300.0
  - Total alkalinity by Standard Method (SM) 2320B-2011
- The trip blank samples were analyzed for BTEX and naphthalene only by EPA Method 8260D.

3.1 Raw Analytical Data

Analytical data generated during the reporting period are listed below and included in Appendix C.

- 1SA - L1610295 laboratory report and chain-of-custody form
- 2SA - L1667311 laboratory report and chain-of-custody form

Data quality reviews were performed on the 20 groundwater samples (19 primary and one field duplicate) and two trip blanks collected in April 2023 and the 20 groundwater samples (19 primary and one field duplicate) and one trip blank collected in October 2023 (Appendix D, Data Validation Reports).

The data from both 2023 monitoring events has been uploaded into Ecology's Environmental Information Management (EIM) database.

3.2 Indicator Hazardous Substances

The IHS results have been tabulated and screened against the selected cleanup levels for groundwater as described in the CAP (AECOM, 2024a). The selected cleanup levels are Ecology Model Toxics Control Act (MTCA) Method A cleanup levels (CULs) as listed below and in Tables 3 and B1 and shown in Figure 5.

Table A. Groundwater Cleanup Levels

Analyte	**Cleanup Level** (µg/L)
TPH-g, Benzene Present	800
TPH-g, No Benzene Present	1,000
TPH-d	500
TPH-o	500
Benzene	5
Toluene	1,000
Ethylbenzene	700
Total Xylenes	1,000
Naphthalene	160

TPH-d and TPH-o were the only IHSs detected above the CULs in groundwater samples during the 2023 monitoring period. TPH-d and/or TPH-o were detected in MW-02, MW-03, MW-11, MW-12, MW-17, and MW-18 during at least one of the two monitoring events in 2023.

In April 2023, TPH-d and/or TPH-o were detected above the CULs as follows:

- TPH-d at MW-02, MW-03, and MW-17
- TPH-o at MW-02 and MW-03

In October 2023, TPH-d and/or TPH-o were detected above the CULs as follows:

- TPH-d at MW-02 and MW-03
- TPH-o at MW-02, MW-03, MW-11, MW-12, and MW-17

Figure 5 shows TPH-d and TPH-o detections in MW-02, MW-03, MW-11, MW-12, MW-17, and MW-18 during the 2023 1SA and 2SA monitoring events.

3.3 Natural Attenuation Evaluation

The NA parameters measured indicate groundwater conditions consistent with those needed for the degradation of petroleum hydrocarbons. This section summarizes the methods and results for the NA parameter evaluation. All 19 monitoring wells included as part of the Site monitoring program were analyzed for the following NA parameters (Table 4):

- Field parameters: pH, conductivity, temperature, ORP, and DO
- Field-measured geochemical indicators: ferrous iron and nitrate
- Laboratory-measured geochemical indicators: sulfate, alkalinity, dissolved manganese, and methane

These NA parameters can be divided into two groups:

- Direct measurement of electron acceptors (e.g., DO, ORP, sulfate, and nitrate)
- Indirect measurement of byproduct(s) of the partially or fully metabolized electron acceptor (e.g., manganese, ferrous iron, methane, and alkalinity)

Contaminant degrading microorganisms will utilize the most efficient electron acceptors under the prevailing redox conditions while creating metabolic by-products. For example, oxygen (as measured by DO and ORP) is consumed in aerobic respiration to create carbon dioxide (CO_2) while the other electron acceptors are consumed in anaerobic respiration: ferric iron (Fe^{3+}) to create soluble ferrous iron (Fe^{2+}), nitrate to create elemental nitrogen, manganese (Mn^{4+}) to create soluble manganese (Mn^{2+}), and sulfate (SO_4^{2-}) to create sulfide (S^{2-}) (Newell et.al., 1995).

When evaluating these parameters, NA is indicated by either a relatively reduced level of the electron acceptors or an elevated level of the metabolic by-products in locations within and external to a plume. Monitoring well locations within the Site monitoring program were selected to represent both background (wells located on a plume perimeter) and source area conditions (wells located within a plume).

Table 4 includes the well location relative to a dissolved-phase plume. Based on average plume conditions, monitoring wells are categorized as inside or outside of known plume perimeter boundaries. Well location classifications are as follows:

- Monitoring wells located within a plume perimeter include MW-02, MW-03, MW-11, MW-12, MW-17, and MW-19 (referred to as plume wells)

- Monitoring wells located outside a plume perimeter include MW-04, MW-06, MW-07, MW-08, MW-10, MW-14, MW-15, MW-16, MW-18, MW-20 through MW-23 (referred to as outside wells)

Field measured NA parameter data generally indicate the following:

- The pH for the plume wells was slightly lower with a pH range of 6.89 to 7.52 compared to a pH range of 7.01 to 7.88 for the outside wells.
- Conductivity for the plume wells was slightly higher with a range of 1,040 to 1,460 µS/cm compared to a range of 948 to 1,140 µS/cm for the outside wells.
- DO concentrations in groundwater were categorized as being depleted with DO concentrations less than 1.0 milligrams per liter, (mg/L) or not depleted with DO concentrations greater than 1.0 mg/L. Depleted DO concentrations were recorded at MW-03 (0.49 mg/L) and MW-12 (0.98 mg/L) located inside the plume and MW-10 (0.19 mg/L) and MW-07 (0.58 mg/L) located outside the plume. DO was greater than 1.0 mg/L in the remaining wells.
- Negative ORP, indicating reducing conditions, was recorded at plume well MW-03 during both 1SA and 2SA monitoring events. ORP was positive in the remaining wells.

The field-measured geochemical indicator (nitrate and ferrous iron) results are as follows:

- Ferrous iron averaged 0.89 mg/L in the plume wells and 0.061 mg/L in the outside wells.
- Nitrate concentrations were highly variable across the Site. Nitrate averaged 12.7 mg/L in the plume wells and 12.5 mg/L in the outside wells. Lowest nitrate concentrations were found in plume wells MW-03 and MW-12, and outside wells MW-16 and MW-15.

Laboratory-measured geochemical indicator (dissolved manganese, sulfate, alkalinity, and methane) results were recorded as follows:

- Sulfate averaged 98.4 mg/L in the plume wells and 113.6 mg/L in the outside wells.
- Alkalinity averaged 394 mg/L in the plume wells and 200 mg/L in the outside wells.
- Dissolved manganese was detected in plume wells MW-03, MW-11, and MW-12.
- Methane was detected in plume well MW-03.

In general, the data suggest NA parameters indicative of contaminant biodegradation within the plume. The processes of biodegradation may include manganese reduction, denitrification, iron reduction, and/or methanogenesis.

- Depleted or low DO concentrations, low ORP values and low sulfate concentrations within the plume suggest anaerobic geochemical biodegradation may be a predominant degradation pathway.
- Concentrations of ferrous iron increase, while sulfate concentrations decrease when moving from outside to inside a plume, which can indicate anaerobic conditions favorable for iron and sulfate reduction are present and appear to be likely degradation pathways.
- Further evidence of anaerobic reductive conditions occurring within the plume are the low (negative) ORP values and methane detections observed in plume well MW-03. Methane concentrations suggest methanogenesis is an active degradation pathway.
- Increased concentrations of soluble manganese in plume wells (MW-03, MW-11, and MW-12) are additional evidence of microbial activities related to biodegradation within the plume.
- Increased alkalinity in groundwater samples collected from within a plume provides further evidence biodegradation is occurring within a plume.

- Nitrate concentrations were variable across the site, continued monitoring is needed to determine if biodegradation through denitrification and nitrate reductive processes is occurring along the plume periphery.

Following deployment of the ORC, AECOM will utilize a natural attenuation screening model such as Ecology's *Natural Attenuation Analysis Tool Package for Petroleum-Contaminated Ground Water* to analyze Site data to evaluate whether IHS detections will fall below cleanup levels within the timeframe outlined in the CAP (Ecology, 2005).

4 Conclusions, Deviations, and Recommendations

4.1 Conclusions

The goal of semi-annual monitoring at the Site is to monitor IHSs for the effectiveness of MNA and enhanced bioremediation. The NA parameters and chemical analytical results from the 2023 semi-annual monitoring events as presented in this report meet this goal.

The results of the 2023 monitoring period support the following conclusions:

- The hydraulic gradient at the site is relatively flat with limited fluctuations. The groundwater flow direction is to the southeast towards Lake Wallula.
- Analytical results for IHSs are generally aligned with historical analyte concentrations.
- Residual IHSs remain on-site within historically known localized areas. Exceedances of IHSs above the CULs during the 2023 monitoring period included:
    - TPH-d at MW-02, MW-03, and MW-17
    - TPH-o at MW-02, MW-03, MW-11, MW-12, and MW-17
- The lateral extent of the dissolved-phase hydrocarbons is stable. Detected concentrations of TPH-d and TPH-o are consistent with previous monitoring events.
- MNA constituents and stable lateral extent of petroleum hydrocarbons in monitored wells indicate biodegradation processes are active at the Site.
- Decreased ORP values and low DO and sulfate concentrations suggest anaerobic biodegradation may be a predominant degradation pathway of petroleum constituents within the plume area.
- Increased soluble manganese and methane concentrations within the plume also are supportive evidence for anaerobic geochemical biodegradation.

AECOM anticipates the bioremediation processes as discussed above to be enhanced with future deployments of ORC in 2024 and beyond. As additional NA parameter data is collected during ORC deployments, supplemental statical analyses can be performed to evaluate biodegradation rates and assess the progress of MNA at the Site.

4.2 Deviations

4.2.1 Required Tasks

This section includes a detailed description of any deviations from required tasks not otherwise documented in project plans or amendment requests.

- Not Applicable: No deviations from required tasks occurred during this reporting period, and none are anticipated for the upcoming reporting period.

4.2.2 Agreed Order

This section includes a description of all deviations from the Scope of Work and Schedule (Exhibit C) of the Order during the current six months and any planned deviations in the upcoming six months.

- Not Applicable: No deviations from the Order occurred during this period, and none are anticipated for the upcoming period.

4.2.3 Schedule

This section lists any deviations in the schedule and a plan for recovering lost time and maintaining compliance with the schedule.

- Not Applicable: No schedule deviations occurred during this period, and none are anticipated for the upcoming reporting period. An annotated schedule from Exhibit C of the Order is provided below:

Tasks/Deliverables	Deadlines		Schedule Status
Tesoro submits draft EDR, O&M Plan, and CMP	90 days following the effective date of the Agreed Order	July 10, 2023	Complete
Tesoro submits final EDR, O&M Plan, and CMP	30 days after receipt of Ecology's written comments on the drafts	January 31, 2024	Complete
Tesoro notifies Ecology that ORC socks are ready to be installed	30 days after Ecology approval of EDR and O&M Plan	February 28, 2024	Complete
Tesoro begins cleanup action	As described in EDR, but no later than **April 28, 2023**	April 28, 2023	In progress
Tesoro notifies Ecology in advance of any sample collection or work activity at the Site	7 days in advance of fieldwork	--	On-going
Draft Environmental Covenant (EC)	60 days after ORC socks are deployed for the first time	--	--
After approval by Ecology, Tesoro records the final EC with the office of the Franklin County Auditor and provides Ecology with the recorded EC	Within 30 days of the recording date of the EC	--	--
Tesoro submits draft Cleanup Action Report	90 days after the ORC treatment is complete	--	--
Tesoro submits Final Cleanup Action Report	30 days after Tesoro receives Ecology's written comments on draft Cleanup Action Report	--	--
Tesoro submits Semi-Annual progress reports	Within 60 days of the last day of the previous six-month period	--	--

Notes:
-- = date pending as set by earlier task/deliverable

4.3 Recommendations and Planned Deliverables (Year 2024)

Continued monitoring according to the CMP is recommended. The next monitoring event is scheduled for March 2024 with the first deployment of the ORC.

A list of planned deliverables for the Year 2024 include:

- In compliance with the Order, the Progress Report for the reporting period January to June 2024 will be issued by August 30, 2024.
- The raw data (groundwater level elevations and laboratory analytical results including data qualifiers added during the data quality review) for reporting periods in 2024 will be submitted online in a format compatible with Ecology's Environmental Information Management (EIM) System, per Ecology Policy 840 following submission of this Semi-Annual Progress Report to Ecology.

5 Limitations

The findings and conclusions documented in this report have been prepared for specific application to this project and have been developed in a manner consistent with the level of care and skill normally exercised by members of the environmental science profession currently practicing under similar conditions in the area and in general accordance with the terms and conditions set forth in our Agreement. No warranty or other conditions express or implied should be understood.

The findings presented in this report are based on conditions observed at specific site locations and sampling intervals at the time of the assessment. Because conditions between the monitoring well locations or borings may vary over distance and time, the potential always remains for the presence of unknown, unidentified, unforeseen, or changed surface and subsurface contamination. Conclusions in this report are based on a comparison of chemical analytical results to current regulatory standards.

This report is for the exclusive use of Tesoro and its representatives. No fourth party shall have the right to rely on AECOM's opinions rendered in connection with the services in this report without our written consent, and the second party's agreement to be bound to the same conditions and limitations as Tesoro.

6 References

AECOM, 2021. *Final Supplemental Remedial Investigation / Feasibility Study.* Tesoro Pasco Bulk Fuel Terminal. September 30.

AECOM, 2024a. *Compliance Monitoring Plan*. Chevron Pipe Line Company Pasco Bulk Terminal. January.

AECOM, 2024b. *Engineering Design Report*. Chevron Pipe Line Company Pasco Bulk Terminal. January.

Ecology, 2005. *User's Manual: Natural Attenuation Analysis Tool Package for Petroleum-Contaminated Ground Water.* Washington State Department of Ecology. Toxics Cleanup Program. Publication No. 05-09-091A (Version 1.0). July.

Ecology, 2023a. *Final Corrective Action Plan.* Chevron Pipeline Co. Pasco Bulk Terminal. March.

Ecology, 2023b. Agreed Order No. DE 21664. In the Matter of Remedial Action by Tesoro Logistic Operation LLC. April.

FIGURES

1,000 0 1,000 2,000

SCALE IN FEET

AECOM

SITE VICINITY MAP

TESORO LOGISTICS OPERATIONS LLC
CHEVRON PIPE LINE COMPANY PASCO BULK TERMINAL
PASCO, WASHINGTON

60722666

FIGURE 1

K:\Tesoro PascoMXD\2023 EDR\Fig 1 Site Viciniy Map.mxd

Explanation

- Compliance Monitoring Well
- Compliance Monitoring Wells Proposed for ORC Deployment
- Tidewater Monitoring Well
- Vapor Extraction Well

Previous Spill
(Size of circle indicates volume released)

- Diesel
- Gasoline
- Jet Fuel

600 — Number of barrels in spill
12/20/78 — Date of spill

- BNSF Railroad
- BNSF Right of Way
- Excavation Area
- Terminal Boundary
- Site Boundary
- Tidewater Site Boundary

Areas of Concern

- North Area
- Northern Tank Area
- Southern Tank Area

Imagery Source: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

K:\Tesoro_PascoMXD\2023_EDR\Fig 2 Site Plan.mxd

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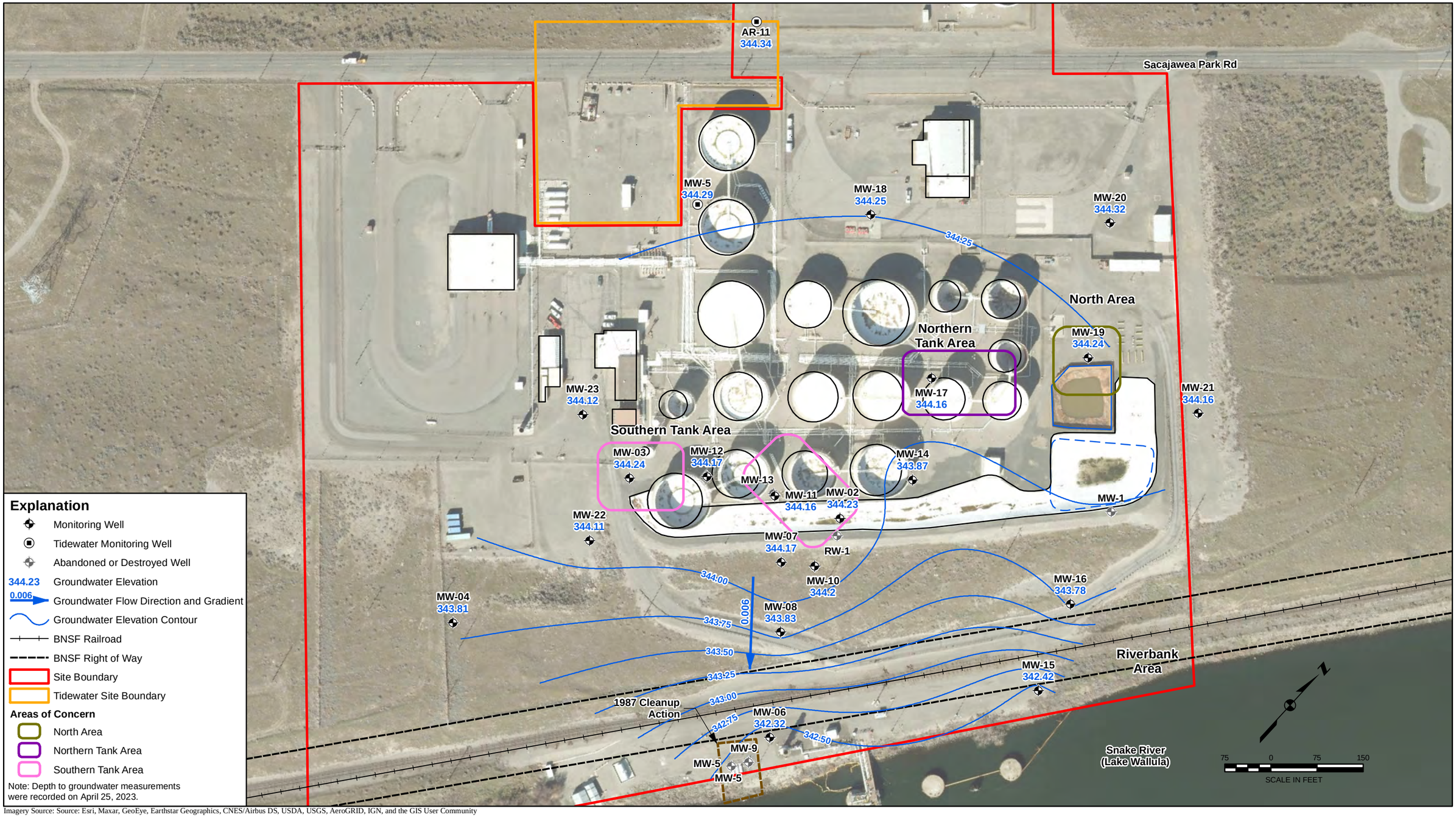
SITE MAP AND MONITORING WELLS PROPOSED FOR ORC DEPLOYMENT

TESORO LOGISTICS OPERATIONS LLC
CHEVRON PIPE LINE COMPANY PASCO BULK TERMINAL
PASCO, WASHINGTON

FIGURE 2



Imagery Source: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

K:\Tesoro_PascoMXD\2023_SA1_2_GWFig 3 Groundwater Elevation Contour Map - April 2023.mxd

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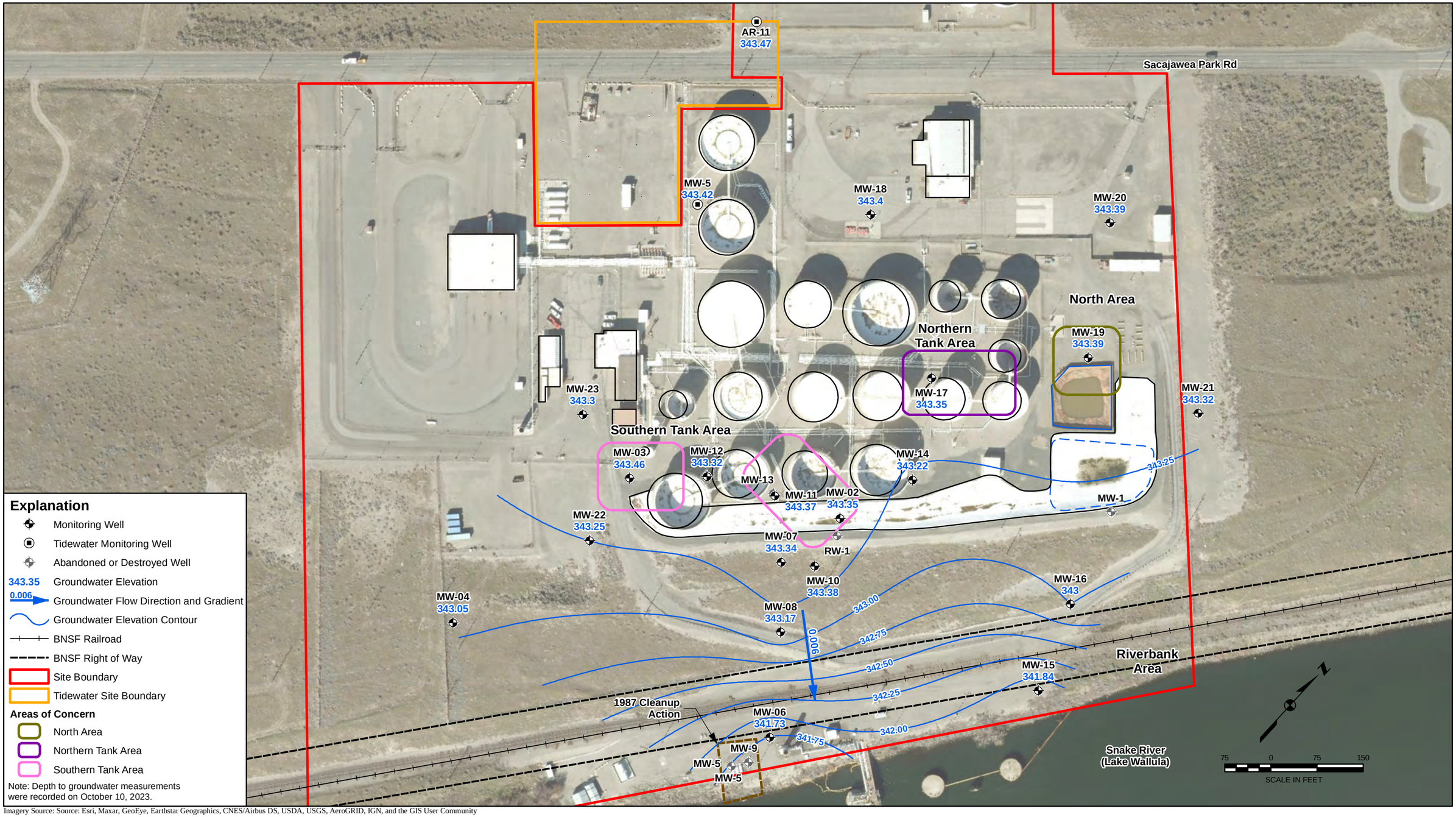
GROUNDWATER ELEVATION CONTOUR MAP - APRIL 2023

TESORO LOGISTICS OPERATIONS, LLC
CHEVRON PIPE LINE COMPANY BULK FUEL TERMINAL
PASCO, WASHINGTON

FIGURE 3



Imagery Source: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

K:\Tesoro_PascoMXD\2023_SA1_2_GWFig 4 Groundwater Elevation Contour Map - October 2023.mxd

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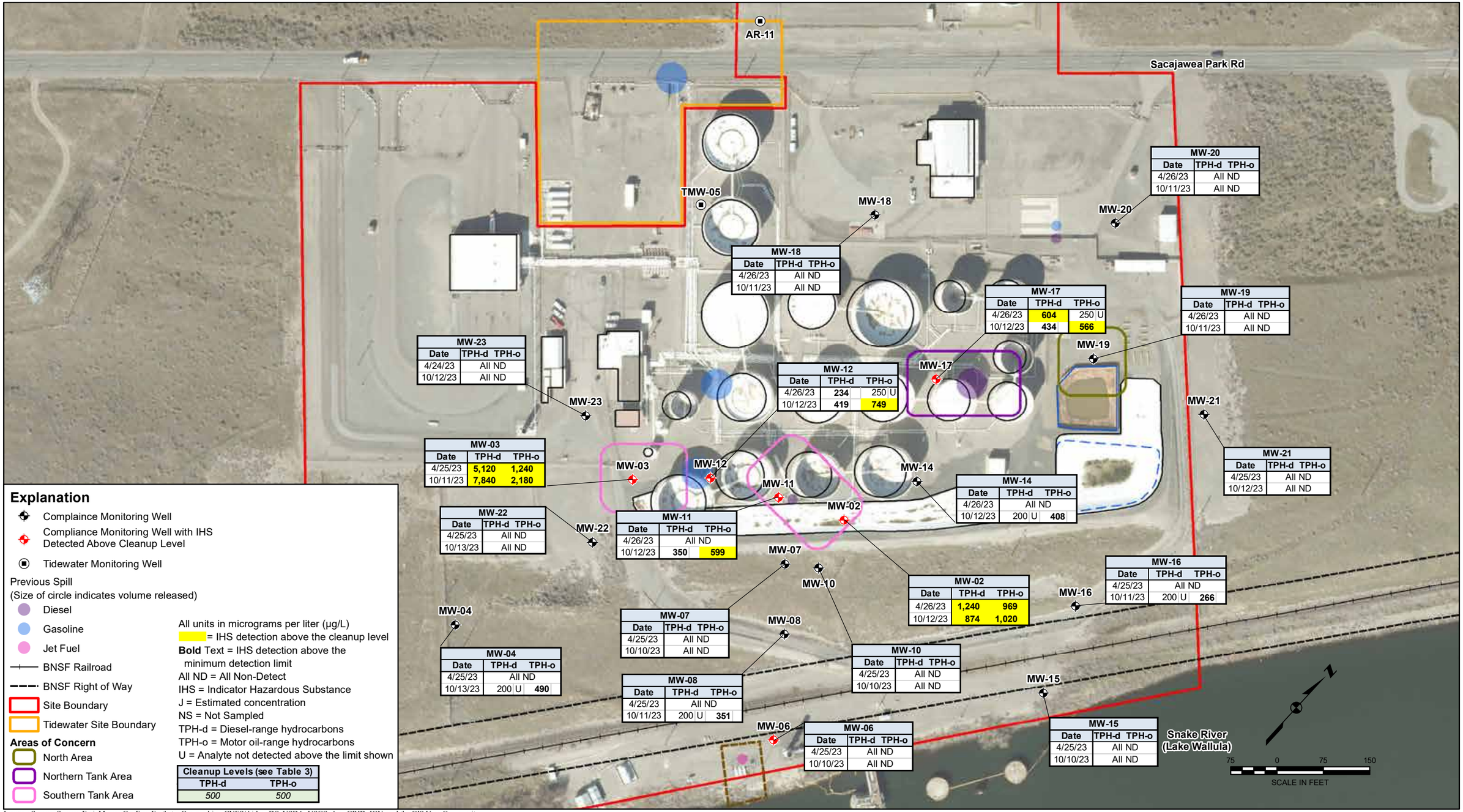
GROUNDWATER ELEVATION CONTOUR MAP - OCTOBER 2023

TESORO LOGISTICS OPERATIONS, LLC
CHEVRON PIPE LINE COMPANY BULK FUEL TERMINAL
PASCO, WASHINGTON

FIGURE 4



MW-20		
Date	TPH-d	TPH-o
4/26/23	All ND	
10/11/23	All ND	

MW-18		
Date	TPH-d	TPH-o
4/26/23	All ND	
10/11/23	All ND	

MW-17		
Date	TPH-d	TPH-o
4/26/23	**604**	250 U
10/12/23	**434**	**566**

MW-19		
Date	TPH-d	TPH-o
4/26/23	All ND	
10/11/23	All ND	

MW-23		
Date	TPH-d	TPH-o
4/24/23	All ND	
10/12/23	All ND	

MW-12		
Date	TPH-d	TPH-o
4/26/23	**234**	250 U
10/12/23	**419**	**749**

MW-21		
Date	TPH-d	TPH-o
4/25/23	All ND	
10/12/23	All ND	

MW-03		
Date	TPH-d	TPH-o
4/25/23	**5,120**	**1,240**
10/11/23	**7,840**	**2,180**

MW-14		
Date	TPH-d	TPH-o
4/26/23	All ND	
10/12/23	200 U	**408**

MW-22		
Date	TPH-d	TPH-o
4/25/23	All ND	
10/13/23	All ND	

MW-11		
Date	TPH-d	TPH-o
4/26/23	All ND	
10/12/23	**350**	**599**

MW-02		
Date	TPH-d	TPH-o
4/26/23	**1,240**	**969**
10/12/23	**874**	**1,020**

MW-16		
Date	TPH-d	TPH-o
4/25/23	All ND	
10/11/23	200 U	**266**

MW-07		
Date	TPH-d	TPH-o
4/25/23	All ND	
10/10/23	All ND	

MW-04		
Date	TPH-d	TPH-o
4/25/23	All ND	
10/13/23	200 U	**490**

MW-10		
Date	TPH-d	TPH-o
4/25/23	All ND	
10/10/23	All ND	

MW-08		
Date	TPH-d	TPH-o
4/25/23	All ND	
10/11/23	200 U	**351**

MW-15		
Date	TPH-d	TPH-o
4/25/23	All ND	
10/10/23	All ND	

MW-06		
Date	TPH-d	TPH-o
4/25/23	All ND	
10/10/23	All ND	

Explanation

- Complaince Monitoring Well
- Compliance Monitoring Well with IHS Detected Above Cleanup Level
- Tidewater Monitoring Well

Previous Spill
(Size of circle indicates volume released)
- Diesel
- Gasoline
- Jet Fuel
- BNSF Railroad
- BNSF Right of Way
- Site Boundary
- Tidewater Site Boundary

Areas of Concern
- North Area
- Northern Tank Area
- Southern Tank Area

All units in micrograms per liter (µg/L)
= IHS detection above the cleanup level
Bold Text = IHS detection above the minimum detection limit
All ND = All Non-Detect
IHS = Indicator Hazardous Substance
J = Estimated concentration
NS = Not Sampled
TPH-d = Diesel-range hydrocarbons
TPH-o = Motor oil-range hydrocarbons
U = Analyte not detected above the limit shown

Cleanup Levels (see Table 3)	
TPH-d	TPH-o
500	*500*

Imagery Source: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

K:\Tesoro_Pasco\MXD\2023_SA1_2_GWFig 3 2023 GW Data Summary Map.mxd

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GROUNDWATER ANALYTICAL DATA SUMMARY MAP

TESORO LOGISTICS OPERATIONS, LLC
CHEVRON PIPE LINE COMPANY PASCO BULK TERMINAL
PASCO, WASHINGTON

FIGURE

TABLES

Table 1. Compliance Monitoring Well and Initial Performance Monitoring Frequency - 2023
Chevron Pipe Line Company Pasco Bulk Terminal

		Monitoring and Sampling Program											
					IHS - Lab Analysis		Natural Attenuation - Field Analysis		Natural Attenuation - Lab Analysis				
Location / Well Type	**Well ID**	**Collect GW Level Measurements** (During both SA Events)	**Collect Samples** (During 1st SA Event in Spring)	**Collect Samples** (During 2nd SA Event in Fall)	**TPH-g, TPH-d, & TPH-o** (NWTPH-Gx / NWTPH-Dx)	**BTEX+N** (EPA 8260D)	**Field Parameters** (pH, Cond, DO, Temp, & ORP)	**Ferrous Iron & Nitrate** (Field Test Kits)	**Alkalinity** (SM 2320B)	**Sulfate** (anions) EPA 300)	**Methane** (dissolved gases) (RSKSOP-175)	**Dissolved Manganese** (lab-filtered) (EPA 6010B)
Site Compliance Monitoring Wells	MW-02	X	X	X	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA
	MW-03*	X	X	X	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA
	MW-04	X	X	X	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA
	MW-06*	X	X	X	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA
	MW-07	X	X	X	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA
	MW-08	X	X	X	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA
	MW-10	X	X	X	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA
	MW-11	X	X	X	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA
	MW-12	X	X	X	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA
	MW-14	X	X	X	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA
	MW-15	X	X	X	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA
	MW-16	X	X	X	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA
	MW-17	X	X	X	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA
	MW-18	X	X	X	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA
	MW-19*	X	X	X	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA
	MW-20	X	X	X	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA
	MW-21	X	X	X	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA
	MW-22	X	X	X	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA
	MW-23	X	X	X	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA
Tidewater Site Monitoring Wells	AR-11	X	--	--	--	--	--	--	--	--	--	--
	TMW-05	X	--	--	--	--	--	--	--	--	--	--

Notes:
* These well locations have been selected as potential sites for one field duplicate and/or extra volume collection for one MS/MSD for sampling events (as < 20 primary samples).

Acronyms:
-- = Not applicable, not available, or not sampled
bgs = below ground surface
BTEX+N = benzene, toluene, ethylbenzene, total xylenes and naphthalene
btoc = below top of casing
Cond = conductivity
DO = dissolved oxygen
EPA = US Environmental Protection Agency
ft = feet
GW = groundwater
IHS = indicator hazardous substance
MW = monitoring well
ORP = oxidation reduction potential
RSKSOP-175 = EPA Procedure RSKSOP-175 (Robert S. Kerr Standard Operating Procedure)
SA = semiannual
SM = Standard Method
TPH = total petroleum hydrocarbons
TPH-d = diesel range hydrocarbons (as analyzed by Northwest Method NWTPH-Dx)
TPH-g = gasoline range hydrocarbons (as analyzed by Northwest Method NWPTH-Gx)
TPH-o = motor oil range hydrocarbons (as analyzed by Northwest Method NWTPH-Dx)
X = collect or deploy as listed for that well

Table 2. Compliance Monitoring Well and Initial Performance Monitoring Frequency - 2024+
Chevron Pipe Line Company Pasco Bulk Terminal

		Monitoring and Sampling Program											
						IHS - Lab Analysis		Natural Attenuation Field Analysis		Natural Attenuation Lab Analysis			
Location / Well Type	**Well ID**	**Collect GW Level Measurements** (During both SA Events)	**Collect Samples** (During 1st SA Event in Spring)	**Deploy ORC Sleeves** (Over 6 months in Summer between two Events)	**Collect Samples** (During 2nd SA Event in Fall)	**TPH-g, TPH-d, & TPH-o** (NWTPH-Gx / NWTPH-Dx)	**BTEX+N** (EPA 8260D)	**Field Parameters** (pH, Cond, DO, Temp, & ORP)	**Ferrous Iron & Nitrate** (Field Test Kits)	**Alkalinity** (SM 2320B)	**Sulfate** (anions) EPA 300)	**Methane** (dissolved gases) (RSKSOP-175)	**Dissolved Manganese** (lab-filtered) (EPA 6010B)
Site Compliance Monitoring Wells	MW-02	X	X	X	--	1st SA only	1st SA only	1st SA only	1st SA only	1st SA only	1st SA only	1st SA only	1st SA only
	MW-03[*1SA]	X	X	X	--	1st SA only	1st SA only	1st SA only	1st SA only	1st SA only	1st SA only	1st SA only	1st SA only
	MW-04	X	X	--	X	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA
	MW-06[*2SA]	X	X	--	X	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA
	MW-07	X	X	--	X	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA
	MW-08	X	X	--	X	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA
	MW-10	X	X	--	X	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA
	MW-11	X	X	X	--	1st SA only	1st SA only	1st SA only	1st SA only	1st SA only	1st SA only	1st SA only	1st SA only
	MW-12	X	X	X	--	1st SA only	1st SA only	1st SA only	1st SA only	1st SA only	1st SA only	1st SA only	1st SA only
	MW-14	X	X	--	X	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA
	MW-15	X	X	--	X	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA
	MW-16	X	X	--	X	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA
	MW-17	X	X	X	--	1st SA only	1st SA only	1st SA only	1st SA only	1st SA only	1st SA only	1st SA only	1st SA only
	MW-18	X	X	--	X	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA
	MW-19[*1SA]	X	X	X	--	1st SA only	1st SA only	1st SA only	1st SA only	1st SA only	1st SA only	1st SA only	1st SA only
	MW-20	X	X	--	X	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA
	MW-21	X	X	--	X	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA
	MW-22	X	X	--	X	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA
	MW-23	X	X	--	X	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA	1st SA & 2nd SA
Tidewater Site Monitoring Wells	AR-11	X	--	--	--	--	--	--	--	--	--	--	--
	TMW-05	X	--	--	--	--	--	--	--	--	--	--	--

Notes:
MW-XX[*1SA] = These well locations have been selected as potential sites for one field duplicate and/or extra volume collection for one MS/MSD for the 1st semiannual event (as < 20 primary samples).
MW-XX[*2SA] = These well locations have been selected as potential sites for one field duplicate and/or extra volume collection for one MS/MSD for the 2nd semiannual event (as < 20 primary samples).

Acronyms:
-- = Not applicable, not available, or not sampled
bgs = below ground surface
BTEX+N = benzene, toluene, ethylbenzene, total xylenes and naphthalene
btoc = below top of casing
Cond = conductivity
DO = dissolved oxygen
EPA = US Environmental Protection Agency
ft = feet
GW = groundwater
IHS = indicator hazardous substance
MW = monitoring well
ORP = oxidation reduction potential
RSKSOP-175 = EPA Procedure RSKSOP-175 (Robert S. Kerr Standard Operating Procedure)
SA = semiannual
SM = Standard Method
TPH = total petroleum hydrocarbons
TPH-d = diesel range hydrocarbons (as analyzed by Northwest Method NWTPH-Dx)
TPH-g = gasoline range hydrocarbons (as analyzed by Northwest Method NWPTH-Gx)
TPH-o = motor oil range hydrocarbons (as analyzed by Northwest Method NWTPH-Dx)
X = collect or deploy as listed for that well

Table 3. Groundwater Elevations and Analytical Results - 2023
Chevron Pipe Line Company Pasco Bulk Fuel Terminal

Well ID	Sample Date	TOC Elevation	Depth to GW	GW Elevation	Change in GW Elevation	Indicator Hazardous Substances (IHSs)							
						TPH-g	TPH-d	TPH-o	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene
	Cleanup Levels [1]					*800/1,000*	*500*	*500*	*5*	*1,000*	*700*	*1,000*	*160*
	Units:	*ft NAVD29* [2]	*ft btoc*	*ft NAVD29* [2]	*ft*	*µg/L*	*µg/L*	*µg/L*	*µg/L*	*µg/L*	*µg/L*	*µg/L*	*µg/L*
Site Wells													
MW-02	4/26/23	417.23	73.00	344.23	-0.98	100 U	**1,240**	**969**	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
	10/12/23	417.23	73.88	343.35	0.88	100 U	**874**	**1,020**	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
MW-03	4/25/23	423.40	79.16	344.24	-1.00	100 U	**5,120**	**1,240**	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
	10/11/23	423.40	79.94	343.46	0.78	**140 J**	**7,840**	**2,180**	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
MW-04	4/25/23	412.05	68.24	343.81	-0.87	100 U	200 U	250 U	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
	10/13/23	412.05	69.00	343.05	0.76	100 U	200 U	**490**	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
MW-06	4/25/23	358.52	16.20	342.32	-0.55	100 U	200 U	250 U	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
	10/10/23	358.52	16.79	341.73	0.59	100 U	200 U	250 U	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
MW-07	4/25/23	411.32	67.15	344.17	-0.97	100 U	200 U	250 U	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
	10/10/23	411.32	67.98	343.34	0.83	100 U	200 U	250 U	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
MW-08	4/25/23	383.76	39.93	343.83	-1.10	100 U	200 U	250 U	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
	10/11/23	383.76	40.59	343.17	0.66	100 U	200 U	**351**	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
MW-10	4/25/23	407.83	63.63	344.20	-0.97	100 U	200 U	250 U	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
	10/10/23	407.83	64.45	343.38	-0.82	100 U	200 U	250 U	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
MW-11	4/26/23	423.44	79.28	344.16	-0.93	100 U	200 U	250 U	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
	10/12/23	423.44	80.07	343.37	0.79	100 U	**350**	**599**	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
MW-12	4/26/23	423.62	79.45	344.17	-0.92	100 U	**234**	250 U	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
	10/12/23	423.62	80.30	343.32	0.85	100 U	**419**	**749**	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
MW-14	4/26/23	421.84	77.97	343.87	-0.76	100 U	200 U	250 U	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
	10/12/23	421.84	78.62	343.22	0.65	100 U	200 U	**408**	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
MW-15	4/25/23	358.50	16.08	342.42	-0.55	100 U	200 U	250 U	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
	10/10/23	358.50	16.66	341.84	0.58	100 U	200 U	250 U	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
MW-16	4/25/23	370.92	27.14	343.78	-0.78	100 U	200 U	250 U	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
	10/11/23	370.92	27.92	343.00	0.78	100 U	200 U	**266**	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
MW-17	4/26/23	424.28	80.12	344.16	-0.92	100 U	**604**	250 U	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
	10/12/23	424.28	80.93	343.35	0.81	100 U	**434**	**566**	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
MW-18	4/26/23	423.69	79.44	344.25	-0.88	100 U	200 U	250 U	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
	10/11/23	423.69	80.29	343.40	0.85	100 U	200 U	250 U	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
MW-19	4/26/23	424.20	79.96	344.24	-0.96	100 U	200 U	250 U	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
	10/11/23	424.20	80.81	343.39	0.85	100 U	200 U	250 U	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
MW-20	4/26/23	426.52	83.43	343.09	-1.08	100 U	200 U	250 U	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
	10/11/23	426.52	83.13	343.39	0.95	100 U	200 U	250 U	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
MW-21	4/25/23	426.16	82.00	344.16	-1.07	100 U	200 U	250 U	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
	10/12/23	426.16	82.84	343.32	0.84	100 U	200 U	250 U	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
MW-22	4/25/23	420.45	76.34	344.11	-0.95	100 U	200 U	250 U	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
	10/13/23	420.45	77.20	343.25	0.86	100 U	200 U	250 U	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
MW-23	4/24/23	421.74	77.62	344.12	-0.91	100 U	200 U	250 U	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
	10/12/23	421.74	78.44	343.30	0.82	100 U	200 U	250 U	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
Tidewater Wells													
AR-11	4/24/23	422.62	78.28	344.34	-0.90	--	--	--	--	--	--	--	--
	10/9/23	422.62	79.15	343.47	0.87	--	--	--	--	--	--	--	--
MW-05	4/24/23	425.02	80.73	344.29	-0.90	--	--	--	--	--	--	--	--
	10/9/23	425.02	81.60	343.42	0.87	--	--	--	--	--	--	--	--

Notes:
Values in **bold** were reported as detected

Table 3. Groundwater Elevations and Analytical Results - 2023
Chevron Pipe Line Company Pasco Bulk Fuel Terminal

= Yellow shaded detections exceed the cleanup level
-- = not analyzed or sample not collected
(1) The Cleanup Levels are included in Table 1 of the *Compliance Monitoring Plan* (AECOM, 2023).
(2) On February 7, 2019, the wells were resurveyed by Stratton Surveying and Mapping, P.C. MW-20 through MW-23 were surveyed on December 10, 2019. Horizontal datum = Washington State Plane South Zone North American Datum 1983(1991). Vertical datum = North American Vertical Datum 29.

Acronyms:
µg/L = microgram per liter
btoc - below top of casing
ft = feet
GW = groundwater
J = estimated concentration
NAVD29 = North American Vertical Datum of 1929
TOC = top of casing
TPH-d = total petroleum hydrocarbons, diesel range
TPH-g = total petroleum hydrocarbons, gasoline range
TPH-o = total petroleum hydrocarbons, oil range
U = Analyte not detected above limit shown. Starting with data collected since April 2023, the limit shown is the method reporting limit.

Table 4. Field Parameters and Natural Attenuation Results – 2023
Chevron Pipe Line Company Pasco Bulk Fuel Terminal

Well ID	Well Location (relative to groundwater contaminant plume)	Sample Date	Field Measured Parameters							Laboratory Measured Parameters			
			pH	Conductivity	Dissolved Oxygen	Temperature	ORP	Ferrous Iron	Nitrate	Sulfate	Alkalinity	Manganese (Dissolved)	Methane
		Units:	*su*	*µS/cm*	*mg/L*	*deg C*	*mV*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*
MW-02	Inside	4/26/23	7.00	1,379	3.24	16.26	183.9	0.02 U	**14.6**	**86.4**	**541 J**	0.0100 U	0.0100 U
		10/12/23	7.35	1,460	3.68	15.72	155	**0.02** U	**11.2**	**88.3 J**	**671 J**	0.0100 U	0.0100 U
MW-03	Inside	4/25/23	7.34	1,367	0.49	16.06	-150.2	**0.66**	0.3 U	**71.2**	**455 J**	**0.580**	**0.336**
		10/11/23	7.30	1,310	2.56	16.84	-123	**2.78**	**3.7**	**27.9**	**595 J**	**0.734**	**2.07**
MW-04	Outside	4/25/23	7.77	1,027	8.27	16.12	27.4	0.02 U	**9.6**	**115**	**190 J**	0.0100 U	0.0100 U
		10/13/23	7.59	948	6.5	15.99	171	**0.02**	**28.6**	**109**	**195 J**	0.0100 U	0.0100 U
MW-06	Outside	4/25/23	7.58	1,137	10.04	15.12	148.4	0.02 U	**8.2**	**110**	**154 J**	0.0100 U	0.0100 U
		10/10/23	7.07	1,100	7.68	18.55	276	0.02 U	**3.3**	**109**	**175 J**	0.0100 U	0.0100 U
MW-07	Outside	4/25/23	7.66	1,055	8	16.67	67.1	0.02 U	**8.0**	**116**	**199 J**	0.0100 U	0.0100 U
		10/10/23	7.77	970	0.58	16.89	133	**0.05**	**23.5**	**110**	**203 J**	0.0100 U	0.0100 U
MW-08	Outside	4/25/23	7.52	1,044	8.54	16.77	110.8	0.02 U	**15**	**117**	**195 J**	0.0100 U	0.0100 U
		10/11/23	7.88	969	2.77	17.09	156	**0.02**	**24.3**	**110**	**200 J**	0.0100 U	0.0100 U
MW-10	Outside	4/25/23	7.53	1,055	7.91	16.43	86.3	0.02 U	**9.6**	**117**	**200 J**	0.0100 U	0.0100 U
		10/10/23	7.70	974	0.19	15.95	121	**0.04**	**26.3**	**110**	**193 J**	0.0100 U	0.0100 U
MW-11	Inside	4/26/23	6.89	1,079	5.08	16.65	196.1	0.02 U	**16.5**	**109**	**261 J**	**0.0731**	0.0100 U
		10/12/23	7.33	1,050	3.52	17.43	174	**0.03**	**19.6**	**98.9**	**298 J**	**0.113**	0.0100 U
MW-12	Inside	4/26/23	7.10	1,193	3.69	15.73	174.9	0.02 U	**4.5**	**113**	**321 J**	**0.0559**	0.0100 U
		10/12/23	7.13	1,440	0.98	16.69	270	0.02 U	0.3 U	**96.2**	**507 J**	**0.0357**	0.0100 U
MW-14	Outside	4/26/23	7.29	1,052	7.96	16.24	202.3	0.02 U	**18.6**	**119**	**207 J**	0.0100 U	0.0100 U
		10/12/23	7.36	1,030	5.94	16.72	278	**0.10**	**13**	**113**	**226 J**	0.0100 U	0.0100 U
MW-15	Outside	4/25/23	7.38	1,052	7.52	15.95	166.7	0.02 U	**8.6**	**119**	**204 J**	0.0100 U	0.0100 U
		10/10/23	7.01	998	5.16	17.52	302	0.02 U	0.3 U	**109**	**218 J**	0.0100 U	0.0100 U
MW-16	Outside	4/25/23	7.46	1,051	7.29	16.49	161.1	0.02 U	**19.6**	**117**	**205 J**	0.0100 U	0.0100 U
		10/11/23	7.61	1,000	6.26	16.56	270	0.02 U	**1.0**	**109 J**	**215 J**	0.0100 U	0.0100 U
MW-17	Inside	4/26/23	7.29	1,316	6.12	15.97	112.4	0.02 U	**12.3**	**146**	**272 J**	0.0100 U	0.0100 U
		10/12/23	7.23	1,200	4.63	16.23	153	0.02 U	**27.3**	**130**	**317 J**	0.0100 U	0.0100 U
MW-18	Outside	4/26/23	7.43	1,118	8.4	16.81	122.7	0.02 U	**6.2**	**123**	**221 J**	0.0100 U	0.0100 U
		10/11/23	7.35	1,140	7.9	17.07	320	**0.09**	**8.2**	**119**	**242 J**	0.0100 U	0.0100 U
MW-19	Inside	4/26/23	7.52	1,084	6.41	16.08	92.7	0.02 U	**9.0**	**112**	**228 J**	0.0100 U	0.0100 U
		10/11/23	7.27	1,040	5.23	16.66	294	**0.09**	**8.3**	**102**	**259 J**	0.0100 U	0.0100 U
MW-20	Outside	4/26/23	7.57	1,061	8.39	16.9	126.5	0.02 U	**11.6**	**120**	**192 J**	0.0100 U	0.0100 U
		10/11/23	7.56	996	8.35	17.38	315	0.02 U	**8.1**	**114**	**188 J**	0.0100 U	0.0100 U
MW-21	Outside	4/25/23	7.66	1,064	8.4	16.18	85.9	0.02 U	**7.4**	**116**	**195 J**	0.0100 U	0.0100 U
		10/12/23	7.44	1,010	8.09	16.08	315	0.02 U	**5.9**	**116**	**193 J**	0.0100 U	0.0100 U
MW-22	Outside	4/25/23	7.76	1,006	9.06	16.19	87.1	0.02 U	**16.1**	**110**	**196 J**	0.0100 U	0.0100 U
		10/13/23	7.41	966	8.38	16.38	302	**0.09**	**5.4**	**108**	**194 J**	0.0100 U	0.0100 U
MW-23	Outside	4/24/23	7.62	1,019	8.69	16.51	46.4	0.02 U	**19.3**	**110**	**196 J**	0.0100 U	0.0100 U
		10/12/23	7.52	987	6.37	18.94	290	**0.08**	**8.0**	**109**	**197 J**	0.0100 U	0.0100 U

Notes:
Values in **bold** were detected above the detection limit
-- = not analyzed or sample not collected

Acronyms:
deg C = degrees Celsius
J = estimated concentration
mg/L = milligrams per liter
mS/cm = millisiemens per centimeter
µS/cm = microsiemens per centimeter
mV = millivolts
ORP = Oxidation Reduction Potential
su = Standard Unit
U = analyte not detected above limit shown

APPENDIX A

Field Forms

AECOM

Groundwater Level Form

Chevron Pipe Line Company Pasco Bulk Terminal

Well ID	Well location	Task	Date/ Time	Depth to Water (ft btoc)	Comments	Measured By
MW-02	SCMW	2023-Q2-WL	4/24/23 12:52 PM	73.00		Christopher Selders
MW-03	SCMW	2023-Q2-WL	4/24/23 12:28 PM	79.16		Christopher Selders
MW-04	SCMW	2023-Q2-WL	4/24/23 12:12 PM	68.24		Christopher Selders
MW-06	SCMW	2023-Q2-WL	4/24/23 1:35 PM	16.20		Christopher Selders
MW-07	SCMW	2023-Q2-WL	4/24/23 1:12 PM	67.15		Christopher Selders
MW-08	SCMW	2023-Q2-WL	4/24/23 1:25 PM	39.93		Christopher Selders
MW-10	SCMW	2023-Q2-WL	4/24/23 1:17 PM	63.63		Christopher Selders
MW-11	SCMW	2023-Q2-WL	4/24/23 12:39 PM	79.28		Christopher Selders
MW-12	SCMW	2023-Q2-WL	4/24/23 12:34 PM	79.45		Christopher Selders
MW-14	SCMW	2023-Q2-WL	4/24/23 12:45 PM	77.97		Christopher Selders
MW-15	SCMW	2023-Q2-WL	4/24/23 1:40 PM	16.08		Christopher Selders
MW-16	SCMW	2023-Q2-WL	4/24/23 1:45 PM	27.14		Christopher Selders
MW-17	SCMW	2023-Q2-WL	4/24/23 12:58 PM	80.12		Christopher Selders
MW-18	SCMW	2023-Q2-WL	4/24/23 2:19 PM	79.44		Christopher Selders
MW-19	SCMW	2023-Q2-WL	4/24/23 2:07 PM	79.96		Christopher Selders
MW-20	SCMW	2023-Q2-WL	4/24/23 2:27 PM	83.43		Christopher Selders
MW-21	SCMW	2023-Q2-WL	4/24/23 2:37 PM	82.00		Christopher Selders
MW-22	SCMW	2023-Q2-WL	4/24/23 12:20 PM	76.34		Christopher Selders
MW-23	SCMW	2023-Q2-WL	4/24/23 12:02 PM	77.62		Christopher Selders
AR-11	TSMW	2023-Q2-WL	4/24/23 2:52 PM	78.28		Christopher Selders
TMW-05	TSMW	2023-Q2-WL	4/24/23 3:23 PM	80.73		Christopher Selders

ft btoc = below top of casing
Site Compliance Monitoring Well = SCMW
Tidewater Site Monitoring Well = TSMW

GROUNDWATER SAMPLING LOG

Client:	Marathon Petroleum Corporation (MPC)	Project #:	
Site:	Chevron Pipe Line Company Pasco Bulk Fuel Terminal	Event:	2023-Q2-GW

Sample Information			
Sample ID:	MW-02-20230426	Date:	4/26/2023 2:20:00 PM
Well ID:	MW-02	Location Type:	Monitoring Well
Duplicate ID:		Sampler:	Christopher Selders
Equipment:	Field param meter: In-Situ AquaTroll 600 # 466586 WL/int meter: Durham Geo Slope Indicator # U91457X		
Comments:	Purge rate 20/10 @ 45 psi		

Well Information			
Well Completion:	Stick-up	Well Diameter:	4
Total Depth (ft bgs):	83.3	Screen Interval (ft bgs):	63.3000 - 83.3000
SAP Pump Depth (ft btoc):	77		

Water Level			
Date:	4/26/2023 1:18:00 PM	Measured Well Depth:	NM
Is Well Dry?	No	Depth to Water:	73.00 ft
Notes:			

Purge Information			
Begin Date and Time:	4/26/2023 1:25:00 PM	End Date and Time:	4/26/2023 2:05:00 PM
Initial Pump Depth:	Not Recorded	Final Pump Depth:	Not Recorded
Purge Method:	Low flow	Sample Method:	
Notes:			

Natural Attenuation Field Parameters			
Ferrous Iron (mg/L):	0	Nitrate (mg/L):	14.6

Time	Purge Rate (ml/min)	Purge Volume (ml)	Cumulative Purge Volume (ml)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)
1:35 PM	450	4500	4500	73.15	16.29	7.22	1386	3.97	158	0
1:40 PM	450	2250	6750	73.15	16.28	7.15	1386	3.85	165.4	0
1:45 PM	450	2250	9000	73.15	16.37	7.12	1382	3.75	170.8	0
1:50 PM	450	2250	11250	73.15	16.38	7.08	1381	3.56	175.2	0
1:55 PM	450	2250	13500	73.15	16.35	7.05	1381	3.5	178.6	0
2:00 PM	450	2250	15750	73.15	16.29	7.02	1381	3.35	181.6	0
2:05 PM	450	2250	18000	73.15	16.26	7	1379	3.24	183.9	0

GROUNDWATER SAMPLING LOG

Client:	Marathon Petroleum Corporation (MPC)	Project #:	
Site:	Chevron Pipe Line Company Pasco Bulk Fuel Terminal	Event:	2023-Q2-GW

Sample Information			
Sample ID:	MW-03-20230425	Date:	4/25/2023 9:10:00 AM
Well ID:	MW-03	Location Type:	Monitoring Well
Duplicate ID:	MW-103-20230425	Sampler:	Edward Lecocq
Equipment:	Field param meter: In-Situ AquaTroll 600 # 697401 WL/int meter: Durham Geo Slope Indicator # MP30 U49485X		
Comments:	20/10 @ 50 psi		

Well Information			
Well Completion:	Stick-up	Well Diameter:	4
Total Depth (ft bgs):	94.95	Screen Interval (ft bgs):	74.9500 - 94.9500
SAP Pump Depth (ft btoc):	85		

Water Level			
Date:	4/25/2023 8:23:00 AM	Measured Well Depth:	NM
Is Well Dry?	No	Depth to Water:	79.09 ft
Notes:			

Purge Information			
Begin Date and Time:	4/25/2023 8:27:00 AM	End Date and Time:	4/25/2023 9:08:00 AM
Initial Pump Depth:		Final Pump Depth:	
Purge Method:	Low flow	Sample Method:	
Notes:			

Natural Attenuation Field Parameters			
Ferrous Iron (mg/L):	0.66	Nitrate (mg/L):	0

Time	Purge Rate (ml/min)	Purge Volume (ml)	Cumulative Purge Volume (ml)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)
8:38 AM	250	2750	2750	79.12	14.1	7.69	1500	9.11	182.5	12.04
8:43 AM	250	1250	4000	79.1	15.68	7.37	1382	1.75	-167.5	4.53
8:48 AM	250	1250	5250	79.09	15.78	7.32	1370	0.6	-167	1.67
8:53 AM	250	1250	6500	79.13	15.92	7.33	1372	0.41	-162.2	1.35
8:58 AM	250	1250	7750	79.14	15.97	7.33	1372	0.43	-158	1.53
9:03 AM	250	1250	9000	79.17	16.02	7.33	1371	0.45	-153.4	1.03
9:08 AM	250	1250	10250	79.12	16.06	7.34	1367	0.49	-150.2	1.5

GROUNDWATER SAMPLING LOG

Client:	Marathon Petroleum Corporation (MPC)	Project #:	
Site:	Chevron Pipe Line Company Pasco Bulk Fuel Terminal	Event:	2023-Q2-GW

Sample Information			
Sample ID:	MW-04-20230425	Date:	4/25/2023 11:05:00 AM
Well ID:	MW-04	Location Type:	Monitoring Well
Duplicate ID:		Sampler:	Edward Lecocq
Equipment:	Field param meter: In-Situ AquaTroll 600 # 697401 WL/int meter: Durham Geo Slope Indicator # MP30 U49485X		
Comments:	20/10 @ 50 psi		

Well Information			
Well Completion:	Stick-up	Well Diameter:	4
Total Depth (ft bgs):	76.75	Screen Interval (ft bgs):	56.7500 - 76.7500
SAP Pump Depth (ft btoc):	72		

Water Level			
Date:	4/25/2023 10:28:00 AM	Measured Well Depth:	NM
Is Well Dry?	No	Depth to Water:	68.22 ft
Notes:			

Purge Information			
Begin Date and Time:	4/25/2023 10:29:00 AM	End Date and Time:	4/25/2023 11:03:00 AM
Initial Pump Depth:		Final Pump Depth:	
Purge Method:	Low flow	Sample Method:	
Notes:			

Natural Attenuation Field Parameters			
Ferrous Iron (mg/L):	0	Nitrate (mg/L):	9.6

Time	Purge Rate (ml/min)	Purge Volume (ml)	Cumulative Purge Volume (ml)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)
10:33 AM	340	1360	1360	68.23	16.05	8.07	988	9.85	-28.8	3.17
10:38 AM	340	1700	3060	68.21	16.26	7.77	1035	8.28	6.8	0.51
10:43 AM	340	1700	4760	68.22	16.23	7.77	1035	8.28	11.8	0.64
10:48 AM	340	1700	6460	68.23	16.16	7.78	1037	8.23	16	0.72
10:53 AM	340	1700	8160	68.22	16.14	7.78	1034	8.18	19.8	0.55
10:58 AM	340	1700	9860	68.23	16.17	7.78	1038	8.2	23.1	2.03
11:03 AM	340	1700	11560	68.23	16.12	7.77	1027	8.27	27.4	0.01

GROUNDWATER SAMPLING LOG

Client:	Marathon Petroleum Corporation (MPC)	Project #:	
Site:	Chevron Pipe Line Company Pasco Bulk Fuel Terminal	Event:	2023-Q2-GW

Sample Information			
Sample ID:	MW-06-20230425	Date:	4/25/2023 2:10:00 PM
Well ID:	MW-06	Location Type:	Monitoring Well
Duplicate ID:		Sampler:	Christopher Selders
Equipment:	Field param meter: In-Situ AquaTroll 600 # 466586 WL/int meter: Durham Geo Slope Indicator # Geotech U91457X		
Comments:	Purge rate 20/10 @ 20 psi		

Well Information			
Well Completion:	Stick-up	Well Diameter:	2
Total Depth (ft bgs):	25	Screen Interval (ft bgs):	8.5000 - 23.5000
SAP Pump Depth (ft btoc):	21		

Water Level			
Date:	4/25/2023 12:57:00 PM	Measured Well Depth:	26.92 ft
Is Well Dry?	No	Depth to Water:	16.26 ft
Notes:			

Purge Information			
Begin Date and Time:	4/25/2023 1:05:00 PM	End Date and Time:	4/25/2023 2:05:00 PM
Initial Pump Depth:	Not Recorded	Final Pump Depth:	Not Recorded
Purge Method:	Low flow	Sample Method:	
Notes:			

Natural Attenuation Field Parameters			
Ferrous Iron (mg/L):	0	Nitrate (mg/L):	8.2

Time	Purge Rate (ml/min)	Purge Volume (ml)	Cumulative Purge Volume (ml)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)
1:10 PM	275	1375	1375	16.29	15.13	7.84	1128	10.38	112.9	13.05
1:15 PM	275	1375	2750	16.29	14.96	7.78	1144	10.4	119.5	0
1:20 PM	275	1375	4125	16.29	14.93	7.73	1108	10.22	124.9	0
1:25 PM	275	1375	5500	16.29	15.06	7.7	1142	10.06	128.5	0
1:30 PM	275	1375	6875	16.29	15.1	7.67	1141	10.17	132.2	0
1:35 PM	275	1375	8250	16.29	15.05	7.65	1143	10.29	135.1	0
1:40 PM	275	1375	9625	16.29	15.07	7.63	1048	10.29	138.3	0
1:45 PM	275	1375	11000	16.29	14.99	7.62	1139	10.15	140.8	0
1:50 PM	275	1375	12375	16.29	15.05	7.61	1139	10.4	143.3	0
1:55 PM	275	1375	13750	16.29	15.2	7.6	1137	10.22	144.9	0

AECOM

GROUNDWATER SAMPLING LOG

Time	Purge Rate (ml/min)	Purge Volume (ml)	Cumulative Purge Volume (ml)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	
2:00 PM	275	1375	15125	16.29	15.2	7.59	1136	10.12	146.6	0	
2:05 PM	275	1375	16500	16.29	15.12	7.58	1137	10.04	148.4	0	

GROUNDWATER SAMPLING LOG

Client:	Marathon Petroleum Corporation (MPC)	Project #:	
Site:	Chevron Pipe Line Company Pasco Bulk Fuel Terminal	Event:	2023-Q2-GW

Sample Information			
Sample ID:	MW-07-20230425	Date:	4/25/2023 2:34:00 PM
Well ID:	MW-07	Location Type:	Monitoring Well
Duplicate ID:		Sampler:	Edward Lecocq
Equipment:	Field param meter: In-Situ AquaTroll 600 # 697401 WL/int meter: Durham Geo Slope Indicator # MP30 U49485X		
Comments:	20/10 @ 45 psi		

Well Information			
Well Completion:	Stick-up	Well Diameter:	2
Total Depth (ft bgs):	79	Screen Interval (ft bgs):	57.0000 - 77.0000
SAP Pump Depth (ft btoc):	72		

Water Level			
Date:	4/25/2023 1:54:00 PM	Measured Well Depth:	NM
Is Well Dry?	No	Depth to Water:	67.09 ft
Notes:			

Purge Information			
Begin Date and Time:	4/25/2023 1:55:00 PM	End Date and Time:	4/25/2023 2:32:00 PM
Initial Pump Depth:		Final Pump Depth:	
Purge Method:	Low flow	Sample Method:	
Notes:			

Natural Attenuation Field Parameters			
Ferrous Iron (mg/L):	0	Nitrate (mg/L):	8

Time	Purge Rate (ml/min)	Purge Volume (ml)	Cumulative Purge Volume (ml)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)
2:02 PM	370	2590	2590	67.1	22.24	13.99	785	8.35	39.4	2.02
2:07 PM	370	1850	4440	67.11	16.88	7.53	1054	8.03	64.1	1.04
2:12 PM	370	1850	6290	67.1	16.7	7.59	1051	8.16	64.6	3.74
2:17 PM	370	1850	8140	67.1	16.57	7.63	1051	8.12	64.4	1.31
2:22 PM	370	1850	9990	67.1	16.61	7.64	1052	8.03	65	0.25
2:27 PM	370	1850	11840	67.1	16.51	7.66	1052	8.16	66.7	0.1
2:32 PM	370	1850	13690	67.12	16.67	7.66	1055	8	67.1	0

GROUNDWATER SAMPLING LOG

Client:	Marathon Petroleum Corporation (MPC)	Project #:	
Site:	Chevron Pipe Line Company Pasco Bulk Fuel Terminal	Event:	2023-Q2-GW

Sample Information			
Sample ID:	MW-08-20230425	Date:	4/25/2023 11:50:00 AM
Well ID:	MW-08	Location Type:	Monitoring Well
Duplicate ID:		Sampler:	Christopher Selders
Equipment:	Field param meter: In-Situ AquaTroll 600 # 466586 WL/int meter: Durham Geo Slope Indicator # Geotech U91457X		
Comments:	Purge rate 20/10 @ 40 psi		

Well Information			
Well Completion:	Stick-up	Well Diameter:	2
Total Depth (ft bgs):	56	Screen Interval (ft bgs):	29.0000 - 54.0000
SAP Pump Depth (ft btoc):	44		

Water Level			
Date:	4/25/2023 10:58:00 AM	Measured Well Depth:	55.50 ft
Is Well Dry?	No	Depth to Water:	39.76 ft
Notes:			

Purge Information			
Begin Date and Time:	4/25/2023 11:01:00 AM	End Date and Time:	4/25/2023 11:45:00 AM
Initial Pump Depth:	Not Recorded	Final Pump Depth:	Not Recorded
Purge Method:	Low flow	Sample Method:	
Notes:			

Natural Attenuation Field Parameters			
Ferrous Iron (mg/L):	0	Nitrate (mg/L):	15

Time	Purge Rate (ml/min)	Purge Volume (ml)	Cumulative Purge Volume (ml)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)
11:10 AM	275	2475	2475	39.8	17.15	7.9	1058	9.53	86.5	0
11:15 AM	275	1375	3850	39.8	16.68	7.7	1041	8.65	94.7	0
11:20 AM	275	1375	5225	39.8	16.64	7.65	1041	8.74	99.1	0
11:25 AM	275	1375	6600	39.8	16.59	7.62	1042	8.84	102	0
11:30 AM	275	1375	7975	39.8	16.64	7.58	1042	8.71	104.6	0
11:35 AM	275	1375	9350	39.8	16.58	7.56	1043	8.62	106.8	0
11:40 AM	275	1375	10725	39.8	16.71	7.54	1041	8.93	108.8	0
11:45 AM	275	1375	12100	39.8	16.77	7.52	1044	8.54	110.8	0

GROUNDWATER SAMPLING LOG

Client:	Marathon Petroleum Corporation (MPC)	Project #:	
Site:	Chevron Pipe Line Company Pasco Bulk Fuel Terminal	Event:	2023-Q2-GW

Sample Information			
Sample ID:	MW-10-20230425	Date:	4/25/2023 1:05:00 PM
Well ID:	MW-10	Location Type:	Monitoring Well
Duplicate ID:		Sampler:	Edward Lecocq
Equipment:	Field param meter: In-Situ AquaTroll 600 # 697401 WL/int meter: Durham Geo Slope Indicator # MP30 U49485X		
Comments:	20/10 @ 45 psi		

Well Information			
Well Completion:	Stick-up	Well Diameter:	4
Total Depth (ft bgs):	78.25	Screen Interval (ft bgs):	55.0000 - 76.0000
SAP Pump Depth (ft btoc):	68		

Water Level			
Date:	4/25/2023 12:19:00 PM	Measured Well Depth:	NM
Is Well Dry?	No	Depth to Water:	63.57 ft
Notes:			

Purge Information			
Begin Date and Time:	4/25/2023 12:25:00 PM	End Date and Time:	4/25/2023 1:03:00 PM
Initial Pump Depth:		Final Pump Depth:	
Purge Method:	Low flow	Sample Method:	
Notes:			

Natural Attenuation Field Parameters			
Ferrous Iron (mg/L):	0	Nitrate (mg/L):	9.6

Time	Purge Rate (ml/min)	Purge Volume (ml)	Cumulative Purge Volume (ml)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)
12:33 PM	340	2720	2720	63.58	17.3	7.47	1117	9.18	109	2.34
12:38 PM	340	1700	4420	63.53	16.44	7.45	1059	8.02	98.6	0.11
12:43 PM	340	1700	6120	63.53	16.4	7.47	1055	8	91.9	0
12:48 PM	340	1700	7820	63.52	16.47	7.48	1055	7.9	90	0
12:53 PM	340	1700	9520	63.53	16.38	7.5	1054	7.98	88.6	0
12:58 PM	340	1700	11220	63.52	16.45	7.52	1054	7.93	86.8	0
1:03 PM	340	1700	12920	63.54	16.43	7.53	1055	7.91	86.3	0

GROUNDWATER SAMPLING LOG

Client:	Marathon Petroleum Corporation (MPC)	Project #:	
Site:	Chevron Pipe Line Company Pasco Bulk Fuel Terminal	Event:	2023-Q2-GW

Sample Information			
Sample ID:	MW-11-20230426	Date:	4/26/2023 11:45:00 AM
Well ID:	MW-11	Location Type:	Monitoring Well
Duplicate ID:		Sampler:	Christopher Selders
Equipment:	Field param meter: In-Situ AquaTroll 600 # 466586 WL/int meter: Durham Geo Slope Indicator # U91457X		
Comments:	Purge rate 20/10 @ 50 psi		

Well Information			
Well Completion:	Stick-up	Well Diameter:	2
Total Depth (ft bgs):	84.5	Screen Interval (ft bgs):	74.5000 - 84.5000
SAP Pump Depth (ft btoc):	83		

Water Level			
Date:	4/26/2023 10:51:00 AM	Measured Well Depth:	NM
Is Well Dry?	No	Depth to Water:	79.30 ft
Notes:			

Purge Information			
Begin Date and Time:	4/26/2023 10:57:00 AM	End Date and Time:	4/26/2023 11:40:00 AM
Initial Pump Depth:	Not Recorded	Final Pump Depth:	Not Recorded
Purge Method:	Low flow	Sample Method:	
Notes:			

Natural Attenuation Field Parameters			
Ferrous Iron (mg/L):	0	Nitrate (mg/L):	16.5

Time	Purge Rate (ml/min)	Purge Volume (ml)	Cumulative Purge Volume (ml)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)
11:00 AM	325	975	975	79.32	17.72	7	1118	7.84	165.6	0
11:05 AM	325	1625	2600	79.45	17.43	6.76	1318	1.64	171.5	25.49
11:11 AM	325	1950	4550	79.45	16.64	6.85	1147	3.46	178.9	0.03
11:15 AM	325	1300	5850	79.45	16.66	6.88	1108	4.14	183.8	0
11:20 AM	325	1625	7475	79.45	16.68	6.88	1100	4.5	186.3	0
11:25 AM	325	1625	9100	79.45	16.69	6.87	1092	4.72	190.1	0
11:30 AM	325	1625	10725	79.45	16.72	6.88	1087	4.82	192.4	0
11:35 AM	325	1625	12350	79.45	16.73	6.88	1084	5.03	194.6	0
11:40 AM	325	1625	13975	79.45	16.65	6.89	1079	5.08	196.1	0

GROUNDWATER SAMPLING LOG

Client:	Marathon Petroleum Corporation (MPC)	Project #:	
Site:	Chevron Pipe Line Company Pasco Bulk Fuel Terminal	Event:	2023-Q2-GW

Sample Information			
Sample ID:	MW-12-20230426	Date:	4/26/2023 9:20:00 AM
Well ID:	MW-12	Location Type:	Monitoring Well
Duplicate ID:		Sampler:	Christopher Selders
Equipment:	Field param meter: In-Situ AquaTroll 600 # 466586 WL/int meter: Durham Geo Slope Indicator # U91457X		
Comments:	MS/MSD	Purge rate 40/20 @ 45 psi	

Well Information			
Well Completion:	Stick-up	Well Diameter:	2
Total Depth (ft bgs):	85	Screen Interval (ft bgs):	33.0000 - 60.0000
SAP Pump Depth (ft btoc):	83.5		

Water Level			
Date:	4/26/2023 8:12:00 AM	Measured Well Depth:	NM
Is Well Dry?	No	Depth to Water:	79.47 ft
Notes:			

Purge Information			
Begin Date and Time:	4/26/2023 8:25:00 AM	End Date and Time:	4/26/2023 9:10:00 AM
Initial Pump Depth:	Not Recorded	Final Pump Depth:	Not Recorded
Purge Method:	Low flow	Sample Method:	
Notes:			

Natural Attenuation Field Parameters			
Ferrous Iron (mg/L):	0	Nitrate (mg/L):	4.5

Time	Purge Rate (ml/min)	Purge Volume (ml)	Cumulative Purge Volume (ml)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)
8:30 AM	300	1500	1500	79.5	13.94	7.31	1262	9.59	160.2	0
8:35 AM	300	1500	3000	79.6	15.55	7.01	1290	2.42	168.7	7.31
8:40 AM	300	1500	4500	79.6	15.62	7.05	1235	2.52	171.9	0
8:45 AM	300	1500	6000	79.6	15.59	7.08	1215	2.76	172.8	0
8:50 AM	300	1500	7500	79.65	15.61	7.09	1203	3.16	173.5	0
8:55 AM	300	1500	9000	79.65	15.64	7.09	1198	3.22	174.3	0
9:00 AM	300	1500	10500	79.65	15.71	7.1	1195	3.3	174.4	0
9:05 AM	300	1500	12000	79.65	15.72	7.1	1193	3.5	174.8	0
9:10 AM	300	1500	13500	79.65	15.73	7.1	1193	3.69	174.9	0

GROUNDWATER SAMPLING LOG

Client:	Marathon Petroleum Corporation (MPC)	Project #:	
Site:	Chevron Pipe Line Company Pasco Bulk Fuel Terminal	Event:	2023-Q2-GW

Sample Information			
Sample ID:	MW-14-30230426	Date:	4/26/2023 4:05:00 PM
Well ID:	MW-14	Location Type:	Monitoring Well
Duplicate ID:		Sampler:	Christopher Selders
Equipment:	Field param meter: In-Situ AquaTroll 600 # 466586 WL/int meter: Durham Geo Slope Indicator # U91457X		
Comments:	Purge rate 20/10 @ 50 psi		

Well Information			
Well Completion:	Stick-up	Well Diameter:	2
Total Depth (ft bgs):	82.5	Screen Interval (ft bgs):	27.5000 - 53.0000
SAP Pump Depth (ft btoc):	82		

Water Level			
Date:	4/26/2023 2:58:00 PM	Measured Well Depth:	NM
Is Well Dry?	No	Depth to Water:	77.77 ft
Notes:			

Purge Information			
Begin Date and Time:	4/26/2023 2:59:00 PM	End Date and Time:	4/26/2023 3:55:00 PM
Initial Pump Depth:	Not Recorded	Final Pump Depth:	
Purge Method:	Low flow	Sample Method:	
Notes:			

Natural Attenuation Field Parameters			
Ferrous Iron (mg/L):	0	Nitrate (mg/L):	18.6

Time	Purge Rate (ml/min)	Purge Volume (ml)	Cumulative Purge Volume (ml)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)
3:10 PM	500	5500	5500	77.8	16.19	7.46	1061	7.89	149.1	90.38
3:15 PM	500	2500	8000	77.8	16.21	7.48	1056	7.61	161.2	26.44
3:20 PM	500	2500	10500	77.8	16.19	7.4	1054	7.58	172.1	22.6
3:25 PM	500	2500	13000	77.8	16.18	7.35	1054	7.81	180.1	13.08
3:30 PM	500	2500	15500	77.8	16.22	7.34	1053	7.7	185.9	6.19
3:35 PM	500	2500	18000	77.8	16.3	7.33	1053	7.94	189.6	9.13
3:40 PM	500	2500	20500	77.8	16.32	7.31	1052	7.9	194	8.84
3:45 PM	500	2500	23000	77.8	16.34	7.3	1053	7.89	197.3	0.84
3:50 PM	500	2500	25500	77.8	16.24	7.3	1053	7.76	200.1	0.88
3:55 PM	500	2500	28000	77.8	16.24	7.29	1052	7.96	202.3	0

GROUNDWATER SAMPLING LOG

Client:	Marathon Petroleum Corporation (MPC)	Project #:	
Site:	Chevron Pipe Line Company Pasco Bulk Fuel Terminal	Event:	2023-Q2-GW

Sample Information			
Sample ID:	MW-15-20230425	Date:	4/25/2023 4:10:00 PM
Well ID:	MW-15	Location Type:	Monitoring Well
Duplicate ID:		Sampler:	Christopher Selders
Equipment:	Field param meter: In-Situ AquaTroll 600 # 466586 WL/int meter: Durham Geo Slope Indicator # Geotech U91457X		
Comments:	Purge rate 20/10 @ 20 psi		

Well Information			
Well Completion:	Stick-up	Well Diameter:	2
Total Depth (ft bgs):	23.5	Screen Interval (ft bgs):	8.5000 - 23.5000
SAP Pump Depth (ft btoc):	20.5		

Water Level			
Date:	4/25/2023 3:06:00 PM	Measured Well Depth:	NM
Is Well Dry?	No	Depth to Water:	16.16 ft
Notes:			

Purge Information			
Begin Date and Time:	4/25/2023 3:10:00 PM	End Date and Time:	4/25/2023 4:05:00 PM
Initial Pump Depth:	Not Recorded	Final Pump Depth:	Not Recorded
Purge Method:	Low flow	Sample Method:	
Notes:			

Natural Attenuation Field Parameters			
Ferrous Iron (mg/L):	0	Nitrate (mg/L):	8.6

Time	Purge Rate (ml/min)	Purge Volume (ml)	Cumulative Purge Volume (ml)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)
3:15 PM	250	1250	1250	16.21	16.36	7.65	1055	7.31	126.3	172.3
3:20 PM	250	1250	2500	16.21	16.11	7.6	1055	7.23	132.5	69.15
3:25 PM	250	1250	3750	16.21	16.2	7.59	1055	7.42	136	43.46
3:30 PM	250	1250	5000	16.21	16.13	7.56	1054	7.3	141.3	25.73
3:35 PM	250	1250	6250	16.21	16.18	7.52	1046	7.57	145.5	17
3:40 PM	250	1250	7500	16.21	16.05	7.5	1054	7.4	149.5	11.56
3:45 PM	250	1250	8750	16.21	16.04	7.47	1053	7.52	154	9.62
3:50 PM	250	1250	10000	16.21	15.92	7.44	1049	7.49	157.7	8.59
3:55 PM	250	1250	11250	16.21	15.94	7.42	1047	7.53	160.8	7.24

AECOM

GROUNDWATER SAMPLING LOG

Time	Purge Rate (ml/min)	Purge Volume (ml)	Cumulative Purge Volume (ml)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)
4:00 PM	250	1250	12500	16.21	15.93	7.4	1046	7.73	164	4.98
4:05 PM	250	1250	13750	16.21	15.95	7.38	1052	7.52	166.7	2.94

GROUNDWATER SAMPLING LOG

Client:	Marathon Petroleum Corporation (MPC)	Project #:	
Site:	Chevron Pipe Line Company Pasco Bulk Fuel Terminal	Event:	2023-Q2-GW

Sample Information			
Sample ID:	MW-16-20230425	Date:	4/25/2023 6:20:00 PM
Well ID:	MW-16	Location Type:	Monitoring Well
Duplicate ID:		Sampler:	Christopher Selders
Equipment:	Field param meter: In-Situ AquaTroll 600 # 466586 WL/int meter: Durham Geo Slope Indicator # U91457X		
Comments:	Purge rate 20/10 @ 25 psi		

Well Information			
Well Completion:	Stick-up	Well Diameter:	2
Total Depth (ft bgs):	30	Screen Interval (ft bgs):	20.0000 - 30.0000
SAP Pump Depth (ft btoc):	31		

Water Level			
Date:	4/25/2023 5:11:00 PM	Measured Well Depth:	33.00 ft
Is Well Dry?	No	Depth to Water:	27.17 ft
Notes:			

Purge Information			
Begin Date and Time:	4/25/2023 5:20:00 PM	End Date and Time:	4/25/2023 6:15:00 PM
Initial Pump Depth:	Not Recorded	Final Pump Depth:	Not Recorded
Purge Method:	Low flow	Sample Method:	
Notes:			

Natural Attenuation Field Parameters			
Ferrous Iron (mg/L):	0	Nitrate (mg/L):	19.6

Time	Purge Rate (ml/min)	Purge Volume (ml)	Cumulative Purge Volume (ml)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)
5:45 PM	250	6250	6250	27.2	16.67	7.61	1054	7.51	131	90.84
5:50 PM	250	1250	7500	27.2	16.65	7.58	1054	7.4	140.3	40.3
5:55 PM	250	1250	8750	27.2	16.61	7.55	1054	7.42	145.8	19.79
6:00 PM	250	1250	10000	27.2	16.52	7.53	1054	7.53	149.9	10.16
6:05 PM	250	1250	11250	27.2	16.5	7.5	1053	7.39	154.4	2.4
6:10 PM	250	1250	12500	27.2	16.44	7.48	1052	7.4	158.1	0.44
6:15 PM	250	1250	13750	27.2	16.49	7.46	1051	7.29	161.1	0

GROUNDWATER SAMPLING LOG

Client:	Marathon Petroleum Corporation (MPC)	Project #:	
Site:	Chevron Pipe Line Company Pasco Bulk Fuel Terminal	Event:	2023-Q2-GW

Sample Information			
Sample ID:	MW-17-20230426	Date:	4/26/2023 11:17:00 AM
Well ID:	MW-17	Location Type:	Monitoring Well
Duplicate ID:		Sampler:	Edward Lecocq
Equipment:	Field param meter: In-Situ AquaTroll 600 # 466586 WL/int meter: Durham Geo Slope Indicator # U91457X		
Comments:	Difficulty getting started. 10/5 @ 60 psi.		

Well Information			
Well Completion:	Stick-up	Well Diameter:	2
Total Depth (ft bgs):	83	Screen Interval (ft bgs):	73.0000 - 83.0000
SAP Pump Depth (ft btoc):	84		

Water Level			
Date:	4/26/2023 10:08:00 AM	Measured Well Depth:	NM
Is Well Dry?	No	Depth to Water:	80.04 ft
Notes:			

Purge Information			
Begin Date and Time:	4/26/2023 10:11:00 AM	End Date and Time:	4/26/2023 11:15:00 AM
Initial Pump Depth:		Final Pump Depth:	
Purge Method:	Low flow	Sample Method:	
Notes:			

Natural Attenuation Field Parameters			
Ferrous Iron (mg/L):	0	Nitrate (mg/L):	12.3

Time	Purge Rate (ml/min)	Purge Volume (ml)	Cumulative Purge Volume (ml)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)
10:40 AM	400	11600	11600	80.21	16.61	7.43	1307	12.09	114.2	58.03
10:45 AM	400	2000	13600	80.18	15.93	7.31	1316	6.33	113.4	22.4
10:50 AM	400	2000	15600	80.19	15.9	7.29	1310	6.12	112.4	9
10:55 AM	400	2000	17600	80.18	15.9	7.3	1318	6.22	111.8	7.83
11:00 AM	400	2000	19600	80.19	15.93	7.29	1253	6.19	111.8	6.57
11:05 AM	400	2000	21600	80.18	15.94	7.29	1325	6.21	111.8	4.51
11:10 AM	400	2000	23600	80.19	15.94	7.29	1317	6.2	112.2	1.96
11:15 AM	400	2000	25600	80.19	15.97	7.29	1316	6.12	112.4	1.33

GROUNDWATER SAMPLING LOG

Client:	Marathon Petroleum Corporation (MPC)	Project #:	
Site:	Chevron Pipe Line Company Pasco Bulk Fuel Terminal	Event:	2023-Q2-GW

Sample Information			
Sample ID:	MW-18-20230426	Date:	4/26/2023 4:33:00 PM
Well ID:	MW-18	Location Type:	Monitoring Well
Duplicate ID:		Sampler:	Edward Lecocq
Equipment:	Field param meter: In-Situ AquaTroll 600 # 466586 WL/int meter: Durham Geo Slope Indicator # U91457X		
Comments:	Needed pressure at 60 psi to start, then 20/10 @ 50 psi.		

Well Information			
Well Completion:	Flush	Well Diameter:	2
Total Depth (ft bgs):	87	Screen Interval (ft bgs):	72.0000 - 87.0000
SAP Pump Depth (ft btoc):	86.5		

Water Level			
Date:	4/26/2023 3:37:00 PM	Measured Well Depth:	NM
Is Well Dry?	No	Depth to Water:	79.39 ft
Notes:			

Purge Information			
Begin Date and Time:	4/26/2023 3:46:00 PM	End Date and Time:	4/26/2023 4:31:00 PM
Initial Pump Depth:		Final Pump Depth:	
Purge Method:	Low flow	Sample Method:	
Notes:			

Natural Attenuation Field Parameters			
Ferrous Iron (mg/L):	0	Nitrate (mg/L):	6.2

Time	Purge Rate (ml/min)	Purge Volume (ml)	Cumulative Purge Volume (ml)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)
3:56 PM	375	3750	3750	79.47	19.2	7.4	1122	8.34	113.7	8.01
4:01 PM	375	1875	5625	79.4	16.72	7.4	1121	8.35	120.1	232.4
4:06 PM	375	1875	7500	79.4	16.64	7.39	1120	8.53	121.2	32.65
4:11 PM	375	1875	9375	79.4	16.78	7.4	1120	8.52	121.9	9.84
4:16 PM	375	1875	11250	79.41	16.74	7.4	1120	8.34	122.6	4.9
4:21 PM	375	1875	13125	79.41	16.69	7.42	1121	8.4	122.8	3.74
4:26 PM	375	1875	15000	79.41	16.61	7.43	1120	8.47	122.5	3.14
4:31 PM	375	1875	16875	79.41	16.81	7.43	1118	8.4	122.7	2.35

GROUNDWATER SAMPLING LOG

Client:	Marathon Petroleum Corporation (MPC)	Project #:	
Site:	Chevron Pipe Line Company Pasco Bulk Fuel Terminal	Event:	2023-Q2-GW

Sample Information			
Sample ID:	MW-19-20230426	Date:	4/26/2023 9:12:00 AM
Well ID:	MW-19	Location Type:	Monitoring Well
Duplicate ID:		Sampler:	Edward Lecocq
Equipment:	Field param meter: In-Situ AquaTroll 600 # 466586 WL/int meter: Durham Geo Slope Indicator # U91457X		
Comments:	20/10 @ 50 psi		

Well Information			
Well Completion:	Stick-up	Well Diameter:	2
Total Depth (ft bgs):	87	Screen Interval (ft bgs):	72.0000 - 87.0000
SAP Pump Depth (ft btoc):	85		

Water Level			
Date:	4/26/2023 8:28:00 AM	Measured Well Depth:	NM
Is Well Dry?	No	Depth to Water:	7.92 ft
Notes:			

Purge Information			
Begin Date and Time:	4/26/2023 8:35:00 AM	End Date and Time:	4/26/2023 9:10:00 AM
Initial Pump Depth:		Final Pump Depth:	
Purge Method:	Low flow	Sample Method:	
Notes:			

Natural Attenuation Field Parameters			
Ferrous Iron (mg/L):	0	Nitrate (mg/L):	9

Time	Purge Rate (ml/min)	Purge Volume (ml)	Cumulative Purge Volume (ml)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)
8:40 AM	375	1875	1875	79.92	16.07	6.12	980	7.25	68.3	2.38
8:45 AM	375	1875	3750	79.91	16.17	7.42	1094	4.64	82.9	6.75
8:50 AM	375	1875	5625	79.92	16.05	7.48	1089	5.54	83.6	1.16
8:55 AM	375	1875	7500	79.91	16.07	7.5	1087	5.96	86.9	0.93
9:00 AM	375	1875	9375	79.91	16.06	7.51	1086	6.18	89	0.76
9:05 AM	375	1875	11250	79.92	16.08	7.51	1085	6.33	91.1	0.78
9:10 AM	375	1875	13125	79.91	16.08	7.52	1084	6.41	92.7	0.77

GROUNDWATER SAMPLING LOG

Client:	Marathon Petroleum Corporation (MPC)	Project #:	
Site:	Chevron Pipe Line Company Pasco Bulk Fuel Terminal	Event:	2023-Q2-GW

Sample Information			
Sample ID:	MW-20-20230426	Date:	4/26/2023 2:51:00 PM
Well ID:	MW-20	Location Type:	Monitoring Well
Duplicate ID:		Sampler:	Edward Lecocq
Equipment:	Field param meter: In-Situ AquaTroll 600 # 466586 WL/int meter: Durham Geo Slope Indicator # U91457X		
Comments:	Difficulty getting flow initially. 20/10 @ 55-60 psi.		

Well Information			
Well Completion:	Stick-up	Well Diameter:	2
Total Depth (ft bgs):	99	Screen Interval (ft bgs):	79.0000 - 94.0000
SAP Pump Depth (ft btoc):	95		

Water Level			
Date:	4/26/2023 1:48:00 PM	Measured Well Depth:	NM
Is Well Dry?	No	Depth to Water:	82.20 ft
Notes:			

Purge Information			
Begin Date and Time:	4/26/2023 1:51:00 PM	End Date and Time:	4/26/2023 2:49:00 PM
Initial Pump Depth:		Final Pump Depth:	
Purge Method:	Low flow	Sample Method:	
Notes:			

Natural Attenuation Field Parameters			
Ferrous Iron (mg/L):	0	Nitrate (mg/L):	11.6

Time	Purge Rate (ml/min)	Purge Volume (ml)	Cumulative Purge Volume (ml)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)
2:19 PM	375	10500	10500	82.18	29.14	7.9	1036	9.01	109.4	2.56
2:24 PM	375	1875	12375	82.19	18.36	7.53	1068	8.43	127.1	22.51
2:29 PM	375	1875	14250	82.18	17.08	7.54	1063	8.24	127.6	3.73
2:34 PM	375	1875	16125	82.18	16.95	7.55	1062	8.3	127.1	1.78
2:39 PM	375	1875	18000	82.18	17.07	7.56	1061	8.19	127	1.21
2:44 PM	375	1875	19875	82.18	16.96	7.56	1061	8.28	126.9	1.03
2:49 PM	375	1875	21750	82.18	16.9	7.57	1061	8.39	126.5	1.14

GROUNDWATER SAMPLING LOG

Client:	Marathon Petroleum Corporation (MPC)	Project #:	
Site:	Chevron Pipe Line Company Pasco Bulk Fuel Terminal	Event:	2023-Q2-GW

Sample Information			
Sample ID:	MW-21-20230425	Date:	4/25/2023 5:19:00 PM
Well ID:	MW-21	Location Type:	Monitoring Well
Duplicate ID:		Sampler:	Edward Lecocq
Equipment:	Field param meter: In-Situ AquaTroll 600 # 697401 WL/int meter: Durham Geo Slope Indicator # MP30 U49485X		
Comments:	20/10 @ 55 psi. Needed 40/20 to get flow.		

Well Information			
Well Completion:	Stick-up	Well Diameter:	2
Total Depth (ft bgs):	93	Screen Interval (ft bgs):	77.0000 - 92.0000
SAP Pump Depth (ft btoc):	93		

Water Level			
Date:	4/25/2023 4:17:00 PM	Measured Well Depth:	NM
Is Well Dry?	No	Depth to Water:	81.93 ft
Notes:			

Purge Information			
Begin Date and Time:	4/25/2023 4:20:00 PM	End Date and Time:	4/25/2023 5:17:00 PM
Initial Pump Depth:		Final Pump Depth:	
Purge Method:	Low flow	Sample Method:	
Notes:			

Natural Attenuation Field Parameters			
Ferrous Iron (mg/L):	0	Nitrate (mg/L):	7.4

Time	Purge Rate (ml/min)	Purge Volume (ml)	Cumulative Purge Volume (ml)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)
4:42 PM	350	7700	7700	81.95	16.96	7.46	1092	9.05	73.9	1.55
4:47 PM	350	1750	9450	81.94	16.2	7.58	1064	8.31	77.1	13.28
4:52 PM	350	1750	11200	81.94	16.28	7.59	1063	8.39	79.8	7.9
4:57 PM	350	1750	12950	81.94	16.28	7.6	1063	8.47	81.8	4.38
5:02 PM	350	1750	14700	81.94	16.21	7.62	1064	8.3	83.2	3.24
5:07 PM	350	1750	16450	81.94	16.19	7.63	1062	8.46	84	1.77
5:12 PM	350	1750	18200	81.94	16.2	7.65	1063	8.36	84.9	1.71
5:17 PM	350	1750	19950	81.94	16.18	7.66	1064	8.4	85.9	0.8

GROUNDWATER SAMPLING LOG

Client:	Marathon Petroleum Corporation (MPC)	Project #:	
Site:	Chevron Pipe Line Company Pasco Bulk Fuel Terminal	Event:	2023-Q2-GW

Sample Information			
Sample ID:	MW-22-20230425	Date:	4/25/2023 9:30:00 AM
Well ID:	MW-22	Location Type:	Monitoring Well
Duplicate ID:		Sampler:	Christopher Selders
Equipment:	Field param meter: In-Situ AquaTroll 600 # 466586 WL/int meter: Durham Geo Slope Indicator # Geotech U91457X		
Comments:	Purge rate 20/10		

Well Information			
Well Completion:	Stick-up	Well Diameter:	2
Total Depth (ft bgs):	95	Screen Interval (ft bgs):	79.0000 - 94.0000
SAP Pump Depth (ft btoc):	94		

Water Level			
Date:	4/25/2023 8:19:00 AM	Measured Well Depth:	97.40 ft
Is Well Dry?	No	Depth to Water:	76.34 ft
Notes:			

Purge Information			
Begin Date and Time:	4/25/2023 8:35:00 AM	End Date and Time:	4/25/2023 9:25:00 AM
Initial Pump Depth:	Not Recorded	Final Pump Depth:	Not Recorded
Purge Method:	Low flow	Sample Method:	
Notes:			

Natural Attenuation Field Parameters			
Ferrous Iron (mg/L):	0	Nitrate (mg/L):	16.1

Time	Purge Rate (ml/min)	Purge Volume (ml)	Cumulative Purge Volume (ml)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)
8:50 AM	350	5250	5250	76.35	16.33	7.76	1015	7.54	65.8	0
8:55 AM	350	1750	7000	76.35	16.17	7.8	1006	9.05	73.4	0
9:00 AM	350	1750	8750	76.35	16.18	7.79	1006	9.13	76.9	0
9:06 AM	350	2100	10850	76.35	16.1	7.78	1005	9.23	80.3	0
9:10 AM	350	1400	12250	76.35	16.08	7.78	1006	9.28	82.2	0
9:15 AM	350	1750	14000	76.35	16.05	7.77	1005	9.16	84.1	0
9:20 AM	350	1750	15750	76.35	16.17	7.77	1005	9.22	85.5	0
9:25 AM	350	1750	17500	76.35	16.19	7.76	1006	9.06	87.1	0

GROUNDWATER SAMPLING LOG

Client:	Marathon Petroleum Corporation (MPC)	Project #:	
Site:	Chevron Pipe Line Company Pasco Bulk Fuel Terminal	Event:	2023-Q2-GW

Sample Information			
Sample ID:	MW-23-20230424	Date:	4/24/2023 5:39:00 PM
Well ID:	MW-23	Location Type:	Monitoring Well
Duplicate ID:		Sampler:	Christopher Selders
Equipment:	Field param meter: In-Situ AquaTroll 600 # 466586 WL/int meter: Durham Geo Slope Indicator # Geotech U91457X		
Comments:	Pump rate 20/10		

Well Information			
Well Completion:	Flush	Well Diameter:	2
Total Depth (ft bgs):	96	Screen Interval (ft bgs):	80.0000 - 95.0000
SAP Pump Depth (ft btoc):	92		

Water Level			
Date:	4/24/2023 4:36:00 PM	Measured Well Depth:	NM
Is Well Dry?	No	Depth to Water:	83.10 ft
Notes:			

Purge Information			
Begin Date and Time:	4/24/2023 4:41:00 PM	End Date and Time:	4/24/2023 5:36:00 PM
Initial Pump Depth:	Not Recorded	Final Pump Depth:	
Purge Method:	Low flow	Sample Method:	
Notes:			

Natural Attenuation Field Parameters			
Ferrous Iron (mg/L):	0	Nitrate (mg/L):	19.3

Time	Purge Rate (ml/min)	Purge Volume (ml)	Cumulative Purge Volume (ml)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)
4:59 PM			0	83.2	16.88	7.61	1017	8.72	29.3	98.65
5:04 PM	350	1750	1750	83.2	16.58	7.57	1027	8.86	38.4	61.13
5:10 PM	350	2100	3850	83.2	16.78	7.59	1022	8.47	38.4	47.85
5:15 PM	350	1750	5600	83.2	16.52	7.57	1021	8.72	41.7	13.76
5:21 PM	350	2100	7700	83.2	16.56	7.65	1023	8.72	39.5	9.56
5:26 PM	350	1750	9450	83.2	16.39	7.65	1023	8.81	41.6	6.7
5:31 PM	350	1750	11200	83.2	16.42	7.63	1021	8.57	44.8	3.69
5:36 PM	350	1750	12950	83.2	16.51	7.62	1019	8.69	46.4	1.24

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Groundwater Level Form

Chevron Pipe Line Company Pasco Bulk Terminal

Well ID	Well location	Task	Date/ Time	Depth to Water (ft btoc)	Comments	Measured By
MW-02	SCMW	2023-Q4-WL	10/9/23 6:08 PM	73.88		Jackson Long
MW-03	SCMW	2023-Q4-WL	10/9/23 4:50 PM	79.94		Jackson Long
MW-04	SCMW	2023-Q4-WL	10/9/23 5:05 PM	69.00		Jackson Long
MW-06	SCMW	2023-Q4-WL	10/9/23 5:41 PM	16.79		Jackson Long
MW-07	SCMW	2023-Q4-WL	10/9/23 5:20 PM	67.98		Jackson Long
MW-08	SCMW	2023-Q4-WL	10/9/23 5:30 PM	40.59		Jackson Long
MW-10	SCMW	2023-Q4-WL	10/9/23 5:26 PM	64.45		Jackson Long
MW-11	SCMW	2023-Q4-WL	10/9/23 6:21 PM	80.07		Jackson Long
MW-12	SCMW	2023-Q4-WL	10/9/23 6:29 PM	80.30	Red quick connect disconnected	Jackson Long
MW-14	SCMW	2023-Q4-WL	10/9/23 6:04 PM	78.62		Jackson Long
MW-15	SCMW	2023-Q4-WL	10/9/23 5:44 PM	16.66		Jackson Long
MW-16	SCMW	2023-Q4-WL	10/9/23 5:48 PM	27.92		Jackson Long
MW-17	SCMW	2023-Q4-WL	10/9/23 6:13 PM	80.93		Jackson Long
MW-18	SCMW	2023-Q4-WL	10/9/23 7:01 PM	80.29		Jackson Long
MW-19	SCMW	2023-Q4-WL	10/9/23 5:57 PM	80.81		Jackson Long
MW-20	SCMW	2023-Q4-WL	10/9/23 7:08 PM	83.13		Jackson Long
MW-21	SCMW	2023-Q4-WL	10/9/23 7:43 PM	82.84	Red connecter starting to break	Jackson Long
MW-22	SCMW	2023-Q4-WL	10/9/23 4:58 PM	77.20		Jackson Long
MW-23	SCMW	2023-Q4-WL	10/9/23 4:33 PM	78.44		Jackson Long
AR-11	TSMW	2023-Q4-WL	10/9/23 7:32 PM	79.15		Jackson Long
TMW-05	TSMW	2023-Q4-WL	10/9/23 6:49 PM	81.60		Jackson Long

ft btoc = below top of casing
Site Compliance Monitoring Well = SCMW
Tidewater Site Monitoring Well = TSMW

GROUNDWATER SAMPLING LOG

Client:	Marathon Petroleum Corporation (MPC)	Project #: 60711842	
Site:	Chevron Pipe Line Company Pasco Bulk Fuel Terminal	Event: 2023-Q4-GW	

Sample Information			
Sample ID:	MW-02-20231012	Date:	10/12/2023 10:26:00 AM
Well ID:	MW-02	Location Type:	Monitoring Well
Duplicate ID:	Not Applicable	Sampler:	Edward Lecocq
Equipment:	Field param meter: Horiba U-52 # U117543X		
Comments:	50 psi 20/10		

Well Information			
Well Completion:	Stick-up	Well Diameter:	4 in
Total Depth:	83.3 ft bgs	Screen Interval:	63.3 - 83.3 ft bgs
SAP Pump Depth:	77 ft btoc		

Water Level			
Date:	10/12/2023 9:12:00 AM	Measured Well Depth:	Not Recorded
Is Well Dry?	No	Depth to Water:	73.90 ft btoc

Purge Information			
Begin Date and Time:	10/12/2023 9:15:00 AM	End Date and Time:	10/12/2023 10:24:00 AM
Initial Pump Depth:	77 ft btoc	Final Pump Depth:	77 ft btoc
Purge Method:	Low flow (pump type: Bladder)	Sample Method:	Low flow

Natural Attenuation Field Parameters			
Ferrous Iron:	0.01 mg/L	Nitrate:	11.2 mg/L

Time	Purge Rate (ml/min)	Cumulative Purge Volume (l)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
9:19 AM	250		73.96	14.78	9.11	871	13.52	94	0		
9:24 AM	250		74.02	15.38	7.52	1450	8.53	134	3.4		
9:29 AM	250		74.01	15.48	7.48	1450	6.4	138	0		
9:34 AM	250		74.04	15.56	7.47	1460	5.74	140	0		
9:39 AM	250		73.92	15.52	7.32	1460	4.34	150	0		
9:44 AM	250		73.92	15.6	7.33	1460	4.55	150	0		
9:49 AM	250		74.04	15.56	7.31	1460	3.71	153	0		
9:54 AM	250		74.04	15.67	7.33	1460	4.53	153	0		
9:59 AM	250		73.96	15.65	7.33	1460	3.34	153	0		
10:04 AM	250		73.92	15.71	7.31	1460	3.75	154	0		
10:09 AM	250		73.93	15.71	7.31	1460	3.08	155	0		
10:14 AM	250		73.91	15.72	7.31	1460	3.65	156	0		

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GROUNDWATER SAMPLING LOG

Time	Purge Rate (ml/min)	Cumulative Purge Volume (l)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
10:19 AM	250		73.92	15.73	7.32	1460	3.06	155	0		
10:24 AM	250	18	74.04	15.72	7.35	1460	3.68	155	0		

Reviewer Comments

GROUNDWATER SAMPLING LOG

Client:	Marathon Petroleum Corporation (MPC)	Project #: 60711842	
Site:	Chevron Pipe Line Company Pasco Bulk Fuel Terminal	Event: 2023-Q4-GW	

Sample Information			
Sample ID:	MW-03-20231011	Date:	10/11/2023 6:25:00 PM
Well ID:	MW-03	Location Type:	Monitoring Well
Duplicate ID:	MW-03-Dup-20231011	Sampler:	Edward Lecocq
Equipment:	Field param meter: Horiba U-52 # U117543X		
Comments:	45 psi, 20/10		

Well Information			
Well Completion:	Stick-up	Well Diameter:	4 in
Total Depth:	94.95 ft bgs	Screen Interval:	74.95 - 94.95 ft bgs
SAP Pump Depth:	85 ft btoc		

Water Level			
Date:	10/11/2023 5:41:00 PM	Measured Well Depth:	Not Recorded
Is Well Dry?	No	Depth to Water:	80.71 ft btoc

Purge Information			
Begin Date and Time:	10/11/2023 5:42:00 PM	End Date and Time:	10/11/2023 6:23:00 PM
Initial Pump Depth:	85 ft btoc	Final Pump Depth:	85 ft btoc
Purge Method:	Low flow (pump type: Bladder)	Sample Method:	Low flow

Natural Attenuation Field Parameters			
Ferrous Iron:	2.78 mg/L	Nitrate:	3.7 mg/L

Time	Purge Rate (ml/min)	Cumulative Purge Volume (l)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
5:48 PM	250		80.07	17.75	9.01	915	2.98	126	13.8		
5:53 PM	250		80.08	17.52	7.69	1200	3.66	-77	0.9		
5:58 PM	250		80.02	17.17	7.26	1280	3.3	-120	0.6		
6:03 PM	250		80.03	17.15	7.29	1290	2.7	-125	0		
6:08 PM	250		80.02	17.04	7.24	1300	2.88	-122	0		
6:13 PM	250		80.03	16.96	7.35	1300	2.69	-128	0		
6:18 PM	250		80.03	16.9	7.36	1300	2.55	-127	0		
6:23 PM	250	10	80.04	16.84	7.3	1310	2.56	-123	0		

Reviewer Comments

GROUNDWATER SAMPLING LOG

Client:	Marathon Petroleum Corporation (MPC)	Project #: 60711842	
Site:	Chevron Pipe Line Company Pasco Bulk Fuel Terminal	Event: 2023-Q4-GW	

Sample Information			
Sample ID:	MW-04-20231013	Date:	10/13/2023 9:06:00 AM
Well ID:	MW-04	Location Type:	Monitoring Well
Duplicate ID:	Not Applicable	Sampler:	Edward Lecocq
Equipment:	Field param meter: Horiba U-52 # U117543X		
Comments:	Not Recorded		

Well Information			
Well Completion:	Stick-up	Well Diameter:	4 in
Total Depth:	76.75 ft bgs	Screen Interval:	56.75 - 76.75 ft bgs
SAP Pump Depth:	72 ft btoc		

Water Level			
Date:	10/13/2023 8:14:00 AM	Measured Well Depth:	Not Recorded
Is Well Dry?	No	Depth to Water:	69.26 ft btoc

Purge Information			
Begin Date and Time:	10/13/2023 8:17:00 AM	End Date and Time:	10/13/2023 9:04:00 AM
Initial Pump Depth:	72 ft btoc	Final Pump Depth:	72 ft btoc
Purge Method:	Low flow (pump type: Bladder)	Sample Method:	Low flow

Natural Attenuation Field Parameters			
Ferrous Iron:	0.02 mg/L	Nitrate:	28.6 mg/L

Time	Purge Rate (ml/min)	Cumulative Purge Volume (l)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
8:24 AM	225		69.25	15.91	7.81	944	10.57	159	0		
8:29 AM	225		69.26	15.96	7.7	948	12.73	161	0		
8:34 AM	225		69.25	15.94	7.67	948	10.95	163	0		
8:39 AM	225		69.25	15.97	7.64	949	10.22	164	0		
8:44 AM	225		69.25	15.89	7.61	948	6.58	167	0		
8:49 AM	225		69.25	15.88	7.6	948	7.14	168	0		
8:54 AM	225		69.25	16.01	7.59	948	6.43	170	0		
8:59 AM	225		69.25	15.99	7.59	948	6.5	171	0		

GROUNDWATER SAMPLING LOG

Client:	Marathon Petroleum Corporation (MPC)	Project #: 60711842	
Site:	Chevron Pipe Line Company Pasco Bulk Fuel Terminal	Event: 2023-Q4-GW	

Sample Information			
Sample ID:	MW-06-20231010	Date:	10/10/2023 12:45:00 PM
Well ID:	MW-06	Location Type:	Monitoring Well
Duplicate ID:	Not Applicable	Sampler:	Jackson Long
Equipment:	Field param meter: Horiba U-52 # U113004X WL/int meter: Heron Dipper-T # U49485X		
Comments:	Pressure: 20 psi ; f/d: 10/5		

Well Information			
Well Completion:	Stick-up	Well Diameter:	2 in
Total Depth:	25 ft bgs	Screen Interval:	8.5 - 23.5 ft bgs
SAP Pump Depth:	21 ft btoc		

Water Level			
Date:	10/10/2023 11:35:00 AM	Measured Well Depth:	Not Recorded
Is Well Dry?	No	Depth to Water:	16.86 ft btoc

Purge Information			
Begin Date and Time:	10/10/2023 11:55:00 AM	End Date and Time:	10/10/2023 12:35:00 PM
Initial Pump Depth:	21 ft btoc	Final Pump Depth:	21 ft btoc
Purge Method:	Low flow (pump type: Bladder)	Sample Method:	Low flow

Natural Attenuation Field Parameters			
Ferrous Iron:	0 mg/L	Nitrate:	3.3 mg/L

Time	Purge Rate (ml/min)	Cumulative Purge Volume (l)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
12:00 PM	0.35		16.92	18.81	7.71	1120	8.25	240	7.3	Clear colorless	None
12:05 PM	0.3		16.92	18.77	7.48	1120	8.04	253	5.8		
12:10 PM	0.2		16.89	18.66	7.24	1110	8.08	268	4.5		
12:15 PM	0.2		16.89	18.61	7.16	1110	7.74	275	3.6		
12:20 PM	0.2		16.88	18.64	7.11	1110	7.48	276	2.9		
12:25 PM	0.2		16.9	18.58	7.09	1110	7.76	276	2.8		
12:30 PM	0.2		16.89	18.59	7.07	1100	7.77	277	3.3		
12:35 PM	0.2	16	16.89	18.55	7.07	1100	7.68	276	2.6		

GROUNDWATER SAMPLING LOG

Client:	Marathon Petroleum Corporation (MPC)	Project #: 60711842	
Site:	Chevron Pipe Line Company Pasco Bulk Fuel Terminal	Event: 2023-Q4-GW	

Sample Information			
Sample ID:	MW-07-20231010	Date:	10/10/2023 3:47:00 PM
Well ID:	MW-07	Location Type:	Monitoring Well
Duplicate ID:	Not Applicable	Sampler:	Edward Lecocq
Equipment:	Field param meter: Horiba U-52 # U117543X		
Comments:	40 psi, 20/10		

Well Information			
Well Completion:	Stick-up	Well Diameter:	2 in
Total Depth:	79 ft bgs	Screen Interval:	57.0 - 77.0 ft bgs
SAP Pump Depth:	72 ft btoc		

Water Level			
Date:	10/10/2023 2:34:00 PM	Measured Well Depth:	Not Recorded
Is Well Dry?	No	Depth to Water:	68.21 ft btoc

Purge Information			
Begin Date and Time:	10/10/2023 2:36:00 PM	End Date and Time:	10/10/2023 3:45:00 PM
Initial Pump Depth:	72 ft btoc	Final Pump Depth:	72 ft btoc
Purge Method:	Low flow (pump type: Bladder)	Sample Method:	Low flow

Natural Attenuation Field Parameters			
Ferrous Iron:	0.05 mg/L	Nitrate:	23.5 mg/L

Time	Purge Rate (ml/min)	Cumulative Purge Volume (l)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
2:40 PM	250		68.21	18	7.65	980	0	136	0		
2:45 PM	250		68.21	16.62	7.51	993	4.8	131	0		
2:50 PM	250		68.21	16.4	7.61	989	2.96	141	0		
2:55 PM	250		68.21	16.39	7.63	989	4.19	133	0		
3:00 PM	250		68.21	16.62	7.65	983	4.06	133	0		
3:05 PM	250		68.21	16.52	7.58	978	5.14	138	0		
3:10 PM	250		68.21	16.64	7.73	976	10.61	132	0		
3:15 PM	250		68.21	16.61	7.74	975	4.86	132	0		
3:20 PM	250		68.21	16.62	7.75	974	1.98	132	0		
3:25 PM	250		68.21	16.77	7.76	973	0.86	132	0		
3:30 PM	250		68.21	16.91	7.76	973	0.73	132	0		
3:35 PM	250		68.21	16.98	7.77	972	0.62	132	0		
3:40 PM	250			16.92	7.77	969	0.62	133	0		
3:45 PM	250	16		16.89	7.77	970	0.58	133	0		

GROUNDWATER SAMPLING LOG

Client:	Marathon Petroleum Corporation (MPC)	Project #: 60711842	
Site:	Chevron Pipe Line Company Pasco Bulk Fuel Terminal	Event: 2023-Q4-GW	

Sample Information			
Sample ID:	MW-08-20231011	Date:	10/11/2023 4:39:00 PM
Well ID:	MW-08	Location Type:	Monitoring Well
Duplicate ID:	Not Applicable	Sampler:	Edward Lecocq
Equipment:	Field param meter: Horiba U-52 # U117543X		
Comments:	30 psi, 20/10		

Well Information			
Well Completion:	Stick-up	Well Diameter:	2 in
Total Depth:	56 ft bgs	Screen Interval:	29.0 - 54.0 ft bgs
SAP Pump Depth:	44 ft btoc		

Water Level			
Date:	10/11/2023 8:51:00 AM	Measured Well Depth:	Not Recorded
Is Well Dry?	No	Depth to Water:	40.74 ft btoc

Purge Information			
Begin Date and Time:	10/11/2023 3:29:00 PM	End Date and Time:	10/11/2023 4:37:00 PM
Initial Pump Depth:	43.5 ft btoc	Final Pump Depth:	43.5 ft btoc
Purge Method:	Low flow (pump type: Bladder)	Sample Method:	Low flow

Natural Attenuation Field Parameters			
Ferrous Iron:	0.02 mg/L	Nitrate:	24.3 mg/L

Time	Purge Rate (ml/min)	Cumulative Purge Volume (l)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
3:32 PM	250		40.82	19.45	8.34	895	21.22	116	0		
3:37 PM	250		40.83	17.22	7.94	973	20.16	143	0		
3:42 PM	250		40.82	17.61	7.93	971	15.65	145	0		
3:47 PM	250		40.82	17.13	8.01	970	7.37	141	0		
3:52 PM	250		40.82	17.08	8.01	971	7.13	148	0		
3:57 PM	250		40.82	17.07	7.88	969	9.29	151	0		
4:02 PM	250		40.82	17.06	7.86	970	7.87	153	0		
4:07 PM	250		40.82	17.05	7.85	968	8.37	155	0		
4:12 PM	250		40.82	17.04	7.96	970	4.81	150	0		
4:17 PM	250		40.82	17.05	7.85	968	4.5	157	0		
4:22 PM	250		40.82	17.06	7.83	970	3.67	160	0		
4:27 PM	250		40.82	17.1	7.86	968	2.6	159	0		

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GROUNDWATER SAMPLING LOG

Time	Purge Rate (ml/min)	Cumulative Purge Volume (l)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
4:32 PM	250		40.82	17.11	7.81	970	2.35	163	0		
4:37 PM	250	18	40.82	17.09	7.88	969	2.77	156	0		

GROUNDWATER SAMPLING LOG

Client:	Marathon Petroleum Corporation (MPC)	Project #: 60711842	
Site:	Chevron Pipe Line Company Pasco Bulk Fuel Terminal	Event: 2023-Q4-GW	

Sample Information			
Sample ID:	MW-10-20231010	Date:	10/10/2023 1:33:00 PM
Well ID:	MW-10	Location Type:	Monitoring Well
Duplicate ID:	Not Applicable	Sampler:	Edward Lecocq
Equipment:	Field param meter: Horiba U-52 # U117543X		
Comments:	40 psi. 20/10		

Well Information			
Well Completion:	Stick-up	Well Diameter:	4 in
Total Depth:	78.25 ft bgs	Screen Interval:	55.0 - 76.0 ft bgs
SAP Pump Depth:	68 ft btoc		

Water Level			
Date:	10/10/2023 12:09:00 PM	Measured Well Depth:	Not Recorded
Is Well Dry?	No	Depth to Water:	64.48 ft btoc

Purge Information			
Begin Date and Time:	10/10/2023 12:13:00 PM	End Date and Time:	10/10/2023 1:30:00 PM
Initial Pump Depth:	68 ft btoc	Final Pump Depth:	68 ft btoc
Purge Method:	Low flow (pump type: Bladder)	Sample Method:	Low flow

Natural Attenuation Field Parameters			
Ferrous Iron:	0.04 mg/L	Nitrate:	26.3 mg/L

Time	Purge Rate (ml/min)	Cumulative Purge Volume (l)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
12:20 PM	230		64.48	17.34	7.94	1020	10.6	79	1.2		
12:25 PM	230		64.48	16.73	7.7	994	10.37	101	0		
12:30 PM	230		64.48	16.08	7.71	972	9.22	102	0		
12:35 PM	230		64.48	16.19	7.59	991	8.72	108	0		
12:40 PM	230		64.48	16.2	7.69	981	5.36	103	0		
12:45 PM	230		64.48	16.18	7.69	977	5.28	105	0		
12:50 PM	230		64.48	16.14	7.71	979	2.83	107	0		
12:55 PM	230		64.48	16.11	7.62	982	2.4	115	0		
1:00 PM	230		64.48	16.08	7.59	981	1.87	117	0		
1:05 PM	230		64.48	16.03	7.73	977	1.45	112	0		
1:10 PM	230		64.48	16	7.6	978	0.93	122	0		
1:15 PM	230		64.48	15.98	7.73	977	0.53	116	0		
1:20 PM	230		64.48	15.99	7.72	974	0.35	120	0		

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GROUNDWATER SAMPLING LOG

Time	Purge Rate (ml/min)	Cumulative Purge Volume (l)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
1:25 PM	230		64.48	15.96	7.72	977	0.38	121	0		
1:30 PM	230	19	64.48	15.95	7.7	974	0.19	121	0		

GROUNDWATER SAMPLING LOG

Client:	Marathon Petroleum Corporation (MPC)	Project #: 60711842	
Site:	Chevron Pipe Line Company Pasco Bulk Fuel Terminal	Event: 2023-Q4-GW	

Sample Information			
Sample ID:	MW-11-20231012	Date:	10/12/2023 5:11:00 PM
Well ID:	MW-11	Location Type:	Monitoring Well
Duplicate ID:	Not Applicable	Sampler:	Edward Lecocq
Equipment:	Field param meter: Horiba U-52 # U117543X		
Comments:	45 psi, 20/10		

Well Information			
Well Completion:	Stick-up	Well Diameter:	2 in
Total Depth:	84.5 ft bgs	Screen Interval:	74.5 - 84.5 ft bgs
SAP Pump Depth:	83 ft btoc		

Water Level			
Date:	10/12/2023 3:48:00 PM	Measured Well Depth:	Not Recorded
Is Well Dry?	No	Depth to Water:	80.28 ft btoc

Purge Information			
Begin Date and Time:	10/12/2023 3:51:00 PM	End Date and Time:	10/12/2023 5:09:00 PM
Initial Pump Depth:	83 ft btoc	Final Pump Depth:	83 ft btoc
Purge Method:	Low flow (pump type: Bladder)	Sample Method:	Low flow

Natural Attenuation Field Parameters			
Ferrous Iron:	0.03 mg/L	Nitrate:	19.6 mg/L

Time	Purge Rate (ml/min)	Cumulative Purge Volume (l)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
3:54 PM	225		80.28	18.88	8.08	785	10.42	156	5.3		
3:59 PM	225		80.29	18.17	6.87	1260	0.83	190	29		
4:04 PM	225		80.32	17.8	6.92	1210	0.09	186	17.5		
4:09 PM	225		8.32	17.68	6.99	1140	1.29	182	15.6		
4:14 PM	225		80.33	17.62	7.06	1110	0.4	180	14.2		
4:19 PM	225		80.33	17.58	7.1	1090	1.05	178	9.7		
4:24 PM	225		80.32	17.55	7.14	1080	0.44	176	6.4		
4:29 PM	225		80.36	17.54	7.18	1060	0.71	175	1		
4:34 PM	225		80.34	17.54	7.22	1060	1.25	175	0.2		
4:39 PM	225		80.34	17.53	7.24	1050	1.41	174	0		
4:49 PM	225		80.3	17.5	7.28	1050	1.95	174	0		
4:50 PM	225		80.32	17.5	7.26	1050	5.26	175	0		
4:54 PM	225		80.33	17.48	7.29	1050	3.66	174	0		

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GROUNDWATER SAMPLING LOG

Time	Purge Rate (ml/min)	Cumulative Purge Volume (l)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
4:59 PM	225		80.38	17.43	7.31	1050	3.55	174	0		
5:04 PM	225		80.44	17.42	7.32	1050	3.05	174	0		
5:09 PM	225	17	80.45	17.43	7.33	1050	3.52	174	0		

GROUNDWATER SAMPLING LOG

Client:	Marathon Petroleum Corporation (MPC)	Project #: 60711842	
Site:	Chevron Pipe Line Company Pasco Bulk Fuel Terminal	Event: 2023-Q4-GW	

Sample Information			
Sample ID:	MW-12-20231012	Date:	10/12/2023 3:00:00 PM
Well ID:	MW-12	Location Type:	Monitoring Well
Duplicate ID:	Not Applicable	Sampler:	Jackson Long
Equipment:	Field param meter: Horiba U-52 # U113004X WL/int meter: Heron Dipper-T # U49485X		
Comments:	55 psi, 9/6. Compressor kept tripping, sampled when could		

Well Information			
Well Completion:	Stick-up	Well Diameter:	2 in
Total Depth:	85 ft bgs	Screen Interval:	75.0 - 84.5 ft bgs
SAP Pump Depth:	83.5 ft btoc		

Water Level			
Date:	10/12/2023 1:41:00 PM	Measured Well Depth:	Not Recorded
Is Well Dry?	No	Depth to Water:	80.30 ft btoc
Notes:	Water level value from monday measurement		

Purge Information			
Begin Date and Time:	10/12/2023 1:45:00 PM	End Date and Time:	10/12/2023 2:45:00 PM
Initial Pump Depth:	83.5 ft btoc	Final Pump Depth:	83.5 ft btoc
Purge Method:	Low flow (pump type: Bladder)	Sample Method:	Low flow

Natural Attenuation Field Parameters			
Ferrous Iron:	0 mg/L	Nitrate:	0 mg/L

Time	Purge Rate (ml/min)	Cumulative Purge Volume (l)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
1:50 PM	0.2		80.3	17.06	7.06	1200	7.96	290	9	clear	None
1:55 PM	0.2		80.3	16.8	7.07	1480	3.19	283	5.1		
2:00 PM	0.2		80.3	16.7	7.09	1540	1.73	280	3.5		
2:05 PM	0.2		80.3	16.68	7.1	1540	0.73	276	3.2		
2:10 PM	0.2		80.3	16.67	7.1	1530	0.55	274	3.2		
2:15 PM	0.2		80.3	16.65	7.11	1520	0.49	272	2.9		
2:20 PM	0.2		80.3	16.64	7.11	1500	0.53	271	2.6		
2:25 PM	0.2		80.3	16.63	7.11	1480	0.63	271	2.7		
2:30 PM	0.2		80.3	16.64	7.12	1460	0.77	270	2.4		
2:35 PM	0.2		80.3	16.74	7.13	1450	0.79	270	2.2		
2:45 PM	0.2	9	80.3	16.69	7.13	1440	0.98	270	2.6		

GROUNDWATER SAMPLING LOG

Client:	Marathon Petroleum Corporation (MPC)	Project #: 60711842	
Site:	Chevron Pipe Line Company Pasco Bulk Fuel Terminal	Event: 2023-Q4-GW	

Sample Information			
Sample ID:	MW-14-20231012	Date:	10/12/2023 12:00:00 PM
Well ID:	MW-14	Location Type:	Monitoring Well
Duplicate ID:	Not Applicable	Sampler:	Jackson Long
Equipment:	Field param meter: Horiba U-52 # U113004X WL/int meter: Heron Dipper-T # U49485X		
Comments:	50 psi, 10/5		

Well Information			
Well Completion:	Stick-up	Well Diameter:	2 in
Total Depth:	82.5 ft bgs	Screen Interval:	72.5 - 82.0 ft bgs
SAP Pump Depth:	82 ft btoc		

Water Level			
Date:	10/12/2023 10:50:00 AM	Measured Well Depth:	Not Recorded
Is Well Dry?	No	Depth to Water:	78.85 ft btoc

Purge Information			
Begin Date and Time:	10/12/2023 10:55:00 AM	End Date and Time:	10/12/2023 11:55:00 AM
Initial Pump Depth:	82 ft btoc	Final Pump Depth:	82 ft btoc
Purge Method:	Low flow (pump type: Bladder)	Sample Method:	Low flow

Natural Attenuation Field Parameters			
Ferrous Iron:	0.1 mg/L	Nitrate:	13 mg/L

Time	Purge Rate (ml/min)	Cumulative Purge Volume (l)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
11:00 AM	0.25		78.85	16.03	7.21	1020	7.82	338	8.9	Clear	None
11:05 AM	0.25		78.85	16.13	7.26	1030	6.75	329	5		
11:10 AM	0.25		78.85	16.15	7.3	1030	6.39	325	3.2		
11:20 AM	0.25		78.85	16.13	7.34	1030	6.39	318	2.3		
11:25 AM	0.25		78.85	16.34	7.34	1030	6.34	308	2.1		
11:35 AM	0.25		78.85	16.28	7.35	1030	6.2	299	2		
11:40 AM	0.25		78.85	16.63	7.34	1030	6.49	293	2.1		
11:45 AM	0.25		78.85	16.64	7.35	1030	6.52	286	1.7		
11:50 AM	0.25		78.85	16.68	7.35	1030	6.3	281	1.3		
11:55 AM	0.25	15	78.85	16.72	7.36	1030	5.94	278	1.2		

GROUNDWATER SAMPLING LOG

Client:	Marathon Petroleum Corporation (MPC)	Project #: 60711842	
Site:	Chevron Pipe Line Company Pasco Bulk Fuel Terminal	Event: 2023-Q4-GW	

Sample Information			
Sample ID:	MW-15-20231010	Date:	10/10/2023 3:00:00 PM
Well ID:	MW-15	Location Type:	Monitoring Well
Duplicate ID:	Not Applicable	Sampler:	Jackson Long
Equipment:	Field param meter: Horiba U-52 # U113004X WL/int meter: Heron Dipper-T # U49485X		
Comments:	Pressure 20 psi; 10/5		

Well Information			
Well Completion:	Stick-up	Well Diameter:	2 in
Total Depth:	23.5 ft bgs	Screen Interval:	8.5 - 23.5 ft bgs
SAP Pump Depth:	20.5 ft btoc		

Water Level			
Date:	10/10/2023 1:52:00 PM	Measured Well Depth:	Not Recorded
Is Well Dry?	No	Depth to Water:	16.71 ft btoc

Purge Information			
Begin Date and Time:	10/10/2023 2:00:00 PM	End Date and Time:	10/10/2023 2:50:00 PM
Initial Pump Depth:	20.5 ft btoc	Final Pump Depth:	20.5 ft btoc
Purge Method:	Low flow (pump type: Bladder)	Sample Method:	Low flow

Natural Attenuation Field Parameters			
Ferrous Iron:	0 mg/L	Nitrate:	0 mg/L

Time	Purge Rate (ml/min)	Cumulative Purge Volume (l)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
2:05 PM	0.25		16.8	17.62	7.06	1010	5.91	273	32.6	Clear colorless	None
2:10 PM	0.25		16.8	17.67	7.03	999	5.86	282	17.8		
2:15 PM	0.325		16.8	17.69	7.02	1000	5.85	287	14.6		
2:20 PM	0.325		16.81	17.69	7.01	999	5.88	292	12.7		
2:25 PM	0.325		16.81	17.71	7.01	998	6.18	296	7.7		
2:30 PM	0.325		16.81	17.68	7	999	5.93	299	6.6		
2:35 PM	0.325		16.81	17.66	7	999	5.91	301	6.2		
2:40 PM	0.325		16.8	17.63	7	999	5.74	302	4.7		
2:45 PM	0.325		16.81	17.61	7	999	6.16	303	3.6		
2:50 PM	0.325	17	16.8	17.52	7.01	998	5.16	302	2.4		

GROUNDWATER SAMPLING LOG

Client:	Marathon Petroleum Corporation (MPC)	Project #: 60711842	
Site:	Chevron Pipe Line Company Pasco Bulk Fuel Terminal	Event: 2023-Q4-GW	

Sample Information			
Sample ID:	MW-16-20231011	Date:	10/11/2023 11:00:00 AM
Well ID:	MW-16	Location Type:	Monitoring Well
Duplicate ID:	Not Applicable	Sampler:	Jackson Long
Equipment:	Field param meter: Horiba U-52 # U113004X WL/int meter: Heron Dipper-T # U49485X		
Comments:	Pressure: 25 ; f/d: 10/5		

Well Information			
Well Completion:	Stick-up	Well Diameter:	2 in
Total Depth:	30 ft bgs	Screen Interval:	20.0 - 30.0 ft bgs
SAP Pump Depth:	31 ft btoc		

Water Level			
Date:	10/11/2023 9:03:00 AM	Measured Well Depth:	Not Recorded
Is Well Dry?	No	Depth to Water:	27.95 ft btoc

Purge Information			
Begin Date and Time:	10/11/2023 9:55:00 AM	End Date and Time:	10/11/2023 10:40:00 AM
Initial Pump Depth:	31 ft btoc	Final Pump Depth:	31 ft btoc
Purge Method:	Low flow (pump type: Bladder)	Sample Method:	Low flow

Natural Attenuation Field Parameters			
Ferrous Iron:	0 mg/L	Nitrate:	1 mg/L

Time	Purge Rate (ml/min)	Cumulative Purge Volume (l)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
10:00 AM	0.35		27.95	16.35	7.58	1000	6.08	266	40.4		None
10:05 AM	0.35		27.95	16.38	7.52	1000	6.35	267	26.8		
10:10 AM	0.35		27.95	16.4	7.64	1000	6.09	262	13.6		
10:15 AM	0.35		27.95	16.43	7.62	1000	6.22	263	10.5		
10:20 AM	0.35		27.95	16.45	7.63	1000	6.21	265	7.7		
10:25 AM	0.35		27.95	16.49	7.66	1000	6.17	264	4.4		
10:30 AM	0.35		27.95	16.52	7.61	1000	6.13	268	2.5		
10:35 AM	0.35		27.95	16.55	7.6	1000	6.22	269	1.7		
10:40 AM	0.35	23	27.95	16.56	7.61	1000	6.26	270	1.6		

GROUNDWATER SAMPLING LOG

Client:	Marathon Petroleum Corporation (MPC)	Project #: 60711842	
Site:	Chevron Pipe Line Company Pasco Bulk Fuel Terminal	Event: 2023-Q4-GW	

Sample Information			
Sample ID:	MW-17-20231012	Date:	10/12/2023 1:44:00 PM
Well ID:	MW-17	Location Type:	Monitoring Well
Duplicate ID:	Not Applicable	Sampler:	Edward Lecocq
Equipment:	Field param meter: Horiba U-52 # U117543X		
Comments:	Ferrous Iron < 0.02 mg/L. 45 psi, 20/10		

Well Information			
Well Completion:	Stick-up	Well Diameter:	2 in
Total Depth:	83 ft bgs	Screen Interval:	73.0 - 83.0 ft bgs
SAP Pump Depth:	84 ft btoc		

Water Level			
Date:	10/12/2023 12:08:00 PM	Measured Well Depth:	Not Recorded
Is Well Dry?	No	Depth to Water:	81.02 ft btoc
Notes:	Not Recorded		

Purge Information			
Begin Date and Time:	10/12/2023 12:10:00 PM	End Date and Time:	10/12/2023 1:42:00 PM
Initial Pump Depth:	84 ft btoc	Final Pump Depth:	84 ft btoc
Purge Method:	Low flow (pump type: Bladder)	Sample Method:	Low flow
Notes:	Not Recorded		

Natural Attenuation Field Parameters			
Ferrous Iron:	0 mg/L	Nitrate:	27.3 mg/L

Time	Purge Rate (ml/min)	Cumulative Purge Volume (l)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
12:22 PM	250		81.07	16.7	8.29	1010	15.91	137	3.1		
12:27 PM	250		81.04	16.42	7.21	1320	6.59	163	0		
12:32 PM	250		81.04	16.39	7.09	1330	4.69	168	0		
12:37 PM	250		81.07	16.42	7.09	1320	5.02	168	0		
12:42 PM	250		81.04	16.48	7.12	1300	6.11	165	0		
12:47 PM	250		81.04	16.4	7.13	1290	5.78	164	0		
12:52 PM	250		81.04	16.42	7.13	1270	4.6	164	0		
12:57 PM	250		81.04	16.34	7.17	1260	5.34	163	0		
1:02 PM	250		81.07	16.41	7.17	1250	2.92	163	0		
1:07 PM	250		81.04	16.29	7.18	1240	8.12	164	0		

AECOM

GROUNDWATER SAMPLING LOG

Time	Purge Rate (ml/min)	Cumulative Purge Volume (l)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
1:12 PM	250		81.04	16.25	7.2	1240	5.18	163	0		
1:17 PM	250			16.25	7.21	1230	5.67	163	0		
1:22 PM	250			16.25	7.21	1220	3.15	163	0		
1:27 PM	250			16.22	7.23	1210	5.2	163	0		
1:32 PM	250			16.23	7.23	1200	4.33	163	0		
1:37 PM	250			16.23	7.23	1200	4.89	163	0		
1:42 PM	250	20		16.23	7.23	1200	4.63	153	0		

GROUNDWATER SAMPLING LOG

Client:	Marathon Petroleum Corporation (MPC)	Project #: 60711842	
Site:	Chevron Pipe Line Company Pasco Bulk Fuel Terminal	Event: 2023-Q4-GW	

Sample Information			
Sample ID:	MW-18-20231011	Date:	10/11/2023 6:30:00 PM
Well ID:	MW-18	Location Type:	Monitoring Well
Duplicate ID:	Not Applicable	Sampler:	Jackson Long
Equipment:	Field param meter: Horiba U-52 # U113004X WL/int meter: Heron Dipper-T # U49485X		
Comments:	60 psi 10/5		

Well Information			
Well Completion:	Flush	Well Diameter:	2 in
Total Depth:	87 ft bgs	Screen Interval:	72.0 - 87.0 ft bgs
SAP Pump Depth:	86.5 ft btoc		

Water Level			
Date:	10/11/2023 5:02:00 PM	Measured Well Depth:	Not Recorded
Is Well Dry?	No	Depth to Water:	80.35 ft btoc
Notes:	Not Recorded		

Purge Information			
Begin Date and Time:	10/11/2023 5:10:00 PM	End Date and Time:	10/11/2023 6:25:00 PM
Initial Pump Depth:	86.5 ft btoc	Final Pump Depth:	86.5 ft btoc
Purge Method:	Low flow (pump type: Bladder)	Sample Method:	Low flow
Notes:	Not Recorded		

Natural Attenuation Field Parameters			
Ferrous Iron:	0.09 mg/L	Nitrate:	8.2 mg/L

Time	Purge Rate (ml/min)	Cumulative Purge Volume (l)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
5:15 PM	0.2		80.35	19.3	7.48	1040	6.8	329	0.5	Clear colorless	None
5:20 PM	0.2		80.35	18.13	7.36	1130	7.58	328	337		
5:25 PM	0.2		80.35	17.77	7.34	1170	7.44	327	137		
5:30 PM	0.2		80.35	17.67	7.33	1170	7.43	328	55		
5:35 PM	0.2		80.35	17.85	7.34	1160	5.89	328	47.4		
5:41 PM	0.2		80.35	17.92	7.35	1170	8.18	328	23.3		
5:45 PM	0.2		80.35	17.44	7.34	1160	8.17	328	14.1		
5:50 PM	0.2		80.35	17.33	7.34	1160	7.93	327	15.7		

AECOM

GROUNDWATER SAMPLING LOG

Time	Purge Rate (ml/min)	Cumulative Purge Volume (l)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
5:55 PM	0.2		80.35	17.26	7.34	1150	8.15	326	11.8		
6:00 PM	0.2		80.35	17.18	7.34	1150	7.9	325	7.7		
6:05 PM	0.2		80.35	17.15	7.34	1150	8.25	323	6.6		
6:10 PM	0.2		80.35	17.14	7.34	1140	8.13	322	5.6		
6:15 PM	0.2		80.35	17.12	7.34	1140	8.05	321	4.4		
6:20 PM	0.2		80.35	17.09	7.34	1140	8.27	320	3.8		
6:25 PM	0.2	15	80.35	17.07	7.35	1140	7.9	320	4.1	Purge water cloudy	

GROUNDWATER SAMPLING LOG

Client:	Marathon Petroleum Corporation (MPC)	Project #: 60711842	
Site:	Chevron Pipe Line Company Pasco Bulk Fuel Terminal	Event: 2023-Q4-GW	

Sample Information			
Sample ID:	MW-19-20231011	Date:	10/11/2023 1:30:00 PM
Well ID:	MW-19	Location Type:	Monitoring Well
Duplicate ID:	Not Applicable	Sampler:	Jackson Long
Equipment:	Field param meter: Horiba U-52 # U113004X WL/int meter: Heron Dipper-T # U49485X		
Comments:	Not Recorded		

Well Information			
Well Completion:	Stick-up	Well Diameter:	2 in
Total Depth:	87 ft bgs	Screen Interval:	72.0 - 87.0 ft bgs
SAP Pump Depth:	85 ft btoc		

Water Level			
Date:	10/11/2023 12:32:00 PM	Measured Well Depth:	Not Recorded
Is Well Dry?	No	Depth to Water:	80.86 ft btoc

Purge Information			
Begin Date and Time:	10/11/2023 12:50:00 PM	End Date and Time:	10/11/2023 1:25:00 PM
Initial Pump Depth:	85 ft btoc	Final Pump Depth:	85 ft btoc
Purge Method:	Low flow (pump type: Bladder)	Sample Method:	Low flow

Natural Attenuation Field Parameters			
Ferrous Iron:	0.09 mg/L	Nitrate:	8.3 mg/L

Time	Purge Rate (ml/min)	Cumulative Purge Volume (l)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
12:55 PM	0.3		80.85	17.35	7.09	1030	4.16	313	11.7		None
1:00 PM	0.3		80.85	16.93	7.14	1050	3.67	303	7.8		
1:05 PM	0.3		80.85	16.76	7.2	1040	4.36	300	4.7		
1:10 PM	0.35		80.85	16.71	7.23	1040	4.44	298	2.9		
1:15 PM	0.35		80.85	16.66	7.24	1040	4.7	297	3.8		
1:20 PM	0.35		80.85	16.65	7.25	1040	4.97	296	2.9		
1:25 PM	0.35	12	80.85	16.66	7.27	1040	5.23	294	2.3		

GROUNDWATER SAMPLING LOG

Client:	Marathon Petroleum Corporation (MPC)	Project #: 60711842	
Site:	Chevron Pipe Line Company Pasco Bulk Fuel Terminal	Event: 2023-Q4-GW	

Sample Information			
Sample ID:	MW-20-20231011	Date:	10/11/2023 3:55:00 PM
Well ID:	MW-20	Location Type:	Monitoring Well
Duplicate ID:	Not Applicable	Sampler:	Jackson Long
Equipment:	Field param meter: Horiba U-52 # U113004X WL/int meter: Heron Dipper-T # U49485X		
Comments:	60 psi, 10/5 cycle		

Well Information			
Well Completion:	Stick-up	Well Diameter:	2 in
Total Depth:	99 ft bgs	Screen Interval:	79.0 - 94.0 ft bgs
SAP Pump Depth:	95 ft btoc		

Water Level			
Date:	10/11/2023 2:25:00 PM	Measured Well Depth:	Not Recorded
Is Well Dry?	No	Depth to Water:	83.15 ft btoc

Purge Information			
Begin Date and Time:	10/11/2023 2:30:00 PM	End Date and Time:	10/11/2023 3:50:00 PM
Initial Pump Depth:	95 ft btoc	Final Pump Depth:	95 ft btoc
Purge Method:	Low flow (pump type: Bladder)	Sample Method:	Low flow

Natural Attenuation Field Parameters			
Ferrous Iron:	0 mg/L	Nitrate:	8.1 mg/L

Time	Purge Rate (ml/min)	Cumulative Purge Volume (l)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
2:35 PM	0.25		83.15	18.28	7.4	1000	7.3	291	10.1		
2:40 PM	0.25		83.15	17.8	7.47	998	7.92	293	4.1		None
3:25 PM	0.25		83.15	17.72	7.58	997	7.31	306	1.2		
3:30 PM	0.25		83.15	17.49	7.56	996	7.88	308	1		
3:35 PM	0.3		83.15	17.4	7.56	996	8.03	310	1.6		
3:40 PM	0.3		83.15	17.39	7.56	996	8.11	312	1.3		
3:45 PM	0.3		83.15	17.37	7.56	996	8.08	313	1.1		
3:50 PM	0.3	15	83.15	17.38	7.56	996	8.35	315	1.2		

GROUNDWATER SAMPLING LOG

Client:	Marathon Petroleum Corporation (MPC)	Project #: 60711842	
Site:	Chevron Pipe Line Company Pasco Bulk Fuel Terminal	Event: 2023-Q4-GW	

Sample Information			
Sample ID:	MW-21-20231012	Date:	10/12/2023 9:30:00 AM
Well ID:	MW-21	Location Type:	Monitoring Well
Duplicate ID:	Not Applicable	Sampler:	Jackson Long
Equipment:	Field param meter: Horiba U-52 # U113004X WL/int meter: Heron Dipper-T # U49485X		
Comments:	60psi, 10/5		

Well Information			
Well Completion:	Stick-up	Well Diameter:	2 in
Total Depth:	93 ft bgs	Screen Interval:	77.0 - 92.0 ft bgs
SAP Pump Depth:	93 ft btoc		

Water Level			
Date:	10/12/2023 8:41:00 AM	Measured Well Depth:	Not Recorded
Is Well Dry?	No	Depth to Water:	83.10 ft btoc

Purge Information			
Begin Date and Time:	10/12/2023 8:50:00 AM	End Date and Time:	10/12/2023 9:25:00 AM
Initial Pump Depth:	93 ft btoc	Final Pump Depth:	93 ft btoc
Purge Method:	Low flow (pump type: Bladder)	Sample Method:	Low flow

Natural Attenuation Field Parameters			
Ferrous Iron:	0 mg/L	Nitrate:	5.9 mg/L

Time	Purge Rate (ml/min)	Cumulative Purge Volume (l)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
8:55 AM	0.25		83.1	15.71	7.2	1020	9.52	312	19.3		None
9:00 AM	0.25		83.1	15.84	7.3	1020	8.17	310	17.4		
9:05 AM	0.25		83.1	15.93	7.36	1010	8.39	310	10.3		
9:10 AM	0.25		83.1	15.96	7.39	1010	8.25	311	6.7		
9:15 AM	0.25		83.1	15.97	7.42	1010	8.23	312	3.8		
9:20 AM	0.25		83.1	16.03	7.43	1010	8.09	314	1		
9:25 AM	0.25	11	83.1	16.08	7.44	1010	8.09	315	0.3		

GROUNDWATER SAMPLING LOG

Client:	Marathon Petroleum Corporation (MPC)	Project #: 60711842	
Site:	Chevron Pipe Line Company Pasco Bulk Fuel Terminal	Event: 2023-Q4-GW	

Sample Information			
Sample ID:	MW-22-20231013	Date:	10/13/2023 9:05:00 AM
Well ID:	MW-22	Location Type:	Monitoring Well
Duplicate ID:	Not Applicable	Sampler:	Jackson Long
Equipment:	Field param meter: Horiba U-52 # U113004X WL/int meter: Heron Dipper-T # U49485X		
Comments:	55 psi, 10/5		

Well Information			
Well Completion:	Stick-up	Well Diameter:	2 in
Total Depth:	95 ft bgs	Screen Interval:	79.0 - 94.0 ft bgs
SAP Pump Depth:	94 ft btoc		

Water Level			
Date:	10/13/2023 8:19:00 AM	Measured Well Depth:	Not Recorded
Is Well Dry?	No	Depth to Water:	77.25 ft btoc

Purge Information			
Begin Date and Time:	10/13/2023 8:25:00 AM	End Date and Time:	10/13/2023 9:00:00 AM
Initial Pump Depth:	94 ft btoc	Final Pump Depth:	94 ft btoc
Purge Method:	Low flow (pump type: Bladder)	Sample Method:	Low flow

Natural Attenuation Field Parameters			
Ferrous Iron:	0.09 mg/L	Nitrate:	5.4 mg/L

Time	Purge Rate (ml/min)	Cumulative Purge Volume (l)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
8:30 AM	0.3		77.25	16.05	7.38	972	9.55	292	16.3		None
8:35 AM	0.3		77.25	16.05	7.36	968	8.67	293	14.4		
8:40 AM	0.3		77.25	16.15	7.37	968	8.7	296	9.4		
8:45 AM	0.3		77.25	16.25	7.38	967	8.5	297	6.7		
8:50 AM	0.3		77.25	16.29	7.39	966	8.69	299	3.1		
8:55 AM	0.3		77.25	16.35	7.4	966	8.47	300	0		
9:00 AM	0.3	13	77.25	16.38	7.41	966	8.38	302	0		

GROUNDWATER SAMPLING LOG

Client:	Marathon Petroleum Corporation (MPC)	Project #: 60711842	
Site:	Chevron Pipe Line Company Pasco Bulk Fuel Terminal	Event: 2023-Q4-GW	

Sample Information			
Sample ID:	MW-23-20231012	Date:	10/12/2023 5:00:00 PM
Well ID:	MW-23	Location Type:	Monitoring Well
Duplicate ID:	Not Applicable	Sampler:	Jackson Long
Equipment:	Field param meter: Horiba U-52 # U113004X WL/int meter: Heron Dipper-T # U49485X		
Comments:	55 psi, 10/5 , compressor tripped multiple times, sampled when could		

Well Information			
Well Completion:	Flush	Well Diameter:	2 in
Total Depth:	96 ft bgs	Screen Interval:	80.0 - 95.0 ft bgs
SAP Pump Depth:	92 ft btoc		

Water Level			
Date:	10/12/2023 4:02:00 PM	Measured Well Depth:	Not Recorded
Is Well Dry?	No	Depth to Water:	78.50 ft btoc

Purge Information			
Begin Date and Time:	10/12/2023 4:10:00 PM	End Date and Time:	10/12/2023 4:50:00 PM
Initial Pump Depth:	92 ft btoc	Final Pump Depth:	92 ft btoc
Purge Method:	Low flow (pump type: Bladder)	Sample Method:	Low flow

Natural Attenuation Field Parameters			
Ferrous Iron:	0.08 mg/L	Nitrate:	8 mg/L

Time	Purge Rate (ml/min)	Cumulative Purge Volume (l)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
4:15 PM	0.2		78.5	18.73	7.33	1070	6.06	267	19.1		None
4:20 PM	0.2		78.5	17.99	7.47	995	6.3	268	19.8		
4:30 PM	0.2		78.5	18.51	7.55	990	6.85	278	13.2		
4:35 PM	0.2		78.5	17.89	7.57	990	6.87	281	8.4		
4:40 PM	0.2		78.5	19.01	7.5	983	7.13	284	7.8		
4:45 PM	0.2		78.5	18.96	7.6	990	6.86	287	5.4		
4:50 PM	0.2	7	78.5	18.94	7.52	987	6.37	290	4.6		

APPENDIX B

Groundwater Data and Analytical Results – 2014 - 2023

Table B1. Groundwater Elevations and Analytical Results - 2014-2023
Chevron Pipe Line Company Pasco Bulk Fuel Terminal

Well ID	Sample Date	TOC Elevation	Depth to GW	GW Elevation	Change in GW Elevation	Chemicals of Concern							
						TPH-g	TPH-d	TPH-o	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene
	Cleanup Levels [1]					*800/1,000*	*500*	*500*	*5*	*1,000*	*700*	*1,000*	*160*
	Units:	*ft NAVD29* [2]	*ft btoc*	*ft NAVD29* [2]	*ft*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*
Site Wells													
MW-02	5/29/14	417.28	72.83	344.45	--	250 U	250 U	500 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	10/29/14	417.28	74.03	343.25	1.20	250 U	250 U	500 U	0.50 U	**0.68**	0.50 U	0.50 U	0.50 U
	6/4/15	417.28	73.31	343.97	-0.72	250 U	**140**	250 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U
	9/28/15	417.28	74.42	342.86	1.11	250 U	100 U	250 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U
	8/29/16	417.28	74.52	342.76	0.10	50 U	**1,400**	**710**	2.0 U	2.0 U	3.0 U	3.0 U	2.0 U
	12/5/16	417.28	74.02	343.26	-0.50	50 U	**410**	250 U	2.0 U	2.0 U	3.0 U	3.0 U	2.0 U
	5/17/17	417.28	72.86	344.42	-1.16	--	--	--	--	--	--	--	--
	10/24/17	417.28	74.12	343.16	1.26	250 U	**580**	250 U	2.0 U	2.0 U	3.0 U	3.0 U	2.0 U
	6/14/18	417.28	72.89	344.39	-1.23	250 U	**450**	**480**	3.0 U	2.0 U	3.0 U	3.0 U	4.0 U
	12/2/18	417.23	73.93	343.30	1.09	100 U	**1,300**	**1,800**	0.53 U	0.39 U	0.50 U	0.75 U	0.93 U
	6/26/19	417.23	73.49	343.74	-0.44	100 U	**1,500**	**1,200**	0.53 U	0.39 U	0.50 U	0.75 U	0.93 U
	12/11/19	417.23	73.75	343.48	0.26	100 U	**1,600**	**1,100**	0.53 U	0.39 U	0.50 U	0.75 U	0.93 U
	6/24/20	417.23	73.38	343.85	-0.37	100 U	**1,200**	**930**	0.24 U	0.39 U	0.50 U	0.39 U	0.93 U
	12/15/20	417.23	73.71	343.52	0.33	100 U	**460**	120 U	0.24 U	0.39 U	0.50 U	3.0 U	4.0 U
	5/25/21	417.23	73.69	343.54	-0.02	31.6 U	**1,250**	**901**	0.0941 U	0.278 U	0.137 U	0.174 U	1.00 UJ
	10/26/21	417.23	74.38	342.85	0.69	100 U	**630**	**460**	0.0941 U	0.278 U	0.137 U	0.174 U	1.00 U
	11/3/22	417.23	73.98	343.25	-0.40	100 U	**2,850**	**8,560**	0.0941 U	0.278 U	0.137 U	0.174 U	1.00 U
	4/26/23	417.23	73.00	344.23	-0.98	100 U	**1,240**	**969**	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
	10/12/23	417.23	73.88	343.35	0.88	100 U	**874**	**1,020**	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
MW-03	5/28/14	423.42	78.85	344.57	--	250 U	**1,100**	500 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	10/30/14	423.42	80.18	343.24	1.33	**620**	**18,000**	500 U	0.50 U	**1.4**	0.50 U	0.50 U	0.50 U
	6/4/15	423.42	79.46	343.96	-0.72	250 U	**3,300**	250 U	0.50 U	0.50 U	0.50 U	1.0 U	**0.51**
	9/29/15	423.42	80.58	342.84	1.12	**733**	**3,300**	250 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U
	8/30/16	423.42	80.60	342.82	0.02	**1,400**	**11,000**	**1,100**	2.0 U	2.0 U	3.0 U	3.0 U	**2.5**
	12/6/16	423.42	80.17	343.25	-0.43	**290**	**6,600**	**290**	2.0 U	2.0 U	3.0 U	3.0 U	2.0 U
	5/16/17	423.42	79.04	344.38	-1.13	500 U	**2,600**	250 U	2.0 U	2.0 U	3.0 U	3.0 U	2.0 U
	10/25/17	423.42	80.23	343.19	1.19	**380**	**5,700**	**410**	2.0 U	2.0 U	3.0 U	3.0 U	2.0 U
	6/14/18	423.42	79.20	344.22	-1.03	250 U	**4,700**	**860**	3.0 U	2.0 U	3.0 U	3.0 U	4.0 U
	12/4/18	423.40	80.00	343.40	0.82	**180 J**	**8,800**	**2,000**	0.53 U	0.39 U	0.50 U	**3.0 U**	0.93 U
	6/26/19	423.40	79.64	343.76	-0.36	**300**	**8,600**	**1,900**	0.53 U	0.39 U	0.50 U	0.75 U	0.93 U
	12/11/19	423.40	79.93	343.47	0.29	**230 J**	**2,700 J**	**830 J**	0.53 U	0.39 U	0.50 U	0.75 U	0.93 U
	6/24/20	423.40	79.57	343.83	-0.36	**200 J**	**4,400**	**920**	0.24 U	0.39 U	0.50 U	0.39 U	0.93 U
	12/16/20	423.40	79.92	343.48	0.35	**150 J**	**2,200**	**210 J**	0.24 U	0.39 U	0.50 U	0.39 U	0.93 U
	5/27/21	423.40	79.86	343.54	-0.06	632 U	**12,100 J**	**3,500 J**	0.471 U	1.39 U	0.685 U	0.870 U	5.00 UJ
	10/25/21	423.40	80.49	342.91	0.63	**213**	**6,910**	**1,740**	0.471 U	1.39 U	0.685 U	**1.30 J**	5.00 U
	11/3/22	423.40	80.16	343.24	-0.33	**117 J**	**5,860**	**1,410**	0.094 U	0.278 U	0.137 U	0.174 U	1.00 U
	4/25/23	423.40	79.16	344.24	-1.00	100 U	**5,120**	**1,240**	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
	10/11/23	423.40	79.94	343.46	0.78	**140 J**	**7,840**	**2,180**	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U

Table B1. Groundwater Elevations and Analytical Results - 2014-2023
Chevron Pipe Line Company Pasco Bulk Fuel Terminal

Well ID	Sample Date	TOC Elevation	Depth to GW	GW Elevation	Change in GW Elevation	Chemicals of Concern							
						TPH-g	TPH-d	TPH-o	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene
	Cleanup Levels [1]					*800/1,000*	*500*	*500*	*5*	*1,000*	*700*	*1,000*	*160*
	Units:	*ft NAVD29* [2]	*ft btoc*	*ft NAVD29* [2]	*ft*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*
MW-04	5/28/14	412.09	67.98	344.11	--	250 U	250 U	500 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	10/28/14	412.09	69.17	342.92	1.19	250 U	250 U	500 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	6/3/15	412.09	68.48	343.61	-0.69	250 U	100 U	250 U	0.50 U	**0.52**	0.5 U	1.0 U	0.50 U
	9/28/15	412.09	69.52	342.57	1.04	--	--	--	--	--	--	--	--
	8/30/16	412.09	69.66	342.43	0.14	50 U	110 U	250 U	2.0 U	2.0 U	3.0 U	3.0 U	2.0 U
	12/5/16	412.09	--	--	--	--	--	--	--	--	--	--	--
	5/15/17	412.09	68.02	344.07	--	500 U	100 U	250 U	2.0 U	2.0 U	3.0 U	3.0 U	2.0 U
	6/13/18	412.05	68.15	343.90	0.17	250 U	110 U	350 U	3.0 U	2.0 U	3.0 U	3.0 U	4.0 U
	6/26/19	412.05	68.68	343.37	0.53	100 U	69 U	100 U	0.53 U	0.39 U	0.50 U	0.75 U	0.93 U
	12/9/19	412.05	68.98	343.07	0.30	--	--	--	--	--	--	--	--
	6/23/20	412.05	68.62	343.43	-0.36	100 U	69 U	100 U	0.24 U	0.39 U	0.50 U	0.39 U	0.93 U
	12/14/20	412.05	68.90	343.15	0.28	--	--	--	--	--	--	--	--
	5/25/21	412.05	68.84	343.21	-0.06	31.6 U	66.7 U	83.3 U	0.0941 U	0.278 U	0.137 U	0.174 U	1.00 UJ
	10/25/21	412.05	69.47	342.58	0.63	--	--	--	--	--	--	--	--
	10/31/22	412.05	69.11	342.94	-0.36	--	--	--	--	--	--	--	--
	4/25/23	412.05	68.24	343.81	-0.87	100 U	200 U	250 U	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
	10/13/23	412.05	69.00	343.05	0.76	100 U	200 U	**490**	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
MW-06	5/29/14	358.61	15.57	343.04	--	250 U	250 U	500 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	10/29/14	358.61	16.82	341.79	1.25	250 U	250 U	500 U	0.50 U	**4.9**	0.50 U	0.50 U	0.50 U
	6/3/15	358.61	16.18	342.43	-0.64	250 U	100 U	250 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U
	9/28/15	358.61	17.15	341.46	0.97	250 U	100 U	250 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U
	8/30/16	358.61	17.15	341.46	0.00	50 U	110 U	250 U	2.0 U	2.0 U	3.0 U	3.0 U	2.0 U
	12/5/16	358.61	16.91	341.70	-0.24	50 U	110 U	250 U	2.0 U	2.0 U	3.0 U	3.0 U	2.0 U
	5/16/17	358.61	15.88	342.73	-1.03	500 U	100 U	250 U	2.0 U	2.0 U	3.0 U	3.0 U	2.0 U
	10/23/17	358.61	17.01	341.60	1.13	250 U	100 U	250 U	2.0 U	2.0 U	3.0 U	3.0 U	2.0 U
	6/11/18	358.61	15.73	342.88	-1.28	250 U	**180**	**460**	3.0 U	2.0 U	3.0 U	3.0 U	4.0 U
	12/2/18	358.52	16.95	341.57	1.31	100 U	**71 J**	350 U	0.53 U	0.39 U	0.50 U	0.75 U	0.93 U
	6/26/19	358.52	16.48	342.04	-0.47	100 U	71 U	110 U	0.53 U	0.39 U	0.50 U	0.75 U	0.93 U
	12/10/19	358.52	16.97	341.55	0.49	100 U	62 U	92 U	0.53 U	0.39 U	0.50 U	0.75 U	0.93 U
	6/23/20	358.52	16.31	342.21	-0.66	100 U	69 U	100 U	0.24 U	0.39 U	0.50 U	0.39 U	0.93 U
	12/16/20	358.52	16.61	341.91	0.30	100 U	110 U	120 U	0.24 U	0.39 U	0.50 U	0.39 U	0.93 U
	5/24/21	358.52	16.44	342.08	-0.17	31.6 U	66.7 U	**120 J**	0.0941 U	0.278 U	0.137 U	0.174 U	1.00 UJ
	10/25/21	358.52	16.99	341.53	0.55	31.6 U	66.7 U	83.3 U	0.0941 U	0.278 U	0.137 U	0.174 U	1.00 U
	11/2/22	358.52	16.75	341.77	-0.24	100 U	**224**	**519**	0.0941 U	0.278 U	0.137 U	0.174 U	1.00 U
	4/25/23	358.52	16.20	342.32	-0.55	100 U	200 U	250 U	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
	10/10/23	358.52	16.79	341.73	0.59	100 U	200 U	250 U	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U

Table B1. Groundwater Elevations and Analytical Results - 2014-2023
Chevron Pipe Line Company Pasco Bulk Fuel Terminal

Well ID	Sample Date	TOC Elevation	Depth to GW	GW Elevation	Change in GW Elevation	Chemicals of Concern							
						TPH-g	TPH-d	TPH-o	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene
	Cleanup Levels [1]					*800/1,000*	*500*	*500*	*5*	*1,000*	*700*	*1,000*	*160*
	Units:	*ft NAVD29* [2]	*ft btoc*	*ft NAVD29* [2]	*ft*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*
MW-07	5/28/14	411.40	67.02	344.38	--	250 U	250 U	500 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	10/29/14	411.40	68.23	343.17	1.21	250 U	250 U	500 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	6/3/15	411.40	67.48	343.92	-0.75	250 U	100 U	250 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U
	9/28/15	411.40	68.61	342.79	1.13	250 U	100 U	250 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U
	8/30/16	411.40	68.74	342.66	0.13	50 U	110 U	250 U	2.0 U	2.0 U	3.0 U	3.0 U	2.0 U
	12/5/16	411.40	68.18	343.22	-0.56	50 U	110 U	250 U	2.0 U	2.0 U	3.0 U	3.0 U	2.0 U
	5/15/17	411.40	67.02	344.38	-1.16	500 U	100 U	250 U	2.0 U	2.0 U	3.0 U	3.0 U	2.0 U
	10/24/17	411.40	68.22	343.18	1.20	250 U	100 U	250 U	2.0 U	2.0 U	3.0 U	3.0 U	2.0 U
	6/13/18	411.40	67.16	344.24	-1.06	250 U	110 U	350 U	3.0 U	2.0 U	3.0 U	3.0 U	4.0 U
	12/4/18	411.32	68.03	343.29	0.95	100 U	**86 J**	97 U	0.53 U	0.39 U	**0.60 J**	3.0 U	0.93 U
	6/26/19	411.32	67.68	343.64	-0.35	100 U	**110**	98 U	0.53 U	0.39 U	0.50 U	0.75 U	0.93 U
	12/11/19	411.32	67.58	343.74	-0.10	100 U	**67 J**	99 U	0.53 U	0.39 U	0.50 U	0.75 U	0.93 U
	6/23/20	411.32	67.57	343.75	-0.01	100 U	66 U	98 U	0.24 U	0.39 U	0.50 U	0.39 U	0.93 U
	12/14/20	411.32	67.87	343.45	0.30	100 U	110 U	120 U	0.24 U	0.39 U	0.50 U	3.0 U	4.0 U
	5/25/21	411.32	67.82	343.50	-0.05	31.6 U	66.7 U	**103 J**	0.0941 U	0.278 U	0.137 U	0.174 U	1.00 UJ
	10/25/21	411.32	68.47	342.85	0.65	31.6 U	66.7 U	83.3 U	0.0941 U	0.278 U	0.137 U	0.174 U	1.00 U
	11/2/22	411.32	68.12	343.20	-0.35	100 U	66.7 U	83.3 U	0.0941 U	0.278 U	0.137 U	0.174 U	1.00 U
	4/25/23	411.32	67.15	344.17	-0.97	100 U	200 U	250 U	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
	10/10/23	411.32	67.98	343.34	0.83	100 U	200 U	250 U	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
MW-08	5/28/14	383.91	39.56	344.35	--	250 U	250 U	500 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	10/29/14	383.91	40.78	343.13	1.22	250 U	250 U	500 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	6/3/15	383.91	40.04	343.87	-0.74	250 U	100 U	250 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U
	9/28/15	383.91	41.13	342.78	1.09	--	--	--	--	--	--	--	--
	8/30/16	383.91	40.30	343.61	-0.83	50 U	110 U	250 U	2.0 U	2.0 U	3.0 U	3.0 U	2.0 U
	12/5/16	383.91	--	--	--	--	--	--	--	--	--	--	--
	5/17/17	383.91	39.56	344.35	--	500 U	100 U	250 U	2.0 U	2.0 U	3.0 U	3.0 U	2.0 U
	6/11/18	383.76	39.65	344.11	0.240	250 U	110 U	350 U	3.0 U	2.0 U	3.0 U	3.0 U	4.0 U
	6/26/19	383.76	40.26	343.50	0.610	100 U	71 U	100 U	0.53 U	0.39 U	0.50 U	0.75 U	0.93 U
	12/9/19	383.76	40.48	343.28	0.22	--	--	--	--	--	--	--	--
	6/23/20	383.76	40.14	343.62	-0.34	100 U	68 U	100 U	0.24 U	0.39 U	0.50 U	0.39 U	0.93 U
	12/14/20	383.76	40.44	343.32	0.300	--	--	--	--	--	--	--	--
	5/26/21	383.76	40.38	343.38	-0.06	31.6 U	66.7 U	83.3 U	0.0941 U	0.278 U	0.137 U	0.174 U	1.00 UJ
	10/25/21	383.76	41.03	342.73	0.65	--	--	--	--	--	--	--	--
	4/25/23	383.76	39.93	343.83	-1.10	100 U	200 U	250 U	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
	10/11/23	383.76	40.59	343.17	0.66	100 U	200 U	**351**	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U

Table B1. Groundwater Elevations and Analytical Results - 2014-2023
Chevron Pipe Line Company Pasco Bulk Fuel Terminal

Well ID	Sample Date	TOC Elevation	Depth to GW	GW Elevation	Change in GW Elevation	Chemicals of Concern							
						TPH-g	TPH-d	TPH-o	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene
	Cleanup Levels [1]					*800/1,000*	*500*	*500*	*5*	*1,000*	*700*	*1,000*	*160*
	Units:	*ft NAVD29* [2]	*ft btoc*	*ft NAVD29* [2]	*ft*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*
MW-10	5/28/14	407.91	63.46	344.45	--	250 U	250 U	500 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	10/29/14	407.91	64.68	343.23	1.22	250 U	250 U	500 U	0.50 U	**1.1**	0.50 U	0.50 U	0.50 U
	6/3/15	407.91	63.91	344.00	-0.77	250 U	100 U	250 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U
	9/28/15	407.91	65.02	342.89	1.11	--	--	--	--	--	--	--	--
	8/30/16	407.91	65.22	342.69	0.20	50 U	110 U	250 U	2.0 U	2.0 U	3.0 U	3.0 U	2.0 U
	12/5/16	407.91	--	--	--	--	--	--	--	--	--	--	--
	5/15/17	407.91	63.50	344.41	--	500 U	100 U	250 U	2.0 U	2.0 U	3.0 U	3.0 U	2.0 U
	6/13/18	407.83	63.58	344.25	0.16	250 U	110 U	350 U	3.0 U	2.0 U	3.0 U	3.0 U	4.0 U
	6/26/19	407.83	64.15	343.68	0.57	100 U	**88 J**	**110 J**	0.53 U	0.39 U	0.50 U	0.75 U	0.93 U
	12/9/19	407.83	64.37	343.46	0.22	--	**--**	**--**	--	--	--	--	--
	6/23/20	407.83	64.03	343.80	-0.34	100 U	66 U	98 U	0.24 U	0.39 U	0.50 U	0.39 U	0.93 U
	12/14/20	407.83	64.36	343.47	0.33	--	--	--	--	--	--	--	--
	5/25/21	407.83	64.30	343.53	-0.06	31.6 U	66.7 U	83.3 U	0.0941 U	0.278 U	0.137 U	0.174 U	1.00 UJ
	10/25/21	407.83	64.94	342.89	0.64	--	--	--	--	--	--	--	--
	10/31/22	407.83	64.60	343.23	-0.34	--	--	--	--	--	--	--	--
	4/25/23	407.83	63.63	344.20	-0.97	100 U	200 U	250 U	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
	10/10/23	407.83	64.45	343.38	0.82	100 U	200 U	250 U	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
MW-11	5/29/14	423.48	79.19	344.29	--	250 U	250 U	500 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	10/30/14	423.48	80.31	343.17	1.12	250 U	250 U	500 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	6/4/15	423.48	79.55	343.93	-0.76	250 U	100 U	250 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U
	9/29/15	423.48	80.67	342.81	1.12	250 U	100 U	250 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U
	8/29/16	423.48	80.42	343.06	-0.25	50 U	**520**	250 U	2.0 U	2.0 U	3.0 U	3.0 U	2.0 U
	12/5/16	423.48	80.29	343.19	-0.13	50 U	**360**	250 U	2.0 U	2.0 U	3.0 U	3.0 U	2.0 U
	5/16/17	423.48	79.15	344.33	-1.14	500 U	**390**	250 U	2.0 U	2.0 U	3.0 U	3.0 U	2.0 U
	10/25/17	423.48	80.31	343.17	1.16	250 U	**360**	250 U	2.0 U	2.0 U	3.0 U	3.0 U	2.0 U
	6/14/18	423.48	79.30	344.18	-1.01	250 U	**160**	350 U	3.0 U	2.0 U	3.0 U	3.0 U	4.0 U
	12/2/18	423.44	80.14	343.30	0.88	100 U	**500**	**570 J**	0.53 U	0.39 U	0.50 U	0.75 U	0.93 U
	6/27/19	423.44	79.79	343.65	-0.35	100 U	**400**	**320 J**	0.53 U	0.39 U	0.50 U	0.75 U	0.93 U
	12/11/19	423.44	80.01	343.43	0.22	100 U	**130**	91 U	0.53 U	0.39 U	0.50 U	0.75 U	0.93 U
	6/24/20	423.44	79.66	343.78	-0.35	100 U	**3,900**	**2,300**	0.24 U	0.39 U	0.50 U	0.39 U	0.93 U
	12/15/20	423.44	79.95	343.49	0.29	100 U	**210 J**	130 U	0.24 U	0.39 U	0.50 U	3.0 U	4.0 U
	5/25/21	423.44	79.95	343.49	0.00	31.6 U	**765 J**	**428 J**	0.0941 U	0.278 U	0.137 U	0.174 U	1.00 UJ
	10/25/21	423.44	80.62	342.82	0.67	31.6 U	**499**	**230 J**	0.0941 U	0.278 U	0.137 U	0.174 U	1.00 U
	11/2/22	423.44	80.21	343.23	-0.41	100 U	**200 J**	**84.6 J**	0.0941 U	0.278 U	0.137 U	0.174 U	1.00 U
	4/26/23	423.44	79.28	344.16	-0.93	100 U	200 U	250 U	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
	10/12/23	423.44	80.07	343.37	0.79	100 U	**350**	**599**	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U

Table B1. Groundwater Elevations and Analytical Results - 2014-2023
Chevron Pipe Line Company Pasco Bulk Fuel Terminal

Well ID	Sample Date	TOC Elevation	Depth to GW	GW Elevation	Change in GW Elevation	Chemicals of Concern							
						TPH-g	TPH-d	TPH-o	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene
	Cleanup Levels [1]					*800/1,000*	*500*	*500*	*5*	*1,000*	*700*	*1,000*	*160*
	Units:	*ft NAVD29* [2]	*ft btoc*	*ft NAVD29* [2]	*ft*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*
MW-12	5/29/14	423.65	79.26	344.39	--	250 U	250 U	500 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	10/30/14	423.65	80.45	343.20	1.19	250 U	250 U	500 U	0.50 U	**0.66**	0.50 U	0.50 U	0.50 U
	6/4/15	423.65	79.72	343.93	-0.73	250 U	100 U	250 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U
	9/29/15	423.65	80.83	342.82	1.11	250 U	100 U	250 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U
	12/6/16	423.65	80.48	343.17	-0.35	50 U	110 U	250 U	**6.0**	2.0 U	3.0 U	3.0 U	2.0 U
	5/16/17	423.65	79.30	344.35	-1.18	500 U	100 U	250 U	2.0 U	2.0 U	3.0 U	3.0 U	2.0 U
	10/24/17	423.65	80.45	343.20	1.15	250 U	**160**	250 U	2.0 U	2.0 U	3.0 U	3.0 U	2.0 U
	6/14/18	423.65	79.30	344.35	-1.15	250 U	**160**	350 U	3.0 U	2.0 U	3.0 U	3.0 U	4.0 U
	12/3/18	423.62	80.22	343.40	0.95	100 U	**270**	**240 J**	0.53 U	0.39 U	0.50 U	0.75 U	0.93 U
	6/27/19	423.62	79.97	343.65	-0.25	100 U	**270**	**300 J**	**0.63 J**	0.39 U	0.50 U	0.75 U	0.93 U
	12/11/19	423.62	80.20	343.42	0.23	100 U	**170**	91 U	0.53 U	0.39 U	0.50 U	0.75 U	0.93 U
	6/24/20	423.62	79.85	343.77	-0.35	100 U	**450**	**330 J**	0.24 U	0.39 U	0.50 U	0.39 U	0.93 U
	12/16/20	423.62	80.14	343.48	0.29	100 U	110 U	120 U	0.24 U	0.39 U	0.50 U	0.39 U	0.93 U
	5/27/21	423.62	80.06	343.56	-0.08	31.6 U	**601**	**448**	1.00 U	0.278 U	0.137 U	0.174 U	1.00 UJ
	10/25/21	423.62	80.79	342.83	0.73	31.6 U	**273**	**652**	0.0941 U	0.278 U	0.137 U	0.174 U	1.00 U
	11/2/22	423.62	80.37	343.25	-0.42	100 U	66.7 U	**736**	0.0941 U	0.278 U	0.137 U	0.174 U	1.00 U
	4/26/23	423.62	79.45	344.17	-0.92	100 U	**234**	250 U	1.00 U	1.000 U	1.000 U	3.000 U	5.00 U
	10/12/23	423.62	80.30	343.32	0.85	100 U	**419**	**749**	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
MW-14	5/29/14	421.97	77.58	344.39	--	250 U	250 U	500 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	10/29/14	421.97	78.80	343.17	1.22	250 U	250 U	500 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	6/4/15	421.97	78.04	343.93	-0.76	250 U	100 U	250 U	0.50 U	**0.72**	0.50 U	1.0 U	0.50 U
	9/28/15	421.97	79.18	342.79	1.14	250 U	100 U	250 U	0.50 U	**0.72**	0.50 U	1.0 U	0.50 U
	8/29/16	421.97	79.32	342.65	0.14	50 U	**120**	250 U	2.0 U	2.0 U	3.0 U	3.0 U	2.0 U
	12/5/16	421.97	78.75	343.22	-0.57	50 U	110 U	250 U	2.0 U	2.0 U	3.0 U	3.0 U	2.0 U
	5/17/17	421.97	77.55	344.42	-1.20	500 U	100 U	250 U	2.0 U	2.0 U	3.0 U	3.0 U	2.0 U
	10/24/17	421.97	78.78	343.19	1.23	250 U	100 U	250 U	2.0 U	2.0 U	3.0 U	3.0 U	2.0 U
	6/13/18	421.97	77.74	344.23	-1.04	250 U	**110**	350 U	3.0 U	2.0 U	3.0 U	3.0 U	4.0 U
	12/2/18	421.84	78.53	343.31	0.92	100 U	**170**	350 U	0.53 U	0.39 U	0.50 U	0.75 U	0.93 U
	6/27/19	421.84	78.28	343.56	-0.25	100 U	**80 J**	**120 J**	0.53 U	0.39 U	0.50 U	0.75 U	0.93 U
	12/11/19	421.84	78.52	343.32	0.24	100 U	67 U	99 U	0.53 U	0.39 U	0.50 U	0.75 U	0.93 U
	6/24/20	421.84	78.16	343.68	-0.36	100 U	73 U	110 U	0.24 U	0.39 U	0.50 U	0.39 U	**1.0 J**
	12/15/20	421.84	78.46	343.38	0.30	100 U	110 U	120 U	0.24 U	0.39 U	0.50 U	3.0 U	4.0 U
	5/25/21	421.84	78.43	343.41	-0.03	31.6 U	66.7 U	83.3 U	0.0941 U	0.278 U	0.137 U	0.174 U	1.00 UJ
	10/25/21	421.84	79.20	342.64	0.77	31.6 U	66.7 U	83.3 U	0.0941 U	0.278 U	0.137 U	0.174 U	1.00 U
	11/3/22	421.84	78.73	343.11	-0.47	31.6 U	66.7 U	83.3 U	0.0941 U	0.278 U	0.137 U	0.174 U	1.00 U
	4/26/23	421.84	77.97	343.87	-0.76	100 U	200 U	250 U	1.00 U	1.000 U	1.000 U	3.000 U	5.00 U
	10/12/23	421.84	78.62	343.22	0.65	100 U	200 U	**408**	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U

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Chevron Pipe Line Company Pasco Bulk Fuel Terminal

Well ID	Sample Date	TOC Elevation	Depth to GW	GW Elevation	Change in GW Elevation	Chemicals of Concern							
						TPH-g	TPH-d	TPH-o	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene
	Cleanup Levels [1]					*800/1,000*	*500*	*500*	*5*	*1,000*	*700*	*1,000*	*160*
	Units:	*ft NAVD29* [2]	*ft btoc*	*ft NAVD29* [2]	*ft*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*
MW-15	12/3/18	358.50	16.69	341.81	--	100 U	**70 J**	97 U	0.53 U	0.39 U	0.50 U	0.75 U	0.93 U
	6/26/19	358.50	16.41	342.09	-0.28	100 U	66 U	98 U	0.53 U	0.39 U	0.50 U	0.75 U	0.93 U
	12/10/19	358.50	16.78	341.72	0.37	100 U	64 U	95 U	0.53 U	0.39 U	0.50 U	0.75 U	0.93 U
	6/23/20	358.50	16.17	342.33	-0.61	100 U	68 U	**110 J**	0.24 U	0.39 U	0.50 U	0.39 U	0.93 U
	12/14/20	358.50	16.43	342.07	0.26	100 U	110 U	120 U	0.24 U	0.39 U	0.50 U	3.0 U	4.0 U
	5/25/21	358.50	16.34	342.16	-0.09	31.6 U	66.7 U	83.3 U	0.0941 U	0.278 U	0.137 U	0.174 U	1.00 UJ
	10/25/21	358.50	16.90	341.60	0.56	31.6 U	66.7 U	83.3 U	0.0941 U	0.278 U	0.137 U	0.174 U	1.00 U
	11/2/22	358.50	16.63	341.87	-0.27	31.6 U	66.7 U	83.3 U	0.0941 U	0.278 U	0.137 U	0.174 U	1.00 U
	4/25/23	358.50	16.08	342.42	-0.82	100 U	200 U	250 U	1.00 U	1.000 U	1.000 U	3.00 U	5.00 U
	10/10/23	358.50	16.66	341.84	0.58	100 U	200 U	250 U	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
MW-16	12/3/18	370.92	27.95	342.97	--	100 U	**82 J**	96 U	0.53 U	0.39 U	0.50 U	0.75 U	0.93 U
	6/26/19	370.92	27.60	343.32	-0.35	100 U	**77 J**	100 U	0.53 U	0.39 U	0.50 U	0.75 U	0.93 U
	12/10/19	370.92	27.79	343.13	0.19	100 U	62 U	91 U	0.53 U	0.39 U	0.50 U	0.75 U	0.93 U
	6/22/20	370.92	27.41	343.51	-0.38	100 U	71 U	100 U	0.24 U	0.39 U	0.50 U	0.39 U	0.93 U
	12/16/20	370.92	27.69	343.23	0.28	100 U	120 U	130 U	0.24 U	0.39 U	0.50 U	0.39 U	0.93 U
	5/25/21	370.92	27.68	343.24	-0.01	31.6 U	66.7 U	83.3 U	0.0941 U	0.278 U	0.137 U	0.174 U	1.00 UJ
	10/25/21	370.92	28.32	342.60	0.64	31.6 U	66.7 U	83.3 U	0.0941 U	0.278 U	0.137 U	0.174 U	1.00 U
	11/2/22	370.92	27.92	343.00	-0.40	100 U	66.7 U	**207 J**	0.0941 U	0.278 U	0.137 U	0.174 U	1.00 U
	4/25/23	370.92	27.14	343.78	-0.78	100 U	200 U	250 U	1.00 U	1.000 U	1.000 U	3.00 U	5.00 U
	10/11/23	370.92	27.92	343.00	0.78	100 U	200 U	**266**	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
MW-17	12/3/18	424.28	81.00	343.28	--	**180 J**	**880**	**850**	**2.9 J**	**1.9 J**	**8.6 J**	**38 J**	**4.7 J**
	6/27/19	424.28	80.62	343.66	-0.38	100 U	**530**	**640**	0.53 U	0.39 U	0.50 U	0.75 U	0.93 U
	12/11/19	424.28	81.84	342.44	1.22	100 U	**960**	**800**	0.53 U	0.39 U	0.50 U	0.75 U	0.93 U
	6/24/20	424.28	80.48	343.80	-1.36	100 U	**750**	**420**	0.24 U	0.39 U	0.50 U	0.39 U	0.93 U
	12/15/20	424.28	80.80	343.48	0.32	100 U	**350**	120 U	0.24 U	0.39 U	0.50 U	3.0 U	4.0 U
	5/25/21	424.28	80.78	343.50	-0.02	31.6 U	**486**	**358**	0.0941 U	0.278 U	0.137 U	0.174 U	1.00 UJ
	10/25/21	424.28	81.50	342.78	0.72	31.6 U	**855**	**674**	0.0941 U	0.278 U	0.137 U	0.174 U	1.00 U
	11/3/22	424.28	81.04	343.24	-0.46	100 U	**903**	**503**	0.0941 U	0.278 U	0.137 U	0.174 U	1.00 U
	4/26/23	424.28	80.12	344.16	-0.92	100 U	**604**	250 U	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
	10/12/23	424.28	80.93	343.35	0.81	100 U	**434**	**566**	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
MW-18	12/3/18	423.66	--	--	--	**280**	65 U	96 U	**1.4 J**	**0.83 J**	**3.2**	**15**	**1.7 J**
	6/26/19	423.69	80.01	343.68	--	100 U	**68 J**	100 U	0.53 U	0.39 U	0.50 U	0.75 U	0.93 U
	12/12/19	423.69	80.12	343.57	0.11	100 U	62 U	91 U	0.53 U	0.39 U	0.50 U	0.75 U	0.93 U
	6/22/20	423.69	79.81	343.88	-0.31	100 U	68 U	100 U	0.24 U	0.39 U	0.50 U	0.39 U	0.93 U
	12/15/20	423.69	80.11	343.58	0.30	100 U	110 U	120 U	0.24 U	0.39 U	0.50 U	3.0 U	4.0 U
	5/26/21	423.69	80.11	343.58	0.00	31.6 U	66.7 U	83.3 U	0.0941 U	0.278 U	0.137 U	0.174 U	1.00 UJ
	10/25/21	423.69	80.78	342.91	0.67	31.6 U	66.7 U	83.3 U	0.0941 U	0.278 U	0.137 U	0.174 U	1.00 U
	11/1/22	423.69	80.32	343.37	-0.46	100 U	66.7 U	**101 J**	0.0941 U	0.278 U	0.137 U	0.174 U	1.00 U
	4/26/23	423.69	79.44	344.25	-0.88	100 U	200 U	250 U	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
	10/11/23	423.69	80.29	343.40	0.85	100 U	200 U	250 U	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U

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Well ID	Sample Date	TOC Elevation	Depth to GW	GW Elevation	Change in GW Elevation	Chemicals of Concern							
						TPH-g	TPH-d	TPH-o	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene
	Cleanup Levels [1]					*800/1,000*	*500*	*500*	*5*	*1,000*	*700*	*1,000*	*160*
	Units:	*ft NAVD29* [2]	*ft btoc*	*ft NAVD29* [2]	*ft*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*
MW-19	12/3/18	424.20	80.80	343.40	--	**18,000 J**	**3,100**	**110 J**	**300**	**160**	**740**	**630**	**390**
	6/27/19	424.20	80.50	343.70	-0.30	**3,200**	**930**	98 U	**160**	**23**	**180**	**260**	**110 J**
	12/10/19	424.20	80.72	343.48	0.22	**530**	**320**	93 U	**27**	4.1 U	**14**	**56**	**18**
	6/24/20	424.20	80.27	343.93	-0.45	100 U	**110**	**110 J**	**6.0**	0.39 U	**0.57 J**	**2.9 J**	**4.6 J**
	12/16/20	424.20	80.65	343.55	0.38	100 U	110 U	120 U	0.24 U	0.39 U	0.50 U	0.39 U	0.93 U
	5/26/21	424.20	80.61	343.59	-0.04	**51.2 J**	**147 J**	83.3 U	1.00 U	0.278 U	0.137 U	3.00 U	**1.56 J**
	10/25/21	424.20	81.31	342.89	0.70	31.6 U	66.7 U	83.3 U	0.0941 U	0.278 U	0.137 U	0.174 U	1.00 U
	11/1/22	424.20	80.92	343.28	-0.39	100 U	66.7 U	**97.8 J**	0.0941 U	0.278 U	0.137 U	0.17 U	1.00 U
	4/26/23	424.20	79.96	344.24	-0.96	100 U	200 U	250 U	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
	10/11/23	424.20	80.81	343.39	0.85	100 U	200 U	250 U	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
MW-20	12/12/19	426.52	82.84	343.68	--	100 U	**77 J**	99 U	0.53 U	0.39 U	0.50 U	0.75 U	0.93 U
	6/22/20	426.52	82.68	343.84	-0.16	100 U	70 U	100 U	0.24 U	0.39 U	0.50 U	0.39 U	0.93 U
	12/16/20	426.52	82.93	343.59	0.25	100 U	120 U	130 U	0.24 U	0.39 U	0.50 U	0.39 U	0.93 U
	5/26/21	426.52	82.94	343.58	0.01	31.6 U	66.7 U	83.3 U	0.0941 U	0.278 U	0.137 U	0.174 U	1.00 UJ
	10/25/21	426.52	83.60	342.92	0.66	31.6 U	66.7 U	83.3 U	0.0941 U	0.278 U	0.137 U	0.174 U	1.00 U
	11/1/22	426.52	83.26	343.26	-0.34	100 U	66.7 U	83.3 U	0.0941 U	0.278 U	0.137 U	0.174 U	1.00 U
	4/26/23	426.52	82.18	344.34	-1.08	100 U	200 U	250 U	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
	10/11/23	426.52	83.13	343.39	0.95	100 U	200 U	250 U	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
MW-21	12/12/19	426.16	82.65	343.51	--	100 U	67 U	99 U	0.53 U	0.39 U	0.50 U	0.75 U	0.93 U
	6/22/20	426.16	82.42	343.74	-0.23	100 U	72 U	**110 J**	0.24 U	0.39 U	0.50 U	0.39 U	0.93 U
	12/15/20	426.16	82.70	343.46	0.28	100 U	120 U	130 U	0.24 U	0.39 U	0.50 U	3.0 U	0.93 U
	5/26/21	426.16	82.66	343.50	-0.04	31.6 U	66.7 U	83.3 U	0.0941 U	0.278 U	0.137 U	0.174 U	1.00 UJ
	10/25/21	426.16	83.33	342.83	0.67	31.6 U	66.7 U	83.3 U	0.0941 U	0.278 U	0.137 U	0.174 U	1.00 U
	11/2/22	426.16	83.07	343.09	-0.26	100 U	66.7 U	83.3 U	0.0941 U	0.278 U	0.137 U	0.174 U	1.00 U
	4/25/23	426.16	82.00	344.16	-1.07	100 U	200 U	250 U	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
	10/12/23	426.16	82.84	343.32	0.84	100 U	200 U	250 U	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
MW-22	12/11/19	420.45	77.00	343.45	--	100 U	64 U	94 U	0.53 U	0.39 U	0.50 U	0.75 U	0.93 U
	6/23/20	420.45	76.76	343.69	-0.24	100 U	66 U	97 U	0.24 U	0.39 U	0.50 U	0.39 U	0.93 U
	12/15/20	420.45	77.04	343.41	0.28	100 U	120 U	130 U	0.24 U	0.39 U	0.50 U	3.0 U	0.93 U
	5/26/21	420.45	77.00	343.45	-0.04	31.6 U	66.7 U	83.3 U	0.0941 U	0.278 U	0.137 U	0.174 U	1.00 UJ
	10/25/21	420.45	77.64	342.81	0.64	31.6 U	66.7 U	83.3 U	0.0941 U	0.278 U	0.137 U	0.174 U	1.00 U
	11/2/22	420.45	77.29	343.16	-0.35	100 U	66.7 U	83.3 U	0.0941 U	0.278 U	0.137 U	0.174 U	1.00 U
	4/25/23	420.45	76.34	344.11	-0.95	100 U	200 U	250 U	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
	10/13/23	420.45	77.20	343.25	0.86	100 U	200 U	250 U	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
MW-23	12/11/19	421.74	78.30	343.44	--	100 U	61 U	90 U	0.53 U	0.39 U	0.50 U	0.75 U	0.93 U
	6/23/20	421.74	77.94	343.80	-0.36	100 U	71 U	100 U	0.24 U	0.39 U	0.50 U	0.39 U	0.93 U
	12/15/20	421.74	78.26	343.48	0.32	100 U	110 U	120 U	0.24 U	0.39 U	0.50 U	3.0 U	4.0 U
	5/26/21	421.74	78.30	343.44	0.04	31.6 U	66.7 U	83.3 U	0.0941 U	0.278 U	0.137 U	0.174 U	1.00 UJ
	10/25/21	421.74	78.93	342.81	0.63	31.6 U	66.7 U	83.3 U	0.0941 U	0.278 U	0.137 U	0.174 U	1.00 U
	11/3/22	421.74	78.53	343.21	-0.40	100 U	66.7 U	83.3 U	0.0941 U	0.278 U	0.137 U	0.174 U	1.00 U
	4/24/23	421.74	77.62	344.12	-0.91	100 U	200 U	250 U	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U
	10/12/23	421.74	78.44	343.30	0.82	100 U	200 U	250 U	1.00 U	1.00 U	1.00 U	3.00 U	5.00 U

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Well ID	Sample Date	TOC Elevation	Depth to GW	GW Elevation	Change in GW Elevation	Chemicals of Concern							
						TPH-g	TPH-d	TPH-o	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene
	Cleanup Levels [1]					*800/1,000*	*500*	*500*	*5*	*1,000*	*700*	*1,000*	*160*
	Units:	*ft NAVD29* [2]	*ft btoc*	*ft NAVD29* [2]	*ft*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*
Tidewater Wells													
AR-11	6/25/19	422.62	78.84	343.78	--	--	--	--	--	--	--	--	--
	12/9/19	422.62	78.96	343.66	0.12	--	--	--	--	--	--	--	--
	6/22/20	422.62	78.63	343.99	-0.33	--	--	--	--	--	--	--	--
	12/15/20	422.62	79.01	343.61	0.38	--	--	--	--	--	--	--	--
	5/24/21	422.62	78.98	343.64	-0.03	--	--	--	--	--	--	--	--
	10/25/21	422.62	79.62	343.00	0.64	--	--	--	--	--	--	--	--
	10/31/22	422.62	79.18	343.44	-0.44	--	--	--	--	--	--	--	--
	4/24/23	422.62	78.28	344.34	-0.90	--	--	--	--	--	--	--	--
	10/9/23	422.62	79.15	343.47	0.87	--	--	--	--	--	--	--	--
MW-05	6/25/19	425.02	81.29	343.73	--	--	--	--	--	--	--	--	--
	12/9/19	425.02	81.40	343.62	0.11	--	--	--	--	--	--	--	--
	6/22/20	425.02	81.07	343.95	-0.33	--	--	--	--	--	--	--	--
	12/15/20	425.02	81.46	343.56	0.39	--	--	--	--	--	--	--	--
	5/24/21	425.02	81.41	343.61	-0.05	--	--	--	--	--	--	--	--
	10/25/21	425.02	82.06	342.96	0.65	--	--	--	--	--	--	--	--
	10/31/22	425.02	81.63	343.39	-0.43	--	--	--	--	--	--	--	--
	4/24/23	425.02	80.73	344.29	-0.90	--	--	--	--	--	--	--	--
	10/9/23	425.02	81.60	343.42	0.87	--	--	--	--	--	--	--	--

Notes:
Values in **bold** were reported as detected
= Yellow shaded detections exceed the cleanup level
-- = not analyzed or sample not collected
(1) The Cleanup Levels are included in Table 1 of the *Compliance Monitoring Plan* (AECOM, 2023).
(2) On February 7, 2019, the wells were resurveyed by Stratton Surveying and Mapping, P.C. MW-20 through MW-23 were surveyed on December 10, 2019. Horizontal datum = Washington State Plane South Zone North American Datum 1983(1991). Vertical datum = North American Vertical Datum 29.

Acronyms:
µg/L = microgram per liter
btoc = below top of casing
ft = feet
GW = groundwater
J = estimated concentration
NAVD29 = North American Vertical Datum of 1929
TOC = top of casing
TPH = total petroleum hydrocarbon
TPH-g = gasoline range hydrocarbons (as analyzed by Northwest Method NWPTH-Gx)
TPH-d = diesel range hydrocarbons (as analyzed by Northwest Method NWTPH-Dx)
TPH-o = motor oil range hydrocarbons (as analyzed by Northwest Method NWTPH-Dx)
U = analyte not detected above limit shown. With data collected from September 2018 to April 2023, the limit shown is the method detection limit; then starting in April 2023, the limit shown is the method reporting limit in compliance with the *Compliance Monitoring Plan* (AECOM, 2023).
UJ = analyte not detected above laboratory report limit; reporting limit estimated.

Table B2. Field Parameters and Natural Attenuation Results - 2014-2023
Chevron Pipe Line Company Pasco Bulk Fuel Terminal

Well ID	Sample Date	Field Parameters							Laboratory Analytical			
		pH	Conductivity	Dissolved Oxygen	Temperature	ORP	Ferrous Iron	Nitrate	Sulfate	Alkalinity	Manganese (Dissolved)	Methane
	Units:	*su*	*µS/cm*	*mg/L*	*deg C*	*mV*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*
MW-02	5/29/14	7.16	1,215	2.49	17.58	146.3	**1.16**	**13.8**	**100**	**537**	0.0050 U	0.0010 U
	10/29/14	6.85	1,578	1.07	17.51	91.6	**1.33**	**2.6**	**140**	**730**	**0.011**	0.0010 U
	6/4/15	6.84	1,018	2.21	17.97	-66.6	**0.53**	0.3 U	**107**	**558**	0.0050 U	0.0010 U
	9/28/15	6.91	1,467	1.77	17.60	-7.0	--	**1.7**	**167**	**711**	0.0050 U	**0.0242**
	8/29/16	7.38	1,400	1.74	19.89	94	--	--	**110**	--	0.020 U	0.0050 U
	12/5/16	6.63	1,050	6.16	15.80	282	--	--	**89**	**400**	--	0.0050 U
	10/24/17	7.34	1,270	8.93	17.58	112	0.02 U	**9.70**	**110**	**350**	0.020 U	**0.0083**
	6/14/18	6.84	1,160	3.40	22.39	178	**0.96**	**11.0**	**110**	**400**	0.020 U	0.0050 U
	12/2/18	7.54	1,680	4.81	13.55	206	**0.15**	**10.8**	**92**	**680**	0.0017 U	**0.022**
	6/26/19	6.93	1,400	IE	17.80	115	**0.12**	**17.9**	**120**	**560**	**0.0066 J**	**0.0017** U
	12/11/19	7.00	1,540	1.55	13.57	120	0.02 U	**16.8**	**110**	**530**	0.0017 U	0.0050 U
	6/24/20	6.91	1,420	2.27	29.34	97	**0.02**	**12.7**	**110**	**560**	0.0017 U	0.0050 U
	12/15/20	7.72	1,319	2.37	15.25	109.4	**0.82**	**5.4**	**100**	**540**	**0.0022 J**	0.0050 U
	5/25/21	7.45	1,450	3.05	21.30	87	**0.02**	**11.4**	**97.9**	**692**	**0.0018 J**	0.00291 U
	10/26/21	7.31	1,180	0.00	17.79	133	0.02 U	**3.3**	**98.6**	**430**	0.000855 U	0.00291 U
	11/3/22	8.22	1,380	0.18	15.60	74	0.02 U	**>30.0**	**97.9**	**509**	**0.00190 J**	0.00291 U
	4/26/23	7.00	1,379	3.24	16.26	183.9	0.02 U	**14.6**	**86.4**	**541 J**	0.0100 U	0.0100 U
	10/12/23	7.35	1,460	3.68	15.72	155	0.01	**11.2**	**88.3 J**	**671 J**	0.0100 U	0.0100 U
MW-03	5/28/14	7.15	1,053	--	18.12	-105.6	--	--	--	--	--	--
	10/30/14	6.91	1,136	0.84	17.28	-144.7	--	--	--	--	--	--
	6/4/15	6.82	1,353	0.95	18.61	-154.0	--	--	--	--	--	--
	9/29/15	6.82	1,174	1.01	17.51	-174.4	--	--	--	--	--	--
	8/30/16	7.13	1,190	2.42	18.13	-153.0	--	--	--	--	--	--
	12/2/16	6.86	963	3.24	16.06	36	--	--	--	--	--	--
	5/16/17	7.27	996	0.82	17.01	-37	--	--	--	--	--	--
	10/25/17	7.41	1,200	4.01	17.58	-105	--	--	--	--	--	--
	6/14/18	6.70	1,030	2.75	19.46	42	--	--	--	--	--	--
	12/4/18	7.56	1,280	8.82	16.31	-65	--	--	**29**	**520**	**0.96**	**1.7**
	6/26/19	6.99	1,030	IE	18.20	-120	**1.71**	**2.7**	**32**	**470**	**0.80**	**2.1**
	12/11/19	7.22	1,310	0.83	14.47	-192	**1.28**	**1.3**	**63**	**450 J**	**0.81**	**0.50**
	6/24/20	7.02	1,220	0.96	22.25	-100	**1.90**	**1.9**	**61**	**450**	**0.66**	**0.063**
	12/16/20	7.60	1,274	1.30	16.10	-94.2	**1.11**	0.3 U	**49**	**500**	**0.77**	**1.1**
	5/27/21	7.09	1,410	0.00	17.02	-93	**1.27**	**1.5**	**37.7**	**557**	**0.719**	**1.92**
	10/25/21	7.07	1,350	1.05	16.79	-88	**2.72**	**2.9**	**27.5**	**648**	**0.862**	**2.74**
	11/2/22	7.20	1,190	0.00	15.67	-98	**2.79**	**0.7**	**45.2**	**544**	**0.697**	**0.869**
	4/25/23	7.34	1,367	0.49	16.06	-150.2	**0.66**	0.3 U	**71.2**	**455 J**	**0.580**	**0.336**
	10/11/23	7.3	1,310	2.56	16.84	-123	**2.78**	**3.7**	**27.9**	**595 J**	**0.734**	**2.07**

Table B2. Field Parameters and Natural Attenuation Results - 2014-2023
Chevron Pipe Line Company Pasco Bulk Fuel Terminal

Well ID	Sample Date	Field Parameters							Laboratory Analytical			
		pH	Conductivity	Dissolved Oxygen	Temperature	ORP	Ferrous Iron	Nitrate	Sulfate	Alkalinity	Manganese (Dissolved)	Methane
	Units:	*su*	*µS/cm*	*mg/L*	*deg C*	*mV*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*
MW-04	5/28/14	7.68	728	--	17.78	82.2	--	--	--	--	--	--
	10/28/14	7.38	741	7.75	16.90	36.0	--	--	--	--	--	--
	6/3/15	7.40	751	8.28	17.76	-23.6	--	--	--	--	--	--
	9/28/15	--	--	--	--	--	--	--	--	--	--	--
	8/30/16	8.36	813	7.34	18.32	59	--	--	--	--	--	--
	12/5/16	--	--	--	--	--	--	--	--	--	--	--
	5/15/17	7.99	861	7.78	17.9	-27	--	--	--	--	--	--
	6/13/18	7.49	813	7.56	20.99	161	--	--	--	--	--	--
	6/26/19	7.40	962	6.62	19.15	150	--	--	--	--	--	--
	6/23/20	7.57	1,050	9.28	19.38	84	--	--	--	--	--	**0.00099 J**
	5/25/21	7.60	1,120	7.74	17.46	165	--	--	--	--	--	--
	4/25/23	7.77	1,027	8.27	16.12	27.4	0.02 U	9.6	115	190 **J**	0.010 U	0.01 U
	10/14/23	7.59	947	6.15	15.89	172	0.02	**28.6**	**109**	**195 J**	0.0100 U	0.0100 U
MW-06	5/29/14	7.93	950	8.78	15.40	127.1	0.02 U	**18.5**	**110**	**252**	0.0050 U	0.0010 U
	10/29/14	7.43	817	6.79	19.45	84.7	**0.40**	0.3 U	**100**	**185**	0.0050 U	0.0010 U
	6/3/15	7.53	744	8.59	17.18	-44.8	0.02 U	0.3 U	**107**	**169**	0.0050 U	**0.00168**
	9/28/15	7.53	812	6.76	19.23	-8.5	--	**15.7**	**108**	**189**	0.0050 U	0.0010 U
	8/30/16	8.30	836	7.39	18.88	110	--	--	**100**	--	0.020 U	0.0050 U
	12/5/16	6.83	851	6.84	14.54	207	--	--	**93**	**170**	0.020 U	0.0050 U
	5/16/17	8.06	824	7.89	14.65	66	--	--	**96**	**150**	0.020 U	**0.0085**
	10/23/17	7.61	863	9.32	19.68	186	0.02 U	0.3 U	**98**	**180**	0.020 U	0.0050 U
	6/11/18	7.38	828	8.38	20.69	156	0.02 U	**8.09**	**96 J**	**150**	0.020 U	0.0050 U
	12/2/18	7.98	963	7.86	18.65	241	0.02 U	**>30.0**	**100**	**170**	**0.0021 J**	0.0017 U
	6/26/19	7.54	831	IE	17.70	121	0.02 U	**14.7**	**100**	**140**	0.0050 U	0.0017 U
	12/10/19	7.69	1,070	9.47	14.60	10	0.02 U	**9.2**	**110**	**160**	0.0017 U	0.0010 U
	6/23/20	7.55	1,080	9.05	19.09	103	**0.11**	**8.1**	**110**	**160**	0.0017 U	0.00050 U
	12/16/20	7.88	2,036	8.38	16.20	92	0.02 U	**17.4**	**110**	**150**	0.0017 U	0.00050 U
	5/24/21	7.60	1,190	5.53	20.50	102	0.02 U	**18.3**	**107**	**164**	0.000855 U	**0.0133**
	10/26/21	7.60	1,120	0.00	18.59	174	**0.47**	**7.8**	**119**	**179**	0.000855 U	0.00291 U
	11/2/22	8.40	984	7.99	17.31	105	**0.11**	**5.5**	**119**	**348**	**0.0487**	**0.0200**
	4/25/23	7.58	1,137	10.04	15.12	148.4	0.02 U	**8.2**	**110**	**154 J**	0.0100 U	0.0100 U
	10/10/23	7.07	1,100	7.68	18.55	276	0.02 U	**3.3**	**109**	**175 J**	0.0100 U	0.0100 U

Table B2. Field Parameters and Natural Attenuation Results - 2014-2023
Chevron Pipe Line Company Pasco Bulk Fuel Terminal

Well ID	Sample Date	Field Parameters							Laboratory Analytical			
		pH	Conductivity	Dissolved Oxygen	Temperature	ORP	Ferrous Iron	Nitrate	Sulfate	Alkalinity	Manganese (Dissolved)	Methane
	Units:	*su*	*µS/cm*	*mg/L*	*deg C*	*mV*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*
MW-07	5/28/14	7.63	775	--	18.48	101.7	--	--	--	--	--	--
	10/29/14	7.48	773	7.43	16.81	84.1	--	--	--	--	--	--
	6/3/15	7.10	843	6.78	18.03	-1.8	--	--	--	--	--	--
	9/28/15	7.10	798	7.40	17.31	-6.4	--	**6.0**	**103**	**203**	**0.0086**	0.0010 U
	8/30/16	7.96	964	6.92	19.01	94	--	--	--	--	--	--
	12/5/16	7.06	839	7.90	15.85	165	--	--	--	--	--	--
	5/15/17	7.62	863	6.10	17.30	35	--	--	--	--	--	--
	10/24/17	7.83	918	7.73	17.67	145	--	--	--	--	--	--
	6/13/18	7.25	837	6.58	22.15	182	--	--	--	--	--	--
	12/4/18	8.02	976	8.26	13.19	173	--	--	--	--	--	--
	6/26/19	7.42	1,190	4.35	21.12	166	--	--	--	--	--	--
	12/11/19	7.36	1,050	5.38	14.10	107	--	--	--	--	--	--
	6/23/20	7.31	1,030	8.37	21.48	94	--	--	--	--	--	--
	12/14/20	7.66	979	8.02	15.20	132	--	--	--	--	--	--
	5/25/21	7.40	1,200	6.20	16.48	180	--	--	--	--	--	--
	10/27/21	7.61	1,050	0.47	17.21	186	--	--	--	--	--	--
	11/2/22	7.48	912	4.98	15.50	179	--	--	--	--	--	--
	4/25/23	7.66	1,055	8.00	16.67	67.1	0.02 U	8.0	116	199 **J**	0.0100 U	0.0100 U
	10/10/23	7.77	970	0.58	16.89	133	**0.05**	**23.5**	**110**	**203 J**	0.0100 U	0.0100 U
MW-08	5/28/14	7.70	755	--	17.50	89.5	**0.59**	**16.8**	**110**	**242**	0.0050 U	0.0010 U
	10/29/14	7.37	774	7.05	17.34	75.3	0.02 U	**18.4**	**100**	**190**	0.0072 U	0.0010 U
	6/3/15	7.39	778	7.38	17.90	-42.7	0.02 U	**16.7**	**108**	**185**	0.0050 U	0.0010 U
	9/28/15	--	--	--	--	--	--	--	--	--	--	--
	8/30/16	7.72	843	5.29	19.46	143	--	--	**100**	--	0.020 U	0.0050 U
	12/5/16	--	--	--	--	--	--	--	--	--	--	--
	5/17/17	7.88	869	5.68	17.96	28	--	--	**100**	**170**	0.020 U	0.0050 U
	6/11/18	7.28	866	7.46	19.77	175	0.02 U	**>30.0**	**120**	**180**	0.020 U	0.0050 U
	6/26/19	7.58	848	IE	18.29	116	--	--	--	--	--	--
	6/23/20	7.46	925	5.11	25.04	107	0.02 U	**15.9**	**130**	**180**	0.0017 U	**0.00062 J**
	5/26/21	7.56	1,140	7.16	17.73	153	0.02 U	**>30.0**	--	--	--	--
	4/25/23	7.52	1,044	8.54	16.77	110.8	0.02 U	**15**	117	195 **J**	0.01 U	0.0100 U
	10/11/23	7.88	969	2.77	17.09	156	**0.02**	**24.3**	**110**	**200 J**	0.0100 U	0.0100 U

Table B2. Field Parameters and Natural Attenuation Results - 2014-2023
Chevron Pipe Line Company Pasco Bulk Fuel Terminal

Well ID	Sample Date	Field Parameters							Laboratory Analytical			
		pH	Conductivity	Dissolved Oxygen	Temperature	ORP	Ferrous Iron	Nitrate	Sulfate	Alkalinity	Manganese (Dissolved)	Methane
	Units:	*su*	*µS/cm*	*mg/L*	*deg C*	*mV*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*
MW-10	5/28/14	7.65	764	--	17.91	137.6	--	--	--	--	--	--
	10/29/14	7.40	769	7.45	17.02	80.6	--	--	--	--	--	--
	6/3/15	7.29	780	7.32	17.90	-34.4	--	--	--	--	--	--
	9/28/15	--	--	--	--	--	--	--	--	--	--	--
	8/30/16	8.28	831	5.40	18.26	100	--	--	--	--	--	--
	12/5/16	--	--	--	--	--	--	--	--	--	--	--
	5/15/17	7.39	888	6.24	17.41	29	--	--	--	--	--	--
	6/13/18	7.35	730	4.96	28.26	178	--	--	--	--	--	--
	6/26/19	7.60	1,010	6.38	18.25	155	--	--	--	--	--	--
	6/23/20	7.40	1,040	7.45	20.04	91	--	--	--	--	--	--
	5/25/21	7.71	1,040	6.67	16.54	100	--	**--**	**--**	**--**	--	--
	4/25/23	7.53	1,055	7.91	16.43	86.3	0.02 U	**9.6**	**117**	**200 J**	0.0100 U	0.0100 U
	10/10/23	7.7	974	0.19	15.95	121	**0.04**	**26.3**	**110**	**193 J**	0.0100 U	0.0100 U
MW-11	5/29/14	7.20	889	1.08	19.27	102.7	--	--	--	--	--	--
	10/30/14	6.96	932	1.12	18.47	89.0	--	--	--	--	--	--
	6/4/15	6.89	916	0.94	18.97	-49.8	--	--	--	--	--	--
	9/29/15	6.89	914	0.89	18.40	-15.4	--	--	--	--	--	--
	8/29/16	7.32	952	2.67	19.99	148	--	--	--	--	--	--
	12/5/16	6.70	933	1.73	17.14	204	--	--	--	--	--	--
	5/16/17	7.44	949	4.79	17.41	46	--	--	--	--	--	--
	10/25/17	7.37	1,040	7.49	18.57	154	--	--	--	--	--	--
	6/14/18	6.71	956	3.35	21.77	198	--	--	--	--	--	--
	12/2/18	7.48	1,140	5.47	15.49	231	--	--	--	--	--	--
	6/27/19	6.98	1,290	1.70	17.37	213	--	--	--	--	--	--
	12/11/19	7.21	1,100	2.97	15.90	34	--	--	--	--	--	--
	6/24/20	6.95	1,380	0.00	20.84	83	--	--	--	--	--	--
	12/15/20	7.43	1,154	2.73	15.93	133.1	--	--	--	--	--	--
	5/25/21	7.23	1,120	1.77	18.78	122	--	**--**	**--**	**--**	--	--
	10/27/21	7.13	1,070	0.00	17.33	189	--	--	--	--	--	--
	11/2/22	6.94	952	0.43	16.08	167	--	--	--	--	--	--
	4/26/23	6.89	1,079	5.08	16.65	196.1	0.02 U	16.5	109	261 **J**	0.0731	0.0100 U
	10/12/23	7.33	1,050	3.52	17.43	174	0.03	**19.6**	**98.9**	**298 J**	**0.113**	0.0100 U

Table B2. Field Parameters and Natural Attenuation Results - 2014-2023
Chevron Pipe Line Company Pasco Bulk Fuel Terminal

Well ID	Sample Date	Field Parameters							Laboratory Analytical			
		pH	Conductivity	Dissolved Oxygen	Temperature	ORP	Ferrous Iron	Nitrate	Sulfate	Alkalinity	Manganese (Dissolved)	Methane
	Units:	*su*	*µS/cm*	*mg/L*	*deg C*	*mV*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*
MW-12	5/29/14	7.22	993	1.81	19.82	-27.5	--	**9.2**	**110**	**309**	**0.270**	**0.0142**
	10/30/14	6.82	1,135	2.55	16.73	-50.6	**4.68**	0.3 U	**110**	**350**	**0.280**	**0.0870**
	6/4/15	6.82	1,017	2.17	18.40	-74.5	**0.34**	**10.4**	**113**	**312**	**0.201**	0.0010 U
	9/29/15	6.82	1,124	1.15	16.49	-63.7	--	**7.0**	**107**	**367**	**0.252**	**0.0362**
	8/29/16	7.45	1,290	1.10	19.42	-10	--	--	**83**	--	**0.25**	**0.760**
	12/6/16	6.80	993	3.22	14.52	121	--	--	--	**270**	**0.19**	**0.063**
	5/16/17	7.96	965	3.93	15.97	36	--	--	**100**	**240**	**0.16**	**0.012**
	10/24/17	7.50	1,100	3.39	17.70	49	0.02 U	**10.5**	**98.0**	**270**	**0.19**	**0.090**
	6/14/18	6.57	1,120	1.95	18.69	212	0.02 U	**23.8**	**120**	**290**	**0.043**	0.0050 U
	12/3/18	7.57	1,360	5.67	13.71	176	0.02 U	**16.4**	**130**	**370**	**0.074**	0.0017 U
	6/27/19	6.97	1,110	IE	15.90	164	**0.09**	**4.7**	**120 J**	**340**	**0.10**	**0.026**
	12/11/19	7.29	1,300	3.22	12.59	15	0.02 U	**7.0**	**140**	**290 J**	**0.076**	**0.0015 J**
	6/24/20	6.76	1,410	0.00	22.66	114	**0.11**	**4.3**	**140**	**430**	**0.12**	**0.0064**
	12/16/20	7.59	1,273	3.16	15.10	121.4	0.02 U	**7.2**	**140**	**360**	**0.14**	**0.0037**
	5/27/21	7.44	1,440	0.19	16.49	141	**0.06**	**12.4**	**114**	**513**	0.0963	0.0386
	10/27/21	7.26	1,310	0.00	16.54	189	**0.16**	**0.5**	**123**	**365**	0.000855 U	**0.0190**
	11/2/22	7.06	1,080	1.33	14.93	196	**0.02**	**0.8**	**122**	**179**	0.000934 U	0.0029 U
	4/26/23	7.10	1,193	3.69	15.73	174.9	0.02 U	**4.5**	**113**	**321 J**	0.0559	0.0100 U
	10/12/23	7.13	1,440	0.98	16.69	270	0.02 U	0.3 U	**96.2**	**507 J**	**0.0357**	0.0100 U
MW-14	5/29/14	7.53	795	5.70	17.69	101.4	--	--	--	--	--	--
	10/29/14	7.23	805	5.65	17.81	105.4	--	--	--	--	--	--
	6/4/15	7.39	784	6.22	17.02	-46.6	--	--	--	--	--	--
	8/29/16	7.71	877	5.19	18.76	120	--	--	--	--	--	--
	12/5/16	6.97	855	6.29	15.43	178	--	--	--	--	--	--
	5/17/17	7.71	923	3.02	17.44	46	--	--	--	--	--	--
	10/24/17	7.70	932	6.18	17.69	144	--	--	--	--	--	--
	12/2/18	7.87	1,010	7.32	15.75	222	--	--	--	--	--	--
	6/27/19	7.54	1,180	3.44	16.30	160	--	--	--	--	--	--
	12/11/19	7.21	1,020	4.27	14.38	107	--	--	--	--	--	--
	6/24/20	7.24	1,060	4.61	20.61	116	--	--	--	--	--	--
	12/15/20	7.90	1,032	7.28	16.10	111.3	--	--	--	--	--	--
	5/25/21	7.58	1,090	5.21	17.23	83	--	**--**	**--**	**--**	--	--
	10/26/21	7.51	1,060	0.00	17.20	184	--	--	--	--	--	--
	11/3/22	8.43	916	4.26	15.50	110	--	--	--	--	--	--
	4/26/23	7.29	1,052	7.96	16.24	202.3	0.02 U	18.6	119	207 J	0.01 U	0.01 U
	10/12/23	7.36	1,030	5.94	16.72	278	**0.1**	**13**	**113**	**226 J**	0.0100 U	0.0100 U
MW-15	12/3/18	8.02	950	6.16	16.03	178	--	--	--	--	--	--
	6/26/19	7.60	990	4.44	18.75	168	--	--	--	--	--	--
	12/10/19	7.37	1,070	4.99	12.99	63	--	--	--	--	--	--
	6/23/20	7.38	904	4.46	27.69	108	--	--	--	--	--	--
	12/14/20	7.92	1,017	6.74	15.00	92.8	--	--	--	--	--	--
	5/25/21	7.51	1,180	5.92	16.67	170	--	--	--	--	--	--
	10/25/21	7.52	1,040	0.00	19.38	171	--	--	--	--	--	--
	11/2/22	8.36	914	5.54	16.82	91	--	--	--	--	--	--
	4/25/23	7.38	1,052	7.52	15.95	166.7	0.02 U	8.6	119	204 J	0.01 U	0.01 U
	10/10/23	7.01	998	5.16	17.52	302	0.02 U	0.3 U	**109**	**218 J**	0.0100 U	0.0100 U

Table B2. Field Parameters and Natural Attenuation Results - 2014-2023
Chevron Pipe Line Company Pasco Bulk Fuel Terminal

Well ID	Sample Date	Field Parameters							Laboratory Analytical			
		pH	Conductivity	Dissolved Oxygen	Temperature	ORP	Ferrous Iron	Nitrate	Sulfate	Alkalinity	Manganese (Dissolved)	Methane
	Units:	*su*	µ*S/cm*	*mg/L*	*deg C*	*mV*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*
MW-16	12/3/18	8.04	949	6.37	16.40	186	--	--	--	--	--	--
	6/2/19	7.58	1,020	4.48	18.08	166	--	--	--	--	--	--
	12/10/19	7.62	1,010	6.11	15.28	-73	0.02 U	**8.4**	**120**	**190 J**	0.0017 U	**0.0029**
	6/22/20	7.18	1,040	4.09	22.10	80	**0.03**	**15.7**	**130**	**180**	0.0017 U	0.00050 U
	12/16/20	7.99	1,026	6.62	16.20	69.3	0.02 U	**17.1**	**130**	**190**	0.0017 U	0.00050 U
	5/25/21	7.46	1,150	4.56	18.87	151	0.02 U	**26.9**	**124**	**200**	**0.00120 J**	0.00291 U
	10/26/21	7.57	1,040	0.00	16.93	173	**0.60**	**6.8**	**126**	**206**	0.000855 U	0.00291 U
	11/2/22	8.42	911	3.62	15.07	94	**0.05**	**>30.0**	**121**	**204**	0.000934 U	0.00291 U
	4/25/23	7.46	1,051	7.29	16.49	161.1	0.02 U	**19.6**	**117**	**205 J**	0.0100 U	0.0100 U
	10/11/23	7.61	1,000	6.26	16.56	270	0.02 U	**1**	**109 J**	**215 J**	0.0100 U	0.0100 U
MW-17	12/3/18	7.46	1,770	5.47	13.77	139	--	--	--	--	--	--
	6/27/19	7.11	1,630	2.78	15.82	185	--	--	--	--	--	--
	12/11/19	6.91	1,540	2.96	13.84	118	--	--	--	--	--	--
	6/24/20	7.18	1,330	9.1	18.86	100	--	--	--	--	--	--
	12/15/20	7.38	1,259	6.94	14.10	107	--	--	--	--	--	--
	5/25/21	7.25	1,270	8.75	16.72	118	--	--	--	--	--	--
	10/26/21	7.28	1,340	0.00	17.01	195	--	--	--	--	--	--
	11/3/22	7.15	1,170	2.54	14.63	185	--	--	--	--	--	--
	4/26/23	7.29	1,316	6.12	15.97	112.4	0.02 U	12.3	146	272 J	0.01 U	0.01 U
	10/12/23	7.23	1,200	4.63	16.23	153	0.02 U	**27.3**	**130**	**317 J**	0.0100 U	0.0100 U
MW-18	12/4/18	7.95	1,060	7.62	11.93	101	--	--	--	--	--	--
	6/26/19	7.12	1,100	IE	18.79	126	**0.12**	**23.4**	**150 J**	**220**	0.0050 U	0.0017 U
	12/12/19	7.42	1,490	7.25	14.20	46	0.02 U	**15.2**	**170**	**240**	0.0017 U	**0.0043**
	6/22/20	7.10	1,280	7.1	19.54	119	0.02 U	**10.7**	**160**	**210**	0.0017 U	0.00050 U
	12/15/20	7.53	1,049	8.10	15.50	109	0.02 U	**16.5**	**150**	**220**	0.0017 U	0.00050 U
	5/26/21	7.33	1,210	6.42	17.10	211	**0.02**	**23.6**	**131**	**214**	0.000855 U	0.00291 U
	10/26/21	7.44	1,060	4.06	16.62	145	**0.28**	**25.1**	**136**	**220**	0.000855 U	0.00291 U
	11/1/202	7.31	946	9.21	15.90	224	0.02 U	**5.5**	**130**	**210**	0.000934 U	0.00291 U
	4/26/23	7.43	1,118	8.40	16.81	122.7	0.02 U	**6.2**	**123**	**221 J**	0.010000 U	0.01000 U
	10/11/23	7.35	1,140	7.9	17.07	320	**0.09**	**8.2**	**119**	**242 J**	0.0100 U	0.0100 U
MW-19	12/3/18	7.44	2,040	4.76	13.11	-75	--	--	--	--	--	--
	6/27/19	7.27	1,050	IE	16.62	-121	**1.37**	**13.8**	**120**	**240**	**0.14**	**1.3**
	12/10/19	7.32	1,200	7.16	16.44	-134	**0.14**	**14.0**	**150**	**220**	**0.079**	**0.27**
	6/24/20	7.26	1,190	7.06	18.80	48	**0.02**	**13.8**	**140**	**200**	**0.028**	**0.12**
	12/16/20	7.64	1,985	6.41	15.80	103	0.02 U	**16.1**	**140**	**200**	**0.0021 J**	0.00050 U
	5/26/21	7.29	1,200	3.12	17.73	88	0.02 U	**20.0**	**115**	**255**	**0.0248**	**0.0724**
	10/27/21	7.47	1,050	0.00	17.24	183	--	**15.7**	**123**	**219**	**0.00121 J**	0.00291 U
	11/1/22	8.22	928	4.54	15.53	140	**0.32**	**5.5**	**123**	**215**	**0.00112 J**	0.00291 U
	4/26/23	7.52	1,084	6.41	16.08	92.7	0.02 U	**9.0**	**112**	**228 J**	0.01000 U	0.01000 U
	10/11/23	7.27	1,040	5.23	16.66	294	**0.09**	**8.3**	**102**	**259 J**	0.0100 U	0.0100 U

Table B2. Field Parameters and Natural Attenuation Results - 2014-2023
Chevron Pipe Line Company Pasco Bulk Fuel Terminal

Well ID	Sample Date	Field Parameters							Laboratory Analytical			
		pH	Conductivity	Dissolved Oxygen	Temperature	ORP	Ferrous Iron	Nitrate	Sulfate	Alkalinity	Manganese (Dissolved)	Methane
	Units:	*su*	*µS/cm*	*mg/L*	*deg C*	*mV*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*
MW-20	12/12/19	7.89	993	6.36	15.70	7	0.02 U	**21.5**	**130**	**170 J**	**0.012 J**	0.00050 U
	6/22/20	7.53	1,010	7.95	20.41	93	**0.08**	**9.8**	**130**	**170**	0.0017 U	**0.00075 J**
	12/16/20	7.91	1,905	8.04	15.70	89	**0.02**	**5.7**	**140**	**160**	**0.0019 J**	0.00050 U
	5/26/21	7.29	1,200	3.12	17.54	179	0.02 U	**>30.0**	**124**	**185**	0.000855 U	0.00291 U
	10/26/21	7.69	978	4.01	14.95	131	0.02 U	**>30.0**	**129**	**181**	0.000855 U	0.00291 U
	11/1/22	7.56	889	6.83	15.88	214	**0.06**	**5.5**	**127**	**185**	0.000934 U	0.00291 U
	4/26/23	7.57	1,061	8.39	16.90	126.5	0.02 U	**11.6**	**120**	**192 J**	0.010000 U	0.01000 U
	10/11/23	7.56	996	8.35	17.38	315	0.02 U	**8.1**	**114**	**188 J**	0.0100 U	0.0100 U
MW-21	12/12/19	7.71	1,020	6.25	14.21	108	0.02 U	**20.2**	**130**	**170**	0.0017 U	0.00050 U
	6/22/20	7.54	1,070	7.27	18.57	78	**0.10**	**>30.0**	**130**	**160**	0.0017 U	0.00050 U
	12/15/20	7.85	1,974	8.12	14.90	103	0.02 U	**20.6**	**150**	**170**	0.0017 U	0.00050 U
	5/26/21	7.81	1,020	7.97	17.59	146	**0.08**	**12.4**	**124**	**189**	0.000855 U	0.00291 U
	10/27/21	7.63	967	3.81	16.37	182	**0.07**	**9.9**	**128**	**183**	0.000855 U	0.00291 U
	11/2/22	8.59	910	6.80	15.43	109	0.02 U	**>30.0**	**128**	**188**	0.001480 J	0.00291 U
	4/25/23	7.66	1.064	8.40	16.18	85.9	0.02 U	**7.4**	**116**	**195 J**	0.0100 U	0.0100 U
	10/12/23	7.44	1,010	8.09	16.08	315	0.02 U	**5.9**	**116**	**193 J**	0.0100 U	0.0100 U
MW-22	12/11/19	7.50	1,050	5.69	14.61	102	**0.04**	**25**	**140**	**170 J**	0.0017 U	**0.00075 J**
	6/23/20	7.62	992	6.57	21.61	107	**0.09**	**7.4**	**130**	**170**	0.0017 U	0.00050 U
	12/15/20	7.85	1,978	8.17	15.80	92	0.02 U	**12.3**	**150**	**170**	0.0017 U	0.00050 U
	5/26/21	7.89	999	7.46	18.68	125	**0.25**	**27.7**	**127**	**189**	0.000855 U	0.00291 U
	10/27/21	7.76	1,030	0.78	16.90	179	**0.04**	**13.9**	**129**	**179**	0.000855 U	0.00291 U
	11/2/22	7.58	868	6.61	15.61	199	0.02 U	**5.5**	**124**	**187**	0.000934 U	0.00291 U
	4/25/23	7.76	1,006	9.06	16.19	87.1	0.02 U	**16.1**	**110**	**196 J**	0.010000 U	0.01000 U
	10/13/23	7.41	966	8.38	16.38	302	**0.09**	**5.4**	**108**	**194 J**	0.0100 U	0.0100 U
MW-23	12/11/19	7.75	1,020	5.90	15.06	12	0.02 U	**6.5**	**130**	**170**	**0.042**	0.00050 U
	6/24/20	7.56	1,100	8.01	17.51	84	**0.10**	**>30.0**	**130**	**180**	0.0017 U	0.00050 U
	12/15/20	8.11	1,062	8.33	16.60	116.1	**0.03**	**20.5**	**150**	**170**	0.0017 U	0.00050 U
	5/26/21	7.58	1,180	6.25	18.69	158	**0.07**	**28.0**	**129**	**186**	0.000855 U	0.00291 U
	10/27/21	7.70	1,060	0.80	17.14	183	0.02 U	**25.7**	**133**	**189**	0.000855 U	0.00291 U
	11/3/22	7.53	873	5.58	15.46	190	**0.02**	**5.0**	**124**	**190**	0.000934 U	0.00291 U
	4/24/23	7.62	1,019	8.69	16.51	46.4	0.02 U	**19.3**	**110**	**196 J**	0.010000 U	0.01000 U
	10/12/23	7.52	987	6.37	18.94	290	0.08	**8**	**109**	**197 J**	0.0100 U	0.0100 U

Notes:
-- = not analyzed or sample not collected
Values in **bold** were detected above the detection limit
'>X = analyte concentration greater than range of colorimeter

Acronyms:
deg C = degrees Celsius
IE = Instrument Error
J = estimated concentration
mg/L = milligrams per liter
mS/cm = milliseimens per centimeter
mV = millivolts
ORP = Oxidation Reduction Potential
su = Standard Unit
U = analyte not detected above limit shown

APPENDIX C

Laboratory Reports and Chain-of-Custody Forms

ANALYTICAL REPORT

May 08, 2023

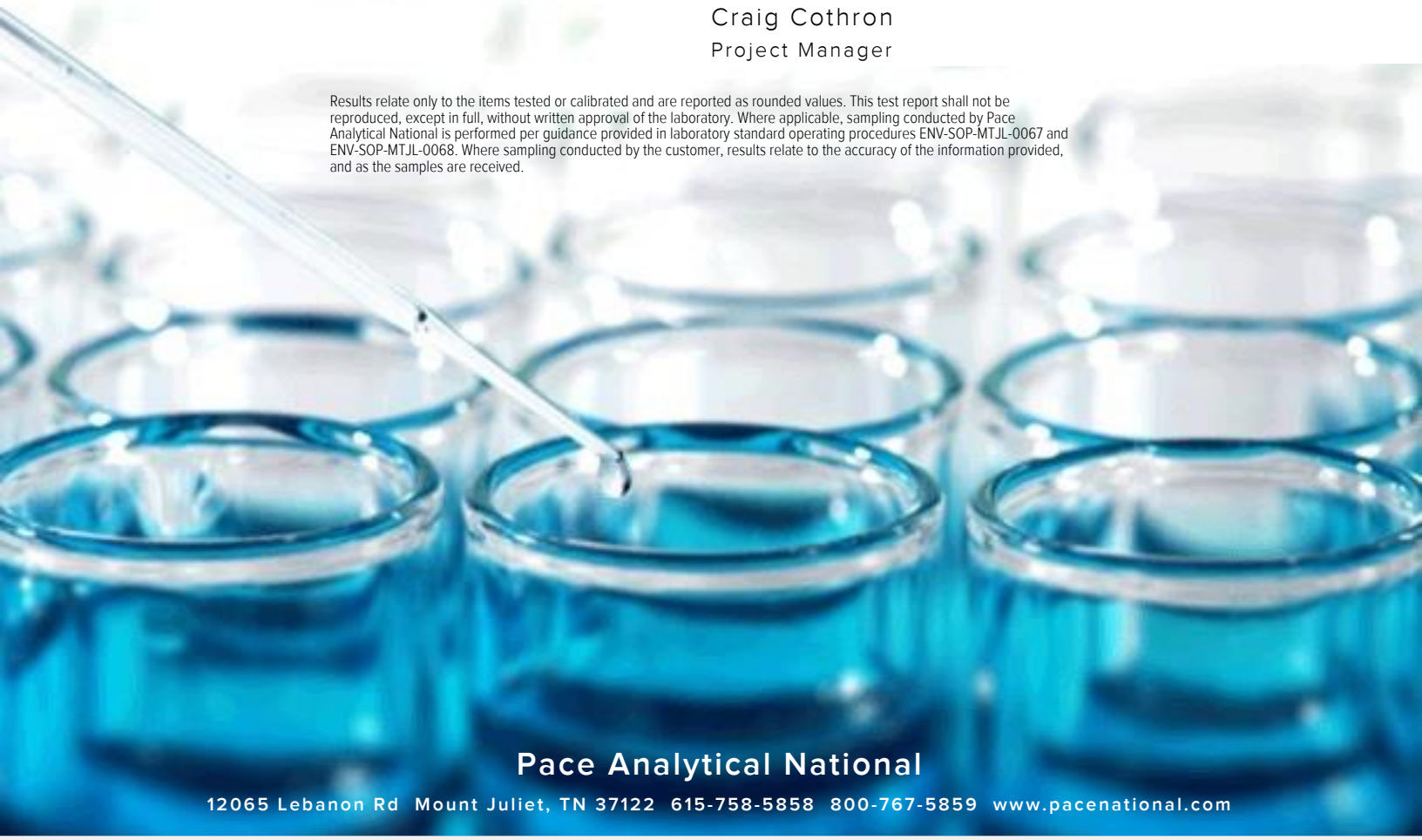
AECOM - Portland, OR

Sample Delivery Group:	L1610295
Samples Received:	04/28/2023
Project Number:	
Description:	CPL Co. Pasco Bulk Fuel Terminal
Site:	55763995
Report To:	Ms. Nicky Moody 888 SW 5th Ave Suite 600 Portland, OR 97204

Entire Report Reviewed By:

Craig Cothron
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



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

TABLE OF CONTENTS

MW-02-20230426 L1610295-01 GW

Collected by: Edward LeCoy | Collected date/time: 04/26/23 14:20 | Received date/time: 04/28/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG2052212	1	05/03/23 14:20	05/03/23 14:20	ARD	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2054567	1	05/05/23 05:10	05/05/23 05:10	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2052056	1	05/03/23 08:34	05/04/23 00:32	ABL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2053161	1	05/03/23 17:30	05/03/23 17:30	BAM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG2052572	1	05/03/23 15:52	05/03/23 15:52	CCM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2051325	1	04/29/23 23:07	04/29/23 23:07	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG2053800	1	05/04/23 20:21	05/06/23 01:32	MWS	Mt. Juliet, TN

MW-03-20230426 L1610295-02 GW

Collected by: Edward LeCoy | Collected date/time: 04/25/23 09:10 | Received date/time: 04/28/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG2052212	1	05/03/23 14:26	05/03/23 14:26	ARD	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2054567	1	05/05/23 05:58	05/05/23 05:58	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2052056	1	05/03/23 08:34	05/04/23 00:35	ABL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2053161	1	05/03/23 17:52	05/03/23 17:52	BAM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG2053545	1	05/04/23 09:08	05/04/23 09:08	BAW	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2051325	1	04/29/23 23:28	04/29/23 23:28	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG2053800	1	05/04/23 20:21	05/06/23 01:53	MWS	Mt. Juliet, TN

MW-04-20230426 L1610295-03 GW

Collected by: Edward LeCoy | Collected date/time: 04/25/23 11:05 | Received date/time: 04/28/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG2052212	1	05/03/23 14:31	05/03/23 14:31	ARD	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2054567	5	05/05/23 06:14	05/05/23 06:14	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2052056	1	05/03/23 08:34	05/04/23 00:37	ABL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2052395	1	05/02/23 17:16	05/02/23 17:16	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG2053545	1	05/04/23 09:10	05/04/23 09:10	BAW	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2051325	1	04/29/23 23:49	04/29/23 23:49	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG2053800	1	05/04/23 20:21	05/06/23 02:13	MWS	Mt. Juliet, TN

MW-06-20230426 L1610295-04 GW

Collected by: Edward LeCoy | Collected date/time: 04/25/23 14:10 | Received date/time: 04/28/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG2052212	1	05/03/23 14:38	05/03/23 14:38	ARD	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2054567	5	05/05/23 06:30	05/05/23 06:30	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2052056	1	05/03/23 08:34	05/04/23 00:40	ABL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2052395	1	05/02/23 17:39	05/02/23 17:39	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG2054369	1	05/05/23 11:27	05/05/23 11:27	BAW	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2051325	1	04/30/23 00:10	04/30/23 00:10	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG2053800	1	05/04/23 20:21	05/06/23 02:33	MWS	Mt. Juliet, TN

MW-07-20230426 L1610295-05 GW

Collected by: Edward LeCoy | Collected date/time: 04/25/23 14:34 | Received date/time: 04/28/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG2051701	1	05/01/23 12:01	05/01/23 12:01	ARD	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2054567	5	05/05/23 06:46	05/05/23 06:46	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2052056	1	05/03/23 08:34	05/04/23 00:49	ABL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2052395	1	05/02/23 18:02	05/02/23 18:02	ACG	Mt. Juliet, TN

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

MW-07-20230426 L1610295-05 GW

Collected by: Edward LeCoy | Collected date/time: 04/25/23 14:34 | Received date/time: 04/28/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method RSK175	WG2054369	1	05/05/23 11:29	05/05/23 11:29	BAW	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2051325	1	04/30/23 00:32	04/30/23 00:32	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG2053800	1	05/04/23 20:21	05/06/23 02:53	MWS	Mt. Juliet, TN

MW-08-20230426 L1610295-06 GW

Collected by: Edward LeCoy | Collected date/time: 04/25/23 11:50 | Received date/time: 04/28/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG2052212	1	05/03/23 14:43	05/03/23 14:43	ARD	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2054567	5	05/05/23 07:01	05/05/23 07:01	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2052056	1	05/03/23 08:34	05/04/23 00:51	ABL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2052395	1	05/02/23 18:24	05/02/23 18:24	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG2054369	1	05/05/23 11:32	05/05/23 11:32	BAW	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2051325	1	04/30/23 00:52	04/30/23 00:52	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG2053800	1	05/04/23 20:21	05/06/23 03:13	MWS	Mt. Juliet, TN

MW-10-20230426 L1610295-07 GW

Collected by: Edward LeCoy | Collected date/time: 04/25/23 13:05 | Received date/time: 04/28/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG2051701	1	05/01/23 12:08	05/01/23 12:08	ARD	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2054567	5	05/05/23 07:17	05/05/23 07:17	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2052056	1	05/03/23 08:34	05/04/23 00:54	ABL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2052395	1	05/02/23 18:55	05/02/23 18:55	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG2054369	1	05/05/23 11:36	05/05/23 11:36	BAW	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2051325	1	04/30/23 01:13	04/30/23 01:13	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG2053800	1	05/04/23 20:21	05/06/23 03:34	MWS	Mt. Juliet, TN

MW-11-20230426 L1610295-08 GW

Collected by: Edward LeCoy | Collected date/time: 04/26/23 11:45 | Received date/time: 04/28/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG2051701	1	05/01/23 12:15	05/01/23 12:15	ARD	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2054567	5	05/05/23 07:33	05/05/23 07:33	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2052056	1	05/03/23 08:34	05/04/23 00:57	ABL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2052395	1	05/02/23 19:52	05/02/23 19:52	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG2054369	1	05/05/23 11:49	05/05/23 11:49	BAW	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2051325	1	04/30/23 01:34	04/30/23 01:34	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG2053800	1	05/04/23 20:21	05/06/23 03:54	MWS	Mt. Juliet, TN

MW-12-20230426 L1610295-09 GW

Collected by: Edward LeCoy | Collected date/time: 04/26/23 09:20 | Received date/time: 04/28/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG2051701	1	05/01/23 12:22	05/01/23 12:22	ARD	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2054567	1	05/05/23 07:49	05/05/23 07:49	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2052056	1	05/03/23 08:34	05/04/23 00:21	ABL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2052395	1	05/02/23 20:26	05/02/23 20:26	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG2054369	1	05/05/23 11:51	05/05/23 11:51	BAW	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2051325	1	04/30/23 01:55	04/30/23 01:55	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG2053800	1	05/04/23 20:21	05/06/23 04:14	MWS	Mt. Juliet, TN

MW-14-20230426 L1610295-10 GW

Collected by: Edward LeCoy | Collected date/time: 04/26/23 16:05 | Received date/time: 04/28/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG2052212	1	05/03/23 15:14	05/03/23 15:14	ARD	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2054567	1	05/05/23 09:09	05/05/23 09:09	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2052056	1	05/03/23 08:34	05/04/23 01:00	ABL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2052395	1	05/02/23 20:48	05/02/23 20:48	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG2054369	1	05/05/23 13:06	05/05/23 13:06	BAW	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2051325	1	04/30/23 02:16	04/30/23 02:16	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG2053800	1	05/04/23 20:21	05/06/23 05:15	MWS	Mt. Juliet, TN

MW-15-20230425 L1610295-11 GW

Collected by: Edward LeCoy | Collected date/time: 04/25/23 16:10 | Received date/time: 04/28/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG2052212	1	05/03/23 15:19	05/03/23 15:19	ARD	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2054567	5	05/05/23 09:41	05/05/23 09:41	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2052056	1	05/03/23 08:34	05/04/23 01:03	ABL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2052395	1	05/02/23 21:37	05/02/23 21:37	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG2054369	1	05/05/23 13:11	05/05/23 13:11	BAW	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2051325	1	04/30/23 02:37	04/30/23 02:37	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG2053800	1	05/04/23 20:21	05/06/23 05:35	MWS	Mt. Juliet, TN

MW-16-20230425 L1610295-12 GW

Collected by: Edward LeCoy | Collected date/time: 04/25/23 18:20 | Received date/time: 04/28/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG2051701	1	05/01/23 12:35	05/01/23 12:35	ARD	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2054567	5	05/05/23 09:57	05/05/23 09:57	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2052056	1	05/03/23 08:34	05/04/23 01:06	ABL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2052395	1	05/02/23 22:00	05/02/23 22:00	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG2054369	1	05/05/23 13:14	05/05/23 13:14	BAW	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2051325	1	04/30/23 02:59	04/30/23 02:59	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG2053800	1	05/04/23 20:21	05/06/23 05:55	MWS	Mt. Juliet, TN

MW-17-20230426 L1610295-13 GW

Collected by: Edward LeCoy | Collected date/time: 04/26/23 11:17 | Received date/time: 04/28/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG2052452	1	05/02/23 14:49	05/02/23 14:49	ARD	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2054567	5	05/05/23 10:12	05/05/23 10:12	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2052056	1	05/03/23 08:34	05/04/23 01:09	ABL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2052395	1	05/02/23 22:22	05/02/23 22:22	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG2054369	1	05/05/23 13:16	05/05/23 13:16	BAW	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2051325	1	04/30/23 03:20	04/30/23 03:20	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG2053800	1	05/04/23 20:21	05/06/23 06:15	MWS	Mt. Juliet, TN

MW-18-20230426 L1610295-14 GW

Collected by: Edward LeCoy | Collected date/time: 04/26/23 16:33 | Received date/time: 04/28/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG2052452	1	05/02/23 15:04	05/02/23 15:04	ARD	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2054567	5	05/05/23 10:28	05/05/23 10:28	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2052056	1	05/03/23 08:34	05/04/23 01:12	ABL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2052395	1	05/02/23 23:15	05/02/23 23:15	ACG	Mt. Juliet, TN

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

MW-18-20230426 L1610295-14 GW

Collected by: Edward LeCoy | Collected date/time: 04/26/23 16:33 | Received date/time: 04/28/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method RSK175	WG2054369	1	05/05/23 13:18	05/05/23 13:18	BAW	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2051325	1	04/30/23 03:41	04/30/23 03:41	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG2053800	1	05/04/23 20:21	05/06/23 06:36	MWS	Mt. Juliet, TN

MW-19-20230426 L1610295-15 GW

Collected by: Edward LeCoy | Collected date/time: 04/26/23 09:12 | Received date/time: 04/28/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG2051701	1	05/01/23 12:41	05/01/23 12:41	ARD	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2054567	1	05/05/23 10:44	05/05/23 10:44	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2052056	1	05/03/23 08:34	05/04/23 01:14	ABL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2052395	1	05/02/23 23:37	05/02/23 23:37	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG2054369	1	05/05/23 13:21	05/05/23 13:21	BAW	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2051325	1	04/30/23 04:02	04/30/23 04:02	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG2053800	1	05/04/23 20:21	05/06/23 06:56	MWS	Mt. Juliet, TN

MW-20-20230426 L1610295-16 GW

Collected by: Edward LeCoy | Collected date/time: 04/26/23 14:51 | Received date/time: 04/28/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG2052452	1	05/02/23 15:09	05/02/23 15:09	ARD	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2054567	5	05/05/23 11:00	05/05/23 11:00	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2052056	1	05/03/23 08:34	05/04/23 01:23	ABL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2052395	1	05/03/23 00:03	05/03/23 00:03	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG2054369	1	05/05/23 13:23	05/05/23 13:23	BAW	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2051325	1	04/30/23 04:24	04/30/23 04:24	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG2053800	1	05/04/23 20:21	05/06/23 07:16	MWS	Mt. Juliet, TN

MW-21-20230425 L1610295-17 GW

Collected by: Edward LeCoy | Collected date/time: 04/25/23 17:19 | Received date/time: 04/28/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG2052452	1	05/02/23 15:15	05/02/23 15:15	ARD	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2054567	5	05/05/23 11:16	05/05/23 11:16	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2052056	1	05/03/23 08:34	05/04/23 01:26	ABL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2052395	1	05/03/23 00:25	05/03/23 00:25	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG2054369	1	05/05/23 13:26	05/05/23 13:26	BAW	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2051325	1	04/30/23 04:45	04/30/23 04:45	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG2053800	1	05/04/23 20:21	05/06/23 07:36	MWS	Mt. Juliet, TN

MW-22-20230425 L1610295-18 GW

Collected by: Edward LeCoy | Collected date/time: 04/25/23 09:30 | Received date/time: 04/28/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG2051701	1	05/01/23 12:57	05/01/23 12:57	ARD	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2054841	5	05/05/23 16:26	05/05/23 16:26	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2052056	1	05/03/23 08:34	05/04/23 01:28	ABL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2052395	1	05/03/23 00:48	05/03/23 00:48	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG2054369	1	05/05/23 13:31	05/05/23 13:31	BAW	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2051325	1	04/30/23 05:06	04/30/23 05:06	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG2053800	1	05/04/23 20:21	05/06/23 07:56	MWS	Mt. Juliet, TN

MW-23-20230424 L1610295-19 GW

Collected by: Edward LeCoy | Collected date/time: 04/24/23 17:39 | Received date/time: 04/28/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG2051701	1	05/01/23 13:03	05/01/23 13:03	ARD	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2054841	5	05/05/23 17:07	05/05/23 17:07	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2052056	1	05/03/23 08:34	05/04/23 01:31	ABL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2052395	1	05/03/23 01:34	05/03/23 01:34	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG2054369	1	05/05/23 13:36	05/05/23 13:36	BAW	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2051325	1	04/30/23 05:27	04/30/23 05:27	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG2053800	1	05/04/23 20:21	05/06/23 08:17	MWS	Mt. Juliet, TN

MW-103-20230425 L1610295-20 GW

Collected by: Edward LeCoy | Collected date/time: 04/25/23 07:42 | Received date/time: 04/28/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG2052452	1	05/02/23 15:20	05/02/23 15:20	ARD	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2054841	5	05/05/23 17:21	05/05/23 17:21	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2052056	1	05/03/23 08:34	05/04/23 01:34	ABL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2052708	20	05/04/23 09:20	05/04/23 09:20	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG2054369	1	05/05/23 13:38	05/05/23 13:38	BAW	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2051325	1	04/30/23 05:48	04/30/23 05:48	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG2053800	1	05/04/23 20:21	05/06/23 08:37	MWS	Mt. Juliet, TN

TB-1-20230401 L1610295-21 GW

Collected by: Edward LeCoy | Collected date/time: 04/26/23 00:00 | Received date/time: 04/28/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2052708	1	05/04/23 02:38	05/04/23 02:38	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2051840	1	05/01/23 13:08	05/01/23 13:08	JAH	Mt. Juliet, TN

TB-2-20230401 L1610295-22 GW

Collected by: Edward LeCoy | Collected date/time: 04/26/23 00:00 | Received date/time: 04/28/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2052708	1	05/04/23 03:00	05/04/23 03:00	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2051840	1	05/01/23 13:29	05/01/23 13:29	JAH	Mt. Juliet, TN

CASE NARRATIVE

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

Craig Cothron
Project Manager

Sample Delivery Group (SDG) Narrative

Analyzed from headspace vial.

Lab Sample ID	Project Sample ID	Method
L1610295-21	TB-1-20230401	NWTPHGX
L1610295-22	TB-2-20230401	NWTPHGX

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Alkalinity	541000		20000	1	05/03/2023 14:20	WG2052212

Sample Narrative:

L1610295-01 WG2052212: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	86400		5000	1	05/05/2023 05:10	WG2054567

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Manganese,Dissolved	ND		10.0	1	05/04/2023 00:32	WG2052056

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Gasoline Range Organics-NWTPH	ND		100	1	05/03/2023 17:30	WG2053161
(S) a,a,a-Trifluorotoluene(FID)	*111*		*78.0-120*		*05/03/2023 17:30*	WG2053161

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Methane	ND		10.0	1	05/03/2023 15:52	WG2052572
Ethane	ND		13.0	1	05/03/2023 15:52	WG2052572
Ethene	ND		13.0	1	05/03/2023 15:52	WG2052572

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	04/29/2023 23:07	WG2051325
Toluene	ND		1.00	1	04/29/2023 23:07	WG2051325
Ethylbenzene	ND		1.00	1	04/29/2023 23:07	WG2051325
Xylenes, Total	ND		3.00	1	04/29/2023 23:07	WG2051325
Naphthalene	ND	J3	5.00	1	04/29/2023 23:07	WG2051325
(S) Toluene-d8	*114*		*80.0-120*		*04/29/2023 23:07*	WG2051325
(S) 4-Bromofluorobenzene	*102*		*77.0-126*		*04/29/2023 23:07*	WG2051325
(S) 1,2-Dichloroethane-d4	*90.8*		*70.0-130*		*04/29/2023 23:07*	WG2051325

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Diesel Range Organics (DRO)	1240		200	1	05/06/2023 01:32	WG2053800
Residual Range Organics (RRO)	969		250	1	05/06/2023 01:32	WG2053800
(S) o-Terphenyl	*101*		*52.0-156*		*05/06/2023 01:32*	WG2053800

Sample Narrative:

L1610295-01 WG2053800: Sample does not resemble laboratory standards.

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Alkalinity	455000		20000	1	05/03/2023 14:26	WG2052212

Sample Narrative:
L1610295-02 WG2052212: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	71200		5000	1	05/05/2023 05:58	WG2054567

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Manganese,Dissolved	580		10.0	1	05/04/2023 00:35	WG2052056

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Gasoline Range Organics-NWTPH	ND		100	1	05/03/2023 17:52	WG2053161
(S) a,a,a-Trifluorotoluene(FID)	*111*		*78.0-120*		*05/03/2023 17:52*	WG2053161

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Methane	336		10.0	1	05/04/2023 09:08	WG2053545
Ethane	ND		13.0	1	05/04/2023 09:08	WG2053545
Ethene	ND		13.0	1	05/04/2023 09:08	WG2053545

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	04/29/2023 23:28	WG2051325
Toluene	ND		1.00	1	04/29/2023 23:28	WG2051325
Ethylbenzene	ND		1.00	1	04/29/2023 23:28	WG2051325
Xylenes, Total	ND		3.00	1	04/29/2023 23:28	WG2051325
Naphthalene	ND	J3	5.00	1	04/29/2023 23:28	WG2051325
(S) Toluene-d8	*113*		*80.0-120*		*04/29/2023 23:28*	WG2051325
(S) 4-Bromofluorobenzene	*99.9*		*77.0-126*		*04/29/2023 23:28*	WG2051325
(S) 1,2-Dichloroethane-d4	*88.7*		*70.0-130*		*04/29/2023 23:28*	WG2051325

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Diesel Range Organics (DRO)	5120		200	1	05/06/2023 01:53	WG2053800
Residual Range Organics (RRO)	1240		250	1	05/06/2023 01:53	WG2053800
(S) o-Terphenyl	*123*		*52.0-156*		*05/06/2023 01:53*	WG2053800

Sample Narrative:
L1610295-02 WG2053800: Sample does not resemble laboratory standards.

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Alkalinity	190000		20000	1	05/03/2023 14:31	WG2052212

Sample Narrative:

L1610295-03 WG2052212: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	115000		25000	5	05/05/2023 06:14	WG2054567

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Manganese,Dissolved	ND		10.0	1	05/04/2023 00:37	WG2052056

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Gasoline Range Organics-NWTPH	ND		100	1	05/02/2023 17:16	WG2052395
(S) a,a,a-Trifluorotoluene(FID)	*99.7*		*78.0-120*		*05/02/2023 17:16*	WG2052395

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Methane	ND		10.0	1	05/04/2023 09:10	WG2053545
Ethane	ND		13.0	1	05/04/2023 09:10	WG2053545
Ethene	ND		13.0	1	05/04/2023 09:10	WG2053545

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	04/29/2023 23:49	WG2051325
Toluene	ND		1.00	1	04/29/2023 23:49	WG2051325
Ethylbenzene	ND		1.00	1	04/29/2023 23:49	WG2051325
Xylenes, Total	ND		3.00	1	04/29/2023 23:49	WG2051325
Naphthalene	ND	J3	5.00	1	04/29/2023 23:49	WG2051325
(S) Toluene-d8	*113*		*80.0-120*		*04/29/2023 23:49*	WG2051325
(S) 4-Bromofluorobenzene	*102*		*77.0-126*		*04/29/2023 23:49*	WG2051325
(S) 1,2-Dichloroethane-d4	*90.2*		*70.0-130*		*04/29/2023 23:49*	WG2051325

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Diesel Range Organics (DRO)	ND		200	1	05/06/2023 02:13	WG2053800
Residual Range Organics (RRO)	ND		250	1	05/06/2023 02:13	WG2053800
(S) o-Terphenyl	*101*		*52.0-156*		*05/06/2023 02:13*	WG2053800

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Alkalinity	154000		20000	1	05/03/2023 14:38	WG2052212

Sample Narrative:

L1610295-04 WG2052212: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	110000		25000	5	05/05/2023 06:30	WG2054567

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Manganese,Dissolved	ND		10.0	1	05/04/2023 00:40	WG2052056

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Gasoline Range Organics-NWTPH	ND		100	1	05/02/2023 17:39	WG2052395
(S) a,a,a-Trifluorotoluene(FID)	*100*		*78.0-120*		*05/02/2023 17:39*	WG2052395

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Methane	ND		10.0	1	05/05/2023 11:27	WG2054369
Ethane	ND		13.0	1	05/05/2023 11:27	WG2054369
Ethene	ND		13.0	1	05/05/2023 11:27	WG2054369

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	04/30/2023 00:10	WG2051325
Toluene	ND		1.00	1	04/30/2023 00:10	WG2051325
Ethylbenzene	ND		1.00	1	04/30/2023 00:10	WG2051325
Xylenes, Total	ND		3.00	1	04/30/2023 00:10	WG2051325
Naphthalene	ND	J3	5.00	1	04/30/2023 00:10	WG2051325
(S) Toluene-d8	*115*		*80.0-120*		*04/30/2023 00:10*	WG2051325
(S) 4-Bromofluorobenzene	*101*		*77.0-126*		*04/30/2023 00:10*	WG2051325
(S) 1,2-Dichloroethane-d4	*90.2*		*70.0-130*		*04/30/2023 00:10*	WG2051325

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Diesel Range Organics (DRO)	ND		200	1	05/06/2023 02:33	WG2053800
Residual Range Organics (RRO)	ND		250	1	05/06/2023 02:33	WG2053800
(S) o-Terphenyl	*103*		*52.0-156*		*05/06/2023 02:33*	WG2053800

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Alkalinity	199000		20000	1	05/01/2023 12:01	WG2051701

Sample Narrative:
L1610295-05 WG2051701: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	116000		25000	5	05/05/2023 06:46	WG2054567

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Manganese,Dissolved	ND		10.0	1	05/04/2023 00:49	WG2052056

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Gasoline Range Organics-NWTPH	ND		100	1	05/02/2023 18:02	WG2052395
(S) a,a,a-Trifluorotoluene(FID)	*99.4*		*78.0-120*		*05/02/2023 18:02*	WG2052395

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Methane	ND		10.0	1	05/05/2023 11:29	WG2054369
Ethane	ND		13.0	1	05/05/2023 11:29	WG2054369
Ethene	ND		13.0	1	05/05/2023 11:29	WG2054369

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	04/30/2023 00:32	WG2051325
Toluene	ND		1.00	1	04/30/2023 00:32	WG2051325
Ethylbenzene	ND		1.00	1	04/30/2023 00:32	WG2051325
Xylenes, Total	ND		3.00	1	04/30/2023 00:32	WG2051325
Naphthalene	ND	J3	5.00	1	04/30/2023 00:32	WG2051325
(S) Toluene-d8	*114*		*80.0-120*		*04/30/2023 00:32*	WG2051325
(S) 4-Bromofluorobenzene	*99.8*		*77.0-126*		*04/30/2023 00:32*	WG2051325
(S) 1,2-Dichloroethane-d4	*89.8*		*70.0-130*		*04/30/2023 00:32*	WG2051325

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Diesel Range Organics (DRO)	ND		200	1	05/06/2023 02:53	WG2053800
Residual Range Organics (RRO)	ND		250	1	05/06/2023 02:53	WG2053800
(S) o-Terphenyl	*104*		*52.0-156*		*05/06/2023 02:53*	WG2053800

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Alkalinity	195000		20000	1	05/03/2023 14:43	WG2052212

Sample Narrative:

L1610295-06 WG2052212: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	117000		25000	5	05/05/2023 07:01	WG2054567

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Manganese,Dissolved	ND		10.0	1	05/04/2023 00:51	WG2052056

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Gasoline Range Organics-NWTPH	ND		100	1	05/02/2023 18:24	WG2052395
(S) a,a,a-Trifluorotoluene(FID)	*99.5*		*78.0-120*		*05/02/2023 18:24*	WG2052395

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Methane	ND		10.0	1	05/05/2023 11:32	WG2054369
Ethane	ND		13.0	1	05/05/2023 11:32	WG2054369
Ethene	ND		13.0	1	05/05/2023 11:32	WG2054369

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	04/30/2023 00:52	WG2051325
Toluene	ND		1.00	1	04/30/2023 00:52	WG2051325
Ethylbenzene	ND		1.00	1	04/30/2023 00:52	WG2051325
Xylenes, Total	ND		3.00	1	04/30/2023 00:52	WG2051325
Naphthalene	ND	J3	5.00	1	04/30/2023 00:52	WG2051325
(S) Toluene-d8	*115*		*80.0-120*		*04/30/2023 00:52*	WG2051325
(S) 4-Bromofluorobenzene	*99.9*		*77.0-126*		*04/30/2023 00:52*	WG2051325
(S) 1,2-Dichloroethane-d4	*87.6*		*70.0-130*		*04/30/2023 00:52*	WG2051325

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Diesel Range Organics (DRO)	ND		200	1	05/06/2023 03:13	WG2053800
Residual Range Organics (RRO)	ND		250	1	05/06/2023 03:13	WG2053800
(S) o-Terphenyl	*103*		*52.0-156*		*05/06/2023 03:13*	WG2053800

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	200000		20000	1	05/01/2023 12:08	WG2051701

Sample Narrative:
L1610295-07 WG2051701: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 300.0

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfate	117000		25000	5	05/05/2023 07:17	WG2054567

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Manganese,Dissolved	ND		10.0	1	05/04/2023 00:54	WG2052056

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	ND		100	1	05/02/2023 18:55	WG2052395
(S) a,a,a-Trifluorotoluene(FID)	*99.9*		*78.0-120*		*05/02/2023 18:55*	WG2052395

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	ND		10.0	1	05/05/2023 11:36	WG2054369
Ethane	ND		13.0	1	05/05/2023 11:36	WG2054369
Ethene	ND		13.0	1	05/05/2023 11:36	WG2054369

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

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	04/30/2023 01:13	WG2051325
Toluene	ND		1.00	1	04/30/2023 01:13	WG2051325
Ethylbenzene	ND		1.00	1	04/30/2023 01:13	WG2051325
Xylenes, Total	ND		3.00	1	04/30/2023 01:13	WG2051325
Naphthalene	ND	J3	5.00	1	04/30/2023 01:13	WG2051325
(S) Toluene-d8	*114*		*80.0-120*		*04/30/2023 01:13*	WG2051325
(S) 4-Bromofluorobenzene	*101*		*77.0-126*		*04/30/2023 01:13*	WG2051325
(S) 1,2-Dichloroethane-d4	*87.8*		*70.0-130*		*04/30/2023 01:13*	WG2051325

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

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	ND		200	1	05/06/2023 03:34	WG2053800
Residual Range Organics (RRO)	ND		250	1	05/06/2023 03:34	WG2053800
(S) o-Terphenyl	*99.5*		*52.0-156*		*05/06/2023 03:34*	WG2053800

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Alkalinity	261000		20000	1	05/01/2023 12:15	WG2051701

Sample Narrative:
L1610295-08 WG2051701: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	109000		25000	5	05/05/2023 07:33	WG2054567

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Manganese,Dissolved	73.1		10.0	1	05/04/2023 00:57	WG2052056

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Gasoline Range Organics-NWTPH	ND		100	1	05/02/2023 19:52	WG2052395
(S) a,a,a-Trifluorotoluene(FID)	*99.2*		*78.0-120*		*05/02/2023 19:52*	WG2052395

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Methane	ND		10.0	1	05/05/2023 11:49	WG2054369
Ethane	ND		13.0	1	05/05/2023 11:49	WG2054369
Ethene	ND		13.0	1	05/05/2023 11:49	WG2054369

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	04/30/2023 01:34	WG2051325
Toluene	ND		1.00	1	04/30/2023 01:34	WG2051325
Ethylbenzene	ND		1.00	1	04/30/2023 01:34	WG2051325
Xylenes, Total	ND		3.00	1	04/30/2023 01:34	WG2051325
Naphthalene	ND	J3	5.00	1	04/30/2023 01:34	WG2051325
(S) Toluene-d8	*116*		*80.0-120*		*04/30/2023 01:34*	WG2051325
(S) 4-Bromofluorobenzene	*99.4*		*77.0-126*		*04/30/2023 01:34*	WG2051325
(S) 1,2-Dichloroethane-d4	*90.6*		*70.0-130*		*04/30/2023 01:34*	WG2051325

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Diesel Range Organics (DRO)	ND		200	1	05/06/2023 03:54	WG2053800
Residual Range Organics (RRO)	ND		250	1	05/06/2023 03:54	WG2053800
(S) o-Terphenyl	*103*		*52.0-156*		*05/06/2023 03:54*	WG2053800

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Alkalinity	321000		20000	1	05/01/2023 12:22	WG2051701

Sample Narrative:

L1610295-09 WG2051701: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	113000		5000	1	05/05/2023 07:49	WG2054567

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Manganese,Dissolved	55.9		10.0	1	05/04/2023 00:21	WG2052056

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Gasoline Range Organics-NWTPH	ND		100	1	05/02/2023 20:26	WG2052395
(S) a,a,a-Trifluorotoluene(FID)	*99.4*		*78.0-120*		*05/02/2023 20:26*	WG2052395

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Methane	ND		10.0	1	05/05/2023 11:51	WG2054369
Ethane	ND		13.0	1	05/05/2023 11:51	WG2054369
Ethene	ND		13.0	1	05/05/2023 11:51	WG2054369

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	04/30/2023 01:55	WG2051325
Toluene	ND		1.00	1	04/30/2023 01:55	WG2051325
Ethylbenzene	ND		1.00	1	04/30/2023 01:55	WG2051325
Xylenes, Total	ND		3.00	1	04/30/2023 01:55	WG2051325
Naphthalene	ND		5.00	1	04/30/2023 01:55	WG2051325
(S) Toluene-d8	*114*		*80.0-120*		*04/30/2023 01:55*	WG2051325
(S) 4-Bromofluorobenzene	*101*		*77.0-126*		*04/30/2023 01:55*	WG2051325
(S) 1,2-Dichloroethane-d4	*90.7*		*70.0-130*		*04/30/2023 01:55*	WG2051325

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Diesel Range Organics (DRO)	234		200	1	05/06/2023 04:14	WG2053800
Residual Range Organics (RRO)	ND		250	1	05/06/2023 04:14	WG2053800
(S) o-Terphenyl	*103*		*52.0-156*		*05/06/2023 04:14*	WG2053800

Sample Narrative:

L1610295-09 WG2053800: Sample does not resemble laboratory standards.

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	207000		20000	1	05/03/2023 15:14	WG2052212

Sample Narrative:
L1610295-10 WG2052212: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 300.0

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfate	119000		5000	1	05/05/2023 09:09	WG2054567

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Manganese,Dissolved	ND		10.0	1	05/04/2023 01:00	WG2052056

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	ND		100	1	05/02/2023 20:48	WG2052395
(S) a,a,a-Trifluorotoluene(FID)	*99.7*		*78.0-120*		*05/02/2023 20:48*	WG2052395

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	ND		10.0	1	05/05/2023 13:06	WG2054369
Ethane	ND		13.0	1	05/05/2023 13:06	WG2054369
Ethene	ND		13.0	1	05/05/2023 13:06	WG2054369

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

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	04/30/2023 02:16	WG2051325
Toluene	ND		1.00	1	04/30/2023 02:16	WG2051325
Ethylbenzene	ND		1.00	1	04/30/2023 02:16	WG2051325
Xylenes, Total	ND		3.00	1	04/30/2023 02:16	WG2051325
Naphthalene	ND	J3	5.00	1	04/30/2023 02:16	WG2051325
(S) Toluene-d8	*114*		*80.0-120*		*04/30/2023 02:16*	WG2051325
(S) 4-Bromofluorobenzene	*96.8*		*77.0-126*		*04/30/2023 02:16*	WG2051325
(S) 1,2-Dichloroethane-d4	*90.4*		*70.0-130*		*04/30/2023 02:16*	WG2051325

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

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	ND		200	1	05/06/2023 05:15	WG2053800
Residual Range Organics (RRO)	ND		250	1	05/06/2023 05:15	WG2053800
(S) o-Terphenyl	*98.4*		*52.0-156*		*05/06/2023 05:15*	WG2053800

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Alkalinity	204000		20000	1	05/03/2023 15:19	WG2052212

Sample Narrative:
L1610295-11 WG2052212: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	119000		25000	5	05/05/2023 09:41	WG2054567

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Manganese,Dissolved	ND		10.0	1	05/04/2023 01:03	WG2052056

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Gasoline Range Organics-NWTPH	ND		100	1	05/02/2023 21:37	WG2052395
(S) a,a,a-Trifluorotoluene(FID)	*99.7*		*78.0-120*		*05/02/2023 21:37*	WG2052395

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Methane	ND		10.0	1	05/05/2023 13:11	WG2054369
Ethane	ND		13.0	1	05/05/2023 13:11	WG2054369
Ethene	ND		13.0	1	05/05/2023 13:11	WG2054369

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	04/30/2023 02:37	WG2051325
Toluene	ND		1.00	1	04/30/2023 02:37	WG2051325
Ethylbenzene	ND		1.00	1	04/30/2023 02:37	WG2051325
Xylenes, Total	ND		3.00	1	04/30/2023 02:37	WG2051325
Naphthalene	ND	J3	5.00	1	04/30/2023 02:37	WG2051325
(S) Toluene-d8	*112*		*80.0-120*		*04/30/2023 02:37*	WG2051325
(S) 4-Bromofluorobenzene	*96.4*		*77.0-126*		*04/30/2023 02:37*	WG2051325
(S) 1,2-Dichloroethane-d4	*90.2*		*70.0-130*		*04/30/2023 02:37*	WG2051325

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Diesel Range Organics (DRO)	ND		200	1	05/06/2023 05:35	WG2053800
Residual Range Organics (RRO)	ND		250	1	05/06/2023 05:35	WG2053800
(S) o-Terphenyl	*99.5*		*52.0-156*		*05/06/2023 05:35*	WG2053800

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	205000		20000	1	05/01/2023 12:35	WG2051701

Sample Narrative:
L1610295-12 WG2051701: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 300.0

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfate	117000		25000	5	05/05/2023 09:57	WG2054567

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Manganese,Dissolved	ND		10.0	1	05/04/2023 01:06	WG2052056

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	ND		100	1	05/02/2023 22:00	WG2052395
(S) a,a,a-Trifluorotoluene(FID)	*100*		*78.0-120*		*05/02/2023 22:00*	WG2052395

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	ND		10.0	1	05/05/2023 13:14	WG2054369
Ethane	ND		13.0	1	05/05/2023 13:14	WG2054369
Ethene	ND		13.0	1	05/05/2023 13:14	WG2054369

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

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	04/30/2023 02:59	WG2051325
Toluene	ND		1.00	1	04/30/2023 02:59	WG2051325
Ethylbenzene	ND		1.00	1	04/30/2023 02:59	WG2051325
Xylenes, Total	ND		3.00	1	04/30/2023 02:59	WG2051325
Naphthalene	ND	J3	5.00	1	04/30/2023 02:59	WG2051325
(S) Toluene-d8	*113*		*80.0-120*		*04/30/2023 02:59*	WG2051325
(S) 4-Bromofluorobenzene	*99.1*		*77.0-126*		*04/30/2023 02:59*	WG2051325
(S) 1,2-Dichloroethane-d4	*89.7*		*70.0-130*		*04/30/2023 02:59*	WG2051325

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

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	ND		200	1	05/06/2023 05:55	WG2053800
Residual Range Organics (RRO)	ND		250	1	05/06/2023 05:55	WG2053800
(S) o-Terphenyl	*96.8*		*52.0-156*		*05/06/2023 05:55*	WG2053800

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Alkalinity	272000		20000	1	05/02/2023 14:49	WG2052452

Sample Narrative:

L1610295-13 WG2052452: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	146000		25000	5	05/05/2023 10:12	WG2054567

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Manganese,Dissolved	ND		10.0	1	05/04/2023 01:09	WG2052056

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Gasoline Range Organics-NWTPH	ND		100	1	05/02/2023 22:22	WG2052395
(S) a,a,a-Trifluorotoluene(FID)	*99.0*		*78.0-120*		*05/02/2023 22:22*	WG2052395

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Methane	ND		10.0	1	05/05/2023 13:16	WG2054369
Ethane	ND		13.0	1	05/05/2023 13:16	WG2054369
Ethene	ND		13.0	1	05/05/2023 13:16	WG2054369

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	04/30/2023 03:20	WG2051325
Toluene	ND		1.00	1	04/30/2023 03:20	WG2051325
Ethylbenzene	ND		1.00	1	04/30/2023 03:20	WG2051325
Xylenes, Total	ND		3.00	1	04/30/2023 03:20	WG2051325
Naphthalene	ND	J3	5.00	1	04/30/2023 03:20	WG2051325
(S) Toluene-d8	*113*		*80.0-120*		*04/30/2023 03:20*	WG2051325
(S) 4-Bromofluorobenzene	*97.1*		*77.0-126*		*04/30/2023 03:20*	WG2051325
(S) 1,2-Dichloroethane-d4	*91.2*		*70.0-130*		*04/30/2023 03:20*	WG2051325

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Diesel Range Organics (DRO)	604		200	1	05/06/2023 06:15	WG2053800
Residual Range Organics (RRO)	ND		250	1	05/06/2023 06:15	WG2053800
(S) o-Terphenyl	*100*		*52.0-156*		*05/06/2023 06:15*	WG2053800

Sample Narrative:

L1610295-13 WG2053800: Sample does not resemble laboratory standards.

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	221000		20000	1	05/02/2023 15:04	WG2052452

Sample Narrative:
L1610295-14 WG2052452: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 300.0

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfate	123000		25000	5	05/05/2023 10:28	WG2054567

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Manganese,Dissolved	ND		10.0	1	05/04/2023 01:12	WG2052056

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	ND		100	1	05/02/2023 23:15	WG2052395
(S) a,a,a-Trifluorotoluene(FID)	*99.7*		*78.0-120*		*05/02/2023 23:15*	WG2052395

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	ND		10.0	1	05/05/2023 13:18	WG2054369
Ethane	ND		13.0	1	05/05/2023 13:18	WG2054369
Ethene	ND		13.0	1	05/05/2023 13:18	WG2054369

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

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	04/30/2023 03:41	WG2051325
Toluene	ND		1.00	1	04/30/2023 03:41	WG2051325
Ethylbenzene	ND		1.00	1	04/30/2023 03:41	WG2051325
Xylenes, Total	ND		3.00	1	04/30/2023 03:41	WG2051325
Naphthalene	ND	J3	5.00	1	04/30/2023 03:41	WG2051325
(S) Toluene-d8	*116*		*80.0-120*		*04/30/2023 03:41*	WG2051325
(S) 4-Bromofluorobenzene	*98.7*		*77.0-126*		*04/30/2023 03:41*	WG2051325
(S) 1,2-Dichloroethane-d4	*92.6*		*70.0-130*		*04/30/2023 03:41*	WG2051325

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

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	ND		200	1	05/06/2023 06:36	WG2053800
Residual Range Organics (RRO)	ND		250	1	05/06/2023 06:36	WG2053800
(S) o-Terphenyl	*98.9*		*52.0-156*		*05/06/2023 06:36*	WG2053800

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Alkalinity	228000		20000	1	05/01/2023 12:41	WG2051701

Sample Narrative:
L1610295-15 WG2051701: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	112000		5000	1	05/05/2023 10:44	WG2054567

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Manganese,Dissolved	ND		10.0	1	05/04/2023 01:14	WG2052056

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Gasoline Range Organics-NWTPH	ND		100	1	05/02/2023 23:37	WG2052395
(S) a,a,a-Trifluorotoluene(FID)	*99.9*		*78.0-120*		*05/02/2023 23:37*	WG2052395

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Methane	ND		10.0	1	05/05/2023 13:21	WG2054369
Ethane	ND		13.0	1	05/05/2023 13:21	WG2054369
Ethene	ND		13.0	1	05/05/2023 13:21	WG2054369

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	04/30/2023 04:02	WG2051325
Toluene	ND		1.00	1	04/30/2023 04:02	WG2051325
Ethylbenzene	ND		1.00	1	04/30/2023 04:02	WG2051325
Xylenes, Total	ND		3.00	1	04/30/2023 04:02	WG2051325
Naphthalene	ND	J3	5.00	1	04/30/2023 04:02	WG2051325
(S) Toluene-d8	*113*		*80.0-120*		*04/30/2023 04:02*	WG2051325
(S) 4-Bromofluorobenzene	*97.2*		*77.0-126*		*04/30/2023 04:02*	WG2051325
(S) 1,2-Dichloroethane-d4	*91.8*		*70.0-130*		*04/30/2023 04:02*	WG2051325

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Diesel Range Organics (DRO)	ND		200	1	05/06/2023 06:56	WG2053800
Residual Range Organics (RRO)	ND		250	1	05/06/2023 06:56	WG2053800
(S) o-Terphenyl	*105*		*52.0-156*		*05/06/2023 06:56*	WG2053800

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Alkalinity	192000		20000	1	05/02/2023 15:09	WG2052452

Sample Narrative:

L1610295-16 WG2052452: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	120000		25000	5	05/05/2023 11:00	WG2054567

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Manganese,Dissolved	ND		10.0	1	05/04/2023 01:23	WG2052056

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Gasoline Range Organics-NWTPH	ND		100	1	05/03/2023 00:03	WG2052395
(S) a,a,a-Trifluorotoluene(FID)	*99.4*		*78.0-120*		*05/03/2023 00:03*	WG2052395

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Methane	ND		10.0	1	05/05/2023 13:23	WG2054369
Ethane	ND		13.0	1	05/05/2023 13:23	WG2054369
Ethene	ND		13.0	1	05/05/2023 13:23	WG2054369

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	04/30/2023 04:24	WG2051325
Toluene	ND		1.00	1	04/30/2023 04:24	WG2051325
Ethylbenzene	ND		1.00	1	04/30/2023 04:24	WG2051325
Xylenes, Total	ND		3.00	1	04/30/2023 04:24	WG2051325
Naphthalene	ND	J3	5.00	1	04/30/2023 04:24	WG2051325
(S) Toluene-d8	*115*		*80.0-120*		*04/30/2023 04:24*	WG2051325
(S) 4-Bromofluorobenzene	*93.1*		*77.0-126*		*04/30/2023 04:24*	WG2051325
(S) 1,2-Dichloroethane-d4	*91.8*		*70.0-130*		*04/30/2023 04:24*	WG2051325

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Diesel Range Organics (DRO)	ND		200	1	05/06/2023 07:16	WG2053800
Residual Range Organics (RRO)	ND		250	1	05/06/2023 07:16	WG2053800
(S) o-Terphenyl	*97.9*		*52.0-156*		*05/06/2023 07:16*	WG2053800

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Alkalinity	195000		20000	1	05/02/2023 15:15	WG2052452

Sample Narrative:
L1610295-17 WG2052452: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	116000		25000	5	05/05/2023 11:16	WG2054567

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Manganese,Dissolved	ND		10.0	1	05/04/2023 01:26	WG2052056

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Gasoline Range Organics-NWTPH	ND		100	1	05/03/2023 00:25	WG2052395
(S) a,a,a-Trifluorotoluene(FID)	*100*		*78.0-120*		*05/03/2023 00:25*	WG2052395

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Methane	ND		10.0	1	05/05/2023 13:26	WG2054369
Ethane	ND		13.0	1	05/05/2023 13:26	WG2054369
Ethene	ND		13.0	1	05/05/2023 13:26	WG2054369

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	04/30/2023 04:45	WG2051325
Toluene	ND		1.00	1	04/30/2023 04:45	WG2051325
Ethylbenzene	ND		1.00	1	04/30/2023 04:45	WG2051325
Xylenes, Total	ND		3.00	1	04/30/2023 04:45	WG2051325
Naphthalene	ND	J3	5.00	1	04/30/2023 04:45	WG2051325
(S) Toluene-d8	*115*		*80.0-120*		*04/30/2023 04:45*	WG2051325
(S) 4-Bromofluorobenzene	*96.3*		*77.0-126*		*04/30/2023 04:45*	WG2051325
(S) 1,2-Dichloroethane-d4	*94.6*		*70.0-130*		*04/30/2023 04:45*	WG2051325

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Diesel Range Organics (DRO)	ND		200	1	05/06/2023 07:36	WG2053800
Residual Range Organics (RRO)	ND		250	1	05/06/2023 07:36	WG2053800
(S) o-Terphenyl	*107*		*52.0-156*		*05/06/2023 07:36*	WG2053800

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Alkalinity	196000		20000	1	05/01/2023 12:57	WG2051701

Sample Narrative:

L1610295-18 WG2051701: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	110000		25000	5	05/05/2023 16:26	WG2054841

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Manganese,Dissolved	ND		10.0	1	05/04/2023 01:28	WG2052056

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Gasoline Range Organics-NWTPH	ND		100	1	05/03/2023 00:48	WG2052395
(S) a,a,a-Trifluorotoluene(FID)	*99.7*		*78.0-120*		*05/03/2023 00:48*	WG2052395

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Methane	ND		10.0	1	05/05/2023 13:31	WG2054369
Ethane	ND		13.0	1	05/05/2023 13:31	WG2054369
Ethene	ND		13.0	1	05/05/2023 13:31	WG2054369

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	04/30/2023 05:06	WG2051325
Toluene	ND		1.00	1	04/30/2023 05:06	WG2051325
Ethylbenzene	ND		1.00	1	04/30/2023 05:06	WG2051325
Xylenes, Total	ND		3.00	1	04/30/2023 05:06	WG2051325
Naphthalene	ND	J3	5.00	1	04/30/2023 05:06	WG2051325
(S) Toluene-d8	*116*		*80.0-120*		*04/30/2023 05:06*	WG2051325
(S) 4-Bromofluorobenzene	*96.1*		*77.0-126*		*04/30/2023 05:06*	WG2051325
(S) 1,2-Dichloroethane-d4	*91.2*		*70.0-130*		*04/30/2023 05:06*	WG2051325

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Diesel Range Organics (DRO)	ND		200	1	05/06/2023 07:56	WG2053800
Residual Range Organics (RRO)	ND		250	1	05/06/2023 07:56	WG2053800
(S) o-Terphenyl	*102*		*52.0-156*		*05/06/2023 07:56*	WG2053800

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Alkalinity	196000		20000	1	05/01/2023 13:03	WG2051701

Sample Narrative:
L1610295-19 WG2051701: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	110000		25000	5	05/05/2023 17:07	WG2054841

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Manganese,Dissolved	ND		10.0	1	05/04/2023 01:31	WG2052056

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Gasoline Range Organics-NWTPH	ND		100	1	05/03/2023 01:34	WG2052395
(S) a,a,a-Trifluorotoluene(FID)	*99.4*		*78.0-120*		*05/03/2023 01:34*	WG2052395

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Methane	ND		10.0	1	05/05/2023 13:36	WG2054369
Ethane	ND		13.0	1	05/05/2023 13:36	WG2054369
Ethene	ND		13.0	1	05/05/2023 13:36	WG2054369

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	04/30/2023 05:27	WG2051325
Toluene	ND		1.00	1	04/30/2023 05:27	WG2051325
Ethylbenzene	ND		1.00	1	04/30/2023 05:27	WG2051325
Xylenes, Total	ND		3.00	1	04/30/2023 05:27	WG2051325
Naphthalene	ND	J3	5.00	1	04/30/2023 05:27	WG2051325
(S) Toluene-d8	*115*		*80.0-120*		*04/30/2023 05:27*	WG2051325
(S) 4-Bromofluorobenzene	*97.4*		*77.0-126*		*04/30/2023 05:27*	WG2051325
(S) 1,2-Dichloroethane-d4	*92.5*		*70.0-130*		*04/30/2023 05:27*	WG2051325

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Diesel Range Organics (DRO)	ND		200	1	05/06/2023 08:17	WG2053800
Residual Range Organics (RRO)	ND		250	1	05/06/2023 08:17	WG2053800
(S) o-Terphenyl	*104*		*52.0-156*		*05/06/2023 08:17*	WG2053800

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	461000		20000	1	05/02/2023 15:20	WG2052452

Sample Narrative:
L1610295-20 WG2052452: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 300.0

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfate	61900		25000	5	05/05/2023 17:21	WG2054841

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Manganese,Dissolved	585		10.0	1	05/04/2023 01:34	WG2052056

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	ND		2000	20	05/04/2023 09:20	WG2052708
(S) a,a,a-Trifluorotoluene(FID)	*112*		*78.0-120*		*05/04/2023 09:20*	WG2052708

Sample Narrative:
L1610295-20 WG2052708: Dilution due to foam.

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	321		10.0	1	05/05/2023 13:38	WG2054369
Ethane	ND		13.0	1	05/05/2023 13:38	WG2054369
Ethene	ND		13.0	1	05/05/2023 13:38	WG2054369

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

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	04/30/2023 05:48	WG2051325
Toluene	ND		1.00	1	04/30/2023 05:48	WG2051325
Ethylbenzene	ND		1.00	1	04/30/2023 05:48	WG2051325
Xylenes, Total	ND		3.00	1	04/30/2023 05:48	WG2051325
Naphthalene	ND	J3	5.00	1	04/30/2023 05:48	WG2051325
(S) Toluene-d8	*114*		*80.0-120*		*04/30/2023 05:48*	WG2051325
(S) 4-Bromofluorobenzene	*97.9*		*77.0-126*		*04/30/2023 05:48*	WG2051325
(S) 1,2-Dichloroethane-d4	*92.8*		*70.0-130*		*04/30/2023 05:48*	WG2051325

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

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	5180		200	1	05/06/2023 08:37	WG2053800
Residual Range Organics (RRO)	869		250	1	05/06/2023 08:37	WG2053800
(S) o-Terphenyl	*125*		*52.0-156*		*05/06/2023 08:37*	WG2053800

Sample Narrative:
L1610295-20 WG2053800: Sample does not resemble laboratory standards.

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	ND		100	1	05/04/2023 02:38	WG2052708
(S) a,a,a-Trifluorotoluene(FID)	*112*		*78.0-120*		*05/04/2023 02:38*	WG2052708

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

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	05/01/2023 13:08	WG2051840
Toluene	ND		1.00	1	05/01/2023 13:08	WG2051840
Ethylbenzene	ND		1.00	1	05/01/2023 13:08	WG2051840
Xylenes, Total	ND		3.00	1	05/01/2023 13:08	WG2051840
Naphthalene	ND		5.00	1	05/01/2023 13:08	WG2051840
(S) Toluene-d8	*113*		*80.0-120*		*05/01/2023 13:08*	WG2051840
(S) 4-Bromofluorobenzene	*96.8*		*77.0-126*		*05/01/2023 13:08*	WG2051840
(S) 1,2-Dichloroethane-d4	*91.6*		*70.0-130*		*05/01/2023 13:08*	WG2051840

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Gasoline Range Organics-NWTPH	ND		100	1	05/04/2023 03:00	WG2052708
(S) a,a,a-Trifluorotoluene(FID)	*110*		*78.0-120*		*05/04/2023 03:00*	WG2052708

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	05/01/2023 13:29	WG2051840
Toluene	ND		1.00	1	05/01/2023 13:29	WG2051840
Ethylbenzene	ND		1.00	1	05/01/2023 13:29	WG2051840
Xylenes, Total	ND		3.00	1	05/01/2023 13:29	WG2051840
Naphthalene	ND		5.00	1	05/01/2023 13:29	WG2051840
(S) Toluene-d8	*115*		*80.0-120*		*05/01/2023 13:29*	WG2051840
(S) 4-Bromofluorobenzene	*99.6*		*77.0-126*		*05/01/2023 13:29*	WG2051840
(S) 1,2-Dichloroethane-d4	*90.9*		*70.0-130*		*05/01/2023 13:29*	WG2051840

Method Blank (MB)

(MB) R3919532-2 05/01/23 11:50

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Alkalinity	U		8450	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1610295-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1610295-09 05/01/23 12:22 • (DUP) R3919532-3 05/01/23 12:28

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	321000	319000	1	0.633		20

Sample Narrative:

OS: Endpoint pH 4.5 Headspace

DUP: Endpoint pH 4.5

L1610497-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1610497-01 05/01/23 13:39 • (DUP) R3919532-4 05/01/23 13:45

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	195000	198000	1	1.46		20

Sample Narrative:

OS: Endpoint pH 4.5 Headspace

DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3919532-1 05/01/23 11:43

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Alkalinity	100000	106000	106	90.0-110	

Sample Narrative:

LCS: Endpoint pH 4.5

Method Blank (MB)

(MB) R3920683-2 05/03/23 12:55

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Alkalinity	U		8450	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1607288-19 Original Sample (OS) • Duplicate (DUP)

(OS) L1607288-19 05/03/23 13:03 • (DUP) R3920683-3 05/03/23 13:09

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Alkalinity	402000	404000	1	0.303		20

Sample Narrative:

OS: Endpoint pH 4.5 Headspace

DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3920683-1 05/03/23 12:50

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Alkalinity	100000	104000	104	90.0-110	

Sample Narrative:

LCS: Endpoint pH 4.5

Method Blank (MB)

(MB) R3920164-2 05/02/23 13:15

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Alkalinity	U		8450	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1607288-24 Original Sample (OS) • Duplicate (DUP)

(OS) L1607288-24 05/02/23 13:22 • (DUP) R3920164-3 05/02/23 13:28

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	381000	384000	1	0.995		20

Sample Narrative:

OS: Endpoint pH 4.5 Headspace

DUP: Endpoint pH 4.5

L1610295-20 Original Sample (OS) • Duplicate (DUP)

(OS) L1610295-20 05/02/23 15:20 • (DUP) R3920164-4 05/02/23 15:25

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	461000	462000	1	0.245		20

Sample Narrative:

OS: Endpoint pH 4.5 Headspace

DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3920164-1 05/02/23 13:02

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Alkalinity	100000	108000	108	90.0-110	

Sample Narrative:

LCS: Endpoint pH 4.5

Method Blank (MB)

(MB) R3921514-1 05/04/23 22:12

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Sulfate	U		594	5000

L1610177-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1610177-02 05/05/23 04:06 • (DUP) R3921514-3 05/05/23 04:22

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Sulfate	9920	9910	1	0.0807		20

L1610295-10 Original Sample (OS) • Duplicate (DUP)

(OS) L1610295-10 05/05/23 09:09 • (DUP) R3921514-7 05/05/23 09:25

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Sulfate	119000	119000	1	0.0721		20

Laboratory Control Sample (LCS)

(LCS) R3921514-2 05/04/23 22:28

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Sulfate	40000	40900	102	90.0-110	

L1610177-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1610177-02 05/05/23 04:06 • (MS) R3921514-4 05/05/23 04:38

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Sulfate	50000	9920	56100	92.3	1	80.0-120	

L1610295-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1610295-09 05/05/23 07:49 • (MS) R3921514-5 05/05/23 08:05 • (MSD) R3921514-6 05/05/23 08:21

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Sulfate	50000	113000	154000	154000	80.7	80.8	1	80.0-120			0.0283	20

Method Blank (MB)

(MB) R3921690-1 05/05/23 11:27

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Sulfate	U		594	5000

L1610203-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1610203-01 05/05/23 12:24 • (DUP) R3921690-3 05/05/23 12:37

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Sulfate	2890000	2770000	10	4.09	E	20

L1610300-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1610300-03 05/05/23 18:29 • (DUP) R3921690-6 05/05/23 18:43

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Sulfate	2330000	2330000	10	0.0154	E	20

Laboratory Control Sample (LCS)

(LCS) R3921690-2 05/05/23 11:41

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Sulfate	40000	39000	97.4	90.0-110	

L1610203-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1610203-01 05/05/23 12:24 • (MS) R3921690-4 05/05/23 12:51 • (MSD) R3921690-5 05/05/23 13:04

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Sulfate	50000	2890000	2720000	2680000	0.000	0.000	10	80.0-120	E V	E V	1.54	20

L1610300-03 Original Sample (OS) • Matrix Spike (MS)

(OS) L1610300-03 05/05/23 18:29 • (MS) R3921690-7 05/05/23 18:57

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Sulfate	50000	2330000	2290000	0.000	10	80.0-120	E V

Method Blank (MB)

(MB) R3920687-1 05/04/23 00:15

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Manganese,Dissolved	U		0.934	10.0

Laboratory Control Sample (LCS)

(LCS) R3920687-2 05/04/23 00:18

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Manganese,Dissolved	1000	951	95.1	80.0-120	

L1610295-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1610295-09 05/04/23 00:21 • (MS) R3920687-4 05/04/23 00:26 • (MSD) R3920687-5 05/04/23 00:29

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Manganese,Dissolved	1000	55.9	1000	1010	94.5	95.7	1	75.0-125			1.16	20

Method Blank (MB)

(MB) R3920251-3 05/02/23 16:31

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	U		31.6	100
(S) a,a,a-Trifluorotoluene(FID)	*100*			*78.0-120*

Laboratory Control Sample (LCS)

(LCS) R3920251-2 05/02/23 15:45

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	5210	94.7	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			*113*	*78.0-120*	

L1610295-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1610295-09 05/02/23 20:26 • (MS) R3920251-4 05/03/23 02:41 • (MSD) R3920251-5 05/03/23 03:04

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	5500	ND	4420	4870	80.4	88.5	1	10.0-155			9.69	21
(S) a,a,a-Trifluorotoluene(FID)					*109*	*110*		*78.0-120*				

Method Blank (MB)

(MB) R3920928-2 05/04/23 01:54

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	U		31.6	100
(S) a,a,a-Trifluorotoluene(FID)	*109*			*78.0-120*

Laboratory Control Sample (LCS)

(LCS) R3920928-1 05/04/23 01:10

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	4950	90.0	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			*106*	*78.0-120*	

Method Blank (MB)

(MB) R3920748-2 05/03/23 15:40

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	U		31.6	100
(S) a,a,a-Trifluorotoluene(FID)	*111*			*78.0-120*

Laboratory Control Sample (LCS)

(LCS) R3920748-1 05/03/23 14:56

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	5430	98.7	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			*108*	*78.0-120*	

Method Blank (MB)

(MB) R3920513-2 05/03/23 14:07

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		2.91	10.0
Ethane	U		4.07	13.0
Ethene	U		4.26	13.0

L1609816-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1609816-03 05/03/23 14:11 • (DUP) R3920513-3 05/03/23 14:52

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	1840	1820	1	1.09		20
Ethane	ND	ND	1	0.000		20
Ethene	ND	ND	1	0.000		20

L1609829-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1609829-01 05/03/23 14:55 • (DUP) R3920513-4 05/03/23 15:55

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	ND	ND	1	0.000		20
Ethane	ND	ND	1	0.000		20
Ethene	ND	ND	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3920513-1 05/03/23 14:04 • (LCSD) R3920513-5 05/03/23 15:58

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	64.1	62.1	94.5	91.6	85.0-115			3.17	20
Ethane	129	114	112	88.4	86.8	85.0-115			1.77	20
Ethene	127	115	113	90.6	89.0	85.0-115			1.75	20

Method Blank (MB)

(MB) R3920821-2 05/04/23 08:45

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Methane	U		2.91	10.0
Ethane	U		4.07	13.0
Ethene	U		4.26	13.0

L1610668-18 Original Sample (OS) • Duplicate (DUP)

(OS) L1610668-18 05/04/23 09:33 • (DUP) R3920821-3 05/04/23 09:35

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Methane	ND	ND	1	0.000		20
Ethane	ND	ND	1	0.000		20
Ethene	ND	ND	1	0.000		20

L1610668-27 Original Sample (OS) • Duplicate (DUP)

(OS) L1610668-27 05/04/23 10:36 • (DUP) R3920821-4 05/04/23 10:42

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Methane	ND	ND	1	0.000		20
Ethane	ND	ND	1	0.000		20
Ethene	ND	ND	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3920821-1 05/04/23 08:42 • (LCSD) R3920821-7 05/04/23 10:54

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Methane	67.8	65.6	62.9	96.8	92.8	85.0-115			4.20	20
Ethane	129	117	113	90.7	87.6	85.0-115			3.48	20
Ethene	127	117	114	92.1	89.8	85.0-115			2.60	20

L1609829-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1609829-06 05/04/23 09:00 • (MS) R3920821-5 05/04/23 10:45 • (MSD) R3920821-6 05/04/23 10:48

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Methane	678	12100	16500	17300	649	767	10	50.0-150	V	V	4.73	20
Ethane	1290	ND	1450	1470	112	114	10	50.0-150			1.37	20
Ethene	1270	ND	1430	1460	113	115	10	50.0-150			2.08	20

Method Blank (MB)

(MB) R3921418-2 05/05/23 11:00

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Methane	U		2.91	10.0
Ethane	U		4.07	13.0
Ethene	U		4.26	13.0

L1610295-10 Original Sample (OS) • Duplicate (DUP)

(OS) L1610295-10 05/05/23 13:06 • (DUP) R3921418-3 05/05/23 13:08

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Methane	ND	ND	1	0.000		20
Ethane	ND	ND	1	0.000		20
Ethene	ND	ND	1	0.000		20

L1610295-19 Original Sample (OS) • Duplicate (DUP)

(OS) L1610295-19 05/05/23 13:36 • (DUP) R3921418-4 05/05/23 13:42

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Methane	ND	ND	1	0.000		20
Ethane	ND	ND	1	0.000		20
Ethene	ND	ND	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3921418-1 05/05/23 10:57 • (LCSD) R3921418-7 05/05/23 13:51

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Methane	67.8	65.0	73.3	95.9	108	85.0-115			12.0	20
Ethane	129	114	113	88.4	87.6	85.0-115			0.881	20
Ethene	127	115	113	90.6	89.0	85.0-115			1.75	20

L1610295-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1610295-09 05/05/23 11:51 • (MS) R3921418-5 05/05/23 13:45 • (MSD) R3921418-6 05/05/23 13:49

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Methane	67.8	ND	73.4	89.7	108	132	1	50.0-150			20.0	20
Ethane	129	ND	124	145	96.1	112	1	50.0-150			15.6	20
Ethene	127	ND	123	145	96.9	114	1	50.0-150			16.4	20

Method Blank (MB)

(MB) R3920902-3 04/29/23 20:26

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Benzene	U		0.0941	1.00
Toluene	U		0.278	1.00
Ethylbenzene	U		0.137	1.00
Xylenes, Total	U		0.174	3.00
Naphthalene	U		1.00	5.00
(S) Toluene-d8	*113*			*80.0-120*
(S) 4-Bromofluorobenzene	*103*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*88.7*			*70.0-130*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3920902-1 04/29/23 19:22 • (LCSD) R3920902-2 04/29/23 19:43

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Benzene	5.00	4.33	4.18	86.6	83.6	70.0-123			3.53	20
Toluene	5.00	4.54	4.42	90.8	88.4	79.0-120			2.68	20
Ethylbenzene	5.00	4.43	4.35	88.6	87.0	79.0-123			1.82	20
Xylenes, Total	15.0	13.5	13.2	90.0	88.0	79.0-123			2.25	20
Naphthalene	5.00	4.72	3.73	94.4	74.6	54.0-135		J3	23.4	20
(S) Toluene-d8				*111*	*111*	*80.0-120*				
(S) 4-Bromofluorobenzene				*104*	*103*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*90.7*	*87.6*	*70.0-130*				

L1610295-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1610295-09 04/30/23 01:55 • (MS) R3920902-4 04/30/23 06:09 • (MSD) R3920902-5 04/30/23 06:30

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Benzene	5.00	ND	4.86	4.79	97.2	95.8	1	17.0-158			1.45	27
Toluene	5.00	ND	5.07	5.06	101	101	1	26.0-154			0.197	28
Ethylbenzene	5.00	ND	5.16	5.18	103	104	1	30.0-155			0.387	27
Xylenes, Total	15.0	ND	15.2	15.1	101	101	1	29.0-154			0.660	28
Naphthalene	5.00	ND	ND	ND	83.0	86.6	1	12.0-156			4.25	35
(S) Toluene-d8					*109*	*109*		*80.0-120*				
(S) 4-Bromofluorobenzene					*101*	*103*		*77.0-126*				
(S) 1,2-Dichloroethane-d4					*92.2*	*89.4*		*70.0-130*				

Method Blank (MB)

(MB) R3920544-3 05/01/23 10:31

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.0941	1.00
Toluene	U		0.278	1.00
Ethylbenzene	U		0.137	1.00
Xylenes, Total	U		0.174	3.00
Naphthalene	U		1.00	5.00
(S) Toluene-d8	*112*			*80.0-120*
(S) 4-Bromofluorobenzene	*97.4*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*88.8*			*70.0-130*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3920544-1 05/01/23 09:28 • (LCSD) R3920544-2 05/01/23 09:49

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	5.00	4.98	4.65	99.6	93.0	70.0-123			6.85	20
Toluene	5.00	5.40	4.95	108	99.0	79.0-120			8.70	20
Ethylbenzene	5.00	5.22	4.83	104	96.6	79.0-123			7.76	20
Xylenes, Total	15.0	15.5	14.7	103	98.0	79.0-123			5.30	20
Naphthalene	5.00	5.01	4.53	100	90.6	54.0-135			10.1	20
(S) Toluene-d8				*113*	*111*	*80.0-120*				
(S) 4-Bromofluorobenzene				*102*	*101*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*92.0*	*87.3*	*70.0-130*				

Method Blank (MB)

(MB) R3921680-1 05/06/23 00:52

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Diesel Range Organics (DRO)	U		66.7	200
Residual Range Organics (RRO)	U		83.3	250
(S) o-Terphenyl	*112*			*52.0-156*

Laboratory Control Sample (LCS)

(LCS) R3921680-2 05/06/23 01:12

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Diesel Range Organics (DRO)	1500	1420	94.7	50.0-150	
(S) o-Terphenyl			*105*	*52.0-156*	

L1610295-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1610295-09 05/06/23 04:14 • (MS) R3921680-3 05/06/23 04:34 • (MSD) R3921680-4 05/06/23 04:54

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Diesel Range Organics (DRO)	1430	234	1600	1620	95.5	96.9	1	50.0-150			1.24	20
(S) o-Terphenyl					*98.4*	*100*		*52.0-156*				

Sample Narrative:

OS: Sample does not resemble laboratory standards.

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J3	The associated batch QC was outside the established quality control range for precision.
V	The sample concentration is too high to evaluate accurate spike recoveries.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

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

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

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

Company Name/Address:
AECOM - Portland, OR

888 SW 5th Ave
Suite 600
Portland. OR 97204

Billing Information:
Accounts Payable
888 SW 5th Ave
Suite 600
Portland, OR 97204

Pres Chk

Report to:
Ms. Nicky Moody

Email To:
nicky.moody@aecom.com;christina.wheeler@a

Project Description:
CPL Co. Pasco Bulk Fuel Terminal

City/State Collected: Pasco Wa.

Please Circle: PT MT CT ET

Phone: **503-969-6310**

Client Project #

Lab Project #
AECOMPORSSA-CPL

Collected by (print):
Richard LeCoy

Site/Facility ID #
55763995

P.O. #

Collected by (signature):

Immediately Packed on Ice N ____ Y X

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

Date Results Needed

Quote #

Analysis / Container / Preservative

Chain of Custody Page 1 of 3

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MT JULIET, TN

12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # L1610295
E109

Table #

Acctnum: **AECOMPORSSA**
Template: **T223778**
Prelogin: **P993452**
PM: **034 - Craig Cothron**
PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	ALK,SULFATE 250mlHDPE-NoPres	MNDICP 250mlHDPE-NoPres	NWTPHDXLVINOSGT 40mlAmb-HCl-BT	NWTPHGX 40mlAmb HCl	NWTPHGX 40mlAmb-HCl-Blk	RSK175 40mlAmb HCl	V8260BTEXN 40mlAmb-HCl	V8260BTEXN 40mlAmb-HCl-Blk			Remarks	Sample # (lab only)
MW-02- 20230426	G	GW	77	4/26	1420	12	X	X	X	X		X	X					-01
MW-03- 20230425	G	GW	85	4/25	0910	12	X	X	X	X		X	X					-02
MW-04- 20230425	G	GW	72	4/25	1105	12	X	X	X	X		X	X					-03
MW-06- 20230425	G	GW	21	4/25	1410	12	X	X	X	X		X	X					-04
MW-07- 20230425	G	GW	72	4/25	1434	12	X	X	X	X		X	X					-05
MW-08- 20230425	G	GW	14	4/25	1150	12	X	X	X	X		X	X					-06
MW-10- 20230425	G	GW	68	4/25	1305	12	X	X	X	X		X	X					-07
MW-11- 20230426	G	GW	83	4/26	1145	12	X	X	X	X		X	X					-08
MW-12- 20230426	G	GW	83	4/26	0920	12	X	X	X	X		X	X					-09
~~MW-12 MS~~ 20230426-MS	G	GW	83	4/26	0920	12	X	X	X	X		X	X					-10 MS/MSD

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

Remarks:PO 148565

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx X Courier _____

Tracking # 6295 1089 8869 / 6295 1089 8858

Sample Receipt Checklist

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

Relinquished by : (Signature)	Date: 4/27	Time: 0901	Received by: (Signature)	Trip Blank Received: Yes / No (HCL / MeoH / TBR) 2	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: .1+0=.1 °C Bottles Received: 264	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) Hana Machina	Date: 09.28.23 Time: 0900	Hold: Condition: NCF / OK

Company Name/Address:
AECOM - Portland, OR

888 SW 5th Ave
Suite 600
Portland. OR 97204

Billing Information:
Accounts Payable
888 SW 5th Ave
Suite 600
Portland, OR 97204

Pres Chk

Report to:
Ms. Nicky Moody

Email To:
nicky.moody@aecom.com;christina.wheeler@a

Project Description:
CPL Co. Pasco Bulk Fuel Terminal

City/State Collected: Pasco Wa.

Please Circle: (PT) MT CT ET

Phone: **503-969-6310**

Client Project #

Lab Project #
AECOMPORSSA-CPL

Collected by (print):
Edward LeCoq

Site/Facility ID #
55763995

P.O. #

Collected by (signature):

Immediately
Packed on Ice N ____ Y X

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

Date Results Needed

Quote #

No. of Cntrs

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	ALK,SULFATE 250mlHDPE-NoPres	MNDICP 250mlHDPE-NoPres	NWTPHDXLVINOSGT 40mlAmb-HCl-BT	NWTPHGX 40mlAmb HCl	NWTPHGX 40mlAmb-HCl-Blk	RSK175 40mlAmb HCl	V8260BTEXN 40mlAmb-HCl	V8260BTEXN 40mlAmb-HCl-Blk			Remarks	Sample # (lab only)
MW-12 ~~MSD~~ 20230426 -MSD	G	GW	83	4/26	0920	12	X	X	X	X		X	X					
MW-14- 20230426	G	GW	84	4/26	1605	12	X	X	X	X		X	X					-10
MW-15- 20230425	G	GW	21	4/25	1610	12	X	X	X	X		X	X					-11
MW-16- 20230425	G	GW	31	4/25	1820	12	X	X	X	X		X	X					-12
MW-17- 20230426	G	GW	84	4/26	1117	12	X	X	X	X		X	X					-13
MW-18- 20230426	G	GW	86.5	4/26	1633	12	X	X	X	X		X	X					-14
MW-19- 20230426	G	GW	85	4/26	0912	12	X	X	X	X		X	X					-15
MW-20- 20230426	G	GW	95	4/26	1451	12	X	X	X	X		X	X					-16
MW-21- 20230425	G	GW	93	4/25	1719	12	X	X	X	X		X	X					-17
MW-22- 20230425	G	GW	94	4/25	0930	12	X	X	X	X		X	X					-18

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

Remarks:PO 148565

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx X Courier _____

Tracking # 6295 1089 8866 6295 1089 8847 / 6295 1089 8858

Sample Receipt Checklist

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

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
	4/27	0901		2	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: .1+0=.1 °C Bottles Received: 264	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) Hana Mirchina	Date: 04.28.23 Time: 0900	Hold: / Condition: NCF / OK

Chain of Custody Page 2 of 3

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MT JULIET, TN

12065 Lebanon Rd Mount Juliet, TN 37122
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SDG # L1610295

Table #

Acctnum: **AECOMPORSSA**
Template:**T223778**
Prelogin: **P993452**
PM: **034 - Craig Cothron**
PB:

Shipped Via:

Company Name/Address:
AECOM - Portland, OR

888 SW 5th Ave
Suite 600
Portland. OR 97204

Billing Information:
Accounts Payable
888 SW 5th Ave
Suite 600
Portland, OR 97204

Pres Chk

Report to:
Ms. Nicky Moody

Email To:
nicky.moody@aecom.com;christina.wheeler@a

Project Description:
CPL Co. Pasco Bulk Fuel Terminal

City/State Collected: Pasco Wa.

Please Circle: (PT) MT CT ET

Phone: **503-969-6310**

Client Project #

Lab Project #
AECOMPORSSA-CPL

Collected by (print):
Edward LeCoq

Site/Facility ID #
55763995

P.O. #

Collected by (signature):

Immediately Packed on Ice N ____ Y X

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

Date Results Needed

Quote #

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	ALK,SULFATE 250mlHDPE-NoPres	MNDICP 250mlHDPE-NoPres	NWTPHDXLVINOSGT 40mlAmb-HCl-BT	NWTPHGX 40mlAmb HCl	NWTPHGX 40mlAmb-HCl-Blk	RSK175 40mlAmb HCl	V8260BTEXN 40mlAmb-HCl	V8260BTEXN 40mlAmb-HCl-Blk			Remarks	Sample # (lab only)
MW-23-20230424	G	GW	92	4/24	1739	12	X	X	X	X		X	X					-19
~~MW-8~~ MW-103-20230425	G	GW	85	4/25	0742	12	X	X	X	X		X	X					-20
		GW				12	X	X	X	X		X	X					
TB-1-20230401		GW				1					X			X				-21
TB2-20230401		GW				1					X			X				-22

Analysis / Container / Preservative

Chain of Custody Page 3 of 3

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12065 Lebanon Rd Mount Juliet, TN 37122
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SDG # L1610295

Table #

Acctnum: **AECOMPORSSA**
Template: **T223778**
Prelogin: **P993452**
PM: **034 - Craig Cothron**
PB:

Shipped Via:

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

Remarks:PO 148565

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx X Courier _____

Tracking # 6295 1089 8869 6295 1089 8847 / 6295 1089 8858

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

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
	4/27	0901			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:	Hold: Condition: NCF / OK
			Hung Machin	04-28-23 (900)	

ANALYTICAL REPORT

January 09, 2024

Revised Report

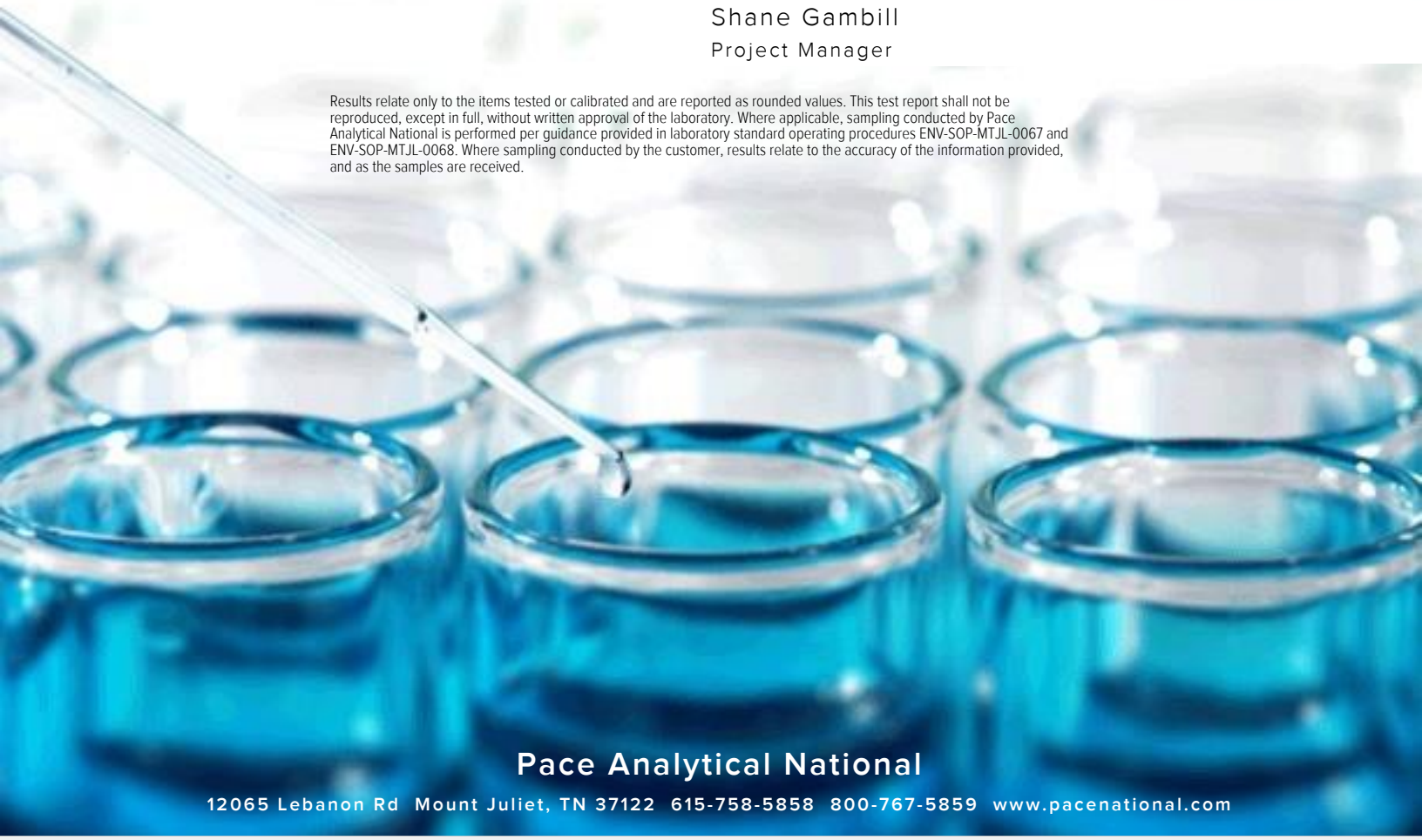
AECOM - Portland, OR

Sample Delivery Group:	L1667311
Samples Received:	10/17/2023
Project Number:	60711842
Description:	CPL Co. Bulk Fuel Terminal
Site:	55763995
Report To:	Ms. Nicky Moody 888 SW 5th Ave Suite 600 Portland, OR 97204

Entire Report Reviewed By:

Shane Gambill
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



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

TABLE OF CONTENTS

SAMPLE SUMMARY

MW-02-20231012 L1667311-01 GW

Collected by: Edward LeCoy | Collected date/time: 10/12/23 10:26 | Received date/time: 10/17/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG2155820	1	10/24/23 15:17	10/24/23 15:17	BJM	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2154230	1	10/24/23 10:42	10/24/23 10:42	GEB	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2153976	1	10/24/23 09:35	10/24/23 15:59	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2155628	1	10/21/23 14:20	10/21/23 14:20	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG2154219	1	10/20/23 16:07	10/20/23 16:07	BAW	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2153858	1	10/19/23 02:30	10/19/23 02:30	DYW	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG2155807	1	10/25/23 16:22	10/26/23 10:56	MAA	Mt. Juliet, TN

MW-03-20231011 L1667311-02 GW

Collected by: Edward LeCoy | Collected date/time: 10/11/23 18:25 | Received date/time: 10/17/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG2155820	1	10/24/23 15:27	10/24/23 15:27	BJM	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2154230	1	10/24/23 11:37	10/24/23 11:37	GEB	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2153976	1	10/24/23 09:35	10/24/23 16:02	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2155628	1	10/21/23 15:05	10/21/23 15:05	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG2154219	1	10/20/23 16:10	10/20/23 16:10	BAW	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2153857	1	10/19/23 12:15	10/19/23 12:15	JCP	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG2155807	1	10/25/23 16:22	10/26/23 11:16	MAA	Mt. Juliet, TN

MW-04-20231013 L1667311-03 GW

Collected by: Edward LeCoy | Collected date/time: 10/13/23 09:06 | Received date/time: 10/17/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG2155820	1	10/24/23 15:33	10/24/23 15:33	BJM	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2154230	1	10/24/23 11:51	10/24/23 11:51	GEB	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2153976	1	10/24/23 09:35	10/24/23 16:05	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2155628	1	10/21/23 15:27	10/21/23 15:27	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG2154219	1	10/20/23 16:12	10/20/23 16:12	BAW	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2154295	1	10/20/23 02:15	10/20/23 02:15	DYW	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG2155807	1	10/25/23 16:22	10/26/23 11:36	MAA	Mt. Juliet, TN

MW-06-20231010 L1667311-04 GW

Collected by: Edward LeCoy | Collected date/time: 10/10/23 12:45 | Received date/time: 10/17/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG2155820	1	10/24/23 15:38	10/24/23 15:38	BJM	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2154230	1	10/24/23 12:04	10/24/23 12:04	GEB	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2153976	1	10/24/23 09:35	10/24/23 16:08	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2155628	1	10/21/23 15:49	10/21/23 15:49	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG2154219	1	10/20/23 16:15	10/20/23 16:15	BAW	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2153857	1	10/19/23 12:36	10/19/23 12:36	JCP	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG2154087	1	10/23/23 18:32	10/25/23 04:50	DMG	Mt. Juliet, TN

MW-07-20231010 L1667311-05 GW

Collected by: Edward LeCoy | Collected date/time: 10/10/23 15:47 | Received date/time: 10/17/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG2155820	1	10/24/23 15:43	10/24/23 15:43	BJM	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2154230	1	10/24/23 12:45	10/24/23 12:45	GEB	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2153976	1	10/24/23 09:35	10/24/23 16:16	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2155628	1	10/21/23 16:11	10/21/23 16:11	JHH	Mt. Juliet, TN

MW-07-20231010 L1667311-05 GW

Collected by: Edward LeCoy | Collected date/time: 10/10/23 15:47 | Received date/time: 10/17/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method RSK175	WG2154219	1	10/20/23 16:17	10/20/23 16:17	BAW	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2153857	1	10/19/23 12:57	10/19/23 12:57	JCP	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG2154087	1	10/23/23 18:32	10/25/23 05:10	DMG	Mt. Juliet, TN

MW-08-20231011 L1667311-06 GW

Collected by: Edward LeCoy | Collected date/time: 10/11/23 16:39 | Received date/time: 10/17/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG2155820	1	10/24/23 15:49	10/24/23 15:49	BJM	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2154230	1	10/24/23 12:59	10/24/23 12:59	GEB	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2153976	1	10/24/23 09:35	10/24/23 16:19	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2155628	1	10/21/23 16:33	10/21/23 16:33	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG2154219	1	10/20/23 16:20	10/20/23 16:20	BAW	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2153857	1	10/19/23 13:17	10/19/23 13:17	JCP	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG2155807	1	10/25/23 16:22	10/26/23 11:56	MAA	Mt. Juliet, TN

MW-10-20231010 L1667311-07 GW

Collected by: Edward LeCoy | Collected date/time: 10/10/23 13:33 | Received date/time: 10/17/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG2155820	1	10/24/23 15:54	10/24/23 15:54	BJM	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2154230	1	10/24/23 13:13	10/24/23 13:13	GEB	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2153976	1	10/24/23 09:35	10/24/23 16:22	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2155628	1	10/21/23 16:55	10/21/23 16:55	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG2154219	1	10/20/23 16:22	10/20/23 16:22	BAW	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2153857	1	10/19/23 13:38	10/19/23 13:38	JCP	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG2154087	1	10/23/23 18:32	10/25/23 05:30	DMG	Mt. Juliet, TN

MW-11-20231012 L1667311-08 GW

Collected by: Edward LeCoy | Collected date/time: 10/12/23 17:11 | Received date/time: 10/17/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG2155820	1	10/24/23 16:48	10/24/23 16:48	BJM	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2154230	1	10/24/23 13:27	10/24/23 13:27	GEB	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2153976	1	10/24/23 09:35	10/24/23 16:25	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2155628	1	10/21/23 17:17	10/21/23 17:17	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG2154219	1	10/20/23 16:24	10/20/23 16:24	BAW	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2153858	1	10/19/23 02:50	10/19/23 02:50	DYW	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG2155807	1	10/25/23 16:22	10/26/23 12:17	MAA	Mt. Juliet, TN

MW-12-20231012 L1667311-09 GW

Collected by: Edward LeCoy | Collected date/time: 10/12/23 15:00 | Received date/time: 10/17/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG2155820	1	10/24/23 16:09	10/24/23 16:09	BJM	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2154230	1	10/24/23 13:40	10/24/23 13:40	GEB	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2153976	1	10/24/23 09:35	10/24/23 16:28	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2155628	1	10/21/23 17:39	10/21/23 17:39	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG2154219	1	10/20/23 16:28	10/20/23 16:28	BAW	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2153858	1	10/19/23 03:11	10/19/23 03:11	DYW	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG2155807	1	10/25/23 16:22	10/26/23 12:37	MAA	Mt. Juliet, TN

MW-14-20231012 L1667311-10 GW

Collected by: Edward LeCoy | Collected date/time: 10/12/23 12:00 | Received date/time: 10/17/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG2155820	1	10/24/23 16:14	10/24/23 16:14	BJM	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2154230	1	10/24/23 13:54	10/24/23 13:54	GEB	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2153976	1	10/24/23 09:35	10/24/23 16:31	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2155628	1	10/21/23 18:01	10/21/23 18:01	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG2154219	1	10/20/23 16:31	10/20/23 16:31	BAW	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2153858	1	10/19/23 03:32	10/19/23 03:32	DYW	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG2155807	1	10/25/23 16:22	10/26/23 12:57	MAA	Mt. Juliet, TN

MW-15-20231010 L1667311-11 GW

Collected by: Edward LeCoy | Collected date/time: 10/10/23 15:00 | Received date/time: 10/17/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG2155820	1	10/24/23 16:20	10/24/23 16:20	BJM	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2154230	1	10/24/23 14:08	10/24/23 14:08	GEB	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2153976	1	10/24/23 09:35	10/24/23 16:34	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2155628	1	10/21/23 18:23	10/21/23 18:23	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG2154270	1	10/20/23 09:50	10/20/23 09:50	BAW	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2153857	1	10/19/23 13:59	10/19/23 13:59	JCP	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG2154087	1	10/23/23 18:32	10/25/23 05:50	DMG	Mt. Juliet, TN

MW-16-20231011 L1667311-12 GW

Collected by: Edward LeCoy | Collected date/time: 10/11/23 11:00 | Received date/time: 10/17/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG2155820	1	10/24/23 16:26	10/24/23 16:26	BJM	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2154230	1	10/24/23 14:21	10/24/23 14:21	GEB	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2153976	1	10/24/23 09:35	10/24/23 15:48	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2155628	1	10/21/23 18:45	10/21/23 18:45	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG2155354	1	10/22/23 10:51	10/22/23 10:51	CCM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2153857	1	10/19/23 14:20	10/19/23 14:20	JCP	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG2155807	1	10/25/23 16:22	10/26/23 13:17	DMG	Mt. Juliet, TN

MW-17-20231012 L1667311-13 GW

Collected by: Edward LeCoy | Collected date/time: 10/12/23 13:44 | Received date/time: 10/17/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG2155820	1	10/24/23 16:32	10/24/23 16:32	BJM	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2154230	1	10/24/23 15:44	10/24/23 15:44	GEB	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2153976	1	10/24/23 09:35	10/24/23 16:37	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2155628	1	10/21/23 19:07	10/21/23 19:07	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG2154270	1	10/20/23 09:52	10/20/23 09:52	BAW	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2153858	1	10/19/23 03:53	10/19/23 03:53	DYW	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG2155807	1	10/25/23 16:22	10/26/23 14:18	MAA	Mt. Juliet, TN

MW-18-20231011 L1667311-14 GW

Collected by: Edward LeCoy | Collected date/time: 10/11/23 18:30 | Received date/time: 10/17/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG2155820	1	10/24/23 16:38	10/24/23 16:38	BJM	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2154230	1	10/24/23 15:57	10/24/23 15:57	GEB	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2153976	1	10/24/23 09:35	10/24/23 16:40	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2155628	1	10/21/23 19:29	10/21/23 19:29	JHH	Mt. Juliet, TN

MW-18-20231011 L1667311-14 GW

Collected by: Edward LeCoy | Collected date/time: 10/11/23 18:30 | Received date/time: 10/17/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method RSK175	WG2154270	1	10/20/23 09:56	10/20/23 09:56	BAW	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2153857	1	10/19/23 14:40	10/19/23 14:40	JCP	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG2155807	1	10/25/23 16:22	10/26/23 14:38	MAA	Mt. Juliet, TN

MW-19-20231011 L1667311-15 GW

Collected by: Edward LeCoy | Collected date/time: 10/11/23 13:30 | Received date/time: 10/17/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG2155820	1	10/24/23 16:43	10/24/23 16:43	BJM	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2154230	1	10/24/23 16:11	10/24/23 16:11	GEB	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2153976	1	10/24/23 09:35	10/24/23 16:43	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2155628	1	10/21/23 19:51	10/21/23 19:51	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG2154270	1	10/20/23 10:07	10/20/23 10:07	BAW	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2155227	1	10/20/23 23:26	10/20/23 23:26	JCP	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG2155807	1	10/25/23 16:22	10/26/23 14:58	MAA	Mt. Juliet, TN

MW-20-20231011 L1667311-16 GW

Collected by: Edward LeCoy | Collected date/time: 10/11/23 15:55 | Received date/time: 10/17/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG2155820	1	10/24/23 16:54	10/24/23 16:54	BJM	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2154230	1	10/24/23 16:25	10/24/23 16:25	GEB	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2153976	1	10/24/23 09:35	10/24/23 16:51	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2155628	1	10/21/23 20:13	10/21/23 20:13	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG2154270	1	10/20/23 10:26	10/20/23 10:26	BAW	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2153857	1	10/19/23 15:22	10/19/23 15:22	JCP	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG2155807	1	10/25/23 16:22	10/26/23 15:18	MAA	Mt. Juliet, TN

MW-21-20231012 L1667311-17 GW

Collected by: Edward LeCoy | Collected date/time: 10/12/23 09:30 | Received date/time: 10/17/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG2155820	1	10/24/23 17:11	10/24/23 17:11	BJM	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2154230	1	10/24/23 16:39	10/24/23 16:39	GEB	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2153976	1	10/24/23 09:35	10/24/23 16:54	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2155628	1	10/21/23 20:35	10/21/23 20:35	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG2154270	1	10/20/23 10:43	10/20/23 10:43	BAW	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2153858	1	10/19/23 04:14	10/19/23 04:14	DYW	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG2155807	1	10/25/23 16:22	10/26/23 15:38	MAA	Mt. Juliet, TN

MW-22-20231013 L1667311-18 GW

Collected by: Edward LeCoy | Collected date/time: 10/13/23 09:05 | Received date/time: 10/17/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG2155820	1	10/24/23 17:23	10/24/23 17:23	BJM	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2154230	1	10/24/23 16:52	10/24/23 16:52	GEB	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2153976	1	10/24/23 09:35	10/24/23 16:57	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2155628	1	10/21/23 20:57	10/21/23 20:57	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG2154270	1	10/20/23 10:49	10/20/23 10:49	BAW	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2154295	1	10/20/23 02:36	10/20/23 02:36	DYW	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG2155807	1	10/25/23 16:22	10/26/23 15:59	MAA	Mt. Juliet, TN

MW-23-20231012 L1667311-19 GW

Collected by: Edward LeCoy | Collected date/time: 10/12/23 17:00 | Received date/time: 10/17/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG2155820	1	10/24/23 17:28	10/24/23 17:28	BJM	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2154230	1	10/24/23 17:06	10/24/23 17:06	GEB	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2153976	1	10/24/23 09:35	10/24/23 17:00	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2155628	1	10/21/23 21:19	10/21/23 21:19	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG2154270	1	10/20/23 10:52	10/20/23 10:52	BAW	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2153858	1	10/19/23 04:35	10/19/23 04:35	DYW	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG2155807	1	10/25/23 16:22	10/26/23 16:19	MAA	Mt. Juliet, TN

MW-03-DUP-20231011 L1667311-20 GW

Collected by: Edward LeCoy | Collected date/time: 10/11/23 18:25 | Received date/time: 10/17/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG2155820	1	10/24/23 17:34	10/24/23 17:34	BJM	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2154230	1	10/24/23 17:20	10/24/23 17:20	GEB	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2153976	1	10/24/23 09:35	10/24/23 17:03	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2155628	1	10/21/23 21:40	10/21/23 21:40	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG2154270	1	10/20/23 10:58	10/20/23 10:58	BAW	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2155227	1	10/20/23 23:47	10/20/23 23:47	JCP	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG2155807	1	10/25/23 16:22	10/26/23 16:39	MAA	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG2155807	5	10/25/23 16:22	10/27/23 04:00	DMG	Mt. Juliet, TN

TB1- L1667311-21 GW

Collected by: Edward LeCoy | Collected date/time: 10/11/23 00:00 | Received date/time: 10/17/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2155889	1	10/22/23 12:30	10/22/23 12:30	KSD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2153857	1	10/19/23 11:33	10/19/23 11:33	JCP	Mt. Juliet, TN

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

CASE NARRATIVE

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

Shane Gambill
Project Manager

Report Revision History

Level II Report - Version 1: 11/03/23 08:16
Level II Report - Version 2: 11/14/23 15:25
Level II Report - Version 3: 11/27/23 09:03

Project Narrative

11/14/23 - updated sample IDs
11/17 - EIM EDD
01/09/24 - Report revised to update the comment for sample L1667311-20 as resembles hydraulic fluid.

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Alkalinity	671000		20000	1	10/24/2023 15:17	WG2155820

Sample Narrative:

L1667311-01 WG2155820: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	88300	J6	5000	1	10/24/2023 10:42	WG2154230

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Manganese,Dissolved	ND		10.0	1	10/24/2023 15:59	WG2153976

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Gasoline Range Organics-NWTPH	ND		100	1	10/21/2023 14:20	WG2155628
(S) a,a,a-Trifluorotoluene(FID)	*92.7*		*78.0-120*		*10/21/2023 14:20*	WG2155628

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Methane	ND		10.0	1	10/20/2023 16:07	WG2154219
Ethane	ND		13.0	1	10/20/2023 16:07	WG2154219
Ethene	ND		13.0	1	10/20/2023 16:07	WG2154219

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	10/19/2023 02:30	WG2153858
Toluene	ND		1.00	1	10/19/2023 02:30	WG2153858
Ethylbenzene	ND		1.00	1	10/19/2023 02:30	WG2153858
Xylenes, Total	ND		3.00	1	10/19/2023 02:30	WG2153858
Naphthalene	ND		5.00	1	10/19/2023 02:30	WG2153858
(S) Toluene-d8	*104*		*80.0-120*		*10/19/2023 02:30*	WG2153858
(S) 4-Bromofluorobenzene	*109*		*77.0-126*		*10/19/2023 02:30*	WG2153858
(S) 1,2-Dichloroethane-d4	*116*		*70.0-130*		*10/19/2023 02:30*	WG2153858

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Diesel Range Organics (DRO)	874		200	1	10/26/2023 10:56	WG2155807
Residual Range Organics (RRO)	1020		250	1	10/26/2023 10:56	WG2155807
(S) o-Terphenyl	*99.5*		*52.0-156*		*10/26/2023 10:56*	WG2155807

Sample Narrative:

L1667311-01 WG2155807: Sample resembles laboratory standard for Hydraulic Oil.

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Alkalinity	595000		20000	1	10/24/2023 15:27	WG2155820

Sample Narrative:

L1667311-02 WG2155820: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	27900		5000	1	10/24/2023 11:37	WG2154230

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Manganese,Dissolved	734		10.0	1	10/24/2023 16:02	WG2153976

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Gasoline Range Organics-NWTPH	140	B	100	1	10/21/2023 15:05	WG2155628
(S) a,a,a-Trifluorotoluene(FID)	*94.5*		*78.0-120*		*10/21/2023 15:05*	WG2155628

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Methane	2070		10.0	1	10/20/2023 16:10	WG2154219
Ethane	ND		13.0	1	10/20/2023 16:10	WG2154219
Ethene	ND		13.0	1	10/20/2023 16:10	WG2154219

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	10/19/2023 12:15	WG2153857
Toluene	ND		1.00	1	10/19/2023 12:15	WG2153857
Ethylbenzene	ND		1.00	1	10/19/2023 12:15	WG2153857
Xylenes, Total	ND		3.00	1	10/19/2023 12:15	WG2153857
Naphthalene	ND		5.00	1	10/19/2023 12:15	WG2153857
(S) Toluene-d8	*95.2*		*80.0-120*		*10/19/2023 12:15*	WG2153857
(S) 4-Bromofluorobenzene	*106*		*77.0-126*		*10/19/2023 12:15*	WG2153857
(S) 1,2-Dichloroethane-d4	*126*		*70.0-130*		*10/19/2023 12:15*	WG2153857

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Diesel Range Organics (DRO)	7840		200	1	10/26/2023 11:16	WG2155807
Residual Range Organics (RRO)	2180		250	1	10/26/2023 11:16	WG2155807
(S) o-Terphenyl	*140*		*52.0-156*		*10/26/2023 11:16*	WG2155807

Sample Narrative:

L1667311-02 WG2155807: Sample resembles laboratory standard for Hydraulic Fluid.

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	195000		20000	1	10/24/2023 15:33	WG2155820

Sample Narrative:
L1667311-03 WG2155820: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 300.0

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfate	109000		5000	1	10/24/2023 11:51	WG2154230

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Manganese,Dissolved	ND		10.0	1	10/24/2023 16:05	WG2153976

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	ND		100	1	10/21/2023 15:27	WG2155628
(S) a,a,a-Trifluorotoluene(FID)	*94.5*		*78.0-120*		*10/21/2023 15:27*	WG2155628

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	ND		10.0	1	10/20/2023 16:12	WG2154219
Ethane	ND		13.0	1	10/20/2023 16:12	WG2154219
Ethene	ND		13.0	1	10/20/2023 16:12	WG2154219

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

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	10/20/2023 02:15	WG2154295
Toluene	ND		1.00	1	10/20/2023 02:15	WG2154295
Ethylbenzene	ND		1.00	1	10/20/2023 02:15	WG2154295
Xylenes, Total	ND		3.00	1	10/20/2023 02:15	WG2154295
Naphthalene	ND		5.00	1	10/20/2023 02:15	WG2154295
(S) Toluene-d8	*106*		*80.0-120*		*10/20/2023 02:15*	WG2154295
(S) 4-Bromofluorobenzene	*109*		*77.0-126*		*10/20/2023 02:15*	WG2154295
(S) 1,2-Dichloroethane-d4	*121*		*70.0-130*		*10/20/2023 02:15*	WG2154295

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

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	ND		200	1	10/26/2023 11:36	WG2155807
Residual Range Organics (RRO)	490		250	1	10/26/2023 11:36	WG2155807
(S) o-Terphenyl	*92.5*		*52.0-156*		*10/26/2023 11:36*	WG2155807

Sample Narrative:
L1667311-03 WG2155807: Sample does not resemble laboratory standards.

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	175000		20000	1	10/24/2023 15:38	WG2155820

Sample Narrative:
L1667311-04 WG2155820: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 300.0

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfate	109000		5000	1	10/24/2023 12:04	WG2154230

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Manganese,Dissolved	ND		10.0	1	10/24/2023 16:08	WG2153976

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	ND		100	1	10/21/2023 15:49	WG2155628
(S) a,a,a-Trifluorotoluene(FID)	*93.6*		*78.0-120*		*10/21/2023 15:49*	WG2155628

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	ND		10.0	1	10/20/2023 16:15	WG2154219
Ethane	ND		13.0	1	10/20/2023 16:15	WG2154219
Ethene	ND		13.0	1	10/20/2023 16:15	WG2154219

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

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	10/19/2023 12:36	WG2153857
Toluene	ND		1.00	1	10/19/2023 12:36	WG2153857
Ethylbenzene	ND		1.00	1	10/19/2023 12:36	WG2153857
Xylenes, Total	ND		3.00	1	10/19/2023 12:36	WG2153857
Naphthalene	ND		5.00	1	10/19/2023 12:36	WG2153857
(S) Toluene-d8	*111*		*80.0-120*		*10/19/2023 12:36*	WG2153857
(S) 4-Bromofluorobenzene	*118*		*77.0-126*		*10/19/2023 12:36*	WG2153857
(S) 1,2-Dichloroethane-d4	*131*	J1	*70.0-130*		*10/19/2023 12:36*	WG2153857

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

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	ND		200	1	10/25/2023 04:50	WG2154087
Residual Range Organics (RRO)	ND		250	1	10/25/2023 04:50	WG2154087
(S) o-Terphenyl	*75.0*		*52.0-156*		*10/25/2023 04:50*	WG2154087

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Alkalinity	203000		20000	1	10/24/2023 15:43	WG2155820

Sample Narrative:

L1667311-05 WG2155820: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	110000		5000	1	10/24/2023 12:45	WG2154230

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Manganese,Dissolved	ND		10.0	1	10/24/2023 16:16	WG2153976

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Gasoline Range Organics-NWTPH	ND		100	1	10/21/2023 16:11	WG2155628
(S) a,a,a-Trifluorotoluene(FID)	*93.6*		*78.0-120*		*10/21/2023 16:11*	WG2155628

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Methane	ND		10.0	1	10/20/2023 16:17	WG2154219
Ethane	ND		13.0	1	10/20/2023 16:17	WG2154219
Ethene	ND		13.0	1	10/20/2023 16:17	WG2154219

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	10/19/2023 12:57	WG2153857
Toluene	ND		1.00	1	10/19/2023 12:57	WG2153857
Ethylbenzene	ND		1.00	1	10/19/2023 12:57	WG2153857
Xylenes, Total	ND		3.00	1	10/19/2023 12:57	WG2153857
Naphthalene	ND		5.00	1	10/19/2023 12:57	WG2153857
(S) Toluene-d8	*106*		*80.0-120*		*10/19/2023 12:57*	WG2153857
(S) 4-Bromofluorobenzene	*113*		*77.0-126*		*10/19/2023 12:57*	WG2153857
(S) 1,2-Dichloroethane-d4	*127*		*70.0-130*		*10/19/2023 12:57*	WG2153857

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Diesel Range Organics (DRO)	ND		200	1	10/25/2023 05:10	WG2154087
Residual Range Organics (RRO)	ND		250	1	10/25/2023 05:10	WG2154087
(S) o-Terphenyl	*70.0*		*52.0-156*		*10/25/2023 05:10*	WG2154087

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	200000		20000	1	10/24/2023 15:49	WG2155820

Sample Narrative:
L1667311-06 WG2155820: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 300.0

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfate	110000		5000	1	10/24/2023 12:59	WG2154230

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Manganese,Dissolved	ND		10.0	1	10/24/2023 16:19	WG2153976

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	ND		100	1	10/21/2023 16:33	WG2155628
(S) a,a,a-Trifluorotoluene(FID)	*94.3*		*78.0-120*		*10/21/2023 16:33*	WG2155628

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	ND		10.0	1	10/20/2023 16:20	WG2154219
Ethane	ND		13.0	1	10/20/2023 16:20	WG2154219
Ethene	ND		13.0	1	10/20/2023 16:20	WG2154219

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

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	10/19/2023 13:17	WG2153857
Toluene	ND		1.00	1	10/19/2023 13:17	WG2153857
Ethylbenzene	ND		1.00	1	10/19/2023 13:17	WG2153857
Xylenes, Total	ND		3.00	1	10/19/2023 13:17	WG2153857
Naphthalene	ND		5.00	1	10/19/2023 13:17	WG2153857
(S) Toluene-d8	*106*		*80.0-120*		*10/19/2023 13:17*	WG2153857
(S) 4-Bromofluorobenzene	*111*		*77.0-126*		*10/19/2023 13:17*	WG2153857
(S) 1,2-Dichloroethane-d4	*121*		*70.0-130*		*10/19/2023 13:17*	WG2153857

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

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	ND		200	1	10/26/2023 11:56	WG2155807
Residual Range Organics (RRO)	351		250	1	10/26/2023 11:56	WG2155807
(S) o-Terphenyl	*102*		*52.0-156*		*10/26/2023 11:56*	WG2155807

Sample Narrative:
L1667311-06 WG2155807: Sample does not resemble laboratory standards.

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Alkalinity	193000		20000	1	10/24/2023 15:54	WG2155820

Sample Narrative:

L1667311-07 WG2155820: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	110000		5000	1	10/24/2023 13:13	WG2154230

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Manganese,Dissolved	ND		10.0	1	10/24/2023 16:22	WG2153976

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Gasoline Range Organics-NWTPH	ND		100	1	10/21/2023 16:55	WG2155628
(S) a,a,a-Trifluorotoluene(FID)	*94.7*		*78.0-120*		*10/21/2023 16:55*	WG2155628

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Methane	ND		10.0	1	10/20/2023 16:22	WG2154219
Ethane	ND		13.0	1	10/20/2023 16:22	WG2154219
Ethene	ND		13.0	1	10/20/2023 16:22	WG2154219

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	10/19/2023 13:38	WG2153857
Toluene	ND		1.00	1	10/19/2023 13:38	WG2153857
Ethylbenzene	ND		1.00	1	10/19/2023 13:38	WG2153857
Xylenes, Total	ND		3.00	1	10/19/2023 13:38	WG2153857
Naphthalene	ND		5.00	1	10/19/2023 13:38	WG2153857
(S) Toluene-d8	*103*		*80.0-120*		*10/19/2023 13:38*	WG2153857
(S) 4-Bromofluorobenzene	*114*		*77.0-126*		*10/19/2023 13:38*	WG2153857
(S) 1,2-Dichloroethane-d4	*144*	J1	*70.0-130*		*10/19/2023 13:38*	WG2153857

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Diesel Range Organics (DRO)	ND		200	1	10/25/2023 05:30	WG2154087
Residual Range Organics (RRO)	ND		250	1	10/25/2023 05:30	WG2154087
(S) o-Terphenyl	*67.5*		*52.0-156*		*10/25/2023 05:30*	WG2154087

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	298000		20000	1	10/24/2023 16:48	WG2155820

Sample Narrative:
L1667311-08 WG2155820: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 300.0

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfate	98900		5000	1	10/24/2023 13:27	WG2154230

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Manganese,Dissolved	113		10.0	1	10/24/2023 16:25	WG2153976

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	ND		100	1	10/21/2023 17:17	WG2155628
(S) a,a,a-Trifluorotoluene(FID)	*93.3*		*78.0-120*		*10/21/2023 17:17*	WG2155628

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	ND		10.0	1	10/20/2023 16:24	WG2154219
Ethane	ND		13.0	1	10/20/2023 16:24	WG2154219
Ethene	ND		13.0	1	10/20/2023 16:24	WG2154219

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

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	10/19/2023 02:50	WG2153858
Toluene	ND		1.00	1	10/19/2023 02:50	WG2153858
Ethylbenzene	ND		1.00	1	10/19/2023 02:50	WG2153858
Xylenes, Total	ND		3.00	1	10/19/2023 02:50	WG2153858
Naphthalene	ND		5.00	1	10/19/2023 02:50	WG2153858
(S) Toluene-d8	*105*		*80.0-120*		*10/19/2023 02:50*	WG2153858
(S) 4-Bromofluorobenzene	*108*		*77.0-126*		*10/19/2023 02:50*	WG2153858
(S) 1,2-Dichloroethane-d4	*113*		*70.0-130*		*10/19/2023 02:50*	WG2153858

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

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	350		200	1	10/26/2023 12:17	WG2155807
Residual Range Organics (RRO)	599		250	1	10/26/2023 12:17	WG2155807
(S) o-Terphenyl	*110*		*52.0-156*		*10/26/2023 12:17*	WG2155807

Sample Narrative:
L1667311-08 WG2155807: Sample does not resemble laboratory standards.

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Alkalinity	507000		20000	1	10/24/2023 16:09	WG2155820

Sample Narrative:

L1667311-09 WG2155820: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	96200		5000	1	10/24/2023 13:40	WG2154230

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Manganese,Dissolved	35.7		10.0	1	10/24/2023 16:28	WG2153976

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Gasoline Range Organics-NWTPH	ND		100	1	10/21/2023 17:39	WG2155628
(S) a,a,a-Trifluorotoluene(FID)	*95.0*		*78.0-120*		*10/21/2023 17:39*	WG2155628

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Methane	ND		10.0	1	10/20/2023 16:28	WG2154219
Ethane	ND		13.0	1	10/20/2023 16:28	WG2154219
Ethene	ND		13.0	1	10/20/2023 16:28	WG2154219

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	10/19/2023 03:11	WG2153858
Toluene	ND		1.00	1	10/19/2023 03:11	WG2153858
Ethylbenzene	ND		1.00	1	10/19/2023 03:11	WG2153858
Xylenes, Total	ND		3.00	1	10/19/2023 03:11	WG2153858
Naphthalene	ND		5.00	1	10/19/2023 03:11	WG2153858
(S) Toluene-d8	*107*		*80.0-120*		*10/19/2023 03:11*	WG2153858
(S) 4-Bromofluorobenzene	*110*		*77.0-126*		*10/19/2023 03:11*	WG2153858
(S) 1,2-Dichloroethane-d4	*116*		*70.0-130*		*10/19/2023 03:11*	WG2153858

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Diesel Range Organics (DRO)	419		200	1	10/26/2023 12:37	WG2155807
Residual Range Organics (RRO)	749		250	1	10/26/2023 12:37	WG2155807
(S) o-Terphenyl	*108*		*52.0-156*		*10/26/2023 12:37*	WG2155807

Sample Narrative:

L1667311-09 WG2155807: Sample does not resemble laboratory standards.

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Alkalinity	226000		20000	1	10/24/2023 16:14	WG2155820

Sample Narrative:

L1667311-10 WG2155820: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	113000		5000	1	10/24/2023 13:54	WG2154230

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Manganese,Dissolved	ND		10.0	1	10/24/2023 16:31	WG2153976

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Gasoline Range Organics-NWTPH	ND		100	1	10/21/2023 18:01	WG2155628
(S) a,a,a-Trifluorotoluene(FID)	*94.7*		*78.0-120*		*10/21/2023 18:01*	WG2155628

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Methane	ND		10.0	1	10/20/2023 16:31	WG2154219
Ethane	ND		13.0	1	10/20/2023 16:31	WG2154219
Ethene	ND		13.0	1	10/20/2023 16:31	WG2154219

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	10/19/2023 03:32	WG2153858
Toluene	ND		1.00	1	10/19/2023 03:32	WG2153858
Ethylbenzene	ND		1.00	1	10/19/2023 03:32	WG2153858
Xylenes, Total	ND		3.00	1	10/19/2023 03:32	WG2153858
Naphthalene	ND		5.00	1	10/19/2023 03:32	WG2153858
(S) Toluene-d8	*106*		*80.0-120*		*10/19/2023 03:32*	WG2153858
(S) 4-Bromofluorobenzene	*110*		*77.0-126*		*10/19/2023 03:32*	WG2153858
(S) 1,2-Dichloroethane-d4	*116*		*70.0-130*		*10/19/2023 03:32*	WG2153858

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Diesel Range Organics (DRO)	ND		200	1	10/26/2023 12:57	WG2155807
Residual Range Organics (RRO)	408		250	1	10/26/2023 12:57	WG2155807
(S) o-Terphenyl	*100*		*52.0-156*		*10/26/2023 12:57*	WG2155807

Sample Narrative:

L1667311-10 WG2155807: Sample does not resemble laboratory standards.

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Alkalinity	218000		20000	1	10/24/2023 16:20	WG2155820

Sample Narrative:

L1667311-11 WG2155820: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	109000		5000	1	10/24/2023 14:08	WG2154230

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Manganese,Dissolved	ND		10.0	1	10/24/2023 16:34	WG2153976

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Gasoline Range Organics-NWTPH	ND		100	1	10/21/2023 18:23	WG2155628
(S) a,a,a-Trifluorotoluene(FID)	*93.3*		*78.0-120*		*10/21/2023 18:23*	WG2155628

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Methane	ND		10.0	1	10/20/2023 09:50	WG2154270
Ethane	ND		13.0	1	10/20/2023 09:50	WG2154270
Ethene	ND		13.0	1	10/20/2023 09:50	WG2154270

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	10/19/2023 13:59	WG2153857
Toluene	ND		1.00	1	10/19/2023 13:59	WG2153857
Ethylbenzene	ND		1.00	1	10/19/2023 13:59	WG2153857
Xylenes, Total	ND		3.00	1	10/19/2023 13:59	WG2153857
Naphthalene	ND		5.00	1	10/19/2023 13:59	WG2153857
(S) Toluene-d8	*105*		*80.0-120*		*10/19/2023 13:59*	WG2153857
(S) 4-Bromofluorobenzene	*116*		*77.0-126*		*10/19/2023 13:59*	WG2153857
(S) 1,2-Dichloroethane-d4	*153*	J1	*70.0-130*		*10/19/2023 13:59*	WG2153857

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Diesel Range Organics (DRO)	ND		200	1	10/25/2023 05:50	WG2154087
Residual Range Organics (RRO)	ND		250	1	10/25/2023 05:50	WG2154087
(S) o-Terphenyl	*66.5*		*52.0-156*		*10/25/2023 05:50*	WG2154087

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Alkalinity	215000		20000	1	10/24/2023 16:26	WG2155820

Sample Narrative:

L1667311-12 WG2155820: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	109000	J6	5000	1	10/24/2023 14:21	WG2154230

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Manganese,Dissolved	ND		10.0	1	10/24/2023 15:48	WG2153976

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Gasoline Range Organics-NWTPH	ND		100	1	10/21/2023 18:45	WG2155628
(S) a,a,a-Trifluorotoluene(FID)	*94.5*		*78.0-120*		*10/21/2023 18:45*	WG2155628

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Methane	ND		10.0	1	10/22/2023 10:51	WG2155354
Ethane	ND		13.0	1	10/22/2023 10:51	WG2155354
Ethene	ND		13.0	1	10/22/2023 10:51	WG2155354

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	10/19/2023 14:20	WG2153857
Toluene	ND		1.00	1	10/19/2023 14:20	WG2153857
Ethylbenzene	ND	J3	1.00	1	10/19/2023 14:20	WG2153857
Xylenes, Total	ND		3.00	1	10/19/2023 14:20	WG2153857
Naphthalene	ND		5.00	1	10/19/2023 14:20	WG2153857
(S) Toluene-d8	*101*		*80.0-120*		*10/19/2023 14:20*	WG2153857
(S) 4-Bromofluorobenzene	*113*		*77.0-126*		*10/19/2023 14:20*	WG2153857
(S) 1,2-Dichloroethane-d4	*154*	J1	*70.0-130*		*10/19/2023 14:20*	WG2153857

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Diesel Range Organics (DRO)	ND		200	1	10/26/2023 13:17	WG2155807
Residual Range Organics (RRO)	266		250	1	10/26/2023 13:17	WG2155807
(S) o-Terphenyl	*97.5*		*52.0-156*		*10/26/2023 13:17*	WG2155807

Sample Narrative:

L1667311-12 WG2155807: Sample does not resemble laboratory standards.

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	317000		20000	1	10/24/2023 16:32	WG2155820

Sample Narrative:
L1667311-13 WG2155820: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 300.0

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfate	130000		5000	1	10/24/2023 15:44	WG2154230

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Manganese,Dissolved	ND		10.0	1	10/24/2023 16:37	WG2153976

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	ND		100	1	10/21/2023 19:07	WG2155628
(S) a,a,a-Trifluorotoluene(FID)	*94.7*		*78.0-120*		*10/21/2023 19:07*	WG2155628

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	ND		10.0	1	10/20/2023 09:52	WG2154270
Ethane	ND		13.0	1	10/20/2023 09:52	WG2154270
Ethene	ND		13.0	1	10/20/2023 09:52	WG2154270

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

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	10/19/2023 03:53	WG2153858
Toluene	ND		1.00	1	10/19/2023 03:53	WG2153858
Ethylbenzene	ND		1.00	1	10/19/2023 03:53	WG2153858
Xylenes, Total	ND		3.00	1	10/19/2023 03:53	WG2153858
Naphthalene	ND		5.00	1	10/19/2023 03:53	WG2153858
(S) Toluene-d8	*106*		*80.0-120*		*10/19/2023 03:53*	WG2153858
(S) 4-Bromofluorobenzene	*112*		*77.0-126*		*10/19/2023 03:53*	WG2153858
(S) 1,2-Dichloroethane-d4	*115*		*70.0-130*		*10/19/2023 03:53*	WG2153858

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

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	434		200	1	10/26/2023 14:18	WG2155807
Residual Range Organics (RRO)	566		250	1	10/26/2023 14:18	WG2155807
(S) o-Terphenyl	*102*		*52.0-156*		*10/26/2023 14:18*	WG2155807

Sample Narrative:
L1667311-13 WG2155807: Sample does not resemble laboratory standards.

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Alkalinity	242000		20000	1	10/24/2023 16:38	WG2155820

Sample Narrative:
L1667311-14 WG2155820: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	119000		5000	1	10/24/2023 15:57	WG2154230

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Manganese,Dissolved	ND		10.0	1	10/24/2023 16:40	WG2153976

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Gasoline Range Organics-NWTPH	ND		100	1	10/21/2023 19:29	WG2155628
(S) a,a,a-Trifluorotoluene(FID)	*93.9*		*78.0-120*		*10/21/2023 19:29*	WG2155628

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Methane	ND		10.0	1	10/20/2023 09:56	WG2154270
Ethane	ND		13.0	1	10/20/2023 09:56	WG2154270
Ethene	ND		13.0	1	10/20/2023 09:56	WG2154270

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	10/19/2023 14:40	WG2153857
Toluene	ND		1.00	1	10/19/2023 14:40	WG2153857
Ethylbenzene	ND		1.00	1	10/19/2023 14:40	WG2153857
Xylenes, Total	ND		3.00	1	10/19/2023 14:40	WG2153857
Naphthalene	ND		5.00	1	10/19/2023 14:40	WG2153857
(S) Toluene-d8	*99.2*		*80.0-120*		*10/19/2023 14:40*	WG2153857
(S) 4-Bromofluorobenzene	*107*		*77.0-126*		*10/19/2023 14:40*	WG2153857
(S) 1,2-Dichloroethane-d4	*154*	J1	*70.0-130*		*10/19/2023 14:40*	WG2153857

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Diesel Range Organics (DRO)	ND		200	1	10/26/2023 14:38	WG2155807
Residual Range Organics (RRO)	ND		250	1	10/26/2023 14:38	WG2155807
(S) o-Terphenyl	*101*		*52.0-156*		*10/26/2023 14:38*	WG2155807

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	259000		20000	1	10/24/2023 16:43	WG2155820

Sample Narrative:
L1667311-15 WG2155820: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 300.0

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfate	102000		5000	1	10/24/2023 16:11	WG2154230

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Manganese,Dissolved	ND		10.0	1	10/24/2023 16:43	WG2153976

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	ND		100	1	10/21/2023 19:51	WG2155628
(S) a,a,a-Trifluorotoluene(FID)	*93.9*		*78.0-120*		*10/21/2023 19:51*	WG2155628

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	ND		10.0	1	10/20/2023 10:07	WG2154270
Ethane	ND		13.0	1	10/20/2023 10:07	WG2154270
Ethene	ND		13.0	1	10/20/2023 10:07	WG2154270

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

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	10/20/2023 23:26	WG2155227
Toluene	ND		1.00	1	10/20/2023 23:26	WG2155227
Ethylbenzene	ND		1.00	1	10/20/2023 23:26	WG2155227
Xylenes, Total	ND		3.00	1	10/20/2023 23:26	WG2155227
Naphthalene	ND		5.00	1	10/20/2023 23:26	WG2155227
(S) Toluene-d8	*103*		*80.0-120*		*10/20/2023 23:26*	WG2155227
(S) 4-Bromofluorobenzene	*108*		*77.0-126*		*10/20/2023 23:26*	WG2155227
(S) 1,2-Dichloroethane-d4	*124*		*70.0-130*		*10/20/2023 23:26*	WG2155227

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

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	ND		200	1	10/26/2023 14:58	WG2155807
Residual Range Organics (RRO)	ND		250	1	10/26/2023 14:58	WG2155807
(S) o-Terphenyl	*111*		*52.0-156*		*10/26/2023 14:58*	WG2155807

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Alkalinity	188000		20000	1	10/24/2023 16:54	WG2155820

Sample Narrative:

L1667311-16 WG2155820: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	114000		5000	1	10/24/2023 16:25	WG2154230

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Manganese,Dissolved	ND		10.0	1	10/24/2023 16:51	WG2153976

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Gasoline Range Organics-NWTPH	ND		100	1	10/21/2023 20:13	WG2155628
(S) a,a,a-Trifluorotoluene(FID)	*95.0*		*78.0-120*		*10/21/2023 20:13*	WG2155628

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Methane	ND		10.0	1	10/20/2023 10:26	WG2154270
Ethane	ND		13.0	1	10/20/2023 10:26	WG2154270
Ethene	ND		13.0	1	10/20/2023 10:26	WG2154270

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	10/19/2023 15:22	WG2153857
Toluene	ND		1.00	1	10/19/2023 15:22	WG2153857
Ethylbenzene	ND		1.00	1	10/19/2023 15:22	WG2153857
Xylenes, Total	ND		3.00	1	10/19/2023 15:22	WG2153857
Naphthalene	ND		5.00	1	10/19/2023 15:22	WG2153857
(S) Toluene-d8	*99.4*		*80.0-120*		*10/19/2023 15:22*	WG2153857
(S) 4-Bromofluorobenzene	*109*		*77.0-126*		*10/19/2023 15:22*	WG2153857
(S) 1,2-Dichloroethane-d4	*163*	J1	*70.0-130*		*10/19/2023 15:22*	WG2153857

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Diesel Range Organics (DRO)	ND		200	1	10/26/2023 15:18	WG2155807
Residual Range Organics (RRO)	ND		250	1	10/26/2023 15:18	WG2155807
(S) o-Terphenyl	*111*		*52.0-156*		*10/26/2023 15:18*	WG2155807

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	193000		20000	1	10/24/2023 17:11	WG2155820

Sample Narrative:
L1667311-17 WG2155820: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 300.0

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfate	116000		5000	1	10/24/2023 16:39	WG2154230

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Manganese,Dissolved	ND		10.0	1	10/24/2023 16:54	WG2153976

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	ND		100	1	10/21/2023 20:35	WG2155628
(S) a,a,a-Trifluorotoluene(FID)	*93.7*		*78.0-120*		*10/21/2023 20:35*	WG2155628

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	ND		10.0	1	10/20/2023 10:43	WG2154270
Ethane	ND		13.0	1	10/20/2023 10:43	WG2154270
Ethene	ND		13.0	1	10/20/2023 10:43	WG2154270

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

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	10/19/2023 04:14	WG2153858
Toluene	ND		1.00	1	10/19/2023 04:14	WG2153858
Ethylbenzene	ND		1.00	1	10/19/2023 04:14	WG2153858
Xylenes, Total	ND		3.00	1	10/19/2023 04:14	WG2153858
Naphthalene	ND		5.00	1	10/19/2023 04:14	WG2153858
(S) Toluene-d8	*107*		*80.0-120*		*10/19/2023 04:14*	WG2153858
(S) 4-Bromofluorobenzene	*108*		*77.0-126*		*10/19/2023 04:14*	WG2153858
(S) 1,2-Dichloroethane-d4	*117*		*70.0-130*		*10/19/2023 04:14*	WG2153858

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

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	ND		200	1	10/26/2023 15:38	WG2155807
Residual Range Organics (RRO)	ND		250	1	10/26/2023 15:38	WG2155807
(S) o-Terphenyl	*113*		*52.0-156*		*10/26/2023 15:38*	WG2155807

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	194000		20000	1	10/24/2023 17:23	WG2155820

Sample Narrative:
L1667311-18 WG2155820: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 300.0

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfate	108000		5000	1	10/24/2023 16:52	WG2154230

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Manganese,Dissolved	ND		10.0	1	10/24/2023 16:57	WG2153976

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	ND		100	1	10/21/2023 20:57	WG2155628
(S) a,a,a-Trifluorotoluene(FID)	*94.7*		*78.0-120*		*10/21/2023 20:57*	WG2155628

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	ND		10.0	1	10/20/2023 10:49	WG2154270
Ethane	ND		13.0	1	10/20/2023 10:49	WG2154270
Ethene	ND		13.0	1	10/20/2023 10:49	WG2154270

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

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	10/20/2023 02:36	WG2154295
Toluene	ND		1.00	1	10/20/2023 02:36	WG2154295
Ethylbenzene	ND		1.00	1	10/20/2023 02:36	WG2154295
Xylenes, Total	ND		3.00	1	10/20/2023 02:36	WG2154295
Naphthalene	ND		5.00	1	10/20/2023 02:36	WG2154295
(S) Toluene-d8	*105*		*80.0-120*		*10/20/2023 02:36*	WG2154295
(S) 4-Bromofluorobenzene	*113*		*77.0-126*		*10/20/2023 02:36*	WG2154295
(S) 1,2-Dichloroethane-d4	*119*		*70.0-130*		*10/20/2023 02:36*	WG2154295

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

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	ND		200	1	10/26/2023 15:59	WG2155807
Residual Range Organics (RRO)	ND		250	1	10/26/2023 15:59	WG2155807
(S) o-Terphenyl	*108*		*52.0-156*		*10/26/2023 15:59*	WG2155807

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	197000		20000	1	10/24/2023 17:28	WG2155820

Sample Narrative:
L1667311-19 WG2155820: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 300.0

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfate	109000		5000	1	10/24/2023 17:06	WG2154230

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Manganese,Dissolved	ND		10.0	1	10/24/2023 17:00	WG2153976

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	ND		100	1	10/21/2023 21:19	WG2155628
(S) a,a,a-Trifluorotoluene(FID)	*93.9*		*78.0-120*		*10/21/2023 21:19*	WG2155628

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	ND		10.0	1	10/20/2023 10:52	WG2154270
Ethane	ND		13.0	1	10/20/2023 10:52	WG2154270
Ethene	ND		13.0	1	10/20/2023 10:52	WG2154270

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

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	10/19/2023 04:35	WG2153858
Toluene	ND		1.00	1	10/19/2023 04:35	WG2153858
Ethylbenzene	ND		1.00	1	10/19/2023 04:35	WG2153858
Xylenes, Total	ND		3.00	1	10/19/2023 04:35	WG2153858
Naphthalene	ND		5.00	1	10/19/2023 04:35	WG2153858
(S) Toluene-d8	*107*		*80.0-120*		*10/19/2023 04:35*	WG2153858
(S) 4-Bromofluorobenzene	*111*		*77.0-126*		*10/19/2023 04:35*	WG2153858
(S) 1,2-Dichloroethane-d4	*120*		*70.0-130*		*10/19/2023 04:35*	WG2153858

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

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	ND		200	1	10/26/2023 16:19	WG2155807
Residual Range Organics (RRO)	ND		250	1	10/26/2023 16:19	WG2155807
(S) o-Terphenyl	*110*		*52.0-156*		*10/26/2023 16:19*	WG2155807

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Alkalinity	604000		20000	1	10/24/2023 17:34	WG2155820

Sample Narrative:

L1667311-20 WG2155820: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	26900		5000	1	10/24/2023 17:20	WG2154230

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Manganese,Dissolved	734		10.0	1	10/24/2023 17:03	WG2153976

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Gasoline Range Organics-NWTPH	130	B	100	1	10/21/2023 21:40	WG2155628
(S) a,a,a-Trifluorotoluene(FID)	*95.0*		*78.0-120*		*10/21/2023 21:40*	WG2155628

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Methane	1960		10.0	1	10/20/2023 10:58	WG2154270
Ethane	ND		13.0	1	10/20/2023 10:58	WG2154270
Ethene	ND		13.0	1	10/20/2023 10:58	WG2154270

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	10/20/2023 23:47	WG2155227
Toluene	ND		1.00	1	10/20/2023 23:47	WG2155227
Ethylbenzene	ND		1.00	1	10/20/2023 23:47	WG2155227
Xylenes, Total	ND		3.00	1	10/20/2023 23:47	WG2155227
Naphthalene	ND		5.00	1	10/20/2023 23:47	WG2155227
(S) Toluene-d8	*100*		*80.0-120*		*10/20/2023 23:47*	WG2155227
(S) 4-Bromofluorobenzene	*107*		*77.0-126*		*10/20/2023 23:47*	WG2155227
(S) 1,2-Dichloroethane-d4	*120*		*70.0-130*		*10/20/2023 23:47*	WG2155227

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Diesel Range Organics (DRO)	9760		1000	5	10/27/2023 04:00	WG2155807
Residual Range Organics (RRO)	2410		250	1	10/26/2023 16:39	WG2155807
(S) o-Terphenyl	*144*		*52.0-156*		*10/26/2023 16:39*	WG2155807
(S) o-Terphenyl	*59.0*		*52.0-156*		*10/27/2023 04:00*	WG2155807

Sample Narrative:

L1667311-20 WG2155807: Sample resembles laboratory standard for Hydraulic Fluid

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	ND		100	1	10/22/2023 12:30	WG2155889
(S) a,a,a-Trifluorotoluene(FID)	*111*		*78.0-120*		*10/22/2023 12:30*	WG2155889

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

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	10/19/2023 11:33	WG2153857
Toluene	ND		1.00	1	10/19/2023 11:33	WG2153857
Ethylbenzene	ND		1.00	1	10/19/2023 11:33	WG2153857
Xylenes, Total	ND		3.00	1	10/19/2023 11:33	WG2153857
Naphthalene	ND		5.00	1	10/19/2023 11:33	WG2153857
(S) Toluene-d8	*109*		*80.0-120*		*10/19/2023 11:33*	WG2153857
(S) 4-Bromofluorobenzene	*114*		*77.0-126*		*10/19/2023 11:33*	WG2153857
(S) 1,2-Dichloroethane-d4	*121*		*70.0-130*		*10/19/2023 11:33*	WG2153857

Method Blank (MB)

(MB) R3990577-2 10/24/23 14:56

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Alkalinity	U		8450	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1667311-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1667311-01 10/24/23 15:17 • (DUP) R3990577-3 10/24/23 15:23

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	671000	678000	1	1.00		20

Sample Narrative:

OS: Endpoint pH 4.5 Headspace

DUP: Endpoint pH 4.5

L1667311-17 Original Sample (OS) • Duplicate (DUP)

(OS) L1667311-17 10/24/23 17:11 • (DUP) R3990577-4 10/24/23 17:17

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	193000	194000	1	0.740		20

Sample Narrative:

OS: Endpoint pH 4.5 Headspace

DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3990577-1 10/24/23 14:50

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Alkalinity	100000	97300	97.3	90.0-110	

Sample Narrative:

LCS: Endpoint pH 4.5

Method Blank (MB)

(MB) R3990821-1 10/24/23 09:08

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Sulfate	U		594	5000

L1667311-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1667311-01 10/24/23 10:42 • (DUP) R3990821-3 10/24/23 10:56

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Sulfate	88300	87800	1	0.643		15

L1667311-12 Original Sample (OS) • Duplicate (DUP)

(OS) L1667311-12 10/24/23 14:21 • (DUP) R3990821-6 10/24/23 14:35

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Sulfate	109000	109000	1	0.0668		15

Laboratory Control Sample (LCS)

(LCS) R3990821-2 10/24/23 09:22

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Sulfate	40000	37900	94.7	90.0-110	

L1667311-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1667311-01 10/24/23 10:42 • (MS) R3990821-4 10/24/23 11:09 • (MSD) R3990821-5 10/24/23 11:23

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Sulfate	40000	88300	109000	108000	51.2	49.7	1	80.0-120	J6	J6	0.543	15

L1667311-12 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1667311-12 10/24/23 14:21 • (MS) R3990821-7 10/24/23 14:49 • (MSD) R3990821-8 10/24/23 15:30

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Sulfate	40000	109000	126000	126000	42.1	41.3	1	80.0-120	J6	J6	0.268	15

Method Blank (MB)

(MB) R3990592-1 10/24/23 15:42

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Manganese,Dissolved	U		0.934	10.0

Laboratory Control Sample (LCS)

(LCS) R3990592-2 10/24/23 15:45

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Manganese,Dissolved	1000	1000	100	80.0-120	

L1667311-12 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1667311-12 10/24/23 15:48 • (MS) R3990592-4 10/24/23 15:53 • (MSD) R3990592-5 10/24/23 15:56

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Manganese,Dissolved	1000	ND	975	975	97.5	97.5	1	75.0-125			0.0322	20

Method Blank (MB)

(MB) R3990544-2 10/21/23 12:01

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	47.1	J	31.6	100
(S) a,a,a-Trifluorotoluene(FID)	*92.4*			*78.0-120*

Laboratory Control Sample (LCS)

(LCS) R3990544-1 10/21/23 11:17

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	4770	86.7	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			*105*	*78.0-120*	

L1667311-12 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1667311-12 10/21/23 18:45 • (MS) R3990544-3 10/21/23 22:02 • (MSD) R3990544-4 10/21/23 22:24

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	5500	ND	5080	4670	92.4	84.9	1	10.0-155			8.41	21
(S) a,a,a-Trifluorotoluene(FID)					*99.2*	*98.2*		*78.0-120*				

Method Blank (MB)

(MB) R3990353-2 10/22/23 11:31

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	46.3	J	31.6	100
(S) a,a,a-Trifluorotoluene(FID)	*111*			*78.0-120*

Laboratory Control Sample (LCS)

(LCS) R3990353-1 10/22/23 10:25

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	4900	89.1	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			*116*	*78.0-120*	

Method Blank (MB)

(MB) R3989155-2 10/20/23 14:54

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		2.91	10.0
Ethane	U		4.07	13.0
Ethene	U		4.26	13.0

L1667186-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1667186-02 10/20/23 16:03 • (DUP) R3989155-3 10/20/23 16:05

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	13.1	12.7	1	3.10		20
Ethane	ND	ND	1	0.000		20
Ethene	ND	ND	1	0.000		20

L1667311-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1667311-09 10/20/23 16:28 • (DUP) R3989155-4 10/20/23 16:35

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	ND	ND	1	0.705		20
Ethane	ND	ND	1	0.000		20
Ethene	ND	ND	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3989155-1 10/20/23 14:50 • (LCSD) R3989155-5 10/20/23 16:37

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	67.6	64.1	99.7	94.5	85.0-115			5.32	20
Ethane	129	116	116	89.9	89.9	85.0-115			0.000	20
Ethene	127	117	117	92.1	92.1	85.0-115			0.000	20

Method Blank (MB)

(MB) R3988957-2 10/20/23 09:39

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		2.91	10.0
Ethane	U		4.07	13.0
Ethene	U		4.26	13.0

L1667431-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1667431-01 10/20/23 11:05 • (DUP) R3988957-3 10/20/23 11:08

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	3550	3540	1	0.282		20
Ethane	ND	ND	1	0.000		20
Ethene	ND	ND	1	0.000		20

L1667753-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1667753-02 10/20/23 12:05 • (DUP) R3988957-4 10/20/23 12:18

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	28.8	29.8	1	3.41		20
Ethane	ND	ND	1	200	P1	20
Ethene	ND	ND	1	1.20		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3988957-1 10/20/23 09:09 • (LCSD) R3988957-5 10/20/23 12:24

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	67.6	66.5	99.7	98.1	85.0-115			1.64	20
Ethane	129	115	117	89.1	90.7	85.0-115			1.72	20
Ethene	127	115	118	90.6	92.9	85.0-115			2.58	20

Method Blank (MB)

(MB) R3989479-2 10/22/23 10:15

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Methane	U		2.91	10.0
Ethane	U		4.07	13.0
Ethene	U		4.26	13.0

L1667311-12 Original Sample (OS) • Duplicate (DUP)

(OS) L1667311-12 10/22/23 10:51 • (DUP) R3989479-3 10/22/23 14:13

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Methane	ND	ND	1	0.000		20
Ethane	ND	ND	1	0.000		20
Ethene	ND	ND	1	0.000		20

L1667832-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1667832-01 10/22/23 14:27 • (DUP) R3989479-4 10/22/23 15:40

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Methane	ND	ND	1	0.000		20
Ethane	ND	ND	1	0.000		20
Ethene	ND	ND	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3989479-1 10/22/23 09:48 • (LCSD) R3989479-9 10/22/23 16:20

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Methane	67.8	67.7	74.9	99.9	110	85.0-115			10.1	20
Ethane	129	115	119	89.1	92.2	85.0-115			3.42	20
Ethene	127	116	119	91.3	93.7	85.0-115			2.55	20

L1667311-12 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1667311-12 10/22/23 10:51 • (MS) R3989479-5 10/22/23 15:53 • (MSD) R3989479-6 10/22/23 16:02

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Methane	67.8	ND	78.8	78.7	116	116	1	50.0-150			0.127	20
Ethane	129	ND	134	136	104	105	1	50.0-150			1.48	20
Ethene	127	ND	133	135	105	106	1	50.0-150			1.49	20

L1667592-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1667592-01 10/22/23 11:16 • (MS) R3989479-7 10/22/23 16:07 • (MSD) R3989479-8 10/22/23 16:12

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Methane	67.8	ND	79.5	81.2	117	120	1	50.0-150			2.12	20
Ethane	129	ND	131	136	102	105	1	50.0-150			3.75	20
Ethene	127	ND	131	135	103	106	1	50.0-150			3.01	20

Method Blank (MB)

(MB) R3989029-3 10/19/23 09:06

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.0941	1.00
Toluene	U		0.278	1.00
Ethylbenzene	U		0.137	1.00
Xylenes, Total	U		0.174	3.00
Naphthalene	U		1.00	5.00
(S) Toluene-d8	*105*			*80.0-120*
(S) 4-Bromofluorobenzene	*118*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*123*			*70.0-130*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3989029-1 10/19/23 08:03 • (LCSD) R3989029-2 10/19/23 08:24

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	5.00	5.40	5.39	108	108	70.0-123			0.185	20
Toluene	5.00	5.04	5.04	101	101	79.0-120			0.000	20
Ethylbenzene	5.00	5.10	5.10	102	102	79.0-123			0.000	20
Xylenes, Total	15.0	15.1	14.7	101	98.0	79.0-123			2.68	20
Naphthalene	5.00	5.55	5.77	111	115	54.0-135			3.89	20
(S) Toluene-d8				*102*	*103*	*80.0-120*				
(S) 4-Bromofluorobenzene				*109*	*109*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*119*	*119*	*70.0-130*				

L1667311-12 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1667311-12 10/19/23 14:20 • (MS) R3989029-4 10/19/23 18:30 • (MSD) R3989029-5 10/19/23 18:51

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	5.00	ND	4.43	3.59	88.6	71.8	1	17.0-158			20.9	27
Toluene	5.00	ND	3.94	3.01	78.8	60.2	1	26.0-154			26.8	28
Ethylbenzene	5.00	ND	4.16	3.10	83.2	62.0	1	30.0-155		J3	29.2	27
Xylenes, Total	15.0	ND	12.3	9.50	82.0	63.3	1	29.0-154			25.7	28
Naphthalene	5.00	ND	ND	ND	87.8	97.2	1	12.0-156			10.2	35
(S) Toluene-d8					*93.7*	*94.3*		*80.0-120*				
(S) 4-Bromofluorobenzene					*110*	*105*		*77.0-126*				
(S) 1,2-Dichloroethane-d4					*156*	*163*		*70.0-130*	J1	J1		

Method Blank (MB)

(MB) R3988677-2 10/18/23 23:26

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.0941	1.00
Toluene	U		0.278	1.00
Ethylbenzene	U		0.137	1.00
Xylenes, Total	U		0.174	3.00
Naphthalene	U		1.00	5.00
(S) Toluene-d8	*106*			*80.0-120*
(S) 4-Bromofluorobenzene	*106*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*121*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3988677-1 10/18/23 22:26

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	5.00	5.09	102	70.0-123	
Toluene	5.00	4.58	91.6	79.0-120	
Ethylbenzene	5.00	4.53	90.6	79.0-123	
Xylenes, Total	15.0	13.9	92.7	79.0-123	
Naphthalene	5.00	5.62	112	54.0-135	
(S) Toluene-d8			*102*	*80.0-120*	
(S) 4-Bromofluorobenzene			*106*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*119*	*70.0-130*	

Method Blank (MB)

(MB) R3989098-2 10/19/23 21:58

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.0941	1.00
Toluene	U		0.278	1.00
Ethylbenzene	U		0.137	1.00
Xylenes, Total	U		0.174	3.00
Naphthalene	U		1.00	5.00
(S) Toluene-d8	*92.6*			*80.0-120*
(S) 4-Bromofluorobenzene	*112*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*144*	J1		*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3989098-1 10/19/23 21:16

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	5.00	4.81	96.2	70.0-123	
Toluene	5.00	4.13	82.6	79.0-120	
Ethylbenzene	5.00	4.37	87.4	79.0-123	
Xylenes, Total	15.0	13.0	86.7	79.0-123	
Naphthalene	5.00	5.04	101	54.0-135	
(S) Toluene-d8			*92.8*	*80.0-120*	
(S) 4-Bromofluorobenzene			*107*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*165*	*70.0-130*	J1

Method Blank (MB)

(MB) R3989748-3 10/20/23 20:58

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.0941	1.00
Toluene	U		0.278	1.00
Ethylbenzene	U		0.137	1.00
Xylenes, Total	U		0.174	3.00
Naphthalene	U		1.00	5.00
(S) Toluene-d8	*103*			*80.0-120*
(S) 4-Bromofluorobenzene	*108*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*123*			*70.0-130*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3989748-1 10/20/23 19:55 • (LCSD) R3989748-2 10/20/23 20:16

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	5.00	5.24	5.42	105	108	70.0-123			3.38	20
Toluene	5.00	4.78	4.88	95.6	97.6	79.0-120			2.07	20
Ethylbenzene	5.00	4.71	4.91	94.2	98.2	79.0-123			4.16	20
Xylenes, Total	15.0	14.3	14.6	95.3	97.3	79.0-123			2.08	20
Naphthalene	5.00	5.60	5.94	112	119	54.0-135			5.89	20
(S) Toluene-d8				*99.1*	*101*	*80.0-120*				
(S) 4-Bromofluorobenzene				*105*	*105*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*121*	*124*	*70.0-130*				

L1667401-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1667401-10 10/21/23 00:28 • (MS) R3989748-4 10/21/23 06:23 • (MSD) R3989748-5 10/21/23 06:44

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	5.00	ND	5.23	5.72	105	114	1	17.0-158			8.95	27
Toluene	5.00	ND	4.62	5.38	92.4	108	1	26.0-154			15.2	28
Ethylbenzene	5.00	ND	5.10	6.02	88.9	107	1	30.0-155			16.5	27
Xylenes, Total	15.0	4.96	18.7	20.8	91.6	106	1	29.0-154			10.6	28
Naphthalene	5.00	ND	5.57	6.06	111	121	1	12.0-156			8.43	35
(S) Toluene-d8					*97.8*	*98.5*		*80.0-120*				
(S) 4-Bromofluorobenzene					*104*	*106*		*77.0-126*				
(S) 1,2-Dichloroethane-d4					*126*	*124*		*70.0-130*				

Method Blank (MB)

(MB) R3990674-1 10/24/23 11:49

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Diesel Range Organics (DRO)	U		66.7	200
Residual Range Organics (RRO)	U		83.3	250
(S) o-Terphenyl	*84.5*			*52.0-156*

Laboratory Control Sample (LCS)

(LCS) R3990674-2 10/24/23 12:09

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Diesel Range Organics (DRO)	1500	1170	78.0	50.0-150	
(S) o-Terphenyl			*86.5*	*52.0-156*	

Method Blank (MB)

(MB) R3991766-1 10/26/23 08:55

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Diesel Range Organics (DRO)	U		66.7	200
Residual Range Organics (RRO)	U		83.3	250
(S) o-Terphenyl	*94.5*			*52.0-156*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3991766-2 10/26/23 09:15 • (LCSD) R3991766-3 10/26/23 09:35

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Diesel Range Organics (DRO)	1500	1250	1270	83.3	84.7	50.0-150			1.59	20
(S) o-Terphenyl				*118*	*121*	*52.0-156*				

L1667311-12 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1667311-12 10/26/23 13:17 • (MS) R3991766-4 10/26/23 13:37 • (MSD) R3991766-5 10/26/23 13:58

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Diesel Range Organics (DRO)	1500	ND	1220	1190	81.3	79.3	1	50.0-150			2.49	20
(S) o-Terphenyl					*109*	*112*		*52.0-156*				

Sample Narrative:

OS: Sample does not resemble laboratory standards.

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier	Description
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

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

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

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

Company Name/Address:
AECOM - Portland, OR Year 0

888 SW 5th Ave
Suite 600
Portland, OR 97204

Billing Information:
Accounts Payable
888 SW 5th Ave
Suite 600
Portland, OR 97204

Pres Chk

Report to:
Ms. Nicky Moody

nicky.moody@aecom.com;
christina.wheeler@aecom.com

Project Description:
CPL Co. Bulk Fuel Pasco Terminal

City/State Collected: Pasco Wa.

Please Circle: (PT) MT CT ET

Phone: **503-969-6310**

Client Project #
60711842

Lab Project #
AECOMPORSSA-CPL

Collected by (print):
Edward LeCocq

Site/Facility ID #
55763995

P.O. #

Collected by (signature):

Immediately
Packed on Ice N ___ Y X

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

Quote #

Date Results Needed

No. of Cntrs

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	ALK,SULFATE 250mlHDPE-NoPres	MNDICP 250mlHDPE-NoPres	NWTPHDXLVINOSGT 40mlAmb-HCl-BT	NWTPHGX 40mlAmb HCl	RSK175 40mlAmb HCl	V8260BTEXN 40mlAmb-HCl	Remarks	Sample # (lab only)
MW-02- 20231012	G	GW	77'	10/12	1026	13	X	X	X	X	X	X		-01
MW-03- 20231011	G	GW	85'	10/11	1825	13	X	X	X	X	X	X		-02
MW-04- 20231013	G	GW	72'	10/13	0906	13	X	X	X	X	X	X		-03
MW-06- 20231010	G	GW	21'	10/10	1245	13	X	X	X	X	X	X		-04
MW-07- 20231010	G	GW	72'	10/10	1547	13	X	X	X	X	X	X		-05
MW-08- 20231011	G	GW	43.5'	10/11	1639	13	X	X	X	X	X	X		-06
MW-10- 20231010	G	GW	68'	10/10	1333	13	X	X	X	X	X	X		-07
MW-11- 20231012	G	GW	83'	10/12	1711	13	X	X	X	X	X	X		-08
MW-12- 20231012	G	GW	83.5'	10/12	1500	13	X	X	X	X	X	X	MS/MSD	-09
MW-14- 20231012	G	GW	82'	10/12	1200	13	X	X	X	X	X	X		-10

Chain of Custody Page 1 of 3

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN

12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # 166711
D131

Acctnum: **AECOMPORSSA**
Template: **T223778**
Prelogin: **P978312**
PM: **034 - Craig Cothron**
PB:

Shipped Via:

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

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS X FedEx __ Courier _____

Tracking #

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

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCl / MeoH TBR	
	10/13	1130			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: 24	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) Alexa Mitchell	Date: 10/17/23 Time: 0900	Hold: Condition: NCF / OK

Company Name/Address:
AECOM - Portland, OR ~~1SA Event~~ Year 0

888 SW 5th Ave
Suite 600
Portland, OR 97204

Billing Information:
Accounts Payable
888 SW 5th Ave
Suite 600
Portland, OR 97204

Pres Chk

Report to:
Ms. Nicky Moody

nicky.moody@aecom.com;
christina.wheeler@aecom.com

Project Description:
CPL Co. Bulk Fuel Terminal

City/State Collected: Pasco Wa.

Please Circle: (PT) MT CT ET

Phone: 503-969-6310

Client Project #
60711842

Lab Project #
AECOMPORSSA-CPL

Collected by (print):
Robert LeCoq

Site/Facility ID #
55763995

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y X

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

Quote #

Date Results Needed

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	ALK,SULFATE 250mlHDPE-NoPres	MNDICP 250mlHDPE-NoPres	NWTPHDXLVINOSGT 40mlAmb-HCl-BT	NWTPHGX 40mlAmb HCl	RSK175 40mlAmb HCl	V8260BTEXN 40mlAmb-HCl	Remarks	Sample # (lab only)
MW-15- 20231010	G	GW	20.5'	10/10	1500	~~13~~ 11	X	X	X	X	X	X		-11
MW-16- 20231011	G	GW	31'	10/11	1100	~~13~~ 11	X	X	X	X	X	X	MS/MSD	-12
MW-17- 20231012	G	GW	84'	10/12	1344	~~13~~ 11	X	X	X	X	X	X		-13
MW-18- 20231011	G	GW	86.5'	10/11	1830	~~13~~ 11	X	X	X	X	X	X		-14
MW-19- 20231011	G	GW	85'	10/11	1330	~~13~~ 11	X	X	X	X	X	X		-15
MW-20- 20231011	G	GW	95'	10/11	1555	~~13~~ 11	X	X	X	X	X	X		-16
MW-21- 20231012	G	GW	93'	10/12	0930	~~13~~ 11	X	X	X	X	X	X		-17
MW-22- 20231013	G	GW	94'	10/13	0905	~~13~~ 11	X	X	X	X	X	X		-18
MW-23- 20231012	G	GW	92'	10/12	1700	~~13~~ 11	X	X	X	X	X	X		-19
MW- 03 - Dup - 20231011	G	GW	85	10/11	1825	~~13~~ 11	X	X	X	X	X	X		-20

Analysis / Container / Preservative

Chain of Custody Page 2 of 3

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN
12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # 166711

Table #

Acctnum: AECOMPORSSA
Template: T223778
Prelogin: P978312
PM: 034 - Craig Cothron
PB:

Shipped Via:

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

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS X FedEx __ Courier _____

Tracking #

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

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCl / MeoH TBR	If preservation required by Login: Date/Time
	10/13	1130			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: 242	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 10/17/23 Time: 0900	Hold: Condition: NCF / OK

Company Name/Address:
AECOM - Portland, OR ~~1SA Event~~ Year 0

888 SW 5th Ave
Suite 600
Portland, OR 97204

Billing Information:
Accounts Payable
888 SW 5th Ave
Suite 600
Portland, OR 97204

Pres Chk

Report to:
Ms. Nicky Moody

nicky.moody@aecom.com;
christina.wheeler@aecom.com

Project Description:
CPL Co. Bulk Fuel Terminal

City/State Collected: Pasco Wa.

Please Circle: (PT) MT CT ET

Phone: 503-969-6310

Client Project #
60711842

Lab Project #
AECOMPORSSA-CPL

Collected by (print):
Edward LeCoq

Site/Facility ID #
55763995

P.O. #

Collected by (signature):

Immediately
Packed on Ice N ___ Y X

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

Quote #

Date Results Needed

No. of Cntrs

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	ALK,SULFATE 250mlHDPE-NoPres	MNDICP 250mlHDPE-NoPres	NWTPHDXLVINOSGT 40mlAmb-HCl-BT	NWTPHGX 40mlAmb HCl	RSK175 40mlAmb HCl	V8260BTEXN 40mlAmb-HCl				Remarks	Sample # (lab only)
TB1-		GW				~~3~~ 4				X		X					-21

Chain of Custody Page 3 of 3

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN
12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # 166311

Table #

Acctnum: AECOMPORSSA
Template: T223778
Prelogin: P978312
PM: 034 - Craig Cothron
PB:

Shipped Via:

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

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS X FedEx __ Courier _____

Tracking #

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

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCl / MeoH TBR	If preservation required by Login: Date/Time
	10/13	1130			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: 242	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 10/17/23 Time: 0900	Hold: Condition: NCF / OK

L1667311

Tracking Numbers	Temperature
9405 5036 9930 0429 7343 36	53 to 53
9405 5036 9930 0429 7343 45	41.7 to 41.7

Name

Date

Company Name/Address:
AECOM - Portland, OR ~~1SA Event~~ Year 0

888 SW 5th Ave
Suite 600
Portland, OR 97204

Billing Information:
Accounts Payable
888 SW 5th Ave
Suite 600
Portland, OR 97204

Pres Chk

Report to:
Ms. Nicky Moody

nicky.moody@aecom.com;
christina.wheeler@aecom.com

Project Description:
CPL Co. Bulk Fuel Terminal

City/State Collected: Pasco Wa.

Please Circle: (PT) MT CT ET

Phone: 503-969-6310

Client Project #
60711842

Lab Project #
AECOMPORSSA-CPL

Collected by (print):
Edward LeCoz

Site/Facility ID #
55763995

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y X

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

Quote #

Date Results Needed

No. of Cntrs

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	ALK,SULFATE 250mlHDPE-NoPres	MNDICP 250mlHDPE-NoPres	NWTPHDXLVINOSGT 40mlAmb-HCl-BT	NWTPHGX 40mlAmb HCl	RSK175 40mlAmb HCl	V8260BTEXN 40mlAmb-HCl	Remarks	Sample # (lab only)
TB1-		GW				4				X		X		-21

Chain of Custody Page 3 of 3

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN
12065 Lebanon Rd Mount Juliet, TN 37122
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SDG # 166311

Table #

Acctnum: AECOMPORSSA
Template: T223778
Prelogin: P978312
PM: 034 - Craig Cothron
PB:

Shipped Via:

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

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS X FedEx __ Courier _____

Tracking #

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

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCl / MeoH TBR	If preservation required by Login: Date/Time
Edward LeCoz	10/13	1130		4	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C 0.2 +0.2 0.2	Bottles Received: 2 2
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 10/17/23	Time: 0900

Hold: | Condition: NCF / OK

APPENDIX D

Data Validation Reports

AECOM
1111 3rd Ave
Suite 1600
Seattle, WA 98101
www.aecom.com

206 438 2700 tel
866 495 5288 fax

Memorandum

To	Nicky Moody, Project Manager	Info	FINAL
Subject	Summary Data Quality Review Chevron Pipe Line Company Pasco Bulk Terminal April 2023 Semi-Annual Groundwater Sampling		
From	Amelia McArthur, Chemist Jennifer B. Garner, Chemist		
Date	June 30, 2023		

The summary data quality review of 20 groundwater samples and 2 trip blanks collected between April 24 and April 26, 2023, has been completed. The samples were analyzed at Pace Analytical National, LLC (Pace), located in Mount Juliet, Tennessee, for selected volatile organic compounds (VOCs) by EPA Method 8260D; total petroleum hydrocarbons (TPHs) by Washington State Department of Ecology (Ecology) Methods NWTPH-Gx (gasoline-range TPH) and NWTPH-Dx (diesel-range and heavy oil-range TPH); dissolved gases (methane, ethane, and ethene) by EPA Method RSK-175; dissolved manganese by EPA Method 6010B; sulfate by EPA Method 300.0; and/or total alkalinity by Standard Method (SM) 2320B-2011. The laboratory provided a summary report containing sample results and associated quality assurance (QA) and quality control (QC) data for all samples. For this report, the sample date suffixes (i.e., -20230424, -20230425, and -20230426) will not be used unless needed for clarity. The following samples are associated with Pace laboratory group L1610295:

Sample ID	Laboratory ID	Requested Analyses
MW-02-20230426	L1610295-01	VOCs, TPH-Gx, Methane, TPH-Dx, Manganese, Sulfate, Alkalinity
MW-03-20230426	L1610295-02	VOCs, TPH-Gx, Methane, TPH-Dx, Manganese, Sulfate, Alkalinity
MW-04-20230426	L1610295-03	VOCs, TPH-Gx, Methane, TPH-Dx, Manganese, Sulfate, Alkalinity
MW-06-20230426	L1610295-04	VOCs, TPH-Gx, Methane, TPH-Dx, Manganese, Sulfate, Alkalinity
MW-07-20230426	L1610295-05	VOCs, TPH-Gx, Methane, TPH-Dx, Manganese, Sulfate, Alkalinity
MW-08-20230426	L1610295-06	VOCs, TPH-Gx, Methane, TPH-Dx, Manganese, Sulfate, Alkalinity
MW-10-20230426	L1610295-07	VOCs, TPH-Gx, Methane, TPH-Dx, Manganese, Sulfate, Alkalinity
MW-11-20230426	L1610295-08	VOCs, TPH-Gx, Methane, TPH-Dx, Manganese, Sulfate, Alkalinity
MW-12-20230426	L1610295-09	VOCs, TPH-Gx, Methane, TPH-Dx, Manganese, Sulfate, Alkalinity
MW-14-20230426	L1610295-10	VOCs, TPH-Gx, Methane, TPH-Dx, Manganese, Sulfate, Alkalinity
MW-15-20230425	L1610295-11	VOCs, TPH-Gx, Methane, TPH-Dx, Manganese, Sulfate, Alkalinity
MW-16-20230425	L1610295-12	VOCs, TPH-Gx, Methane, TPH-Dx, Manganese, Sulfate, Alkalinity
MW-17-20230426	L1610295-13	VOCs, TPH-Gx, Methane, TPH-Dx, Manganese, Sulfate, Alkalinity
MW-18-20230426	L1610295-14	VOCs, TPH-Gx, Methane, TPH-Dx, Manganese, Sulfate, Alkalinity
MW-19-20230426	L1610295-15	VOCs, TPH-Gx, Methane, TPH-Dx, Manganese, Sulfate, Alkalinity
MW-20-20230426	L1610295-16	VOCs, TPH-Gx, Methane, TPH-Dx, Manganese, Sulfate, Alkalinity
MW-21-20230425	L1610295-17	VOCs, TPH-Gx, Methane, TPH-Dx, Manganese, Sulfate, Alkalinity
MW-22-20230425	L1610295-18	VOCs, TPH-Gx, Methane, TPH-Dx, Manganese, Sulfate, Alkalinity
MW-23-20230424	L1610295-19	VOCs, TPH-Gx, Methane, TPH-Dx, Manganese, Sulfate, Alkalinity
MW-103-20230425 (field duplicate of MW-03-20230426)	L1610295-20	VOCs, TPH-Gx, Methane, TPH-Dx, Manganese, Sulfate, Alkalinity
TB-1-20230401	L1610295-21	VOCs, TPH-Gx
TB-2-20230401	L1610295-22	VOCs, TPH-Gx

Data were evaluated based on validation criteria established in the analytical methods, as well as *National Functional Guidelines for Organic Superfund Methods Data Review*, November 2020, and the *National Functional Guidelines for Inorganic Superfund Methods Data Review*, November 2020, as applied to the reported methodology.

The following data components were reviewed during the limited data validation procedure for compliance with method specific or laboratory control charted criteria where appropriate: chain of custody forms, holding times,

field/method/trip/instrument blanks, surrogate recoveries, matrix spike/matrix spike duplicate recoveries, laboratory and field duplicate results, laboratory control sample/laboratory control sample duplicate recoveries, reporting limits, and electronic data deliverables.

A summary of qualifiers that may be assigned to results in these laboratory groups are included in Table 1. Qualifiers that may be assigned to results include:

- U - The analyte was analyzed for but was not detected above the reported sample quantitation limit.
- J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
- R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.
- DNR - Do Not Report. Another result is available that is more reliable or appropriate.

Sample Receipt

Upon receipt by the laboratory, the sample jar information was compared to the chain-of-custody (COC) and the cooler temperatures were recorded. No discrepancies related to sample identification were noted by the laboratory and the coolers were received at temperatures within the EPA-recommended limits of greater than 0°C and less than or equal to 6°C.

The laboratory indicated the presence of headspace in the sample vials for TB-1 and TB-2 for the NWTPH-Gx analysis. The results for gasoline range organics were qualified as estimated and flagged 'UJ' based on the presence of headspace in sample vials.

The laboratory indicated the presence of headspace in MW-02, MW-03, MW-04, MW-06, MW-07, MW-08, MW-10, MW-11, MW-12, MW-14, MW-15, MW-16, MW-17, MW-18, MW-19, MW-20, MW-21, MW-22, MW-23, and MW-103 for the alkalinity analysis. The analysis method requires the absence of head space in the sample containers, therefore; the results for alkalinity in the associated samples were qualified as estimated and flagged 'J' based on the presence of headspace in sample containers.

Organic Analyses

Samples were analyzed for VOCs, TPHs, and/or dissolved gases by the methods identified in the introduction of this report.

1. Holding Times – Acceptable

2. Blanks – Acceptable

3. Surrogates – Acceptable

4. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) – Acceptable except as noted below:

   VOCs by EPA Method 8260D – The relative percent difference (RPD, 23.4%) for naphthalene in the LCS/LCSD associated with analytical batch WG2051325 exceeded the control limit of 20%. The percent recoveries for naphthalene in the LCS and LCSD were acceptable; therefore, no data were qualified based on the elevated RPD.

5. Matrix Spike/Matrix Spike Duplicate (MS/MSD) – Acceptable

   General – MS/MSDs were performed using MW-12 in association with VOCs, NWTPH-Gx, NWTPH-Dx, and dissolved gases. Results were acceptable. An MS/MSD for dissolved gases was also performed using a sample from a project unrelated to the MPC-Pasco project. No data were qualified based on non-project QC results.

6. Laboratory Duplicate – Acceptable where applicable

   Dissolved Methane by EPA Method RSK-175 – Laboratory duplicates were performed using MW-14, MW-23, and four samples from projects unrelated to the MPC-Pasco project. Results were comparable.

7. Field Duplicate – Acceptable

   General – A field duplicate was submitted for MW-03 and identified as MW-103. Results were comparable for all analytes reported at concentrations greater than five times the reporting limits.

8. Reporting Limits – Acceptable

9. Other Items of Note:

   Diesel Range and Residual Range Organics by NWTPH-Dx –. The laboratory noted that the chromatographic pattern profile present in MW-02, MW-03, MW-17, and MW-103 did not match the laboratory standard chromatograms for diesel and/or motor oil. No data were qualified based on these qualitative observations.

Dissolved Manganese

Samples were analyzed for dissolved manganese by EPA Method 6010B.

1. Holding Times – Acceptable

2. Blanks – Acceptable

3. Laboratory Control Sample (LCS) – Acceptable

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) – Acceptable

   An MS/MSD was performed using MW-12. Results were acceptable.

5. Field Duplicate – Acceptable

   A field duplicate was submitted for MW-03 and identified as MW-103. Results were comparable.

6. Reporting Limits – Acceptable

Conventional Analyses

Samples were analyzed for sulfate and alkalinity by the methods identified in the introduction of this report.

1. Holding Times – Acceptable

2. Blanks – Acceptable

3. Laboratory Control Sample (LCS) – Acceptable

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) – Acceptable where applicable

   Sulfate by EPA Method 300.0 – MS/MSDs were performed using MW-12 and three sample from projects unrelated to MPC-Pasco. Results were acceptable for the MS/MSD performed using MW-12. No data were qualified based on non-project QC results.

5. Laboratory Duplicate – Acceptable

   Sulfate by EPA Method 300.0 – Laboratory duplicates were performed using MW-14 and three samples from projects unrelated to the MPC-Pasco project. Results were comparable.

   Alkalinity by SM 2320B – Laboratory duplicates were performed using MW-12, MW-103, and three samples from projects unrelated to the MPC-Pasco project. Results were comparable.

6. Field Duplicate – Acceptable

   General – A field duplicate was submitted for MW-03 and identified as MW-103. Results were comparable.

7. Reporting Limits – Acceptable

Overall Assessment of Data

The data reported in this laboratory group, as qualified, are usable for meeting project objectives. The completeness for Pace laboratory group L1610295 is 100%.

AECOM

Summary Data Quality Review
Chevron Pipe Line Company Pasco Bulk Terminal
April 2023 Semi-Annual Groundwater Sampling
Laboratory Group: L1610295

Table 1 – Summary of Qualified Data

Sample ID	Laboratory ID	Method	Analyte	Laboratory Result	Units	Final Result	Reason Code
MW-02	L1610295-01	SM2320 B	Alkalinity, total (as $CaCO_3$)	541000	ug/L	541000 J	hs
MW-03	L1610295-02	SM2320 B	Alkalinity, total (as $CaCO_3$)	455000	ug/L	455000 J	hs
MW-04	L1610295-03	SM2320 B	Alkalinity, total (as $CaCO_3$)	190000	ug/L	190000 J	hs
MW-06	L1610295-04	SM2320 B	Alkalinity, total (as $CaCO_3$)	154000	ug/L	154000 J	hs
MW-07	L1610295-05	SM2320 B	Alkalinity, total (as $CaCO_3$)	199000	ug/L	199000 J	hs
MW-08	L1610295-06	SM2320 B	Alkalinity, total (as $CaCO_3$)	195000	ug/L	195000 J	hs
MW-10	L1610295-07	SM2320 B	Alkalinity, total (as $CaCO_3$)	200000	ug/L	200000 J	hs
MW-11	L1610295-08	SM2320 B	Alkalinity, total (as $CaCO_3$)	261000	ug/L	261000 J	hs
MW-12	L1610295-09	SM2320 B	Alkalinity, total (as $CaCO_3$)	321000	ug/L	321000 J	hs
MW-14	L1610295-10	SM2320 B	Alkalinity, total (as $CaCO_3$)	207000	ug/L	207000 J	hs
MW-15	L1610295-11	SM2320 B	Alkalinity, total (as $CaCO_3$)	204000	ug/L	204000 J	hs
MW-16	L1610295-12	SM2320 B	Alkalinity, total (as $CaCO_3$)	205000	ug/L	205000 J	hs
MW-17	L1610295-13	SM2320 B	Alkalinity, total (as $CaCO_3$)	272000	ug/L	272000 J	hs
MW-18	L1610295-14	SM2320 B	Alkalinity, total (as $CaCO_3$)	221000	ug/L	221000 J	hs
MW-19	L1610295-15	SM2320 B	Alkalinity, total (as $CaCO_3$)	228000	ug/L	228000 J	hs
MW-20	L1610295-16	SM2320 B	Alkalinity, total (as $CaCO_3$)	192000	ug/L	192000 J	hs
MW-21	L1610295-17	SM2320 B	Alkalinity, total (as $CaCO_3$)	195000	ug/L	195000 J	hs
MW-22	L1610295-18	SM2320 B	Alkalinity, total (as $CaCO_3$)	196000	ug/L	196000 J	hs
MW-23	L1610295-19	SM2320 B	Alkalinity, total (as $CaCO_3$)	196000	ug/L	196000 J	hs
MW-103	L1610295-20	SM2320 B	Alkalinity, total (as $CaCO_3$)	461000	ug/L	461000 J	hs
TB-1	L1610295-21	NWTPH-GX	Gasoline Range Organics	100 U	ug/L	100 UJ	hs
TB-2	L1610295-22	NWTPH-GX	Gasoline Range Organics	100 U	ug/L	100 UJ	hs

Notes:
$CaCO_3$ – calcium carbonate
hs – headspace
ID - identification
J – estimated value
U – compound was analyzed for, but not detected above the limit shown
ug/L – microgram per liter

AECOM
1111 3rd Ave
Suite 1600
Seattle, WA 98101
www.aecom.com

206 438 2700 tel
866 495 5288 fax

Memorandum

To	Nicky Moody, Project Manager	Info	FINAL
Subject	Summary Data Quality Review Chevron Pipeline Company Pasco Bulk Terminal October 2023 Semi-Annual Groundwater Sampling		
From	Amelia McArthur, Chemist Lucy Panteleeff, Chemist		
Date	January 2, 2024		

The summary data quality review of 20 groundwater samples and 1 trip blank collected between October 10 and October 13, 2023, has been completed. The samples were analyzed at Pace Analytical National, LLC (Pace), located in Mount Juliet, Tennessee, for selected volatile organic compounds (VOCs) by EPA Method 8260D; total petroleum hydrocarbons (TPHs) by Washington State Department of Ecology (Ecology) Methods NWTPH-Gx (gasoline-range TPH) and NWTPH-Dx (diesel-range and heavy oil-range TPH); dissolved gases (methane, ethane, and ethene) by EPA Method RSK-175; dissolved manganese by EPA Method 6010B; sulfate by EPA Method 300.0; and/or total alkalinity by Standard Method (SM) 2320B-2011. The laboratory provided a summary report containing sample results and associated quality assurance (QA) and quality control (QC) data for all samples. For this report, the sample date suffixes (i.e., -20231010, -20231011, -20231012, and -20231013) will not be used unless needed for clarity. The following samples are associated with Pace laboratory group L1667311:

Sample ID	**Laboratory ID**	**Requested Analyses**
MW-02-20231012	L1667311-01	VOCs, TPH-Gx, Methane, TPH-Dx, Manganese, Sulfate, Alkalinity
MW-03-20231011	L1667311-02	VOCs, TPH-Gx, Methane, TPH-Dx, Manganese, Sulfate, Alkalinity
MW-04-20231013	L1667311-03	VOCs, TPH-Gx, Methane, TPH-Dx, Manganese, Sulfate, Alkalinity
MW-06-20231010	L1667311-04	VOCs, TPH-Gx, Methane, TPH-Dx, Manganese, Sulfate, Alkalinity
MW-07-20231010	L1667311-05	VOCs, TPH-Gx, Methane, TPH-Dx, Manganese, Sulfate, Alkalinity
MW-08-20231011	L1667311-06	VOCs, TPH-Gx, Methane, TPH-Dx, Manganese, Sulfate, Alkalinity
MW-10-20231010	L1667311-07	VOCs, TPH-Gx, Methane, TPH-Dx, Manganese, Sulfate, Alkalinity
MW-11-20231012	L1667311-08	VOCs, TPH-Gx, Methane, TPH-Dx, Manganese, Sulfate, Alkalinity
MW-12-20231012	L1667311-09	VOCs, TPH-Gx, Methane, TPH-Dx, Manganese, Sulfate, Alkalinity
MW-14-20231012	L1667311-10	VOCs, TPH-Gx, Methane, TPH-Dx, Manganese, Sulfate, Alkalinity
MW-15-20231010	L1667311-11	VOCs, TPH-Gx, Methane, TPH-Dx, Manganese, Sulfate, Alkalinity
MW-16-20231011	L1667311-12	VOCs, TPH-Gx, Methane, TPH-Dx, Manganese, Sulfate, Alkalinity
MW-17-20231012	L1667311-13	VOCs, TPH-Gx, Methane, TPH-Dx, Manganese, Sulfate, Alkalinity
MW-18-20231011	L1667311-14	VOCs, TPH-Gx, Methane, TPH-Dx, Manganese, Sulfate, Alkalinity
MW-19-20231011	L1667311-15	VOCs, TPH-Gx, Methane, TPH-Dx, Manganese, Sulfate, Alkalinity
MW-20-20231011	L1667311-16	VOCs, TPH-Gx, Methane, TPH-Dx, Manganese, Sulfate, Alkalinity
MW-21-20231012	L1667311-17	VOCs, TPH-Gx, Methane, TPH-Dx, Manganese, Sulfate, Alkalinity
MW-22-20231013	L1667311-18	VOCs, TPH-Gx, Methane, TPH-Dx, Manganese, Sulfate, Alkalinity
MW-23-20231012	L1667311-19	VOCs, TPH-Gx, Methane, TPH-Dx, Manganese, Sulfate, Alkalinity
MW-03-Dup-20231011 (Field Duplicate of MW-03)	L1667311-20	VOCs, TPH-Gx, Methane, TPH-Dx, Manganese, Sulfate, Alkalinity
TB1-20231011 (trip blank)	L1667311-21	VOCs, TPH-Gx

Data were evaluated based on validation criteria established in the analytical methods, as well as *National Functional Guidelines for Organic Superfund Methods Data Review*, November 2020, and the *National Functional Guidelines for Inorganic Superfund Methods Data Review*, November 2020, as applied to the reported methodology.

Summary Data Quality Review
Chevron Pipeline Company Pasco Bulk Terminal
October 2023 Semi-Annual Groundwater Sampling
Laboratory Group: L1667311

The following data components were reviewed during the limited data validation procedure for compliance with method specific or laboratory control charted criteria where appropriate: chain of custody forms, holding times, field/method/trip/instrument blanks, surrogate recoveries, matrix spike/matrix spike duplicate recoveries, laboratory and field duplicate results, laboratory control sample/laboratory control sample duplicate recoveries, reporting limits, and electronic data deliverables.

A summary of qualifiers that may be assigned to results in these laboratory groups are included in Table 1. Qualifiers that may be assigned to results include:

- U - The analyte was analyzed for but was not detected above the reported sample quantitation limit.
- J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
- R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.
- DNR - Do Not Report. Another result is available that is more reliable or appropriate.

Sample Receipt

Upon receipt by the laboratory, the sample jar information was compared to the chain-of-custody (COC) and the cooler temperatures were recorded. No discrepancies related to sample identification were noted by the laboratory and the coolers were received at temperatures within the EPA-recommended limits of greater than 0°C and less than or equal to 6°C.

Organic Analyses

Samples were analyzed for VOCs, TPHs, and/or dissolved gases by the methods identified in the introduction of this report.

1. Holding Times – Acceptable

2. Blanks – Acceptable except as noted below:

   Gasoline-range TPH by NWTPH-Gx – Gasoline-range TPH was detected at concentrations between the method detection limits (MDLs) and the reporting limits (RLs) in the method blanks associated with batches WG2155628 (47.1 ug/L) and WG2155889 (46.3 ug/L). Gasoline-range TPH was not detected in the sample associated with WG2155889; therefore, no data were qualified based on this method blank detection. The results for gasoline-range TPH in MW-03 and MW-03-Dup were reported at concentrations 1 to 2 times the RL; therefore, the results for gasoline range organics in MW-03 and MW-03-Dup were qualified as estimated and flagged ‘J’ based on this method blank detection.

3. Surrogates – Acceptable except as noted below:

VOCs by EPA Method 8260D – The percent recoveries for 1,2-Dichloroethane-d4 exceeded the control limits of 70-130% in the following samples:

Sample	Recovery
MW-06	131%
MW-10	144%
MW-15	153%
MW-16	154%
MW-18	154%
MW-20	163%
MW-16 MS	156%
MW-16 MSD	163%
MB (WG2154295)	144%
LCS (WG2154295)	165%

MS – matrix spike
MSD – matrix spike duplicate
MB – method blank
LCS – laboratory control sample

Data were not qualified based on surrogate outliers in QC samples (MS, MSD, MB, and LCS). VOCs were not detected in MW-06, MW-10, MW-15, MW-16, MW-18, and MW-20; therefore, no data were qualified based on these elevated surrogate recoveries.

4. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) – Acceptable

5. Matrix Spike/Matrix Spike Duplicate (MS/MSD) – Acceptable except as noted below:

General – MS/MSDs for all organic analyses were performed using MW-16. Results were acceptable with the following exceptions.

VOCs by EPA Method 8260D – The relative percent difference (RPD) for ethylbenzene (29.2%) in the MS/MSD associated with MW-16 exceeded the control limit of 27%. The percent recoveries for the MS and MSD were within control limits; therefore, no data were qualified based on this RPD exceedance.

Dissolved Gases by EPA Method RSK175 – In addition to MW-16, an MS/MSD was performed using a sample from an unrelated project. Results were acceptable.

6. Laboratory Duplicate – Acceptable where applicable

Dissolved Methane by EPA Method RSK-175 – Laboratory duplicates were performed using MW-12 and MW-16. Results were comparable.

Four samples from unrelated projects were also used to perform laboratory duplicates. Results were comparable for all analytes reported at concentrations greater than five times the reporting limits.

7. Field Duplicate – Acceptable

   General – A field duplicate was submitted for MW-03 and identified as MW-03-Dup. Results were comparable for all analytes reported at concentrations greater than five times the reporting limits.

8. Reporting Limits – Acceptable

9. Other Items of Note:

   Diesel Range and Residual Range Organics by NWTPH-Dx –. The laboratory noted that the chromatographic pattern present in MW-02, MW-03 and MW-03-Dup resembled hydraulic oil and the chromatographic patterns present in MW-04, MW-08, MW-11, MW-12, MW-14, MW-16, and MW-17 did not match the laboratory standard chromatograms for diesel and/or motor. No data were qualified based on these qualitative observations.

Dissolved Manganese

Samples were analyzed for dissolved manganese by EPA Method 6010B.

1. Holding Times – Acceptable

2. Blanks – Acceptable

3. Laboratory Control Sample (LCS) – Acceptable

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) – Acceptable

   An MS/MSD was performed using MW-16. Results were acceptable.

5. Field Duplicate – Acceptable

   A field duplicate was submitted for MW-03 and identified as MW-03-Dup. Results were comparable.

6. Reporting Limits – Acceptable

Conventional Analyses

Samples were analyzed for sulfate and alkalinity by the methods identified in the introduction of this report.

1. Holding Times – Acceptable

2. Blanks – Acceptable

3. Laboratory Control Sample (LCS) – Acceptable

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) – Acceptable where applicable

   Sulfate by EPA Method 300.0 – MS/MSDs were performed using MW-02 and MW-16. The following percent recoveries were below the control limits of 80-120%:

Sample	MS Recovery	MSD Recovery
MW-02	51.2%	49.7%
MW-16	42.1%	41.3%

   The results for sulfate in MW-02 and MW-16 were qualified as estimated and flagged 'J' based on these MS/MSD recoveries.

5. Laboratory Duplicate – Acceptable

   Sulfate by EPA Method 300.0 – Laboratory duplicates were performed using MW-02 and MW-16. Results were comparable.

   Alkalinity by SM 2320B – Laboratory duplicates were performed using MW-02 and MW-21. Results were comparable.

6. Field Duplicate – Acceptable

   General – A field duplicate was submitted for MW-03 and identified as MW-03-Dup. Results were comparable.

7. Reporting Limits – Acceptable

8. Other Items of Note:

   Alkalinity by SM 2320B – The laboratory indicated the presence of headspace in all the samples associated with this laboratory group. The analysis method requires the absence of headspace in the sample containers, therefore; the results for alkalinity in all the samples were qualified as estimated and flagged 'J' based on the presence of headspace.

Overall Assessment of Data

The data reported in this laboratory group, as qualified, are usable for meeting project objectives. The completeness for Pace laboratory group L1667311 is 100%.

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Summary Data Quality Review
Chevron Pipeline Company Pasco Bulk Terminal
October 2023 Semi-Annual Groundwater Sampling
Laboratory Group: L1667311

Table 1 – Summary of Qualified Data

Sample ID	Laboratory ID	Method	Analyte	Laboratory Result	Units	Final Result	Reason Code
MW-02	L1667311-01	300.0	Sulfate	88300	ug/L	88300 J	m
MW-02	L1667311-01	SM2320 B	Alkalinity, total (as $CaCO_3$)	671000	ug/L	671000 J	hs
MW-03	L1667311-02	NWTPH-Gx	Gasoline Range Organics	140	ug/L	140 J	bl
MW-03	L1667311-02	SM2320 B	Alkalinity, total (as $CaCO_3$)	595000	ug/L	595000 J	hs
MW-04	L1667311-03	SM2320 B	Alkalinity, total (as $CaCO_3$)	195000	ug/L	195000 J	hs
MW-06	L1667311-04	SM2320 B	Alkalinity, total (as $CaCO_3$)	175000	ug/L	175000 J	hs
MW-07	L1667311-05	SM2320 B	Alkalinity, total (as $CaCO_3$)	203000	ug/L	203000 J	hs
MW-08	L1667311-06	SM2320 B	Alkalinity, total (as $CaCO_3$)	200000	ug/L	200000 J	hs
MW-10	L1667311-07	SM2320 B	Alkalinity, total (as $CaCO_3$)	193000	ug/L	193000 J	hs
MW-11	L1667311-08	SM2320 B	Alkalinity, total (as $CaCO_3$)	298000	ug/L	298000 J	hs
MW-12	L1667311-09	SM2320 B	Alkalinity, total (as $CaCO_3$)	507000	ug/L	507000 J	hs
MW-14	L1667311-10	SM2320 B	Alkalinity, total (as $CaCO_3$)	226000	ug/L	226000 J	hs
MW-15	L1667311-11	SM2320 B	Alkalinity, total (as $CaCO_3$)	218000	ug/L	218000 J	hs
MW-16	L1667311-12	300.0	Sulfate	109000	ug/L	109000 J	m
MW-16	L1667311-12	SM2320 B	Alkalinity, total (as $CaCO_3$)	215000	ug/L	215000 J	hs
MW-17	L1667311-13	SM2320 B	Alkalinity, total (as $CaCO_3$)	317000	ug/L	317000 J	hs
MW-18	L1667311-14	SM2320 B	Alkalinity, total (as $CaCO_3$)	242000	ug/L	242000 J	hs
MW-19	L1667311-15	SM2320 B	Alkalinity, total (as $CaCO_3$)	259000	ug/L	259000 J	hs
MW-20	L1667311-16	SM2320 B	Alkalinity, total (as $CaCO_3$)	188000	ug/L	188000 J	hs
MW-21	L1667311-17	SM2320 B	Alkalinity, total (as $CaCO_3$)	193000	ug/L	193000 J	hs
MW-22	L1667311-18	SM2320 B	Alkalinity, total (as $CaCO_3$)	194000	ug/L	194000 J	hs
MW-23	L1667311-19	SM2320 B	Alkalinity, total (as $CaCO_3$)	197000	ug/L	197000 J	hs
MW-03-Dup	L1667311-20	NWTPH-Gx	Gasoline Range Organics	130	ug/L	130 J	bl
MW-03-Dup	L1667311-20	SM2320 B	Alkalinity, total (as $CaCO_3$)	604000	ug/L	604000 J	hs

Notes:
bl – laboratory blank contamination
$CaCO_3$ – calcium carbonate
hs – headspace
ID - identification
J – estimated value
m – matrix spike recoveries
ug/L – microgram per liter

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