



November 20, 2022
Project 2004-0003

Ms. Jing Song
Washington Department of Ecology -
Toxic Cleanup Program, NWRO
15700 Dayton Avenue North
Shoreline, Washington 98133

Re: Quarterly Groundwater Monitoring and Remedial Operations Report – September 2022, Former Provisioner’s Express, Inc. Facility, 2102 West Valley Highway North, Auburn, Washington, Ecology Facility ID 91612121, Cleanup Site ID 6847, VCP Project No. 3206

Dear Ms. Song:

A&M Engineering and Environmental Services, Inc. (A&M), on behalf of Commerce Road Terminals, LLC (CRT), has prepared this groundwater monitoring and remedial operations report to provide the results of quarterly groundwater monitoring and remedial operations completed at the former Provisioner’s Express, Inc. (Provisioner’s) facility (Site) located at 2102 West Valley Highway North in Auburn, Washington. This report presents the details and findings of the groundwater monitoring activities conducted at the Site on September 14, 2022 for the July through September 2022 monitoring period.

SITE DESCRIPTION

The former Provisioner’s facility is located at 2102 West Valley Highway North, Auburn, Washington, east of the intersection of 22nd street Northwest and West Valley Highway North, northwest quarter of Section 12, Township 21 North, Range 4 East, Willamette Meridian in King County, Washington (Figure 1). The property is listed as Tax Parcel No. 1221049034 and the zoning is designated M-1, Light Industrial.

The facility is currently operated by Estes Express Lines (Estes), a motor freight transportation company. Estes uses the facility as a trucking terminal that includes a maintenance garage. There are currently no active underground storage tanks (USTs) on the facility.

The property is fully paved or covered by buildings and has a storm water conveyance system consisting of catch basins that are connected to an oil/water separator through underground piping with discharge to the municipal sewer system. Pavement is primarily asphalt with concrete pads surrounding the on-Site buildings and loading bays.

The topography of the property is relatively flat with an approximate elevation of 65 feet above mean sea level (msl). Mill Creek and the White River Park Wetland System are the nearest surface water bodies and are located approximate 200 feet to the southeast of the Site. A drainage ditch flowing to the White River Park Wetland System is present near the south property boundary, approximately 40 feet south of the Site. The property and the Site are separated from Mill Creek and the White River Park Wetland System by an adjoining property. The nearest major surface water body, the Green River, is located approximately 1.7 miles east of the Site.

The property contains a single Washington Department of Ecology (Ecology) Model Toxics Control Act (MTCA) site that is defined by the lateral and vertical extent of soil and groundwater impacted by diesel and oil range petroleum hydrocarbons (TPH-d and TPH-o) at concentrations greater than applicable MTCA Method A Cleanup Levels (CULs). Under the MTCA program, the Facility Site Identification No. is 91612121, Cleanup Site Identification No. is 6847, and in July 2018 the Voluntary Cleanup Program (VCP) number was change from NW2532 to VCP No. 3206 when CRT became responsible for the Site cleanup.

BACKGROUND

Soil and groundwater at the Site were impacted by petroleum hydrocarbon releases from conveyance piping related to a 550-gallon used oil UST located near the northwest corner of the truck maintenance building (Figure 2). The UST and approximately 350 cubic yards of petroleum-contaminated soil (PCS) were removed for disposal off-Site, and four monitoring wells, designated MW-1, MW-2, MW-3, and MW-4, were constructed in December 1998 (EMR, 1999).

In January 2000, Ecology issued a conditional No Further Action (NFA) determination for the Site. The NFA contained the condition that quarterly groundwater monitoring and reporting be continued until the *site demonstrates sustained, continuous compliance with Model Toxics Control Act (MTCA) Groundwater Cleanup Levels (CULs) for at least one year*. The NFA also stipulated that analytical results for groundwater compliance *shall include BTEX (benzene, toluene, ethylbenzene, and xylene), diesel, and heavy oils*. Available records indicate that the monitoring wells were sampled approximately every quarter from December 1998 until October 2002.

In November 2002, the Site owner petitioned for a full NFA determination based on three (3) years of data demonstrating that benzene groundwater concentrations greater than MTCA Method A CULs was confined to the area on the north side of the maintenance building around MW-2. At that time, the sample collected from MW-2 had a gasoline range petroleum hydrocarbon (TPH-g) concentration of 180 micrograms per liter ($\mu\text{g/L}$) and a benzene concentration of 12.0 $\mu\text{g/L}$. The reported TPH-g concentration was less than the MTCA Method A CUL of 800 $\mu\text{g/L}$. However, the benzene concentration exceeded the MTCA Method A CUL of 5 $\mu\text{g/L}$. No other

BTEX compounds, TPH-d, or TPH-o were reported in the sample collected from MW-2. Reported contaminant concentrations for the samples collected from the remaining monitoring wells were also below MTCA Method A CULs.

Groundwater sampling was discontinued in late 2002 and the Site did not receive a full NFA determination, due to the benzene concentration exceeding the MTCA Method A CUL in the samples from MW-2. Records indicate that the Site was subsequently dropped from Ecology's VCP due to inactivity.

The Site re-entered the VCP in August 2011 and was assigned VCP No. NW 2532. Quarterly groundwater sampling of the four on-Site wells was resumed in August 2011. On March 26, 2012, Ecology notified the Site owner that the January 2000 conditional NFA determination was rescinded because the benzene concentrations in groundwater samples collected from well MW-2 remained greater than the MTCA Method A CUL and the previous groundwater remedy (excavation of petroleum impacted soils followed by groundwater monitoring) did not achieve and maintain compliance with the applicable MTCA Method A CULs.

On November 28, 2012, a 12,000-gallon diesel fuel UST was decommissioned by removal south of the truck maintenance building (Figure 2). According to available information, the UST was emptied and removed from service in 1998 when the 550-gallon waste oil UST was decommissioned and had not been operated between 1998 and 2012. EPI personnel oversaw the UST decommissioning activities and collected nine (9) soil samples and a water sample from the excavation. The diesel contaminated water was reported in the water from the excavation and was reportedly rinseate from the UST that was spilled as the UST was removed from the excavation due to improper rigging and hoisting. EPI prepared the *Underground Storage Tank Site Assessment Report* (EPI, 2013a), dated January 4, 2013, for submittal to Ecology's Underground Storage Tank Division.

In an opinion letter dated April 22, 2013, Ecology requested installation of two additional monitoring wells designated MW-5 and MW-6. Well MW-5 was installed at the southwest corner of the truck maintenance building, near the on-Site oil/water separator (OWS), to monitor groundwater downgradient of MW-1. Well MW-6 was installed at the southeast corner of the former 12,000-gallon diesel UST excavation to evaluate groundwater quality based on the reported petroleum hydrocarbon concentrations in a water sample collected from the in the UST excavation (EPI, 2013b).

In October 2013, EPI performed a site investigation at Ecology's request. The investigation included advancing nine (9) direct-push soil borings DP-1 through DP-9 (Figure 2); five were located around MW-1 and four were located downgradient of MW-6. Laboratory analytical results indicated soil impacts around MW-1 were limited to location DP-3, which was immediately adjacent to the exterior wall of the northwest corner of the Truck Maintenance Building. This result was anticipated

because a small quantity of impacted soil was left in place immediately under the truck maintenance building footings to maintain geotechnical stability during impacted soil excavation. None of the remaining soil samples had detections for petroleum hydrocarbons (EPI, 2013b).

On August 26, 2016, EPI directed the advancement of two soil borings, designated BH-1 and BH-2 for soil sample collection, and construction of two conditional point of compliance (POC) monitoring wells, designated MW-7 and MW-8. BH-1 and BH-2 were advanced east of the former 12,000-gallon diesel UST to evaluate subsurface conditions immediately downgradient of the former UST. Well MW-7 was installed southeast and downgradient of the former 12,000-gallon diesel UST and existing well MW-6. Well MW-8 was installed northeast of MW-7, also downgradient of the former 12,000-gallon diesel UST and existing well MW-6. The purpose of the POC monitoring wells was to monitor groundwater conditions downgradient of the former 12,000-gallon diesel UST (EPI, 2017a). The soil boring and monitoring wells locations are presented on Figure 2.

On August 11, 2017, monitoring well MW-9 was installed by Holt Services near the northwest corner of the truck maintenance building (Figure 2). The additional well was requested by CRT as part of their environmental due diligence prior to their purchase of the property. Historical direct-push sampling data from this location indicated TPH-d and TPH-o was above MTCA Method A in a groundwater sample collected from the boring (EPI, 2017b).

On May 17, 2018, during collection of depth-to-water measurements, asphalt sealant was encountered in the monument for MW-8. After removal of the asphalt sealant, it was discovered that the locking expansion plug for the monitoring well was loose, and that asphalt sealant had seeped past the expansion plug. Visible material was skimmed from the well surface and the monitoring well was purged of approximately 30 gallons of groundwater prior to sampling. TPH-d and TPH-o were reported above MTCA Method A cleanup levels in the groundwater sample collected on May 17, 2018.

On June 5, 2018, Environmental Technologies Group, Inc. (ETG) cleaned the casing for monitoring well MW-8, using clean absorbent pads to wipe the well casing. Following cleaning, the well was developed by extracting water with a development pump beginning at the top of the groundwater surface and lowering the pump as groundwater dropped in elevation. This process was repeated approximately 15 times until the purge water no longer changed in color between purging events. A total of 25 gallons of groundwater was removed from the well. The well was resampled following cleaning and development. Though significant reduction in TPH-d and TPH-o concentrations were reported, laboratory analytical results still reported TPH-d and TPH-o above MTCA Method A cleanup levels in the groundwater sample.

On September 17, 2018, ETG submitted *Groundwater Assessment Work Plan* (ETG, 2018) proposing the construction of a new groundwater monitoring well downgradient of MW-8. Ecology approved the groundwater monitoring well location in an Opinion Letter dated December 20, 2018 (Ecology, 2018).

On January 25, 2019, consistent with the Ecology approved *Groundwater Assessment Work Plan* (ETG, 2018), groundwater monitoring well MW-10 was constructed downgradient of MW-8 and surveyed. The monitoring well was developed and sampled during the first quarter groundwater monitoring event in February 2019. Laboratory analytical results indicated TPH-g, TPH-d, TPH-o, volatile organic compounds (VOCs), polychlorinated biphenyls (PCBs), carcinogenic polynuclear aromatic hydrocarbons (cPAHs) including naphthalene, 1-methyl naphthalene and 2-methyl naphthalene, and total lead were not reported at, or above, laboratory method reporting limits (MRLs) in the groundwater sample collected from the well.

In February 2020, following discussions with Ecology, groundwater monitoring was modified from a quarter frequency to a semi-annual frequency with events occurring during first and third quarter of the calendar year, the high and low groundwater elevation periods of the year. Groundwater monitoring was also modified to only include groundwater sample collection from well MW-9, as prior groundwater monitoring indicated samples collected from all other wells were compliant with MCTA Method A CULs.

In August 2022, following Ecology review of the June 2022 groundwater monitoring report, Ecology requested another quarterly groundwater monitoring event be completed to sample monitoring wells MW-6 and MW-9. Following technical discussion with Ecology, CRT decided to complete the monitoring event as requested by Ecology.

Remedial System

In 2014, because groundwater data indicated that natural attenuation of the residual TPH-d and TPH-o impacts was not occurring at a rate that would result in a reasonable restoration timeframe, an active groundwater remediation system was designed, installed, and operated for the area around MW-1 as described in the following.

In May 2014, EPI installed three shallow air injection (AI) wells at locations upgradient of MW-1 (Figure 2) to add dissolved oxygen (DO) to the groundwater. The increased DO concentrations in groundwater would stimulate existing aerobic bacteria by providing the oxygen necessary for those bacteria to metabolize dissolved petroleum hydrocarbons in groundwater at a higher rate.

Each of the shallow AI well was equipped with a 1-foot section of Kerfoot Technologies C-Sparger® screen set in a sand filter pack and set below groundwater at approximately 14 to 15 feet bgs. Pressurized air pumped through the C-Sparger® screens forces air, containing oxygen, into groundwater as microbubbles, greatly increasing the surface

area of the bubbles for more efficient oxygenation of the groundwater. The remaining well annulus was sealed using hydrated bentonite chips and the surface was completed with 8-inch diameter flush-mount steel monuments set in concrete.

An appropriately sized rotary vane air compressor was installed in the fenced area at the north end of the truck maintenance building to provide air to the shallow air injection wells. The shallow air injection wells are connected to the compressor using 1-inch diameter polyvinyl chloride (PVC) piping installed below grade to each of the well monuments. PVC air supply lines were installed in trenches that were appropriately backfilled and patched with asphalt at the surface to match the surrounding grade.

The remediation system was started and tested on May 15, 2014 after quarterly groundwater monitoring was completed. An electrical issue with the compressor's motor caused the air injection remediation system to shut down in August 2014. Analytical results from the August 2014 monitoring event indicated that TPH-d and TPH-o concentrations were not reported, at or above laboratory MRLs in the sample from MW-1. Based on the favorable result, remediation system operation was suspended at MW-1 from August 2014 to April 2015 so that groundwater data could be collected to demonstrate that groundwater was remediated to concentrations below Ecology MTCA Method A Groundwater CULs, and to provide data intended to demonstrate that contaminant concentration rebound was not occurring.

The positive response to operation of the air injection remediation system at MW-1 demonstrated that expansion to remediate impacted groundwater at MW-6 was warranted. In January 2015, EPI installed three additional shallow AI wells at locations upgradient of MW-6 (Figure 2). The three wells are constructed like the air injection wells at MW-1, equipped with 1-foot lengths of Kerfoot Technologies C-Sparger® screen set in a sand filter pack and set below groundwater at approximately 14 to 15 feet bgs.

Operation of the expanded air injection remediation system at MW-6 was initiated on April 3, 2015. The expanded system at MW-6 ran from April until June 2015 when a new electrical issue with the compressor's motor caused the air injection remediation system to shut down, requiring replacement.

Repairs to the air injection system were completed and the remediation system was restarted on February 3, 2016. However, the system was not operational during the June 21, 2016 groundwater monitoring event, and inspection revealed that the compressor motor was damaged due to overheating. EPI was informed that the system had been off for several weeks prior to the monitoring event.

EPI evaluated the potential reasons for the compressor motor overheating and the likely cause was low voltage power throughout the area, which was measured at 208 volts at the air injection system panel. The actual voltage was lower than the design voltage of 220-230 volts. EPI concluded that although the compressor motor was rated to operate

at 208 volts, voltage fluctuations below 208 volts caused high amperage on the motor, resulting in excessive heat that eventually burned-out the motor.

In November 2016, EPI installed a 1.5 horsepower, Republic Manufacturing, Model DRT-425 rotary vane compressor with a 208-volt-specific motor. Compressor operation was started on November 16, 2016. The system was operational before, and after the December 20, 2016 groundwater monitoring event. Sometime between the December 20, 2016 monitoring event and a Site visit by EPI personnel on March 20, 2017, the air injection system shut down. On March 20, 2017, EPI personnel inspected the compressor and determined that the rotary vanes were destroyed and required replacement. The compressor repair work was completed under warranty at the manufacturer's facility.

The repaired compressor was reconnected and returned to service on June 19, 2017. Both areas of the air injection system MW-1 and MW-6, were back in operation following the completion of groundwater monitoring on June 19, 2017.

Since installation in 2015, air injection well AI-6, located near monitoring well MW-6, consistently had little to no air flow. EPI tested, evaluated, and attempted to increase air flow through this point with no measurable improvement and determined that the well was plugged and unrepairable. On June 26, 2017, Holocene Drilling, under EPI direction, decommissioned AI-6 per Ecology requirements and replaced it with air injection well AI-6R.

The air injection system was inspected during a Site visit by EPI on December 14, 2017, and again during quarterly monitoring on December 20, 2017 and was operating as designed with no excessive heat or mechanical issues noted. EPI returned to the property on January 2, 2018 to re-sample wells MW-4, MW-6, and MW-6 and noted that the air compressor was not running. The compressor was replaced, and the air injection system re-started (EPI, 2018).

The air injection system continued to operate after repair in January 2018, with the exception of maintenance events and prior to groundwater monitoring events. Based on the November 2018 monitoring results, air injection system operation was suspended on December 6, 2018 and remained inactive until February 2021.

Based on the September 2020 semi-annual groundwater monitoring results, it was determined that operation of the air injection system would be beneficial in increasing the rate of degradation for residual contaminants in the vicinity of MW-9. On December 15, 2020, an attempt was made to restart the air injection system. It was discovered that the injection blower had been damaged by an attempted theft of the equipment. A new injection blower was installed on February 9, 2021, and the air injection system restarted. All six (6) air injection wells were opened, and the operating pressure set to approximately 11 pounds per square inch (psi).

On July 29, 2021, the air injection system was shutdown prior to the August 23, 2021, groundwater monitoring event. On August 23, 2021, following the groundwater sampling event the system was inspected and maintained. The AS System was restarted after system maintenance. The AS System condensate was drained, and flow and pressure data collected and recorded on an Air Sparging Treatment System Data Sheet (TSDS). A copy of the TSDS for the event is provided as Attachment A.

On August 30, 2021, following the receipt of groundwater monitoring analytical results, the AS System was shutdown.

GROUNDWATER MONITORING

On September 14, 2022, A&M conducted a quarterly groundwater monitoring event for the third quarter 2022 monitoring period. The monitoring event included collection of depth-to-water measurements from monitoring wells MW-2 through MW-10 and collection of a primary and duplicate groundwater sample from monitoring well MW-9 and a sample from MW-6. A depth-to-water measurement was not collected from MW-1 due to the presence of a solid waste dumpster over the monitoring well location. Depth-to-water measurements and groundwater elevation data are provided in Table 1.

Monitoring Procedures

During the monitoring event, groundwater samples were collected utilizing “low-flow” sampling techniques in general accordance with the United States Environmental Protection Agency (USEPA) *Low-Flow Groundwater Monitoring Procedures* (USEPA, 1996). Prior to sampling, depth-to-water measurements were used to determine the static water level in each well. During purging, field parameters including: pH, conductivity, temperature, oxidation-reduction (Redox), and dissolved oxygen were measured utilizing a flow-through cell. A groundwater sample was collected after at least three sequential field parameter readings had stabilized to within the limits specified in the USEPA procedure and the water level was below the top of the screened interval. Field sampling data, including depth-to-water at the completion of sampling were recorded on a field sampling data sheet (FSDS). A copy of the FSDS is provided as Attachment A.

Groundwater samples were collected from disposable discharge tubing connected to the peristaltic pump and transferred directly to laboratory-supplied containers with as little agitation as possible. Groundwater samples were labeled with a unique blind code and delivered in an iced cooler using chain-of-custody (COC) procedure to Pace Analytical Services, LLC (PACE), a State of Washington certified laboratory (No. C486), in Minneapolis, Minnesota.

All groundwater samples were analyzed for TPH-d and TPH-o by Ecology Method NWTPH-Dx. For quality assurance/quality control (QA/QC) purposes, a duplicate groundwater sample was also collected from monitoring well MW-9.

All purge water was stored on-Site in a United States Department of Transportation (USDOT) approved 55-gallon drum pending proper off-Site disposal.

Groundwater Elevation and Flow Direction

Based on the depth-to-water measurements collected on September 14, 2022, from the nine (9) monitoring wells, a groundwater elevation contour map was generated for the Site (Figure 3) using field measurements and data from well surveys completed on September 19, 2017 (MW-1 through MW-9) and February 5, 2019 (MW-10). Groundwater elevation data indicated a predominantly east-northeast groundwater flow direction, consistent with prior monitoring events. The horizontal groundwater gradient was relatively flat during the September 14, 2022 groundwater monitoring event.

Groundwater Analytical Results

A summary of the laboratory analytical results for the samples collected on September 14, 2022, from monitoring wells MW-6 and MW-9 are provided in Table 2 along with Ecology MTCA Method A CULs for comparison. TPH-d and TPH-o analytical results are also presented on Figure 4. A copy of the laboratory analytical report is provided as Attachment B.

Analytical results for groundwater samples collected on September 14, 2022, from monitoring wells MW-6 and MW-9 indicated the following:

Diesel Range Hydrocarbons

- TPH-d was not reported at, or above, the laboratory method reporting limit (MRL) in the sample collected from MW-6 and the primary and duplicate groundwater sample collected from monitoring well MW-9.

Oil Range Hydrocarbons

- TPH-o was reported above the laboratory MRL in the primary groundwater sample collected from monitoring well MW-9 at a concentration of 640 micrograms per liter ($\mu\text{g/L}$), above MTCA Method A CUL of 500 $\mu\text{g/L}$. TPH-o was not reported at, or above, the MRL in the sample collected from MW-6 and the duplicate sample collected from MW-9.

Total Diesel and Oil Range Hydrocarbons

- Total TPH was reported above the laboratory MRL in the primary groundwater sample collected from monitoring well MW-9 at a concentration of 640 $\mu\text{g/L}$, above MTCA Method A CUL of 500 $\mu\text{g/L}$. Total TPH was not reported at, or above, the MRL in the sample collected from MW-6 and the duplicate sample collected from MW-9.

GROUNDWATER ANALYSIS TREND CHARTS

In Ecology's Opinion Letter dated December 20, 2018 (Ecology, 2018) groundwater analysis trend charts were requested for monitoring wells MW-1, MW-3, MW-6, MW-8, and MW-9. During September 2022, only MW-6 and MW-9 were monitored. Copies of the groundwater analysis trend charts for MW-6 and MW-9 are provided as Attachment C. The trend chart indicates the following:

- Laboratory analyses for samples collected from MW-6 indicate the declining trend observed in May 2019 has continued in the area downgradient of the former diesel UST. TPH-d and TPH-o were not reported at, or above, laboratory MRLs in the September 2022 sample collected from MW-6, confirming the four quarters of compliance observed for the period of September 2018 through May 2019.
- Laboratory analyses for samples collected from MW-9 indicate a declining trend during the past 3-year monitoring period. Groundwater quality data for TPH-d were compliant with Ecology MTCA Method A for the fifth consecutive quarter since suspending remedial operation in August 2021. TPH-d has not been reported above the MRL in groundwater samples collected from MW-9 since September 2020. Until the primary groundwater sample collected in September 2022, TPH-o had never been reported in groundwater samples collected from MW-9 at concentrations above the MRL in twenty-nine samples. The historical data strongly indicates the primary sample from September 2022 is an anomalous sample and does not reflect actual groundwater quality.

REMEDIAL SYSTEM OPERATION

The air injection system operation will continue to be suspended. The air injection system is not scheduled to operate at this time.

SCHEDULED ACTIONS

The September 2022 groundwater monitoring data indicates: (1) groundwater quality in the vicinity of the former diesel UST area still compliant with MCTA Method A CULs, (2) TPH-d analytical results were compliant with Ecology MTCA Method A for the fifth consecutive quarter since suspending remedial operation in August 2021, and (3) the TPH-o concentrations reported in the duplicate sample collected from MW-9 is not consistent with historical TPH-o data and is not reflective of actual groundwater quality, and (4) a declining trend has been observed for groundwater quality in MW-9 for the last 3-years and the reported concentrations have been compliant with MTCA Method A CULs for the past six quarters of monitoring except for the anomalous TPH-o detection in the September 2022 duplicate sample. Additional groundwater monitoring is not proposed for the Site.

If there are any questions regarding this report, please call.

Sincerely,

A&M Engineering and Environmental Services, Inc.



Daniel J. Landry
Senior Project Manager



David M. Seaver, L.G.
Senior Geologist

Attachments: References
Limitations
Tables 1 and 2
Figures 1, 2, 3, and 4
Attachment A, B, and C



REFERENCES

- Ecology. 2018. Opinion Letter – Further Action at the Following Site: Site Name: Provisioner’s Express Inc., Site Address: 2102 West Valley Highway North, Auburn, Washington, 98001, Facility/Site No.: 91612121, VCP Project No.: 3206, Cleanup Site ID: 6847. State of Washington Department of Ecology. December 20.
- EMR. 1999. *Remedial Investigation/Feasibility Study*, Provisioners Express Auburn Facility, 2102 West Valley Highway, Auburn, Washington. Environmental Management Resources, Inc. March.
- EPI. 2013a. *Underground Storage Tank Site Assessment Report*, Estes Express Facility, 2102 West Valley Highway North, Auburn, Washington. Environmental Partners, Inc. January 4.
- EPI. 2013b. *Phase II Environmental Site Assessment Report*, Estes West Express Trucking Facility, 2102 West Valley Highway North, Auburn, Washington. Environmental Partners, Inc. December 9.
- EPI. 2017a. *September and December 2016 Groundwater Sampling Report – Twenty and Twenty-First Rounds*, Estes West Express Trucking Facility, 2102 West Valley Highway North, Auburn, Washington. Environmental Partners, Inc. February 24.
- EPI. 2017b. *September 2017 Groundwater Sampling Report – Twenty-Fourth Round*, Estes West Express Trucking Facility, 2102 West Valley Highway North, Auburn, Washington. Environmental Partners, Inc. October 3.
- EPI. 2018. *December 2017 – January 2018 Groundwater Sampling Report – Twenty-Fifth Round*, Estes West Express Trucking Facility, 2102 West Valley Highway North, Auburn, Washington. Environmental Partners, Inc. February 21.
- ETG. 2018. *Groundwater Assessment Work Plan*, Former Provisioner’s Express, Inc. Facility, 2102 West Valley Highway North, Auburn, Washington, Ecology Facility ID 91612121, Cleanup Site ID 6847, VCP Project No. 3206. Environmental Technologies Group, Inc. September 17.
- ETG. 2019. *Response to Ecology Opinion Letter*, Former Provisioner’s Express, Inc. Facility, 2102 West Valley Highway North, Auburn, Washington, Ecology

Facility ID 91612121, Cleanup Site ID 6847, VCP Project No. 3206.
Environmental Technologies Group, Inc. March 28.

USEPA. 1996. *Low-Flow Groundwater Monitoring Procedures*, USEPA/540/S-95/504,
United States Environmental Protection Agency. April.

LIMITATIONS

The services described in this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

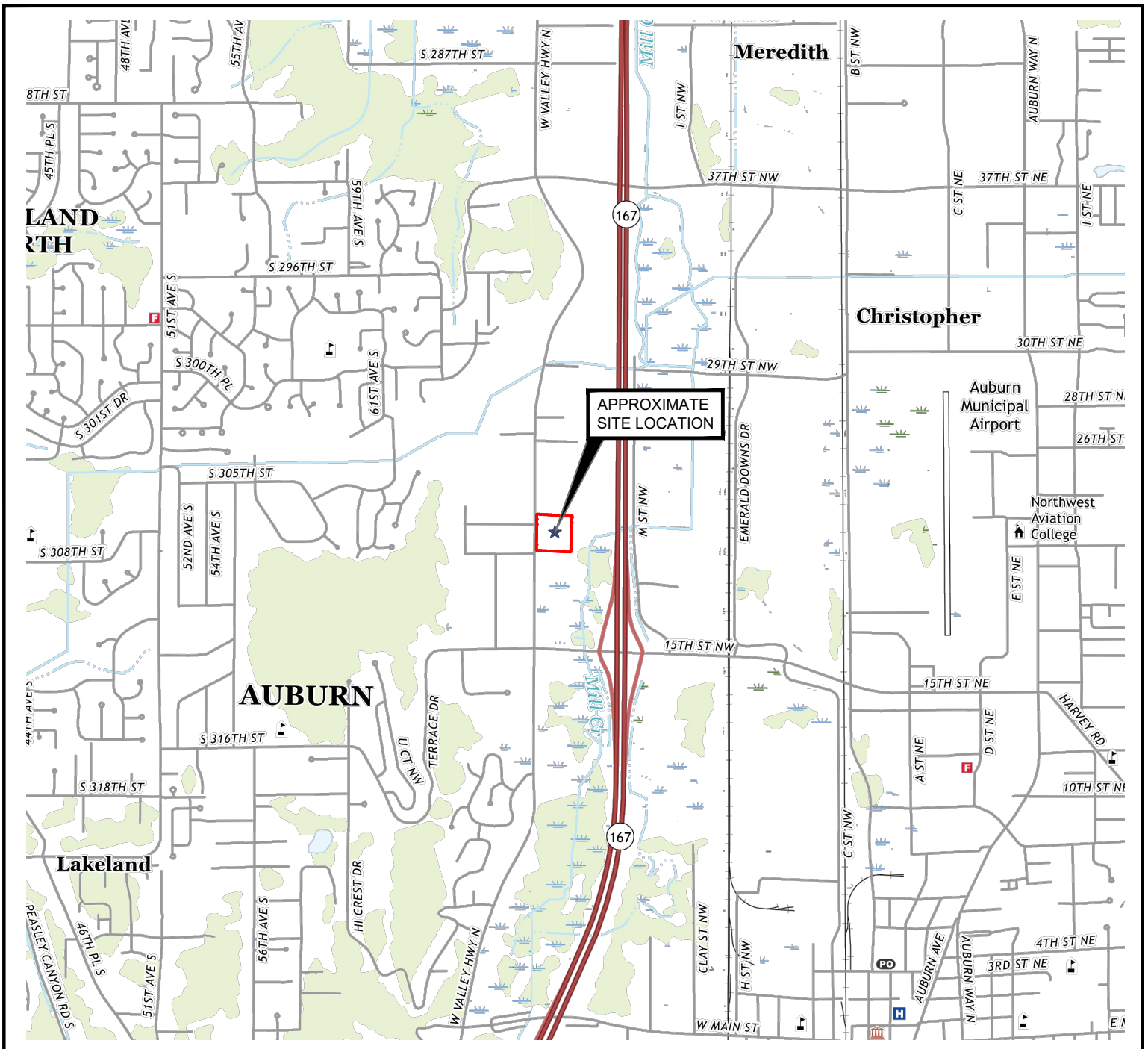
Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, nor the use of segregated portions of this report.

The purpose of a geologic/hydrogeologic study is to reasonably characterize existing site conditions based on the geology/hydrogeology of the area. In performing such a study, it is understood that a balance must be struck between a reasonable inquiry into the site conditions and an exhaustive analysis of each conceivable environmental characteristic. The following paragraphs discuss the assumptions and parameters under which such an opinion is rendered.

No investigation is thorough enough to describe all geologic/hydrogeologic conditions of interest at a given site. If conditions have not been identified during the study, such a finding should not therefore be construed as a guarantee of the absence of such conditions at the site, but rather as the result of the services performed within the scope, limitations, and cost of the work performed.

We are unable to report on or accurately predict events that may change the site conditions after the described services are performed, whether occurring naturally or caused by external forces. We assume no responsibility for conditions we were not authorized to evaluate, or conditions not generally recognized as predictable when services were performed.

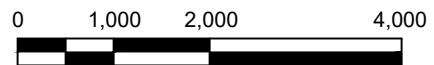
Geologic/hydrogeologic conditions may exist at the site that cannot be identified solely by visual observation. Where subsurface exploratory work was performed, our professional opinions are based in part on interpretation of data from discrete sampling locations that may not represent actual conditions at unsampled locations.



SOURCE: U.S.G.S. 7.5 MINUTE TOPOGRAPHIC QUADRANGLE
 AUBURN, WA AND POVERTY BAY, WA (2020)



Scale: 1"=2,000'



**A & M Engineering and
 Environmental Services, Inc.**

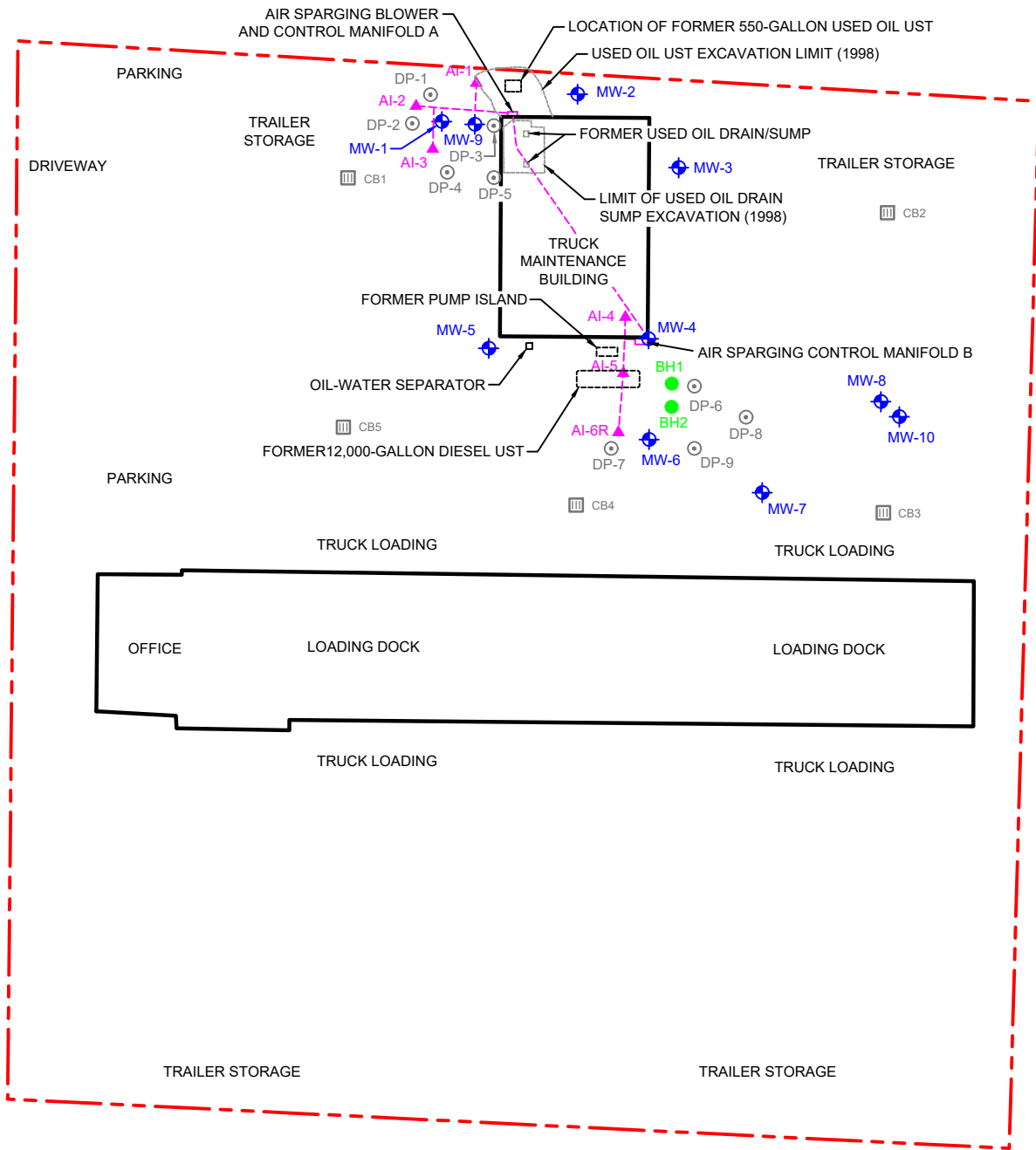
Consulting - Design - Construction - Remediation

SITE LOCATION MAP








QUARTERLY GROUNDWATER MONITORING REPORT - SEPTEMBER 2022
 FORMER PROVISIONERS EXPRESS FACILITY
 2102 WEST VALLEY HIGHWAY NORTH, AUBURN, WASHINGTON

SCALE: AS SHOWN	DATE: 9/30/22	FIGURE NO. 1
APPROVED BY: DJL	DRAWN BY: SRM	PROJECT NO. 2004-0003

WEST VALLEY HIGHWAY NORTH



LEGEND

-  AIR SPARGING WELL
-  MONITORING WELL
-  HOLLOW STEM AUGER BORING
-  DIRECT-PUSH BORING (OCTOBER 2013)
-  CATCH BASIN
-  UST UNDERGROUND STORAGE TANK
-  APPROXIMATE SITE PROPERTY BOUNDARY



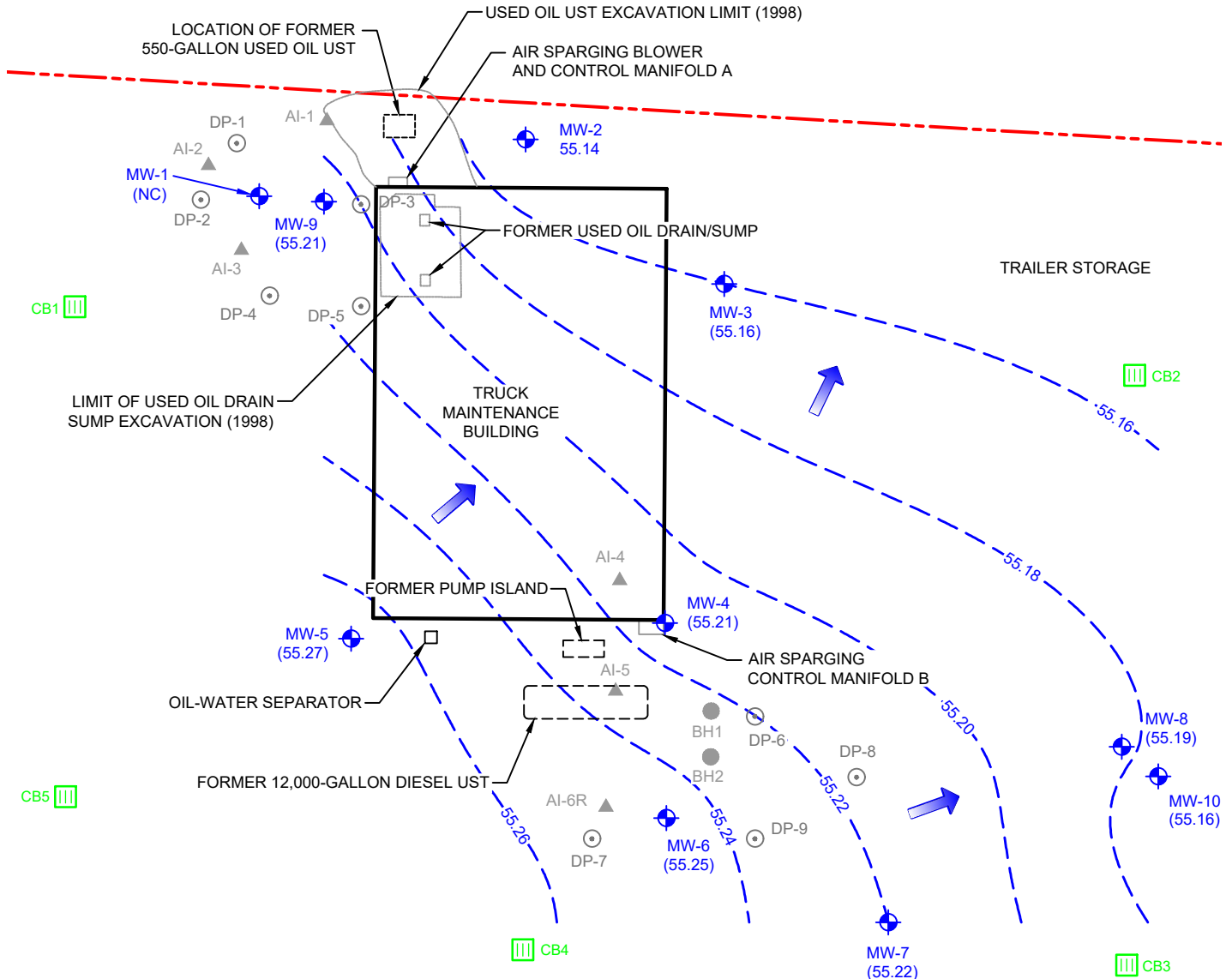
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A & M Engineering and Environmental Services, Inc.
 Consulting - Design - Construction - Remediation

SITE MAP
 QUARTERLY GROUNDWATER MONITORING REPORT - SEPTEMBER 2022
 FORMER PROVISIONERS EXPRESS FACILITY
 2102 WEST VALLEY HIGHWAY NORTH, AUBURN, WASHINGTON

SCALE: AS SHOWN	DATE: 9/30/22	FIGURE NO. 2
APPROVED BY: DJL	DRAWN BY: SRM	PROJECT NO. 2004-0003



LEGEND

- - - 56.90 - - - GROUNDWATER ELEVATION CONTOUR
- (55.90) GROUNDWATER ELEVATION
- (NC) NOT COLLECTED
- ➔ APPROXIMATE FLOW DIRECTION OF SHALLOW GROUNDWATER
- ⊕ MONITORING WELL
- ▲ AIR SPARGING WELL
- HOLLOW STEM AUGER BORING
- ⊙ DIRECT-PUSH BORING (OCTOBER 2013)
- ▤ CATCH BASIN
- UST UNDERGROUND STORAGE TANK
- - - - - APPROXIMATE SITE PROPERTY BOUNDARY

TRUCK LOADING

LOADING DOCK



Scale: 1"=40'

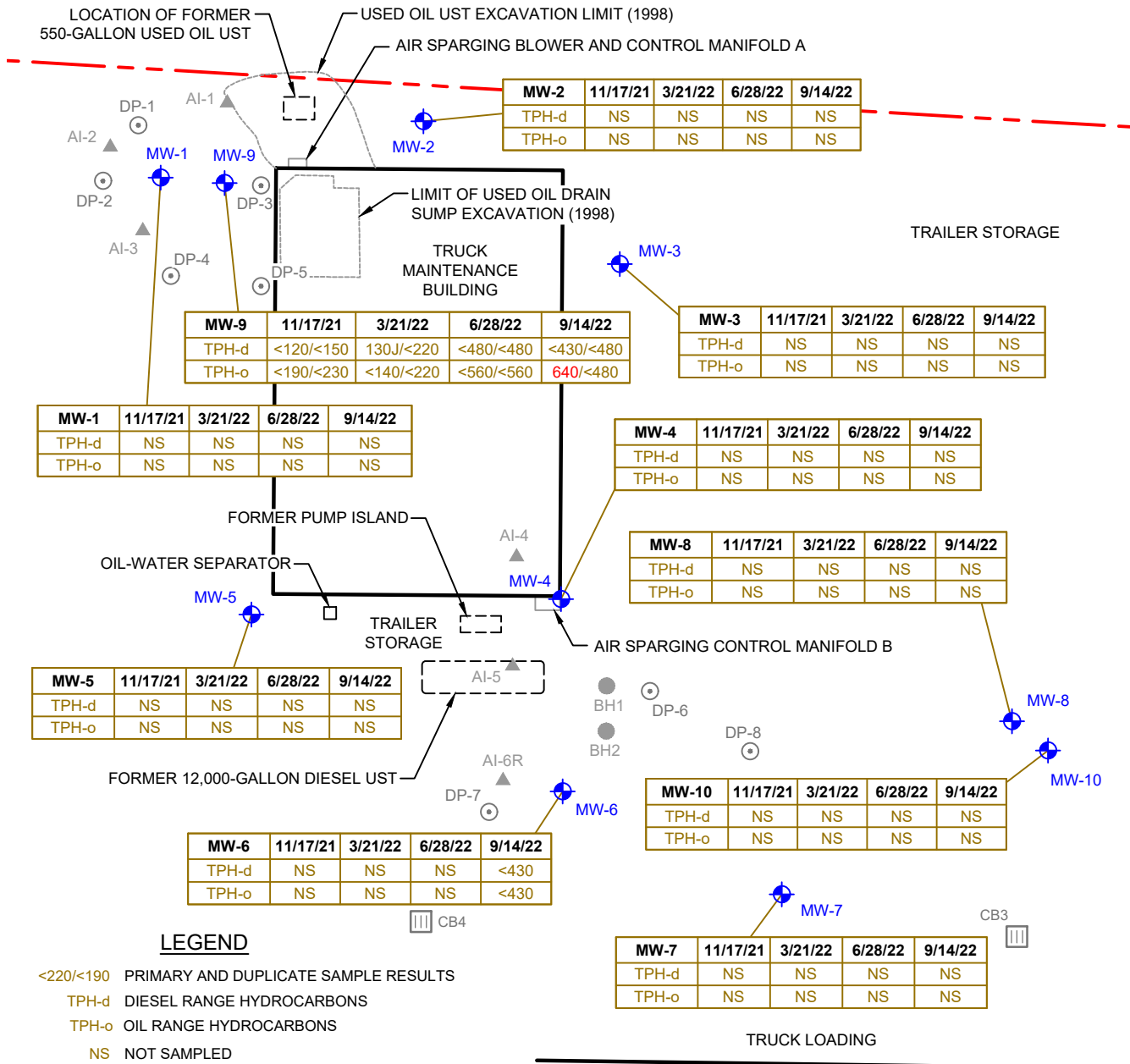


A & M Engineering and Environmental Services, Inc.

Consulting - Design - Construction - Remediation

GROUNDWATER CONTOUR - SEPTEMBER 14, 2022
 QUARTERLY GROUNDWATER MONITORING REPORT - SEPTEMBER 2022
 FORMER PROVISIONERS EXPRESS FACILITY
 2102 WEST VALLEY HIGHWAY NORTH, AUBURN, WASHINGTON

SCALE: AS SHOWN	DATE: 9/30/22	FIGURE NO. 3
APPROVED BY: DJL	DRAWN BY: SRM	PROJECT NO. 2004-0003



LEGEND

- <220/<190 PRIMARY AND DUPLICATE SAMPLE RESULTS
 - TPH-d DIESEL RANGE HYDROCARBONS
 - TPH-o OIL RANGE HYDROCARBONS
 - NS NOT SAMPLED
 - < NOT REPORTED AT OR ABOVE LABORATORY METHOD REPORTING LIMITS
 - RED** VALUE EXCEEDS MTCA METHOD A CLEANUP LEVEL
 - ▲ AIR SPARGING WELL
 - ◆ MONITORING WELL
 - HOLLOW STEM AUGER BORING
 - ⊙ DIRECT-PUSH BORING (OCTOBER 2013)
 - ▤ CATCH BASIN
 - UST UNDERGROUND STORAGE TANK
 - APPROXIMATE SITE PROPERTY BOUNDARY
 - J ESTIMATED CONCENTRATION, BELOW METHOD REPORTING LIMIT, ABOVE METHOD DETECTION LIMIT
- ALL ANALYTICAL RESULTS ARE IN MICROGRAMS PER LITER (µg/L)



Scale: 1"=40'



A & M Engineering and Environmental Services, Inc.
 Consulting - Design - Construction - Remediation

GROUNDWATER ANALYTICAL RESULTS
 QUARTERLY GROUNDWATER MONITORING REPORT - SEPTEMBER 2022
 FORMER PROVISIONERS EXPRESS FACILITY
 2102 WEST VALLEY HIGHWAY NORTH, AUBURN, WASHINGTON

SCALE: AS SHOWN	DATE: 9/30/22	FIGURE NO. 4
APPROVED BY: DJL	DRAWN BY: SRM	PROJECT NO. 2004-0003

**Table 1
Groundwater Elevation Summary**

Well Number/ TOC Elevation	Date of Measurement	Dissolved Oxygen (mg/L)	DTW (feet)	SWL (feet)	Change in SWL (feet)
MW-1 100.51 60.77	12/23/98	--	5.32	95.19	--
	01/05/99	--	5.01	95.50	0.31
	01/20/99	--	4.95	95.56	0.06
	02/02/99	--	5.01	95.50	-0.06
	08/12/11	--	6.12	54.65	--
	11/11/11	--	5.42	55.35	0.70
	02/10/12	--	4.76	56.01	0.66
	05/17/12	--	5.35	55.42	-0.59
	08/28/12	--	6.28	54.49	-0.93
	11/15/12	--	4.99	55.78	1.29
	02/14/13	--	5.22	55.55	-0.23
	05/16/13	--	5.42	55.35	-0.20
	08/14/13	0.21	6.17	54.60	-0.75
	11/25/13	0.29	5.06	55.71	1.11
	02/20/14	0.25	3.62	57.15	1.44
	05/15/14	0.41	4.76	56.01	-1.14
	08/14/14	7.69	7.32	53.45	-2.56
	11/24/14	0.67	5.22	55.55	2.10
	03/31/15	0.45	4.99	55.78	0.23
	06/29/15	0.15	6.23	54.54	-1.24
	09/28/15	0.40	6.37	54.40	-0.14
	03/03/16	10.71	2.18	58.59	4.19
	06/21/16	4.82	5.82	54.95	-3.64
	09/16/16	0.16	5.99	54.78	-0.17
	12/20/16	7.69	4.92	55.85	1.07
	03/24/17	1.99	3.33	57.44	1.59
	06/16/17	0.93	4.25	56.52	-0.92
	09/05/17	0.49	6.17	54.60	-1.92
	12/20/17	11.2	4.45	56.32	1.72
	05/17/18	5.90	5.50	55.27	-1.05
08/23/18	3.37	6.54	54.23	-1.04	
11/15/18	7.77	5.40	55.37	1.14	
02/19/19	--	3.88	56.89	1.52	
05/21/19	--	5.19	55.58	-1.31	
08/21/19	--	5.64	55.13	-0.45	
11/12/19	0.43	4.92	55.85	0.72	
03/04/20	--	4.25	56.52	0.67	
09/03/20	--	5.50	55.27	-1.25	
03/19/21	--	4.58	56.19	0.92	
08/23/21	--	NC	--	--	
11/17/21	--	NC	--	--	
03/21/22	--	NC	--	--	
06/28/22	--	NC	--	--	
09/14/22	--	NC	--	--	
MW-2 100.56 60.85	12/23/98	--	6.89	93.67	--
	01/05/99	--	5.09	95.47	1.80
	01/20/99	--	4.48	96.08	0.61
	02/02/99	--	5.09	95.47	-0.61
	08/12/11	--	5.51	55.34	--
	11/11/11	--	5.13	55.72	0.38
	02/10/12	--	4.94	55.91	0.19
	05/17/12	--	5.42	55.43	-0.48
	08/28/12	--	6.40	54.45	-0.98
	11/15/12	--	5.12	55.73	1.28
	02/14/13	--	5.32	55.53	-0.20

**Table 1
Groundwater Elevation Summary**

Well Number/ TOC Elevation	Date of Measurement	Dissolved Oxygen (mg/L)	DTW (feet)	SWL (feet)	Change in SWL (feet)
MW-2 Continued	05/16/13	--	5.48	55.37	-0.16
	08/14/13	0.58	6.33	54.52	-0.85
	11/25/13	0.27	5.14	55.71	1.19
	02/20/14	3.08	2.23	58.62	2.91
	05/15/14	0.12	4.86	55.99	-2.63
	08/14/14	0.36	4.93	55.92	-0.07
	11/24/14	0.14	3.70	57.15	1.23
	03/31/15	2.12	5.02	55.83	-1.32
	06/29/15	0.28	6.36	54.49	-1.34
	09/28/15	0.84	6.50	54.35	-0.14
	03/03/16	1.34	2.64	58.21	3.86
	06/21/16	0.74	5.95	54.90	-3.31
	09/16/16	0.15	6.13	54.72	-0.18
	12/20/16	0.87	4.71	56.14	1.42
	03/24/17	--	3.09	57.76	1.62
	06/16/17	0.51	4.75	56.10	-1.66
	09/05/17	0.55	6.32	54.53	-1.57
	12/20/17	4.41	4.21	56.64	2.11
	05/17/18	0.56	5.60	55.25	-1.39
	08/23/18	--	6.68	54.17	-1.08
	11/15/18	--	5.44	55.41	1.24
	02/19/19	--	4.12	56.73	1.32
	05/21/19	--	5.30	55.55	-1.18
	08/21/19	--	5.81	55.04	-0.51
	11/12/19	--	4.89	55.96	0.92
	03/04/20	--	4.67	56.18	0.22
	09/03/20	--	5.68	55.17	-1.01
	03/19/21	--	4.62	56.23	1.06
08/23/21	--	6.09	54.76	-1.47	
11/17/21	--	3.10	57.75	2.99	
03/21/22	--	3.90	56.95	-0.80	
06/28/22	--	4.95	55.90	-1.05	
09/14/22	--	5.71	55.14	-0.76	
MW-3 100.56 60.80	12/23/98	--	5.44	95.12	--
	01/05/99	--	5.11	95.45	0.33
	01/20/99	--	4.57	95.99	0.54
	02/02/99	--	5.11	95.45	-0.54
	08/12/11	--	5.54	55.26	--
	11/11/11	--	8.90	51.90	-3.36
	02/10/12	--	5.05	55.75	3.85
	05/17/12	--	5.60	55.20	-0.55
	08/28/12	--	6.40	54.40	-0.80
	11/15/12	--	5.25	55.55	1.15
	02/14/13	--	5.38	55.42	-0.13
	05/16/13	--	5.56	55.24	-0.18
	08/14/18	0.37	6.31	54.49	-0.75
	11/25/13	0.41	5.22	55.58	1.09
	02/20/14	0.26	4.34	56.46	0.88
	05/15/14	0.77	5.03	55.77	-0.69
	08/14/14	0.29	6.28	54.52	-1.25
	11/24/14	0.05	5.21	55.59	1.07
	03/31/15	1.24	5.15	55.65	0.06
	06/29/15	0.25	6.37	54.43	-1.22
09/28/15	0.25	6.51	54.29	-0.14	
03/03/16	1.48	4.55	56.25	1.96	
06/21/16	0.90	5.93	54.87	-1.38	

**Table 1
Groundwater Elevation Summary**

Well Number/ TOC Elevation	Date of Measurement	Dissolved Oxygen (mg/L)	DTW (feet)	SWL (feet)	Change in SWL (feet)
MW-3 Continued	09/16/16	0.11	6.09	54.71	-0.16
	12/20/16	1.94	5.38	55.42	0.71
	03/24/17	--	4.57	56.23	0.81
	06/16/17	0.29	5.23	55.57	-0.66
	09/05/17	0.21	6.30	54.50	-1.07
	12/20/17	0.78	4.91	55.89	1.39
	05/17/18	0.71	5.63	55.17	-0.72
	08/23/18	--	6.63	54.17	-1.00
	11/15/18	1.91	5.48	55.32	1.15
	02/19/19	0.34	4.77	56.03	0.71
	05/21/19	0.36	5.31	55.49	-0.54
	08/21/19	0.21	5.75	55.05	-0.44
	11/12/19	--	5.07	55.73	0.68
	03/04/20	--	4.72	56.08	0.35
	09/03/20	--	5.62	55.18	-0.90
	03/19/21	--	4.58	56.22	1.04
	08/23/21	--	6.05	54.75	-1.47
	11/17/21	--	3.28	57.52	2.77
	03/21/22	--	4.29	56.51	-1.01
	06/28/22	--	4.96	55.84	-0.67
09/14/22	--	5.64	55.16	-0.68	
MW-4 100.61 60.93	02/02/99	--	5.11	95.50	--
	08/12/11	--	6.37	54.56	--
	11/11/11	--	5.65	55.28	0.72
	02/10/12	--	5.20	55.73	0.45
	05/17/12	--	5.63	55.30	-0.43
	08/28/12	--	6.50	54.43	-0.87
	11/15/12	--	5.36	55.57	1.14
	02/14/13	--	5.50	55.43	-0.14
	05/16/13	--	5.67	55.26	-0.17
	08/14/13	0.18	6.42	54.51	-0.75
	11/25/13	--	5.31	55.62	1.11
	02/20/14	0.37	4.45	56.48	0.86
	05/15/14	0.45	5.14	55.79	-0.69
	08/14/14	0.27	6.33	54.60	-1.19
	11/24/14	0.04	5.27	55.66	1.06
	03/31/15	0.98	5.27	55.66	0.00
	06/29/15	0.15	6.45	54.48	-1.18
	09/28/15	0.27	6.62	54.31	-0.17
	03/03/16	4.79	3.20	57.73	3.42
	06/21/16	0.49	6.11	54.82	-2.91
	09/16/16	0.64	6.40	54.53	-0.29
	12/20/16	0.75	6.32	54.61	0.08
	03/24/17	0.23	4.69	56.24	1.63
	06/16/17	0.24	5.36	55.57	-0.67
	09/05/17	0.58	6.39	54.54	-1.03
	12/20/17	0.75	5.00	55.93	1.39
	01/02/18	1.52	5.00	55.93	0.00
	05/17/18	0.57	5.74	55.19	-0.74
	08/23/18	--	6.73	54.20	-0.99
	11/15/18	--	5.55	55.38	1.18
02/19/19	--	4.90	56.03	0.65	
05/21/19	--	5.41	55.52	-0.51	
08/21/19	--	5.83	55.10	-0.42	
11/12/19	--	5.22	55.71	0.61	
03/04/20	--	4.81	56.12	0.41	

**Table 1
Groundwater Elevation Summary**

Well Number/ TOC Elevation	Date of Measurement	Dissolved Oxygen (mg/L)	DTW (feet)	SWL (feet)	Change in SWL (feet)
MW-4 Continued	09/03/20	--	5.70	55.23	-0.89
	03/19/21	--	4.75	56.18	0.95
	08/23/21	--	6.11	54.82	-1.36
	11/17/21	--	4.21	56.72	1.90
	03/21/22	--	4.39	56.54	-0.18
	06/28/22	--	5.05	55.88	-0.66
	09/14/22	--	5.72	55.21	-0.67
MW-5 60.90	08/14/13	0.21	6.31	54.59	--
	11/25/13	--	5.24	55.66	1.07
	02/20/14	--	4.38	56.52	0.86
	05/15/14	0.29	5.06	55.84	-0.68
	08/14/14	--	6.31	54.59	-1.25
	11/24/14	0.08	5.24	55.66	1.07
	03/31/15	1.09	5.17	55.73	0.07
	06/29/15	0.28	6.35	54.55	-1.18
	09/28/15	0.52	6.51	54.39	-0.16
	03/03/16	2.03	4.59	56.31	1.92
	06/21/16	0.40	5.96	54.94	-1.37
	09/16/16	0.10	6.11	54.79	-0.15
	12/20/16	1.09	5.16	55.74	0.95
	03/24/17	--	4.61	56.29	0.55
	06/16/17	0.30	5.27	55.63	-0.66
	09/05/17	0.51	6.27	54.63	-1.00
	12/20/17	0.93	4.92	55.98	1.35
	01/02/18	1.20	4.92	55.98	0.00
	05/17/18	0.95	5.65	55.25	-0.73
	08/23/18	--	6.58	54.32	-0.93
	11/15/18	--	5.44	55.46	1.14
	02/19/19	--	4.80	56.10	0.64
	05/21/19	--	5.31	55.59	-0.51
	08/21/19	--	5.73	55.17	-0.42
	11/12/19	--	5.06	55.84	0.67
	03/04/20	--	4.72	56.18	0.34
	09/03/20	--	5.61	55.29	-0.89
	03/19/21	--	4.69	56.21	0.92
08/23/21	--	5.98	54.92	-1.29	
11/17/21	--	4.05	56.85	1.93	
03/21/22	--	4.24	56.66	-0.19	
06/28/22	--	4.95	55.95	-0.71	
09/14/22	--	5.63	55.27	-0.68	
MW-6 60.76	08/14/13	0.22	6.21	54.55	--
	11/25/13	--	5.13	55.63	1.08
	02/20/14	0.29	4.27	56.49	0.86
	05/15/14	0.33	4.97	55.79	-0.70
	08/14/14	0.20	6.13	54.63	-1.16
	11/24/14	0.09	5.08	55.68	1.05
	03/31/15	0.09	5.10	55.66	-0.02
	06/29/15	0.17	6.27	54.49	-1.17
	09/28/15	0.37	6.42	54.34	-0.15
	03/03/16	0.67	4.53	56.23	1.89
	06/21/16	0.52	5.91	54.85	-1.38
	09/16/16	0.33	6.01	54.75	-0.10
	12/20/16	1.30	5.14	55.62	0.87
	03/24/17	0.18	4.52	56.24	0.62
	06/16/17	0.23	5.18	55.58	-0.66

**Table 1
Groundwater Elevation Summary**

Well Number/ TOC Elevation	Date of Measurement	Dissolved Oxygen (mg/L)	DTW (feet)	SWL (feet)	Change in SWL (feet)
MW-6 Continued	09/05/17	0.61	6.23	54.53	-1.05
	12/20/17	0.76	4.80	55.96	1.43
	01/02/18	0.86	4.80	55.96	0.00
	05/17/18	0.35	5.57	55.19	-0.77
	08/23/18	0.48	6.51	54.25	-0.94
	11/15/18	1.22	5.39	55.37	1.12
	02/19/19	0.39	4.69	56.07	0.70
	05/21/19	0.32	5.22	55.54	-0.53
	08/21/19	--	5.63	55.13	-0.41
	11/12/19	--	5.14	55.62	0.49
	03/04/20	--	4.62	56.14	0.52
	09/03/20	--	5.50	55.26	-0.88
	03/19/21	--	4.59	56.17	0.91
	08/23/21	--	5.90	54.86	-1.31
	11/17/21	--	4.02	56.74	1.88
	03/21/22	--	4.19	56.57	-0.17
06/28/22	--	4.86	55.90	-0.67	
09/14/22	0.43	5.51	55.25	-0.65	
MW-7 59.87	09/16/16	0.57	5.15	54.72	--
	12/20/16	0.72	5.27	54.60	-0.12
	03/24/17	0.23	3.68	56.19	1.59
	06/16/17	0.31	4.33	55.54	-0.65
	09/05/17	0.21	5.43	54.44	-1.10
	12/20/17	0.94	3.95	55.92	1.48
	05/17/18	0.53	4.71	55.16	-0.76
	08/23/18	--	5.67	54.20	-0.96
	11/15/18	--	4.49	55.38	1.18
	02/19/19	--	3.85	56.02	0.64
	05/21/19	--	4.36	55.51	-0.51
	08/21/19	--	4.76	55.11	-0.40
	11/12/19	--	4.14	55.73	0.62
	03/04/20	--	3.77	56.10	0.37
	09/03/20	--	4.62	55.25	-0.85
	03/19/21	--	3.72	56.15	0.90
08/23/21	--	5.19	54.68	-1.47	
11/17/21	--	3.10	56.77	2.09	
03/21/22	--	NC	--	--	
06/28/22	--	4.14	55.73	-1.04	
09/14/22	--	4.65	55.22	-0.51	
MW-8 59.70	09/16/16	0.52	5.09	54.61	--
	12/20/16	1.29	4.62	55.08	0.47
	03/24/17	0.33	3.67	56.03	0.95
	06/16/17	0.28	4.21	55.49	-0.54
	09/05/17	0.34	5.31	54.39	-1.10
	12/20/17	1.39	3.78	55.92	1.53
	05/17/18	0.62	4.66	55.04	-0.88
	06/05/18	0.67	5.90	53.80	-1.24
	08/23/18	0.93	5.56	54.14	0.34
	11/15/18	2.03	4.44	55.26	1.12
	02/19/19	0.41	3.73	55.97	0.71
	05/21/19	0.39	4.20	55.50	-0.47
	08/21/19	--	4.62	55.08	-0.42
	11/12/19	--	3.89	55.81	0.73
03/04/20	--	3.61	56.09	0.28	
09/03/20	--	4.49	55.21	-0.88	

**Table 1
Groundwater Elevation Summary**

Well Number/ TOC Elevation	Date of Measurement	Dissolved Oxygen (mg/L)	DTW (feet)	SWL (feet)	Change in SWL (feet)
MW-8 Continued	03/19/21	--	3.55	56.15	0.94
	08/23/21	--	4.92	54.78	-1.37
	11/17/21	--	2.97	56.73	1.95
	03/21/22	--	3.19	56.51	-0.22
	06/28/22	--	4.32	55.38	-1.13
	09/14/22	--	4.51	55.19	-0.19
MW-9 60.91	09/05/17	0.38	6.33	54.58	--
	12/20/17	4.73	4.73	56.18	1.60
	05/17/18	0.67	5.64	55.27	-0.91
	08/23/18	1.03	6.69	54.22	-1.05
	11/15/18	0.84	5.50	55.41	1.19
	02/19/19	0.48	4.70	56.21	0.80
	05/21/19	0.29	5.33	55.58	-0.63
	08/21/19	0.29	5.80	55.11	-0.47
	11/12/19	0.50	5.09	55.82	0.71
	03/04/20	0.35	4.72	56.19	0.37
	09/03/20	0.42	5.67	55.24	-0.95
	03/19/21	4.97	4.54	56.37	1.13
	08/23/21	1.73	6.09	54.82	-1.55
	11/17/21	6.09	4.03	56.88	2.06
	03/21/22	4.12	4.07	56.84	-0.04
06/28/22	1.96	4.97	55.94	-0.90	
09/14/22	0.30	5.70	55.21	-0.73	
MW-10 59.80	02/19/19	0.69	4.09	55.71	--
	05/21/19	0.30	4.36	55.44	-0.27
	08/21/19	0.47	4.75	55.05	-0.39
	11/12/19	0.40	4.46	55.34	0.29
	03/04/20	--	3.89	55.91	0.57
	09/03/20	--	4.62	55.18	-0.73
	03/19/21	--	3.64	56.16	0.98
	08/23/21	--	5.05	54.75	-1.41
	11/17/21	--	3.04	56.76	2.01
	03/21/22	--	3.32	56.48	-0.28
	06/28/22	--	4.43	55.37	-1.11
	09/14/22	--	4.64	55.16	-0.21
Notes:					
TOC - Top of casing		SWL - Static water level			
mg/L - Milligrams per liter		NC - Not collected			
DTW - Depth to water					
-- - Not applicable/Not measured					
Wells MW-1 thru MW-4 surveyed to an arbitrary datum of 100 feet in 1998.					
Wells MW-1 through MW-9 surveyed to the North American Vertical Datum of 1988 (NAVD 88)					
on September 19, 2017 and MW-10 on February 5, 2019.					

Table 2
Summary of Groundwater Analytical Results

Well ID	Sample ID	Collection Date	Ecology Method	Ecology Method			Volatile Organic Compounds				
			NWTPH-Gx (µg/L)	NWTPH-Dx (µg/L)			USEPA Method 8021B/8260B (µg/L)				
			TPH-g	TPH-d	TPH-o	Total TPH (C ₁₂ - C ₃₆)	Benzene	Toluene	Ethylbenzene	Total Xylenes	
MW-1	MW-1	12/23/1998	--	<250	<500	<500	--	--	--	--	
	NA	8/12/2011	<100	<250	<500	<500	<1	<1	<1	<3	
	NA	11/11/2011	<100	1,500	300	1,800	<1	<1	<1	<3	
	NA	2/10/2012	<100	690	<250	690	<1	<1	<1	<3	
	NA	5/17/2012	<100	1,100	480	1,580	<1	<1	<1	<3	
	NA	8/28/2012	<100	1,200	820	2,020	<1	<1	<1	<3	
	NA	11/15/2012	<100	2,700	1,200	3,900	<1	<1	<1	<3	
	NA	2/14/2013	<100	1,600	510	2,110	<1	<1	<1	<3	
	NA	5/16/2013	<100	1,500	340	1,840	<1	<1	<1	<3	
	NA	8/14/2013	<100	1,100	290	1,390	<1	<1	<1	<3	
	NA	11/25/2013	--	1,400	400	1,800	--	--	--	--	
	NA	2/20/2014	--	700	280	980	--	--	--	--	
	NA	5/15/2014	--	940	<250	940	--	--	--	--	
	NA	8/14/2014	--	<50	<250	<250	--	--	--	--	
	NA	11/24/2014	--	220	<250	220	--	--	--	--	
	NA	3/31/2015	--	340	<250	340	--	--	--	--	
	NA	6/29/2015	--	240	<250	240	--	--	--	--	
	NA	9/28/2015	--	700	290	990	--	--	--	--	
	NA	3/3/2016	--	220	<250	220	--	--	--	--	
	NA	6/21/2016	--	160	<250	160	--	--	--	--	
	NA	9/16/2016	--	580	420	1,000	--	--	--	--	
	NA	12/20/2016	--	190	<250	190	--	--	--	--	
	NA	3/24/2017	--	53	<250	53	--	--	--	--	
	NA	6/19/2017	--	310	560	870	--	--	--	--	
	NA	9/5/2017	--	340	340	680	--	--	--	--	
	NA	12/20/2017	--	150	340	490	--	--	--	--	
		EW-051718-1	5/17/2018	--	<400	<400	<400	--	--	--	--
		EW-082318-3	8/23/2018	--	<380	<380	<380	--	--	--	--
		EW-111518-6	11/15/2018	--	<400	<400	<400	--	--	--	--
		NS	2/19/2019	--	--	--	--	--	--	--	--
	NS	5/21/2019	--	--	--	--	--	--	--	--	
	NS	8/21/2019	--	--	--	--	--	--	--	--	
	EW-111219-3	11/12/2019	--	220 J	160 J	380 J	--	--	--	--	
	NS	3/4/2020	--	--	--	--	--	--	--	--	
	NS	9/3/2020	--	--	--	--	--	--	--	--	
	NS	3/19/2021	--	--	--	--	--	--	--	--	
	NS	8/23/2021	--	--	--	--	--	--	--	--	
	NS	11/17/2021	--	--	--	--	--	--	--	--	
	NS	3/21/2022	--	--	--	--	--	--	--	--	
	NS	6/28/2022	--	--	--	--	--	--	--	--	
	NS	9/14/2022	--	--	--	--	--	--	--	--	
MW-2	MW-2	12/23/1998	--	250	<500	<500	--	--	--	--	
	MW-2	1/29/1999	230	--	--	--	8.3	1.2	<1.0	4.0	
	NA	8/12/2011	<100	<250	<500	<500	<1	<1	<1	<3	
	NA	11/11/2011	<100	500	<250	500	<1	<1	<1	<3	
	NA	2/10/2012	<100	<50	<250	<250	<1	<1	<1	<3	
	NA	5/17/2012	<100	<50	<250	<250	<1	<1	<1	<3	
	NA	8/28/2012	<100	470	730	1,200	<1	<1	<1	<3	
	NA	11/15/2012	<100	140	<260	140	<1	<1	<1	<3	
	NA	2/14/2013	<100	94	260	354	<1	<1	<1	<3	
	NA	5/16/2013	<100	77	<250	77	<1	<1	<1	<3	
	NA	8/14/2013	<100	280	<250	280	<1	<1	<1	<3	
	NA	11/25/2013	--	53	<250	53	--	--	--	--	
	NA	2/20/2014	--	<50	<250	<250	--	--	--	--	

Table 2
Summary of Groundwater Analytical Results

Well ID	Sample ID	Collection Date	Ecology Method	Ecology Method			Volatile Organic Compounds			
			NWTPH-Gx (µg/L)	NWTPH-Dx (µg/L)			USEPA Method 8021B/8260B (µg/L)			
			TPH-g	TPH-d	TPH-o	Total TPH (C ₁₂ - C ₃₆)	Benzene	Toluene	Ethylbenzene	Total Xylenes
MW-2 Continued	NA	5/15/2014	--	<50	<250	<250	--	--	--	--
	NA	8/14/2014	--	100	<250	100	--	--	--	--
	NA	11/24/2014	--	<50	<250	<250	--	--	--	--
	NA	3/31/2015	--	57	<250	57	--	--	--	--
	NA	6/29/2015	--	97	<250	97	--	--	--	--
	NA	9/28/2015	--	150	<250	150	--	--	--	--
	NA	3/3/2016	--	<50	<250	<250	--	--	--	--
	NA	6/21/2016	--	86	<250	86	--	--	--	--
	NA	9/16/2016	--	95	<250	95	--	--	--	--
	NA	12/20/2016	--	<50	<250	<250	--	--	--	--
	NA	6/19/2017	--	61	<250	61	--	--	--	--
	NA	9/5/2017	--	100	<250	100	--	--	--	--
	NA	12/20/2017	--	<50	<250	<250	--	--	--	--
	EW-051718-4	5/17/2018	--	<410	<410	<410	--	--	--	--
	NS	8/23/2018	--	--	--	--	--	--	--	--
	NS	11/15/2018	--	--	--	--	--	--	--	--
	NS	2/19/2019	--	--	--	--	--	--	--	--
	NS	5/21/2019	--	--	--	--	--	--	--	--
	NS	8/21/2019	--	--	--	--	--	--	--	--
	NS	11/12/2019	--	--	--	--	--	--	--	--
	NS	3/4/2020	--	--	--	--	--	--	--	--
	NS	9/3/2020	--	--	--	--	--	--	--	--
	NS	3/19/2021	--	--	--	--	--	--	--	--
NS	8/23/2021	--	--	--	--	--	--	--	--	
NS	11/17/2021	--	--	--	--	--	--	--	--	
NS	3/21/2022	--	--	--	--	--	--	--	--	
NS	6/28/2022	--	--	--	--	--	--	--	--	
NS	9/14/2022	--	--	--	--	--	--	--	--	
MW-3	MW-3	12/23/1998	--	<250	<500	<500	--	--	--	--
	NA	8/12/2011	<100	<250	<500	<500	<1	<1	<1	<3
	NA	11/11/2011	<100	65	<250	65	<1	<1	<1	<3
	NA	2/10/2012	<100	100	<250	100	<1	<1	<1	<3
	NA	5/17/2012	<100	53	<250	53	<1	<1	<1	<3
	NA	8/28/2012	<100	130	<250	130	<1	<1	<1	<3
	NA	11/15/2012	<100	120	<280	120	<1	<1	<1	<3
	NA	2/14/2013	<100	150	<250	150	<1	<1	<1	<3
	NA	5/16/2013	<100	200	<250	200	<1	<1	<1	<3
	NA	8/14/2013	<100	140	<250	140	<1	<1	<1	<3
	NA	11/25/2013	--	170	<250	170	--	--	--	--
	NA	2/20/2014	--	160	<250	160	--	--	--	--
	NA	5/15/2014	--	120	<250	120	--	--	--	--
	NA	8/14/2014	--	140	<250	140	--	--	--	--
	NA	11/24/2014	--	130	<250	130	--	--	--	--
	NA	3/31/2015	--	220	<250	220	--	--	--	--
	NA	6/29/2015	--	130	<250	130	--	--	--	--
	NA	9/28/2015	--	110	<250	110	--	--	--	--
	NA	3/3/2016	--	92	<250	92	--	--	--	--
	NA	6/21/2016	--	85	<250	85	--	--	--	--
NA	9/16/2016	--	100	<250	100	--	--	--	--	
NA	12/20/2016	--	99	<250	99	--	--	--	--	
NA	6/19/2017	--	310	<250	310	--	--	--	--	
NA	9/5/2017	--	210	<250	210	--	--	--	--	
NA	12/20/2017	--	150	<250	150	--	--	--	--	
EW-051718-9	5/17/2018	--	520	<400	520	--	--	--	--	

Table 2
Summary of Groundwater Analytical Results

Well ID	Sample ID	Collection Date	Ecology Method	Ecology Method			Volatile Organic Compounds			
			NWTPH-Gx (µg/L)	NWTPH-Dx (µg/L)			USEPA Method 8021B/8260B (µg/L)			
			TPH-g	TPH-d	TPH-o	Total TPH (C ₁₂ - C ₃₆)	Benzene	Toluene	Ethylbenzene	Total Xylenes
MW-3	NS	8/23/2018	--	--	--	--	--	--	--	--
Continued	EW-111518-1	11/15/2018	--	<390	<390	<390	--	--	--	--
	EW-021919-4	2/19/2019	--	<400	<400	<400	--	--	--	--
duplicate	EW-021919-5	2/19/2019	--	<400	<400	<400	--	--	--	--
	EW-052119-3	5/21/2019	--	<410	<410	<410	--	--	--	--
duplicate	EW-052119-4	5/21/2019	--	<400	<400	<400	--	--	--	--
	EW-082119-3	8/21/2019	--	<410	<410	<410	--	--	--	--
duplicate	EW-082119-4	8/21/2019	--	<390	<390	<390	--	--	--	--
	NS	11/12/2019	--	--	--	--	--	--	--	--
	NS	3/4/2020	--	--	--	--	--	--	--	--
	NS	9/3/2020	--	--	--	--	--	--	--	--
	NS	3/19/2021	--	--	--	--	--	--	--	--
	NS	8/23/2021	--	--	--	--	--	--	--	--
	NS	11/17/2021	--	--	--	--	--	--	--	--
	NS	3/21/2022	--	--	--	--	--	--	--	--
	NS	6/28/2022	--	--	--	--	--	--	--	--
	NS	9/14/2022	--	--	--	--	--	--	--	--
MW-4	MW-4	1/29/1999	<100	--	--	--	<1.0	<1.0	<1.0	<1.0
	NA	8/12/2011	<100	<250	<500	<500	<1	<1	<1	<3
	NA	11/11/2011	<100	72	<250	72	<1	<1	<1	<3
	NA	2/10/2012	<100	150	<250	150	<1	<1	<1	<3
	NA	5/17/2012	<100	160	<250	160	<1	<1	<1	<3
	NA	8/28/2012	<100	200	<250	200	<1	<1	<1	<3
	NA	11/15/2012	<100	220	<250	220	<1	<1	<1	<3
	NA	2/14/2013	<100	220	<250	220	<1	<1	<1	<3
	NA	5/16/2013	<100	210	<250	210	<1	<1	<1	<3
	NA	8/14/2013	<100	200	<250	200	<1	<1	<1	<3
	NA	2/20/2014	--	140	<250	140	--	--	--	--
	NA	5/15/2014	--	140	<250	140	--	--	--	--
	NA	8/14/2014	--	290	<250	290	--	--	--	--
	NA	11/24/2014	--	290	<250	290	--	--	--	--
	NA	3/31/2015	--	320	<250	320	--	--	--	--
	NA	6/29/2015	--	240	<250	240	--	--	--	--
	NA	9/28/2015	--	220	<250	220	--	--	--	--
	NA	3/3/2016	--	130	<250	130	--	--	--	--
	NA	6/21/2016	--	63	<250	63	--	--	--	--
	NA	9/29/2016	--	68	<250	68	--	--	--	--
	NA	12/20/2016	--	78	<250	78	--	--	--	--
	NA	3/24/2017	--	<50	<250	<250	--	--	--	--
	NA	6/19/2017	--	110	<250	110	--	--	--	--
	NA	9/5/2017	--	150	<250	150	--	--	--	--
	NA	1/2/2018	--	<50	<250	<250	--	--	--	--
	EW-051718-8	5/17/2018	--	<400	<400	<400	--	--	--	--
	NS	8/23/2018	--	--	--	--	--	--	--	--
	NS	11/15/2018	--	--	--	--	--	--	--	--
	NS	2/19/2019	--	--	--	--	--	--	--	--
	NS	5/21/2019	--	--	--	--	--	--	--	--
	NS	8/21/2019	--	--	--	--	--	--	--	--
	NS	11/12/2019	--	--	--	--	--	--	--	--
	NS	3/4/2020	--	--	--	--	--	--	--	--
	NS	9/3/2020	--	--	--	--	--	--	--	--
	NS	3/19/2021	--	--	--	--	--	--	--	--
	NS	8/23/2021	--	--	--	--	--	--	--	--
	NS	11/17/2021	--	--	--	--	--	--	--	--

Table 2
Summary of Groundwater Analytical Results

Well ID	Sample ID	Collection Date	Ecology Method	Ecology Method			Volatile Organic Compounds			
			NWTPH-Gx (µg/L)	NWTPH-Dx (µg/L)			USEPA Method 8021B/8260B (µg/L)			
			TPH-g	TPH-d	TPH-o	Total TPH (C ₁₂ - C ₃₆)	Benzene	Toluene	Ethylbenzene	Total Xylenes
MW-4 Continued	NS	3/21/2022	--	--	--	--	--	--	--	--
	NS	6/28/2022	--	--	--	--	--	--	--	--
	NS	9/14/2022	--	--	--	--	--	--	--	--
MW-5	NA	6/5/2013	<100	160	<250	160	<1	<1	<1	<3
	NA	8/14/2013	<100	56	<250	56	<1	<1	<1	<3
	NA	11/24/2014	<100	<50	<250	<250	--	--	--	--
	NA	3/31/2015	--	52	<250	52	--	--	--	--
	NA	6/29/2015	--	<50	<250	<250	--	--	--	--
	NA	9/28/2015	--	<50	<250	<250	--	--	--	--
	NA	3/3/2016	--	<50	<250	<250	--	--	--	--
	NA	6/21/2016	--	<50	<250	<250	--	--	--	--
	NA	9/16/2016	--	<50	<250	<250	--	--	--	--
	NA	12/20/2016	--	<50	<250	<250	--	--	--	--
	NA	6/19/2017	--	55	<250	55	--	--	--	--
	NA	9/5/2017	--	68	<250	68	--	--	--	--
	NA	1/2/2018	--	<50	<250	<250	--	--	--	--
	EW-051718-5	5/17/2018	--	<380	<380	<380	--	--	--	--
	NS	8/23/2018	--	--	--	--	--	--	--	--
	NS	11/15/2018	--	--	--	--	--	--	--	--
	NS	2/19/2019	--	--	--	--	--	--	--	--
	NS	5/21/2019	--	--	--	--	--	--	--	--
	NS	8/21/2019	--	--	--	--	--	--	--	--
	NS	11/12/2019	--	--	--	--	--	--	--	--
	NS	3/4/2020	--	--	--	--	--	--	--	--
	NS	9/3/2020	--	--	--	--	--	--	--	--
	NS	3/19/2021	--	--	--	--	--	--	--	--
NS	8/23/2021	--	--	--	--	--	--	--	--	
NS	11/17/2021	--	--	--	--	--	--	--	--	
NS	3/21/2022	--	--	--	--	--	--	--	--	
NS	6/28/2022	--	--	--	--	--	--	--	--	
NS	9/14/2022	--	--	--	--	--	--	--	--	
MW-6	NA	6/5/2013	<100	680	<250	680	<1	<1	<1	<3
	NA	8/14/2013	<100	790	<250	790	<1	<1	<1	<3
	NA	2/20/2014	--	740	<250	740	--	--	--	--
	NA	5/15/2014	--	950	<250	950	--	--	--	--
	NA	8/14/2014	--	1,200	<250	1,200	--	--	--	--
	NA	11/24/2014	--	680	<250	680	--	--	--	--
	NA	3/31/2015	--	750	<250	750	--	--	--	--
	NA	6/29/2015	--	750	<250	750	--	--	--	--
	NA	9/28/2015	--	610	<250	610	--	--	--	--
	NA	3/3/2016	--	1,100	390	1,490	--	--	--	--
	NA	6/21/2016	--	650	<250	650	--	--	--	--
	NA	9/16/2016	--	340	<250	340	--	--	--	--
	NA	12/20/2016	--	640	<250	640	--	--	--	--
	NA	3/24/2017	--	580	<250	580	--	--	--	--
	NA	6/19/2017	--	970	280	1,250	--	--	--	--
	NA	9/5/2017	--	320	<250	320	--	--	--	--
	NA	1/2/2018	--	240	<250	240	--	--	--	--
EW-051718-6	5/17/2018	--	880	<400	880	--	--	--	--	
EW-082318-4	8/23/2018	--	<400	<400	<400	--	--	--	--	
EW-082318-3	11/15/2018	--	<380	<380	<380	--	--	--	--	
EW-021919-2	2/19/2019	--	470	<400	470	--	--	--	--	
EW-052119-2	5/21/2019	--	<390	<390	<390	--	--	--	--	

Table 2
Summary of Groundwater Analytical Results

Well ID	Sample ID	Collection Date	Ecology Method	Ecology Method			Volatile Organic Compounds			
			NWTPH-Gx (µg/L)	NWTPH-Dx (µg/L)			USEPA Method 8021B/8260B (µg/L)			
			TPH-g	TPH-d	TPH-o	Total TPH (C ₁₂ - C ₃₆)	Benzene	Toluene	Ethylbenzene	Total Xylenes
MW-6 Continued	NS	8/21/2019	--	--	--	--	--	--	--	--
	NS	11/12/2019	--	--	--	--	--	--	--	--
	NS	3/4/2020	--	--	--	--	--	--	--	--
	NS	9/3/2020	--	--	--	--	--	--	--	--
	NS	3/19/2021	--	--	--	--	--	--	--	--
	NS	8/23/2021	--	--	--	--	--	--	--	--
	NS	11/17/2021	--	--	--	--	--	--	--	--
	NS	3/21/2022	--	--	--	--	--	--	--	--
	NS	6/28/2022	--	--	--	--	--	--	--	--
	EW-091422-03	9/14/2022	--	<430	<430	<430	--	--	--	--
MW-7	NA	9/16/2016	--	140	<250	140	--	--	--	--
	NA	12/20/2016	--	78	<250	78	--	--	--	--
	NA	3/24/2017	--	<50	<250	<250	--	--	--	--
	NA	6/19/2017	--	100	<250	100	--	--	--	--
	NA	9/5/2017	--	59	<250	59	--	--	--	--
	NA	12/20/2017	--	99	<250	99	--	--	--	--
	EW-051718-7	5/17/2018	--	<380	<380	<380	--	--	--	--
	NS	8/23/2018	--	--	--	--	--	--	--	--
	NS	11/15/2018	--	--	--	--	--	--	--	--
	NS	2/19/2019	--	--	--	--	--	--	--	--
	NS	5/21/2019	--	--	--	--	--	--	--	--
	NS	8/21/2019	--	--	--	--	--	--	--	--
	NS	11/12/2019	--	--	--	--	--	--	--	--
	NS	3/4/2020	--	--	--	--	--	--	--	--
	NS	9/3/2020	--	--	--	--	--	--	--	--
	NS	3/19/2021	--	--	--	--	--	--	--	--
	NS	8/23/2021	--	--	--	--	--	--	--	--
	NS	11/17/2021	--	--	--	--	--	--	--	--
	NS	3/21/2022	--	--	--	--	--	--	--	--
NS	6/28/2022	--	--	--	--	--	--	--	--	
NS	9/14/2022	--	--	--	--	--	--	--	--	
MW-8	NA	10/3/2016	--	290	<250	290	--	--	--	--
	NA	12/20/2016	--	140	<250	140	--	--	--	--
	NA	3/24/2017	--	<50	<250	<250	--	--	--	--
	NA	6/26/2017	--	180	<250	180	--	--	--	--
	NA	9/5/2017	--	160	<250	160	--	--	--	--
	NA	12/20/2017	--	140	<250	140	--	--	--	--
	EW-051718-10	5/17/2018	--	1,900	2,800	4,700	--	--	--	--
	EW-060518-1	6/5/2018	--	850	770	1,620	--	--	--	--
	EW-082318-5	8/23/2018	<100	450	<380	450	<1.0	<1.0	<1.0	<3.0
	EW-111518-2	11/15/2018	--	<400	<400	<400	--	--	--	--
	EW-021919-3	2/19/2019	--	<400	<400	<400	--	--	--	--
	EW-052119-5	5/21/2019	--	<400	<400	<400	--	--	--	--
	NS	8/21/2019	--	--	--	--	--	--	--	--
	NS	11/12/2019	--	--	--	--	--	--	--	--
	NS	3/4/2020	--	--	--	--	--	--	--	--
	NS	9/3/2020	--	--	--	--	--	--	--	--
	NS	3/19/2021	--	--	--	--	--	--	--	--
	NS	8/23/2021	--	--	--	--	--	--	--	--
	NS	11/17/2021	--	--	--	--	--	--	--	--
	NS	3/21/2022	--	--	--	--	--	--	--	--
NS	6/28/2022	--	--	--	--	--	--	--	--	
NS	9/14/2022	--	--	--	--	--	--	--	--	

**ATTACHMENT A
FIELD SAMPLING DATA SHEETS**

FIELD SAMPLING DATA SHEET LOW-FLOW GROUNDWATER SAMPLING

PROJECT NAME: ESTES West WELL ID: MW-6
 SITE ADDRESS: Auburn, WA LABEL CODE: EW-09 14 22-03
 DUPLICATE ID: _____

Wind From	N	NE	E	SE	S	SW	W	NW	Light	Medium	Heavy
Weather	Sunny		Cloudy		Rain		_____?		Temperature:	70 °F	_____ °C

WELL DATA

Date	Time	Casing Diameter	DT-Product	DT-Water	Product Thickness
9-14-22		2	—	5.51	—

PUMP/INTAKE DEPTH (ft btoc): _____

WATER QUALITY DATA

Time	Liters	PH	Temp	DO	Spec. Cond.	Redox	Turbidity
1440	0.5	6.41	20.4	0.44	658	-75	CLEAR
1442	0.7	6.41	20.2	0.41	648	-90	"
1444	0.9	6.41	20.1	0.42	648	-91	"
1446	1.1	6.40	20.1	0.43	646	-92	"

GROUNDWATER SAMPLE DATA

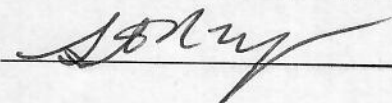
Sample Date: 9-14-22

Sample Time: 14450

Bottle Type	✓	Amount & Volume	Preservative	Filter
VOA Glass		40 ml	HCl	No
Amber Glass	✓	2 250 ml	HCl	No
Poly		250 ml		
Total Bottles		2		

Notes: _____

Sampled By: Steve McCray

Signature: 

2004-0003
TASK 1

FIELD SAMPLING DATA SHEET LOW-FLOW GROUNDWATER SAMPLING

Dup

PROJECT NAME: ESTES West WELL ID: MW-9
 SITE ADDRESS: Auburn, WA LABEL CODE: EW-09 14 22-01
 DUPLICATE ID: -02

Wind From	N	NE	E	SE	S	SW	W	NW	Light	Medium	Heavy
Weather	Sunny		Cloudy		Rain		_____?		Temperature:	20 °F	_____ °C

WELL DATA

Date	Time	Casing Diameter	DT-Product	DT-Water	Product Thickness
9-14-22		2	/	5.70	/

PUMP/INTAKE DEPTH (ft btoc): _____

WATER QUALITY DATA

Time	Liters	PH	Temp	DO	Spec. Cond.	Redox	Turbidity
1400	0.5	5.75	18.9	0.34	289	-69	CLEAR
1402	0.7	5.77	19.0	0.31	285	-55	"
1404	0.9	5.78	19.0	0.29	280	-54	"
1406	1.1	5.77	19.1	0.30	281	-54	"

GROUNDWATER SAMPLE DATA

Sample Date: 9-14-22 Dup 1430
 Sample Time: 1410

Bottle Type	✓	Amount & Volume	Preservative	Filter
VOA Glass		40 ml	HCl	No
Amber Glass	✓	2 250 ml	HCl	No
Poly		250 ml		
Total Bottles	x2	4		

Notes: * yellow tint to water, pump rate ≈ 0.1 LPM.
WATER HOLD @

Sampled By: Steve McCray Signature: [Signature]

2004-0003 (1)

10

ESTES WEST KW SAMPLE (MW-9+6)

9-14-22

13:30 A.M. ON SITE. BEGIN WLS

WELL	WL	WELL	WL
MW-1	*NM	MW-6	5.51
MW-2	5.71	MW-7	4.65
MW-3	5.67	MW-8	4.51
MW-4	5.72	MW-9	5.70
MW-5	5.63	MW-10	4.64

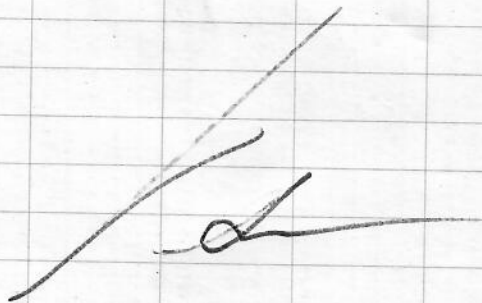
* MW-1 HAS DUMSTON ON TOP, NOT MASS.

CALIBRATE METERS + BEGIN
SAMPLING FW.

FINISH SAMPLING. PUT PUNGK
WATER IN ON SITE DRUM.

PACK SAMPLES FOR SHIPPING.

1510 A.M. OFF SITE TO SHIP SAMPLES



**ATTACHMENT B
LABORATORY ANALYTICAL REPORT**

September 29, 2022

Dan Landry
A & M Engineering and Environmental Services,
Inc.
1176 West 7th Avenue
Eugene, OR 97402

RE: Project: 2004-0002 Task 1 Fmr Provision-Revised Report
Pace Project No.: 10625586

Dear Dan Landry:

Enclosed are the analytical results for sample(s) received by the laboratory on September 15, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

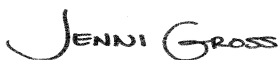
The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Minneapolis

This report was revised on September 29, 2022, to report the results to the practical quantitation limit (PQL).

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jennifer Gross
jennifer.gross@pacelabs.com
(612)607-1700
Project Manager

Enclosures

cc: Steve McCray, A & M Engineering and Environmental
Services, Inc.



REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

CERTIFICATIONS

Project: 2004-0002 Task 1 Fmr Provision-Revised Report

Pace Project No.: 10625586

Pace Analytical Services, LLC - Minneapolis MN

1700 Elm Street SE, Minneapolis, MN 55414

A2LA Certification #: 2926.01*

1800 Elm Street SE, Minneapolis, MN 55414--Satellite Air Lab

Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009*

Alaska DW Certification #: MN00064

Arizona Certification #: AZ0014*

Arkansas DW Certification #: MN00064

Arkansas WW Certification #: 88-0680

California Certification #: 2929

Colorado Certification #: MN00064

Connecticut Certification #: PH-0256

EPA Region 8 Tribal Water Systems+Wyoming DW Certification #: via MN 027-053-137

Florida Certification #: E87605*

Georgia Certification #: 959

Hawaii Certification #: MN00064

Idaho Certification #: MN00064

Illinois Certification #: 200011

Indiana Certification #: C-MN-01

Iowa Certification #: 368

Kansas Certification #: E-10167

Kentucky DW Certification #: 90062

Kentucky WW Certification #: 90062

Louisiana DEQ Certification #: AI-03086*

Louisiana DW Certification #: MN00064

Maine Certification #: MN00064*

Maryland Certification #: 322

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137*

Minnesota Dept of Ag Approval: via MN 027-053-137

Minnesota Petrofund Registration #: 1240*

Mississippi Certification #: MN00064

Missouri Certification #: 10100

Montana Certification #: CERT0092

Nebraska Certification #: NE-OS-18-06

Nevada Certification #: MN00064

New Hampshire Certification #: 2081*

New Jersey Certification #: MN002

New York Certification #: 11647*

North Carolina DW Certification #: 27700

North Carolina WW Certification #: 530

North Dakota Certification (A2LA) #: R-036

North Dakota Certification (MN) #: R-036

Ohio DW Certification #: 41244

Ohio VAP Certification (1700) #: CL101

Ohio VAP Certification (1800) #: CL110*

Oklahoma Certification #: 9507*

Oregon Primary Certification #: MN300001

Oregon Secondary Certification #: MN200001*

Pennsylvania Certification #: 68-00563*

Puerto Rico Certification #: MN00064

South Carolina Certification #:74003001

Tennessee Certification #: TN02818

Texas Certification #: T104704192*

Utah Certification #: MN00064*

Vermont Certification #: VT-027053137

Virginia Certification #: 460163*

Washington Certification #: C486*

West Virginia DEP Certification #: 382

West Virginia DW Certification #: 9952 C

Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

USDA Permit #: P330-19-00208

Please Note: Applicable air certifications are denoted with an asterisk ().

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 2004-0002 Task 1 Fmr Provision-Revised Report

Pace Project No.: 10625586

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10625586001	EW-091422-01	Water	09/14/22 14:10	09/15/22 08:50
10625586002	EW-091422-02	Water	09/14/22 14:30	09/15/22 08:50

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 2004-0002 Task 1 Fmr Provision-Revised Report

Pace Project No.: 10625586

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10625586001	EW-091422-01	NWTPH-Dx	EB3	4	PASI-M
10625586002	EW-091422-02	NWTPH-Dx	EB3	4	PASI-M

PASI-M = Pace Analytical Services - Minneapolis

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 2004-0002 Task 1 Fmr Provision-Revised Report

Pace Project No.: 10625586

Sample: EW-091422-01		Lab ID: 10625586001		Collected: 09/14/22 14:10		Received: 09/15/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
NWTPH-Dx GCS LV		Analytical Method: NWTPH-Dx Preparation Method: EPA 3510C Pace Analytical Services - Minneapolis							
Diesel Fuel Range	ND	mg/L	0.43	1	09/16/22 15:32	09/19/22 15:48	68334-30-5		
Motor Oil Range	0.64	mg/L	0.43	1	09/16/22 15:32	09/19/22 15:48			
Surrogates									
o-Terphenyl (S)	69	%.	50-150	1	09/16/22 15:32	09/19/22 15:48	84-15-1		
n-Triacontane (S)	71	%.	50-150	1	09/16/22 15:32	09/19/22 15:48			

Sample: EW-091422-02		Lab ID: 10625586002		Collected: 09/14/22 14:30		Received: 09/15/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
NWTPH-Dx GCS LV		Analytical Method: NWTPH-Dx Preparation Method: EPA 3510C Pace Analytical Services - Minneapolis							
Diesel Fuel Range	ND	mg/L	0.48	1	09/16/22 15:32	09/19/22 15:57	68334-30-5		
Motor Oil Range	ND	mg/L	0.48	1	09/16/22 15:32	09/19/22 15:57			
Surrogates									
o-Terphenyl (S)	66	%.	50-150	1	09/16/22 15:32	09/19/22 15:57	84-15-1		
n-Triacontane (S)	70	%.	50-150	1	09/16/22 15:32	09/19/22 15:57			

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 2004-0002 Task 1 Fmr Provision-Revised Report

Pace Project No.: 10625586

QC Batch: 841024	Analysis Method: NWTPH-Dx
QC Batch Method: EPA 3510C	Analysis Description: NWTPH-Dx GCS LV
	Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10625586001, 10625586002

METHOD BLANK: 4450993 Matrix: Water

Associated Lab Samples: 10625586001, 10625586002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Fuel Range	mg/L	ND	0.40	09/19/22 15:01	
Motor Oil Range	mg/L	ND	0.40	09/19/22 15:01	
n-Triacontane (S)	%	64	50-150	09/19/22 15:01	
o-Terphenyl (S)	%	63	50-150	09/19/22 15:01	

LABORATORY CONTROL SAMPLE & LCSD: 4450994 4450995

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Fuel Range	mg/L	2	1.4	1.4	70	69	50-150	1	20	
Motor Oil Range	mg/L	2	1.4	1.5	72	77	50-150	6	20	
n-Triacontane (S)	%				67	73	50-150			
o-Terphenyl (S)	%				69	70	50-150			

SAMPLE DUPLICATE: 4450996

Parameter	Units	10625575002 Result	Dup Result	RPD	Max RPD	Qualifiers
Diesel Fuel Range	mg/L	64.0	14.8	125	30	D6
Motor Oil Range	mg/L	454	106	124	30	D6
n-Triacontane (S)	%	0	44			S4
o-Terphenyl (S)	%	0	59			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 2004-0002 Task 1 Fmr Provision-Revised Report

Pace Project No.: 10625586

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

S4 Surrogate recovery not evaluated against control limits due to sample dilution.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 2004-0002 Task 1 Fmr Provision-Revised Report
Pace Project No.: 10625586

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10625586001	EW-091422-01	EPA 3510C	841024	NWTPH-Dx	841337
10625586002	EW-091422-02	EPA 3510C	841024	NWTPH-Dx	841337

REPORT OF LABORATORY ANALYSIS

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Effective Date:

Sample Condition
Upon Receipt

Client Name: A&M Engineering & Environmental

Project #: **WO#: 10625586**

PM: JMG Due Date: 09/29/22
CLIENT: A&M Engineer

Courier: FedEx UPS USPS Client
 Pace SpeedDee Commercial

Tracking Number: 54051823 0023 See Exceptions ENV-FRM-MIN4-0142

Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes No Biological Tissue Frozen? Yes No N/A
Packing Material: Bubble Wrap Bubble Bags None Other Temp Blank? Yes No
Thermometer: T1 (0461) T2 (1336) T3 (0459) T4 (0254) T5 (0178) Type of Ice: Wet Blue Dry None
 T6 (0235) T7 (0042) T8 (0775) 01339252/1710 Melted

Did Samples Originate in West Virginia? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Were All Container Temps Taken? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Temp should be above freezing to 6 °C	Average Corrected Temp (no temp blank only): _____ °C
Correction Factor: <u>true</u> Cooler Temp Corrected w/temp blank: <u>0.4</u> °C	<input type="checkbox"/> See Exceptions ENV-FRM-MIN4-0142 <input type="checkbox"/> 1 Container

USDA Regulated Soil: N/A, water sample/other: _____ Date/Initials of Person Examining Contents: 9/15/22 JPC
Did samples originate in a quarantine zone within the United States: AL, AR, AZ CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX, or VA (check maps)? Yes No
Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

If Yes to either question, fill out a Regulated Soil Checklist (ENV-FRM-MIN4-0154) and include with SCUR/COC paperwork.

Location (Check one): <input type="checkbox"/> Duluth <input checked="" type="checkbox"/> Minneapolis <input type="checkbox"/> Virginia	COMMENTS
Chain of Custody Present and Filled Out? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Relinquished? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Sampler Name and/or Signature on COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	4. If fecal: <input type="checkbox"/> <8 hrs <input type="checkbox"/> >8 hr, <24 <input type="checkbox"/> No
Short Hold Time Analysis (<72 hr)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E.coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrom <input type="checkbox"/> Turbidity <input type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Sufficient Sample Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
-Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Field Filtered Volume Received for Dissolved Tests? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC? Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other	11. If no, write ID/Date/Time of container below: <input type="checkbox"/> See Exceptions ENV-FRM-MIN4-0142
All containers needing acid/base preservation have been checked? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	12. Sample # <input type="checkbox"/> NaOH <input type="checkbox"/> HNO3 <input type="checkbox"/> H2SO4 <input type="checkbox"/> Zinc Acetate
All containers needing preservation are found to be in compliance with EPA recommendation? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A (HNO3, H2SO4, <2pH, NaOH >9 Sulfide, NaOH >10 Cyanide)	Positive for Residual Chlorine? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Exceptions ENV-FRM-MIN4-0142
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, <u>DRO/BO15</u> (water) and Dioxins/PFAS <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A (*If adding preservative to a container, it must be added to associated field and equipment blanks—verify with PM first.)	pH Paper Lot # Residual Chlorine 0-6 Roll 0-6 Strip 0-14 Strip
Headspace in Methyl Mercury Container? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.
Extra labels present on soil VOA or WIDRO containers? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14. <input type="checkbox"/> See Exceptions ENV-FRM-MIN4-0142
Headspace in VOA Vials (greater than 6mm)? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
3 Trip Blanks Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Custody Seals Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Pace Trip Blank Lot # (if purchased): _____

CLIENT NOTIFICATION/RESOLUTION
Person Contacted: _____ Date/Time: _____
Comments/Resolution: _____
Project Manager Review: Jenni Gross Date: 9/15/22
Field Data Required? Yes No

NOTE: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e., out of hold, incorrect: preservative, out of temp, incorrect containers).

Labeled By: ADU Line: 2

September 29, 2022

Dan Landry
A & M Engineering and Environmental Services,
Inc.
1176 West 7th Avenue
Eugene, OR 97402

RE: Project: 2004-0002 Task 1 Fmr Provision-Revised Report
Pace Project No.: 10625587

Dear Dan Landry:

Enclosed are the analytical results for sample(s) received by the laboratory on September 15, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

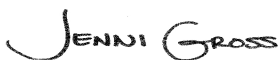
The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Minneapolis

This report was revised on September 29, 2022, to report the results to the practical quantitation limit (PQL).

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jennifer Gross
jennifer.gross@pacelabs.com
(612)607-1700
Project Manager

Enclosures

cc: Steve McCray, A & M Engineering and Environmental
Services, Inc.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 2004-0002 Task 1 Fmr Provision-Revised Report

Pace Project No.: 10625587

Pace Analytical Services, LLC - Minneapolis MN

1700 Elm Street SE, Minneapolis, MN 55414

A2LA Certification #: 2926.01*

1800 Elm Street SE, Minneapolis, MN 55414--Satellite Air Lab

Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009*

Alaska DW Certification #: MN00064

Arizona Certification #: AZ0014*

Arkansas DW Certification #: MN00064

Arkansas WW Certification #: 88-0680

California Certification #: 2929

Colorado Certification #: MN00064

Connecticut Certification #: PH-0256

EPA Region 8 Tribal Water Systems+Wyoming DW Certification #: via MN 027-053-137

Florida Certification #: E87605*

Georgia Certification #: 959

Hawaii Certification #: MN00064

Idaho Certification #: MN00064

Illinois Certification #: 200011

Indiana Certification #: C-MN-01

Iowa Certification #: 368

Kansas Certification #: E-10167

Kentucky DW Certification #: 90062

Kentucky WW Certification #: 90062

Louisiana DEQ Certification #: AI-03086*

Louisiana DW Certification #: MN00064

Maine Certification #: MN00064*

Maryland Certification #: 322

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137*

Minnesota Dept of Ag Approval: via MN 027-053-137

Minnesota Petrofund Registration #: 1240*

Mississippi Certification #: MN00064

Missouri Certification #: 10100

Montana Certification #: CERT0092

Nebraska Certification #: NE-OS-18-06

Nevada Certification #: MN00064

New Hampshire Certification #: 2081*

New Jersey Certification #: MN002

New York Certification #: 11647*

North Carolina DW Certification #: 27700

North Carolina WW Certification #: 530

North Dakota Certification (A2LA) #: R-036

North Dakota Certification (MN) #: R-036

Ohio DW Certification #: 41244

Ohio VAP Certification (1700) #: CL101

Ohio VAP Certification (1800) #: CL110*

Oklahoma Certification #: 9507*

Oregon Primary Certification #: MN300001

Oregon Secondary Certification #: MN200001*

Pennsylvania Certification #: 68-00563*

Puerto Rico Certification #: MN00064

South Carolina Certification #: 74003001

Tennessee Certification #: TN02818

Texas Certification #: T104704192*

Utah Certification #: MN00064*

Vermont Certification #: VT-027053137

Virginia Certification #: 460163*

Washington Certification #: C486*

West Virginia DEP Certification #: 382

West Virginia DW Certification #: 9952 C

Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

USDA Permit #: P330-19-00208

Please Note: Applicable air certifications are denoted with an asterisk ().

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 2004-0002 Task 1 Fmr Provision-Revised Report

Pace Project No.: 10625587

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10625587001	EW-091422-03	Water	09/14/22 14:50	09/15/22 08:50

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 2004-0002 Task 1 Fmr Provision-Revised Report

Pace Project No.: 10625587

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10625587001	EW-091422-03	NWTPH-Dx	EB3	4	PASI-M

PASI-M = Pace Analytical Services - Minneapolis

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 2004-0002 Task 1 Fmr Provision-Revised Report

Pace Project No.: 10625587

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Sample: EW-091422-03 Lab ID: 10625587001 Collected: 09/14/22 14:50 Received: 09/15/22 08:50 Matrix: Water								
NWTPH-Dx GCS LV Analytical Method: NWTPH-Dx Preparation Method: EPA 3510C Pace Analytical Services - Minneapolis								
Diesel Fuel Range	ND	mg/L	0.43	1	09/21/22 11:46	09/28/22 02:40	68334-30-5	
Motor Oil Range	ND	mg/L	0.43	1	09/21/22 11:46	09/28/22 02:40		
Surrogates								
o-Terphenyl (S)	72	%.	50-150	1	09/21/22 11:46	09/28/22 02:40	84-15-1	
n-Triacontane (S)	60	%.	50-150	1	09/21/22 11:46	09/28/22 02:40		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 2004-0002 Task 1 Fmr Provision-Revised Report

Pace Project No.: 10625587

QC Batch: 841807	Analysis Method: NWTPH-Dx
QC Batch Method: EPA 3510C	Analysis Description: NWTPH-Dx GCS LV
	Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10625587001

METHOD BLANK: 4455183 Matrix: Water

Associated Lab Samples: 10625587001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Fuel Range	mg/L	ND	0.40	09/28/22 02:12	
Motor Oil Range	mg/L	ND	0.40	09/28/22 02:12	
n-Triacontane (S)	%	68	50-150	09/28/22 02:12	
o-Terphenyl (S)	%	62	50-150	09/28/22 02:12	

LABORATORY CONTROL SAMPLE & LCSD: 4455184

4455185

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Fuel Range	mg/L	2	1.6	1.6	79	79	50-150	0	20	
Motor Oil Range	mg/L	2	1.8	1.9	88	94	50-150	6	20	
n-Triacontane (S)	%				71	79	50-150			
o-Terphenyl (S)	%				81	82	50-150			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 2004-0002 Task 1 Fmr Provision-Revised Report

Pace Project No.: 10625587

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 2004-0002 Task 1 Fmr Provision-Revised Report

Pace Project No.: 10625587

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10625587001	EW-091422-03	EPA 3510C	841807	NWTPH-Dx	842726

REPORT OF LABORATORY ANALYSIS

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Effective Date:

Sample Condition Upon Receipt

Client Name: A&M Engineering & Environmental Project #: **WO#: 10625587**

PM: JMG Due Date: 09/29/22
CLIENT: A&M Engineer

Courier: FedEx UPS USPS Client
 Pace SpeedDee Commercial

Tracking Number: 5405 1823 0023 See Exceptions ENV-FRM-MIN4-0142

Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes No Biological Tissue Frozen? Yes No N/A

Packing Material: Bubble Wrap Bubble Bags None Other Temp Blank? Yes No

Thermometer: T1 (0461) T2 (1336) T3 (0459) T4 (0254) T5 (0178)
 T6 (0235) T7 (0042) T8 (0775) 01339252/1710 Type of Ice: Wet Blue Dry None
 Melted

Did Samples Originate in West Virginia? Yes No Were All Container Temps Taken? Yes No N/A

Temp should be above freezing to 6 °C Cooler temp Read w/Temp Blank: 0.4 °C Average Corrected Temp (no temp blank only): _____ °C

Correction Factor: true Cooler Temp Corrected w/temp blank: 0.4 °C See Exceptions ENV-FRM-MIN4-0142 1 Container

USDA Regulated Soil: N/A (water) sample/other: _____ Date/Initials of Person Examining Contents: 9/15/22 ADL

Did samples originate in a quarantine zone within the United States: AL, AR, AZ CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX, or VA (check maps)? Yes No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

If Yes to either question, fill out a Regulated Soil Checklist (ENV-FRM-MIN4-0154) and include with SCUR/COC paperwork.

Location (Check one): <input type="checkbox"/> Duluth <input checked="" type="checkbox"/> Minneapolis <input type="checkbox"/> Virginia	COMMENTS
Chain of Custody Present and Filled Out? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Relinquished? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Sampler Name and/or Signature on COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	4. If fecal: <input type="checkbox"/> <8 hrs <input type="checkbox"/> >8 hr, <24 <input type="checkbox"/> No
Short Hold Time Analysis (<72 hr)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E.coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrom <input type="checkbox"/> Turbidity <input type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Sufficient Sample Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8. <u>Extra samples received not on COC</u>
Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	ADL 9/15/22
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Field Filtered Volume Received for Dissolved Tests? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC? Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other	11. If no, write ID/Date/Time of container below: <input type="checkbox"/> See Exceptions ENV-FRM-MIN4-0142
All containers needing acid/base preservation have been checked? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	12. Sample # <input type="checkbox"/> NaOH <input type="checkbox"/> HNO3 <input type="checkbox"/> H2SO4 <input type="checkbox"/> Zinc Acetate
All containers needing preservation are found to be in compliance with EPA recommendation? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Positive for Residual Chlorine? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Exceptions ENV-FRM-MIN4-0142
(HNO3, H2SO4, <2pH, NaOH >9 Sulfide, NaOH >10 Cyanide)	pH Paper Lot #
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/BO15 (water) and Dioxins/PFAS (*If adding preservative to a container, it must be added to associated field and equipment blanks—verify with PM first.)	Residual Chlorine 0-6 Roll 0-6 Strip 0-14 Strip
Headspace in Methyl Mercury Container? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.
Extra labels present on soil VOA or WIDRO containers? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14. <input type="checkbox"/> See Exceptions ENV-FRM-MIN4-0142
Headspace in VOA Vials (greater than 6mm)? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
3 Trip Blanks Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Pace Trip Blank Lot # (if purchased): _____
Trip Blank Custody Seals Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Project Manager Review: Jenni Gross Date: 9/15/22

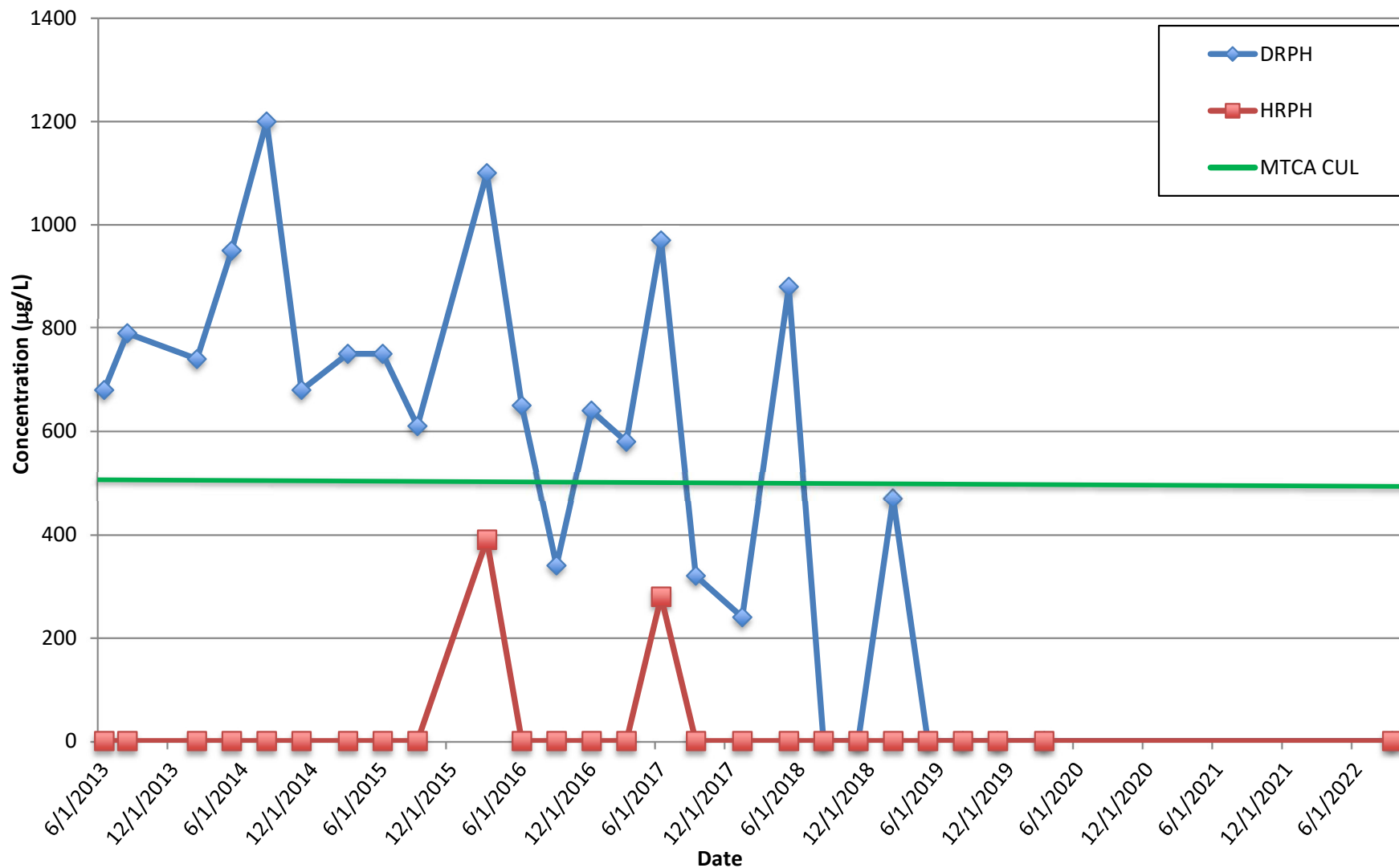
Field Data Required? Yes No

NOTE: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e., out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled By: ADL Line: 2

ATTACHMENT C
GROUNDWATER ANALYSIS TREND CHARTS

MW-6 DRPH and HRPH Concentration Time Series



MW-9 DRPH and HRPD Concentration Time Series

