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April 6, 2020

Washington Department of Ecology
Toxics Cleanup Program
Northwest Regional Office
3190 160th Avenue Southeast
Bellevue, WA 98008-5452

Attention: Ms. Tamara Welty, LG, LHG

Subject: Source Investigation Summary Report
SE Parking Lot Plume
12th & Yesler Redevelopment Property
Seattle, Washington

Dear Ms. Welty:

As you are aware, ***Whitman Environmental Sciences (WES)***, has been conducting an investigation of the potential source areas of the groundwater plume of chlorinated solvents in the parking lot in the southeastern portion of the above referenced property. The attached report addresses the scope of work, methodology and findings of our investigation. It includes the laboratory reports of all soil and groundwater analyses conducted for this phase of work and includes supporting information from previously conducted drilling and sampling at the site and on adjacent properties that are relevant to this work.

WES has been pleased to have the opportunity to be of service in this matter. If you have any questions regarding the information contained in this report, or if I may be of any further assistance, please feel free to contact me.

Respectfully submitted,

Whitman Environmental Sciences

Daniel S. Whitman
Principal

SOURCE INVESTIGATION SUMMARY REPORT

SE PARKING LOT PLUME
12TH & YESLER REDEVELOPMENT PROPERTY
SEATTLE, WASHINGTON 98122

April 6, 2020
Project No. WES-1591

WHITMAN Environmental Sciences

SOURCE INVESTIGATION SUMMARY REPORT

SE PARKING LOT PLUME
12TH & YESLER REDEVELOPMENT PROPERTY
104-124 12TH AVENUE & 1209 E. FIR STREET
SEATTLE, WASHINGTON 98122

EXECUTIVE SUMMARY

Whitman Environmental Sciences (WES) was has delineated a groundwater plume of vinyl chloride and related chlorinated solvents in the parking lot in the southeastern portion of the above referenced property. The plume appears to extend through the northern part of the SE parking lot from beneath the adjacent King County warehouse to the north. The purpose of this investigation is to identify the likely source area of the SE parking lot plume. In planning this investigation WES identified four potential areas where the plume may originate:

- The 118 12th Avenue tenant space, where prior tenants included a dry cleaner from about 1966 to 1972;
- An unidentified source beneath the King County warehouse related to past uses of that property;
- A former unidentified structure, incinerator or disposal area at the northern edge of the SE parking lot, or;
- An extended plume from the former Star Laundry facility at 160 12th Avenue, about 350 feet to the north.

Figure 1 shows the location of the subject site. Figure 2 illustrates the four areas and their relation to the SE parking lot plume. This study included drilling 14 additional borings, installing one additional monitoring well, two additional deep soil vapor probes, and obtaining 10 additional shallow soil samples in and around the site. The investigation focused on locations that would document conditions between these potential source areas and the SE parking lot plume. The purpose is to evaluate whether or not there are pathways for migration that would allow these potential source areas to contribute to the plume. The work was also coordinated with a complete set of quarterly groundwater sampling on all 19 previously exiting monitoring wells.

The findings of this study are summarized below:

- Six borings were drilled to the west of the warehouse. None of the investigation sampling from this area contained detectable concentrations of volatile organic compounds in any soil or groundwater sample. At the same time, monitoring well MW-14, an upgradient location from our investigation, contained vinyl chloride (0.66 ug/l) and cis-1,2-dichloroethene (C12DCE) at 1.3 ug/l. The investigative sampling, along with our prior investigations which support these findings, demonstrates there is no contaminant migration in groundwater toward or beneath the warehouse from this direction.

- A soil vapor sample adjacent to the west side of the warehouse did not contain tetrachloroethene (PCE) or any related daughter products except 1.4 ug/m^3 of vinyl chloride, below the deep soil gas screening level of 28 ug/m^3. The sample contained chloroform and bromodichloromethane above deep soil gas screening levels. These compounds are most commonly associated with municipal water supplies and are unrelated to PCE or its

breakdown products. This, along with our prior investigations which support these findings, demonstrates that conditions to the west of the warehouse have a different suite of compounds than observed over the SE parking lot plume. It further demonstrates that conditions to the west of the warehouse do not contribute to vapor intrusion into the warehouse structure.

- Four borings were drilled to the north of the warehouse. None of the investigation groundwater sampling from this area contained detectable concentrations of volatile organic compounds (VOCs) in any groundwater sample. The investigative sampling demonstrates there is no pathway for migration from the Star Laundry site toward or beneath the warehouse.

- Four borings were drilled to the south of the warehouse in the area of the suspected incinerator structure or disposal area. One was constructed as a permanent monitoring well (MW-15), to define the lower limits of groundwater contamination in the plume area. Ten shallow soil samples were also obtained to evaluate the extent of shallow PCE contaminated soils previously identified in boring WES-16.

  One groundwater sample from adjacent to the warehouse found elevated concentrations of PCE (33 ug/l), trichloroethene (TCE) (23ug/l), and vinyl chloride (0.23 ug/l), above MTCA Method A cleanup levels. That sample from WES-17 was obtained from within three feet of the south wall of the warehouse. Three other samples further away from the warehouse did not exceed Method A cleanup levels (WES-18), or did not contain any detectable VOCs (MW-15 and WES-19).

- One shallow soil sample from the borings south of the warehouse contained 0.13 mg/kg of PCE, with no other detected chlorinated compounds. The sample from WES-17 was from a depth of 1.5 feet below the surface, about the level of the footing of the adjacent warehouse. A deeper sample from 4.5 feet below the surface in WES-17 did not contain any detectable chlorinated VOCs. Borings WES-18, WES-19 and MW-15, further away from the wall of the warehouse, did not contain any detectable VOCs in shallow soil samples. A series of ten shallow soil samples (WES-20 through WES-29) were obtained in the area above the plume to evaluate the potential for surface spills in the parking lot. These samples did not find any other location with detectable chlorinated compounds in shallow soil.

- Groundwater samples were taken from 19 monitoring wells across the site as part of quarterly monitoring. The sampling found one well (MW-14) containing a detectable concentration of vinyl chloride (0.66 ug/l). The reported concentration exceeds the Model Toxics Control Act Method A groundwater cleanup criteria of 0.2 ug/l. Six of the samples contained detectable C12DCE at concentrations ranging from 1.1 to 3.3 ug/l, all below the applicable MTCA Method B standard formula value of 16 ug/l. Two samples contained TCE at 2.2 and 2.9 ug/l, below MTCA Method A cleanup criteria of 5 ug/l. The reported levels are lower and the distribution of chlorinated compounds is less than in prior sampling, which may reflect seasonal variations in water quality.

- Petroleum constituents were found in quarterly groundwater samples from monitoring wells MW-8, MW-9 and GEO B-8, all located in the northwestern corner of the subject property. Of these, only MW-9 exceeded MTCA groundwater cleanup criteria for any parameter. The

sample contained gasoline-range total petroleum hydrocarbons (TPH-G) at 3,900 ug/l, 9.5 ug/l of benzene and 1,100 ug/l of diesel-range TPH, which the laboratory flagged as not resembling the laboratory standard for diesel. This most likely reflects aged gasoline that extends into the diesel fraction of the test. The sample contained other petroleum-related volatile organic compounds, but at concentrations below applicable MTCA groundwater cleanup levels.

Based on the reported findings and our prior investigations of the site, this source investigation definitively excludes the areas to the west and north of the King County warehouse as potential sources or contributors to the plume in the SE parking lot. Sampling to the south of the King County warehouse found soil and groundwater contamination directly adjacent to the warehouse, but not at locations further south in the parking lot. Soil containing PCE has been identified at approximately the level of the warehouse footing. Groundwater adjacent to the wall of the warehouse is impacted with PCE, TCE, C12DCE and vinyl chloride.

Based on prior sampling throughout the SE parking lot there is a relatively limited plume that includes TCE, and a more widespread plume of vinyl chloride. The TCE distribution shows a distinct trend following the anticipated gradient of groundwater migration. The vinyl chloride plume reflects a wider distribution, suggesting the source area is located further north than the property boundary, in order to have spread to the degree found in our testing. The distribution of contaminants likely indicates a source of groundwater contamination beneath the King County warehouse.

The depth of contamination within the plume is bounded by deeper monitoring wells MW-1D and MW-15. Both of these wells are screened at depths underlying the plume and sampling has not found any detectable chlorinated compounds in any sample.

The extent of the plume is bounded to the east and southeast by on-site monitoring wells MW-1, MW-1D, MW-1S, MW-10 and MW-11. Off-site investigations conducted for Seattle Housing Authority (SHA) on the adjacent property to the east have sampled soil and groundwater for VOCs. Their investigations included analysis of seven soil and five groundwater samples that were located directly downgradient of the inferred extent of the vinyl chloride plume in the SE parking lot. None of these SHA sampling found any detectable VOCs in any samples. The finding bounds the easterly extent of the parking lot plume.

This summary is for introductory purposes only, and should be used only in conjunction with the full text of this report.

SOURCE INVESTIGATION SUMMARY REPORT

SE PARKING LOT PLUME
12TH & YESLER REDEVELOPMENT PROPERTY
104-124 12TH AVENUE & 1209 E. FIR STREET
SEATTLE, WASHINGTON 98122

April 6, 2020
Project No. WES-1591

Prepared for:
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SE PARKING LOT PLUME
12TH & YESLER REDEVELOPMENT PROPERTY
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SEATTLE, WASHINGTON 98122

1.0 INTRODUCTION

Whitman Environmental Sciences (WES) was retained by Mr. Michael Pollard of Centric Partners LLC to conduct an investigation to identify the likely source area of a plume of groundwater contaminated by chlorinated volatile organic compounds on the subject property. This work was conducted in response to comments received from the Washington Department of Ecology, which is reviewing a proposed cleanup to be conducted as part of redevelopment of the property.

This report summarizes the scope of work, methodology and findings of soil, groundwater and soil gas sampling conducted for this investigation. The investigation is one of several phases of assessment that have been completed at the property since 2017. Some pertinent site data from prior phases of work are incorporated into this assessment.

2.0 SITE DESCRIPTION

2.1 Location and Description

The subject property is located on the northeastern corner of the intersection of 12th Avenue and E. Yesler Way, in a mixed-use area in central Seattle, King County, Washington. The property and surrounding area are indicated in Figure 1, a Site Location Map.

The property consists of about 47,433 square feet of land extending the length of the block between Yesler and E. Fir Street, to the north. This investigation focused on the area surrounding an adjacent property occupied by a King County warehouse addressed 1215 E. Fir Street. Figure 2 shows the relative locations of the subject property and the warehouse.

2.2 Environmental Conditions

The subject site has been the subject of remedial investigations since at least 2016. The property has previously housed a service station with underground storage tanks, two auto repair operations, and a tenant space that housed both a screen printing shop and dry cleaner for part of its history.

WES' prior investigations have delineated a groundwater plume of vinyl chloride and related chlorinated solvents in the parking lot in the southeastern portion of the property. For identification in the redevelopment planning of the property, the area has been identified as the SE parking lot and the extent of contaminated groundwater has been identified as the SE parking lot plume. As shown in Figure 2, the plume appears to extend through the northern part of the SE parking lot from beneath the adjacent King County warehouse to the north. The purpose of this investigation has been to identify the likely source area of the SE parking lot plume.

The information collected about the site and surrounding area identified four potential areas that may contribute to the groundwater plume:

- The former tenant space at 118 12th Avenue on the subject property, where prior tenants included a dry cleaner from about 1966 to 1972;
- An unidentified source beneath the King County warehouse related to past uses of that property;
- A former structure or disposal area at the northern edge of the SE parking lot, or;
- An extended plume from the former Star Laundry facility at 160 12th Avenue, about 350 feet to the north.

Figure 2 illustrates the four areas and their relation to the SE parking lot plume. The available information about these potential sources was discussed in WES' workplan for this investigation, dated February 14, 2020 (WES, 2020).

2.2.1 118 12th Avenue Tenant Space Area

The 118 address is the northernmost tenant space in the 110 -118 12th Avenue building, a 1940 structure aligned along the western side of the redevelopment property. The area beneath the building and the open area to the east have been the subject of environmental investigations beginning in 2017 (WES, 2019). The closest point of the SE parking lot plume is about 125 feet to the southeast of the 118 12th Avenue area.

No soil samples from any of the borings in this area have contained detectable concentrations of any chlorinated compounds under analysis by EPA Method 8260. A reconnaissance groundwater sample from one hand augered boring evidenced vinyl chloride (1.9 ug/l), cis-1,2-dichloroethene (C12DCE) (5.3 ug/l), and trichloroethene (TCE) (1.6 ug/l), as well as several petroleum related volatile compounds that are attributable to the adjoining former service station to the north. MW-14 was constructed as a permanent monitoring well that has been sampled on two occasions prior to this investigation. Groundwater samples from MW-14 have detected vinyl chloride (0.25 to 0.66 ug/l) and C12DCE (1.8 to 2.3 ug/l), with no other detected compounds. Five other borings located between the former 118 12th Avenue tenant space and the SE parking lot plume (BN-1, BN-2, BN-3, BN-4 and WES-7) have not contained chlorinated volatile organic compounds (VOCs) in soil or groundwater samples.

Water level measurements in monitoring wells in and around this portion of the property indicate a generally south to southeastward gradient. The SE parking lot plume is not directly downgradient with respect to groundwater or contaminant migration. There are no utilities, trenches or known preferential flow paths that would allow cross-gradient migration of contaminants.

2.2.2 King County Warehouse Area

The King County warehouse was constructed in about 1954, replacing a small 1940s housing project. The structure was built on or very close to the property line that separates the subject property from the King County property. At the time of the warehouse construction, the SE parking lot was already in place as parking for an IGA grocery located in the lower level of the 104 12th Avenue building.

The building construction consists of tilt-up pre-cast concrete panels on narrow grade-beam foundations, with the roof supported by columns built on spread footings. Foundation plans

showing the building outline and typical footing construction are attached in Appendix C. The foundation plans do not show footing drains and the base of the building's footings are shallow, at elevations above groundwater level, which is typically five to seven feet below the surface along the northern edge of the SE Parking Lot. All utilities enter the building from the east side. The building or utility construction does not suggest a preferential flow path that would influence the direction of groundwater migration. There is likely to have been building maintenance and possibly equipment repair occurring in or on the warehouses. Activities related to the warehouse uses or construction may be potential sources of the chlorinated plume.

The row-houses that pre-dated the warehouse are also considered a potential source. Historical aerial photographs and Sanborn Fire Insurance Maps show long, narrow row-house buildings, one of which directly underlies the warehouse. At the time of a 1953 aerial photograph the homes had been removed in preparation for the warehouse construction, but the long narrow foundations and floor slabs were still in place and the photo shows a disturbed area at the southern end of the westernmost strip of slabs. The westernmost row-house and disturbed area are directly upgradient of the SE parking lot plume with respect to groundwater or contaminant migration. The warehouse area was considered a potential source of the plume due to historical uses or conditions and the location relative to the plume.

2.2.3 SE Parking Lot Area

The SE parking lot has been a parking lot since the early 1950s. Prior to that, the lot was unpaved and fenced off. Early tenants of the 104 12th Avenue building included auto repair, fertilizer manufacturing and a junk dealer. There is a potential that these early uses of the building resulted in impacts to the property that were later paved over to become the parking lot.

Another potential source in the parking lot was a structure shown in a 1955 photograph of the King County warehouse from historical Assessor's records (included in Appendix C). The structure could be a crude incinerator, located about 40 feet east of the southwestern corner of the warehouse. It should be noted that this structure pre-dates the former on-site dry cleaner at 118 12th Avenue, and the location would not have been readily accessible to that tenant. Solvent disposal in this area by the former cleaner is unlikely. Chlorinated solvents are not flammable, so it is unlikely for anyone to have attempted to dispose of them in an incinerator. This potential source is not likely related to any previously identified site activities.

This structure's location was investigated in 2019, with soil and groundwater samples from boring WES-16. A sample from one foot below the surface contained 0.12 mg/kg of tetrachloroethene (PCE), the only detected soil concentration of any chlorinated compound at any location on the entire property. The sample had a dark appearance and also contained elevated concentrations of cadmium (2.13 mg/kg), lead (883 mg/kg) and motor oil range petroleum hydrocarbons (1,200 mg/kg), suggesting this area may have been used for burning or other poorly controlled disposal. A groundwater sample contained a low concentration of 1.9 ug/l of C12DCE as the only detected chlorinated compound, but it represents the westernmost edge of the SE parking lot plume.

The area of this former structure was considered a potential source of the SE parking lot plume. The detected contaminants could also represent the southern edge of a source area beneath the King County warehouse.

2.2.4 Star Laundry Area 160 12th Avenue

The neighborhood surrounding the subject property has an extensive history of dry cleaning operations. Those include Star Laundry at 160 12th Avenue which operated to the north of the property as a laundry and dry cleaner from about 1928 to 1994. This potential source area is directly upgradient with respect to groundwater or contaminant migration. Although about 140 feet north of the King County property and about 350 feet north of the SE parking lot plume, the extremely high concentrations and the extended time the cleaner operated suggest that a contaminant plume could extend to that distance. It has been investigated since at least 2004, but no cleanup has been conducted. Five monitoring wells are at the Star Laundry property, all of which contained elevated concentrations of PCE. The highest concentrations were found in the area of a former sump in the southeastern corner of that building, where groundwater samples contained up to 16,000 ug/l of PCE and included C12DCE (4,700 ug/l), TCE (1,380 ug/l) and vinyl chloride (3.8 ug/l).

3.0 SCOPE OF WORK

To investigate these potential sources for the origin of the SE parking lot plume WES sampled soil and groundwater from fourteen additional borings located to the north, south and west of the King County warehouse. Figure 3 illustrates these new boring locations in context of prior site investigations. Six borings were drilled in the central part of the subject property along the western side of the King County warehouse, identified as borings BN-18 through BN-23. The borings were spaced about five feet from the warehouse wall, at approximately 15-foot intervals northward from the southwestern corner of the building. Four borings were drilled in the City of Seattle boulevard of E. Fir Street to the north of the warehouse, identified as borings BN-24 through BN-27. Four additional borings were drilled to the south of the warehouse, east, southeast and south of prior boring WES-16, designated WES-17 through WES-19 and MW-15. Boring MW-15 was constructed as a monitoring well for periodic sampling, screened at a depth to demonstrate the lower limits of the groundwater plume. Ten shallow soil samples were obtained from below the pavement, designated WES-20 through WES-29, in the area above the plume to evaluate the potential for surface spills to have occurred in the parking lot.

Two deep soil vapor probes were also installed along the west side of the building, identified as DSVP-3 and DSVP-4.

The work was coordinated with quarterly sampling of the 19 monitoring wells on the subject property.

3.1 Field Drilling and Sampling Procedures

WES subcontracted ESN Northwest, Inc. for all environmental field drilling in this investigation, except monitoring well MW-15 and shallow soil samples WES-20 through WES-22. These borings were drilled by Anderson Drilling LLC. Due to access constraints, borings BN-18 through BN-23 were drilled using a small tractor-mounted rig on February 28th, 2020. Borings BN-24 through BN-27 and WES-17 through WES-19 were conducted with a truck-mounted Geoprobe rig on March 3, 2020. Monitoring well MW-15 and WES-20 through WES-22 were drilled on March 26th, 2020. Shallow soil samples WES-23 through WES-29 were taken using hand auger on April 2, 2020.

Borings were drilled by direct-push methods, hydraulically driving a five-foot long sampler to obtain continuous soil samples throughout the drilled depth. Sample recovery was sometimes limited by loose or exceptionally dense soil conditions. The samplers were cleaned prior to each sampling

attempt and were equipped with new acetate liners which isolated the sample from contact with the body of the sampler. Boring BN-26 was drilled as a water sampling drive point only, since adjacent borings had consistent soil profiles showing no evidence of field detectable impacts. Details of the depths drilled, sample intervals and conditions encountered are noted on boring logs, included in Appendix A.

Borings were drilled to depths ranging from 15 to 25 feet below the ground surface. Except for MW-15, drilling extended to a depth that allowed sampling from the first encountered groundwater conditions. MW-15 was drilled through the first encountered groundwater and an underlying clayey stratum to a deeper seepage zone.

At the final depth of each boring, it was checked for standing water in the borehole. Groundwater seepage was encountered in all of the borings. Except for MW-15, a 1-inch diameter factory-slotted PVC well screen was installed as a temporary well to allow one-time reconnaissance groundwater sampling. The screen was purged to remove sediment using a peristaltic pump equipped with new polyethylene tubing. In most cases, recharge to the screen was sufficient to allow pumping until turbidity was reduced and relatively clear water could be obtained.

For monitoring well MW-15, after drilling and sampling to identify soil conditions, the driller moved over two feet and drove a 4-inch steel casing equipped with a sacrificial point to a depth of 25 feet, then installed a 5-foot long, 2-inch diameter PVC screen equipped with a mesh-wrapped pre-packed filter. The screen was then surrounded by an additional silica sand filter pack and the remaining borehole was grouted to seal off overlying water-bearing zones. The well was equipped with a flush monument installed in concrete at the ground surface. The well was allowed to stand undisturbed for five days prior to development and seven days prior to sampling.

Shallow soil samples were obtained using a jackhammer to break the asphalt pavement, then a post hole digger to clear base gravel from above the natural soil. Below that depth, a hand auger was used to extend the hole to a depth of three feet. Representative samples were taken from depths of 1.5 and 3 feet below the surface for potential laboratory testing.

During all drilling, representative portions of soil samples were placed in laboratory prepared containers, chilled and held under chain-of-custody following appropriate environmental sampling procedures. Soil samples intended for analysis of volatile organic compounds were placed in 40-ml septum sealed vials in accordance with EPA Method 5035A, chilled and held under chain-of-custody until delivered to the laboratory. Additional portions of all samples were held for field screening, potential laboratory testing and soil classification reference.

After drilling and sampling was completed the borings were sealed with bentonite and surficial asphalt patches were placed at the ground surface to match the surrounding surface in paved areas. Shallow soil sample locations were backfilled with the cuttings.

The deep soil vapor probes were completed at a depth of five feet below the surface, constructed with a 1" stainless steel porous filter surrounded by a silica sand pack, attached to teflon tubing extending to the ground surface. The remaining borehole was sealed with bentonite and the probes were allowed to stand for at least 48-hours before sampling vapors. A sample was obtained from DSVP-4 using a laboratory prepared 1-liter Summa canister attached to the tubing, following

appropriate leak check, purge and sample techniques. When attempting to sample DSVP-3, water was drawn into the tubing, indicating the porous filter was below groundwater level at that location. The probe could not be sampled for this investigation.

3.2 Quarterly Groundwater Monitoring

From February 24th to April 2nd, 2020, WES collected groundwater samples from 19 pre-existing monitoring wells and newly installed well MW-15. Water level measurements were taken relative to a measuring point on the top of well pipe that has the elevation established by a licensed surveyor. Sampling was conducted using peristaltic pumps with dedicated polyethylene tubing to purge and sample the wells. Where possible, sampled wells were purged of a minimum of three standing well volumes. Wells MW-3, MW-5, MW-12, MW-14 and MW-15 pump dry before that volume is reached and were allowed to recharge, then pumped again prior to sampling.

Field measurements of the groundwater temperature, pH and conductivity were taken as indicators of stability during pumping. During sampling, the pump flow rates are reduced to approximately 40 ml/minute to fill containers. Representative samples are placed in laboratory prepared vials and bottles appropriate for the planned analyses, chilled and held under chain-of-custody following appropriate environmental sampling procedures, until delivered to the laboratory.

3.3 Field Observations

During drilling, the samples were reviewed for soil classification purposes and any field detectable evidence of soil and groundwater contamination. There was no evidence of discoloration, petroleum or solvent odors, elevated PID measurements, sheens or staining at any of the borings. Shallow soils observed in the SE parking lot (borings WES-17 through WES-29 and MW-15) were fill, containing limited amounts of debris, including brick and glass, but no other field discernible evidence of impacts.

3.4 Laboratory Testing of Environmental Samples

For this investigation, at least one soil sample and the groundwater sample were selected from each on-site boring for laboratory analyses. No soil samples were selected from borings BN–24 through BN-27, north of the King County warehouse, as off-site locations removed from any planned cleanup or excavation, showing no field detectable indications of impacts.

All selected soil and groundwater samples were analyzed for a suite of 63 volatile organic compounds by EPA Method 8260. Selected soil samples were also analyzed for total petroleum hydrocarbons in the gasoline range by Method NWTPH-G and/or a list of five common regulated metals; arsenic, cadmium, chromium, lead and mercury (MTCA 5 Metals).

If initial soil analyses detect contaminants of concern, a deeper sample from that same boring was selected for additional analysis to evaluate the vertical extent. During this investigation only one additional sample, from boring WES-17 was selected for additional testing.

Groundwater samples from the quarterly monitoring round in existing monitoring wells were also analyzed for total petroleum hydrocarbons in the gasoline, diesel and motor oil ranges by methods NWTPH-G and NWTPH-D(x). One sample from monitoring well MW-1D was analyzed for total lead and arsenic.

The deep soil gas sample from DSVP-4 was analyzed by EPA Method TO-15 for a full list of volatile organic compounds.

The laboratory testing of soil and groundwater samples are summarized in Tables 1 and 2, respectively. Table 1 includes a summary of pertinent soil data from prior investigation borings in these portions of the site from our 2017 to 2019 investigations.

The laboratory testing of soil gas is summarized in Table 3, comparing the current sample results to that of two prior samples from other probes installed in the SE parking lot (DSVP-1 and DVSP-2).

A summary of 2017 to 2019 groundwater analyses from both reconnaissance samples and periodic sampling from monitoring wells is included as Table 4.

4.0 SOURCE INVESTIGATION RESULTS

4.1 Soil and Groundwater Conditions

As noted above, soil conditions consist of a layer of relatively unconsolidated fill containing organic material and debris, overlying brown to grayish brown clayey sand and gravel interpreted to be glacial till, or weathered, till-derived sediments. Where present, groundwater was encountered in sandier zones, including thinly layered interbeds in otherwise silty soil. Cross sections demonstrating the interpreted geologic stratification within the depths drilled are attached as Figures 4A and 4B. A cross section orientation plan is included as Figure 4. These figures include previous investigation data supplemented by the new information from this investigation. Table A-1 in Appendix A summarizes all site remedial investigation borings conducted on or around the property. The available bore logs are included.

Groundwater was encountered in sandier zones ranging from thin fine sand laminae within silt units to thicker water-bearing zones up to two and a half feet in thickness.

Water level measurements have been taken throughout this remedial investigation. Table 5 summarizes the top-of-pipe elevation for each well, the depth to groundwater and the groundwater elevation at each well during the current and prior monitoring events.

Current measurements show that groundwater ranges in depth from 1.65 to 14.62 feet below the top of pipe of the monitoring wells. The depths represent groundwater elevations within a range of 187.20 to 201.89 feet. There is a significant difference in water elevation from the highest elevations in the northwest to lowest levels in the southeast, indicating a relatively strong overall gradient of 0.03 to 0.04 foot/foot to the southeast across the site. Figure 5 shows the inferred contour of the groundwater surface and anticipated southeasterly direction of migration for measurements taken on March 17, 2020. The inferred direction and gradient of groundwater migration remains relatively consistent with prior measurement sets.

Water level measurements in the nested well set MW-1D and MW-1S demonstrate an upward vertical gradient ranging from 0.019 to 0.090 foot/foot, averaging 0.054 foot/foot over four sets of seasonal measurements. This suggests the lower water-bearing formation is under hydraulic pressure and is most likely isolated from the shallower water-bearing zones. This reduces the potential for shallow contaminants to reach underlying aquifers.

Monitoring well MW-15 was not yet installed at the date of this quarterly full set of water level measurements. Water level at the time of sampling was 7.12 feet below top of pipe, an elevation of 193.73 feet.

4.2 Soil Sample Analytical Results

Table 1 summarizes the soil samples selected for laboratory testing and the analytical results. Laboratory analytical reports are included in Appendix B. Laboratory analyses found no evidence of chlorinated volatile organic compounds in any of the soil samples from the six borings to the west of the King County warehouse (borings BN-18 through BN-23). These findings indicate there is no large scale source of contaminants in the vicinity of the 118 12th Avenue tenant space that could contribute to the SE parking lot plume. Five samples from these borings were also analyzed for the MTCA 5 Metals. None of the reported concentrations of any of the metals exceeded MTCA Method A cleanup levels. Total chromium was detected at concentrations ranging from 29.5 to 34.7 mg/kg, which exceeds the MTCA Method A cleanup level for chromium VI. However, there is no reason to suspect industrial operations that would utilize chromium VI, so the cleanup level of 2,000 mg/kg for chromium III would apply.

One shallow soil sample from boring WES-17, located to the south of the warehouse, identified 0.13 mg/kg of PCE, with no other detected chlorinated VOCs as degradation products. The sample, from a depth of 1.5 feet is at approximately the elevation of the warehouse footing and is located about seven feet east of a sample from similar depth in October 2019 boring WES-16. Deeper soil samples from WES-16 and WES-17 did not contain any detectable VOCs.

Based on this finding, WES conducted additional shallow soil sampling to evaluate whether or not surface spills in the parking lot were a potential source of the plume. Thirteen soil samples from borings WES-18 through WES-29 and MW-15 from a depth of 1.5 feet found no detectable volatile organic compounds.

This finding identified PCE contaminated soil within three feet of the warehouse, at footing level, with no detected concentrations at any other location in the SE parking lot. The finding suggests the detected contaminant is the southern extent of a source area beneath the warehouse.

Figure 6 illustrates the results of laboratory testing on soil samples from this investigation.

4.3 Groundwater Sample Analytical Results

Table 2 summarizes the groundwater samples of this source investigation and the quarterly sampling from prior monitoring wells. Figure 7 identifies the source investigation borings and 1st Quarter 2020 sampling of monitoring wells that detected chlorinated VOCs in groundwater.

Source Investigation Reconnaissance Samples

Laboratory analyses found no evidence of chlorinated volatile organic compounds in any of the reconnaissance samples from the six borings to the west (BN-18 through BN-23) or four borings to the north (BN-24 through BN-27) of the King County warehouse. These findings indicate there is no viable pathway for the potential sources from the west (118 12th Avenue) or north (Star Laundry) to contribute to the SE parking lot plume.

Groundwater in two borings south of the warehouse (WES-17 and WES-18) contained detectable chlorinated compounds. The sample from boring WES-17 found elevated concentrations of PCE

(33 ug/l), TCE (23ug/l), and vinyl chloride (0.23 ug/l), above MTCA Method A cleanup levels. Sample WES-17-GW was obtained from within three feet of the south wall of the warehouse. The sample from boring WES-18, about 15 feet south of the warehouse contained TCE (4.2 ug/l) and C12DCE (6.5 ug/l), which do not exceed Method A cleanup levels. Boring WES-19, located further to the southwest and the sample from MW-15, located to the southeast, found no detectable volatile organic compounds.

Quarterly Groundwater Samples from Monitoring Wells
Groundwater samples from the 19 pre-existing monitoring wells found concentrations of one or more chlorinated compounds in wells MW-5, MW-6, MW-11 and MW-14, GEO B-7 and GEO B-9. These six samples contained detectable C12DCE at concentrations ranging from 1.1 to 3.3 ug/l, all below the applicable MTCA Method B standard formula value of 16 ug/l.

Of the 19 wells, only MW-14 contained vinyl chloride, at a concentration of 0.66 ug/l, exceeding the MTCA Method A cleanup criteria of 0.2 ug/l. No other detected chlorinated compound in this or other wells exceeded MTCA Method A groundwater cleanup levels or Method B standard formula values. Two samples (MW-5 and GEO B-7) contained TCE at 2.2 and 2.9 ug/l, below MTCA Method A cleanup criteria of 5 ug/l. The sample from MW- 6 contained PCE at 1.1 ug/l. The reported levels are lower and the distribution of chlorinated compounds is less than in prior sampling, which may reflect seasonal variations in water quality. Time series plots demonstrating variations in concentrations are attached, for those wells that have detected contaminants in any sampling event.

Wells MW-5, MW-11 GEO B-7 and GEO B-9 are all within the area of the SE parking lot plume. The plume is typically bounded by monitoring wells MW-1, MW-1S, MW-1D, MW-11 and MW-10 to the east, MW-12 to the south, and MW-2 and GEO B-7 to the west. Additional information regarding conditions to the east of the plume is available from two investigations of the adjacent property for the Seattle Housing Authority.

A 2017 evaluation by Foster Wheeler AMEC drilled six borings for soil and groundwater testing in the parking lot to the west of the eastern King County warehouse. A 2019 report by PBS Environmental, Inc. drilled seven borings in and around the same building. The referenced reports are included in Appendix D.

The evaluations included analysis of eight groundwater samples for VOCs. Borings FIR-01, FIR-03, BH-03, BH-04 and BH-06 of those investigations were located directly downgradient of the inferred extent of the vinyl chloride plume in the SE parking lot. The boring locations are shown in Figure 3. None of the SHA sampling found any detectable VOCs in groundwater samples. The finding bounds the easterly extent of the parking lot plume.

Petroleum constituents were found in quarterly groundwater samples from monitoring wells MW-8, MW-9 and GEO B-8, all located in the northwestern corner of the subject property. Of these, only MW-9 exceeded MTCA groundwater cleanup criteria for any parameter. The sample contained gasoline-range total petroleum hydrocarbons (TPH-G) at 3,900 ug/l, 9.5 ug/l of benzene and 1,100 ug/l of diesel-range TPH, which the laboratory flagged as not resembling the laboratory standard for diesel. This most likely reflects aged gasoline that extends into the diesel fraction of the test. The sample contained other petroleum-related volatile organic compounds, but at concentrations below applicable MTCA groundwater cleanup levels.

A sample from monitoring well MW-1D was found to contain 10.3 ug/l of total arsenic. This result is most likely due to moderate turbidity in the sample, since this well is screened from a depth of 35 to 40 feet below the ground surface and any detected metals would likely be from natural sources. Additional arsenic testing will be conducted in future monitoring rounds with low-flow sampling to limit the amount of turbidity and dual analyses will be performed to compare total to dissolved concentrations.

4.4 Soil Gas Sample Analytical Results

The soil gas sample from DSVP-4, adjacent to the west side of the warehouse, contained 1.4 ug/m^3 of vinyl chloride as the only PCE-related chlorinated compound. The reported concentration is below Ecology's deep soil gas screening level of 28 ug/m^3. The sample contained a variety of other volatile compounds, mostly light-end petroleum constituents, none of which approach deep soil gas screening levels. This sample result demonstrates that soil gas is not migrating from the petroleum contaminated soil and groundwater areas on the former service station parcel toward or below the warehouse.

The sample contained chloroform (15 ug/m^3) and bromodichloromethane (8.5 ug/m^3), at levels above their respective deep soil gas screening levels. These compounds are most commonly associated with municipal water supplies and are unrelated to petroleum, PCE or its breakdown products. This most likely indicates a long history of leaking water lines in the vicinity of the site.

The reported detections are summarized in Table 3, along with two other deep soil gas samples taken in the area directly above the SE parking lot plume in October 2019. The most notable feature is the similarities of the suite of detected compounds between the samples over the plume (DSVP-1 and DSVP-2) versus the different composition of DSVP-4, from the west of the warehouse. DSVP-1 and DSVP-2 contained acetone, butane, carbon disulfide, C12DCE, heptane, hexane, methyl-ethyl-ketone, naphthalene and TCE at disproportionate levels to that found in DSVP-4. DSVP-4 contained chloroform, bromodichloromethane, cumene, dibromochloromethane, ethylbenzene, toluene, pentane, xylenes and trimethylbenzenes, disproportional to that found in the other two samples. It further demonstrates that conditions to the west of the warehouse are not a likely source of the SE parking lot plume, or contribute to vapor intrusion into the warehouse structure.

5.0 FINDINGS AND CONCLUSIONS

Based on the reported findings and our prior investigations of the site, this source investigation definitively excludes the areas to the west and north of the King County warehouse as potential sources or contributors to the plume in the SE parking lot. Sampling to the south of the King County warehouse found soil and groundwater contamination directly adjacent to the warehouse, but not at locations further south in the parking lot. Soil containing PCE has been identified at approximately the level of the warehouse footing. Groundwater adjacent to the wall of the warehouse is impacted with PCE, TCE, C12DCE and vinyl chloride.

Figure 7 notes the boring and monitoring well locations where groundwater concentrations of chlorinated compounds and petroleum have been detected exceeding MTCA Method A cleanup levels in this current quarter and source investigation. The estimated typical extent of the vinyl chloride plume is also shown. A smaller plume within this area is defined by locations that have

identified TCE in one of more samples throughout the history of the investigations of this site. The TCE plume is relatively limited in extent compared to the more widespread plume of vinyl chloride. The TCE distribution shows a distinct trend following the anticipated gradient of groundwater migration. The vinyl chloride plume reflects a wider distribution, suggesting the source area is located further north than the property boundary, in order to have spread to the degree found in our testing. The distribution of contaminants indicates a source of groundwater contamination beneath the King County warehouse.

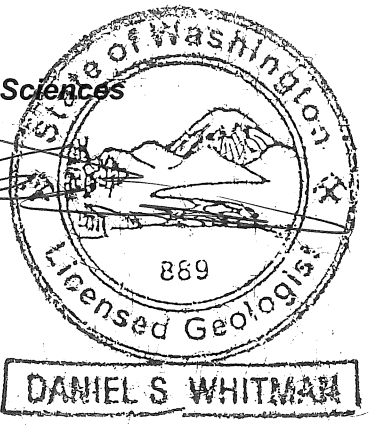
The extent of the plume is bounded by monitoring wells and reconnaissance groundwater sampling to the east, south and west. Investigation samples both on-site and on adjoining property to the east include soil and groundwater samples beyond the limits of the plume. Monitoring wells MW-1D and MW-15 demonstrate that contamination is relatively shallow and does not extent to lower water-bearing units.

6.0 CLOSURE

Whitman Environmental Sciences has been pleased to be of service in this matter. If you have any questions regarding the information contained in this report, or if we may be of any further assistance, please feel free to contact me.

Respectfully submitted,
Whitman Environmental Sciences

Daniel S. Whitman, LG
Principal



7.0 REFERENCES

AMEC, 2017 AMEC Foster Wheeler, Phase II Environmental Site Assessment, 1215 East Fir Street, Seattle, Washington, Project No. PS1718052G, July 2017

PBS, 2019 PBS Engineering & Environmental, Inc., Subsurface Investigation Report 1215 E Fir Street, Seattle, Washington, King County Assessor's Parcel 8061000045, Project No. 41593.000, September 24, 2019

WES, 2019 Whitman Environmental Sciences, Remedial Investigation Summary Report, 12th & Yesler Redevelopment Property, Seattle, Washington, Project No. WES-1591, October 26, 2019

WES, 2020 Whitman Environmental Sciences, Workplan for Source Investigation, SE Parking Lot Plume, 12th & Yesler Redevelopment Property, Seattle, Washington, Project No. WES-1591, February 14, 2020

TABLES

TABLE 1
Source Investigation Summary of Soil Sample Analytical Results
104 - 124 12th Avenue & 1209 E. Fir Street, Seattle, Washington

Boring/ Sample I.D.	Sample Location	Sample Date	Depth (ft.)	Laboratory Analytical Results (mg/kg)			
				Total Petroleum Hydrocarbons (by Method NWTPH-HCID or NWTPH-G and NWTPH-D(x))	**Benzene, Toluene, Ethyl benzene, Xylenes** (by EPA Methods 8021B or 8260C)	**Other Volatile Organic Compounds** (List of 58 Additional Compounds Detectable by the Laboratory Method.)	**Regulated Metals** (By EPA Method 6020B)
Borings South of King County Warehouse							
WES-17	SE parking lot, 3' S of King Co. warehouse, 2' W of centerline of building	3-5-2020	1.5'	Gasoline: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	***Tetrachloroethene 0.13*** ND (all other)	NA
			4'	Gasoline: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)	NA
WES-18	SE parking lot, 15' S of King Co. warehouse, 2' W of centerline of building	3-5-2020	1'	Gasoline: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)	Arsenic: 2.50 Cadmium: ND (<1) Chromium: 15.7 Lead: 8.62 Mercury: ND (<1)
WES-19	SE parking lot, 22' S of King Co. warehouse, 12' W of centerline of building	3-5-2020	1.5'	Gasoline: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)	Arsenic: 12.0 Cadmium: ND (<1) Chromium: 23.2 Lead: 2.95 Mercury: ND (<1)
WES-20	SE parking lot, 3' S, 18‘ W of centerline of warehouse	3-26-2020	1.5	Gasoline: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)	Arsenic: 2.89 Cadmium: ND (<1) Chromium: 20.2 Lead: 37.7 Mercury: ND (<1)
WES-21	SE parking lot, 2' S, 10 E of centerline of warehouse	3-26-2020	1.5	Gasoline: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)	NA
WES-22	SE parking lot, 3' S, 22' E of centerline of warehouse	3-26-2020	1.5	Gasoline: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)	Arsenic: 3.86 Cadmium: ND (<1) Chromium: 24.5 Lead: 9.11 Mercury: ND (<1)
WES-23	SE parking lot, 22‘ S, 26' E of centerline of warehouse	4-2-2020	1.5	Gasoline: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)	NA

TABLE 1
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Boring/ Sample I.D.	Sample Location	Sample Date	Depth (ft.)	Laboratory Analytical Results (mg/kg)			
				Total Petroleum Hydrocarbons (by Method NWTPH-HCID or NWTPH-G and NWTPH-D(x)	Benzene Toluene Ethyl benzene Xylenes (by EPA Methods 8021B or 8260C)	Other Volatile Organic Compounds (List of 58 Additional Compounds Detectable by the Laboratory Method.)	Regulated Metals (By EPA Method 6020B)
WES-24	SE parking lot, 28‘ S, 24' E of centerline of warehouse	4-2-2020	1.5	Gasoline: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)	NA
WES-25	SE parking lot, 28‘ S, 13' E of centerline of warehouse	4-2-2020	1.5	Gasoline: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)	NA
WES-26	SE parking lot, 26' S, 4' E of centerline of warehouse	4-2-2020	1.5	Gasoline: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)	NA
WES-27	SE parking lot, 44' S, 4' E of centerline of warehouse	4-2-2020	1.5	Gasoline: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)	NA
WES-28	SE parking lot, 49' S, 36' E of centerline of warehouse	4-2-2020	1.5	Gasoline: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)	NA
WES-29	SE parking lot, 28' S, 40' E of centerline of warehouse	4-2-2020	1.5	Gasoline: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)	NA
MW-15	In N central part of SE parking lot	3-26-2020	1.5	Gasoline: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)	NA
			5'	Gasoline: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)	NA
			23'	Gasoline: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)	NA

TABLE 1
Source Investigation Summary of Soil Sample Analytical Results
104 - 124 12th Avenue & 1209 E. Fir Street, Seattle, Washington

Boring/ Sample I.D.	Sample Location	Sample Date	Depth (ft.)	Laboratory Analytical Results (mg/kg)			
				Total Petroleum Hydrocarbons (by Method NWTPH-HCID or NWTPH-G and NWTPH-D(x))	**Benzene, Toluene, Ethyl benzene, Xylenes** (by EPA Methods 8021B or 8260C)	**Other Volatile Organic Compounds** (List of 58 Additional Compounds Detectable by the Laboratory Method.)	**Regulated Metals** (By EPA Method 6020B)
Borings West of King County Warehouse							
BN-18	5' W. of Warehouse 15' N. of SW building corner	2-24-2020	6.5'	Gasoline: ND (<5) Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)	Arsenic: 12.0 Cadmium: ND (<1) Chromium: 34.7 Lead: 2.80 Mercury: ND (<1)
BN-19	5' W. of Warehouse 30' N. of SW building corner	2-24-2020	1.5'	Gasoline: ND (<5) Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)	NA
BN-20	5' W. of Warehouse 45' N. of SW building corner	2-24-2020	7'	Gasoline: ND (<5) Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)	Arsenic: 14.9 Cadmium: ND (<1) Chromium: 29.5 Lead: 2.60 Mercury: ND (<1)
BN-21	5' W. of Warehouse 60' N. of SW building corner	2-24-2020	7'	Gasoline: ND (<5) Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)	Arsenic: 16.0 Cadmium: ND (<1) Chromium: 33.8 Lead: 3.37 Mercury: ND (<1)
BN-22	5' W. of Warehouse 75' N. of SW building corner	2-24-2020	8'	Gasoline: ND (<5) Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)	Arsenic: 8.92 Cadmium: ND (<1) Chromium: 33.6 Lead: 3.03 Mercury: ND (<1)
BN-23	Center of open area, 35 feet SE of MW-14	2-24-2020	3'	Gasoline: ND (<5) Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)	NA
			8'	Gasoline: ND (<5) Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)	Arsenic: 17.7 Cadmium: ND (<1) Chromium: 31.9 Lead: 3.40 Mercury: ND (<1)

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				Total Petroleum Hydrocarbons (by Method NWTPH-HCID or NWTPH-G and NWTPH-D(x))	Benzene Toluene Ethyl benzene Xylenes (by EPA Methods 8021B or 8260C)	Other Volatile Organic Compounds (List of 58 Additional Compounds Detectable by the Laboratory Method.)	Regulated Metals (By EPA Method 6020B)
Borings North of King County Warehouse - E. Fir Street Right-of-Way							
BN-24	12' N. of Warehouse, 12' W of NE building corner	3-5-2020	NA				
BN-25	12' N. of Warehouse, 35' W of NE building corner	3-5-2020	NA				
BN-26	12' N. of Warehouse, 60' W of NE building corner	3-5-2020	NA				
BN-27	12' N. of Warehouse, 75' W of NE building corner	3-5-2020	NA				
Prior Borings Relevant to Source Investigation and Plume Definition							
Area South of King County Warehouse							
WES-7	Near NE corner of basement	4/4/2017	10'	Gasoline: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)	NA
WES-8 (Completed as MW-7)	In N corridor, 25' W of WES-7	4/4/2017	11.5'	Gasoline: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)	NA
WES-10	In S central part of SE parking lot	4/5/2017	7'	Gasoline: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)	NA
WES-11	In N central part of SE parking lot, adjacent to previous boring MW-5	4/5/2017	15'	Gasoline: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)	NA
WES-12	In SW corner of SE parking lot	4/5/2017	16'	Gasoline: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)	NA

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Boring/ Sample I.D.	Sample Location	Sample Date	Depth (ft.)	Laboratory Analytical Results (mg/kg)			
				Total Petroleum Hydrocarbons (by Method NWTPH-HCID or NWTPH-G and NWTPH-D(x))	**Benzene, Toluene, Ethyl benzene, Xylenes** (by EPA Methods 8021B or 8260C)	**Other Volatile Organic Compounds** (List of 58 Additional Compounds Detectable by the Laboratory Method.)	**Regulated Metals** (By EPA Method 6020B)
WES-13	In E central part of SE parking lot	4/5/2017	12'	Gasoline: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)	NA
WES-16	NW edge of SE parking lot, adjacent to King Co. warehouse, 8' W of centerline of building	10/1/2019	1'	Gasoline: ND (<5) Diesel: 81[X] Motor Oil: 1,200	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	***Tetrachloroethene 0.12*** ND (all other)	Arsenic: 12.1 ***Cadmium: 2.13*** Chromium: 28.1 ***Lead: 883*** Mercury: ND (<1)
		10/1/2019	6'	Gasoline: ND (<5) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)	Lead: 3.42
Geotech B-7 (GEO B-7)	In NW part of parking lot, between previous borings MW-2 and MW-5	9/7/2018	14'	Gasoline: ND (<5) Diesel: NA Motor Oil: NA	Benzene: ND (<0.02) Toluene: ND (<0.02) Ethylbenzene: ND (<0.02) Xylenes: ND (< 0.06)	ND (all)	NA
Geotech B-9 (GEO B-9)	In NE part of SE parking lot, between previous borings MW-5 and MW-1	9/7/2018	7.5'	Gasoline: ND (<5) Diesel: NA Motor Oil: NA	Benzene: ND (<0.02) Toluene: ND (<0.02) Ethylbenzene: ND (<0.02) Xylenes: ND (< 0.06)	ND (all)	NA
		9/7/2018	12.5'	Gasoline: ND (<20) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.02) Toluene: ND (<0.02) Ethylbenzene: ND (<0.02) Xylenes: ND (< 0.06)	ND (all)	NA
MW-1D	In NE corner of property, outside fenceline, in King Co. Archives parking lot	7/22/2019	8'	Gasoline: ND (<20) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)	NA
MW-11	On E central edge of property, in King Co. Archives parking lot	7/22/2019	9'	Gasoline: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)	NA
MW-12	In SE central part of SE parking lot	7/22/2019	9'	Gasoline: ND (<20) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)	NA

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				Total Petroleum Hydrocarbons ***(by Method NWTPH-HCID or NWTPH-G and NWTPH-D(x)***	***Benzene Toluene Ethyl benzene Xylenes (by EPA Methods 8021B or 8260C)***	***Other Volatile Organic Compounds*** ***(List of 58 Additional Compounds Detectable by the Laboratory Method.)***	***Regulated Metals*** ***(By EPA Method 6020B)***
Area West of King County Warehouse							
BN-1	In SE corner of open area	5/12/2017	9'	Gasoline: ND (<20) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)	NA
		5/12/2017	15'	Gasoline: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)	NA
BN-2	Near SW corner of open area	5/12/2017	3'	Gasoline: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)	NA
		5/12/2017	13'	Gasoline: ND (<20) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)	NA
BN-3	Outside rear entry to 110 12th Avenue bldg.	5/12/2017	7'	Gasoline: ND (<20) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)	NA
		5/12/2017	14.5'	Gasoline: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)	NA
BN-4	In E central part of open area, adjacent to Archives bldg.	5/12/2017	7'	Gasoline: ND (<20) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)	NA

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				Total Petroleum Hydrocarbons (by Method NWTPH-HCID or NWTPH-G and NWTPH-D(x))	**Benzene, Toluene, Ethyl benzene, Xylenes** (by EPA Methods 8021B or 8260C)	**Other Volatile Organic Compounds** (List of 58 Additional Compounds Detectable by the Laboratory Method.)	**Regulated Metals** (By EPA Method 6020B)
BN-17	In NE slope of open area, 10' S of corner of King Co. Archives Bldg.	7/23/2019	5'	Gasoline: NA Diesel: NA Motor Oil: NA	NA	NA	Arsenic: 3.46 Cadmium: ND (<1) Chromium: 14.6 Lead: 64.7 Mercury: ND (<1)
		7/23/2019	10'	Gasoline: NA Diesel: NA Motor Oil: NA	NA	NA	Arsenic: 13.0 Cadmium: 1.37 Chromium: 32.7 ***Lead: 411*** Mercury: ND (<1)
		7/23/2019	13'	Gasoline: NA Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)	Lead: 32.6
		7/23/2019	15'	Gasoline: NA Diesel: NA Motor Oil: NA	NA	NA	Lead: 2.86
HA-N	In N. portion of building basement	5/12/2017	2.5	***Gasoline: 730*** Diesel: 230[x] Motor Oil: ND (<250)	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	n-Propylbenzene 0.24 sec-Butylbenzene 0.60 ND (all other)	NA
		5/12/2017	9'	Gasoline: 3.9 Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)	NA
HA-S	In S portion of building basement	5/12/2017	2.5'	Gasoline: 7.0 Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)	NA
		5/12/2017	6'	Gasoline: 11 Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	n-Propylbenzene 0.12 ND (all other)	NA
HA-3	In S portion of basement below 110 tenant space	8/4/2017	4'	Gasoline: ND (<2) Diesel: ND (<50) Motor Oil: ND (<250)	NA	ND (all)	NA

TABLE 1
Source Investigation Summary of Soil Sample Analytical Results
104 - 124 12th Avenue & 1209 E. Fir Street, Seattle, Washington

Boring/ Sample I.D.	Sample Location	Sample Date	Depth (ft.)	Laboratory Analytical Results (mg/kg)			
				Total Petroleum Hydrocarbons (by Method NWTPH-HCID or NWTPH-G and NWTPH-D(x))	**Benzene, Toluene, Ethyl benzene, Xylenes** (by EPA Methods 8021B or 8260C)	**Other Volatile Organic Compounds** (List of 58 Additional Compounds Detectable by the Laboratory Method.)	**Regulated Metals** (By EPA Method 6020B)
MW-14	In W central part of open area, at base of slope adjacent to former dry clener tenant space (118 12th Avenue)	7/23/2019	10'	Gasoline: ND (<5) Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)	Arsenic: 7.52 Cadmium: ND (<1) Chromium: 23.7 Lead: 24.2 Mercury: ND (<1)
Area North and Northwest of King County Warehouse							
BN-5	In NE corner of parking lot, near oil/water separator	5/12/2017	5'	Gasoline: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)	NA
		5/12/2017	11'	Gasoline: ND (<20) Diesel: ND (<50) Motor Oil: ND (<250)	NA	NA	NA
		5/12/2017	18'	Gasoline: ND (<20) Diesel: ND (<50) Motor Oil: ND (<250)	NA	NA	NA
BN-6	In S area of parking lot, near paint booth sump	5/12/2017	1'	Gasoline: 2.7 Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)	NA
		5/12/2017	9'	Gasoline: ND (<20) Diesel: ND (<50) Motor Oil: ND (<250)	NA	NA	NA
		5/12/2017	15'	Gasoline: ND (<2) Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)	NA
BN-11	At S end of 1209 Fir bldg, inside gate to open area	5/15/2017	12'	NA	NA	NA	Arsenic: 4.03 Cadmium ND (<1) Chromium 17.5 ***Lead 330*** Mercury ND (<1)
		5/15/2017	20'	Gasoline: ND (<20) Diesel: ND (<50) Motor Oil: ND (<250)	NA	NA	NA

TABLE 1
Source Investigation Summary of Soil Sample Analytical Results
104 - 124 12th Avenue & 1209 E. Fir Street, Seattle, Washington

Boring/ Sample I.D.	***Sample Location***	***Sample Date***	***Depth (ft.)***	***Laboratory Analytical Results (mg/kg)***			
				Total Petroleum Hydrocarbons ***(by Method NWTPH-HCID or NWTPH-G and NWTPH-D(x)***	***Benzene Toluene Ethyl benzene Xylenes (by EPA Methods 8021B or 8260C)***	***Other Volatile Organic Compounds*** ***(List of 58 Additional Compounds Detectable by the Laboratory Method.)***	***Regulated Metals*** ***(By EPA Method 6020B)***
BN-13	At S end of Auto Repair building, at top of slope	7/23/2019	7'	Gasoline: NA Diesel: NA Motor Oil: NA	NA	NA	Arsenic: 4.13 Cadmium: ND (<1) Chromium: 17.8 Lead: 32.3 Mercury: ND (<1)
		7/23/2019	11'	Gasoline: ND (<20) Diesel: ND (<50) Motor Oil: ND (<250)	NA	NA	Arsenic: 4.53 Cadmium: ND (<1) Chromium: 13.5 Lead: 42.2 Mercury: ND (<1)
		7/23/2019	16'	Gasoline: NA Diesel: NA Motor Oil: NA	NA	NA	Arsenic: 9.42 Cadmium: ND (<1) Chromium: 33.0 Lead: 8.43 Mercury: ND (<1)
BN-14	In SE corner of auto repair yard, near intersection of King Co. Archives bldgs.	7/23/2019	11'	Gasoline: NA Diesel: ND (<50) Motor Oil: ND (<250)	NA	NA	Arsenic: 2.06 Cadmium: ND (<1) Chromium: 9.13 Lead: 10.1 Mercury: ND (<1)
		7/23/2019	18'	Gasoline: ND (<5) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)	NA
		7/23/2019	21'	Gasoline: ND (<5) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)	NA
Washington State Model Toxics Control Act (MTCA) Soil Cleanup Criteria (mg/kg)				***Gasoline: 30[A]*** ***If no benzene present: 100[A]*** ***Diesel or Motor Oil: 2,000[A]***	***Benzene: 0.03[A]*** ***Toluene: 7[A]*** ***Ethylbenzene: 6[A]*** ***Xylenes: 9[A]***	***Tetrachloroethene 0.05[A]*** ***n-Propylbenzene : 8,000[B]*** ***sec-Butylbenzene: 8,000[B]***	***Arsenic: 20[A]*** ***Cadmium 2[A]*** ***Chromium 2,000*[A]*** ***Lead 250[A]*** ***Mercury 2[A]***

TABLE 1
Source Investigation Summary of Soil Sample Analytical Results
104 - 124 12th Avenue & 1209 E. Fir Street, Seattle, Washington

Table Notes:
ND (<XXX) - Parameter not detected at concentrations at or above the noted reporting limit.
NA - Sample not analyzed for the listed parameter.
Total Petroleum Hydrocarbons by Method NWTPH-HCID, or Gasoline Range Total Petroleum Hydrocarbons by Method NWTPH-G and Diesel and Motor Oil Range Total Petroleum Hydrocarbons by Method NWTPH-D(x).

[x] - Sample Chromatogram does not resemble fuel standard used for analysis. Most likely carry over from gasoline range hydrocarbons or organic material.
BTEX compounds by EPA Method 8021B, or as part of volatile organic analysis by EPA Method 8260C.
Volatile organic compounds by EPA Method 8260C for a list of 62 different volatile parameters. Detection limits vary.

MTCA Soil cleanup criteria per Chapter 173-340-740 WAC. Method A criteria presented where available. Otherwise, Method B standard formula values or concentrations protective of groundwater in vadose zone at 13 degrees C, per Ecology's Cleanup Levels and Risk Calculations (CLARC) database. Basis of cleanup criteria noted:

A - Method A listed
B - Method B Direct Contact
GWP - Groundwater Protection
NV - No published value

Sample results exceeding applicable cleanup criteria are noted in ***Bold Italic***.

TABLE 2
Summary of Groundwater Sample Analytical Results
Source Investigation and 1st Quarter 2020
104 - 124 12th Avenue & 1209 E. Fir Street, Seattle, Washington

Boring/ Sample I.D.	***Sample Location***	***Sample Date***	***Laboratory Analytical Results (ug/l)***			
			Total Petroleum Hydrocarbons ***(by Methods NWTPH-G & NWTPH-D(X))***	***Benzene*** ***Toluene*** ***Ethyl benzene*** ***Xylenes*** ***(by EPA Method 8260C)***	***Other Volatile Organic Compounds (by EPA Method 8260C)*** ***List of 58 Additional Compounds Detectable by the Laboratory Method.***	***Total Metals***
Borings South of King County Warehouse						
WES-17-GW	SE Parking Lot, 3' S. of Warehouse, 40' E of SW building corner	3/5/2020	Gasoline Range: ND (<100) Diesel: 53[x] Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	cis-1,2-Dichloroethene: 8.2 ***Tetrachloroethene: 33*** ***Trichloroethene: 23*** ***Vinyl chloride: 0.23*** ND (all other)	NA
WES-18-GW	SE Parking Lot, 15' S. of Warehouse, 40' E of SW building corner	3/5/2020	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	cis-1,2-Dichloroethene: 6.5 Trichloroethene: 4.2 ND (all other)	NA
WES-19-GW	SE Parking Lot, 20' S. of Warehouse, 27' E of SW building corner	3/5/2020	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
Borings West of Ki9ng County Warehouse						
BN-18-GW	5' W. of Warehouse 15' N. of SW building corner	2/24/2020	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
BN-19-GW	5' W. of Warehouse 30' N. of SW building corner	2/24/2020	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
BN-20-GW	5' W. of Warehouse 45' N. of SW building corner	2/24/2020	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
BN-21-GW	5' W. of Warehouse 60' N. of SW building corner	2/24/2020	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA

TABLE 2 (Continued)
Summary of Groundwater Sample Analytical Results
Source Investigation and 1st Quarter 2020
104 - 124 12th Avenue & 1209 E. Fir Street, Seattle, Washington

Boring/ Sample I.D.	***Sample Location***	***Sample Date***	***Laboratory Analytical Results (ug/l)***			
			Total Petroleum Hydrocarbons ***(by Methods NWTPH-G & NWTPH-D(X))***	***Benzene Toluene Ethyl benzene Xylenes*** ***(by EPA Method 8260C)***	***Other Volatile Organic Compounds (by EPA Method 8260C)*** ***List of 58 Additional Compounds Detectable by the Laboratory Method.***	***Total Metals***
BN-22-GW	5' W. of Warehouse 75' N. of SW building corner	2/24/2020	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
BN-23-GW	Center of open area, 35 feet SE of MW-14	2/24/2020	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
Borings North of King County Warehouse						
BN-24-GW	12’ N. of Warehouse, 12' W of NE building corner	3/5/2020	NA	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
BN-25-GW	12’ N. of Warehouse, 35' W of NE building corner	3/5/2020	NA	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
BN-26-GW	12’ N. of Warehouse, 60' W of NE building corner	3/5/2020	NA	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
BN-27-GW	12’ N. of Warehouse, 75' W of NE building corner	3/5/2020	NA	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
Permanently Installed Monitoring Wells						
MW-1-GW	Pre-existing well in NE corner of 104 12th parking lot	3/5/2020	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA

TABLE 2 (Continued)
Summary of Groundwater Sample Analytical Results
Source Investigation and 1st Quarter 2020
104 - 124 12th Avenue & 1209 E. Fir Street, Seattle, Washington

Boring/ Sample I.D.	***Sample Location***	***Sample Date***	***Laboratory Analytical Results (ug/l)***			
			Total Petroleum Hydrocarbons ***(by Methods NWTPH-G & NWTPH-D(X))***	***Benzene*** ***Toluene*** ***Ethyl benzene*** ***Xylenes*** ***(by EPA Method 8260C)***	***Other Volatile Organic Compounds (by EPA Method 8260C)*** ***List of 58 Additional Compounds Detectable by the Laboratory Method.***	***Total Metals***
MW-1S-GW	Shallow monitoring well in NE corner of 104 12th parking lot property. Outside fence accessed through King County parking area. Cluster with MW-1D	2/26/2020	Gasoline Range: ND (<100) Diesel: 100[x] Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
MW-1D-GW	Deep monitoring well in NE corner of 104 12th parking lot property. Outside fence accessed through King County parking area. Cluster with MW-1S	3/3/2020	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	***Arsenic 10.3*** Lead: ND(<1)
MW-2-GW	Pre-existing well in NW corner of 104 12th parking lot	3/17/2020	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
MW-3-GW	Pre-existing well adjacent to floor sump in SW corner of 104 12th basement	3/17/2020	Gasoline Range: ND (<100) Diesel: 210 Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
MW-4-GW	Pre-existing well in SW corner of 104 12th parking lot	3/17/2020	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
MW-5-GW	Pre-existing well along N side of 104 12th parking lot	3/5/2020	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	cis-1,2-Dichloroethene: 1.4 Trichloroethene: 2.2 ND (all other)	NA
MW-6-GW	Pre-existing well near NW corner of 104 12th basement	3/17/2020	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	cis-1,2-Dichloroethene: 3.3 Tetrachloroethene: 1.1 ND (all other)	NA
MW-7-GW (Drilled as WES–8)	In N corridor of 104 12th basement, 25' W of WES-7	3/17/2020	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA

TABLE 2 (Continued)
Summary of Groundwater Sample Analytical Results
Source Investigation and 1st Quarter 2020
104 - 124 12th Avenue & 1209 E. Fir Street, Seattle, Washington

Boring/ Sample I.D.	***Sample Location***	***Sample Date***	***Laboratory Analytical Results (ug/l)***			
			Total Petroleum Hydrocarbons ***(by Methods NWTPH-G & NWTPH-D(X))***	***Benzene*** ***Toluene*** ***Ethyl benzene*** ***Xylenes*** ***(by EPA Method 8260C)***	***Other Volatile Organic Compounds (by EPA Method 8260C)*** ***List of 58 Additional Compounds Detectable by the Laboratory Method.***	***Total Metals***
MW-8-GW (Drilled as BN-7)	Near NW corner of 124 12th property - former location of gas station pump island	2/28/2020	Gasoline Range: 640 Diesel: 79[x] Motor Oil: ND (<250)	Benzene: 0.64 Toluene: ND (<1) Ethylbenzene: 7.5 Xylenes: 74	Isopropylbenzene: 3.2 n-Propylbenzene: 4.0 1,2,4-Trimethylbenzene: 57 1,3,5-Trimethylbenzene: 23 ND (all other)	NA
MW-9-GW (Drilled as BN-10)	NW gravel parking lot, S end of parking lot - likely S of former UST location	2/28/2020	***Gasoline Range: 3,900*** ***Diesel: 1,100[x]*** Motor Oil: ND (<250)	***Benzene: 9.5*** Toluene: 3.7 Ethylbenzene: 43 Xylenes: 6.7	Hexane: 7.2 Isopropylbenzene: 110 n-Propylbenzene: 310 sec-Butylbenzene: 22 1,2,4-Trimethylbenzene: 1.7 ND (all other)	NA
MW-10 (Drilled as SES-1)	In SE corner of 104 12th parking lot property. Outside fence accessed through King County parking area.	2/26/2020	Gasoline Range: ND (<100) Diesel: 66[x] Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
MW-11	On E edge of 104 12th parking lot property. Outside fence accessed through King County parking area.	3/3/2020	Gasoline Range: ND (<100) Diesel: 130[x] Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	cis-1,2-Dichloroethene: 2.8 ND (all other)	NA
MW-12	In SE central part of 104 12th parking lot property.	3/17/2020	Gasoline Range: ND (<100) Diesel: 120[x] Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
MW-13	Sidewalk of Yesler Way of garage door entry, adjacent to OS-4.	3/17/2020	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
MW-14	At base of slope in open Center part of property, outside tenant access to former dry cleaner space in 118 12th bldg.	2/28/2020	Gasoline Range: ND (<100) Diesel: 64[x] Motor Oil: ND (<250)	Benzene: 1.8 Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	cis-1,2-Dichloroethene: 2.1 ***Vinyl chloride: 0.66*** ND (all other)	NA
MW-15	In N central part of SE parking lot	4/2/2020	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA

TABLE 2 (Continued)
Summary of Groundwater Sample Analytical Results
Source Investigation and 1st Quarter 2020
104 - 124 12th Avenue & 1209 E. Fir Street, Seattle, Washington

Boring/ Sample I.D.	***Sample Location***	***Sample Date***	***Laboratory Analytical Results (ug/l)***			
			Total Petroleum Hydrocarbons ***(by Methods NWTPH-G & NWTPH-D(X))***	***Benzene*** ***Toluene*** ***Ethyl benzene*** ***Xylenes*** ***(by EPA Method 8260C)***	***Other Volatile Organic Compounds (by EPA Method 8260C)*** ***List of 58 Additional Compounds Detectable by the Laboratory Method.***	***Total Metals***
Geotech B-7 (GEO B-7)	In NW part of parking lot E of 104 12th , between previous borings MW-2 and MW-5	3/5/2020	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<1)	cis-1,2-Dichloroethene: 3.2 Trichloroethene: 2.9 ND (all other)	NA
Geotech B-8 (GEO B-8)	In S central area of NW gravel parking lot, between borings BN-10, AEG-B-2 and AEG-B-4	2/28/2020	Gasoline Range: 110 Diesel: 180x Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	Isopropylbenzene: 1.4 n-Propylbenzene: 2.7 ND (all other)	NA
Geotech B-9 (GEO B-9)	In NE part of parking lot E of 104 12th, between previous borings MW-5 and MW-1	3/5/2020	Gasoline Range: ND (<100) Diesel: 73x Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<1)	cis-1,2-Dichloroethene: 1.1 ND (all other)	NA
Washington State Model Toxics Control Act (MTCA) Groundwater Cleanup Criteria (ug/l)			***Gasoline: 800A*** ***(Benzene is present)*** ***Diesel or Motor Oil: 500A*** ***(combined)***	***Benzene: 5A*** ***Toluene: 1,000A*** ***Ethylbenzene: 700A*** ***Xylenes: 1,000A***	***cis-1,2-Dichloroethene: 16B*** ***Hexane: 480B*** ***Isopropylbenzene: 800B*** ***n-Propylbenzene: 800B*** ***Naphthalene: 160B*** ***p-Isopropyltoluene: NV*** ***sec-Butylbenzene: 800B*** ***Tetrachloroethene: 5A*** ***Trichloroethene: 5A*** ***Vinyl chloride: 0.2A*** ***1,2,4-Trimethylbenzene: 80B*** ***1,3,5-Trimethylbenzene: 80B***	***Arsenic: 5A*** ***Lead: 15A***

Table Notes:
ND (<XXX) - Parameter not detected at concentrations at or above the noted reporting limit.
NA - Sample not analyzed for the listed parameter.
Gasoline Range Total Petroleum Hydrocarbons by Method NWTPH-G.
Diesel and Motor Oil Range Total Petroleum Hydrocarbons by Method NWTPH-D(x).
x - Indicates sample chromatogram does not resemble fuel standard used for analysis. Most likely carry over from gasoline range hydrocarbons, or non-petroleum organic matter.
BTEX compounds and other volatile organic compounds by EPA Method 8260C. All detected compounds summarized here. See laboratory report for full list of analyzed parameters.
Total Metals on unfiltered samples by EPA Method 6020B.

MTCA Groundwater cleanup criteria per Chapter 173-340-720 WAC. Method A criteria presented where available. Method B standard formula values shown where no Method A criteria available. Method B standard formula values from Dept. of Ecology Cleanup Levels and Risk Calculation (CLARC) database. NV indicates no value available from CLARC.
A - Method A listed
B - Method B Direct Contact
NV - No published value

Sample results exceeding applicable cleanup criteria are noted in ***Bold Italic***.

TABLE 3
Summary of Deep Soil Vapor Sample Analytical Results
104 12th Avenue, Seattle, Washington

Detected Compounds (ug/m³) 78 Compounds Detectable by the Laboratory Method - Only detected compounds included here. See laboratory report for full list of analyzed parameters.	***Sample ID***			***Deep Soil Gas Screening Level (ug/m³)***
	DSVP-1 ***10/3/2019***	***DSVP-2*** ***10/3/2019***	***DSVP-4*** ***2/26/2020***	
Acetone	120	150	23	NV
Benzene	27	31	10	32
Butane	130	94	13	NV
Bromodichloromethane	ND (<0.19)	ND (<0.21)	***8.5***	6.8
Carbon Disulfide	25	44	ND (<19)	32,000
Chloroform	0.21	0.64	***15***	11
cis-1,2-dichloroethene	57	19	ND (<1.2)	NV
Cumene (isopropylbenzene)	ND (<6.9)	ND (<7.9)	12	18,000
Dibromochloromethane	ND (<0.24)	ND (<0.27)	3.3	NV
Dichlorodifluoromethane	1.5	1.7	2.5	4,600
Ethylbenzene	1.8	4.8	36	46,000
Heptane	35	35	ND (<12)	NV
Hexane	140	97	11	32,000
Methyl-ethyl-ketone	32	26	ND (<5.4)	230,000
Naphthalene	2.7	***18***	ND (<0.79)	7.4
Nonane	ND (<15)	ND (<17)	150	NV
Pentane	120	71	640	NV
Propene	240	170	52	NV
Propylbenzene	ND (<6.9)	ND (<7.9)	22	NV
Toluene	ND (<53)	ND (<60)	67	230,000
Trans-1,2-Dichloroethene	22	ND (<1.2)	ND (<1.2)	NV
Trichloroethene	8.2	1.5	ND (<0.81)	33 67[RST]
Vinyl chloride	***65***	ND (<0.82)	1.4	28
m - Xylene	4.1	5.5	160	4,600
o - Xylene	1.9	2.6	63	4,600
1,2,4 Trimethylbenzene	ND (<6.9)	ND (<7.9)	170	2,700
1,3,5 Trimethylbenzene	ND (<6.9)	ND (<7.9)	57	NV
1,2 Dichloropropane	0.7	ND (<0.74)	ND (<0.69)	68
1,3 Dichlorobenzene	32	36	ND (<1.8)	NV
2-Hexanone	19	ND (<13)	ND (<12)	NV
2-Propanol*	51	77	ND (<26)	NV
4-Ethyltoluene	ND (<6.9)	ND (<7.9)	38	NV

Table Notes:
Volatile organic compounds by EPA Method TO-15.
Table shows all detected compounds. See laboratory report for full analytical parameter list.

Screening levels from CLARC Database, January 2020.

[RST] TCE Residential Short-term screening level for sub-slab soil vapors from Ecology Implementation Memorandum No. 22, Vapor Intrusion (VI) Investigations and Short-term Trichloroethene (TCE) Toxicity, October 1, 2019. No deep soil screening level was developed for short-term exposures, so sub-slab screening levels may be applied.

NV- No Value. Screening level is not included in CLARC database for this parameter.

Sample results exceeding applicable screening levels are noted in ***Bold Italic***.

TABLE 4
2017-2020 Summary of Groundwater Sample Analytical Results
104 - 124 12th Avenue & 1209 E. Fir Street, Seattle, Washington

Boring/ Sample I.D.	***Sample Location***	***Sample Date***	***Laboratory Analytical Results (ug/l)***			
			Total Petroleum Hydrocarbons ***(by Methods NWTPH-G & NWTPH-D(X))***	***Benzene*** ***Toluene*** ***Ethyl benzene*** ***Xylenes*** ***(by EPA Method 8260C)***	***Other Volatile Organic Compounds (by EPA Method 8260C)*** ***List of 58 Additional Compounds Detectable by the Laboratory Method.***	***Total Metals***
WES-1-GW	One Time Reconnaissance Sample - In 104 12th basement, 6 ft. inside double doors in SE corner	4/3/2017	***Gasoline Range: 1,700*** ***Diesel: 690x*** Motor Oil: ND (<250)	Benzene: 0.42 Toluene: 6.7 Ethylbenzene: 2.2 Xylenes: 20.5	Isopropylbenzene : 1.2 n-Propylbenzene: 1.7 Naphthalene: 14 sec-Butylbenzene: 5.3 1,2,4-Trimethylbenzene: 12 1,3,5-Trimethylbenzene: 2.7 ND (all other)	NA
WES-2	Not Sampled - Adjacent to existing well MW-3 and oil/water separator by entry ramp in SW corner of basement.					
WES-3	Not Sampled - 10 ft NW of WES-2, near floor sump and existing well MW-3.					
WES-4-GW	One Time Reconnaissance Sample- In 104 12th Ave. basement corridor through shelving area in S central part of basement	4/3/2017	Gasoline Range: 560 ***Diesel: 1,000x*** ***Motor Oil: 680***	Benzene: ND (<0.35) Toluene: 3.6 Ethylbenzene: 1.5 Xylenes: 13.7	Naphthalene: 6.4 sec-Butylbenzene: 1.7 1,2,4-Trimethylbenzene: 9.0 1,3,5-Trimethylbenzene: 1.9 ND (all other)	NA
WES-5-GW	One Time Reconnaissance Sample - In 104 12th Ave. basement shelving area corridor, NW of WES-1, near SE entry double doors	4/3/2017	Gasoline Range: 220 Diesel: 460x Motor Oil: ND (<300)	Benzene: ND (<0.35) Toluene: 6.0 Ethylbenzene: 2.3 Xylenes: 21.3	n-Propylbenzene: 1.0 Naphthalene: 6.0 1,2,4-Trimethylbenzene: 14 1,3,5-Trimethylbenzene: 2.7 ND (all other)	NA
WES-6-GW	One Time Reconnaissance Sample - In 104 12th Ave. basement main corridor 30 ft. N of SE entry double doors	4/3/2017	Gasoline Range: NA Diesel: 78x Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: 1.4 Ethylbenzene: ND (<1) Xylenes: 5.7	cis-1,2-Dichloroethene: 3.9 Naphthalene: 1.4 1,2,4-Trimethylbenzene: 3.6 ND (all other)	NA
WES-7-GW	One Time Reconnaissance Sample - Near NE corner of 104 12th Ave. basement	4/4/2017	Gasoline Range: NA Diesel: 56x Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: 4.0	Naphthalene: 1.1 1,2,4-Trimethylbenzene: 2.5 ND (all other)	NA
WES-8	Completed as **MW-7**- See Data Below					
WES-9-GW	One Time Reconnaissance Sample - W central part of 104 12th basement, near boiler room door	4/4/2017	Gasoline Range: NA Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: 1.6 Ethylbenzene: ND (<1) Xylenes: 7.6	Naphthalene: 1.5 1,2,4-Trimethylbenzene: 4.6 ND (all other)	NA

TABLE 4 (Continued)
2017-2020 Summary of Groundwater Sample Analytical Results
104 - 124 12th Avenue & 1209 E. Fir Street, Seattle, Washington

Boring/ Sample I.D.	***Sample Location***	***Sample Date***	***Laboratory Analytical Results (ug/l)***			
			Total Petroleum Hydrocarbons ***(by Methods NWTPH-G & NWTPH-D(X))***	***Benzene*** ***Toluene*** ***Ethyl benzene*** ***Xylenes*** ***(by EPA Method 8260C)***	***Other Volatile Organic Compounds (by EPA Method 8260C)*** ***List of 58 Additional Compounds Detectable by the Laboratory Method.***	***Total Metals***
WES-10-GW	One Time Reconnaissance Sample - In S central part of SE parking lot	4/5/2017	Gasoline Range: ND (<100) Diesel: 180[x] ***Motor Oil: 530***	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: 3.7	1,2,4-Trimethylbenzene: 2.2 ND (all other)	NA
WES-11-GW	One Time Reconnaissance Sample - In N central part of SE parking lot, adjacent to previous boring MW-5	4/5/2017	Gasoline Range: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: m&p: 2.7 o: 1.4	Acetone: 27 cis-1,2-Dichloroethene: 9.4 ***Tetrachloroethene: 12*** ***Trichloroethene: 17*** ***Vinyl Chloride: 0.39*** 1,2,4-Trimethylbenzene: 2.6 ND (all other)	NA
WES-12-GW	One Time Reconnaissance Sample - In SW corner of SE parking lot	4/5/2017	Gasoline Range: NA Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	Acetone: 29 ND (all other)	NA
WES-13-GW	One Time Reconnaissance Sample - In E central part of SE parking lot	4/5/2017	Gasoline Range: NA Diesel: 120[x] Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	cis-1,2-Dichloroethene: 12 Tetrachloroethene: 3.1 ***Trichloroethene: 10*** ***Vinyl Chloride: 0.23*** ND (all other)	NA
WES-14-GW	One Time Reconnaissance Sample - NW corner of 104 12th Ave. basement, 8 feet east of W wall	7/23/2019	Gasoline Range: ND (<100) Diesel: 130[x] Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
WES-15-GW	One Time Reconnaissance Sample - SW corner of 104 12th Ave. basement, 15 feet west of MW-3	7/23/2019	Gasoline Range: ND (<100) Diesel: 50[x] Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
WES-16-GW	One Time Reconnaissance Sample - SE parking lot, S of King Co. warehouse, 33 ft east of SW corner	10/1/2019	Gasoline Range: ND (<100) Diesel: ND (50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	cis-1,2-Dichloroethene: 1.9 ND (all other)	NA
WES-17-GW	One Time Reconnaissance Sample - SE Parking Lot, 3' S of Warehouse, 40' E of SW building corner	3/5/2020	Gasoline Range: ND (<100) Diesel: 53[x] Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	cis-1,2-Dichloroethene: 8.2 ***Tetrachloroethene: 33*** ***Trichloroethene: 23*** ***Vinyl chloride: 0.23*** ND (all other)	NA

TABLE 4 (Continued)
2017-2020 Summary of Groundwater Sample Analytical Results
104 - 124 12th Avenue & 1209 E. Fir Street, Seattle, Washington

Boring/ Sample I.D.	***Sample Location***	***Sample Date***	***Laboratory Analytical Results (ug/l)***			
			Total Petroleum Hydrocarbons ***(by Methods NWTPH-G & NWTPH-D(X))***	***Benzene Toluene Ethyl benzene Xylenes*** ***(by EPA Method 8260C)***	***Other Volatile Organic Compounds (by EPA Method 8260C)*** ***List of 58 Additional Compounds Detectable by the Laboratory Method.***	***Total Metals***
WES-18-GW	One Time Reconnaissance Sample - SE Parking Lot, 15' S of Warehouse, 40' E of SW building corner	3/5/2020	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	cis-1,2-Dichloroethene: 6.5 Trichloroethene: 4.2 ND (all other)	NA
WES-19-GW	One Time Reconnaissance Sample - SE Parking Lot, 20' S. of Warehouse, 27' E of SW building corner	3/5/2020	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
BN-1-GW	One Time Reconnaissance Sample - In SE corner of central open area of property	5/12/2017	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
BN-2-GW	One Time Reconnaissance Sample - Near SW corner of central open area of property	5/12/2017	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
BN-3-GW	One Time Reconnaissance Sample - Outside rear entry to 110 12th Avenue bldg., in central open area of property	5/12/2017	Gasoline Range: ND (<100) Diesel: 79[x] Motor Oil: ND (<250)	Benzene: 0.65 Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
BN-4-GW	One Time Reconnaissance Sample - In E central part of open area, adjacent to King Co. Archives bldg.	5/12/2017	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
BN-5-GW	One Time Reconnaissance Sample - in NE corner of parking lot E of 1209 Fir, near oil/water separator	5/12/2017	Gasoline Range: ND (<100) Diesel: 64[x] Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
BN-6-GW	One Time Reconnaissance Sample - in S area of parking lot E of 1209 Fir	5/12/2017	Gasoline Range: ND (<100) Diesel: 100[x] Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	Acetone: 11 ND (all other)	NA
BN-7 Completed as **MW-8** - See Data Below						

Boring/ Sample I.D.	***Sample Location***	***Sample Date***	***Laboratory Analytical Results (ug/l)***			
			Total Petroleum Hydrocarbons *(by Methods NWTPH-G & NWTPH-D(X))*	***Benzene Toluene Ethyl benzene Xylenes*** *(by EPA Method 8260C)*	***Other Volatile Organic Compounds (by EPA Method 8260C)*** *List of 58 Additional Compounds Detectable by the Laboratory Method.*	***Total Metals***
BN-8-GW	One Time Reconnaissance Sample - NW gravel parking lot - former location of gas station service bay	5/15/2017	***Gasoline Range: 1,300*** ***Diesel: 830[x]*** Motor Oil: ND (<250)	Benzene: 1.6 Toluene: 1.3 Ethylbenzene: 12 Xylenes: 6.9	Hexane: 1.1 Isopropylbenzene: 28 n-Propylbenzene: 39 Naphthalene: 2.1 sec-Butylbenzene: 1.5 1,2,4-Trimethylbenzene: 3.9 ND (all other)	NA
BN-9-GW	One Time Reconnaissance Sample - NW gravel parking lot, W central part of lot- likely former UST location	5/15/2017	Gasoline Range: ND (<100) Diesel: 120[x] Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
BN-10 Completed as **MW-9** - See Data Below						
BN-11-GW	One Time Reconnaissance Sample - At S end of 1209 Fir bldg, inside gate to open area, top of slope	5/15/2017	Gasoline Range: ND (<100) Diesel: 460[x] Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
BN-12-GW	One Time Reconnaissance Sample - in west entry to NW gravel parking lot	7/23/2019	Gasoline Range: ND (<100) Diesel: 200[x] Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	Lead: ND (<1)
BN-13	Groundwater not encountered within the depth drilled.					
BN-14-GW	One Time Reconnaissance Sample - in SE corner of parking lot E of 1209 Fir, near intersection of King Co. Archives bldgs.	7/23/2019	Gasoline Range: ND (<100) Diesel: 230[x] Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	Lead: ND (<1)
BN-15-GW	One Time Reconnaissance Sample - NW gravel parking lot, 15' SW of MW-8	7/23/2019	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	Lead: ND (<1)
BN-16-GW	One Time Reconnaissance Sample - NW gravel parking lot, 15' NW of MW-8	7/23/2019	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: 3.9	n-Propylbenzene: 1.5 1,2,4-Trimethylbenzene: 4.8 ND (all other)	Lead: ND (<1)

TABLE 4 (Continued)
2017-2020 Summary of Groundwater Sample Analytical Results
104 - 124 12th Avenue & 1209 E. Fir Street, Seattle, Washington

Boring/ Sample I.D.	***Sample Location***	***Sample Date***	***Laboratory Analytical Results (ug/l)***			
			Total Petroleum Hydrocarbons ***(by Methods NWTPH-G & NWTPH-D(X))***	***Benzene Toluene Ethyl benzene Xylenes*** ***(by EPA Method 8260C)***	***Other Volatile Organic Compounds (by EPA Method 8260C)*** ***List of 58 Additional Compounds Detectable by the Laboratory Method.***	***Total Metals***
BN-17-GW	One Time Reconnaissance Sample - On slope in center open area of site, near NW corner of King Co. warehouse	7/23/2019	Gasoline Range: ND (<100) Diesel: 170[x] Motor Oil: 260[x]	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	Lead: 13.8
BN-18-GW	5' W. of Warehouse 15' N. of SW building corner	2/24/2020	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
BN-19-GW	5' W. of Warehouse 30' N. of SW building corner	2/24/2020	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
BN-20-GW	5' W. of Warehouse 45' N. of SW building corner	2/24/2020	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
BN-21-GW	5' W. of Warehouse 60' N. of SW building corner	2/24/2020	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
BN-22-GW	5' W. of Warehouse 75' N. of SW building corner	2/24/2020	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
BN-23-GW	Center of open area, 35 feet SE of MW-14	2/24/2020	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
HA-N-GW	One Time Reconnaissance Sample - in N crawlspace beneath 118 12th building.	5/15/2017	Gasoline Range: 770 Diesel: 410[x] Motor Oil: ND (<250)	Benzene: 1.9 Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	cis-1,2-Dichloroethene: 5.3 Isopropylbenzene : 3.5 n-Propylbenzene: 12 sec-Butylbenzene: 9.9 Trichloroethene: 1.6 ***Vinyl chloride: 1.9*** ND (all other)	NA

Boring/ Sample I.D.	***Sample Location***	***Sample Date***	***Laboratory Analytical Results (ug/l)***			
			Total Petroleum Hydrocarbons *(by Methods NWTPH-G & NWTPH-D(X))*	***Benzene Toluene Ethyl benzene Xylenes*** *(by EPA Method 8260C)*	***Other Volatile Organic Compounds (by EPA Method 8260C)*** *List of 58 Additional Compounds Detectable by the Laboratory Method.*	***Total Metals***
HA-S-GW	One Time Reconnaissance Sample - in S crawlspace beneath 118 12th building	5/15/2017	Gasoline Range: 600 ***Diesel: 730x*** Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	Isopropylbenzene : 9.3 n-Propylbenzene: 45 sec-Butylbenzene: 7.5 ND (all other)	NA
HA-3-GW	One Time Reconnaissance Sample - in crawlspace beneath 110 12th building	8/7/2017	Gasoline Range: ND (<100) Diesel: 100x Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
Off-Site Investigation Groundwater Samples						
OS-1-GW	One Time Reconnaissance Sample - In sidewalk of Yesler Way, adjacent to SE corner of parking lot for 104 12th Ave. building	8/3/2017	Gasoline Range: ND (<100) Diesel: 110x Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	cis-1,2-Dichloroethene: 3.5 Trichloroethene: 2.7 ND (all other)	NA
OS-2-GW	One Time Reconnaissance Sample - In sidewalk of Yesler Way, adjacent to SE corner of 104 12th Ave. building	8/3/2017	Gasoline Range: ND (<100) Diesel: 130x Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	cis-1,2-Dichloroethene: 1.4 ND (all other)	NA
OS-3-GW	One Time Reconnaissance Sample - In sidewalk of Yesler Way, SW of double doors to basement, 30' W of bldg. corner	8/3/2017	Gasoline Range: ND (<100) Diesel: 220x Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
OS-4	One Time Reconnaissance Sample - In sidewalk of Yesler Way, SW of garage door into 104 12th Ave. building	8/3/2017	Dry Hole - No Groundwater Encountered			
OS-5-GW	One Time Reconnaissance Sample - In sidewalk of 12th Ave., 40' N of SW corner of 104 12th building	8/3/2017	Gasoline Range: ND (<100) Diesel: ND (<150) Motor Oil: ND (<750) (elevated D(x) detection limits due to limited sample volume)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
OS-6-GW	One Time Reconnaissance Sample - In sidewalk of 12th Ave., 15' S of NW corner of 104 12th bldg.	8/30/2017	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: 1.1 Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA

Boring/ Sample I.D.	Sample Location	Sample Date	Laboratory Analytical Results (ug/l)			
			Total Petroleum Hydrocarbons (by Methods NWTPH-G & NWTPH-D(X))	**Benzene, Toluene, Ethyl benzene, Xylenes** (by EPA Method 8260C)	**Other Volatile Organic Compounds (by EPA Method 8260C)** List of 58 Additional Compounds Detectable by the Laboratory Method.	**Total Metals**
OS-7-GW	One Time Reconnaissance Sample - In Sidewalk of 12th Ave., adjacent to tree, 40' S of NW corner of 124 12th parking lot.	8/3/2017	Gasoline Range: ND (<100) Diesel: 84[x] Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
OS-8-GW	One Time Reconnaissance Sample - In blvd. gravel strip N of 1209 E Fir bldg.	8/4/2017	Gasoline Range: ND (<100) Diesel: 66[x] Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
OS-9-GW	One Time Reconnaissance Sample - In blvd. grass strip N of 124 12th Ave. parking lot	8/4/2017	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
OS-10	In curb lane of 12th Ave., 10' N of NW corner of 104 12th Ave. bldg.	8/4/2017	Dry Hole - No Groundwater Encountered			
OS-11	In curb lane of 12th Ave., adjacent to vacant 118 12th Ave. bldg.	8/4/2017	Dry Hole - No Groundwater Encountered			
OS-12-GW	One Time Reconnaissance Sample - In sidewalk at S entry drive to NW gravel, parking lot.	8/3/2017	Gasoline Range: ND (<100) Diesel: 290[x] Motor Oil: ND (<250)	Benzene: 0.5 Toluene: 2.5 Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
BN-24-GW	12' N. of Warehouse, 12' W of NE building corner	3/5/2020	NA	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
BN-25-GW	12' N. of Warehouse, 35' W of NE building corner	3/5/2020	NA	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
BN-26-GW	12' N. of Warehouse, 60' W of NE building corner	3/5/2020	NA	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
BN-27-GW	12' N. of Warehouse, 75' W of NE building corner	3/5/2020	NA	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA

Boring/ Sample I.D.	***Sample Location***	***Sample Date***	***Laboratory Analytical Results (ug/l)***			
			Total Petroleum Hydrocarbons *(by Methods NWTPH-G & NWTPH-D(X))*	***Benzene, Toluene, Ethyl benzene, Xylenes*** *(by EPA Method 8260C)*	***Other Volatile Organic Compounds (by EPA Method 8260C)*** *List of 58 Additional Compounds Detectable by the Laboratory Method.*	***Total Metals***
Permanently Installed Monitoring Wells						
MW-1-GW	Pre-existing well in NE corner of 104 12th parking lot	6/30/2017	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<1)	Vinyl Chloride: 0.20 ND (all other)	NA
		10/30/2017	Gasoline Range: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
		6/14/2018	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	***Vinyl Chloride: 0.27*** ND (all other)	NA
		12/6/2018	Gasoline Range: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	Iron Dissolved: 247 Total: 562 Manganese Dissolved: 539 Total: 577
		7/22/2019	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	cis-1,2-Dichloroethene: 2.1 ***Vinyl Chloride: 0.55*** ND (all other)	NA
		12/4/2019	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	cis-1,2-Dichloroethene: 2.3 ***Vinyl Chloride: 0.73*** ND (all other)	***Arsenic: 13.0*** Chromium: ND(<1) Lead: ND(<1)
		3/5/2020	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA

Boring/ Sample I.D.	***Sample Location***	***Sample Date***	***Laboratory Analytical Results (ug/l)***			
			Total Petroleum Hydrocarbons *(by Methods NWTPH-G & NWTPH-D(X))*	***Benzene*** ***Toluene*** ***Ethyl benzene*** ***Xylenes*** *(by EPA Method 8260C)*	***Other Volatile Organic Compounds (by EPA Method 8260C)*** *List of 58 Additional Compounds Detectable by the Laboratory Method.*	***Total Metals***
MW-1S-GW	Shallow monitoring well in NE corner of 104 12th parking lot property. Outside fence accessed through King County parking area. Cluster with MW-1D	8/6/2019	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	***Vinyl Chloride: 0.21*** ND (all other)	NA
		12/4/2019	Gasoline Range: ND (<100) Diesel: 72[x] Motor Oil: 340	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	***Vinyl Chloride: 0.29*** ND (all other)	***Arsenic: 16.5*** Chromium: 1.16 Lead: ND(<1)
		2/26/2020	Gasoline Range: ND (<100) Diesel: 100[x] Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
MW-1D-GW	Deep monitoring well in NE corner of 104 12th parking lot property. Outside fence accessed through King County parking area. Cluster with MW-1S	8/6/2019	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
		12/4/2019	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	***Arsenic: 9.14*** Chromium: ND(<1) Lead: ND(<1)
		3/3/2020	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	***Arsenic 10.3*** Lead: ND(<1)
MW-2-GW	Pre-existing well in NW corner of 104 12th parking lot	4/4/2017	Gasoline Range: NA Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<1)	ND (all)	NA
		10/30/2017	Gasoline Range: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<1)	ND (all)	NA
		6/14/2018	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA

Boring/ Sample I.D.	***Sample Location***	***Sample Date***	***Laboratory Analytical Results (ug/l)***			
			Total Petroleum Hydrocarbons *(by Methods NWTPH-G & NWTPH-D(X))*	***Benzene, Toluene, Ethyl benzene, Xylenes*** *(by EPA Method 8260C)*	***Other Volatile Organic Compounds (by EPA Method 8260C)*** *List of 58 Additional Compounds Detectable by the Laboratory Method.*	***Total Metals***
MW-2-GW (Continued)		7/22/2019	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
		12/4/2019	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
		3/17/2020	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
MW-3-GW	Pre-existing well adjacent to floor sump in SW corner of 104 12th basement	4/3/2017	Gasoline Range: 110 Diesel: 400[x] Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: 2.5 Ethylbenzene: ND (<1) Xylenes: 7.9	Acetone: 11 Naphthalene: 4.7 ***Vinyl Chloride: 0.34*** 1,2,4-Trimethylbenzene: 4.9 1,3,5-Trimethylbenzene: 1.1 ND (all other)	NA
		10/30/2017	Gasoline Range: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<1)	ND (all)	NA
		6/14/2018	Gasoline Range: ND (<100) Diesel: 210[x] Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
		2/25/2019	Gasoline Range: ND (<100) Diesel: 400[x] Motor Oil: ND (<300)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	Lead: ND (<1)
		4/3/2019	Gasoline Range: ND (<100) Diesel: 420[x] Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA

Boring/ Sample I.D.	*Sample Location*	*Sample Date*	*Laboratory Analytical Results (ug/l)*			
			Total Petroleum Hydrocarbons *(by Methods NWTPH-G & NWTPH-D(X))*	***Benzene, Toluene, Ethyl benzene, Xylenes*** *(by EPA Method 8260C)*	***Other Volatile Organic Compounds (by EPA Method 8260C)*** *List of 58 Additional Compounds Detectable by the Laboratory Method.*	***Total Metals***
MW-3-GW (Continued)		7/23/2019	Gasoline Range: ND (<100) Diesel: 170[x] Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	Lead: ND (<1)
		12/4/2019	Gasoline Range: ND (<100) Diesel: 280[x] Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
		3/17/2020	Gasoline Range: ND (<100) Diesel: 210 Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
MW-4-GW	Pre-existing well in SW corner of 104 12th parking lot	4/5/2017	Gasoline Range: NA Diesel: 67[x] Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<1)	ND (all)	NA
		10/30/2017	Gasoline Range: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<1)	ND (all)	NA
		6/14/2018	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
		7/23/2019	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
		12/9/2019	Gasoline Range: ND (<100) Diesel: 180[x] Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
		3/17/2020	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA

Boring/ Sample I.D.	***Sample Location***	***Sample Date***	***Laboratory Analytical Results (ug/l)***			
			Total Petroleum Hydrocarbons *(by Methods NWTPH-G & NWTPH-D(X))*	***Benzene*** ***Toluene*** ***Ethyl benzene*** ***Xylenes*** *(by EPA Method 8260C)*	***Other Volatile Organic Compounds (by EPA Method 8260C)*** *List of 58 Additional Compounds Detectable by the Laboratory Method.*	***Total Metals***
MW-5-GW	Pre-existing well along N side of 104 12th parking lot	4/5/2017	Gasoline Range: NA Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<1)	Acetone: 12 ND (all other)	NA
		10/30/2017	Gasoline Range: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	cis-1,2-Dichloroethene: 10 Tetrachloroethene: 1.4 ***Trichloroethene: 9.1*** ***Vinyl Chloride: 0.29*** ND (all other)	NA
		6/14/2018	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	cis-1,2-Dichloroethene: 8.3 Tetrachloroethene: 1.3 Trichloroethene: 5.0 ***Vinyl Chloride: 0.25*** ND (all other)	NA
		12/6/2018	Gasoline Range: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	cis-1,2-Dichloroethene: 8.4 Tetrachloroethene: 2.1 ***Trichloroethene: 11*** ***Vinyl Chloride: 0.37*** ND (all other)	Iron Dissolved: 195 Total: 283 Manganese Dissolved: 478 Total: 472
		7/22/2019	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	cis-1,2-Dichloroethene: 10 Tetrachloroethene: 1.1 ***Trichloroethene: 6.5*** ND (all other)	Lead: ND (<1)
		12/4/2019	Gasoline Range: ND (<100) Diesel: 52[x] Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	cis-1,2-Dichloroethene: 3.5 Tetrachloroethene: 1.3 Trichloroethene: 2.2 ND (all other)	NA
		3/5/2020	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	cis-1,2-Dichloroethene: 1.4 Trichloroethene: 2.2 ND (all other)	NA

Boring/ Sample I.D.	***Sample Location***	***Sample Date***	***Laboratory Analytical Results (ug/l)***			
			Total Petroleum Hydrocarbons *(by Methods NWTPH-G & NWTPH-D(X))*	***Benzene, Toluene, Ethyl benzene, Xylenes*** *(by EPA Method 8260C)*	***Other Volatile Organic Compounds (by EPA Method 8260C)*** *List of 58 Additional Compounds Detectable by the Laboratory Method.*	***Total Metals***
MW-6-GW	Pre-existing well near NW corner of 104 12th basement	4/4/2017	Gasoline Range: NA Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: 1.2 Ethylbenzene: ND (<1) Xylenes: 5.5	cis-1,2-Dichloroethene: 1.3 1,2,4-Trimethylbenzene: 3.4 ND (all other)	NA
		6/14/2018	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	cis-1,2-Dichloroethene: 9.6 Chloroform 1.1 Tetrachloroethene 1.2 ND (all other)	NA
		7/23/2019	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	***cis-1,2-Dichloroethene: 17*** Trichloroethene: 1.7 ND (all other)	NA
		12/4/2019	Gasoline Range: ND (<100) Diesel: 78x Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	cis-1,2-Dichloroethene: 5.7 Tetrachloroethene: 1.3 ND (all other)	NA
		3/17/2020	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	cis-1,2-Dichloroethene: 3.3 Tetrachloroethene: 1.1 ND (all other)	NA
MW-7-GW (Drilled as WES–8)	In N corridor of 104 12th basement, 25' W of WES-7	6/30/2017	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<1)	ND (all)	NA
		6/14/2018	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
		7/23/2019	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA

Boring/ Sample I.D.	***Sample Location***	***Sample Date***	***Laboratory Analytical Results (ug/l)***			
			Total Petroleum Hydrocarbons *(by Methods NWTPH-G & NWTPH-D(X))*	***Benzene, Toluene, Ethyl benzene, Xylenes*** *(by EPA Method 8260C)*	***Other Volatile Organic Compounds (by EPA Method 8260C)*** *List of 58 Additional Compounds Detectable by the Laboratory Method.*	***Total Metals***
MW-7-GW (Continued)		12/4/2019	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
		3/17/2020	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
MW-8-GW (Drilled as BN-7)	Near NW corner of 124 12th property - former location of gas station pump island	8/3/2017	***Gasoline Range: 3,200*** ***Diesel: 790x*** Motor Oil: ND (<250)	***Benzene: 11*** Toluene: ND (<1) Ethylbenzene: 71 Xylenes: m&p: 360 o: 59	Isopropylbenzene: 12 n-Propylbenzene: 24 Naphthalene: 8.9 p-Isopropyltoluene: 1.1 sec-Butylbenzene: 1.8 ***1,2,4-Trimethylbenzene: 180*** 1,3,5-Trimethylbenzene: 59 ND (all other)	NA
		6/28/2018	***Gasoline Range: 2,400*** Diesel: 160x Motor Oil: ND (<250)	Benzene: 2.9 Toluene: ND (<1) Ethylbenzene: 85 Xylenes: m&p: 320 o: 64	Isopropylbenzene: 14 n-Propylbenzene: 33 Naphthalene: 1.6 p-Isopropyltoluene: 1.1 sec-Butylbenzene: 1.9 ***1,2,4-Trimethylbenzene: 150*** 1,3,5-Trimethylbenzene: 54 ND (all other)	NA
		7/23/2019	Gasoline Range: 740 Diesel: 64x Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: 10 Xylenes: 96	Isopropylbenzene: 3.1 n-Propylbenzene: 8.1 sec-Butylbenzene: 1.0 1,2,4-Trimethylbenzene: 67 1,3,5-Trimethylbenzene: 27 ND (all other)	Lead: ND (<1)
		12/9/2019	Gasoline Range: 350 Diesel: 62x Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: 4.3 Xylenes: 49.7	Isopropylbenzene: 1.3 n-Propylbenzene: 2.1 1,2,4-Trimethylbenzene: 34 1,3,5-Trimethylbenzene: 14 ND (all other)	***Arsenic: 9.2*** Chromium: ND (<1) Lead: ND (<1)
		2/28/2020	Gasoline Range: 640 Diesel: 79x Motor Oil: ND (<250)	Benzene: 0.64 Toluene: ND (<1) Ethylbenzene: 7.5 Xylenes: 74	Isopropylbenzene: 3.2 n-Propylbenzene: 4.0 1,2,4-Trimethylbenzene: 57 1,3,5-Trimethylbenzene: 23 ND (all other)	NA

Boring/ Sample I.D.	***Sample Location***	***Sample Date***	***Laboratory Analytical Results (ug/l)***			
			Total Petroleum Hydrocarbons *(by Methods NWTPH-G & NWTPH-D(X))*	***Benzene*** ***Toluene*** ***Ethyl benzene*** ***Xylenes*** *(by EPA Method 8260C)*	***Other Volatile Organic Compounds (by EPA Method 8260C)*** *List of 58 Additional Compounds Detectable by the Laboratory Method.*	***Total Metals***
MW-9-GW (Drilled as BN-10)	NW gravel parking lot, S end of parking lot - likely S of former UST location	8/3/2017	Gasoline Range: 500 Diesel: 270[x] Motor Oil: ND (<250)	***Benzene: 6.8*** Toluene: 1.3 Ethylbenzene: 6.3 Xylenes: 4.3	Hexane: 4.3 Isopropylbenzene: 7.2 n-Propylbenzene: 17 sec-Butylbenzene: 1.5 1,2,4-Trimethylbenzene: 1.3 1,3,5-Trimethylbenzene: 1.4 ND (all other)	NA
		7/13/2018	Gasoline Range: 470 Diesel: 180[x] Motor Oil: ND (<250)	Benzene: 5.0 Toluene: ND (<1) Ethylbenzene: 8.5 Xylenes: 3.2	Isopropylbenzene: 12 n-Propylbenzene: 23 sec-Butylbenzene: 1.9 1,2,4-Trimethylbenzene: 1.1 ND (all other)	NA
		7/23/2019	Gasoline Range: 500 Diesel: 210[x] Motor Oil: ND (<250)	Benzene: 2.1 Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	Hexane: 1.4 Isopropylbenzene: 16 n-Propylbenzene: 48 sec-Butylbenzene: 3.9 ND (all other)	Lead: ND (<1)
		12/5/2019	***Gasoline Range: 2,900*** Diesel: 620[x] Motor Oil: ND (<250)	***Benzene: 9.5*** Toluene: 4.3 Ethylbenzene: 31 Xylenes: 9.3	Hexane: 10 Isopropylbenzene: 82 n-Propylbenzene: 210 Naphthalene: 1.2 p-Isopropyltoluene: 1.4 sec-Butylbenzene: 19 1,2,4-Trimethylbenzene: 1.7 ND (all other)	Lead: ND (<1)
		2/28/2020	***Gasoline Range: 3,900*** ***Diesel: 1,100[x]*** Motor Oil: ND (<250)	***Benzene: 9.5*** Toluene: 3.7 Ethylbenzene: 43 Xylenes: 6.7	Hexane: 7.2 Isopropylbenzene: 110 n-Propylbenzene: 310 sec-Butylbenzene: 22 1,2,4-Trimethylbenzene: 1.7 ND (all other)	NA

Boring/ Sample I.D.	***Sample Location***	***Sample Date***	***Laboratory Analytical Results (ug/l)***			
			Total Petroleum Hydrocarbons *(by Methods NWTPH-G & NWTPH-D(X))*	***Benzene*** ***Toluene*** ***Ethyl benzene*** ***Xylenes*** *(by EPA Method 8260C)*	***Other Volatile Organic Compounds (by EPA Method 8260C)*** *List of 58 Additional Compounds Detectable by the Laboratory Method.*	***Total Metals***
MW-10 (Drilled as SES-1)	In SE corner of 104 12th parking lot property. Outside fence accessed through King County parking area.	11/3/2017	Gasoline Range: ND (<100) Diesel: 69[x] Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<1)	ND (all)	NA
		6/14/2018	Gasoline Range: ND (<100) Diesel: 66[x] Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<1)	cis-1,2-Dichloroethene: 1.2 ND (all other)	NA
		7/22/2019	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<1)	ND (all)	Lead: ND (<1)
		12/5/2019	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	***Arsenic: 9.30*** Chromium: ND(<1) Lead: ND(<1)
		2/26/2020	Gasoline Range: ND (<100) Diesel: 66[x] Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
MW-11	On E edge of 104 12th parking lot property. Outside fence accessed through King County parking area.	7/22/2019	Gasoline Range: ND (<100) Diesel: 400[x] Motor Oil: 370[x]	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<1)	cis-1,2-Dichloroethene: 1.9 ND (all other)	Lead: ND (<1)
		12/5/2019	Gasoline Range: ND (<100) Diesel: 61[x] Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	cis-1,2-Dichloroethene: 2.9 ***Vinyl chloride: 0.22*** ND (all other)	***Arsenic: 15.0*** Chromium: ND(<1) Lead: ND(<1)
		3/3/2020	Gasoline Range: ND (<100) Diesel: 130[x] Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	cis-1,2-Dichloroethene: 2.8 ND (all other)	NA

Boring/ Sample I.D.	***Sample Location***	***Sample Date***	***Laboratory Analytical Results (ug/l)***			
			Total Petroleum Hydrocarbons *(by Methods NWTPH-G & NWTPH-D(X))*	***Benzene Toluene Ethyl benzene Xylenes*** *(by EPA Method 8260C)*	***Other Volatile Organic Compounds (by EPA Method 8260C)*** *List of 58 Additional Compounds Detectable by the Laboratory Method.*	***Total Metals***
MW-12	In SE central part of 104 12th parking lot property.	7/22/2019	Gasoline Range: ND (<100) Diesel: 140[x] Motor Oil: 270[x]	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<1)	ND (all)	Lead: ND (<1)
		12/4/2019	Gasoline Range: ND (<100) Diesel: 120[x] Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	Arsenic: 4.53 Chromium: ND(<1) Lead: ND(<1)
		3/17/2020	Gasoline Range: ND (<100) Diesel: 120[X] Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
MW-13	Sidewalk of Yesler Way, of garage door entry, adjacent to OS-4.	10/3/2019	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<1)	ND (all)	NA
		12/9/2019	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
		3/17/2020	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
MW-14	At base of slope in open Center part of property, outside tenant access to former dry cleaner space in 118 12th bldg.	7/22/2019	Gasoline Range: ND (<100) Diesel: 130[x] Motor Oil: ND (<250)	Benzene: 1.8 Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<1)	cis-1,2-Dichloroethene: 2.3 ***Vinyl chloride: 0.65*** ND (all other)	Lead: ND (<1)
		12/4/2019	Gasoline Range: ND (<100) Diesel: 110[x] Motor Oil: ND (<250)	Benzene: 1.3 Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	cis-1,2-Dichloroethene: 1.8 ***Vinyl chloride: 0.25*** ND (all other)	NA
		2/28/2020	Gasoline Range: ND (<100) Diesel: 64[x] Motor Oil: ND (<250)	Benzene: 1.8 Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	cis-1,2-Dichloroethene: 2.1 ***Vinyl chloride: 0.66*** ND (all other)	NA

Boring/ Sample I.D.	***Sample Location***	***Sample Date***	***Laboratory Analytical Results (ug/l)***			
			Total Petroleum Hydrocarbons *(by Methods NWTPH-G & NWTPH-D(X))*	***Benzene Toluene Ethyl benzene Xylenes*** *(by EPA Method 8260C)*	***Other Volatile Organic Compounds (by EPA Method 8260C)*** *List of 58 Additional Compounds Detectable by the Laboratory Method.*	***Total Metals***
MW-15	In N central part of SE parking lot	4/2/2020	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	NA
Geotech B-7 (GEO B-7)	In NW part of parking lot E of 104 12th , between previous borings MW-2 and MW-5	12/6/2018	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<1)	cis-1,2-Dichloroethene: 1.1 ND (all other)	NA
		7/22/2019	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<1)	cis-1,2-Dichloroethene: 3.0 Trichloroethene: 2.3 ND (all other)	NA
		12/4/2019	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<1)	cis-1,2-Dichloroethene: 2.7 Trichloroethene: 1.8 ND (all other)	NA
		3/5/2020	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<1)	cis-1,2-Dichloroethene: 3.2 Trichloroethene: 2.9 ND (all other)	NA
Geotech B-8 (GEO B-8)	In S central area of NW gravel parking lot, between borings BN-10, AEG-B-2 and AEG-B-4	12/6/2018	Gasoline Range: ND (<100) Diesel: 210x Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<1)	Isopropylbenzene: 1.1 n-Propylbenzene: 1.8 ND (all other)	NA
		7/23/2019	Gasoline Range: ND (<100) Diesel: 140x Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	ND (all)	Lead: ND (<1)
		12/4/2019	Gasoline Range: 150 Diesel: 410x Motor Oil: 360x	Benzene: 1.3 Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	Isopropylbenzene: 4.0 n-Propylbenzene: 7.1 sec-Butylbenzene: 1.1 ND (all other)	NA
		2/28/2020	Gasoline Range: 110 Diesel: 180x Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	Isopropylbenzene: 1.4 n-Propylbenzene: 2.7 ND (all other)	NA

Boring/ Sample I.D.	***Sample Location***	***Sample Date***	***Laboratory Analytical Results (ug/l)***			
			Total Petroleum Hydrocarbons *(by Methods NWTPH-G & NWTPH-D(X))*	***Benzene*** ***Toluene*** ***Ethyl benzene*** ***Xylenes*** *(by EPA Method 8260C)*	***Other Volatile Organic Compounds (by EPA Method 8260C)*** *List of 58 Additional Compounds Detectable by the Laboratory Method.*	***Total Metals***
Geotech B-9 (GEO B-9)	In NE part of parking lot E of 104 12th, between previous borings MW-5 and MW-1	12/6/2018	Gasoline Range: ND (<100) Diesel: 76[x] Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<1)	cis-1,2-Dichloroethene: 2.4 ***Vinyl chloride: 0.36*** ND (all other)	NA
		7/23/2019	Gasoline Range: ND (<100) Diesel: 59[x] Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<1)	cis-1,2-Dichloroethene: 1.4 ND (all other)	NA
		12/4/2019	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	cis-1,2-Dichloroethene: 1.5 ***Vinyl chloride: 0.22*** ND (all other)	NA
		3/5/2020	Gasoline Range: ND (<100) Diesel: 73[x] Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<1)	cis-1,2-Dichloroethene: 1.1 ND (all other)	NA
Washington State Model Toxics Control Act (MTCA) Groundwater Cleanup Criteria (ug/l)			***Gasoline: 800[A]*** ***(Benzene is present)*** ***Diesel or Motor Oil: 500[A] (combined)***	***Benzene: 5[A]*** ***Toluene: 1,000[A]*** ***Ethylbenzene: 700[A]*** ***Xylenes: 1,000[A]***	***Acetone: 7,200[B]*** ***cis-1,2-Dichloroethene: 16*** ***Hexane: 480[B]*** ***Isopropylbenzene: 800[B]*** ***n-Propylbenzene: 800[B]*** ***Naphthalene: 160[B]*** ***p-Isopropyltoluene: NV*** ***sec-Butylbenzene: 800[B]*** ***tert-Butylbenzene: 800[B]*** ***Tetrachloroethene: 5[A]*** ***Trichloroethene: 5[A]*** ***Vinyl chloride: 0.2[A]*** ***1,2,4-Trimethylbenzene: 80[B]*** ***1,3,5-Trimethylbenzene: 80[B]***	***Arsenic: 5[A]*** ***Chromium: 2,000*** ***Lead: 15[A]*** ***Iron: 11,000[B]*** ***Manganese: 750[B]***

Table Notes:
ND (<XXX) - Parameter not detected at concentrations at or above the noted reporting limit.
NA - Sample not analyzed for the listed parameter.
Gasoline Range Total Petroleum Hydrocarbons by Method NWTPH-G.
Diesel and Motor Oil Range Total Petroleum Hydrocarbons by Method NWTPH-D(x).
[x] - Indicates sample chromatogram does not resemble fuel standard used for analysis. Most likely carry over from gasoline range hydrocarbons, or non-petroleum organic matter.
BTEX compounds and other volatile organic compounds by EPA Method 8260C. All detected compounds summarized here. See laboratory report for full list of analyzed parameters.
Total Lead on unfiltered samples by EPA Method 6020B.
Dissolved and total Iron and Manganese as general water parameters as part of clean-up feasability study. Analyses by EPA Method 6020B.

MTCA Groundwater cleanup criteria per Chapter 173-340-720 WAC. Method A criteria presented where available. Method B standard formula values shown where no Method A criteria available. Method B standard formula values from Dept. of Ecology Cleanup Levels and Risk Calculation (CLARC) database. NV indicates no value available from CLARC.

A - Method A listed
B - Method B Direct Contact
NV - No published value

Sample results exceeding applicable cleanup criteria are noted in ***Bold Italic***.

TABLE 5
Summary of Groundwater Level Measurements
104 - 124 12th Avenue and 1209 E. Fir Street, Seattle, Washington

Monitoring Well	*Date*	*Top of Pipe Elevation*	*Water Level Below T.O.P.*	*Water Elevation*	*Comments*
MW-1	10/30/2017	200.26	-6.68	193.58	2" Well, 29' deep
	11/7/2017		-6.37	193.89	
	6/14/2018		-6.28	193.98	
	9/7/2018		-7.55	192.71	
	12/6/2018		-8.15	192.11	
	2/25/2018		-5.34	194.92	
	7/22/2019		-6.90	193.36	
	9/3/2019		-7.54	192.72	
	10/3/2019		-6.77	193.49	
	12/4/2019		-6.47	193.79	
	3/17/2020		-5.72	194.54	
MW-1S	10/30/2017	198.99	Not installed yet		
	11/7/2017		Not installed yet		
	6/14/2018		Not installed yet		
	9/7/2018		Not installed yet		
	12/6/2018		Not installed yet		
	2/25/2019		Not installed yet		
	7/22/2019		Not installed yet		
	9/3/2019		-6.72	192.27	2" Well, 15' deep, 10' screen
	10/3/2019		-6.10	192.89	
	12/4/2019		-6.30	192.69	
	3/17/2020		-6.08	192.91	
MW-1D	10/30/2017	199.02	Not installed yet		
	11/7/2017		Not installed yet		
	6/14/2018		Not installed yet		
	9/7/2018		Not installed yet		
	12/6/2018		Not installed yet		
	2/25/2019		Not installed yet		
	7/22/2019		Not installed yet		
	9/3/2019		-5.58	193.44	2" Well, 40' deep, 5 ft screen
	10/3/2019		-5.14	193.88	
	12/4/2019		-5.96	193.06	
	3/17/2020		-4.32	194.70	

TABLE 5
Summary of Groundwater Level Measurements
104 - 124 12th Avenue and 1209 E. Fir Street, Seattle, Washington

Monitoring Well	*Date*	*Top of Pipe Elevation*	*Water Level Below T.O.P.*	*Water Elevation*	*Comments*
MW-2	10/30/2017	201.08	-5.94	195.14	2" Well, 29' deep
	11/7/2017		-5.78	195.30	
	6/14/2018		-5.83	195.25	
	9/7/2018		-7.29	193.79	
	12/6/2018		-6.42	194.66	
	2/25/2018		-6.71	194.37	
	7/22/2019		-6.11	194.97	
	9/3/2019		-6.62	194.46	
	10/3/2019		-6.16	194.92	
	12/4/2019		-5.85	195.23	
	3/17/2020		-5.29	195.79	
MW-3	10/30/2017	199.98	-4.81	195.17	3/4" Well, 10.6' deep
	11/7/2017		-5.09	194.89	
	6/14/2018		-4.80	195.18	
	9/7/2018		-5.86	194.12	
	12/6/2018		-4.15	195.83	
	2/25/2019		-3.71	196.27	
	7/22/2019		-5.15	194.83	
	9/3/2019		-5.64	194.34	
	10/3/2019		-5.43	194.55	
	12/4/2019		-5.13	194.85	
	3/17/2020		-4.52	195.46	
MW-4	10/30/2017	199.36	-8.65	190.71	2" Well, 29' deep
	11/7/2017		-8.45	190.91	
	6/14/2018		-8.32	191.04	
	9/7/2018		-10.02	189.34	
	12/6/2018		-7.98	191.38	
	2/25/2019		-7.03	192.33	
	7/22/2019		-8.68	190.68	
	9/3/2019		-9.18	190.18	
	10/3/2019		-8.72	190.64	
	12/4/2019		-8.54	190.82	
	3/17/2020		-7.93	191.43	

TABLE 5
Summary of Groundwater Level Measurements
104 - 124 12th Avenue and 1209 E. Fir Street, Seattle, Washington

Monitoring Well	*Date*	*Top of Pipe Elevation*	*Water Level Below T.O.P.*	*Water Elevation*	*Comments*
MW-5	10/30/2017	200.99	-6.53	194.46	3/4" Well, 12' deep
	11/7/2017		-6.22	194.77	
	6/14/2018		-6.10	194.89	
	9/7/2018		-7.47	193.52	
	12/6/2018		-5.69	195.30	
	2/25/2019		-4.95	196.04	
	7/22/2019		-6.76	194.23	
	9/3/2019		-7.13	193.86	
	10/3/2019		-6.50	194.49	
	12/4/2019		-6.11	194.88	
	3/17/2020		-5.32	195.67	
MW-6	10/30/2017	200.27	-2.75	197.52	3/4" Well, 12' deep
	11/7/2017		-2.10	198.17	
	6/14/2018		-2.82	197.45	
	9/7/2018		-4.85	195.42	
	12/6/2018		-2.07	198.20	
	2/25/2019		-1.70	198.57	
	7/22/2019		-3.23	197.04	
	9/3/2019		-4.58	195.69	
	10/3/2019		-3.15	197.12	
	12/4/2019		-2.64	197.63	
	3/17/2020		-2.02	198.25	
MW-7	10/30/2017	199.56	-2.41	197.15	1" Well, 11.5' deep
	11/7/2017		-1.70	197.86	
	6/14/2018		-2.66	196.90	
	9/7/2018		-4.34	195.22	
	12/6/2018		-1.69	197.87	
	2/25/2019		-2.32	197.24	
	7/22/2019		-3.18	196.38	
	9/3/2019		-4.07	195.49	
	10/3/2019		-2.97	196.59	
	12/4/2019		-2.27	197.29	
	3/17/2020		-1.65	197.91	

TABLE 5
Summary of Groundwater Level Measurements
104 - 124 12th Avenue and 1209 E. Fir Street, Seattle, Washington

Monitoring Well	*Date*	*Top of Pipe Elevation*	*Water Level Below T.O.P.*	*Water Elevation*	*Comments*
MW-8 (Drilled as BN-7)	10/30/2017	216.51	NM	--	2" Well, 22' deep
	11/7/2017		-15.16	201.35	
	6/28/2018		-15.27	201.24	
	9/7/2018		-15.76	200.75	
	12/6/2018		-14.92	201.59	
	2/25/2019		-14.13	202.38	
	7/22/2019		-15.41	201.10	
	9/3/2019		-15.62	200.89	
	10/3/2019		-15.41	201.10	
	12/4/2019		-15.23	201.28	
	3/17/2020		-14.62	201.89	
MW-9 (Drilled as BN-10)	10/30/2017	214.25	NM	--	2" Well, 25' deep
	11/7/2017		-13.14	201.11	
	7/13/2018		-13.99	200.26	
	9/7/2018		-14.71	199.54	
	12/6/2018		NM	--	
	2/25/2019		-12.07	202.18	
	7/22/2019		-14.04	200.21	
	9/3/2019		-14.46	199.79	
	10/3/2019		-13.79	200.46	
	12/4/2019		-13.91	200.34	
	3/17/2020		-12.73	201.52	
MW-10 (Drilled as SMW-01)	10/30/2017	196.88	Not installed yet		
	11/7/2017		-10.21	186.67	2" Well, 15' deep
	6/14/2018		-9.88	187.00	
	9/7/2018		-10.35	186.53	
	12/6/2018		NM	--	
	2/25/2019		NM	--	
	7/22/2019		-10.04	186.84	
	9/3/2019		-9.95	186.93	
	10/3/2019		-9.99	186.89	
	12/4/2019		-9.91	186.97	
	3/17/2020		-9.68	187.20	

TABLE 5
Summary of Groundwater Level Measurements
104 - 124 12th Avenue and 1209 E. Fir Street, Seattle, Washington

Monitoring Well	*Date*	*Top of Pipe Elevation*	*Water Level Below T.O.P.*	*Water Elevation*	*Comments*
MW-11	10/30/2017	198.20	Not installed yet		
	11/7/2017		Not installed yet		
	6/14/2018		Not installed yet		
	9/7/2018		Not installed yet		
	12/6/2018		Not installed yet		
	2/25/2019		Not installed yet		
	7/22/2019		Not installed yet		
	9/3/2019		-6.54	191.66	2" Well, 15' deep
	10/3/2019		-5.74	192.46	
	12/4/2019		-5.57	192.63	
	3/17/2020		-5.73	192.47	
MW-12	10/30/2017	198.89	Not installed yet		
	11/7/2017		Not installed yet		
	6/14/2018		Not installed yet		
	9/7/2018		Not installed yet		
	12/6/2018		Not installed yet		
	2/25/2019		Not installed yet		
	7/22/2019		Not installed yet		
	9/3/2019		-7.69	191.20	2" Well, 15' deep
	10/3/2019		-6.25	192.64	
	12/4/2019		-5.72	193.17	
	3/17/2020		-4.57	194.32	
MW-13	10/30/2017	201.80*	Not installed yet		
	11/7/2017		Not installed yet		
	6/14/2018		Not installed yet		
	9/7/2018		Not installed yet		
	12/6/2018		Not installed yet		
	2/25/2019		Not installed yet		
	7/22/2019		Not installed yet		
	9/3/2019		Not installed yet		2" Well, 20' deep
	10/3/2019		-7.55*	194.25*	* Prior to development
	12/4/2019		-7.58	194.22	
	3/17/2020		-6.96	194.84	

TABLE 5
Summary of Groundwater Level Measurements
104 - 124 12th Avenue and 1209 E. Fir Street, Seattle, Washington

Monitoring Well	*Date*	*Top of Pipe Elevation*	*Water Level Below T.O.P.*	*Water Elevation*	*Comments*
MW-14	10/30/2017	203.09	Not installed yet		
	11/7/2017		Not installed yet		
	6/14/2018		Not installed yet		
	9/7/2018		Not installed yet		
	12/6/2018		Not installed yet		
	2/25/2019		Not installed yet		
	7/22/2019		Not installed yet		
	9/3/2019		-5.64	197.45	2" Well, 15' deep
	10/3/2019		-4.42	198.67	
	12/4/2019		-3.85	199.24	
	3/17/2020		-4.86	198.23	
GEO B-7	10/30/2017	201.12	Not installed yet		
	11/7/2017		Not installed yet		
	6/14/2018		Not installed yet		
	9/7/2018		Not installed yet		
	12/6/2018		-5.70	195.42	2" Well, 20' deep
	2/25/2019		-5.85	195.27	
	7/22/2019		-5.91	195.21	
	9/3/2019		NM	--	
	10/3/2019		-6.42	194.70	
	12/4/2019		-6.10	195.02	
	3/17/2020		-5.81	195.31	
GEO B-8	10/30/2017	214.79	Not installed yet		
	11/7/2017		Not installed yet		
	6/14/2018		Not installed yet		
	9/7/2018		Not installed yet		
	12/6/2018		-13.83	200.96	2" Well, 35' deep
	2/25/2019		NM	--	
	7/22/2019		-14.13	200.66	
	9/3/2019		-15.25	199.54	
	10/3/2019		-14.65	200.14	
	12/4/2019		-14.22	200.57	
	3/17/2020		-13.50	201.29	

TABLE 5
Summary of Groundwater Level Measurements
104 - 124 12th Avenue and 1209 E. Fir Street, Seattle, Washington

Monitoring Well	*Date*	*Top of Pipe Elevation*	*Water Level Below T.O.P.*	*Water Elevation*	*Comments*
GEO B-9	10/30/2017	200.69	Not installed yet		
	11/7/2017		Not installed yet		
	6/14/2018		Not installed yet		
	9/7/2018		Not installed yet		
	12/6/2018		-6.33	194.36	2" Well, 15' deep
	2/25/2019		-5.37	195.32	
	7/22/2019		-6.67	194.02	
	9/3/2019		-7.57	193.12	
	10/3/2019		-7.11	193.58	
	12/4/2019		-6.60	194.09	
	3/17/2020		-5.78	194.91	

Table Notes:
NM - Not measured due to obstruction over well.
Top of Pipe elevations determined by site surveys, Terrane, Inc., November 2017 and August 2019.
MW-13 top of pipe elevation by WES, back-sighted to previously surveyed monitoring wells.

FIGURES

Figure 1 - Site Map

104-124 12th Avenue & 1209 E. Fir Street
Seattle, Washington 98122

Project No.	WES - 1591
Date	June 11, 2017
File ID.	1591F1

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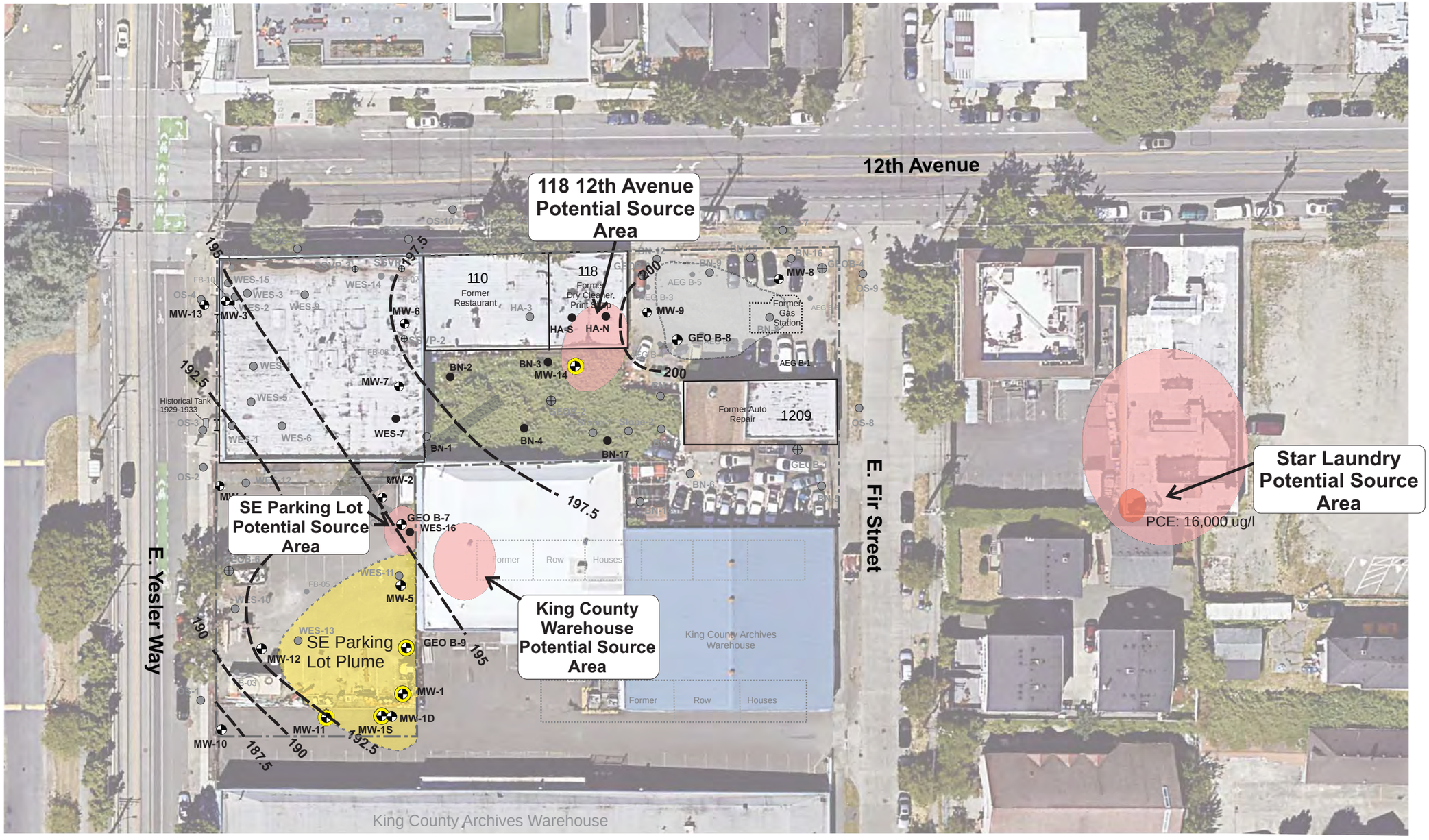


Legend

- Approximate Location of Monitoring Well
- Inferred Groundwater Elevation Contour 12/4/2019
- General Direction of Groundwater Migration
- Approximate Location of Soil Borings (2014-19)
- Approximate Property Boundary
- Dec. 2019 Groundwater Sample Exceeding MTCA Method A CUL for Vinyl Chloride

Figure 2 - Potential Source Areas of SE Parking Lot Plume

Proposed Redevelopment Property
104-124 12th Avenue & 1209 E. Fir Street
Seattle, WA

Project No.	WES - 1591A
Date	Feb 9, 2020
File ID.	1591F2C

WHITMAN Environmental Sciences

Legend

- Approximate Location of Monitoring Well
- Approximate Location of Soil Borings (2016 -2020)
- Approximate Location of Soil Vapor Probe
- Approximate Location of Geotechnical Soil Borings (Soil Descriptions Only)
- Approximate Location of 2016 Farallon Soil Borings (No Data or Soil Descriptions, Locations Estimated)

Figure 3 - Source Investigation Boring Location Plan

Proposed Redevelopment Property
104-124 12th Avenue & 1209 E. Fir Street
Seattle, WA

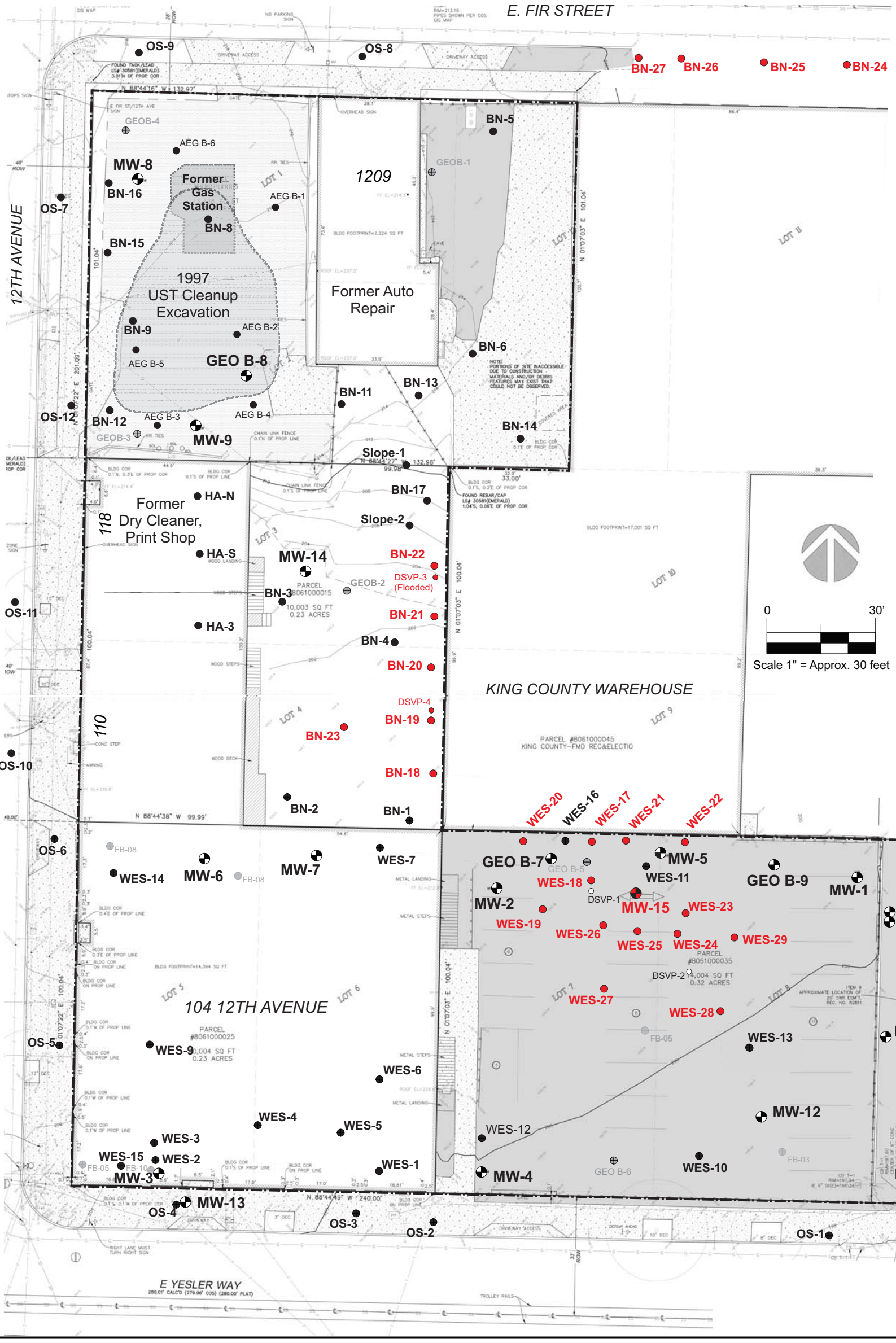
Project No.	WES - 1591A
Date	Mar 20, 2020
File ID.	1591SIF3

WHITMAN Environmental Sciences

Boring or Shallow Soil Sample Location Drilled for Source Investigation

Monitoring Well Installed for Source Investigation

Deep Soil Vapor Probe Installed for Source Investigation



Legend

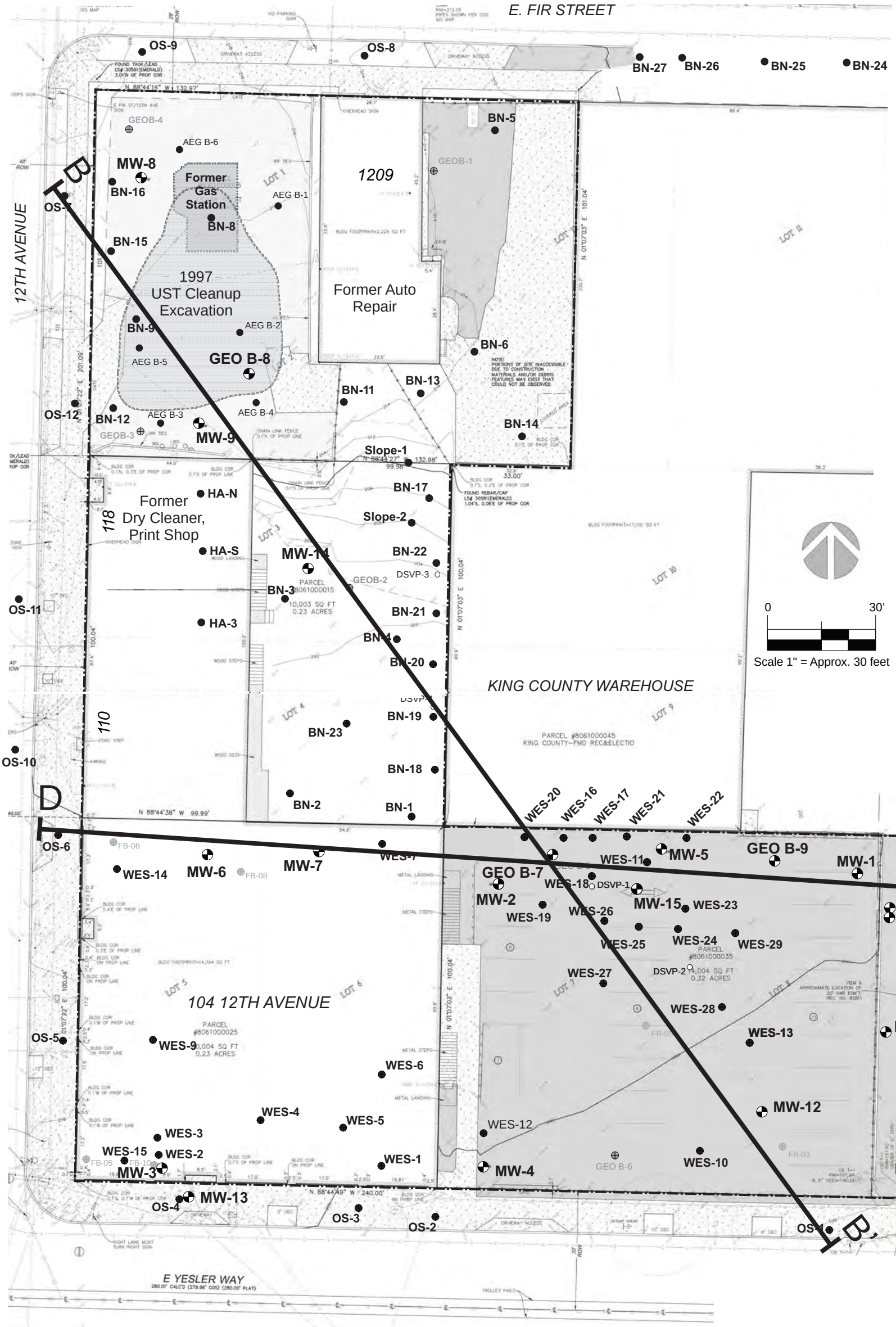
- Approximate Location of Monitoring Well
- Approximate Location of Soil Borings (2016 -2020)
- Approximate Location of Soil Vapor Probe
- Approximate Location of Geotechnical Soil Borings (Soil Descriptions Only)
- Approximate Location of 2016 Farallon Soil Borings (No Data or Soil Descriptions, Locations Estimated)

Figure 4 - Cross-Section Orientation Plan

Proposed Redevelopment Property
104-124 12th Avenue & 1209 E. Fir Street
Seattle, WA

Project No.	WES - 1591A
Date	Apr 5, 2020
File ID.	1591SIF4

WHITMAN
Environmental Sciences



B

Former Gas Station Area

B’

OS-7 | Property Line | BN-7(MW-8) | BN-15 | BN-9 | AEG B-5 | GEO B-3 | AEG B-3 | BN-10(MW-9) | AEG B-4 | HA-N | MW-14 | GEO B-2 | BN-4 | BN-19, 20 | WES-16 | WES-17 | GEO B-7 | GEO B-5 | WES-19 | WES-11 | MW-5 | MW-15 | FB-05 | WES-13 | MW-12 | FB-03 | MW-10 | Property Line | OS-1

215 | 210 | 205 | 200 | 195 | 190 | 185 | 180 | 175

Ground Surface

King County Warehouse

S.E. Parking Lot

Fill & Organic Silt

Clayey & Silty Sand

Clayey Glacial Till

Wet Sand Zone

Silt

Sample Depth Estimated

Wet Sand

Silt

Organic Silt and Fill

Clayey & Silty Sand

Wet Sand Zone

Clayey & Silty Sand

No Soil Data

Clayey & Silty Sand

No Soil Data

Wet Sand Zone

Wet Sand

Clayey & Silty Sand

Proposed Excavation Base Elevation 186.9 Ft.

Wet Sand Zone

Clayey Silt

Wet Sand Zone

Silt EOB 49’

Clayey Silt

Wet Sand Zone

Silt EOB 43.5’

Clayey Silt

Wet Sand Zone

Silt EOB 54‘

Legend

- High and Low Static Water Levels Measured 2017-2019
- Depth Interval of Soil Sample - Does Not Exceed MTCA Soil Cleanup Criteria for VOCs
- Depth Interval of Soil Sample - Exceeds MTCA Soil Cleanup Criteria for Tetrachloroethene
- Groundwater Sample - No Exceedance of MTCA Groundwater Cleanup Criteria
- Groundwater Sample - One or More Parameter Exceeds MTCA Groundwater Cleanup Criteria for VOCs
- Groundwater Sample - One or More Parameter Exceeds MTCA Groundwater Cleanup Criteria for Petroleum Related Compounds

Horizontal Scale - 1”= 30 ft.
Vertical Scale 1”= 7.5 ft.
(4X Vertical Exaggeration)

Figure 4A - Cross-Section B-B’

104-124 12th Avenue & 1209 E. Fir Street
Seattle, Washington 98122

Project No.	WES - 1591
Date	Mar 30, 2020
File ID.	1591CC4A

WHITMAN
Environmental Sciences

D

Elevation

12th Avenue

OS-6

Property Line

104 12th Avenue Building

King County Warehouse

King County East Warehouse

MW-6 MW-7 WES-7 BN-1 BN-18 MW-2 GEO B-5 WES-19 GEO B-7 WES-16 WES-17 WES-18 MW-15 WES-11 MW-5 GEO B-9 MW-1 MW-1D, 1S Property Line SHA FIR-02 SHA BH-04 SHA BH-06

Basement Floor

200 195 190 185 180 175 170

Organic Silt

Organic Silt (Fill)

Fill

Fill

Fill

No Soil Data

No Soil Data

No Soil Data

No Soil Data

Silty & Clayey Sand (Fill or Weathered Glacial Till)

Silty & Clayey Sand (Fill or Weathered Glacial Till)

Silt

Wet Sand Zone

Wet Sand Zone

Proposed Excavation Base Elevation 186 Ft.

Clayey Sand

Clayey Sand (Possible Glacial Till)

Clayey Silt

Wet Coarse Sand

Wet Fine Sand

Clayey Silt

EOB at 54'

200 195 190 185 180 175 170 165 160

Legend

- High and Low Static Water Levels Measured 2017-2019
- Depth Interval of Soil Sample - Does Not Exceed MTCA Soil Cleanup Criteria for VOCs
- Depth Interval of Soil Sample - Exceeds MTCA Soil Cleanup Criteria for Tetrachloroethene
- Groundwater Sample - No Exceedance of MTCA Groundwater Cleanup Criteria
- Groundwater Sample - One or More Parameter Exceeds MTCA Groundwater Cleanup Criteria for VOCs

Figure 4B - Cross-Section D-D'

104-124 12th Avenue & 1209 E. Fir Street
Seattle, Washington 98122

Project No.	WES - 1591
Date	Mar 30, 2020
File ID.	1591SIF4B

WHITMAN
Environmental Sciences

Legend

- Approximate Location of Monitoring Well
- Approximate Location of Soil Borings (2016 -2020)
- Approximate Location of Soil Vapor Probe
- Approximate Location of Geotechnical Soil Borings (Soil Descriptions Only)
- Approximate Location of 2016 Farallon Soil Borings (No Data or Soil Descriptions, Locations Estimated)

MW-X
195.77 Well I.D. and Groundwater Elevation

Inferred Groundwater Elevation Contour

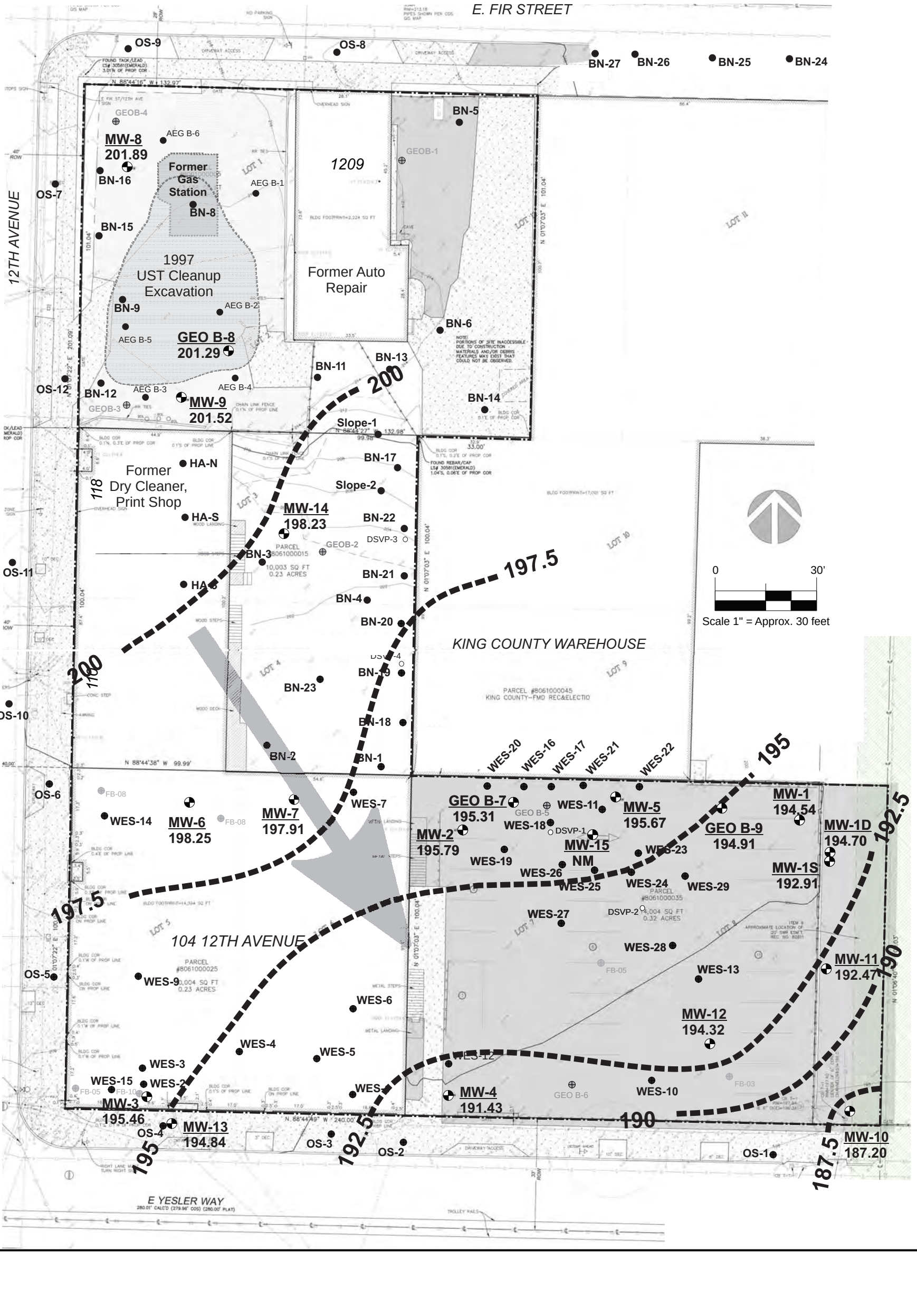
General Direction of Groundwater Migration

Figure 5 - Inferred Groundwater Contours
3/17/2020

Proposed Redevelopment Property
104-124 12th Avenue & 1209 E. Fir Street
Seattle, WA

Project No.	WES - 1591A
Date	Mar 20, 2020
File ID.	1591SIF5

WHITMAN
Environmental Sciences



Legend

- Approximate Location of Monitoring Well
- Approximate Location of Soil Borings (2016 -2020)
- Approximate Location of Soil Vapor Probe
- Approximate Location of Geotechnical Soil Borings (Soil Descriptions Only)
- Approximate Location of 2016 Farallon Soil Borings (No Data or Soil Descriptions, Locations Estimated)

WES-17
TCE- 2.9
C12DCE- 3.2

Sample Location I.D
Chlorinated VOC Concentrations (mg/kg)
Bold Italic Exceeds CUL

Source Investigation Boring or Monitoring Well with No Detected CVOCs in Soil Sampling

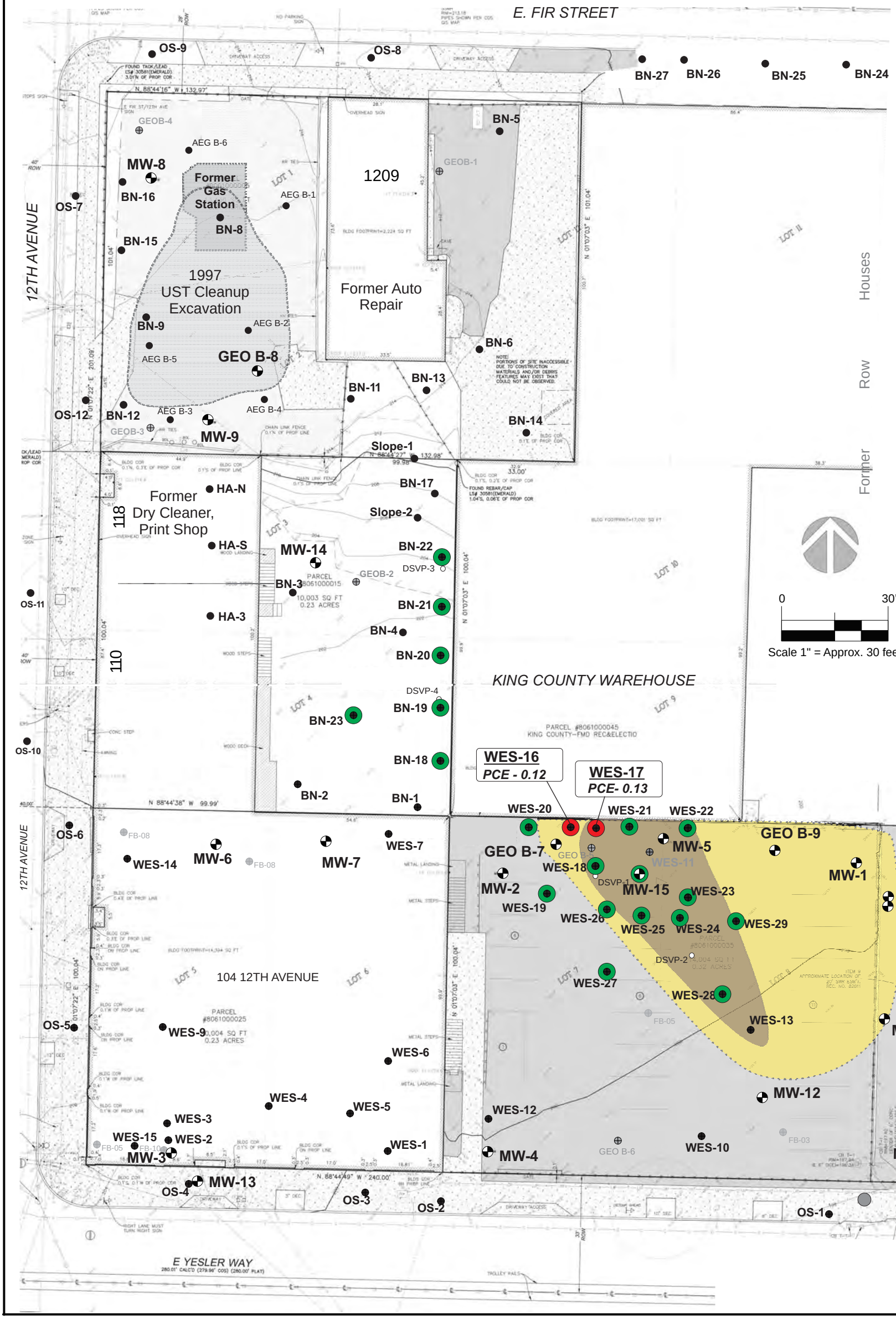
Source Investigation Boring or Monitoring Well with CVOCs above MTCA Method A in Soil Sampling

Figure 6 - Source Investigation Data Summary
Chlorinated VOC Detections in Soil

Proposed Redevelopment Property
104-124 12th Avenue & 1209 E. Fir Street
Seattle, WA

Project No.	WES - 1591A
Date	Apr 5, 2020
File ID.	1591SIF6

WHITMAN
Environmental Sciences



SHA
2017 & 2019
Soil
Samples Analyzed
for VOCs
(Shown in Green)

Legend

- Approximate Location of Monitoring Well
- Approximate Location of Soil Borings (2016 -2020)
- Approximate Location of Soil Vapor Probe
- Approximate Location of Geotechnical Soil Borings (Soil Descriptions Only)
- Approximate Location of 2016 Farallon Soil Borings (No Data or Soil Descriptions, Locations Estimated)

GEO B-7
TCE- 2.9
C12DCE- 3.2

Sample Location I.D

Chlorinated VOC Concentrations (ug/l)

Bold Italic Exceeds CUL

Figure 7 - Source Investigation Data Summary Chlorinated VOC Detections in Groundwater

Proposed Redevelopment Property
104-124 12th Avenue & 1209 E. Fir Street
Seattle, WA

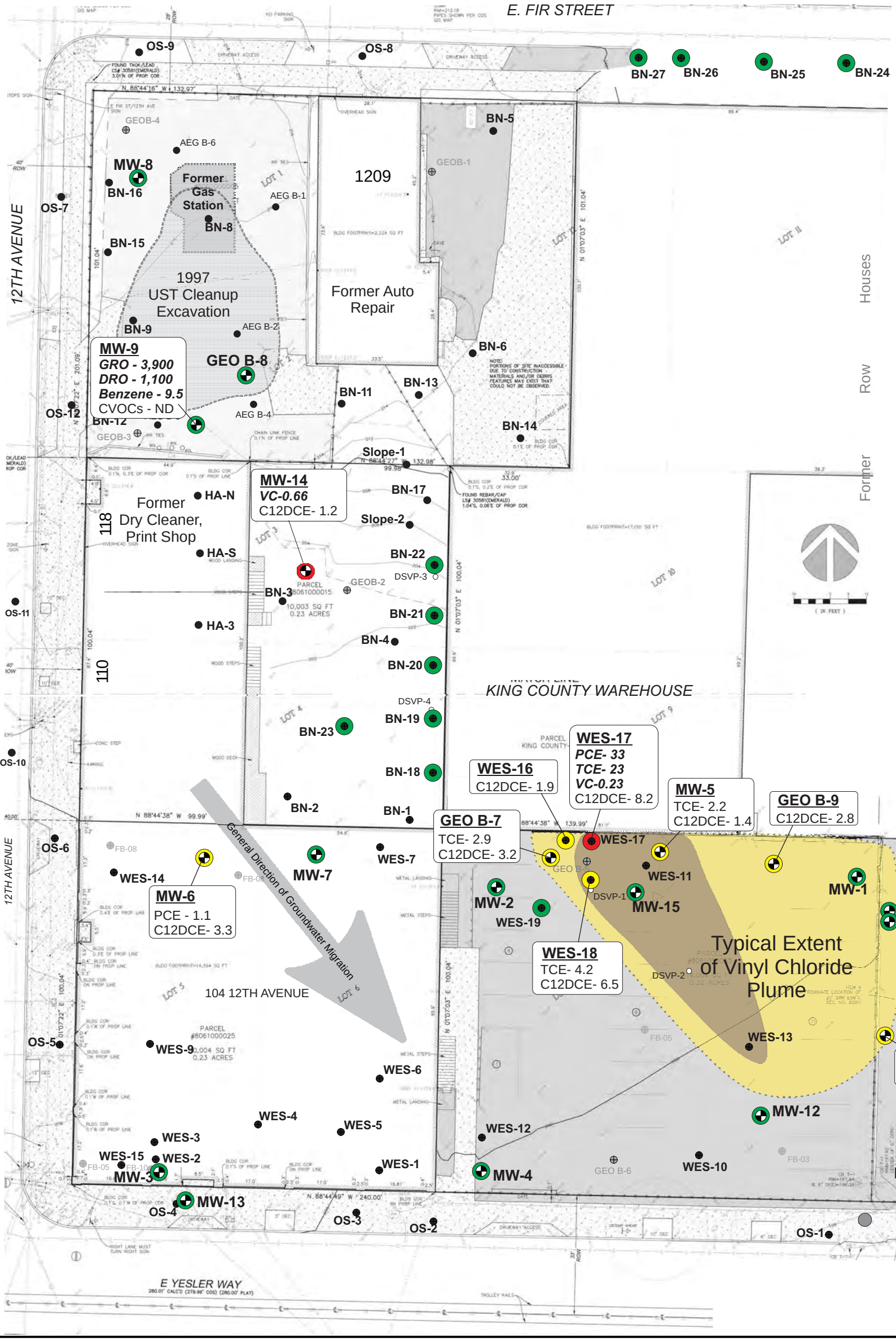
Project No.	WES - 1591A
Date	Apr 5, 2020
File ID.	1591SIF7

WHITMAN Environmental Sciences

Source Investigation Boring or Monitoring Well with No Detected CVOCs in Groundwater in 1st Quarter 2020 Sampling

Source Investigation Boring or Monitoring Well with CVOCs Detected in Groundwater in 1st Quarter 2020 Sampling

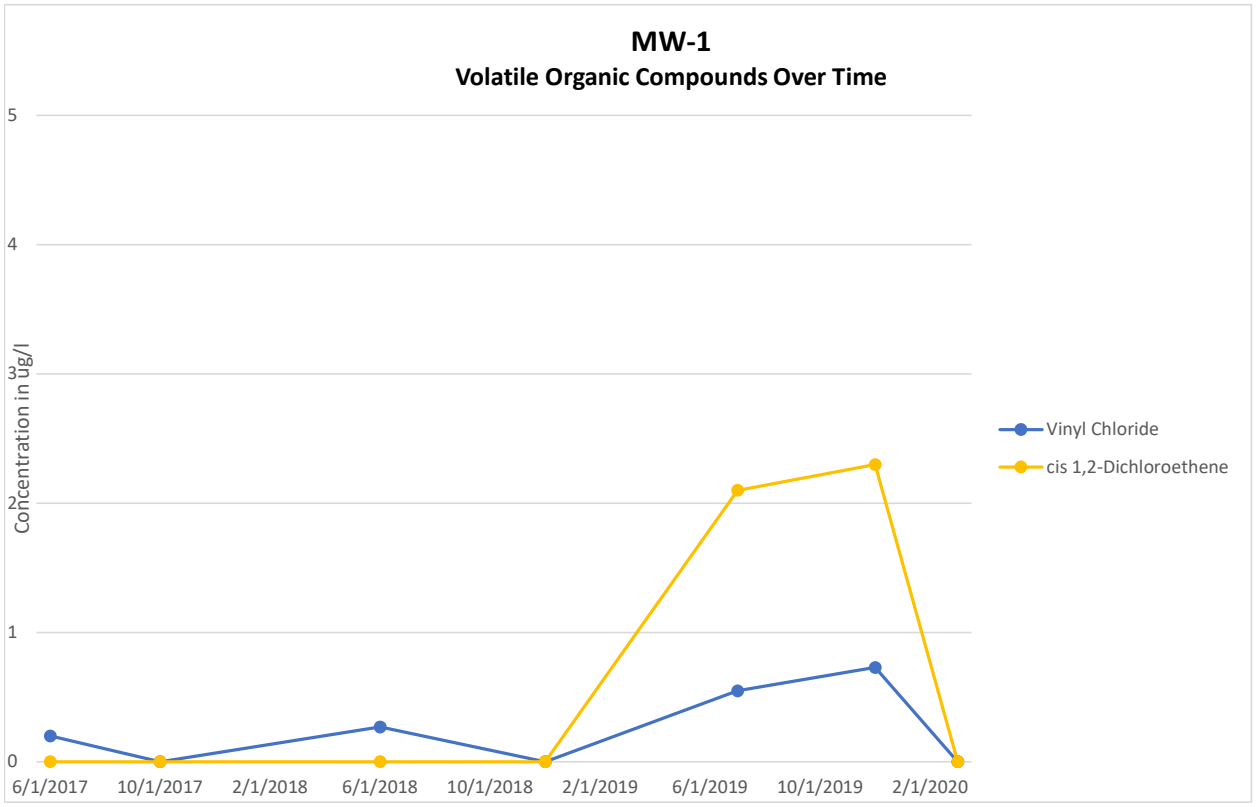
Source Investigation Boring or Monitoring Well with CVOCs above MTCA Method A in Groundwater in 1st Qtr 2020 Sampling



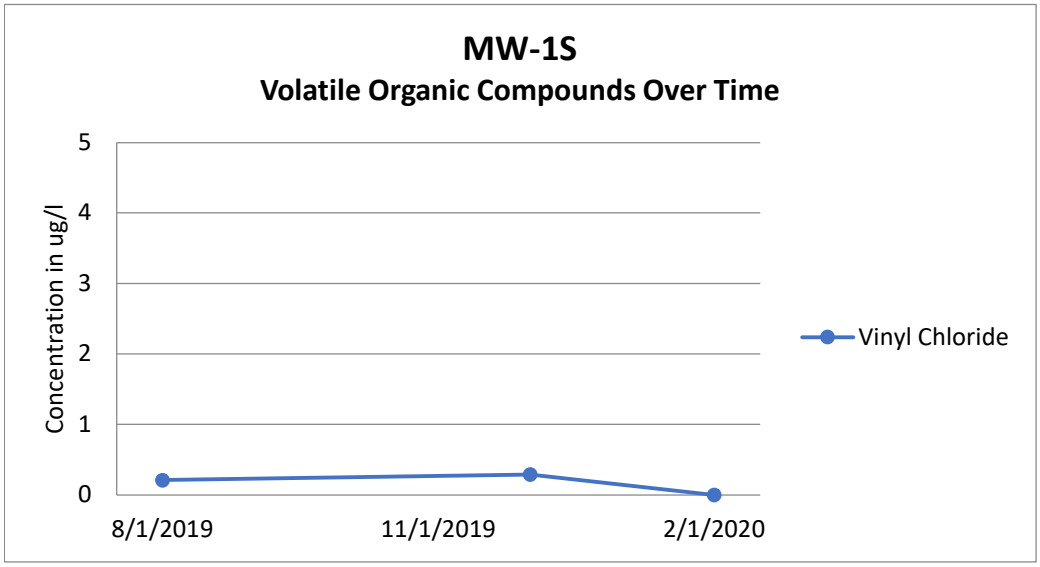
SHA 2017 & 2019 Groundwater Samples Analyzed for VOCs (Shown in Green)

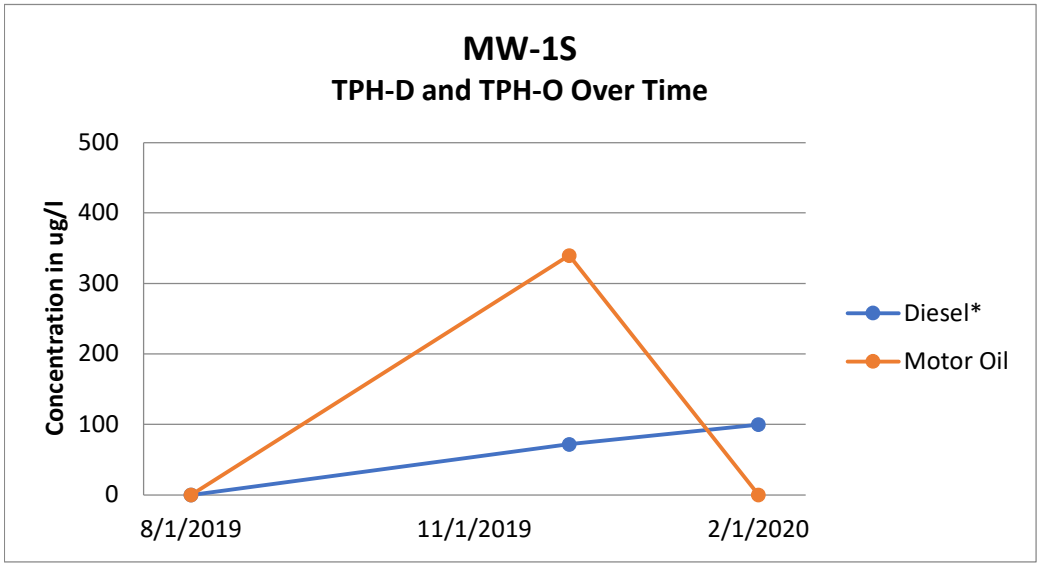
Time Series Plots for Monitoring Wells that have Detected Contaminants

	Date						
	6/30/2017	10/30/2017	6/14/2018	12/6/2018	7/22/2019	12/4/2019	3/5/2020
Vinyl Chloride	0.2	0	0.27	0	0.55	0.73	0
cis 1,2-Dichloroethene	0	0	0	0	2.1	2.3	0



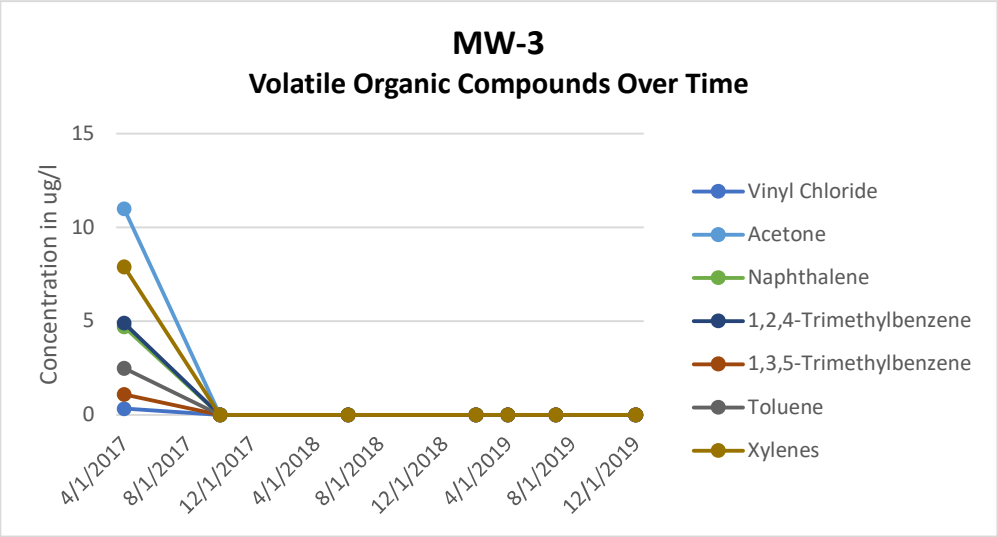
	Date		
	8/6/2019	12/4/2019	2/26/2020
Vinyl Chloride	0.21	0.29	0
Diesel*	0	72	100
Motor Oil	0	340	0

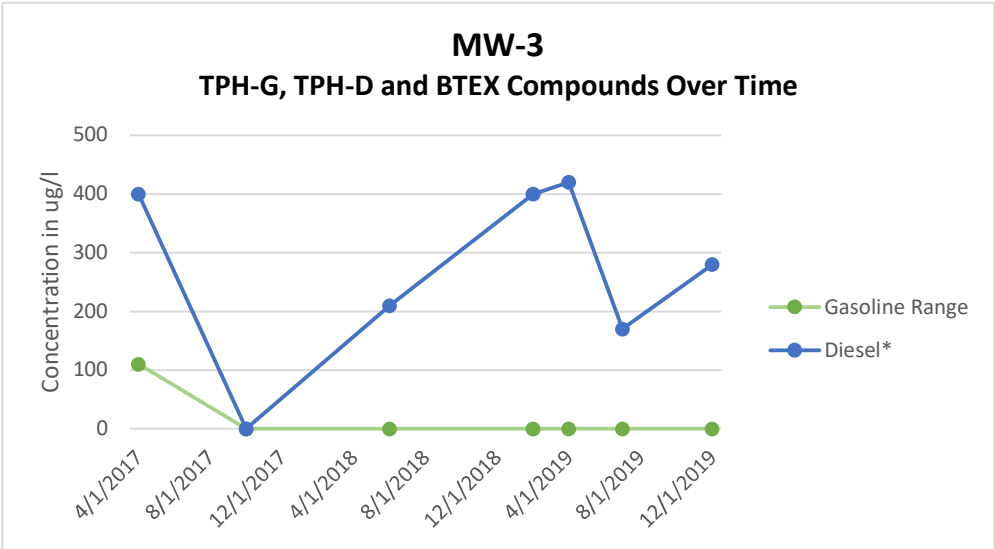




* Diesel flagged by Laboratory as not resembling diesel standard used for quantitation

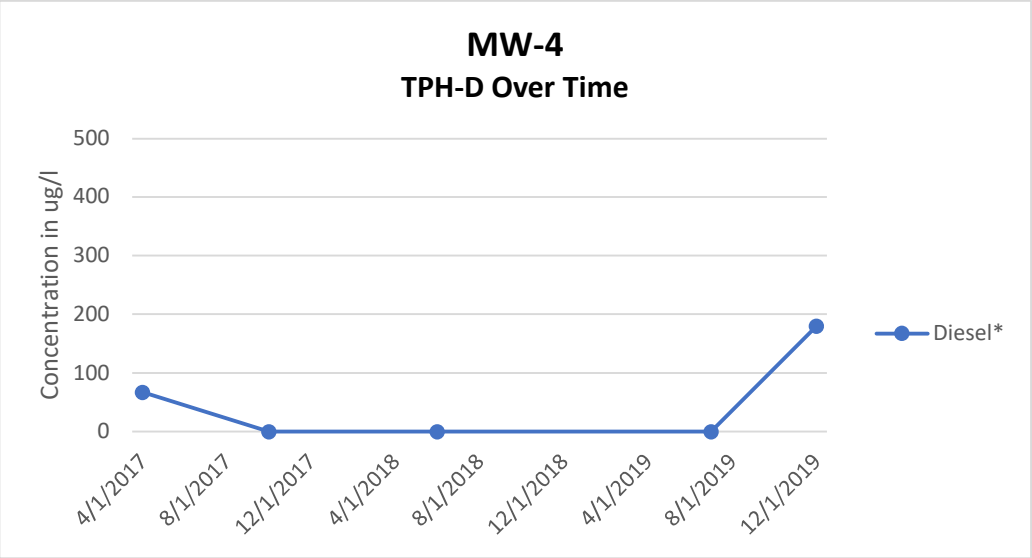
	Date						
	4/3/2017	10/30/2017	6/14/2018	2/25/2019	4/3/2019	7/3/2019	12/4/2019
Vinyl Chloride	0.34	0	0	0	0	0	0
Acetone	11	0	0	0	0	0	0
Naphthalene	4.7	0	0	0	0	0	0
1,2,4-Trimethylbenzene	4.9	0	0	0	0	0	0
1,3,5-Trimethylbenzene	1.1	0	0	0	0	0	0
Gasoline Range	110	0	0	0	0	0	0
Diesel*	400	0	210	400	420	170	280
Toluene	2.5	0	0	0	0	0	0
Xylenes	7.9	0	0	0	0	0	0





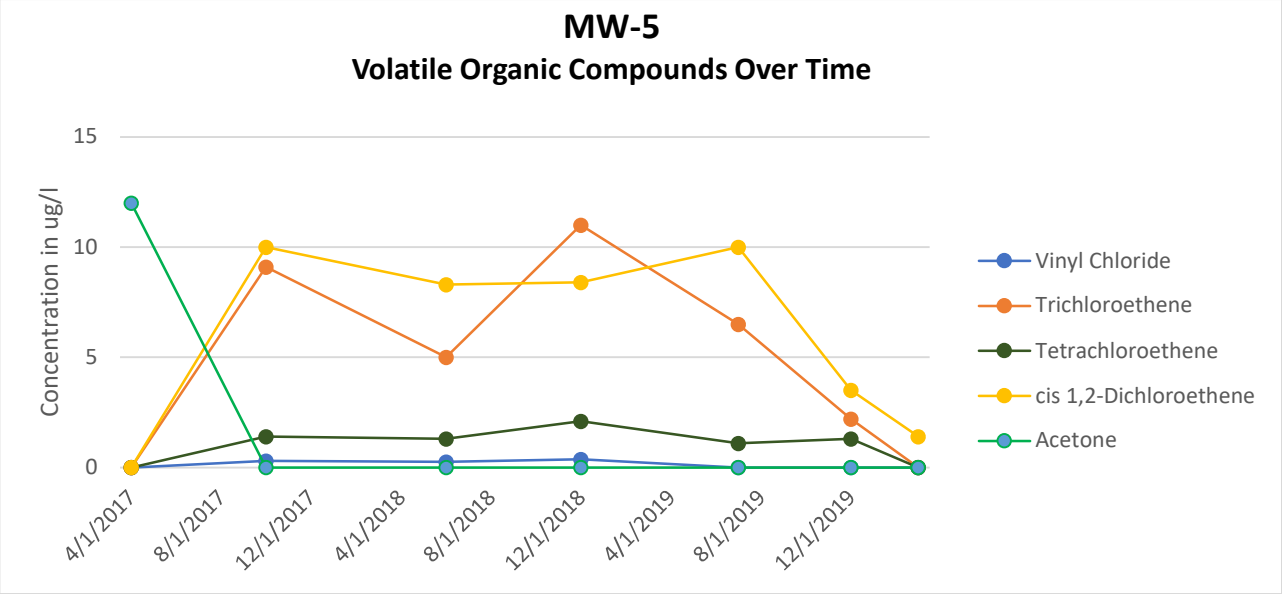
* Diesel flagged by Laboratory as not resembling diesel standard used for quantitation

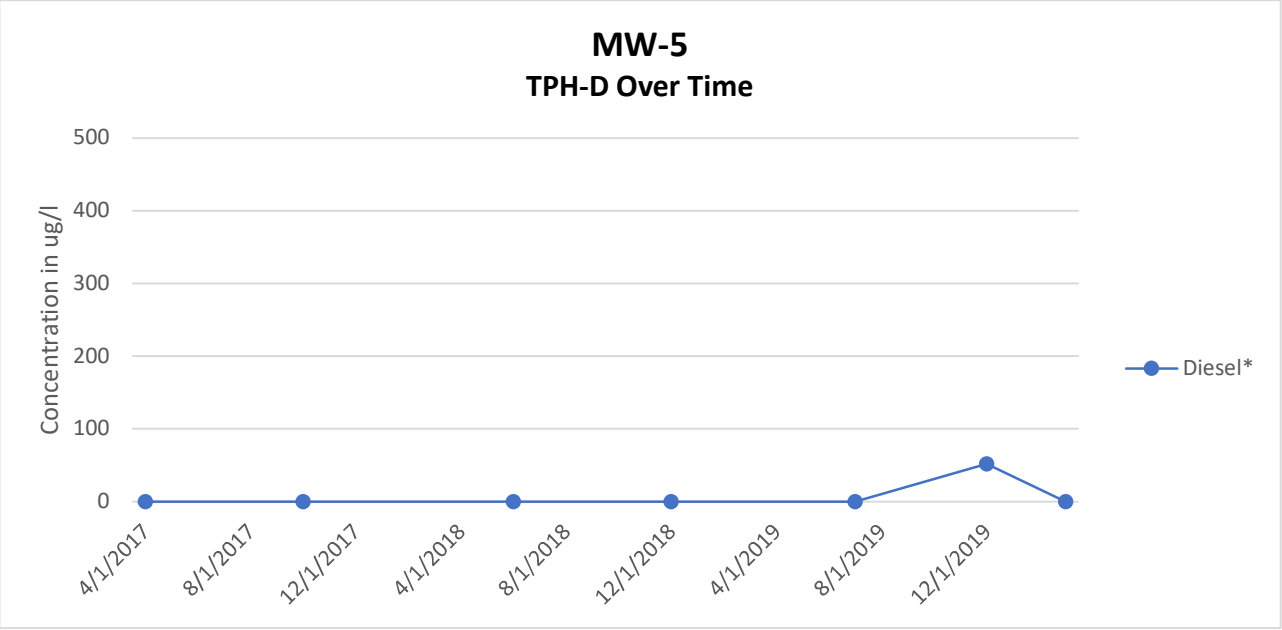
	Date				
	4/5/2017	10/30/2017	6/14/2018	7/23/2019	12/9/2019
Diesel*	67	0	0	0	180
Motor Oil	0	0	0	0	0



* Diesel flagged by Laboratory as not resembling diesel standard used for quantitation

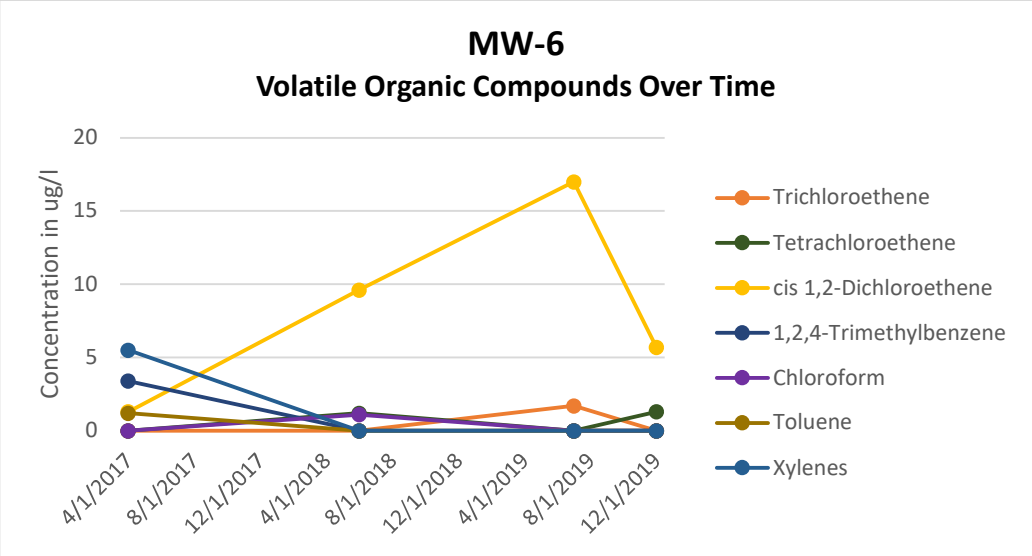
	Date						
	4/5/2017	10/30/2017	6/14/2018	12/6/2018	7/22/2019	12/4/2019	3/5/2020
Vinyl Chloride	0	0.29	0.25	0.37	0	0	0
Trichloroethene	0	9.1	5	11	6.5	2.2	0
Tetrachloroethene	0	1.4	1.3	2.1	1.1	1.3	0
cis 1,2-Dichloroethene	0	10	8.3	8.4	10	3.5	1.4
Acetone	12	0	0	0	0	0	0
Diesel*	0	0	0	0	0	52	0

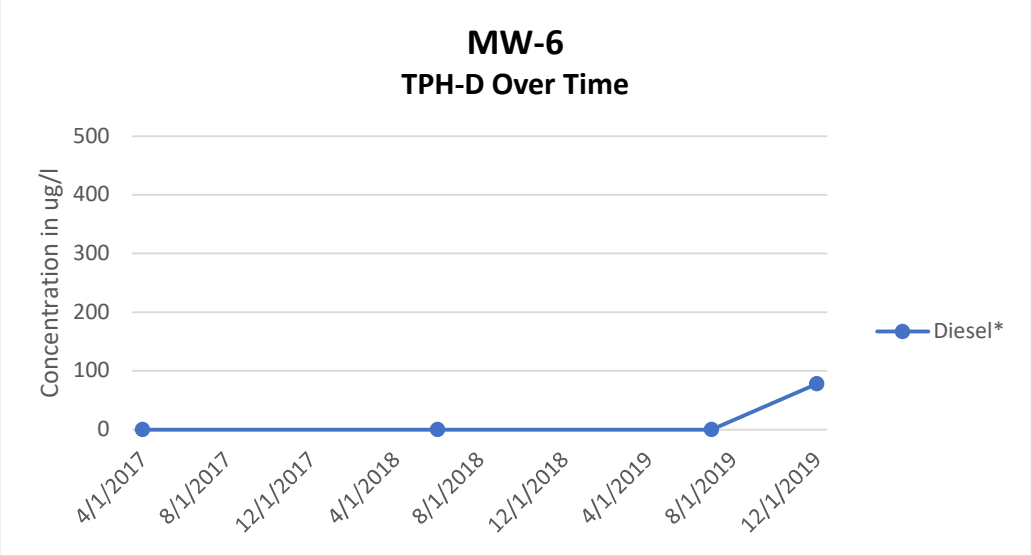




* Diesel flagged by Laboratory as not resembling diesel standard used for quantitation

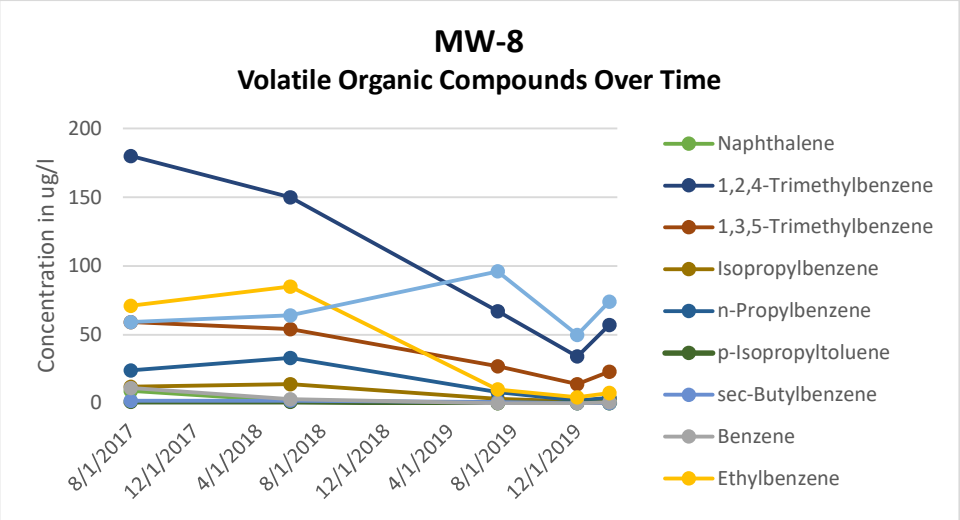
	Date			
	4/4/2017	6/14/2018	7/23/2019	12/4/2019
Trichloroethene	0	0	1.7	0
Tetrachloroethene	0	1.2	0	1.3
cis 1,2-Dichloroethene	1.3	9.6	17	5.7
1,2,4-Trimethylbenzene	3.4	0	0	0
Chloroform	0	1.1	0	0
Diesel*	0	0	0	78
Toluene	1.2	0	0	0
Xylenes	5.5	0	0	0

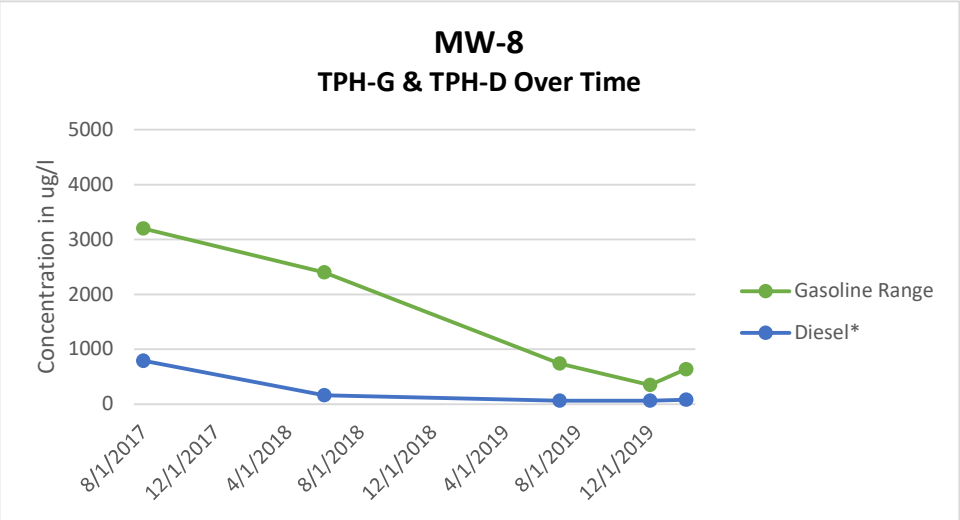




* Diesel flagged by Laboratory as not resembling diesel standard used for quantitation

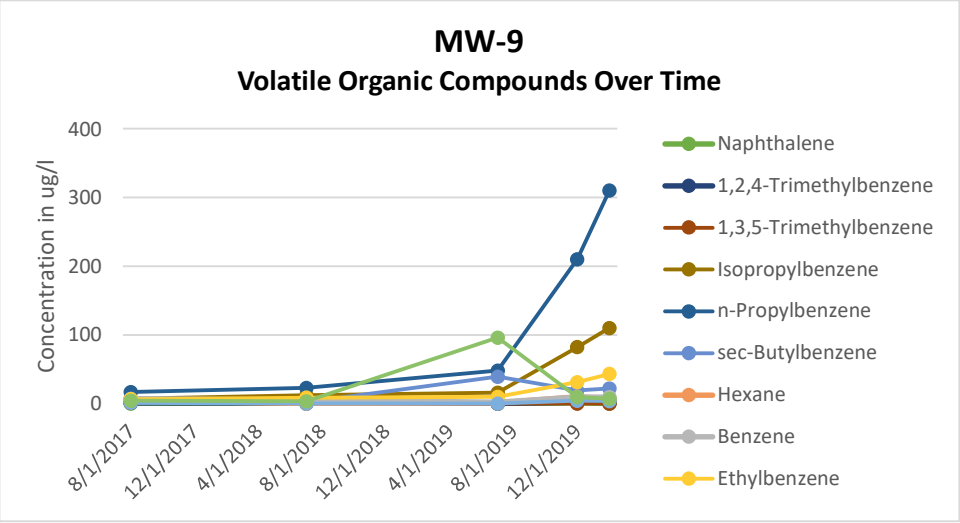
	Date				
	8/3/2017	6/28/2018	7/23/2019	12/9/2019	2/28/2020
Naphthalene	8.9	1.6	0	0	0
1,2,4-Trimethylbenzene	180	150	67	34	57
1,3,5-Trimethylbenzene	59	54	27	14	23
Isopropylbenzene	12	14	3.1	1.3	3.2
n-Propylbenzene	24	33	8.1	2.1	4
p-Isopropyltoluene	1.1	1.1	0	0	0
sec-Butylbenzene	1.8	1.9	1	0	0
Gasoline Range	3200	2400	740	350	640
Diesel*	790	160	64	62	79
Benzene	11	2.9	0	0	0.64
Ethylbenzene	71	85	10	4.3	7.5
Xylenes	59	64	96	49.7	74

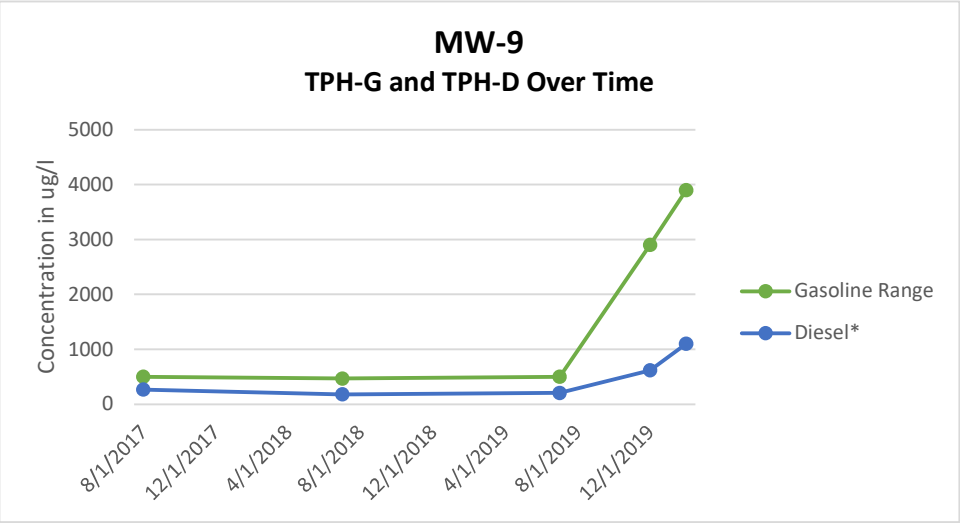




* Diesel flagged by Laboratory as not resembling diesel standard used for quantitation

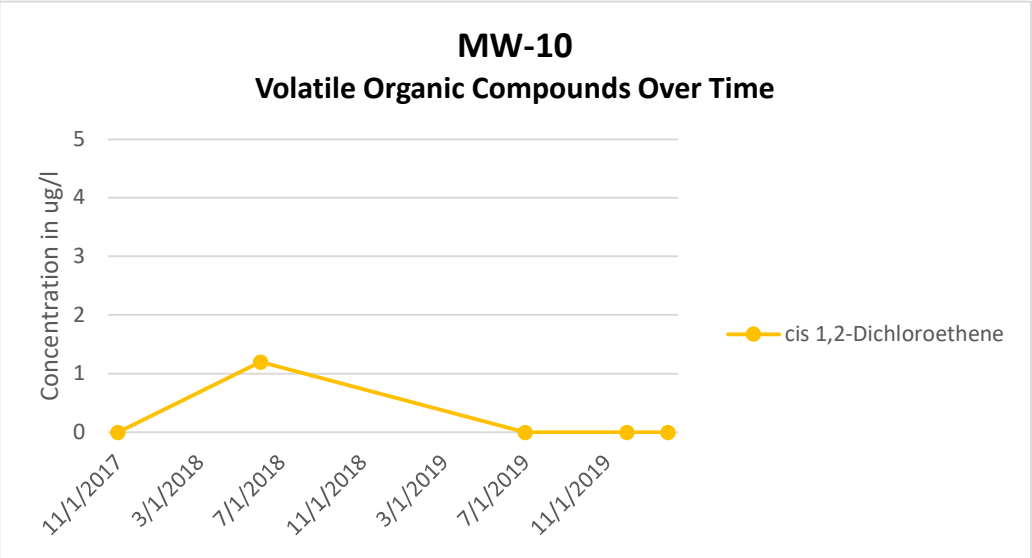
	Date				
	8/3/2017	7/13/2018	7/23/2019	12/5/2019	2/28/2020
Naphthalene	0	0	0	1.2	0
1,2,4-Trimethylbenzene	1.3	1.1	0	1.7	1.7
1,3,5-Trimethylbenzene	1.4	0	0	0	0
Isopropylbenzene	7.2	12	16	82	110
n-Propylbenzene	17	23	48	210	310
sec-Butylbenzene	1.5	1.9	39	19	22
Hexane	4.3	0	1.4	10	7.2
Gasoline Range	500	470	500	2900	3900
Diesel*	270	180	210	620	1100
Benzene	6.8	5	2.1	9.5	9.5
Ethylbenzene	6.3	8.5	10	31	43
Toluene	1.3	0	0	4.3	3.7
Xylenes	4.3	3.2	96	9.3	6.7

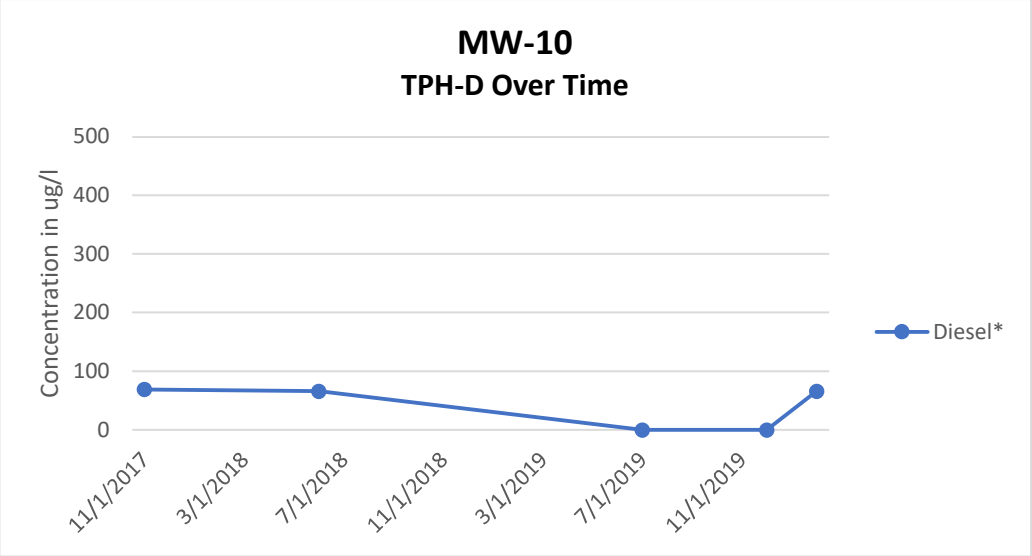




* Diesel flagged by Laboratory as not resembling diesel standard used for quantitation

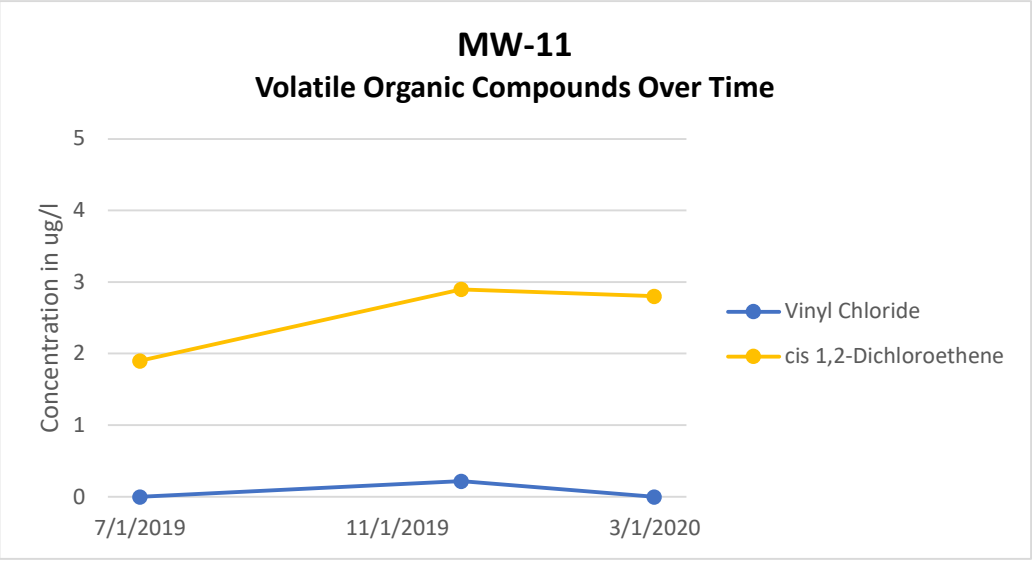
	Date				
	11/3/2017	6/14/2018	7/22/2019	12/5/2019	2/26/2020
cis 1,2-Dichloroethene	0	1.2	0	0	0
Diesel*	69	66	0	0	66

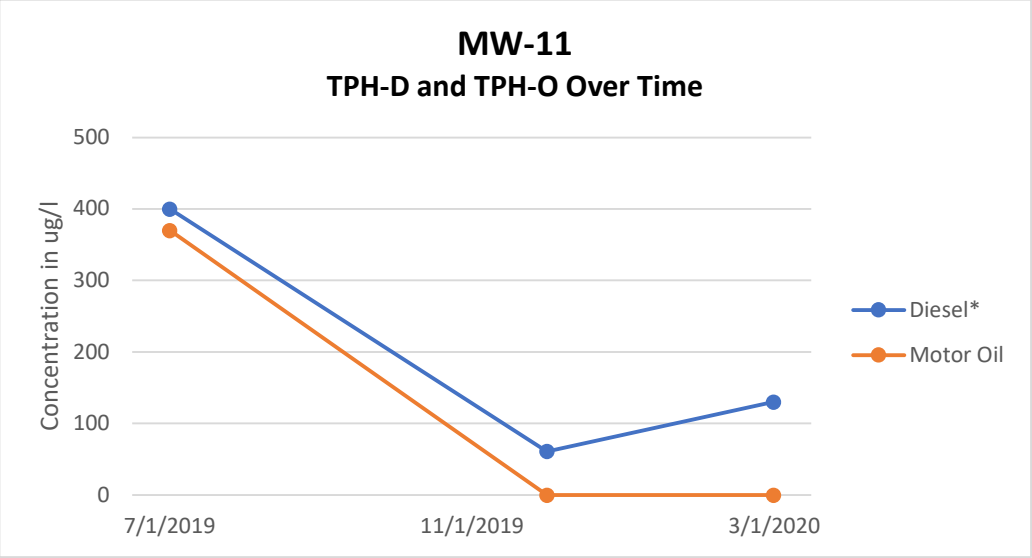




* Diesel flagged by Laboratory as not resembling diesel standard used for quantitation

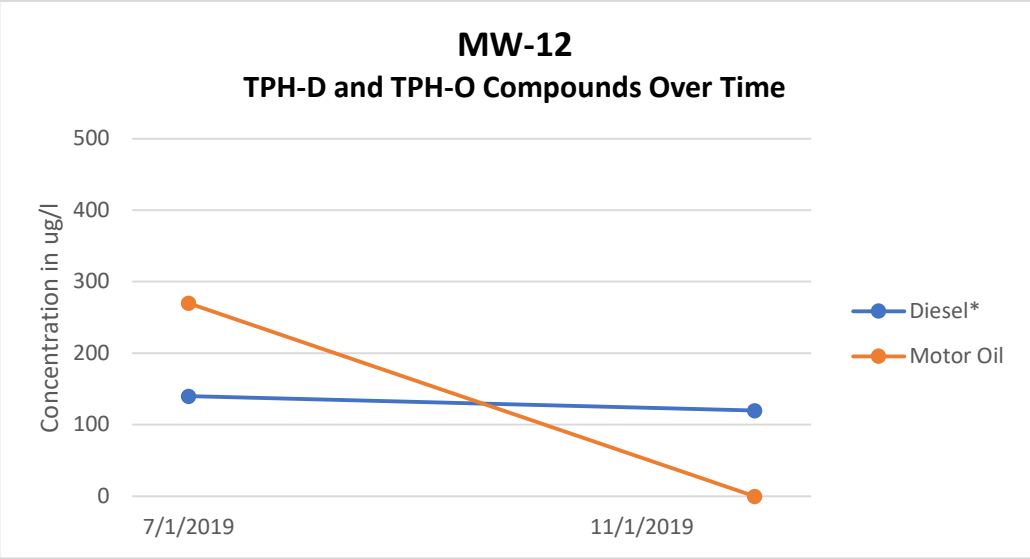
	Date		
	7/22/2019	12/5/2019	3/3/2020
Vinyl Chloride	0	0.22	0
cis 1,2-Dichloroethene	1.9	2.9	2.8
Diesel*	400	61	130
Motor Oil	370	0	0





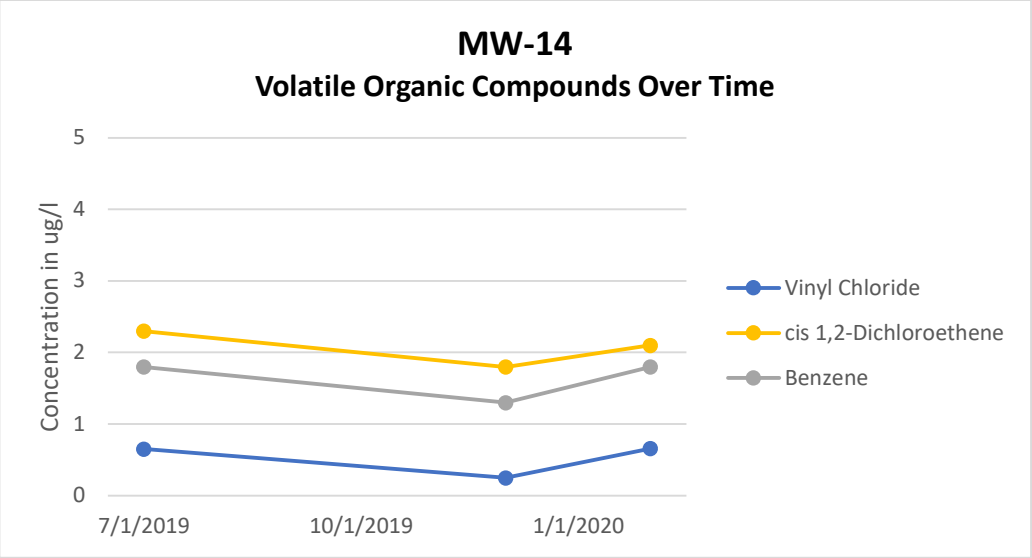
* Diesel flagged by Laboratory as not resembling diesel standard used for quantitation

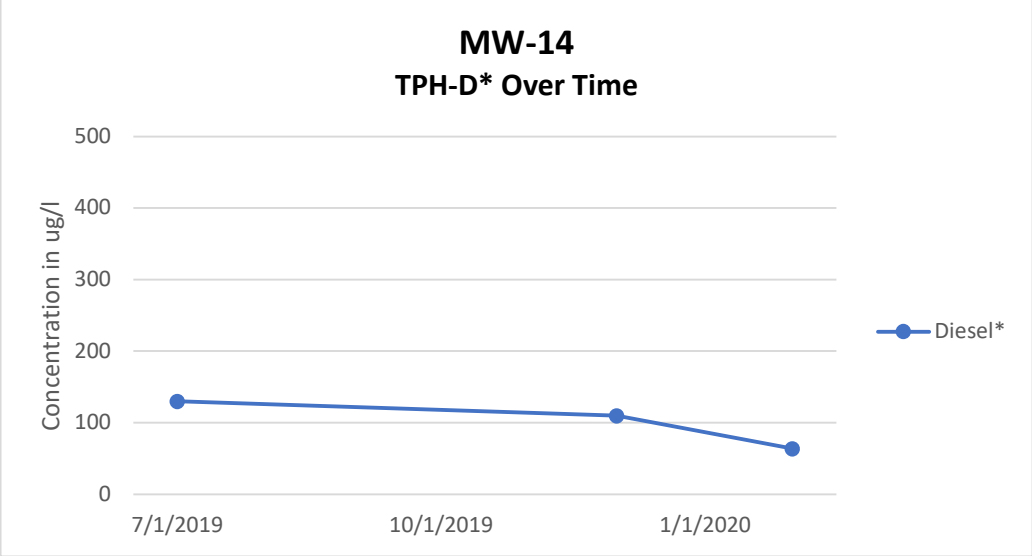
	Date	
	7/22/2019	12/4/2019
Diesel*	140	120
Motor Oil	270	0



* Diesel flagged by Laboratory as not resembling diesel standard used for quantitation

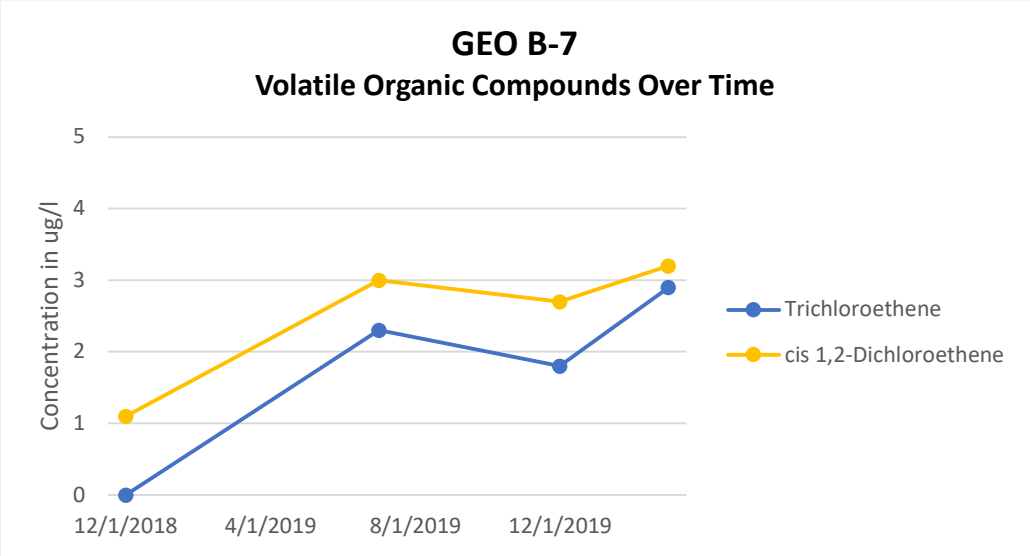
	Date		
	7/22/2019	12/4/2019	2/28/2020
Vinyl Chloride	0.65	0.25	0.66
cis 1,2-Dichloroethene	2.3	1.8	2.1
Diesel*	130	110	64
Benzene	1.8	1.3	1.8



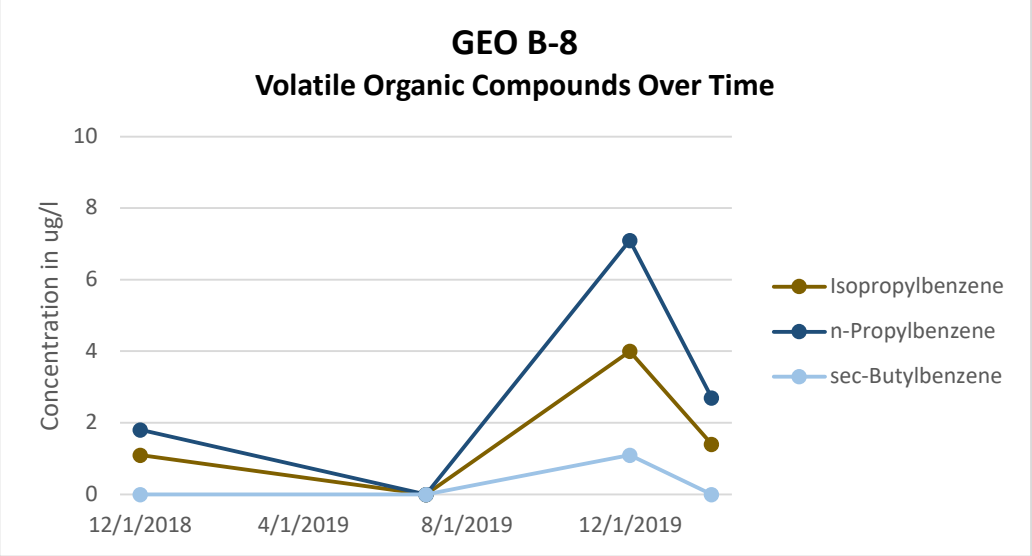


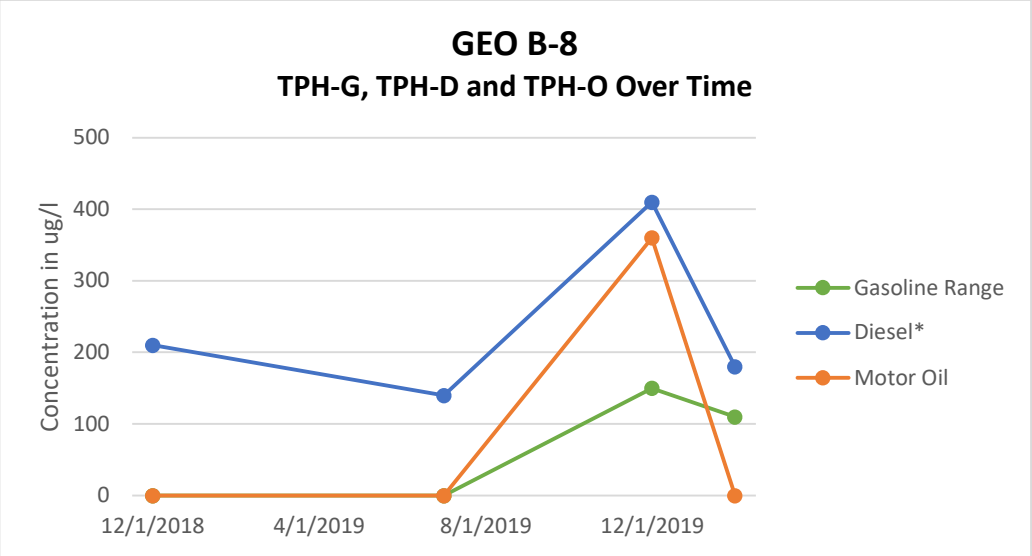
* Diesel flagged by Laboratory as not resembling diesel standard used for quantitation

	Date			
	12/6/2018	7/22/2019	12/4/2019	3/5/2020
Trichloroethene	0	2.3	1.8	2.9
cis 1,2-Dichloroethene	1.1	3	2.7	3.2



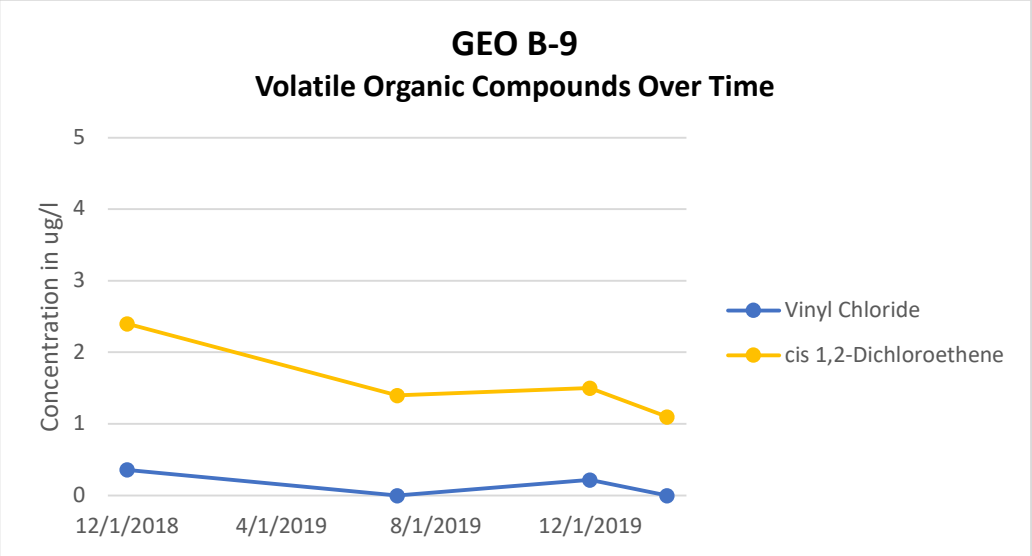
	Date			
	12/6/2018	7/23/2019	12/4/2019	2/28/2020
Isopropylbenzene	1.1	0	4	1.4
n-Propylbenzene	1.8	0	7.1	2.7
sec-Butylbenzene	0	0	1.1	0
Gasoline Range	0	0	150	110
Diesel*	210	140	410	180
Motor Oil	0	0	360	0

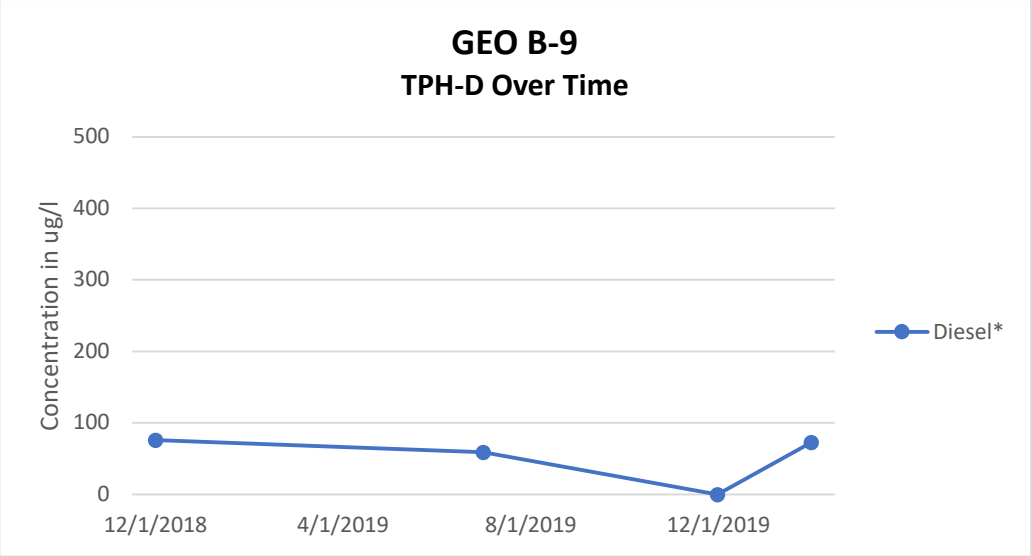




* Diesel flagged by Laboratory as not resembling diesel standard used for quantitation

	Date			
	12/6/2018	7/23/2019	12/4/2019	2/28/2020
Vinyl Chloride	0.36	0	0.22	0
cis 1,2-Dichloroethene	2.4	1.4	1.5	1.1
Diesel*	76	59	0	73





* Diesel flagged by Laboratory as not resembling diesel standard used for quantitation

APPENDIX A

Soil Boring Logs BN-18 through BN-27,
WES-17 through WES-19 & MW-15

Table A-1
Summary of All Property Remedial Investigation Borings
with Bore Logs

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	BN-18
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-202’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Grass and topsoil.
1	2” Lined Spoon		2.5’	--		Dark brown silty SAND, trace GRAVEL, loose, moist to wet(Fill).
						Dark brown silty and clayey SAND, trace organic, soft, moist, (Fill).
		5.0				Gray, mottled clayey and silty SAND, trace gravel, soft, moist to wet. Mottling has strong rusty color in some areas.
2	2” Lined Spoon		5’		TPH-G VOCs MTCA5 Metals	
		10.0				Increasingly dense with less mottled color with depth.
3	2” Lined Spoon		5’			
		15.0				Gray fine to medium SAND, little silt, dense, wet.
						End of Boring at 15.0 ft. No odor or discoloration encountered at any depth. Uncalibrated PID screening 0-20 ppm throughout sampled depth. Water sample collected from temporary well screen installed in boring to a depth of 5-15’. Backfilled with bentonite upon completion.

Date Drilled:	Water Level Data	Depth	Date/Time
2-24-2020	First Encountered:	4’	2-24-2020
	Stabilized:		

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Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	BN-19
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-205’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Grass and topsoil.
1	2” Lined Spoon		2’	--	TPH-G VOCs	Dark brown silty SAND, trace GRAVEL, loose, moist to wet(Fill).
						Dark brown silty and clayey SAND, trace organic, soft, moist, (Fill).
		5.0				Gray, mottled clayey and silty SAND, trace gravel, soft, moist to wet. Mottling has strong rusty color in some areas.
2	2” Lined Spoon		5’			
		10.0				Increasingly dense with less mottled color with depth.
3	2” Lined Spoon		5’			
		15.0				Gray fine to medium SAND, little silt, medium dense, wet.
						End of Boring at 15.0 ft. No odor or discoloration encountered at any depth. Uncalibrated PID screening 0-20 ppm throughout sampled depth. Water sample collected from temporary well screen installed in boring to a depth of 5-15’. Backfilled with bentonite upon completion.

Date Drilled:	Water Level Data	Depth	Date/Time
2-24-2020	First Encountered:	4’	2-24-2020
	Stabilized:		

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Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	BN-20
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-205’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Grass and topsoil.
1	2” Lined Spoon		2’	--		Brown silty SAND, trace GRAVEL, loose, moist to wet(Fill).
						Dark brown silty and clayey SAND, trace organic, soft, moist, (Fill).
		5.0				Gray, mottled clayey and silty SAND, trace gravel, soft, moist to wet. Sandier lenses at 6’
2	2” Lined Spoon		5’		TPH-G VOCs MTCA5 Metals	
		10.0				Increasingly dense with less mottled color with depth.
3	2” Lined Spoon		5’			Gray fine to medium SAND, medium dense, wet.
						Gray clayey and silty SAND, dense, moist.
		15.0				End of Boring at 15.0 ft. No odor or discoloration encountered at any depth. Uncalibrated PID screening 0-20 ppm throughout sampled depth.
						Water sample collected from temporary well screen installed in boring to a depth of 5-15’. Low flow, but was able to obtain sample.
						Backfilled with bentonite upon completion.

Date Drilled:	Water Level Data	Depth	Date/Time
2-24-2020	First Encountered:	5’	2-24-2020
	Stabilized:		

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Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	BN-21
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-205’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Grass and topsoil.
1	2” Lined Spoon		2.5’	--		Dark brown silty SAND, trace GRAVEL, loose, moist to wet(Fill).
						Dark brown organic SILT, with clayey SAND, soft, moist, (Fill).
		5.0				
2	2” Lined Spoon		5’		TPH-G VOCs MTCA5 Metals	Grayish brown, mottled clayey and silty SAND, trace gravel, soft, moist to wet. Rusty brown lense at 6.5’, transitions to grayish brown at 7’
		10.0				Increasingly dense with less mottled color with depth.
3	2” Lined Spoon		5’			Same, with gray fine to medium SAND lenses, wet.
		15.0				End of Boring at 15.0 ft.
						No odor or discoloration encountered at any depth. Uncalibrated PID screening 0-20 ppm throughout sampled depth.
						Water sample collected from temporary well screen installed in boring to a depth of 5-15’. Low flow, but was able to obtain sample.
						Backfilled with bentonite upon completion.

Date Drilled:	Water Level Data	Depth	Date/Time
2-24-2020	First Encountered:	9’	2-24-2020
	Stabilized:		

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Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	BN-22
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-207’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Grass and topsoil.
						Fine GRAVEL.
1	2” Lined Spoon		2’	--		Dark brown silty and clayey SAND, loose, moist to wet(Fill).
						Dark brown organic SILT, with clayey SAND, soft, moist, (Fill).
		5.0				
						Wood piece.
2	2” Lined Spoon		5’		TPH-G VOCs MTCA5 Metals	Grayish brown, mottled clayey and silty SAND, trace gravel, black flakes of organic (ash?), soft, moist to wet.
		10.0				Increasingly dense with less mottled color with depth.
3	2” Lined Spoon		5’			Same, with gray fine to medium SAND lenses, wet.
		15.0				
						End of Boring at 15.0 ft.
						No odor or discoloration encountered at any depth. Uncalibrated PID screening 0-20 ppm throughout sampled depth.
						Water sample collected from temporary well screen installed in boring to a depth of 5-15’.
						Backfilled with bentonite upon completion.

Date Drilled:	Water Level Data	Depth	Date/Time
2-24-2020	First Encountered:	9’	2-24-2020
	Stabilized:		

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Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	BN-23
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-204’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Grass and topsoil.
						1 — Dark brown silty and clayey SAND, loose, wet(Fill).
1	2” Lined Spoon		2.5’	--		2 — Dark brown organic SILT with SAND, soft, moist, (Fill).
					TPH-G VOCs	3
						4
		5.0				5 — Grayish brown, mottled clayey and silty SAND, trace gravel, soft, moist.
						6
2	2” Lined Spoon		5’			7
					MTCA5 Metals	8
						9 — Grayish brown very fine SAND and SILT, mottled, medium dense, wet, dilatent.
		10.0				10
						11 — Gray clayey and silty SAND, trace gravel, slightly mottled, medium dense, moist.
						12 — Increasingly dense with depth.
3	2” Lined Spoon		5’			13
						14
		15.0				15
						End of Boring at 15.0 ft.
						16 — No odor or discoloration encountered at any depth.
						17 — Uncalibrated PID screening 0-20 ppm throughout sampled depth.
						18 — Water sample collected from temporary well screen installed in boring to a depth of 5-15’.
						19 — Backfilled with bentonite upon completion.
						20

Date Drilled:	Water Level Data	Depth	Date/Time
2-24-2020	First Encountered:	5’	2-24-2020
	Stabilized:		

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Project:	Client:	Boring:
E. Fir Street Right-of-Way 1215 E. Fir Street Seattle, WA	Seattle Land Use Company	BN-24
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-206’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Asphalt over gravelly fill.
1	2” Lined Spoon		2.5’	--		Brown silty and clayey SAND, mottled, moist, (Fill, or weathered glacial till).
		5.0				
2	2” Lined Spoon		4’			Increasingly dense with depth.
		10.0				
3	2” Lined Spoon		5’			Gray clayey and silty SAND, with zones of fine to medium SAND, soft, moist.
		15.0				Gray fine to medium SAND, wet.
4	2” Lined Spoon		5’			Gray fine to coarse SAND, trace to little gravel, trace silt, wet.
		20.0				End of Boring at 20.0 ft.

No odor or discoloration encountered at any depth.
Uncalibrated PID screening 0-20 ppm throughout sampled depth.

Date Drilled: 3-5-2020

Water Level Data	Depth	Date/Time
First Encountered:		3-5-2020

Water sample collected from temporary well screen installed in boring to a depth of 5-20’.

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Project:	Client:	Boring:
E. Fir Street Right-of-Way 1215 E. Fir Street Seattle, WA	Seattle Land Use Company	BN-25
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-207’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Asphalt over gravelly fill, concrete pieces.
1	2” Lined Spoon		2.5’	--		Dark brown silty SAND and GRAVEL, organic and fine to coarse SAND layers, soft, moist, (Fill).
		5.0				
2	2” Lined Spoon		2’			Brown mottled clayey and silty SAND, soft, moist (Fill) Poor sample recovery.
		10.0				
3	2” Lined Spoon		3.5’			Increasingly dense with depth.
		15.0				Gray silty SAND, with lenses of fine to medium SAND, wet.
4	2” Lined Spoon		4’			Gray fine to medium SAND, wet.
		20.0				End of Boring at 20 ft. No odor or discoloration encountered at any depth. Uncalibrated PID screening 0-20 ppm throughout sampled depth.

Date Drilled:

3-5-2020

Water Level Data	Depth	Date/Time
First Encountered:	10.6’	3-5-2020

Water sample collected from temporary well screen installed in boring to a depth of 5-20’.

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Project:	Client:	Boring:
E. Fir Street Right-of-Way 1215 E. Fir Street Seattle, WA	Seattle Land Use Company	BN-26
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-208’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Asphalt over gravelly fill.
						Push Probe for Water Sampling Only. Installed sacrificial tip and pushed to depth of 20 feet. Withdrew drive rods and installed temporary PVC screen.
		20.0				End of Boring at 20 ft. Water sample collected from temporary well screen installed in boring to a depth of 5-20’. Backfilled with bentonite upon completion.

Date Drilled:

3-5-2020

Water Level Data	Depth	Date/Time
First Encountered:		3-5-2020
Stabilized:		

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Project:	Client:	Boring:
E. Fir Street Right-of-Way 1215 E. Fir Street Seattle, WA	Seattle Land Use Company	BN-27
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-207’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Asphalt over gravelly fill.
1	2” Lined Spoon		1.5’	--		Dark brown SAND and GRAVEL with debris (Fill), loose, moist to wet.
		5.0				Mottled brown clayey SAND and GRAVEL, some greenish brown tint in mottled areas (likely Fill) moist to wet.
2	2” Lined Spoon		1.5’			
		10.0				Gray clayey and silty SAND, trace gravel, moist, weathered glacial till.
3	2” Lined Spoon		5’			
						Brown fine to medium SAND, wet.
		15.0				Brown clayey and silty SAND, dense, moist. Glacial till. Turns gray at sample tip.
						End of Boring at 15.0 ft. No odor or discoloration encountered at any depth. Uncalibrated PID screening 0-12ppm throughout sampled depth. Water sample collected from temporary well screen installed in boring to a depth of 15’. Backfilled with bentonite upon completion.

Date Drilled:	Water Level Data	Depth	Date/Time
3-5-2020	First Encountered:		3-5-2020
	Stabilized:		

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Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	WES-17
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/- 201.5 / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Asphalt Surface.
1	2" Lined Spoon		2.5'		VOCs MTCA5 Metals	Dark brown mottled silty SAND, little GRAVEL, brick (Fill), loose, moist.
		5.0			VOCs MTCA5 Metals	Brown silty and clayey fine to medium SAND, little gravel, weathered galcial till or till fill), medium dense, moist to wet.
2	2" Lined Spoon		4'			
		10.0				
3	2" Lined Spoon		4'			
		15.0				Gray fine to coarse SAND with gravel, wet.
						End of Boring at 15.0 ft. No petroleum odor or discoloration encountered at any depth. Uncalibrated PID screening of 0-25 ppm throughout sampled depth. Water sample obtained from temporary well. Backfilled with bentonite on completion.

Date Drilled:	Water Level Data	Depth	Date/Time
3-5-2020	First Encountered:		3-5-2020
	Stabilized:		

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Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	WES-18
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/- 201.5 / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Asphalt Surface.
1	2" Lined Spoon		2.5'		VOCs MTCA5 Metals	Dark brown mottled silty SAND, little GRAVEL, brick (Fill), loose, moist.
		5.0				Brown silty and clayey fine to medium SAND, little gravel, weathered galcial till or till fill), medium dense, moist to wet.
2	2" Lined Spoon		4'			
		10.0				
3	2" Lined Spoon		5'			
		15.0				Gray fine to coarse SAND with gravel, wet.
						End of Boring at 15.0 ft. No petroleum odor or discoloration encountered at any depth. Uncalibrated PID screening of 0-20 ppm throughout sampled depth. Water sample obtained from temporary well. Backfilled with bentonite on completion.

Date Drilled:	Water Level Data	Depth	Date/Time
3-5-2020	First Encountered:		3-5-2020
	Stabilized:		

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Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	WES-19
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/- 201.5 / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Asphalt Surface.
1	2" Lined Spoon		2.5'		VOCs MTCA5 Metals	Dark brown mottled silty SAND, little GRAVEL, brick (Fill), loose, moist.
		5.0			MTCA5 Metals	Brown silty and clayey fine to medium SAND, little gravel, weathered galcial till or till fill), medium dense, moist to wet.
2	2" Lined Spoon		4'			
		10.0				
3	2" Lined Spoon		5'			
		15.0				Gray fine to coarse SAND with gravel, wet.
						End of Boring at 15.0 ft. No petroleum odor or discoloration encountered at any depth. Uncalibrated PID screening of 0-25 ppm throughout sampled depth. Water sample obtained from temporary well. Backfilled with bentonite on completion.

Date Drilled:	Water Level Data	Depth	Date/Time
3-5-2020	First Encountered:		3-5-2020
	Stabilized:		

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Project:	Client:	Boring:
Seattle Curtain Co. Property 104 12th Avenue Seattle, WA	Seattle Land Use Company	MW-15
	Driller: Andersen Drilling / Method: Geoprobe	Project No. WES-1591
	Elevation: Top of Pipe: 200.85 / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
1	2” Lined Spoon		5’	--	VOCs	Asphalt surface over dark brown silty and clayey SAND (Fill), loose, moist.
						3’
						Dark brown mottled silty SAND, little GRAVEL, brick (Fill), loose, moist.
		5.0			VOCs	
2	2” Lined Spoon		3.5’			Greenish gray silty and clayey CLAY, trace coarse sand and gravel (weathered glacial till or till derived fill) moist.
		10.0				
3	2” Lined Spoon		5’			Gray fine to medium SAND, medium dense, wet.
		15.0				Gray silty and sandy CLAY (weathered till) soft, moist to wet. Increasingly dense with depth.
4	2” Lined Spoon		5’			
		20.0				Continued

Date Drilled:	Water Level Data	Depth	Date/Time
3-26-2020	First Encountered:	12’	3-26-2022
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Seattle Curtain Co. Property 104 12th Avenue Seattle, WA	Seattle Land Use Company	MW-15 Continued
	Driller: Andersen Drilling / Method: Geoprobe	Project No. WES-1591
	Elevation: Top of Pipe: 200;85 / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
5	2” Lined Spoon	20.0 25.0	5’	--	VOCs	20’ Gray clayey SILT and very fine SAND, trace fine gravel (reworked or weathered till), moist to wet. Slightly sandier, wet from 22-24’ End of Boring at 25.0 ft. 25’ 2” Sch. 40 PVC well screen with pre-pack filter installed from depth of 20 to 25 feet below ground surface, surrounded with #10-20 silica sand filter pack. Grout seal to 3 feet, and flush-mounted steel monument at surface.

Date Drilled:	Water Level Data	Depth	Date/Time
3/26/2020	First Encountered:	+/-12’	3-26-20
	Stabilized:		

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Project:	Client:	Boring:
Seattle Curtain Co. Property 104 12th Avenue Seattle, WA	Seattle Land Use Company	DSVP-3
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-201’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
		5.0	--			0’ End of Boring at 5.5 ft. 4.5’ 5.5’ Drove point with end plug to installation depth. Remove sampler and installed 1” Stainless steel porous filter attached to 1/4” PTFE tubing at depth of 5 feet below ground surface. Surrounded with 1’ of #10-20 silica sand filter pack. Bentonite seal to surface.

Date Drilled:	Water Level Data	Depth	Date/Time
2-24-2020	First Encountered:		
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Seattle Curtain Co. Property 104 12th Avenue Seattle, WA	Seattle Land Use Company	DSVP-4
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-201’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
		5.0	--			0’ End of Boring at 5.5 ft. 4.5’ 5.5’ Drove point with end plug to installation depth. Remove sampler and installed 1” Stainless steel porous filter attached to 1/4” PTFE tubing at depth of 5 feet below ground surface. Surrounded with 1’ of #10-20 silica sand filter pack. Bentonite seal to surface.

Date Drilled:	Water Level Data	Depth	Date/Time
2-24-2020	First Encountered:		
	Stabilized:		

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TABLE A-1
Summary of Drilling
104 - 124 12th Avenue & 1209 E. Fir Street, Seattle, Washington

Boring I.D.	Location	Approx. Surface Elevation	Date	Drilling Method	Total Depth Drilled	Water Sampling Method	Screened Interval		Log	Report Reference	Notes
							Top	Bottom			
104 12th Avenue - Seattle Curtain Co. Building and Parking Lot to the East											
WES-1	6 ft. inside double doors in SE corner of basement	201	4/3/2017	DP	16'	TW	2	12	WES	RI	
WES-2	Adjacent to oil/water separator by entry ramp in SW corner of basement	202	4/3/2017	DP	12'	--	--	--	WES	RI	No Water Sample
WES-3	10 ft NW of WES-2, near floor sump in SW corner of basement	202	4/3/2017	DP	8'	--	--	--	WES	RI	No Water Sample
WES-4	In corridor through shelving area in S central part of basement	201	4/3/2017	DP	12'	TW	2	12	WES	RI	
WES-5	In shelving area corridor, NW of WES-1, near SE entry double doors	201	4/3/2017	DP	12'	TW	2	12	WES	RI	
WES-6	In main corridor 30 ft. N of SE entry double doors in SE of basement	201	4/3/2017	DP	12'	TW	2	12	WES	RI	
WES-7	Near NE corner of basement	201	4/4/2017	DP	12'	TW	2	12	WES	RI	
WES-8	In N corridor of basement, 25' W of WES-7	201	4/4/2017	DP	13'	MW	3	13	WES	RI	Completed as MW-7, See Below
WES-9	W central part of basement, near boiler room door	202	4/4/2017	DP	8'	TW	0	8	WES	RI	Dry Hole - No Water Sample
WES-10	In S central part of SE parking lot	199	4/5/2017	DP	12'	TW	2	12	WES	RI	
WES-11	In N central part of SE parking lot, adjacent to previous boring MW-5	201	4/5/2017	DP	16'	TW	6	16	WES	RI	
WES-12	In SW corner of SE parking lot	200	4/5/2017	DP	16'	TW	6	16	WES	RI	
WES-13	In E central part of SE parking lot	199	4/5/2017	DP	16'	TW	6	16	WES	RI	
WES-14	NW corner of basement, 8 feet east of W wall.	202	7/23/2019	DP	15'	TW	5	10	WES	RI	
WES-15	SW corner of basement, 15 feet W of WES-2	202	7/23/2019	DP	10"	TW	5	10	WES	RI	
WES-16	SE parking lot, 3' S, 6' W of centerline of warehouse	202	10/1/2019	DP	20'	TW	10	20	WES	RI	

TABLE A-1
Summary of Drilling
104 - 124 12th Avenue & 1209 E. Fir Street, Seattle, Washington

Boring I.D.	Location	Approx. Surface Elevation	Date	Drilling Method	Total Depth Drilled	Water Sampling Method	Screened Interval		Log	Report Reference	Notes
							Top	Bottom			
WES-17	SE parking lot, 3' S on centerline of warehouse	202	3/5/2020	DP	15'	TW	5	15	WES	SI	
WES-18	SE parking lot, 14' S on centerline of warehouse	202	3/5/2020	DP	15'	TW	5	15	WES	SI	
WES-19	SE parking lot, 20' S, 10' W of centerline of warehouse	201	3/5/2020	DP	15'	TW	5	15	WES	SI	
WES-20	SE parking lot, 3' S, 18‘ W of centerline of warehouse	202	3/26/2020	DP	5'	--	--	--	No	SI	Shallow Soil Samples Only
WES-21	SE parking lot, 2' S, 10 E of centerline of warehouse	202	3/26/2020	DP	5'	--	--	--	No	SI	Shallow Soil Samples Only
WES-22	SE parking lot, 3' S, 22' E of centerline of warehouse	202	3/26/2020	DP	5'	--	--	--	No	SI	Shallow Soil Samples Only
WES-23	SE parking lot, 22‘ S, 26' E of centerline of warehouse	201	4/2/2020	HA	3'	--	--	--	No	SI	Shallow Soil Samples Only
WES-24	SE parking lot, 28‘ S, 24' E of centerline of warehouse	201	4/2/2020	HA	3'	--	--	--	No	SI	Shallow Soil Samples Only
WES-25	SE parking lot, 28‘ S, 13' E of centerline of warehouse	201	4/2/2020	HA	3'	--	--	--	No	SI	Shallow Soil Samples Only
WES-26	SE parking lot, 26' S, 4' E of centerline of warehouse	201	4/2/2020	HA	3'	--	--	--	No	SI	Shallow Soil Samples Only
WES-27	SE parking lot, 44' S, 4' E of centerline of warehouse	200	4/2/2020	HA	3'	--	--	--	No	SI	Shallow Soil Samples Only
WES-28	SE parking lot, 49' S, 36' E of centerline of warehouse	200	4/2/2020	HA	3'	--	--	--	No	SI	Shallow Soil Samples Only
WES-29	SE parking lot, 28' S, 40' E of centerline of warehouse	201	4/2/2020	HA	3'	--	--	--	No	SI	Shallow Soil Samples Only
110 - 124 12th Avenue & 1209 E. Fir Street											
BN-1	In SE corner of open area	201	5/12/2017	DP	15'	TW	5	15	WES	RI	
BN-2	Near SW corner of open area	202	5/12/2017	DP	15'	TW	5	15	WES	RI	
BN-3	Outside rear entry to 110 12th Avenue bldg.	203	5/12/2017	DP	15'	TW	5	15	WES	RI	

TABLE A-1
Summary of Drilling
104 - 124 12th Avenue & 1209 E. Fir Street, Seattle, Washington

Boring I.D.	Location	Approx. Surface Elevation	Date	Drilling Method	Total Depth Drilled	Water Sampling Method	Screened Interval		Log	Report Reference	Notes
							Top	Bottom			
BN-4	In E central part of open area, adjacent to Archives bldg.	202	5/12/2017	DP	15'	TW	5	15	WES	RI	
BN-5	In NE corner of parking lot, near oil/water separator	212	5/12/2017	DP	20'	TW	5	15	WES	RI	
BN-6	In S area of parking lot, near paint booth sump	214	5/12/2017	DP	15'	TW	5	15	WES	RI	
BN-7	NW corner of property - former location of gas station pump island	217	5/15/2017	DP	25'	MW	12	22	WES	RI	Completed as MW-8, See Below
BN-8	N central part of property - former location of gas station service bay	216	5/15/2017	DP	20'	TW	10	20	WES	RI	
BN-9	W central part of parking lot - likely former UST location	215	5/15/2017	DP	25'	TW	10	20	WES	RI	
BN-10	S end of parking lot - likely S of former UST location	215	5/15/2017	DP	25'	TW	15	25	WES	RI	Completed as MW-9, See Below
BN-11	At S end of 1209 Fir bldg, inside gate to open area	215	5/15/2017	DP	25'	TW	10	20	WES	RI	
BN-12	In SW corner of gravel parking lot, Between AEG B-3 and OS-12	215	7/23/2019	DP	30'	TW	20	30	WES	RI	
BN-13	At S end of Auto Repair building, at top of slope	214	7/23/2019	DP	20'	--	--	--	WES	RI	Not Drilled to Depth of Groundwater - No Water Sample
BN-14	In SE corner of auto repair yard, near intersection of King Co. bldgs.	213	7/23/2019	DP	30'	TW	20	30	WES	RI	
BN-15	W central part of gravel parking lot, 15 ft SW of BN-7	216	7/23/2019	DP	30'	TW	20	30	WES	RI	
BN-16	NW corner of gravel parking lot, 10 ft NW of BN-7	217	7/23/2019	DP	30'	TW	20	30	WES	RI	
BN-17	In NE slope of open area, 10' S of corner of King Co. Bldg.	208	7/23/2019	DP	20'	TW	8	18	WES	RI	
BN-18	5' W. of Warehouse 15' N. of SW building corner	201	2/24/2020	DP	15'	TW	5	15	WES	SI	
BN-19	5' W. of Warehouse 30' N. of SW building corner	201	2/24/2020	DP	15'	TW	10	15	WES	SI	
BN-20	5' W. of Warehouse 45' N. of SW building corner	201	2/24/2020	DP	15'	TW	10	15	WES	SI	Limited Water

TABLE A-1
Summary of Drilling
104 - 124 12th Avenue & 1209 E. Fir Street, Seattle, Washington

Boring I.D.	Location	Approx. Surface Elevation	Date	Drilling Method	Total Depth Drilled	Water Sampling Method	Screened Interval		Log	Report Reference	Notes
							Top	Bottom			
BN-21	5' W. of Warehouse 60' N. of SW building corner	202	2/24/2020	DP	15'	TW	1	11	WES	SI	
BN-22	5' W. of Warehouse 75' N. of SW building corner	204	2/24/2020	DP	15'	TW	5	15	WES	SI	
BN-23	Center of open area, 35 feet SE of MW-14	201	2/24/2020	DP	15'	TW	5	15	WES	SI	
Slope 1	In NE part of property, fill slope down to open area	210	5/12/2017	DP	5'	--	--	--	No	RI	Shallow Soil Samples Only
Slope 2	In NE part of property, top of fill slope	206	5/12/2017	DP	5'	--	--	--	No	RI	Shallow Soil Samples Only
HA-N	In N. portion of building basement	203	5/15/2017	HA	9'	TW	0	9	No	RI	
HA-S	In S portion of building basement	203	5/15/2017	HA	6'	TW	0	6	No	RI	
HA-3	In S portion of basement below 110 tenant space	202	8/7/2017	HA	6'	TW	0	6	No	RI	
Permanent Monitoring Wells											
MW-1	Pre-existing well in NE corner of 104 12th parking lot	200	12/21/2015	HSA	30'	MW	10	30	F, WDOE	RI	
MW-1S	Shallow well in NE corner of SE parking lot. Outside fence, accessed through King County parking area. Cluster with MW-1D	199	7/22/2019	DP	15'	MW	5	15	WES	RI	
MW-1D	Deep well in NE corner of ESE parking lot. Outside fence accessed through King County parking area. Cluster with MW-1S	199	7/22/2019	DP	40'	MW	35	40	WES	RI	
MW-2	Pre-existing well in NW corner of 104 12th parking lot	201	12/21/2015	HSA	30'	MW	10	30	F, WDOE	RI	
MW-3	Pre-existing well adjacent to floor sump in SW corner of 104 12th basement	200	2/15.2016	UNK	12'	MW	6	11	F, WDOE	RI	
MW-4	Pre-existing well in SW corner of 104 12th parking lot	200	12/21/2015	HSA	25'	MW	10	25	F, WDOE	RI	
MW-5	Pre-existing well along N side of 104 12th parking lot	201	2/12/2016	UNK	15'	MW	3	13	F, WDOE	RI	

TABLE A-1
Summary of Drilling
104 - 124 12th Avenue & 1209 E. Fir Street, Seattle, Washington

Boring I.D.	Location	Approx. Surface Elevation	Date	Drilling Method	Total Depth Drilled	Water Sampling Method	Screened Interval		Log	Report Reference	Notes
							Top	Bottom			
MW-6	Pre-existing well near NW corner of 104 12th basement	201	2/12/2016	UNK	12	MW	6	11	F, WDOE	RI	
MW-7	In N corridor of 104 12th basement, 25' W of WES-7	200	4/4/2017	DP	13'	MW	3	13	WES	RI	
MW-8	Near NW corner of 124 12th property - former location of gas station pump island	217	5/15/2017	DP	25'	MW	12	22	WES	RI	
MW-9	NW gravel parking lot, S end of parking lot - likely S of former UST locations	215	5/15/2017	DP	25'	MW	15	25	WES	RI	
MW-10	In SE corner of 104 12th parking lot property. Outside fence accessed through King County parking area.	198	10/28/2017	HSA	15'	MW	5	15	SES, WDOE	RI	
MW-11	On E central edge of property, in King Co. Archives parking lot	199	7/22/2019	DP	15'	MW	5	15	WES	RI	
MW-12	In SE central part of SE parking lot	199	7/22/2019	DP	20'	MW	5	20	WES	RI	
MW-13	In Yesler Way sidewalk S of garage door near SW building corner	202	10/1/2019	DP	20'	MW	5	20	WES	RI	
MW-14	In W central part of open area, at base of slope adjacent to former dry clener tenant space (118 12th Ave)	203	7/23/2019	DP	15'	MW	5	15	WES		
MW-15	In N central part of SE parking lot	201	3/26/2020	DP	25'	MW	20	25	WES	SI	
GEO B-7	In NW part of parking lot, between previous borings MW-2 and MW-5	201	9/7/2018	HSA	21.5'	MW	10	20	WES, GEO	RI	
GEO B-8	In S central area of gravel parking between borings BN-10, AEG-B-2 and AEG-B-4	215	9/7/2018	HSA	36.5	TW	15	35	WES, GEO	RI	
GEO B-9	In NE part of SE parking lot, between previous borings MW-5 and MW-1	201	9/7/2018	HSA	16.5'	MW	10	15	WES, GEO	RI	

TABLE A-1
Summary of Drilling
104 - 124 12th Avenue & 1209 E. Fir Street, Seattle, Washington

Boring I.D.	Location	Approx. Surface Elevation	Date	Drilling Method	Total Depth Drilled	Water Sampling Method	Screened Interval		Log	Report Reference	Notes
							Top	Bottom			
Deep Soil Vapor Probes											
DSVP-1	SE Parking lot. 16' S, 2'E of centerline of warehouse	201	10/1/2019	DP	5'	VP	4.5	5.5	WES	RI	
DSVP-2	SE parking lot,	201	10/1/2019	DP	5'	VP	4.5	5.5	WES	RI	
DSVP-3	W side of warehouse, 2' S of BN-22	202	2/24/2020	DP	5'	VP	4.5	5.5	WES	SI	Flooded - Unable to Sample
DSVP-4	W side of warehouse 3' N of BN-19	206	2/24/2020	DP	5'	VP	4.5	5.5	WES	SI	
Geotechnical Borings											
GEO B-1	E side of 1209 Fir building	214	6/30/2017	HSA	36.5	--	--	--	GEO	RI	Geotechnical Boring, No environmental soil or groundwater
GEO B-2	Central part of property at base of slope	203	6/30/2017	HSA	43.5	--	--	--	GEO	RI	Geotechnical Boring, No environmental soil or groundwater
GEO B-3	SW Corner of former service station	215	7/12/2017	HSA	49	--	--	--	GEO	RI	Geotechnical Boring, No environmental soil or groundwater
GEO B-4	NW Corner of Property	218	7/12/2017	HSA	49	--	--	--	GEO	RI	Geotechnical Boring, No environmental soil or groundwater
GEO B-5	NW Corner of SE parking lot	201	7/12/2017	HSA	54	--	--	--	GEO	RI	Geotechnical Boring, No environmental soil or groundwater
GEO B-6	S Central part of SE parking lot	199	7/13/2017	HSA	39	--	--	--	GEO	RI	Geotechnical Boring, No environmental soil or groundwater
AEG Borings at Former Service Station											
AEG B-1	E Side of former Service Station building area	216	10/21/2014	DP	20'	TW	15	20	AEG	RI	
AEG B-2	SE of former Service Station building, in former tank excavation	215	10/21/2014	DP	25'	TW	20	25	AEG	RI	
AEG B-3	S end of former Service Station property	215	10/21/2014	DP	25'	TW	20	25	AEG	RI	
AEG B-4	SE of former Service Station building, in former tank excavation	215	10/21/2014	DP	25'	TW	20	25	AEG	RI	

TABLE A-1
Summary of Drilling
104 - 124 12th Avenue & 1209 E. Fir Street, Seattle, Washington

Boring I.D.	Location	Approx. Surface Elevation	Date	Drilling Method	Total Depth Drilled	Water Sampling Method	Screened Interval		Log	Report Reference	Notes
							Top	Bottom			
AEG B-5	SW of former Service Station building, in former tank excavation	215	10/21/2014	DP	25'	TW	20	25	AEG	RI	
AEG B-6	N end of former Service Station Property	217	10/21/2014	DP	25'	TW	20	25	AEG	RI	
Off-Site Borings in Surrounding Right-of-Ways											
OS-1	In sidewalk of Yesler Way, adjacent to SE corner of parking lot for 104 12th Ave. bldg.	198	8/3/2017	DP	16'	TW	6	16	WES	RI	
OS-2	In sidewalk of Yesler Way, adjacent to SE corner of 104 12th Ave. bldg.	199	8/3/2017	DP	12'	TW	2	12	WES	RI	Limited Water
OS-3	In sidewalk of Yesler Way, SW of double doors to basement, 30' W of bldg. corner.	199	8/3/2017	DP	15'	TW	5	15	WES	RI	
OS-4	In sidewalk of Yesler Way, SW of garage door into 104 12th Ave. bldg.	202	8/3/2017	DP	12'	--	--	--	WES	RI	Dry Hole -No Water Sample
OS-5	In sidewalk of 12th Ave., 40' N of SW corner of 104 12th bldg.	207	8/3/2017	DP	14'	TW	4	14	WES	RI	Very Limited Water
OS-6	In sidewalk of 12th Ave., 15' S of NW corner of 104 12th bldg.	210	8/3/2017	DP	12'	TW	2	12	WES	RI	
OS-7	In sidewalk of 12th Ave., adjacent to tree, 40' S of NW corner of 124 12th parking lot.	217	8/3/2017	DP	20'	TW	10	20	WES	RI	
OS-8	In blvd. gravel strip N. of 1209 E. Fir bldg.	214	8/4/2017	DP	20'	TW	10	20	WES	RI	
OS-9	In blvd. grass strip N. of 124 12th Ave. parking lot	218	8/4/2017	DP	25'	TW	15	25	WES	RI	
OS-10	In curb lane of 12th Ave., 10' N. of NW corner of 104 12th Ave. bldg.	211	8/4/2017	DP	30'	--	--	--	WES	RI	Dry Hole - No Water Sample
OS-11	In curb lane of 12th Ave., adjacent to vacant 118 12th Ave. bldg.	212	8/4/2017	DP	20'	--	--	--	WES	RI	Dry Hole - No Water Sample
OS-12	In sidewalk at S entry drive to 124 12th Ave., parking lot.	215	8/4/2017	DP	13'	TW			WES	RI	Limited Water
BN-24	12’ N. of Warehouse, 12' W of NE building corner	205	3/5/2020	DP	15	TW	5	15	WES	SI	

TABLE A-1
Summary of Drilling
104 - 124 12th Avenue & 1209 E. Fir Street, Seattle, Washington

Boring I.D.	Location	Approx. Surface Elevation	Date	Drilling Method	Total Depth Drilled	Water Sampling Method	Screened Interval		Log	Report Reference	Notes
							Top	Bottom			
BN-25	12’ N. of Warehouse, 35' W of NE building corner	206	3/5/2020	DP	20	TW	10	20	WES	SI	
BN-26	12’ N. of Warehouse, 60' W of NE building corner	207	3/5/2020	DP	20'	TW	10	20	WES	SI	
BN-27	12’ N. of Warehouse, 75' W of NE building corner	209	3/5/2020	DP	15'	TW	5	15	WES	SI	

Table Notes:

DP - Direct Push
HSA - Hollow Stem Auger
HA - Hand Auger
TW - Temporary Well - Decommissioned Same Day
MW - Monitoring Well - All remain in use
WES- Log produced by WES
F, WDOE - Boring by Farallon, record available from WDOE water well log search
SES, WDOE - Boring by SoundEarth Strategies, record available from WDOE water well log search
GEO - Log available from Geotech NW report, July, 2017
AEG - Log available from AEG Phase II Assessment, October, 2014
No - No log produced for shallow soil sampling.
RI - WES Remedial Investigation Summary Report, October, 2019
SI - WES Source Investigation Summary Report, April, 2020.

Project:	Client:	Boring:
Seattle Curtain Co. Property 104 12th Avenue Seattle, WA	Seattle Land Use Company	WES-1
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-205’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Concrete floor over gravel base.
1	2” Lined Spoon		3’	--		Dark brown gravelly silty SAND, with organics (Fill or old topsoil), soft, moist.
		4.0				Grades into black clayey SAND and SILT.
2	2” Lined Spoon		4’		TPH-G TPH-D VOCs	Dark gray silty and clayey SAND, trace gravel, soft, moist, slight petroleum odor.
		8.0				Gray silty fine to medium SAND, trace gravel soft, wet, strong petroleum odor.
3	2” Lined Spoon		4’		TPH-D	
		12.0				Dark gray clayey SAND, with gravel, little silt, dense, moist, no petroleum odor.
4	2” Lined Spoon		4’			
		16.0				End of Boring at 16.0 ft. Petroleum odor and discoloration encountered at noted depths. Water sample collected from temporary well screen installed in boring to a depth of 12’. After sampling, completed boring to 16’ depth. Backfilled with bentonite upon completion.

Date Drilled:	Water Level Data	Depth	Date/Time
4-3-2017	First Encountered:	7.5’	4-3-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Seattle Curtain Co. Property 104 12th Avenue Seattle, WA	Seattle Land Use Company	WES-2
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-205’ / Reference: –	

Sample Data No.	Type	Depth	Recovery	N	Lab Sample	Soil Description
						Concrete floor over gravel base.
1	2” Lined Spoon	4.0	2’	--		Rusty brown clayey and gravelly SAND (Fill).
2	2” Lined Spoon	8.0	4’		TPH-G VOCs TPH-D	Dark gray silty and clayey SAND, with gravel, soft, moist to wet, oily petroleum odor.
3	2” Lined Spoon	12.0	4’		TPH-G TPH-D	Dark gray fine to coarse SAND, with gravel, trace silt soft, wet, slight petroleum odor.
						Dark gray silty and clayey SAND, trace gravel, dense, moist, no petroleum odor.
						End of Boring at 12.0 ft.
						Petroleum odor and discoloration encountered at noted depths.
						Water sample collected from adjacent pre-existing monitoring well MW-3.
						Backfilled with bentonite upon completion.

Date Drilled:	Water Level Data	Depth	Date/Time
4-3-2017	First Encountered:	8’	4-3-2017
	Stabilized:		

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Environmental Sciences

Project:	Client:	Boring:
Seattle Curtain Co. Property 104 12th Avenue Seattle, WA	Seattle Land Use Company	WES-3
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-205’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Concrete floor over gravel base.
1	2” Lined Spoon	2.0	2’	--		Dark brown to black silty SAND, with organics (Fill or old topsoil), soft, moist.
		4.0	2’			Rusty brown mottled clayey SAND, with darker zones, soft, moist.
2	2” Lined Spoon	6.0	2’		VOCs	Gray clayey fine to coarse SAND, with gravel, dense, moist to wet.
		8.0	2’			End of Boring at 8.0 ft. Two foot sample drives and slow progress due to low basement ceiling. No petroleum odor or discoloration encountered at any depth. Backfilled with bentonite upon completion.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

Date Drilled:	Water Level Data	Depth	Date/Time
4-3-2017	First Encountered:	4’	4-3-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Seattle Curtain Co. Property 104 12th Avenue Seattle, WA	Seattle Land Use Company	WES-4
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-205’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Concrete floor over gravel base.
1	2” Lined Spoon		2’	--		Dark brown silty and clayey SAND (Fill or old topsoil), soft, moist.
		4.0				
						Dark gray silty and clayey SAND, soft, moist to wet.
2	2” Lined Spoon		4’		VOCs	
		8.0				
						Dark gray fine to medium SAND, trace coarse sand and gravel, medium dense, moist to wet.
3	2” Lined Spoon		4’			
		12.0				Dark gray clayey SAND, with gravel, dense, wet.
						End of Boring at 12.0 ft. No petroleum odor or discoloration encountered at any depth. Water sample collected from temporary well screen installed to a depth of 12 feet. Backfilled with bentonite upon completion.

Date Drilled:	Water Level Data	Depth	Date/Time
4-3-2017	First Encountered:	4’	4-3-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Seattle Curtain Co. Property 104 12th Avenue Seattle, WA	Seattle Land Use Company	WES-5
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-205’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Concrete floor.
1	2” Lined Spoon		2’	--		Dark brown silty SAND with organics (Fill or old topsoil), soft, moist.
		4.0				
2	2” Lined Spoon		4’		VOCs	Dark brown mottled with gray clayey SAND, trace gravel, soft, moist.
						Dark gray silty fine to medium SAND, little clay, trace coarse sand and gravel, increasingly dense with depth, moist.
		8.0				
						Dark gray coarse SAND, trace silt, dense, wet.
3	2” Lined Spoon		4’			Dark gray silty and clayey fine SAND, moist.
		12.0				
						End of Boring at 12.0 ft. No petroleum odor or discoloration encountered at any depth. Water sample collected from temporary well screen installed to a depth of 12 feet. Backfilled with bentonite upon completion.

Date Drilled:	Water Level Data	Depth	Date/Time
4-3-2017	First Encountered:	6’	4-3-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Seattle Curtain Co. Property 104 12th Avenue Seattle, WA	Seattle Land Use Company	WES-6
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-205’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Concrete floor.
						1 Dark brown clayey SAND and GRAVEL (Fill), soft, moist.
1	2” Lined Spoon		2’	--		2 Dark brown to black SILT, former topsoil horizon, soft, moist.
		4.0				3 4
						5 Greenish gray mottled sandy CLAY, trace gravel, increasingly dense with depth, moist.
2	2” Lined Spoon		4’			6 Dark gray fine to medium SAND, trace silt, wet.
						7 Dark gray silty and clayey SAND, little gravel, moist.
		8.0			VOCs	8
						9 Dark greenish gray sandy CLAY, trace gravel, increasingly dense with depth, moist.
3	2” Lined Spoon		4’			10 11
		12.0				12
						13 End of Boring at 12.0 ft. No petroleum odor or discoloration encountered at any depth.
						14 Water sample collected from temporary well screen installed to a depth of 12 feet.
						15 Backfilled with bentonite upon completion.
						16 17 18 19 20

Date Drilled:	Water Level Data	Depth	Date/Time
4-3-2017	First Encountered:	6’	4-3-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Seattle Curtain Co. Property 104 12th Avenue Seattle, WA	Seattle Land Use Company	WES-7
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-205’ / Reference: –	

Sample Data No.	Type	Depth	Recovery	N	Lab Sample	Soil Description
						Concrete floor.
						Gray fine to medium SAND (Fill), soft, wet.
1	2” Lined Spoon		1.5’	--		Dark brown to black SILT, former topsoil horizon, soft, moist.
		4.0				
						Greenish gray sandy CLAY, increasingly dense with depth, moist.
2	2” Lined Spoon		3.5’			
		8.0				
3	2” Lined Spoon		4’		VOCs	Dark gray fine to medium SAND, trace silt, wet.
						Dark greenish gray sandy CLAY, trace gravel, increasingly dense with depth, moist.
		12.0				
						End of Boring at 12.0 ft.
						No petroleum odor or discoloration encountered at any depth.
						Water sample collected from temporary well screen installed to a depth of 12 feet.
						Backfilled with bentonite upon completion.

Date Drilled:	Water Level Data	Depth	Date/Time
4-4-2017	First Encountered:	6’	4-4-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Seattle Curtain Co. Property 104 12th Avenue Seattle, WA	Seattle Land Use Company	MW-7 (Originally WES-8)
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: Top of Pipe: 199.56 / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Concrete floor.
1	2” Lined Spoon		4’	--		Dark brown to black SILT, former topsoil horizon, soft, moist.
		4.0				Greenish gray mottled sandy CLAY, dense, moist.
2	2” Lined Spoon		4’			
		8.0				
3	2” Lined Spoon		4’		VOCs	
		12.0				Dark gray fine SAND, interlayered with silt, wet.
						End of Boring at 13.0 ft.

No petroleum odor or discoloration encountered at any depth.

1” Sch. 40 PVC well screen installed from depth of 3 to 13 feet below ground surface, surrounded with #10-20 silica sand filter pack. Bentonite seal and flush-mounted steel monument at surface.

Date Drilled:	Water Level Data	Depth	Date/Time
4-4-2017	First Encountered:	11’	4-4-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Seattle Curtain Co. Property 104 12th Avenue Seattle, WA	Seattle Land Use Company	WES-9
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-205’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Concrete floor over gravel base.
1	2” Lined Spoon	2.0	0.7’	--		Dark brown to black silty SAND, with organics (Fill or old topsoil), soft, moist.
		4.0	0.7’			
			2’			Gray mottled clayey SAND, with gravel, increasingly dense with depth, moist to wet.
2	2” Lined Spoon	6.0	2’		VOCs	Gray fine to medium SAND, trace silt wet.
		8.0				End of Boring at 8.0 ft. Two foot sample drives and slow progress due to low basement ceiling. No petroleum odor and discoloration encountered at any depth. Backfilled with bentonite upon completion.

Date Drilled:	Water Level Data	Depth	Date/Time
4-4-2017	First Encountered:	6’	4-4-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Seattle Curtain Co. Property 104 12th Avenue Seattle, WA	Seattle Land Use Company	WES-10
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-205’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Asphalt over gravel base.
						1 Brown clayey SAND and GRAVEL (Fill), soft, moist.
1	2” Lined Spoon		2.5’	--		2 Dark brown organic SILT, former topsoil horizon, with roots and fibers, soft, moist.
		4.0				3 4 5
2	2” Lined Spoon		3’		VOCs	6 Greenish gray clayey SILT, with fine to coarse sand, moist to wet. 7
		8.0				8 9
3	2” Lined Spoon		4’			10 Grades to mottled brown silty and clayey SAND, trace coarse sand or fine gravel, increasingly dense with depth, moist. 11
		12.0				12 End of Boring at 12.0 ft. 13 No petroleum odor or discoloration encountered at any depth. 14 Water sample collected from temporary well screen installed to a depth of 12 feet. 15 Backfilled with bentonite upon completion. 16 17 18 19 20

Date Drilled:	Water Level Data	Depth	Date/Time
4-5-2017	First Encountered:	6’	4-5-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Seattle Curtain Co. Property 104 12th Avenue Seattle, WA	Seattle Land Use Company	WES-11
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-205' / Reference: –	

Sample Data No.	Type	Depth	Recovery	N	Lab Sample	Soil Description
						Asphalt over gravel base.
						1 Brown clayey SAND and GRAVEL with brick debris (Fill), soft, moist.
1	2" Lined Spoon		3'	--		2 Light brown fine to medium SAND, (Fill), soft, moist to wet. 3
		4.0				4 Dark brown organic SILT, former topsoil horizon, with roots and fibers, soft, moist. 5
2	2" Lined Spoon		4'			6
		8.0				7 Grades to mottled greenish gray and brown silty and clayey SAND, moist to wet. 8 9
3	2" Lined Spoon		4'			10 Greenish gray silty fine to coarse SAND with gravel, wet. 11
		12.0				12 Gray silty CLAY with fine to coarse sand, interlayered with zones of fine to medium sand, dense, moist to wet. 13
4	2" Lined Spoon		4'		VOCs	14 15
		16.0				16
						End of Boring at 16.0 ft. 17 No petroleum odor or discoloration encountered at any depth. 18 Water sample collected from temporary well screen installed to a depth of 16 feet. Water sample also taken from adjacent pre-existing monitoring well MW-5. 19 Backfilled with bentonite upon completion. 20

Date Drilled:	Water Level Data	Depth	Date/Time
4-5-2017	First Encountered:	6'	4-5-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Seattle Curtain Co. Property 104 12th Avenue Seattle, WA	Seattle Land Use Company	WES-12
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-205’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
1	2” Lined Spoon		3’	--		Asphalt over gravel base. Brown silty GRAVEL (Fill), soft, moist.
		4.0				Brown fine to medium SAND, trace gravel (Fill), soft, moist to wet.
2	2” Lined Spoon		4’			Greenish gray mottled silty and clayey SAND, moist to wet.
		8.0				Greenish gray fine to medium SAND, trace gravel, wet.
3	2” Lined Spoon		4’			Gray mottled with rusty brown clayey SILT with fine to medium sand, moist to wet.
		12.0				
4	2” Lined Spoon		4’			
		16.0			VOCs	End of Boring at 16.0 ft. No petroleum odor or discoloration encountered at any depth. Water sample collected from temporary well screen installed to a depth of 16 feet. Water sample also taken from adjacent pre-existing monitoring well MW-4. Backfilled with bentonite upon completion.

Date Drilled:	Water Level Data	Depth	Date/Time
4-5-2017	First Encountered:	2’	4-5-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Seattle Curtain Co. Property 104 12th Avenue Seattle, WA	Seattle Land Use Company	WES-13
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-205’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Asphalt over gravel base.
1	2” Lined Spoon		2’	--		Dark brown clayey SAND and GRAVEL with brick debris, (Fill), soft, moist.
		4.0				Mottled brown silty CLAY with sand, trace gravel, moist to wet.
2	2” Lined Spoon		4’			
		8.0				
3	2” Lined Spoon		4’			
		12.0			VOCs	Brown silty fine to medium SAND, wet.
4	2” Lined Spoon		4’			
		16.0				End of Boring at 16.0 ft. No petroleum odor or discoloration encountered at any depth. Water sample collected from temporary well screen installed to a depth of 16 feet. Backfilled with bentonite upon completion.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

Date Drilled:	Water Level Data	Depth	Date/Time
4-5-2017	First Encountered:	12’	4-5-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Seattle Curtain Co. Property 104 12th Avenue Seattle, WA	Seattle Land Use Company	WES-14
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-205’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
1	2” Lined Spoon	2.0	0.5’	--		Concrete floor over gravel base. Dark gray mottled silty SAND, trace gravel, (Fill), medium dense, moist.
2	2” Lined Spoon	4.0	1.7’			Dark brown to black silty SAND, with organics (Fill or old topsoil), soft, moist.
3	2” Lined Spoon	6.0	2’		TPH-G TPH-D VOCs	
4	2” Lined Spoon	8.0	2’			Gray silty fine SAND, interlayered with silt, medium dense, moist to wet in sandier zones.
5	2” Lined Spoon		2’		TPH-G TPH-D VOCs	Gray fine to coarse SAND, with gravel, wet. End of Boring at 10.0 ft. Two foot sample drives and slow progress due to low basement ceiling. No odor and discoloration encountered at any depth. Groundwater sample from temporary screen installed from depth of 5 to 10 feet. Backfilled with bentonite upon completion.

Date Drilled:	Water Level Data	Depth	Date/Time
7-23-2019	First Encountered:	6’	7-23-2019
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Seattle Curtain Co. Property 104 12th Avenue Seattle, WA	Seattle Land Use Company	WES-15
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-205’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Concrete floor over gravel base.
1	2” Lined Spoon	2.0	2’	--		Rusty brown clayey and gravelly SAND (Fill).
2	2” Lined Spoon	4.0				Brown silty SAND, soft, wet, no odor or discoloration.
3	2” Lined Spoon	6.0	2’		TPH-G TPH-D VOCs	Dark gray SILT, with fine sand lenses, medium dense moist to wet. No odor or discoloration.
4	2” Lined Spoon	8.0				Gray silty fine SAND, occasional gravel, dense, wet, no odor or discolortion.
5	2” Lined Spoon	10.0	2’			End of Boring at 10.0 ft.
						Water sample collected from temporary well screen installed at depth of 5-10 feet.
						Backfilled with bentonite upon completion.

Date Drilled:	Water Level Data	Depth	Date/Time
7-23-2019	First Encountered:	6.4’	7/23/2019
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	WES-16
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/- 201.5 / Reference: –	

Sample Data					Lab Sample	Soil Description
No.	Type	Depth	Recovery	N		
						Asphalt Surface.
1	2" Lined Spoon		2.5'		TPH-G TPH-D VOCs MTCA5 Metals	Dark brown mottled silty SAND, little GRAVEL (Fill), loose, moist.
		5.0				Brown silty and clayey fine to medium SAND, little gravel, weathered galcial till or till fill), medium dense, moist to wet.
2	2" Lined Spoon		4'		TPH-G TPH-D VOCs Lead	
		10.0				
3	2" Lined Spoon		4'			Gray fine to coarse SAND with gravel, wet.
		15.0				
4	2" Lined Spoon		5'			Gray clayey and silty SAND, soft, wet Increasingly dense with depth.
		20.0				End of Boring at 20.0 ft. No petroleum odor or discoloration encountered at any depth.
						Water sample obtained from temporary well. Backfilled with bentonite on completion.

Date Drilled:	Water Level Data	Depth	Date/Time
10-1-2019	First Encountered:	14'	10-1-2019
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	WES-17
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/- 201.5 / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Asphalt Surface.
1	2" Lined Spoon		2.5'		VOCs MTCA5 Metals	Dark brown mottled silty SAND, little GRAVEL, brick (Fill), loose, moist.
		5.0			VOCs MTCA5 Metals	Brown silty and clayey fine to medium SAND, little gravel, weathered galcial till or till fill), medium dense, moist to wet.
2	2" Lined Spoon		4'			
		10.0				
3	2" Lined Spoon		4'			
		15.0				Gray fine to coarse SAND with gravel, wet.
						End of Boring at 15.0 ft. No petroleum odor or discoloration encountered at any depth. Uncalibrated PID screening of 0-25 ppm throughout sampled depth. Water sample obtained from temporary well. Backfilled with bentonite on completion.

Date Drilled:	Water Level Data	Depth	Date/Time
3-5-2020	First Encountered:		3-5-2020
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	WES-18
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/- 201.5 / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Asphalt Surface.
1	2" Lined Spoon		2.5'		VOCs MTCA5 Metals	Dark brown mottled silty SAND, little GRAVEL, brick (Fill), loose, moist.
		5.0				Brown silty and clayey fine to medium SAND, little gravel, weathered galcial till or till fill), medium dense, moist to wet.
2	2" Lined Spoon		4'			
		10.0				
3	2" Lined Spoon		5'			
		15.0				Gray fine to coarse SAND with gravel, wet.
						End of Boring at 15.0 ft. No petroleum odor or discoloration encountered at any depth. Uncalibrated PID screening of 0-20 ppm throughout sampled depth. Water sample obtained from temporary well. Backfilled with bentonite on completion.

Date Drilled:	Water Level Data	Depth	Date/Time
3-5-2020	First Encountered:		3-5-2020
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	WES-19
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/- 201.5 / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Asphalt Surface.
1	2" Lined Spoon		2.5'		VOCs MTCA5 Metals	Dark brown mottled silty SAND, little GRAVEL, brick (Fill), loose, moist.
		5.0			MTCA5 Metals	Brown silty and clayey fine to medium SAND, little gravel, weathered galcial till or till fill), medium dense, moist to wet.
2	2" Lined Spoon		4'			
		10.0				
3	2" Lined Spoon		5'			
		15.0				Gray fine to coarse SAND with gravel, wet.
						End of Boring at 15.0 ft. No petroleum odor or discoloration encountered at any depth. Uncalibrated PID screening of 0-25 ppm throughout sampled depth. Water sample obtained from temporary well. Backfilled with bentonite on completion.

Date Drilled:	Water Level Data	Depth	Date/Time
3-5-2020	First Encountered:		3-5-2020
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	BN-1
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-205’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Grass and topsoil containing brick & debris.
						1 Brown silty fine to coarse SAND, little gravel (Fill), loose, wet.
1	2” Lined Spoon		2.5’	--		2 Dark brown silty SAND buried topsoil with root fibers, moist to wet.
						3 Blueish gray clayey SAND, mottled with rusty brown, 4 trace gravel, soft, moist.
		5.0				5
						6
2	2” Lined Spoon		4’			7 8
					HCID VOCs	9
		10.0				10
						11
3	2” Lined Spoon		5’			12 13
						Gray fine to medium SAND, trace silt, wet.
						14 Blueish gray clayey SAND, little silt, firm, moist.
		15.0			VOCs	15 End of Boring at 15.0 ft.
						16 No petroleum odor or discoloration encountered at any depth.
						17 Water sample collected from temporary well screen installed in boring to a depth of 15’.
						18 Backfilled with bentonite upon completion.
						19
						20

Date Drilled:	Water Level Data	Depth	Date/Time
5-12-2017	First Encountered:	1’	5-12-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	BN-2
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-205’ / Reference: –	

Sample Data No.	Type	Depth	Recovery	N	Lab Sample	Soil Description
						Grass and topsoil.
1	2” Lined Spoon		2.5’	--		Brown silty fine to medium SAND, trace clay (Fill), loose, wet.
					VOCs	Dark brown sandy SILT organic topsoil, moist to wet.
		5.0				
2	2” Lined Spoon		5’			Gradual transition to blueish gray, mottled clayey fine to medium SAND with thin lenses of clean sand, soft, moist.
		10.0				
3	2” Lined Spoon		5’		HCID VOCs	Gray SILT, mottled with rusty brown zones, firm, moist to wet.
		15.0				End of Boring at 15.0 ft. No petroleum odor or discoloration encountered at any depth. Water sample collected from temporary well screen installed in boring to a depth of 15’. Backfilled with bentonite upon completion.

Date Drilled:	Water Level Data	Depth	Date/Time
5-12-2017	First Encountered:	1’	5-12-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	BN-3
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-210’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Grass and topsoil.
1	2” Lined Spoon		3’	--		Brown clayey GRAVEL and SAND (Fill), loose, wet.
						Dark brown clayey SAND organic topsoil, moist to wet.
		5.0				
2	2” Lined Spoon		5’		HCID VOCs	Gradual transition to blueish gray, mottled clayey fine to medium SAND with trace coarse sand and gravel, soft, moist.
		10.0				
3	2” Lined Spoon		5’		VOCs	Gray SILT with fine sand, firm, moist to wet.
		15.0				Gray fine to medium SAND, wet.
						End of Boring at 15.0 ft. No odor or discoloration encountered at any depth.
						Water sample collected from temporary well screen installed in boring to a depth of 15’.
						Backfilled with bentonite upon completion.

Date Drilled:	Water Level Data	Depth	Date/Time
5-12-2017	First Encountered:	1’	5-12-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	BN-4
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-205’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Grass and topsoil.
1	2” Lined Spoon		3’	--		Dark brown SAND and GRAVEL with debris (Fill), loose, moist to wet.
		5.0				Mottled brown clayey SAND and GRAVEL, (likely Fill) moist to wet.
2	2” Lined Spoon		5’		HCID VOCs	Gray, mottled clayey and silty SAND with zones of fine to medium SAND, soft, moist.
		10.0				
3	2” Lined Spoon		5’			Gray fine to medium SAND, wet.
						Gray clayey and silty SAND, with zones of fine to medium SAND, soft, moist.
		15.0				End of Boring at 15.0 ft. No odor or discoloration encountered at any depth. Water sample collected from temporary well screen installed in boring to a depth of 15’. Backfilled with bentonite upon completion.

Date Drilled:	Water Level Data	Depth	Date/Time
5-12-2017	First Encountered:	4’	5-12-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	BN-5
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-215’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Asphalt over gravel base.
1	2” Lined Spoon		2.5’	--		Dark brown silty SAND, little gravel, with organic material (Fill), loose, moist to wet.
		5.0			VOCs	Mottled brown silty SAND and GRAVEL, (likely Fill) moist to wet.
						Dark brown sandy organic SILT, soft, moist.
2	2” Lined Spoon		4’			Grayish brown, mottled clayey and silty SAND, firm, moist.
		10.0			HCID	
3	2” Lined Spoon		5’			Gray clayey and silty SAND, trace to little gravel, with zones of fine to medium SAND, harder with depth, moist.
		15.0				
4	2” Lined Spoon		5’		HCID	End of Boring at 20.0 ft. No odor or discoloration encountered at any depth. Water sample collected from temporary well screen installed in boring to a depth of 15’. Backfilled with bentonite upon completion.
		20.0				

Date Drilled:	Water Level Data	Depth	Date/Time
5-12-2017	First Encountered:	4’	5-12-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	BN-6
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-215’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Broken concrete surface over gravel base.
1	2” Lined Spoon		2’	--	TPH-G VOCs	Dark brown clayey SAND and GRAVEL (Fill), loose, moist to wet.
		5.0				Dark brown sandy organic SILT, soft, moist.
2	2” Lined Spoon		4’		HCID	
		10.0				Grayish brown clayey and silty SAND, soft, moist.
3	2” Lined Spoon		5’		TPH-G VOCs	
		15.0				End of Boring at 15.0 ft. No odor or discoloration encountered at any depth. Water sample collected from temporary well screen installed in boring to a depth of 15’. Backfilled with bentonite upon completion.

Date Drilled:	Water Level Data	Depth	Date/Time
5-12-2017	First Encountered:	6’	5-12-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	MW-8 (Originally BN-7)
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: Top of Pipe: 216.51 / Reference: –	

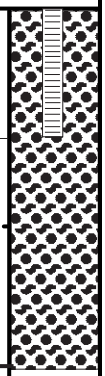
Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Gravel surface.
1	2" Lined Spoon		2.5'	--		Brown silty SAND and GRAVEL (Fill),some black spots of organic or burned wood, loose, moist.
						3'
		5.0			VOCs	
2	2" Lined Spoon		4'			
						Distinct transition to gray SAND and GRAVEL (Fill), medium dense, moist, with distinct petroleum odor.
		10.0				
						Grayish green sandy CLAY, trace to little gravel, weathered glacial till or till derived fill, harder with depth, moist to wet, strong petroleum odor.
					HCID	12'
3	2" Lined Spoon		5'			
		15.0				Dark brown sandy organic SILT, soft, moist, no petroleum odor.
						Grayish green silty and sandy CLAY, harder with depth, moist to wet, moderate petroleum odor.
4	2" Lined Spoon		5'		HCID	
		20.0				Gray fine to medium SAND, trace coarse sand and gravel, wet, no petroleum odor.
						Continued

Date Drilled:	Water Level Data	Depth	Date/Time
5-15-2017	First Encountered:	8'	5-15-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	MW-8 (BN-7 Continued)
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: Top of Pipe: 216.51 / Reference: –	

Sample Data					Lab Sample	Soil Description
No.	Type	Depth	Recovery	N		
5	2” Lined Spoon	20.0 – 25.0	5’	--		Gray fine to medium SAND, trace coarse sand and gravel, wet, no petroleum odor. 22’ Gray SILT with very fine sand, dilatant, wet, no petroleum odor. End of Boring at 25.0 ft. 2” Sch. 40 PVC well screen installed from depth of 12 to 22 feet below ground surface, surrounded with #10-20 silica sand filter pack. Bentonite seal and flush-mounted steel monument at surface.



Dept. of Ecology Unique Well ID: **BJR-852**	Water Level Data	Depth	Date/Time
	First Encountered:	+/-8’	5-15-17
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	BN-8
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-215’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Gravel surface.
1	2” Lined Spoon		2’	--		Brown SAND and GRAVEL (Fill), medium dense, moist.
		5.0				
2	2” Lined Spoon		4’		HCID	Brown silty and clayey SAND with brick and asphalt debris (Fill), soft, moist to wet, musty odor.
		10.0				Dark brown sandy organic SILT, soft, moist.
3	2” Lined Spoon		3’			Grayish brown clayey and silty SAND with gravel, medium dense, moist.
		15.0				
4	2” Lined Spoon		5’		TPH-G BTEX	Gray silty SAND, trace clay, trace gravel, medium dense, moist to wet.
		20.0				End of Boring at 20.0 ft Water sample collected from temporary well screen installed in boring to a depth of 20’. Backfilled with bentonite upon completion.

Date Drilled:	Water Level Data	Depth	Date/Time
5-15-2017	First Encountered:	6’	5-15-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	BN-9
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-215’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Gravel surface.
1	2” Lined Spoon		4’	--		Brown SAND and GRAVEL (Fill), medium dense, moist.
		5.0				
2	2” Lined Spoon		3’			Brown silty and clayey SAND with brick and asphalt debris (Fill), soft, moist.
		10.0				
3	2” Lined Spoon		2.5’		TPH-G BTEX	Gray clayey SAND, trace gravel, medium dense, moist to wet, possible slight petroleum odor.
		15.0				
4	2” Lined Spoon		5’			Dark brown sandy organic SILT, with wood fragments, trace gravel, soft, moist, no petroleum odor.
		20.0				Greenish gray clayey SAND, trace gravel, moist to wet, no petroleum odor.

Continued

Date Drilled:	Water Level Data	Depth	Date/Time
5-15-2017	First Encountered:	12’	5-15-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	BN-9 Continued
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-215’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
5	2” Lined Spoon	20.0 – 25.0	5’	--		Greenish gray clayey SAND, trace coarse sand and gravel, with lenses of fine to medium SAND and laminar SILT, very moist to wet in sandy zones, no petroleum odor.
						End of Boring at 25.0 ft.
						Water sample collected from temporary well screen installed in boring to a depth of 20’.
						Backfilled with bentonite upon completion.

21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40

Date Drilled:

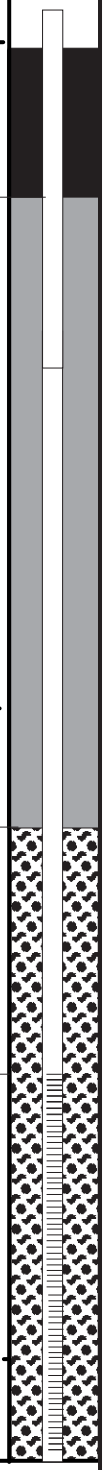
5-15-2017

Water Level Data	Depth	Date/Time
First Encountered:	+/-12’	5-15-17
Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	MW-9 (Originally BN-10)
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: Top of Pipe: 214.25 / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Gravel surface.
1	2" Lined Spoon		0.5'	--		Brown silty SAND and GRAVEL with brick and debris (Fill), very soft, moist.
						3' Poor sample recovery
		5.0				
2	2" Lined Spoon		0.3'			Poor sample recovery
		10.0				
						Dark brown sandy organic SILT, soft, moist, moderate petroleum odor. 12'
3	2" Lined Spoon		0.2'		VOCs TPH-G TPH-D	Poor sample recovery
		15.0				15'
4	2" Lined Spoon		0.7'		HCID	Poor sample recovery
		20.0				Gray fine to medium SAND, trace coarse sand and gravel, wet, slight petroleum odor.
						Continued



Date Drilled:	Water Level Data	Depth	Date/Time
5-15-2017	First Encountered:	12'	5-15-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	MW-9 (BN-10 Continued)
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: Top of Pipe: 214.25 / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
5	2” Lined Spoon	20.0 25.0	5’	--		Gray fine to medium SAND, trace coarse sand and gravel, very moist, but no free water, no petroleum odor. 25’ End of Boring at 25.0 ft. Poor sample recovery throughout upper 20’. Moved 3’ west and redrilled using hollow stem auger for monitoring well installation. 2” Sch. 40 PVC well screen installed from depth of 15 to 25 feet below ground surface, surrounded with #10-20 silica sand filter pack. Bentonite seal and flush-mounted steel monument at surface.

Dept. of Ecology Unique Well ID: **BJR-853**	Water Level Data	Depth	Date/Time
	First Encountered:	+/-8’	5-15-17
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	BN-11
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-215’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Gravel surface.
1	2” Lined Spoon		1.5’	--		Yellowish brown to brown silty SAND and GRAVEL with brick and debris(Fill), very soft, moist.
		5.0				
2	2” Lined Spoon		1.3’			Piece of fire brick
		10.0				
3	2” Lined Spoon		1’		Metals	Broken glass fragments and brick
		15.0				
4	2” Lined Spoon		0.7’			
		20.0				Gray clayey SAND, trace gravel, wet, no petroleum odor.
						Continued

Date Drilled:	Water Level Data	Depth	Date/Time
5-15-2017	First Encountered:	12’	5-15-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	BN-11 Continued
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-215’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
5	2” Lined Spoon	20.0 – 25.0	5’	--	HCID	Gray clayey SAND, trace coarse sand and gravel, mottled with rusty brown coloration, moist, no petroleum odor.
						End of Boring at 25.0 ft.
						Water sample collected from temporary well screen installed in boring to a depth of 20’.
						Backfilled with bentonite upon completion.

Date Drilled:	Water Level Data	Depth	Date/Time
5-15-2017	First Encountered:	+/-12’	5-15-17
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	BN-12
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-215’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Gravel surface.
1	2” Lined Spoon		1.5’	--		Brown clayey SAND, (Fill), medium dense, moist.
		5.0				
2	2” Lined Spoon		2.5’			Greenish gray silty and clayey SAND with sandier lenses (Fill), soft, moist to wet in sandier zones.
		10.0				
3	2” Lined Spoon		3.5’			Brown silty and clayey SAND, (Fill) medium dense, moist to wet.
		15.0				
4	2” Lined Spoon		2.5’		TPH-G VOCs	Wood fragments in dark greyish brown silty SAND, (Fill), soft, moist.
		20.0				Continued

Date Drilled:	Water Level Data	Depth	Date/Time
7-23-2019	First Encountered:	+/- 11’	7-23-2019
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	BN-12 (Continued)
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-215’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
		20.0				
5	2” Lined Spoon		5’	--		Grayish brown silty and clayey SAND, trace gravel, medium dense, wet, native soil.
		25.0			TPH-G VOCs	Grayish brown fine to medium SAND, wet.
6	2” Lined Spoon		5’	--		Grayish brown fine SAND interlayered with SILT and clayey SAND (weathered till), trace gravel, medium dense, wet. Increasingly drier and silty with depth.
		30.0				End of Boring at 30.0 ft.
						No odor and discoloration encountered at any depth.
						Groundwater sample from temporary screen installed from depth of 10 to 30 ft.
						Backfilled with bentonite upon completion.

Date Drilled:	Water Level Data	Depth	Date/Time
7/23/2019	First Encountered:	+/-9’	7-23-2019
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 1209 E. Fir Street Seattle, WA	Seattle Land Use Company	BN-13
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-215' / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
1	2" Lined Spoon		3'	--		Brown clayey SAND, little gravel, (Fill), medium dense, moist.
		5.0				
2	2" Lined Spoon		2.5'		MTCA 5 Metals	Same.
		10.0				
3	2" Lined Spoon		2.5'		HCID MTCA 5 Metals	Brick and debris at 12 ft.
		15.0				
4	2" Lined Spoon		3.5'		MTCA 5 Metals	Dark brown to black organic SILT and silty SAND, (Fill), soft, moist.
						Greenish grey clayey SAND, mottled rusty areas, native soil, moist, not wet.
		20.0				End of Boring at 20.0 ft. Backfilled with bentonite.

Date Drilled:	Water Level Data	Depth	Date/Time
7-23-2019	First Encountered:	Dry	7-23-2019
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 1209 E. Fir Street Seattle, WA	Seattle Land Use Company	BN-14
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-215’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Concrete surface.
1	2” Lined Spoon		1.2’	--		Brown clayey SAND with gravel, (Fill), soft, moist.
		5.0				
2	2” Lined Spoon		2.5’			
		10.0				
3	2” Lined Spoon		2.5’			Greenish gray mottled clayey SAND (Fill), soft, moist to wet in thin sandier zones.
		15.0				
						Dark brown to black organic SILT, (Fill or buried topsoil), soft, moist, musty odor.
4	2” Lined Spoon		4’		TPH-G VOCs	
						Greenish gray mottled clayey SAND (Weathered till), medium dense, moist, slight musty odor.
		20.0				

Continued

Date Drilled:	Water Level Data	Depth	Date/Time
7-23-2019	First Encountered:	+/- 14’	7-23-2019
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 12109 E. Fir Street Seattle, WA	Seattle Land Use Company	BN-14 (Continued)
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-215’ / Reference: –	

Sample Data					Lab Sample	Soil Description
No.	Type	Depth	Recovery	N		
		20.0				
5	2” Lined Spoon		5’	--	TPH-D TPH-G VOCs	Brown fine to medium SAND, with rusty brown mottling, interlayered with silty and clayey SAND (weathered till), medium dense, wet.
		25.0				Grayish brown medium to coarse SAND, wet.
6	2” Lined Spoon		5’	--		Grayish brown clayey SAND (weathered till), with gravel, medium dense, moist to wet.
		30.0				End of Boring at 30.0 ft.
						Groundwater sample from temporary screen installed from depth of 10 to 30 ft.
						Backfilled with bentonite upon completion.

Date Drilled:	Water Level Data	Depth	Date/Time
7/23/2019	First Encountered:	+/-9’	7-23-2019
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	BN-15
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-215’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Gravel surface.
1	2” Lined Spoon		3’	--		Mottled brown clayey SAND trace gravel (Fill), rusty areas, moist.
		5.0				
2	2” Lined Spoon		2’		TPH-G BTEX	Gray silty fine to medium SAND, (Fill), soft, moist.
		10.0				Dark brown mottled clayey SAND (Fill), some organic silt in lenses, soft, moist.
3	2” Lined Spoon		1.75’			
		15.0				Greenish gray silty and clayey SAND (Fill), with some organic silt zones, soft, moist.
4	2” Lined Spoon		4’		TPH-D TPH-G BTEX	
		20.0				Continued

Date Drilled:	Water Level Data	Depth	Date/Time
7-23-2019	First Encountered:	+/- 15’	7-23-2019
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	BN-15 (Continued)
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-215’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
		20.0				Gray fine to coarse SAND, wet.
5	2” Lined Spoon		5’	--		Grayish brown silty fine to medium SAND, medium dense, moist to wet. Increasingly drier and silty with depth.
		25.0				
6	2” Lined Spoon		5’	--		
		30.0				End of Boring at 30.0 ft. No odor and discoloration encountered at any depth. Groundwater sample from temporary screen installed from depth of 10 to 30 ft. Backfilled with bentonite upon completion.

21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40

Date Drilled: 7/23/2019

Water Level Data	Depth	Date/Time
First Encountered:	+/-14’	7-23-2019
Stabilized:		

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Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	BN-16
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-215’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Gravel surface.
1	2” Lined Spoon		4’	--		Mottled brown clayey SAND trace gravel (Fill), moist.
		5.0				
2	2” Lined Spoon		4’			
		10.0				Greenish gray silty and clayey SAND (Fill), soft, moist slight petroleum odor.
3	2” Lined Spoon		3.5’		TPH-G BTEX	Dark brown to black silty SAND (Fill), with wood and organic, very soft, moist to wet, slight petroleum odor.
					TPH-D	
		15.0			TPH-G BTEX	Grayish brown silty and clayey fine to medium SAND (Weathered till), soft, moist, slight petroleum odor.
4	2” Lined Spoon		4’		TPH-G BTEX	Grayish brown silty fine to medium SAND, medium dense, wet, no odor.
		20.0				Gray SILT and very fine SAND, laminated, moist to wet in sandy zones.
						Continued

Date Drilled:	Water Level Data	Depth	Date/Time
7-23-2019	First Encountered:	+/- 12’	7-23-2019
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	BN-16 (Continued)
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-215’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
		20.0				
5	2” Lined Spoon		5’	--		Gray SILT and very fine SAND, medium dense, moist to wet in sandier zones. Increasingly drier and silty with depth.
		25.0				
6	2” Lined Spoon		5’	--		
		30.0				End of Boring at 30.0 ft.
						Some petroleum odor at depths noted.
						Groundwater sample from temporary screen installed from depth of 10 to 30 ft.
						Backfilled with bentonite upon completion.

Date Drilled:	Water Level Data	Depth	Date/Time
7/23/2019	First Encountered:	+/-12’	7-23-2019
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	BN-17
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-205’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
1	2” Lined Spoon		0.5’	--		Grayish brown silty fine to coarse SAND with gravel (Fill), medium dense, moist.
		5.0			MTCA 5 Metals	
2	2” Lined Spoon		1.5’			Dark brown silty and clayey SAND with brick, fabric and plastic debris (Fill), soft, moist, musty odor.
		10.0			MTCA 5 Metals	
3	2” Lined Spoon		4.5’		TPH-D VOCs Lead	Gray silty fine SAND interlayered with SILT, medium dense, moist, wet in sandier zones.
		15.0			Lead	
4	2” Lined Spoon		5’			End of Boring at 20 ft. Water sample from temporary screen installed from depth of 8.5 to 18.5 feet. No petroleum odor or discoloration encountered at any depth.
		20.0				

Date Drilled:	Water Level Data	Depth	Date/Time
7-23-2019	First Encountered:	+/- 10’	7-23-2019
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	BN-18
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-202’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Grass and topsoil.
1	2” Lined Spoon		2.5’	--		Dark brown silty SAND, trace GRAVEL, loose, moist to wet(Fill).
						Dark brown silty and clayey SAND, trace organic, soft, moist, (Fill).
		5.0				Gray, mottled clayey and silty SAND, trace gravel, soft, moist to wet. Mottling has strong rusty color in some areas.
2	2” Lined Spoon		5’		TPH-G VOCs MTCA5 Metals	
		10.0				Increasingly dense with less mottled color with depth.
3	2” Lined Spoon		5’			
		15.0				Gray fine to medium SAND, little silt, dense, wet.
						End of Boring at 15.0 ft. No odor or discoloration encountered at any depth. Uncalibrated PID screening 0-20 ppm throughout sampled depth. Water sample collected from temporary well screen installed in boring to a depth of 5-15’. Backfilled with bentonite upon completion.

Date Drilled:	Water Level Data	Depth	Date/Time
2-24-2020	First Encountered:	4’	2-24-2020
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	BN-19
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-205’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Grass and topsoil.
1	2” Lined Spoon		2’	--	TPH-G VOCs	Dark brown silty SAND, trace GRAVEL, loose, moist to wet(Fill).
						Dark brown silty and clayey SAND, trace organic, soft, moist, (Fill).
		5.0				Gray, mottled clayey and silty SAND, trace gravel, soft, moist to wet. Mottling has strong rusty color in some areas.
2	2” Lined Spoon		5’			
		10.0				Increasingly dense with less mottled color with depth.
3	2” Lined Spoon		5’			
		15.0				Gray fine to medium SAND, little silt, medium dense, wet.
						End of Boring at 15.0 ft. No odor or discoloration encountered at any depth. Uncalibrated PID screening 0-20 ppm throughout sampled depth. Water sample collected from temporary well screen installed in boring to a depth of 5-15’. Backfilled with bentonite upon completion.

Date Drilled:	Water Level Data	Depth	Date/Time
2-24-2020	First Encountered:	4’	2-24-2020
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	BN-20
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-205’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Grass and topsoil.
1	2” Lined Spoon		2’	--		Brown silty SAND, trace GRAVEL, loose, moist to wet(Fill).
						Dark brown silty and clayey SAND, trace organic, soft, moist, (Fill).
		5.0				Gray, mottled clayey and silty SAND, trace gravel, soft, moist to wet. Sandier lenses at 6’
2	2” Lined Spoon		5’		TPH-G VOCs MTCA5 Metals	
		10.0				Increasingly dense with less mottled color with depth.
3	2” Lined Spoon		5’			Gray fine to medium SAND, medium dense, wet.
						Gray clayey and silty SAND, dense, moist.
		15.0				End of Boring at 15.0 ft. No odor or discoloration encountered at any depth. Uncalibrated PID screening 0-20 ppm throughout sampled depth.
						Water sample collected from temporary well screen installed in boring to a depth of 5-15’. Low flow, but was able to obtain sample.
						Backfilled with bentonite upon completion.

Date Drilled:	Water Level Data	Depth	Date/Time
2-24-2020	First Encountered:	5’	2-24-2020
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	BN-21
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-205’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Grass and topsoil.
1	2” Lined Spoon		2.5’	--		Dark brown silty SAND, trace GRAVEL, loose, moist to wet(Fill).
						Dark brown organic SILT, with clayey SAND, soft, moist, (Fill).
		5.0				
2	2” Lined Spoon		5’		TPH-G VOCs MTCA5 Metals	Grayish brown, mottled clayey and silty SAND, trace gravel, soft, moist to wet. Rusty brown lense at 6.5’, transitions to grayish brown at 7’
		10.0				Increasingly dense with less mottled color with depth.
3	2” Lined Spoon		5’			Same, with gray fine to medium SAND lenses, wet.
		15.0				End of Boring at 15.0 ft.
						No odor or discoloration encountered at any depth. Uncalibrated PID screening 0-20 ppm throughout sampled depth.
						Water sample collected from temporary well screen installed in boring to a depth of 5-15’. Low flow, but was able to obtain sample.
						Backfilled with bentonite upon completion.

Date Drilled:	Water Level Data	Depth	Date/Time
2-24-2020	First Encountered:	9’	2-24-2020
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	BN-22
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-207’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Grass and topsoil.
						Fine GRAVEL.
1	2” Lined Spoon		2’	--		Dark brown silty and clayey SAND, loose, moist to wet(Fill).
						Dark brown organic SILT, with clayey SAND, soft, moist, (Fill).
		5.0				
						Wood piece.
2	2” Lined Spoon		5’		TPH-G VOCs MTCA5 Metals	Grayish brown, mottled clayey and silty SAND, trace gravel, black flakes of organic (ash?), soft, moist to wet.
		10.0				Increasingly dense with less mottled color with depth.
3	2” Lined Spoon		5’			Same, with gray fine to medium SAND lenses, wet.
		15.0				
						End of Boring at 15.0 ft.
						No odor or discoloration encountered at any depth. Uncalibrated PID screening 0-20 ppm throughout sampled depth.
						Water sample collected from temporary well screen installed in boring to a depth of 5-15’.
						Backfilled with bentonite upon completion.

Date Drilled:	Water Level Data	Depth	Date/Time
2-24-2020	First Encountered:	9’	2-24-2020
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	BN-23
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-204’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Grass and topsoil.
						1 — Dark brown silty and clayey SAND, loose, wet(Fill).
1	2” Lined Spoon		2.5’	--		2 — Dark brown organic SILT with SAND, soft, moist, (Fill).
					TPH-G VOCs	3
						4
		5.0				5 — Grayish brown, mottled clayey and silty SAND, trace gravel, soft, moist.
						6
2	2” Lined Spoon		5’			7
					MTCA5 Metals	8
						9 — Grayish brown very fine SAND and SILT, mottled, medium dense, wet, dilatent.
		10.0				10
						11 — Gray clayey and silty SAND, trace gravel, slightly mottled, medium dense, moist.
						12 — Increasingly dense with depth.
3	2” Lined Spoon		5’			13
						14
		15.0				15
						End of Boring at 15.0 ft.
						16 — No odor or discoloration encountered at any depth.
						17 — Uncalibrated PID screening 0-20 ppm throughout sampled depth.
						18 — Water sample collected from temporary well screen installed in boring to a depth of 5-15’.
						19 — Backfilled with bentonite upon completion.
						20

Date Drilled:	Water Level Data	Depth	Date/Time
2-24-2020	First Encountered:	5’	2-24-2020
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
E. Fir Street Right-of-Way 1215 E. Fir Street Seattle, WA	Seattle Land Use Company	BN-24
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-206’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Asphalt over gravelly fill.
1	2” Lined Spoon		2.5’	--		Brown silty and clayey SAND, mottled, moist, (Fill, or weathered glacial till).
		5.0				
2	2” Lined Spoon		4’			Increasingly dense with depth.
		10.0				
3	2” Lined Spoon		5’			Gray clayey and silty SAND, with zones of fine to medium SAND, soft, moist.
		15.0				Gray fine to medium SAND, wet.
4	2” Lined Spoon		5’			Gray fine to coarse SAND, trace to little gravel, trace silt, wet.
		20.0				End of Boring at 20.0 ft.

No odor or discoloration encountered at any depth.
Uncalibrated PID screening 0-20 ppm throughout sampled depth.

Date Drilled: 3-5-2020

Water Level Data	Depth	Date/Time
First Encountered:		3-5-2020

Water sample collected from temporary well screen installed in boring to a depth of 5-20’.

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
E. Fir Street Right-of-Way 1215 E. Fir Street Seattle, WA	Seattle Land Use Company	BN-25
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-207’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Asphalt over gravelly fill, concrete pieces.
1	2” Lined Spoon		2.5’	--		Dark brown silty SAND and GRAVEL, organic and fine to coarse SAND layers, soft, moist, (Fill).
		5.0				
2	2” Lined Spoon		2’			Brown mottled clayey and silty SAND, soft, moist (Fill) Poor sample recovery.
		10.0				
3	2” Lined Spoon		3.5’			Increasingly dense with depth.
		15.0				Gray silty SAND, with lenses of fine to medium SAND, wet.
4	2” Lined Spoon		4’			Gray fine to medium SAND, wet.
		20.0				End of Boring at 20 ft. No odor or discoloration encountered at any depth. Uncalibrated PID screening 0-20 ppm throughout sampled depth.

Date Drilled:

3-5-2020

Water Level Data	Depth	Date/Time
First Encountered:	10.6’	3-5-2020

Water sample collected from temporary well screen installed in boring to a depth of 5-20’.

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
E. Fir Street Right-of-Way 1215 E. Fir Street Seattle, WA	Seattle Land Use Company	BN-26
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-208’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Asphalt over gravelly fill.
						Push Probe for Water Sampling Only. Installed sacrificial tip and pushed to depth of 20 feet. Withdrew drive rods and installed temporary PVC screen.
		20.0				End of Boring at 20 ft. Water sample collected from temporary well screen installed in boring to a depth of 5-20’. Backfilled with bentonite upon completion.

Date Drilled:

3-5-2020

Water Level Data	Depth	Date/Time
First Encountered:		3-5-2020
Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
E. Fir Street Right-of-Way 1215 E. Fir Street Seattle, WA	Seattle Land Use Company	BN-27
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-207’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Asphalt over gravelly fill.
1	2” Lined Spoon		1.5’	--		Dark brown SAND and GRAVEL with debris (Fill), loose, moist to wet.
		5.0				Mottled brown clayey SAND and GRAVEL, some greenish brown tint in mottled areas (likely Fill) moist to wet.
2	2” Lined Spoon		1.5’			
		10.0				Gray clayey and silty SAND, trace gravel, moist, weathered glacial till.
3	2” Lined Spoon		5’			
						Brown fine to medium SAND, wet.
		15.0				Brown clayey and silty SAND, dense, moist. Glacial till. Turns gray at sample tip.
						End of Boring at 15.0 ft. No odor or discoloration encountered at any depth. Uncalibrated PID screening 0-12ppm throughout sampled depth. Water sample collected from temporary well screen installed in boring to a depth of 15’. Backfilled with bentonite upon completion.

Date Drilled:	Water Level Data	Depth	Date/Time
3-5-2020	First Encountered:		3-5-2020
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Seattle Curtain Co. Property 104 12th Avenue Seattle, WA	Seattle Land Use Company	MW-1D
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: Top of Pipe: 199.02 / Reference: –	

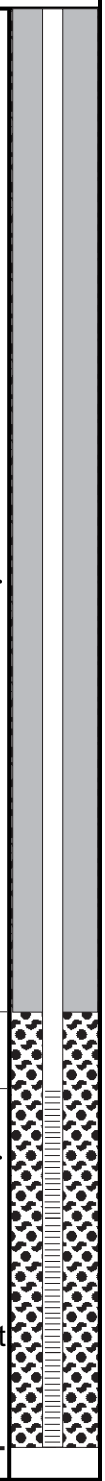
Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
1	2" Lined Spoon		2'	--		Asphalt surface over dark brown silty and clayey SAND (Fill), loose, moist.
						Greenish brown mottled clayey SAND (Fill), medium dense, moist. 3'
		5.0				
2	2" Lined Spoon		4'		HCID VOCs	Greenish gray silty and clayey CLAY, trace coarse sand and gravel (weathered glacial till or till derived fill) moist.
		10.0				
3	2" Lined Spoon		5'			Gray fine to medium SAND, medium dense, wet.
		15.0				Gray silty and sandy CLAY (weathered till) soft, moist to wet. Increasingly dense with depth.
4	2" Lined Spoon		5'			Gray SILT and very fine sand, laminated in some areas, medium dense, dilatant, moist to wet.
		20.0				Continued

Date Drilled:	Water Level Data	Depth	Date/Time
7-22-2019	First Encountered:	8'	7-22-2019
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Seattle Curtain Co. Property 104 12th Avenue Seattle, WA	Seattle Land Use Company	MW-1D Continued
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: Top of Pipe: 199.02 / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
5	2” Lined Spoon	20.0	5’	--		Gray clayey SILT and very fine SAND, trace fine gravel (reworked or weathered till), moist to wet.
		25.0	5’			Slightly sandier, wet from 26-28’
		30.0	5’			Gray clayey and silty SAND with gravel, sticky texture, medium dense to dense (till or reworked till), medium dense, moist.
		35.0	5’			Gray fine to medium SAND, trace silt, wet.
		40.0				End of Boring at 40.0 ft.

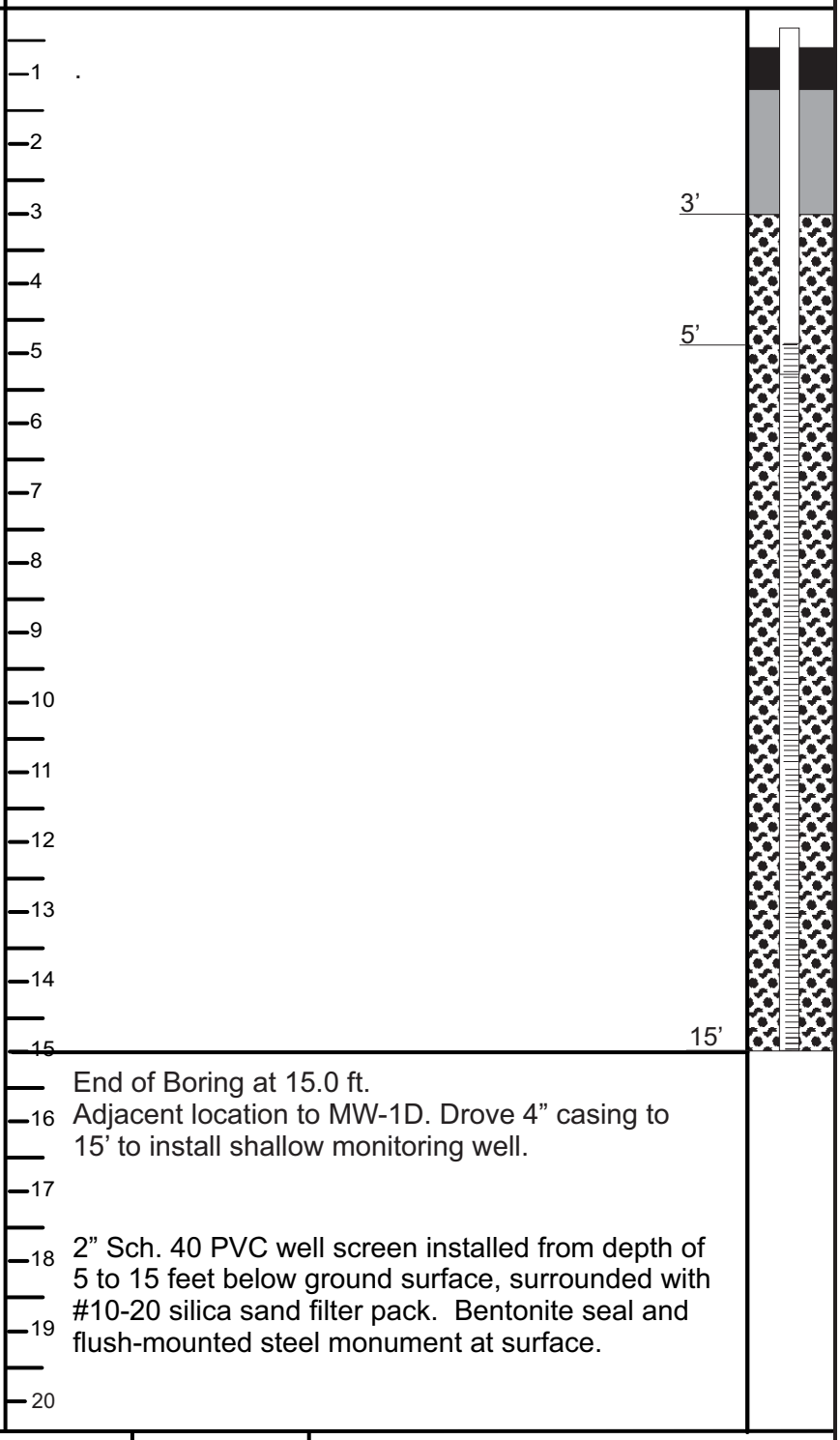


Date Drilled:	Water Level Data	Depth	Date/Time
7/22/2019	First Encountered:	+/-8’	7-22-19
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Seattle Curtain Co. Property 104 12th Avenue Seattle, WA	Seattle Land Use Company	MW-1S
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: Top of Pipe: 198.99' / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	



End of Boring at 15.0 ft.
Adjacent location to MW-1D. Drove 4" casing to 15' to install shallow monitoring well.

2" Sch. 40 PVC well screen installed from depth of 5 to 15 feet below ground surface, surrounded with #10-20 silica sand filter pack. Bentonite seal and flush-mounted steel monument at surface.

Date Drilled:	Water Level Data	Depth	Date/Time
7-22-2019	First Encountered:	8'	7-22-2019
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Seattle Curtain Co. Property 104 12th Avenue Seattle, WA	Seattle Land Use Company	MW-11
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: Top of Pipe: 198.20 / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Asphalt parking lot.
1	2" Lined Spoon		3'	--		Greenish gray mottled clayey and silty SAND, (Fill) with zones of black organic, medium dense, moist.
		5.0				3'
2	2" Lined Spoon		5'			5'
3	2" Lined Spoon	10.0			VOCs	6" zone of fine to medium SAND at 9 ft, wet.
						Brown clayey and silty SAND, medium dense, moist to wet.
			5'			Brown fine to medium SAND, medium dense, wet.
		15.0				Gray clayey SAND with trace gravel (weathered till), soft, moist to wet. 15'
						End of Boring at 15.0 ft. No odor or discoloration encountered at any depth.
						2" Sch. 40 PVC well screen installed from depth of 5 to 15 feet below ground surface, surrounded with #10-20 silica sand filter pack. Bentonite seal and flush-mounted steel monument at surface.

Date Drilled:	Water Level Data	Depth	Date/Time
7-22-2019	First Encountered:	+/- 9'	7-22-2019
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Seattle Curtain Co. Property 104 12th Avenue Seattle, WA	Seattle Land Use Company	MW-12
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: Top of Pipe: 198.89 / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Asphalt parking lot.
1	2" Lined Spoon		2.5'	--		Greenish gray mottled clayey SAND, trace gravels, with black organic area at 3-3.5' (Fill), moist.
		5.0				
2	2" Lined Spoon		5'			Grayish brown silty and clayey SAND, occasional large gravel (weathered glacial till), dense, moist.
3	2" Lined Spoon	10.0			VOCs	
			5'			Gray, silty and clayey SAND, soft, moist to wet.
		15.0				
			5'			Gray clayey SILT, interlayered with clayey fine to coarse sand, moist to wet. Wet in sandier zones.
		20.0				End of Boring at 20.0 ft. Drilled boring then backfilled with bentonite. 7-23-2019 moved to adjacent location and drove 4" casing to 15' to install monitoring well. 2" Sch. 40 PVC well screen installed from depth of 5 to 15 feet below ground surface, surrounded with #10-20 silica sand filter pack. Bentonite seal and flush-mounted steel monument at surface.

Date Drilled:	Water Level Data	Depth	Date/Time
7-22-2019	First Encountered:	12'	7-22-2019
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Seattle Curtain Co. Property 104 12th Avenue Seattle, WA	Seattle Land Use Company	MW-13
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: Top of Pipe:201.81’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Concrete floor over gravel base.
1	2” Lined Spoon		2’	--		2’ Dark brown mottled silty SAND (Fill), small zones of organic and occasional gravels, medium dense, moist, no odor or discoloration.
		5.0			TPH-G TPH-D VOCs	5’
2	2” Lined Spoon		3.5’			
		10.0				Gray silty and clayey SAND with gravel (Glacial till), very dense, moist, no odor or discoloration. Decreasing clay content with depth.
3	2” Lined Spoon		4’			Fine to medium sandier zones at 12 and 14 feet, moist to wet.
		15.0				Grades to fine SAND with SILT, medium dense, wet, no odor or discoloration.
4	2” Lined Spoon		4.5’			End of Boring at 20.0 ft. 2” Sch. 40 PVC well screen installed from depth of 5 to 20 feet below ground surface, surrounded with #10-20 silica sand filter pack. Bentonite seal and flush-mounted steel monument set in concrete at ground surface.
		20.0				20’

Date Drilled:	Water Level Data	Depth	Date/Time
10-1-2019	First Encountered:	12’	10/1/2019
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	MW-14
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: Top of Pipe: 203.09 / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Grass and topsoil.
1	2” Lined Spoon		4’	--		Brown silty fine to medium SAND with some gravel (Fill), loose, moist to wet.
		5.0				3’
2	2” Lined Spoon		4.5’			5’
		10.0			TPH-G VOCs MTCA 5 Metals	Gray SILT with fine sand, firm, moist to wet in sandier zones.
3	2” Lined Spoon		5’			Interlayered zones of SILT and very fine SAND, moist to wet.
		15.0				15’
						End of Boring at 15.0 ft. No odors or discoloration encountered at any depth.
						2” Sch. 40 PVC well screen installed from depth of 5 to 15 feet below ground surface, surrounded with #10-20 silica sand filter pack. Bentonite seal and flush-mounted steel monument at surface.

Date Drilled:	Water Level Data	Depth	Date/Time
7-23-2019	First Encountered:	12’	7-23-2019
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Seattle Curtain Co. Property 104 12th Avenue Seattle, WA	Seattle Land Use Company	MW-15
	Driller: Andersen Drilling / Method: Geoprobe	Project No. WES-1591
	Elevation: Top of Pipe: 200.85 / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
1	2” Lined Spoon		5’	--	VOCs	Asphalt surface over dark brown silty and clayey SAND (Fill), loose, moist.
						3’
						Dark brown mottled silty SAND, little GRAVEL, brick (Fill), loose, moist.
		5.0			VOCs	
2	2” Lined Spoon		3.5’			Greenish gray silty and clayey CLAY, trace coarse sand and gravel (weathered glacial till or till derived fill) moist.
		10.0				
3	2” Lined Spoon		5’			Gray fine to medium SAND, medium dense, wet.
		15.0				Gray silty and sandy CLAY (weathered till) soft, moist to wet. Increasingly dense with depth.
4	2” Lined Spoon		5’			
		20.0				Continued

Date Drilled:	Water Level Data	Depth	Date/Time
3-26-2020	First Encountered:	12’	3-26-2022
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Seattle Curtain Co. Property 104 12th Avenue Seattle, WA	Seattle Land Use Company	MW-15 Continued
	Driller: Andersen Drilling / Method: Geoprobe	Project No. WES-1591
	Elevation: Top of Pipe: 200;85 / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
5	2” Lined Spoon	20.0 25.0	5’	--	VOCs	20’ Gray clayey SILT and very fine SAND, trace fine gravel (reworked or weathered till), moist to wet. Slightly sandier, wet from 22-24’ End of Boring at 25.0 ft. 25’ 2” Sch. 40 PVC well screen with pre-pack filter installed from depth of 20 to 25 feet below ground surface, surrounded with #10-20 silica sand filter pack. Grout seal to 3 feet, and flush-mounted steel monument at surface.

Date Drilled:	Water Level Data	Depth	Date/Time
3/26/2020	First Encountered:	+/-12’	3-26-20
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	GEO B-7
	Driller: Geologic Drilling / Method: Hollow-stem Auger	Project No. WES-1591
	Elevation: Top of Pipe: 201.12 / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Asphalt Surface.
						Greyish brown mottled silty SAND, little GRAVEL (Fill), loose, moist.
						3’
1	2” Split Spoon	5.0 – 6.5	1.5’	2/2/3		
						10’
2	2” Split Spoon	10.0 – 11.5	1.5’	4/10/18		
						Brown fine to medium SAND, wet.
3	2” Split Spoon	12.5 – 14.0	1.5’	3/5/7	TPH-G VOCs	Grayish brown clayey fine to medium SAND, little gravel, moist to wet.
4	2” Split Spoon	15.0 – 16.5	1.5’	1/1/2		Interlayered with dark grey fine to medium SAND zones, wet.
						2” Sch. 40 PVC well screen installed from depth of 10 to 20 feet below ground surface, surrounded with #10-20 silica sand filter pack. Bentonite seal and flush-mounted steel monument set in concrete at ground surface.
						20’
5	2” Split Spoon	20.0 – 21.5	1.5’	2/5/10		
						End of Boring at 21.5 ft. No petroleum odor or discoloration encountered at any depth.

Date Drilled:	Water Level Data	Depth	Date/Time
9-7-2018	First Encountered:	13’	9-7-2018
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	GEO B-8
	Driller: Geologic Drilling / Method: Hollow-stem Auger	Project No. WES-1591
	Elevation: Top of Pipe: 214.79 / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Gravel Surface.
						Brown silty SAND and GRAVEL (Fill), with debris and organic material, very soft, moist to wet.
						3’
1	2” Split Spoon	5.0 – 6.5	1.5’			
2	2” Split Spoon	7.5 – 9.0	1.5’			
						Grayish green mottled silty and clayey SAND, trace gravel (Fill), moist.
3	2” Split Spoon	10.0 – 11.5	1.5’		HCID VOCs	
4	2” Split Spoon	12.5 – 14.0	1.5’			
						15’
5	2” Split Spoon	15.0 – 16.5	1.5’		HCID VOCs	Dark brown to black sandy organic SILT, soft, wet.
6	2” Split Spoon	17.5 – 19.0			HCID VOCs	Greenish gray clayey fine to medium SAND, trace gravel, moist.
						Continued

Date Drilled:	Water Level Data	Depth	Date/Time
9-7-2018	First Encountered:		
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	GEO B-8 Continued
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: Top of Pipe: 214.79 / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
7	2" Split Spoon	20.0 – 21.5	1.5'			Gray fine to medium SAND, trace coarse sand and gravel, wet, no petroleum odor.
		25.0 – 26.5				Grey clayey SAND, trace gravel, with small sand seams, increasingly dense with depth, moist, no petroleum odor.
		30.0 – 31.5				Dark grey gravelly and silty SAND, wet, no petroleum odor.
		35.0 – 36.5				Dark grey SILT and silty fine SAND, trace clay, moist to wet, no petroleum odor. 35'
						End of Boring at 36.5 ft.
						2" Sch. 40 PVC well screen installed from depth of 15-35 feet below ground surface, surrounded with #10-20 silica sand filter pack. Bentonite seal and flush-mounted steel monument at surface.

Date Drilled:	Water Level Data	Depth	Date/Time
9-7-2018	First Encountered:	+/-22'	9-7-2018
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	GEO B-9
	Driller: Geologic Drilling / Method: Hollow-stem Auger	Project No. WES-1591
	Elevation: Top of Pipe: 200.69 / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Asphalt Surface.
						Brown silty SAND and GRAVEL (Fill), loose, moist.
						3’
1	2” Split Spoon	5.0 – 6.5	1.5’	7/4/4		
2	2” Split Spoon	7.5 – 9.0	1.5’	4/7/10		Grayish green mottled clayey SAND, little gravel, weathered glacial till or till derived fill, harder with depth, moist.
						10’
3	2” Split Spoon	10.0 – 11.5	1.5’	6/10/16	HCID	Brown fine to medium SAND, wet.
4	2” Split Spoon	12.5 – 14.0	1.5’	9/5/3		Grayish brown clayey fine to medium SAND, moist to wet. Interlayered with dark grey fine to medium SAND zones, wet.
						15’
5	2” Split Spoon	15.0 – 16.5	1.5’	2/2/10		
						End of Boring at 16.5 ft. No petroleum odor or discoloration encountered at any depth.
						2” Sch. 40 PVC well screen installed from depth of 10 to 15 feet below ground surface, surrounded with #10-20 silica sand filter pack. Bentonite seal and flush-mounted steel monument set in concrete at ground surface.

Date Drilled:	Water Level Data	Depth	Date/Time
9-7-2018	First Encountered:	11’	9-7-2018
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Seattle Curtain Co. Property 104 12th Avenue Seattle, WA	Seattle Land Use Company	DSVP-1
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-201’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
1	2” Lined Spoon	5.0	5’	--		0’ Asphalt Surface. Greyish brown mottled silty SAND, little GRAVEL (Fill), loose, moist. 4.5’ End of Boring at 5.5 ft. 5.5’

1” Stainless steel porous filter attached to 1/4” PTFE tubing, installed at depth of 5 feet below ground surface. Surrounded with 1’ of #10-20 silica sand filter pack. Bentonite seal to surface.

Date Drilled:	Water Level Data	Depth	Date/Time
10-1-2019	First Encountered:		
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Seattle Curtain Co. Property 104 12th Avenue Seattle, WA	Seattle Land Use Company	DSVP-2
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-201’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
1	2” Lined Spoon	5.0	5’	--		0’ Asphalt Surface.
						Greyish brown mottled silty SAND, little GRAVEL (Fill), loose, moist.
						4.5’ End of Boring at 5.5 ft. 5.5’
						1” Stainless steel porous filter attached to 1/4” PTFE tubing, installed at depth of 5 feet below ground surface. Surrounded with 1’ of #10-20 silica sand filter pack. Bentonite seal to surface.

Date Drilled:	Water Level Data	Depth	Date/Time
10-1-2019	First Encountered:		
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Seattle Curtain Co. Property 104 12th Avenue Seattle, WA	Seattle Land Use Company	DSVP-3
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-201’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
		5.0	--			0’ End of Boring at 5.5 ft. 4.5’ 5.5’ Drove point with end plug to installation depth. Remove sampler and installed 1” Stainless steel porous filter attached to 1/4” PTFE tubing at depth of 5 feet below ground surface. Surrounded with 1’ of #10-20 silica sand filter pack. Bentonite seal to surface.

Date Drilled:	Water Level Data	Depth	Date/Time
2-24-2020	First Encountered:		
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Seattle Curtain Co. Property 104 12th Avenue Seattle, WA	Seattle Land Use Company	DSVP-4
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-201’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
		5.0	--			0’ End of Boring at 5.5 ft. 4.5’ 5.5’ Drove point with end plug to installation depth. Remove sampler and installed 1” Stainless steel porous filter attached to 1/4” PTFE tubing at depth of 5 feet below ground surface. Surrounded with 1’ of #10-20 silica sand filter pack. Bentonite seal to surface.

Date Drilled:	Water Level Data	Depth	Date/Time
2-24-2020	First Encountered:		
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Off-Site Borings 104 12th Avenue Seattle, WA	Seattle Land Use Company	OS-1
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-196' / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Concrete sidewalk.
1	2" Lined Spoon		1'	--		Brown clayey SAND and GRAVEL (Fill), soft, moist.
		4.0				Mottled grayish brown silty and sandy CLAY, trace gravel, medium dense, moist.
2	2" Lined Spoon		4'			
		8.0				
3	2" Lined Spoon		4'			
		12.0			HCID	Gray fine to medium SAND, medium dense, wet.
4	2" Lined Spoon		4'			Gray silty fine to coarse SAND, trace gravel, trace clay, medium dense, moist to wet.
		16.0				End of Boring at 16.0 ft. No petroleum odor or discoloration encountered at any depth. Water sample collected from temporary well screen installed to a depth of 16 feet. Backfilled with bentonite upon completion, concrete patch at sidewalk surface.

Date Drilled:	Water Level Data	Depth	Date/Time
8-3-2017	First Encountered:	+/- 12'	8-3-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Off-Site Borings 104 12th Avenue Seattle, WA	Seattle Land Use Company	OS-2
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-205’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Concrete sidewalk.
1	2” Lined Spoon		1’	--		Brown silty GRAVEL (Fill), soft, moist.
		4.0				Mottled brown to gray silty CLAY with fine to coarse SAND (Fill), soft, moist.
2	2” Lined Spoon		4’			Dark brown to black organic SILT (Fill or former topsoil) soft, moist.
		8.0			HCID	Gray silty and clayey SAND, trace gravel (Glacial till), medium dense, moist.
3	2” Lined Spoon		4’			Gray silty fine to medium SAND, wet.
		12.0			HCID	Gray silty and clayey SAND, trace gravel (Glacial till), increasingly denser and drier.
						End of Boring at 12.0 ft. No petroleum odor or discoloration encountered at any depth. Water sample collected from temporary well screen installed to a depth of 12 feet. Backfilled with bentonite upon completion, concrete patch at sidewalk surface.

Date Drilled:	Water Level Data	Depth	Date/Time
8-3-2017	First Encountered:	10’	8-3-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Off-Site Borings 104 12th Avenue Seattle, WA	Seattle Land Use Company	OS-3
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-202’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Concrete sidewalk over gravel base.
1	2” Lined Spoon		2.5’	--		Brown gravelly silty SAND with gravel (Fill), soft, moist.
						Rusty brown zones
		4.0				Black clayey SAND zone.
2	2” Lined Spoon		3’			Gray clayey fine to coarse SAND, medium dense, moist.
		8.0				Thin fine to medium sand zone at 7.5’, wet.
3	2” Lined Spoon		4’			Increasingly denser and drier with depth.
		12.0			HCID	
4	2” Lined Spoon		3’			Gray silty fine to medium SAND, trace gravel, soft, wet.
		15.0				End of Boring at 15.0 ft.
						No petroleum odor or discoloration encountered at any depth.
						Water sample collected from temporary well screen installed in boring to a depth of 16’.
						Backfilled with bentonite upon completion, concrete patch at sidewalk.

Date Drilled:	Water Level Data	Depth	Date/Time
8-3-2017	First Encountered:	7.5’	8-3-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Off-Site Borings 104 12th Avenue Seattle, WA	Seattle Land Use Company	OS-4
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-205’ / Reference: –	

Sample Data No.	Type	Depth	Recovery	N	Lab Sample	Soil Description
						Concrete sidewalk.
1	2” Lined Spoon	4.0	1.5’	--		Mottled brown clayey SAND with gravel (Fill), medium dense, moist.
2	2” Lined Spoon		3’		HCID	
		8.0				Light gray mottled clayey SAND, trace gravel, dense, moist.
3	2” Lined Spoon	9.0	1’		TPH-G VOCs	With gravels
						End of Boring at 9 ft. on refusal. No petroleum odor or discoloration encountered at any depth. Installed temporary screen, but had dry boring after one hour. No water sample could be collected. Backfilled with bentonite upon completion, concrete patch at sidewalk.

Date Drilled:	Water Level Data	Depth	Date/Time
8-3-2017	First Encountered:	Dry	8-3-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Off-Site Borings 104 12th Avenue Seattle, WA	Seattle Land Use Company	OS-5
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-205’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Concrete floor over gravel base.
1	2” Lined Spoon		2’	--		Rusty brown clayey and gravelly SAND (Fill).
		4.0				
2	2” Lined Spoon		3’		TPH-G VOCs TPH-D	Dark gray silty and clayey SAND, with gravel, soft, moist to wet, oily petroleum odor.
		8.0				Dark gray fine to coarse SAND, with gravel, trace silt soft, wet, slight petroleum odor.
3	2” Lined Spoon		4’		TPH-G TPH-D	Dark gray silty and clayey SAND, trace gravel, dense, moist, no petroleum odor.
		12.0				
			2’			
		14.0				End of Boring at 14.0 ft. No petroleum odor or discoloration encountered at any depth. Installed temporary screen, but had very limited flow. Obtained a total of two VOA Vials within one hour. Backfilled with bentonite upon completion, concrete patch at sidealk.

Date Drilled:	Water Level Data	Depth	Date/Time
8-3-2017	First Encountered:	8’	8-3-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Seattle Curtain Co. Property 104 12th Avenue Seattle, WA	Seattle Land Use Company	OS-6
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-205’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Concrete sidewalk.
1	2” Lined Spoon		3’			Brown clayey SAND, trace gravel (Fill), medium dense, moist to wet.
		4.0				
2	2” Lined Spoon		3’		TPH-G VOCs	Gray clayey SAND or sandy CLAY, medium dense, moist to wet.
		8.0				
3	2” Lined Spoon		3.5’			Dark brown to black organic SILT, with fibrous pieces, moist to wet.
					HCID	Greenish gray silty and clayey SAND, trace gravel (weathered till), moist. Increasingly dense with depth.
		12.0				End of Boring at 12.0 ft on refusal.
						No odor and discoloration encountered at any depth.
						Groundwater sample from temporary screen installed to a depth of 12 feet. Low flow conditions took approximately 45 minutes to collect sample volume.
						Backfilled with bentonite upon completion, concrete patch at sidewalk.

Date Drilled:	Water Level Data	Depth	Date/Time
8-3-2017	First Encountered:	6’	8-3-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Off-Site Borings 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	OS-7
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-215’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Concrete surface.
1	2” Lined Spoon		3’	--		Mottled brown clayey SAND trace gravel (Fill), moist.
		4.0				Gray clayey SAND with gravel (Fill), moist to wet, harder with depth.
			3’			
2	2” Lined Spoon	8.0			HCID	
						Dark brown to black organic SILT with wood and fibrous material, very soft, moist to wet.
			3.5’			
					TPH-G VOCs	Dark brown mottled silty and clayey SAND (Fill), roots, soft, moist to wet.
3	2” Lined Spoon	12.0				
			4’			
		16.0			TPH-G VOCs	
4	2” Lined Spoon					Gray fine to coarse SAND, trace silt, moist to wet.
			4’			No odor and discoloration encountered at any depth. Groundwater sample from temporary screen installed to a depth of 12 feet. Backfilled with bentonite upon completion.
		20.0				End of Boring at 20.0 ft.

Date Drilled:	Water Level Data	Depth	Date/Time
8-3-2017	First Encountered:	+/- 15’	8-3-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Off-Site Borings 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	OS-8
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-216’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Gravel surface.
1	2” Lined Spoon		2’	--		Brown to dark brown clayey and silty SAND (Fill), soft, moist.
		5.0				Dark greenish gray silty fine for coarse SAND (Fll), soft, moist to wet.
2	2” Lined Spoon		1.5’		HCID	
		10.0				Dark brown to black organic SILT with wood and fibrous material, very soft, moist to wet.
3	2” Lined Spoon		3’			Greenish gray clayey SAND with gravel, medium dense, moist.
		15.0				
4	2” Lined Spoon		4.5’		TPH-G BTEX	Thin zones of fine to coarse SAND, trace silt, wet.
		20.0				No odor and discoloration encountered at any depth. Groundwater sample from temporary screen installed to a depth of 20 feet. Backfilled with bentonite upon completion. End of Boring at 20.0 ft.

Date Drilled:	Water Level Data	Depth	Date/Time
8-4-2017	First Encountered:	+/- 15’	8-4-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Off-Site Borings 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	OS-9
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-216’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Gravel surface.
1	2” Lined Spoon		4’	--		Brown to dark brown clayey and silty SAND (Fill), soft, moist.
		5.0				
2	2” Lined Spoon		3’			Distinct change to dark gray sandy CLAY (Fll), soft, moist.
		10.0				Gray silty fine to coarse SAND with gravel, medium dense, moist. Interlayered with clayey SAND and gravel (weathered glacial till).
3	2” Lined Spoon		4’		HCID	
		15.0				Thin zones of fine to coarse SAND, trace silt, wet.
4	2” Lined Spoon		5’			
		20.0				Dark gray silty and clayey SAND with gravel, very dense, moist (glacial till).
						Continued

Date Drilled:	Water Level Data	Depth	Date/Time
8-4-2017	First Encountered:	+/- 15’	8-4-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Off-site Borings 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	OS-9 (Continued)
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-215’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
5	2” Lined Spoon	20.0 – 25.0	5’	--		Glacial Till Gray SILT and very fine SAND, medium dense, moist to wet in sandier zones. Increasingly drier and silty with depth. End of Boring at 25.0 ft. No petroleum odor or discoloration encountered at any depth. Water sample obtained from temporary screen Sealed with bentonite upon completion, concrete patch at sidewalk.

Date Drilled:	Water Level Data	Depth	Date/Time
8/4/2017	First Encountered:	+/-16’	8-4-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Off-Site Borings 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	OS-10
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-210’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Asphalt surface.
1	2” Lined Spoon		3’	--		Dark greenish gray clayey and silty SAND (Fill), root fibers, soft, moist.
		5.0				
					HCID	
2	2” Lined Spoon		3’			Dark brown to black organic SILT with gravel, medium dense, moist.
		10.0			HCID	Mottled with dark gray, moist to wet.
3	2” Lined Spoon		4’			Greenish gray clayey and silty SAND, increasingly dense with depth, moist.
		15.0				Greenish gray silty fine to medium SAND, very soft, moist.
4	2” Lined Spoon		4’			
		20.0				Continued

Date Drilled:	Water Level Data	Depth	Date/Time
8-4-2017	First Encountered:	Dry’	8-4-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Off-site Borings 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	OS-10 (Continued)
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-210’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
5	2” Lined Spoon	20.0 25.0 30.0	3’ 5’	--		Greenish gray silty fine to medium SAND, very soft, moist. Gray clayey SILT, little fine SAND, medium dense, slightly moist. No free water in boring . End of Boring at 30.0 ft. No petroleum odor or discoloration encountered at any depth. Installed temporary screen, but no water accumulated after one hour. Sealed with bentonite upon completion, asphalt patch in roadway.

Date Drilled:	Water Level Data	Depth	Date/Time
8/4/2017	First Encountered:	Dry	8-4-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Off-Site Borings 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	OS-11
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-210’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Asphalt surface over brick over gravel base.
1	2” Lined Spoon		3’	--		Brown clayey and silty SAND (Fill), medium dense, moist.
		5.0				Greenish gray clayey and silty SAND (Fill), hard, moist.
2	2” Lined Spoon		3’		HCID	
		10.0			HCID	Dark brown sandy organic SILT, medium dense, moist.
3	2” Lined Spoon		4’			
		15.0				Gray silty CLAY with thin sandier zones, increasingly dense with depth, moist to wet but no free water.
4	2” Lined Spoon		4’			No odor and discoloration encountered at any depth. Installed temporary screen, but no water accumulation after one half hour.. Backfilled with bentonite upon completion, asphalt patch at roadway surface.
		20.0				End of Boring at 20.0 ft.

Date Drilled:	Water Level Data	Depth	Date/Time
8-4-2017	First Encountered:	Dry’	8-4-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Off-Site Borings 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	OS-12
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-210' / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Broken concrete.
1	2" Lined Spoon		2.5'	--		Brown clayey and silty SAND with gravel (Fill), variable density, some very soft, moist.
		5.0				
2	2" Lined Spoon		3'			Gray clayey and silty SAND with fine sand lenses, hard, moist.
					HCID	
		10.0				Gray clayey and silty SAND (Fill), loose and sticky, moist to wet.
					HCID	
3	2" Lined Spoon		3'			
		15.0				Dark brown sandy organic SILT with gravels, medium dense, moist.
4	2" Lined Spoon		4'			Greenish gray silty and sandy CLAY, ncreasingly dense with depth, moist to wet but no free water.
						No odor and discoloration encountered at any depth. Water sample from temporary screen installed to depth of 20 feet. Very low water flow. Backfilled with bentonite upon completion, asphalt patch at roadway surface.
		20.0				End of Boring at 20.0 ft.

Date Drilled:	Water Level Data	Depth	Date/Time
8-4-2017	First Encountered:	+/-18''	8-4-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Farallon 2016 Bore Logs and
SoundEarth Environmental Strategies Log of MW-10
From Ecology Well Log Database

RESOURCE PROTECTION WELL REPORT Notice of Intent No. KE-12220

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

MW-1

Construction/Decommission *("x" in circle)*

(x) Construction
( ) Decommission *Original Construction Notice of Intent Number* _____

Type of Well *("x" in circle)*

(x) Resource Protection
( ) Geotech Soil Boring

Property Owner Spectrum Development

Site Address 104 12th AVE

Unique Ecology Well ID Tag No. BES-195

City Seattle County: King

Consulting Firm Pan Geo

Location NE 1/4- 1/4 NE 1/4 Sec 5 Twn 24 R 4 (EWM circle one WWM)

Driller or Trainee Name Robert A Sheldon

Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Lat Min/Sec _____

Long Deg _____ Long Min/Sec _____

Driller or Trainee Signature [signature]

Driller or Trainee License No. 1815

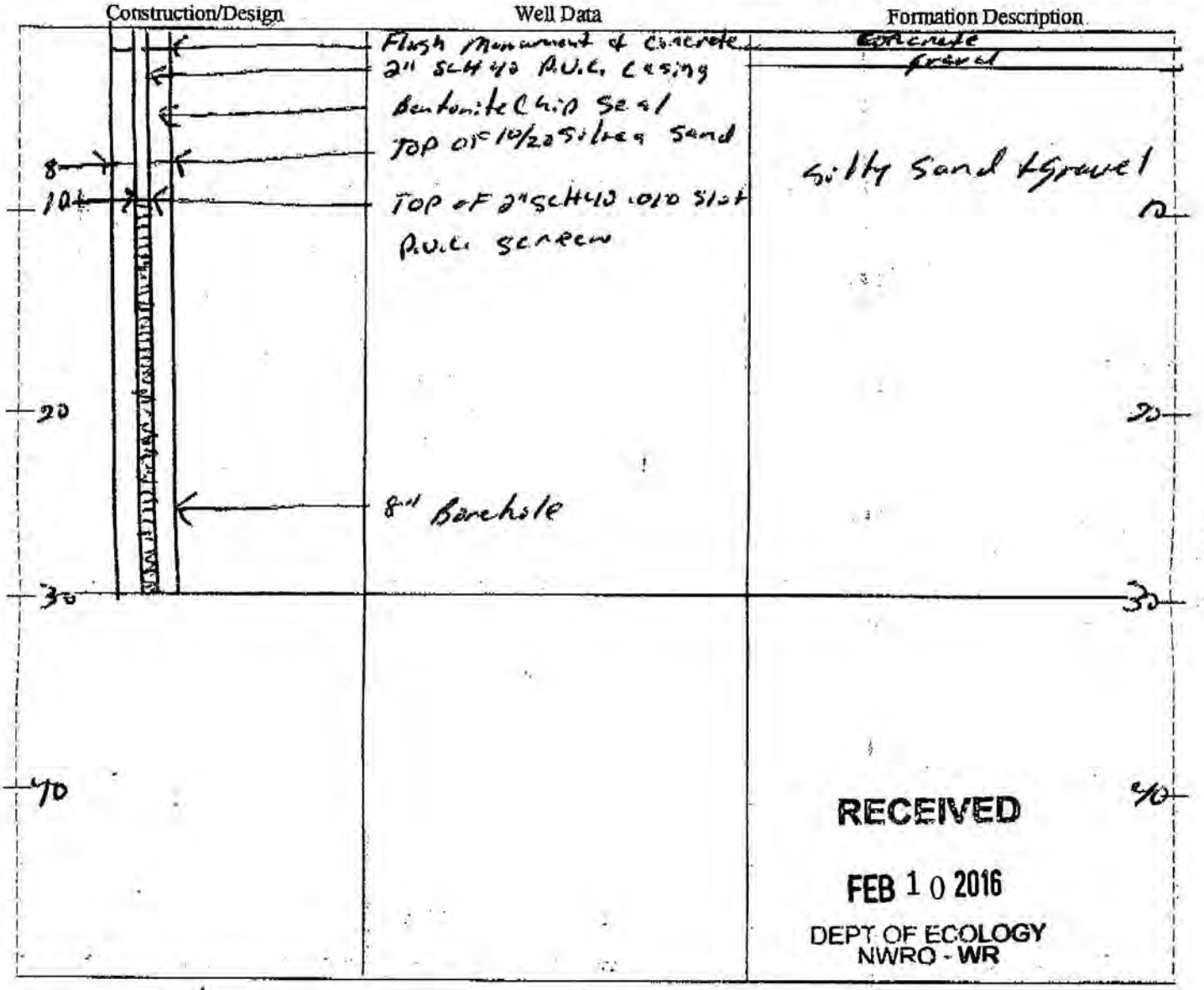
Tax Parcel No. _____

If trainee, licensed driller's Signature and License no. _____

Cased or Uncased Diameter 2" Static Level _____

Work/Decommission Start Date 12-21-15

Work/Decommission Completed Date 12-23-15



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Page 1 of 1

ECY 050-12 (Rev 2/01)

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RESOURCE PROTECTION WELL REPORT

Notice of Intent No. KE-12220

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

MW-2

Construction/Decommission *("x" in circle)*

(x) Construction

( ) Decommission *Original Construction Notice of Intent Number* _____

Type of Well *("x" in circle)*

(x) Resource Protection

( ) Geotech Soil Boring

Property Owner Spectrum Development

Site Address 104 12th Ave

Unique Ecology Well ID Tag No. BTS-[redacted]196

City Seattle County: King

Consulting Firm Pan Geo

Location NE 1/4 - 1/4 NE 1/4 Sec 5 Twn 24 R 4 (EWM circle one / WWM)

Driller or Trainee Name Robert A Sheldon

Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Lat Min/Sec _____

Driller or Trainee Signature [signature]

Long Deg _____ Long Min/Sec _____

Driller or Trainee License No 1815

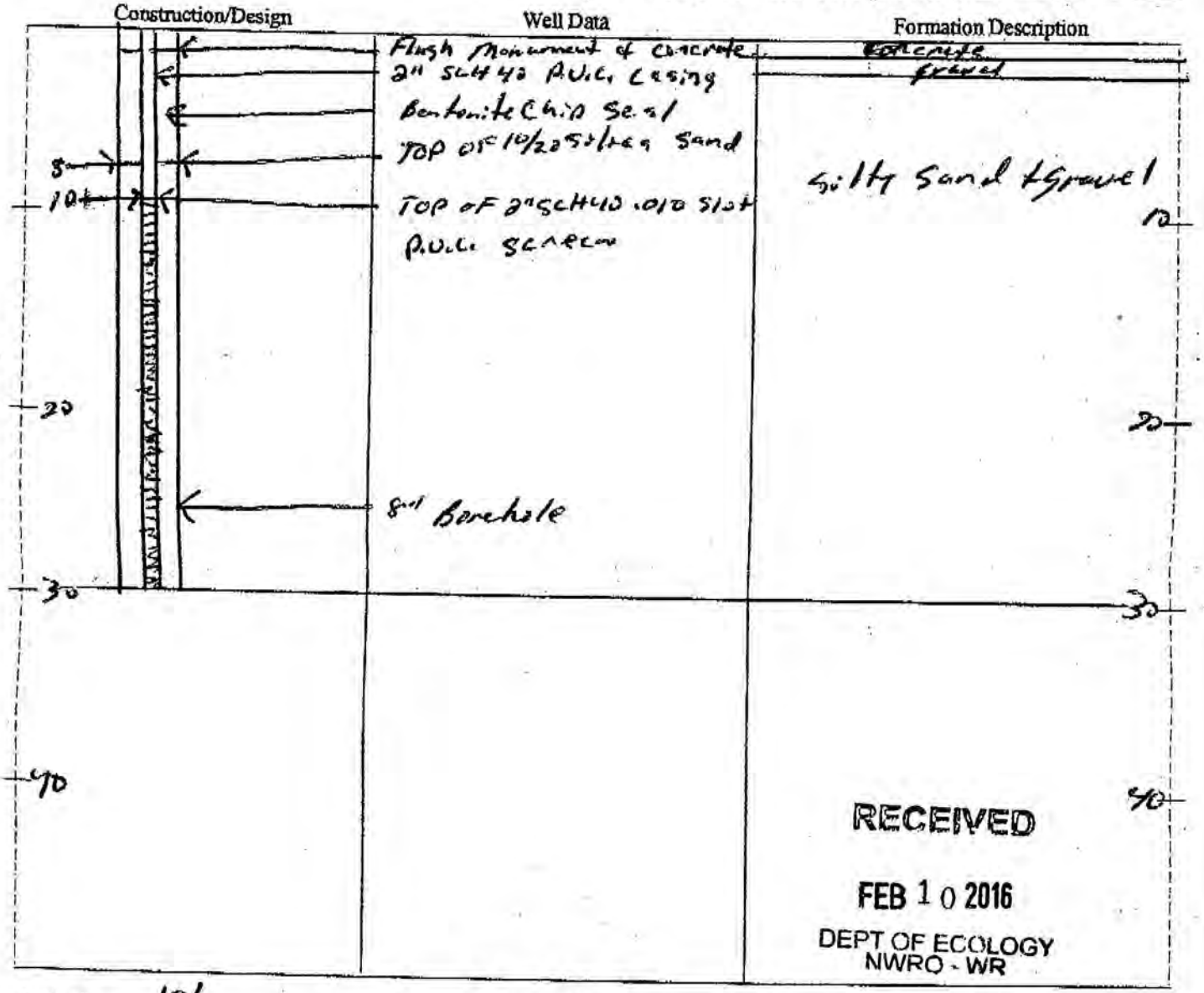
Tax Parcel No. _____

If trainee, licensed driller's Signature and License no. _____

Cased or Uncased Diameter 2" Static Level _____

Work/Decommission Start Date 12-21-15

Work/Decommission Completed Date 12-23-15



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RESOURCE PROTECTION WELL REPORT

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

CURRENT
Notice of Intent No. RE12393

Construction/Decommission

[X] Construction

[ ] Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

MW-3

Type of Well

[X] Resource Protection

[ ] Geotechnical Soil Boring

Consulting Firm **Farallon Consulting**

Property Owner **Seattle Curtain Shop**

Site Address **104 12th Ave**

City **Seattle** County **King**

EWM

Unique Ecology Well ID Tag No. BIX306

Location 1/4 **NE** 1/4 **NE** Sec **5** TWN **24N** R **4E** or WWM

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief

Lat/Long (s,t,r still Required) Lat Deg x Lat Min/Sec x Long Deg x Long Min/Sec x

Tax Parcel No. 0

[ ] Driller [X] Trainee Name (Print) **Tim Watson**

Driller/Trainee Signature Tim Watson

Cased or Uncased Diameter 3/4" Static Level 4'

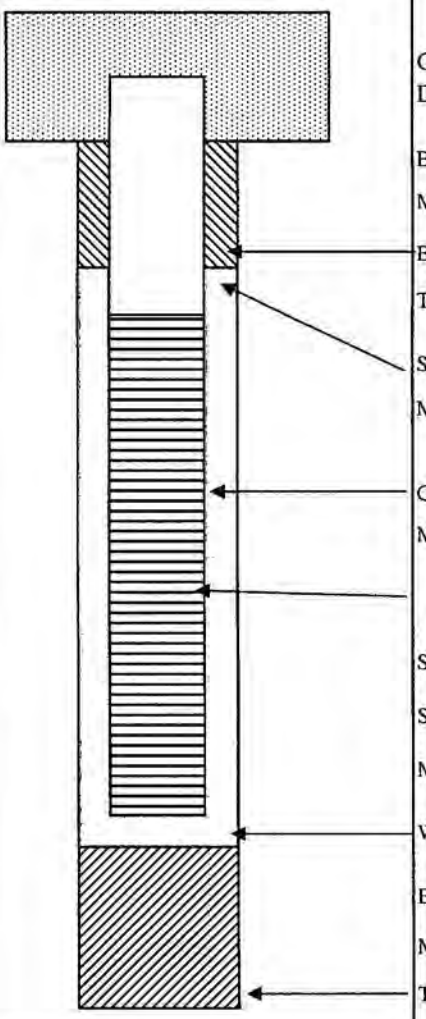
Driller/Trainee License No. **3203T**

Work/Decommision Start Date 2-12-16

If trainee, licensed driller's Signature and License No. 2501

Work/Decommision End Date 2-15-16

Construction/Design | Well Data 103-16-1011 | Formation Description



Concrete Surface Seal Depth	2'-0 Concrete FT
Blank Casing (dia x dep)	3/4" x 6'
Material	PVC
Backfill	2' FT
Type	Bent. chip
Seal	
Material	
Gravel Pack	6' FT
Material	2/12 Sand
Screen (dia x dep)	3/4" x 5'
Slot Size	.010
Material	PVC
Well Depth	11' FT
Backfill	
Material	2/12 Sand
Total Hole Depth	12' FT

0 - 2' FT
Brown Soil and Cobble

0 2' - 5' FT
med gray sand

0 5' - 11' FT
gray Fine Silt Sand

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Scale 1" = _____ Page _____ of _____

ECY 050-12 (Rev 2/01)

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RESOURCE PROTECTION WELL REPORT

Notice of Intent No. KE-12220

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

MW-4

Construction/Decommission *("x" in circle)*

- (x) Construction
- ( ) Decommission *Original Construction Notice of Intent Number* _____

Type of Well *("x" in circle)*

- (x) Resource Protection
- ( ) Geotech Soil Boring

Property Owner Spectrum Development

Site Address 104 12th AVE

Unique Ecology Well ID Tag No. BFS-187

City Seattle County: King

Consulting Firm Pan Geo

Location NE 1/4- 1/4 NE 1/4 Sec 5 Twn 24 R 4 (EWM) WWM *circle one*

Driller or Trainee Name Robert A Sheldon

Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Lat Min/Sec _____

Driller or Trainee Signature [signature]

Long Deg _____ Long Min/Sec _____

Driller or Trainee License No. 1815

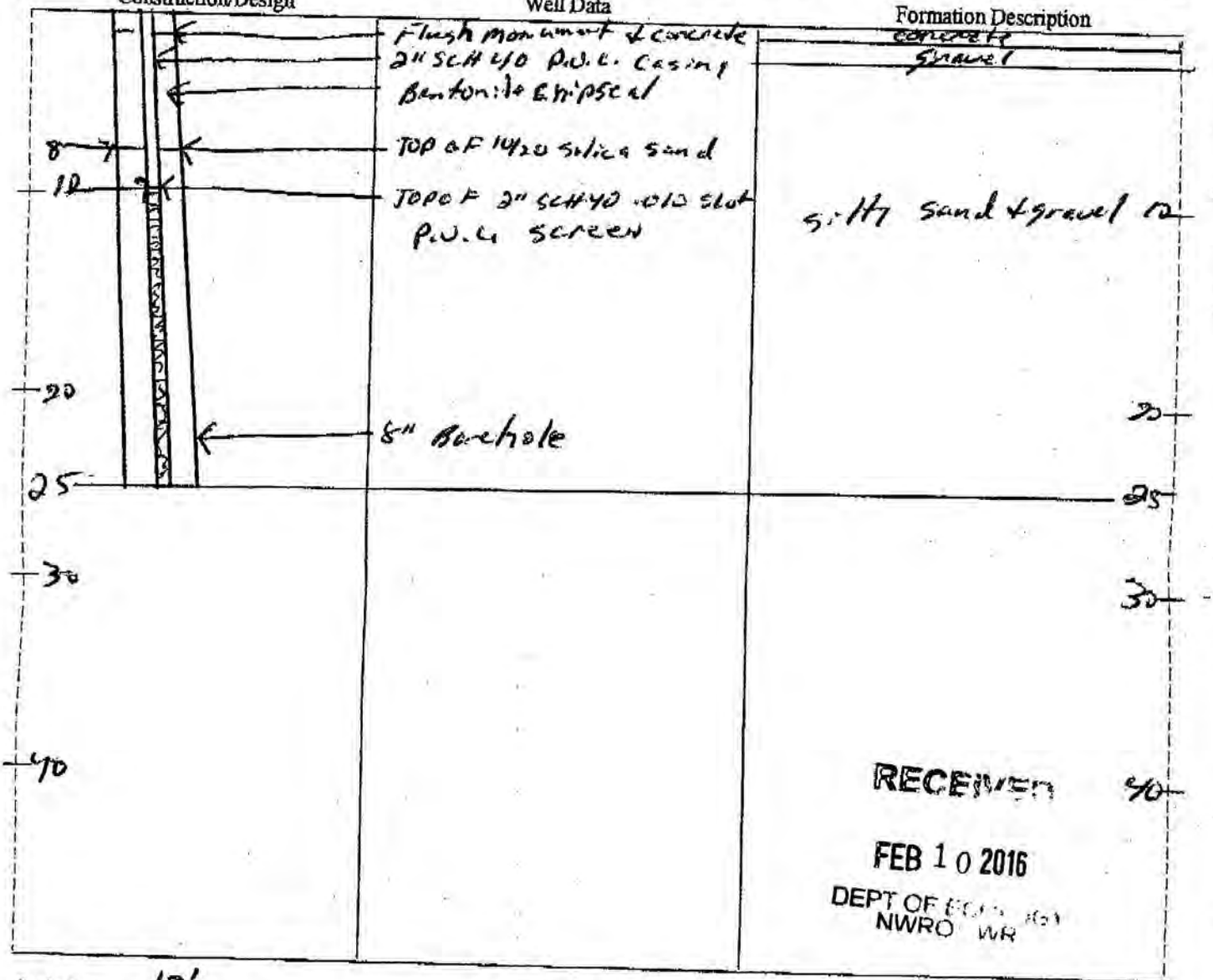
Tax Parcel No. _____

If trainee, licensed driller's Signature and License no. _____

Cased or Uncased Diameter 2" Static Level _____

Work/Decommission Start Date 12-21-15

Work/Decommission Completed Date 12-23-15



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Scale 1"= 10'

Page 1 of 1

ECY 050-12 (Rev 2/01)

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report

RESOURCE PROTECTION WELL REPORT

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

CURRENT
Notice of Intent No. RE12393

MW-5

Construction/Decommission
[X] Construction
[ ] Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

Type of Well
[X] Resource Protection
[ ] Geotechnical Soil Boring

Property Owner: Seattle Curtain Shop
Site Address: 104 12th Ave
Consulting Firm: Farallon Consulting
City: Seattle County: King

Unique Ecology Well ID Tag No. Bix 305

Location 1/4 NE 1/4 NE Sec 5 TWN 24N R 4E EWM or WWM

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Lat/Long (s,t,r still Required) Lat Deg x Lat Min/Sec x
Long Deg x Long Min/Sec x

Tax Parcel No. 0

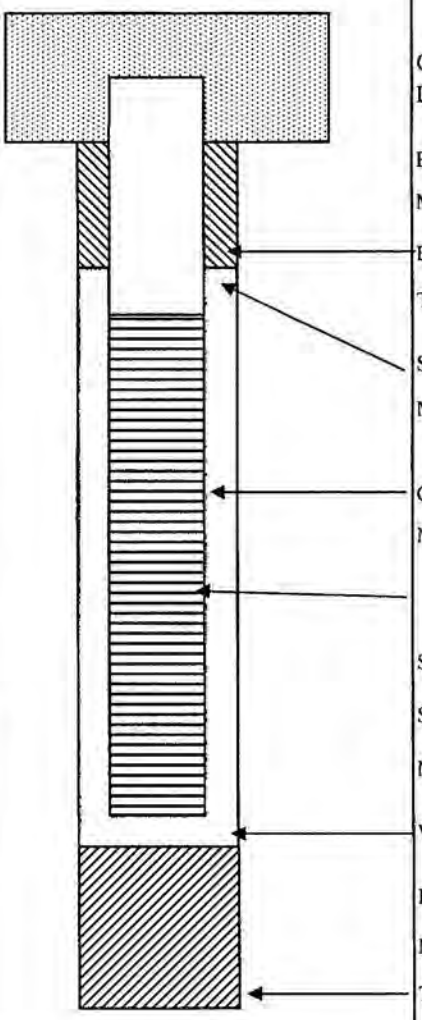
[ ] Driller [X] Trainee Name (Print) Tim Watson
Driller/Trainee Signature
Driller/Trainee License No. 3203T

Cased or Uncased Diameter 2" Static Level 6'

If trainee, licensed driller's Signature and License No. 2501

Work/Decommision Start Date 2-12-16
Work/Decommision End Date 2-12-16

Construction/Design — Well Data 103-16-1011 — Formation Description



Concrete Surface Seal Depth	2'-0 FT
Blank Casing (dia x dep)	3/4" X 3'
Material	PVC
Backfill	2.5'-2' FT
Type	Bent. chip
Seal	
Material	
Gravel Pack	13'-2.5' FT
Material	2/12 Sand.
Screen (dia x dep)	3/4" X 10'
Slot Size	.010
Material	PVC
Well Depth	13' FT
Backfill	2'
Material	2/12 Sand
Total Hole Depth	15' FT

Formation Description:
0 - 2' FT — Soil with small cobble
0 2' - 5' FT — Gray med sand
0 5' - 15' FT — Gray silty sand

RECEIVED
MAR 16 2016
DEPT OF ECOLOGY
NWRO - WR

Scale 1" = _____ Page _____ of _____

ECY 050-12 (Rev 2/01)

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report

RESOURCE PROTECTION WELL REPORT

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

CURRENT

Notice of Intent No. RE12393

Construction/Decommission

[X] Construction

[ ] Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

MW-6

Type of Well

[X] Resource Protection

[ ] Geotechnical Soil Boring

Property Owner: **Seattle Curtain Shop**

Site Address: **104 12th Ave**

Consulting Firm: **Farallon Consulting**

City: **Seattle** County: **King**

EWM

Unique Ecology Well ID Tag No. Bix 304

Location 1/4 **NE** 1/4 **NE** Sec **5** TWN **24N** R **4E** or WWM

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief

Lat/Long (s,t,r still Required) Lat Deg x Lat Min/Sec x Long Deg x Long Min/Sec x

Tax Parcel No. 0

[ ] Driller [X] Trainee Name (Print) **Tim Watson**

Driller/Trainee Signature Tim Watson

Cased or Uncased Diameter 3/4" Static Level 2 1/2'

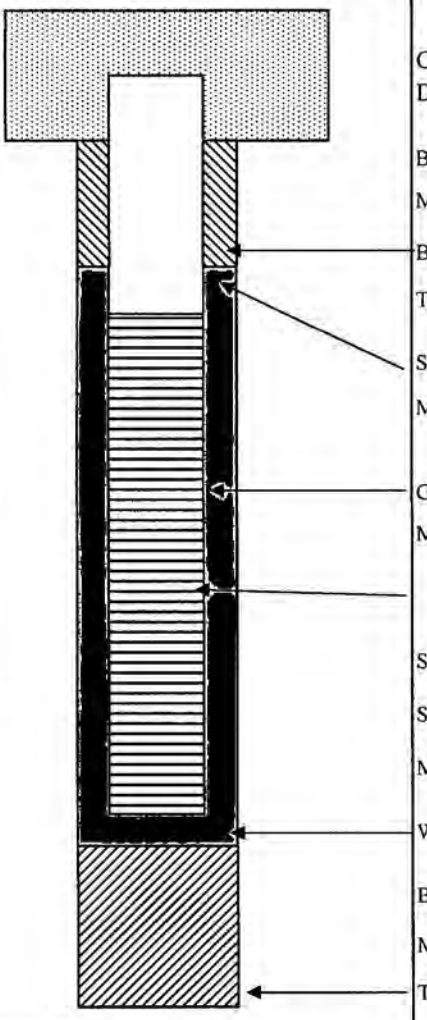
Driller/Trainee License No. **3203T**

Work/Decommision Start Date 2-12-16

If trainee, licensed driller's Signature and License No. 2501

Work/Decommision End Date 2-12-16

Construction/Design — Well Data 103-16-1011 — Formation Description



Concrete Surface Seal Depth	2-0 FT
Blank Casing (dia x dep)	3/4 x 6'
Material	PVC
Backfill	9' FT
Type	Bent. chip
Seal	
Material	
Gravel Pack	6.5' FT
Material	2/12 Sand
Screen (dia x dep)	3/4" x 5'
Slot Size	.010
Material	PVC
Well Depth	11' FT
Backfill	1'
Material	Sand 2/12
Total Hole Depth	12' FT

Formation Description

0 - 1' FT — Concrete

0 1' - 6' FT — Gray sand med coble

0 6' - 11' FT — Gray silty sand Fine

RECEIVED

MAR 16 2016

DEPT OF ECOLOGY NWRO - WR

Scale 1" = _____ Page _____ of _____

ECY 050-12 (Rev 2/01)

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report

Please print, sign and return to the Department of Ecology

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. RE15246

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in box)*

☒ Construction

☐ Decommission

MW-10

Type of Well *("x in box)*

☒ Resource Protection

☐ Geotech Soil Boring

ORIGINAL INSTALLATION Notice of Intent Number:

Property Owner Linda Capeluto

Site Address 104 12th Ave

Consulting Firm

City Seattle County King

Unique Ecology Well IDTag No. BJR 695

Location NE1/4-1/4 NE1/4 Sec 05 Twn 24 R 04

EWM ☒ or WWM ☐

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Lat/Long (s, t, r still REQUIRED) Lat Deg ____ Min ____ Sec ____

Long Deg ____ Min ____ Sec ____

☒ Driller ☐ Engineer ☐ Trainee

Name (Print Last, First Name) Haun, Marty

Driller/Engineer /Trainee Signature

Driller or Trainee License No. 2827

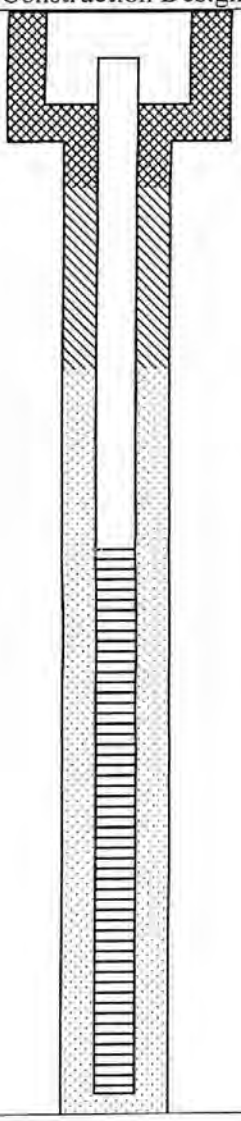
Tax Parcel No. 8061000025

Cased or Uncased Diameter 8.25 Static Level ____

Work/Decommission Start Date 10/28/17

Work/Decommission Completed Date 10/28/17

If trainee, licensed driller's Signature and License Number:

Construction Design	Well Data	Formation Description
	MONUMENT TYPE: flush CONCRETE SURFACE SEAL: 0-1 ANNULAR SPACE: ____ BACKFILL: 1-4' TYPE: bentonite PVC BLANK: 0-5' SCREEN: 5-15' SLOT SIZE: .010 TYPE: 2" sch 40 SAND PACK: 4-15' MATERIAL: 10/20 silica sand DRILLING METHOD: HSA WELL DEPTH: 15' BORING DIAMETER: ____	0-2' brown sandy gravel 2-15' brown/light grey fine sandy silt

RECEIVED

NOV 27 2017

DEPT OF ECOLOGY
NWRO - WR

SCALE: 1"= ____ PAGE 1 OF 1

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report

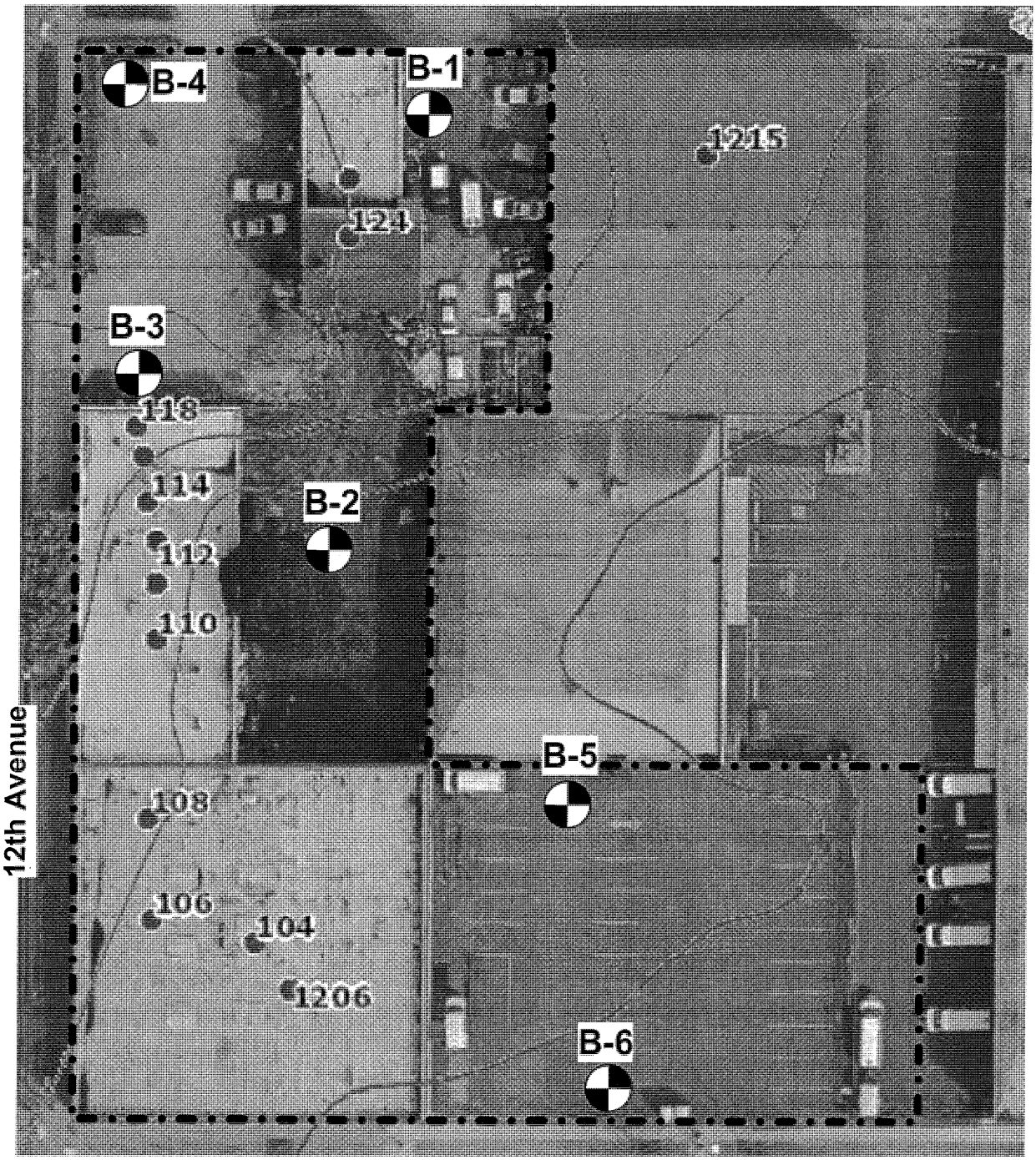
ECY 050-12 (Rev. 7/06)

Ecology is an Equal Opportunity Employer

Bore Logs from Geotechnical Borings
Geotech Consultants, Inc.

NORTH

East Fir Street



East Yesler Way

Legend:

Test boring location

GEOTECH CONSULTANTS, INC.

SITE EXPLORATION PLAN

104, 110, and 124 - 12th Avenue
Seattle, Washington

Job No:	Date:		Plate:
17357	July 2017	No Scale	2

BORING 1

Depth (ft.)	Moisture	Water Table	Blows per Foot	Sample	USCS	Description
					FILL	Asphalt over; Gray-brown silty SAND with gravel, fine to coarse-grained, moist, loose **(Fill)**
5			9	1		
10			9	2		-with organics and a piece of brick
15			18	3	SM	Rust-brown mottled gray silty SAND with gravel, fine to coarse-grained, moist to very moist, medium-dense
20			25	4		-becomes gray, with a 3 inch seam of wet sand
25			9	5		-becomes loose and very moist
30						

CONTINUED ON PLATE 4

GEOTECH
CONSULTANTS, INC.

TEST BORING LOG

104, 110, and 124 - 12th Avenue
Seattle, Washington

Job	Date:	Logged by:	Plate:
17357	July 2017	TRC	3

BORING 1 (CONTINUED)

Depth (ft.)	Moisture	Water Table	Blows per Foot	Sample	USCS	Description
30		▼	26	6	SW	Gray SAND, fine to coarse-grained, wet, medium-dense
35			31	7	ML SP	Gray SILT to SAND, non-plastic, very fine-grained, wet, dense
40						

*** Test boring was terminated at 36.5 feet on June 30, 2017.**

*** Groundwater was encountered at 32 feet during drilling.**

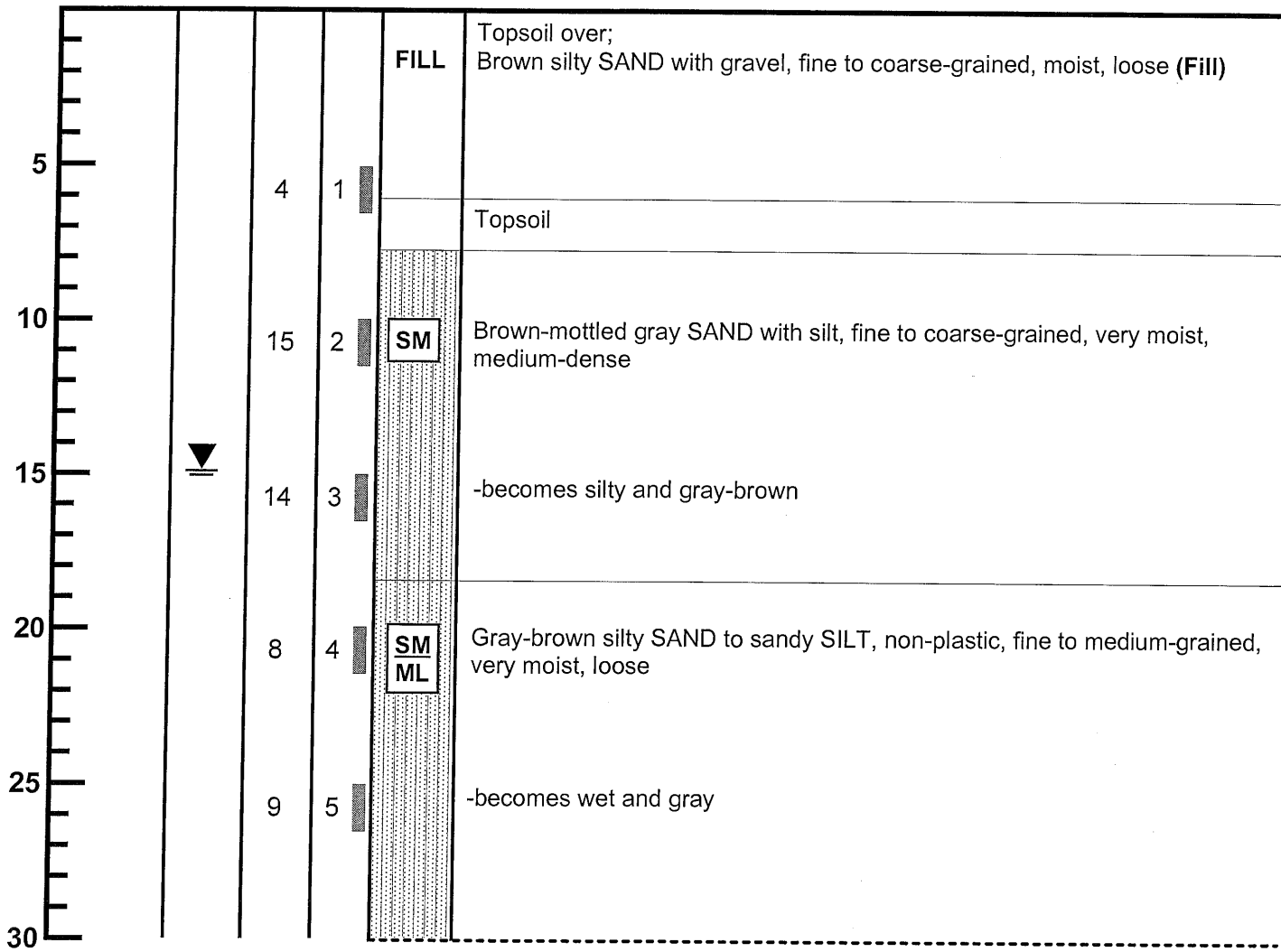
GEOTECH
CONSULTANTS, INC.

TEST BORING LOG

104, 110, and 124 - 12th Avenue
Seattle, Washington

Job	Date:	Logged by:	Plate:
17357	July 2017	TRC	4

BORING 2



CONTINUED ON PLATE 6

GEOTECH CONSULTANTS, INC.

TEST BORING LOG

104, 110, and 124 - 12th Avenue
Seattle, Washington

Job	Date:	Logged by:	Plate:
17357	July 2017	TRC	5

BORING 2 (CONTINUED)

Depth (ft.)	Moisture	Water Table	Blows per Foot	Sample	USCS	Description
30			7	6	ML	Gray sandy clayey SILT, plastic, fine to medium-grained, very moist, medium stiff
35			13	7	SW	Gray SAND, fine to medium-grained, moist, medium-dense
40			50/ 3"	8		
			46	9	ML	Gray clayey SILT, plastic, very moist, hard -refusal on a rock
45						* **Test boring was terminated at 43.5 feet on June 30, 2017.** * **Groundwater was encountered at 15 feet during drilling.**
50						

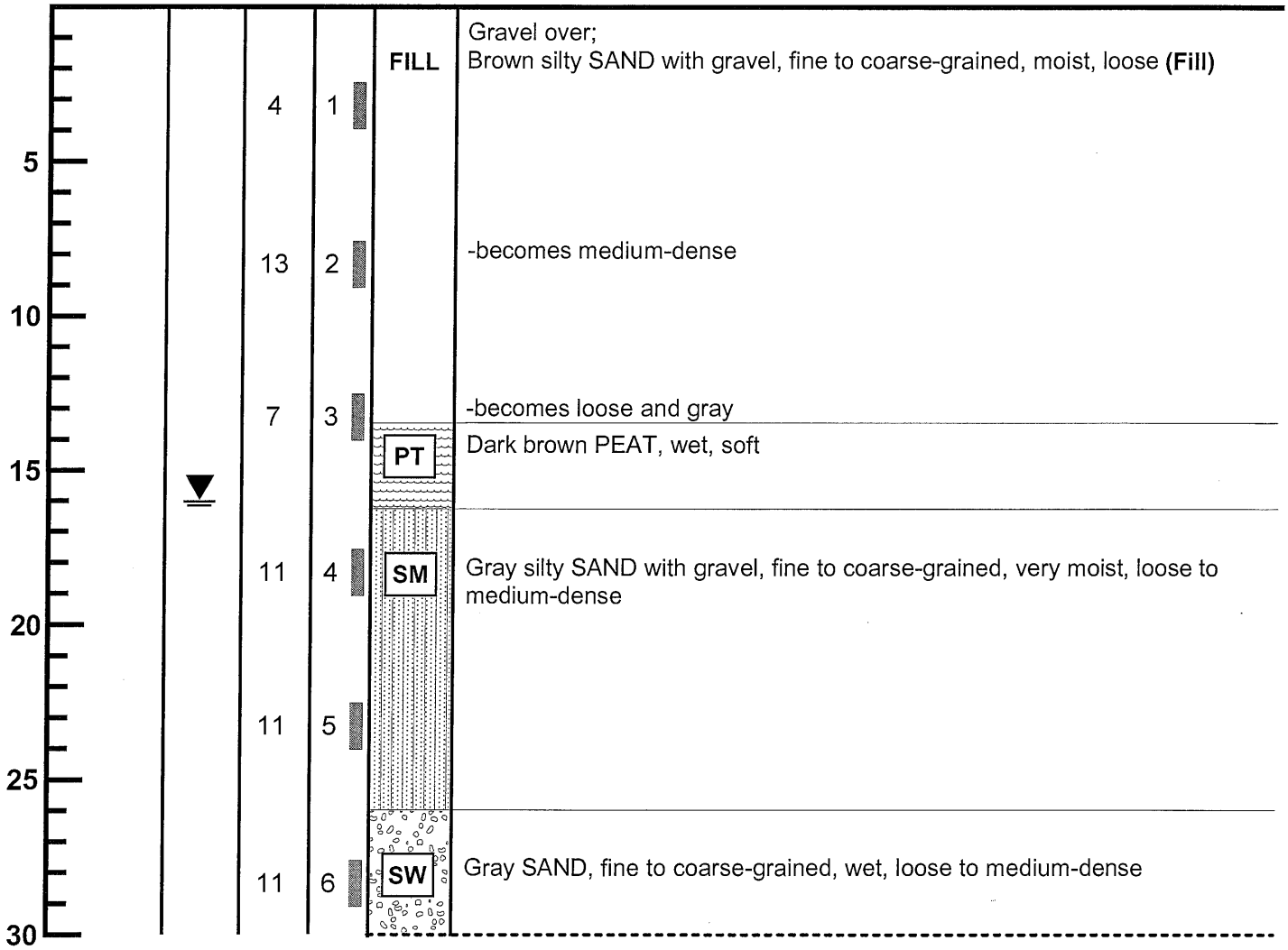
GEOTECH CONSULTANTS, INC.

TEST BORING LOG

104, 110, and 124 - 12th Avenue
Seattle, Washington

Job	Date:	Logged by:	Plate:
17357	July 2017	TRC	6

BORING 3



CONTINUED ON PLATE 8

GEOTECH
CONSULTANTS, INC.

TEST BORING LOG

104, 110, and 124 - 12th Avenue
Seattle, Washington

Job	Date:	Logged by:	Plate:
17357	July 2017	TRC	7

BORING 3 (CONTINUED)

Depth (ft.)	Moisture	Water Table	Blows per Foot	Sample	USCS	Description
30			22	7	ML	Gray clayey SILT, plastic, very moist, very stiff
35			19	8		
40			13	9	SP	Gray SAND, fine-grained, very moist, medium-dense
45			41	10	ML	Gray clayey SILT, plastic, very moist, hard
50						
55						

*** Test boring was terminated at 49 feet on July 12, 2017.**
*** Groundwater was encountered at 16 feet during drilling.**

GEOTECH
CONSULTANTS, INC.

TEST BORING LOG

104, 110, and 124 - 12th Avenue
Seattle, Washington

Job	Date:	Logged by:	Plate:
17357	July 2017	TRC	8

BORING 4

Depth (ft.)	Moisture	Water Table	Blows per Foot	Sample	USCS	Description
			6	1	FILL	Gravel over; Concrete rubble Brown silty SAND with gravel, fine to coarse-grained, moist, loose **(Fill)**
5			3	2		-becomes very loose
10			6	3	PT	Dark brown PEAT, wet, very soft
					SM	Gray silty SAND with gravel, fine to coarse-grained, very moist, loose
15		▼	20	4		-becomes medium-dense and very moist to wet, reduced silt in some zones
20			23	5	SP	Gray SAND, fine-grained, very wet, medium-dense
25			19	6	ML	Gray clayey SILT, plastic, very moist, very stiff
30						

CONTINUED ON PLATE 10

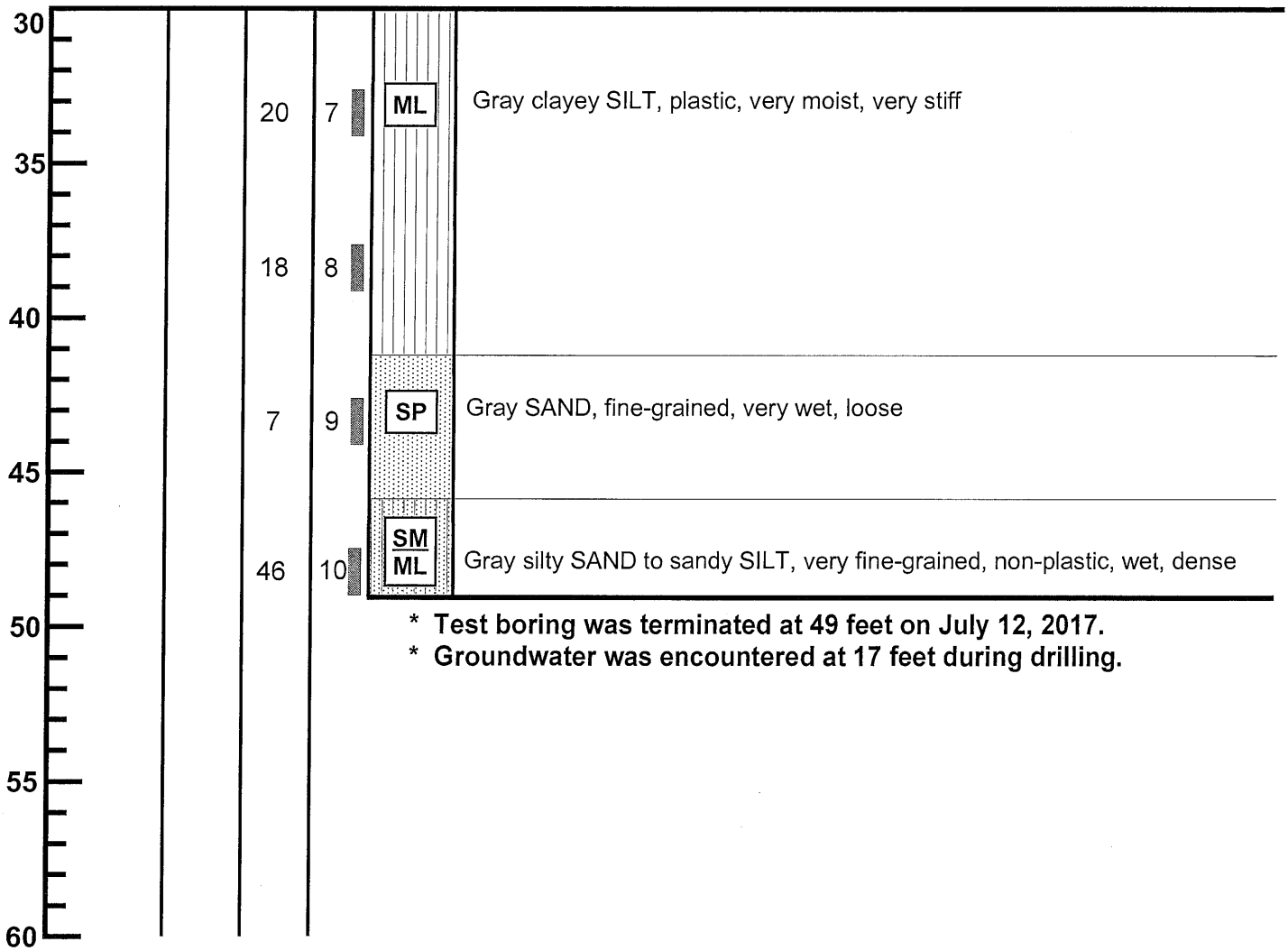
GEOTECH
CONSULTANTS, INC.

TEST BORING LOG

104, 110, and 124 - 12th Avenue
Seattle, Washington

Job	Date:	Logged by:	Plate:
17357	July 2017	TRC	9

BORING 4 (CONTINUED)



*** Test boring was terminated at 49 feet on July 12, 2017.**

*** Groundwater was encountered at 17 feet during drilling.**

GEOTECH
CONSULTANTS, INC.

TEST BORING LOG

104, 110, and 124 - 12th Avenue
Seattle, Washington

Job	Date:	Logged by:	Plate:
17357	July 2017	TRC	10

BORING 5

Depth (ft.)	Moisture	Water Table	Blows per Foot	Sample	USCS	Description
			3	1	FILL	Asphalt over; Brown to gray-brown silty SAND with gravel, fine to coarse-grained, moist to very moist, very loose **(Fill)**
5			21	2		-becomes medium-dense and moist to wet, reduced silt in some zones
10			5	3		-becomes loose
15			31	4	SP	Gray SAND, fine-grained, moist, dense
20			12	5	SM	Gray silty SAND, fine to medium-grained, moist, medium-dense
25			12	6	ML	Gray SILT to sandy SILT, non-plastic, very moist, medium-dense
30						

CONTINUED ON PLATE 12

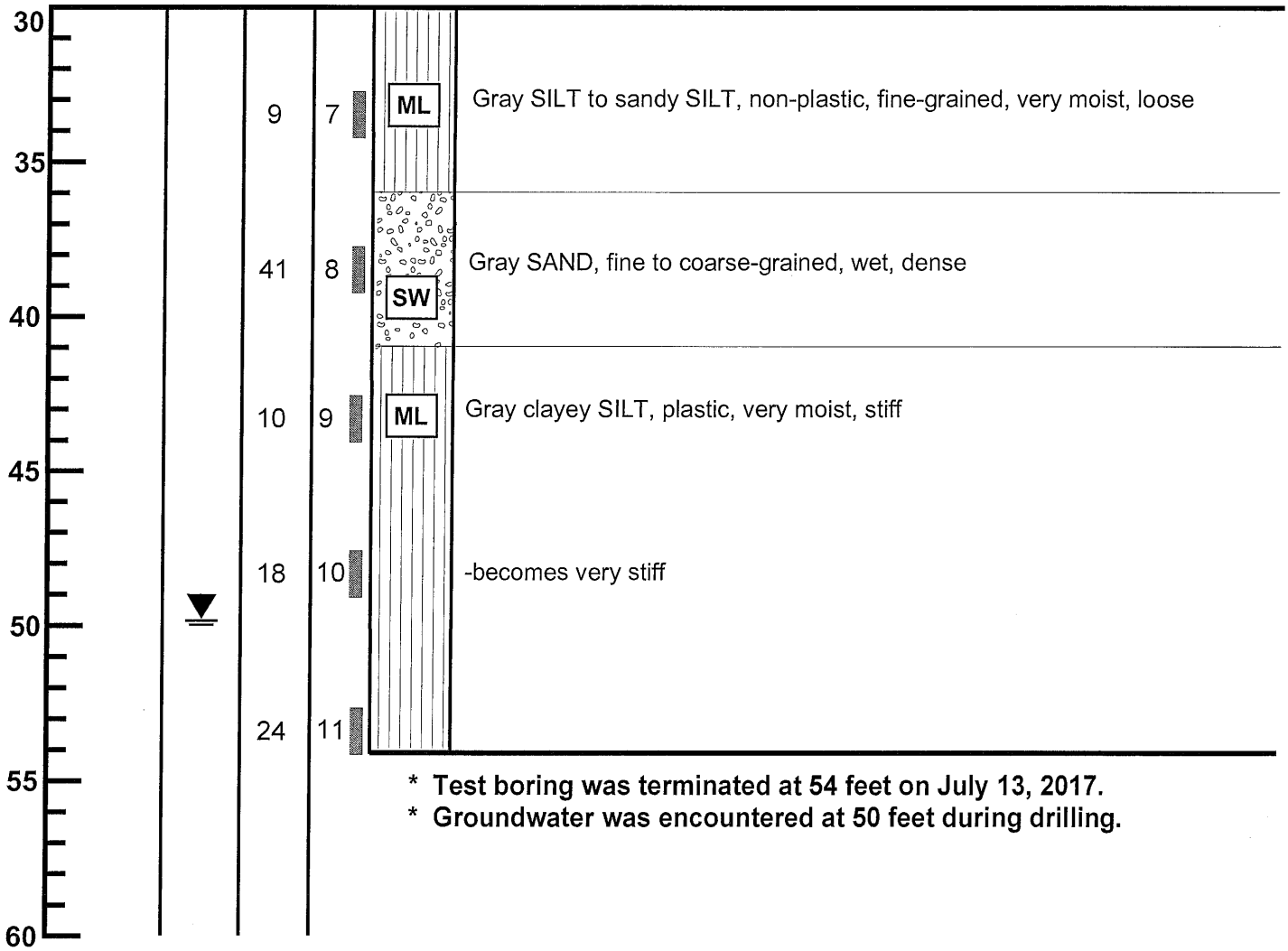
GEOTECH CONSULTANTS, INC.

TEST BORING LOG

104, 110, and 124 - 12th Avenue
Seattle, Washington

Job	Date:	Logged by:	Plate:
17357	July 2017	TRC	11

BORING 5 (CONTINUED)



* **Test boring was terminated at 54 feet on July 13, 2017.**
* **Groundwater was encountered at 50 feet during drilling.**

GEOTECH CONSULTANTS, INC.

TEST BORING LOG

104, 110, and 124 - 12th Avenue
Seattle, Washington

Job	Date:	Logged by:	Plate:
17357	July 2017	TRC	12

BORING 6

Depth (ft.)	Moisture	Water Table	Blows per Foot	Sample	USCS	Description
					FILL	Asphalt over; Gray-brown silty SAND with gravel, fine to coarse-grained, very moist, medium-dense **(Fill)**
			5	1		Dark brown organic SILT, very moist, loose
5					SM	Gray-brown silty SAND, fine to coarse-grained, moist, loose
			15	2		-becomes medium-dense, reduced silt in sone zones
10						
			6	3		-becomes loose
15						
			9	4		
20						
			11	5		-becomes medium-dense and very moist
25						
			16	6	ML	Gray clayey SILT, plastic, very moist, stiff
30						

CONTINUED ON PLATE 14

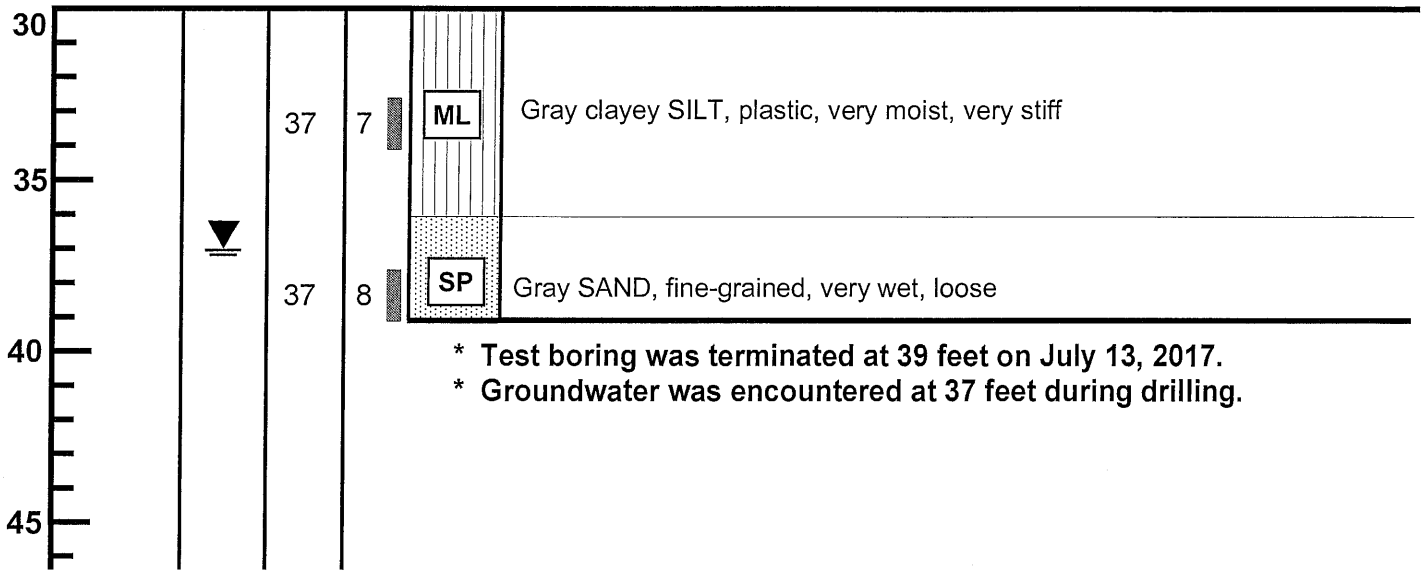
GEOTECH
CONSULTANTS, INC.

TEST BORING LOG

104, 110, and 124 - 12th Avenue
Seattle, Washington

Job	Date:	Logged by:	Plate:
17357	July 2017	TRC	13

BORING 6 (CONTINUED)



* **Test boring was terminated at 39 feet on July 13, 2017.**
* **Groundwater was encountered at 37 feet during drilling.**

GEOTECH CONSULTANTS, INC.

TEST BORING LOG

104, 110, and 124 - 12th Avenue
Seattle, Washington

Job	Date:	Logged by:	Plate:
17357	July 2017	TRC	14

Bore Logs from Phase II
Environmental Site Assessment
Associated Environmental Group, LLC

ASSOCIATED ENVIRONMENTAL GROUP, LLC **LOG OF BOREHOLE**

PROJECT:	***Orion 12th Avenue - Seattle***	**JOB #** ***14-142***	**BORING #** ***B-1*** **PAGE 1 OF 1**
Location:	*110 12th Ave, Seattle, Washington*	**Approximate Elevation:**	
Subcontractor / Driller:	*ESN / Casey*	**Equipment / Drilling Method:**	*Geoprobe / Direct Push*
Date:	*October 21, 2014*	**Logged By:**	*B. Dilba*

Boring Depth (feet)	Soil Description	Unified Soil Symbol	Sample Depth	Sample Recovery	Sample Number	Time	Blows/Foot	PID Reading	Sheen	Observations
	Gravel surface underlain by; Light gray, moist, medium dense GRAVELLY SAND; fine grained sand, fine to medium gravel	SP				9:00	N/A			
5	at 4.5 feet; broken brick material									
10										
15	Dark brown, moist, medium dense SILTY SAND; fine grained	SM			B1-S1-15	9:15		0.0		
20	at 19 feet; saturated, with medium gravel, some silt		▽						Not observed	
25										

Explanation

- Sample Advance / Recovery
- No Recovery
- Contact located approximately
- ATD — Groundwater level at time of drilling or date of measurement

ASSOCIATED ENVIRONMENTAL GROUP, LLC **LOG OF BOREHOLE**

PROJECT:	***Orion 12th Avenue c- Seattle***	**JOB #** ***14-142***	**BORING #** ***B-2*** **PAGE 1 OF 1**
Location:	*110 12th Ave, Seattle, Washington*	**Approximate Elevation:**	
Subcontractor / Driller:	*ESN / Casey*	**Equipment / Drilling Method:**	*Geoprobe / Direct Push*
Date:	*October 21, 2014*	**Logged By:**	*B. Dilba*

Boring Depth (feet)	Soil Description	Unified Soil Symbol	Sample Depth	Sample Recovery	Sample Number	Time	Blows/Foot	PID Reading	Sheen	Observations
	Gravel surface underlain by; Light gray, moist, dense GRAVELLY SAND; medium grained sand, fine to medium gravel, trace of organic material	SP				9:55	N/A			
5										
10					B2-S1-10	10:10		0.1		Odor
	at 10 feet; discolored soil									
					B2-S2-13.5	10:15		0.3		Strong Odor
		▽							Not observed	
15	at 14 feet; dark gray, saturated, dense									
	Dark gray, moist, stiff GRAVELLY SILT; trace of clay	ML								
20					B2-S3-20	11:00				Odor
	Dark gray, saturated, loose SANDY GRAVEL; fine grained grael, fine sand	GP								
	Dark gray, moist, stiff GRAVELLY SILT; fine gravel, trace of clay, trace organics	ML								
25										

Explanation

- Sample Advance / Recovery
- No Recovery
- Contact located approximately
- ATD — Groundwater level at time of drilling or date of measurement

ASSOCIATED ENVIRONMENTAL GROUP, LLC **LOG OF BOREHOLE**

PROJECT: *Orion 12th Avenue - Seattle*	**JOB #** *14-142*	**BORING #** *B-3*	**PAGE 1 OF 1**
Location: *110 12th Ave, Seattle, Washington*	**Approximate Elevation:**		
Subcontractor / Driller: *ESN / Casey*	**Equipment / Drilling Method:** *Geoprobe / Direct Push*		
Date: *October 21, 2014*	**Logged By:** *B. Dilba*		

Boring Depth (feet)	Soil Description	Unified Soil Symbol	Sample Depth	Sample Recovery	Sample Number	Time	Blows/Foot	PID Reading	Sheen	Observations
	Gravel surface underlain by; Brown, dry, medium dense GRAVELLY SAND; fine grained sand, fine gravel, organic content	SP	1			11:30	N/A			
			2							
			3							
	at 7 feet; Yellowish brown		4							
5			5							
			6							
			7							
			8							
	at 9 feet; brick residue		9							
10			10							
			11							
			12							
			13							
			14							
15	Black, moist, medium dense SILTY SAND; fine grained, trace organics	SM	15		B3-S1-15	11:00		0.3	Not observed	Odor
			16							
		▽	17							
	at 17 feet; gray, saturated, dense		18							
			19							
20			20							
	Dark gray, moist, stiff GRAVELLY SILT; fine gravel, trace organics	ML	21							
			22							
			23							
			24							
25			25							

Explanation

- Sample Advance / Recovery
- No Recovery
- Contact located approximately
- ATD — Groundwater level at time of drilling or date of measurement

ASSOCIATED ENVIRONMENTAL GROUP, LLC **LOG OF BOREHOLE**

PROJECT:	***Orion 12th Avenue - Seatlle***	**JOB #** ***14-142***	**BORING #** ***B-4*** **PAGE 1 OF 1**
Location:	*110 12th Ave, Seattle, Washington*	**Approximate Elevation:**	
Subcontractor / Driller: *ESN / Casey*		**Equipment / Drilling Method:** *Geoprobe / Direct Push*	
Date:	*October 21, 2014*	**Logged By:**	*B. Dilba*

Boring Depth (feet)	Soil Description	Unified Soil Symbol	Sample Depth	Sample Recovery	Sample Number	Time	Blows/Foot	PID Reading	Sheen	Observations
	Gravel surface underlain by; Light brown, moist, medium, dense GRAVELLY SAND; fine to medium grained sand, fine gravel, trace organics	SP	1–5				N/A			
5	at 9.5 feet; brick material		6–10							
10			11–15		B4-S1-14	13:00		0.1	Not observed	Slight odor
15	Greenish gray, saturated, dense SILTY SAND; fine grained	SM	16–20							
20	at 16.5 feet; moist		21–25							
25										

Explanation

- Sample Advance / Recovery
- No Recovery
- Contact located approximately
- ATD — Groundwater level at time of drilling or date of measurement

ASSOCIATED ENVIRONMENTAL GROUP, LLC **LOG OF BOREHOLE**

PROJECT: *12th Ave Parking Lot*	**JOB #** *14-142*	**BORING #** *B-5*	**PAGE 1 OF 1**
Location: *110 12th Ave, Seattle, Washington*	**Approximate Elevation:**		
Subcontractor / Driller: *ESN/Casey*	**Equipment / Drilling Method:**		*Geoprobe*
Date: *October 21, 2014*	**Logged By:** *B. Dilba*		

Boring Depth (feet)	Soil Description	Unified Soil Symbol	Sample Depth	Sample Recovery	Sample Number	Time	Blows/Foot	PID Reading	Sheen	Observations
	Gravel surface underlain by; Light gray, moist, medium dense GRAVELLY SAND; fine grained sand, fine gravel	SP	1–5			13:55	N/A			
5			6–8							
	Brown,moist, medium dense SILTY SAND; fine grained sand, with fine to medium gravel	SM	9–10							
10			11–14		B5-S1-11.5	1415		0.1		faint odor
	at 11.5 feet; greenish gray									
15			15–16							
	at 16 feet; a 0.5 foot layer of light gray GRAVELLY SAND, underlain by: Black moist, dense SILTY SAND, fine grained	SP SM	17–19						Not observed	
20	at 19 feet; greenish gray, saturated		20–25		B5-S2-18.5	14:25		0.0		

Explanation

- Sample Advance / Recovery
- No Recovery
- Contact located approximately
- ATD — Groundwater level at time of drilling or date of measurement

ASSOCIATED ENVIRONMENTAL GROUP, LLC **LOG OF BOREHOLE**

PROJECT:	***Orion 12th Avenue - Seattle***	**JOB #** ***14-142*** **BORING #** ***B-6***	**PAGE 1 OF 1**
Location:	*110 12th Ave, Seattle, Washington*	**Approximate Elevation:**	
Subcontractor / Driller: *ESN / Casey*		**Equipment / Drilling Method:** *Geoprobe / Direct Push*	
Date:	*October 21, 2014*	**Logged By:** *B. Dilba*	

Boring Depth (feet)	Soil Description	Unified Soil Symbol	Sample Depth	Sample Recovery	Sample Number	Time	Blows/Foot	PID Reading	Sheen	Observations
	Gravel surface underlain by; Brown, moist, medium dense GRAVELLY SAND; fine grained sand, fine gravel	SP	1–5				N/A			
5			5							
10			10							
			13		B6-S1-13.5	15:15		10		odor from 13.5 to 15.0
	Dark green, moist, dense SILTY SAND with GRAVEL; fine sand, fine gravel	SM	14							
15	at 14 feet; GREENISH GRAY, trace of fine gravel, trace of clay		15							
			18		B6-S2-18	15:25		2.8		Odor from 16.5 to 18.5
20	at 19.5 feet; wet, with fine gravel	▽	20						Not observed	
25			25							

Explanation

- Sample Advance / Recovery
- No Recovery
- Contact located approximately
- ATD — Groundwater level at time of drilling or date of measurement

APPENDIX B

Laboratory Analytical Reports

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
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March 3, 2020

Dan Whitman, Project Manager
Whitman Environmental Sciences
6812 16th Ave NE
Seattle, WA 98115

Dear Mr Whitman:

Included are the results from the testing of material submitted on February 24, 2020 from the 12th+Yesler WES1591, F&BI 002341 project. There are 23 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
WES0303R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on February 24, 2020 by Friedman & Bruya, Inc. from the Whitman Environmental Sciences 12th+Yesler WES1591, F&BI 002341 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Whitman Environmental Sciences
002341 -01	BN-18-GW
002341 -02	BN-19-GW
002341 -03	BN-20-GW
002341 -04	BN-21-GW
002341 -05	BN-22-GW
002341 -06	BN-23-GW
002341 -07	MW-9-GW
002341 -08	MW-14-GW
002341 -09	MW-8-GW
002341 -10	GEO-B8-GW

Several compounds in the 8260D laboratory control sample duplicate exceeded the acceptance criteria. The analytes were not detected in the samples, therefore the data were acceptable.

All other quality control requirements were acceptable.

Date of Report: 03/03/20
Date Received: 02/24/20
Project: 12th+Yesler WES1591, F&BI 002341
Date Extracted: 02/25/20
Date Analyzed: 02/26/20

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 51-134)
BN-18-GW 002341-01	<100	105
BN-19-GW 002341-02	<100	103
BN-20-GW 002341-03	<100	108
BN-21-GW 002341-04	<100	103
BN-22-GW 002341-05	<100	104
BN-23-GW 002341-06	<100	102
MW-9-GW 002341-07	3,900	ip
MW-14-GW 002341-08	<100	105
MW-8-GW 002341-09	640	112
GEO-B8-GW 002341-10	110	106
Method Blank 00-380 MB	<100	105

Date of Report: 03/03/20
Date Received: 02/24/20
Project: 12th+Yesler WES1591, F&BI 002341
Date Extracted: 02/25/20
Date Analyzed: 02/25/20

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 41-152)
BN-18-GW 002341-01	<50	<250	105
BN-19-GW 002341-02	<50	<250	103
BN-20-GW 002341-03	<50	<250	104
BN-21-GW 002341-04	<50	<250	118
BN-22-GW 002341-05	<50	<250	116
BN-23-GW 002341-06	<50	<250	106
MW-9-GW 002341-07	1,100 x	<250	114
MW-14-GW 002341-08	64 x	<250	120
MW-8-GW 002341-09	79 x	<250	104
GEO-B8-GW 002341-10	180 x	<250	102
Method Blank 00-470 MB	<50	<250	121

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	BN-18-GW	Client:	Whitman Environmental Sciences
Date Received:	02/24/20	Project:	12th+Yesler WES1591, F&BI 002341
Date Extracted:	02/25/20	Lab ID:	002341-01
Date Analyzed:	02/25/20	Data File:	022527.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	57	121
Toluene-d8	110	63	127
4-Bromofluorobenzene	101	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	BN-19-GW	Client:	Whitman Environmental Sciences
Date Received:	02/24/20	Project:	12th+Yesler WES1591, F&BI 002341
Date Extracted:	02/25/20	Lab ID:	002341-02
Date Analyzed:	02/25/20	Data File:	022528.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	57	121
Toluene-d8	110	63	127
4-Bromofluorobenzene	100	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	BN-20-GW	Client:	Whitman Environmental Sciences
Date Received:	02/24/20	Project:	12th+Yesler WES1591, F&BI 002341
Date Extracted:	02/25/20	Lab ID:	002341-03
Date Analyzed:	02/25/20	Data File:	022529.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	105	57	121
Toluene-d8	108	63	127
4-Bromofluorobenzene	98	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	BN-21-GW	Client:	Whitman Environmental Sciences
Date Received:	02/24/20	Project:	12th+Yesler WES1591, F&BI 002341
Date Extracted:	02/25/20	Lab ID:	002341-04
Date Analyzed:	02/25/20	Data File:	022530.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	57	121
Toluene-d8	108	63	127
4-Bromofluorobenzene	101	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	BN-22-GW	Client:	Whitman Environmental Sciences
Date Received:	02/24/20	Project:	12th+Yesler WES1591, F&BI 002341
Date Extracted:	02/25/20	Lab ID:	002341-05
Date Analyzed:	02/25/20	Data File:	022531.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	57	121
Toluene-d8	107	63	127
4-Bromofluorobenzene	101	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	BN-23-GW	Client:	Whitman Environmental Sciences
Date Received:	02/24/20	Project:	12th+Yesler WES1591, F&BI 002341
Date Extracted:	02/25/20	Lab ID:	002341-06
Date Analyzed:	02/25/20	Data File:	022532.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	57	121
Toluene-d8	106	63	127
4-Bromofluorobenzene	100	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-9-GW	Client:	Whitman Environmental Sciences
Date Received:	02/24/20	Project:	12th+Yesler WES1591, F&BI 002341
Date Extracted:	02/25/20	Lab ID:	002341-07
Date Analyzed:	02/25/20	Data File:	022533.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	99	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	43
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	6.7
Hexane	7.2	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	110
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	300 ve
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	1.7
Benzene	9.5	sec-Butylbenzene	22
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	3.7	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-9-GW	Client:	Whitman Environmental Sciences
Date Received:	02/24/20	Project:	12th+Yesler WES1591, F&BI 002341
Date Extracted:	02/25/20	Lab ID:	002341-07 1/10
Date Analyzed:	02/27/20	Data File:	022732.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	57	121
Toluene-d8	98	63	127
4-Bromofluorobenzene	101	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<10	1,3-Dichloropropane	<10
Chloromethane	<100	Tetrachloroethene	<10
Vinyl chloride	<2	Dibromochloromethane	<10
Bromomethane	<10	1,2-Dibromoethane (EDB)	<10
Chloroethane	<10	Chlorobenzene	<10
Trichlorofluoromethane	<10	Ethylbenzene	37
Acetone	<500	1,1,1,2-Tetrachloroethane	<10
1,1-Dichloroethene	<10	m,p-Xylene	<20
Hexane	<10	o-Xylene	<10
Methylene chloride	<50	Styrene	<10
Methyl t-butyl ether (MTBE)	<10	Isopropylbenzene	99
trans-1,2-Dichloroethene	<10	Bromoform	<10
1,1-Dichloroethane	<10	n-Propylbenzene	310
2,2-Dichloropropane	<10	Bromobenzene	<10
cis-1,2-Dichloroethene	<10	1,3,5-Trimethylbenzene	<10
Chloroform	<10	1,1,2,2-Tetrachloroethane	<10
2-Butanone (MEK)	<100	1,2,3-Trichloropropane	12
1,2-Dichloroethane (EDC)	<10	2-Chlorotoluene	<10
1,1,1-Trichloroethane	<10	4-Chlorotoluene	<10
1,1-Dichloropropene	<10	tert-Butylbenzene	<10
Carbon tetrachloride	<10	1,2,4-Trimethylbenzene	<10
Benzene	9.0	sec-Butylbenzene	22
Trichloroethene	<10	p-Isopropyltoluene	<10
1,2-Dichloropropane	<10	1,3-Dichlorobenzene	<10
Bromodichloromethane	<10	1,4-Dichlorobenzene	<10
Dibromomethane	<10	1,2-Dichlorobenzene	<10
4-Methyl-2-pentanone	<100	1,2-Dibromo-3-chloropropane	<100
cis-1,3-Dichloropropene	<10	1,2,4-Trichlorobenzene	<10
Toluene	<10	Hexachlorobutadiene	<10
trans-1,3-Dichloropropene	<10	Naphthalene	<10
1,1,2-Trichloroethane	<10	1,2,3-Trichlorobenzene	<10
2-Hexanone	<100		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-14-GW	Client:	Whitman Environmental Sciences
Date Received:	02/24/20	Project:	12th+Yesler WES1591, F&BI 002341
Date Extracted:	02/27/20	Lab ID:	002341-08
Date Analyzed:	02/27/20	Data File:	022731.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	96	63	127
4-Bromofluorobenzene	103	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	0.66	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	2.1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	1.8	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-8-GW	Client:	Whitman Environmental Sciences
Date Received:	02/24/20	Project:	12th+Yesler WES1591, F&BI 002341
Date Extracted:	02/25/20	Lab ID:	002341-09
Date Analyzed:	02/25/20	Data File:	022535.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	100	63	127
4-Bromofluorobenzene	100	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	7.5
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	58
Hexane	<1	o-Xylene	16
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	3.2
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	4.0
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	23
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	57
Benzene	0.64	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	GEO-B8-GW	Client:	Whitman Environmental Sciences
Date Received:	02/24/20	Project:	12th+Yesler WES1591, F&BI 002341
Date Extracted:	02/25/20	Lab ID:	002341-10
Date Analyzed:	02/25/20	Data File:	022536.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	57	121
Toluene-d8	98	63	127
4-Bromofluorobenzene	100	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	1.4
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	2.7
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th+Yesler WES1591, F&BI 002341
Date Extracted:	02/25/20	Lab ID:	00-424 mb2
Date Analyzed:	02/25/20	Data File:	022514.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	57	121
Toluene-d8	107	63	127
4-Bromofluorobenzene	94	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th+Yesler WES1591, F&BI 002341
Date Extracted:	02/27/20	Lab ID:	00-482 mb2
Date Analyzed:	02/27/20	Data File:	022714.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	57	121
Toluene-d8	92	63	127
4-Bromofluorobenzene	97	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Date of Report: 03/03/20
Date Received: 02/24/20
Project: 12th+Yesler WES1591, F&BI 002341

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 002262-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	104	69-134

Date of Report: 03/03/20
Date Received: 02/24/20
Project: 12th+Yesler WES1591, F&BI 002341

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	104	120	63-142	14

Date of Report: 03/03/20
Date Received: 02/24/20
Project: 12th+Yesler WES1591, F&BI 002341

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 002325-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	50	<1	122	10-172
Chloromethane	ug/L (ppb)	50	<10	123	25-166
Vinyl chloride	ug/L (ppb)	50	<0.2	128	36-166
Bromomethane	ug/L (ppb)	50	<1	138	47-169
Chloroethane	ug/L (ppb)	50	<1	126	46-160
Trichlorofluoromethane	ug/L (ppb)	50	<1	129	44-165
Acetone	ug/L (ppb)	250	<50	98	10-182
1,1-Dichloroethene	ug/L (ppb)	50	<1	127	60-136
Hexane	ug/L (ppb)	50	2.8	111	52-150
Methylene chloride	ug/L (ppb)	50	<5	120	67-132
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<1	126	74-127
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	120	72-129
1,1-Dichloroethane	ug/L (ppb)	50	<1	113	70-128
2,2-Dichloropropane	ug/L (ppb)	50	<1	131	36-154
cis-1,2-Dichloroethene	ug/L (ppb)	50	<1	121	71-127
Chloroform	ug/L (ppb)	50	<1	117	65-132
2-Butanone (MEK)	ug/L (ppb)	250	<10	90	10-129
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	97	48-149
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	125	60-146
1,1-Dichloropropene	ug/L (ppb)	50	<1	110	69-133
Carbon tetrachloride	ug/L (ppb)	50	<1	133	56-152
Benzene	ug/L (ppb)	50	25	118 b	76-125
Trichloroethene	ug/L (ppb)	50	<1	102	66-135
1,2-Dichloropropane	ug/L (ppb)	50	<1	109	78-125
Bromodichloromethane	ug/L (ppb)	50	<1	115	61-150
Dibromomethane	ug/L (ppb)	50	<1	107	66-141
4-Methyl-2-pentanone	ug/L (ppb)	250	<10	116	10-185
cis-1,3-Dichloropropene	ug/L (ppb)	50	<1	103	72-132
Toluene	ug/L (ppb)	50	45	111 b	76-122
trans-1,3-Dichloropropene	ug/L (ppb)	50	<1	91	76-130
1,1,2-Trichloroethane	ug/L (ppb)	50	<1	94	68-131
2-Hexanone	ug/L (ppb)	250	<10	86	10-185
1,3-Dichloropropane	ug/L (ppb)	50	<1	87	71-128
Tetrachloroethene	ug/L (ppb)	50	<1	96	10-226
Dibromochloromethane	ug/L (ppb)	50	<1	102	70-139
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	<1	91	69-134
Chlorobenzene	ug/L (ppb)	50	<1	94	77-122
Ethylbenzene	ug/L (ppb)	50	26	111 b	69-135
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	<1	120	73-137
m,p-Xylene	ug/L (ppb)	100	200	136 b	69-135
o-Xylene	ug/L (ppb)	50	54	126 b	60-140
Styrene	ug/L (ppb)	50	<1	104	71-133
Isopropylbenzene	ug/L (ppb)	50	<1	109	65-142
Bromoform	ug/L (ppb)	50	<1	100	65-142
n-Propylbenzene	ug/L (ppb)	50	1.4	97	58-144
Bromobenzene	ug/L (ppb)	50	<1	89	75-124
1,3,5-Trimethylbenzene	ug/L (ppb)	50	11	107 b	66-137
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	<1	94	51-154
1,2,3-Trichloropropane	ug/L (ppb)	50	<1	88	53-150
2-Chlorotoluene	ug/L (ppb)	50	<1	104	66-127
4-Chlorotoluene	ug/L (ppb)	50	<1	94	65-130
tert-Butylbenzene	ug/L (ppb)	50	<1	103	65-137
1,2,4-Trimethylbenzene	ug/L (ppb)	50	27	114 b	59-146
sec-Butylbenzene	ug/L (ppb)	50	<1	101	64-140
p-Isopropyltoluene	ug/L (ppb)	50	<1	102	65-141
1,3-Dichlorobenzene	ug/L (ppb)	50	<1	91	72-123
1,4-Dichlorobenzene	ug/L (ppb)	50	<1	89	69-126
1,2-Dichlorobenzene	ug/L (ppb)	50	<1	94	69-128
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	<10	108	32-164
1,2,4-Trichlorobenzene	ug/L (ppb)	50	<1	108	66-136
Hexachlorobutadiene	ug/L (ppb)	50	<1	103	60-143
Naphthalene	ug/L (ppb)	50	<1	113	44-164
1,2,3-Trichlorobenzene	ug/L (ppb)	50	<1	107	69-148

Date of Report: 03/03/20
Date Received: 02/24/20
Project: 12th+Yesler WES1591, F&BI 002341

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	50	116	104	25-158	11
Chloromethane	ug/L (ppb)	50	117	104	45-156	12
Vinyl chloride	ug/L (ppb)	50	120	107	50-154	11
Bromomethane	ug/L (ppb)	50	132	119	55-143	10
Chloroethane	ug/L (ppb)	50	120	110	58-146	9
Trichlorofluoromethane	ug/L (ppb)	250	126	118	50-150	7
Acetone	ug/L (ppb)	250	111	110	53-131	1
1,1-Dichloroethene	ug/L (ppb)	50	127	121	67-136	5
Hexane	ug/L (ppb)	50	109	121	57-137	10
Methylene chloride	ug/L (ppb)	50	129	123	39-148	5
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	123	132	64-147	7
trans-1,2-Dichloroethene	ug/L (ppb)	50	117	124	68-128	6
1,1-Dichloroethane	ug/L (ppb)	50	115	128 vo	79-121	11
2,2-Dichloropropane	ug/L (ppb)	50	121	133	55-143	9
cis-1,2-Dichloroethene	ug/L (ppb)	50	121	128 vo	80-123	6
Chloroform	ug/L (ppb)	50	119	132 vo	80-121	10
2-Butanone (MEK)	ug/L (ppb)	250	106	126	57-149	17
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	108	105	73-132	3
1,1,1-Trichloroethane	ug/L (ppb)	50	124	137 vo	81-125	10
1,1-Dichloropropene	ug/L (ppb)	50	115	125	77-129	8
Carbon tetrachloride	ug/L (ppb)	50	132	142	75-158	7
Benzene	ug/L (ppb)	50	112	111	69-134	1
Trichloroethene	ug/L (ppb)	50	111	108	79-113	3
1,2-Dichloropropane	ug/L (ppb)	50	118	114	77-123	3
Bromodichloromethane	ug/L (ppb)	50	129	125	81-133	3
Dibromomethane	ug/L (ppb)	50	120	117	82-125	3
4-Methyl-2-pentanone	ug/L (ppb)	250	124	122	65-138	2
cis-1,3-Dichloropropene	ug/L (ppb)	50	123	122	82-132	1
Toluene	ug/L (ppb)	50	100	97	72-122	3
trans-1,3-Dichloropropene	ug/L (ppb)	50	111	109	80-136	2
1,1,2-Trichloroethane	ug/L (ppb)	50	106	105	75-124	1
2-Hexanone	ug/L (ppb)	250	100	100	60-136	0
1,3-Dichloropropane	ug/L (ppb)	50	103	101	76-126	2
Tetrachloroethene	ug/L (ppb)	50	99	96	76-121	3
Dibromochloromethane	ug/L (ppb)	50	117	115	84-133	2
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	106	105	82-115	1
Chlorobenzene	ug/L (ppb)	50	100	98	83-114	2
Ethylbenzene	ug/L (ppb)	50	103	99	77-124	4
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	120	114	84-127	5
m,p-Xylene	ug/L (ppb)	100	102	99	81-112	3
o-Xylene	ug/L (ppb)	50	103	99	81-121	4
Styrene	ug/L (ppb)	50	106	103	84-119	3
Isopropylbenzene	ug/L (ppb)	50	107	101	80-117	6
Bromoform	ug/L (ppb)	50	115	113	74-136	2
n-Propylbenzene	ug/L (ppb)	50	100	98	74-126	2
Bromobenzene	ug/L (ppb)	50	98	97	80-121	1
1,3,5-Trimethylbenzene	ug/L (ppb)	50	102	98	78-123	4
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	105	102	66-126	3
1,2,3-Trichloropropane	ug/L (ppb)	50	98	97	67-124	1
2-Chlorotoluene	ug/L (ppb)	50	98	95	77-127	3
4-Chlorotoluene	ug/L (ppb)	50	98	96	78-128	2
tert-Butylbenzene	ug/L (ppb)	50	105	100	80-123	5
1,2,4-Trimethylbenzene	ug/L (ppb)	50	102	97	79-122	5
sec-Butylbenzene	ug/L (ppb)	50	102	97	80-116	5
p-Isopropyltoluene	ug/L (ppb)	50	102	97	81-123	5
1,3-Dichlorobenzene	ug/L (ppb)	50	97	93	83-113	4
1,4-Dichlorobenzene	ug/L (ppb)	50	95	92	83-107	3
1,2-Dichlorobenzene	ug/L (ppb)	50	98	93	84-112	5
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	110	104	57-141	6
1,2,4-Trichlorobenzene	ug/L (ppb)	50	103	94	72-130	9
Hexachlorobutadiene	ug/L (ppb)	50	100	91	53-141	9
Naphthalene	ug/L (ppb)	50	107	98	64-133	9
1,2,3-Trichlorobenzene	ug/L (ppb)	50	103	94	65-136	9

Date of Report: 03/03/20
Date Received: 02/24/20
Project: 12th+Yesler WES1591, F&BI 002341

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 002402-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	50	<1	110	10-172
Chloromethane	ug/L (ppb)	50	<10	104	25-166
Vinyl chloride	ug/L (ppb)	50	<0.2	103	36-166
Bromomethane	ug/L (ppb)	50	<1	110	47-169
Chloroethane	ug/L (ppb)	50	<1	101	46-160
Trichlorofluoromethane	ug/L (ppb)	50	<1	106	44-165
Acetone	ug/L (ppb)	250	<50	89	10-182
1,1-Dichloroethene	ug/L (ppb)	50	<1	106	60-136
Hexane	ug/L (ppb)	50	<1	94	52-150
Methylene chloride	ug/L (ppb)	50	<5	96	67-132
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<1	99	74-127
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	96	72-129
1,1-Dichloroethane	ug/L (ppb)	50	<1	94	70-128
2,2-Dichloropropane	ug/L (ppb)	50	<1	102	36-154
cis-1,2-Dichloroethene	ug/L (ppb)	50	<1	99	71-127
Chloroform	ug/L (ppb)	50	1.9	97	65-132
2-Butanone (MEK)	ug/L (ppb)	250	<10	82	10-129
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	84	48-149
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	101	60-146
1,1-Dichloropropene	ug/L (ppb)	50	<1	92	69-133
Carbon tetrachloride	ug/L (ppb)	50	<1	110	56-152
Benzene	ug/L (ppb)	50	<0.35	90	76-125
Trichloroethene	ug/L (ppb)	50	<1	88	66-135
1,2-Dichloropropane	ug/L (ppb)	50	<1	93	78-125
Bromodichloromethane	ug/L (ppb)	50	<1	100	61-150
Dibromomethane	ug/L (ppb)	50	<1	94	66-141
4-Methyl-2-pentanone	ug/L (ppb)	250	<10	96	10-185
cis-1,3-Dichloropropene	ug/L (ppb)	50	<1	96	72-132
Toluene	ug/L (ppb)	50	<1	103	76-122
trans-1,3-Dichloropropene	ug/L (ppb)	50	<1	108	76-130
1,1,2-Trichloroethane	ug/L (ppb)	50	<1	106	68-131
2-Hexanone	ug/L (ppb)	250	<10	96	10-185
1,3-Dichloropropane	ug/L (ppb)	50	<1	100	71-128
Tetrachloroethene	ug/L (ppb)	50	<1	104	10-226
Dibromochloromethane	ug/L (ppb)	50	<1	118	70-139
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	<1	105	69-134
Chlorobenzene	ug/L (ppb)	50	<1	101	77-122
Ethylbenzene	ug/L (ppb)	50	<1	104	69-135
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	<1	128	73-137
m,p-Xylene	ug/L (ppb)	100	<2	105	69-135
o-Xylene	ug/L (ppb)	50	<1	109	60-140
Styrene	ug/L (ppb)	50	<1	107	71-133
Isopropylbenzene	ug/L (ppb)	50	<1	113	65-142
Bromoform	ug/L (ppb)	50	<1	115	65-142
n-Propylbenzene	ug/L (ppb)	50	<1	108	58-144
Bromobenzene	ug/L (ppb)	50	<1	102	75-124
1,3,5-Trimethylbenzene	ug/L (ppb)	50	<1	111	66-137
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	<1	109	51-154
1,2,3-Trichloropropane	ug/L (ppb)	50	<1	101	53-150
2-Chlorotoluene	ug/L (ppb)	50	<1	106	66-127
4-Chlorotoluene	ug/L (ppb)	50	<1	103	65-130
tert-Butylbenzene	ug/L (ppb)	50	<1	114	65-137
1,2,4-Trimethylbenzene	ug/L (ppb)	50	<1	111	59-146
sec-Butylbenzene	ug/L (ppb)	50	<1	112	64-140
p-Isopropyltoluene	ug/L (ppb)	50	<1	112	65-141
1,3-Dichlorobenzene	ug/L (ppb)	50	<1	103	72-123
1,4-Dichlorobenzene	ug/L (ppb)	50	<1	100	69-126
1,2-Dichlorobenzene	ug/L (ppb)	50	<1	106	69-128
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	<10	116	32-164
1,2,4-Trichlorobenzene	ug/L (ppb)	50	<1	120	66-136
Hexachlorobutadiene	ug/L (ppb)	50	<1	117	60-143
Naphthalene	ug/L (ppb)	50	<1	121	44-164
1,2,3-Trichlorobenzene	ug/L (ppb)	50	<1	119	69-148

Date of Report: 03/03/20
Date Received: 02/24/20
Project: 12th+Yesler WES1591, F&BI 002341

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	50	96	99	25-158	3
Chloromethane	ug/L (ppb)	50	95	97	45-156	2
Vinyl chloride	ug/L (ppb)	50	95	97	50-154	2
Bromomethane	ug/L (ppb)	50	103	104	55-143	1
Chloroethane	ug/L (ppb)	50	92	92	58-146	0
Trichlorofluoromethane	ug/L (ppb)	250	101	95	50-150	6
Acetone	ug/L (ppb)	250	84	77	53-131	9
1,1-Dichloroethene	ug/L (ppb)	50	102	94	67-136	8
Hexane	ug/L (ppb)	50	90	86	57-137	5
Methylene chloride	ug/L (ppb)	50	96	92	39-148	4
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	96	94	64-147	2
trans-1,2-Dichloroethene	ug/L (ppb)	50	94	90	68-128	4
1,1-Dichloroethane	ug/L (ppb)	50	94	90	79-121	4
2,2-Dichloropropane	ug/L (ppb)	50	92	90	55-143	2
cis-1,2-Dichloroethene	ug/L (ppb)	50	96	94	80-123	2
Chloroform	ug/L (ppb)	50	97	93	80-121	4
2-Butanone (MEK)	ug/L (ppb)	250	89	85	57-149	5
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	89	85	73-132	5
1,1,1-Trichloroethane	ug/L (ppb)	50	100	96	81-125	4
1,1-Dichloropropene	ug/L (ppb)	50	95	91	77-129	4
Carbon tetrachloride	ug/L (ppb)	50	108	104	75-158	4
Benzene	ug/L (ppb)	50	93	88	69-134	6
Trichloroethene	ug/L (ppb)	50	91	87	79-113	4
1,2-Dichloropropane	ug/L (ppb)	50	97	94	77-123	3
Bromodichloromethane	ug/L (ppb)	50	107	102	81-133	5
Dibromomethane	ug/L (ppb)	50	99	96	82-125	3
4-Methyl-2-pentanone	ug/L (ppb)	250	104	100	65-138	4
cis-1,3-Dichloropropene	ug/L (ppb)	50	106	99	82-132	7
Toluene	ug/L (ppb)	50	104	99	72-122	5
trans-1,3-Dichloropropene	ug/L (ppb)	50	119	112	80-136	6
1,1,2-Trichloroethane	ug/L (ppb)	50	113	107	75-124	5
2-Hexanone	ug/L (ppb)	250	109	102	60-136	7
1,3-Dichloropropane	ug/L (ppb)	50	109	103	76-126	6
Tetrachloroethene	ug/L (ppb)	50	103	98	76-121	5
Dibromochloromethane	ug/L (ppb)	50	124	119	84-133	4
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	114	108	82-115	5
Chlorobenzene	ug/L (ppb)	50	105	99	83-114	6
Ethylbenzene	ug/L (ppb)	50	105	101	77-124	4
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	122	118	84-127	3
m,p-Xylene	ug/L (ppb)	100	105	101	81-112	4
o-Xylene	ug/L (ppb)	50	104	101	81-121	3
Styrene	ug/L (ppb)	50	111	106	84-119	5
Isopropylbenzene	ug/L (ppb)	50	109	104	80-117	5
Bromoform	ug/L (ppb)	50	122	116	74-136	5
n-Propylbenzene	ug/L (ppb)	50	109	104	74-126	5
Bromobenzene	ug/L (ppb)	50	108	103	80-121	5
1,3,5-Trimethylbenzene	ug/L (ppb)	50	110	105	78-123	5
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	116	109	66-126	6
1,2,3-Trichloropropane	ug/L (ppb)	50	110	102	67-124	8
2-Chlorotoluene	ug/L (ppb)	50	108	102	77-127	6
4-Chlorotoluene	ug/L (ppb)	50	107	102	78-128	5
tert-Butylbenzene	ug/L (ppb)	50	111	108	80-123	3
1,2,4-Trimethylbenzene	ug/L (ppb)	50	110	105	79-122	5
sec-Butylbenzene	ug/L (ppb)	50	108	105	80-116	3
p-Isopropyltoluene	ug/L (ppb)	50	109	105	81-123	4
1,3-Dichlorobenzene	ug/L (ppb)	50	106	101	83-113	5
1,4-Dichlorobenzene	ug/L (ppb)	50	103	99	83-107	4
1,2-Dichlorobenzene	ug/L (ppb)	50	103	101	84-112	2
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	117	113	57-141	3
1,2,4-Trichlorobenzene	ug/L (ppb)	50	106	107	72-130	1
Hexachlorobutadiene	ug/L (ppb)	50	103	103	53-141	0
Naphthalene	ug/L (ppb)	50	110	109	64-133	1
1,2,3-Trichlorobenzene	ug/L (ppb)	50	106	107	65-136	1

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

002341

SAMPLE CHAIN OF CUSTODY

ME 02/24/20

Report To: [illegible signature]
Company: Whitman Env. Sciences
Address: 6812 15th Ave NE
City, State, ZIP: Seattle, WA 98115
Phone:
Email: [illegible]@yahoo.com

SAMPLERS (signature):

PROJECT NAME: RTH + Yesler

PO #: [illegible] 1591

REMARKS:

INVOICE TO:

Project specific RLs? - Yes / No

Page # ____ of UW3

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

Doy

SAMPLE DISPOSAL
- ☐ Archive samples
- ☐ Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082					Notes
BU-18-GW	01 A-D	2-24-20	8:45	Water	4	X	X			X							
BU-19-GW	02	↓	9:15	↓	↓	X	X			X							
BU-20-GW	03	↓	9:00	↓	↓	↓	↓			↓							
BU-21-GW	04	↓		↓	↓	↓	↓			↓							
BU-22-GW	05	↓		↓	↓	↓	↓			↓							
BU-23-GW	06	↓	↓	↓	↓	↓	↓			↓							
MW-~~10~~ 9-GW (per DW 2/26/20 ME)	07	↓	12:50	↓	↓	↓	↓			↓							
MW-14-GW	08	↓		↓	↓	↓	↓			↓							
MW-8-GW	09	↓		↓	↓	↓	↓			↓							
GEO-B8-GW	10	↓		↓	↓	↓	↓			↓							

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: [signature]		OES	2-24-20	4:10
Received by: [signature]	Eric [illegible]	FeB	2/24/20	1610
Relinquished by:				
Received by:				

Samples received at 12 °C

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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March 9, 2020

Dan Whitman, Project Manager
Whitman Environmental Sciences
6812 16th Ave NE
Seattle, WA 98115

Dear Mr Whitman:

Included are the results from the testing of material submitted on February 27, 2020 from the 12th + Yesler WES-1591, F&BI 002435 project. There are 25 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
WES0309R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on February 27, 2020 by Friedman & Bruya, Inc. from the Whitman Environmental Sciences 12th + Yesler WES-1591, F&BI 002435 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Whitman Environmental Sciences
002435 -01	BN-18-6.5'
002435 -02	BN-19-1.5'
002435 -03	BN-20-7'
002435 -04	BN-21-7'
002435 -05	BN-22-8'
002435 -06	BN-23-3'
002435 -07	BN-23-8'

A 6020B internal standard failed the acceptance criteria for the samples. The samples was diluted and reanalyzed with acceptable results. Both data sets were reported.

2-Butanone in the 8260D laboratory control sample failed the acceptance criteria. The data were flagged accordingly.

All other quality control requirements were acceptable.

Date of Report: 03/09/20
Date Received: 02/27/20
Project: 12th + Yesler WES-1591, F&BI 002435
Date Extracted: 03/03/20
Date Analyzed: 03/04/20

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
BN-18-6.5' 002435-01	<5	92
BN-19-1.5' 002435-02	<5	91
BN-20-7' 002435-03	<5	97
BN-21-7' 002435-04	<5	92
BN-22-8' 002435-05	<5	91
BN-23-3' 002435-06	<5	91
Method Blank 00-395 MB	<5	97

Analysis For Total Metals By EPA Method 6020B

Client ID:	BN-18-6.5'	Client:	Whitman Environmental Sciences
Date Received:	02/27/20	Project:	12th + Yesler WES-1591
Date Extracted:	02/28/20	Lab ID:	002435-01
Date Analyzed:	02/28/20	Data File:	002435-01.123
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	12.0
Cadmium	<1
Chromium	28.9 J
Lead	2.80
Mercury	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	BN-18-6.5'	Client:	Whitman Environmental Sciences
Date Received:	02/27/20	Project:	12th + Yesler WES-1591
Date Extracted:	02/28/20	Lab ID:	002435-01 x5
Date Analyzed:	03/03/20	Data File:	002435-01 x5.051
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Chromium	34.7

Analysis For Total Metals By EPA Method 6020B

Client ID:	BN-20-7'	Client:	Whitman Environmental Sciences
Date Received:	02/27/20	Project:	12th + Yesler WES-1591
Date Extracted:	02/28/20	Lab ID:	002435-03
Date Analyzed:	02/28/20	Data File:	002435-03.124
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	14.9
Cadmium	<1
Chromium	27.0 J
Lead	2.60
Mercury	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	BN-20-7'	Client:	Whitman Environmental Sciences
Date Received:	02/27/20	Project:	12th + Yesler WES-1591
Date Extracted:	02/28/20	Lab ID:	002435-03 x5
Date Analyzed:	03/03/20	Data File:	002435-03 x5.052
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Chromium	29.5

Analysis For Total Metals By EPA Method 6020B

Client ID:	BN-21-7'	Client:	Whitman Environmental Sciences
Date Received:	02/27/20	Project:	12th + Yesler WES-1591
Date Extracted:	02/28/20	Lab ID:	002435-04
Date Analyzed:	02/28/20	Data File:	002435-04.133
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	16.0
Cadmium	<1
Chromium	29.3 J
Lead	3.37
Mercury	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	BN-21-7'	Client:	Whitman Environmental Sciences
Date Received:	02/27/20	Project:	12th + Yesler WES-1591
Date Extracted:	02/28/20	Lab ID:	002435-04 x5
Date Analyzed:	03/03/20	Data File:	002435-04 x5.053
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Chromium	33.8

Analysis For Total Metals By EPA Method 6020B

Client ID:	BN-22-8'	Client:	Whitman Environmental Sciences
Date Received:	02/27/20	Project:	12th + Yesler WES-1591
Date Extracted:	02/28/20	Lab ID:	002435-05
Date Analyzed:	02/28/20	Data File:	002435-05.134
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	8.92
Cadmium	<1
Chromium	29.8 J
Lead	3.03
Mercury	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	BN-22-8'	Client:	Whitman Environmental Sciences
Date Received:	02/27/20	Project:	12th + Yesler WES-1591
Date Extracted:	02/28/20	Lab ID:	002435-05 x5
Date Analyzed:	03/03/20	Data File:	002435-05 x5.054
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Chromium	33.6

Analysis For Total Metals By EPA Method 6020B

Client ID:	BN-23-8'	Client:	Whitman Environmental Sciences
Date Received:	02/27/20	Project:	12th + Yesler WES-1591
Date Extracted:	02/28/20	Lab ID:	002435-07
Date Analyzed:	02/28/20	Data File:	002435-07.135
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	17.7
Cadmium	<1
Chromium	27.8 J
Lead	3.40
Mercury	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	BN-23-8'	Client:	Whitman Environmental Sciences
Date Received:	02/27/20	Project:	12th + Yesler WES-1591
Date Extracted:	02/28/20	Lab ID:	002435-07 x5
Date Analyzed:	03/03/20	Data File:	002435-07 x5.055
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Chromium	31.9

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	NA	Project:	12th + Yesler WES-1591
Date Extracted:	02/28/20	Lab ID:	I0-120 mb2
Date Analyzed:	02/28/20	Data File:	I0-120 mb2.115
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Cadmium	<1
Chromium	<1
Lead	<1
Mercury	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	BN-18-6.5'	Client:	Whitman Environmental Sciences
Date Received:	02/27/20	Project:	12th + Yesler WES-1591
Date Extracted:	02/28/20	Lab ID:	002435-01
Date Analyzed:	02/28/20	Data File:	022845.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	62	145
Toluene-d8	97	55	145
4-Bromofluorobenzene	101	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	BN-19-1.5'	Client:	Whitman Environmental Sciences
Date Received:	02/27/20	Project:	12th + Yesler WES-1591
Date Extracted:	02/28/20	Lab ID:	002435-02
Date Analyzed:	02/28/20	Data File:	022846.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	62	145
Toluene-d8	95	55	145
4-Bromofluorobenzene	100	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	BN-20-7'	Client:	Whitman Environmental Sciences
Date Received:	02/27/20	Project:	12th + Yesler WES-1591
Date Extracted:	02/28/20	Lab ID:	002435-03
Date Analyzed:	02/28/20	Data File:	022847.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	62	145
Toluene-d8	96	55	145
4-Bromofluorobenzene	99	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	BN-21-7'	Client:	Whitman Environmental Sciences
Date Received:	02/27/20	Project:	12th + Yesler WES-1591
Date Extracted:	02/28/20	Lab ID:	002435-04
Date Analyzed:	03/03/20	Data File:	030320.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	145
Toluene-d8	100	55	145
4-Bromofluorobenzene	99	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	BN-22-8'	Client:	Whitman Environmental Sciences
Date Received:	02/27/20	Project:	12th + Yesler WES-1591
Date Extracted:	02/28/20	Lab ID:	002435-05
Date Analyzed:	03/03/20	Data File:	030321.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	62	145
Toluene-d8	100	55	145
4-Bromofluorobenzene	101	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	BN-23-3'	Client:	Whitman Environmental Sciences
Date Received:	02/27/20	Project:	12th + Yesler WES-1591
Date Extracted:	02/28/20	Lab ID:	002435-06
Date Analyzed:	03/03/20	Data File:	030322.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	145
Toluene-d8	100	55	145
4-Bromofluorobenzene	101	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th + Yesler WES-1591
Date Extracted:	02/28/20	Lab ID:	00-488 mb
Date Analyzed:	02/28/20	Data File:	022835a.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	145
Toluene-d8	95	55	145
4-Bromofluorobenzene	99	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Date of Report: 03/09/20
Date Received: 02/27/20
Project: 12th + Yesler WES-1591, F&BI 002435

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 003014-01 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet Wt)	Duplicate Result (Wet Wt)	RPD (Limit 20)
Gasoline	mg/kg (ppm)	<5	<5	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	mg/kg (ppm)	20	100	61-153

Date of Report: 03/09/20
Date Received: 02/27/20
Project: 12th + Yesler WES-1591, F&BI 002435

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 002019-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	1.60	82	81	75-125	1
Cadmium	mg/kg (ppm)	10	<1	95	95	75-125	0
Chromium	mg/kg (ppm)	50	17.0	81	80	75-125	1
Lead	mg/kg (ppm)	50	1.66	97	97	75-125	0
Mercury	mg/kg (ppm	5	<1	92	96	75-125	4

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	89	80-120
Cadmium	mg/kg (ppm)	10	102	80-120
Chromium	mg/kg (ppm)	50	97	80-120
Lead	mg/kg (ppm)	50	109	80-120
Mercury	mg/kg (ppm)	5	95	80-120

Date of Report: 03/09/20
Date Received: 02/27/20
Project: 12th + Yesler WES-1591, F&BI 002435

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 002435-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	2.5	<0.5	15	18	10-142	18
Chloromethane	mg/kg (ppm)	2.5	<0.5	44	51	10-126	15
Vinyl chloride	mg/kg (ppm)	2.5	<0.05	45	52	10-138	14
Bromomethane	mg/kg (ppm)	2.5	<0.5	55	62	10-163	12
Chloroethane	mg/kg (ppm)	2.5	<0.5	52	60	10-176	14
Trichlorofluoromethane	mg/kg (ppm)	2.5	<0.5	50	57	10-176	13
Acetone	mg/kg (ppm)	12.5	<0.5	73	84	10-163	14
1,1-Dichloroethene	mg/kg (ppm)	2.5	<0.05	63	67	10-160	6
Hexane	mg/kg (ppm)	2.5	<0.25	47	50	10-137	6
Methylene chloride	mg/kg (ppm)	2.5	<0.5	69	76	10-156	10
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	<0.05	73	81	21-145	10
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	69	73	14-137	6
1,1-Dichloroethane	mg/kg (ppm)	2.5	<0.05	72	78	19-140	8
2,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	58	64	10-158	10
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	78	83	25-135	6
Chloroform	mg/kg (ppm)	2.5	<0.05	78	83	21-145	6
2-Butanone (MEK)	mg/kg (ppm)	12.5	<0.5	81	90	19-147	11
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	76	80	12-160	5
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	<0.05	72	81	10-156	12
1,1-Dichloropropene	mg/kg (ppm)	2.5	<0.05	76	80	17-140	5
Carbon tetrachloride	mg/kg (ppm)	2.5	<0.05	73	83	9-164	13
Benzene	mg/kg (ppm)	2.5	<0.03	76	81	29-129	6
Trichloroethene	mg/kg (ppm)	2.5	<0.02	82	88	21-139	7
1,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	84	90	30-135	7
Bromodichloromethane	mg/kg (ppm)	2.5	<0.05	88	95	23-155	8
Dibromomethane	mg/kg (ppm)	2.5	<0.05	87	93	23-145	7
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	<0.5	92	102	24-155	10
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	91	97	28-144	6
Toluene	mg/kg (ppm)	2.5	<0.05	87	92	35-130	6
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	99	105	26-149	6
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	<0.05	98	106	10-205	8
2-Hexanone	mg/kg (ppm)	12.5	<0.5	98	107	15-166	9
1,3-Dichloropropane	mg/kg (ppm)	2.5	<0.05	96	102	31-137	6
Tetrachloroethene	mg/kg (ppm)	2.5	<0.025	86	90	20-133	5
Dibromochloromethane	mg/kg (ppm)	2.5	<0.05	96	104	28-150	8
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	<0.05	98	104	28-142	6
Chlorobenzene	mg/kg (ppm)	2.5	<0.05	89	94	32-129	5
Ethylbenzene	mg/kg (ppm)	2.5	<0.05	87	93	32-137	7
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	91	101	31-143	10
m,p-Xylene	mg/kg (ppm)	5	<0.1	88	93	34-136	6
o-Xylene	mg/kg (ppm)	2.5	<0.05	86	93	33-134	8
Styrene	mg/kg (ppm)	2.5	<0.05	94	99	35-137	5
Isopropylbenzene	mg/kg (ppm)	2.5	<0.05	87	95	31-142	9
Bromoform	mg/kg (ppm)	2.5	<0.05	94	102	21-156	8
n-Propylbenzene	mg/kg (ppm)	2.5	<0.05	93	98	23-146	5
Bromobenzene	mg/kg (ppm)	2.5	<0.05	95	101	34-130	6
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	92	99	18-149	7
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	92	97	28-140	5
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	<0.05	95	103	25-144	8
2-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	90	97	31-134	7
4-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	93	98	31-136	5
tert-Butylbenzene	mg/kg (ppm)	2.5	<0.05	94	103	30-137	9
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	92	100	10-182	8
sec-Butylbenzene	mg/kg (ppm)	2.5	<0.05	90	99	23-145	10
p-Isopropyltoluene	mg/kg (ppm)	2.5	<0.05	90	99	21-149	10
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	90	97	30-131	7
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	89	96	29-129	8
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	88	95	31-132	8
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	<0.5	88	98	11-161	11
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	87	99	22-142	13
Hexachlorobutadiene	mg/kg (ppm)	2.5	<0.25	86	98	10-142	13
Naphthalene	mg/kg (ppm)	2.5	<0.05	89	103	14-157	15
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	87	99	20-144	13

Date of Report: 03/09/20
Date Received: 02/27/20
Project: 12th + Yesler WES-1591, F&BI 002435

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	2.5	42	10-146
Chloromethane	mg/kg (ppm)	2.5	57	27-133
Vinyl chloride	mg/kg (ppm)	2.5	62	22-139
Bromomethane	mg/kg (ppm)	2.5	65	38-114
Chloroethane	mg/kg (ppm)	2.5	65	9-163
Trichlorofluoromethane	mg/kg (ppm)	2.5	70	10-196
Acetone	mg/kg (ppm)	12.5	83	52-141
1,1-Dichloroethene	mg/kg (ppm)	2.5	75	47-128
Hexane	mg/kg (ppm)	2.5	71	43-142
Methylene chloride	mg/kg (ppm)	2.5	77	42-132
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	78	60-123
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	75	67-129
1,1-Dichloroethane	mg/kg (ppm)	2.5	75	68-115
2,2-Dichloropropane	mg/kg (ppm)	2.5	75	52-170
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	78	72-127
Chloroform	mg/kg (ppm)	2.5	76	66-120
2-Butanone (MEK)	mg/kg (ppm)	12.5	71 vo	72-127
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	68	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	74	62-131
1,1-Dichloropropene	mg/kg (ppm)	2.5	73	69-128
Carbon tetrachloride	mg/kg (ppm)	2.5	78	60-139
Benzene	mg/kg (ppm)	2.5	71	68-114
Trichloroethene	mg/kg (ppm)	2.5	71	64-117
1,2-Dichloropropane	mg/kg (ppm)	2.5	73	72-127
Bromodichloromethane	mg/kg (ppm)	2.5	78	72-130
Dibromomethane	mg/kg (ppm)	2.5	76	70-120
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	81	45-145
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	78	75-136
Toluene	mg/kg (ppm)	2.5	80	66-126
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	82	72-132
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	84	75-113
2-Hexanone	mg/kg (ppm)	12.5	84	33-152
1,3-Dichloropropane	mg/kg (ppm)	2.5	81	72-130
Tetrachloroethene	mg/kg (ppm)	2.5	80	72-114
Dibromochloromethane	mg/kg (ppm)	2.5	84	74-125
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	83	74-132
Chlorobenzene	mg/kg (ppm)	2.5	80	76-111
Ethylbenzene	mg/kg (ppm)	2.5	81	64-123
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	90	69-135
m,p-Xylene	mg/kg (ppm)	5	82	78-122
o-Xylene	mg/kg (ppm)	2.5	82	77-124
Styrene	mg/kg (ppm)	2.5	83	74-126
Isopropylbenzene	mg/kg (ppm)	2.5	84	76-127
Bromoform	mg/kg (ppm)	2.5	81	56-132
n-Propylbenzene	mg/kg (ppm)	2.5	87	74-124
Bromobenzene	mg/kg (ppm)	2.5	85	72-122
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	88	76-126
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	88	56-143
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	84	61-137
2-Chlorotoluene	mg/kg (ppm)	2.5	84	74-121
4-Chlorotoluene	mg/kg (ppm)	2.5	84	75-122
tert-Butylbenzene	mg/kg (ppm)	2.5	88	73-130
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	87	76-125
sec-Butylbenzene	mg/kg (ppm)	2.5	87	71-130
p-Isopropyltoluene	mg/kg (ppm)	2.5	88	70-132
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	82	75-121
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	81	74-117
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	83	76-121
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	86	58-138
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	90	64-135
Hexachlorobutadiene	mg/kg (ppm)	2.5	92	50-153
Naphthalene	mg/kg (ppm)	2.5	88	63-140
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	89	63-138

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

002435

SAMPLE CHAIN OF CUSTODY

ME 02/27/20 VS5/BT3

Page # _____ of _____

Report To [redacted]

Company [redacted] ENV. SCIENCES

Address [redacted] 16TH AVE NE

City, State, ZIP [redacted] 98115

Phone _____ Email [redacted]

SAMPLERS (*signature*) [redacted]

PROJECT NAME: 12TH + YESLER

PO #: 065 - 1591

REMARKS: Project specific RLs? - Yes / No

INVOICE TO

TURNAROUND TIME
- [x] Standard turnaround
- [ ] RUSH _____
- Rush charges authorized by: _____

SAMPLE DISPOSAL
- [ ] Archive samples
- [ ] Other _____
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type (PP) 2/27	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	MTCA 5 Metals				Notes
BW-18-6.5'	01 A-E			SOIL	5		X			X			X				
BW-19-1.5'	02 A-D				4		X			X							
BW-20-7'	03 A-E				5		X			X			X				
BW-21-7'	04				5		X			X			X				
BW-22-8'	05				5		X			X			X				
BW-23-3'	06 A-D				4		X			X							
BW-23-8'	07 A-E				5								X				
														Samples received at 17 °C			

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: [redacted]	[redacted]	[redacted]	2-27-20	4:15
Received by: [redacted]	Liz Webster-Bruya	F?B1	2/27/20	1615
Relinquished by:				
Received by:				

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

3012 16th Avenue West
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www.friedmanandbruya.com

March 6, 2020

Dan Whitman, Project Manager
Whitman Environmental Sciences
6812 16th Ave NE
Seattle, WA 98115

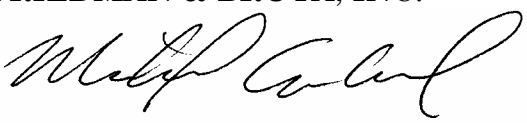
Dear Mr Whitman:

Included are the results from the testing of material submitted on February 27, 2020 from the 12th + Yesler WES-1591, F&BI 002438 project. There are 11 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
WES0306R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on February 27, 2020 by Friedman & Bruya, Inc. from the Whitman Environmental Sciences 12th + Yesler WES-1591, F&BI 002438 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Whitman Environmental Sciences
002438 -01	MW-10-GW
002438 -02	MW-1S-GW

All quality control requirements were acceptable.

Date of Report: 03/06/20
Date Received: 02/27/20
Project: 12th + Yesler WES-1591, F&BI 002438
Date Extracted: 03/05/20
Date Analyzed: 03/05/20

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 51-134)
MW-10-GW 002438-01	<100	93
MW-1S-GW 002438-02	<100	92
Method Blank 00-394 MB	<100	98

Date of Report: 03/06/20
Date Received: 02/27/20
Project: 12th + Yesler WES-1591, F&BI 002438
Date Extracted: 02/28/20
Date Analyzed: 02/28/20

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 47-140)
MW-10-GW 002438-01	66 x	<250	111
MW-1S-GW 002438-02	100 x	<250	120
Method Blank 00-509 MB	<50	<250	122

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-10-GW	Client:	Whitman Environmental Sciences
Date Received:	02/27/20	Project:	12th + Yesler WES-1591
Date Extracted:	03/02/20	Lab ID:	002438-01
Date Analyzed:	03/03/20	Data File:	030254.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	57	121
Toluene-d8	100	63	127
4-Bromofluorobenzene	100	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-1S-GW	Client:	Whitman Environmental Sciences
Date Received:	02/27/20	Project:	12th + Yesler WES-1591
Date Extracted:	03/02/20	Lab ID:	002438-02
Date Analyzed:	03/03/20	Data File:	030255.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	57	121
Toluene-d8	99	63	127
4-Bromofluorobenzene	103	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th + Yesler WES-1591
Date Extracted:	03/02/20	Lab ID:	00-489 mb
Date Analyzed:	03/02/20	Data File:	030212.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	57	121
Toluene-d8	97	63	127
4-Bromofluorobenzene	100	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Date of Report: 03/06/20
Date Received: 02/27/20
Project: 12th + Yesler WES-1591, F&BI 002438

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 002413-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	108	69-134

Date of Report: 03/06/20
Date Received: 02/27/20
Project: 12th + Yesler WES-1591, F&BI 002438

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	104	116	61-133	11

Date of Report: 03/06/20
Date Received: 02/27/20
Project: 12th + Yesler WES-1591, F&BI 002438

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 002464-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	50	<1	64	10-172
Chloromethane	ug/L (ppb)	50	<10	74	25-166
Vinyl chloride	ug/L (ppb)	50	<0.2	79	36-166
Bromomethane	ug/L (ppb)	50	<1	90	47-169
Chloroethane	ug/L (ppb)	50	<1	85	46-160
Trichlorofluoromethane	ug/L (ppb)	50	<1	90	44-165
Acetone	ug/L (ppb)	250	<50	66	10-182
1,1-Dichloroethene	ug/L (ppb)	50	<1	89	60-136
Hexane	ug/L (ppb)	50	<1	86	52-150
Methylene chloride	ug/L (ppb)	50	<5	87	67-132
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<1	92	74-127
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	90	72-129
1,1-Dichloroethane	ug/L (ppb)	50	<1	89	70-128
2,2-Dichloropropane	ug/L (ppb)	50	<1	97	36-154
cis-1,2-Dichloroethene	ug/L (ppb)	50	<1	93	71-127
Chloroform	ug/L (ppb)	50	<1	92	65-132
2-Butanone (MEK)	ug/L (ppb)	250	<10	76	10-129
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	82	48-149
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	94	60-146
1,1-Dichloropropene	ug/L (ppb)	50	<1	89	69-133
Carbon tetrachloride	ug/L (ppb)	50	<1	101	56-152
Benzene	ug/L (ppb)	50	<0.35	87	76-125
Trichloroethene	ug/L (ppb)	50	<1	86	66-135
1,2-Dichloropropane	ug/L (ppb)	50	<1	91	78-125
Bromodichloromethane	ug/L (ppb)	50	<1	100	61-150
Dibromomethane	ug/L (ppb)	50	<1	90	66-141
4-Methyl-2-pentanone	ug/L (ppb)	250	<10	98	10-185
cis-1,3-Dichloropropene	ug/L (ppb)	50	<1	98	72-132
Toluene	ug/L (ppb)	50	2.0	97	76-122
trans-1,3-Dichloropropene	ug/L (ppb)	50	<1	108	76-130
1,1,2-Trichloroethane	ug/L (ppb)	50	<1	102	68-131
2-Hexanone	ug/L (ppb)	250	<10	96	10-185
1,3-Dichloropropane	ug/L (ppb)	50	<1	97	71-128
Tetrachloroethene	ug/L (ppb)	50	<1	95	10-226
Dibromochloromethane	ug/L (ppb)	50	<1	113	70-139
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	<1	101	69-134
Chlorobenzene	ug/L (ppb)	50	<1	96	77-122
Ethylbenzene	ug/L (ppb)	50	<1	98	69-135
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	<1	112	73-137
m,p-Xylene	ug/L (ppb)	100	2.2	99	69-135
o-Xylene	ug/L (ppb)	50	1.3	99	60-140
Styrene	ug/L (ppb)	50	<1	103	71-133
Isopropylbenzene	ug/L (ppb)	50	<1	101	65-142
Bromoform	ug/L (ppb)	50	<1	110	65-142
n-Propylbenzene	ug/L (ppb)	50	<1	101	58-144
Bromobenzene	ug/L (ppb)	50	<1	99	75-124
1,3,5-Trimethylbenzene	ug/L (ppb)	50	<1	101	66-137
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	<1	102	51-154
1,2,3-Trichloropropane	ug/L (ppb)	50	<1	95	53-150
2-Chlorotoluene	ug/L (ppb)	50	<1	99	66-127
4-Chlorotoluene	ug/L (ppb)	50	<1	99	65-130
tert-Butylbenzene	ug/L (ppb)	50	<1	104	65-137
1,2,4-Trimethylbenzene	ug/L (ppb)	50	1.9	101	59-146
sec-Butylbenzene	ug/L (ppb)	50	<1	101	64-140
p-Isopropyltoluene	ug/L (ppb)	50	2.6	102	65-141
1,3-Dichlorobenzene	ug/L (ppb)	50	<1	97	72-123
1,4-Dichlorobenzene	ug/L (ppb)	50	<1	95	69-126
1,2-Dichlorobenzene	ug/L (ppb)	50	<1	95	69-128
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	<10	105	32-164
1,2,4-Trichlorobenzene	ug/L (ppb)	50	<1	100	66-136
Hexachlorobutadiene	ug/L (ppb)	50	<1	95	60-143
Naphthalene	ug/L (ppb)	50	1.3	103	44-164
1,2,3-Trichlorobenzene	ug/L (ppb)	50	<1	98	69-148

Date of Report: 03/06/20
Date Received: 02/27/20
Project: 12th + Yesler WES-1591, F&BI 002438

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	50	90	79	25-158	13
Chloromethane	ug/L (ppb)	50	89	83	45-156	7
Vinyl chloride	ug/L (ppb)	50	92	84	50-154	9
Bromomethane	ug/L (ppb)	50	99	92	55-143	7
Chloroethane	ug/L (ppb)	50	90	86	58-146	5
Trichlorofluoromethane	ug/L (ppb)	250	94	91	50-150	3
Acetone	ug/L (ppb)	250	79	78	53-131	1
1,1-Dichloroethene	ug/L (ppb)	50	93	91	67-136	2
Hexane	ug/L (ppb)	50	90	93	57-137	3
Methylene chloride	ug/L (ppb)	50	89	90	39-148	1
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	95	92	64-147	3
trans-1,2-Dichloroethene	ug/L (ppb)	50	88	89	68-128	1
1,1-Dichloroethane	ug/L (ppb)	50	90	90	79-121	0
2,2-Dichloropropane	ug/L (ppb)	50	98	96	55-143	2
cis-1,2-Dichloroethene	ug/L (ppb)	50	92	94	80-123	2
Chloroform	ug/L (ppb)	50	93	93	80-121	0
2-Butanone (MEK)	ug/L (ppb)	250	92	92	57-149	0
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	86	87	73-132	1
1,1,1-Trichloroethane	ug/L (ppb)	50	95	96	81-125	1
1,1-Dichloropropene	ug/L (ppb)	50	92	93	77-129	1
Carbon tetrachloride	ug/L (ppb)	50	103	105	75-158	2
Benzene	ug/L (ppb)	50	90	91	69-134	1
Trichloroethene	ug/L (ppb)	50	89	90	79-113	1
1,2-Dichloropropane	ug/L (ppb)	50	96	98	77-123	2
Bromodichloromethane	ug/L (ppb)	50	105	106	81-133	1
Dibromomethane	ug/L (ppb)	50	99	98	82-125	1
4-Methyl-2-pentanone	ug/L (ppb)	250	106	106	65-138	0
cis-1,3-Dichloropropene	ug/L (ppb)	50	107	110	82-132	3
Toluene	ug/L (ppb)	50	98	101	72-122	3
trans-1,3-Dichloropropene	ug/L (ppb)	50	116	119	80-136	3
1,1,2-Trichloroethane	ug/L (ppb)	50	108	110	75-124	2
2-Hexanone	ug/L (ppb)	250	109	112	60-136	3
1,3-Dichloropropane	ug/L (ppb)	50	104	107	76-126	3
Tetrachloroethene	ug/L (ppb)	50	98	100	76-121	2
Dibromochloromethane	ug/L (ppb)	50	120	121	84-133	1
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	109	111	82-115	2
Chlorobenzene	ug/L (ppb)	50	99	100	83-114	1
Ethylbenzene	ug/L (ppb)	50	100	102	77-124	2
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	115	114	84-127	1
m,p-Xylene	ug/L (ppb)	100	100	102	81-112	2
o-Xylene	ug/L (ppb)	50	100	99	81-121	1
Styrene	ug/L (ppb)	50	105	106	84-119	1
Isopropylbenzene	ug/L (ppb)	50	102	101	80-117	1
Bromoform	ug/L (ppb)	50	118	117	74-136	1
n-Propylbenzene	ug/L (ppb)	50	104	108	74-126	4
Bromobenzene	ug/L (ppb)	50	102	107	80-121	5
1,3,5-Trimethylbenzene	ug/L (ppb)	50	105	106	78-123	1
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	109	112	66-126	3
1,2,3-Trichloropropane	ug/L (ppb)	50	103	107	67-124	4
2-Chlorotoluene	ug/L (ppb)	50	101	105	77-127	4
4-Chlorotoluene	ug/L (ppb)	50	102	106	78-128	4
tert-Butylbenzene	ug/L (ppb)	50	107	107	80-123	0
1,2,4-Trimethylbenzene	ug/L (ppb)	50	105	106	79-122	1
sec-Butylbenzene	ug/L (ppb)	50	105	105	80-116	0
p-Isopropyltoluene	ug/L (ppb)	50	105	105	81-123	0
1,3-Dichlorobenzene	ug/L (ppb)	50	100	101	83-113	1
1,4-Dichlorobenzene	ug/L (ppb)	50	98	100	83-107	2
1,2-Dichlorobenzene	ug/L (ppb)	50	98	98	84-112	0
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	116	112	57-141	4
1,2,4-Trichlorobenzene	ug/L (ppb)	50	102	98	72-130	4
Hexachlorobutadiene	ug/L (ppb)	50	101	96	53-141	5
Naphthalene	ug/L (ppb)	50	106	100	64-133	6
1,2,3-Trichlorobenzene	ug/L (ppb)	50	100	96	65-136	4

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

0 02438

SAMPLE CHAIN OF CUSTODY ME 02/27/20

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Report To Gad Whitman

Company Whitman Env Sciences

Address 6812 16th Ave NE

City, State, ZIP Seattle, WA 98115

Phone ______ Email whitmanco@yahoo.com

SAMPLERS (*signature*)	
PROJECT NAME 12th + Yesler	PO # WES-1591
REMARKS	INVOICE TO
Project specific RLs? - Yes / No	

TURNAROUND TIME D04
☐ Standard turnaround
☐ RUSH ______
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Archive samples
☐ Other ______
Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082					Notes
MW-10-GW	01 A-D	2-26	PM	Water	4	X	X			X							
MW-1S-GW	02	"	"	"	4	X	X			X							

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

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: [signature]		WES	2-27-20	4:32
Received by: [signature]	Khoi Hoang	FBI	2/27/20	4:31
Relinquished by:				16:31 (NP)
Received by:		**Samples received at 14 °C**		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

3012 16th Avenue West
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(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

March 9, 2020

Dan Whitman, Project Manager
Whitman Environmental Sciences
6812 16th Ave NE
Seattle, WA 98115

Dear Mr Whitman:

Included are the results from the testing of material submitted on February 27, 2020 from the 12th + Yesler WES-1591, F&BI 002439 project. There are 8 pages included in this report.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
WES0309R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on February 27, 2020 by Friedman & Bruya, Inc. from the Whitman Environmental Sciences 12th + Yesler WES-1591, F&BI 002439 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Whitman Environmental Sciences
002439 -01	DSVP-4

The TO-15 pentane concentration for sample DSVP-4 exceeded the calibration range. The data were flagged accordingly.

All other quality control requirements were acceptable.

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	DSVP-4	Client:	Whitman Environmental Sciences
Date Received:	02/27/20	Project:	12th + Yesler WES-1591, F&BI 002439
Date Collected:	02/26/20	Lab ID:	002439-01 1/3.0
Date Analyzed:	03/06/20	Data File:	030538.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	98	70	130

Compounds:	Concentration ug/m3	ppbv	Compounds:	Concentration ug/m3	ppbv
Propene	52	30	1,2-Dichloropropane	<0.69	<0.15
Dichlorodifluoromethane	2.5	0.50	1,4-Dioxane	<1.1	<0.3
Chloromethane	<6.2	<3	2,2,4-Trimethylpentane	<14	<3
F-114	<2.1	<0.3	Methyl methacrylate	<12	<3
Vinyl chloride	1.4	0.56	Heptane	<12	<3
1,3-Butadiene	<0.066	<0.03	Bromodichloromethane	8.5	1.3
Butane	13	5.6	Trichloroethene	<0.81	<0.15
Bromomethane	<4.7	<1.2	cis-1,3-Dichloropropene	<1.4	<0.3
Chloroethane	<7.9	<3	4-Methyl-2-pentanone	<12	<3
Vinyl bromide	<1.3	<0.3	trans-1,3-Dichloropropene	<1.4	<0.3
Ethanol	<23	<12	Toluene	67	18
Acrolein	<2.8	<1.2	1,1,2-Trichloroethane	<0.33	<0.06
Pentane	640 ve	220 ve	2-Hexanone	<12	<3
Trichlorofluoromethane	<6.7	<1.2	Tetrachloroethene	<20	<3
Acetone	23	9.8	Dibromochloromethane	3.3	0.39
2-Propanol	<26	<10	1,2-Dibromoethane (EDB)	<0.23	<0.03
1,1-Dichloroethene	<1.2	<0.3	Chlorobenzene	<1.4	<0.3
trans-1,2-Dichloroethene	<1.2	<0.3	Ethylbenzene	36	8.3
Methylene chloride	<260	<75	1,1,2,2-Tetrachloroethane	<0.41	<0.06
t-Butyl alcohol (TBA)	<36	<12	Nonane	150	29
3-Chloropropene	<3.8	<1.2	Isopropylbenzene	12	2.4
CFC-113	<2.3	<0.3	2-Chlorotoluene	<16	<3
Carbon disulfide	<19	<6	Propylbenzene	22	4.4
Methyl t-butyl ether (MTBE)	<5.4	<1.5	4-Ethyltoluene	38	7.8
Vinyl acetate	<21	<6	m,p-Xylene	160	37
1,1-Dichloroethane	<1.2	<0.3	o-Xylene	63	14
cis-1,2-Dichloroethene	<1.2	<0.3	Styrene	<2.6	<0.6
Hexane	11	3.1	Bromoform	<6.2	<0.6
Chloroform	15	3.0	Benzyl chloride	<0.16	<0.03
Ethyl acetate	<22	<6	1,3,5-Trimethylbenzene	57	12
Tetrahydrofuran	<0.88	<0.3	1,2,4-Trimethylbenzene	170	35
2-Butanone (MEK)	<8.8	<3	1,3-Dichlorobenzene	<1.8	<0.3
1,2-Dichloroethane (EDC)	<0.12	<0.03	1,4-Dichlorobenzene	<0.72	<0.12
1,1,1-Trichloroethane	<1.6	<0.3	1,2-Dichlorobenzene	<1.8	<0.3
Carbon tetrachloride	<1.9	<0.3	1,2,4-Trichlorobenzene	<2.2	<0.3
Benzene	10	3.3	Naphthalene	<0.79	<0.15
Cyclohexane	<21	<6	Hexachlorobutadiene	<0.64	<0.06

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th + Yesler WES-1591, F&BI 002439
Date Collected:	Not Applicable	Lab ID:	00-0559 mb
Date Analyzed:	03/05/20	Data File:	030519.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	89	70	130

Compounds:	Concentration ug/m3	ppbv	Compounds:	Concentration ug/m3	ppbv
Propene	<0.69	<0.4	1,2-Dichloropropane	<0.23	<0.05
Dichlorodifluoromethane	<0.49	<0.1	1,4-Dioxane	<0.36	<0.1
Chloromethane	<2.1	<1	2,2,4-Trimethylpentane	<4.7	<1
F-114	<0.7	<0.1	Methyl methacrylate	<4.1	<1
Vinyl chloride	<0.26	<0.1	Heptane	<4.1	<1
1,3-Butadiene	<0.022	<0.01	Bromodichloromethane	<0.067	<0.01
Butane	<2.4	<1	Trichloroethene	<0.27	<0.05
Bromomethane	<1.6	<0.4	cis-1,3-Dichloropropene	<0.45	<0.1
Chloroethane	<2.6	<1	4-Methyl-2-pentanone	<4.1	<1
Vinyl bromide	<0.44	<0.1	trans-1,3-Dichloropropene	<0.45	<0.1
Ethanol	<7.5	<4	Toluene	<19	<5
Acrolein	<0.92	<0.4	1,1,2-Trichloroethane	<0.11	<0.02
Pentane	<3	<1	2-Hexanone	<4.1	<1
Trichlorofluoromethane	<2.2	<0.4	Tetrachloroethene	<6.8	<1
Acetone	<4.8	<2	Dibromochloromethane	<0.085	<0.01
2-Propanol	<8.6	<3.5	1,2-Dibromoethane (EDB)	<0.077	<0.01
1,1-Dichloroethene	<0.4	<0.1	Chlorobenzene	<0.46	<0.1
trans-1,2-Dichloroethene	<0.4	<0.1	Ethylbenzene	<0.43	<0.1
Methylene chloride	<87	<25	1,1,2,2-Tetrachloroethane	<0.14	<0.02
t-Butyl alcohol (TBA)	<12	<4	Nonane	<5.2	<1
3-Chloropropene	<1.3	<0.4	Isopropylbenzene	<2.5	<0.5
CFC-113	<0.77	<0.1	2-Chlorotoluene	<5.2	<1
Carbon disulfide	<6.2	<2	Propylbenzene	<2.5	<0.5
Methyl t-butyl ether (MTBE)	<1.8	<0.5	4-Ethyltoluene	<2.5	<0.5
Vinyl acetate	<7	<2	m,p-Xylene	<0.87	<0.2
1,1-Dichloroethane	<0.4	<0.1	o-Xylene	<0.43	<0.1
cis-1,2-Dichloroethene	<0.4	<0.1	Styrene	<0.85	<0.2
Hexane	<3.5	<1	Bromoform	<2.1	<0.2
Chloroform	<0.049	<0.01	Benzyl chloride	<0.052	<0.01
Ethyl acetate	<7.2	<2	1,3,5-Trimethylbenzene	<2.5	<0.5
Tetrahydrofuran	<0.29	<0.1	1,2,4-Trimethylbenzene	<2.5	<0.5
2-Butanone (MEK)	<2.9	<1	1,3-Dichlorobenzene	<0.6	<0.1
1,2-Dichloroethane (EDC)	<0.04	<0.01	1,4-Dichlorobenzene	<0.24	<0.04
1,1,1-Trichloroethane	<0.55	<0.1	1,2-Dichlorobenzene	<0.6	<0.1
Carbon tetrachloride	<0.63	<0.1	1,2,4-Trichlorobenzene	<0.74	<0.1
Benzene	<0.32	<0.1	Naphthalene	<0.26	<0.05
Cyclohexane	<6.9	<2	Hexachlorobutadiene	<0.21	<0.02

Date of Report: 03/09/20
Date Received: 02/27/20
Project: 12th + Yesler WES-1591, F&BI 002439

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

Laboratory Code: 002408-01 1/3.1 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 30)
Propene	ug/m3	84	81	4
Dichlorodifluoromethane	ug/m3	2.2	2.2	0
Chloromethane	ug/m3	<6.4	<6.4	nm
F-114	ug/m3	<2.2	<2.2	nm
Vinyl chloride	ug/m3	<0.79	<0.79	nm
1,3-Butadiene	ug/m3	<0.069	<0.069	nm
Butane	ug/m3	130	130	0
Bromomethane	ug/m3	<4.8	<4.8	nm
Chloroethane	ug/m3	<8.2	<8.2	nm
Vinyl bromide	ug/m3	<1.4	<1.4	nm
Ethanol	ug/m3	<23	<23	nm
Acrolein	ug/m3	<2.8	<2.8	nm
Pentane	ug/m3	<9.1	<9.1	nm
Trichlorofluoromethane	ug/m3	<7	<7	nm
Acetone	ug/m3	<15	<15	nm
2-Propanol	ug/m3	<27	<27	nm
1,1-Dichloroethene	ug/m3	<1.2	<1.2	nm
trans-1,2-Dichloroethene	ug/m3	<1.2	<1.2	nm
Methylene chloride	ug/m3	<270	<270	nm
t-Butyl alcohol (TBA)	ug/m3	<38	<38	nm
3-Chloropropene	ug/m3	<3.9	<3.9	nm
CFC-113	ug/m3	<2.4	<2.4	nm
Carbon disulfide	ug/m3	<19	<19	nm
Methyl t-butyl ether (MTBE)	ug/m3	<5.6	<5.6	nm
Vinyl acetate	ug/m3	<22	<22	nm
1,1-Dichloroethane	ug/m3	<1.3	<1.3	nm
cis-1,2-Dichloroethene	ug/m3	<1.2	<1.2	nm
Hexane	ug/m3	<11	<11	nm
Chloroform	ug/m3	0.97	0.94	3
Ethyl acetate	ug/m3	<22	<22	nm
Tetrahydrofuran	ug/m3	<0.91	<0.91	nm
2-Butanone (MEK)	ug/m3	<9.1	<9.1	nm
1,2-Dichloroethane (EDC)	ug/m3	<0.13	<0.13	nm
1,1,1-Trichloroethane	ug/m3	<1.7	<1.7	nm
Carbon tetrachloride	ug/m3	<2	<2	nm
Benzene	ug/m3	3.8	3.7	3
Cyclohexane	ug/m3	<21	<21	nm
1,2-Dichloropropane	ug/m3	<0.72	<0.72	nm
1,4-Dioxane	ug/m3	<1.1	<1.1	nm
2,2,4-Trimethylpentane	ug/m3	<14	<14	nm

Date of Report: 03/09/20
Date Received: 02/27/20
Project: 12th + Yesler WES-1591, F&BI 002439

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

Laboratory Code: 002408-01 1/3.1 (Duplicate) (continued)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 30)
Methyl methacrylate	ug/m3	<13	<13	nm
Heptane	ug/m3	<13	<13	nm
Bromodichloromethane	ug/m3	<0.21	<0.21	nm
Trichloroethene	ug/m3	0.95	0.93	2
cis-1,3-Dichloropropene	ug/m3	<1.4	<1.4	nm
4-Methyl-2-pentanone	ug/m3	<13	<13	nm
trans-1,3-Dichloropropene	ug/m3	<1.4	<1.4	nm
Toluene	ug/m3	<58	<58	nm
1,1,2-Trichloroethane	ug/m3	<0.34	<0.34	nm
2-Hexanone	ug/m3	<13	<13	nm
Tetrachloroethene	ug/m3	<21	<21	nm
Dibromochloromethane	ug/m3	<0.26	<0.26	nm
1,2-Dibromoethane (EDB)	ug/m3	<0.24	<0.24	nm
Chlorobenzene	ug/m3	<1.4	<1.4	nm
Ethylbenzene	ug/m3	<1.3	<1.3	nm
1,1,2,2-Tetrachloroethane	ug/m3	<0.43	<0.43	nm
Nonane	ug/m3	<16	<16	nm
Isopropylbenzene	ug/m3	<7.6	<7.6	nm
2-Chlorotoluene	ug/m3	<16	<16	nm
Propylbenzene	ug/m3	<7.6	<7.6	nm
4-Ethyltoluene	ug/m3	<7.6	<7.6	nm
m,p-Xylene	ug/m3	<2.7	<2.7	nm
o-Xylene	ug/m3	<1.3	<1.3	nm
Styrene	ug/m3	<2.6	<2.6	nm
Bromoform	ug/m3	<6.4	<6.4	nm
Benzyl chloride	ug/m3	<0.16	<0.16	nm
1,3,5-Trimethylbenzene	ug/m3	<7.6	<7.6	nm
1,2,4-Trimethylbenzene	ug/m3	<7.6	<7.6	nm
1,3-Dichlorobenzene	ug/m3	<1.9	<1.9	nm
1,4-Dichlorobenzene	ug/m3	<0.75	<0.75	nm
1,2-Dichlorobenzene	ug/m3	<1.9	<1.9	nm
1,2,4-Trichlorobenzene	ug/m3	<2.3	<2.3	nm
Naphthalene	ug/m3	<0.81	<0.81	nm
Hexachlorobutadiene	ug/m3	<0.66	<0.66	nm

Date of Report: 03/09/20
Date Received: 02/27/20
Project: 12th + Yesler WES-1591, F&BI 002439

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Propene	ug/m3	23	104	70-130
Dichlorodifluoromethane	ug/m3	67	106	70-130
Chloromethane	ug/m3	28	86	70-130
F-114	ug/m3	94	105	70-130
Vinyl chloride	ug/m3	35	102	70-130
1,3-Butadiene	ug/m3	30	103	70-130
Butane	ug/m3	32	105	70-130
Bromomethane	ug/m3	52	103	70-130
Chloroethane	ug/m3	36	104	70-130
Vinyl bromide	ug/m3	59	98	70-130
Ethanol	ug/m3	25	114	70-130
Acrolein	ug/m3	31	96	70-130
Pentane	ug/m3	40	104	70-130
Trichlorofluoromethane	ug/m3	76	104	70-130
Acetone	ug/m3	32	91	70-130
2-Propanol	ug/m3	33	102	70-130
1,1-Dichloroethene	ug/m3	54	103	70-130
trans-1,2-Dichloroethene	ug/m3	54	95	70-130
Methylene chloride	ug/m3	94	91	70-130
t-Butyl alcohol (TBA)	ug/m3	41	109	70-130
3-Chloropropene	ug/m3	42	104	70-130
CFC-113	ug/m3	100	100	70-130
Carbon disulfide	ug/m3	42	99	70-130
Methyl t-butyl ether (MTBE)	ug/m3	49	103	70-130
Vinyl acetate	ug/m3	48	104	70-130
1,1-Dichloroethane	ug/m3	55	100	70-130
cis-1,2-Dichloroethene	ug/m3	54	98	70-130
Hexane	ug/m3	48	108	70-130
Chloroform	ug/m3	66	100	70-130
Ethyl acetate	ug/m3	49	100	70-130
Tetrahydrofuran	ug/m3	40	102	70-130
2-Butanone (MEK)	ug/m3	40	104	70-130
1,2-Dichloroethane (EDC)	ug/m3	55	104	70-130
1,1,1-Trichloroethane	ug/m3	74	100	70-130
Carbon tetrachloride	ug/m3	85	103	70-130
Benzene	ug/m3	43	93	70-130
Cyclohexane	ug/m3	46	92	70-130
1,2-Dichloropropane	ug/m3	62	87	70-130
1,4-Dioxane	ug/m3	49	86	70-130
2,2,4-Trimethylpentane	ug/m3	63	94	70-130

Date of Report: 03/09/20
Date Received: 02/27/20
Project: 12th + Yesler WES-1591, F&BI 002439

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

Laboratory Code: Laboratory Control Sample (continued)

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Methyl methacrylate	ug/m3	55	104	70-130
Heptane	ug/m3	55	99	70-130
Bromodichloromethane	ug/m3	90	88	70-130
Trichloroethene	ug/m3	73	86	70-130
cis-1,3-Dichloropropene	ug/m3	61	96	70-130
4-Methyl-2-pentanone	ug/m3	55	101	70-130
trans-1,3-Dichloropropene	ug/m3	61	99	70-130
Toluene	ug/m3	51	89	70-130
1,1,2-Trichloroethane	ug/m3	74	91	70-130
2-Hexanone	ug/m3	55	110	70-130
Tetrachloroethene	ug/m3	92	83	70-130
Dibromochloromethane	ug/m3	120	87	70-130
1,2-Dibromoethane (EDB)	ug/m3	100	93	70-130
Chlorobenzene	ug/m3	62	84	70-130
Ethylbenzene	ug/m3	59	77	70-130
1,1,2,2-Tetrachloroethane	ug/m3	93	93	70-130
Nonane	ug/m3	71	88	70-130
Isopropylbenzene	ug/m3	66	79	70-130
2-Chlorotoluene	ug/m3	70	96	70-130
Propylbenzene	ug/m3	66	94	70-130
4-Ethyltoluene	ug/m3	66	95	70-130
m,p-Xylene	ug/m3	120	82	70-130
o-Xylene	ug/m3	59	78	70-130
Styrene	ug/m3	58	86	70-130
Bromoform	ug/m3	140	79	70-130
Benzyl chloride	ug/m3	70	99	70-130
1,3,5-Trimethylbenzene	ug/m3	66	85	70-130
1,2,4-Trimethylbenzene	ug/m3	66	92	70-130
1,3-Dichlorobenzene	ug/m3	81	88	70-130
1,4-Dichlorobenzene	ug/m3	81	85	70-130
1,2-Dichlorobenzene	ug/m3	81	88	70-130
1,2,4-Trichlorobenzene	ug/m3	100	82	70-130
Naphthalene	ug/m3	71	92	70-130
Hexachlorobutadiene	ug/m3	140	93	70-130

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

002439

SAMPLE CHAIN OF CUSTODY

ME 02/27/20

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Page # ______ of ______

Report To Tim Whitman

Company Whitman Env. Sciences

Address 6812 16th Ave NE

City, State, ZIP Seattle, WA 98115

Phone ______ Email whitenviro@yahoo.com

SAMPLERS (*signature*)	
PROJECT NAME & ADDRESS: 12th + Yesler	PO #: WES 1591
NOTES:	INVOICE TO

TURNAROUND TIME
☒ Standard
☐ RUSH ______
Rush charges authorized by: ______
SAMPLE DISPOSAL
☐ Archive Samples
☐ Other ______

SAMPLE INFORMATION / ANALYSIS REQUESTED

Sample Name	Lab ID	Canister ID	Flow Cont. ID	Reporting Level: IA=Indoor Air SG=Soil Gas (Circle One)	Date Sampled	Initial Vac. ("Hg)	Field Initial Time	Final Vac. ("Hg)	Field Final Time	TO15 Full Scan	TO15 BTEXN	TO15 cVOCs	APH	Helium		Notes
DSVP-4	01	2433	242	IA / (SG)	2/26	29.5	2:12	4	2:18	X						
				IA / SG												
				IA / SG												
				IA / SG												
				IA / SG												
				IA / SG												
				IA / SG												
				IA / SG												

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

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	[signature]	[signature]	WES	2-27-20	4:38
Received by:	[signature]	Khoi Hoang	FBI	2.27.20	~~4:38~~ 16:38 NP
Relinquished by:					
Received by:					

Samples received at 18 °C

FORMS\COC\COCTO-15.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

3012 16th Avenue West
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(206) 285-8282
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March 11, 2020

Dan Whitman, Project Manager
Whitman Environmental Sciences
6812 16th Ave NE
Seattle, WA 98115

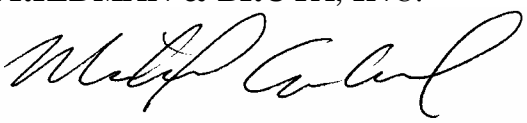
Dear Mr Whitman:

Included are the results from the testing of material submitted on March 3, 2020 from the 12th & Yesler WES 1591, F&BI 003025 project. There are 14 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
WES0311R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on March 3, 2020 by Friedman & Bruya, Inc. from the Whitman Environmental Sciences 12th & Yesler WES 1591, F&BI 003025 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Whitman Environmental Sciences
003025 -01	MW-1D-GW
003025 -02	MW-11-GW

All quality control requirements were acceptable.

Date of Report: 03/11/20
Date Received: 03/03/20
Project: 12th & Yesler WES 1591, F&BI 003025
Date Extracted: 03/06/20
Date Analyzed: 03/09/20

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
MW-1D-GW 003025-01	<100	89
MW-11-GW 003025-02	<100	90
Method Blank 00-543 MB	<100	97

Date of Report: 03/11/20
Date Received: 03/03/20
Project: 12th & Yesler WES 1591, F&BI 003025
Date Extracted: 03/04/20
Date Analyzed: 03/04/20

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 41-152)
MW-1D-GW 003025-01	<50	<250	101
MW-11-GW 003025-02	130 x	<250	108
Method Blank 00-530 MB	<50	<250	117

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-1D-GW	Client:	Whitman Environmental Sciences
Date Received:	03/03/20	Project:	12th & Yesler WES 1591
Date Extracted:	03/03/20	Lab ID:	003025-01
Date Analyzed:	03/04/20	Data File:	030429.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	57	121
Toluene-d8	95	63	127
4-Bromofluorobenzene	101	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-11-GW	Client:	Whitman Environmental Sciences
Date Received:	03/03/20	Project:	12th & Yesler WES 1591
Date Extracted:	03/03/20	Lab ID:	003025-02
Date Analyzed:	03/04/20	Data File:	030430.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	57	121
Toluene-d8	96	63	127
4-Bromofluorobenzene	102	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	2.8	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th & Yesler WES 1591
Date Extracted:	03/03/20	Lab ID:	00-495 mb2
Date Analyzed:	03/03/20	Data File:	030313.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	100	63	127
4-Bromofluorobenzene	102	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-1D-GW	Client:	Whitman Environmental Sciences
Date Received:	03/03/20	Project:	12th & Yesler WES 1591
Date Extracted:	03/05/20	Lab ID:	003025-01
Date Analyzed:	03/05/20 19:13:36	Data File:	003024-01.139
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	10.3
Lead	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th & Yesler WES 1591
Date Extracted:	03/05/20	Lab ID:	I0-138 mb
Date Analyzed:	03/05/20 14:30:25	Data File:	I0-138 mb.082
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Lead	<1

Date of Report: 03/11/20
Date Received: 03/03/20
Project: 12th & Yesler WES 1591, F&BI 003025

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 003103-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	103	69-134

Date of Report: 03/11/20
Date Received: 03/03/20
Project: 12th & Yesler WES 1591, F&BI 003025

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	104	112	63-142	7

Date of Report: 03/11/20
Date Received: 03/03/20
Project: 12th & Yesler WES 1591, F&BI 003025

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 002468-30 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	50	<1	98	10-172
Chloromethane	ug/L (ppb)	50	<10	103	25-166
Vinyl chloride	ug/L (ppb)	50	<0.2	107	36-166
Bromomethane	ug/L (ppb)	50	<1	114	47-169
Chloroethane	ug/L (ppb)	50	<1	102	46-160
Trichlorofluoromethane	ug/L (ppb)	50	<1	110	44-165
Acetone	ug/L (ppb)	250	<50	99	10-182
1,1-Dichloroethene	ug/L (ppb)	50	<1	112	60-136
Hexane	ug/L (ppb)	50	<1	98	52-150
Methylene chloride	ug/L (ppb)	50	<5	116	67-132
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<1	84	74-127
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	102	72-129
1,1-Dichloroethane	ug/L (ppb)	50	<1	97	70-128
2,2-Dichloropropane	ug/L (ppb)	50	<1	104	36-154
cis-1,2-Dichloroethene	ug/L (ppb)	50	<1	104	71-127
Chloroform	ug/L (ppb)	50	<1	101	65-132
2-Butanone (MEK)	ug/L (ppb)	250	<10	94	10-129
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	92	48-149
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	103	60-146
1,1-Dichloropropene	ug/L (ppb)	50	<1	101	69-133
Carbon tetrachloride	ug/L (ppb)	50	<1	111	56-152
Benzene	ug/L (ppb)	50	<0.35	97	76-125
Trichloroethene	ug/L (ppb)	50	<1	96	66-135
1,2-Dichloropropane	ug/L (ppb)	50	<1	101	78-125
Bromodichloromethane	ug/L (ppb)	50	<1	108	61-150
Dibromomethane	ug/L (ppb)	50	<1	104	66-141
4-Methyl-2-pentanone	ug/L (ppb)	250	<10	112	10-185
cis-1,3-Dichloropropene	ug/L (ppb)	50	<1	108	72-132
Toluene	ug/L (ppb)	50	<1	100	76-122
trans-1,3-Dichloropropene	ug/L (ppb)	50	<1	112	76-130
1,1,2-Trichloroethane	ug/L (ppb)	50	<1	108	68-131
2-Hexanone	ug/L (ppb)	250	<10	105	10-185
1,3-Dichloropropane	ug/L (ppb)	50	<1	103	71-128
Tetrachloroethene	ug/L (ppb)	50	<1	99	10-226
Dibromochloromethane	ug/L (ppb)	50	<1	114	70-139
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	<1	108	69-134
Chlorobenzene	ug/L (ppb)	50	<1	100	77-122
Ethylbenzene	ug/L (ppb)	50	<1	102	69-135
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	<1	113	73-137
m,p-Xylene	ug/L (ppb)	100	<2	103	69-135
o-Xylene	ug/L (ppb)	50	<1	103	60-140
Styrene	ug/L (ppb)	50	<1	106	71-133
Isopropylbenzene	ug/L (ppb)	50	<1	105	65-142
Bromoform	ug/L (ppb)	50	<1	110	65-142
n-Propylbenzene	ug/L (ppb)	50	<1	104	58-144
Bromobenzene	ug/L (ppb)	50	<1	102	75-124
1,3,5-Trimethylbenzene	ug/L (ppb)	50	<1	105	66-137
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	<1	108	51-154
1,2,3-Trichloropropane	ug/L (ppb)	50	<1	103	53-150
2-Chlorotoluene	ug/L (ppb)	50	<1	101	66-127
4-Chlorotoluene	ug/L (ppb)	50	<1	102	65-130
tert-Butylbenzene	ug/L (ppb)	50	<1	107	65-137
1,2,4-Trimethylbenzene	ug/L (ppb)	50	<1	107	59-146
sec-Butylbenzene	ug/L (ppb)	50	<1	105	64-140
p-Isopropyltoluene	ug/L (ppb)	50	<1	105	65-141
1,3-Dichlorobenzene	ug/L (ppb)	50	<1	101	72-123
1,4-Dichlorobenzene	ug/L (ppb)	50	<1	99	69-126
1,2-Dichlorobenzene	ug/L (ppb)	50	<1	99	69-128
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	<10	108	32-164
1,2,4-Trichlorobenzene	ug/L (ppb)	50	<1	102	66-136
Hexachlorobutadiene	ug/L (ppb)	50	<1	101	60-143
Naphthalene	ug/L (ppb)	50	<1	108	44-164
1,2,3-Trichlorobenzene	ug/L (ppb)	50	<1	101	69-148

Date of Report: 03/11/20
Date Received: 03/03/20
Project: 12th & Yesler WES 1591, F&BI 003025

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	50	105	111	25-158	6
Chloromethane	ug/L (ppb)	50	98	107	45-156	9
Vinyl chloride	ug/L (ppb)	50	101	109	50-154	8
Bromomethane	ug/L (ppb)	50	111	121	55-143	9
Chloroethane	ug/L (ppb)	50	99	110	58-146	11
Trichlorofluoromethane	ug/L (ppb)	250	106	118	50-150	11
Acetone	ug/L (ppb)	250	86	89	53-131	3
1,1-Dichloroethene	ug/L (ppb)	50	106	116	67-136	9
Hexane	ug/L (ppb)	50	92	94	57-137	2
Methylene chloride	ug/L (ppb)	50	96	112	39-148	15
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	82	90	64-147	9
trans-1,2-Dichloroethene	ug/L (ppb)	50	98	111	68-128	12
1,1-Dichloroethane	ug/L (ppb)	50	97	106	79-121	9
2,2-Dichloropropane	ug/L (ppb)	50	102	113	55-143	10
cis-1,2-Dichloroethene	ug/L (ppb)	50	102	112	80-123	9
Chloroform	ug/L (ppb)	50	100	108	80-121	8
2-Butanone (MEK)	ug/L (ppb)	250	91	87	57-149	4
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	91	91	73-132	0
1,1,1-Trichloroethane	ug/L (ppb)	50	102	112	81-125	9
1,1-Dichloropropene	ug/L (ppb)	50	99	103	77-129	4
Carbon tetrachloride	ug/L (ppb)	50	108	120	75-158	11
Benzene	ug/L (ppb)	50	96	100	69-134	4
Trichloroethene	ug/L (ppb)	50	96	97	79-113	1
1,2-Dichloropropane	ug/L (ppb)	50	101	101	77-123	0
Bromodichloromethane	ug/L (ppb)	50	107	109	81-133	2
Dibromomethane	ug/L (ppb)	50	103	103	82-125	0
4-Methyl-2-pentanone	ug/L (ppb)	250	109	109	65-138	0
cis-1,3-Dichloropropene	ug/L (ppb)	50	107	102	82-132	5
Toluene	ug/L (ppb)	50	99	102	72-122	3
trans-1,3-Dichloropropene	ug/L (ppb)	50	109	103	80-136	6
1,1,2-Trichloroethane	ug/L (ppb)	50	106	104	75-124	2
2-Hexanone	ug/L (ppb)	250	99	96	60-136	3
1,3-Dichloropropane	ug/L (ppb)	50	101	99	76-126	2
Tetrachloroethene	ug/L (ppb)	50	96	101	76-121	5
Dibromochloromethane	ug/L (ppb)	50	112	113	84-133	1
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	106	103	82-115	3
Chlorobenzene	ug/L (ppb)	50	99	101	83-114	2
Ethylbenzene	ug/L (ppb)	50	100	104	77-124	4
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	113	121	84-127	7
m,p-Xylene	ug/L (ppb)	100	99	105	81-112	6
o-Xylene	ug/L (ppb)	50	100	107	81-121	7
Styrene	ug/L (ppb)	50	105	105	84-119	0
Isopropylbenzene	ug/L (ppb)	50	103	110	80-117	7
Bromoform	ug/L (ppb)	50	109	109	74-136	0
n-Propylbenzene	ug/L (ppb)	50	101	106	74-126	5
Bromobenzene	ug/L (ppb)	50	100	101	80-121	1
1,3,5-Trimethylbenzene	ug/L (ppb)	50	104	109	78-123	5
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	106	108	66-126	2
1,2,3-Trichloropropane	ug/L (ppb)	50	101	100	67-124	1
2-Chlorotoluene	ug/L (ppb)	50	99	104	77-127	5
4-Chlorotoluene	ug/L (ppb)	50	100	101	78-128	1
tert-Butylbenzene	ug/L (ppb)	50	105	110	80-123	5
1,2,4-Trimethylbenzene	ug/L (ppb)	50	102	108	79-122	6
sec-Butylbenzene	ug/L (ppb)	50	103	108	80-116	5
p-Isopropyltoluene	ug/L (ppb)	50	103	108	81-123	5
1,3-Dichlorobenzene	ug/L (ppb)	50	97	100	83-113	3
1,4-Dichlorobenzene	ug/L (ppb)	50	96	97	83-107	1
1,2-Dichlorobenzene	ug/L (ppb)	50	97	101	84-112	4
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	107	112	57-141	5
1,2,4-Trichlorobenzene	ug/L (ppb)	50	100	111	72-130	10
Hexachlorobutadiene	ug/L (ppb)	50	99	109	53-141	10
Naphthalene	ug/L (ppb)	50	104	115	64-133	10
1,2,3-Trichlorobenzene	ug/L (ppb)	50	99	110	65-136	11

Date of Report: 03/11/20
Date Received: 03/03/20
Project: 12th & Yesler WES 1591, F&BI 003025

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 002447-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	1.79	89	87	75-125	2
Lead	ug/L (ppb)	10	<1	83	81	75-125	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	100	80-120
Lead	ug/L (ppb)	10	96	80-120

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

003025

SAMPLE CHAIN OF CUSTODY

ME 03/03/20 VW1/AI3

Page # ____ of ____

Report To [illegible]

Company [illegible] Env. Services

Address [illegible]

City, State, ZIP Seattle, WA 98115

Phone ________ Email [illegible]

SAMPLERS (signature)	
PROJECT NAME: 12th + Yesler	PO #: OES 1591
REMARKS	INVOICE TO
Project specific RLs? - Yes / No	

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

SAMPLE DISPOSAL
- ☐ Archive samples
- ☐ Other ________
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	[illegible]				Notes
MW-12-GW	01 A-E	3-3-20		Water	5	X	X			X			X				
MW-11-GW	02 A-D				4	X	X			X							

Samples received at 15 °C

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

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	[illegible]		OES	3-3-20	1:38
Received by:	[illegible]	Dhan Phan	FeBI	3/3/20	1332
Relinquished by:					
Received by:					

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

March 13, 2020

Dan Whitman, Project Manager
Whitman Environmental Sciences
6812 16th Ave NE
Seattle, WA 98115

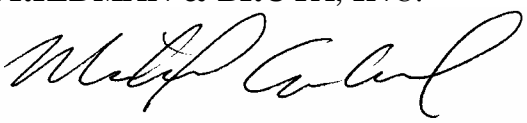
Dear Mr Whitman:

Included are the results from the testing of material submitted on March 5, 2020 from the 12th+Yesler WES-1591, F&BI 003094 project. There are 20 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
WES0313R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on March 5, 2020 by Friedman & Bruya, Inc. from the Whitman Environmental Sciences 12th+Yesler WES-1591, F&BI 003094 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Whitman Environmental Sciences
003094 -01	MW-1-GW
003094 -02	MW-5-GW
003094 -03	GEO-B7-GW
003094 -04	GEO-B9-GW
003094 -05	WES-17-GW
003094 -06	WES-18-GW
003094 -07	WES-19-GW
003094 -08	BN-24-GW
003094 -09	BN-25-GW
003094 -10	BN-26-GW
003094 -11	BN-27-GW

All quality control requirements were acceptable.

Date of Report: 03/13/20
Date Received: 03/05/20
Project: 12th+Yesler WES-1591, F&BI 003094
Date Extracted: 03/10/20
Date Analyzed: 03/10/20

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 51-134)
MW-1-GW 003094-01	<100	96
MW-5-GW 003094-02	<100	94
GEO-B7-GW 003094-03	<100	97
GEO-B9-GW 003094-04	<100	94
WES-17-GW 003094-05	<100	96
WES-18-GW 003094-06	<100	94
WES-19-GW 003094-07	<100	94
Method Blank 00-548 MB	<100	100

Date of Report: 03/13/20
Date Received: 03/05/20
Project: 12th+Yesler WES-1591, F&BI 003094
Date Extracted: 03/09/20
Date Analyzed: 03/09/20

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 41-152)
MW-1-GW 003094-01	<50	<250	119
MW-5-GW 003094-02	<50	<250	112
GEO-B7-GW 003094-03	<50	<250	116
GEO-B9-GW 003094-04	73 x	<250	126
WES-17-GW 003094-05	53 x	<250	127
WES-18-GW 003094-06	<50	<250	117
WES-19-GW 003094-07	<50	<250	100
Method Blank 00-590 MB	<50	<250	106

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-1-GW	Client:	Whitman Environmental Sciences
Date Received:	03/05/20	Project:	12th+Yesler WES-1591, F&BI 003094
Date Extracted:	03/10/20	Lab ID:	003094-01
Date Analyzed:	03/11/20	Data File:	031125.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	95	63	127
4-Bromofluorobenzene	98	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-5-GW	Client:	Whitman Environmental Sciences
Date Received:	03/05/20	Project:	12th+Yesler WES-1591, F&BI 003094
Date Extracted:	03/10/20	Lab ID:	003094-02
Date Analyzed:	03/11/20	Data File:	031126.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	96	63	127
4-Bromofluorobenzene	102	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	1.4	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	2.2	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	GEO-B7-GW	Client:	Whitman Environmental Sciences
Date Received:	03/05/20	Project:	12th+Yesler WES-1591, F&BI 003094
Date Extracted:	03/10/20	Lab ID:	003094-03
Date Analyzed:	03/11/20	Data File:	031127.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	57	121
Toluene-d8	96	63	127
4-Bromofluorobenzene	98	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	3.2	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	2.9	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	GEO-B9-GW	Client:	Whitman Environmental Sciences
Date Received:	03/05/20	Project:	12th+Yesler WES-1591, F&BI 003094
Date Extracted:	03/10/20	Lab ID:	003094-04
Date Analyzed:	03/11/20	Data File:	031128.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	95	63	127
4-Bromofluorobenzene	98	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	1.1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	WES-17-GW	Client:	Whitman Environmental Sciences
Date Received:	03/05/20	Project:	12th+Yesler WES-1591, F&BI 003094
Date Extracted:	03/10/20	Lab ID:	003094-05
Date Analyzed:	03/11/20	Data File:	031129.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	96	63	127
4-Bromofluorobenzene	97	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	33
Vinyl chloride	0.23	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	8.2	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	23	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	WES-18-GW	Client:	Whitman Environmental Sciences
Date Received:	03/05/20	Project:	12th+Yesler WES-1591, F&BI 003094
Date Extracted:	03/10/20	Lab ID:	003094-06
Date Analyzed:	03/11/20	Data File:	031130.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	95	63	127
4-Bromofluorobenzene	97	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	6.5	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	4.2	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	WES-19-GW	Client:	Whitman Environmental Sciences
Date Received:	03/05/20	Project:	12th+Yesler WES-1591, F&BI 003094
Date Extracted:	03/10/20	Lab ID:	003094-07
Date Analyzed:	03/11/20	Data File:	031131.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	90	63	127
4-Bromofluorobenzene	100	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	BN-24-GW	Client:	Whitman Environmental Sciences
Date Received:	03/05/20	Project:	12th+Yesler WES-1591, F&BI 003094
Date Extracted:	03/10/20	Lab ID:	003094-08
Date Analyzed:	03/11/20	Data File:	031140.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	92	63	127
4-Bromofluorobenzene	94	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	BN-25-GW	Client:	Whitman Environmental Sciences
Date Received:	03/05/20	Project:	12th+Yesler WES-1591, F&BI 003094
Date Extracted:	03/10/20	Lab ID:	003094-09
Date Analyzed:	03/11/20	Data File:	031141.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	57	121
Toluene-d8	92	63	127
4-Bromofluorobenzene	97	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	BN-26-GW	Client:	Whitman Environmental Sciences
Date Received:	03/05/20	Project:	12th+Yesler WES-1591, F&BI 003094
Date Extracted:	03/10/20	Lab ID:	003094-10
Date Analyzed:	03/11/20	Data File:	031142.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	57	121
Toluene-d8	92	63	127
4-Bromofluorobenzene	95	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	BN-27-GW	Client:	Whitman Environmental Sciences
Date Received:	03/05/20	Project:	12th+Yesler WES-1591, F&BI 003094
Date Extracted:	03/10/20	Lab ID:	003094-11
Date Analyzed:	03/11/20	Data File:	031143.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	57	121
Toluene-d8	95	63	127
4-Bromofluorobenzene	101	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th+Yesler WES-1591, F&BI 003094
Date Extracted:	03/10/20	Lab ID:	00-573 mb
Date Analyzed:	03/11/20	Data File:	031112.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	57	121
Toluene-d8	97	63	127
4-Bromofluorobenzene	97	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Date of Report: 03/13/20
Date Received: 03/05/20
Project: 12th+Yesler WES-1591, F&BI 003094

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 003079-02 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	106	69-134

Date of Report: 03/13/20
Date Received: 03/05/20
Project: 12th+Yesler WES-1591, F&BI 003094

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	112	92	63-142	20

Date of Report: 03/13/20
Date Received: 03/05/20
Project: 12th+Yesler WES-1591, F&BI 003094

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 003119-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	50	<1	107	10-172
Chloromethane	ug/L (ppb)	50	<10	106	25-166
Vinyl chloride	ug/L (ppb)	50	<0.2	110	36-166
Bromomethane	ug/L (ppb)	50	<1	119	47-169
Chloroethane	ug/L (ppb)	50	<1	105	46-160
Trichlorofluoromethane	ug/L (ppb)	50	<1	102	44-165
Acetone	ug/L (ppb)	250	<50	98	10-182
1,1-Dichloroethene	ug/L (ppb)	50	<1	99	60-136
Hexane	ug/L (ppb)	50	<1	95	52-150
Methylene chloride	ug/L (ppb)	50	<5	99	67-132
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<1	105	74-127
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	96	72-129
1,1-Dichloroethane	ug/L (ppb)	50	<1	102	70-128
2,2-Dichloropropane	ug/L (ppb)	50	<1	104	36-154
cis-1,2-Dichloroethene	ug/L (ppb)	50	<1	98	71-127
Chloroform	ug/L (ppb)	50	<1	103	65-132
2-Butanone (MEK)	ug/L (ppb)	250	<10	112	10-129
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	101	48-149
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	105	60-146
1,1-Dichloropropene	ug/L (ppb)	50	<1	101	69-133
Carbon tetrachloride	ug/L (ppb)	50	<1	111	56-152
Benzene	ug/L (ppb)	50	<0.35	100	76-125
Trichloroethene	ug/L (ppb)	50	<1	99	66-135
1,2-Dichloropropane	ug/L (ppb)	50	<1	106	78-125
Bromodichloromethane	ug/L (ppb)	50	<1	108	61-150
Dibromomethane	ug/L (ppb)	50	<1	101	66-141
4-Methyl-2-pentanone	ug/L (ppb)	250	<10	110	10-185
cis-1,3-Dichloropropene	ug/L (ppb)	50	<1	112	72-132
Toluene	ug/L (ppb)	50	<1	96	76-122
trans-1,3-Dichloropropene	ug/L (ppb)	50	<1	109	76-130
1,1,2-Trichloroethane	ug/L (ppb)	50	<1	104	68-131
2-Hexanone	ug/L (ppb)	250	<10	107	10-185
1,3-Dichloropropane	ug/L (ppb)	50	<1	105	71-128
Tetrachloroethene	ug/L (ppb)	50	2.7	94	10-226
Dibromochloromethane	ug/L (ppb)	50	<1	115	70-139
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	<1	106	69-134
Chlorobenzene	ug/L (ppb)	50	<1	98	77-122
Ethylbenzene	ug/L (ppb)	50	<1	98	69-135
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	<1	108	73-137
m,p-Xylene	ug/L (ppb)	100	<2	98	69-135
o-Xylene	ug/L (ppb)	50	<1	98	60-140
Styrene	ug/L (ppb)	50	<1	104	71-133
Isopropylbenzene	ug/L (ppb)	50	<1	100	65-142
Bromoform	ug/L (ppb)	50	<1	109	65-142
n-Propylbenzene	ug/L (ppb)	50	<1	95	58-144
Bromobenzene	ug/L (ppb)	50	<1	98	75-124
1,3,5-Trimethylbenzene	ug/L (ppb)	50	<1	98	66-137
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	<1	106	51-154
1,2,3-Trichloropropane	ug/L (ppb)	50	<1	99	53-150
2-Chlorotoluene	ug/L (ppb)	50	<1	94	66-127
4-Chlorotoluene	ug/L (ppb)	50	<1	96	65-130
tert-Butylbenzene	ug/L (ppb)	50	<1	98	65-137
1,2,4-Trimethylbenzene	ug/L (ppb)	50	<1	97	59-146
sec-Butylbenzene	ug/L (ppb)	50	<1	98	64-140
p-Isopropyltoluene	ug/L (ppb)	50	<1	97	65-141
1,3-Dichlorobenzene	ug/L (ppb)	50	<1	98	72-123
1,4-Dichlorobenzene	ug/L (ppb)	50	<1	97	69-126
1,2-Dichlorobenzene	ug/L (ppb)	50	<1	99	69-128
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	<10	107	32-164
1,2,4-Trichlorobenzene	ug/L (ppb)	50	<1	98	66-136
Hexachlorobutadiene	ug/L (ppb)	50	<1	87	60-143
Naphthalene	ug/L (ppb)	50	<1	105	44-164
1,2,3-Trichlorobenzene	ug/L (ppb)	50	<1	98	69-148

Date of Report: 03/13/20
Date Received: 03/05/20
Project: 12th+Yesler WES-1591, F&BI 003094

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	50	112	119	25-158	6
Chloromethane	ug/L (ppb)	50	107	115	45-156	7
Vinyl chloride	ug/L (ppb)	50	114	119	50-154	4
Bromomethane	ug/L (ppb)	50	119	125	55-143	5
Chloroethane	ug/L (ppb)	50	109	115	58-146	5
Trichlorofluoromethane	ug/L (ppb)	250	108	111	50-150	3
Acetone	ug/L (ppb)	250	91	96	53-131	5
1,1-Dichloroethene	ug/L (ppb)	50	104	108	67-136	4
Hexane	ug/L (ppb)	50	98	95	57-137	3
Methylene chloride	ug/L (ppb)	50	103	107	39-148	4
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	107	104	64-147	3
trans-1,2-Dichloroethene	ug/L (ppb)	50	98	98	68-128	0
1,1-Dichloroethane	ug/L (ppb)	50	105	100	79-121	5
2,2-Dichloropropane	ug/L (ppb)	50	108	101	55-143	7
cis-1,2-Dichloroethene	ug/L (ppb)	50	101	101	80-123	0
Chloroform	ug/L (ppb)	50	105	102	80-121	3
2-Butanone (MEK)	ug/L (ppb)	250	100	95	57-149	5
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	100	94	73-132	6
1,1,1-Trichloroethane	ug/L (ppb)	50	108	104	81-125	4
1,1-Dichloropropene	ug/L (ppb)	50	103	100	77-129	3
Carbon tetrachloride	ug/L (ppb)	50	114	110	75-158	4
Benzene	ug/L (ppb)	50	100	99	69-134	1
Trichloroethene	ug/L (ppb)	50	98	97	79-113	1
1,2-Dichloropropane	ug/L (ppb)	50	103	102	77-123	1
Bromodichloromethane	ug/L (ppb)	50	112	109	81-133	3
Dibromomethane	ug/L (ppb)	50	104	102	82-125	2
4-Methyl-2-pentanone	ug/L (ppb)	250	107	106	65-138	1
cis-1,3-Dichloropropene	ug/L (ppb)	50	111	111	82-132	0
Toluene	ug/L (ppb)	50	99	99	72-122	0
trans-1,3-Dichloropropene	ug/L (ppb)	50	105	104	80-136	1
1,1,2-Trichloroethane	ug/L (ppb)	50	102	103	75-124	1
2-Hexanone	ug/L (ppb)	250	105	97	60-136	8
1,3-Dichloropropane	ug/L (ppb)	50	104	102	76-126	2
Tetrachloroethene	ug/L (ppb)	50	97	97	76-121	0
Dibromochloromethane	ug/L (ppb)	50	112	112	84-133	0
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	102	102	82-115	0
Chlorobenzene	ug/L (ppb)	50	98	99	83-114	1
Ethylbenzene	ug/L (ppb)	50	100	100	77-124	0
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	112	112	84-127	0
m,p-Xylene	ug/L (ppb)	100	100	101	81-112	1
o-Xylene	ug/L (ppb)	50	100	101	81-121	1
Styrene	ug/L (ppb)	50	104	106	84-119	2
Isopropylbenzene	ug/L (ppb)	50	100	106	80-117	6
Bromoform	ug/L (ppb)	50	104	107	74-136	3
n-Propylbenzene	ug/L (ppb)	50	96	97	74-126	1
Bromobenzene	ug/L (ppb)	50	97	98	80-121	1
1,3,5-Trimethylbenzene	ug/L (ppb)	50	101	101	78-123	0
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	103	104	66-126	1
1,2,3-Trichloropropane	ug/L (ppb)	50	95	96	67-124	1
2-Chlorotoluene	ug/L (ppb)	50	95	96	77-127	1
4-Chlorotoluene	ug/L (ppb)	50	96	97	78-128	1
tert-Butylbenzene	ug/L (ppb)	50	102	102	80-123	0
1,2,4-Trimethylbenzene	ug/L (ppb)	50	100	99	79-122	1
sec-Butylbenzene	ug/L (ppb)	50	103	103	80-116	0
p-Isopropyltoluene	ug/L (ppb)	50	101	101	81-123	0
1,3-Dichlorobenzene	ug/L (ppb)	50	100	100	83-113	0
1,4-Dichlorobenzene	ug/L (ppb)	50	98	99	83-107	1
1,2-Dichlorobenzene	ug/L (ppb)	50	101	102	84-112	1
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	106	104	57-141	2
1,2,4-Trichlorobenzene	ug/L (ppb)	50	104	103	72-130	1
Hexachlorobutadiene	ug/L (ppb)	50	98	97	53-141	1
Naphthalene	ug/L (ppb)	50	109	107	64-133	2
1,2,3-Trichlorobenzene	ug/L (ppb)	50	103	103	65-136	0

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

003094

SAMPLE CHAIN OF CUSTODY ME 03-05-20

A04 / VW2

Page # ____ of ____

Report To Tom Whitman

Company Whitman Env. Sciences

Address 6812 16th Ave NE

City, State, ZIP Seattle, WA 98115

Phone ____ Email whitenviro@yahoo.com

SAMPLERS (*signature*)

PROJECT NAME: 12th + Yesler

PO #: WES-1591

REMARKS

INVOICE TO

Project specific RLs? - Yes / No

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

SAMPLE DISPOSAL
- ☐ Archive samples
- ☐ Other ____
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082					Notes
MW-1-GW	01 A-D	3-5-20	1:20	Water	4	X	X			X							
MW-5-GW	02		2:00		4	X	X			X							
GEO-B7-GW	03		2:35		4	X	X			X							
GEO-B9-GW	04		1:40		4	X	X			X							
WES-17-GW	05		2:10		4	X	X			X							
WES-18-GW	06		2:20		4	X	X			X							
WES-19-GW	07		2:40		4	X	X			X							
BN-24-GW	08 A-C	8:15	8:15		3					X							
BN-25-GW	09	8:30	8:30		3					X							Samples received at 14°C
BN-26-GW	10	8:45	8:45		3					X							
BN-27-GW	11		9:00		3					X							

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

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	[signature]		WES	3-5-20	3:15
Received by:	Hong	HONG NGUYEN	FBI	✓	✓
Relinquished by:					
Received by:					

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

March 16, 2020

Dan Whitman, Project Manager
Whitman Environmental Sciences
6812 16th Ave NE
Seattle, WA 98115

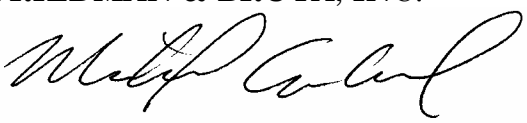
Dear Mr Whitman:

Included are the results from the testing of material submitted on March 6, 2020 from the 12th + Yesler WES-1591, F&BI 003136 project. There are 12 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
WES0316R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on March 6, 2020 by Friedman & Bruya, Inc. from the Whitman Environmental Sciences 12th + Yesler WES-1591, F&BI 003136 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Whitman Environmental Sciences
003136 -01	WES-17-1.5'
003136 -02	WES-17-4'
003136 -03	WES-18-1'
003136 -04	WES-18-5.5'
003136 -05	WES-19-1.5'
003136 -06	WES-19-5'

The 8260D matrix spike and matrix spike duplicate failed the relative percent difference for several analytes. The analytes were not detected in the samples therefore the data were acceptable.

All other quality control requirements were acceptable.

Analysis For Total Metals By EPA Method 6020B

Client ID:	WES-18-1'	Client:	Whitman Environmental Sciences
Date Received:	03/06/20	Project:	12th + Yesler WES-1591
Date Extracted:	03/10/20	Lab ID:	003136-03
Date Analyzed:	03/10/20	Data File:	003136-03.085
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.56
Cadmium	<1
Chromium	15.7
Lead	8.62
Mercury	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	WES-19-5'	Client:	Whitman Environmental Sciences
Date Received:	03/06/20	Project:	12th + Yesler WES-1591
Date Extracted:	03/10/20	Lab ID:	003136-06
Date Analyzed:	03/10/20	Data File:	003136-06.086
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	12.0
Cadmium	<1
Chromium	23.2
Lead	2.95
Mercury	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th + Yesler WES-1591
Date Extracted:	03/10/20	Lab ID:	I0-142 mb2
Date Analyzed:	03/10/20	Data File:	I0-142 mb2.059
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Cadmium	<1
Chromium	<1
Lead	<1
Mercury	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	WES-17-1.5'	Client:	Whitman Environmental Sciences
Date Received:	03/06/20	Project:	12th + Yesler WES-1591
Date Extracted:	03/09/20	Lab ID:	003136-01
Date Analyzed:	03/12/20	Data File:	031166.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	62	145
Toluene-d8	92	55	145
4-Bromofluorobenzene	91	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.13
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	WES-18-1'	Client:	Whitman Environmental Sciences
Date Received:	03/06/20	Project:	12th + Yesler WES-1591
Date Extracted:	03/09/20	Lab ID:	003136-03
Date Analyzed:	03/12/20	Data File:	031167.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	62	145
Toluene-d8	92	55	145
4-Bromofluorobenzene	91	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	WES-19-1.5'	Client:	Whitman Environmental Sciences
Date Received:	03/06/20	Project:	12th + Yesler WES-1591
Date Extracted:	03/09/20	Lab ID:	003136-05
Date Analyzed:	03/12/20	Data File:	031168.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	62	145
Toluene-d8	93	55	145
4-Bromofluorobenzene	94	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th + Yesler WES-1591
Date Extracted:	03/09/20	Lab ID:	00-565 mb
Date Analyzed:	03/09/20	Data File:	030913.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	62	145
Toluene-d8	94	55	145
4-Bromofluorobenzene	97	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Date of Report: 03/16/20
Date Received: 03/06/20
Project: 12th + Yesler WES-1591, F&BI 003136

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 003125-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	2.03	82	76	75-125	8
Cadmium	mg/kg (ppm)	10	<1	100	98	75-125	2
Chromium	mg/kg (ppm)	50	13.8	80	88	75-125	10
Lead	mg/kg (ppm)	50	1.81	96	94	75-125	2
Mercury	mg/kg (ppm	5	<1	97	96	75-125	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	83	80-120
Cadmium	mg/kg (ppm)	10	96	80-120
Chromium	mg/kg (ppm)	50	95	80-120
Lead	mg/kg (ppm)	50	100	80-120
Mercury	mg/kg (ppm)	5	100	80-120

Date of Report: 03/16/20
Date Received: 03/06/20
Project: 12th + Yesler WES-1591, F&BI 003136

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 003144-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	2.5	<0.5	31	25	10-142	21 vo
Chloromethane	mg/kg (ppm)	2.5	<0.5	56	45	10-126	22 vo
Vinyl chloride	mg/kg (ppm)	2.5	<0.05	61	49	10-138	22 vo
Bromomethane	mg/kg (ppm)	2.5	<0.5	66	59	10-163	11
Chloroethane	mg/kg (ppm)	2.5	<0.5	68	58	10-176	16
Trichlorofluoromethane	mg/kg (ppm)	2.5	<0.5	71	63	10-176	12
Acetone	mg/kg (ppm)	12.5	<0.5	126	114	10-163	10
1,1-Dichloroethene	mg/kg (ppm)	2.5	<0.05	80	72	10-160	11
Hexane	mg/kg (ppm)	2.5	<0.25	71	68	10-137	4
Methylene chloride	mg/kg (ppm)	2.5	<0.5	89	82	10-156	8
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	<0.05	75	70	21-145	7
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	84	79	14-137	6
1,1-Dichloroethane	mg/kg (ppm)	2.5	<0.05	88	85	19-140	3
2,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	87	85	10-158	2
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	92	87	25-135	6
Chloroform	mg/kg (ppm)	2.5	<0.05	91	89	21-145	2
2-Butanone (MEK)	mg/kg (ppm)	12.5	<0.5	103	108	19-147	5
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	85	89	12-160	5
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	<0.05	93	88	10-156	6
1,1-Dichloropropene	mg/kg (ppm)	2.5	<0.05	88	86	17-140	2
Carbon tetrachloride	mg/kg (ppm)	2.5	<0.05	95	92	9-164	3
Benzene	mg/kg (ppm)	2.5	<0.03	88	84	29-129	5
Trichloroethene	mg/kg (ppm)	2.5	<0.02	87	84	21-139	4
1,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	94	90	30-135	4
Bromodichloromethane	mg/kg (ppm)	2.5	<0.05	97	96	23-155	1
Dibromomethane	mg/kg (ppm)	2.5	<0.05	96	94	23-145	2
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	<0.5	103	99	24-155	4
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	98	97	28-144	1
Toluene	mg/kg (ppm)	2.5	<0.05	91	89	35-130	2
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	102	103	26-149	1
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	<0.05	101	101	10-205	0
2-Hexanone	mg/kg (ppm)	12.5	<0.5	108	114	15-166	5
1,3-Dichloropropane	mg/kg (ppm)	2.5	<0.05	100	98	31-137	2
Tetrachloroethene	mg/kg (ppm)	2.5	<0.025	91	87	20-133	4
Dibromochloromethane	mg/kg (ppm)	2.5	<0.05	100	97	28-150	3
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	<0.05	102	100	28-142	2
Chlorobenzene	mg/kg (ppm)	2.5	<0.05	93	89	32-129	4
Ethylbenzene	mg/kg (ppm)	2.5	<0.05	93	89	32-137	4
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	102	98	31-143	4
m,p-Xylene	mg/kg (ppm)	5	<0.1	94	89	34-136	5
o-Xylene	mg/kg (ppm)	2.5	<0.05	95	89	33-134	7
Styrene	mg/kg (ppm)	2.5	<0.05	97	92	35-137	5
Isopropylbenzene	mg/kg (ppm)	2.5	<0.05	96	89	31-142	8
Bromoform	mg/kg (ppm)	2.5	<0.05	96	92	21-156	4
n-Propylbenzene	mg/kg (ppm)	2.5	<0.05	95	94	23-146	1
Bromobenzene	mg/kg (ppm)	2.5	<0.05	95	94	34-130	1
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	98	94	18-149	4
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	101	100	28-140	1
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	<0.05	99	100	25-144	1
2-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	94	93	31-134	1
4-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	94	94	31-136	0
tert-Butylbenzene	mg/kg (ppm)	2.5	<0.05	100	96	30-137	4
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	97	94	10-182	3
sec-Butylbenzene	mg/kg (ppm)	2.5	<0.05	97	93	23-145	4
p-Isopropyltoluene	mg/kg (ppm)	2.5	<0.05	98	93	21-149	5
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	93	89	30-131	4
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	91	88	29-129	3
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	93	87	31-132	7
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	<0.5	101	95	11-161	6
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	98	89	22-142	10
Hexachlorobutadiene	mg/kg (ppm)	2.5	<0.25	100	89	10-142	12
Naphthalene	mg/kg (ppm)	2.5	<0.05	106	97	14-157	9
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	102	94	20-144	8

Date of Report: 03/16/20
Date Received: 03/06/20
Project: 12th + Yesler WES-1591, F&BI 003136

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	2.5	65	10-146
Chloromethane	mg/kg (ppm)	2.5	75	27-133
Vinyl chloride	mg/kg (ppm)	2.5	77	22-139
Bromomethane	mg/kg (ppm)	2.5	98	38-114
Chloroethane	mg/kg (ppm)	2.5	98	9-163
Trichlorofluoromethane	mg/kg (ppm)	2.5	103	10-196
Acetone	mg/kg (ppm)	12.5	88	52-141
1,1-Dichloroethene	mg/kg (ppm)	2.5	111	47-128
Hexane	mg/kg (ppm)	2.5	95	43-142
Methylene chloride	mg/kg (ppm)	2.5	116	42-132
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	100	60-123
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	110	67-129
1,1-Dichloroethane	mg/kg (ppm)	2.5	107	68-115
2,2-Dichloropropane	mg/kg (ppm)	2.5	132	52-170
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	112	72-127
Chloroform	mg/kg (ppm)	2.5	107	66-120
2-Butanone (MEK)	mg/kg (ppm)	12.5	80	72-127
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	90	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	122	62-131
1,1-Dichloropropene	mg/kg (ppm)	2.5	98	69-128
Carbon tetrachloride	mg/kg (ppm)	2.5	130	60-139
Benzene	mg/kg (ppm)	2.5	98	68-114
Trichloroethene	mg/kg (ppm)	2.5	93	64-117
1,2-Dichloropropane	mg/kg (ppm)	2.5	100	72-127
Bromodichloromethane	mg/kg (ppm)	2.5	105	72-130
Dibromomethane	mg/kg (ppm)	2.5	98	70-120
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	105	45-145
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	94	75-136
Toluene	mg/kg (ppm)	2.5	107	66-126
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	102	72-132
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	110	75-113
2-Hexanone	mg/kg (ppm)	12.5	99	33-152
1,3-Dichloropropane	mg/kg (ppm)	2.5	100	72-130
Tetrachloroethene	mg/kg (ppm)	2.5	106	72-114
Dibromochloromethane	mg/kg (ppm)	2.5	116	74-125
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	105	74-132
Chlorobenzene	mg/kg (ppm)	2.5	103	76-111
Ethylbenzene	mg/kg (ppm)	2.5	111	64-123
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	135	69-135
m,p-Xylene	mg/kg (ppm)	5	111	78-122
o-Xylene	mg/kg (ppm)	2.5	116	77-124
Styrene	mg/kg (ppm)	2.5	110	74-126
Isopropylbenzene	mg/kg (ppm)	2.5	120	76-127
Bromoform	mg/kg (ppm)	2.5	120	56-132
n-Propylbenzene	mg/kg (ppm)	2.5	112	74-124
Bromobenzene	mg/kg (ppm)	2.5	104	72-122
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	116	76-126
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	117	56-143
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	112	61-137
2-Chlorotoluene	mg/kg (ppm)	2.5	111	74-121
4-Chlorotoluene	mg/kg (ppm)	2.5	106	75-122
tert-Butylbenzene	mg/kg (ppm)	2.5	114	73-130
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	115	76-125
sec-Butylbenzene	mg/kg (ppm)	2.5	114	71-130
p-Isopropyltoluene	mg/kg (ppm)	2.5	116	70-132
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	105	75-121
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	103	74-117
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	108	76-121
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	134	58-138
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	120	64-135
Hexachlorobutadiene	mg/kg (ppm)	2.5	124	50-153
Naphthalene	mg/kg (ppm)	2.5	130	63-140
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	125	63-138

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

003 136 ND

SAMPLE CHAIN OF CUSTODY

ME 03/06/20

Page # 1 of 2

Report To

Company

Address

City, State, ZIP

Phone Email

SAMPLERS (*signature*)

PROJECT NAME: 12TH + Yesler

PO #: 065 -1591

REMARKS

Project specific RLs? - Yes / No

INVOICE TO

TURNAROUND TIME
- [x] Standard turnaround
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [ ] Archive samples
- [ ] Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	4				Notes
OES-17-1.5'	01A-B3-5			Soil	5					X							
OES-17-4'	07																Hold
OES-18-1'	03												X				
OES-18-5.5'	04																Hold
OES-19-1.5'	05																
OES-19-5'	06												X				Hold

ANALYSES REQUESTED

Samples received at 4 °C

~~Samples received at °C~~ (ND)

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		OES	3-6-20	5:37
Received by:	Eric Clarke	F B	3/6/20	17:37
Relinquished by:				
Received by:				

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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Eric Young, B.S.

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March 18, 2020

Dan Whitman, Project Manager
Whitman Environmental Sciences
6812 16th Ave NE
Seattle, WA 98115

Dear Mr Whitman:

Included are the additional results from the testing of material submitted on March 6, 2020 from the 12th + Yesler WES-1591, F&BI 003136 project. There are 6 pages included in this report.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
WES0318R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on March 6, 2020 by Friedman & Bruya, Inc. from the Whitman Environmental Sciences 12th + Yesler WES-1591, F&BI 003136 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Whitman Environmental Sciences
003136 -01	WES-17-1.5'
003136 -02	WES-17-4'
003136 -03	WES-18-1'
003136 -04	WES-18-5.5'
003136 -05	WES-19-1.5'
003136 -06	WES-19-5'

All quality control requirements were acceptable.

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	WES-17-4'	Client:	Whitman Environmental Sciences
Date Received:	03/06/20	Project:	12th + Yesler WES-1591
Date Extracted:	03/16/20	Lab ID:	003136-02
Date Analyzed:	03/16/20	Data File:	031632.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	107	50	150
Toluene-d8	101	50	150
4-Bromofluorobenzene	101	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	2.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th + Yesler WES-1591
Date Extracted:	03/16/20	Lab ID:	00-616 mb2
Date Analyzed:	03/16/20	Data File:	031614.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	50	150
Toluene-d8	101	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Date of Report: 03/18/20
Date Received: 03/06/20
Project: 12th + Yesler WES-1591, F&BI 003136

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 003231-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	2.5	<0.5	31	27	10-142	14
Chloromethane	mg/kg (ppm)	2.5	<0.5	76	63	10-126	19
Vinyl chloride	mg/kg (ppm)	2.5	<0.05	81	68	10-138	17
Bromomethane	mg/kg (ppm)	2.5	<0.5	96	79	10-163	19
Chloroethane	mg/kg (ppm)	2.5	<0.5	92	76	10-176	19
Trichlorofluoromethane	mg/kg (ppm)	2.5	<0.5	78	68	10-176	14
Acetone	mg/kg (ppm)	12.5	<0.5	100	93	10-163	7
1,1-Dichloroethene	mg/kg (ppm)	2.5	<0.05	91	82	10-160	10
Hexane	mg/kg (ppm)	2.5	<0.25	55	60	10-137	9
Methylene chloride	mg/kg (ppm)	2.5	<0.5	103	90	10-156	13
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	<0.05	94	96	21-145	2
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	85	83	14-137	2
1,1-Dichloroethane	mg/kg (ppm)	2.5	<0.05	84	89	19-140	6
2,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	81	85	10-158	5
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	86	87	25-135	1
Chloroform	mg/kg (ppm)	2.5	<0.05	88	90	21-145	2
2-Butanone (MEK)	mg/kg (ppm)	12.5	<0.5	73	84	19-147	14
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	78	80	12-160	3
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	<0.05	86	88	10-156	2
1,1-Dichloropropene	mg/kg (ppm)	2.5	<0.05	80	81	17-140	1
Carbon tetrachloride	mg/kg (ppm)	2.5	<0.05	90	90	9-164	0
Benzene	mg/kg (ppm)	2.5	<0.03	82	82	29-129	0
Trichloroethene	mg/kg (ppm)	2.5	<0.02	84	83	21-139	1
1,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	85	85	30-135	0
Bromodichloromethane	mg/kg (ppm)	2.5	<0.05	93	87	23-155	7
Dibromomethane	mg/kg (ppm)	2.5	<0.05	87	85	23-145	2
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	<0.5	94	85	24-155	10
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	93	84	28-144	10
Toluene	mg/kg (ppm)	2.5	<0.05	84	73	35-130	14
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	90	84	26-149	7
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	<0.05	89	75	10-205	17
2-Hexanone	mg/kg (ppm)	12.5	<0.5	87	82	15-166	6
1,3-Dichloropropane	mg/kg (ppm)	2.5	<0.05	88	90	31-137	2
Tetrachloroethene	mg/kg (ppm)	2.5	<0.025	89	75	20-133	17
Dibromochloromethane	mg/kg (ppm)	2.5	<0.05	99	88	28-150	12
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	<0.05	91	77	28-142	17
Chlorobenzene	mg/kg (ppm)	2.5	<0.05	89	85	32-129	5
Ethylbenzene	mg/kg (ppm)	2.5	<0.05	87	74	32-137	16
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	98	86	31-143	13
m,p-Xylene	mg/kg (ppm)	5	<0.1	89	90	34-136	1
o-Xylene	mg/kg (ppm)	2.5	<0.05	90	80	33-134	12
Styrene	mg/kg (ppm)	2.5	<0.05	95	82	35-137	15
Isopropylbenzene	mg/kg (ppm)	2.5	<0.05	94	77	31-142	20
Bromoform	mg/kg (ppm)	2.5	<0.05	105	94	21-156	11
n-Propylbenzene	mg/kg (ppm)	2.5	<0.05	84	100	23-146	17
Bromobenzene	mg/kg (ppm)	2.5	<0.05	88	106	34-130	19
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	86	97	18-149	12
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	86	109	28-140	24 vo
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	<0.05	82	104	25-144	24 vo
2-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	83	99	31-134	18
4-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	83	95	31-136	13
tert-Butylbenzene	mg/kg (ppm)	2.5	<0.05	89	98	30-137	10
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	86	91	10-182	6
sec-Butylbenzene	mg/kg (ppm)	2.5	<0.05	88	86	23-145	2
p-Isopropyltoluene	mg/kg (ppm)	2.5	<0.05	87	86	21-149	1
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	90	90	30-131	0
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	90	94	29-129	4
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	91	105	31-132	14
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	<0.5	88	108	11-161	20
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	91	100	22-142	9
Hexachlorobutadiene	mg/kg (ppm)	2.5	<0.25	90	97	10-142	7
Naphthalene	mg/kg (ppm)	2.5	<0.05	93	97	14-157	4
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	92	98	20-144	6

Date of Report: 03/18/20
Date Received: 03/06/20
Project: 12th + Yesler WES-1591, F&BI 003136

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	2.5	79	10-146
Chloromethane	mg/kg (ppm)	2.5	102	27-133
Vinyl chloride	mg/kg (ppm)	2.5	109	22-139
Bromomethane	mg/kg (ppm)	2.5	96	38-114
Chloroethane	mg/kg (ppm)	2.5	109	9-163
Trichlorofluoromethane	mg/kg (ppm)	2.5	103	10-196
Acetone	mg/kg (ppm)	12.5	115	52-141
1,1-Dichloroethene	mg/kg (ppm)	2.5	108	47-128
Hexane	mg/kg (ppm)	2.5	102	43-142
Methylene chloride	mg/kg (ppm)	2.5	109	42-132
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	111	60-123
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	105	67-129
1,1-Dichloroethane	mg/kg (ppm)	2.5	109	68-115
2,2-Dichloropropane	mg/kg (ppm)	2.5	113	52-170
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	105	72-127
Chloroform	mg/kg (ppm)	2.5	107	66-120
2-Butanone (MEK)	mg/kg (ppm)	12.5	105	72-127
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	83	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	109	62-131
1,1-Dichloropropene	mg/kg (ppm)	2.5	90	69-128
Carbon tetrachloride	mg/kg (ppm)	2.5	104	60-139
Benzene	mg/kg (ppm)	2.5	89	68-114
Trichloroethene	mg/kg (ppm)	2.5	90	64-117
1,2-Dichloropropane	mg/kg (ppm)	2.5	92	72-127
Bromodichloromethane	mg/kg (ppm)	2.5	103	72-130
Dibromomethane	mg/kg (ppm)	2.5	94	70-120
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	96	45-145
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	104	75-136
Toluene	mg/kg (ppm)	2.5	98	66-126
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	106	72-132
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	101	75-113
2-Hexanone	mg/kg (ppm)	12.5	100	33-152
1,3-Dichloropropane	mg/kg (ppm)	2.5	99	72-130
Tetrachloroethene	mg/kg (ppm)	2.5	102	72-114
Dibromochloromethane	mg/kg (ppm)	2.5	119	74-125
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	101	74-132
Chlorobenzene	mg/kg (ppm)	2.5	98	76-111
Ethylbenzene	mg/kg (ppm)	2.5	100	64-123
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	119	69-135
m,p-Xylene	mg/kg (ppm)	5	101	78-122
o-Xylene	mg/kg (ppm)	2.5	102	77-124
Styrene	mg/kg (ppm)	2.5	104	74-126
Isopropylbenzene	mg/kg (ppm)	2.5	108	76-127
Bromoform	mg/kg (ppm)	2.5	127	56-132
n-Propylbenzene	mg/kg (ppm)	2.5	98	74-124
Bromobenzene	mg/kg (ppm)	2.5	101	72-122
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	105	76-126
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	105	56-143
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	96	61-137
2-Chlorotoluene	mg/kg (ppm)	2.5	99	74-121
4-Chlorotoluene	mg/kg (ppm)	2.5	98	75-122
tert-Butylbenzene	mg/kg (ppm)	2.5	107	73-130
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	103	76-125
sec-Butylbenzene	mg/kg (ppm)	2.5	107	71-130
p-Isopropyltoluene	mg/kg (ppm)	2.5	106	70-132
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	104	75-121
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	102	74-117
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	108	76-121
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	118	58-138
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	116	64-135
Hexachlorobutadiene	mg/kg (ppm)	2.5	115	50-153
Naphthalene	mg/kg (ppm)	2.5	118	63-140
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	116	63-138

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

003 136 (ND)

SAMPLE CHAIN OF CUSTODY

ME 03/06/20

Page # VS2/ of 2

Report To [illegible]

Company [illegible] Env. Sciences

Address [illegible] 16th Avenue

City, State, ZIP Seattle, WA

Phone ______ Email [illegible]@yahoo.com

SAMPLERS (signature)	
PROJECT NAME: 12th + Yesler	PO #: OES -1591
REMARKS	INVOICE TO
Project specific RLs? - Yes / No	

TURNAROUND TIME
- ☒ Standard turnaround
- ☐ RUSH ______
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Archive samples
- ☐ Other ______
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	[illegible]			Notes
OES-17-1.5'	01 A-E 3-5			Soil	5											◆ - per DW 3/16/20 ME
OES-17-4'	02									X						
OES-18-1'	03									◆						Hold
OES-18-5.5'	04											X				
OES-19-1.5'	05															Hold
OES-19-5'	06											X				Hold

Samples received at 4 °C

~~Samples received at ___ °C~~ (DP)

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

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: [signature]	[illegible]	OES	3-6-20	5:37
Received by: [signature]	Eric Young	FB	3/6/20	1737
Relinquished by:				
Received by:				

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

March 23, 2020

Dan Whitman, Project Manager
Whitman Environmental Sciences
6812 16th Ave NE
Seattle, WA 98115

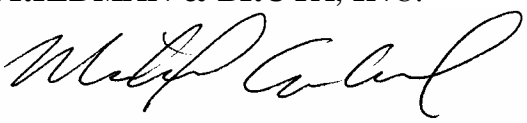
Dear Mr Whitman:

Included are the results from the testing of material submitted on March 17, 2020 from the 12th+Yesler WES-1591, F&BI 003283 project. There are 16 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
WES0323R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on March 17, 2020 by Friedman & Bruya, Inc. from the Whitman Environmental Sciences 12th+Yesler WES-1591, F&BI 003283 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Whitman Environmental Sciences
003283 -01	MW-2-GW
003283 -02	MW-3-GW
003283 -03	MW-4-GW
003283 -04	MW-6-GW
003283 -05	MW-7-GW
003283 -06	MW-12-GW
003283 -07	MW-13-GW

All quality control requirements were acceptable.

Date of Report: 03/23/20
Date Received: 03/17/20
Project: 12th+Yesler WES-1591, F&BI 003283
Date Extracted: 03/18/20
Date Analyzed: 03/19/20

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 51-134)
MW-2-GW 003283-01	<100	91
MW-3-GW 003283-02	<100	93
MW-4-GW 003283-03	<100	94
MW-6-GW 003283-04	<100	95
MW-7-GW 003283-05	<100	95
MW-12-GW 003283-06	<100	95
MW-13-GW 003283-07	<100	95
Method Blank 00-649 MB	<100	94

Date of Report: 03/23/20
Date Received: 03/17/20
Project: 12th+Yesler WES-1591, F&BI 003283
Date Extracted: 03/18/20
Date Analyzed: 03/18/20

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 41-152)
MW-2-GW 003283-01	<50	<250	107
MW-3-GW 003283-02	210	<250	89
MW-4-GW 003283-03	<50	<250	105
MW-6-GW 003283-04	<50	<250	109
MW-7-GW 003283-05	<50	<250	106
MW-12-GW 003283-06	120 x	<250	110
MW-13-GW 003283-07	<50	<250	93
Method Blank 00-698 MB	<50	<250	111

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-2-GW	Client:	Whitman Environmental Sciences
Date Received:	03/17/20	Project:	12th+Yesler WES-1591, F&BI 003283
Date Extracted:	03/18/20	Lab ID:	003283-01
Date Analyzed:	03/18/20	Data File:	031833.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	106	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	100	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-3-GW	Client:	Whitman Environmental Sciences
Date Received:	03/17/20	Project:	12th+Yesler WES-1591, F&BI 003283
Date Extracted:	03/18/20	Lab ID:	003283-02
Date Analyzed:	03/18/20	Data File:	031834.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	50	150
Toluene-d8	101	50	150
4-Bromofluorobenzene	101	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-4-GW	Client:	Whitman Environmental Sciences
Date Received:	03/17/20	Project:	12th+Yesler WES-1591, F&BI 003283
Date Extracted:	03/18/20	Lab ID:	003283-03
Date Analyzed:	03/18/20	Data File:	031831.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	105	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	96	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-6-GW	Client:	Whitman Environmental Sciences
Date Received:	03/17/20	Project:	12th+Yesler WES-1591, F&BI 003283
Date Extracted:	03/18/20	Lab ID:	003283-04
Date Analyzed:	03/18/20	Data File:	031835.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	105	50	150
Toluene-d8	102	50	150
4-Bromofluorobenzene	104	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	1.1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	3.3	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-7-GW	Client:	Whitman Environmental Sciences
Date Received:	03/17/20	Project:	12th+Yesler WES-1591, F&BI 003283
Date Extracted:	03/18/20	Lab ID:	003283-05
Date Analyzed:	03/18/20	Data File:	031836.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	106	50	150
Toluene-d8	95	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-12-GW	Client:	Whitman Environmental Sciences
Date Received:	03/17/20	Project:	12th+Yesler WES-1591, F&BI 003283
Date Extracted:	03/18/20	Lab ID:	003283-06
Date Analyzed:	03/18/20	Data File:	031837.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-13-GW	Client:	Whitman Environmental Sciences
Date Received:	03/17/20	Project:	12th+Yesler WES-1591, F&BI 003283
Date Extracted:	03/18/20	Lab ID:	003283-07
Date Analyzed:	03/18/20	Data File:	031832.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	106	50	150
Toluene-d8	101	50	150
4-Bromofluorobenzene	100	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th+Yesler WES-1591, F&BI 003283
Date Extracted:	03/18/20	Lab ID:	00-694 mb
Date Analyzed:	03/18/20	Data File:	031825.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	91	57	121
Toluene-d8	102	63	127
4-Bromofluorobenzene	106	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Date of Report: 03/23/20
Date Received: 03/17/20
Project: 12th+Yesler WES-1591, F&BI 003283

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 003294-05 1/5 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<500	710 c	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	98	69-134

Date of Report: 03/23/20
Date Received: 03/17/20
Project: 12th+Yesler WES-1591, F&BI 003283

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	113	114	63-142	1

Date of Report: 03/23/20
Date Received: 03/17/20
Project: 12th+Yesler WES-1591, F&BI 003283

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 003286-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	<1	<1	nm
Chloromethane	ug/L (ppb)	<10	<10	nm
Vinyl chloride	ug/L (ppb)	<0.2	<0.2	nm
Bromomethane	ug/L (ppb)	<1	<1	nm
Chloroethane	ug/L (ppb)	<1	<1	nm
Trichlorofluoromethane	ug/L (ppb)	<1	<1	nm
Acetone	ug/L (ppb)	<50	<50	nm
1,1-Dichloroethene	ug/L (ppb)	<1	<1	nm
Hexane	ug/L (ppb)	<1	<1	nm
Methylene chloride	ug/L (ppb)	<5	<5	nm
Methyl t-butyl ether (MTBE)	ug/L (ppb)	<1	<1	nm
trans-1,2-Dichloroethene	ug/L (ppb)	<1	<1	nm
1,1-Dichloroethane	ug/L (ppb)	<1	<1	nm
2,2-Dichloropropane	ug/L (ppb)	<1	<1	nm
cis-1,2-Dichloroethene	ug/L (ppb)	<1	<1	nm
Chloroform	ug/L (ppb)	<1	<1	nm
2-Butanone (MEK)	ug/L (ppb)	<10	<10	nm
1,2-Dichloroethane (EDC)	ug/L (ppb)	<1	<1	nm
1,1,1-Trichloroethane	ug/L (ppb)	<1	<1	nm
1,1-Dichloropropene	ug/L (ppb)	<1	<1	nm
Carbon tetrachloride	ug/L (ppb)	<1	<1	nm
Benzene	ug/L (ppb)	<0.35	<0.35	nm
Trichloroethene	ug/L (ppb)	<1	<1	nm
1,2-Dichloropropane	ug/L (ppb)	<1	<1	nm
Bromodichloromethane	ug/L (ppb)	<1	<1	nm
Dibromomethane	ug/L (ppb)	<1	<1	nm
4-Methyl-2-pentanone	ug/L (ppb)	<10	<10	nm
cis-1,3-Dichloropropene	ug/L (ppb)	<1	<1	nm
Toluene	ug/L (ppb)	<1	<1	nm
trans-1,3-Dichloropropene	ug/L (ppb)	<1	<1	nm
1,1,2-Trichloroethane	ug/L (ppb)	<1	<1	nm
2-Hexanone	ug/L (ppb)	<10	<10	nm
1,3-Dichloropropane	ug/L (ppb)	<1	<1	nm
Tetrachloroethene	ug/L (ppb)	<1	<1	nm
Dibromochloromethane	ug/L (ppb)	<1	<1	nm
1,2-Dibromoethane (EDB)	ug/L (ppb)	<1	<1	nm
Chlorobenzene	ug/L (ppb)	<1	<1	nm
Ethylbenzene	ug/L (ppb)	<1	<1	nm
1,1,1,2-Tetrachloroethane	ug/L (ppb)	<1	<1	nm
m,p-Xylene	ug/L (ppb)	<2	<2	nm
o-Xylene	ug/L (ppb)	<1	<1	nm
Styrene	ug/L (ppb)	<1	<1	nm
Isopropylbenzene	ug/L (ppb)	<1	<1	nm
Bromoform	ug/L (ppb)	<1	<1	nm
n-Propylbenzene	ug/L (ppb)	<1	<1	nm
Bromobenzene	ug/L (ppb)	<1	<1	nm
1,3,5-Trimethylbenzene	ug/L (ppb)	<1	<1	nm
1,1,2,2-Tetrachloroethane	ug/L (ppb)	<1	<1	nm
1,2,3-Trichloropropane	ug/L (ppb)	<1	<1	nm
2-Chlorotoluene	ug/L (ppb)	<1	<1	nm
4-Chlorotoluene	ug/L (ppb)	<1	<1	nm
tert-Butylbenzene	ug/L (ppb)	<1	<1	nm
1,2,4-Trimethylbenzene	ug/L (ppb)	<1	<1	nm
sec-Butylbenzene	ug/L (ppb)	<1	<1	nm
p-Isopropyltoluene	ug/L (ppb)	<1	<1	nm
1,3-Dichlorobenzene	ug/L (ppb)	<1	<1	nm
1,4-Dichlorobenzene	ug/L (ppb)	<1	<1	nm
1,2-Dichlorobenzene	ug/L (ppb)	<1	<1	nm
1,2-Dibromo-3-chloropropane	ug/L (ppb)	<10	<10	nm
1,2,4-Trichlorobenzene	ug/L (ppb)	<1	<1	nm
Hexachlorobutadiene	ug/L (ppb)	<1	<1	nm
Naphthalene	ug/L (ppb)	<1	<1	nm
1,2,3-Trichlorobenzene	ug/L (ppb)	<1	<1	nm

Date of Report: 03/23/20
Date Received: 03/17/20
Project: 12th+Yesler WES-1591, F&BI 003283

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	50	96	85	50-157	12
Chloromethane	ug/L (ppb)	50	95	89	62-130	7
Vinyl chloride	ug/L (ppb)	50	101	94	70-128	7
Bromomethane	ug/L (ppb)	50	98	90	60-143	9
Chloroethane	ug/L (ppb)	50	97	91	66-149	6
Trichlorofluoromethane	ug/L (ppb)	50	101	92	65-138	9
Acetone	ug/L (ppb)	250	101	97	44-145	4
1,1-Dichloroethene	ug/L (ppb)	50	102	94	72-121	8
Hexane	ug/L (ppb)	50	98	96	51-153	2
Methylene chloride	ug/L (ppb)	50	92	84	63-132	9
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	111	103	70-122	7
trans-1,2-Dichloroethene	ug/L (ppb)	50	99	91	76-118	8
1,1-Dichloroethane	ug/L (ppb)	50	97	91	77-119	6
2,2-Dichloropropane	ug/L (ppb)	50	95	86	62-141	10
cis-1,2-Dichloroethene	ug/L (ppb)	50	103	97	76-119	6
Chloroform	ug/L (ppb)	50	98	93	78-117	5
2-Butanone (MEK)	ug/L (ppb)	250	100	108	48-150	8
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	90	95	75-116	5
1,1,1-Trichloroethane	ug/L (ppb)	50	97	92	80-116	5
1,1-Dichloropropene	ug/L (ppb)	50	101	100	78-119	1
Carbon tetrachloride	ug/L (ppb)	50	100	92	72-128	8
Benzene	ug/L (ppb)	50	96	96	75-116	0
Trichloroethene	ug/L (ppb)	50	100	102	72-119	2
1,2-Dichloropropane	ug/L (ppb)	50	94	98	79-121	4
Bromodichloromethane	ug/L (ppb)	50	94	100	76-120	6
Dibromomethane	ug/L (ppb)	50	96	104	79-121	8
4-Methyl-2-pentanone	ug/L (ppb)	250	114	121	54-153	6
cis-1,3-Dichloropropene	ug/L (ppb)	50	97	113	76-128	15
Toluene	ug/L (ppb)	50	103	100	79-115	3
trans-1,3-Dichloropropene	ug/L (ppb)	50	98	110	76-128	12
1,1,2-Trichloroethane	ug/L (ppb)	50	101	106	78-120	5
2-Hexanone	ug/L (ppb)	250	102	110	49-147	8
1,3-Dichloropropane	ug/L (ppb)	50	98	108	81-111	10
Tetrachloroethene	ug/L (ppb)	50	99	98	78-109	1
Dibromochloromethane	ug/L (ppb)	50	104	107	63-140	3
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	101	110	82-118	9
Chlorobenzene	ug/L (ppb)	50	100	102	80-113	2
Ethylbenzene	ug/L (ppb)	50	101	97	83-111	4
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	111	101	76-125	9
m,p-Xylene	ug/L (ppb)	100	106	103	81-112	3
o-Xylene	ug/L (ppb)	50	111	104	81-117	7
Styrene	ug/L (ppb)	50	103	104	83-121	1
Isopropylbenzene	ug/L (ppb)	50	110	100	78-118	10
Bromoform	ug/L (ppb)	50	109	113	40-161	4
n-Propylbenzene	ug/L (ppb)	50	100	99	81-115	1
Bromobenzene	ug/L (ppb)	50	99	104	80-113	5
1,3,5-Trimethylbenzene	ug/L (ppb)	50	109	105	83-117	4
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	107	110	79-118	3
1,2,3-Trichloropropane	ug/L (ppb)	50	104	108	74-116	4
2-Chlorotoluene	ug/L (ppb)	50	101	100	79-112	1
4-Chlorotoluene	ug/L (ppb)	50	96	100	80-116	4
tert-Butylbenzene	ug/L (ppb)	50	110	110	81-119	0
1,2,4-Trimethylbenzene	ug/L (ppb)	50	106	102	81-121	4
sec-Butylbenzene	ug/L (ppb)	50	109	104	83-123	5
p-Isopropyltoluene	ug/L (ppb)	50	108	104	81-117	4
1,3-Dichlorobenzene	ug/L (ppb)	50	96	96	80-115	0
1,4-Dichlorobenzene	ug/L (ppb)	50	98	99	77-112	1
1,2-Dichlorobenzene	ug/L (ppb)	50	104	101	79-115	3
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	106	101	62-133	5
1,2,4-Trichlorobenzene	ug/L (ppb)	50	113	102	75-119	10
Hexachlorobutadiene	ug/L (ppb)	50	102	97	70-116	5
Naphthalene	ug/L (ppb)	50	125	110	72-131	13
1,2,3-Trichlorobenzene	ug/L (ppb)	50	116	101	74-122	14

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

003283

SAMPLE CHAIN OF CUSTODY

ME 03/17/20 VW3 / B05

Report To [redacted]

Company [redacted] ENVIRONMENTAL SCIENCES

Address 6812 16TH AVE NE

City, State, ZIP SEATTLE, WA 98115

Phone _____ Email [redacted]@YAHOO.COM

SAMPLERS (*signature*) [redacted]

PROJECT NAME: 12TH / JOSLER

PO #: WES - 1591

REMARKS: Project specific RLs? - Yes / No

INVOICE TO

Page # _____ of _____

TURNAROUND TIME
- ☐ Standard turnaround
- ☒ RUSH FRIDAY PLEASE.

Rush charges authorized by: _____

SAMPLE DISPOSAL
- ☐ Archive samples
- ☐ Other _____

Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082					Notes
MW-2-GW	01 A-D	3-17-20	PM	WATER	4	X	X			X							
MW-3-GW	02																
MW-4-GW	03																
MW-6-GW	04																
MW-7-GW	05																
MW-12-GW	06																
MW-13-GW	07																

ANALYSES REQUESTED

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: [redacted]		WES	3-17-20	4:17
Received by: [redacted]	Khoi Hoang	FBE	3-17-20	16:17
Relinquished by:				
Received by:		Samples received at 1.5 °C		

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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www.friedmanandbruya.com

April 9, 2020

Dan Whitman, Project Manager
Whitman Environmental Sciences
6812 16th Ave NE
Seattle, WA 98115

Dear Mr Whitman:

Included is the amended report from the testing of material submitted on March 26, 2020 from the 12th and Yesler WES-1591, F&BI 003433 project. The out of control result has been replaced with the reanalysis of MW15-1.5 and the additional result for MW15-5 has been included in the report.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
WES0406R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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Seattle, WA 98119-2029
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fbi@isomedia.com
www.friedmanandbruya.com

April 1, 2020

Dan Whitman, Project Manager
Whitman Environmental Sciences
6812 16th Ave NE
Seattle, WA 98115

Dear Mr Whitman:

Included are the results from the testing of material submitted on March 26, 2020 from the 12th and Yesler WES-1591, F&BI 003433 project. There are 14 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
WES0401R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on March 26, 2020 by Friedman & Bruya, Inc. from the Whitman Environmental Sciences 12th and Yesler WES-1591, F&BI 003433 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Whitman Environmental Sciences
003433 -01	MW15-1.5
003433 -02	MW15-5
003433 -03	MW15-10
003433 -04	MW15-17
003433 -05	MW15-23
003433 -06	WES-20-1
003433 -07	WES-21-1
003433 -08	WES-21-2.5
003433 -09	WES-22-1
003433 -10	WES-22-5

Acetone was detected in the 8260D analysis of sample MW15-1.5. The data were flagged as due to laboratory contamination. In addition, the calibration standard failed the acceptance criteria for acetone. The data were flagged accordingly.

The 8260D matrix spike and matrix spike duplicate failed the relative percent difference for several compounds. In addition, several compounds in the laboratory control sample exceeded the acceptance criteria. The analytes were not detected in the sample, therefore the data were acceptable.

All other quality control requirements were acceptable.

Analysis For Total Metals By EPA Method 6020B

Client ID:	WES-20-1	Client:	Whitman Environmental Sciences
Date Received:	03/26/20	Project:	12th and Yesler WES-1591
Date Extracted:	03/30/20	Lab ID:	003433-06
Date Analyzed:	03/30/20	Data File:	003433-06.125
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.89
Cadmium	<1
Chromium	20.2
Lead	37.7
Mercury	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	WES-22-1	Client:	Whitman Environmental Sciences
Date Received:	03/26/20	Project:	12th and Yesler WES-1591
Date Extracted:	03/30/20	Lab ID:	003433-09
Date Analyzed:	03/30/20	Data File:	003433-09.126
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	3.86
Cadmium	<1
Chromium	24.5
Lead	9.11
Mercury	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th and Yesler WES-1591
Date Extracted:	03/30/20	Lab ID:	I0-190 mb
Date Analyzed:	03/30/20	Data File:	I0-190 mb.077
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Cadmium	<1
Chromium	<1
Lead	<1
Mercury	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW15-1.5	Client:	Whitman Environmental Sciences
Date Received:	03/26/20	Project:	12th and Yesler WES-1591
Date Extracted:	04/02/20	Lab ID:	003433-01
Date Analyzed:	04/02/20	Data File:	040231.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW15-5	Client:	Whitman Environmental Sciences
Date Received:	03/26/20	Project:	12th and Yesler WES-1591
Date Extracted:	04/02/20	Lab ID:	003433-02
Date Analyzed:	04/02/20	Data File:	040232.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	50	150
Toluene-d8	103	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW15-23	Client:	Whitman Environmental Sciences
Date Received:	03/26/20	Project:	12th and Yesler WES-1591
Date Extracted:	03/24/20	Lab ID:	003433-05
Date Analyzed:	03/27/20	Data File:	032725.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	105	50	150
4-Bromofluorobenzene	96	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	WES-20-1	Client:	Whitman Environmental Sciences
Date Received:	03/26/20	Project:	12th and Yesler WES-1591
Date Extracted:	03/24/20	Lab ID:	003433-06
Date Analyzed:	03/27/20	Data File:	032726.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	105	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	WES-21-1	Client:	Whitman Environmental Sciences
Date Received:	03/26/20	Project:	12th and Yesler WES-1591
Date Extracted:	03/24/20	Lab ID:	003433-07
Date Analyzed:	03/27/20	Data File:	032727.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	103	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	WES-22-1	Client:	Whitman Environmental Sciences
Date Received:	03/26/20	Project:	12th and Yesler WES-1591
Date Extracted:	03/24/20	Lab ID:	003433-09
Date Analyzed:	03/27/20	Data File:	032728.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	103	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th and Yesler WES-1591
Date Extracted:	03/27/20	Lab ID:	00-758 mb
Date Analyzed:	03/27/20	Data File:	032718.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	50	150
Toluene-d8	104	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Date of Report: 04/01/20
Date Received: 03/26/20
Project: 12th and Yesler WES-1591, F&BI 003433

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 003308-06 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	1.31	82	81	75-125	1
Cadmium	mg/kg (ppm)	10	<1	97	98	75-125	1
Chromium	mg/kg (ppm)	50	18.4	99	102	75-125	3
Lead	mg/kg (ppm)	50	1.94	97	97	75-125	0
Mercury	mg/kg (ppm	5	<1	86	96	75-125	11

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	82	80-120
Cadmium	mg/kg (ppm)	10	97	80-120
Chromium	mg/kg (ppm)	50	112	80-120
Lead	mg/kg (ppm)	50	103	80-120
Mercury	mg/kg (ppm)	5	96	80-120

Date of Report: 04/01/20
Date Received: 03/26/20
Project: 12th and Yesler WES-1591, F&BI 003433

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 003433-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	2.5	<0.5	25	28	10-142	11
Chloromethane	mg/kg (ppm)	2.5	<0.5	44	55	10-126	22 vo
Vinyl chloride	mg/kg (ppm)	2.5	<0.05	46	57	10-138	21 vo
Bromomethane	mg/kg (ppm)	2.5	<0.5	55	69	10-163	23 vo
Chloroethane	mg/kg (ppm)	2.5	<0.5	55	70	10-176	24 vo
Trichlorofluoromethane	mg/kg (ppm)	2.5	<0.5	53	67	10-176	23 vo
Acetone	mg/kg (ppm)	12.5	1.5	88	80	10-163	10
1,1-Dichloroethene	mg/kg (ppm)	2.5	<0.05	63	82	10-160	26 vo
Hexane	mg/kg (ppm)	2.5	<0.25	49	59	10-137	19
Methylene chloride	mg/kg (ppm)	2.5	<0.5	64	80	10-156	22 vo
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	<0.05	72	96	21-145	29 vo
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	66	88	14-137	29 vo
1,1-Dichloroethane	mg/kg (ppm)	2.5	<0.05	70	89	19-140	24 vo
2,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	68	91	10-158	29 vo
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	2.2	-14	7 b	25-135	
Chloroform	mg/kg (ppm)	2.5	<0.05	72	92	21-145	24 vo
2-Butanone (MEK)	mg/kg (ppm)	12.5	0.88	65	74	19-147	13
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	64	82	12-160	25 vo
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	<0.05	72	92	10-156	24 vo
1,1-Dichloropropene	mg/kg (ppm)	2.5	<0.05	66	85	17-140	25 vo
Carbon tetrachloride	mg/kg (ppm)	2.5	<0.05	69	91	9-164	27 vo
Benzene	mg/kg (ppm)	2.5	<0.03	65	85	29-129	27 vo
Trichloroethene	mg/kg (ppm)	2.5	0.030	64	81	21-139	23 vo
1,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	68	87	30-135	25 vo
Bromodichloromethane	mg/kg (ppm)	2.5	<0.05	67	88	23-155	27 vo
Dibromomethane	mg/kg (ppm)	2.5	<0.05	65	85	23-145	27 vo
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	<0.5	76	94	24-155	21 vo
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	65	80	28-144	21 vo
Toluene	mg/kg (ppm)	2.5	<0.05	68	88	35-130	26 vo
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	62	79	26-149	24 vo
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	<0.05	65	83	10-205	24 vo
2-Hexanone	mg/kg (ppm)	12.5	0.48	69	76	15-166	10
1,3-Dichloropropane	mg/kg (ppm)	2.5	<0.05	64	83	31-137	26 vo
Tetrachloroethene	mg/kg (ppm)	2.5	0.096	67	84	20-133	23 vo
Dibromochloromethane	mg/kg (ppm)	2.5	<0.05	69	87	28-150	23 vo
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	<0.05	67	82	28-142	20
Chlorobenzene	mg/kg (ppm)	2.5	<0.05	68	88	32-129	26 vo
Ethylbenzene	mg/kg (ppm)	2.5	<0.05	71	91	32-137	25 vo
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	73	94	31-143	25 vo
m,p-Xylene	mg/kg (ppm)	5	<0.1	73	93	34-136	24 vo
o-Xylene	mg/kg (ppm)	2.5	<0.05	75	97	33-134	26 vo
Styrene	mg/kg (ppm)	2.5	<0.05	73	95	35-137	26 vo
Isopropylbenzene	mg/kg (ppm)	2.5	<0.05	75	97	31-142	26 vo
Bromoform	mg/kg (ppm)	2.5	<0.05	65	84	21-156	26 vo
n-Propylbenzene	mg/kg (ppm)	2.5	<0.05	72	92	23-146	24 vo
Bromobenzene	mg/kg (ppm)	2.5	<0.05	72	92	34-130	24 vo
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	74	93	18-149	23 vo
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	70	88	28-140	23 vo
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	<0.05	68	85	25-144	22 vo
2-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	72	92	31-134	24 vo
4-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	70	87	31-136	22 vo
tert-Butylbenzene	mg/kg (ppm)	2.5	<0.05	72	89	30-137	21 vo
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	75	95	10-182	24 vo
sec-Butylbenzene	mg/kg (ppm)	2.5	<0.05	75	94	23-145	22 vo
p-Isopropyltoluene	mg/kg (ppm)	2.5	<0.05	74	93	21-149	23 vo
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	72	89	30-131	21 vo
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	71	88	29-129	21 vo
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	72	90	31-132	22 vo
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	<0.5	70	84	11-161	18
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	78	96	22-142	21 vo
Hexachlorobutadiene	mg/kg (ppm)	2.5	<0.25	81	97	10-142	18
Naphthalene	mg/kg (ppm)	2.5	<0.05	78	94	14-157	19
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	79	96	20-144	19

Date of Report: 04/01/20
Date Received: 03/26/20
Project: 12th and Yesler WES-1591, F&BI 003433

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	2.5	52	10-146
Chloromethane	mg/kg (ppm)	2.5	82	27-133
Vinyl chloride	mg/kg (ppm)	2.5	91	22-139
Bromomethane	mg/kg (ppm)	2.5	96	38-114
Chloroethane	mg/kg (ppm)	2.5	104	9-163
Trichlorofluoromethane	mg/kg (ppm)	2.5	104	10-196
Acetone	mg/kg (ppm)	12.5	121	52-141
1,1-Dichloroethene	mg/kg (ppm)	2.5	111	47-128
Hexane	mg/kg (ppm)	2.5	102	43-142
Methylene chloride	mg/kg (ppm)	2.5	124	42-132
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	111	60-123
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	111	67-129
1,1-Dichloroethane	mg/kg (ppm)	2.5	117 vo	68-115
2,2-Dichloropropane	mg/kg (ppm)	2.5	112	52-170
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	115	72-127
Chloroform	mg/kg (ppm)	2.5	116	66-120
2-Butanone (MEK)	mg/kg (ppm)	12.5	114	72-127
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	111	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	118	62-131
1,1-Dichloropropene	mg/kg (ppm)	2.5	116	69-128
Carbon tetrachloride	mg/kg (ppm)	2.5	117	60-139
Benzene	mg/kg (ppm)	2.5	117 vo	68-114
Trichloroethene	mg/kg (ppm)	2.5	118 vo	64-117
1,2-Dichloropropane	mg/kg (ppm)	2.5	118	72-127
Bromodichloromethane	mg/kg (ppm)	2.5	122	72-130
Dibromomethane	mg/kg (ppm)	2.5	119	70-120
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	111	45-145
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	113	75-136
Toluene	mg/kg (ppm)	2.5	97	66-126
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	89	72-132
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	90	75-113
2-Hexanone	mg/kg (ppm)	12.5	93	33-152
1,3-Dichloropropane	mg/kg (ppm)	2.5	92	72-130
Tetrachloroethene	mg/kg (ppm)	2.5	96	72-114
Dibromochloromethane	mg/kg (ppm)	2.5	99	74-125
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	92	74-132
Chlorobenzene	mg/kg (ppm)	2.5	96	76-111
Ethylbenzene	mg/kg (ppm)	2.5	97	64-123
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	94	69-135
m,p-Xylene	mg/kg (ppm)	5	97	78-122
o-Xylene	mg/kg (ppm)	2.5	95	77-124
Styrene	mg/kg (ppm)	2.5	95	74-126
Isopropylbenzene	mg/kg (ppm)	2.5	99	76-127
Bromoform	mg/kg (ppm)	2.5	95	56-132
n-Propylbenzene	mg/kg (ppm)	2.5	94	74-124
Bromobenzene	mg/kg (ppm)	2.5	90	72-122
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	91	76-126
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	86	56-143
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	86	61-137
2-Chlorotoluene	mg/kg (ppm)	2.5	92	74-121
4-Chlorotoluene	mg/kg (ppm)	2.5	92	75-122
tert-Butylbenzene	mg/kg (ppm)	2.5	94	73-130
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	93	76-125
sec-Butylbenzene	mg/kg (ppm)	2.5	94	71-130
p-Isopropyltoluene	mg/kg (ppm)	2.5	95	70-132
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	93	75-121
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	95	74-117
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	93	76-121
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	86	58-138
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	97	64-135
Hexachlorobutadiene	mg/kg (ppm)	2.5	103	50-153
Naphthalene	mg/kg (ppm)	2.5	89	63-140
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	91	63-138

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

003433

SAMPLE CHAIN OF CUSTODY

ME 03-26-20

Page # 1 of 1

B I3

VS2

Report To WHITMAN ENV. SCIENCES

Company

Address

City, State, ZIP WHITENVIRO@ YAHOO.COM
JOHN F@ VEPCONSULTING.COM

Phone Email

SAMPLERS (*signature*)	
PROJECT NAME: 12th + Yesler	PO #: WES-1591
REMARKS	INVOICE TO
Project specific RLs? - Yes / No	

[redacted]RNAROUND TIME
- ☒ Standard turnaround
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Archive samples
- ☐ Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	~~VOCs EPA 8260~~	PAHs EPA 8270	PCBs EPA 8082	VOCs	MTCA 5	VOCs-Reextract		Notes
MW15-1.5	01 A-E	3-26-20	0920	soil	5					X			⊗		◆		⊗ - per DW 3/26/20 ME
MW15-5	02		0935										◆				◆ - per DW 4/1/20 2-day ME
MW15-10	03		0945														
MW15-17	04		0950														
MW15-23	05		1000										⊗				
WES-20-1	06		1020										⊗	⊗			
WES-21-1	07		1035										⊗				
WES-21-2.5	08		1040														
WES-22-1	09		1050										⊗	⊗			
WES-22-5	10		1100														

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

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Kevin Cline	VEP	3-26-20	1515
Received by:	Khoi Hoang	FBC	3/26/20	1515
Relinquished by:				
Received by:		Samples received at 4 °C		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

April 6, 2020

Dan Whitman, Project Manager
Whitman Environmental Sciences
6812 16th Ave NE
Seattle, WA 98115

Dear Mr Whitman:

Included are the results from the testing of material submitted on April 2, 2020 from the 12th + Yesler WES 1591, F&BI 004031 project. There are 20 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
WES0406R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on April 2, 2020 by Friedman & Bruya, Inc. from the Whitman Environmental Sciences 12th + Yesler WES 1591, F&BI 004031 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Whitman Environmental Sciences
004031 -01	MW-15-GW
004031 -02	WES-23-1.5'
004031 -03	WES-23-3'
004031 -04	WES-24-1.5'
004031 -05	WES-24-3'
004031 -06	WES-25-1.5'
004031 -07	WES-25-3'
004031 -08	WES-26-1.5'
004031 -09	WES-26-3'
004031 -10	WES-27-1.5'
004031 -11	WES-27-3'
004031 -12	WES-28-1.5'
004031 -13	WES-28-3'
004031 -14	WES-29-1.5'
004031 -15	WES-29-3'

The 8260D matrix spike and matrix spike duplicate failed the relative percent difference for several compounds. The analytes were not detected therefore the data were acceptable.

All other quality control requirements were acceptable.

Date of Report: 04/06/20
Date Received: 04/02/20
Project: 12th + Yesler WES 1591, F&BI 004031
Date Extracted: 04/03/20
Date Analyzed: 04/03/20

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 51-134)
MW-15-GW 004031-01	<100	97
Method Blank 00-672 MB	<100	59

Date of Report: 04/06/20
Date Received: 04/02/20
Project: 12th + Yesler WES 1591, F&BI 004031
Date Extracted: 04/03/20
Date Analyzed: 04/03/20

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 41-152)
MW-15-GW 004031-01	<50	<250	89
Method Blank 00-800 MB2	<50	<250	84

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	WES-23-1.5'	Client:	Whitman Environmental Sciences
Date Received:	04/02/20	Project:	12th + Yesler WES 1591
Date Extracted:	04/02/20	Lab ID:	004031-02
Date Analyzed:	04/02/20	Data File:	040233.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	107	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	WES-24-1.5'	Client:	Whitman Environmental Sciences
Date Received:	04/02/20	Project:	12th + Yesler WES 1591
Date Extracted:	04/02/20	Lab ID:	004031-04
Date Analyzed:	04/02/20	Data File:	040234.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	WES-25-1.5'	Client:	Whitman Environmental Sciences
Date Received:	04/02/20	Project:	12th + Yesler WES 1591
Date Extracted:	04/02/20	Lab ID:	004031-06
Date Analyzed:	04/02/20	Data File:	040235.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	106	50	150
Toluene-d8	97	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	WES-26-1.5'	Client:	Whitman Environmental Sciences
Date Received:	04/02/20	Project:	12th + Yesler WES 1591
Date Extracted:	04/02/20	Lab ID:	004031-08
Date Analyzed:	04/02/20	Data File:	040236.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	105	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	WES-27-1.5'	Client:	Whitman Environmental Sciences
Date Received:	04/02/20	Project:	12th + Yesler WES 1591
Date Extracted:	04/02/20	Lab ID:	004031-10
Date Analyzed:	04/02/20	Data File:	040237.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	105	50	150
Toluene-d8	104	50	150
4-Bromofluorobenzene	102	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	WES-28-1.5'	Client:	Whitman Environmental Sciences
Date Received:	04/02/20	Project:	12th + Yesler WES 1591
Date Extracted:	04/02/20	Lab ID:	004031-12
Date Analyzed:	04/02/20	Data File:	040238.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	102	50	150
4-Bromofluorobenzene	100	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	WES-29-1.5'	Client:	Whitman Environmental Sciences
Date Received:	04/02/20	Project:	12th + Yesler WES 1591
Date Extracted:	04/02/20	Lab ID:	004031-14
Date Analyzed:	04/02/20	Data File:	040239.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	105	50	150
Toluene-d8	101	50	150
4-Bromofluorobenzene	101	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th + Yesler WES 1591
Date Extracted:	04/02/20	Lab ID:	00-769 mb
Date Analyzed:	04/02/20	Data File:	040216.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	101	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-15-GW	Client:	Whitman Environmental Sciences
Date Received:	04/02/20	Project:	12th + Yesler WES 1591
Date Extracted:	04/02/20	Lab ID:	004031-01
Date Analyzed:	04/02/20	Data File:	040241.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	104	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th + Yesler WES 1591
Date Extracted:	04/02/20	Lab ID:	00-770 mb
Date Analyzed:	04/02/20	Data File:	040215.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	103	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Date of Report: 04/06/20
Date Received: 04/02/20
Project: 12th + Yesler WES 1591, F&BI 004031

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 004031-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	106	69-134

Date of Report: 04/06/20
Date Received: 04/02/20
Project: 12th + Yesler WES 1591, F&BI 004031

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	100	100	63-142	0

Date of Report: 04/06/20
Date Received: 04/02/20
Project: 12th + Yesler WES 1591, F&BI 004031

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 003433-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	2.5	<0.5	33	31	10-56	6
Chloromethane	mg/kg (ppm)	2.5	<0.5	62	53	10-90	16
Vinyl chloride	mg/kg (ppm)	2.5	<0.05	67	55	10-91	20
Bromomethane	mg/kg (ppm)	2.5	<0.5	76	62	10-110	20
Chloroethane	mg/kg (ppm)	2.5	<0.5	85	68	10-101	22 vo
Trichlorofluoromethane	mg/kg (ppm)	2.5	<0.5	74	64	10-95	14
Acetone	mg/kg (ppm)	12.5	<0.5	104	94	11-141	10
1,1-Dichloroethene	mg/kg (ppm)	2.5	<0.05	89	71	22-107	22 vo
Hexane	mg/kg (ppm)	2.5	<0.25	73	63	10-95	15
Methylene chloride	mg/kg (ppm)	2.5	<0.5	103	81	14-128	24 vo
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	<0.05	90	78	17-134	14
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	96	80	13-112	18
1,1-Dichloroethane	mg/kg (ppm)	2.5	<0.05	96	85	23-115	12
2,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	110	87	18-117	23 vo
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	89	78	25-120	13
Chloroform	mg/kg (ppm)	2.5	<0.05	92	81	29-117	13
2-Butanone (MEK)	mg/kg (ppm)	12.5	<0.5	71	77	20-133	8
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	75	73	22-124	3
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	<0.05	103	86	27-112	18
1,1-Dichloropropene	mg/kg (ppm)	2.5	<0.05	85	79	26-107	7
Carbon tetrachloride	mg/kg (ppm)	2.5	<0.05	103	82	28-126	23 vo
Benzene	mg/kg (ppm)	2.5	<0.03	89	80	26-114	11
Trichloroethene	mg/kg (ppm)	2.5	<0.02	85	80	30-112	6
1,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	94	83	31-119	12
Bromodichloromethane	mg/kg (ppm)	2.5	<0.05	90	83	31-131	8
Dibromomethane	mg/kg (ppm)	2.5	<0.05	81	78	27-124	4
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	<0.5	79	77	16-147	3
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	85	80	28-137	6
Toluene	mg/kg (ppm)	2.5	<0.05	93	83	34-112	11
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	79	77	30-136	3
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	<0.05	84	76	32-126	10
2-Hexanone	mg/kg (ppm)	12.5	<0.5	75	74	17-147	1
1,3-Dichloropropane	mg/kg (ppm)	2.5	<0.05	81	80	29-125	1
Tetrachloroethene	mg/kg (ppm)	2.5	<0.025	89	78	25-114	13
Dibromochloromethane	mg/kg (ppm)	2.5	<0.05	85	80	32-143	6
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	<0.05	83	82	32-126	1
Chlorobenzene	mg/kg (ppm)	2.5	<0.05	95	85	37-113	11
Ethylbenzene	mg/kg (ppm)	2.5	<0.05	97	84	34-115	14
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	99	85	35-126	15
m,p-Xylene	mg/kg (ppm)	5	<0.1	100	87	25-125	14
o-Xylene	mg/kg (ppm)	2.5	<0.05	100	88	27-126	13
Styrene	mg/kg (ppm)	2.5	<0.05	96	85	39-121	12
Isopropylbenzene	mg/kg (ppm)	2.5	<0.05	104	89	34-123	16
Bromoform	mg/kg (ppm)	2.5	<0.05	86	79	18-155	8
n-Propylbenzene	mg/kg (ppm)	2.5	<0.05	103	90	31-120	13
Bromobenzene	mg/kg (ppm)	2.5	<0.05	90	83	40-115	8
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	106	91	24-130	15
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	88	80	27-148	10
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	<0.05	83	82	33-123	1
2-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	101	88	39-110	14
4-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	98	87	39-111	12
tert-Butylbenzene	mg/kg (ppm)	2.5	<0.05	103	89	36-116	15
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	107	93	35-116	14
sec-Butylbenzene	mg/kg (ppm)	2.5	<0.05	109	93	33-118	16
p-Isopropyltoluene	mg/kg (ppm)	2.5	<0.05	105	89	32-119	16
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	95	85	38-111	11
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	93	84	39-109	10
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	93	84	40-111	10
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	<0.5	82	72	44-112	13
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	99	84	31-121	16
Hexachlorobutadiene	mg/kg (ppm)	2.5	<0.25	102	87	24-128	16
Naphthalene	mg/kg (ppm)	2.5	<0.05	93	80	24-139	15
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	95	80	35-117	17

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	2.5	58	10-76
Chloromethane	mg/kg (ppm)	2.5	79	34-98
Vinyl chloride	mg/kg (ppm)	2.5	88	42-107
Bromomethane	mg/kg (ppm)	2.5	90	46-113
Chloroethane	mg/kg (ppm)	2.5	99	47-115
Trichlorofluoromethane	mg/kg (ppm)	2.5	97	53-112
Acetone	mg/kg (ppm)	12.5	110	39-147
1,1-Dichloroethene	mg/kg (ppm)	2.5	102	65-110
Hexane	mg/kg (ppm)	2.5	97	55-107
Methylene chloride	mg/kg (ppm)	2.5	105	50-127
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	96	72-122
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	105	71-113
1,1-Dichloroethane	mg/kg (ppm)	2.5	108	74-109
2,2-Dichloropropane	mg/kg (ppm)	2.5	115	63-145
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	99	73-110
Chloroform	mg/kg (ppm)	2.5	103	76-110
2-Butanone (MEK)	mg/kg (ppm)	12.5	86	60-121
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	84	73-111
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	109	72-116
1,1-Dichloropropene	mg/kg (ppm)	2.5	102	72-112
Carbon tetrachloride	mg/kg (ppm)	2.5	109	67-123
Benzene	mg/kg (ppm)	2.5	100	72-106
Trichloroethene	mg/kg (ppm)	2.5	96	72-107
1,2-Dichloropropane	mg/kg (ppm)	2.5	96	74-115
Bromodichloromethane	mg/kg (ppm)	2.5	96	75-126
Dibromomethane	mg/kg (ppm)	2.5	89	76-116
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	84	80-128
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	85	71-138
Toluene	mg/kg (ppm)	2.5	104	74-111
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	83	73-124
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	92	76-118
2-Hexanone	mg/kg (ppm)	12.5	86	67-123
1,3-Dichloropropane	mg/kg (ppm)	2.5	88	75-118
Tetrachloroethene	mg/kg (ppm)	2.5	98	73-111
Dibromochloromethane	mg/kg (ppm)	2.5	92	64-152
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	88	77-117
Chlorobenzene	mg/kg (ppm)	2.5	100	76-109
Ethylbenzene	mg/kg (ppm)	2.5	103	75-112
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	112	75-129
m,p-Xylene	mg/kg (ppm)	5	106	77-115
o-Xylene	mg/kg (ppm)	2.5	109	76-115
Styrene	mg/kg (ppm)	2.5	101	76-119
Isopropylbenzene	mg/kg (ppm)	2.5	115	76-120
Bromoform	mg/kg (ppm)	2.5	96	50-174
n-Propylbenzene	mg/kg (ppm)	2.5	107	77-115
Bromobenzene	mg/kg (ppm)	2.5	93	76-112
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	112	77-121
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	96	74-121
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	91	73-117
2-Chlorotoluene	mg/kg (ppm)	2.5	104	75-113
4-Chlorotoluene	mg/kg (ppm)	2.5	101	77-115
tert-Butylbenzene	mg/kg (ppm)	2.5	111	77-123
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	112	77-119
sec-Butylbenzene	mg/kg (ppm)	2.5	115	78-120
p-Isopropyltoluene	mg/kg (ppm)	2.5	110	77-120
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	98	76-112
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	99	74-109
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	100	75-114
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	90	68-122
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	108	75-122
Hexachlorobutadiene	mg/kg (ppm)	2.5	106	74-130
Naphthalene	mg/kg (ppm)	2.5	107	73-122
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	107	75-117

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 003473-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	50	<1	103	55-137
Chloromethane	ug/L (ppb)	50	<10	99	57-129
Vinyl chloride	ug/L (ppb)	50	<0.2	101	61-139
Bromomethane	ug/L (ppb)	50	<1	96	20-265
Chloroethane	ug/L (ppb)	50	<1	104	55-149
Trichlorofluoromethane	ug/L (ppb)	50	<1	101	65-137
Acetone	ug/L (ppb)	250	72	69 b	48-149
1,1-Dichloroethene	ug/L (ppb)	50	<1	102	71-123
Hexane	ug/L (ppb)	50	<1	107	44-139
Methylene chloride	ug/L (ppb)	50	<5	98	61-126
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<1	103	68-125
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	102	72-122
1,1-Dichloroethane	ug/L (ppb)	50	<1	102	79-113
2,2-Dichloropropane	ug/L (ppb)	50	<1	106	48-157
cis-1,2-Dichloroethene	ug/L (ppb)	50	<1	95	63-126
Chloroform	ug/L (ppb)	50	<1	98	77-117
2-Butanone (MEK)	ug/L (ppb)	250	<10	97	70-135
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	91	70-119
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	104	75-121
1,1-Dichloropropene	ug/L (ppb)	50	<1	101	67-121
Carbon tetrachloride	ug/L (ppb)	50	<1	106	70-132
Benzene	ug/L (ppb)	50	<0.35	100	75-114
Trichloroethene	ug/L (ppb)	50	<1	99	73-122
1,2-Dichloropropane	ug/L (ppb)	50	<1	101	80-111
Bromodichloromethane	ug/L (ppb)	50	<1	102	78-117
Dibromomethane	ug/L (ppb)	50	<1	98	73-125
4-Methyl-2-pentanone	ug/L (ppb)	250	<10	111	79-140
cis-1,3-Dichloropropene	ug/L (ppb)	50	<1	101	76-120
Toluene	ug/L (ppb)	50	<1	100	73-117
trans-1,3-Dichloropropene	ug/L (ppb)	50	<1	97	75-122
1,1,2-Trichloroethane	ug/L (ppb)	50	<1	99	81-116
2-Hexanone	ug/L (ppb)	250	<10	108	74-127
1,3-Dichloropropane	ug/L (ppb)	50	<1	97	80-113
Tetrachloroethene	ug/L (ppb)	50	<1	97	40-155
Dibromochloromethane	ug/L (ppb)	50	<1	101	69-129
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	<1	101	79-120
Chlorobenzene	ug/L (ppb)	50	<1	101	75-115
Ethylbenzene	ug/L (ppb)	50	<1	100	66-124
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	<1	104	76-130
m,p-Xylene	ug/L (ppb)	100	<2	104	63-128
o-Xylene	ug/L (ppb)	50	<1	103	64-129
Styrene	ug/L (ppb)	50	<1	103	56-142
Isopropylbenzene	ug/L (ppb)	50	<1	108	74-122
Bromoform	ug/L (ppb)	50	<1	101	49-138
n-Propylbenzene	ug/L (ppb)	50	<1	105	65-129
Bromobenzene	ug/L (ppb)	50	<1	95	70-121
1,3,5-Trimethylbenzene	ug/L (ppb)	50	<1	107	60-138
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	<1	102	77-120
1,2,3-Trichloropropane	ug/L (ppb)	50	<1	102	62-125
2-Chlorotoluene	ug/L (ppb)	50	<1	102	40-159
4-Chlorotoluene	ug/L (ppb)	50	<1	101	76-122
tert-Butylbenzene	ug/L (ppb)	50	<1	112	74-125
1,2,4-Trimethylbenzene	ug/L (ppb)	50	<1	108	59-136
sec-Butylbenzene	ug/L (ppb)	50	<1	111	69-127
p-Isopropyltoluene	ug/L (ppb)	50	1.9	106	64-132
1,3-Dichlorobenzene	ug/L (ppb)	50	<1	100	77-113
1,4-Dichlorobenzene	ug/L (ppb)	50	<1	98	75-110
1,2-Dichlorobenzene	ug/L (ppb)	50	<1	99	70-120
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	<10	102	69-129
1,2,4-Trichlorobenzene	ug/L (ppb)	50	<1	101	66-123
Hexachlorobutadiene	ug/L (ppb)	50	<1	98	53-136
Naphthalene	ug/L (ppb)	50	1.2	110	60-145
1,2,3-Trichlorobenzene	ug/L (ppb)	50	<1	97	59-130

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	50	99	100	50-157	1
Chloromethane	ug/L (ppb)	50	95	97	62-130	2
Vinyl chloride	ug/L (ppb)	50	99	98	70-128	1
Bromomethane	ug/L (ppb)	50	91	93	60-143	2
Chloroethane	ug/L (ppb)	50	98	99	66-149	1
Trichlorofluoromethane	ug/L (ppb)	50	96	99	65-138	3
Acetone	ug/L (ppb)	250	98	110	44-145	12
1,1-Dichloroethene	ug/L (ppb)	50	95	99	72-121	4
Hexane	ug/L (ppb)	50	100	101	51-153	1
Methylene chloride	ug/L (ppb)	50	96	101	63-132	5
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	91	95	70-122	4
trans-1,2-Dichloroethene	ug/L (ppb)	50	95	98	76-118	3
1,1-Dichloroethane	ug/L (ppb)	50	95	102	77-119	7
2,2-Dichloropropane	ug/L (ppb)	50	103	100	62-141	3
cis-1,2-Dichloroethene	ug/L (ppb)	50	87	93	76-119	7
Chloroform	ug/L (ppb)	50	91	98	78-117	7
2-Butanone (MEK)	ug/L (ppb)	250	97	101	48-150	4
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	95	95	75-116	0
1,1,1-Trichloroethane	ug/L (ppb)	50	100	103	80-116	3
1,1-Dichloropropene	ug/L (ppb)	50	95	104	78-119	9
Carbon tetrachloride	ug/L (ppb)	50	100	101	72-128	1
Benzene	ug/L (ppb)	50	99	101	75-116	2
Trichloroethene	ug/L (ppb)	50	101	103	72-119	2
1,2-Dichloropropane	ug/L (ppb)	50	109	106	79-121	3
Bromodichloromethane	ug/L (ppb)	50	113	108	76-120	5
Dibromomethane	ug/L (ppb)	50	105	102	79-121	3
4-Methyl-2-pentanone	ug/L (ppb)	250	101	101	54-153	0
cis-1,3-Dichloropropene	ug/L (ppb)	50	127	108	76-128	16
Toluene	ug/L (ppb)	50	100	99	79-115	1
trans-1,3-Dichloropropene	ug/L (ppb)	50	114	103	76-128	10
1,1,2-Trichloroethane	ug/L (ppb)	50	104	102	78-120	2
2-Hexanone	ug/L (ppb)	250	93	97	49-147	4
1,3-Dichloropropane	ug/L (ppb)	50	107	104	81-111	3
Tetrachloroethene	ug/L (ppb)	50	96	95	78-109	1
Dibromochloromethane	ug/L (ppb)	50	105	101	63-140	4
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	107	105	82-118	2
Chlorobenzene	ug/L (ppb)	50	105	103	80-113	2
Ethylbenzene	ug/L (ppb)	50	98	101	83-111	3
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	94	102	76-125	8
m,p-Xylene	ug/L (ppb)	100	102	103	81-112	1
o-Xylene	ug/L (ppb)	50	98	103	81-117	5
Styrene	ug/L (ppb)	50	104	105	83-121	1
Isopropylbenzene	ug/L (ppb)	50	99	105	78-118	6
Bromoform	ug/L (ppb)	50	96	99	40-161	3
n-Propylbenzene	ug/L (ppb)	50	108	106	81-115	2
Bromobenzene	ug/L (ppb)	50	104	101	80-113	3
1,3,5-Trimethylbenzene	ug/L (ppb)	50	109	108	83-117	1
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	98	102	79-118	4
1,2,3-Trichloropropane	ug/L (ppb)	50	97	101	74-116	4
2-Chlorotoluene	ug/L (ppb)	50	105	104	79-112	1
4-Chlorotoluene	ug/L (ppb)	50	108	104	80-116	4
tert-Butylbenzene	ug/L (ppb)	50	113	114	81-119	1
1,2,4-Trimethylbenzene	ug/L (ppb)	50	110	109	81-121	1
sec-Butylbenzene	ug/L (ppb)	50	115	113	83-123	2
p-Isopropyltoluene	ug/L (ppb)	50	108	107	81-117	1
1,3-Dichlorobenzene	ug/L (ppb)	50	101	100	80-115	1
1,4-Dichlorobenzene	ug/L (ppb)	50	101	101	77-112	0
1,2-Dichlorobenzene	ug/L (ppb)	50	97	99	79-115	2
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	83	89	62-133	7
1,2,4-Trichlorobenzene	ug/L (ppb)	50	94	98	75-119	4
Hexachlorobutadiene	ug/L (ppb)	50	93	96	70-116	3
Naphthalene	ug/L (ppb)	50	92	99	72-131	7
1,2,3-Trichlorobenzene	ug/L (ppb)	50	89	94	74-122	5

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

004031

SAMPLE CHAIN OF CUSTODY

ME 04-02-20

Page # _____ of 003

Send Report To Ron Whitman

Company Whitman Env. Sciences

Address 6812 16th Ave NE

City, State, ZIP Seattle, WA 98115

Phone # _____ Fax # whitenw@yahoo.com

Email Address

SAMPLERS *(signature)*

PROJECT NAME/NO. 12th + Yesler

PO # DES 1691

PROJECT ADDRESS

• ELECTRONIC DATA REQUESTED

TURNAROUND TIME VS SW1

• Standard Turnaround

• RUSH 24 HR Rush

Rush charges authorized by:

SAMPLE DISPOSAL

• Dispose after 30 days

• Return samples

• Will call with instructions

Samples Received at ____ °C

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS						Notes
MW-15-GW	-01 A-D	4-2-20	PM	WATER	4	X	X		X								
DES-23-1.5'	-02 A-E			SOIL	5				X								
" " -3'	-03				1												Hold
DES-24-1.5'	-04 A-D				END 4				X								
" " -3'	-05				1												"
DES-25-1.5'	-06 A-E				5				X								
" " -3'	-07				1												"
DES-26-1.5'	-08 A-E				5				X								
" " 3'	-09				1					Samples received at 6 °C							
DES-27-1.5'	-10 A-E				5				X								

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		DES	4-2-20	3:30
Received by:	Khai Hoang	FBI	4-2-20	3:30
Relinquished by:				
Received by:				

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

FORMS\COC\COC.DOC

SAMPLE CHAIN OF CUSTODY

064031

ME 04-02-20

Page # 2 of 2 C03

Send Report To [illegible]

Company WES

Address

City, State, ZIP

Phone # Fax #

Email Address

SAMPLERS *(signature)*

PROJECT NAME/NO. | PO #

PROJECT ADDRESS

• ELECTRONIC DATA REQUESTED

TURNAROUND TIME

• Standard Turnaround VS S

• RUSH VW

Rush charges authorized by:

SAMPLE DISPOSAL

• Dispose after 30 days

• Return samples

• Will call with instructions

Samples Received at ____ °C

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS						Notes
WES-27-3.[illegible]	-11				1												Hold
WES-28-1.5	12 A-E				5				X								
WES-28-3[illegible]	13				1												"
WES-29-1.5	14 A-E				5				X								
" " -3[illegible]	15				1												"

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	[signature]		[illegible]	4-2	3:35
Received by:	VW	Khai Hoang	FBI	4-2-20	3:32
Relinquished by:					
Received by:					

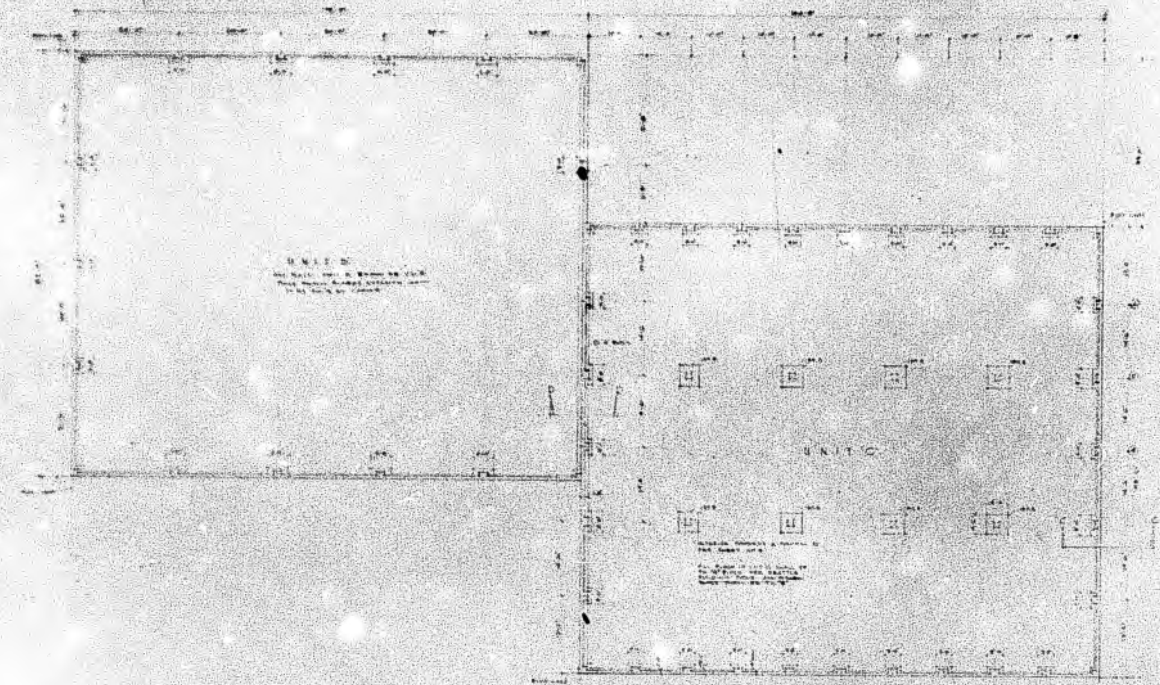
Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FORMS\COC\COC.DOC

APPENDIX C

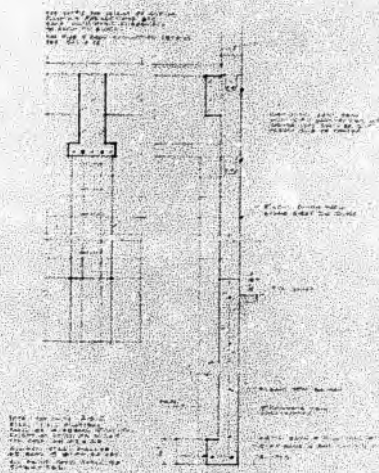
Historical References and Documentation

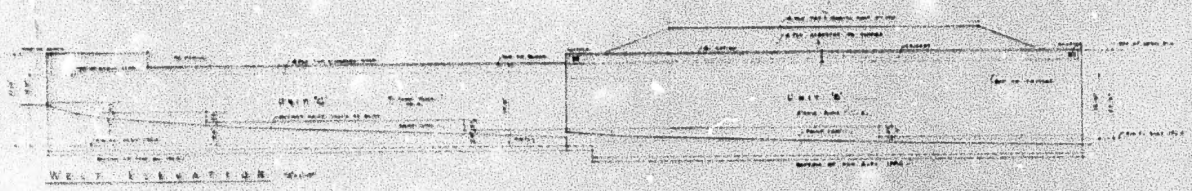
Historical King County Warehouse Foundation Detail Plans
Historical Aerial Photograph - 1953, showing row-house foundations and disturbed areas
Historical SE Parking Lot Photograph with Unidentified Structure
Groundwater Monitoring Report, 4th Quarter 2014, Former Star Laundry
(Conestoga Rovers Associates, 2015)
Dept of Ecology Initial Investigation Report, Star Laundry
Department of Ecology Site Hazard Assessment, Star Laundry



FOUNDATION PLAN UNITS B & C
ALTERNATE

GENERAL NOTES: UNITS A & C





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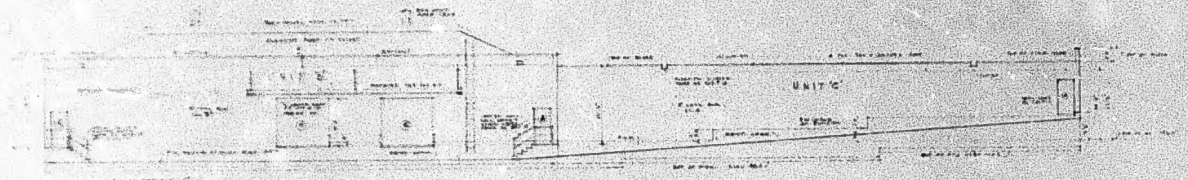
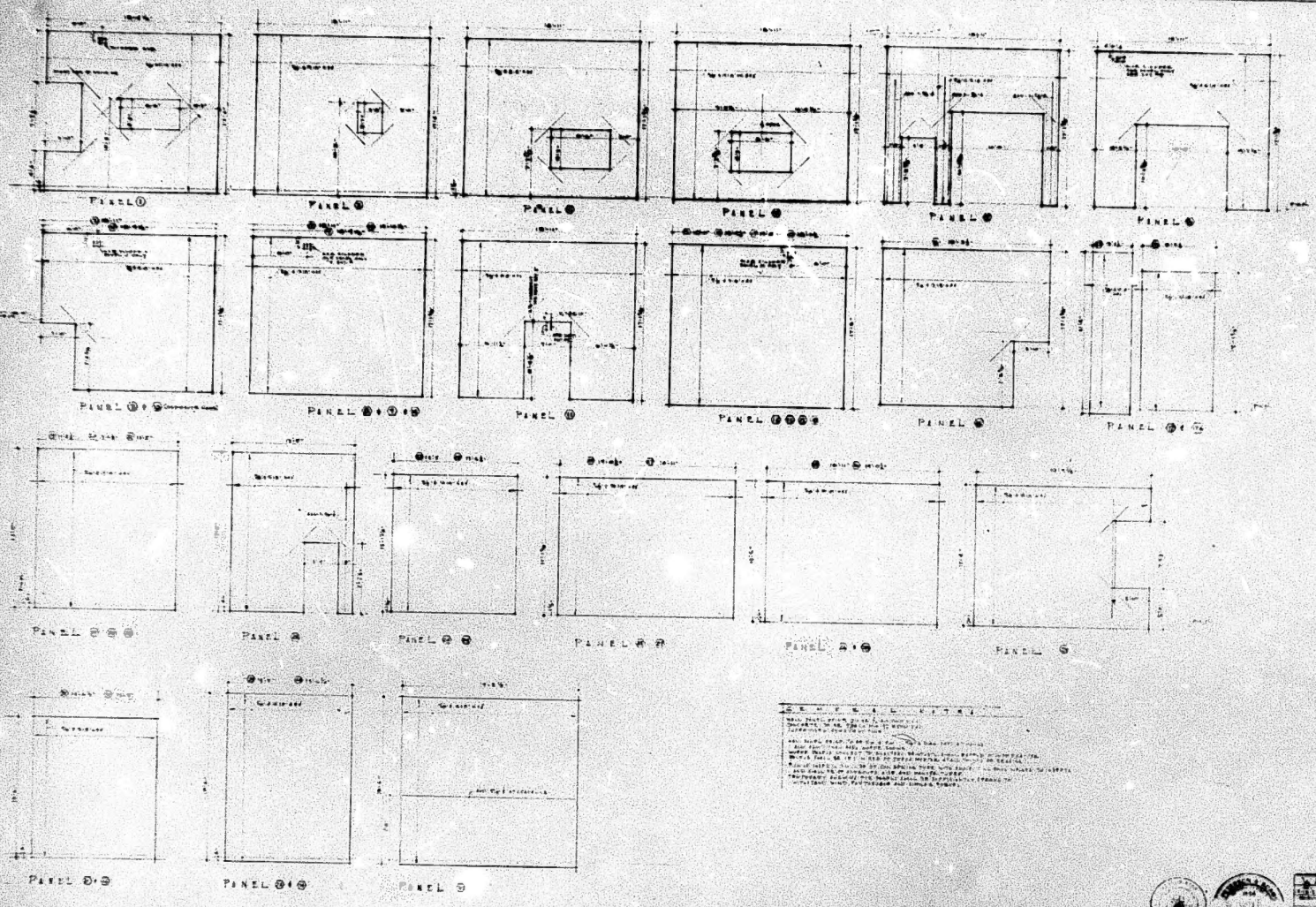


EAST ELEVATION

NORTH ELEVATION

SOUTH ELEVATION

[redacted]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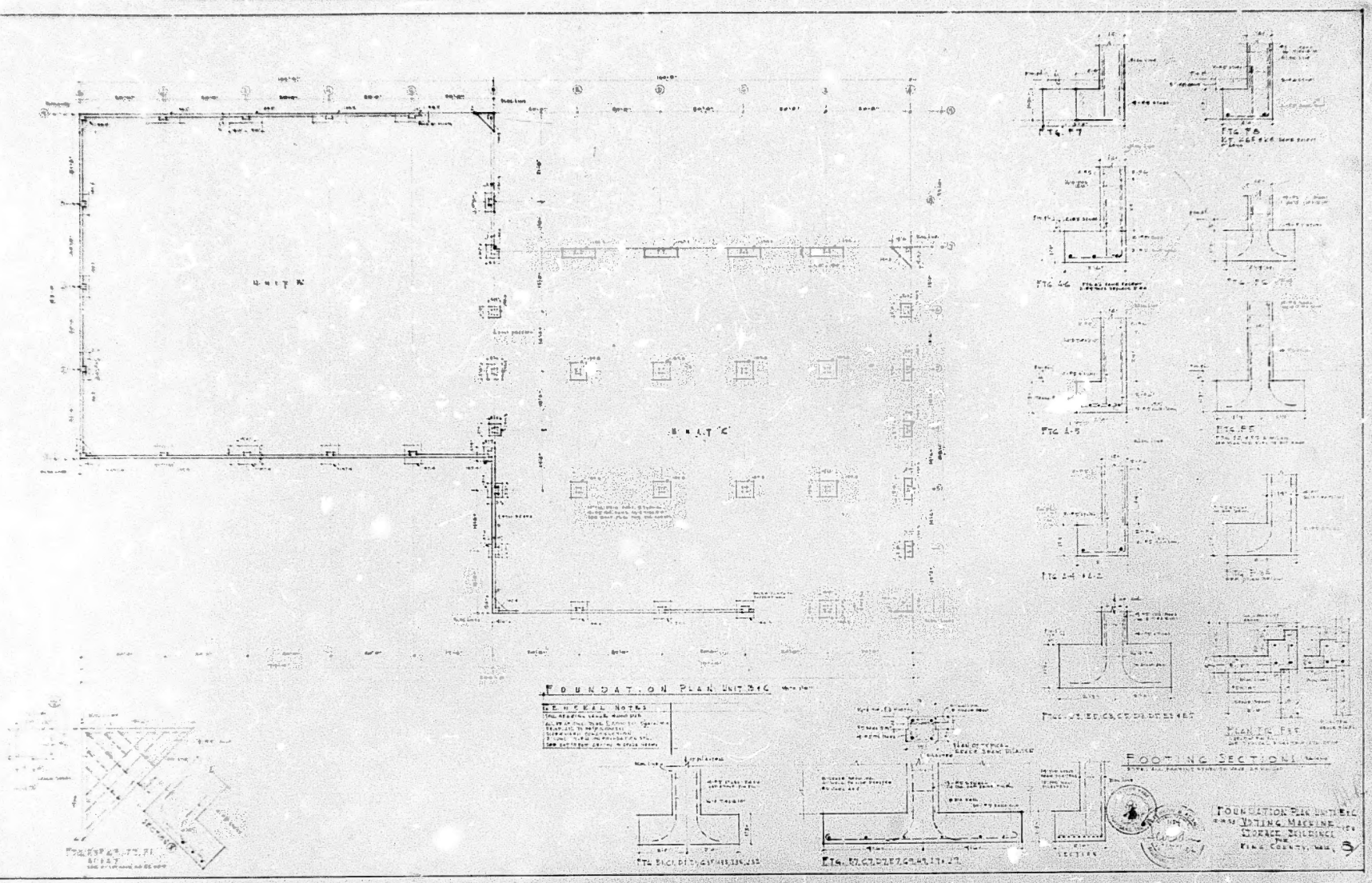
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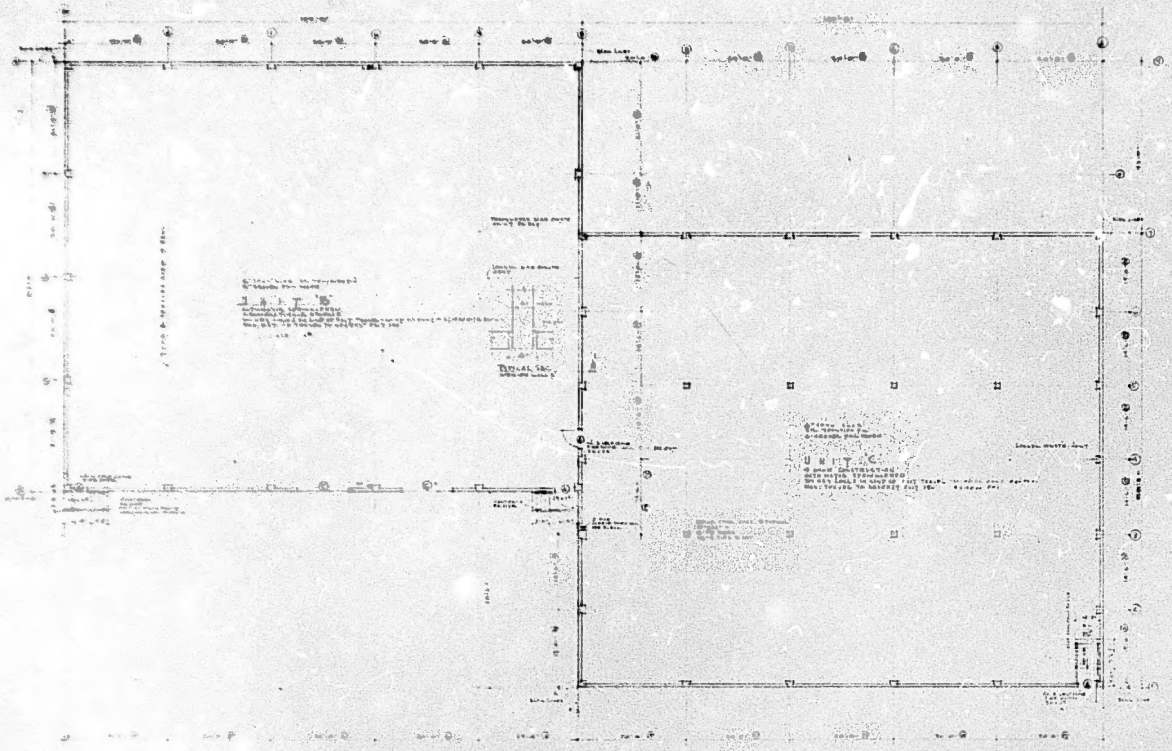
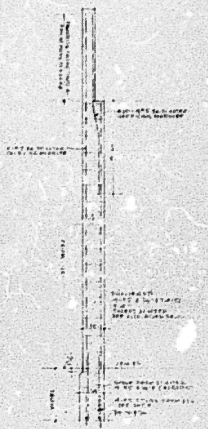
FOOTING SECTIONS
FOUNDATION PLAN UNIT B&C
VOTING MACHINE
STORAGE BUILDING
PIMA COUNTY, ARIZ.





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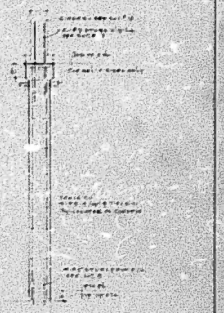

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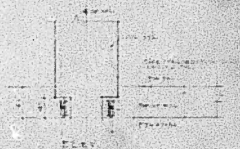
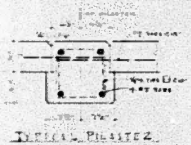


PLAN

OPTIONAL PERIMETER COL. DET.

PLAN UNIT B & C

CORNER PILASTER



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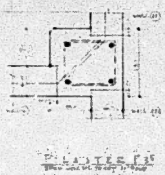

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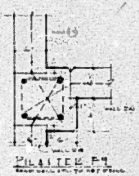
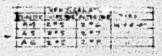


PILASTER P7

PILASTER DETAILS



FLOOR PLAN UNITS ETC.
TESTING MACHINE
STORAGE BUILDING
FOR
KING COUNTY, WASH.

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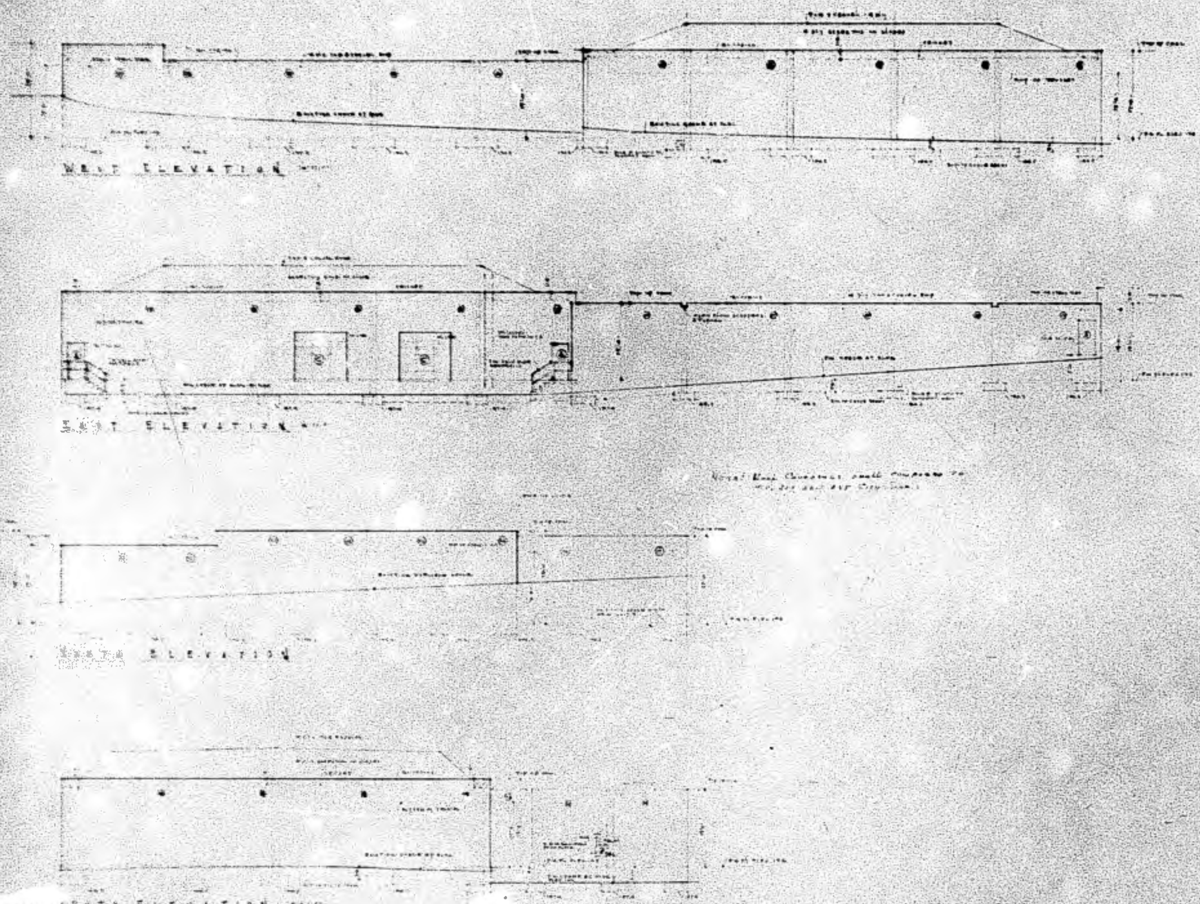

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VOTING MACHINE
STORAGE BUILDINGS
FOR
KING COUNTY, WASH.

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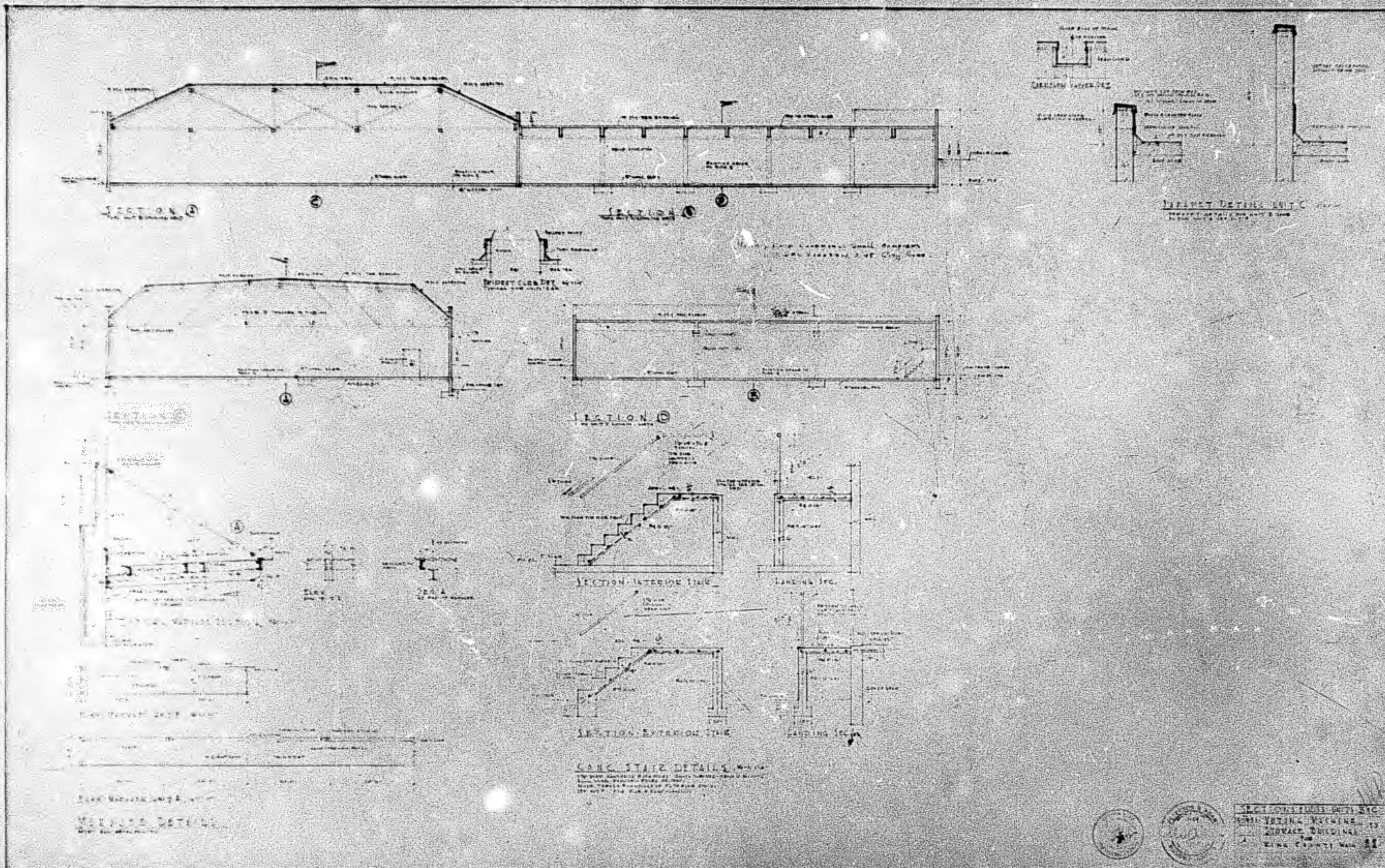
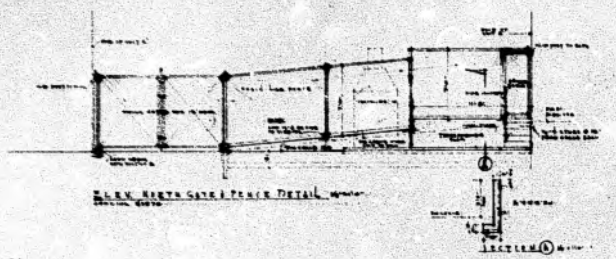
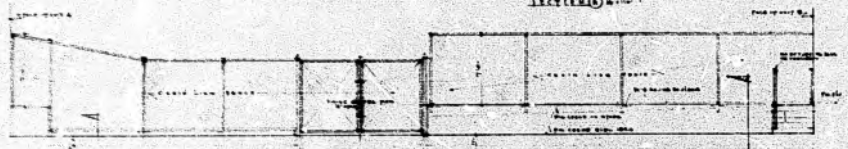

SECTION A
SECTION B
SECTION C
SECTION D
PARAPET DETAILS UNIT C
SECTION INTERIOR STAIR
LANDING SEC.
SECTION EXTERIOR STAIR
CONC. STAIR DETAILS
VOTING MACHINE
STORAGE BUILDING
KING COUNTY WASH.



ELEV. NORTH GATE & FENCE DETAIL

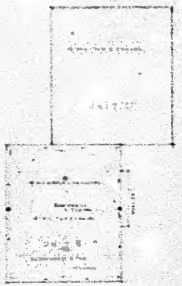
SECTION B

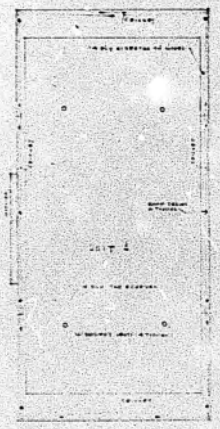


ELEV. SOUTH GATE & FENCE DETAIL

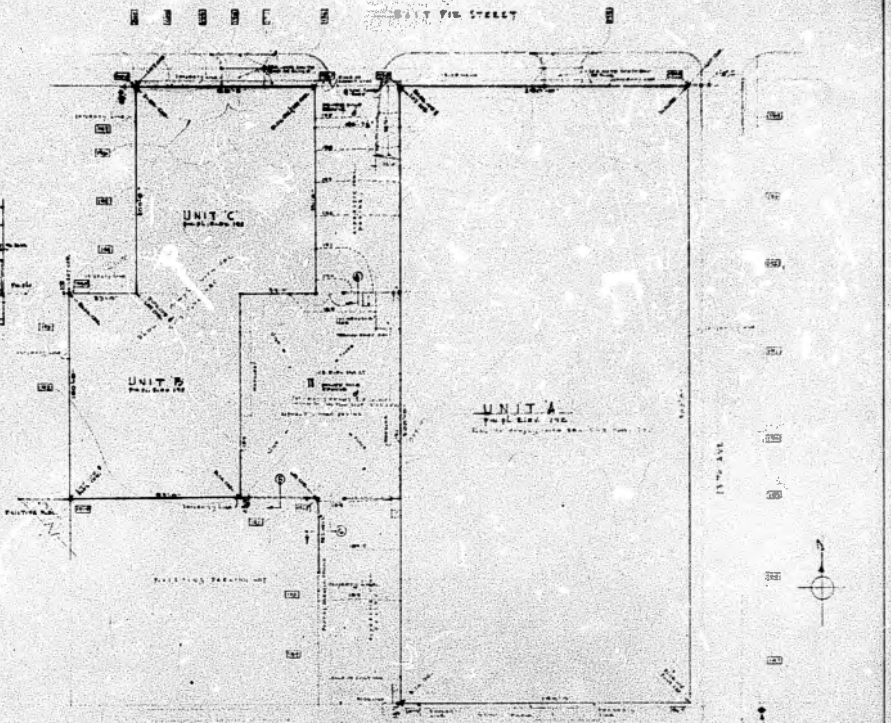
SECTION B

SECTION C





ROOF PLAN



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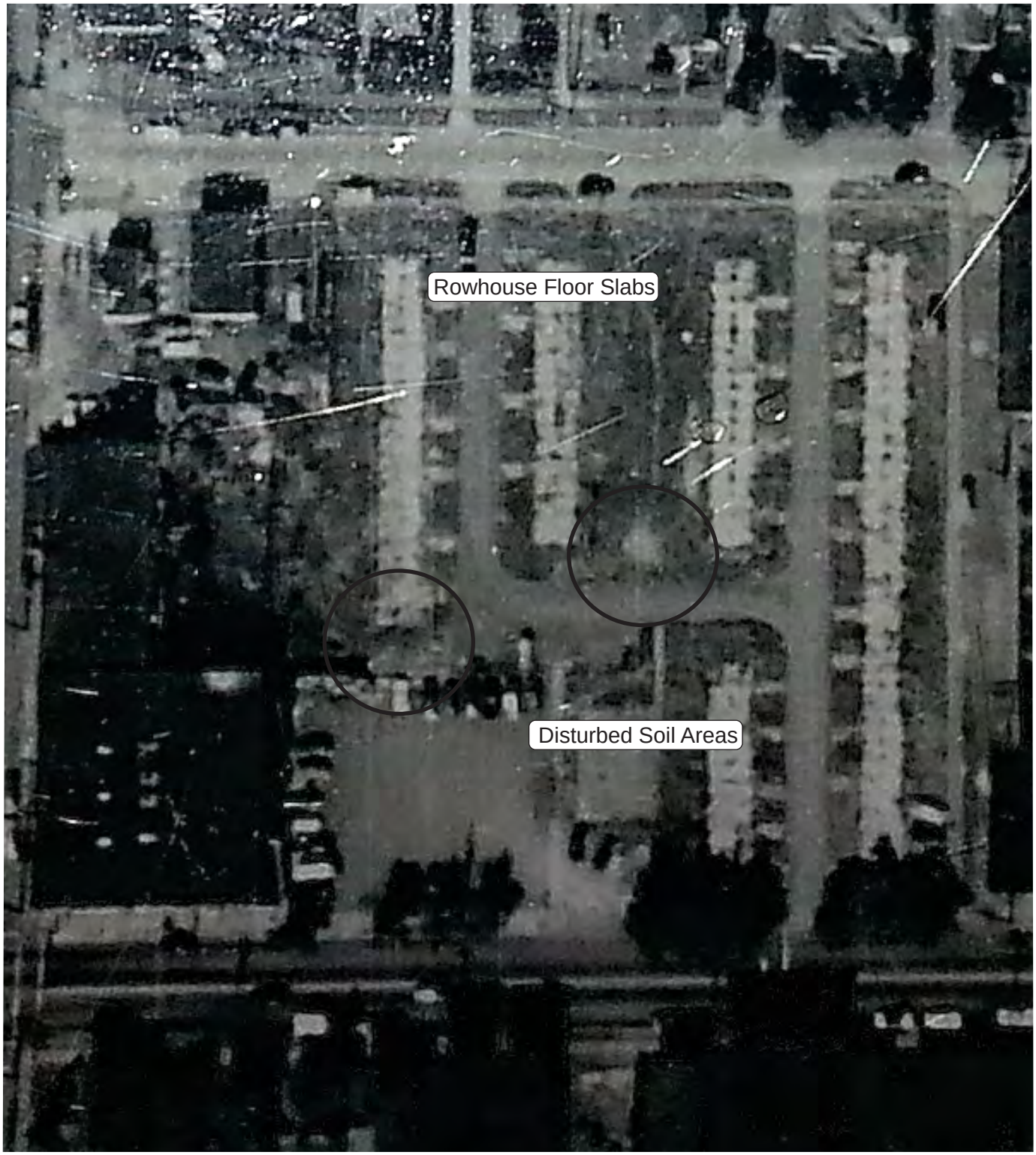


North

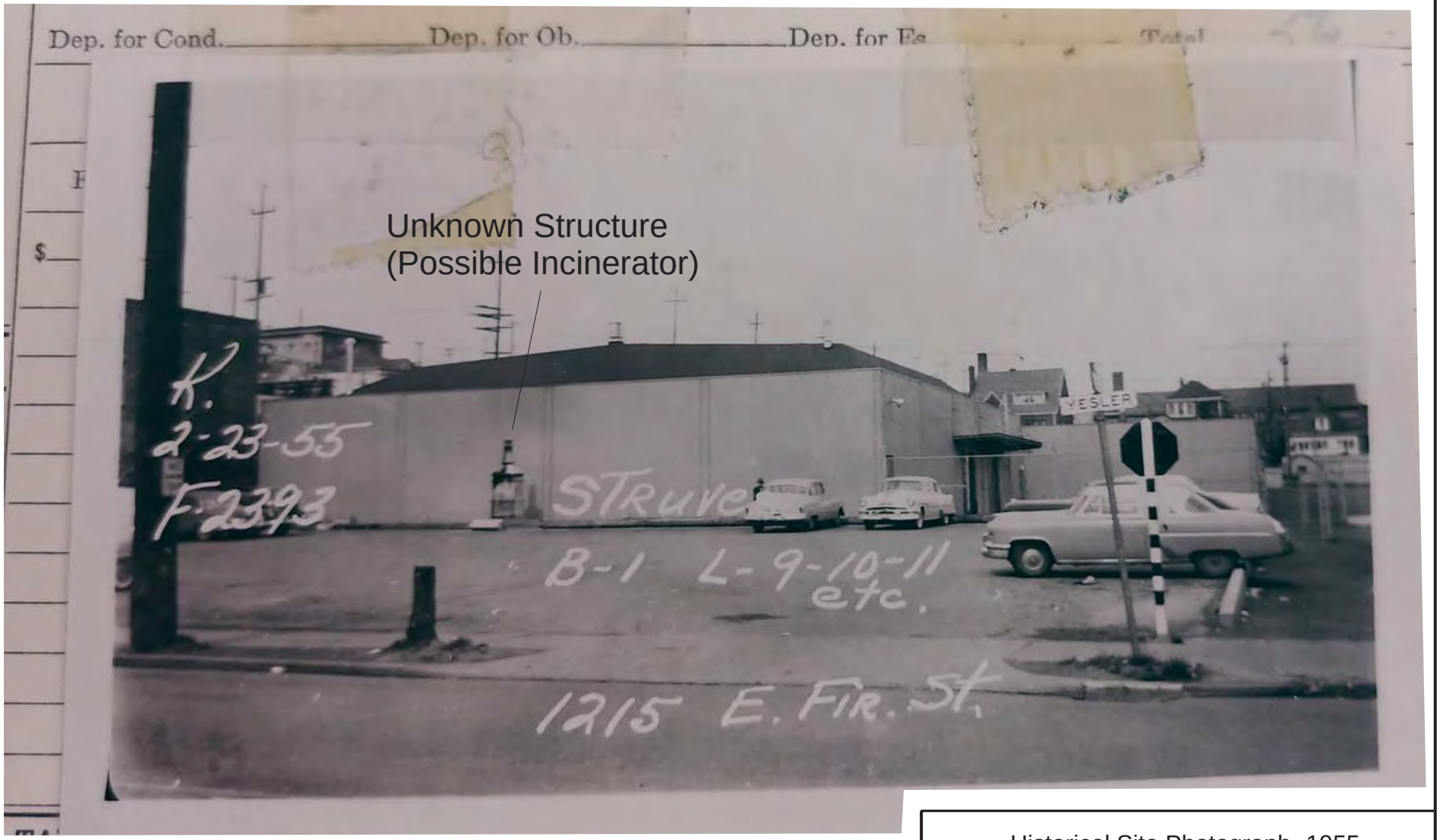
Historical Aerial Photograph - 1953

104-124 12th Avenue & 1209 E. Fir Street
Seattle, Washington

Project No.	WES - 1591
Date	Jun 20, 2017
File ID.	1591AP53

WHITMAN
Environmental Sciences

From UW Suzzallo Library Collection



Historical Site Photograph -1955

SE Parking Lot Area
12th & Yesler Redevelopment Property
Seattle, Washington

Project No.	WES - 1591
Date	Feb 9, 2020
File ID.	1591HP55

WHITMAN
Environmental Sciences

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CONESTOGA-ROVERS & ASSOCIATES

www.CRAworld.com

Groundwater Monitoring Report
Fourth Quarter 2014

Former Star Laundry
160 12th Avenue
Seattle, Washington

Conestoga-Rovers & Associates
20818 44th Ave. West, Suite 190
Lynnwood, Washington 98036

January 2015 • 062224 • Report No. 1

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CONESTOGA-ROVERS & ASSOCIATES

www.CRAworld.com

Groundwater Monitoring Report - Fourth Quarter 2014

Former Star Laundry
160 12th Avenue
Seattle, Washington

Jing Song

Christina McClelland

Conestoga-Rovers & Associates
20818 44th Avenue West, Ste 190
Lynnwood, Washington 98036

January 2015 • 062224 • Report No. 1

Partners in Sustainability

Table of Contents

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(Following Text)

List of Appendices

Section 1.0 Introduction

Conestoga-Rovers & Associates (CRA) prepared this report to document the fourth quarter 2014 groundwater monitoring activities performed at the former Star Laundry located at 160 12th Avenue, Seattle, Washington (Site, Figure 1).

Section 2.0 Findings

2.1 Monitoring Well Re-development

Blaine Tech Services, Inc. (Blaine) re-developed all Site monitoring wells MW-1A and MW-2 through MW-5 on October 16, 2014. Well re-development included surging and purging to remove sediment within the well casing and promote hydraulic conductivity. Blaine attempted to continue development until conditions (temperature, pH, conductivity, and turbidity) stabilized. However, turbidity did not drop below 1,000 Nephelometric Turbidity Units (NTUs) due to the insufficient groundwater in the wells. Blaine's field data sheets for well re-development are included in Appendix A.

2.2 Monitoring Well Gauging and Sampling

Blaine gauged and sampled Site monitoring wells MW-1A and MW-2 through MW-5 on October 21, 2014. The samples were collected without purging the wells due to the limited amount of groundwater present in the wells. The wells also dewatered during sample collection resulting in turbid groundwater samples. Field notes and observations from the sampling event are presented in Appendix B.

The groundwater samples were analyzed for the following.

- Total petroleum hydrocarbons (TPH) as gasoline (TPHg) by Method NWTPH-Gx
- TPH as diesel (TPHd) and TPH as heavy oil (TPHo) by Method NWTPH-Dx
- Volatile organic compounds (VOCs) by EPA Method 8260B
- Total and dissolved arsenic, cadmium, chromium, and lead by EPA Method 6020

Tabulated data are provided in Tables 1A and 1B, and the certified analytical reports are presented in Appendix C.

2.3 Groundwater Elevations and Flow Directions

The groundwater contour map for the fourth quarter of 2014 is presented as Figure 2. During the fourth quarter, groundwater elevations ranged from 36.63 feet relative to mean sea level (ft msl) measured in well MW-4 to 38.94 ft msl measured in well MW-1A. Current and prior sampling data are provided in Tables 1A and 1B. The groundwater flow direction beneath the Site was northeasterly at an estimated hydraulic gradient of 0.05.

2.3 Fourth Quarter 2014 Groundwater Concentrations

During the fourth quarter 2014, the following analyte concentrations exceeded the State of Washington Department of Ecology (Ecology) Model Toxics Control Act (MTCA) Method A cleanup levels.

- TPHg in well MW-5
- Trichloroethene (TCE) in well MW-1A and MW-5
- Tetrachloroethene (PCE) in well MW-1A, MW-2, MW-3, MW-4, and MW-5
- Cis-1,2-dichloroethene (cis 1,2-DCE) in well MW-1A and MW-5
- Vinyl chloride in well MW-1A
- Arsenic in well MW-2
- Lead in well MW-4

The TCE, PCE, and cis 1,2-DCE concentrations in groundwater were contoured and are shown on Figures 3 through 5, respectively.

Section 3.0 Discussion

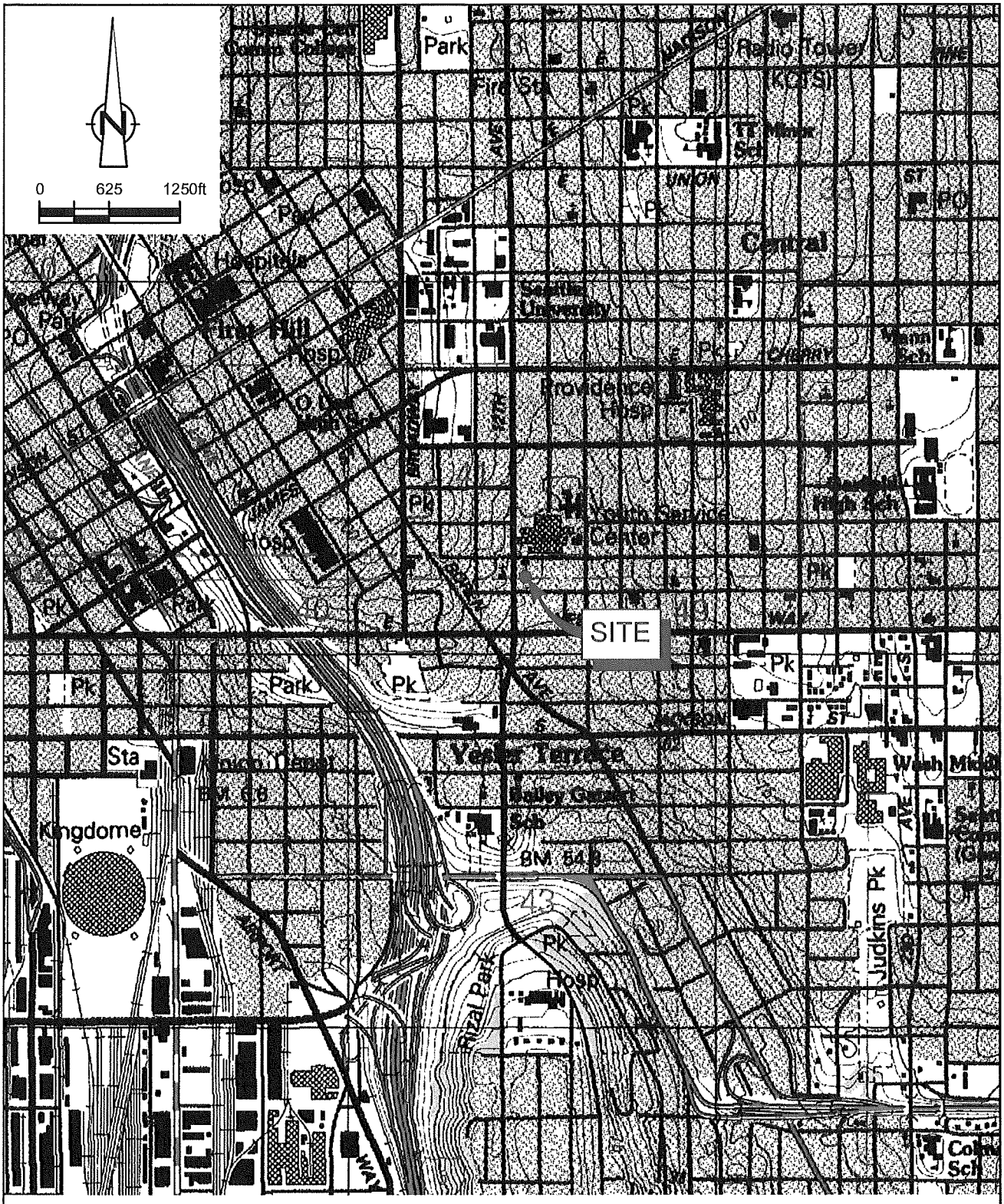
The groundwater analytical data indicate that one or more of the VOCs and metal concentrations remain above MTCA Method A cleanup levels in all Site monitoring wells MW-1A, and MW-2 through MW-5. Among these, PCE were detected at concentrations above MTCA Method A cleanup levels in all Site monitoring wells. Concentrations of TCE and cis 1,2-DCE were detected at concentrations above MTCA Method A cleanup levels in two monitoring wells (MW-1A and MW-5). Concentrations of vinyl chloride, arsenic, and lead were detected at concentrations above MTCA Method A cleanup levels in one monitoring well each; MW-1A (vinyl chloride), MW-2 (arsenic), and MW-4 (lead). In addition, TPHg was detected at a concentration above the MTCA Method A cleanup level in well MW-5, indicating that there may have been a petroleum release in the vicinity of the sump.

These results indicated that PCE, TCE, and cis 1,2-DCE are major constituents of concern (COC) in groundwater. Monitoring well MW-5 contained the highest concentrations of these COCs: 11,000 micrograms per liter (µg/L) of PCE, 1,380 µg/L of TCE, and 485 µg/L of cis 1,2-DCE. Monitoring well MW-5 is located adjacent to the former sump at the southeast corner of the Site, which may be the source of the VOC plume. Monitoring well MW-1A is located approximately 25 feet west of MW-5, which contained concentrations of PCE, TCE, and cis 1,2-DCE lower than MW-5, but still above MTCA Method A cleanup levels, indicating the VOC plume had migrated to the west.

PCE concentrations were detected above MTCA Method A cleanup levels in all Site monitoring wells indicating that the VOC groundwater plume is not fully delineated. Additional investigation is warranted to define the plume. In addition, the current monitoring well network consists entirely or 1" diameter pre-pack monitoring wells, which produce very little groundwater and may not be representative of in-situ groundwater conditions. Additional and/or replacement monitoring wells may be warranted in order to obtain more representative data.

Additional recommendations for evaluating data gaps will be proposed under separate cover.

Figures

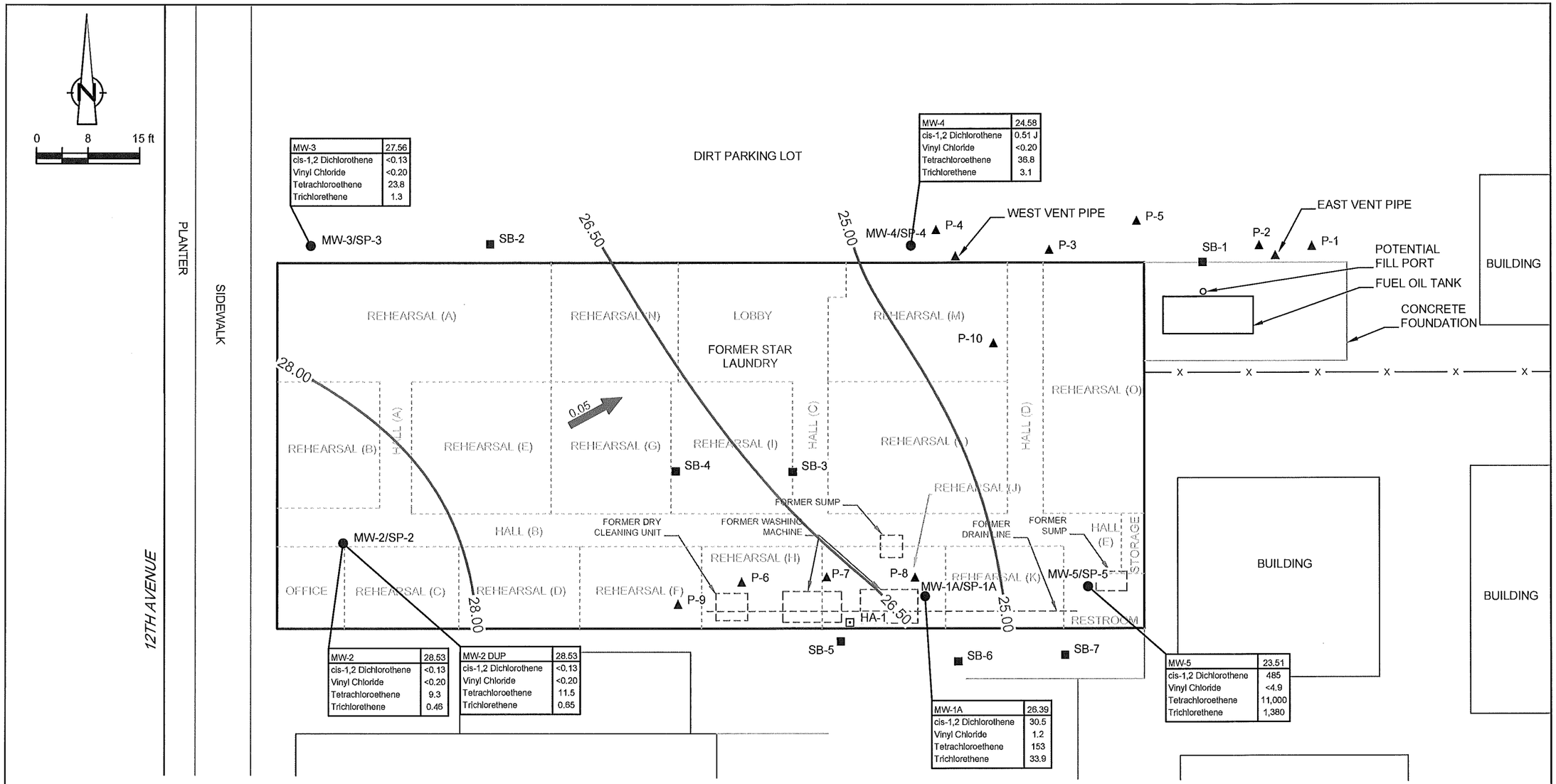


SOURCE: USGS QUADRANGLE MAP: SEATTLE SOUTH, WA.

figure 1

VICINITY MAP
FORMER STAR LAUNDRY
160 12th Avenue, Seattle, Washington

62224-04(001)GN-WA002 JAN 12/2015



LEGEND

- MONITORING WELL LOCATION
- BORING LOCATION
- HAND AUGER BORING LOCATION
- GEOPROBE BORING LOCATION
- GROVEBOX FLOOR PLAN
- x FENCE LINE
- 28.00 GROUNDWATER ELEVATION CONTOUR, IN FEET, REFERENCED TO ARBITRARY DATUM
- 0.05 GROUNDWATER FLOW DIRECTION AND GRADIENT

SOURCE: GROVEBOX FLOOR PLAN. KANE ENVIRONMENTAL , INC. SITE PLAN WITH BORING LOCATIONS NO DATE. USGS NATIONAL MAP AERIAL IMAGERY.

MW-5	23.51
cis-1,2 Dichlorothene	485
Vinyl Chloride	<4.9
Tetrachloroethene	11,000
Trichlorethene	1,380

SAMPLE LOCATION — GROUNDWATER ELEVATION — RESULT — PARAMETER

NOTE:
ALL CONCENTRATIONS REPORTED IN MICROGRAMS PER LITER (µg/L).

MTCA METHOD A CLEANUP LEVELS (µg/L)

cis-1,2 Dichloroethene	16
Vinyl Chloride	0.2
Tetrachloroethene	5
Trichlorethene	5

figure 2

GROUNDWATER CONTOUR AND CHEMICAL CONCENTRATION MAP - OCTOBER 21, 2014
FORMER STAR LAUNDRY
160 12th Avenue, Seattle, Washington

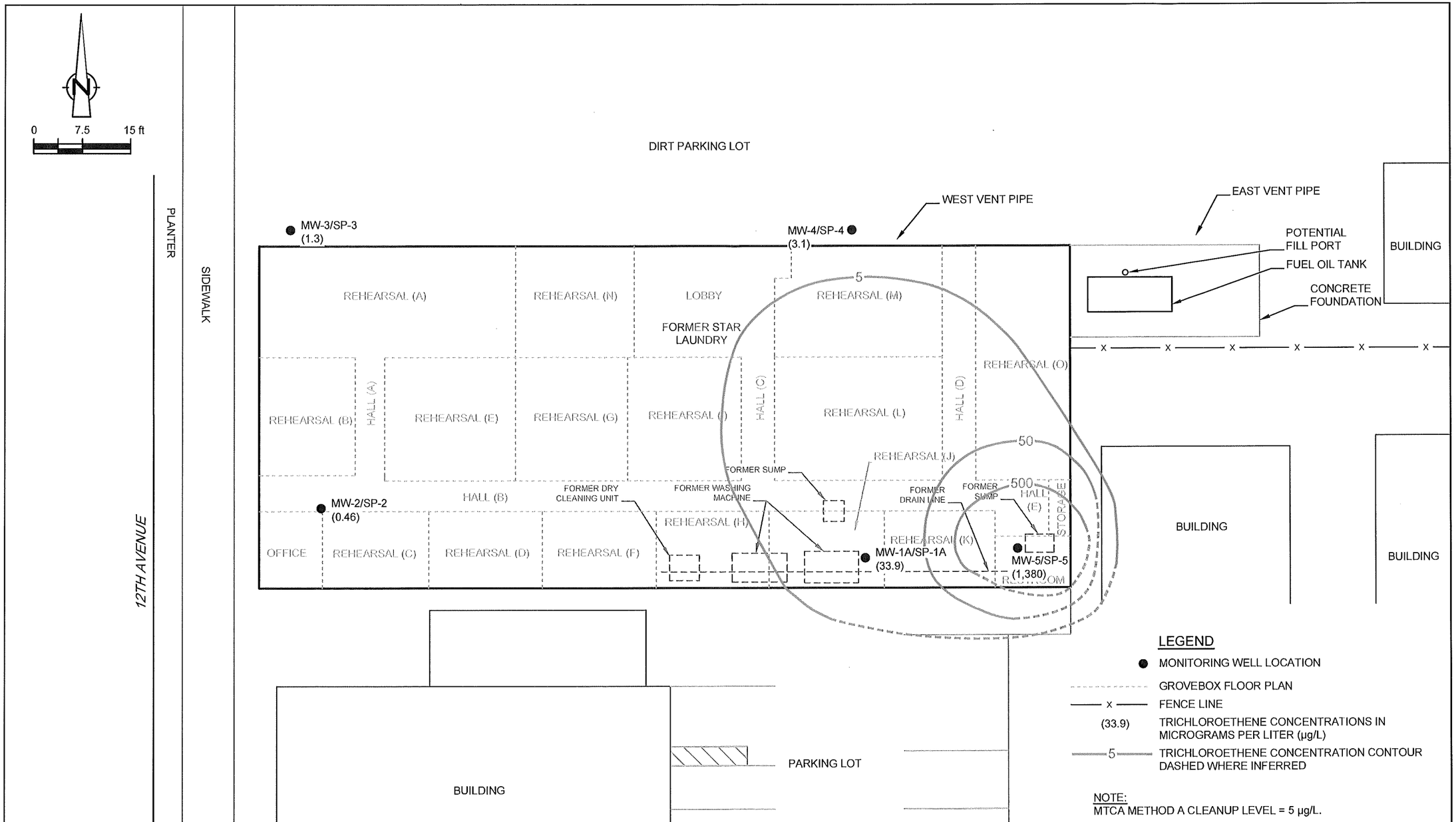
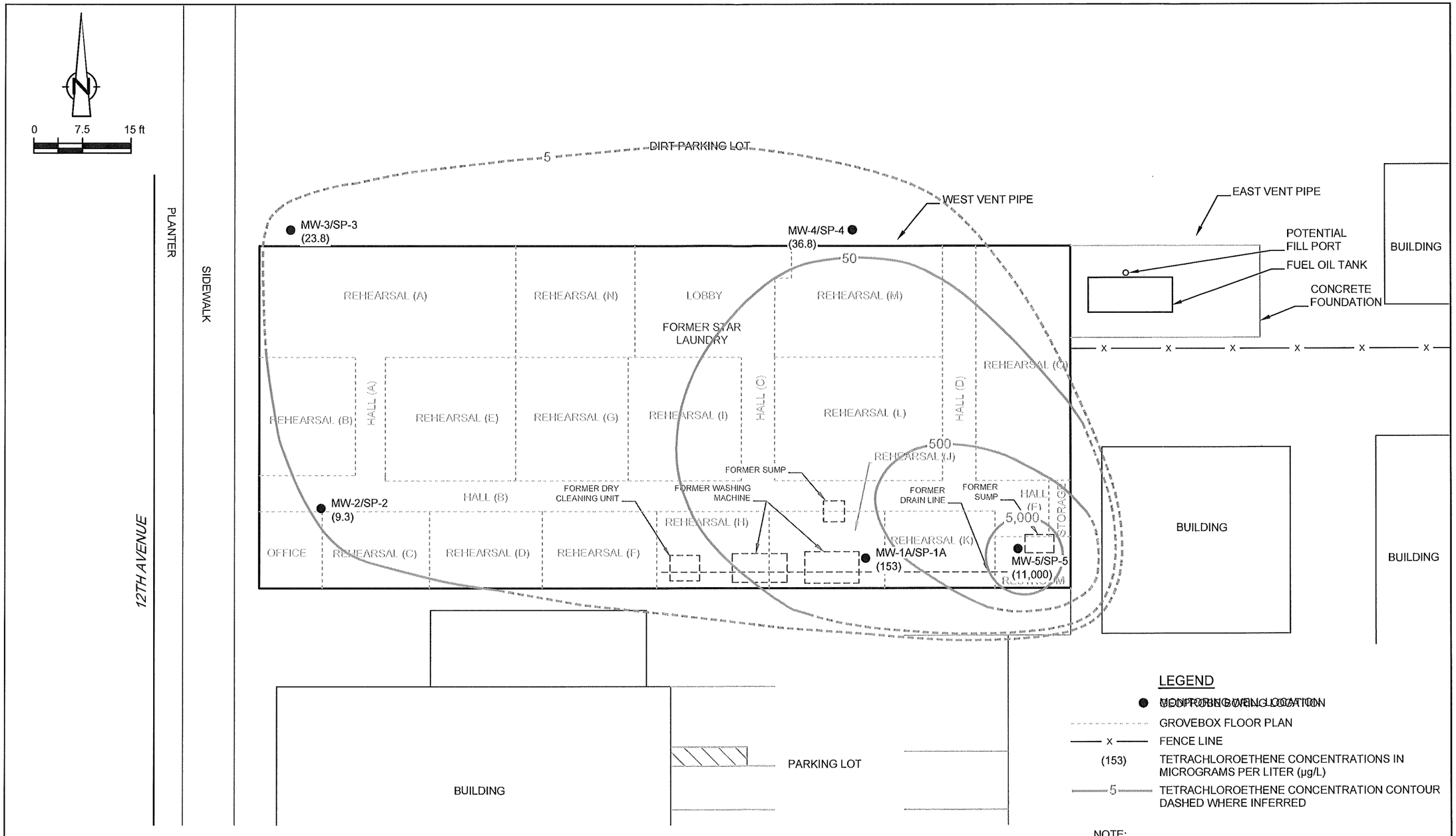


Figure 3

TRICHLOROETHENE ISOCONCENTRATION CONTOUR MAP - OCTOBER 21, 2014
FORMER STAR LAUNDRY
160 12th Avenue, Seattle, Washington

SOURCE: GROVEBOX FLOOR PLAN. KANE ENVIRONMENTAL , INC. SITE PLAN WITH BORING LOCATIONS NO DATE. USGS NATIONAL MAP AERIAL IMAGERY.

62224-04(001)GN-WA003 JAN 13/2015



LEGEND

- MONITORING WELL LOCATION
- GROVEBOX FLOOR PLAN
- FENCE LINE
- (153) TETRACHLOROETHENE CONCENTRATIONS IN MICROGRAMS PER LITER (µg/L)
- 5 TETRACHLOROETHENE CONCENTRATION CONTOUR DASHED WHERE INFERRED

NOTE:
MTCA METHOD A CLEANUP LEVEL = 5 µg/L.

Figure 4

TETRACHLOROETHENE ISOCONCENTRATION CONTOUR MAP - OCTOBER 21, 2014
FORMER STAR LAUNDRY
160 12th Avenue, Seattle, Washington

SOURCE: GROVEBOX FLOOR PLAN. KANE ENVIRONMENTAL , INC. SITE PLAN WITH BORING LOCATIONS NO DATE. USGS NATIONAL MAP AERIAL IMAGERY.

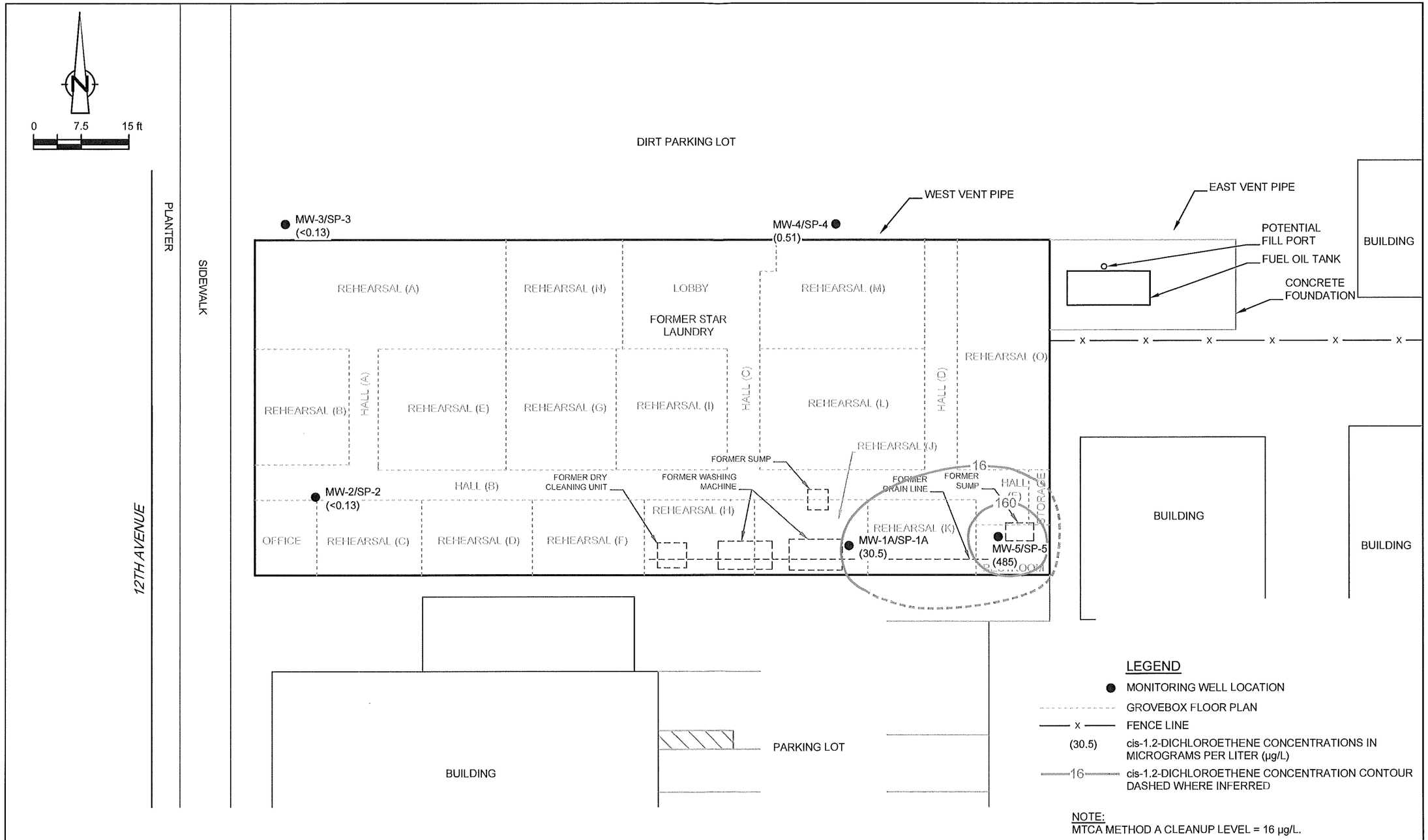


Figure 5

cis-1.2-DICHLOROETHENE ISOCONCENTRATION CONTOUR MAP - OCTOBER 21, 2014
FORMER STAR LAUNDRY
160 12th Avenue, Seattle, Washington

SOURCE: GROVEBOX FLOOR PLAN. KANE ENVIRONMENTAL , INC. SITE PLAN WITH BORING LOCATIONS NO DATE. USGS NATIONAL MAP AERIAL IMAGERY.

Tables

TABLE 1A

SUMMARY OF GROUNDWATER ANALYTICAL DATA
HYDROCARBONS AND VOLATILE ORGANIC COMPOUNDS
FORMER STAR LAUNDRY
160 12TH AVENUE
SEATTLE, WASHINGTON

					HYDROCARBONS									VOCs										
Sample ID	Date	TOC	DTW	GWE	TPHg	TPHd	TPHo	Benzene	Toluene	Ethylbenzene	Total xylenes	Naphthalene	Chloroethane	1,1-Dichloroethene	1,1-Dichloroethane	(trans) 1,2-Dichloroethene	(cis) 1,2-Dichloroethene	1,2-Dibromoethane (EDB)	1,2-Dichloroethane (EDC)	1,1,1-Trichloroethane	Trichloroethene (TCE)	Tetrachloroethene (PCE)	Vinyl Chloride	1,1,2-Trichloroethane
MTCA Method A or B Cleanup Levels [1]					MTCA Method A			MTCA Method A					--					MTCA Method A						MTCA Method B
	Units	ft	ft	ft	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
					800/1000	500	500	5	1000	700	1000	160	NE	400	1600	160	16	0.01	5	200	5	5	0.2	0.77
MW-1A	1/29/2004	NR	NR	NR	<100	<200	<500	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.3	**120**	<0.01	<1.0	<1.0	**22**	**45**	<0.2	<1.0
MW-1A	10/16/2014	38.94	12.81	26.13	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-1A	10/21/2014	38.94	12.55	26.39	83.8 J	110 J	78 J	<0.15	<0.11	<0.16	<0.40	<2.0	<0.24	<0.20	<0.16	0.68 J	**30.5**	<0.15	<0.13	<0.26	**33.9**	**153**	**1.2**	**33.9**
MW-2 *	1/29/2004	NR	NR	NR	<100	<200	<500	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.01	<1.0	<1.0	<1.0	<1.0	<0.2	<1.0
MW-2	10/16/2014	38.71	10.99	27.72	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-2	10/21/2014	38.71	10.18	28.53	<50.0	<48	<28	<0.15	<0.11	<0.16	<0.40	<2.0	<0.24	<0.20	<0.16	<0.23	<0.13	<0.15	<0.13	<0.26	0.46	**9.3**	<0.20	0.46
MW-2 DUP	10/21/2014	38.71	10.18	28.53	<50.0	---	---	<0.15	0.18 J	<0.16	<0.40	<2.0	<0.24	<0.20	<0.16	<0.23	<0.13	<0.15	<0.13	<0.26	0.65	**11.5**	<0.20	0.65
MW-3 *	1/29/2004	NR	NR	NR	<100	<200	<500	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.01	<1.0	<1.0	<1.0	<1.0	<0.2	<1.0
MW-3	10/16/2014	38.68	11.35	27.33	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-3	10/21/2014	38.68	11.12	27.56	<50.0	<50	61 J	<0.15	<0.11	<0.16	<0.40	<2.0	<0.24	<0.20	<0.16	<0.23	<0.13	<0.15	<0.13	<0.26	1.3	**23.8**	<0.20	**1.3**
MW-4 *	1/29/2004	NR	NR	NR	<100	<200	<500	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.01	<1.0	<1.0	<1.0	<1.0	<0.2	<1.0
MW-4	10/16/2014	36.63	12.30	24.33	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-4	10/21/2014	36.63	12.05	24.58	<50.0	<48	35 J	<0.15	<0.11	<0.16	<0.40	<2.0	<0.24	<0.20	<0.16	<0.23	0.51 J	<0.15	<0.13	<0.26	3.1	**36.8**	<0.20	**3.1**
MW-5 *	2/20/2004	NR	NR	NR	<200	<500	<500	<1.0	<1.0	<1.0	<1.0	--	--	7.8	--	35	**4700**	--	--	--	<1.0	**16,000**	**3.8**	--
MW-5	10/16/2014	37.07	13.48	23.59	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-5	10/21/2014	37.07	13.56	23.51	**6,430**	<48	29 J	<3.8	<2.8	<4.1	<10.1	<50.0	<6.0	<5.0	<4.0	14.4 J	**485**	<3.7	<3.3	<6.6	**1,380**	**11,000**	<4.9	**1,380**

Abbreviations and Notes:
DTW = Depth to Water in feet
GWE = Groundwater Elevation
TOC = Top of Casing
TPHg = Total petroleum hydrocarbons as gasoline range organics analyzed by method NWTPH-Gx
TPHd = Total petroleum hydrocarbons as diesel range organics analyzed by method NWTPH-Dx
TPHo = Total petroleum hydrocarbons as heavy oil range organics analyzed by method NWTPH-Dx
VOC = Volatile Organic Compounds analyzed by EPA Method 8260 (See analytical laboratory reports for a complete list of VOCs)
ug/L = Micrograms per liter
NE = Not established
NR = Not reported
---- = Not analyzed
<*n* = Below laboratory detection limit of *n* ug/L
MTCA = Model Toxics Control Act Cleanup Regulations [WAC 173-340-720(2)(a)(1), as amended February 2001]
[1] The cleanup levels in the table are from the following standards: Federal Maximum Contaminant Levels (MCLs) from US Environmental Protection Agency, MTCA Method A cleanup level, MTCA Method B cleanup level obtained from Cleanup Level Risk Calculations (CLARC) value for groundwater.
* = Grab groundwater sample
All data prior to 2014 collected by previous consultants
a = Constituent analyzed by method NWTPH-HCID

TABLE 1B

SUMMARY OF GROUNDWATER ANALYTICAL DATA
METALS
FORMER STAR LAUNDRY
160 12TH AVENUE
SEATTLE, WASHINGTON

					METALS								
Sample ID	*Date*	*TOC*	*DTW**	*GWE*	*Arsenic*	*Arsenic*	*Cadmium*	*Cadmium*	*Chromium*	*Chromium*	*Chromium IV*	*Copper*	*Lead*
	MTCA Method A or B Cleanup Levels [1]					*MTCA Method A*					*MTCA Method B*		*MTCA M*
					5	*5*	*5*	*5*	*50*	*50*	*48*	*320*	*15*
	Units	*ft*	*ft*	*ft*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*
MW-1A	1/29/2004	NR	NR	NR	**26**	--	<5	--	<10	--	--	10	7
MW-1A	10/16/2014	38.94	12.81	26.13	---	---	---	---	---	---	---	---	---
MW-1A	10/21/2014	38.94	12.55	26.39	---	---	---	---	---	---	---	---	---
MW-2	1/29/2004	NR	NR	NR	**19**	--	<5	--	20	--	--	20	1
MW-2	10/16/2014	38.71	10.99	27.72	---	---	---	---	---	---	---	---	---
MW-2	10/21/2014	38.71	10.18	28.53	**5.8**	3.2	0.068 J	<0.033	9.4	<0.22	---	---	4.1
MW-2 DUP	10/21/2014	38.71	10.18	28.53	---	---	---	---	---	---	---	---	---
MW-3	1/29/2004	NR	NR	NR	**55**	--	<5	--	<10	--	--	<10	<2
MW-3	10/16/2014	38.68	11.35	27.33	---	---	---	---	---	---	---	---	---
MW-3	10/21/2014	38.68	11.12	27.56	2.7	1.6	0.050 J	0.033 J	11.7	2.0	---	---	2.1
MW-4	1/29/2004	NR	NR	NR	**28**	--	<5	--	9	--	--	10	7
MW-4	10/16/2014	36.63	12.30	24.33	---	---	---	---	---	---	---	---	---
MW-4	10/21/2014	36.63	12.05	24.58	4.1	0.36 J	0.25	0.035 J	15.9	0.33 J	---	---	**47.7**
MW-5	10/16/2014	37.07	13.48	23.59	---	---	---	---	---	---	---	---	---
MW-5	10/21/2014	37.07	13.56	23.51	---	---	---	---	---	---	---	---	---

Abbreviations and Notes:
DTW = Depth to Water in feet
GWE = Groundwater Elevation
TOC = Top of Casing
ug/L = Micrograms per liter
NE = Not established
---- = Not analyzed
<*n* = Below laboratory detection limit of *n* ug/L
All metals analyzed by method 7010, except mercury which was analyzed by method 7470A; see analytical laboratory reports for a complete list of compounds analyzed.
MTCA = Model Toxics Control Act Cleanup Regulations [WAC 173-340-720(2)(a)(1), as amended February 2001]
All data prior to 2014 collected by previous consultants

Appendix A

Blaine Tech Services, Inc. – Well Re-development Field Data Sheets

WELL GAUGING DATA

Project # 141016-CP1 Date 10/16/14 Client CRA

Site 160 12th Ave Seattle WA

Well ID	Time	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or TOC	Notes
MW-1A	0843	1					12.81	14.48		
MW-2	0838	1					10.99	14.53		
MW-3	0820	1					11.35	14.57		
MW-4	0827	1					12.30	14.78		
MW-5	0832	1					13.48	15.15	↓	

WELL DEVELOPMENT DATA SHEET

Project #: 141016-CP1	Client: CRA
Developer: Cra's Peters	Date Developed: 10/16/14
Well I.D. MW-1A	Well Diameter: (circle one) 2 3 4 6 1
Total Well Depth: Before 14.48 After 14.52	Depth to Water: Before 12.81 After
Reason not developed:	If Free Product, thickness:
Additional Notations:	

Volume Conversion Factor (VCF):
{12 x (d^2/4) x π} /231
where
12 = in / foot
d = diameter (in.)
π = 3.1416
231 = in 3/gal

Well dia.		VCF
2"	=	0.16
3"	=	0.37
4"	=	0.65
6"	=	1.47
10"	=	4.08
12"	=	6.87

1" = .04

.10	X	10	=	1.0
1 Case Volume		Specified Volumes		gallons

Purging Device: Bailer ☐ Electric Submersible ☐
Middleburg ☐ Suction Pump ☑

Type of Installed Pump _____
Other equipment used 20' 5/8" Poly Tubing

TIME	TEMP (F)	pH	Cond. (mS or µS)	TURBIDITY (NTUs)	VOLUME REMOVED:	NOTATIONS:
1005	- Started		swabbing well	with		Hard Bottom
	(15min)		5/8" Poly Tubing	-		
1020	63.3	6.40	605.1	>1000	.1	Silty, Grey
	- Well Dewatered		after	.1gal	-	
1200	- Returned to well			DTW - 12.87		
	- Surged for 5min -					
1205	- Start Purge -					
1206	62.2	7.23	566.1	>1000		
	- Well Dewatered @			.1 gal		Silty Brown
1315	- Returned to well & surged for 5min.					DTW - 12.84
1320	- Start Purge -					
1321	62.5	7.29	541.2	>1000		Silty Brown
	- Well Dewatered @				.4gal	
Did Well Dewater?	If yes, note above.		Gallons Actually Evacuated:		0.4	

WELL DEVELOPMENT DATA SHEET

Well I.D. MW-1A	PAGE 2 OF 2
Project #: 141016-001	Client: CRA

TIME	TEMP (F)	pH	Cond. (mS or µS)	TURBIDITY (NTUs)	VOLUME REMOVED:	NOTATIONS:
1415	Returned to well & surged for 5min					DTW-12.86
1420	-Start Purge-					
1421	63.0	7.27	587.3	>1000	.1 gal	
	-Well Dewatered			Q	.1 gal	
1512	Returned to well & surged for 5min					DTW-12.89
1517	Start Purge					
1517	62.5	7.19	588.1	>1000		Silty Brown
	Well Dewatered			Q	.1 gal	

WELL DEVELOPMENT DATA SHEET

Project #: 141016-CP1	Client: CRA
Developer: Craig Peters	Date Developed: 10/16/14
Well I.D. MW-2	Well Diameter: (circle one) 2 3 4 6 1
Total Well Depth: Before 14.53 After 14.58	Depth to Water: Before 10.99 After
Reason not developed:	If Free Product, thickness:
Additional Notations:	

Volume Conversion Factor (VCF):
{12 x (d^2/4) x π} /231
where
12 = in / foot
d = diameter (in.)
π = 3.1416
231 = in 3/gal

Well dia.		VCF
2"	=	0.16
3"	=	0.37
4"	=	0.65
6"	=	1.47
10"	=	4.08
12"	=	6.87

1" = .04

.20	X	10	=	2.0
1 Case Volume		Specified Volumes		gallons

Purging Device: Bailer ☐ Electric Submersible ☐
Middleburg ☐ Suction Pump ☑

Type of Installed Pump _____
Other equipment used 20' 5/8 poly tubing

TIME	TEMP (F)	pH	Cond. (mS or µS)	TURBIDITY (NTUs)	VOLUME REMOVED:	NOTATIONS:
0930	- Started Swabbing well					Hard Bottom
	(1.5 min) with 5/8 poly tubing -					
0945	- Start Purge -					Silty, Grey
0946	62.9	5.67	474.6	>1000	.2	
	- well Dewatered after				.2 gal. -	
1145	- Returned to Well -				DTW 11.04	
	Surged well for 5 min					
1190	63.1	7.71	437.1	>1000		
	- Well Dewatered @				.2 gal	Silty, Brown
1305	- Returned to well - Surged well for 5 min DTW - 11.93					
1311	63.3	8.01	431.2	>1000	.2	Silty, Brown
	- Well Dewatered @				.2	

Did Well Dewater?	If yes, note above.	Gallons Actually Evacuated:	0.8 gal

WELL DEVELOPMENT DATA SHEET

Well I.D. mw-2	PAGE 2 OF 2
Project #: 141016-GP1	Client: QRA

TIME	TEMP (F)	pH	Cond. (mS or µS)	TURBIDITY (NTUs)	VOLUME REMOVED:	NOTATIONS:
1400	Returned to well & Surged for 5min					DTW - 11.49
1406	- Start Purge -					
1407	62.8	8.01	431.4	>1000	.2	silty Brown
	- Well Dewatered @				.2991	
1500	Returned to well & surged for 5min					DTW-11.53
1506	start Purge					
1507	63.1	7.95	429.4	>1000	.2	Silty Brown
	Well Dewatered @				.2991	

WELL DEVELOPMENT DATA SHEET

Project #: 141016 - CP1	Client: CRA
Developer: Craig Peters	Date Developed: ~~10/10/14~~ 10/16/14
Well I.D. MW-3	Well Diameter: (circle one) 2 3 4 6 1
Total Well Depth: Before 14.57 After 14.59	Depth to Water: Before 11.35 After
Reason not developed:	If Free Product, thickness:
Additional Notations:	

Volume Conversion Factor (VCF):
{12 x (d^2/4) x π} /231
where
12 = in / foot
d = diameter (in.)
π = 3.1416
231 = in 3/gal

Well dia.		VCF
2"	=	0.16
3"	=	0.37
4"	=	0.65
6"	=	1.47
10"	=	4.08
12"	=	6.87

1" - .04

.20	X	10	=	2.0
1 Case Volume		Specified Volumes		gallons

Purging Device: Bailer ☐ Electric Submersible ☐
Middleburg ☐ Suction Pump ☑

Type of Installed Pump _____
Other equipment used _____

TIME	TEMP (F)	pH	Cond. (mS or µS)	TURBIDITY (NTUs)	VOLUME REMOVED:	NOTATIONS:
1115	- Started Swabbing well					Hard Bottom
	with 5/8" Poly Tubing				—	
1131	- Started Purge			—		
1132	64.0	7.14	333.1	>1000	.2	Silty, Grey
1138	- Well Dewatered @				.2 gal	
1230	- Returned to well & surged for 5 min — DTW - 13.09					
1236	re Start Purge					Silty, Brown
1236	63.1	7.25	328.9	>1000		
	— Well Dewatered @				.1 gal	—
1335	- Returned to well & surged for 5 min DTW - 13.43					
1340	- Start Purge —					Silty, Brown
1341	63.4	7.65	329.7	>1000		
	- Well Dewatered @			<	.1 gal	—

Did Well Dewater?	If yes, note above.	Gallons Actually Evacuated:	0.5 gal

WELL DEVELOPMENT DATA SHEET

Well I.D. MW-3	PAGE 2 OF 2
Project #: 141016-CP1	Client: CRA

TIME	TEMP (F)	pH	Cond. (mS or µS)	TURBIDITY (NTUs)	VOLUME REMOVED:	NOTATIONS:
1435	Returned to well & Surged for 5 min.					DTW - 13.31
1440	Start Purge					
1440	63.5	7.89	324.7	>1000		
	Well Dewatered @				< .1 gal	Silty Brown
1530	Returned to well & surged for 5 min					DTW - 13.42
1535	Start Purge					
1536	63.3	7.49	323.5	>1000		Silty Brown
	Well Dewatered @			<	.1 gal	

WELL DEVELOPMENT DATA SHEET

Project #: 141016-CP1	Client: CRA
Developer: Craig Peters	Date Developed: 10/16/14
Well I.D. MW-4	Well Diameter: (circle one) 2 3 4 6 1
Total Well Depth: Before 14.78 After 14.81	Depth to Water: Before 12.30 After
Reason not developed:	If Free Product, thickness:
Additional Notations:	

Volume Conversion Factor (VCF):
{12 x (d^3/4) x π} /231
where
12 = in / foot
d = diameter (in.)
π = 3.1416
231 = in 3/gal

Well dia.		VCF
2"	=	0.16
3"	=	0.37
4"	=	0.65
6"	=	1.47
10"	=	4.08
12"	=	6.87

1" - .04

.10	X	10	=	1.0
1 Case Volume		Specified Volumes		gallons

Purging Device: Bailer ☐ Electric Submersible ☐
Middleburg ☐ Suction Pump ☑

Type of Installed Pump _____
Other equipment used _____

TIME	TEMP (F)	pH	Cond. (mS or µS)	TURBIDITY (NTUs)	VOLUME REMOVED:	NOTATIONS:
1050	- Started Swabbing well with					Hand Bottom
		5/8" Poly Tubing				
1106	- Started Purge			—		
1107	60.3	7.22	428.9	71000	.1	Silty, Grey
	- Well Dewatered @				.1 gal.	
1241	- Surged well for 5 min -					
1246	- Start Purge -			DTW -	12.35	
1246	59.8	7.41	481.2	71000	.1 gal	Silty, Grey
	- Well Dewatered			@	.1 gal	
1345	- Returned to well & Surged for 5 min					DTW - 12.32
1350	- Start Purge -					
1351	60.1	7.54	480.4	71000	.1	Silty Brown
	- Well Dewatered			@	.1 gal	
Did Well Dewater?	If yes, note above.			Gallons Actually Evacuated:		0.4

WELL DEVELOPMENT DATA SHEET

Well I.D.	MW-4	PAGE 2 OF 2
Project #:	141016-CP1	Client: CRA

TIME	TEMP (F)	pH	Cond. (mS or µS)	TURBIDITY (NTUs)	VOLUME REMOVED:	NOTATIONS:
1445	Returned to well & surged for 5min					DTW-12.37
1450	Start Purge					
1450	60.3	7.31	488.2	>1000		Silty Brown
	Well Dewatered @				.1gal	
1540	Returned to well & surged for 5min					DTW-12.32
1545	Start Purge					
1545	60.6	7.61	493.5	>1000		Silty Brown
	well Dewatered @				.1gal	

WELL DEVELOPMENT DATA SHEET

Project #: 141016-CP1	Client: CRA
Developer: Craig Peters	Date Developed: 10/16/14
Well I.D. MW-5	Well Diameter: (circle one) 2 3 4 6 1
Total Well Depth: Before 15.19 After 15.18	Depth to Water: Before 13.48 After
Reason not developed:	If Free Product, thickness:
Additional Notations:	

Volume Conversion Factor (VCF):
{12 x (d^2/4) x π} /231
where
12 = in / foot
d = diameter (in.)
π = 3.1416
231 = in 3/gal

Well dia.		VCF
2"	=	0.16
3"	=	0.37
4"	=	0.65
6"	=	1.47
10"	=	4.08
12"	=	6.87

1" - .04

.10	X	10	=	1.0
1 Case Volume		Specified Volumes		gallons

Purging Device: Bailer ☐ Middleburg ☐ Electric Submersible ☐ Suction Pump ☑

Type of Installed Pump
Other equipment used 20' 5/8" Poly Tubing 20' 1/4" poly Tubing

TIME	TEMP (F)	pH	Cond. (mS or µS)	TURBIDITY (NTUs)	VOLUME REMOVED:	NOTATIONS:
1030	- Started Swabbing well with					Hard Bottom
		5/8" Poly Tubing —				
1046	- Started Purge —					
1047	63.0	7.22	379.2	>1000	.1	Silty, Grey
	- Well Dewatered @				.1 gal	
1215	- Returned to well - DTW - 13.55					
	— Surged for 5 min. —					
1220	- Start Purge —					
1221	62.5	7.44	363.1	>1000		Silty, Grey
	- Well Dewatered @ .1 gal					
1325	- Returned to well & Surged for 5 min					DTW - 13.58
1330	- Start Purge —					Silty Brown
1331	61.8	7.51	358.0	>1000	Well Dewatered @ .1 gal	
Did Well Dewater?	If yes, note above.			Gallons Actually Evacuated:		0.4

WELL DEVELOPMENT DATA SHEET

Well I.D. MW-5	PAGE 2 OF 2
Project #: 141016-CP1	Client: CRA

TIME	TEMP (F)	pH	Cond. (mS or (µS))	TURBIDITY (NTUs)	VOLUME REMOVED:	NOTATIONS:
1425	Returned to well & Surged for 5min					DTW - 13.55
1430	Start Purge					
1430	61.8	7.39	346.1	>1000		Silty Brown
	Well Dewatered @				.1gal	
1521	Returned to well & Surged for 5min					DTW - 13.58
1526	Start Purge					
1526	61.8	7.47	353.1	>1000		Silty Brown
	Well Dewatered @				.1gal	

WELLHEAD INSPECTION FORM

Client: CRA Site: 100 12th Ave Seattle Date: 10/16/14

Job #: 141016-CP1 Technician: AF Page 1 of 1

Well ID	Well Inspected - No Corrective Action Required	Check indicates deficiency: Cap non-functional	Lock non-functional	Lock missing	Bolts missing (list qty)	Tabs stripped (list qty)	Tabs broken (list qty)	Annular seal incomplete	Apron damaged	Rim / Lid broken	Trip Hazard	Below Grade	Other (explain in notes)	Well Not Inspected (explain in notes)	Notes (list if cap or lick replaced, if there are access issues associated with repairs, if traffic control is required, if stand pipe damaged, or any specific details not covered by checklist)
MW-1A				X	2										Plywood well lid under carpet
MW-2				X	1										
MW-3				X											
MW-4				X	1										
MW-5				X											

NOTES:

SPH or Purge Water Drum Log

Client: ARA

Site Address: 1600 12th Ave Seattle WA

STATUS OF DRUM(S) UPON ARRIVAL						
Date	10/16/14					
Number of drum(s) empty:	0					
Number of drum(s) 1/4 full:	0					
Number of drum(s) 1/2 full:	0					
Number of drum(s) 3/4 full:	0					
Number of drum(s) full:	0					
Total drum(s) on site:	0					
Are the drum(s) properly labeled?	N/A					
Drum ID & Contents:	N/A					
If any drum(s) are partially or totally filled, what is the first use date:	N/A					

- If you add any SPH to an empty or partially filled drum, drum must have at least 20 gals. of Purgewater or DI Water.

-If drum contains SPH, the drum MUST be steel AND labeled with the appropriate label.

-All BTS drums MUST be labeled appropriately.

STATUS OF DRUM(S) UPON DEPARTURE						
Date	10/16/14					
Number of drums empty:	0					
Number of drum(s) 1/4 full:	1					
Number of drum(s) 1/2 full:	0					
Number of drum(s) 3/4 full:	0					
Number of drum(s) full:	0					
Total drum(s) on site:	1					
Are the drum(s) properly labeled?	yes					
Drum ID & Contents:	BTS Purge #1 Water					

LOCATION OF DRUM(S)	
Describe location of drum(s):	concrete pad East side of Building

FINAL STATUS						
Number of new drum(s) left on site this event	1					
Date of inspection:	10/16/14					
Drum(s) labelled properly:	BTS #1					
Logged by BTS Field Tech:	AP					
Office reviewed by:						

Appendix B

Blaine Tech Services, Inc. – Well Sampling Field Data Sheets

WELL GAUGING DATA

Project # 141021-LB1 Date 10/21/14 Client CRA

Site 160 12th Ave, Seattle, WA

Well ID	Time	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or TOC	Notes
MW-1	1150	1					12.55	14.38		
MW-2	0856	1					10.18	14.49		
MW-3	0852	1					11.12	14.55		
MW-4	0848	1					12.05	14.73		
MW-5	0902	1					13.56	15.05	↓	

LOW FLOW WELL MONITORING DATA SHEET

Project #: 141021-LB1	Client: CRA
Sampler: LB	Gauging Date: 10/21/14
Well I.D.: MW1-1A	Well Diameter (in.): 2 3 4 6 8 (1)
Total Well Depth (ft.): 14.38	Depth to Water (ft.): 12.55
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type:

Purge Method: 2" Grundfos Pump (Peristaltic Pump) Bladder Pump
Sampling Method: Dedicated Tubing (New Tubing) Other

Start Purge Time: — Flow Rate: — Pump Depth: —

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
—	—	NO PURGE SAMPLE TAKEN				—		
1155	61.4	6.88	628	>1000	—	—		
—	—	WELL	DEWATERED @	4	VOAs	—	—	
1400	—	RETURN	TO WELL,	WELL	DEWATERED	@	1 AMBER	—

Did well dewater? (Yes) No — Amount actually evacuated: —

Sampling Time: 1155 — Sampling Date: 10/21/14

Sample I.D.: MW1-1A — Laboratory: PACE

Analyzed for: (TPH-G) BTEX MTBE (TPH-D) — Other: SEE COC

Equipment Blank I.D.: @ Time — Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 141021-LB1	Client: CRA
Sampler: LB	Gauging Date: 10/21/14
Well I.D.: MW-2	Well Diameter (in.): 2 3 4 6 8 (1)
Total Well Depth (ft.): 14.49	Depth to Water (ft.): 10.18
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump | Peristaltic Pump | Bladder Pump
Sampling Method: Dedicated Tubing | New Tubing | Other

Start Purge Time: 0922 Flow Rate: 100 mL/MIN Pump Depth: 14'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
—	—	WELL	DRAWING	DOWN	SIGNIFICANTLY		BEFORE	
		FLOW	CELL	FILLED,	SWITCH	TO NO PURGE	—	—
0938	61.4	6.88	618	>1000	—	—	—	
—	—	WELL	DEWATERED @		6 VOAS		—	
1100	—	RETURN TO WELL,	WELL	DEWATERED @			6 VOAS / AMBER	—
1300	—	RETURN TO WELL,	WELL	DEWATERED @ 2			POLYS	—

Did well dewater? Yes No	Amount actually evacuated: —
Sampling Time: 0938	Sampling Date: 10/21/14
Sample I.D.: MW-2	Laboratory: PACE
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.: DUP

LOW FLOW WELL MONITORING DATA SHEET

Project #: 141021-LB1	Client: CRA
Sampler: LB	Gauging Date: 10/21/14
Well I.D.: MW-3	Well Diameter (in.): 2 3 4 6 8 (1)
Total Well Depth (ft.): 14.55	Depth to Water (ft.): 11.12
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type:

Purge Method: 2" Grundfos Pump | Peristaltic Pump | Bladder Pump
Sampling Method: Dedicated (Tubing) | New Tubing | Other

Start Purge Time: NA Flow Rate: NA Pump Depth: NA

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
—	—	NO	PURGE	SAMPLE	TAKEN	—	—	
1040	60.4	6.94	384	>1000	—	—	—	
—	—	WELL	DEWATERED @	6 VOAS	+ 2	POLYS	—	
1235	—	RETURN TO WELL, WELL		DEWATERED @		1 AMBER	—	

Did well dewater? (Yes) No — Amount actually evacuated: —

Sampling Time: 1040 — Sampling Date: 10/21/14

Sample I.D.: MW-3 — Laboratory: PACE

Analyzed for: (TPH-G) BTEX MTBE (TPH-D) — Other: SEE COC

Equipment Blank I.D.: @ Time — Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 141021-LB1	Client: CRA
Sampler: LB	Gauging Date: 10/21/14
Well I.D.: MW-4	Well Diameter (in.): 2 3 4 6 8 (1)
Total Well Depth (ft.): 14.73	Depth to Water (ft.): 12.05
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type:

Purge Method: 2" Grundfos Pump | Peristaltic Pump | Bladder Pump
Sampling Method: Dedicated Tubing | New Tubing | Other

Start Purge Time: NA Flow Rate: NA Pump Depth: NA

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
—	—	No	Purge	Sample	Taken	—	—	
1025	60.3	7.08	518	>1000	—	—	—	
—	—	Well	Dewatered	@	6 VOAs	—	—	
1225	—	Return	to well,	Dewatered	@	1 Amber + 1/2 Poly	—	
1330	—	Return	to well,	Dewatered	@	1 + 1/2 Poly	—	

Did well dewater? Yes No — Amount actually evacuated: —

Sampling Time: 1025 — Sampling Date: 10/21/14

Sample I.D.: MW-4 — Laboratory: Pace

Analyzed for: TPH-G BTEX MTBE TPH-D — Other: See COC

Equipment Blank I.D.: @ Time — Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 141021-LB1	Client: CRA
Sampler: LB	Gauging Date: 10/21/14
Well I.D.: MW-5	Well Diameter (in.): 2 3 4 6 8 (1)
Total Well Depth (ft.): 15.05	Depth to Water (ft.): 13.56
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type:

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other

Start Purge Time: NA Flow Rate: NA Pump Depth: NA

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
	—	—	NO PURGE		SAMPLE	TAKEN	—	—
1000	60.4	6.87	418	>1000	—	—	—	
	—	WELL	DEWATERED	@	3	VOA'S	—	
1215	—	RETURN TO WELL, WELL DEWATERED @ 1 VOA & 1/2 AMBER						
1345	—	RETURN TO WELL, WELL DEWATERED @ 1/2 AMBER						—

Did well dewater? Yes No Amount actually evacuated: —

Sampling Time: 1000 Sampling Date: PACE 10/21/14

Sample I.D.: MW-5 Laboratory: PACE

Analyzed for: TPH-G BTEX MTBE TPH-D Other: SEE COC

Equipment Blank I.D.: @ Time Duplicate I.D.:

BLAINE
TECH SERVICES, INC.

1680 ROGERS AVENUE
SAN JOSE, CALIFORNIA 95112-1105
FAX (408) 573-7771
PHONE (408) 573-0555

CHAIN OF CUSTODY

CLIENT: CRA

SITE: Former Star Laundry
160 12th Ave.
Seattlw, WA

LAB: Pace

DHS #

CONDUCT ANALYSIS TO DETECT

C = COMPOSITE ALL CONTAINERS

SAMPLE I.D.	DATE	TIME	MATRIX S= SOIL W=H_2O	CONTAINERS TOTAL	CONTAINERS Type	NWTPH-Gx	NWTPH-Dx + MO	As, Cd, Cr, Pb Total GOLD	As, Cd, Cr, Pb Dissolved GOLD *	VOC's 8260B				ADD'L INFORMATION		CONDITION	LAB SAMPLE #
MW-1A	10/21/14	1155	W	5	VOA, AMBER	X	X	X	X	X							
MW-2	10/21/14	0938	W	9	VOA, Poly, AMBER	X	X	X	X	X							
MW-3	10/21/14	1040	W	9	"	X	X	X	X	X							
MW-4	10/21/14	1025	W	9	↓	X	X	X	X	X							
MW-5	10/21/14	1000	W	5	VOA, AMBER	X	X	X	X	X							
DUP	10/21/14	—	W	6	VOA	X	X	X	X	X							

SPECIAL INSTRUCTIONS
LIMITED VOLUME, CONTACT
Invoice & Report to:
Christina McClelland
Conestoga-Rovers & Associates (CRA)
20818 44th Ave., West, Suite 190
Lynnwood, WA 98036
cmcclelland@CRAworld.com
(425) 519-0305 TO DISCUSS OPTIONS
* LAB TO FILTER & PRESERVE

RESULTS NEEDED NO LATER THAN: Standard TAT

12.7 on ice

SAMPLING COMPLETED	DATE	TIME	SAMPLING PERFORMED BY
	10/21/14	1430	LEE BORS

	DATE	TIME		DATE	TIME
RELEASED BY	10/21/14	1635	RECEIVED BY Jenn Gross/ Pace	10/21/14	16:35
RELEASED BY			RECEIVED BY		
RELEASED BY			RECEIVED BY		

SHIPPED VIA	DATE SENT	TIME SENT	COOLER #

WELLHEAD INSPECTION FORM

Client: CRA Site: 160th 92nd Ave, Seattle, WA Date: 10/21/14

Job # : 141021-LB1 Technician: L. Bures Page 1 of 1

Well ID	Well Inspected - No Corrective Action Required	Check Indicates deficiency: Cap non-functional	Lock non-functional	Lock missing	Bolts missing (list qty)	Tabs stripped (list qty)	Tabs broken (list qty)	Annular seal incomplete	Apron damaged	Rim / Lid broken	Trip Hazard	Below Grade	Other (explain in notes)	Well Not Inspected (explain in notes)	Notes (list if cap or lick replaced, if there are access issues associated with repairs, if traffic control is required, if stand pipe damaged, or any specific details not covered by checklist)
MW-1A			X												SLIP-ON PVC CAP
MW-2			X		1/2										SLIP-ON PVC CAP
MW-3			X												SLIP-ON PVC CAP
MW-4			X		1/2										SLIP-ON PIC CAP
MW-5			X												SLIP-ON PVC CAP

NOTES:

Appendix C

Analytical Laboratory Report

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

November 07, 2014

Brian Peters
Conestoga-Rovers & Associates
20818 44th Avenue W
Suite 190
Lynnwood, WA 98036

RE: Project: 062224-03 Former Star Laundry
Pace Project No.: 10286313

Dear Brian Peters:
Enclosed are the analytical results for sample(s) received by the laboratory on October 23, 2014. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Jennifer Gross
jennifer.gross@pacelabs.com
Project Manager

Enclosures

cc: Jeffrey Cloud, Conestoga-Rovers Association

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: 062224-03 Former Star Laundry
Pace Project No.: 10286313

Minnesota Certification IDs

1700 Elm Street SE Suite 200, Minneapolis, MN 55414
A2LA Certification #: 2926.01
Alaska Certification #: UST-078
Alaska Certification #MN00064
Alabama Certification #40770
Arizona Certification #: AZ-0014
Arkansas Certification #: 88-0680
California Certification #: 01155CA
Colorado Certification #Pace
Connecticut Certification #: PH-0256
EPA Region 8 Certification #: 8TMS-L
Florida/NELAP Certification #: E87605
Guam Certification #:14-008r
Georgia Certification #: 959
Georgia EPD #: Pace
Idaho Certification #: MN00064
Hawaii Certification #MN00064
Illinois Certification #: 200011
Indiana Certification#C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky Dept of Envi. Protection - DW #90062
Kentucky Dept of Envi. Protection - WW #:90062
Louisiana DEQ Certification #: 3086
Louisiana DHH #: LA140001
Maine Certification #: 2013011
Maryland Certification #: 322
Michigan DEPH Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: Pace
Montana Certification #: MT0092
Nevada Certification #: MN_00064
Nebraska Certification #: Pace
New Jersey Certification #: MN-002
New York Certification #: 11647
North Carolina Certification #: 530
North Carolina State Public Health #: 27700
North Dakota Certification #: R-036
Ohio EPA #: 4150
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon Certification #: MN200001
Oregon Certification #: MN300001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification
Saipan (CNMI) #:MP0003
South Carolina #:74003001
Texas Certification #: T104704192
Tennessee Certification #: 02818
Utah Certification #: MN000642013-4
Virginia DGS Certification #: 251
Virginia/VELAP Certification #: Pace
Washington Certification #: C486
West Virginia Certification #: 382
West Virginia DHHR #:9952C
Wisconsin Certification #: 999407970

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Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: 062224-03 Former Star Laundry
Pace Project No.: 10286313

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10286313001	MW-1A	Water	10/21/14 11:55	10/23/14 09:45
10286313002	MW-2	Water	10/21/14 09:38	10/23/14 09:45
10286313003	MW-3	Water	10/21/14 10:40	10/23/14 09:45
10286313004	MW-4	Water	10/21/14 10:25	10/23/14 09:45
10286313005	MW-5	Water	10/21/14 10:00	10/23/14 09:45
10286313006	DUP	Water	10/21/14 00:00	10/23/14 09:45
10286313007	Trip Blank	Water	10/21/14 00:00	10/23/14 09:45

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Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: 062224-03 Former Star Laundry
Pace Project No.: 10286313

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10286313001	MW-1A	NWTPH-Dx	JRH	4	PASI-M
		NWTPH-Gx/8021	LLC	2	PASI-M
		EPA 8260	AJC	70	PASI-M
10286313002	MW-2	NWTPH-Dx	JRH	4	PASI-M
		NWTPH-Gx/8021	LLC	2	PASI-M
		EPA 6020	TT3	4	PASI-M
		EPA 6020	TT3	4	PASI-M
		EPA 8260	AJC	70	PASI-M
10286313003	MW-3	NWTPH-Dx	JRH	4	PASI-M
		NWTPH-Gx/8021	LLC	2	PASI-M
		EPA 6020	TT3	4	PASI-M
		EPA 6020	TT3	4	PASI-M
		EPA 8260	AJC	70	PASI-M
10286313004	MW-4	NWTPH-Dx	JRH	4	PASI-M
		NWTPH-Gx/8021	LLC	2	PASI-M
		EPA 6020	TT3	4	PASI-M
		EPA 6020	TT3	4	PASI-M
		EPA 8260	AJC	70	PASI-M
10286313005	MW-5	NWTPH-Dx	JRH	4	PASI-M
		NWTPH-Gx/8021	LLC	2	PASI-M
		EPA 8260	AJC	70	PASI-M
10286313006	DUP	NWTPH-Gx/8021	LLC	2	PASI-M
		EPA 8260	AJC	70	PASI-M
10286313007	Trip Blank	NWTPH-Gx/8021	LLC	2	PASI-M
		EPA 8260	AJC	70	PASI-M

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Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 062224-03 Former Star Laundry
Pace Project No.: 10286313

Sample: MW-1A **Lab ID: 10286313001** Collected: 10/21/14 11:55 Received: 10/23/14 09:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS LV	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510								
Diesel Fuel Range	**0.11J**	mg/L	0.42	0.050	1	10/27/14 16:25	11/02/14 22:13	68334-30-5	
Motor Oil Range	**0.078J**	mg/L	0.42	0.029	1	10/27/14 16:25	11/02/14 22:13		B
Surrogates									
o-Terphenyl (S)	75	%.	30-125		1	10/27/14 16:25	11/02/14 22:13	84-15-1	
n-Triacontane (S)	83	%.	30-125		1	10/27/14 16:25	11/02/14 22:13	638-68-6	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx/8021								
TPH as Gas	**83.8J**	ug/L	100	50.0	1		10/30/14 16:05		
Surrogates									
a,a,a-Trifluorotoluene (S)	101	%.	70-125		1		10/30/14 16:05	98-08-8	
8260 VOC	Analytical Method: EPA 8260								
1,1,1,2-Tetrachloroethane	**<0.50**	ug/L	1.0	0.50	1		10/30/14 12:57	630-20-6	
1,1,1-Trichloroethane	**<0.26**	ug/L	1.0	0.26	1		10/30/14 12:57	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.50**	ug/L	1.0	0.50	1		10/30/14 12:57	79-34-5	
1,1,2-Trichloroethane	**<0.13**	ug/L	1.0	0.13	1		10/30/14 12:57	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.50**	ug/L	1.0	0.50	1		10/30/14 12:57	76-13-1	
1,1-Dichloroethane	**<0.16**	ug/L	1.0	0.16	1		10/30/14 12:57	75-34-3	
1,1-Dichloroethene	**<0.20**	ug/L	1.0	0.20	1		10/30/14 12:57	75-35-4	
1,1-Dichloropropene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 12:57	563-58-6	
1,2,3-Trichlorobenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 12:57	87-61-6	
1,2,3-Trichloropropane	**<1.2**	ug/L	4.0	1.2	1		10/30/14 12:57	96-18-4	
1,2,4-Trichlorobenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 12:57	120-82-1	
1,2,4-Trimethylbenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 12:57	95-63-6	
1,2-Dibromo-3-chloropropane	**<2.0**	ug/L	4.0	2.0	1		10/30/14 12:57	96-12-8	
1,2-Dibromoethane (EDB)	**<0.15**	ug/L	1.0	0.15	1		10/30/14 12:57	106-93-4	
1,2-Dichlorobenzene	**<0.16**	ug/L	1.0	0.16	1		10/30/14 12:57	95-50-1	
1,2-Dichloroethane	**<0.13**	ug/L	1.0	0.13	1		10/30/14 12:57	107-06-2	
1,2-Dichloropropane	**<0.14**	ug/L	4.0	0.14	1		10/30/14 12:57	78-87-5	
1,3,5-Trimethylbenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 12:57	108-67-8	
1,3-Dichlorobenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 12:57	541-73-1	
1,3-Dichloropropane	**<0.50**	ug/L	1.0	0.50	1		10/30/14 12:57	142-28-9	
1,4-Dichlorobenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 12:57	106-46-7	
2,2-Dichloropropane	**<0.17**	ug/L	4.0	0.17	1		10/30/14 12:57	594-20-7	
2-Butanone (MEK)	**<2.5**	ug/L	5.0	2.5	1		10/30/14 12:57	78-93-3	CL,L2
2-Chlorotoluene	**<0.14**	ug/L	1.0	0.14	1		10/30/14 12:57	95-49-8	
4-Chlorotoluene	**<0.083**	ug/L	1.0	0.083	1		10/30/14 12:57	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<2.5**	ug/L	5.0	2.5	1		10/30/14 12:57	108-10-1	
Acetone	**<10.0**	ug/L	20.0	10.0	1		10/30/14 12:57	67-64-1	
Allyl chloride	**<0.45**	ug/L	4.0	0.45	1		10/30/14 12:57	107-05-1	
Benzene	**<0.15**	ug/L	1.0	0.15	1		10/30/14 12:57	71-43-2	
Bromobenzene	**<0.13**	ug/L	1.0	0.13	1		10/30/14 12:57	108-86-1	
Bromochloromethane	**<0.12**	ug/L	1.0	0.12	1		10/30/14 12:57	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	1.0	0.20	1		10/30/14 12:57	75-27-4	
Bromoform	**<2.0**	ug/L	4.0	2.0	1		10/30/14 12:57	75-25-2	
Bromomethane	**<2.0**	ug/L	4.0	2.0	1		10/30/14 12:57	74-83-9	CL

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ANALYTICAL RESULTS

Project: 062224-03 Former Star Laundry
Pace Project No.: 10286313

Sample: MW-1A **Lab ID: 10286313001** Collected: 10/21/14 11:55 Received: 10/23/14 09:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 VOC	Analytical Method: EPA 8260								
Carbon tetrachloride	**<0.16**	ug/L	1.0	0.16	1		10/30/14 12:57	56-23-5	
Chlorobenzene	**<0.066**	ug/L	1.0	0.066	1		10/30/14 12:57	108-90-7	
Chloroethane	**<0.24**	ug/L	1.0	0.24	1		10/30/14 12:57	75-00-3	
Chloroform	**<0.16**	ug/L	1.0	0.16	1		10/30/14 12:57	67-66-3	
Chloromethane	**<0.34**	ug/L	4.0	0.34	1		10/30/14 12:57	74-87-3	
Dibromochloromethane	**<0.50**	ug/L	1.0	0.50	1		10/30/14 12:57	124-48-1	
Dibromomethane	**<0.18**	ug/L	4.0	0.18	1		10/30/14 12:57	74-95-3	
Dichlorodifluoromethane	**<0.50**	ug/L	1.0	0.50	1		10/30/14 12:57	75-71-8	
Dichlorofluoromethane	**<0.20**	ug/L	1.0	0.20	1		10/30/14 12:57	75-43-4	
Diethyl ether (Ethyl ether)	**<0.14**	ug/L	4.0	0.14	1		10/30/14 12:57	60-29-7	
Ethylbenzene	**<0.16**	ug/L	1.0	0.16	1		10/30/14 12:57	100-41-4	
Hexachloro-1,3-butadiene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 12:57	87-68-3	
Isopropylbenzene (Cumene)	**<0.50**	ug/L	1.0	0.50	1		10/30/14 12:57	98-82-8	
Methyl-tert-butyl ether	**<0.17**	ug/L	1.0	0.17	1		10/30/14 12:57	1634-04-4	
Methylene Chloride	**<2.0**	ug/L	4.0	2.0	1		10/30/14 12:57	75-09-2	
Naphthalene	**<2.0**	ug/L	4.0	2.0	1		10/30/14 12:57	91-20-3	
Styrene	**<0.063**	ug/L	1.0	0.063	1		10/30/14 12:57	100-42-5	
Tetrachloroethene	**153**	ug/L	1.0	0.16	1		10/30/14 12:57	127-18-4	
Tetrahydrofuran	**<2.0**	ug/L	10.0	2.0	1		10/30/14 12:57	109-99-9	
Toluene	**<0.11**	ug/L	1.0	0.11	1		10/30/14 12:57	108-88-3	
Trichloroethene	**33.9**	ug/L	0.40	0.091	1		10/30/14 12:57	79-01-6	
Trichlorofluoromethane	**<0.22**	ug/L	1.0	0.22	1		10/30/14 12:57	75-69-4	
Vinyl chloride	**1.2**	ug/L	0.40	0.20	1		10/30/14 12:57	75-01-4	
Xylene (Total)	**<0.40**	ug/L	3.0	0.40	1		10/30/14 12:57	1330-20-7	
cis-1,2-Dichloroethene	**30.5**	ug/L	1.0	0.13	1		10/30/14 12:57	156-59-2	
cis-1,3-Dichloropropene	**<0.13**	ug/L	4.0	0.13	1		10/30/14 12:57	10061-01-5	
n-Butylbenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 12:57	104-51-8	
n-Propylbenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 12:57	103-65-1	
p-Isopropyltoluene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 12:57	99-87-6	
sec-Butylbenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 12:57	135-98-8	
tert-Butylbenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 12:57	98-06-6	
trans-1,2-Dichloroethene	**0.68J**	ug/L	1.0	0.23	1		10/30/14 12:57	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	4.0	0.18	1		10/30/14 12:57	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	88	%.	75-125		1		10/30/14 12:57	17060-07-0	
Toluene-d8 (S)	99	%.	75-125		1		10/30/14 12:57	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-125		1		10/30/14 12:57	460-00-4	

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ANALYTICAL RESULTS

Project: 062224-03 Former Star Laundry
Pace Project No.: 10286313

Sample: MW-2 **Lab ID: 10286313002** Collected: 10/21/14 09:38 Received: 10/23/14 09:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS LV	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510								
Diesel Fuel Range	**<0.048**	mg/L	0.40	0.048	1	10/27/14 16:25	11/02/14 22:35	68334-30-5	
Motor Oil Range	**<0.028**	mg/L	0.40	0.028	1	10/27/14 16:25	11/02/14 22:35		
Surrogates									
o-Terphenyl (S)	78	%.	30-125		1	10/27/14 16:25	11/02/14 22:35	84-15-1	
n-Triacontane (S)	86	%.	30-125		1	10/27/14 16:25	11/02/14 22:35	638-68-6	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx/8021								
TPH as Gas	**<50.0**	ug/L	100	50.0	1		10/30/14 12:07		
Surrogates									
a,a,a-Trifluorotoluene (S)	102	%.	70-125		1		10/30/14 12:07	98-08-8	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020								
Arsenic	**5.8**	ug/L	0.50	0.25	1	10/28/14 20:46	10/30/14 22:35	7440-38-2	
Cadmium	**0.068J**	ug/L	0.080	0.033	1	10/28/14 20:46	10/30/14 22:35	7440-43-9	
Chromium	**9.4**	ug/L	0.50	0.22	1	10/28/14 20:46	10/30/14 22:35	7440-47-3	
Lead	**4.1**	ug/L	0.10	0.046	1	10/28/14 20:46	10/30/14 22:35	7439-92-1	
6020 MET ICPMS, Lab Filtered	Analytical Method: EPA 6020 Preparation Method: EPA 3020								
Arsenic, Dissolved	**3.2**	ug/L	0.50	0.25	1	11/05/14 10:32	11/06/14 10:19	7440-38-2	
Cadmium, Dissolved	**<0.033**	ug/L	0.080	0.033	1	11/05/14 10:32	11/06/14 10:19	7440-43-9	
Chromium, Dissolved	**<0.22**	ug/L	0.50	0.22	1	11/05/14 10:32	11/06/14 10:19	7440-47-3	
Lead, Dissolved	**<0.046**	ug/L	0.10	0.046	1	11/05/14 10:32	11/06/14 10:19	7439-92-1	
8260 VOC	Analytical Method: EPA 8260								
1,1,1,2-Tetrachloroethane	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:11	630-20-6	
1,1,1-Trichloroethane	**<0.26**	ug/L	1.0	0.26	1		10/30/14 13:11	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:11	79-34-5	
1,1,2-Trichloroethane	**<0.13**	ug/L	1.0	0.13	1		10/30/14 13:11	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:11	76-13-1	
1,1-Dichloroethane	**<0.16**	ug/L	1.0	0.16	1		10/30/14 13:11	75-34-3	
1,1-Dichloroethene	**<0.20**	ug/L	1.0	0.20	1		10/30/14 13:11	75-35-4	
1,1-Dichloropropene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:11	563-58-6	
1,2,3-Trichlorobenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:11	87-61-6	
1,2,3-Trichloropropane	**<1.2**	ug/L	4.0	1.2	1		10/30/14 13:11	96-18-4	
1,2,4-Trichlorobenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:11	120-82-1	
1,2,4-Trimethylbenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:11	95-63-6	
1,2-Dibromo-3-chloropropane	**<2.0**	ug/L	4.0	2.0	1		10/30/14 13:11	96-12-8	
1,2-Dibromoethane (EDB)	**<0.15**	ug/L	1.0	0.15	1		10/30/14 13:11	106-93-4	
1,2-Dichlorobenzene	**<0.16**	ug/L	1.0	0.16	1		10/30/14 13:11	95-50-1	
1,2-Dichloroethane	**<0.13**	ug/L	1.0	0.13	1		10/30/14 13:11	107-06-2	
1,2-Dichloropropane	**<0.14**	ug/L	4.0	0.14	1		10/30/14 13:11	78-87-5	
1,3,5-Trimethylbenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:11	108-67-8	
1,3-Dichlorobenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:11	541-73-1	
1,3-Dichloropropane	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:11	142-28-9	
1,4-Dichlorobenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:11	106-46-7	
2,2-Dichloropropane	**<0.17**	ug/L	4.0	0.17	1		10/30/14 13:11	594-20-7	

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ANALYTICAL RESULTS

Project: 062224-03 Former Star Laundry
Pace Project No.: 10286313

Sample: MW-2 **Lab ID: 10286313002** Collected: 10/21/14 09:38 Received: 10/23/14 09:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 VOC	Analytical Method: EPA 8260								
2-Butanone (MEK)	**<2.5**	ug/L	5.0	2.5	1		10/30/14 13:11	78-93-3	CL,L2
2-Chlorotoluene	**<0.14**	ug/L	1.0	0.14	1		10/30/14 13:11	95-49-8	
4-Chlorotoluene	**<0.083**	ug/L	1.0	0.083	1		10/30/14 13:11	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<2.5**	ug/L	5.0	2.5	1		10/30/14 13:11	108-10-1	
Acetone	**<10.0**	ug/L	20.0	10.0	1		10/30/14 13:11	67-64-1	
Allyl chloride	**<0.45**	ug/L	4.0	0.45	1		10/30/14 13:11	107-05-1	
Benzene	**<0.15**	ug/L	1.0	0.15	1		10/30/14 13:11	71-43-2	
Bromobenzene	**<0.13**	ug/L	1.0	0.13	1		10/30/14 13:11	108-86-1	
Bromochloromethane	**<0.12**	ug/L	1.0	0.12	1		10/30/14 13:11	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	1.0	0.20	1		10/30/14 13:11	75-27-4	
Bromoform	**<2.0**	ug/L	4.0	2.0	1		10/30/14 13:11	75-25-2	
Bromomethane	**<2.0**	ug/L	4.0	2.0	1		10/30/14 13:11	74-83-9	CL
Carbon tetrachloride	**<0.16**	ug/L	1.0	0.16	1		10/30/14 13:11	56-23-5	
Chlorobenzene	**<0.066**	ug/L	1.0	0.066	1		10/30/14 13:11	108-90-7	
Chloroethane	**<0.24**	ug/L	1.0	0.24	1		10/30/14 13:11	75-00-3	
Chloroform	**<0.16**	ug/L	1.0	0.16	1		10/30/14 13:11	67-66-3	
Chloromethane	**<0.34**	ug/L	4.0	0.34	1		10/30/14 13:11	74-87-3	
Dibromochloromethane	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:11	124-48-1	
Dibromomethane	**<0.18**	ug/L	4.0	0.18	1		10/30/14 13:11	74-95-3	
Dichlorodifluoromethane	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:11	75-71-8	
Dichlorofluoromethane	**<0.20**	ug/L	1.0	0.20	1		10/30/14 13:11	75-43-4	
Diethyl ether (Ethyl ether)	**<0.14**	ug/L	4.0	0.14	1		10/30/14 13:11	60-29-7	
Ethylbenzene	**<0.16**	ug/L	1.0	0.16	1		10/30/14 13:11	100-41-4	
Hexachloro-1,3-butadiene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:11	87-68-3	
Isopropylbenzene (Cumene)	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:11	98-82-8	
Methyl-tert-butyl ether	**<0.17**	ug/L	1.0	0.17	1		10/30/14 13:11	1634-04-4	
Methylene Chloride	**<2.0**	ug/L	4.0	2.0	1		10/30/14 13:11	75-09-2	
Naphthalene	**<2.0**	ug/L	4.0	2.0	1		10/30/14 13:11	91-20-3	
Styrene	**<0.063**	ug/L	1.0	0.063	1		10/30/14 13:11	100-42-5	
Tetrachloroethene	**9.3**	ug/L	1.0	0.16	1		10/30/14 13:11	127-18-4	
Tetrahydrofuran	**<2.0**	ug/L	10.0	2.0	1		10/30/14 13:11	109-99-9	
Toluene	**<0.11**	ug/L	1.0	0.11	1		10/30/14 13:11	108-88-3	
Trichloroethene	**0.46**	ug/L	0.40	0.091	1		10/30/14 13:11	79-01-6	
Trichlorofluoromethane	**<0.22**	ug/L	1.0	0.22	1		10/30/14 13:11	75-69-4	
Vinyl chloride	**<0.20**	ug/L	0.40	0.20	1		10/30/14 13:11	75-01-4	
Xylene (Total)	**<0.40**	ug/L	3.0	0.40	1		10/30/14 13:11	1330-20-7	
cis-1,2-Dichloroethene	**<0.13**	ug/L	1.0	0.13	1		10/30/14 13:11	156-59-2	
cis-1,3-Dichloropropene	**<0.13**	ug/L	4.0	0.13	1		10/30/14 13:11	10061-01-5	
n-Butylbenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:11	104-51-8	
n-Propylbenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:11	103-65-1	
p-Isopropyltoluene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:11	99-87-6	
sec-Butylbenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:11	135-98-8	
tert-Butylbenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:11	98-06-6	
trans-1,2-Dichloroethene	**<0.23**	ug/L	1.0	0.23	1		10/30/14 13:11	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	4.0	0.18	1		10/30/14 13:11	10061-02-6	

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ANALYTICAL RESULTS

Project: 062224-03 Former Star Laundry
Pace Project No.: 10286313

Sample: MW-2 **Lab ID: 10286313002** Collected: 10/21/14 09:38 Received: 10/23/14 09:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 VOC	Analytical Method: EPA 8260								
Surrogates									
1,2-Dichloroethane-d4 (S)	85	%.	75-125		1		10/30/14 13:11	17060-07-0	
Toluene-d8 (S)	100	%.	75-125		1		10/30/14 13:11	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1		10/30/14 13:11	460-00-4	

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ANALYTICAL RESULTS

Project: 062224-03 Former Star Laundry
Pace Project No.: 10286313

Sample: MW-3 **Lab ID: 10286313003** Collected: 10/21/14 10:40 Received: 10/23/14 09:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS LV	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510								
Diesel Fuel Range	**<0.050**	mg/L	0.42	0.050	1	10/27/14 16:25	11/02/14 22:57	68334-30-5	
Motor Oil Range	**0.061J**	mg/L	0.42	0.029	1	10/27/14 16:25	11/02/14 22:57		B
Surrogates									
o-Terphenyl (S)	75	%.	30-125		1	10/27/14 16:25	11/02/14 22:57	84-15-1	
n-Triacontane (S)	83	%.	30-125		1	10/27/14 16:25	11/02/14 22:57	638-68-6	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx/8021								
TPH as Gas	**<50.0**	ug/L	100	50.0	1		10/30/14 13:07		
Surrogates									
a,a,a-Trifluorotoluene (S)	100	%.	70-125		1		10/30/14 13:07	98-08-8	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020								
Arsenic	**2.7**	ug/L	0.50	0.25	1	10/28/14 20:46	10/30/14 22:38	7440-38-2	
Cadmium	**0.050J**	ug/L	0.080	0.033	1	10/28/14 20:46	10/30/14 22:38	7440-43-9	
Chromium	**11.7**	ug/L	0.50	0.22	1	10/28/14 20:46	10/30/14 22:38	7440-47-3	
Lead	**2.1**	ug/L	0.10	0.046	1	10/28/14 20:46	10/30/14 22:38	7439-92-1	
6020 MET ICPMS, Lab Filtered	Analytical Method: EPA 6020 Preparation Method: EPA 3020								
Arsenic, Dissolved	**1.6**	ug/L	0.50	0.25	1	11/05/14 10:32	11/06/14 12:56	7440-38-2	
Cadmium, Dissolved	**0.033J**	ug/L	0.080	0.033	1	11/05/14 10:32	11/06/14 12:56	7440-43-9	
Chromium, Dissolved	**2.0**	ug/L	0.50	0.22	1	11/05/14 10:32	11/06/14 12:56	7440-47-3	
Lead, Dissolved	**0.14**	ug/L	0.10	0.046	1	11/05/14 10:32	11/06/14 12:56	7439-92-1	
8260 VOC	Analytical Method: EPA 8260								
1,1,1,2-Tetrachloroethane	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:25	630-20-6	
1,1,1-Trichloroethane	**<0.26**	ug/L	1.0	0.26	1		10/30/14 13:25	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:25	79-34-5	
1,1,2-Trichloroethane	**<0.13**	ug/L	1.0	0.13	1		10/30/14 13:25	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:25	76-13-1	
1,1-Dichloroethane	**<0.16**	ug/L	1.0	0.16	1		10/30/14 13:25	75-34-3	
1,1-Dichloroethene	**<0.20**	ug/L	1.0	0.20	1		10/30/14 13:25	75-35-4	
1,1-Dichloropropene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:25	563-58-6	
1,2,3-Trichlorobenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:25	87-61-6	
1,2,3-Trichloropropane	**<1.2**	ug/L	4.0	1.2	1		10/30/14 13:25	96-18-4	
1,2,4-Trichlorobenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:25	120-82-1	
1,2,4-Trimethylbenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:25	95-63-6	
1,2-Dibromo-3-chloropropane	**<2.0**	ug/L	4.0	2.0	1		10/30/14 13:25	96-12-8	
1,2-Dibromoethane (EDB)	**<0.15**	ug/L	1.0	0.15	1		10/30/14 13:25	106-93-4	
1,2-Dichlorobenzene	**<0.16**	ug/L	1.0	0.16	1		10/30/14 13:25	95-50-1	
1,2-Dichloroethane	**<0.13**	ug/L	1.0	0.13	1		10/30/14 13:25	107-06-2	
1,2-Dichloropropane	**<0.14**	ug/L	4.0	0.14	1		10/30/14 13:25	78-87-5	
1,3,5-Trimethylbenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:25	108-67-8	
1,3-Dichlorobenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:25	541-73-1	
1,3-Dichloropropane	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:25	142-28-9	
1,4-Dichlorobenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:25	106-46-7	
2,2-Dichloropropane	**<0.17**	ug/L	4.0	0.17	1		10/30/14 13:25	594-20-7	

REPORT OF LABORATORY ANALYSIS

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Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 062224-03 Former Star Laundry
Pace Project No.: 10286313

Sample: MW-3 **Lab ID: 10286313003** Collected: 10/21/14 10:40 Received: 10/23/14 09:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 VOC	Analytical Method: EPA 8260								
2-Butanone (MEK)	**<2.5**	ug/L	5.0	2.5	1		10/30/14 13:25	78-93-3	CL,L2
2-Chlorotoluene	**<0.14**	ug/L	1.0	0.14	1		10/30/14 13:25	95-49-8	
4-Chlorotoluene	**<0.083**	ug/L	1.0	0.083	1		10/30/14 13:25	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<2.5**	ug/L	5.0	2.5	1		10/30/14 13:25	108-10-1	
Acetone	**<10.0**	ug/L	20.0	10.0	1		10/30/14 13:25	67-64-1	
Allyl chloride	**<0.45**	ug/L	4.0	0.45	1		10/30/14 13:25	107-05-1	
Benzene	**<0.15**	ug/L	1.0	0.15	1		10/30/14 13:25	71-43-2	
Bromobenzene	**<0.13**	ug/L	1.0	0.13	1		10/30/14 13:25	108-86-1	
Bromochloromethane	**<0.12**	ug/L	1.0	0.12	1		10/30/14 13:25	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	1.0	0.20	1		10/30/14 13:25	75-27-4	
Bromoform	**<2.0**	ug/L	4.0	2.0	1		10/30/14 13:25	75-25-2	
Bromomethane	**<2.0**	ug/L	4.0	2.0	1		10/30/14 13:25	74-83-9	CL
Carbon tetrachloride	**<0.16**	ug/L	1.0	0.16	1		10/30/14 13:25	56-23-5	
Chlorobenzene	**<0.066**	ug/L	1.0	0.066	1		10/30/14 13:25	108-90-7	
Chloroethane	**<0.24**	ug/L	1.0	0.24	1		10/30/14 13:25	75-00-3	
Chloroform	**1.4**	ug/L	1.0	0.16	1		10/30/14 13:25	67-66-3	
Chloromethane	**<0.34**	ug/L	4.0	0.34	1		10/30/14 13:25	74-87-3	
Dibromochloromethane	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:25	124-48-1	
Dibromomethane	**<0.18**	ug/L	4.0	0.18	1		10/30/14 13:25	74-95-3	
Dichlorodifluoromethane	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:25	75-71-8	
Dichlorofluoromethane	**<0.20**	ug/L	1.0	0.20	1		10/30/14 13:25	75-43-4	
Diethyl ether (Ethyl ether)	**<0.14**	ug/L	4.0	0.14	1		10/30/14 13:25	60-29-7	
Ethylbenzene	**<0.16**	ug/L	1.0	0.16	1		10/30/14 13:25	100-41-4	
Hexachloro-1,3-butadiene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:25	87-68-3	
Isopropylbenzene (Cumene)	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:25	98-82-8	
Methyl-tert-butyl ether	**<0.17**	ug/L	1.0	0.17	1		10/30/14 13:25	1634-04-4	
Methylene Chloride	**<2.0**	ug/L	4.0	2.0	1		10/30/14 13:25	75-09-2	
Naphthalene	**<2.0**	ug/L	4.0	2.0	1		10/30/14 13:25	91-20-3	
Styrene	**<0.063**	ug/L	1.0	0.063	1		10/30/14 13:25	100-42-5	
Tetrachloroethene	**23.8**	ug/L	1.0	0.16	1		10/30/14 13:25	127-18-4	
Tetrahydrofuran	**<2.0**	ug/L	10.0	2.0	1		10/30/14 13:25	109-99-9	
Toluene	**<0.11**	ug/L	1.0	0.11	1		10/30/14 13:25	108-88-3	
Trichloroethene	**1.3**	ug/L	0.40	0.091	1		10/30/14 13:25	79-01-6	
Trichlorofluoromethane	**<0.22**	ug/L	1.0	0.22	1		10/30/14 13:25	75-69-4	
Vinyl chloride	**<0.20**	ug/L	0.40	0.20	1		10/30/14 13:25	75-01-4	
Xylene (Total)	**<0.40**	ug/L	3.0	0.40	1		10/30/14 13:25	1330-20-7	
cis-1,2-Dichloroethene	**<0.13**	ug/L	1.0	0.13	1		10/30/14 13:25	156-59-2	
cis-1,3-Dichloropropene	**<0.13**	ug/L	4.0	0.13	1		10/30/14 13:25	10061-01-5	
n-Butylbenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:25	104-51-8	
n-Propylbenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:25	103-65-1	
p-Isopropyltoluene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:25	99-87-6	
sec-Butylbenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:25	135-98-8	
tert-Butylbenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:25	98-06-6	
trans-1,2-Dichloroethene	**<0.23**	ug/L	1.0	0.23	1		10/30/14 13:25	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	4.0	0.18	1		10/30/14 13:25	10061-02-6	

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ANALYTICAL RESULTS

Project: 062224-03 Former Star Laundry
Pace Project No.: 10286313

Sample: MW-3 **Lab ID: 10286313003** Collected: 10/21/14 10:40 Received: 10/23/14 09:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 VOC	Analytical Method: EPA 8260								
Surrogates									
1,2-Dichloroethane-d4 (S)	85	%.	75-125		1		10/30/14 13:25	17060-07-0	
Toluene-d8 (S)	99	%.	75-125		1		10/30/14 13:25	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-125		1		10/30/14 13:25	460-00-4	

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ANALYTICAL RESULTS

Project: 062224-03 Former Star Laundry
Pace Project No.: 10286313

Sample: MW-4 **Lab ID: 10286313004** Collected: 10/21/14 10:25 Received: 10/23/14 09:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS LV	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510								
Diesel Fuel Range	**<0.048**	mg/L	0.40	0.048	1	10/27/14 16:25	11/02/14 23:19	68334-30-5	
Motor Oil Range	**0.035J**	mg/L	0.40	0.028	1	10/27/14 16:25	11/02/14 23:19		B
Surrogates									
o-Terphenyl (S)	81	%.	30-125		1	10/27/14 16:25	11/02/14 23:19	84-15-1	
n-Triacontane (S)	87	%.	30-125		1	10/27/14 16:25	11/02/14 23:19	638-68-6	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx/8021								
TPH as Gas	**<50.0**	ug/L	100	50.0	1		10/30/14 12:27		
Surrogates									
a,a,a-Trifluorotoluene (S)	102	%.	70-125		1		10/30/14 12:27	98-08-8	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020								
Arsenic	**4.1**	ug/L	0.50	0.25	1	10/28/14 20:46	10/30/14 22:41	7440-38-2	
Cadmium	**0.25**	ug/L	0.080	0.033	1	10/28/14 20:46	10/30/14 22:41	7440-43-9	
Chromium	**15.9**	ug/L	0.50	0.22	1	10/28/14 20:46	10/30/14 22:41	7440-47-3	
Lead	**47.7**	ug/L	0.10	0.046	1	10/28/14 20:46	10/30/14 22:41	7439-92-1	
6020 MET ICPMS, Lab Filtered	Analytical Method: EPA 6020 Preparation Method: EPA 3020								
Arsenic, Dissolved	**0.36J**	ug/L	0.50	0.25	1	11/05/14 10:32	11/06/14 12:29	7440-38-2	
Cadmium, Dissolved	**0.035J**	ug/L	0.080	0.033	1	11/05/14 10:32	11/06/14 12:29	7440-43-9	
Chromium, Dissolved	**0.33J**	ug/L	0.50	0.22	1	11/05/14 10:32	11/06/14 12:29	7440-47-3	
Lead, Dissolved	**1.0**	ug/L	0.10	0.046	1	11/05/14 10:32	11/06/14 12:29	7439-92-1	
8260 VOC	Analytical Method: EPA 8260								
1,1,1,2-Tetrachloroethane	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:40	630-20-6	
1,1,1-Trichloroethane	**<0.26**	ug/L	1.0	0.26	1		10/30/14 13:40	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:40	79-34-5	
1,1,2-Trichloroethane	**<0.13**	ug/L	1.0	0.13	1		10/30/14 13:40	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:40	76-13-1	
1,1-Dichloroethane	**<0.16**	ug/L	1.0	0.16	1		10/30/14 13:40	75-34-3	
1,1-Dichloroethene	**<0.20**	ug/L	1.0	0.20	1		10/30/14 13:40	75-35-4	
1,1-Dichloropropene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:40	563-58-6	
1,2,3-Trichlorobenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:40	87-61-6	
1,2,3-Trichloropropane	**<1.2**	ug/L	4.0	1.2	1		10/30/14 13:40	96-18-4	
1,2,4-Trichlorobenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:40	120-82-1	
1,2,4-Trimethylbenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:40	95-63-6	
1,2-Dibromo-3-chloropropane	**<2.0**	ug/L	4.0	2.0	1		10/30/14 13:40	96-12-8	
1,2-Dibromoethane (EDB)	**<0.15**	ug/L	1.0	0.15	1		10/30/14 13:40	106-93-4	
1,2-Dichlorobenzene	**<0.16**	ug/L	1.0	0.16	1		10/30/14 13:40	95-50-1	
1,2-Dichloroethane	**<0.13**	ug/L	1.0	0.13	1		10/30/14 13:40	107-06-2	
1,2-Dichloropropane	**<0.14**	ug/L	4.0	0.14	1		10/30/14 13:40	78-87-5	
1,3,5-Trimethylbenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:40	108-67-8	
1,3-Dichlorobenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:40	541-73-1	
1,3-Dichloropropane	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:40	142-28-9	
1,4-Dichlorobenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:40	106-46-7	
2,2-Dichloropropane	**<0.17**	ug/L	4.0	0.17	1		10/30/14 13:40	594-20-7	

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ANALYTICAL RESULTS

Project: 062224-03 Former Star Laundry
Pace Project No.: 10286313

Sample: MW-4 **Lab ID: 10286313004** Collected: 10/21/14 10:25 Received: 10/23/14 09:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 VOC	Analytical Method: EPA 8260								
2-Butanone (MEK)	**<2.5**	ug/L	5.0	2.5	1		10/30/14 13:40	78-93-3	CL,L2
2-Chlorotoluene	**<0.14**	ug/L	1.0	0.14	1		10/30/14 13:40	95-49-8	
4-Chlorotoluene	**<0.083**	ug/L	1.0	0.083	1		10/30/14 13:40	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<2.5**	ug/L	5.0	2.5	1		10/30/14 13:40	108-10-1	
Acetone	**<10.0**	ug/L	20.0	10.0	1		10/30/14 13:40	67-64-1	
Allyl chloride	**<0.45**	ug/L	4.0	0.45	1		10/30/14 13:40	107-05-1	
Benzene	**<0.15**	ug/L	1.0	0.15	1		10/30/14 13:40	71-43-2	
Bromobenzene	**<0.13**	ug/L	1.0	0.13	1		10/30/14 13:40	108-86-1	
Bromochloromethane	**<0.12**	ug/L	1.0	0.12	1		10/30/14 13:40	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	1.0	0.20	1		10/30/14 13:40	75-27-4	
Bromoform	**<2.0**	ug/L	4.0	2.0	1		10/30/14 13:40	75-25-2	
Bromomethane	**<2.0**	ug/L	4.0	2.0	1		10/30/14 13:40	74-83-9	CL
Carbon tetrachloride	**<0.16**	ug/L	1.0	0.16	1		10/30/14 13:40	56-23-5	
Chlorobenzene	**<0.066**	ug/L	1.0	0.066	1		10/30/14 13:40	108-90-7	
Chloroethane	**<0.24**	ug/L	1.0	0.24	1		10/30/14 13:40	75-00-3	
Chloroform	**<0.16**	ug/L	1.0	0.16	1		10/30/14 13:40	67-66-3	
Chloromethane	**<0.34**	ug/L	4.0	0.34	1		10/30/14 13:40	74-87-3	
Dibromochloromethane	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:40	124-48-1	
Dibromomethane	**<0.18**	ug/L	4.0	0.18	1		10/30/14 13:40	74-95-3	
Dichlorodifluoromethane	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:40	75-71-8	
Dichlorofluoromethane	**<0.20**	ug/L	1.0	0.20	1		10/30/14 13:40	75-43-4	
Diethyl ether (Ethyl ether)	**<0.14**	ug/L	4.0	0.14	1		10/30/14 13:40	60-29-7	
Ethylbenzene	**<0.16**	ug/L	1.0	0.16	1		10/30/14 13:40	100-41-4	
Hexachloro-1,3-butadiene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:40	87-68-3	
Isopropylbenzene (Cumene)	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:40	98-82-8	
Methyl-tert-butyl ether	**<0.17**	ug/L	1.0	0.17	1		10/30/14 13:40	1634-04-4	
Methylene Chloride	**<2.0**	ug/L	4.0	2.0	1		10/30/14 13:40	75-09-2	
Naphthalene	**<2.0**	ug/L	4.0	2.0	1		10/30/14 13:40	91-20-3	
Styrene	**<0.063**	ug/L	1.0	0.063	1		10/30/14 13:40	100-42-5	
Tetrachloroethene	**36.8**	ug/L	1.0	0.16	1		10/30/14 13:40	127-18-4	
Tetrahydrofuran	**<2.0**	ug/L	10.0	2.0	1		10/30/14 13:40	109-99-9	
Toluene	**<0.11**	ug/L	1.0	0.11	1		10/30/14 13:40	108-88-3	
Trichloroethene	**3.1**	ug/L	0.40	0.091	1		10/30/14 13:40	79-01-6	
Trichlorofluoromethane	**<0.22**	ug/L	1.0	0.22	1		10/30/14 13:40	75-69-4	
Vinyl chloride	**<0.20**	ug/L	0.40	0.20	1		10/30/14 13:40	75-01-4	
Xylene (Total)	**<0.40**	ug/L	3.0	0.40	1		10/30/14 13:40	1330-20-7	
cis-1,2-Dichloroethene	**0.51J**	ug/L	1.0	0.13	1		10/30/14 13:40	156-59-2	
cis-1,3-Dichloropropene	**<0.13**	ug/L	4.0	0.13	1		10/30/14 13:40	10061-01-5	
n-Butylbenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:40	104-51-8	
n-Propylbenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:40	103-65-1	
p-Isopropyltoluene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:40	99-87-6	
sec-Butylbenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:40	135-98-8	
tert-Butylbenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:40	98-06-6	
trans-1,2-Dichloroethene	**<0.23**	ug/L	1.0	0.23	1		10/30/14 13:40	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	4.0	0.18	1		10/30/14 13:40	10061-02-6	

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Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 062224-03 Former Star Laundry
Pace Project No.: 10286313

Sample: MW-4 **Lab ID: 10286313004** Collected: 10/21/14 10:25 Received: 10/23/14 09:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 VOC	Analytical Method: EPA 8260								
Surrogates									
1,2-Dichloroethane-d4 (S)	85	%.	75-125		1		10/30/14 13:40	17060-07-0	
Toluene-d8 (S)	100	%.	75-125		1		10/30/14 13:40	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-125		1		10/30/14 13:40	460-00-4	

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ANALYTICAL RESULTS

Project: 062224-03 Former Star Laundry
Pace Project No.: 10286313

Sample: MW-5 **Lab ID: 10286313005** Collected: 10/21/14 10:00 Received: 10/23/14 09:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS LV	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510								
Diesel Fuel Range	**<0.048**	mg/L	0.40	0.048	1	10/27/14 16:25	11/02/14 00:02	68334-30-5	
Motor Oil Range	**0.029J**	mg/L	0.40	0.028	1	10/27/14 16:25	11/02/14 00:02		B
Surrogates									
o-Terphenyl (S)	81	%.	30-125		1	10/27/14 16:25	11/02/14 00:02	84-15-1	
n-Triacontane (S)	80	%.	30-125		1	10/27/14 16:25	11/02/14 00:02	638-68-6	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx/8021								
TPH as Gas	**6430**	ug/L	2000	1000	20		10/30/14 13:47		
Surrogates									
a,a,a-Trifluorotoluene (S)	102	%.	70-125		20		10/30/14 13:47	98-08-8	
8260 VOC	Analytical Method: EPA 8260								
1,1,1,2-Tetrachloroethane	**<12.5**	ug/L	25.0	12.5	25		10/30/14 16:19	630-20-6	
1,1,1-Trichloroethane	**<6.6**	ug/L	25.0	6.6	25		10/30/14 16:19	71-55-6	
1,1,2,2-Tetrachloroethane	**<12.5**	ug/L	25.0	12.5	25		10/30/14 16:19	79-34-5	
1,1,2-Trichloroethane	**<3.2**	ug/L	25.0	3.2	25		10/30/14 16:19	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<12.5**	ug/L	25.0	12.5	25		10/30/14 16:19	76-13-1	
1,1-Dichloroethane	**<4.0**	ug/L	25.0	4.0	25		10/30/14 16:19	75-34-3	
1,1-Dichloroethene	**<5.0**	ug/L	25.0	5.0	25		10/30/14 16:19	75-35-4	
1,1-Dichloropropene	**<12.5**	ug/L	25.0	12.5	25		10/30/14 16:19	563-58-6	
1,2,3-Trichlorobenzene	**<12.5**	ug/L	25.0	12.5	25		10/30/14 16:19	87-61-6	
1,2,3-Trichloropropane	**<30.5**	ug/L	100	30.5	25		10/30/14 16:19	96-18-4	
1,2,4-Trichlorobenzene	**<12.5**	ug/L	25.0	12.5	25		10/30/14 16:19	120-82-1	
1,2,4-Trimethylbenzene	**<12.5**	ug/L	25.0	12.5	25		10/30/14 16:19	95-63-6	
1,2-Dibromo-3-chloropropane	**<50.0**	ug/L	100	50.0	25		10/30/14 16:19	96-12-8	
1,2-Dibromoethane (EDB)	**<3.7**	ug/L	25.0	3.7	25		10/30/14 16:19	106-93-4	
1,2-Dichlorobenzene	**<4.0**	ug/L	25.0	4.0	25		10/30/14 16:19	95-50-1	
1,2-Dichloroethane	**<3.3**	ug/L	25.0	3.3	25		10/30/14 16:19	107-06-2	
1,2-Dichloropropane	**<3.6**	ug/L	100	3.6	25		10/30/14 16:19	78-87-5	
1,3,5-Trimethylbenzene	**<12.5**	ug/L	25.0	12.5	25		10/30/14 16:19	108-67-8	
1,3-Dichlorobenzene	**<12.5**	ug/L	25.0	12.5	25		10/30/14 16:19	541-73-1	
1,3-Dichloropropane	**<12.5**	ug/L	25.0	12.5	25		10/30/14 16:19	142-28-9	
1,4-Dichlorobenzene	**<12.5**	ug/L	25.0	12.5	25		10/30/14 16:19	106-46-7	
2,2-Dichloropropane	**<4.4**	ug/L	100	4.4	25		10/30/14 16:19	594-20-7	
2-Butanone (MEK)	**<62.5**	ug/L	125	62.5	25		10/30/14 16:19	78-93-3	CL,L2
2-Chlorotoluene	**<3.4**	ug/L	25.0	3.4	25		10/30/14 16:19	95-49-8	
4-Chlorotoluene	**<2.1**	ug/L	25.0	2.1	25		10/30/14 16:19	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<62.5**	ug/L	125	62.5	25		10/30/14 16:19	108-10-1	
Acetone	**<250**	ug/L	500	250	25		10/30/14 16:19	67-64-1	
Allyl chloride	**<11.2**	ug/L	100	11.2	25		10/30/14 16:19	107-05-1	
Benzene	**<3.8**	ug/L	25.0	3.8	25		10/30/14 16:19	71-43-2	
Bromobenzene	**<3.3**	ug/L	25.0	3.3	25		10/30/14 16:19	108-86-1	
Bromochloromethane	**<2.9**	ug/L	25.0	2.9	25		10/30/14 16:19	74-97-5	
Bromodichloromethane	**<5.0**	ug/L	25.0	5.0	25		10/30/14 16:19	75-27-4	
Bromoform	**<50.0**	ug/L	100	50.0	25		10/30/14 16:19	75-25-2	
Bromomethane	**<50.0**	ug/L	100	50.0	25		10/30/14 16:19	74-83-9	CL

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ANALYTICAL RESULTS

Project: 062224-03 Former Star Laundry
Pace Project No.: 10286313

Sample: MW-5 **Lab ID: 10286313005** Collected: 10/21/14 10:00 Received: 10/23/14 09:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 VOC	Analytical Method: EPA 8260								
Carbon tetrachloride	**<4.0**	ug/L	25.0	4.0	25		10/30/14 16:19	56-23-5	
Chlorobenzene	**<1.6**	ug/L	25.0	1.6	25		10/30/14 16:19	108-90-7	
Chloroethane	**<6.0**	ug/L	25.0	6.0	25		10/30/14 16:19	75-00-3	
Chloroform	**<4.0**	ug/L	25.0	4.0	25		10/30/14 16:19	67-66-3	
Chloromethane	**<8.5**	ug/L	100	8.5	25		10/30/14 16:19	74-87-3	
Dibromochloromethane	**<12.5**	ug/L	25.0	12.5	25		10/30/14 16:19	124-48-1	
Dibromomethane	**<4.6**	ug/L	100	4.6	25		10/30/14 16:19	74-95-3	
Dichlorodifluoromethane	**<12.5**	ug/L	25.0	12.5	25		10/30/14 16:19	75-71-8	
Dichlorofluoromethane	**<5.0**	ug/L	25.0	5.0	25		10/30/14 16:19	75-43-4	
Diethyl ether (Ethyl ether)	**<3.5**	ug/L	100	3.5	25		10/30/14 16:19	60-29-7	
Ethylbenzene	**<4.1**	ug/L	25.0	4.1	25		10/30/14 16:19	100-41-4	
Hexachloro-1,3-butadiene	**<12.5**	ug/L	25.0	12.5	25		10/30/14 16:19	87-68-3	
Isopropylbenzene (Cumene)	**<12.5**	ug/L	25.0	12.5	25		10/30/14 16:19	98-82-8	
Methyl-tert-butyl ether	**<4.2**	ug/L	25.0	4.2	25		10/30/14 16:19	1634-04-4	
Methylene Chloride	**<50.0**	ug/L	100	50.0	25		10/30/14 16:19	75-09-2	
Naphthalene	**<50.0**	ug/L	100	50.0	25		10/30/14 16:19	91-20-3	
Styrene	**<1.6**	ug/L	25.0	1.6	25		10/30/14 16:19	100-42-5	
Tetrachloroethene	**11000**	ug/L	100	15.7	100		10/31/14 04:20	127-18-4	
Tetrahydrofuran	**<49.8**	ug/L	250	49.8	25		10/30/14 16:19	109-99-9	
Toluene	**<2.8**	ug/L	25.0	2.8	25		10/30/14 16:19	108-88-3	
Trichloroethene	**1380**	ug/L	10.0	2.3	25		10/30/14 16:19	79-01-6	
Trichlorofluoromethane	**<5.4**	ug/L	25.0	5.4	25		10/30/14 16:19	75-69-4	
Vinyl chloride	**<4.9**	ug/L	10.0	4.9	25		10/30/14 16:19	75-01-4	
Xylene (Total)	**<10.1**	ug/L	75.0	10.1	25		10/30/14 16:19	1330-20-7	
cis-1,2-Dichloroethene	**485**	ug/L	25.0	3.3	25		10/30/14 16:19	156-59-2	
cis-1,3-Dichloropropene	**<3.2**	ug/L	100	3.2	25		10/30/14 16:19	10061-01-5	
n-Butylbenzene	**<12.5**	ug/L	25.0	12.5	25		10/30/14 16:19	104-51-8	
n-Propylbenzene	**<12.5**	ug/L	25.0	12.5	25		10/30/14 16:19	103-65-1	
p-Isopropyltoluene	**<12.5**	ug/L	25.0	12.5	25		10/30/14 16:19	99-87-6	
sec-Butylbenzene	**<12.5**	ug/L	25.0	12.5	25		10/30/14 16:19	135-98-8	
tert-Butylbenzene	**<12.5**	ug/L	25.0	12.5	25		10/30/14 16:19	98-06-6	
trans-1,2-Dichloroethene	**14.4J**	ug/L	25.0	5.8	25		10/30/14 16:19	156-60-5	
trans-1,3-Dichloropropene	**<4.6**	ug/L	100	4.6	25		10/30/14 16:19	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	86	%.	75-125		25		10/30/14 16:19	17060-07-0	
Toluene-d8 (S)	99	%.	75-125		25		10/30/14 16:19	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-125		25		10/30/14 16:19	460-00-4	

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ANALYTICAL RESULTS

Project: 062224-03 Former Star Laundry
Pace Project No.: 10286313

Sample: DUP **Lab ID: 10286313006** Collected: 10/21/14 00:00 Received: 10/23/14 09:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx/8021								
TPH as Gas	**<50.0**	ug/L	100	50.0	1		10/30/14 12:47		
Surrogates									
a,a,a-Trifluorotoluene (S)	102	%.	70-125		1		10/30/14 12:47	98-08-8	
8260 VOC	Analytical Method: EPA 8260								
1,1,1,2-Tetrachloroethane	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:54	630-20-6	
1,1,1-Trichloroethane	**<0.26**	ug/L	1.0	0.26	1		10/30/14 13:54	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:54	79-34-5	
1,1,2-Trichloroethane	**<0.13**	ug/L	1.0	0.13	1		10/30/14 13:54	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:54	76-13-1	
1,1-Dichloroethane	**<0.16**	ug/L	1.0	0.16	1		10/30/14 13:54	75-34-3	
1,1-Dichloroethene	**<0.20**	ug/L	1.0	0.20	1		10/30/14 13:54	75-35-4	
1,1-Dichloropropene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:54	563-58-6	
1,2,3-Trichlorobenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:54	87-61-6	
1,2,3-Trichloropropane	**<1.2**	ug/L	4.0	1.2	1		10/30/14 13:54	96-18-4	
1,2,4-Trichlorobenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:54	120-82-1	
1,2,4-Trimethylbenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:54	95-63-6	
1,2-Dibromo-3-chloropropane	**<2.0**	ug/L	4.0	2.0	1		10/30/14 13:54	96-12-8	
1,2-Dibromoethane (EDB)	**<0.15**	ug/L	1.0	0.15	1		10/30/14 13:54	106-93-4	
1,2-Dichlorobenzene	**<0.16**	ug/L	1.0	0.16	1		10/30/14 13:54	95-50-1	
1,2-Dichloroethane	**<0.13**	ug/L	1.0	0.13	1		10/30/14 13:54	107-06-2	
1,2-Dichloropropane	**<0.14**	ug/L	4.0	0.14	1		10/30/14 13:54	78-87-5	
1,3,5-Trimethylbenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:54	108-67-8	
1,3-Dichlorobenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:54	541-73-1	
1,3-Dichloropropane	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:54	142-28-9	
1,4-Dichlorobenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:54	106-46-7	
2,2-Dichloropropane	**<0.17**	ug/L	4.0	0.17	1		10/30/14 13:54	594-20-7	
2-Butanone (MEK)	**<2.5**	ug/L	5.0	2.5	1		10/30/14 13:54	78-93-3	CL,L2
2-Chlorotoluene	**<0.14**	ug/L	1.0	0.14	1		10/30/14 13:54	95-49-8	
4-Chlorotoluene	**<0.083**	ug/L	1.0	0.083	1		10/30/14 13:54	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<2.5**	ug/L	5.0	2.5	1		10/30/14 13:54	108-10-1	
Acetone	**<10.0**	ug/L	20.0	10.0	1		10/30/14 13:54	67-64-1	
Allyl chloride	**<0.45**	ug/L	4.0	0.45	1		10/30/14 13:54	107-05-1	
Benzene	**<0.15**	ug/L	1.0	0.15	1		10/30/14 13:54	71-43-2	
Bromobenzene	**<0.13**	ug/L	1.0	0.13	1		10/30/14 13:54	108-86-1	
Bromochloromethane	**<0.12**	ug/L	1.0	0.12	1		10/30/14 13:54	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	1.0	0.20	1		10/30/14 13:54	75-27-4	
Bromoform	**<2.0**	ug/L	4.0	2.0	1		10/30/14 13:54	75-25-2	
Bromomethane	**<2.0**	ug/L	4.0	2.0	1		10/30/14 13:54	74-83-9	CL
Carbon tetrachloride	**<0.16**	ug/L	1.0	0.16	1		10/30/14 13:54	56-23-5	
Chlorobenzene	**<0.066**	ug/L	1.0	0.066	1		10/30/14 13:54	108-90-7	
Chloroethane	**<0.24**	ug/L	1.0	0.24	1		10/30/14 13:54	75-00-3	
Chloroform	**<0.16**	ug/L	1.0	0.16	1		10/30/14 13:54	67-66-3	
Chloromethane	**<0.34**	ug/L	4.0	0.34	1		10/30/14 13:54	74-87-3	
Dibromochloromethane	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:54	124-48-1	
Dibromomethane	**<0.18**	ug/L	4.0	0.18	1		10/30/14 13:54	74-95-3	

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ANALYTICAL RESULTS

Project: 062224-03 Former Star Laundry
Pace Project No.: 10286313

Sample: DUP **Lab ID: 10286313006** Collected: 10/21/14 00:00 Received: 10/23/14 09:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 VOC	Analytical Method: EPA 8260								
Dichlorodifluoromethane	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:54	75-71-8	
Dichlorofluoromethane	**<0.20**	ug/L	1.0	0.20	1		10/30/14 13:54	75-43-4	
Diethyl ether (Ethyl ether)	**<0.14**	ug/L	4.0	0.14	1		10/30/14 13:54	60-29-7	
Ethylbenzene	**<0.16**	ug/L	1.0	0.16	1		10/30/14 13:54	100-41-4	
Hexachloro-1,3-butadiene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:54	87-68-3	
Isopropylbenzene (Cumene)	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:54	98-82-8	
Methyl-tert-butyl ether	**<0.17**	ug/L	1.0	0.17	1		10/30/14 13:54	1634-04-4	
Methylene Chloride	**<2.0**	ug/L	4.0	2.0	1		10/30/14 13:54	75-09-2	
Naphthalene	**<2.0**	ug/L	4.0	2.0	1		10/30/14 13:54	91-20-3	
Styrene	**<0.063**	ug/L	1.0	0.063	1		10/30/14 13:54	100-42-5	
Tetrachloroethene	**11.5**	ug/L	1.0	0.16	1		10/30/14 13:54	127-18-4	
Tetrahydrofuran	**<2.0**	ug/L	10.0	2.0	1		10/30/14 13:54	109-99-9	
Toluene	**0.18J**	ug/L	1.0	0.11	1		10/30/14 13:54	108-88-3	
Trichloroethene	**0.65**	ug/L	0.40	0.091	1		10/30/14 13:54	79-01-6	
Trichlorofluoromethane	**<0.22**	ug/L	1.0	0.22	1		10/30/14 13:54	75-69-4	
Vinyl chloride	**<0.20**	ug/L	0.40	0.20	1		10/30/14 13:54	75-01-4	
Xylene (Total)	**<0.40**	ug/L	3.0	0.40	1		10/30/14 13:54	1330-20-7	
cis-1,2-Dichloroethene	**<0.13**	ug/L	1.0	0.13	1		10/30/14 13:54	156-59-2	
cis-1,3-Dichloropropene	**<0.13**	ug/L	4.0	0.13	1		10/30/14 13:54	10061-01-5	
n-Butylbenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:54	104-51-8	
n-Propylbenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:54	103-65-1	
p-Isopropyltoluene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:54	99-87-6	
sec-Butylbenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:54	135-98-8	
tert-Butylbenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 13:54	98-06-6	
trans-1,2-Dichloroethene	**<0.23**	ug/L	1.0	0.23	1		10/30/14 13:54	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	4.0	0.18	1		10/30/14 13:54	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	87	%.	75-125		1		10/30/14 13:54	17060-07-0	
Toluene-d8 (S)	100	%.	75-125		1		10/30/14 13:54	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-125		1		10/30/14 13:54	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 062224-03 Former Star Laundry
Pace Project No.: 10286313

Sample: Trip Blank **Lab ID: 10286313007** Collected: 10/21/14 00:00 Received: 10/23/14 09:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx/8021								
TPH as Gas	**<50.0**	ug/L	100	50.0	1		11/03/14 10:37		
Surrogates									
a,a,a-Trifluorotoluene (S)	103	%.	70-125		1		11/03/14 10:37	98-08-8	
8260 VOC	Analytical Method: EPA 8260								
1,1,1,2-Tetrachloroethane	**<0.50**	ug/L	1.0	0.50	1		10/30/14 11:58	630-20-6	
1,1,1-Trichloroethane	**<0.26**	ug/L	1.0	0.26	1		10/30/14 11:58	71-55-6	
1,1,2,2-Tetrachloroethane	**<0.50**	ug/L	1.0	0.50	1		10/30/14 11:58	79-34-5	
1,1,2-Trichloroethane	**<0.13**	ug/L	1.0	0.13	1		10/30/14 11:58	79-00-5	
1,1,2-Trichlorotrifluoroethane	**<0.50**	ug/L	1.0	0.50	1		10/30/14 11:58	76-13-1	
1,1-Dichloroethane	**<0.16**	ug/L	1.0	0.16	1		10/30/14 11:58	75-34-3	
1,1-Dichloroethene	**<0.20**	ug/L	1.0	0.20	1		10/30/14 11:58	75-35-4	
1,1-Dichloropropene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 11:58	563-58-6	
1,2,3-Trichlorobenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 11:58	87-61-6	
1,2,3-Trichloropropane	**<1.2**	ug/L	4.0	1.2	1		10/30/14 11:58	96-18-4	
1,2,4-Trichlorobenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 11:58	120-82-1	
1,2,4-Trimethylbenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 11:58	95-63-6	
1,2-Dibromo-3-chloropropane	**<2.0**	ug/L	4.0	2.0	1		10/30/14 11:58	96-12-8	
1,2-Dibromoethane (EDB)	**<0.15**	ug/L	1.0	0.15	1		10/30/14 11:58	106-93-4	
1,2-Dichlorobenzene	**<0.16**	ug/L	1.0	0.16	1		10/30/14 11:58	95-50-1	
1,2-Dichloroethane	**<0.13**	ug/L	1.0	0.13	1		10/30/14 11:58	107-06-2	
1,2-Dichloropropane	**<0.14**	ug/L	4.0	0.14	1		10/30/14 11:58	78-87-5	
1,3,5-Trimethylbenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 11:58	108-67-8	
1,3-Dichlorobenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 11:58	541-73-1	
1,3-Dichloropropane	**<0.50**	ug/L	1.0	0.50	1		10/30/14 11:58	142-28-9	
1,4-Dichlorobenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 11:58	106-46-7	
2,2-Dichloropropane	**<0.17**	ug/L	4.0	0.17	1		10/30/14 11:58	594-20-7	
2-Butanone (MEK)	**<2.5**	ug/L	5.0	2.5	1		10/30/14 11:58	78-93-3	CL,L2
2-Chlorotoluene	**<0.14**	ug/L	1.0	0.14	1		10/30/14 11:58	95-49-8	
4-Chlorotoluene	**<0.083**	ug/L	1.0	0.083	1		10/30/14 11:58	106-43-4	
4-Methyl-2-pentanone (MIBK)	**<2.5**	ug/L	5.0	2.5	1		10/30/14 11:58	108-10-1	
Acetone	**<10.0**	ug/L	20.0	10.0	1		10/30/14 11:58	67-64-1	
Allyl chloride	**<0.45**	ug/L	4.0	0.45	1		10/30/14 11:58	107-05-1	
Benzene	**<0.15**	ug/L	1.0	0.15	1		10/30/14 11:58	71-43-2	
Bromobenzene	**<0.13**	ug/L	1.0	0.13	1		10/30/14 11:58	108-86-1	
Bromochloromethane	**<0.12**	ug/L	1.0	0.12	1		10/30/14 11:58	74-97-5	
Bromodichloromethane	**<0.20**	ug/L	1.0	0.20	1		10/30/14 11:58	75-27-4	
Bromoform	**<2.0**	ug/L	4.0	2.0	1		10/30/14 11:58	75-25-2	
Bromomethane	**<2.0**	ug/L	4.0	2.0	1		10/30/14 11:58	74-83-9	CL
Carbon tetrachloride	**<0.16**	ug/L	1.0	0.16	1		10/30/14 11:58	56-23-5	
Chlorobenzene	**<0.066**	ug/L	1.0	0.066	1		10/30/14 11:58	108-90-7	
Chloroethane	**<0.24**	ug/L	1.0	0.24	1		10/30/14 11:58	75-00-3	
Chloroform	**<0.16**	ug/L	1.0	0.16	1		10/30/14 11:58	67-66-3	
Chloromethane	**<0.34**	ug/L	4.0	0.34	1		10/30/14 11:58	74-87-3	
Dibromochloromethane	**<0.50**	ug/L	1.0	0.50	1		10/30/14 11:58	124-48-1	
Dibromomethane	**<0.18**	ug/L	4.0	0.18	1		10/30/14 11:58	74-95-3	

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ANALYTICAL RESULTS

Project: 062224-03 Former Star Laundry
Pace Project No.: 10286313

Sample: Trip Blank **Lab ID: 10286313007** Collected: 10/21/14 00:00 Received: 10/23/14 09:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 VOC	Analytical Method: EPA 8260								
Dichlorodifluoromethane	**<0.50**	ug/L	1.0	0.50	1		10/30/14 11:58	75-71-8	
Dichlorofluoromethane	**<0.20**	ug/L	1.0	0.20	1		10/30/14 11:58	75-43-4	
Diethyl ether (Ethyl ether)	**<0.14**	ug/L	4.0	0.14	1		10/30/14 11:58	60-29-7	
Ethylbenzene	**<0.16**	ug/L	1.0	0.16	1		10/30/14 11:58	100-41-4	
Hexachloro-1,3-butadiene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 11:58	87-68-3	
Isopropylbenzene (Cumene)	**<0.50**	ug/L	1.0	0.50	1		10/30/14 11:58	98-82-8	
Methyl-tert-butyl ether	**<0.17**	ug/L	1.0	0.17	1		10/30/14 11:58	1634-04-4	
Methylene Chloride	**<2.0**	ug/L	4.0	2.0	1		10/30/14 11:58	75-09-2	
Naphthalene	**<2.0**	ug/L	4.0	2.0	1		10/30/14 11:58	91-20-3	
Styrene	**<0.063**	ug/L	1.0	0.063	1		10/30/14 11:58	100-42-5	
Tetrachloroethene	**<0.16**	ug/L	1.0	0.16	1		10/30/14 11:58	127-18-4	
Tetrahydrofuran	**<2.0**	ug/L	10.0	2.0	1		10/30/14 11:58	109-99-9	
Toluene	**<0.11**	ug/L	1.0	0.11	1		10/30/14 11:58	108-88-3	
Trichloroethene	**<0.091**	ug/L	0.40	0.091	1		10/30/14 11:58	79-01-6	
Trichlorofluoromethane	**<0.22**	ug/L	1.0	0.22	1		10/30/14 11:58	75-69-4	
Vinyl chloride	**<0.20**	ug/L	0.40	0.20	1		10/30/14 11:58	75-01-4	
Xylene (Total)	**<0.40**	ug/L	3.0	0.40	1		10/30/14 11:58	1330-20-7	
cis-1,2-Dichloroethene	**<0.13**	ug/L	1.0	0.13	1		10/30/14 11:58	156-59-2	
cis-1,3-Dichloropropene	**<0.13**	ug/L	4.0	0.13	1		10/30/14 11:58	10061-01-5	
n-Butylbenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 11:58	104-51-8	
n-Propylbenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 11:58	103-65-1	
p-Isopropyltoluene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 11:58	99-87-6	
sec-Butylbenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 11:58	135-98-8	
tert-Butylbenzene	**<0.50**	ug/L	1.0	0.50	1		10/30/14 11:58	98-06-6	
trans-1,2-Dichloroethene	**<0.23**	ug/L	1.0	0.23	1		10/30/14 11:58	156-60-5	
trans-1,3-Dichloropropene	**<0.18**	ug/L	4.0	0.18	1		10/30/14 11:58	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	88	%.	75-125		1		10/30/14 11:58	17060-07-0	
Toluene-d8 (S)	100	%.	75-125		1		10/30/14 11:58	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125		1		10/30/14 11:58	460-00-4	

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QUALITY CONTROL DATA

Project: 062224-03 Former Star Laundry
Pace Project No.: 10286313

QC Batch: GCV/12854 Analysis Method: NWTPH-Gx/8021
QC Batch Method: NWTPH-Gx/8021 Analysis Description: NWTPH-Gx/8021B Water
Associated Lab Samples: 10286313001, 10286313002, 10286313003, 10286313004, 10286313005, 10286313006

METHOD BLANK: 1830018 Matrix: Water
Associated Lab Samples: 10286313001, 10286313002, 10286313003, 10286313004, 10286313005, 10286313006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH as Gas	ug/L	<50.0	100	10/30/14 10:21	
a,a,a-Trifluorotoluene (S)	%.	103	70-125	10/30/14 10:21	

METHOD BLANK: 1830847 Matrix: Water
Associated Lab Samples: 10286313001, 10286313002, 10286313003, 10286313004, 10286313005, 10286313006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH as Gas	ug/L	<50.0	100	10/30/14 15:05	
a,a,a-Trifluorotoluene (S)	%.	98	70-125	10/30/14 15:05	

LABORATORY CONTROL SAMPLE & LCSD: 1830019 1830020

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	1000	1150	948	115	95	75-125	19	20	
a,a,a-Trifluorotoluene (S)	%.				110	104	70-125			

MATRIX SPIKE SAMPLE: 1830833

Parameter	Units	10286313005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
TPH as Gas	ug/L	6430	20000	26600	101	52-150	
a,a,a-Trifluorotoluene (S)	%.				104	70-125	

SAMPLE DUPLICATE: 1830836

Parameter	Units	10286438005 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	27100	25700	5	30	
a,a,a-Trifluorotoluene (S)	%.	102	102	0		

SAMPLE DUPLICATE: 1830846

Parameter	Units	10286313003 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	<50.0	<50.0		30	
a,a,a-Trifluorotoluene (S)	%.	100	103	2		

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QUALITY CONTROL DATA

Project: 062224-03 Former Star Laundry
Pace Project No.: 10286313

QC Batch: GCV/12862 Analysis Method: NWTPH-Gx/8021
QC Batch Method: NWTPH-Gx/8021 Analysis Description: NWTPH-Gx/8021B Water
Associated Lab Samples: 10286313007

METHOD BLANK: 1832115 Matrix: Water
Associated Lab Samples: 10286313007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH as Gas	ug/L	<50.0	100	11/03/14 10:17	
a,a,a-Trifluorotoluene (S)	%.	104	70-125	11/03/14 10:17	

LABORATORY CONTROL SAMPLE & LCSD: 1832116 1832117

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	1000	1090	1010	109	101	75-125	8	20	
a,a,a-Trifluorotoluene (S)	%.				111	107	70-125			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1832118 1832119

Parameter	Units	10286954001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
TPH as Gas	ug/L	ND	1000	1000	1020	1010	100	99	52-150	1	30	
a,a,a-Trifluorotoluene (S)	%.						116	115	70-125			

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QUALITY CONTROL DATA

Project: 062224-03 Former Star Laundry
Pace Project No.: 10286313

QC Batch: MPRP/50162 Analysis Method: EPA 6020
QC Batch Method: EPA 3020 Analysis Description: 6020 MET
Associated Lab Samples: 10286313002, 10286313003, 10286313004

METHOD BLANK: 1828491 Matrix: Water
Associated Lab Samples: 10286313002, 10286313003, 10286313004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	ug/L	<0.25	0.50	10/30/14 22:30	
Cadmium	ug/L	<0.033	0.080	10/30/14 22:30	
Chromium	ug/L	<0.22	0.50	10/30/14 22:30	
Lead	ug/L	0.071J	0.10	10/30/14 22:30	

LABORATORY CONTROL SAMPLE: 1828492

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	80	79.7	100	80-120	
Cadmium	ug/L	80	80.8	101	80-120	
Chromium	ug/L	80	80.0	100	80-120	
Lead	ug/L	80	82.5	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1828493 1828494

Parameter	Units	30132392001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	ug/L	ND	80	80	77.7	82.5	97	103	75-125	6	20	
Cadmium	ug/L	ND	80	80	79.1	81.6	99	102	75-125	3	20	
Chromium	ug/L	ND	80	80	78.7	81.8	98	102	75-125	4	20	
Lead	ug/L	ND	80	80	79.9	83.4	100	104	75-125	4	20	

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QUALITY CONTROL DATA

Project: 062224-03 Former Star Laundry
Pace Project No.: 10286313

QC Batch: MPRP/50390 Analysis Method: EPA 6020
QC Batch Method: EPA 3020 Analysis Description: 6020 MET Dissolved
Associated Lab Samples: 10286313002, 10286313003, 10286313004

METHOD BLANK: 1836120 Matrix: Water
Associated Lab Samples: 10286313002, 10286313003, 10286313004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	<0.25	0.50	11/06/14 10:11	
Cadmium, Dissolved	ug/L	<0.033	0.080	11/06/14 10:11	
Chromium, Dissolved	ug/L	<0.22	0.50	11/06/14 10:11	
Lead, Dissolved	ug/L	<0.046	0.10	11/06/14 10:11	

LABORATORY CONTROL SAMPLE: 1836121

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	80	77.9	97	80-120	
Cadmium, Dissolved	ug/L	80	83.4	104	80-120	
Chromium, Dissolved	ug/L	80	77.9	97	80-120	
Lead, Dissolved	ug/L	80	81.4	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1836122 1836123

Parameter	Units	10286313002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic, Dissolved	ug/L	3.2	80	80	85.4	84.8	103	102	75-125	1	20	
Cadmium, Dissolved	ug/L	<0.033	80	80	86.6	84.0	108	105	75-125	3	20	
Chromium, Dissolved	ug/L	<0.22	80	80	81.0	79.9	101	100	75-125	1	20	
Lead, Dissolved	ug/L	<0.046	80	80	82.2	82.1	103	103	75-125	0	20	

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QUALITY CONTROL DATA

Project: 062224-03 Former Star Laundry
Pace Project No.: 10286313

QC Batch: MSV/29142 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV 465 W
Associated Lab Samples: 10286313001, 10286313002, 10286313003, 10286313004, 10286313005, 10286313006, 10286313007

METHOD BLANK: 1831072 Matrix: Water
Associated Lab Samples: 10286313001, 10286313002, 10286313003, 10286313004, 10286313005, 10286313006, 10286313007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.50	1.0	10/30/14 11:01	
1,1,1-Trichloroethane	ug/L	<0.26	1.0	10/30/14 11:01	
1,1,2,2-Tetrachloroethane	ug/L	<0.50	1.0	10/30/14 11:01	
1,1,2-Trichloroethane	ug/L	<0.13	1.0	10/30/14 11:01	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.50	1.0	10/30/14 11:01	
1,1-Dichloroethane	ug/L	<0.16	1.0	10/30/14 11:01	
1,1-Dichloroethene	ug/L	<0.20	1.0	10/30/14 11:01	
1,1-Dichloropropene	ug/L	<0.50	1.0	10/30/14 11:01	
1,2,3-Trichlorobenzene	ug/L	<0.50	1.0	10/30/14 11:01	
1,2,3-Trichloropropane	ug/L	<1.2	4.0	10/30/14 11:01	
1,2,4-Trichlorobenzene	ug/L	<0.50	1.0	10/30/14 11:01	
1,2,4-Trimethylbenzene	ug/L	<0.50	1.0	10/30/14 11:01	
1,2-Dibromo-3-chloropropane	ug/L	<2.0	4.0	10/30/14 11:01	
1,2-Dibromoethane (EDB)	ug/L	<0.15	1.0	10/30/14 11:01	
1,2-Dichlorobenzene	ug/L	<0.16	1.0	10/30/14 11:01	
1,2-Dichloroethane	ug/L	<0.13	1.0	10/30/14 11:01	
1,2-Dichloropropane	ug/L	<0.14	4.0	10/30/14 11:01	
1,3,5-Trimethylbenzene	ug/L	<0.50	1.0	10/30/14 11:01	
1,3-Dichlorobenzene	ug/L	<0.50	1.0	10/30/14 11:01	
1,3-Dichloropropane	ug/L	<0.50	1.0	10/30/14 11:01	
1,4-Dichlorobenzene	ug/L	<0.50	1.0	10/30/14 11:01	
2,2-Dichloropropane	ug/L	<0.17	4.0	10/30/14 11:01	
2-Butanone (MEK)	ug/L	<2.5	5.0	10/30/14 11:01	CL
2-Chlorotoluene	ug/L	<0.14	1.0	10/30/14 11:01	
4-Chlorotoluene	ug/L	<0.083	1.0	10/30/14 11:01	
4-Methyl-2-pentanone (MIBK)	ug/L	<2.5	5.0	10/30/14 11:01	
Acetone	ug/L	<10.0	20.0	10/30/14 11:01	
Allyl chloride	ug/L	<0.45	4.0	10/30/14 11:01	
Benzene	ug/L	<0.15	1.0	10/30/14 11:01	
Bromobenzene	ug/L	<0.13	1.0	10/30/14 11:01	
Bromochloromethane	ug/L	<0.12	1.0	10/30/14 11:01	
Bromodichloromethane	ug/L	<0.20	1.0	10/30/14 11:01	
Bromoform	ug/L	<2.0	4.0	10/30/14 11:01	
Bromomethane	ug/L	<2.0	4.0	10/30/14 11:01	CL
Carbon tetrachloride	ug/L	<0.16	1.0	10/30/14 11:01	
Chlorobenzene	ug/L	<0.066	1.0	10/30/14 11:01	
Chloroethane	ug/L	<0.24	1.0	10/30/14 11:01	
Chloroform	ug/L	<0.16	1.0	10/30/14 11:01	
Chloromethane	ug/L	<0.34	4.0	10/30/14 11:01	
cis-1,2-Dichloroethene	ug/L	<0.13	1.0	10/30/14 11:01	
cis-1,3-Dichloropropene	ug/L	<0.13	4.0	10/30/14 11:01	

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(612)607-1700

QUALITY CONTROL DATA

Project: 062224-03 Former Star Laundry
Pace Project No.: 10286313

METHOD BLANK: 1831072 Matrix: Water
Associated Lab Samples: 10286313001, 10286313002, 10286313003, 10286313004, 10286313005, 10286313006, 10286313007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dibromochloromethane	ug/L	<0.50	1.0	10/30/14 11:01	
Dibromomethane	ug/L	<0.18	4.0	10/30/14 11:01	
Dichlorodifluoromethane	ug/L	<0.50	1.0	10/30/14 11:01	
Dichlorofluoromethane	ug/L	<0.20	1.0	10/30/14 11:01	
Diethyl ether (Ethyl ether)	ug/L	<0.14	4.0	10/30/14 11:01	
Ethylbenzene	ug/L	<0.16	1.0	10/30/14 11:01	
Hexachloro-1,3-butadiene	ug/L	<0.50	1.0	10/30/14 11:01	
Isopropylbenzene (Cumene)	ug/L	<0.50	1.0	10/30/14 11:01	
Methyl-tert-butyl ether	ug/L	<0.17	1.0	10/30/14 11:01	
Methylene Chloride	ug/L	<2.0	4.0	10/30/14 11:01	
n-Butylbenzene	ug/L	<0.50	1.0	10/30/14 11:01	
n-Propylbenzene	ug/L	<0.50	1.0	10/30/14 11:01	
Naphthalene	ug/L	<2.0	4.0	10/30/14 11:01	
p-Isopropyltoluene	ug/L	<0.50	1.0	10/30/14 11:01	
sec-Butylbenzene	ug/L	<0.50	1.0	10/30/14 11:01	
Styrene	ug/L	<0.063	1.0	10/30/14 11:01	
tert-Butylbenzene	ug/L	<0.50	1.0	10/30/14 11:01	
Tetrachloroethene	ug/L	<0.16	1.0	10/30/14 11:01	
Tetrahydrofuran	ug/L	<2.0	10.0	10/30/14 11:01	
Toluene	ug/L	<0.11	1.0	10/30/14 11:01	
trans-1,2-Dichloroethene	ug/L	<0.23	1.0	10/30/14 11:01	
trans-1,3-Dichloropropene	ug/L	<0.18	4.0	10/30/14 11:01	
Trichloroethene	ug/L	<0.091	0.40	10/30/14 11:01	
Trichlorofluoromethane	ug/L	<0.22	1.0	10/30/14 11:01	
Vinyl chloride	ug/L	<0.20	0.40	10/30/14 11:01	
Xylene (Total)	ug/L	<0.40	3.0	10/30/14 11:01	
1,2-Dichloroethane-d4 (S)	%.	88	75-125	10/30/14 11:01	
4-Bromofluorobenzene (S)	%.	99	75-125	10/30/14 11:01	
Toluene-d8 (S)	%.	100	75-125	10/30/14 11:01	

LABORATORY CONTROL SAMPLE: 1831073

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	19.0	95	75-125	
1,1,1-Trichloroethane	ug/L	20	17.4	87	73-125	
1,1,2,2-Tetrachloroethane	ug/L	20	18.7	94	74-125	
1,1,2-Trichloroethane	ug/L	20	19.1	96	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	20	19.8	99	56-133	
1,1-Dichloroethane	ug/L	20	18.1	91	75-125	
1,1-Dichloroethene	ug/L	20	17.4	87	70-125	
1,1-Dichloropropene	ug/L	20	18.0	90	73-125	
1,2,3-Trichlorobenzene	ug/L	20	16.2	81	75-125	
1,2,3-Trichloropropane	ug/L	20	19.2	96	75-125	
1,2,4-Trichlorobenzene	ug/L	20	16.7	83	75-125	

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QUALITY CONTROL DATA

Project: 062224-03 Former Star Laundry
Pace Project No.: 10286313

LABORATORY CONTROL SAMPLE: 1831073

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trimethylbenzene	ug/L	20	17.8	89	75-125	
1,2-Dibromo-3-chloropropane	ug/L	50	40.0	80	70-125	
1,2-Dibromoethane (EDB)	ug/L	20	18.0	90	75-125	
1,2-Dichlorobenzene	ug/L	20	19.0	95	75-125	
1,2-Dichloroethane	ug/L	20	16.1	80	75-125	
1,2-Dichloropropane	ug/L	20	17.6	88	75-125	
1,3,5-Trimethylbenzene	ug/L	20	17.6	88	75-125	
1,3-Dichlorobenzene	ug/L	20	18.4	92	75-125	
1,3-Dichloropropane	ug/L	20	18.6	93	75-125	
1,4-Dichlorobenzene	ug/L	20	18.0	90	75-125	
2,2-Dichloropropane	ug/L	20	17.5	88	66-130	
2-Butanone (MEK)	ug/L	100	56.5	57	64-126	CL,L0
2-Chlorotoluene	ug/L	20	17.5	87	73-125	
4-Chlorotoluene	ug/L	20	17.6	88	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	100	79.9	80	71-125	
Acetone	ug/L	100	76.3	76	66-131	
Allyl chloride	ug/L	20	14.6	73	70-129	
Benzene	ug/L	20	17.3	87	75-125	
Bromobenzene	ug/L	20	19.0	95	75-125	
Bromochloromethane	ug/L	20	16.6	83	75-125	
Bromodichloromethane	ug/L	20	16.5	82	75-125	
Bromoform	ug/L	20	16.2	81	70-125	
Bromomethane	ug/L	20	9.5	47	30-150	CL
Carbon tetrachloride	ug/L	20	15.7	78	68-129	
Chlorobenzene	ug/L	20	18.2	91	75-125	
Chloroethane	ug/L	20	18.9	94	68-133	
Chloroform	ug/L	20	16.0	80	75-125	
Chloromethane	ug/L	20	13.3	66	57-140	
cis-1,2-Dichloroethene	ug/L	20	17.7	88	75-125	
cis-1,3-Dichloropropene	ug/L	20	17.0	85	75-125	
Dibromochloromethane	ug/L	20	16.7	84	75-125	
Dibromomethane	ug/L	20	18.1	91	75-125	
Dichlorodifluoromethane	ug/L	20	19.8	99	50-134	
Dichlorofluoromethane	ug/L	20	18.4	92	74-125	
Diethyl ether (Ethyl ether)	ug/L	20	15.9	79	75-125	
Ethylbenzene	ug/L	20	17.6	88	75-125	
Hexachloro-1,3-butadiene	ug/L	20	19.2	96	74-128	
Isopropylbenzene (Cumene)	ug/L	20	17.9	90	73-125	
Methyl-tert-butyl ether	ug/L	20	16.6	83	75-125	
Methylene Chloride	ug/L	20	16.1	80	75-125	
n-Butylbenzene	ug/L	20	16.0	80	73-125	
n-Propylbenzene	ug/L	20	17.6	88	72-125	
Naphthalene	ug/L	20	14.8	74	74-125	
p-Isopropyltoluene	ug/L	20	16.8	84	74-125	
sec-Butylbenzene	ug/L	20	17.6	88	74-125	
Styrene	ug/L	20	17.8	89	75-125	
tert-Butylbenzene	ug/L	20	18.0	90	74-125	

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(612)607-1700

QUALITY CONTROL DATA

Project: 062224-03 Former Star Laundry
Pace Project No.: 10286313

LABORATORY CONTROL SAMPLE: 1831073

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Tetrachloroethene	ug/L	20	16.8	84	71-125	
Tetrahydrofuran	ug/L	200	213	106	70-125	
Toluene	ug/L	20	18.6	93	75-125	
trans-1,2-Dichloroethene	ug/L	20	17.8	89	73-125	
trans-1,3-Dichloropropene	ug/L	20	17.1	85	75-125	
Trichloroethene	ug/L	20	19.1	95	75-125	
Trichlorofluoromethane	ug/L	20	20.7	104	70-128	
Vinyl chloride	ug/L	20	19.7	98	70-130	
Xylene (Total)	ug/L	60	53.1	88	75-125	
1,2-Dichloroethane-d4 (S)	%.			88	75-125	
4-Bromofluorobenzene (S)	%.			99	75-125	
Toluene-d8 (S)	%.			100	75-125	

MATRIX SPIKE SAMPLE: 1834069

Parameter	Units	1240458004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	20	7.1	35	74-131	M1
1,1,1-Trichloroethane	ug/L	ND	20	7.0	35	73-139	M1
1,1,2,2-Tetrachloroethane	ug/L	ND	20	7.2	36	72-125	M1
1,1,2-Trichloroethane	ug/L	ND	20	7.1	35	75-125	M1
1,1,2-Trichlorotrifluoroethane	ug/L	ND	20	8.7	43	68-150	M1
1,1-Dichloroethane	ug/L	ND	20	7.2	36	73-132	M1
1,1-Dichloroethene	ug/L	ND	20	6.6	33	71-142	M1
1,1-Dichloropropene	ug/L	ND	20	6.8	34	73-139	M1
1,2,3-Trichlorobenzene	ug/L	ND	20	6.2	31	70-129	M1
1,2,3-Trichloropropane	ug/L	ND	20	6.7	34	74-125	M1
1,2,4-Trichlorobenzene	ug/L	ND	20	6.5	33	70-129	M1
1,2,4-Trimethylbenzene	ug/L	ND	20	6.7	33	72-136	M1
1,2-Dibromo-3-chloropropane	ug/L	ND	50	15.1	30	66-127	M1
1,2-Dibromoethane (EDB)	ug/L	ND	20	6.7	33	75-125	M1
1,2-Dichlorobenzene	ug/L	ND	20	7.2	36	75-125	M1
1,2-Dichloroethane	ug/L	ND	20	6.0	30	68-128	M1
1,2-Dichloropropane	ug/L	ND	20	6.9	34	74-131	M1
1,3,5-Trimethylbenzene	ug/L	ND	20	6.6	33	75-131	M1
1,3-Dichlorobenzene	ug/L	ND	20	6.9	34	73-125	M1
1,3-Dichloropropane	ug/L	ND	20	6.9	34	75-125	M1
1,4-Dichlorobenzene	ug/L	ND	20	6.9	34	73-125	M1
2,2-Dichloropropane	ug/L	ND	20	6.8	34	58-150	M1
2-Butanone (MEK)	ug/L	ND	100	30.8	31	56-140	CL,M0
2-Chlorotoluene	ug/L	ND	20	6.7	34	70-130	M1
4-Chlorotoluene	ug/L	ND	20	6.8	34	73-126	M1
4-Methyl-2-pentanone (MIBK)	ug/L	ND	100	30.4	30	69-128	M1
Acetone	ug/L	ND	100	40.4	40	57-143	M1
Allyl chloride	ug/L	ND	20	5.8	29	65-146	M1
Benzene	ug/L	ND	20	6.4	32	75-129	M1

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QUALITY CONTROL DATA

Project: 062224-03 Former Star Laundry
Pace Project No.: 10286313

MATRIX SPIKE SAMPLE: 1834069

Parameter	Units	1240458004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Bromobenzene	ug/L	ND	20	7.6	38	74-125	M1
Bromochloromethane	ug/L	ND	20	6.6	33	75-126	M1
Bromodichloromethane	ug/L	ND	20	6.4	32	75-128	M1
Bromoform	ug/L	ND	20	6.0	30	66-130	M1
Bromomethane	ug/L	ND	20	5.7	28	30-150	CL,M1
Carbon tetrachloride	ug/L	ND	20	6.4	32	69-148	M1
Chlorobenzene	ug/L	ND	20	7.0	35	75-125	M1
Chloroethane	ug/L	ND	20	7.3	36	71-143	M1
Chloroform	ug/L	ND	20	8.0	40	75-126	M1
Chloromethane	ug/L	ND	20	5.6	28	55-150	M1
cis-1,2-Dichloroethene	ug/L	ND	20	7.1	35	75-130	M1
cis-1,3-Dichloropropene	ug/L	ND	20	6.1	30	72-129	M1
Dibromochloromethane	ug/L	ND	20	6.1	30	73-129	M1
Dibromomethane	ug/L	ND	20	6.9	35	75-125	M1
Dichlorodifluoromethane	ug/L	ND	20	7.9	39	70-150	M1
Dichlorofluoromethane	ug/L	ND	20	7.2	36	75-135	M1
Diethyl ether (Ethyl ether)	ug/L	ND	20	6.0	30	72-126	M1
Ethylbenzene	ug/L	ND	20	6.8	34	75-128	M1
Hexachloro-1,3-butadiene	ug/L	ND	20	7.2	36	65-144	M1
Isopropylbenzene (Cumene)	ug/L	ND	20	6.9	34	75-131	M1
Methyl-tert-butyl ether	ug/L	ND	20	6.1	30	74-128	M1
Methylene Chloride	ug/L	ND	20	6.1	31	69-125	M1
n-Butylbenzene	ug/L	ND	20	6.1	30	70-137	M1
n-Propylbenzene	ug/L	ND	20	6.9	35	72-131	M1
Naphthalene	ug/L	ND	20	5.6	28	70-132	M1
p-Isopropyltoluene	ug/L	ND	20	6.5	32	73-133	M1
sec-Butylbenzene	ug/L	ND	20	6.8	34	74-133	M1
Styrene	ug/L	ND	20	6.9	34	75-128	M1
tert-Butylbenzene	ug/L	ND	20	7.1	35	74-130	M1
Tetrachloroethene	ug/L	ND	20	6.4	32	68-140	M1
Tetrahydrofuran	ug/L	ND	200	80.2	40	65-131	M1
Toluene	ug/L	3.0	20	10.1	36	75-129	M1
trans-1,2-Dichloroethene	ug/L	ND	20	6.6	33	70-136	M1
trans-1,3-Dichloropropene	ug/L	ND	20	6.1	30	71-125	M1
Trichloroethene	ug/L	ND	20	7.4	37	72-135	M1
Trichlorofluoromethane	ug/L	ND	20	7.9	40	75-150	M1
Vinyl chloride	ug/L	ND	20	8.3	42	73-150	M1
Xylene (Total)	ug/L	ND	60	20.4	34	75-129	MS
1,2-Dichloroethane-d4 (S)	%.				87	75-125	
4-Bromofluorobenzene (S)	%.				100	75-125	
Toluene-d8 (S)	%.				100	75-125	

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QUALITY CONTROL DATA

Project: 062224-03 Former Star Laundry
Pace Project No.: 10286313

SAMPLE DUPLICATE: 1834070

Parameter	Units	1240458005 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	<0.50		30	
1,1,1-Trichloroethane	ug/L	ND	<0.26		30	
1,1,2,2-Tetrachloroethane	ug/L	ND	<0.50		30	
1,1,2-Trichloroethane	ug/L	ND	<0.13		30	
1,1,2-Trichlorotrifluoroethane	ug/L	ND	<0.50		30	
1,1-Dichloroethane	ug/L	ND	<0.16		30	
1,1-Dichloroethene	ug/L	ND	<0.20		30	
1,1-Dichloropropene	ug/L	ND	<0.50		30	
1,2,3-Trichlorobenzene	ug/L	ND	<0.50		30	
1,2,3-Trichloropropane	ug/L	ND	<1.2		30	
1,2,4-Trichlorobenzene	ug/L	ND	<0.50		30	
1,2,4-Trimethylbenzene	ug/L	ND	<0.50		30	
1,2-Dibromo-3-chloropropane	ug/L	ND	<2.0		30	
1,2-Dibromoethane (EDB)	ug/L	ND	<0.15		30	
1,2-Dichlorobenzene	ug/L	ND	<0.16		30	
1,2-Dichloroethane	ug/L	ND	<0.13		30	
1,2-Dichloropropane	ug/L	ND	<0.14		30	
1,3,5-Trimethylbenzene	ug/L	ND	<0.50		30	
1,3-Dichlorobenzene	ug/L	ND	<0.50		30	
1,3-Dichloropropane	ug/L	ND	<0.50		30	
1,4-Dichlorobenzene	ug/L	ND	<0.50		30	
2,2-Dichloropropane	ug/L	ND	<0.17		30	
2-Butanone (MEK)	ug/L	ND	<2.5		30	CL
2-Chlorotoluene	ug/L	ND	<0.14		30	
4-Chlorotoluene	ug/L	ND	<0.083		30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	<2.5		30	
Acetone	ug/L	ND	<10.0		30	
Allyl chloride	ug/L	ND	<0.45		30	
Benzene	ug/L	ND	<0.15		30	
Bromobenzene	ug/L	ND	<0.13		30	
Bromochloromethane	ug/L	ND	<0.12		30	
Bromodichloromethane	ug/L	ND	<0.20		30	
Bromoform	ug/L	ND	<2.0		30	
Bromomethane	ug/L	ND	<2.0		30	CL
Carbon tetrachloride	ug/L	ND	<0.16		30	
Chlorobenzene	ug/L	ND	<0.066		30	
Chloroethane	ug/L	ND	<0.24		30	
Chloroform	ug/L	ND	0.19J		30	
Chloromethane	ug/L	ND	<0.34		30	
cis-1,2-Dichloroethene	ug/L	ND	<0.13		30	
cis-1,3-Dichloropropene	ug/L	ND	<0.13		30	
Dibromochloromethane	ug/L	ND	<0.50		30	
Dibromomethane	ug/L	ND	<0.18		30	
Dichlorodifluoromethane	ug/L	ND	<0.50		30	
Dichlorofluoromethane	ug/L	ND	<0.20		30	
Diethyl ether (Ethyl ether)	ug/L	ND	<0.14		30	
Ethylbenzene	ug/L	ND	<0.16		30	

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QUALITY CONTROL DATA

Project: 062224-03 Former Star Laundry
Pace Project No.: 10286313

SAMPLE DUPLICATE: 1834070

Parameter	Units	1240458005 Result	Dup Result	RPD	Max RPD	Qualifiers
Hexachloro-1,3-butadiene	ug/L	ND	<0.50		30	
Isopropylbenzene (Cumene)	ug/L	ND	<0.50		30	
Methyl-tert-butyl ether	ug/L	ND	<0.17		30	
Methylene Chloride	ug/L	ND	<2.0		30	
n-Butylbenzene	ug/L	ND	<0.50		30	
n-Propylbenzene	ug/L	ND	<0.50		30	
Naphthalene	ug/L	ND	<2.0		30	
p-Isopropyltoluene	ug/L	ND	<0.50		30	
sec-Butylbenzene	ug/L	ND	<0.50		30	
Styrene	ug/L	ND	<0.063		30	
tert-Butylbenzene	ug/L	ND	<0.50		30	
Tetrachloroethene	ug/L	ND	<0.16		30	
Tetrahydrofuran	ug/L	ND	<2.0		30	
Toluene	ug/L	ND	<0.11		30	
trans-1,2-Dichloroethene	ug/L	ND	<0.23		30	
trans-1,3-Dichloropropene	ug/L	ND	<0.18		30	
Trichloroethene	ug/L	ND	<0.091		30	
Trichlorofluoromethane	ug/L	ND	<0.22		30	
Vinyl chloride	ug/L	ND	<0.20		30	
Xylene (Total)	ug/L	ND	<0.40		30	
1,2-Dichloroethane-d4 (S)	%.	87	86	2		
4-Bromofluorobenzene (S)	%.	99	97	2		
Toluene-d8 (S)	%.	100	100	0		

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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Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 062224-03 Former Star Laundry
Pace Project No.: 10286313

QC Batch: OEXT/27039 Analysis Method: NWTPH-Dx
QC Batch Method: EPA 3510 Analysis Description: NWTPH-Dx GCS LV
Associated Lab Samples: 10286313001, 10286313002, 10286313003, 10286313004, 10286313005

METHOD BLANK: 1828208 Matrix: Water
Associated Lab Samples: 10286313001, 10286313002, 10286313003, 10286313004, 10286313005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Fuel Range	mg/L	<0.048	0.40	11/02/14 21:08	
Motor Oil Range	mg/L	0.041J	0.40	11/02/14 21:08	
n-Triacontane (S)	%.	78	30-125	11/02/14 21:08	
o-Terphenyl (S)	%.	79	30-125	11/02/14 21:08	

LABORATORY CONTROL SAMPLE & LCSD: 1828209 1828210

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	1.5	80	74	50-150	7	20	
Motor Oil Range	mg/L	2	1.8	1.8	88	88	50-150	1	20	
n-Triacontane (S)	%.				88	87	30-125			
o-Terphenyl (S)	%.				89	87	30-125			

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QUALIFIERS

Project: 062224-03 Former Star Laundry
Pace Project No.: 10286313

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

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

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis

BATCH QUALIFIERS

Batch: GCSV/14415

[1]	A matrix spike/matrix spike duplicate/sample duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
CL	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.
L0	Analyte recovery in the laboratory control sample (LCS) was outside QC limits.
L2	Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results may be biased low.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
MS	Analyte recovery in the matrix spike was outside QC limits for one or more of the constituent analytes used in the calculated result.

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METHOD CROSS REFERENCE TABLE

Project: 062224-03 Former Star Laundry
Pace Project No.: 10286313

Parameter	Matrix	Analytical Method	Preparation Method
6020 MET ICPMS	Water	SW-846 6020A	SW-846 3020A
6020 MET ICPMS, Lab Filtered	Water	SW-846 6020A	SW-846 3020A
8260 VOC	Water	SW-846 8260B/5030B	N/A

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 062224-03 Former Star Laundry
Pace Project No.: 10286313

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10286313001	MW-1A	EPA 3510	OEXT/27039	NWTPH-Dx	GCSV/14415
10286313002	MW-2	EPA 3510	OEXT/27039	NWTPH-Dx	GCSV/14415
10286313003	MW-3	EPA 3510	OEXT/27039	NWTPH-Dx	GCSV/14415
10286313004	MW-4	EPA 3510	OEXT/27039	NWTPH-Dx	GCSV/14415
10286313005	MW-5	EPA 3510	OEXT/27039	NWTPH-Dx	GCSV/14415
10286313001	MW-1A	NWTPH-Gx/8021	GCV/12854		
10286313002	MW-2	NWTPH-Gx/8021	GCV/12854		
10286313003	MW-3	NWTPH-Gx/8021	GCV/12854		
10286313004	MW-4	NWTPH-Gx/8021	GCV/12854		
10286313005	MW-5	NWTPH-Gx/8021	GCV/12854		
10286313006	DUP	NWTPH-Gx/8021	GCV/12854		
10286313007	Trip Blank	NWTPH-Gx/8021	GCV/12862		
10286313002	MW-2	EPA 3020	MPRP/50162	EPA 6020	ICPM/22316
10286313003	MW-3	EPA 3020	MPRP/50162	EPA 6020	ICPM/22316
10286313004	MW-4	EPA 3020	MPRP/50162	EPA 6020	ICPM/22316
10286313002	MW-2	EPA 3020	MPRP/50390	EPA 6020	ICPM/22384
10286313003	MW-3	EPA 3020	MPRP/50390	EPA 6020	ICPM/22384
10286313004	MW-4	EPA 3020	MPRP/50390	EPA 6020	ICPM/22384
10286313001	MW-1A	EPA 8260	MSV/29142		
10286313002	MW-2	EPA 8260	MSV/29142		
10286313003	MW-3	EPA 8260	MSV/29142		
10286313004	MW-4	EPA 8260	MSV/29142		
10286313005	MW-5	EPA 8260	MSV/29142		
10286313006	DUP	EPA 8260	MSV/29142		
10286313007	Trip Blank	EPA 8260	MSV/29142		

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1121 11/6/14
1122

BLAINE
TECH SERVICES, INC.

1680 ROGERS AVENUE
SAN JOSE, CALIFORNIA 95112-1105
FAX (408) 573-7771
PHONE (408) 573-0555

CONDUCT ANALYSIS TO DETECT

LAB Pace | DHS #

Profile# 34441

10286313

CHAIN OF CUSTODY

CLIENT CRA

SITE Former Star Laundry
160 12th Ave.
Seattlw, WA

SPECIAL INSTRUCTIONS
Limited Volume, Contact
Invoice & Report to:
Christina McClelland (925) 519-0305 re
Conestoga-Rovers & Associates (CRA) DS/OS OPTIONS
20818 44th Ave., West, Suite 190
Lynnwood, WA 98036
cmcclelland@CRAworld.com
*Lab to filter & preserve

SAMPLE I.D.	DATE	TIME	MATRIX (S=SOIL W=H_2O)	CONTAINERS TOTAL	CONTAINERS Type	C = COMPOSITE ALL CONTAINERS	NWTPH-Gx	NWTPH-Dx + MO	As, Cd, Cr, Pb Total 6010	As, Cd, Cr, Pb Dissolved 6010 *	VOC's 8260B				ADD'L INFORMATION		CONDITION	LAB SAMPLE #
MW-1A	10/21/14	1155	W	5	VOA, AMBER		X	X	X	X	X							001
MW-2	10/21/14	0938	W	9	VOA, POLY, AMBER		X	X	X	X	X							002
MW-3	10/21/14	1040	W	9	"		X	X	X	X	X							003
MW-4	10/21/14	1025	W	9	↓		X	X	X	X	X							004
MW-5	10/21/14	1000	W	5	VOA, AMBER		X	X	X	X	X							005
DUP	10/21/14	—	W	6	VOA		X	X	X	X	X							006
																		007

SAMPLING COMPLETED	DATE	TIME	SAMPLING PERFORMED BY
	10/21/14	1430	LEE BURB

RESULTS NEEDED NO LATER THAN Standard TAT

12.7 on ice

	DATE	TIME		DATE	TIME
RELEASED BY	10/21/14	1635	RECEIVED BY Jenn Gross/ Pace	10/21/14	16:35
RELEASED BY Jenn Gross/ Pace	10/21/14	16:00	RECEIVED BY PACE	10-23-14	945
RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME

SHIPPED VIA	DATE SENT	TIME SENT	COOLER #
			T=0.2

Pace Analytical	Document Name: Sample Condition Upon Receipt Form	Document Revised: 28Feb2014 Page 1 of 1
	Document No.: F-MN-L-213-rev.09	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Blaine Tech

Project #: WO# : 10286313

10286313

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 5779 5332 4373

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

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

Thermom. Used: ☐ B88A9130516413 ☐ B88A912167504 ☑ B88A9132521491 **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read (°C): 0.0 **Cooler Temp Corrected (°C):** 0.2 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ N/A

Temp should be above freezing to 6°C **Correction Factor:** +0.2 **Date and Initials of Person Examining Contents:** 10-27-14 JG

				Comments:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☑ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☑ Yes	☐ No	☐ N/A	3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	7.
Sufficient Volume?	☐ Yes	☑ No	☐ N/A	8. Missing metals containers for -001, -005
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☑ No	☐ N/A	11. Lab Filter
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☑ Yes	☐ No	☐ N/A	12.
All containers needing acid/base preservation have been checked?	☑ Yes	☐ No	☐ N/A	13. ☑ HNO_3 ☐ H_2SO_4 ☐ NaOH ☐ HCl
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, HCl<2; NaOH >9 Sulfide, NaOH>12 Cyanide)	☑ Yes	☐ No	☐ N/A	Sample # 2-4 1/1
Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC	☑ Yes	☐ No		Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☑ Yes	☐ No	☐ N/A	14. 1 VIAL for sample MW-4 (empty)
Trip Blank Present?	☑ Yes	☐ No	☐ N/A	15.
Trip Blank Custody Seals Present?	☑ Yes	☐ No	☐ N/A	
Pace Trip Blank Lot # (if purchased): 081814-35374				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☑ No

Person Contacted: Jeff Cloud Date/Time: 10/27/14

Comments/Resolution: Analyze TB for 8260, if second vial is still available analyze for NWTPHGx. JG

Project Manager Review: JENNY GROSS **Date:** 10/27/14

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)

INITIAL INVESTIGATION FIELD REPORT

ERTS Number: 655254
Parcel #(s): 3927400005
County: King
FSID #: 979
CSID #: 12676

SITE INFORMATION

Site Name (Name over door): Star Laundry	Site Address (including City, State and Zip): 160 12th Avenue Seattle , WA 98122	Phone/email:
Site Contact, Title, Business: Christina McClelland Conestoga –Rovers & Associates	Site Contact Address (including City, State and Zip): 20818 44th Ave. W, Ste 190 Lynwood, WA 98036	Phone/email: 425-563-6514
Site Owner, Title, Business: Mr. Hamed "Ted" Saedi	Site Owner Address (including City, State and Zip): 1444 185th Ave NE Bellevue, WA 98008	Phone/email: tedsaedi@yahoo.com
Site Owner Contact, Title, Business:	Site Owner Contact Address (including City, State and Zip):	Phone/email:
Previous Site Owner(s):	Additional Info:	
Alternate Site Name(s):	Additional Info:	

Latitude (Decimal Degrees):
Longitude (Decimal Degrees):

INSPECTION INFORMATION

Inspection Conducted? Yes ☐ No ☒	Date/Time:	Entry Notice: Announced ☐	Unannounced ☐
Photographs taken? Yes ☐	No ☐		
Samples collected? Yes ☐	No ☐		

RECOMMENDATION

No Further Action (Check appropriate box below):		**LIST on Confirmed and Suspected Contaminated Sites List**: ☒
Release or threatened release does not pose a threat	☐	
No release or threatened release	☐	
Refer to program/agency (Name: _____)	☐	
Independent Cleanup Action Completed (contamination removed)	☐	

COMPLAINT (Brief Summary of ERTS Complaint):
A groundwater monitoring report shows concentrations of PCE, TCE, cis-1,2-Dichloroethane and vinyl chloride above the MTCA Method A cleanup levels for groundwater. Levels for PCE and TCE are also above the groundwater screening levels for vapor intrusion evaluation (per the draft Guidance for Evaluating Vapor Intrusion, 2009).

CURRENT SITE STATUS (Brief Summary of why Site is recommended for Listing or NFA):
Site is described in the King County property database as a music studio, however, no description is included with the submitted monitoring report. PCE concentrations in all five monitoring wells sampled were above the MTCA Method A cleanup level. TCE concentrations exceeded the cleanup levels in two of the wells. Concentrations for PCE ranged from 11.5 to 11,000 ug/L; for TCE from 33.9 to 1380 ug/L. Vinyl chloride and cis-1,2-Dichloroethene also exceeded cleanup levels in some of the wells. No information on additional work at the site is included with the monitoring report.

Investigator: T. Cardona	Date Submitted: May 4, 2015

OBSERVATIONS

Description (If site visit made, please be sure to include the following: site observations, site features and cover, chronology of events, sources/past practices likely responsible for contamination, presence of water supply wells and other potential exposure pathways, etc.):

Documents reviewed:

Conestoga- Rovers and Associates (CRA) , Groundwater Monitoring Report Fourth Quarter 2014, January 2015.

Summary:

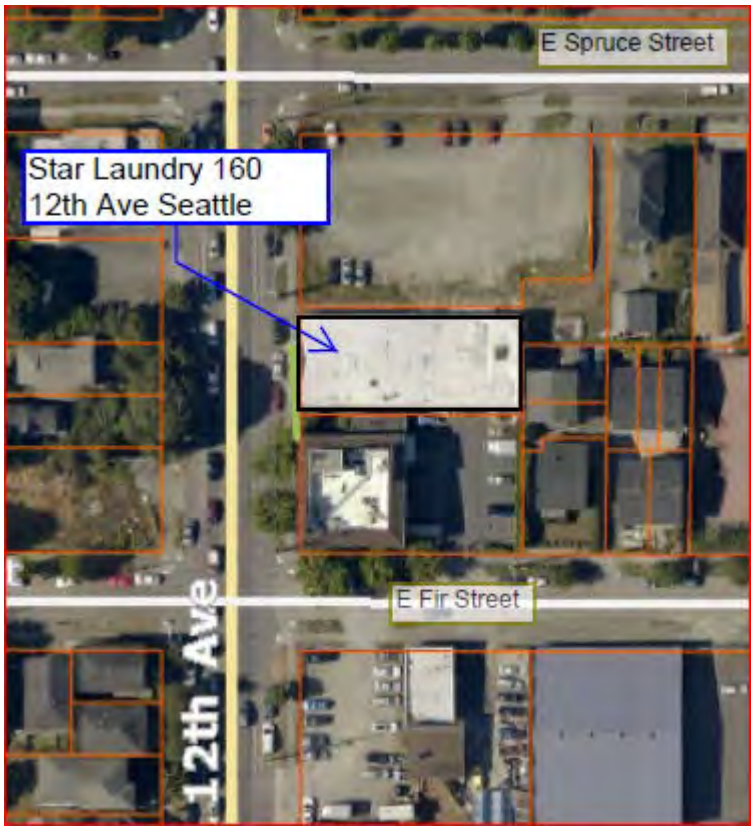
CRA submitted a groundwater monitoring report for a former laundry property that appears to be currently used as a music studio. Samples were collected from five existing monitoring wells and analyzed for VOC's and hydrocarbons. Concentrations of chlorinated solvents including PCE, TCE, cis-1,2-Dichloroethane, and vinyl chloride exceeded the MTCA cleanup levels in some of the wells. All wells contained PCE above cleanup levels.

Concentrations of PCE and TCE are high enough to be a vapor intrusion concern since they exceed the screening levels for vapor intrusion evaluation.

Additional information is needed to evaluate the site further. It seems like the wells have been installed for several years and that there was a groundwater sampling event conducted in 2004. These results were included in the table in the submitted report.

A site contaminated with chlorinated solvents is also located immediately north of this property. However, groundwater flow direction is listed as northwest to southeast for the other site and southeast to northwest at this site. Further information is needed to verify groundwater flow direction.

Update: Site owner contacted Ecology on 5/6/2015. He indicated he purchased the property without knowledge of the contamination. He has a report he was able to obtain from an adjacent property and is willing to share with Ecology when he gets back into town.



(fill in contaminant matrix below with appropriate status choice from the key below the table)

CONTAMINANT GROUP	CONTAMINANT	*SOIL*	*GROUNDWATER*	*SURFACE WATER*	*AIR*	*BEDROCK*	DESCRIPTION
Non-Halogenated Organics	Phenolic Compounds						Compounds containing phenols (Examples: phenol; 4-methylphenol; 2-methylphenol)
	Non-Halogenated Solvents						Organic solvents, typically volatile or semi-volatile, not containing any halogens. To determine if a product has halogens, search HSDB (http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?HSDB) and look at the Chemical/Physical Properties, and Molecular Formula. If there is not a Cl, I, Br, F in the formula, it's not halogenated. (Examples: acetone, benzene, toluene, xylenes, methyl ethyl ketone, ethyl acetate, methanol, ethanol, isopropranol, formic acid, acetic acid, stoddard solvent, Naptha). *Use this when TEX contaminants are present independently of gasoline.*
	Polynuclear Aromatic Hydrocarbons (PAH)						Hydrocarbons composed of two or more benzene rings.
	Tributyltin						The main active ingredients in biocides used to control a broad spectrum of organisms. Found in antifouling marine paint, antifungal action in textiles and industrial water systems. (Examples: Tributyltin; monobutyltin; dibutyltin)
	Methyl tertiary-butyl ether						MTBE is a volatile oxygen-containing organic compound that was formerly used as a gasoline additive to promote complete combustion and help reduce air pollution.
	Benzene						Benzene
	Other Non-Halogenated Organics						TEX
	Petroleum Diesel						Petroleum Diesel
	Petroleum Gasoline						Petroleum Gasoline
	Petroleum Other						Oil range organics
Halogenated Organics (see notes at bottom)	PBDE						Polybrominated di-phenyl ether
	Other Halogenated Organics						Other organic compounds with halogens (chlorine, fluorine, bromine, iodine). search HSDB (http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?HSDB) and look at the Chemical/Physical Properties, and Molecular Formula. If there is a Cl, I, Br, F in the formula, it is halogenated. (Examples: Hexachlorobutadiene; hexachlorobenzene; pentachlorophenol)
	Halogenated solvents		C				PCE, chloroform, EDB, EDC, MTBE
	Polychlorinated Biphenyls (PCB)						Any of a family of industrial compounds produced by chlorination of biphenyl, noted primarily as an environmental pollutant that accumulates in animal tissue with resultant pathogenic and teratogenic effects
	Dioxin/dibenzofuran compounds (see notes at bottom)						A family of more than 70 compounds of chlorinated dioxins or furans. (Examples: Dioxin; Furan; Dioxin TEQ; PCDD; PCDF; TCDD; TCDF; OCDD; OCDF). *Do not use for 'dibenzofuran', which is a non-chlorinated compound that is detected using the semivolatile organics analysis 8270*
Metals	Metals - Other						Cr, Se, Ag, Ba, Cd
	Lead						Lead
	Mercury						Mercury
	Arsenic						Arsenic
Pesticides	Non-halogenated pesticides						Pesticides without halogens (Examples: parathion, malathion, diazinon, phosmet, carbaryl (sevin), fenoxycarb, aldicarb)
	Halogenated pesticides						Pesticides with halogens (Examples: DDT; DDE; Chlordane; Heptachlor; alpha-beta and delta BHC; Aldrin; Endosulfan, dieldrin, endrin)

CONTAMINANT GROUP	CONTAMINANT	*SOIL*	*GROUNDWATER*	*SURFACE WATER*	*AIR*	*BEDROCK*	DESCRIPTION
Other Contaminants	Radioactive Wastes						Wastes that emit more than background levels of radiation.
	Conventional Contaminants, Organic						Unspecified organic matter that imposes an oxygen demand during its decomposition (Example: Total Organic Carbon)
	Conventional Contaminants, Inorganic						Non-metallic inorganic substances or indicator parameters that may indicate the existence of contamination if present at unusual levels (Examples: Sulfides, ammonia)
	Asbestos						All forms of Asbestos. Asbestos fibers have been used in products such as building materials, friction products and heat-resistant materials.
	Other Deleterious Substances						Other contaminants or substances that cause subtle or unexpected harm to sediments (Examples: Wood debris; garbage (e.g., dumped in sediments))
	Benthic Failures						Failures of the benthic analysis standards from the Sediment Management Standards.
	Bioassay Failures						For sediments, a failure to meet bioassay criteria from the Sediment Management Standards. For soils, a failure to meet TEE bioassay criteria for plant, animal or soil biota toxicity.
Reactive Wastes	Unexploded Ordinance						Weapons that failed to detonate or discarded shells containing volatile material.
	Other Reactive Wastes						Other Reactive Wastes (Examples: phosphorous, lithium metal, sodium metal)
	Corrosive Wastes						Corrosive wastes are acidic or alkaline (basic) wastes that can readily corrode or dissolve materials they come into contact with. Wastes that are highly corrosive as defined by the Dangerous Waste Regulation (WAC 173-303-090(6)). (Examples: Hydrochloric acid; sulfuric acid; caustic soda)

Status choices for contaminants	
Contaminant Status	**Definition**
B - Below Cleanup Levels (Confirmed)	The contaminant was tested and found to be below cleanup levels. (Generally, we would not enter each and every contaminant that was tested; for example if an SVOC analysis was done we would not enter each SVOC with a status of "below". We would use this for contaminants that were believed likely to be present but were found to be below standards when tested
S - Suspected	The contaminant is suspected to be present; based on some knowledge about the history of the site, knowledge of regional contaminants, or based on other contaminants known to be present
C - Confirmed Above Cleanup Levels	The contaminant is confirmed to be present above any cleanup level. For example - above MTCA method A, B, or C; above Sediment Quality Standards; or above a presumed site-specific cleanup level (such as human health criteria for a sediment contaminant).
RA - Remediated - Above	The contaminant was remediated, but remains on site above the cleanup standards (for example - capped area).
RB - Remediated - Below	The contaminant was remediated, and no area of the site contains this contaminant above cleanup standards (for example - complete removal of contaminated soils).

Halogenated chemicals and solvents: Any chemical compound with chloro, bromo, iodo or fluoro is halogenated; those with eight or fewer carbons are generally solvents (e.g. halogenated methane, ethane, propane, butane, pentane, hexane, heptane or octane) and may also be used for or registered as pesticides or fumigants. Most are dangerous wastes, either listed or categorical. Organic compounds with more carbons are almost always halogenated pesticides or a contaminant or derivitive. Referral to the HSDB is recommended you are unfamiliar with a chemical name or compound, as it contains useful information about synonyms, uses, trade names, waste codes, and other regulatory information about most toxic or potentially toxic chemicals.

Dibenzodioxins and dibenzofurans are normalized to a combined equivalent toxicity based on 2,3,7,8-tetrachloro-p-dibenzodioxin as set out in Ch. 173-340-708(8)(d) and in the Evaluating the Toxicity and Assessing the Carcinogenic Risk of Environmental Mixtures using Toxicity Equivalency Factors Focus Sheet (https://fortress.wa.gov/ecy/clarc/FocusSheets/tef.pdf). Results may be reported as individual compounds and isomers (usually lab results), or as a toxic equivalency value (reports).

FOR ECOLOGY II REVIEWER USE ONLY (For Listing Sites):

How did the Site come to be known: ☐ **Site Discovery (received a report):** _____ (Date Report Received)
☐ **ERTS Complaint**
☐ **Other (please explain):** _____

Does an Early Notice Letter need to be sent: ☐ Yes ☐ No
If *No*, please explain why: _____

NAICS Code (if known): _____
Otherwise, briefly explain how property is/was used (i.e., gas station, dry cleaner, paint shop, vacant land, etc.):
_____

Site Unit(s) to be created (Unit Type): ☐ Upland (includes VCP & LUST) ☐ Sediment
If multiple Units needed, please explain why: _____

Cleanup Process Type (for the Unit): ☐ No Process ☐ Independent Action
☐ Voluntary Cleanup Program ☐ Ecology-supervised or conducted
☐ Federal-supervised or conducted

Site Status: ☐ Awaiting Cleanup ☐ Construction Complete – Performance Monitoring
☐ Cleanup Started ☐ Cleanup Complete – Active O&M/Monitoring
☐ No Further Action Required

Site Manager (Default: Donna Musa): _____

Specific confirmed contaminants include:

_____ in Soil

_____ in Groundwater

_____ in Other (specify matrix: _____)

Facility/Site ID No. (if known):
_____
Cleanup Site ID No. (if known):
_____

COUNTY ASSESSOR INFO:
Please attach to this report a copy of the tax parcel/ownership information for each parcel associated with the site, as well as a parcel map illustrating the parcel boundary and location.

Site Hazard Assessment
Worksheet 1
Summary Score Sheet

Star Laundry

Address:	160 12th Ave, Seattle, WA 98122		
County:	King	Tax Parcel:	392740-0005
Cleanup Site ID:	12676	Latitude:	47.603096
Facility Site ID:	979	Longitude:	-122.316265

This site was assessed for the August 2015 update of the Hazardous Sites List.

Property Description

The former Star Laundry Property is located at 160 12th Avenue in Seattle, WA. The property is 0.24 acres in size and is in a mixed use area. It is located at Parcel 392740-0005. The site is paved with a structure that occupies the 7,416 square feet, or about 70% of the property.

The property began operating as a laundry facility when the building was constructed in approximately 1920. Dry cleaning activities were only conducted for a one year period between 1986 and 1988. The original building was remodeled to serve as a music/ rehearsal studio in 2013.

Site Ownership

From	To	Owner/Operator	Activity
12/12/2008	present	Hamed "Ted" Saedi	Remodeled as a music studio
		City foreclosed property	
10/6/2004	Sometime prior to 12/12/2008	Victoria's properties USA	Unknown

In 2004 the property was sold by Star Laundry. The new owner had several Notices of Violation with the City and the property was foreclosed and sold in auction by King County to the current owner. The current owner remodeled the property as a music/rehearsal studio and leased it.

Property History

On December 2002 eight borings were advanced at locations near the known underground storage tank, a suspected underground storage tank (UST) and the former dry cleaning machine. Total gasoline petroleum hydrocarbons (TPHg) were detected at concentrations of up to 1500 mg/kg at a depth of 12-16 feet below ground surface (bgs). Tetrachloroethylene (PCE) was detected at a concentration of 5,800 ug/kg at a depth of 0-4 ft bgs near the dry cleaning machine. Groundwater samples were not collected at this time.

In 2004 a Supplemental Subsurface Assessment was completed for Windermere Real Estate. This assessment was as a follow up to a Phase I and Phase II conducted at the site in 2002 and 2003, respectively, that identified potential environmental concerns related to an out-of-service dry cleaning machine inside the laundry, two abandoned USTs on the north side of the building and petroleum and solvent contaminated soils beneath the property.

Seven borings and one hand auger boring were advanced to assess subsurface soil and groundwater. No petroleum hydrocarbons were detected during this assessment. Volatile organic compounds (cis-1,2 dichloroethylene [cis-1,2-DCE], trichloroethene [TCE] and PCE) were detected in 7 of the 9 soil samples collected at depths between 8 – 12 feet below ground surface, which is also the depth at which groundwater was encountered. Concentrations of cis-1,2-DCE ranged up to 2,200 ug/kg, TCE ranged up to 1,900 ug/kg and PCE ranged up to 270,000 ug/kg. This investigation indicated that VOC impacted soils were present in the area near the former dry cleaning unit.

Ground water was also sampled at this time from 5 installed wells. An additional two ground water samples were collected from the bottom of the soil borings. The highest concentrations of VOC's detected were cis-1,2-DCE at 4,700 ug/L, vinyl chloride at 3.8ug/L, TCE at 1,500 ug/L and PCE at 16,000 ug/L.

The soil encountered during this investigation was typically silty sand and sandy silt. Peat, wood, debris, clay and gravel layers were also encountered in the borings . Ground water was encountered at depths between 7 and 14 feet bgs. Groundwater elevation data indicated that shallow groundwater flow is to the southeast, consistent with the topography.

In 2014 the property owner hired Conestoga Rovers and Associates to re-sample the existing monitoring wells. Concentrations in the wells are listed below as well as soil concentrations from previous samples.

Petroleum and BTEX Concentrations in Soil

Sample	Depth (feet)	TPH g (mg/kg)	TPH d (mg/kg)	TPH oil (mg/kg)	BTEX (ug/kg)
MTCA Method A		100	2,000	2,000	
P1-S3 (December 2002)	8-12	--	2900	--	NA
P1-S4	12-15	--	160	--	NA
P2-S2 (December 2002)	4-8	--	2700	510	NA
P4-S4 (December 2002)	12-16	--			820 (B) 380 (X)
P5-S2 (only sample analyzed for TPHg and BTEX) (December 2002)		--	2700	200	NA
P5-S3 (December 2002)	8-12	--	310	--	NA

VOC Concentrations in Soil (ug/kg)

Well	Depth (feet)	Cis-1,2 -DCE	TCE	PCE
MTCA Cleanup Level (Method A or Method B including leaching pathway)		80	30	50
P6-S1 /December 2002	0-4	--	--	5800
P7-S1 / December 2002	0-4	--	--	180
SP1A-S1 /January 2004	1-4	100	200	3700
SP1A-S4 / January 2004	13.5-16	180	--	290
SP5-S1 / February 2004	2-4	110	50	1600
SP5-S3 / February 2004	8-12	2200	1900	270000
P9-S1 / February 2004	0-4	65	65	4000
P9-S2 / February 2004	4-8	--	51	3100
HA-1 / February 2004	2.3-2.5	74	--	800

NA = not analyzed

-- = below detection

Groundwater concentrations (ug/L)

Well	TPHg	VC	Cis-1,2 -DCE	TCE	PCE
MTCA Method A	800/1000	0.2	16 (Method B)	5	5
MW-1A / January 2004	--	--	120	22	45
MW-1A / October 2014	--	1.2	30.5	33.9	153
MW-2 /January 2004	--	--	--	--	--
MW-2 / October 2014	--	--	--	--	11.5
MW-3 /January 2004	--	--	--	--	
MW-3 / October 2014	--	--	--	--	23.8
MW-4 / January 2004	--	--	--	--	
MW-4 / October 2014	--	--	--	--	36.8
MW-5 / February 2004	--	3.8	4700	1500	16000
MW-5 / October 2014	6430	(high detection limit)	485	1380	11000
P-9 / February 2004	--	--	7.4	9	81

NA = not analyzed

-- = below detection

Current Site Conditions

Based on the sampling conducted in 2014, contamination remains in the ground water above the cleanup levels. Because no cleanup has been reported, it is assumed that contamination also remains in the soil.

The estimated volume of impacted soil is unknown, however the contamination is assumed to have resulted from leaks and spills from the dry cleaning unit. An estimate of less than 200 gallons has been assumed.

No containment measures are assumed at the site. As a conservative measure it is assumed that the spills occurred directly into the ground.

Geology

Soil boring logs indicate that most of the site is covered by a layer of silty sand beneath the asphalt to depths of 15 (or the bottom of the soil boring) .

Ground Water

Groundwater was encountered at depths between 7 and 14 feet below ground surface. The direction of flow was established during the 2014 sampling event as to the northeast. However, the distribution of the groundwater contamination suggests a northwest flow.

A search within the Department of Ecology's Water Resources Map indicates that there are nearby wells within two miles of the site. Ten of the wells are listed for irrigation purposes and one domestic.

Drinking water in the area is provided by Seattle Public Utilities.

Surface Water

The nearest surface water body is the Puget Sound approximately a mile to the West.

Surrounding Population

The location of the site is an area with a mixed commercial and residential uses. Adjacent properties include a church to the north, a townhouse and duplex to the east, an office building to the south and 160th Avenue to the west. Residential properties are located across 160th Avenue to the West.

There is a park, Horiuchi Park, located approximately 550 feet west of the Site and an Elementary School at less than 1,000 feet south of the Site. A homeless shelter is located about 300 feet southwest of the Site. A Juvenile Detention Center is located about 200 feet north of the site.

Ecological Setting

Most of the property is covered by the building. Nearby properties are mostly covered with asphalt and limited areas are available as potential wildlife habitat.

Horiuchi Park is located 550 feet west of the site.

Special Considerations for Scoring

The detection of very high concentrations of chlorinated solvents in the soils suggests the presence of free product underneath the building. High concentrations of chlorinated solvents in groundwater underneath the building also represent a concern for vapor intrusion. The indoor air exposure pathway may be significant to the tenants in the building and/or downgradient properties.

Of particular concern is exposure to high levels of trichloroethene in the indoor air for pregnant women. Short-term exposure (less than 21 days) to trichloroethylene in indoor air from vapor intrusion has the potential to cause serious heart defects in the developing

fetus. The damage can occur early in pregnancy, possibly before the pregnancy is recognized, and can be caused by relatively low TCE concentrations, similar to those associated with other critical cancer and noncancer effects that are produced after long-term (many years) exposure.

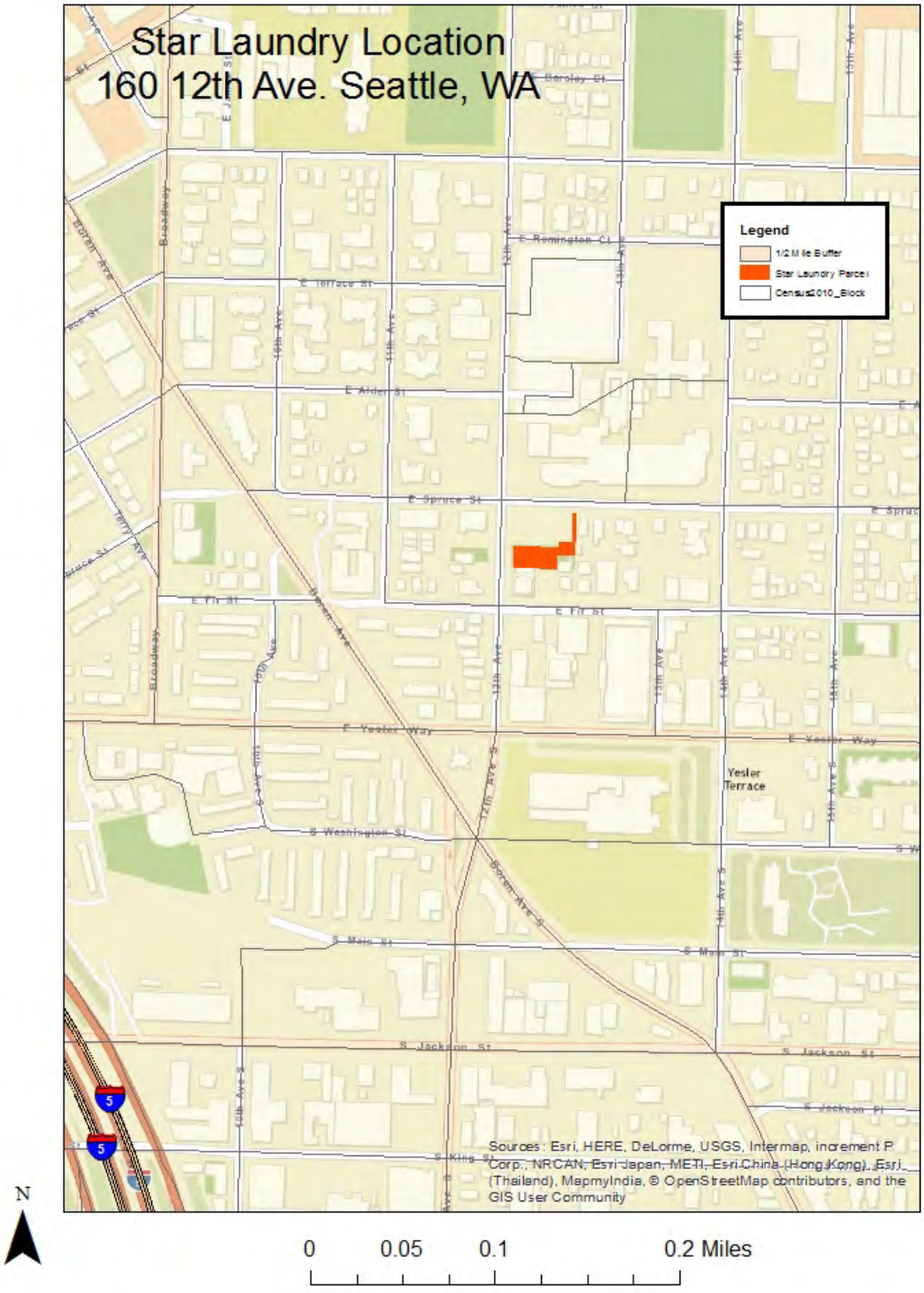
Route Score Summary

Route	Human Health	Environment
Surface Water	NA	
Air	97	10
Groundwater	38	

Overall Rank: 3

References:

1	Ecology. 1992. Toxicology database for use in Washington ranking method scoring. Prepared by: Science Applications International Corporation, Olympia, WA. Prepared for: Washington State Department of Ecology, Olympia, WA. Publ. no. 92-37.
2	King County i-map. Available at: http://gismaps.kingcounty.gov/iMap/.
3	Washington State well log viewer. Available at: https://fortress.wa.gov/ecy/waterresources/map/WCLSWebMap/default.aspx. Washington State Department of Ecology, Olympia, WA.
4	Hart Crowser, *Supplemental Subsurface Assessment Star Laundry*, March 29, 2004. Conestoga-Rovers and Associates, *Groundwater Monitoring Report Fourth Quarter 2014*, January 2015.


Star Laundry Location
160 12th Ave. Seattle, WA
Legend
1/2 Mile Buffer
Star Laundry Parcel
Census2010_Block
Yesler Terrace
Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, © OpenStreetMap contributors, and the GIS User Community
N
0
0.05
0.1
0.2 Miles

Worksheet 2
Route Documentation

Site Name: Star Laundry
CSID: 12676
FSID: 979

1. SURFACE WATER ROUTE – NOT SCORED-

2. AIR ROUTE

Substances Used for Scoring:
PCE, TCE, cis-1,2 DCE, 1,1,2-TCE, Vinyl Chloride and gasoline

Basis for Selection of Substances:
Substances that are volatile and have highest toxicity

Management Units for Scoring:
Soil and groundwater

Basis for Selection of Management Units
Management units were selected based on where the contamination has been identified that can contribute to the air exposure pathway.

3. GROUND WATER ROUTE

Substances Used for Scoring:
PCE, TCE, cis-1,2 DCE, 1,1,2-TCE, Vinyl Chloride and gasoline

Basis for Selection of Substances
Substances with highest toxicity present in groundwater

Management Units for Scoring
Soil and groundwater

Basis for Selection of Management Units
Management unit was selected based on where the contamination has been identified that can migrate to groundwater and also based on actual groundwater results.

WASHINGTON RANKING METHOD

ROUTE SCORE SUMMARY AND RANKING CALCULATION

Site Name: Star Laundry

Site Address: 160 12th Ave. Seattle, WA

CSID: 12676

FSID: 979

Human Health Route Scores

Pathway	Score	Quintile
Surface water	0	
Air	97	5
Ground water	38	3

Quintile	Value
High (H)	5
Middle (M)	3
Low (L)	

Human Health Pathway Quintiles - February 2015

Quintile	Surface Water		Air		Ground Water	
1	<=	6.9	<=	8.4	<=	23.4
2	7.0	14.0	8.5	15.4	23.5	33.1
3	14.1	23.0	15.5	23.7	33.2	40.8
4	23.1	30.6	23.8	37.5	40.9	51.5
5	>=	30.7	>=	37.6	>=	51.6

$(H^2 + 2M + L) / 8$

Human Health Priority Bin Score: 4

Environmental Route Scores

Pathway	Score	Quintile
Surface water	0	
Air	10	2

Quintile	Value
High (H)	2
Low (L)	

Environmental Pathway Quintiles - February 2015

Quintile	Surface Water		Air	
1	<=	10.9	<=	1.5
2	11.0	23.5	1.6	13.9
3	23.6	31.1	14.0	22.4
4	31.2	50.8	22.5	29.8
5	>=	50.9	>=	29.9

$(H^2 + 2L) / 7$

Environmental Priority Bin Score: 1

FINAL MATRIX RANKING

Human Health Priority	Environmental Priority 5	4	3	2	1	n/a
5	1	1	1	1	1	1
4	1	2	2	2	3	2
3	1	2	3	4	4	3
2	2	3	4	4	5	3
1	2	3	4	5	5	5
n/a	3	4	5	5	5	NFA

n/a - not applicable

NFA - no further action

Site Rank: 3

Worksheet 5
Air Route

CSID: 12676

Site: Star Laundry

1.0 SUBSTANCE CHARACTERISTICS

1.1 Introduction

No scoring in Section 1.1.

1.2 Human Toxicity

	Amb. Air Stnd.		Acute Toxicity		Chronic Toxicity		Carcinogenicity	
Substance	Value (ug/m^3)	Score	Value (ug/m^3)	Score	Value (ug/m^3)	Score	CPFi (risk/mg/kg-day	Score
PCE	0.169	10	4000	5	0.0114	5	0.00073	3
TCE	0.5	10	15583	3	0.000571	8	0.0144	5
Vinyl Chloride	0.0128	10	460123	1	0.0286	5	0.031	5
cis-1,2 DCE		X	65000	3				
Gasoline	0.0345	10	31947	3	0.00857	8	0.0273	5
Maximum score:	10							
Bonus points:	2							
Source:	1							
Range:	1-12						Human Toxicity Score:	12

1.3 Mobility

Gaseous Mobility

	Vapor Pressure		Henry's Law	
Substance	Value (mm Hg)	Score	Value (atm-m3/mol)	Score
PCE	18	4	0.0182	4
TCE	58	4	0.0103	4
Vinyl Chloride	2700	4	0.0271	4
cis-1,2 DCE	2100	4	0.00407	4
Gasoline	95	3	0.00556	4
Maximum score:	4			
Source:	1			

Particulate Mobility

Soil type:	silty sand /sandy silt		
Erodibility factor:	86-220		
Climatic factor:	1-10		
Mobility value:	2		
Source:	4		
Range of scores:	0-4	Mobility Score:	4

1.4 Human Toxicity/Mobility

Source:	1		
Range of scores:	1-24	Human Tox/Mobil Score:	24

1.5 Environmental Toxicity/Mobility

Freshwater: X

Marine:

Substance	Acute Value (ug/m^3)	Score
PCE	4000	5
TCE	15583	3
Vinyl Chloride	460123	1
cis-1,2 DCE	65000	3
1,1,2-TCE		
Gasoline	31947	3
Maximum score	5	

Source:	1		
Range of scores:	1-5	Environmental Toxicity Score:	5
		Environmental Tox/Mobil Score:	10

1.6 Substance Quantity

Quantity:	200		
Units:	gallons		
Basis:	Unknown - suspected leaks from dry cleaning equipment		
Source:	Professional judgement		
Range of scores:	1-10	Substance Quantity Score:	1

2.1 Containment

Description:	For vapors, no cover and no collection system		
Source:	Table A9		
Range of scores:	0-10	Containment Score:	10

SUBSTANCE PARAMETER CALCULATIONS

Human Health Pathway

SUBh = (Human Tox/Mobil + 5) x (Containment +1) + Substance Quantity | 320

Environmental Pathway

SUBe = (Environ. Tox/Mobil + 5) x (Containment +1) + Substance Quantity | 166

Worksheet 5 (cont.)
Air Route

CSID: 12676

Site: Star Laundry

3.0 TARGETS

3.1 Nearest Population

Description:	YWCA and Elementary School		
Distance (ft):	660		
Source:	Google Maps		
Range of scores:	0-10	Nearest Population Score:	10

3.2 Nearest Sensitive Environment

Description:	Horiuchi Park		
Distance (ft):	545		
Source:	2		
Range of scores:	0-7	Nearest Sensitive Environment Score:	7

3.3 Population within One-Half Mile

Number:	14,160		
Source:	GIS - 2010 Census		
Range of scores:	0-75	Population within Half Mile Score:	75

TARGET PARAMETER CALCULATIONS

Human Health Pathway

TARh= Nearest Population + Population within Half Mile 85

Environmental Pathway

TARe = Nearest Sensitive Environment 7

Worksheet 5 (cont.)
Air Route

CSID: 12676

Site: Star Laundry

4.0 RELEASE

Evid. of release?	Yes
Source:	4
Range of scores:	0 or 5

Release Score (REL): 5

AIR ROUTE CALCULATIONS

Human Health Pathway

AIRh = (SUBh x 60/329) x {REL + (TARh x 35/85} / 24 — 97

Environmental Pathway

AIRe = (SUBe x 60/329) x {REL + (TARe x 35/85} / 24 — 10

Worksheet 6
Groundwater Route

CSID: 12676
Site: Star Laundry

1.0 SUBSTANCE CHARACTERISTICS

1.1 Human toxicity

Substance	Drink. Wat. Stnd Value (ug/L)	Score	Acute Toxicity Value (ug/L)	Score	Chronic Toxicity Value (ug/L)	Score	Carcinogenicity CPFi (risk/mg/kg-day	Score
PCE	5	8	800	5	0.006	3	0.00168	3
TCE	5	8	2402	3	0.0005	5	0.0464	5
Vinyl Chloride	2	8	500	5	0.003	3	1.5	7
cis-1,2 DCE	70	6		3	0.002	3		
Gasoline	5	8	3306	3	0.0004	3	0.055	5

Maximum score: 8
Bonus points: 2
Source: 1
Range of scores: 1-12

Human Toxicity Score: 10

1.2 Mobility

Substance	Solubility mg/L	Score
PCE	200	2
TCE	1100	3
Vinyl Chloride	2760	3
cis-1,2 DCE	3500	3
1,1,2-TCE		3
Gasoline	1750	3

Maximum value: 3
Source: 1
Range of scores: 1-3

Mobility Score: 3

1.3 Substance quantity

Quantity: 200
Units: gallons
Basis: Unknown - suspected leaks from dry cleaning equipment
Source: Professional judgement
Range of scores: 1-10

Substance Quantity Score: 1

2.1 Containment

Description:	Unknown - suspected leaks from dry cleaning equipment		
Source:	Professional judgement		
Range of scores:	0-10	Containment Score:	10

SUBSTANCE PARAMETER CALCULATION

SUB =	(Human Toxicity + Mobility + 3) x (Containment + 1) + Substance Quantity	177

Worksheet 6 (cont.)
Groundwater Route

CSID: 12676
Site: Star Laundry

2.0 MIGRATION POTENTIAL

2.2 Net precipitation

Amount (in.):	21-30		
Source:	GIS source		
Range of scores:	0-5	Net Precipitation Score:	3

2.3 Subsurface Hydraulic Conductivity

Description:	Sandy Silt and Silty Sand		
Source:	2004 Hart Crowser Report		
Range of scores:	1-4	Hydraulic Conductivity Score:	3

2.4 Vertical Depth to Aquifer

Depth (ft):	7 to 14		
Source:	4		
Range of scores:	1-8	Depth to Aquifer Score:	8

MIGRATION PARAMETER CALCULATION

MIG =	Depth to Aquifer + Net Precipitation + Hydraulic Conductivity	14

Worksheet 6 (cont.)
Groundwater Route

CSID: 12676
Site: Star Laundry

3.0 TARGETS

3.1 Aquifer Usage

Description:	Ground water not used but usable		
Source:	3		
Range of scores:	1-10	Aquifer Use Score:	2

3.2 Distance to Nearest Drinking Water Well

Distance (ft):	5,000 - 10,000		
Source:	3	one well identified on the water resources explorer	
Range of scores:	0-5	Well Distance Score:	1

3.3 Population Served by Drinking Water Wells within Two Miles

Number of people:	3		
Source:	3	Water Resources Explorer (1 domestic well)	
Range of scores:	0-100	Population Served Score:	2

3.4 Area Irrigated by Wells within Two Miles

Area (acres):	7.5		
Source:	3	Water Resources Explorer (see table below)	
Range of scores:	0-50	Area Irrigated Score:	3

TARGET PARAMETER CALCULATION

TAR = Aquifer Use + Well Distance + Population Served + Area Irrigated **7**

Worksheet 6 (cont.)
Groundwater Route

CSID: 12676
Site: Star Laundry

4.0 RELEASE

	Evid. of release?	Yes
	Source:	4
	Range of scores:	0 or 5

Release Score (REL): 5

GROUND WATER ROUTE CALCULATION

GW = (SUB x 40/208) x {(MIG x 25/17) + REL + (TAR x 30/165)} / 24 **38**

APPENDIX D

Adjacent King County East Warehouse Environmental Studies

AMEC Foster Wheeler, 2017

PBS Engineering & Environmental, 2019

Client Draft

PHASE II ENVIRONMENTAL SITE ASSESSMENT

1215 East Fir Street

Seattle, Washington

Prepared for:

Seattle Housing Authority
Seattle, Washington

Prepared by:

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(206) 342-1760

July 2017

Project No. PS1718052G

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PHASE II ENVIRONMENTAL SITE ASSESSMENT
1215 East Fir Street
Seattle, Washington

1.0 INTRODUCTION AND BACKGROUND

This Phase II Environmental Site Assessment (ESA) summarizes the results of a soil and groundwater investigation performed at the King County-owned property at 1215 East Fir Street in Seattle, Washington (the site) on June 14, 2017 Figure 1). Amec Foster Wheeler Environment & Infrastructure, Inc. (Amec Foster Wheeler) was retained by the Seattle Housing Authority (SHA) to determine whether soil or groundwater at the site are affected by constituent of concern associated with historic releases of petroleum and potentially other constituents from either on-site or off-site sources. Amec Foster Wheeler understands that SHA intends to develop the property for residential use after the pending property transaction is complete.

A Phase I ESA was conducted in May 2017 by SoundEarth Strategies, Inc., and no recognized environmental conditions were reported for the site. However, the Phase I ESA indicated that a former gas station, three former dry cleaners, and an existing car maintenance and body work business were located within 250 feet of the site, to the north, west, and northwest. There were also four groundwater monitoring wells installed on the adjacent Seattle Curtain Company property to the west of the site.

2.0 METHODOLOGY

To determine whether off-site contamination has affected the site, soil borings and groundwater sampling locations were selected in a north-south transect along the west side of the current building to capture possible movement onto the site from the north, northwest and west. Boring locations are shown on Figure 2.

We understand that the redevelopment plans require the upper 12 feet of soil to be excavated and disposed of off site. While we were not able to complete borings inside the existing structure, the results of the soil samples should provide a preliminary indication as to whether there are affected soils or groundwater on site. Sections 2.1 through 2.4 describe the work that was performed during the ESA.

2.1 UTILITY AND SUBSURFACE LOCATING

Amec Foster Wheeler staff met Applied Professional Services, Inc. (APS) on site on June 7, 2017. The purpose of the utility survey was to ensure that drilling did not disrupt or damage underground utilities during completion of the borings. APS performed underground utility location services using electromagnetic survey methods.

The utility clearance was helpful in determining the alignment of electrical conduits from the north property boundary to a transformer station located in the middle of the site. In addition, water service and probable locations of gas and additional electrical lines were identified.

2.2 DRILLING

Amec Foster Wheeler staff met Cascade Drilling, Inc. (Cascade Drilling) on site on June 14, 2017. Cascade Drilling advanced a total of six soil borings using a Geoprobe 6600 truck-mounted direct-push drill rig. Locations of the borings are shown on Figure 2. Soil samples were collected from all six borings and groundwater was collected from three of the borings.

Depth to groundwater ranged from approximately 12 to 18 feet below ground surface (bgs) during drilling, except for once instance of perched water near 10 feet bgs. The ground surface is higher at the north end of the property than the south. Borings FIR-01 through FIR-04 were advanced to 15 feet bgs, FIR-05 was advanced to 20 feet bgs, and FIR-06 (the northernmost boring) was advanced to 25 feet bgs.

2.3 SAMPLE COLLECTION AND FIELD INDICATIONS OF CONTAMINATION

Soil samples were collected within the zone where soil transitioned from moist to saturated, which is where total petroleum hydrocarbons (TPH) would be concentrated, if present. Following collection of discrete soil ampules for analysis of volatile organic compounds (VOCs) and TPH-gasoline range hydrocarbons (TPH-G), approximately 3 to 4 inches of soil from the same interval were composited for analyses of TPH-diesel range hydrocarbons (TPH-D), TPH-motor oil range hydrocarbons (TPH-MO), and Resource Conservation and Recovery Act (RCRA) 8 Total Metals. A photoionization detector (PID) was used to screen soils for VOCs from each borehole upon opening of the acetate sample liner and to record headspace readings. Headspace readings were collected by placing a small amount of soil in a plastic bag, sealing it, and waiting for 5 to 10 minutes. The headspace of the plastic bag was then tested using the PID. No contamination was identified based on PID field screening. Sample depths are presented in Table 1. All samples collected and PID readings are shown on the boring logs (Appendix A). None of the soil samples had observable signs of

contamination, such as discoloration or odor. All soil borings were logged in the field by an Amec Foster Wheeler geologist. Boring logs were reviewed by a senior hydrogeologist

2.4 INVESTIGATION-DERIVED WASTE

Investigation-derived waste (soil cuttings contained in two 16-gallon drums, and one other drum for decontamination water) were securely stored on the southwest area of the parking lot. Disposal is being arranged now that the soil results are known.

3.0 SOIL AND GROUNDWATER ANALYTICAL RESULTS

Figure 2 shows the locations of the soil borings. Table 1 lists analytes detected above the reporting limit in the soil samples and Table 2 lists analytes detected above the reporting limit in the groundwater samples. These tables show all detected analytes, even those below the Washington State Department of Ecology (Ecology) Model Toxics Control Act (MTCA) Method A cleanup levels, because prospective construction debris landfills have various acceptance criteria in the range that is between the detection limit and below Method A cleanup levels. Tables B-1 and Table B-2 in Appendix B lists the complete soil and groundwater sample analytical results, and the laboratory results are included as Appendix C.

Soil sample results that were above the MTCA Method A cleanup levels are as follows:

- A soil sample collected from FIR-02 collected from 13 feet bgs contained 3,700 milligrams per kilogram (mg/kg) of TPH-MO, above the MTCA Method A cleanup level of 2,000 mg/kg.

The source of the motor oil in the FIR-02 soil sample is unknown. Since the FIR-02 soil sample was collected at the capillary fringe, there is a possibility that the TPH-MO detected in the sample may be attributable to an off-site source. No other soil results were above the laboratory reporting limits or MTCA Method A cleanup levels.

Groundwater sample results that were above the MTCA Method A cleanup levels are as follows:

- Arsenic was detected at 22.4 micrograms per liter (µg/L) in FIR-01, at 11.8 µg/L in FIR-02 and 126 µg/L in FIR-06 groundwater samples, above the MTCA Method A cleanup level of 5 µg/L.
- Chromium was detected at 1,850 µg/L in the groundwater sample from FIR-06, above the MTCA Method A cleanup level of 50 µg/L.
- Lead was detected at 1,680 µg/L in groundwater sample FIR-06, above the MTCA Method A cleanup level of 15 µg/L.

The FIR-06 groundwater sample was a grab sample collected from 18 to 22 feet in depth. The lead and chromium results for the FIR-06 groundwater sample are unusual, since the concentrations are much higher than background. There are no on-site historic practices that would appear to be responsible for the presence of these metals.

It should be noted that a combined sewer is located within the vacated Mosler Avenue, which is now the alley between the buildings on the site. This combined sewer drains properties to the northwest, including the auto body business at the corner of 12th Avenue and East Fir Street. Leakage from the combined sewer or releases from a neighboring property may have contributed to the metals in groundwater at the FIR-06 location. According to the Phase I ESA, the adjoining property to the west (TD Auto Body) was listed on Ecology's Confirmed and Suspected Contaminated Sites list for lead and petroleum hydrocarbons in soil above cleanup levels.

4.0 SUMMARY AND RECOMMENDATIONS

As based on our discussions with the SHA regarding redevelopment, a single story basement (approximately 12 feet in depth) is anticipated to be constructed. Because the surface elevation of the site varies from north to south by 7–8 feet, it is unclear if the 12-foot depth is a median depth. The affected soils at FIR-02 may be encountered at a depth of 13 feet. We expect the extent of soil affected by TPH-MO to be limited in volume.

If the affected soils surrounding FIR-02 are excavated, it may be difficult to distinguish the presence of TPH-O based solely on field observations. Observable contamination was not seen during completion of the FIR-02 boring. Confirmation samples should be collected at the time of excavation and analyzed with a rapid turnaround time so that the standby time for the excavator is minimized. Costs for transport and disposal of affected soil will depend on the location of the disposal facility.

Prior to the investigation, the depth to water was assumed to be 8–12 feet, based on review of drillers' logs in the immediate vicinity of the site. However, the depth to groundwater was 12 feet at the southern end of the property and approximately 18 feet at the north end of the property. Therefore, the currently proposed depth of excavation for the basement may not require dewatering, based on the observed depths to groundwater during this investigation.

When SHA finalizes the design of the future redevelopment of the site, Amec Foster Wheeler can refine the conclusions regarding soil disposal and dewatering. SHA has expressed that they may prefer to get an opinion letter from Ecology under the Voluntary Cleanup Program. If SHA decides to excavate the soil at FIR-02, it may be possible to get a No Further Action opinion letter from Ecology

in regard to the soil. Review of the file records for TD Auto Body at Ecology's Northwest Regional office may provide additional information that may allow SHA to argue that the affected groundwater at FIR-06 is due to an off-site source.

If it is necessary to review Ecology's files to determine the potential source of the groundwater concentrations at location FIR-06, it may be desirable to see if records exist concerning Seattle Curtain Company's property. A cursory review of Ecology's website records did not indicate that this site has been reported to Ecology, despite the presence of monitoring wells in the parking lot.

5.0 LIMITATIONS

This report was prepared by Amec Foster Wheeler exclusively for the SHA. The quality of information, conclusions, and estimates contained herein is consistent with the level of effort involved in Amec Foster Wheeler services and based on (1) information available at the time of preparation, (2) Phase I ESA data provided to Amec Foster Wheeler by the SHA, and (3) the assumptions, conditions, and qualifications set forth in this report. Environmental impairment of a property may result from many activities, such as illegal or unreported dumping, or the spilling of hazardous wastes or materials. The presence of contaminants at a particular property may not always be apparent, and the completion of the Phase II ESA cannot provide a guarantee that hazardous wastes or materials do not exist, particularly because not all areas of the site could be accessed for investigation. The findings contained herein are relevant to the date of Amec Foster Wheeler's sampling activities and should not be relied upon to represent conditions at later dates. In the event that changes in the nature, usage, or layout of the property or nearby properties are made, the conclusions and recommendations contained in this report may not be valid. If additional information becomes available, it should be provided to Amec Foster Wheeler so the original conclusions and recommendations can be modified as necessary.

This Phase II ESA is intended to be used by the Client for the site located at 1215 East Fir Street in Seattle, Washington, only, subject to the terms and conditions of its contract with Amec Foster Wheeler. Any other use of, or reliance on, this report by any third party is at that party's sole risk. Amec Foster Wheeler has completed this work under the contract terms and conditions presented in Amec Foster Wheeler's Phase II ESA proposal dated April 20, 2017.

TABLES

TABLE 1

ANALYTES DETECTED IN SOIL[1, 2]
1215 East Fir Street
Seattle, Washington

	MTCA Method A Cleanup Level for Unrestricted Land Use	Sample ID and Depth					
		FIR-01 (13.5 feet bgs)	FIR-02 (13 feet bgs)	FIR-03 (10.5 feet bgs)	FIR-04 (10.5 feet bgs)	FIR-05 (12.5 feet bgs)	FIR-06 (15.5 feet bgs)
Constituent							
Total Petroleum Hydrocarbons (mg/kg)							
Diesel range	2,000	50 U	340	50 U	50 U	50 U	50 U
Motor oil	2,000	250 U	**3,700**	250 U	250 U	250 U	250 U
Total Metals (mg/kg)							
Arsenic	30	5.11	2.99	6.32	14.5	4.16	9.05
Barium	NE	37.9	32.8	35.9	95.9	49.1	83.1
Chromium	2,000	15.6	11.4	16.6	27.5	21.9	20.3
Lead	250	1.52	10.4	2.05	3.20	2.82	16.4

Notes:
1. Data qualifiers are as follows:
   U = The analyte was not detected at the reporting limit indicated.
2. **Bold and highlighted** values exceed the screening level.

Abbreviations:
bgs = below ground surface
mg/kg = milligrams per kilogram
MTCA = Model Toxics Control Act

TABLE 2

ANALYTES DETECTED IN GROUNDWATER[1, 2]

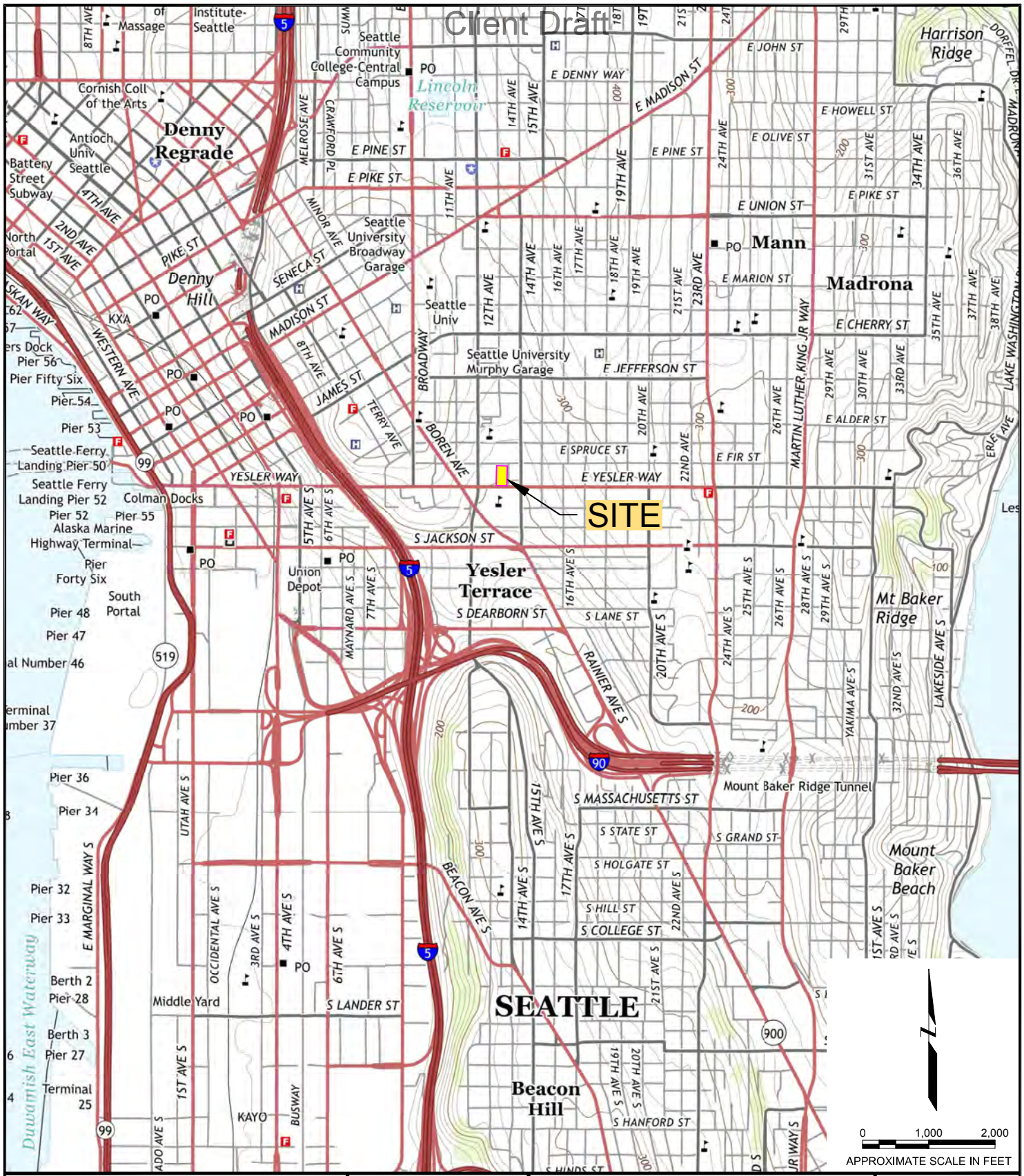
1215 East Fir Street
Seattle, Washington

	MTCA Method A Cleanup Level	Sample ID and Depth		
		FIR-01 (13.5–15 feet bgs)	FIR-03 (10–15 feet bgs)	FIR-06 (15.5–20 feet bgs)
Constituent				
Volatile Organic Compounds (µg/L)				
Acetone	NE	10 U	10 U	13
Chloroform	NE	1 U	1 U	19
Total Petroleum Hydrocarbons (µg/L)				
Diesel range	500	80 U	60 U	150
Total Metals (µg/L)				
Arsenic	5	**22.4**	**11.8**	**126**
Barium	NE	155	106	5,070
Chromium	50	35.2	14.8	**1,850**
Lead	15	4.29	7.00	**1,680**
Selenium	NE	1.69	1 U	10 U

Notes:
1. Data qualifiers are as follows:
   U = The analyte was not detected at the reporting limit indicated.
2. **Bold and highlighted** values exceed the screening level.

Abbreviations:
µg/L = micrograms per liter
bgs = below ground surface
MTCA = Model Toxics Control Act
NE = not established

FIGURES

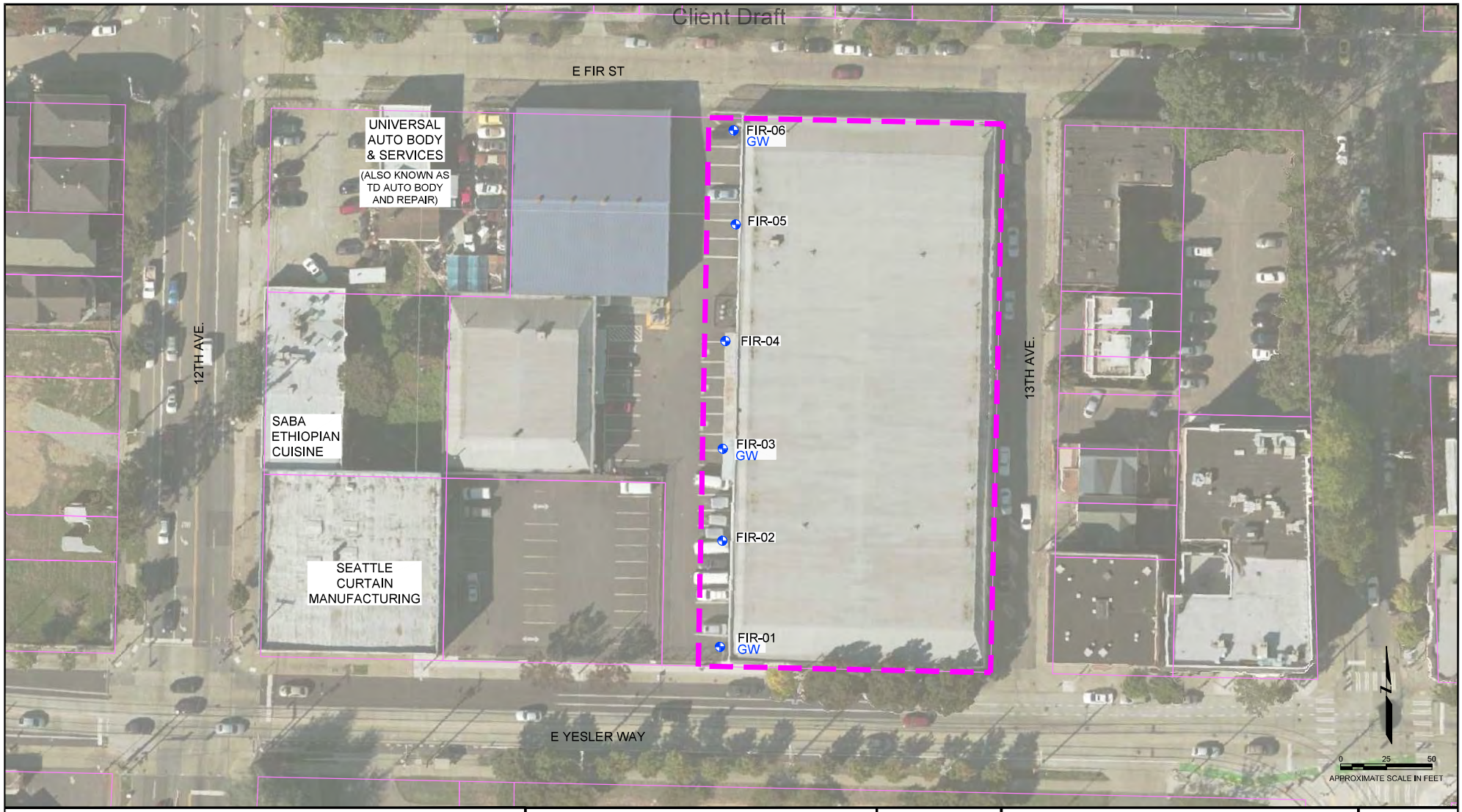


CLIENT Seattle Housing Authority 1215 Fir Street		PROJECT 1215 EAST FIR STREET PHASE II ENVIRONMENTAL SITE ASSESSMENT	DATE JUNE 2017
			SCALE AS SHOWN
Amec Foster Wheeler Environment & Infrastructure, Inc. 600 University Street, Suite 600 Seattle, Washington 98101	amec foster wheeler	TITLE SITE VICINITY	PROJECT NO. PS1718052G
			FIGURE 1

DRAWN BY: APS CHECKED BY: JKH

C:\Users\adam.stenberg\appdata\local\temp\AcPublish_7864\SeattleHousingAuthority_SitePlan_053117.dwg - AFW_8x11_P - Jun. 01, 2017 5:11pm - adam.stenberg

Client Draft



LEGEND

- SOIL SAMPLE LOCATION AND SAMPLE IDENTIFICATION (FIR-03)
- GW GROUNDWATER SAMPLE COLLECTED FROM BORING
- APPROXIMATE SITE BOUNDARY
- PARCEL LINES

CLIENT
Seattle Housing Authority
1215 Fir Street

Amec Foster Wheeler
Environment & Infrastructure, Inc.
600 University Street, Suite 600
Seattle, Washington 98101

PROJECT
1215 EAST FIR STREET PHASE II
ENVIRONMENTAL SITE ASSESSMENT

TITLE
SITE PLAN AND
SOIL AND GROUNDWATER
SAMPLE LOCATIONS

DATE: JULY 2017
SCALE: AS SHOWN
PROJECT NO.: PS1718052G
FIGURE: 2

DRAWN BY: PM CHECKED BY: JKH

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APPENDIX A

Boring Logs

APPENDIX B

Complete Analytical Data Table

TABLE B-1

SOIL ANALYTICAL RESULTS[1]
1215 East Fir Street
Seattle, Washington

	MTCA Method A Screening Level for Unrestricted Land Use	Sample ID and Depth					
		FIR-01 (13.5 feet bgs)	FIR-02 (13 feet bgs)	FIR-03 (10.5 feet bgs)	FIR-04 (10.5 feet bgs)	FIR-05 (12.5 feet bgs)	FIR-06 (15.5 feet bgs)
Constituent							
Volatile Organic Compounds (mg/kg)							
1,1,1,2-Tetrachloroethane	NE	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,1,1-Trichloroethane	2	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,1,2,2-Tetrachloroethane	NE	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,1,2-Trichloroethane	NE	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,1-Dichloroethane	NE	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,1-Dichloroethene	NE	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,1-Dichloropropene	NE	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2,3-Trichlorobenzene	NE	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2,3-Trichloropropane	NE	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2,4-Trichlorobenzene	NE	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2,4-Trimethylbenzene	NE	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2-Dibromo-3-chloropropane	NE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromoethane	0.005	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2-Dichlorobenzene	NE	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2-Dichloroethane	NE	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2-Dichloropropane	NE	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,3,5-Trimethylbenzene	NE	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,3-Dichlorobenzene	NE	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,3-Dichloropropane	NE	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,4-Dichlorobenzene	NE	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
2,2-Dichloropropane	NE	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
2-Butanone	NE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Chlorotoluene	NE	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
2-Hexanone	NE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
4-Chlorotoluene	NE	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Acetone	NE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Benzene	0.03	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Bromobenzene	NE	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U

TABLE B-1

SOIL ANALYTICAL RESULTS[1]
1215 East Fir Street
Seattle, Washington

	MTCA Method A Screening Level for Unrestricted Land Use	Sample ID and Depth					
		FIR-01 (13.5 feet bgs)	FIR-02 (13 feet bgs)	FIR-03 (10.5 feet bgs)	FIR-04 (10.5 feet bgs)	FIR-05 (12.5 feet bgs)	FIR-06 (15.5 feet bgs)
Bromoform	NE	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Bromomethane	NE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon tetrachloride	NE	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
CFC-11	NE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CFC-12	NE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	NE	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Chloroethane	NE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroform	NE	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Chloromethane	NE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene	NE	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
cis-1,3-Dichloropropene	NE	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Dibromochloromethane	NE	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Dibromomethane	NE	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Dichlorobromomethane	NE	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Ethylbenzene	6	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Hexachlorobutadiene	NE	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Hexane	NE	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Isopropylbenzene (Cumene)	NE	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
m, p-Xylene	9	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Methyl isobutyl ketone	NE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl t-butyl ether	0.1	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Methylene chloride	0.02	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Naphthalene	5	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
n-Propylbenzene	NE	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
o-Xylene	9	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
p-Isopropyltoluene	NE	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
sec-Butylbenzene	NE	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Styrene	NE	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
tert-Butylbenzene	NE	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Tetrachloroethene	0.05	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U

TABLE B-1

SOIL ANALYTICAL RESULTS[1]
1215 East Fir Street
Seattle, Washington

	MTCA Method A Screening Level for Unrestricted Land Use	Sample ID and Depth					
		FIR-01 (13.5 feet bgs)	FIR-02 (13 feet bgs)	FIR-03 (10.5 feet bgs)	FIR-04 (10.5 feet bgs)	FIR-05 (12.5 feet bgs)	FIR-06 (15.5 feet bgs)
Toluene	7	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
trans-1,2-Dichloroethene	NE	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
trans-1,3-Dichloropropene	NE	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Trichloroethene	0.03	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Vinyl chloride	NE	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Total Petroleum Hydrocarbons (mg/kg)							
Gasoline Range	100 [2]	2 U	2 U	2 U	2 U	2 U	2 U
Diesel range	2000	50 U	340	50 U	50 U	50 U	50 U
Motor oil	2000	250 U	3,700	250 U	250 U	250 U	250 U
Total Metals (mg/kg)							
Arsenic	20	5.11	2.99	6.32	14.5	4.16	9.05
Barium	NE	37.9	32.8	35.9	95.9	49.1	83.1
Cadmium	2	1 U	1 U	1 U	1 U	1 U	1 U
Chromium	2000[3]	15.6	11.4	16.6	27.5	21.9	20.3
Lead	250	1.52	10.4	2.05	3.20	2.82	16.4
Mercury	2	1 U	1 U	1 U	1 U	1 U	1 U
Selenium	NE	1 U	1 U	1 U	1 U	1 U	1 U
Silver	NE	1 U	1 U	1 U	1 U	1 U	1 U

Notes:
1. Data qualifiers are as follows:
   U = The analyte was not detected at the reporting limit indicated.
2. The cleanup level for gasoline range TPH is 100 mg/kg when benzene is not detected in the soil.
3. The cleanup level for chromium is trivalent chromium.

Abbreviations:
bgs = below ground surface
mg/kg = milligrams per kilogram
MTCA = Model Toxics Control Act
NE = not established

TABLE B-2

GROUNDWATER ANALYTICAL RESULTS[1]

1215 East Fir Street
Seattle, Washington

	MTCA Method A Screening Level	Sample ID and Depth		
		FIR-01 (13.5–15 feet bgs)	FIR-03 (10–15 feet bgs)	FIR-06 (15.5–20 feet bgs)
Constituent				
Volatile Organic Compounds (µg/L)				
1,1,1,2-Tetrachloroethane	NE	1 U	1 U	1 U
1,1,1-Trichloroethane	200	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	NE	1 U	1 U	1 U
1,1,2-Trichloroethane	NE	1 U	1 U	1 U
1,1-Dichloroethane	NE	1 U	1 U	1 U
1,1-Dichloroethene	NE	1 U	1 U	1 U
1,1-Dichloropropene	NE	1 U	1 U	1 U
1,2,3-Trichlorobenzene	NE	1 U	1 U	1 U
1,2,3-Trichloropropane	NE	1 U	1 U	1 U
1,2,4-Trichlorobenzene	NE	1 U	1 U	1 U
1,2,4-Trimethylbenzene	NE	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	NE	10 U	10 U	10 U
1,2-Dibromoethane	0.01	1 U	1 U	1 U
1,2-Dichlorobenzene	NE	1 U	1 U	1 U
1,2-Dichloroethane	5	1 U	1 U	1 U
1,2-Dichloropropane	NE	1 U	1 U	1 U
1,3,5-Trimethylbenzene	NE	1 U	1 U	1 U
1,3-Dichlorobenzene	NE	1 U	1 U	1 U
1,3-Dichloropropane	NE	1 U	1 U	1 U
1,4-Dichlorobenzene	NE	1 U	1 U	1 U
2,2-Dichloropropane	NE	1 U	1 U	1 U
2-Butanone	NE	10 U	10 U	10 U
2-Chlorotoluene	NE	1 U	1 U	1 U
2-Hexanone	NE	10 U	10 U	10 U
4-Chlorotoluene	NE	1 U	1 U	1 U
Acetone	NE	10 U	10 U	13
Benzene	5	0.35 U	0.35 U	0.35 U
Bromobenzene	NE	1 U	1 U	1 U
Bromoform	NE	1 U	1 U	1 U
Bromomethane	NE	1 U	1 U	1 U
Carbon tetrachloride	NE	1 U	1 U	1 U
CFC-11	NE	1 U	1 U	1 U
CFC-12	NE	1 U	1 U	1 U
Chlorobenzene	NE	1 U	1 U	1 U
Chloroethane	NE	1 U	1 U	1 U
Chloroform	NE	1 U	1 U	19
Chloromethane	NE	10 U	10 U	10 U
cis-1,2-Dichloroethene	NE	1 U	1 U	1 U
cis-1,3-Dichloropropene	NE	1 U	1 U	1 U
Dibromochloromethane	NE	1 U	1 U	1 U
Dibromomethane	NE	1 U	1 U	1 U
Dichlorobromomethane	NE	1 U	1 U	1 U
Ethylbenzene	700	1 U	1 U	1 U

TABLE B-2

GROUNDWATER ANALYTICAL RESULTS[1]
1215 East Fir Street
Seattle, Washington

	MTCA Method A Screening Level	Sample ID and Depth		
		FIR-01 (13.5–15 feet bgs)	FIR-03 (10–15 feet bgs)	FIR-06 (15.5–20 feet bgs)
Constituent				
Hexachlorobutadiene	NE	1 U	1 U	1 U
Hexane	NE	1 U	1 U	1 U
Isopropylbenzene (Cumene)	NE	1 U	1 U	1 U
m, p-Xylene	1000	2 U	2 U	2 U
Methyl isobutyl ketone	NE	10 U	10 U	10 U
Methyl t-butyl ether	20	1 U	1 U	1 U
Methylene chloride	5	5 U	5 U	5 U
Naphthalene	160	1 U	1 U	1 U
n-Propylbenzene	NE	1 U	1 U	1 U
o-Xylene	1000	1 U	1 U	1 U
p-Isopropyltoluene	NE	1 U	1 U	1 U
sec-Butylbenzene	NE	1 U	1 U	1 U
Styrene	NE	1 U	1 U	1 U
tert-Butylbenzene	NE	1 U	1 U	1 U
Tetrachloroethene	5	1 U	1 U	1 U
Toluene	1000	1 U	1 U	1 U
trans-1,2-Dichloroethene	NE	1 U	1 U	1 U
trans-1,3-Dichloropropene	NE	1 U	1 U	1 U
Trichloroethene	5	1 U	1 U	1 U
Vinyl chloride	0.2	0.2 U	0.2 U	0.2 U
Total Petroleum Hydrocarbons (µg/L)				
Gasoline Range	1000 [2]	100 U	100 U	100 U
Diesel range	500	80 U	60 U	150
Motor oil	500	400 U	300 U	300 U
Total Metals (µg/L)				
Arsenic	5	22.4	11.8	126
Barium	NE	155	106	5070
Cadmium	5	1 U	1 U	10 U
Chromium	50	35.2	14.8	1850
Lead	15	4.29	7.00	1680
Mercury	2	1 U	1 U	10 U
Selenium	NE	1.69	1 U	10 U
Silver	NE	1 U	1 U	10 U

Notes:
1. Data qualifiers are as follows:
   U = The analyte was not detected at the reporting limit indicated.
2. No benzene was detected in groundwater.

Abbreviations:
µg/L = micrograms per liter
bgs = below ground surface
MTCA = Model Toxics Control Act
NE = not established

APPENDIX C

Laboratory Analytical Data Packages

FRIEDMAN & BRUYA, INC.
Client Draft
ENVIRONMENTAL CHEMISTS

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June 23, 2017

Crystal Thimsen, Project Manager
AMEC Foster Wheeler
One Union Square
600 University Street, Suite 600
Seattle, WA 98101

Dear Ms Thimsen:

Included are the results from the testing of material submitted on June 15, 2017 from the Fir Street, PO PS1718052G, F&BI 706250 project. There are 40 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Melanie Lanier-Kamaha'o
AMC0623R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on June 15, 2017 by Friedman & Bruya, Inc. from the AMEC Foster Wheeler Fir Street, PO PS1718052G, F&BI 706250 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	AMEC Foster Wheeler
706250 -01	FIR-01
706250 -02	FIR-01
706250 -03	FIR-02
706250 -04	FIR-03
706250 -05	FIR-03
706250 -06	FIR-04
706250 -07	FIR-05
706250 -08	FIR-06
706250 -09	FIR-06
706250 -10	Trip Blank

Selenium failed below the acceptance criteria in the 6020A matrix spike sample. The laboratory control samples met the acceptance criteria, therefore the data were due to sample matrix effect.

All quality control requirements were acceptable.

Date of Report: 06/23/17
Date Received: 06/15/17
Project: Fir Street, PO PS1718052G, F&BI 706250
Date Extracted: 06/16/17
Date Analyzed: 06/16/17

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
FIR-01 706250-01	<2	88
FIR-02 706250-03	<2	95
FIR-03 706250-04	<2	88
FIR-04 706250-06	<2	88
FIR-05 706250-07	<2	88
FIR-06 706250-08	<2	87
Method Blank 07-1260 MB	<2	83

Date of Report: 06/23/17
Date Received: 06/15/17
Project: Fir Street, PO PS1718052G, F&BI 706250
Date Extracted: 06/16/17
Date Analyzed: 06/16/17

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 51-134)
FIR-01 706250-02	<100	85
FIR-03 706250-05	<100	85
FIR-06 706250-09	<100	89
Method Blank 07-1259 MB	<100	87

Date of Report: 06/23/17
Date Received: 06/15/17
Project: Fir Street, PO PS1718052G, F&BI 706250
Date Extracted: 06/16/17
Date Analyzed: 06/16/17

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 41-152)
FIR-01 706250-02 1/1.6	<80	<400	97
FIR-03 706250-05 1/1.2	<60	<300	97
FIR-06 706250-09 1/1.2	150 x	<300	101
Method Blank 07-1305 MB	<50	<250	80

Date of Report: 06/23/17
Date Received: 06/15/17
Project: Fir Street, PO PS1718052G, F&BI 706250
Date Extracted: 06/16/17
Date Analyzed: 06/16/17

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 48-168)
FIR-01 706250-01	<50	<250	98
FIR-02 706250-03	340 x	3,700	100
FIR-03 706250-04	<50	<250	99
FIR-04 706250-06	<50	<250	101
FIR-05 706250-07	<50	<250	99
FIR-06 706250-08	<50	<250	98
Method Blank 07-1302 MB	<50	<250	85

Analysis For Total Metals By EPA Method 6020A

Client ID:	FIR-01	Client:	AMEC Foster Wheeler
Date Received:	06/15/17	Project:	Fir Street, PO PS1718052G
Date Extracted:	06/19/17	Lab ID:	706250-02
Date Analyzed:	06/19/17	Data File:	706250-02.055
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	22.4
Barium	155
Cadmium	<1
Chromium	35.2
Lead	4.29
Mercury	<1
Selenium	1.69
Silver	<1

Analysis For Total Metals By EPA Method 6020A

Client ID:	FIR-03	Client:	AMEC Foster Wheeler
Date Received:	06/15/17	Project:	Fir Street, PO PS1718052G
Date Extracted:	06/19/17	Lab ID:	706250-05
Date Analyzed:	06/19/17	Data File:	706250-05.056
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	11.8
Barium	106
Cadmium	<1
Chromium	14.8
Lead	7.00
Mercury	<1
Selenium	<1
Silver	<1

Analysis For Total Metals By EPA Method 6020A

Client ID:	FIR-06	Client:	AMEC Foster Wheeler
Date Received:	06/15/17	Project:	Fir Street, PO PS1718052G
Date Extracted:	06/19/17	Lab ID:	706250-09 x10
Date Analyzed:	06/19/17	Data File:	706250-09 x10.057
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	126
Barium	5,070
Cadmium	<10
Chromium	1,170 J
Lead	1,310 ve
Mercury	<10
Selenium	<10
Silver	<10

Analysis For Total Metals By EPA Method 6020A

Client ID:	FIR-06	Client:	AMEC Foster Wheeler
Date Received:	06/15/17	Project:	Fir Street, PO PS1718052G
Date Extracted:	06/19/17	Lab ID:	706250-09 x100
Date Analyzed:	06/19/17	Data File:	706250-09 x100.068
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Chromium	1,850
Lead	1,680

Analysis For Total Metals By EPA Method 6020A

Client ID:	Method Blank	Client:	AMEC Foster Wheeler
Date Received:	NA	Project:	Fir Street, PO PS1718052G
Date Extracted:	06/19/17	Lab ID:	I7-329 mb
Date Analyzed:	06/19/17	Data File:	I7-329 mb.044
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Barium	<1
Cadmium	<1
Chromium	<1
Lead	<1
Mercury	<1
Selenium	<1
Silver	<1

Analysis For Total Metals By EPA Method 6020A

Client ID:	FIR-01	Client:	AMEC Foster Wheeler
Date Received:	06/15/17	Project:	Fir Street, PO PS1718052G
Date Extracted:	06/16/17	Lab ID:	706250-01
Date Analyzed:	06/16/17	Data File:	706250-01.034
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	5.11
Barium	37.9
Cadmium	<1
Chromium	15.6
Lead	1.52
Mercury	<1
Selenium	<1
Silver	<1

Analysis For Total Metals By EPA Method 6020A

Client ID:	FIR-02	Client:	AMEC Foster Wheeler
Date Received:	06/15/17	Project:	Fir Street, PO PS1718052G
Date Extracted:	06/16/17	Lab ID:	706250-03
Date Analyzed:	06/16/17	Data File:	706250-03.035
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.99
Barium	32.8
Cadmium	<1
Chromium	11.4
Lead	10.4
Mercury	<1
Selenium	<1
Silver	<1

Analysis For Total Metals By EPA Method 6020A

Client ID:	FIR-03	Client:	AMEC Foster Wheeler
Date Received:	06/15/17	Project:	Fir Street, PO PS1718052G
Date Extracted:	06/16/17	Lab ID:	706250-04
Date Analyzed:	06/16/17	Data File:	706250-04.036
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	6.32
Barium	35.9
Cadmium	<1
Chromium	16.6
Lead	2.05
Mercury	<1
Selenium	<1
Silver	<1

Analysis For Total Metals By EPA Method 6020A

Client ID:	FIR-04	Client:	AMEC Foster Wheeler
Date Received:	06/15/17	Project:	Fir Street, PO PS1718052G
Date Extracted:	06/16/17	Lab ID:	706250-06
Date Analyzed:	06/16/17	Data File:	706250-06.037
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	14.5
Barium	95.9
Cadmium	<1
Chromium	27.5
Lead	3.20
Mercury	<1
Selenium	<1
Silver	<1

Analysis For Total Metals By EPA Method 6020A

Client ID:	FIR-05	Client:	AMEC Foster Wheeler
Date Received:	06/15/17	Project:	Fir Street, PO PS1718052G
Date Extracted:	06/16/17	Lab ID:	706250-07
Date Analyzed:	06/16/17	Data File:	706250-07.038
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	4.16
Barium	49.1
Cadmium	<1
Chromium	21.9
Lead	2.82
Mercury	<1
Selenium	<1
Silver	<1

Analysis For Total Metals By EPA Method 6020A

Client ID:	FIR-06	Client:	AMEC Foster Wheeler
Date Received:	06/15/17	Project:	Fir Street, PO PS1718052G
Date Extracted:	06/16/17	Lab ID:	706250-08
Date Analyzed:	06/16/17	Data File:	706250-08.039
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	9.05
Barium	83.1
Cadmium	<1
Chromium	20.3
Lead	16.4
Mercury	<1
Selenium	<1
Silver	<1

Analysis For Total Metals By EPA Method 6020A

Client ID:	Method Blank	Client:	AMEC Foster Wheeler
Date Received:	NA	Project:	Fir Street, PO PS1718052G
Date Extracted:	06/16/17	Lab ID:	I7-326 mb2
Date Analyzed:	06/16/17	Data File:	I7-326 mb2.025
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Barium	<1
Cadmium	<1
Chromium	<1
Lead	<1
Mercury	<1
Selenium	<1
Silver	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	FIR-01	Client:	AMEC Foster Wheeler
Date Received:	06/15/17	Project:	Fir Street, PO PS1718052G
Date Extracted:	06/16/17	Lab ID:	706250-02
Date Analyzed:	06/16/17	Data File:	061620.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	85	117
Toluene-d8	100	91	108
4-Bromofluorobenzene	99	76	126

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	FIR-03	Client:	AMEC Foster Wheeler
Date Received:	06/15/17	Project:	Fir Street, PO PS1718052G
Date Extracted:	06/16/17	Lab ID:	706250-05
Date Analyzed:	06/16/17	Data File:	061621.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	85	117
Toluene-d8	101	91	108
4-Bromofluorobenzene	99	76	126

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	FIR-06	Client:	AMEC Foster Wheeler
Date Received:	06/15/17	Project:	Fir Street, PO PS1718052G
Date Extracted:	06/16/17	Lab ID:	706250-09
Date Analyzed:	06/16/17	Data File:	061622.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	85	117
Toluene-d8	102	91	108
4-Bromofluorobenzene	99	76	126

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	13	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	19	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Trip Blank	Client:	AMEC Foster Wheeler
Date Received:	06/15/17	Project:	Fir Street, PO PS1718052G
Date Extracted:	06/16/17	Lab ID:	706250-10
Date Analyzed:	06/16/17	Data File:	061618.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	85	117
Toluene-d8	100	91	108
4-Bromofluorobenzene	99	76	126

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	AMEC Foster Wheeler
Date Received:	Not Applicable	Project:	Fir Street, PO PS1718052G
Date Extracted:	06/16/17	Lab ID:	07-1283 mb
Date Analyzed:	06/16/17	Data File:	061617.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	85	117
Toluene-d8	101	91	108
4-Bromofluorobenzene	100	76	126

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	FIR-01	Client:	AMEC Foster Wheeler
Date Received:	06/15/17	Project:	Fir Street, PO PS1718052G
Date Extracted:	06/19/17	Lab ID:	706250-01
Date Analyzed:	06/19/17	Data File:	061911.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	62	142
Toluene-d8	105	55	145
4-Bromofluorobenzene	102	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	FIR-02	Client:	AMEC Foster Wheeler
Date Received:	06/15/17	Project:	Fir Street, PO PS1718052G
Date Extracted:	06/19/17	Lab ID:	706250-03
Date Analyzed:	06/19/17	Data File:	061912.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	62	142
Toluene-d8	106	55	145
4-Bromofluorobenzene	100	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	FIR-03	Client:	AMEC Foster Wheeler
Date Received:	06/15/17	Project:	Fir Street, PO PS1718052G
Date Extracted:	06/19/17	Lab ID:	706250-04
Date Analyzed:	06/19/17	Data File:	061913.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	62	142
Toluene-d8	107	55	145
4-Bromofluorobenzene	100	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	FIR-04	Client:	AMEC Foster Wheeler
Date Received:	06/15/17	Project:	Fir Street, PO PS1718052G
Date Extracted:	06/19/17	Lab ID:	706250-06
Date Analyzed:	06/19/17	Data File:	061914.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	62	142
Toluene-d8	106	55	145
4-Bromofluorobenzene	99	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	FIR-05	Client:	AMEC Foster Wheeler
Date Received:	06/15/17	Project:	Fir Street, PO PS1718052G
Date Extracted:	06/19/17	Lab ID:	706250-07
Date Analyzed:	06/19/17	Data File:	061915.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	106	55	145
4-Bromofluorobenzene	98	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	FIR-06	Client:	AMEC Foster Wheeler
Date Received:	06/15/17	Project:	Fir Street, PO PS1718052G
Date Extracted:	06/19/17	Lab ID:	706250-08
Date Analyzed:	06/19/17	Data File:	061916.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	107	55	145
4-Bromofluorobenzene	101	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	AMEC Foster Wheeler
Date Received:	Not Applicable	Project:	Fir Street, PO PS1718052G
Date Extracted:	06/19/17	Lab ID:	07-1285 mb
Date Analyzed:	06/19/17	Data File:	061908.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	106	55	145
4-Bromofluorobenzene	101	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Date of Report: 06/23/17
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Project: Fir Street, PO PS1718052G, F&BI 706250

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 706250-01 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet Wt)	Duplicate Result (Wet Wt)	RPD (Limit 20)
Gasoline	mg/kg (ppm)	<2	<2	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	mg/kg (ppm)	20	80	71-131

Date of Report: 06/23/17
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Project: Fir Street, PO PS1718052G, F&BI 706250

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 706226-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	96	69-134

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Project: Fir Street, PO PS1718052G, F&BI 706250

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	93	99	63-142	6

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QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 706252-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	85	87	73-135	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	83	74-139

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Project: Fir Street, PO PS1718052G, F&BI 706250

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020A

Laboratory Code: 706267-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	1.18	108	111	75-125	3
Barium	ug/L (ppb)	50	39.0	102	105	75-125	3
Cadmium	ug/L (ppb)	5	<1	103	106	75-125	3
Chromium	ug/L (ppb)	20	1.96	105	107	75-125	2
Lead	ug/L (ppb)	10	1.67	97	97	75-125	0
Mercury	ug/L (ppb)	5	<1	102	104	75-125	2
Selenium	ug/L (ppb)	5	<1	100	103	75-125	3
Silver	ug/L (ppb)	5	<1	101	103	75-125	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	107	80-120
Barium	ug/L (ppb)	50	105	80-120
Cadmium	ug/L (ppb)	5	105	80-120
Chromium	ug/L (ppb)	20	106	80-120
Lead	ug/L (ppb)	10	106	80-120
Mercury	ug/L (ppb)	5	106	80-120
Selenium	ug/L (ppb)	5	100	80-120
Silver	ug/L (ppb)	5	108	80-120

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 6020A

Laboratory Code: 706245-08 x5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	<5	78	76	75-125	3
Barium	mg/kg (ppm)	50	255	62 b	66 b	75-125	6 b
Cadmium	mg/kg (ppm)	10	<5	85	84	75-125	1
Chromium	mg/kg (ppm)	50	12.6	76	76	75-125	0
Lead	mg/kg (ppm)	50	7.67	81	81	75-125	0
Mercury	mg/kg (ppm	5	<5	83	82	75-125	1
Selenium	mg/kg (ppm)	5	<5	71 vo	77	75-125	8
Silver	mg/kg (ppm)	10	<5	76	77	75-125	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	102	80-120
Barium	mg/kg (ppm)	50	108	80-120
Cadmium	mg/kg (ppm)	10	105	80-120
Chromium	mg/kg (ppm)	50	103	80-120
Lead	mg/kg (ppm)	50	104	80-120
Mercury	mg/kg (ppm)	5	108	80-120
Selenium	mg/kg (ppm)	5	94	80-120
Silver	mg/kg (ppm)	10	96	80-120

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 706264-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	50	<1	123	55-137
Chloromethane	ug/L (ppb)	50	<10	101	61-120
Vinyl chloride	ug/L (ppb)	50	<0.2	114	61-139
Bromomethane	ug/L (ppb)	50	<1	127	20-265
Chloroethane	ug/L (ppb)	50	<1	105	55-149
Trichlorofluoromethane	ug/L (ppb)	50	<1	119	71-128
Acetone	ug/L (ppb)	250	<10	99	48-149
1,1-Dichloroethene	ug/L (ppb)	50	<1	102	71-123
Hexane	ug/L (ppb)	50	<1	105	44-139
Methylene chloride	ug/L (ppb)	50	<5	104	61-126
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<1	103	68-125
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	101	72-122
1,1-Dichloroethane	ug/L (ppb)	50	<1	103	79-113
2,2-Dichloropropane	ug/L (ppb)	50	<1	105	48-157
cis-1,2-Dichloroethene	ug/L (ppb)	50	<1	102	63-126
Chloroform	ug/L (ppb)	50	<1	100	77-117
2-Butanone (MEK)	ug/L (ppb)	250	<10	104	70-135
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	105	70-119
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	100	75-121
1,1-Dichloropropene	ug/L (ppb)	50	<1	101	67-121
Carbon tetrachloride	ug/L (ppb)	50	<1	106	70-132
Benzene	ug/L (ppb)	50	<0.35	103	75-114
Trichloroethene	ug/L (ppb)	50	<1	102	73-122
1,2-Dichloropropane	ug/L (ppb)	50	<1	100	80-111
Bromodichloromethane	ug/L (ppb)	50	<1	105	78-117
Dibromomethane	ug/L (ppb)	50	<1	99	73-125
4-Methyl-2-pentanone	ug/L (ppb)	250	<10	103	79-140
cis-1,3-Dichloropropene	ug/L (ppb)	50	<1	108	76-120
Toluene	ug/L (ppb)	50	<1	97	73-117
trans-1,3-Dichloropropene	ug/L (ppb)	50	<1	101	75-122
1,1,2-Trichloroethane	ug/L (ppb)	50	<1	99	81-116
2-Hexanone	ug/L (ppb)	250	<10	103	74-127
1,3-Dichloropropane	ug/L (ppb)	50	<1	97	80-113
Tetrachloroethene	ug/L (ppb)	50	<1	100	72-113
Dibromochloromethane	ug/L (ppb)	50	<1	106	69-129
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	<1	100	79-120
Chlorobenzene	ug/L (ppb)	50	<1	99	75-115
Ethylbenzene	ug/L (ppb)	50	<1	101	66-124
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	<1	101	76-130
m,p-Xylene	ug/L (ppb)	100	<2	101	63-128
o-Xylene	ug/L (ppb)	50	<1	100	64-129
Styrene	ug/L (ppb)	50	<1	100	56-142
Isopropylbenzene	ug/L (ppb)	50	<1	100	74-122
Bromoform	ug/L (ppb)	50	<1	107	49-138
n-Propylbenzene	ug/L (ppb)	50	<1	98	65-129
Bromobenzene	ug/L (ppb)	50	<1	101	70-121
1,3,5-Trimethylbenzene	ug/L (ppb)	50	<1	100	60-138
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	<1	100	79-120
1,2,3-Trichloropropane	ug/L (ppb)	50	<1	101	62-125
2-Chlorotoluene	ug/L (ppb)	50	<1	102	40-159
4-Chlorotoluene	ug/L (ppb)	50	<1	100	76-122
tert-Butylbenzene	ug/L (ppb)	50	<1	106	74-125
1,2,4-Trimethylbenzene	ug/L (ppb)	50	<1	100	59-136
sec-Butylbenzene	ug/L (ppb)	50	<1	97	69-127
p-Isopropyltoluene	ug/L (ppb)	50	<1	101	64-132
1,3-Dichlorobenzene	ug/L (ppb)	50	<1	98	77-113
1,4-Dichlorobenzene	ug/L (ppb)	50	<1	95	75-110
1,2-Dichlorobenzene	ug/L (ppb)	50	<1	97	70-120
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	<10	99	69-129
1,2,4-Trichlorobenzene	ug/L (ppb)	50	<1	99	66-123
Hexachlorobutadiene	ug/L (ppb)	50	<1	96	53-136
Naphthalene	ug/L (ppb)	50	<1	96	60-145
1,2,3-Trichlorobenzene	ug/L (ppb)	50	<1	97	59-130

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	50	125	129	50-157	3
Chloromethane	ug/L (ppb)	50	103	106	62-130	3
Vinyl chloride	ug/L (ppb)	50	116	121	70-128	4
Bromomethane	ug/L (ppb)	50	129	133	62-188	3
Chloroethane	ug/L (ppb)	50	106	110	66-149	4
Trichlorofluoromethane	ug/L (ppb)	50	118	124	70-132	5
Acetone	ug/L (ppb)	250	101	101	44-145	0
1,1-Dichloroethene	ug/L (ppb)	50	103	106	75-119	3
Hexane	ug/L (ppb)	50	105	105	51-153	0
Methylene chloride	ug/L (ppb)	50	103	106	63-132	3
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	100	107	70-122	7
trans-1,2-Dichloroethene	ug/L (ppb)	50	102	104	76-118	2
1,1-Dichloroethane	ug/L (ppb)	50	102	104	77-119	2
2,2-Dichloropropane	ug/L (ppb)	50	103	106	62-141	3
cis-1,2-Dichloroethene	ug/L (ppb)	50	101	104	76-119	3
Chloroform	ug/L (ppb)	50	100	103	78-117	3
2-Butanone (MEK)	ug/L (ppb)	250	104	100	49-147	4
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	103	104	78-114	1
1,1,1-Trichloroethane	ug/L (ppb)	50	100	104	80-116	4
1,1-Dichloropropene	ug/L (ppb)	50	102	104	78-119	2
Carbon tetrachloride	ug/L (ppb)	50	105	109	72-128	4
Benzene	ug/L (ppb)	50	102	103	75-116	1
Trichloroethene	ug/L (ppb)	50	103	104	72-119	1
1,2-Dichloropropane	ug/L (ppb)	50	100	101	79-121	1
Bromodichloromethane	ug/L (ppb)	50	104	106	76-120	2
Dibromomethane	ug/L (ppb)	50	99	101	79-121	2
4-Methyl-2-pentanone	ug/L (ppb)	250	102	100	54-153	2
cis-1,3-Dichloropropene	ug/L (ppb)	50	106	105	76-128	1
Toluene	ug/L (ppb)	50	97	98	79-115	1
trans-1,3-Dichloropropene	ug/L (ppb)	50	100	99	76-128	1
1,1,2-Trichloroethane	ug/L (ppb)	50	97	97	78-120	0
2-Hexanone	ug/L (ppb)	250	100	97	49-147	3
1,3-Dichloropropane	ug/L (ppb)	50	96	95	81-115	1
Tetrachloroethene	ug/L (ppb)	50	100	102	78-109	2
Dibromochloromethane	ug/L (ppb)	50	106	107	63-140	1
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	99	97	82-118	2
Chlorobenzene	ug/L (ppb)	50	99	100	80-113	1
Ethylbenzene	ug/L (ppb)	50	101	103	83-111	2
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	101	106	76-125	5
m,p-Xylene	ug/L (ppb)	100	101	103	84-112	2
o-Xylene	ug/L (ppb)	50	101	104	81-117	3
Styrene	ug/L (ppb)	50	99	101	83-121	2
Isopropylbenzene	ug/L (ppb)	50	100	104	81-122	4
Bromoform	ug/L (ppb)	50	106	106	40-161	0
n-Propylbenzene	ug/L (ppb)	50	99	102	81-115	3
Bromobenzene	ug/L (ppb)	50	99	102	80-113	3
1,3,5-Trimethylbenzene	ug/L (ppb)	50	101	105	83-117	4
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	100	102	79-118	2
1,2,3-Trichloropropane	ug/L (ppb)	50	101	102	74-116	1
2-Chlorotoluene	ug/L (ppb)	50	102	106	79-112	4
4-Chlorotoluene	ug/L (ppb)	50	100	102	80-116	2
tert-Butylbenzene	ug/L (ppb)	50	108	113	81-119	5
1,2,4-Trimethylbenzene	ug/L (ppb)	50	101	104	81-121	3
sec-Butylbenzene	ug/L (ppb)	50	98	102	83-123	4
p-Isopropyltoluene	ug/L (ppb)	50	102	106	81-122	4
1,3-Dichlorobenzene	ug/L (ppb)	50	98	101	80-115	3
1,4-Dichlorobenzene	ug/L (ppb)	50	96	97	77-112	1
1,2-Dichlorobenzene	ug/L (ppb)	50	98	102	79-115	4
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	99	101	62-133	2
1,2,4-Trichlorobenzene	ug/L (ppb)	50	99	104	75-119	5
Hexachlorobutadiene	ug/L (ppb)	50	97	100	70-116	3
Naphthalene	ug/L (ppb)	50	97	102	72-131	5
1,2,3-Trichlorobenzene	ug/L (ppb)	50	98	103	74-122	5

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 706250-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	2.5	<0.5	57	10-142
Chloromethane	mg/kg (ppm)	2.5	<0.5	84	10-126
Vinyl chloride	mg/kg (ppm)	2.5	<0.05	88	10-138
Bromomethane	mg/kg (ppm)	2.5	<0.5	91	10-163
Chloroethane	mg/kg (ppm)	2.5	<0.5	102	10-176
Trichlorofluoromethane	mg/kg (ppm)	2.5	<0.5	108	10-176
Acetone	mg/kg (ppm)	12.5	<0.5	104	10-163
1,1-Dichloroethene	mg/kg (ppm)	2.5	<0.05	108	10-160
Hexane	mg/kg (ppm)	2.5	<0.25	98	10-137
Methylene chloride	mg/kg (ppm)	2.5	<0.5	113	10-156
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	<0.05	108	21-145
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	115	14-137
1,1-Dichloroethane	mg/kg (ppm)	2.5	<0.05	111	19-140
2,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	119	10-158
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	114	25-135
Chloroform	mg/kg (ppm)	2.5	<0.05	116	21-145
2-Butanone (MEK)	mg/kg (ppm)	12.5	<0.5	114	19-147
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	114	12-160
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	<0.05	115	10-156
1,1-Dichloropropene	mg/kg (ppm)	2.5	<0.05	112	17-140
Carbon tetrachloride	mg/kg (ppm)	2.5	<0.05	118	9-164
Benzene	mg/kg (ppm)	2.5	<0.03	111	29-129
Trichloroethene	mg/kg (ppm)	2.5	<0.02	113	21-139
1,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	115	30-135
Bromodichloromethane	mg/kg (ppm)	2.5	<0.05	120	23-155
Dibromomethane	mg/kg (ppm)	2.5	<0.05	115	23-145
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	<0.5	110	24-155
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	122	28-144
Toluene	mg/kg (ppm)	2.5	<0.05	99	35-130
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	112	26-149
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	<0.05	102	10-205
2-Hexanone	mg/kg (ppm)	12.5	<0.5	99	15-166
1,3-Dichloropropane	mg/kg (ppm)	2.5	<0.05	103	31-137
Tetrachloroethene	mg/kg (ppm)	2.5	<0.025	102	20-133
Dibromochloromethane	mg/kg (ppm)	2.5	<0.05	115	28-150
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	<0.05	104	28-142
Chlorobenzene	mg/kg (ppm)	2.5	<0.05	103	32-129
Ethylbenzene	mg/kg (ppm)	2.5	<0.05	103	32-137
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	109	31-143
m,p-Xylene	mg/kg (ppm)	5	<0.1	104	34-136
o-Xylene	mg/kg (ppm)	2.5	<0.05	101	33-134
Styrene	mg/kg (ppm)	2.5	<0.05	103	35-137
Isopropylbenzene	mg/kg (ppm)	2.5	<0.05	101	31-142
Bromoform	mg/kg (ppm)	2.5	<0.05	117	21-156
n-Propylbenzene	mg/kg (ppm)	2.5	<0.05	98	23-146
Bromobenzene	mg/kg (ppm)	2.5	<0.05	101	34-130
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	97	18-149
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	97	28-140
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	<0.05	95	25-144
2-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	98	31-134
4-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	99	31-136
tert-Butylbenzene	mg/kg (ppm)	2.5	<0.05	99	30-137
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	99	10-182
sec-Butylbenzene	mg/kg (ppm)	2.5	<0.05	98	23-145
p-Isopropyltoluene	mg/kg (ppm)	2.5	<0.05	99	21-149
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	101	30-131
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	98	29-129
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	100	31-132
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	<0.5	100	11-161
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	102	22-142
Hexachlorobutadiene	mg/kg (ppm)	2.5	<0.25	102	10-142
Naphthalene	mg/kg (ppm)	2.5	<0.05	97	14-157
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	104	20-144

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	2.5	18	20	10-146	11
Chloromethane	mg/kg (ppm)	2.5	49	54	27-133	10
Vinyl chloride	mg/kg (ppm)	2.5	47	54	22-139	14
Bromomethane	mg/kg (ppm)	2.5	62	68	38-114	9
Chloroethane	mg/kg (ppm)	2.5	63	72	10-163	13
Trichlorofluoromethane	mg/kg (ppm)	2.5	58	64	10-196	10
Acetone	mg/kg (ppm)	12.5	86	98	52-141	13
1,1-Dichloroethene	mg/kg (ppm)	2.5	69	77	47-128	11
Hexane	mg/kg (ppm)	2.5	46	50	43-142	8
Methylene chloride	mg/kg (ppm)	2.5	87	92	42-132	6
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	85	93	60-123	9
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	82	89	67-127	8
1,1-Dichloroethane	mg/kg (ppm)	2.5	84	89	68-115	6
2,2-Dichloropropane	mg/kg (ppm)	2.5	78	86	52-170	10
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	89	95	72-113	7
Chloroform	mg/kg (ppm)	2.5	91	98	66-120	7
2-Butanone (MEK)	mg/kg (ppm)	12.5	93	106	57-123	13
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	91	98	56-135	7
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	87	93	62-131	7
1,1-Dichloropropene	mg/kg (ppm)	2.5	82	89	69-128	8
Carbon tetrachloride	mg/kg (ppm)	2.5	85	93	60-139	9
Benzene	mg/kg (ppm)	2.5	86	93	68-114	8
Trichloroethene	mg/kg (ppm)	2.5	89	98	64-117	10
1,2-Dichloropropane	mg/kg (ppm)	2.5	91	99	72-127	8
Bromodichloromethane	mg/kg (ppm)	2.5	95	104	72-130	9
Dibromomethane	mg/kg (ppm)	2.5	93	101	70-120	8
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	90	103	45-145	13
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	93	103	75-136	10
Toluene	mg/kg (ppm)	2.5	78	84	66-126	7
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	87	95	72-132	9
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	83	91	75-113	9
2-Hexanone	mg/kg (ppm)	12.5	81	92	33-152	13
1,3-Dichloropropane	mg/kg (ppm)	2.5	84	92	72-130	9
Tetrachloroethene	mg/kg (ppm)	2.5	79	86	72-114	8
Dibromochloromethane	mg/kg (ppm)	2.5	90	98	74-125	9
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	83	93	74-132	11
Chlorobenzene	mg/kg (ppm)	2.5	83	90	76-111	8
Ethylbenzene	mg/kg (ppm)	2.5	82	90	64-123	9
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	86	95	69-135	10
m,p-Xylene	mg/kg (ppm)	5	83	90	78-122	8
o-Xylene	mg/kg (ppm)	2.5	82	90	77-124	9
Styrene	mg/kg (ppm)	2.5	84	92	74-126	9
Isopropylbenzene	mg/kg (ppm)	2.5	81	90	76-127	11
Bromoform	mg/kg (ppm)	2.5	88	100	56-132	13
n-Propylbenzene	mg/kg (ppm)	2.5	79	86	74-124	8
Bromobenzene	mg/kg (ppm)	2.5	83	89	72-122	7
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	79	86	76-126	8
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	77	86	56-143	11
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	77	86	61-137	11
2-Chlorotoluene	mg/kg (ppm)	2.5	80	86	74-121	7
4-Chlorotoluene	mg/kg (ppm)	2.5	79	87	75-122	10
tert-Butylbenzene	mg/kg (ppm)	2.5	80	87	73-130	8
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	80	87	76-125	8
sec-Butylbenzene	mg/kg (ppm)	2.5	79	87	71-130	10
p-Isopropyltoluene	mg/kg (ppm)	2.5	80	88	70-132	10
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	81	89	75-121	9
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	79	87	74-117	10
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	83	90	76-121	8
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	79	93	58-138	16
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	84	92	64-135	9
Hexachlorobutadiene	mg/kg (ppm)	2.5	82	91	50-153	10
Naphthalene	mg/kg (ppm)	2.5	80	90	63-140	12
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	84	92	63-138	9

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

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

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

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

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

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

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

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

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

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

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

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

706250

SAMPLE CHAIN OF CUSTODY

ME 06-15-17 VS1/NW1/AI4/A03

Page # _____ of _____

Report To Crystal Thiessen and Meilani Lanier-Kamahele
Company Amec Foster Wheeler
Address 1600 University St. #600
City, State, ZIP Seattle WA 98101
Phone _____ Email _____

SAMPLERS (signature) Meilani Lanier Kamahele
PROJECT NAME: FR Street
~~PO~~ Reference: PS17180526
REMARKS
INVOICE TO

TURNAROUND TIME
☒ Standard Turnaround
☐ RUSH _____
Rush charges authorized by: _____

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Archive Samples
☐ Other _____

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM	RCRA 8 Total metal				Notes
FR-01	01 A-E	6/14/17	0915	S	5		X	X		X			X				
FR-01	02 A-F	6/14/17	0935	W	6		X	X		X			X				
FR-02	03 A-E	6/14/17	1045	S	5		X	X		X			X				
FR-03	04 A-E	6/14/17	1120	S	5		X	X		X			X				
FR-03	05 A-E	6/14/17	1140	W	6		X	X		X			X				
FR-04	06 A-E	6/14/17	1225	S	5		X	X		X			X				
FR-05	07-A-E	6/14/17	1300	S	5		X	X		X			X				
FR-06	08 A-E	6/14/17	1350	S	5		X	X		X			X				
FR-06	09-A-F	6/14/17	1530	W	6+3		X	X		X			X				Samples received at 2°C
TRIP BLANK	10 A-B	6/14/17	—	W	2					X							

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: Meilani Lanier Kamahele	Meilani Lanier-Kamahele	Amec Foster Wheeler	6/15/17	1425
Received by: Dero	DO UO	FBI	6-15-17	14.25
Relinquished by:				
Received by:				

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

Client Draft

Subsurface Investigation Report

1215 E Fir Street
Seattle, Washington
King County Assessor's Parcel 8061000045

Prepared for:
Big Village, LLLP
C/O: Seattle Chinatown International District Preservation and Development Authority (SCIDpda)
PO Box 3302
Seattle, WA 98114

September 24, 2019
PBS Project No. 41593.000

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FIGURES

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APPENDICES

1.0 INTRODUCTION

PBS Engineering and Environmental, Inc. (PBS) is pleased to submit this Subsurface Investigation Report to Big Village, LLLP and the Seattle Chinatown International District Preservation and Development Authority (SCIDpda) summarizing environmental subsurface investigation activities related to the planned redevelopment of King County Assessor's Parcel 8061000045 located at 1215 E Fir Street in Seattle, Washington (the Site/Property).

PBS understands that the single-story warehouse structure totaling approximately 40,000 square feet will be razed to give way to construction of a new residential housing development.

1.1 Site Description and Topography

The site is located in the northeast quarter of Section 5, Township 24 North, Range 4 East of the Willamette Base and Meridian (W.M.) (Figure 1). The site is currently developed with a single-story warehouse used for public records storage by King County Archives and Records Center. The site slopes to the southeast (Refer to Figure 2 for site layout).

2.0 REGIONAL GEOLOGY AND HYDROGEOLOGY

The Property is located in the Puget Lowland physiographic province of Washington. This province is a basin which is bordered to the east by the Cascade Mountains and to the west by the Olympic Mountains. The Puget Sound Basin was partially filled with thick accumulations of sand, gravel, and till by at least four separate periods of glaciation within the past two million years. Periods of glaciation were followed by lacustrine, alluvial, and marine deposition of clay, silt, sand, gravel, and peat.

According to the Geologic Map of Washington – Northwest Quadrant (Washington Division of Geology and Earth Resources, 2002), 1:250,000 scale, the site is underlain by Pleistocene-aged glacial drift deposited as an end or recessional moraine.

The closest surface water to the site is Elliott Bay, an inlet of the greater Puget Sound, located approximately 1.1-miles to the west. Lake Washington is located 1.5-miles to the east of the Property.

3.0 BACKGROUND

In May 2017, SoundEarth Strategies, Inc. performed a Phase I Environmental Site Assessment (ESA) for the Property. No recognized environmental conditions were reported in the Phase I ESA, however, a former gas station, three former dry cleaners, and an existing car maintenance facility were located within 250 feet of the Property in the upgradient direction with respect to groundwater flow.

A Phase II ESA was performed for the Property by Amec Foster Wheeler Environment & Infrastructure, Inc. (Amec) in July 2017. During the Phase II ESA, the following contaminants were discovered in Site soil and/or groundwater in exceedance of cleanup levels:

- Total Petroleum Hydrocarbons (TPH) in the motor oil range (TPH-MO) were detected in soil near the western property boundary at a concentration in exceedance of the Washington State Department of Ecology's (Ecology's) Method A Cleanup Levels for unrestricted land use (Cleanup Levels, see section 7). The soil sample in which TPH-MO was detected was collected from within the capillary fringe. Thus, there is a possibility that the TPH-MO may be attributable to an offsite source.

- Metals (arsenic, chromium, and lead) concentrations were reported in exceedance of cleanup levels in groundwater in the northwest corner of the Property. Additionally, arsenic was detected in groundwater in exceedance of cleanup levels in various locations along the western property boundary.

In addition to the soil and groundwater contamination described above, Amec noted the following environmental concerns associated with the Property:

- At the time the Amec Phase II report was issued, files relating to environmental concerns at the adjacent TD Auto Body and Seattle Curtain Manufacturing Co. properties located at 1209 E Fir Street and 104 12th Ave, respectively, were not available on Ecology's online database. The report noted that review of records for adjacent properties may provide additional information suggesting that impacted groundwater at the Property is a result of an offsite source.
- A combined sewer is located within the vacated Mosler Avenue, which is now the alley between the Property and west adjacent properties. The combined sewer drains properties to the northwest, including several current and former auto body shops and dry cleaners. Leakage from the sewer in combination with releases at nearby properties may have contributed to groundwater contamination at the Property.
- The Phase II report noted that the Phase I ESA for the Property reported that the TD Auto Body site was listed on Ecology's Confirmed and Suspected Contaminated Sites list for lead and petroleum hydrocarbons in soil above cleanup levels.

4.0 REGULATORY FILE REVIEW

Since the issuance of the 2017 Phase II ESA report and the scoping of this investigation, documents relating to the environmental investigation and cleanup of the TD Autobody and Seattle Curtain Manufacturing Co. properties were uploaded to Ecology's online database. PBS reviewed the associated database listing (Facility Site ID: 2501, Cleanup Site ID: 2666) which provides information for 104 -124 12th Avenue (including the Seattle Curtain Manufacturing Co. Site as well as a former dry cleaner) and 1209 E Fir Street (TD Auto Body). For the purposes of this report, the four parcels, King County parcel numbers 8061000005, 8061000015, 8061000025 and 8061000035, associated with the TD Autobody Cleanup Site listing will be referred to as the west adjacent properties.

The following environmental concerns at the west adjacent properties were noted as possible contributing factors to Site environmental concerns:

- Tetrachloroethene (PCE), trichloroethene (TCE), and vinyl chloride (VC) concentrations were detected in groundwater in exceedance of cleanup levels near the property boundary between the Property and the west adjacent properties. PCE is a common dry-cleaning solvent. TCE and VC are degradational products of PCE.
- Total petroleum hydrocarbons in the gasoline, diesel, and motor oil ranges have been detected in exceedance of cleanup levels in groundwater throughout the west adjacent properties.
- Benzene was detected in groundwater in the northwest portion of the west adjacent properties in exceedance of cleanup levels.
- Naphthalene, bromodichloromethane, and chloroform were detected in sub-slab soil vapor samples in exceedance of Cleanup Levels in the southwest corner of the west adjacent properties. No other portions of the west adjacent properties were evaluated for sub-slab soil vapors.
- Lead was detected in soil in exceedance of the cleanup level in one location on the west adjacent properties. Groundwater samples collected at the west adjacent properties were not analyzed for metals.

5.0 SITE INVESTIGATION

The subsurface investigation was completed to delineate the extent of known contamination in soil and groundwater at the Property and to evaluate the possibility of migration of offsite contaminants in groundwater onto the Property from west adjacent properties.

5.1 Drilling Investigation

Prior to beginning the drilling investigation, PBS filed a public utility notification request. On July 3, 2019, PBS supervised a private utility locating company, Applied Professional Services of North Bend, WA, while they conducted borehole clearance for subsurface obstructions.

The drilling and sampling program included the advancement of seven soil borings (BH-01 through BH-07) for collection of soil samples and grab groundwater samples. Soil borings were advanced on July 23 and 24, 2019 by Holt Services of Edgewood, Washington under the direction of a PBS geologist. The borings were completed with a track mounted direct-push drilling rig. Six of the seven soil borings were located indoors within the warehouse that occupied the property at the time of the investigation. Due to limited access to certain locations, a small track rig was mobilized on the second day of drilling to facilitate drilling in the limited access locations. The small track rig was unable to reach the proposed depth of exploration due to drilling refusal.

The following table provides justification for selection of boring locations and proposed vs. achieved depths:

Boring ID	Proposed Depth (feet bgs)	Achieved Depth (feet bgs)	Temporary Well Construction	Groundwater sample collected?	Objective
BH-01	20	20	Temporary well screened from 15-20 feet bgs	Yes	Delineate metals in groundwater in former boring FIR-06
BH-02					
BH-03	30	30	Temporary wells screened from 13-18 and 24-29 feet bgs	Yes	Investigate impacts to groundwater from combined sewer and west adjacent properties
BH-04	20	20	Temporary well screened from 15-20 feet bgs	Yes	Delineate motor oil in soil in former boring FIR-02
BH-05	20	7	None	No	Investigate eastern property boundary for environmental concerns and offsite impacts
BH-06	20	8	Expendable tip screened 16-20 feet bgs	Yes	Delineate motor oil in soil in former boring FIR-02
BH-07	20	12	None	No	

bgs – below ground surface (measured from top of slab within warehouse)

Soils from each boring were logged continuously, noting grain size, density, color, odor, and moisture. During the advancement of boreholes, soil was screened for volatiles using a hand-held photoionization detector (PID). PID readings were taken at one-foot intervals by partially filling a sealable plastic bag and taking headspace readings within the bag.

Refer to Figure 2: Site Plan for boring locations. Boring logs describing the subsurface lithology, sample depths, and PID readings are presented in Appendix A.

5.2 Groundwater Sampling

Groundwater was encountered in five out of seven on-site borings in sufficient volumes for sample collection. In borings in which the full depth of exploration was reached, temporary well screens were installed in the open boring for the collection of grab groundwater samples. Boring BH-03 was advanced to a depth of 18 feet below ground surface (bgs), a temporary well screen was installed from 13 to 18 feet bgs, and a shallow groundwater sample was collected. The temporary well screen was then removed, and boring BH-03 was advanced beyond the initial 18-foot depth to a total depth of 30 feet bgs. A new temporary well screen was installed in the boring from 25 to 30 feet bgs, and a deeper groundwater sample was collected. Groundwater samples were collected from BH-03 at multiple depths to target lighter than water contaminants (TPH) in the shallow water sample and typically heavier than water contaminants (VOCs) in the deeper water sample. An expendable tip was pushed beyond the depth of drilling refusal at BH-06 to facilitate the collection of groundwater samples. The expendable tip is a smaller diameter than the direct push drilling rods and can typically reach greater depths than those achieved with typical direct push drill tooling. Once the desired depth was achieved with the expendable tip, the smaller diameter rods were pulled up, exposing a temporary stainless-steel well screen allowing collection of a groundwater sample. An attempt to push an expendable tip was made at BH-05, however, refusal was encountered at the same depth of drilling refusal in boring BH-05.

Groundwater samples were collected using a peristaltic pump and dedicated disposable tubing from the temporary polyvinyl chloride (PVC) well screens placed in open borings and stainless-steel well screens exposed using the expendable tip technique.

5.3 Laboratory Analysis

Soil and groundwater samples were collected directly into laboratory-supplied containers, placed on ice in a cooler, and transported under chain-of-custody documentation. Samples were submitted on July 25, 2019 to Friedman and Bruya, Inc. in Seattle, WA, a State of Washington Department of Ecology (Ecology) accredited laboratory. Samples were submitted for the following analyses and analytical methods:

- Diesel range Total Petroleum Hydrocarbons (TPH-D) by method NWTPH-Dx
- Gasoline range Total Petroleum Hydrocarbons (TPH-G) by method NWTPH-Gx
- Volatile organic compounds (VOCs) by United States Environmental Protection Agency (EPA) method 8260
- Metals by EPA method 6010/6020

Additionally, one sample of artificial fill material was submitted for analysis of Polycyclic Aromatic Hydrocarbons (PAHs) by EPA Method 8270 SIM.

6.0 INVESTIGATION-DERIVED WASTES

Gloves, tubing, and other disposable field supplies were disposed of as municipal solid waste. Soil cuttings, purged groundwater, and decontamination water were placed in one 55-gallon drum, which is sealed, labeled, and stored on site pending disposal.

7.0 APPLICABLE REGULATIONS AND CLEANUP STANDARDS

Contaminated site assessment and cleanup is conducted in accordance with the substantive requirements of the Model Toxics Control Act (MTCA), Chapter 70.105D of the Revised Code of Washington (RCW) and its implementation regulations, Chapter 173-340 of the Washington Administrative Code (WAC).

Site assessment and cleanup (if applicable) has been and will continue to be performed under MTCA. This section summarizes the cleanup standards established for this site.

7.1 Soil and Groundwater Cleanup Standards

In accordance with MTCA, development of preliminary cleanup levels includes identifying potential exposure pathways for human and ecological impacts based on the planned land use. MTCA provides for three methods (Method A, B, or C) for establishing cleanup standards. Method A (unrestricted land use) is typically used as the default standard levels. Methods B and C are used when developing site-specific cleanup levels.

Considering the current land use and future land use as a multi-unit residential dwelling, MTCA Method A Cleanup Levels (Cleanup Levels) for unrestricted land use are adopted as screening levels at this time. Method A Cleanup Levels for soil and groundwater are presented in Tables 1 and 2, along with the contaminant concentrations.

8.0 FINDINGS

8.1 Groundwater Elevation

In the northwest portion of the Property, groundwater was first encountered between 14.5 to 17.5 feet bgs and stabilized at depths between 4.5 and 7 feet bgs. In the southwest portion of the Property, groundwater was first encountered at 15 feet bgs and stabilized at 10 feet bgs.

Depth to groundwater site-wide is estimated to be approximately 5 to 10 feet below the top of slab in the existing warehouse structure. Given the duration and sequence of the drilling investigation, sufficient time was not available to allow water levels to stabilize in all borings for simultaneous depth to water measurements. Therefore, detailed interpretation of groundwater elevations and flow direction cannot be made based on the findings of this investigation.

8.2 Soil Profile

A typical subsurface profile encountered on-site is presented below:

Typical Subsurface Profile

Classification	Description	Approximate Depth Range (feet bgs)
Asphalt/Concrete	Asphalt slab (exterior borings) Concrete slab (interior borings)	0.0 to 0.66
Sand and silt	Silty Sand / Sandy Silt with gravel (SM); brown; poorly graded clay, silt, sand and gravel mixture; brown to gray brown; medium dense; [Fill].	0.66 to 13
Sandy Silt	Saturated brown to yellow brown Silt (ML) with fine to medium sand; low plasticity.	13 to 30+

Graphic boring logs are provided in Appendix A.

8.3 Soil Analytical Results

TPH and VOC constituents were not detected in the soil samples with concentrations at or above laboratory reporting limits. Carcinogenic PAHs (cPAHs) and metals were detected in soil samples at concentrations below cleanup levels.

Soil analytical results are presented in Table 1. Toxicity equivalence calculations for cPAHs are presented in Appendix B. A copy of the laboratory reports and chain of custody documentation is included in Appendix C.

8.4 Groundwater Analytical Results

Arsenic was detected in groundwater samples from each location explored with concentrations exceeding Cleanup Levels in all locations explored. Lead and chromium were also detected in groundwater in exceedance of Cleanup Levels in two and three out of seven locations explored, respectively.

TPH-D was detected with a reported concentration below the Cleanup Level in the shallow groundwater sample collected from boring BH-03. BH-03 was located outside and adjacent to the western property boundary.

VOCs were not detected above laboratory reporting limits in groundwater samples with the following exception: chloromethane was detected in the groundwater sample collected from boring BH-04. No Cleanup Level has been established for this chemical.

Groundwater analytical results are presented in Table 2. A copy of the laboratory reports and chain of custody documentation is included in Appendix C.

9.0 CONCLUSIONS

9.1 Conclusions

A summary of the findings of the subsurface investigation are presented below:

Metals in Groundwater

Groundwater across the property contains levels of metals, namely arsenic, chromium, and lead, at concentrations in exceedance of Cleanup Levels. Past uses of the Property do not indicate an on-site source of these constituents. The metal concentrations are present site-wide, including in locations adjacent to the upgradient property boundaries, and are suspected to be the result of background or an offsite source. Given that groundwater in the area is not a current or proposed resource (for drinking water or otherwise), the metals in groundwater at the Property are not expected to impact the proposed land use.

Metals in groundwater are likely to present disposal restrictions or considerations for water generated as a result of construction dewatering at the Site.

Metals concentrations detected in groundwater samples from this investigation were significantly lower than those detected in the previous 2017 investigation conducted by Amec. This may be a result of decreasing concentrations over time, or due to the influence of sediment in previous grab groundwater samples creating a biased high concentration of total metals concentrations in groundwater.

VOCs

VOCs were not detected in the soil or groundwater samples collected during this investigation, with the exception of chloromethane. The sample locations included samples collected downgradient from locations with previously identified VOC contamination at the west adjacent properties. Chloromethane does not have an established Cleanup Level, and is not a common solvent used in dry-cleaning operations. The detection of chloromethane is not expected to impact regulatory compliance or proposed future land uses.

VOCs in groundwater do not appear to be migrating onto the Property at the time of this investigation. VOC plumes are known to impact the regional water table at several properties in the neighborhood, including the west adjacent properties and the 160 12th Avenue property located approximately 200 feet upgradient from the Property. VOCs have also been detected in exceedance of Cleanup Levels in sub-slab soil vapor samples collected at the west adjacent properties. Based on this information and the shallow depth to water on-site, PBS recommends consideration of a vapor intrusion evaluation and inclusion of a vapor barrier in future building design.

TPH-HO in Soil and Groundwater

TPH-HO was detected in boring FIR-02, located near the western portion of the property, in exceedance of the respective Cleanup Level during the 2017 investigation. TPH-HO was not detected in soil samples collected from borings surrounding FIR-02. Thus, the TPH-HO contamination in soil appears to be limited to a lateral extent of 50 feet or less.

TPH-HO in soil will likely require removal and offsite disposal during site grading and construction. The volume of TPH-HO impacted soil requiring removal from the Property is estimated to be less than 1,000 bank cubic yards based on the results of this investigation. TPH-HO was detected in the shallow groundwater sample collected from boring BH-03, albeit below the Cleanup Level. While remediation of

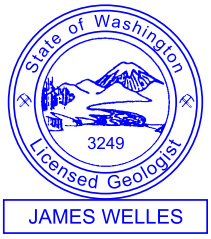
TPH-HO in groundwater is not required for regulatory compliance, the contaminant is likely to present disposal restrictions for water generated as a result of construction dewatering in the area.

10.0 LIMITATIONS

PBS has prepared this report for use by Big Village, LLLP and SCIDpda. This report is for the exclusive use of the client and is not to be relied upon by other parties. It is not to be photographed, photocopied, or similarly reproduced, in total or in part, without the expressed written consent of the client and PBS.

This study was limited to the tests, locations, and depths as indicated to determine the absence or presence of certain contaminants. The findings and conclusions of this report are not scientific certainties but, rather, are probabilities based on professional judgment concerning the significance of the data gathered during this investigation. PBS is not able to represent that the site or adjoining land contain no hazardous substances or other latent conditions beyond that detected or observed by PBS.

Sincerely,
PBS Engineering and Environmental Inc.



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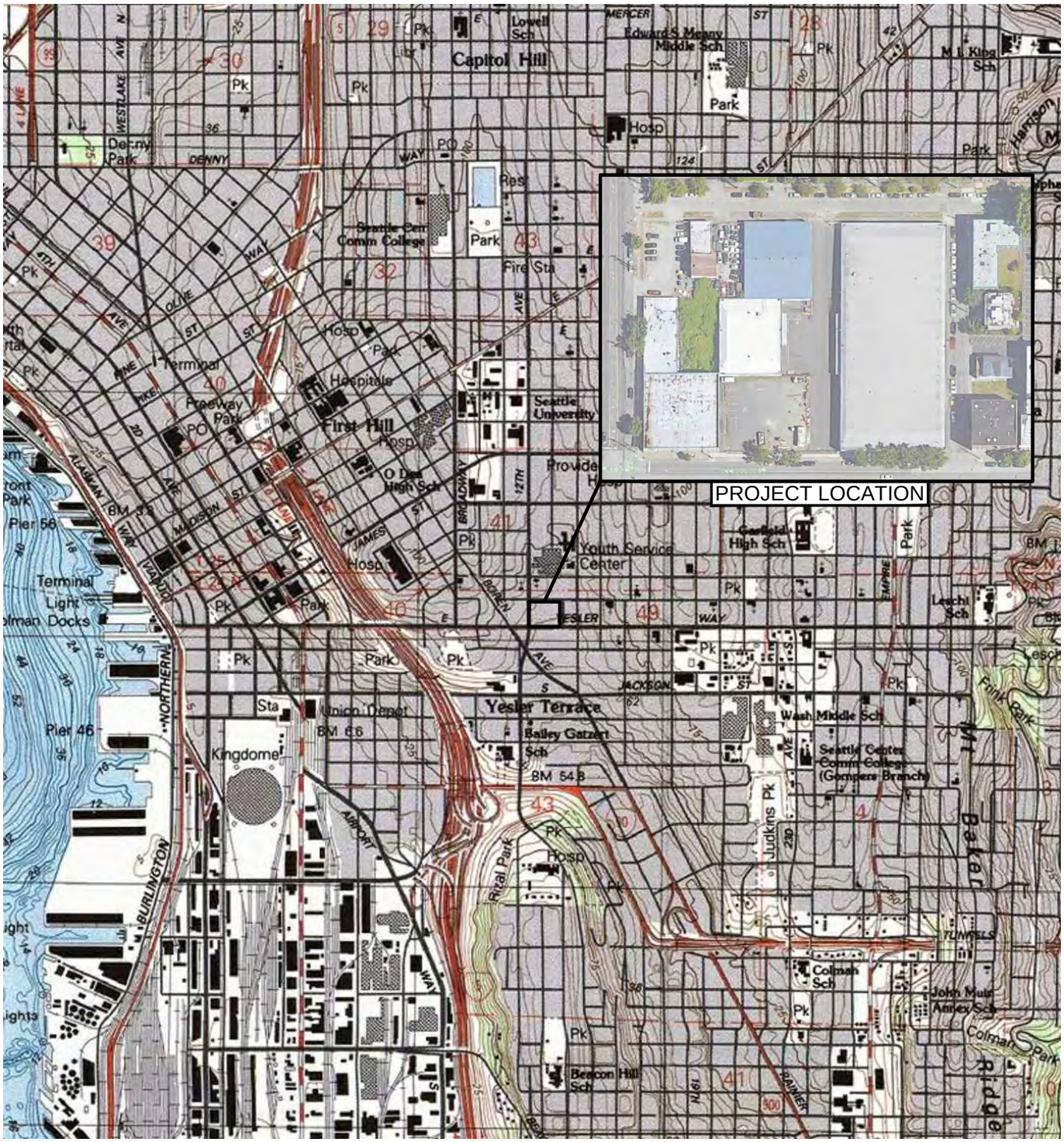
Senior Geologist

FIGURES



SOURCE: USGS SEATTLE SOUTH E, WA QUADRANGLE 1978, PHOTO REVISED 1983.

WASHINGTON

Scale 1" = 2000'

0' 1000' 2000' 4000'

PREPARED FOR: BIG VILLAGE LLLP

PBS

VICINITY MAP

1215 EAST FIR STREET
SEATTTLE, WASHINGTON

SEP 2019
41593.000

FIGURE
1

Filename: L:\Projects\41000\41593 Big Village LLLP\41593.000 East Fir Street Subsurface Characterization Svcs\DWG\41593.000_Fig_1-2.dwg Layout Tab: VICINITY MAP User: Katie Breyman CAD Plot Date/Time: 8/8/2019 9:42:06 AM

SOURCE: © 2019 GOOGLE EARTH PRO

LEGEND

- FIR-01 SOIL BORING (AMEC, 2017)
- BH-01 SOIL BORING (PBS, 2019)
- FENCELINE

Scale 1" = 80'

0' 40' 80' 160'

PREPARED FOR: BIG VILLAGE LLLP

SITE PLAN

1215 EAST FIR STREET
SEATTTLE, WASHINGTON

SEP 2019
41593.000

FIGURE
2

Filename: L:\Projects\41000\41593 Big Village LLLP\41593.000 East Fir Street Subsurface Characterization Svcs\DWG\41593.000_Fig_1-2.dwg Layout Tab: SITE PLAN User: Katie Breyman CAD Plot Date/Time: 8/9/2019 2:51:33 PM

TABLES

TABLE 1: SOIL ANALYTICAL RESULTS

Site: 1215 E Fir Street
Project No: 41593.000

Soil Boring-depth	BH-01-10	BH-02-09	BH-03-15	BH-04-15	BH-05-02	BH-05-07	BH-06-05	BH-07-12	**MTCA Method A Cleanup Level**
Description	Native	Fill	Native	Native	Fill	Fill	Fill	Native	
Subsurface Investigation Conducted July 23-24, 2019									
TPHs	Results in mg/Kg								
Gasoline	<5	<5	<5	<5	<5	<5	<5	<5	100
Diesel	<50	<50	<50	<50	<50	<50	<50	<50	2,000
Heavy Oil	<250	<250	<250	<250	<250	<250	<250	<250	2,000
VOCs									
Benzene	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.03
Toluene	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	7
Ethyl Benzene	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	6
Xylene	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	9
PCE	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.05
Other VOCs	ND	ND	ND	ND	ND	ND	ND	ND	NE
cPAHs[a]	---	---	---	---	0.034	---	---	---	0.1
Metals									
Arsenic	8.76	5.42	3.73	12.10	3.29	5.07	5.71	5.38	20
Barium	62.70	89.50	56.60	83.40	77.90	75.30	94.70	67.70	NE
Cadmium	<1	<1	<1	<1	<1	<1	<1	<1	2
Chromium	30.4	32.80	22.70	31.70	21.50	34.30	38.90	26.90	2,000
Lead	2.71	3.14	2.12	4.99	23.20	2.94	5.41	2.19	250
Mercury	<1	<1	<1	<1	<1	<1	<1	<1	2
Selenium	<1	<1	<1	<1	<1	<1	<1	<1	NE
Silver	<1	<1	<1	<1	<1	<1	<1	<1	2

[a] cPAHs - carcinogenic polycyclic aromatic hydrocarbons calculated by toxicity equivalence per WAC 173-340-900
Gasoline - gasoline range total petroleum hydrocarbons analyzed by Method NWTPH-Gx
Diesel - diesel range total petroleum hydrocarbons analyzed by Method NWTPH-Dx, method includes reporting TPH in heavy oil range
Metals analyzed by US EPA Method 6020B.
PAHs - polycyclic aromatic hydrocarbons analyzed by US EPA Method 8270 SIM
VOCS - volotile organic compounds analyzed by US EPA Method 8260B
BOLD indicates above MTCA Method A Cleanup Levels for Soil
MTCA - Washington State Department of Ecology Model Toxic Control Act
mg/kg - miligrams per kilogram
PCE - tetracholoethylene
TPH - total petroleum hydrocarbons
ND- Not detected at various reporting limits
NE - Not established
<50 - less than a laboratory reporting limit of 50
- not analyzed

TABLE 2 : GROUNDWATER ANALYTICAL RESULTS

Site: 1215 E Fir Street
Project No: 41593.000

Location-depth	BH-01W	BH-02W	BH-03WA	BH-03WB	BH-04W	BH-06W	**MTCA Method A Cleanup Levels**
Grab groundwater samples collected July 23-24, 2019							
TPHs	Results in µg/L						
Gasoline	<100	<100	<100	<100	<100	<100	800
Diesel	<50	<50	110	<50	<50	<50	500
Heavy Oil	<250	<250	<250	<250	<250	<250	500
VOCs							
Benzene	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	5
Toluene	<1	<1	<1	<1	1.3	<1	1,000
Ethyl Benzene	<1	<1	<1	<1	<1	<1	700
Xylene	<3	<3	<3	<3	<3	<3	1,000
PCE	<1	<1	<1	<1	<1	<1	5
Chloro-methane	<10	<10	<10	<10	40	<10	NE
Other VOCs	ND	ND	ND	ND	ND	ND	NE
Metals							
Arsenic	**14.8**	**17.7**	**61.5**	**11.7**	**11.6**	**63.4**	**5**
Barium	82	287	690	173	181	1,690	NE
Cadmium	<1	<1	<1	<1	<1	2.58	5
Chromium	10	**80.2**	**187**	37.2	36.9	**610**	**50**
Lead	1.41	9.79	**19.1**	3.97	4.6	**40.3**	**15**
Mercury	<1	<1	<1	<1	<1	<1	2
Selenium	<1	<1	2.22	1.33	<1	5.40	NE
Silver	<1	<1	<1	<1	<1	<1	2

Gasoline - gasoline range hydrocarbons analyzed by Method NWTPH-Gx

Diesel - diesel range hydrocarbons analyzed by Method NWTPH-Dx, method includes reporting TPH in the heavy oil range

Metals analyzed by US EPA Method 6020B

VOCs - volatile organic compounds analyzed by US EPA Method 8260B

BOLD indicates above MTCA Method A Cleanup Levels for Groundwater

ND - not detected at various laboratory reporting limits

NE - not established

MTCA - Washington State Department of Ecology Model Toxic Control Act

PCE - Tetrachloroethylene

TPH - total petroleum hydrocarbons

µg/L - micrograms per litre

<50 - less than a laboratory reporting limit of 50

APPENDIX A

Soil Boring Logs

PBS

SCIDPDA
1215 E FIR STREET, SEATTLE, WA

PBS PROJECT NUMBER:
41593.000

BORING BH-01

BORING BH-1 LOCATION:
(See Site Plan)

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	GROUND-WATER	PID (PPM)	SAMPLE NUMBER	SAMPLE/ TEMPORARY WELL(S)	RECOVERY (%)	COMMENTS/ WELL INSTALLATION
0.0		Concrete						
		Silty SAND (SM); gray brown; dense; damp; 40% fines; 5% subangular fine gravel; medium to coarse sand; [FILL].		0.0				
2.0				0.0			70	
		Sandy SILT (ML); brown with gray and orange mottling; medium stiff; damp; 10% subrounded fine gravel; 40% fine to medium sand; medium plasticity; [FILL].	7/24/19 13:29	0.0				
4.0				0.0				
				0.0				
6.0				0.0				
				0.0			100	
8.0				0.0				
		Silty SAND (SM); brown; medium dense; damp; 10% subrounded fine gravel; 30% fines; medium sand; [FILL].		0.0	BH-01-10			
10.0		Sany SILT (ML); brown; medium stiff; moist; 50% fine to medium sand; trace subangular fine gravel; low plasticity.		0.0				
				0.0				
12.0				0.0			100	
				0.0				
14.0		Silty SAND (SM); brown; medium dense; moist; 40% fines; 10% subrounded to subangular fine gravel; fine to coarse sand.		0.0				
16.0			7/23/19 11:49	0.0				Temporary well screen installed from 15 to 20 feet to collect groundwater sample
				0.0			100	
18.0				0.0				
				0.0				
20.0		Boring terminated at 20 feet at 11:47 on 7/23/2019.		0.0				
22.0								
24.0								

BORING METHOD: Direct Push
DRILLED BY: Holt Services
BORING BIT DIAMETER: 2.25 in

LOGGED BY: J. Welles, LG
COMPLETED: 7/23/19

BORING LOG-ENV CORE BH_01THRU07.GPJ DATATMPL.GDT PRINT DATE: 8/21/19 JW

PBS

SCIDPDA
1215 E FIR STREET, SEATTLE, WA

PBS PROJECT NUMBER:
41593.000

BORING BH-02

BORING BH-2 LOCATION:
(See Site Plan)

DEPTH FEET	MATERIAL DESCRIPTION	GROUND-WATER	PID (PPM)	SAMPLE NUMBER	SAMPLE/ TEMPORARY WELL(S)	RECOVERY (%)	COMMENTS/ WELL INSTALLATION
0.0	Concrete						
	Sandy SILT (ML); brown; medium stiff; damp; 40% fine to medium sand; trace subrounded fine gravel; low plasticity; [FILL].					0	
2.0							
4.0						90	
6.0		7/24/19 13:31	0.0				
			0.0				
8.0			0.0				
			0.5	BH-02-09			
10.0	Silty SAND (SM); brown; loose; wet; fine to coarse sand; 25% fines; trace subangular fine gravel; [FILL].		0.2				
			0.0			100	
12.0			0.0				
			0.0				
14.0	Sandy SILT (ML); brown; medium stiff; moist; 40% m sand; no gravel. low plasticity.	7/23/19 14:08	0.0				
	Silty SAND (SM); gray; medium dense; wet; 15% subangular fine gravel; 20% fines; fine to coarse sand.		0.0				
16.0			0.0				
	Sandy SILT (ML); gray; medium stiff; moist; 15% subangular fine to coarse gravel; 30% fine to medium sand; low plasticity.		0.0			100	Temporary well screen installed from 15 to 20 feet to collect groundwater sample
18.0			0.0				
			0.0				
20.0	Boring terminated at 20 feet at 13:53 on 7/23/2019.		0.0				
22.0							
24.0							

BORING METHOD: Direct Push
DRILLED BY: Holt Services
BORING BIT DIAMETER: 2.25 in

LOGGED BY: J. Welles, LG
COMPLETED: 7/23/19

BORING LOG-ENV CORE_BH_01THRU07.GPJ_DATATMPL.GDT_PRINT DATE: 8/21/19.JW

PBS

SCIDPDA
1215 E FIR STREET, SEATTLE, WA

PBS PROJECT NUMBER:
41593.000

BORING BH-03

BORING BH-3 LOCATION:
(See Site Plan)

DEPTH FEET	MATERIAL DESCRIPTION	GROUND-WATER	PID (PPM)	SAMPLE NUMBER	SAMPLE/ TEMPORARY WELL(S)	RECOVERY (%)	COMMENTS/ WELL INSTALLATION
0.0	Asphalt / roadbase						
	Silty SAND (SM); brown; medium dense; damp; 30% fines; fine to medium sand; [FILL].		0.0				
	SAND (SP); gray; medium dense; damp; fine to medium sand; [FILL].		0.0 0.0			66	
5.0	Sandy SILT (ML); gray with brown and orange mottling; medium stiff; damp; trace subrounded fine gravel; 50% fine to medium sand; low plasticity.		0.0 0.0 0.0 0.0 0.0			100	
10.0			0.0 0.0 0.0 0.0			100	
	SAND (SP); brown; medium dense; damp; mediume sand.	7/23/19 9:20 ▽	0.0	BH-03-15	■		
15.0	Silty SAND (SM); gray; medium stiff; damp; slight oil odor; trace subrounded to subangular gravel; 40% fines; fine to coarse sand. wet @ 15.5' decreased % fines (30%)		0.0 0.0 0.0 0.0 0.0			100	Temporary well screen installed from 13 to 18 feet to collect groundwater sample. Boring then advanced to 30 feet. Temporary well screen installed from 25 to 30 feet to collect 2nd groundwater sample.
20.0	Sandy SILT (ML); gray; medium stiff; moist; 50% fine sand; no gravel; low plasticity.					100	
25.0						100	
30.0	SAND (SP); gray; medium dense; moist; medium to coarse sand. Boring terminated at 30 feet at 09:16 on 7/23/2019.						
35.0							

BORING METHOD: Direct Push
DRILLED BY: Holt Services
BORING BIT DIAMETER: 2.25 in

LOGGED BY: J. Welles, LG
COMPLETED: 7/23/19

BORING LOG-ENV CORE BH_01THRU07.GPJ DATATMPL.GDT PRINT DATE: 8/21/19 JW

PBS

SCIDPDA
1215 E FIR STREET, SEATTLE, WA

PBS PROJECT NUMBER:
41593.000

BORING BH-04

BORING BH-4 LOCATION:
(See Site Plan)

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	GROUND-WATER	PID (PPM)	SAMPLE NUMBER	SAMPLE/ TEMPORARY WELL(S)	RECOVERY (%)	COMMENTS/ WELL INSTALLATION
0.0		Concrete						
		Silty SAND (SM); brown; medium dense; damp; 25% fines; 10% rounded fine gravel; fine sand; [FILL].		0.0				
2.0				0.0			60	
		SAND (SP); gray brown; medium dense; damp; medium sand; 5% subrounded fine to coarse gravel; [FILL].		0.0				
4.0								
		Silty SAND (SM); dark brown; medium dense; damp; 5% rounded fine to coarse gravel; 30% fines; fine to medium sand; [FILL].		0.0				
6.0				0.0				
		Sandy SILT (ML); yellow brown; medium stiff; damp; 5% subrounded fine gravel; 40% fine to medium sand; no to low plasticity.		0.0			60	
8.0				0.0				
			7/24/19 9:40 ▼					
10.0				0.0				
				0.0				
12.0				0.0			50	
14.0					BH-04-15			
				0.0				
16.0				0.0				
		Silty SAND with gravel (SM); gray; medium dense; wet; 35% subrounded fine to coarse gravel; 25% silt; fine to coarse sand.		0.0			100	Temporary well screen installed from 15 to 20 feet to collect groundwater sample
18.0				0.0				
				0.0				
20.0		Boring terminated at 20 feet at 15:28 on 7/23/2019.						
22.0								
24.0								

BORING METHOD: Direct Push
DRILLED BY: Holt Services
BORING BIT DIAMETER: 2.25 in

LOGGED BY: J. Welles, LG
COMPLETED: 7/23/19

BORING LOG-ENV CORE_BH_01THRU07.GPJ_DATATMPL.GDT_PRINT DATE: 8/21/19-JW

PBS

SCIDPDA
1215 E FIR STREET, SEATTLE, WA

PBS PROJECT NUMBER:
41593.000

BORING BH-05

BORING BH-5 LOCATION:
(See Site Plan)

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	GROUND-WATER	PID (PPM)	SAMPLE NUMBER	SAMPLE/ TEMPORARY WELL(S)	RECOVERY (%)	COMMENTS/ WELL INSTALLATION
0.0		Concrete						
		Silty SAND (SM); dark brown; medium dense; damp; 10% subrounded fine gravel; 30% fines; fine sand; [FILL].		0.0				
2.0				0.0	BH-05-02		75	
				0.0				
4.0				0.0				
				0.0			100	
6.0		Silty SAND (SM); yellow brown; medium dense; damp; 20% subrounded fine to coarse gravel; 20% fines; fine to medium sand; [FILL].						
		Drilling refusal encountered at 7 feet at 13:15 on 7/24/2019. Attempt to push expendable tip to collect groundwater sample. Refusal again encountered at 7 feet. No groundwater sample collected.		0.0	BH-05-07			
8.0								
10.0								
12.0								

BORING METHOD: Direct Push
DRILLED BY: Holt Services
BORING BIT DIAMETER: 2.25 in

LOGGED BY: J. Welles, LG
COMPLETED: 7/24/19

BORING LOG-ENV CORE BH_01THRU07.GPJ DATATMPL.GDT PRINT DATE: 8/21/19 JW

PBS

SCIDPDA
1215 E FIR STREET, SEATTLE, WA

PBS PROJECT NUMBER:
41593.000

BORING BH-06

BORING BH-6 LOCATION:
(See Site Plan)

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	GROUND-WATER	PID (PPM)	SAMPLE NUMBER	SAMPLE/ TEMPORARY WELL(S)	RECOVERY (%)	COMMENTS/ WELL INSTALLATION
0.0		Concrete						
		Silty SAND (SM); dark brown; medium dense; damp; 10% SR gravel; 40% fines; fine sand; [FILL].		0.0				
				0.0				
2.0							40	
4.0		Silty SAND with gravel (SM); dark brown; medium dense; wet; 30% fines; 20% subrounded fine to coarse gravel; fine to coarse sand; [FILL].		0.0	BH-06-05			
6.0							25	
8.0		Drilling refusal encountered at 8 feet at 14:25 on 7/24/2019. Expendable tip pushed to 20 feet, screen exposed 16-20 feet, for collection of groundwater sample.						
10.0								
12.0								

BORING METHOD: Direct Push
DRILLED BY: Holt Services
BORING BIT DIAMETER: 2.25 in

LOGGED BY: J. Welles, LG
COMPLETED: 7/24/19

BORING LOG-ENV CORE BH_01THRU07.GPJ DATATMPL.GDT PRINT DATE: 8/21/19 JW

PBS

SCIDPDA
1215 E FIR STREET, SEATTLE, WA

BORING BH-07

PBS PROJECT NUMBER:
41593.000

BORING BH-7 LOCATION:
(See Site Plan)

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	GROUND-WATER	PID (PPM)	SAMPLE NUMBER	SAMPLE/ TEMPORARY WELL(S)	RECOVERY (%)	COMMENTS/ WELL INSTALLATION
0.0		Concrete						
		Silty SAND (SM); dark gray; medium dense; damp; 20-40% fines; 10% subrounded fine to coarse gravel; fine to medium sand; [FILL].		0.0				
2.0				0.0			50	
4.0								
		Sandy SILT (ML); dark brown; medium stiff; damp; 40% fine sand; medium plasticity.		0.0				
6.0							100	
				0.0				
		color change to yellow brown		0.0				
8.0				0.0				
				0.0				
		Silty SAND (SM); yellow brown; medium dense; damp; 40% fines; 10% subrounded fine gravel; fine to medium sand.		0.0				
10.0							100	
				0.0				
				0.0	BH-07-12			
12.0		Drilling refusal encountered at 12 feet at 11:46 on 7/24/2019.						
14.0								

BORING METHOD: Direct Push
DRILLED BY: Holt Services
BORING BIT DIAMETER: 2.25 in

LOGGED BY: J. Welles, LG
COMPLETED: 7/24/19

BORING LOG-ENV CORE BH_01THRU07.GPJ DATATMPL.GDT PRINT DATE: 8/21/19 JW

APPENDIX B

Toxicity Equivalence Calculations for cPAHs

Attachment B: Toxicity equivalence calculations for carcinogenic PAHs (cPAHs) in sample BH-05-02

It should be noted that the calculation of carcinogenic PAHs (cPAHs) must be performed in accordance with MTCA regulations to determine whether cPAH concentrations meet MTCA level A requirements. The calculation methodology is given in Washington Administrative Code (WAC) Section 173-340-708(8), and the Toxicity Equivalence Factors (TEFs) to be used in the calculations are given in MTCA Section 173-340-900 Table 708-2 which is reproduced below:

	Toxicity Equivalency Factor (TEF)	Concentration (mg/kg)	Benzo(a)pyrene Equivalent Concentration (mg/kg)
benzo(a)pyrene	1	0.025	0.025
benzo(a)anthracene	0.1	0.02	0.002
benzo(b)fluoranthene	0.1	0.027	0.0027
benzo(k)fluoranthene	0.1	0.011	0.0011
chrysene	0.01	0.027	0.00027
dibenz(a,h)anthracene	0.1	0.01	0.001
indeno(1,2,3-cd)pyrene	0.1	0.019	0.0019
		RESULT	0.03397
MTCA Method A Cleanup Level			0.1

mg/kg - milligrams per kilogram

Note: No carcinogenic PAHs were detected above laboratory reporting limits. Concentrations used represent laboratory reporting limit of non-detect result

APPENDIX C

Laboratory Reports
Chain-of-Custody Documentation

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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Seattle, WA 98119-2029
(206) 285-8282
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www.friedmanandbruya.com

August 6, 2019

James Welles, Project Manager
PBS Engineering and Environmental, Inc.
214 E. Galer St, Suite 300
Seattle, WA 98102

Dear Mr Welles:

Included are the results from the testing of material submitted on July 25, 2019 from the SCID 1215 E Fir St PO 41593.000, F&BI 907454 project. There are 65 ages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
PBS0806R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on July 25, 2019 by Friedman & Bruya, Inc. from the PBS Engineering and Environmental SCID 1215 E Fir St PO 41593.000, F&BI 907454 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	PBS Engineering and Environmental
907454 -01	BH-01-10
907454 -02	BH-01-W
907454 -03	BH-02-09
907454 -04	BH-02-W
907454 -05	BH-03-15
907454 -06	BH-03-WA
907454 -07	BH-04-15
907454 -08	BH-04-W
907454 -09	BH-05-02
907454 -10	BH-05-07
907454 -11	BH-06-05
907454 -12	BH-06-W
907454 -13	BH-07-12
907454 -14	BH-03-WB

A 6020A internal standard failed the acceptance criteria for the metals samples. In addition, barium exceeded the calibration range in the water samples. The samples were diluted and reanalyzed with acceptable results. Both data sets were reported.

Acetone in the 8260C water laboratory control sample failed the acceptance criteria. The data were flagged accordingly.

The 8260C soil calibration standard failed the acceptance criteria for dichlorofluoromethane. The data were flagged accordingly.

All other quality control requirements were acceptable.

Date of Report: 08/06/19
Date Received: 07/25/19
Project: SCID 1215 E Fir St PO 41593.000, F&BI 907454
Date Extracted: 07/26/19
Date Analyzed: 07/29/19 and 07/30/19

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 58-139)
BH-01-10 907454-01	<5	91
BH-02-09 907454-03	<5	100
BH-03-15 907454-05	<5	99
BH-04-15 907454-07	<5	95
BH-05-02 907454-09	<5	98
BH-05-07 907454-10	<5	98
BH-06-05 907454-11	<5	99
BH-07-12 907454-13	<5	99
Method Blank 09-1809 mb	<5	80

Date of Report: 08/06/19
Date Received: 07/25/19
Project: SCID 1215 E Fir St PO 41593.000, F&BI 907454
Date Extracted: 07/26/19
Date Analyzed: 07/26/19

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 51-134)
BH-01-W 907454-02	<100	84
BH-02-W 907454-04	<100	83
BH-03-WA 907454-06	<100	87
BH-04-W 907454-08	<100	85
BH-06-W 907454-12	<100	88
BH-03-WB 907454-14	<100	86
Method Blank 09-1769 MB	<100	93

Date of Report: 08/06/19
Date Received: 07/25/19
Project: SCID 1215 E Fir St PO 41593.000, F&BI 907454
Date Extracted: 07/26/19
Date Analyzed: 07/26/19

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 48-168)
BH-01-10 907454-01	<50	<250	87
BH-02-09 907454-03	<50	<250	92
BH-03-15 907454-05	<50	<250	84
BH-04-15 907454-07	<50	<250	93
BH-05-02 907454-09	<50	<250	86
BH-05-07 907454-10	<50	<250	86
BH-06-05 907454-11	<50	<250	93
BH-07-12 907454-13	<50	<250	91
Method Blank 09-1801 MB	<50	<250	87
Method Blank 09-1802 MB	<50	<250	95

Date of Report: 08/06/19
Date Received: 07/25/19
Project: SCID 1215 E Fir St PO 41593.000, F&BI 907454
Date Extracted: 07/26/19
Date Analyzed: 07/26/19

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 51-134)
BH-01-W 907454-02	<50	<250	93
BH-02-W 907454-04	<50	<250	94
BH-03-WA 907454-06	110 x	<250	96
BH-04-W 907454-08	<50	<250	88
BH-06-W 907454-12	<50	<250	90
BH-03-WB 907454-14	<50	<250	99
Method Blank 09-1799 MB	<50	<250	97

Analysis For Total Metals By EPA Method 6020B

Client ID:	BH-01-10	Client:	PBS Engineering and Environmental
Date Received:	07/25/19	Project:	SCID 1215 E Fir St PO 41593.000
Date Extracted:	07/31/19	Lab ID:	907454-01
Date Analyzed:	07/31/19	Data File:	907454-01.110
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	8.76
Barium	62.7
Cadmium	<1
Chromium	21.3 J
Lead	2.71
Mercury	<1
Selenium	<1
Silver	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	BH-01-10	Client:	PBS Engineering and Environmental
Date Received:	07/25/19	Project:	SCID 1215 E Fir St PO 41593.000
Date Extracted:	07/31/19	Lab ID:	907454-01 x5
Date Analyzed:	08/01/19	Data File:	907454-01 x5.099
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Chromium	30.4

Analysis For Total Metals By EPA Method 6020B

Client ID:	BH-02-09	Client:	PBS Engineering and Environmental
Date Received:	07/25/19	Project:	SCID 1215 E Fir St PO 41593.000
Date Extracted:	07/31/19	Lab ID:	907454-03
Date Analyzed:	07/31/19	Data File:	907454-03.111
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	5.42
Barium	89.5
Cadmium	<1
Chromium	23.8 J
Lead	3.14
Mercury	<1
Selenium	<1
Silver	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	BH-02-09	Client:	PBS Engineering and Environmental
Date Received:	07/25/19	Project:	SCID 1215 E Fir St PO 41593.000
Date Extracted:	07/31/19	Lab ID:	907454-03 x5
Date Analyzed:	08/01/19	Data File:	907454-03 x5.100
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Chromium	32.8

Analysis For Total Metals By EPA Method 6020B

Client ID:	BH-03-15	Client:	PBS Engineering and Environmental
Date Received:	07/25/19	Project:	SCID 1215 E Fir St PO 41593.000
Date Extracted:	07/31/19	Lab ID:	907454-05
Date Analyzed:	07/31/19	Data File:	907454-05.112
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	3.73
Barium	56.6
Cadmium	<1
Chromium	16.3 J
Lead	2.12
Mercury	<1
Selenium	<1
Silver	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	BH-03-15	Client:	PBS Engineering and Environmental
Date Received:	07/25/19	Project:	SCID 1215 E Fir St PO 41593.000
Date Extracted:	07/31/19	Lab ID:	907454-05 x5
Date Analyzed:	08/01/19	Data File:	907454-05 x5.101
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Chromium	22.7

Analysis For Total Metals By EPA Method 6020B

Client ID:	BH-04-15	Client:	PBS Engineering and Environmental
Date Received:	07/25/19	Project:	SCID 1215 E Fir St PO 41593.000
Date Extracted:	07/31/19	Lab ID:	907454-07
Date Analyzed:	07/31/19	Data File:	907454-07.113
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	12.1
Barium	83.4
Cadmium	<1
Chromium	25.3 J
Lead	4.99
Mercury	<1
Selenium	<1
Silver	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	BH-04-15	Client:	PBS Engineering and Environmental
Date Received:	07/25/19	Project:	SCID 1215 E Fir St PO 41593.000
Date Extracted:	07/31/19	Lab ID:	907454-07 x5
Date Analyzed:	08/01/19	Data File:	907454-07 x5.189
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Chromium	31.7

Analysis For Total Metals By EPA Method 6020B

Client ID:	BH-05-02	Client:	PBS Engineering and Environmental
Date Received:	07/25/19	Project:	SCID 1215 E Fir St PO 41593.000
Date Extracted:	07/31/19	Lab ID:	907454-09
Date Analyzed:	07/31/19	Data File:	907454-09.116
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	3.29
Barium	77.9
Cadmium	<1
Chromium	17.4 J
Lead	23.2
Mercury	<1
Selenium	<1
Silver	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	BH-05-02	Client:	PBS Engineering and Environmental
Date Received:	07/25/19	Project:	SCID 1215 E Fir St PO 41593.000
Date Extracted:	07/31/19	Lab ID:	907454-09 x5
Date Analyzed:	08/01/19	Data File:	907454-09 x5.190
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Chromium	21.5

Analysis For Total Metals By EPA Method 6020B

Client ID:	BH-05-07	Client:	PBS Engineering and Environmental
Date Received:	07/25/19	Project:	SCID 1215 E Fir St PO 41593.000
Date Extracted:	07/31/19	Lab ID:	907454-10
Date Analyzed:	07/31/19	Data File:	907454-10.117
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	5.07
Barium	75.3
Cadmium	<1
Chromium	25.8 J
Lead	2.94
Mercury	<1
Selenium	<1
Silver	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	BH-05-07	Client:	PBS Engineering and Environmental
Date Received:	07/25/19	Project:	SCID 1215 E Fir St PO 41593.000
Date Extracted:	07/31/19	Lab ID:	907454-10 x5
Date Analyzed:	08/01/19	Data File:	907454-10 x5.191
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Chromium	34.3

Analysis For Total Metals By EPA Method 6020B

Client ID:	BH-06-05	Client:	PBS Engineering and Environmental
Date Received:	07/25/19	Project:	SCID 1215 E Fir St PO 41593.000
Date Extracted:	07/31/19	Lab ID:	907454-11
Date Analyzed:	07/31/19	Data File:	907454-11.118
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	5.71
Barium	94.7
Cadmium	<1
Chromium	29.9 J
Lead	5.41
Mercury	<1
Selenium	<1
Silver	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	BH-06-05	Client:	PBS Engineering and Environmental
Date Received:	07/25/19	Project:	SCID 1215 E Fir St PO 41593.000
Date Extracted:	07/31/19	Lab ID:	907454-11 x5
Date Analyzed:	08/02/19	Data File:	907454-11 x5.192
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Chromium	38.9

Analysis For Total Metals By EPA Method 6020B

Client ID:	BH-07-12	Client:	PBS Engineering and Environmental
Date Received:	07/25/19	Project:	SCID 1215 E Fir St PO 41593.000
Date Extracted:	07/31/19	Lab ID:	907454-13
Date Analyzed:	07/31/19	Data File:	907454-13.119
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	5.38
Barium	67.7
Cadmium	<1
Chromium	22.0 J
Lead	2.19
Mercury	<1
Selenium	<1
Silver	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	BH-07-12	Client:	PBS Engineering and Environmental
Date Received:	07/25/19	Project:	SCID 1215 E Fir St PO 41593.000
Date Extracted:	07/31/19	Lab ID:	907454-13 x5
Date Analyzed:	08/02/19	Data File:	907454-13 x5.193
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Chromium	26.9

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	PBS Engineering and Environmental
Date Received:	NA	Project:	SCID 1215 E Fir St PO 41593.000
Date Extracted:	07/31/19	Lab ID:	I9-462 mb
Date Analyzed:	07/31/19	Data File:	I9-462 mb.102
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Barium	<1
Cadmium	<1
Chromium	<1
Lead	<1
Mercury	<1
Selenium	<1
Silver	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	BH-01-W	Client:	PBS Engineering and Environmental
Date Received:	07/25/19	Project:	SCID 1215 E Fir St PO 41593.000
Date Extracted:	07/26/19	Lab ID:	907454-02
Date Analyzed:	07/26/19	Data File:	907454-02.135
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	14.8
Barium	82.4
Cadmium	<1
Chromium	10.0
Lead	1.41
Mercury	<1
Selenium	<1
Silver	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	BH-02-W	Client:	PBS Engineering and Environmental
Date Received:	07/25/19	Project:	SCID 1215 E Fir St PO 41593.000
Date Extracted:	07/26/19	Lab ID:	907454-04
Date Analyzed:	07/26/19	Data File:	907454-04.136
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	17.7
Barium	289 ve
Cadmium	<1
Chromium	42.7 J
Lead	9.79
Mercury	<1
Selenium	<1
Silver	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	BH-02-W	Client:	PBS Engineering and Environmental
Date Received:	07/25/19	Project:	SCID 1215 E Fir St PO 41593.000
Date Extracted:	07/26/19	Lab ID:	907454-04 x10
Date Analyzed:	08/01/19	Data File:	907454-04 x10.164
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Barium	287
Chromium	80.2

Analysis For Total Metals By EPA Method 6020B

Client ID:	BH-03-WA	Client:	PBS Engineering and Environmental
Date Received:	07/25/19	Project:	SCID 1215 E Fir St PO 41593.000
Date Extracted:	07/26/19	Lab ID:	907454-06
Date Analyzed:	07/26/19	Data File:	907454-06.137
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	61.5
Barium	610 ve
Cadmium	<1
Chromium	63.3 J
Lead	19.1
Mercury	<1
Selenium	2.22
Silver	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	BH-03-WA	Client:	PBS Engineering and Environmental
Date Received:	07/25/19	Project:	SCID 1215 E Fir St PO 41593.000
Date Extracted:	07/26/19	Lab ID:	907454-06 x10
Date Analyzed:	08/01/19	Data File:	907454-06 x10.165
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Barium	690
Chromium	187

Analysis For Total Metals By EPA Method 6020B

Client ID:	BH-04-W	Client:	PBS Engineering and Environmental
Date Received:	07/25/19	Project:	SCID 1215 E Fir St PO 41593.000
Date Extracted:	07/26/19	Lab ID:	907454-08
Date Analyzed:	07/26/19	Data File:	907454-08.138
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	11.6
Barium	188 ve
Cadmium	<1
Chromium	21.0 J
Lead	4.60
Mercury	<1
Selenium	<1
Silver	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	BH-04-W	Client:	PBS Engineering and Environmental
Date Received:	07/25/19	Project:	SCID 1215 E Fir St PO 41593.000
Date Extracted:	07/26/19	Lab ID:	907454-08 x10
Date Analyzed:	08/01/19	Data File:	907454-08 x10.166
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Barium	181
Chromium	36.9

Analysis For Total Metals By EPA Method 6020B

Client ID:	BH-06-W	Client:	PBS Engineering and Environmental
Date Received:	07/25/19	Project:	SCID 1215 E Fir St PO 41593.000
Date Extracted:	07/26/19	Lab ID:	907454-12
Date Analyzed:	07/26/19	Data File:	907454-12.139
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	63.4
Barium	1,410 ve
Cadmium	2.58
Chromium	131 J
Lead	40.3
Mercury	<1
Selenium	5.40
Silver	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	BH-06-W	Client:	PBS Engineering and Environmental
Date Received:	07/25/19	Project:	SCID 1215 E Fir St PO 41593.000
Date Extracted:	07/26/19	Lab ID:	907454-12 x10
Date Analyzed:	08/01/19	Data File:	907454-12 x10.167
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Barium	1,690
Chromium	610

Analysis For Total Metals By EPA Method 6020B

Client ID:	BH-03-WB	Client:	PBS Engineering and Environmental
Date Received:	07/25/19	Project:	SCID 1215 E Fir St PO 41593.000
Date Extracted:	07/26/19	Lab ID:	907454-14
Date Analyzed:	07/26/19	Data File:	907454-14.142
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	11.7
Barium	185 ve
Cadmium	<1
Chromium	23.9 J
Lead	3.97
Mercury	<1
Selenium	1.33
Silver	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	BH-03-WB	Client:	PBS Engineering and Environmental
Date Received:	07/25/19	Project:	SCID 1215 E Fir St PO 41593.000
Date Extracted:	07/26/19	Lab ID:	907454-14 x10
Date Analyzed:	08/01/19	Data File:	907454-14 x10.168
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Barium	173
Chromium	37.2

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	PBS Engineering and Environmental
Date Received:	NA	Project:	SCID 1215 E Fir St PO 41593.000
Date Extracted:	07/26/19	Lab ID:	I9-455 mb
Date Analyzed:	07/26/19	Data File:	I9-455 mb.130
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Barium	<1
Cadmium	<1
Chromium	<1
Lead	<1
Mercury	<1
Selenium	<1
Silver	<1

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	BH-05-02	Client:	PBS Engineering and Environmental
Date Received:	07/25/19	Project:	SCID 1215 E Fir St PO 41593.000
Date Extracted:	07/29/19	Lab ID:	907454-09 1/5
Date Analyzed:	07/30/19	Data File:	073009.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	78	31	163
Benzo(a)anthracene-d12	92	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	0.042
Anthracene	<0.01
Fluoranthene	0.057
Pyrene	0.061
Benz(a)anthracene	0.020
Chrysene	0.027
Benzo(a)pyrene	0.025
Benzo(b)fluoranthene	0.027
Benzo(k)fluoranthene	0.011
Indeno(1,2,3-cd)pyrene	0.019
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	0.018

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	Method Blank	Client:	PBS Engineering and Environmental
Date Received:	Not Applicable	Project:	SCID 1215 E Fir St PO 41593.000
Date Extracted:	07/29/19	Lab ID:	09-1815 mb 1/5
Date Analyzed:	07/30/19	Data File:	073006.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	79	31	163
Benzo(a)anthracene-d12	95	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	BH-01-W	Client:	PBS Engineering and Environmental
Date Received:	07/25/19	Project:	SCID 1215 E Fir St PO 41593.000
Date Extracted:	07/29/19	Lab ID:	907454-02
Date Analyzed:	07/29/19	Data File:	072935.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS/AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	101	63	127
4-Bromofluorobenzene	97	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 jl	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	BH-02-W	Client:	PBS Engineering and Environmental
Date Received:	07/25/19	Project:	SCID 1215 E Fir St PO 41593.000
Date Extracted:	07/29/19	Lab ID:	907454-04
Date Analyzed:	07/29/19	Data File:	072936.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS/AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	100	63	127
4-Bromofluorobenzene	98	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 jl	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	BH-03-WA	Client:	PBS Engineering and Environmental
Date Received:	07/25/19	Project:	SCID 1215 E Fir St PO 41593.000
Date Extracted:	07/29/19	Lab ID:	907454-06
Date Analyzed:	07/29/19	Data File:	072937.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS/AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	100	63	127
4-Bromofluorobenzene	98	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 jl	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	BH-04-W	Client:	PBS Engineering and Environmental
Date Received:	07/25/19	Project:	SCID 1215 E Fir St PO 41593.000
Date Extracted:	07/29/19	Lab ID:	907454-08
Date Analyzed:	07/29/19	Data File:	072938.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS/AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	100	63	127
4-Bromofluorobenzene	97	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	40	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 jl	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	1.3	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	BH-06-W	Client:	PBS Engineering and Environmental
Date Received:	07/25/19	Project:	SCID 1215 E Fir St PO 41593.000
Date Extracted:	07/29/19	Lab ID:	907454-12
Date Analyzed:	07/29/19	Data File:	072939.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS/AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	100	63	127
4-Bromofluorobenzene	97	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 jl	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	BH-03-WB	Client:	PBS Engineering and Environmental
Date Received:	07/25/19	Project:	SCID 1215 E Fir St PO 41593.000
Date Extracted:	07/29/19	Lab ID:	907454-14
Date Analyzed:	07/29/19	Data File:	072940.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS/AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	101	63	127
4-Bromofluorobenzene	97	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 jl	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	PBS Engineering and Environmental
Date Received:	Not Applicable	Project:	SCID 1215 E Fir St PO 41593.000
Date Extracted:	07/29/19	Lab ID:	09-1703 mb
Date Analyzed:	07/29/19	Data File:	072926.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS/AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	101	63	127
4-Bromofluorobenzene	98	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 jl	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	BH-01-10	Client:	PBS Engineering and Environmental
Date Received:	07/25/19	Project:	SCID 1215 E Fir St PO 41593.000
Date Extracted:	07/26/19	Lab ID:	907454-01
Date Analyzed:	07/26/19	Data File:	072620.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS/AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	93	107
Toluene-d8	98	87	110
4-Bromofluorobenzene	98	85	112

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	BH-02-09	Client:	PBS Engineering and Environmental
Date Received:	07/25/19	Project:	SCID 1215 E Fir St PO 41593.000
Date Extracted:	07/26/19	Lab ID:	907454-03
Date Analyzed:	07/26/19	Data File:	072621.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS/AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	93	107
Toluene-d8	99	87	110
4-Bromofluorobenzene	98	85	112

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	BH-03-15	Client:	PBS Engineering and Environmental
Date Received:	07/25/19	Project:	SCID 1215 E Fir St PO 41593.000
Date Extracted:	07/26/19	Lab ID:	907454-05
Date Analyzed:	07/26/19	Data File:	072622.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS/AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	93	107
Toluene-d8	99	87	110
4-Bromofluorobenzene	98	85	112

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5 ca	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	BH-04-15	Client:	PBS Engineering and Environmental
Date Received:	07/25/19	Project:	SCID 1215 E Fir St PO 41593.000
Date Extracted:	07/26/19	Lab ID:	907454-07
Date Analyzed:	07/26/19	Data File:	072631.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS/AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	93	107
Toluene-d8	103	87	110
4-Bromofluorobenzene	100	85	112

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5 ca	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	BH-05-02	Client:	PBS Engineering and Environmental
Date Received:	07/25/19	Project:	SCID 1215 E Fir St PO 41593.000
Date Extracted:	07/26/19	Lab ID:	907454-09
Date Analyzed:	07/26/19	Data File:	072632.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS/AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	93	107
Toluene-d8	102	87	110
4-Bromofluorobenzene	101	85	112

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5 ca	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	BH-05-07	Client:	PBS Engineering and Environmental
Date Received:	07/25/19	Project:	SCID 1215 E Fir St PO 41593.000
Date Extracted:	07/26/19	Lab ID:	907454-10
Date Analyzed:	07/26/19	Data File:	072633.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS/AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	93	107
Toluene-d8	103	87	110
4-Bromofluorobenzene	99	85	112

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5 ca	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	BH-06-05	Client:	PBS Engineering and Environmental
Date Received:	07/25/19	Project:	SCID 1215 E Fir St PO 41593.000
Date Extracted:	07/26/19	Lab ID:	907454-11
Date Analyzed:	07/26/19	Data File:	072634.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS/AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	93	107
Toluene-d8	102	87	110
4-Bromofluorobenzene	101	85	112

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5 ca	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	BH-07-12	Client:	PBS Engineering and Environmental
Date Received:	07/25/19	Project:	SCID 1215 E Fir St PO 41593.000
Date Extracted:	07/26/19	Lab ID:	907454-13
Date Analyzed:	07/26/19	Data File:	072635.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS/AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	93	107
Toluene-d8	101	87	110
4-Bromofluorobenzene	100	85	112

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5 ca	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	PBS Engineering and Environmental
Date Received:	Not Applicable	Project:	SCID 1215 E Fir St PO 41593.000
Date Extracted:	07/26/19	Lab ID:	09-1708 mb2
Date Analyzed:	07/26/19	Data File:	072613.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS/AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	93	107
Toluene-d8	98	87	110
4-Bromofluorobenzene	96	85	112

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Date of Report: 08/06/19
Date Received: 07/25/19
Project: SCID 1215 E Fir St PO 41593.000, F&BI 907454

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 907411-07 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet Wt)	Duplicate Result (Wet Wt)	RPD (Limit 20)
Gasoline	mg/kg (ppm)	21	36	53 a

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	mg/kg (ppm)	20	100	71-131

Date of Report: 08/06/19
Date Received: 07/25/19
Project: SCID 1215 E Fir St PO 41593.000, F&BI 907454

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 907474-06 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	1,600	1,700	5

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	96	69-134

Date of Report: 08/06/19
Date Received: 07/25/19
Project: SCID 1215 E Fir St PO 41593.000, F&BI 907454

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 907411-07 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	82	94	73-135	14

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	92	74-139

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QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 907443-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	700	90	98	63-146	9

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	106	79-144

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	76	80	58-134	5

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 907401-01 x5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	<5	98	102	75-125	4
Barium	mg/kg (ppm)	50	35.1	85	90	75-125	6
Cadmium	mg/kg (ppm)	10	<5	94	94	75-125	0
Chromium	mg/kg (ppm)	50	19.3	100	101	75-125	1
Lead	mg/kg (ppm)	50	<5	101	101	75-125	0
Mercury	mg/kg (ppm	5	<5	100	105	75-125	5
Selenium	mg/kg (ppm)	5	<5	111	109	75-125	2
Silver	mg/kg (ppm)	10	<5	102	103	75-125	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	96	80-120
Barium	mg/kg (ppm)	50	96	80-120
Cadmium	mg/kg (ppm)	10	99	80-120
Chromium	mg/kg (ppm)	50	106	80-120
Lead	mg/kg (ppm)	50	102	80-120
Mercury	mg/kg (ppm)	5	104	80-120
Selenium	mg/kg (ppm)	5	103	80-120
Silver	mg/kg (ppm)	10	104	80-120

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 907486-07 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	10.2	92	90	75-125	2
Barium	ug/L (ppb)	50	20.8	107	110	75-125	3
Cadmium	ug/L (ppb)	5	<1	97	98	75-125	1
Chromium	ug/L (ppb)	20	<1	98	85	75-125	14
Lead	ug/L (ppb)	10	<1	83	84	75-125	1
Mercury	ug/L (ppb)	5	<1	90	91	75-125	1
Selenium	ug/L (ppb)	5	<1	97	97	75-125	0
Silver	ug/L (ppb)	5	<1	89	90	75-125	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	98	80-120
Barium	ug/L (ppb)	50	93	80-120
Cadmium	ug/L (ppb)	5	96	80-120
Chromium	ug/L (ppb)	20	89	80-120
Lead	ug/L (ppb)	10	97	80-120
Mercury	ug/L (ppb)	5	97	80-120
Selenium	ug/L (ppb)	5	104	80-120
Silver	ug/L (ppb)	5	102	80-120

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR PAHS BY EPA METHOD 8270D SIM

Laboratory Code: 907454-09 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Acceptance Criteria
Naphthalene	mg/kg (ppm)	0.17	<0.01	78	44-129
Acenaphthylene	mg/kg (ppm)	0.17	<0.01	83	52-121
Acenaphthene	mg/kg (ppm)	0.17	<0.01	81	51-123
Fluorene	mg/kg (ppm)	0.17	<0.01	82	37-137
Phenanthrene	mg/kg (ppm)	0.17	0.038	66 b	34-141
Anthracene	mg/kg (ppm)	0.17	<0.01	77	32-124
Fluoranthene	mg/kg (ppm)	0.17	0.051	68 b	16-160
Pyrene	mg/kg (ppm)	0.17	0.054	66 b	10-180
Benz(a)anthracene	mg/kg (ppm)	0.17	0.018	79	23-144
Chrysene	mg/kg (ppm)	0.17	0.024	74	32-149
Benzo(b)fluoranthene	mg/kg (ppm)	0.17	0.024	74	23-176
Benzo(k)fluoranthene	mg/kg (ppm)	0.17	0.010	76	42-139
Benzo(a)pyrene	mg/kg (ppm)	0.17	0.022	75	21-163
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.17	0.017	79	23-170
Dibenz(a,h)anthracene	mg/kg (ppm)	0.17	<0.01	83	31-146
Benzo(g,h,i)perylene	mg/kg (ppm)	0.17	0.016	73	37-133

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	mg/kg (ppm)	0.17	86	87	58-121	1
Acenaphthylene	mg/kg (ppm)	0.17	85	87	54-121	2
Acenaphthene	mg/kg (ppm)	0.17	87	89	54-123	2
Fluorene	mg/kg (ppm)	0.17	91	90	56-127	1
Phenanthrene	mg/kg (ppm)	0.17	88	90	55-122	2
Anthracene	mg/kg (ppm)	0.17	86	88	50-120	2
Fluoranthene	mg/kg (ppm)	0.17	96	93	54-129	3
Pyrene	mg/kg (ppm)	0.17	103	89	53-127	15
Benz(a)anthracene	mg/kg (ppm)	0.17	90	93	51-115	3
Chrysene	mg/kg (ppm)	0.17	91	93	55-129	2
Benzo(b)fluoranthene	mg/kg (ppm)	0.17	81	88	56-123	8
Benzo(k)fluoranthene	mg/kg (ppm)	0.17	86	86	54-131	0
Benzo(a)pyrene	mg/kg (ppm)	0.17	82	84	51-118	2
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.17	94	98	49-148	4
Dibenz(a,h)anthracene	mg/kg (ppm)	0.17	100	101	50-141	1
Benzo(g,h,i)perylene	mg/kg (ppm)	0.17	96	96	52-131	0

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 907506-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	50	<1	80	10-172
Chloromethane	ug/L (ppb)	50	<10	94	25-166
Vinyl chloride	ug/L (ppb)	50	<0.2	107	36-166
Bromomethane	ug/L (ppb)	50	<1	92	47-169
Chloroethane	ug/L (ppb)	50	<1	93	46-160
Trichlorofluoromethane	ug/L (ppb)	50	<1	106	44-165
Acetone	ug/L (ppb)	250	<50	57	10-182
1,1-Dichloroethene	ug/L (ppb)	50	<1	103	60-136
Hexane	ug/L (ppb)	50	<1	96	52-150
Methylene chloride	ug/L (ppb)	50	5.2	102	67-132
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<1	104	74-127
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	102	72-129
1,1-Dichloroethane	ug/L (ppb)	50	<1	102	70-128
2,2-Dichloropropane	ug/L (ppb)	50	<1	78	36-154
cis-1,2-Dichloroethene	ug/L (ppb)	50	4.7	106	71-127
Chloroform	ug/L (ppb)	50	<1	102	65-132
2-Butanone (MEK)	ug/L (ppb)	250	<10	80	10-129
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	102	48-149
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	104	60-146
1,1-Dichloropropene	ug/L (ppb)	50	<1	104	69-133
Carbon tetrachloride	ug/L (ppb)	50	<1	103	56-152
Benzene	ug/L (ppb)	50	<0.35	103	76-125
Trichloroethene	ug/L (ppb)	50	<1	101	66-135
1,2-Dichloropropane	ug/L (ppb)	50	<1	105	78-125
Bromodichloromethane	ug/L (ppb)	50	<1	105	61-150
Dibromomethane	ug/L (ppb)	50	<1	107	66-141
4-Methyl-2-pentanone	ug/L (ppb)	250	<10	112	10-185
cis-1,3-Dichloropropene	ug/L (ppb)	50	<1	105	72-132
Toluene	ug/L (ppb)	50	<1	94	76-122
trans-1,3-Dichloropropene	ug/L (ppb)	50	<1	98	76-130
1,1,2-Trichloroethane	ug/L (ppb)	50	<1	104	68-131
2-Hexanone	ug/L (ppb)	250	<10	98	10-185
1,3-Dichloropropane	ug/L (ppb)	50	<1	103	71-128
Tetrachloroethene	ug/L (ppb)	50	3.7	100	10-226
Dibromochloromethane	ug/L (ppb)	50	<1	104	70-139
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	<1	103	69-134
Chlorobenzene	ug/L (ppb)	50	<1	101	77-122
Ethylbenzene	ug/L (ppb)	50	<1	98	69-135
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	<1	106	73-137
m,p-Xylene	ug/L (ppb)	100	<2	99	69-135
o-Xylene	ug/L (ppb)	50	<1	99	60-140
Styrene	ug/L (ppb)	50	<1	102	71-133
Isopropylbenzene	ug/L (ppb)	50	<1	101	65-142
Bromoform	ug/L (ppb)	50	<1	106	65-142
n-Propylbenzene	ug/L (ppb)	50	<1	100	58-144
Bromobenzene	ug/L (ppb)	50	<1	101	75-124
1,3,5-Trimethylbenzene	ug/L (ppb)	50	<1	101	66-137
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	<1	108	51-154
1,2,3-Trichloropropane	ug/L (ppb)	50	<1	103	53-150
2-Chlorotoluene	ug/L (ppb)	50	<1	101	66-127
4-Chlorotoluene	ug/L (ppb)	50	<1	100	65-130
tert-Butylbenzene	ug/L (ppb)	50	<1	102	65-137
1,2,4-Trimethylbenzene	ug/L (ppb)	50	<1	101	59-146
sec-Butylbenzene	ug/L (ppb)	50	<1	102	64-140
p-Isopropyltoluene	ug/L (ppb)	50	<1	100	65-141
1,3-Dichlorobenzene	ug/L (ppb)	50	<1	102	72-123
1,4-Dichlorobenzene	ug/L (ppb)	50	<1	98	69-126
1,2-Dichlorobenzene	ug/L (ppb)	50	<1	100	69-128
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	<10	104	32-164
1,2,4-Trichlorobenzene	ug/L (ppb)	50	<1	103	66-136
Hexachlorobutadiene	ug/L (ppb)	50	<1	96	60-143
Naphthalene	ug/L (ppb)	50	<1	104	44-164
1,2,3-Trichlorobenzene	ug/L (ppb)	50	<1	102	69-148

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	50	93	76	25-158	20
Chloromethane	ug/L (ppb)	50	95	87	45-156	9
Vinyl chloride	ug/L (ppb)	50	101	92	50-154	9
Bromomethane	ug/L (ppb)	50	95	88	55-143	8
Chloroethane	ug/L (ppb)	50	98	92	58-146	6
Trichlorofluoromethane	ug/L (ppb)	250	108	101	50-150	7
Acetone	ug/L (ppb)	250	51 vo	53	53-131	4
1,1-Dichloroethene	ug/L (ppb)	50	102	100	67-136	2
Hexane	ug/L (ppb)	50	106	108	57-137	2
Methylene chloride	ug/L (ppb)	50	108	100	39-148	8
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	107	101	64-147	6
trans-1,2-Dichloroethene	ug/L (ppb)	50	108	102	68-128	6
1,1-Dichloroethane	ug/L (ppb)	50	106	101	79-121	5
2,2-Dichloropropane	ug/L (ppb)	50	120	112	55-143	7
cis-1,2-Dichloroethene	ug/L (ppb)	50	110	106	80-123	4
Chloroform	ug/L (ppb)	50	106	102	80-121	4
2-Butanone (MEK)	ug/L (ppb)	250	73	81	57-149	10
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	100	101	73-132	1
1,1,1-Trichloroethane	ug/L (ppb)	50	108	102	81-125	6
1,1-Dichloropropene	ug/L (ppb)	50	106	104	77-129	2
Carbon tetrachloride	ug/L (ppb)	50	107	102	75-158	5
Benzene	ug/L (ppb)	50	103	102	69-134	1
Trichloroethene	ug/L (ppb)	50	102	100	79-113	2
1,2-Dichloropropane	ug/L (ppb)	50	102	105	77-123	3
Bromodichloromethane	ug/L (ppb)	50	105	105	81-133	0
Dibromomethane	ug/L (ppb)	50	106	109	82-125	3
4-Methyl-2-pentanone	ug/L (ppb)	250	101	110	65-138	9
cis-1,3-Dichloropropene	ug/L (ppb)	50	107	112	82-132	5
Toluene	ug/L (ppb)	50	97	95	72-122	2
trans-1,3-Dichloropropene	ug/L (ppb)	50	103	107	80-136	4
1,1,2-Trichloroethane	ug/L (ppb)	50	102	106	75-124	4
2-Hexanone	ug/L (ppb)	250	87	101	60-136	15
1,3-Dichloropropane	ug/L (ppb)	50	99	105	76-126	6
Tetrachloroethene	ug/L (ppb)	50	105	102	76-121	3
Dibromochloromethane	ug/L (ppb)	50	105	107	84-133	2
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	99	104	82-115	5
Chlorobenzene	ug/L (ppb)	50	103	102	83-114	1
Ethylbenzene	ug/L (ppb)	50	101	100	77-124	1
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	114	107	84-127	6
m,p-Xylene	ug/L (ppb)	100	103	101	81-112	2
o-Xylene	ug/L (ppb)	50	105	100	81-121	5
Styrene	ug/L (ppb)	50	103	104	84-119	1
Isopropylbenzene	ug/L (ppb)	50	108	102	80-117	6
Bromoform	ug/L (ppb)	50	105	108	74-136	3
n-Propylbenzene	ug/L (ppb)	50	108	103	74-126	5
Bromobenzene	ug/L (ppb)	50	105	102	80-121	3
1,3,5-Trimethylbenzene	ug/L (ppb)	50	111	103	78-123	7
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	109	109	66-126	0
1,2,3-Trichloropropane	ug/L (ppb)	50	103	103	67-124	0
2-Chlorotoluene	ug/L (ppb)	50	108	102	77-127	6
4-Chlorotoluene	ug/L (ppb)	50	105	102	78-128	3
tert-Butylbenzene	ug/L (ppb)	50	111	102	80-123	8
1,2,4-Trimethylbenzene	ug/L (ppb)	50	110	103	79-122	7
sec-Butylbenzene	ug/L (ppb)	50	112	103	80-116	8
p-Isopropyltoluene	ug/L (ppb)	50	112	103	81-123	8
1,3-Dichlorobenzene	ug/L (ppb)	50	106	103	83-113	3
1,4-Dichlorobenzene	ug/L (ppb)	50	101	98	83-107	3
1,2-Dichlorobenzene	ug/L (ppb)	50	108	101	84-112	7
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	112	106	57-141	6
1,2,4-Trichlorobenzene	ug/L (ppb)	50	120	106	72-130	12
Hexachlorobutadiene	ug/L (ppb)	50	115	101	53-141	13
Naphthalene	ug/L (ppb)	50	120	104	64-133	14
1,2,3-Trichlorobenzene	ug/L (ppb)	50	123	105	65-136	16

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 907454-09 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	2.5	<0.5	18	10-56
Chloromethane	mg/kg (ppm)	2.5	<0.5	51	10-90
Vinyl chloride	mg/kg (ppm)	2.5	<0.05	50	10-91
Bromomethane	mg/kg (ppm)	2.5	<0.5	69	10-110
Chloroethane	mg/kg (ppm)	2.5	<0.5	68	10-101
Trichlorofluoromethane	mg/kg (ppm)	2.5	<0.5	65	10-95
Acetone	mg/kg (ppm)	12.5	<0.5	57	11-141
1,1-Dichloroethene	mg/kg (ppm)	2.5	<0.05	76	22-107
Hexane	mg/kg (ppm)	2.5	<0.25	45	10-95
Methylene chloride	mg/kg (ppm)	2.5	<0.5	76	14-128
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	<0.05	81	17-134
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	78	13-112
1,1-Dichloroethane	mg/kg (ppm)	2.5	<0.05	80	23-115
2,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	46	18-117
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	81	25-120
Chloroform	mg/kg (ppm)	2.5	<0.05	87	29-117
2-Butanone (MEK)	mg/kg (ppm)	12.5	<0.5	75	20-133
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	88	22-124
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	<0.05	85	27-112
1,1-Dichloropropene	mg/kg (ppm)	2.5	<0.05	81	26-107
Carbon tetrachloride	mg/kg (ppm)	2.5	<0.05	88	28-126
Benzene	mg/kg (ppm)	2.5	<0.03	84	26-114
Trichloroethene	mg/kg (ppm)	2.5	<0.02	85	30-112
1,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	90	31-119
Bromodichloromethane	mg/kg (ppm)	2.5	<0.05	95	31-131
Dibromomethane	mg/kg (ppm)	2.5	<0.05	93	27-124
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	<0.5	101	16-147
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	88	28-137
Toluene	mg/kg (ppm)	2.5	<0.05	90	34-112
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	91	30-136
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	<0.05	94	32-126
2-Hexanone	mg/kg (ppm)	12.5	<0.5	96	17-147
1,3-Dichloropropane	mg/kg (ppm)	2.5	<0.05	97	29-125
Tetrachloroethene	mg/kg (ppm)	2.5	<0.025	87	25-114
Dibromochloromethane	mg/kg (ppm)	2.5	<0.05	107	32-143
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	<0.05	98	32-126
Chlorobenzene	mg/kg (ppm)	2.5	<0.05	92	37-113
Ethylbenzene	mg/kg (ppm)	2.5	<0.05	92	34-115
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	98	35-126
m,p-Xylene	mg/kg (ppm)	5	<0.1	94	25-125
o-Xylene	mg/kg (ppm)	2.5	<0.05	90	27-126
Styrene	mg/kg (ppm)	2.5	<0.05	97	39-121
Isopropylbenzene	mg/kg (ppm)	2.5	<0.05	90	34-123
Bromoform	mg/kg (ppm)	2.5	<0.05	102	18-155
n-Propylbenzene	mg/kg (ppm)	2.5	<0.05	92	31-120
Bromobenzene	mg/kg (ppm)	2.5	<0.05	96	40-115
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	94	24-130
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	100	27-148
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	<0.05	97	33-123
2-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	92	39-110
4-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	93	39-111
tert-Butylbenzene	mg/kg (ppm)	2.5	<0.05	93	36-116
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	93	35-116
sec-Butylbenzene	mg/kg (ppm)	2.5	<0.05	93	33-118
p-Isopropyltoluene	mg/kg (ppm)	2.5	<0.05	93	32-119
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	95	38-111
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	91	39-109
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	93	40-111
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	<0.5	97	44-112
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	86	31-121
Hexachlorobutadiene	mg/kg (ppm)	2.5	<0.25	85	24-128
Naphthalene	mg/kg (ppm)	2.5	<0.05	88	24-139
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	89	35-117

Date of Report: 08/06/19
Date Received: 07/25/19
Project: SCID 1215 E Fir St PO 41593.000, F&BI 907454

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	2.5	34	33	10-76	3
Chloromethane	mg/kg (ppm)	2.5	54	53	34-98	2
Vinyl chloride	mg/kg (ppm)	2.5	58	59	42-107	2
Bromomethane	mg/kg (ppm)	2.5	59	58	46-113	2
Chloroethane	mg/kg (ppm)	2.5	67	68	47-115	1
Trichlorofluoromethane	mg/kg (ppm)	2.5	73	73	53-112	0
Acetone	mg/kg (ppm)	12.5	81	83	39-147	2
1,1-Dichloroethene	mg/kg (ppm)	2.5	79	79	65-110	0
Hexane	mg/kg (ppm)	2.5	88	87	55-107	1
Methylene chloride	mg/kg (ppm)	2.5	70	69	50-127	1
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	88	89	72-122	1
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	87	89	71-113	2
1,1-Dichloroethane	mg/kg (ppm)	2.5	89	90	74-109	1
2,2-Dichloropropane	mg/kg (ppm)	2.5	92	93	63-145	1
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	95	95	73-110	0
Chloroform	mg/kg (ppm)	2.5	93	93	76-110	0
2-Butanone (MEK)	mg/kg (ppm)	12.5	92	94	60-121	2
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	93	95	73-111	2
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	91	92	72-116	1
1,1-Dichloropropene	mg/kg (ppm)	2.5	92	92	72-112	0
Carbon tetrachloride	mg/kg (ppm)	2.5	91	93	67-123	2
Benzene	mg/kg (ppm)	2.5	92	92	72-106	0
Trichloroethene	mg/kg (ppm)	2.5	91	92	72-107	1
1,2-Dichloropropane	mg/kg (ppm)	2.5	96	97	74-115	1
Bromodichloromethane	mg/kg (ppm)	2.5	97	97	75-126	0
Dibromomethane	mg/kg (ppm)	2.5	101	100	76-116	1
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	104	107	80-128	3
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	103	103	71-138	0
Toluene	mg/kg (ppm)	2.5	89	89	74-111	0
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	100	100	73-124	0
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	99	99	76-118	0
2-Hexanone	mg/kg (ppm)	12.5	109	111	67-123	2
1,3-Dichloropropane	mg/kg (ppm)	2.5	98	99	75-118	1
Tetrachloroethene	mg/kg (ppm)	2.5	95	95	73-111	0
Dibromochloromethane	mg/kg (ppm)	2.5	101	100	64-152	1
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	98	100	77-117	2
Chlorobenzene	mg/kg (ppm)	2.5	97	97	76-109	0
Ethylbenzene	mg/kg (ppm)	2.5	94	94	75-112	0
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	102	101	75-129	1
m,p-Xylene	mg/kg (ppm)	5	97	96	77-115	1
o-Xylene	mg/kg (ppm)	2.5	96	96	76-115	0
Styrene	mg/kg (ppm)	2.5	99	100	76-119	1
Isopropylbenzene	mg/kg (ppm)	2.5	98	97	76-120	1
Bromoform	mg/kg (ppm)	2.5	103	102	50-174	1
n-Propylbenzene	mg/kg (ppm)	2.5	97	97	77-115	0
Bromobenzene	mg/kg (ppm)	2.5	97	98	76-112	1
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	98	97	77-121	1
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	102	104	74-121	2
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	97	99	73-117	2
2-Chlorotoluene	mg/kg (ppm)	2.5	97	96	75-113	1
4-Chlorotoluene	mg/kg (ppm)	2.5	97	97	77-115	0
tert-Butylbenzene	mg/kg (ppm)	2.5	97	97	77-123	0
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	98	98	77-119	0
sec-Butylbenzene	mg/kg (ppm)	2.5	98	98	78-120	0
p-Isopropyltoluene	mg/kg (ppm)	2.5	99	98	77-120	1
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	98	98	76-112	0
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	95	95	74-109	0
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	97	97	75-114	0
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	98	103	68-122	5
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	104	102	75-122	2
Hexachlorobutadiene	mg/kg (ppm)	2.5	101	99	74-130	2
Naphthalene	mg/kg (ppm)	2.5	100	102	73-122	2
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	103	103	75-117	0

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

907454

SAMPLE CHAIN OF CUSTODY

ME 07-25-19 804 / AI3 CI3

Page # 1 of 2

Send Report To J. Welles

Company PBS Engineering

Address Seattle

City, State, ZIP

Phone # (206) 348-6317 Fax #

Email Address james.welles@pbsusa.com

SAMPLERS (signature)

PROJECT NAME/NO.	PO #
SCID - 1215 E FIR ST	41593.000

PROJECT ADDRESS

• ELECTRONIC DATA REQUESTED

TURNAROUND TIME VW2

X Standard Turnaround

• RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

X Dispose after 30 days

• Return samples

• Will call with instructions

Samples Received at ____ °C

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	RCRA-8 Metals (6010)	PAHs (8270 SIM)				Notes
BH-01-10	01A-C	7/23/19	1140	SOIL	3	X	X		X			X					
BH-01-W	02A-E	7/23/19	1255	W	5	X	X		X			X					
BH-02-09	03A-C	7/23/19	1359	SOIL	3	X	X		X			X					
BH-02-W	04A-E	7/23/19	1410	W	5	X	X		X			X					
BH-03-15	05A-C	7/23/19	0836	SOIL	3	X	X		X			X					
BH-03-WA	06A-E	7/23/19	1020	W	5	X	X		X			X					
BH-04-15	07A-C	7/23/19	1510	SOIL	3	X	X		X			X					
BH-04-W	08A-E	7/23/19	1554	W	5	X	X		X			X					
BH-05-02	09A-C	7/24/19	1521	SOIL	3	X	X		X			X	X				
BH-05-07	10	7/24/19	1535	SOIL	3	X	X		X			X					

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	J Welles	PBS	7/25/19	1015
Received by:	Eric Lowe	F+S	7/25/19	1015
Relinquished by:				
Received by:				

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

907454

SAMPLE CHAIN OF CUSTODY

ME 07-25-19 AI3/B04 CI3

Page # 1 of 2

Send Report To J. Welles

Company PBS

Address

City, State, ZIP Seattle

Phone # (206) 348-6317 Fax #

Email Address james.welles@pbsusa.com

SAMPLERS (signature)

PROJECT NAME/NO.: SCID - 121SE FIRST

PO # 41593.000 4/5/19

PROJECT ADDRESS

• ELECTRONIC DATA REQUESTED

TURNAROUND TIME VW2

X Standard Turnaround

• RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

X Dispose after 30 days

• Return samples

• Will call with instructions

Samples Received at ____ °C

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	RCRA 8 Metals (6010)	PAHs 8270 SIM				Notes
BH-06-05	11A-C	7/24/19	1309	SOIL	3	X	X		X			X					
BH-06-W	12A-E	7/24/19	1439	W	5	X	X		X			X					
BH-07-12	13A-C	7/24/19	1145	SOIL	3	X	X		X			X					
BH-03-WB	14A-E	7/23/19	1600	W	5	X	X		X			X					

ANALYSES REQUESTED

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		J. Welles	PBS	7/25/19	1945
Received by:		Eric Young	F a B	7/25/19	1045
Relinquished by:					
Received by:					

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