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Centric Partners LLC
c/o Trent Development
1420 Fifth Avenue, Suite 2200
Seattle, WA 98101

Attention: Mr. Michael Pollard

Subject: 2020-2022 Groundwater Monitoring Summary
104-124 12th Avenue & 1209 E. Fir Street
Seattle, Washington

Dear Mr. Pollard:

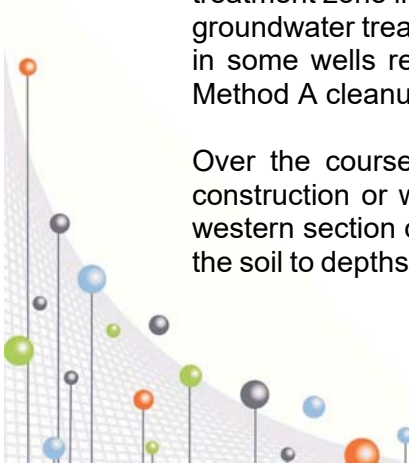
As you have authorized, **Whitman Environmental Sciences, (WES)** has continued to monitor groundwater at the above referenced site in Seattle, Washington, prior to and during site excavation and construction. Figure 1 shows the site location and surrounding area. This letter summarizes the sampling and results of laboratory testing on groundwater samples taken during the 4th Quarter 2020, throughout 2021 and 1st Quarter of 2022. This monitoring was conducted as part of the activities under the Compliance Monitoring Plan for documenting site remediation progress.

Groundwater remedial injections were conducted in the June 2020 in the SE Parking Lot area of the site. The sampling events documented in this report represent post-remediation monitoring in and around that groundwater remediation area, as well as site-wide sampling of the original monitoring network.

The findings indicate that the groundwater treatment injections initially eliminated concentrations of chlorinated volatile organic compounds(CVOC), but over time rebound has occurred. In the most recent sampling, vinyl chloride has exceed the Washington State Model Toxics Control Act (MTCA) groundwater cleanup level of 0.2 ug/l in two monitoring wells along the northern edge of the treatment zone. No other organic compounds or petroleum constituents exceeded MTCA cleanup levels in any of the recent samples.

Throughout these sampling rounds, groundwater has been analyzed for concentrations of dissolved arsenic. The findings indicate elevated arsenic in groundwater throughout most of the site. Data from surrounding area sites have suggested this is an area-wide issue and natural background levels of arsenic exceed the State groundwater cleanup level of 5 ug/l. In the groundwater treatment zone in the SE Parking Lot there is evidence that elevated arsenic is a byproduct of the groundwater treatment. Over time, the reported arsenic concentrations in this area are falling, but in some wells remain above the concentrations reported prior to treatment and above MTCA Method A cleanup levels.

Over the course of 2021 many of the site monitoring wells have been inaccessible due to construction or were decommissioned. As part of site excavations, all monitoring wells in the western section of the property were decommissioned and site excavations completely removed the soil to depths below the former bottom-of-well depths. The groundwater seepage zones these



wells monitored were completely removed within the property boundaries. A series of 117 de-watering well points were installed around the perimeter of the excavation, which have been controlling groundwater infiltration from the surrounding area since the June 17th, 2021. Monitoring well MW-13, located in the Yesler Way right-of-way south of the excavated area has been dry since 3rd Quarter, due to nearby de-watering well points.

Monitoring wells were retained for as long as possible in the SE Parking Lot groundwater remediation area, but eventually all wells in the area except those along the eastern property line (MW-1D, MW-1S, MW-10 and MW-11) were decommissioned due to construction interference. In December 2021, five wells were replaced with newly constructed monitoring wells at locations that would not interfere with excavations or construction activities. These wells were designated MW-5R, MW-12R, MW-15R, GEO B-7R and GEO B-9R. Generally, the new locations were within a few feet of the original wells.

GROUNDWATER MONITORING

This report presents the results of six quarterly sampling events, representing the 4th Quarter of 2020, the 1st, 2nd, 3rd and 4th Quarters of 2021, and 1st Quarter of 2022. During each quarter, all accessible monitoring wells were purged and sampled following appropriate environmental sampling procedures.

Figures 3, 3A, 3B, 3C, 3D and 3E show the approximate locations of the wells that remained in place for each of the quarterly events.

In the 1st Quarter 2021, access to two monitoring wells (MW-3 and MW-14) was blocked and the wells were eventually decommissioned with no further sampling. After sampling was completed for the quarter a total of seven wells were decommissioned in preparation for the overall site excavation (MW-3, MW-6, MW-7, MW-8, MW-9, MW-14 and GEO-B8) by ESN Northwest, Inc. (ESN), a licensed well driller.

After the 2nd Quarter 2021 sampling two additional wells (MW-4 and GEO-B7) were encountered by excavations and properly decommissioned by ESN.

During the 3rd Quarter 2021 three other wells were inaccessible for sampling throughout the quarter (MW-1, MW-12 and MW-16). Monitoring well MW-13 was consistently dry throughout the quarter, due to nearby de-watering wells for the main excavation. MW-13 has remained dry to the present. After sampling was completed for the quarter, monitoring well MW-2 was decommissioned due to construction interference.

By 4th Quarter 2021, two additional wells (MW-12 and MW-16) were damaged by excavations and decommissioned without further sampling. Two other wells were inaccessible for sampling throughout the quarter (MW-11 and MW-15). Following the 4th Quarter 2021 sampling, wells MW-1, MW-5, MW-15 and GEO-B9 were decommissioned, as excavations extended into the SE Parking Lot. A large trench excavation was conducted in the northern part of the lot to install a below-grade concrete stormwater retention structure. After the structure was in place, replacement wells MW-5R, MW-12R, MW-15R, GEO B-7R and GEO B-9R were installed on December 23rd, 2021. These wells were developed, but not sampled until 1st Quarter 2022.

In 1st Quarter 2022, monitoring well MW-1S was inaccessible throughout the quarter. Sampling was limited to MW-1D, MW-10, MW-11 and the newly installed replacement wells MW-5R, MW-12R, MW-15R, GEO B-7R and GEO B-9R.

Groundwater Level Measurements

As part of monitoring, WES measured the depth to groundwater in the monitoring wells. The measurements were obtained after the well caps had been removed for a period of time to allow water levels to stabilize and before any of the wells were purged of standing groundwater. Table 1 summarizes the top-of-pipe elevation for each well, the depth to groundwater and the groundwater elevation at each well for all monitoring events from October 2017 to the present. Top of pipe elevations were determined by a licensed surveyor, with the exception of MW-13, MW-15 and MW-16. These well elevations were surveyed by WES relative to multiple nearby monitoring wells with known elevations. Top-of-pipe elevations for the new replacement wells have not been determined yet, as the top of the riser pipes will be cut to final grade elevations as part of later construction.

Figures 2, 2A, 2B and 2C show the measured water elevations and inferred contours of the groundwater surface for the 4th Quarter 2020 and 1st, 2nd and 3rd Quarters 2021, respectively. The inferred gradient of groundwater migration is consistently to the southeast, similar to that interpreted from prior measurements from 2017 to the present.

In the 4th Quarter 2020, the depths represent groundwater elevations within a range of 187.10 to 201.68 feet. Figure 2 illustrates the measured groundwater elevations at the monitoring wells and the inferred contours of the shallowest groundwater level across the site. In that quarter, most measured water levels were higher than any prior measurements in the subject wells, which likely reflects seasonal variations. There was 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 0.04 foot/foot to the southeast across the site. Between nested wells MW-1D and MW-1S, there was an upward vertical gradient of 0.044 ft/ft.

In 1st Quarter 2021, the depths represent groundwater elevations within a range of 187.31 to 201.18 feet. Figure 2A illustrates the measured groundwater elevations at the monitoring wells and the inferred contours of the shallowest groundwater level across the site. In that quarter, measured water levels were within the range of prior measurements in the subject wells, except for well MW-1. MW-1 was at an elevation 1.47 feet lower than any prior measurement. MW-1, near the northeastern corner of the SE Parking Lot was located at a distance from any site excavations that were being conducted at that time, so it is unclear what influenced the groundwater level. The data indicates a relatively strong overall gradient of 0.041 foot/foot to the southeast across the site. Between nested wells MW-1D and MW-1S, there was an upward vertical gradient of 0.014 ft/ft.

For the 4th Quarter 2020 and 1st Quarter 2021 monitoring events, most of the wells remained in place allowing measurements across the site. After that, measurements were from a more limited number of wells, accessible only on different dates, so water level measurements do not represent instantaneous measurements.

In 2nd Quarter 2021, the main western excavation had begun, so measurements were limited to the SE Parking Lot and MW-13. Measured depths represent groundwater elevations within a range of 187.16 to 195.06 feet. Figure 2B illustrates the measured groundwater elevations at the monitoring wells and the inferred contours of the shallowest groundwater. In that quarter, measured water levels were within the range of prior measurements in the subject wells, except MW-1, which remained depressed, and MW-13 which was lower than any prior measurement. By the dates these wells were measured there had been significant excavation work, but construction de-watering had not begun yet. The data indicates a relatively strong overall gradient of 0.041

foot/foot to the southeast across the site. Between nested wells MW-1D and MW-1S, there was an upward vertical gradient of 0.014 ft/ft.

In 3rd Quarter 2021, the number of accessible wells was limited. Measured depths represent groundwater elevations within a range of 186.40 to 195.00 feet. In Figure 2C, the limited amount of data affected the way contours appear across the southern edge of the site, suggesting a southerly gradient. It is likely an artifact of contouring, as the available data points nearer the groundwater treatment area (such as MW-5, MW-15, MW-11 and GEO B-9) show the gradient continued to trend toward the southeast across this portion of the site. Monitoring wells MW-1D, MW-1S and MW-13 were at elevations below their normal ranges, but no other wells in the groundwater treatment area (most of which were closer to the excavated area) did not show measurable influences that exceeded typical seasonal water level variations.

By 4th Quarter 2021 there were too few wells with intact reference elevations to generate meaningful groundwater contour plots. However the data shows that the groundwater levels on the southeastern edge of the property (MW-10 and MW-11) have not been affected by de-watering and are relatively consistent with prior measurements, suggesting gradients across the SE Parking Lot area remain consistent with prior observations.

FIELD SAMPLING AND LABORATORY ANALYTICAL PROGRAM

Groundwater Sampling Procedures

Samples were obtained using peristaltic pumps equipped with dedicated polyethylene tubing in each well. Each well was purged of at least three times the volume of standing water prior to sampling; volumes ranging from one to 20 gallons. Field measurements of dissolved oxygen, pH, temperature, conductivity and oxidation reduction potential (ORP) were used to evaluate when stabilized conditions were reached in the pump discharge water.

In most of the sampling events, wells in the groundwater treatment area continued to show somewhat discolored, black water that indicates the injected activated carbon had not completely adsorbed to soil. This decreased over time, but monitoring wells MW-1S, MW-5, MW-11, MW-12, MW-16 and GEO B-9 particularly showed dark colored water through all sampling events.

Samples were taken following proper environmental sampling techniques and protocols. Samples were taken directly from the polyethylene pump tubing at a low flow rate and were placed in laboratory prepared bottles, sealed, chilled and held under chain of custody until delivered to the laboratory. Samples for dissolved arsenic were filtered through 0.45 micron single-use filters in the field, before preservation. The samples were submitted to Friedman & Bruya, Inc., a Washington State accredited laboratory, for testing.

4th Quarter 2020

During the 4th Quarter 2020, samples from all 21 site wells were sampled. The sampling and laboratory analyses are summarized in Table 2. Eighteen of the samples were analyzed for a list of 62 individual volatile organic compounds (VOCs) by EPA Method 8260C. The tested compounds are common solvents and/or organic compounds associated with petroleum. Three additional wells (MW-8, MW-9 and GEO B-8) were analyzed for a more limited suite of petroleum related volatile organic compounds (benzene, toluene, ethylbenzene and xylenes (BTEX)) by EPA Method 8021B, based on prior sampling.

The samples from wells MW-8, MW-9 and GEO-B8 were also analyzed for total petroleum hydrocarbons in the gasoline range (GRO) by Washington accepted Method NWTPH-G. The sample from MW-9 was also analyzed for total petroleum hydrocarbons in the diesel and oil ranges (DRO and MRO) by NWTPH-D(extended). These analyses were selected based on the prior detections in previous sampling events from these wells.

Samples from all of the monitoring wells except MW-9 were analyzed for total and dissolved arsenic by EPA Method 6020B. This was to demonstrate site-wide arsenic concentrations in groundwater prior to overall excavation.

1st Quarter 2021

During the 1st Quarter 2021, samples from 19 site wells were sampled. The sampling and laboratory analyses are summarized in Table 2A. Two wells (MW-3 and MW-14) were inaccessible due to demolition of the site buildings and preparations for construction. All of the samples were analyzed for VOCs and concentrations of dissolved arsenic. Seventeen of the samples were also tested for total arsenic. Three of the wells (MW-8, MW-9 and GEO B-8) were analyzed for GRO, DRO and MRO.

Field Filtration Testing

During the 1st Quarter sampling, testing was conducted to investigate different field filtration methods for arsenic sampling. Bulk samples were separately filtered using four different types of field filters to determine if the finely-milled remediation injectates or soil turbidity were passing through the filters. Filters included 0.45 micron large canister filters with high surface area folded filter media, 0.45 micron button filters with 25 mm flat filter media, 0.22 micron button filters with 25 mm flat filter media, and 0.1 micron canister filters. Two or more differently filtered samples and a sample of unfiltered water from 17 wells were analyzed for dissolved and total arsenic, respectively.

The filtration testing found that in general, most dissolved arsenic (filtered) samples had slightly lower concentrations reported than the total arsenic concentration in unfiltered samples. But the testing found little or no difference in the reported dissolved arsenic concentrations from the various filters. Using a 0.22 micron button filter versus a 0.45 micron button filter resulted in a 1-10% lower dissolved arsenic concentration in 10 of the samples, while in seven samples the results were relatively unchanged (three samples) or higher (four samples). The additional removal may represent very fine particulate not captured by the standard 0.45 micron filter, but the difference was not significant and the field process often required multiple filters to collect enough sample for analysis. Based on this, WES selected 0.45 micron button filters as the filtration medium for all future dissolved arsenic sampling. Table 2A reports only the results of the testing on unfiltered samples and those passed through 0.45 micron filters. The laboratory reports from Apex Laboratories, Inc., summarizing the analyses are included in Appendix A.

Two samples (MW-11, MW-16) showed a significantly lower concentration of dissolved arsenic versus total arsenic, suggesting the turbidity in these wells partially contributed to the reported total arsenic concentrations. The water from these wells continued to evidence black water from the injection of activated carbon. But filtration, regardless of the choice of media, reduced the reported arsenic concentrations in the dissolved samples at approximately the same rate.

2nd Quarter 2021

During the 2nd Quarter 2021, samples were obtained from all 15 remaining site wells. The western part of the property was being excavated and the southeastern parking lot was being used for construction staging, so not all wells were accessible at any given time. All of the samples were analyzed for VOCs and concentrations of dissolved arsenic. The sampling and laboratory analyses are summarized in Table 2B.

3rd Quarter 2021

During the 3rd Quarter 2021, samples were obtained from eight remaining site wells. Three wells (MW-1, MW-12 and MW-16) were inaccessible due to construction staging throughout the quarter. The sampling and laboratory analyses are summarized in Table 2C. Seven of the samples were analyzed for VOCs and concentrations of dissolved arsenic. The sample from MW-2 was damaged in transit and was only analyzed for dissolved arsenic.

4th Quarter 2021

During the 4th Quarter 2021, samples were obtained from six of the remaining site wells. Four wells (MW-11, MW-12, MW-15 and MW-16) were inaccessible throughout the quarter, then damaged during initial earthwork, before they could be sampled. MW-11 was repairable, so it was re-developed and a new section of riser casing was added. The other wells were either beyond repair, or at locations that would soon be disturbed by excavations. Wells MW-12, MW-15 and MW-16 were decommissioned without further sampling. Monitoring wells MW-1, MW-5 and GEO B-9 were sampled then decommissioned due to construction interference. All of the samples were analyzed for VOCs and concentrations of dissolved arsenic. The sampling and laboratory analyses are summarized in Table 2D.

1st Quarter 2022

During the 1st Quarter 2022, samples were obtained from eight monitoring wells, including MW-1D, MW-10, MW-11 and five newly installed replacement wells (MW-5R, MW-12R, MW-15R, GEO B-7R and GEO B-9R). One well (MW-1S) was inaccessible throughout the quarter and damaged. The replacement wells were developed by surging, bailing and pumping to remove sediment and increase communication with the surrounding formation. After development, they were fitted with dedicated polyethylene tubing and sampled following appropriate environmental sampling procedures. All of the samples were analyzed for VOCs and concentrations of dissolved arsenic. The sampling and laboratory analyses are summarized in Table 2E.

LABORATORY ANALYTICAL RESULTS

The results of laboratory testing are summarized in the attached data tables and illustrated in Figures 3, 3A, 3B, 3C, 3D and 3F. The laboratory reports of the analytical results are included in Appendix A.

All laboratory testing was conducted with reporting limits suitable for comparison with regulatory criteria. All laboratory quality assurance/quality control data is included and meets the analytical requirements of this assessment. Beginning in 3rd Quarter 2021, Friedman & Bruya, Inc. reduced their standard reporting limit for vinyl chloride to 0.02 ug/l and trichloroethylene to 0.5 ug/l. The data tables included with this report reflect that change.

Volatile Organic Compounds and Petroleum

In the 4th Quarter 2020 and 1st Quarter 2021 sampling rounds conditions were comparable to that of prior sampling from the 3rd Quarter 2020, following remedial injections. In the northwestern part of the property, not influenced by the injections, wells MW-8 and MW-9 continued to evidence petroleum related compounds. Monitoring well MW-8 contained low but detectable concentrations of GRO, ethylbenzene and xylenes, at concentrations below applicable MTCA Method A cleanup levels. Monitoring well MW-9 contained GRO, DRO and benzene at concentrations exceeding MTCA Method A cleanup levels, and toluene, ethylbenzene and xylenes below cleanup levels. In 4th Quarter 2020, MW-14 contained detectable benzene (0.57 ug/l), below the MTCA Method A cleanup level of 5 ug/l, with no other detected volatile organic compounds.

In the southwestern part of the property, MW-6 evidenced low but detectable concentrations of cis-1,2 dichloroethene (C12DCE) and chloroform, below MTCA Method A or B cleanup levels. The samples from monitoring wells MW-3, MW-4, MW-7 and MW-13 contained no detectable volatile organic compounds. These findings are comparable to prior testing.

In the southeastern parking lot, the 4th Quarter 2020 and 1st Quarter 2021 sampling rounds reported no detectable tetrachloroethene (PCE), trichloroethene (TCE), or vinyl chloride in any of the 12 wells in and around the groundwater treatment area. In both quarters, MW-10, the most downgradient well, contained detectable C12DCE, at 1.4 and 1.1 ug/l, respectively, with no other volatile organic compounds. Samples from wells MW-1, MW-1S, MW-2, MW-11, MW-12 and MW-16 in or around the treatment area, contained methyl ethyl ketone (MEK), a simple organic ketone that is most likely produced as breakdown products of organic materials under the reducing conditions created by the in-situ groundwater treatment. Detected MEK concentrations ranged from 20 to 77 ug/l. Monitoring well MW-11 also contained 61 ug/l of acetone, another simple organic byproduct compound. None of the detected volatile organic compounds exceed MTCA Method A or B groundwater cleanup criteria.

By 2nd Quarter 2021 monitoring was limited to the remaining wells in the southeastern parking lot and MW-13, while the western part of the property was being excavated. In 2nd Quarter 2021 sampling, no detectable PCE, TCE or vinyl chloride were found in any of the wells in and around the groundwater treatment area. MW-10 again contained detectable C12DCE, at 1.0 ug/l, with no other volatile organic compounds. The sample from MW-11 contained 38 ug/l of MEK, about half the concentration reported in 1st Quarter, with no detected acetone in any sample. No other sample contained MEK or acetone.

In the 3rd Quarter 2021, monitoring was limited to the remaining wells in the southeastern parking lot. MW-13 no longer contained measurable water, due to adjacent de-watering well points. The sample from monitoring well MW-5, located closest to the northern edge of the groundwater treatment area contained vinyl chloride (0.27 ug/l), TCE (1.1 ug/l), and C12DCE (4.3 ug/l), evidence of contaminants migrating toward the groundwater treatment area. MW-5 was located about three feet south of the adjacent King County warehouse, and so was at the northern edge of the treatment zone, upgradient from the main mass of treatment compounds. It acts as an indicator of the presence of contaminants in groundwater flowing toward the site. Monitoring well MW-10, the most downgradient well, did not contain detectable C12DCE as it had in the three prior quarters.

In the 4th Quarter 2021, monitoring was limited to the remaining wells in the southeastern parking lot. The sample from monitoring well MW-5 again contained vinyl chloride (0.41 ug/l), TCE (1.4 ug/l), and C12DCE (3.8 ug/l), additional evidence of contaminants migrating toward the groundwater treatment area. A second sample from the well as confirmation also contained vinyl chloride (0.61 ug/l), TCE (1.9 ug/l), and C12DCE (4.6 ug/l), suggesting slightly increasing concentrations over time. None of the other remaining wells contained any detectable volatile organic compounds. After the 4th Quarter sampling, wells MW-1, MW-5, MW-12, MW-15 and MW-16 and GEO B-9 were decommissioned and replacement wells MW-5R, MW-12R, MW-15R, GEO B-7R and GEO B-9R were installed.

In the 1st Quarter 2022, monitoring was conducted on three of the remaining wells (MW-1D, MW-10 and MW-11) and the five newly installed replacement wells. Vinyl chloride was detected in four of the eight samples, including MW-5R, MW-15R and GEO B-7R along the northern boundary, and MW-11, a downgradient well on the eastern site boundary. The reported concentrations in MW-5R (0.60 ug/l) and GEO B-7R (1.1 ug/l), exceed the MTCA Method A groundwater cleanup level. The detections in MW-11 (0.039 ug/l) and MW-15R (0.14 ug/l) are below cleanup level. The samples from both MW-15R and GEO B-7R also contained C12DCE below the MTCA Method B groundwater cleanup level. The findings could indicate breakthrough of chlorinated volatile organic compounds, or the typically high bias observed in samples from newly installed or disturbed monitoring wells. However, the detections indicate the wells are suitable replacements for the previously decommissioned wells and additional sampling will be necessary to evaluate trends over time.

Arsenic In Groundwater

Throughout all six quarterly monitoring events, dissolved arsenic has been detected in most sampled monitoring wells. MW-1 in the far northeastern corner of the SE Parking Lot typically did not contain detectable arsenic, until the 4th Quarter 2021 when 1.1 ug/l was found. Nearby wells MW-5 and GEO B-9 have typically contained low levels of dissolved arsenic, but have exceeded the MTCA Method A groundwater cleanup level of 5ug/l in one or more sampling round.

Other than this, reported dissolved concentrations ranged from 1.79 to 2,110 ug/l. Samples from wells MW-3, MW-6 and MW-13, in the southwestern part of the site all contained from 1.79 to 2.16 ug/l of dissolved arsenic in the two sampled quarters summarized here, prior to decommissioning. Wells MW-8, MW-14 and GEO B-8 in the northwestern part of the property contained dissolved arsenic concentrations ranging from 8.72 to 74.1 ug/l, exceeding the 5 ug/l cleanup level in those quarters. The water bearing zones represented by those samples have since been excavated away.

Monitoring wells in the SE Parking Lot other than MW-1, MW-5 and GEO B-9 all evidenced dissolved arsenic concentrations exceeding the 5 ug/l cleanup level in 4th Quarter 2020 and 1st and 2nd Quarters 2021. In general, there is a trend of decreasing concentrations over time in shallower wells, as evidenced by the 3rd and 4th Quarter 2021 and 1st Quarter 2022 sampling, but additional monitoring will be required to confirm trends once the disturbance of construction has ended. Time trend plots for monitoring wells with at least four consecutive quarterly data points (MW-1S, MW-1D, MW-2, MW-4, MW-5, MW-10, MW-11, MW-12, MW-15, GEO B-7 and GEO B-9) are included in Appendix B. All other wells have been decommissioned, or do not have sufficient data to demonstrate longer-term trends.

MW-2, MW-11 and particularly MW-12 have shown an increase in arsenic concentrations as a byproduct of the groundwater treatment. Prior to the remedial action, dissolved arsenic in MW-12 was reported at 4.39 ug/l in samples taken in May 2020, compared to 1,260 ug/l in December and 2,110 ug/l in March 2021. Until decommissioned, MW-12 contained black discolored water during sampling and during the injection process saw injectate surfacing through and around the well. In 3rd Quarter 2021 the concentration remained high (1,600 ug/l). The first sample from replacement well MW-12R in 1st Quarter 2022 showed some reduction but remained elevated, at 845 ug/l.

Wells screened at deeper intervals (MW-1D and MW-15) have shown stable concentrations at levels exceeding the MTCA 5 ug/l cleanup level. MW-1D has a history of eight consecutive quarterly samples with concentrations ranging from 9.04 to 10.3 ug/l, and no evidence of detectable volatile organic contaminants. MW-15 had a history of five consecutive quarterly samples with concentrations ranging from 9.91 to 12.7 ug/l before it was decommissioned.

Additional monitoring for dissolved arsenic will be conducted as part of the Compliance Monitoring Plan.

In November 2020, WES prepared a calculation of the natural background arsenic concentration for the site based on groundwater concentrations reported at the site and in the surrounding area. Some of the data points used in that calculation were rejected by Ecology. Since then, additional information from the site and surrounding area has become available. An updated calculation of natural background arsenic concentrations will be prepared under separate cover.

CONCLUSIONS

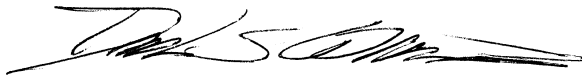
Groundwater sampling and analysis are important parts of compliance monitoring for this site. Some wells have begun to show evidence of possible breakthrough of vinyl chloride migrating with groundwater onto the SE Parking Lot from the adjacent King County warehouse to the north. Additional monitoring will be necessary to determine if additional remedial actions are needed. Dissolved arsenic concentrations exceed the MTCA Method A groundwater cleanup level in most samples from the site. Although some wells reflect elevated arsenic as a byproduct of the strong reducing environment created by groundwater treatment, the reported concentrations in these wells are decreasing over time. Some wells screened at depths below the contaminated, shallowest zone show arsenic concentration in natural background water that exceeds the MTCA cleanup level. A calculation of the natural background arsenic concentration for the site and surrounding area will be prepared under separate cover.

Additional quarterly monitoring will be conducted to evaluate areas that have in the past or currently exceeded MTCA cleanup criteria. Since construction activities have disturbed or removed some of the prior monitoring well network, the Compliance Monitoring Plan will need to be updated and some additional monitoring wells may be needed to properly bound the groundwater treatment area.

Closure

Thank you for the opportunity to be of service to you in this matter. If you have any questions regarding this letter, or if I may be of any further assistance, please feel free to contact me.

Respectfully submitted,
Whitman Environmental Sciences



Daniel S. Whitman
Principal



TABLES

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Table 2A - Summary of 1st Quarter 2021 Groundwater Sample Analytical Results
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APPENDICES

APPENDIX A - Laboratory Analytical Report - Friedman & Bruya, Inc.
& Apex Laboratories, Inc.
APPENDIX B - Dissolved Arsenic Time Series Plots -
MW-1S, MW-1D, MW-2, MW-4, MW-5, MW-10,
MW-11, MW-12, MW-15, GEO B-7 and GEO B-9

TABLES

TABLE 1
Summary of Groundwater Level Measurements
104 - 124 12th Avenue and 1209 E. Fir Street, Seattle, Washington

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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, 25' Screen	
	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		
	5/19/2020		-6.08	194.18		
	9/28/2020		-6.70	193.56		
	12/1/2020		-5.64	194.62		
	3/18/2021		-9.62	190.64		
	5/24/2021		-9.08	191.18		
	Q3 2021		NM	--	Inaccessible	
	Q4 2021		NM	Top of Pipe Damaged - No Reference Elevation		
	Decommissioned					
MW-1S	9/3/2019	198.99	-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		
	5/19/2020		-5.49	193.50		
	9/28/2020		-6.47	192.52		
	12/1/2020		-5.14	193.85		
	3/23/2021		-4.48	194.51		
	5/13/2021		-4.91	194.08		
	9/14/2021		-7.71	191.29		
	12/23/2021		NM	Top of Pipe Damaged - No Reference Elevation		
	Q1 2022		NM	Top of Pipe Damaged - No Reference Elevation		

TABLE 1
Summary of Groundwater Level Measurements
104 - 124 12th Avenue and 1209 E. Fir Street, Seattle, Washington

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Monitoring Well	Date	Top of Pipe Elevation	Water Level Below T.O.P.	Water Elevation	Comments
MW-1D	9/3/2019	199.02	-5.58	193.44	2" Well, 40' deep, 5' Screen
	10/3/2019		-5.14	193.88	
	12/4/2019		-5.96	193.06	
	3/17/2020		-4.32	194.70	
	5/19/2020		-4.64	194.38	
	9/28/2020		-4.89	194.13	
	12/1/2020		-4.33	194.69	
	3/23/2021		-4.24	194.78	
	5/12/2021		-4.65	194.37	
	9/14/2021		-9.09	189.93	
	12/23/2021		-7.75	Top of Pipe Damaged - No Reference Elevation	
	Q1 2022		NM	Top of Pipe Damaged - No Reference Elevation	
	MW-2	10/30/2017	201.08	-5.94	195.14
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	
5/19/2020		-5.48		195.60	
9/28/2020		-4.91		196.17	
12/1/2020		-4.16		196.92	
3/16/2021		-4.83		196.25	
6/5/2021		-6.02		195.06	
7/16/2021		NM		Top of Pipe Damaged - No Reference Elevation	
Decommissioned					

TABLE 1
Summary of Groundwater Level Measurements
104 - 124 12th Avenue and 1209 E. Fir Street, Seattle, Washington

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Monitoring Well	Date	Top of Pipe Elevation	Water Level Below T.O.P.	Water Elevation	Comments
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	
	5/19/2020		-4.71	195.27	
	9/28/2020		-4.95	195.03	
	12/1/2020		-3.67	196.31	
	Q1 2021		NM	--	Inaccessible Throughout Quarter
	Decommissioned				
	MW-4	10/30/2017	199.36	-8.65	190.71
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	
5/19/2020		-8.23		191.13	
9/28/2020		-8.36		191.00	
12/1/2020		-7.15		192.21	
3/26/2021		-6.89		192.47	
Decommissioned					

TABLE 1
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	
	5/19/2020		-5.76	195.23	
	9/28/2020		-5.76	195.23	
	12/1/2020		-4.89	196.10	
	3/16/2021		-5.21	195.78	
	5/24/2021		NM	--	Inaccessible Throughout Quarter
	9/30/2021		-6.33	194.66	
	Decommissioned - Replacement Well MW-5R Installed 12/23/2021				
MW-5R	3/22/2022	--	-8.17	New Top of Pipe - No Reference Elevation Yet	
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	
	5/19/2020		-2.84	197.45	
	9/28/2020		-0.88	199.39	

TABLE 1
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-6 (Continued)	12/1/2020		-1.04	199.23	
	3/26/2021		-1.30	198.97	
	Decommissioned				
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	
	5/19/2020		-2.18	197.38	
	9/28/2020		-0.25	199.31	
	12/1/2020		-0.23	199.33	
	3/16/2021		NM	Top of Pipe Damaged - No Reference Elevation	
	Decommissioned				
MW-8	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	
	5/19/2020		-15.05	201.46	
	9/28/2020		-15.40	201.11	

TABLE 1
Summary of Groundwater Level Measurements
104 - 124 12th Avenue and 1209 E. Fir Street, Seattle, Washington

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Monitoring Well	Date	Top of Pipe Elevation	Water Level Below T.O.P.	Water Elevation	Comments
MW-8 (Continued)	12/1/2020	216.51	-14.83	201.68	
	3/16/2021		-15.33	201.18	
	Decommissioned				
MW-9	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	
	5/19/2020		-13.21	201.04	
	9/28/2020		-13.63	200.62	
	12/1/2020		-12.33	201.92	
	3/26/2021		NM	Top of Pipe Damaged - No Reference Elevation	
	Decommissioned				
MW-10	11/7/2017	196.88	-10.21	186.67	2" Well, 15' Deep, 10' Screen
	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	
	5/19/2020		-9.67	187.21	
	9/28/2020		-10.00	186.88	
	12/1/2020		-9.78	187.10	

TABLE 1
Summary of Groundwater Level Measurements
104 - 124 12th Avenue and 1209 E. Fir Street, Seattle, Washington

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Monitoring Well	Date	Top of Pipe Elevation	Water Level Below T.O.P.	Water Elevation	Comments
MW-10 (Continued)	3/23/2021	196.88	-9.57	187.31	
	5/12/2021		-9.72	187.16	
	9/14/2021		-10.48	186.40	
	12/23/2021		-9.55	187.33	
	3/9/2022		-9.08	187.80	
MW-11	9/3/2019	198.20	-6.54	191.66	2" Well, 15' Deep, 10' Screen
	10/3/2019		-5.74	192.46	
	12/4/2019		-5.57	192.63	
	3/17/2020		-5.73	192.47	
	5/19/2020		-5.26	192.94	
	9/28/2020		-6.67	191.53	
	12/1/2020		-5.14	193.06	
	3/23/2021		-4.84	193.36	
	5/14/2021		-5.18	193.02	
	9/30/2021		-6.15	192.05	
	Q4 2021		NM	--	Inaccessible Throughout Quarter
	3/25/2022		NM	Top of Pipe Damaged - No Reference Elevation	
MW-12	9/3/2019	198.89	-7.69	191.20	2" Well, 15' Deep, 10' Screen
	10/3/2019		-6.25	192.64	
	12/4/2019		-5.72	193.17	
	3/17/2020		-4.57	194.32	
	5/19/2020		-5.20	193.69	
	9/28/2020		-6.67	192.22	
	12/1/2020		-4.42	194.47	
	3/18/2021		-4.87	194.02	
	6/4/2021		-6.05	192.84	
	Q3 2021		NM	--	Inaccessible Throughout Quarter
	Q4 2021		NM	--	Inaccessible Throughout Quarter
	Decommissioned - Replacement Well MW-12R Installed 12/23/2021				
MW-12R	3/8/2022	--		New Top of Pipe - No Reference Elevation Yet	

TABLE 1
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-13	10/3/2019	201.80*	-7.55	194.25	Prior to development
	12/4/2019		-7.58	194.22	2" Well, 20' Deep, 15' Screen
	3/17/2020		-6.96	194.84	
	5/19/2020		-7.08	194.72	
	9/28/2020		-7.29	194.51	
	12/1/2020		-6.30	195.50	
	3/26/2021		-5.62	196.18	
	5/26/2021		-10.09	191.71	
	9/29/2021		Dry	<181	Adjacent Dewatering Wells
	12/23/2021		Dry	<181	Adjacent Dewatering Wells
	3/8/2022		Dry	<181	Adjacent Dewatering Wells
	MW-14		9/3/2019	203.09	-5.64
10/3/2019		-4.42	198.67		
12/4/2019		-3.85	199.24		
3/17/2020		-4.86	198.23		
5/19/2020		-4.40	198.69		
9/28/2020		-4.35	198.74		
12/1/2020		-2.40	200.69		
Q1 2021		NM	--		Inaccessible throughout Quarter
Decommissioned					
MW-15		4/2/2020	200.85*	-7.12	193.73
	5/19/2020		-5.67	195.18	
	9/28/2020		-5.93	194.92	
	12/1/2020		-4.91	195.94	
	3/18/2021		-5.14	195.71	
	5/26/2021		-6.00	194.85	
	7/1/2021		-5.85	195.00	
	Decommissioned - Replacement Well MW-15R Installed 12/23/2021				
MW-15R	3/22/2022	--	-7.73	New Top of Pipe - No Reference Elevation Yet	

TABLE 1
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-16	9/28/2020	200.40*	NM	--	2" Well, 15' Deep, 10' Screen
	12/1/2020		-4.43	195.97	
	3/26/2021		-5.01	195.39	
	6/5/2021		-5.85	194.55	
	Q3 2021		NM	--	Inaccessible Throughout Quarter
	Decommissioned				
GEO B-7	12/6/2018	201.12	-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	--	Inaccessible
	10/3/2019		-6.42	194.70	
	12/4/2019		-6.10	195.02	
	3/17/2020		-5.81	195.31	
	5/19/2020		-5.67	195.45	
	9/28/2020		-5.58	195.54	
	12/1/2020		-4.64	196.48	
	3/16/2021		-4.24	196.88	
	5/24/2021		NM	--	Inaccessible Throughout Quarter
	Decommissioned - Replacement Well GEO B-7R Installed 12/23/2021				
GEO B-7R	3/22/2022	--	-8.65	New Top of Pipe - No Reference Elevation Yet	
GEO B-8	12/6/2018	214.79	-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	
	5/19/2020		-14.01	200.78	
	9/28/2020		-13.99	200.80	
	12/1/2020		-13.13	201.66	
	3/26/2021		NM	Top of Pipe Damaged - No Reference Elevation	
	Decommissioned				

TABLE 1
Summary of Groundwater Level Measurements
104 - 124 12th Avenue and 1209 E. Fir Street, Seattle, Washington

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Monitoring Well	Date	Top of Pipe Elevation	Water Level Below T.O.P.	Water Elevation	Comments
GEO B-9	12/6/2018	200.69	-6.33	194.36	2" Well, 15' Deep, 5' Screen
	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	
	5/19/2020		-6.17	194.52	
	9/28/2020		-6.62	194.07	
	12/1/2020		-5.47	195.22	
	3/18/2021		-5.39	195.30	
	5/24/2021		-6.10	194.59	
	9/30/2021		-6.66	194.03	
	11/22/2021		NM	Top of Pipe Damaged - No Reference Elevation	
	Decommissioned - Replacement Well GEO B-9R Installed 12/23/2021				
GEO B-9R	3/22/2022	--	-7.58	New Top of Pipe - No Reference Elevation Yet	

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, MW-15 and MW-16 top of pipe elevations by WES, back-sighted to previously surveyed monitoring wells.

TABLE 2
4th Quarter 2020 Summary of Groundwater Sample Analytical Results
104 - 124 12th Avenue & 1209 E. Fir Street, Seattle, Washington

Well ID	Sample Date	TPH-G	TPH-D	TPH-O	Benzene	Toluene	Ethylbenzene	Xylenes	PCE	TCE	Cis 1,2 DCE	Vinyl Chloride	Chloroform	Acetone	Cumene	MEK	n-propylbenzene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Other VOCs	Arsenic (Total)	Arsenic (Dissolved)
MW-1	12/1/20	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	<1	< 0.2	<1	<50	<1	29	<1	<1	<1	ND	<1	<1
MW-1S	12/1/20	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	<1	< 0.2	<1	86	<1	46	<1	<1	<1	ND	39.2	41.0
MW-1D	12/1/20	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	<1	< 0.2	<1	<50	<1	<20	<1	<1	<1	ND	11.1	10.3
MW-2	12/9/20	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	<1	<0.2	<1	<50	<1	47	<1	<1	<1	ND	44.5	30.8
MW-3	12/23/20	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	<1	< 0.2	<1	<50	<1	<20	<1	<1	<1	ND	2.11	1.79
MW-4	12/1/20	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	<1	< 0.2	<1	<50	<1	<20	<1	<1	<1	ND	78.0	53.5
MW-5	12/1/20	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	<1	<0.2	<1	<50	<1	<20	<1	<1	<1	ND	5.85	4.07
MW-6	12/23/20	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	4.3	<0.2	3.8	<50	<1	<20	<1	<1	<1	ND	2.15	2.16
MW-7	12/23/20	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	<1	<0.2	<1	<50	<1	<20	<1	<1	<1	ND	109	117
MW-8	12/1/20	100	NA	NA	<1	<1	2.4	6.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.01	8.72
MW-9	12/1/20	3,700	1,100^x	<250	11	37	48	18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-10	12/1/20	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	1.4	< 0.2	<1	<50	<1	<20	<1	<1	<1	ND	6.50	6.06
MW-11	12/1/20	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	<1	<0.2	<1	82	<1	130	<1	<1	<1	ND	569	728
MW-12	12/1/20	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	<1	<0.2	<1	94	<1	59	<1	<1	<1	ND	1,380	1,260
MW-13	12/23/20	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	<1	<0.2	<1	<50	<1	<20	<1	<1	<1	ND	1.91	2.06
MW-14	12/1/20	NA	NA	NA	0.57	<1	<1	<3	<1	<1	<1	<0.2	<1	<50	<1	<20	<1	<1	<1	ND	60.4	45.4
MW-15	12/9/20	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	<1	<0.2	<1	<50	<1	<20	<1	<1	<1	ND	11.9	11.7
MW-16	12/9/20	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	<1	<0.2	<1	120	<1	62	<1	<1	<1	ND	289	299
GEO B-7	12/9/20	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	<1	< 0.2	<1	<50	<1	<20	<1	<1	<1	ND	27.0	29.0
GEO B-8	12/1/20	<100	NA	NA	<1	<1	<1	<3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	99.6	74.1
GEO B-9	12/9/20	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	<1	< 0.2	<1	<50	<1	<20	<1	<1	<1	ND	<1	<1
MTCA Groundwater Cleanup Levels		800^A	500^A	500^A	5^A	1,000^A	700^A	1,000^A	5^A	5^A	16^B	0.2^A	80^A	7,200^B	800^B	4,800^B	800^B	80^B	80^B	--	5^A	5^A

Table Notes:

<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).

* - Indicates sample chromatogram does not resemble fuel standard used for analysis. Most likely carry over from gasoline range hydrocarbons, or non-petroleum organic matter.

Volatile organic compounds by EPA Method 8260C or 8021B. All detected compounds summarized here. See laboratory report for full list of analyzed parameters.

Dissolved and total arsenic by EPA Method 6020B. Total arsenic on unfiltered samples. Dissolved arsenic on field filtered samples using 0.45 micron single-use filters.

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 2020 Cleanup Levels and Risk Calculation (CLARC) database. NV indicates no value available from CLARC.

A - Method A listed or State or Federal MCL

B - Method B Direct Contact

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

TABLE 2A
1st Quarter 2021 Summary of Groundwater Sample Analytical Results
104 - 124 12th Avenue & 1209 E. Fir Street, Seattle, Washington

Well ID	Sample Date	TPH-G	TPH-D	TPH-O	Benzene	Toluene	Ethylbenzene	Xylenes	PCE	TCE	Cis 1,2 DCE	Vinyl Chloride	Chloroform	Acetone	Cumene	MEK	n-propylbenzene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Other VOCs	Arsenic (Total)	Arsenic (Dissolved)
MW-15	3/18/21	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	<1	< 0.2	<1	<50	<1	<20	<1	<1	<1	ND	11.6	11.4
MW-16	3/26/21	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	<1	< 0.2	<1	<50	<1	24	<1	<1	<1	ND	218	29.4
GEO B-7	3/16/21	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	<1	< 0.2	<1	<50	<1	<20	<1	<1	<1	ND	20.6	16.0
GEO B-8	3/26/21	<100	310 ^x	320 ^x	<0.35	<1	<1	<3	<1	<1	<1	< 0.2	<1	<50	2.5	<20	8.8	<1	<1	ND	NA	14.7
	3/30/21	Well Decommissioned for Construction																				
GEO B-9	3/18/21	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	<1	< 0.2	<1	<50	<1	<20	<1	<1	<1	ND	1.27	<1
MTCA Groundwater Cleanup Levels		800^A	500^A	500^A	5^A	1,000^A	700^A	1,000^A	5^A	5^A	16^B	0.2^A	80^A	7,200^B	800^B	4,800^B	800^B	80^B	80^B	--	5^A	5^A

Table Notes:

<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.

Volatile organic compounds by EPA Method 8260C or 8021B. All detected compounds summarized here. See laboratory report for full list of analyzed parameters.

Dissolved and total arsenic by EPA Method 6020B. Total arsenic on unfiltered samples. Dissolved arsenic on field filtered samples using 0.45 micron single-use filters.

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 2020 Cleanup Levels and Risk Calculation (CLARC) database. NV indicates no value available from CLARC.

A - Method A listed or State or Federal MCL

B - Method B Direct Contact

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

TABLE 2B
2nd Quarter 2021 Summary of Groundwater Sample Analytical Results
104 - 124 12th Avenue & 1209 E. Fir Street, Seattle, Washington

Well ID	Sample Date	PCE	TCE	Cis 1,2 DCE	Vinyl Chloride	MEK	Other VOCs	Arsenic (Dissolved)
MW-1	5/24/21	<1	<1	<1	< 0.2	<20	ND	<1
MW-1S	5/12/21	<1	<1	<1	< 0.2	<20	ND	14.4
MW-1D	5/12/21	<1	<1	<1	< 0.2	<20	ND	9.34
MW-2	6/4/21	<1	<1	<1	< 0.2	<20	ND	20.6
MW-3	Decommissioned Q1 2021							
MW-4	4/30/21	<1	<1	<1	< 0.2	<20	ND	18.9
	5/7/21	Well Decommissioned for Construction						
MW-5	5/24/21	<1	<1	<1	< 0.2	<20	ND	4.49
MW-6	Decommissioned Q1 2021							
MW-7	Decommissioned Q1 2021							
MW-8	Decommissioned Q1 2021							
MW-9	Decommissioned Q1 2021							
MW-10	5/12/21	<1	<1	1.0	< 0.2	<20	ND	6.58
MW-11	5/14/21	<1	<1	<1	< 0.2	38	ND	267
MW-12	6/4/21	<1	<1	<1	< 0.2	<20	ND	1,600
MW-13	5/26/21	<1	<1	<1	< 0.2	<20	ND	3.50
MW-14	Decommissioned Q1 2021							
MW-15	5/26/21	<1	<1	<1	< 0.2	<20	ND	12.7
MW-16	6/4/21	<1	<1	<1	< 0.2	<20	ND	140
GEO B-7	5/24/21	<1	<1	<1	< 0.2	<20	ND	24.8
	6/15/21	Well Decommissioned for Construction						
GEO B-8	Decommissioned Q1 2021							
GEO B-9	5/24/21	<1	<1	<1	< 0.2	<20	ND	1.58
MTCA Groundwater Cleanup Levels		5 ^A	5 ^A	16 ^B	0.2 ^A	4,800 ^B	--	5 ^A

Table Notes:

<XXX - Parameter not detected at concentrations at or above the noted reporting limit.

Volatile organic compounds by EPA Method 8260C or 8021B. All detected compounds summarized here. See laboratory report for full list of analyzed parameters.

Dissolved arsenic by EPA Method 6020B, on field filtered samples using 0.45 micron single-use filters.

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 2020 Cleanup Levels and Risk Calculation (CLARC) database. NV indicates no value available from CLARC.

A - Method A listed or State or Federal MCL

B - Method B Direct Contact

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

TABLE 2C
3rd Quarter 2021 Summary of Groundwater Sample Analytical Results
104 - 124 12th Avenue & 1209 E. Fir Street, Seattle, Washington

Well ID	Sample Date	PCE	TCE	Cis 1,2 DCE	Vinyl Chloride	MEK	Other VOCs	Arsenic (Dissolved)

MW-1	Q3 2021	Inaccessible due to Construction						
MW-1S	9/14/21	<1	<0.5	<1	< 0.02	< 20	ND	23.7
MW-1D	9/14/21	<1	<0.5	<1	< 0.02	< 20	ND	9.94
MW-2	7/16/21	NA	NA	NA	NA	NA	NA	3.24
	7/16/21	Well Decommissioned for Construction						
MW-3	Decommissioned Q1 2021							
MW-4	Decommissioned Q2 2021							
MW-5	9/30/21	<1	1.1	4.3	0.27	< 20	ND	10.8
MW-6	Decommissioned Q1 2021							
MW-7	Decommissioned Q1 2021							
MW-8	Decommissioned Q1 2021							
MW-9	Decommissioned Q1 2021							
MW-10	9/14/21	<1	<0.5	<1	< 0.02	< 20	ND	1.17
MW-11	9/30/21	<1	<0.5	<1	< 0.02	< 20	ND	67.6
MW-12	Q3 2021	Inaccessible due to Construction						
MW-13	9/29/21	Well Dry due to Nearby Dewatering Wells						
MW-14	Decommissioned Q1 2021							
MW-15	7/1/21	<1	<0.5	<1	< 0.02	< 20	ND	9.91
MW-16	Q3 2021	Inaccessible due to Construction						
GEO B-7	Decommissioned Q2 2021							
GEO B-8	Decommissioned Q1 2021							
GEO B-9	9/30/21	<1	<0.5	<1	< 0.02	33	ND	2.12
MTCA Groundwater Cleanup Levels		5^A	5^A	16^B	0.2^A	4,800^B	--	5^A

Table Notes:

<XXX - Parameter not detected at concentrations at or above the noted reporting limit.

Volatile organic compounds by EPA Method 8260C or 8021B. All detected compounds summarized here. See laboratory report for full list of analyzed parameters.

Dissolved arsenic by EPA Method 6020B, on field filtered samples using 0.45 micron single-use filters.

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 2020 Cleanup Levels and Risk Calculation (CLARC) database.

A - Method A listed or State or Federal MCL

B - Method B Direct Contact

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

TABLE 2D
4th Quarter 2021 Summary of Groundwater Sample Analytical Results
104 - 124 12th Avenue & 1209 E. Fir Street, Seattle, Washington

Well ID	Sample Date	PCE	TCE	Cis 1,2 DCE	Vinyl Chloride	Other VOCs	Arsenic (Dissolved)
MW-1	11/22/21	<1	<0.5	<1	< 0.02	ND	1.11
	11/22/21	Well Decommissioned for Construction					
MW-1S	12/23/21	<1	<0.5	<1	< 0.02	ND	2.78
MW-1D	12/23/21	<1	<0.5	<1	< 0.02	ND	9.04
MW-2	Decommissioned Q3 2021						
MW-3	Decommissioned Q1 2021						
MW-4	Decommissioned Q2 2021						
MW-5	11/15/21	<1	1.4	3.8	0.41	ND	5.04
	11/22/21	<1	1.9	4.6	0.61	ND	1.49
	11/22/21	Well Decommissioned for Construction					
MW-6	Decommissioned Q1 2021						
MW-7	Decommissioned Q1 2021						
MW-8	Decommissioned Q1 2021						
MW-9	Decommissioned Q1 2021						
MW-10	12/23/21	<1	<0.5	<1	< 0.02	ND	5.71
MW-11	Q4 2021	Inaccessible Due to Construction - Well Damaged					
MW-12	Q4 2021	Inaccessible due to Construction					
	12/23/21	Well Damaged - Decommissioned for Construction					
MW-13	12/23/21	Well Dry due to Nearby Dewatering Wells					
MW-14	Decommissioned Q1 2021						
MW-15	Q4 2021	Inaccessible Due to Construction - Well Damaged					
	11/22/21	Decommissioned for Construction					
MW-16	Q4 2021	Inaccessible due to Construction - Well Damaged					
	12/23/21	Decommissioned for Construction					
GEO B-7	Decommissioned Q2 2021						
GEO B-8	Decommissioned Q1 2021						
GEO B-9	11/22/21	<1	<0.5	<1	< 0.02	ND	1.61
	11/22/21	Well Decommissioned for Construction					
MTCA Groundwater Cleanup Levels		5 ^A	5 ^A	16 ^B	0.2 ^A	--	5 ^A

Table Notes:

<XXX - Parameter not detected at concentrations at or above the noted reporting limit.

Volatile organic compounds by EPA Method 8260C or 8021B. See laboratory report for full list of analyzed parameters.

Dissolved arsenic by EPA Method 6020B, on field filtered samples using 0.45 micron single-use filters.

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 2020 Cleanup Levels and Risk Calculation (CLARC) database.

A - Method A listed or State or Federal MCL

B - Method B Direct Contact Sample results exceeding applicable cleanup criteria are noted in ***Bold Italic***.

TABLE 2E
1st Quarter 2022 Summary of Groundwater Sample Analytical Results
104 - 124 12th Avenue & 1209 E. Fir Street, Seattle, Washington

Well ID	Sample Date	PCE	TCE	Cis 1,2 DCE	Vinyl Chloride	Other VOCs	Arsenic (Dissolved)

MW-1	Decommissioned Q4 2021						
MW-1S	Q1 2022	Inaccessible due to Construction - Damaged					
MW-1D	3/9/22	<1	<0.5	<1	< 0.02	ND	9.64
MW-2	Decommissioned Q3 2021						
MW-3	Decommissioned Q1 2021						
MW-4	Decommissioned Q2 2021						
MW-5R	12/23/21	Installed Replacement Well					
	2/25/22	<1	<0.5	<1	0.60	ND	2.50
MW-6	Decommissioned Q1 2021						
MW-7	Decommissioned Q1 2021						
MW-8	Decommissioned Q1 2021						
MW-9	Decommissioned Q1 2021						
MW-10	3/9/22	<1	<0.5	<1	< 0.02	ND	9.62
MW-11	Q1 2022	Repaired and Partially Cleaned out Well					
	3/25/22	<1	<0.5	<1	0.039	ND	327*
MW-12R	12/23/21	Installed Replacement Well					
	3/8/22	<1	<0.5	<1	< 0.1	ND	845
MW-13	9/29/21	Well Dry due to Nearby Dewatering Wells					
MW-14	Decommissioned Q1 2021						
MW-15R	12/23/21	Installed Replacement Well					
	3/2/22	<1	<0.5	1.1	0.14	ND	13.1
MW-16	Decommissioned Q4 2021						
GEOB-7R	12/23/21	Installed Replacement Well					
	3/2/22	<1	<0.5	4.0	1.1	ND	33.8
GEO B-8	Decommissioned Q1 2021						
GEOB-9R	12/23/21	Installed Replacement Well					
	3/2/22	<1	<0.5	<1	< 0.02	ND	5.30
MTCA Groundwater Cleanup Levels		5^A	5^A	16^B	0.2^A	--	5^A

Table Notes:

<XXX - Parameter not detected at concentrations at or above the noted reporting limit.

Volatile organic compounds by EPA Method 8260C or 8021B. See laboratory report for full list of analyzed parameters.

Dissolved arsenic by EPA Method 6020B on field filtered samples using 0.45 micron single-use filters.

* - Indicates high turbidity sample from damaged well that could not be completely cleaned out. May not be representative of groundwater conditions.

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 2020 Cleanup Levels and Risk Calculation (CLARC) database. NV indicates no value available from CLARC.

A - Method A listed or State or Federal MCL

B - Method B Direct Contact

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

TABLE 3
2017-2022 Summary of Groundwater Sample Analytical Results
104 - 124 12th Avenue & 1209 E. Fir Street, Seattle, Washington

Well ID	Sample Date	TPH-G	TPH-D	TPH-O	Benzene	Toluene	Ethylbenzene	Xylenes	PCE	TCE	Cis 1,2 DCE	Vinyl Chloride	Chloroform	Acetone	Hexane	Cumine	MEK	n-propylbenzene	Naphthalene	p-isopropyltoluene	sec-butylbenzene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Other VOCs	Arsenic (Total)	Arsenic (Dissolved)	Lead (Total)	Chromium (Total)
MW-1D	8/6/19	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	<1	< 0.2	<1	<50	<1	<1	<10	<1	<1	<1	<1	<1	<1	ND	NA	NA	NA	NA
	12/5/19	<100	<50	340	<0.35	<1	<1	<3	<1	<1	<1	< 0.2	<1	<50	<1	<1	<10	<1	<1	<1	<1	<1	<1	ND	9.14	NA	<1	<1
	3/3/20	<100	<50	<250	<0.35	<1	<1	<3	<1	<1	<1	< 0.2	<1	<50	<1	<1	<10	<1	<1	<1	<1	<1	<1	ND	10.3	NA	<1	NA
	5/19/20	<100	<50	<250	<0.35	<1	<1	<3	<1	<1	<1	< 0.2	<1	<50	<1	<1	<10	<1	<1	<1	<1	<1	<1	ND	9.65	10.1	NA	NA
	9/28/20	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	<1	< 0.2	<1	<50	<5	<1	<20	<1	<1	<1	<1	<1	<1	ND	10.1	9.68	NA	NA
	12/1/20	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	<1	< 0.2	<1	<50	<5	<1	<20	<1	<1	<1	<1	<1	<1	ND	11.1	10.3	NA	NA
	3/23/21	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	<1	< 0.2	<1	<50	<5	<1	<20	<1	<1	<1	<1	<1	<1	ND	9.41	9.56	NA	NA
	5/12/21	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	<1	< 0.2	<1	<50	<5	<1	<20	<1	<1	<1	<1	<1	<1	ND	NA	9.34	NA	NA
	9/14/21	NA	NA	NA	<0.35	<1	<1	<3	<1	<0.5	<1	< 0.02	<1	<50	<5	<1	<20	<1	<1	<1	<1	<1	<1	ND	NA	9.94	NA	NA
	12/23/21	NA	NA	NA	<0.35	<1	<1	<3	<1	<0.5	<1	< 0.02	<1	<50	<5	<1	<20	<1	<1	<1	<1	<1	<1	ND	NA	9.04	NA	NA
3/9/22	NA	NA	NA	<0.35	<1	<1	<3	<1	<0.5	<1	< 0.02	<1	<50	<5	<1	<20	<1	<1	<1	<1	<1	<1	ND	NA	9.64	NA	NA	
MW-2	4/4/17	NA	<50	<250	<0.35	<1	<1	<3	<1	<1	<1	<0.2	<1	<10	<1	<1	<10	<1	<1	<1	<1	<1	<1	ND	NA	NA	NA	NA
	10/30/17	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	<1	<0.2	<1	<10	<1	<1	<10	<1	<1	<1	<1	<1	<1	ND	NA	NA	NA	NA
	6/14/18	<100	<50	<250	<0.35	<1	<1	<3	<1	<1	<1	<0.2	<1	<50	<1	<1	<10	<1	<1	<1	<1	<1	<1	ND	NA	NA	NA	NA
	7/22/19	<100	<50	<250	<0.35	<1	<1	<3	<1	<1	<1	<0.2	<1	<50	<1	<1	<10	<1	<1	<1	<1	<1	<1	ND	NA	NA	NA	NA
	12/4/19	<100	<50	<250	<0.35	<1	<1	<3	<1	<1	<1	<0.2	<1	<50	<1	<1	<10	<1	<1	<1	<1	<1	<1	ND	NA	NA	NA	NA
	3/17/20	<100	<50	<250	<0.35	<1	<1	<3	<1	<1	<1	<0.2	<1	<50	<1	<1	<10	<1	<1	<1	<1	<1	<1	ND	NA	NA	NA	NA
	5/19/20	<100	<50	<250	<0.35	<1	<1	<3	<1	<1	<1	<0.2	<1	<50	<1	<1	<20	<1	<1	<1	<1	<1	<1	ND	NA	NA	NA	NA
	9/28/20	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	<1	<0.2	<1	<50	<5	<1	82	<1	<1	<1	<1	<1	<1	ND	2.88	1.21	NA	NA
	12/9/20	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	<1	<0.2	<1	<50	<5	<1	47	<1	<1	<1	<1	<1	<1	ND	44.5	30.8	NA	NA
	3/16/21	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	<1	< 0.2	<1	<50	<5	<1	<20	<1	<1	<1	<1	<1	<1	ND	105	90.7	NA	NA
	6/4/21	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	<1	< 0.2	<1	<50	<5	<1	<20	<1	<1	<1	<1	<1	<1	ND	NA	20.6	NA	NA
	7/16/21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.24	NA	NA
7/16/21	Well Decommissioned for Construction																											

TABLE 3
2017-2022 Summary of Groundwater Sample Analytical Results
104 - 124 12th Avenue & 1209 E. Fir Street, Seattle, Washington

Well ID	Sample Date	TPH-G	TPH-D	TPH-O	Benzene	Toluene	Ethylbenzene	Xylenes	PCE	TCE	Cis 1,2 DCE	Vinyl Chloride	Chloroform	Acetone	Hexane	Cumene	MEK	n-propylbenzene	Naphthalene	p-isopropyltoluene	sec-butylbenzene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Other VOCs	Arsenic (Total)	Arsenic (Dissolved)	Lead (Total)	Chromium (Total)	
MW-5	4/5/17	NA	<50	<250	<0.35	<1	<1	<3	<1	<1	<1	<0.2	<1	12	<1	<1	<10	<1	<1	<1	<1	<1	<1	ND	NA	NA	NA	NA	
	10/30/17	NA	NA	NA	<0.35	<1	<1	<3	1.4	9.1	10	0.29	<1	<10	<1	<1	<10	<1	<1	<1	<1	<1	<1	ND	NA	NA	NA	NA	
	6/14/18	<100	<50	<250	<0.35	<1	<1	<3	1.3	5.0	8.3	0.25	<1	<50	<1	<1	<10	<1	<1	<1	<1	<1	<1	ND	NA	NA	NA	NA	
	12/6/18	NA	NA	NA	<0.35	<1	<1	<3	2.1	11	8.4	0.37	<1	<50	<1	<1	<10	<1	<1	<1	<1	<1	<1	ND	NA	NA	NA	NA	
	7/22/19	<100	<50	<250	<0.35	<1	<1	<3	1.1	6.5	10	<0.2	<1	<50	<1	<1	<10	<1	<1	<1	<1	<1	<1	ND	NA	NA	<1	NA	
	12/4/19	<100	52 ^x	<250	<0.35	<1	<1	<3	1.3	2.2	3.5	<0.2	<1	<50	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1	ND	NA	NA	NA	NA
	3/5/19	<100	<50	<250	<0.35	<1	<1	<3	<1	2.2	1.4	<0.2	<1	<50	<1	<1	<10	<1	<1	<1	<1	<1	<1	ND	NA	NA	NA	NA	
	5/19/20	<100	<50	<250	<0.35	<1	<1	<3	<1	2.8	3.6	<0.2	<1	<50	<1	<1	<10	<1	<1	<1	<1	<1	<1	ND	NA	NA	NA	NA	
	9/28/20	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	<1	<0.2	<1	<50	<5	<1	<20	<1	<1	<1	<1	<1	<1	ND	NA	NA	NA	NA	
	12/1/20	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	<1	<0.2	<1	<50	<5	<1	<20	<1	<1	<1	<1	<1	<1	ND	5.85	4.07	NA	NA	
	3/16/21	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	<1	< 0.2	<1	<50	<5	<1	<20	<1	<1	<1	<1	<1	<1	ND	8.23	5.54	NA	NA	
	5/24/21	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	<1	< 0.2	<1	<50	<5	<1	<20	<1	<1	<1	<1	<1	<1	ND	NA	4.49	NA	NA	
	9/30/21	NA	NA	NA	<0.35	<1	<1	<3	<1	1.1	4.3	0.27	<1	<50	<5	<1	<20	<1	<1	<1	<1	<1	<1	ND	NA	10.8	NA	NA	
	11/15/21	NA	NA	NA	<0.35	<1	<1	<3	<1	1.4	3.8	0.41	<1	<50	<5	<1	<20	<1	<1	<1	<1	<1	<1	ND	NA	5.04	NA	NA	
	11/22/21	NA	NA	NA	<0.35	<1	<1	<3	<1	1.9	4.6	0.61	<1	<50	<5	<1	<20	<1	<1	<1	<1	<1	<1	ND	NA	1.49	NA	NA	
	11/22/21	Well Decommissioned for Construction - Replaced with Well MW-5R on 12/23/2021																											
MW-5R	2/25/22	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	<1	0.60	<1	<50	<5	<1	<20	<1	<1	<1	<1	<1	<1	ND	NA	2.50	NA	NA	
MW-6	4/5/17	NA	<50	<250	<0.35	1.2	<1	5.5	<1	<1	1.3	< 0.2	<1	<10	<1	<1	<10	<1	<1	<1	<1	3.4	<1	ND	NA	NA	NA	NA	
	6/14/18	<100	<50	<250	<0.35	<1	<1	<3	1.2	<1	9.6	< 0.2	1.1	<50	<1	<1	<10	<1	<1	<1	<1	<1	<1	ND	NA	NA	NA	NA	
	7/23/19	<100	<50	<250	<0.35	<1	<1	<3	<1	1.7	17	< 0.2	<1	<50	<1	<1	<10	<1	<1	<1	<1	<1	<1	ND	NA	NA	NA	NA	
	12/4/19	<100	78 ^x	<250	<0.35	<1	<1	<3	1.3	<1	5.7	< 0.2	<1	<50	<1	<1	<10	<1	<1	<1	<1	<1	<1	ND	NA	NA	NA	NA	
	3/17/19	<100	<50	<250	<0.35	<1	<1	<3	1.1	<1	3.3	< 0.2	<1	<50	<1	<1	<10	<1	<1	<1	<1	<1	<1	ND	NA	NA	NA	NA	
	5/19/20	<100	<50	<250	<0.35	<1	<1	<3	1.1	<1	4.5	< 0.2	<1	<50	<1	<1	<10	<1	<1	<1	<1	<1	<1	ND	1.65	1.21	NA	NA	
	9/28/20	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	3.5	< 0.2	<1	<50	<5	<1	<20	<1	<1	<1	<1	<1	<1	ND	NA	NA	NA	NA	
	12/23/20	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	4.3	<0.2	3.8	<50	<5	<1	<20	<1	<1	<1	<1	<1	<1	ND	2.15	2.16	NA	NA	
	3/18/21	NA	NA	NA	<0.35	<1	<1	<3	<1	1.2	10	< 0.2	1.6	<50	<5	<1	<20	<1	<1	<1	<1	<1	<1	ND	2.44	1.92	NA	NA	
	3/30/21	Well Decommissioned for Construction																											

TABLE 3
2017-2022 Summary of Groundwater Sample Analytical Results
104 - 124 12th Avenue & 1209 E. Fir Street, Seattle, Washington

[illegible]

TABLE 3
2017-2022 Summary of Groundwater Sample Analytical Results
104 - 124 12th Avenue & 1209 E. Fir Street, Seattle, Washington

Well ID	Sample Date	TPH-G	TPH-D	TPH-O	Benzene	Toluene	Ethylbenzene	Xylenes	PCE	TCE	Cis 1,2 DCE	Vinyl Chloride	Chloroform	Acetone	Hexane	Cumene	MEK	n-propylbenzene	Naphthalene	p-isopropyltoluene	sec-butylbenzene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Other VOCs	Arsenic (Total)	Arsenic (Dissolved)	Lead (Total)	Chromium (Total)
MW-10	11/3/17	<100	69 ^x	<250	<0.35	<1	<1	<3	<1	<1	<1	< 0.2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ND	NA	NA	NA	NA
	6/14/18	<100	66 ^x	<250	<0.35	<1	<1	<3	<1	<1	1.2	< 0.2	<1	<50	<1	<1	<10	<1	<1	<1	<1	<1	<1	ND	NA	NA	NA	NA
	7/22/19	<100	<50	<250	<0.35	<1	<1	<3	<1	<1	<1	< 0.2	<1	<50	<1	<1	<10	<1	<1	<1	<1	<1	<1	ND	NA	NA	<1	NA
	12/5/19	<100	<50	<250	<0.35	<1	<1	<3	<1	<1	<1	< 0.2	<1	<50	<1	<1	<10	<1	<1	<1	<1	<1	<1	ND	9.3	NA	<1	<1
	2/26/20	<100	66 ^x	<250	<0.35	<1	<1	<3	<1	<1	<1	< 0.2	<1	<50	<1	<1	<10	<1	<1	<1	<1	<1	<1	ND	NA	NA	NA	NA
	5/19/20	<100	<50	<250	<0.35	<1	<1	<3	<1	<1	<1	< 0.2	<1	<50	<1	<1	<10	<1	<1	<1	<1	<1	<1	ND	5.41	5.18	NA	NA
	9/28/20	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	<1	< 0.2	<1	<50	<5	<1	<20	<1	<1	<1	<1	<1	<1	ND	16.6	15.0	NA	NA
	12/1/20	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	1.4	< 0.2	<1	<50	<5	<1	<20	<1	<1	<1	<1	<1	<1	ND	6.50	6.06	NA	NA
	3/23/21	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	1.1	< 0.2	<1	<50	<5	<1	<20	<1	<1	<1	<1	<1	<1	ND	8.69	7.00	NA	NA
	5/12/21	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	1.0	< 0.2	<1	<50	<5	<1	<20	<1	<1	<1	<1	<1	<1	ND	NA	6.58	NA	NA
	9/14/21	NA	NA	NA	<0.35	<1	<1	<3	<1	<0.5	<1	< 0.02	<1	<50	<5	<1	<20	<1	<1	<1	<1	<1	<1	ND	NA	1.17	NA	NA
	12/23/21	NA	NA	NA	<0.35	<1	<1	<3	<1	<0.5	<1	< 0.02	<1	<50	<5	<1	<20	<1	<1	<1	<1	<1	<1	ND	NA	5.71	NA	NA
	3/9/22	NA	NA	NA	<0.35	<1	<1	<3	<1	<0.5	<1	< 0.02	<1	<50	<5	<1	<20	<1	<1	<1	<1	<1	<1	ND	NA	9.62	NA	NA
MW-11	8/15/19	<100	400 ^x	370 ^x	<0.35	<1	<1	<3	<1	<1	1.9	< 0.2	<1	<50	<1	<1	<10	<1	<1	<1	<1	<1	<1	ND	NA	NA	NA	NA
	12/5/19	<100	61 ^x	<250	<0.35	<1	<1	<3	<1	<1	2.9	0.22	<1	<50	<1	<1	<10	<1	<1	<1	<1	<1	<1	ND	15	NA	<1	<1
	3/3/20	<100	130 ^x	<250	<0.35	<1	<1	<3	<1	<1	2.8	< 0.2	<1	<50	<1	<1	<10	<1	<1	<1	<1	<1	<1	ND	NA	NA	NA	NA
	5/19/20	<100	99 ^x	<250	<0.35	<1	<1	<3	<1	<1	3.1	0.27	<1	<50	<1	<1	<10	<1	<1	<1	<1	<1	<1	ND	8.96	7.98	NA	NA
	9/28/20	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	<1	< 0.2	<1	69	<5	<1	170	<1	<1	<1	<1	<1	<1	ND	69.3	55.7	NA	NA
	12/1/20	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	<1	<0.2	<1	82	<5	<1	130	<1	<1	<1	<1	<1	<1	ND	569	728	NA	NA
	3/23/21	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	<1	< 0.2	<1	61	<5	<1	77	<1	<1	<1	<1	<1	<1	ND	966	776	NA	NA
	5/14/21	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	<1	< 0.2	<1	<50	<5	<1	38	<1	<1	<1	<1	<1	<1	ND	NA	267	NA	NA
	9/30/21	NA	NA	NA	<0.35	<1	<1	<3	<1	<0.5	<1	< 0.2	<1	<50	<5	<1	<20	<1	<1	<1	<1	<1	<1	ND	NA	67.6	NA	NA
	Q4 2021	Inaccessible Due to Construction - Well Damaged and Filled with Dirt																										
	3/25/22	NA	NA	NA	<0.35	<1	<1	<3	<1	<0.5	<1	0.039	<1	<50	<5	<1	<20	<1	<1	<1	<1	<1	<1	ND	NA	327*	NA	NA

TABLE 3
2017-2022 Summary of Groundwater Sample Analytical Results
104 - 124 12th Avenue & 1209 E. Fir Street, Seattle, Washington

Well ID	Sample Date	TPH-G	TPH-D	TPH-O	Benzene	Toluene	Ethylbenzene	Xylenes	PCE	TCE	Cis 1,2 DCE	Vinyl Chloride	Chloroform	Acetone	Hexane	Cumine	MEK	n-propylbenzene	Naphthalene	p-isopropyltoluene	sec-butylbenzene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Other VOCs	Arsenic (Total)	Arsenic (Dissolved)	Lead (Total)	Chromium (Total)	
MW-14	8/15/19	<100	130 ^x	<250	1.8	<1	<1	<3	<1	<1	2.3	0.65	<1	<50	<1	<1	<10	<1	<1	<1	<1	<1	<1	ND	NA	NA	NA	NA	
	12/4/19	<100	110 ^x	<250	1.3	<1	<1	<3	<1	<1	1.8	0.25	<1	<50	<1	<1	<10	<1	<1	<1	<1	<1	<1	ND	NA	NA	NA	NA	
	2/24/20	<100	64 ^x	<250	1.8	<1	<1	<3	<1	<1	2.1	0.66	<1	<50	<1	<1	<10	<1	<1	<1	<1	<1	<1	ND	NA	NA	NA	NA	
	5/19/20	<100	110 ^x	<250	0.89	<1	<1	<3	<1	<1	1.3	0.28	<1	<50	<1	<1	<10	<1	<1	<1	<1	<1	<1	ND	NA	NA	NA	NA	
	9/28/20	NA	NA	NA	0.74	<1	<1	<3	<1	<1	<1	< 0.2	<1	<50	<5	<1	<20	<1	<1	<1	<1	<1	<1	ND	NA	NA	NA	NA	
	12/1/20	NA	NA	NA	0.57	<1	<1	<3	<1	<1	<1	<0.2	<1	<50	<5	<1	<20	<1	<1	<1	<1	<1	<1	ND	60.4	45.4	NA	NA	
	3/26/21	Inaccessible due to Construction																											
	3/30/21	Well Decommissioned for Construction																											
MW-15	4/2/20	<100	<50	<250	<0.35	<1	<1	<3	<1	<1	<1	< 0.2	<1	<50	<1	<1	<10	<1	<1	<1	<1	<1	<1	ND	NA	NA	NA	NA	
	5/19/20	<100	<50	<250	<0.35	<1	<1	<3	<1	<1	<1	< 0.2	<1	<50	<1	<1	<10	<1	<1	<1	<1	<1	<1	ND	NA	NA	NA	NA	
	9/28/20	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	1.3	0.23	<1	<50	<5	<1	<20	<1	<1	<1	<1	<1	<1	ND	14.6	11.1	NA	NA	
	12/9/20	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	<1	<0.2	<1	<50	<5	<1	<20	<1	<1	<1	<1	<1	<1	ND	11.9	11.7	NA	NA	
	3/16/21	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	<1	< 0.2	<1	<50	<5	<1	<20	<1	<1	<1	<1	<1	<1	ND	11.6	11.4	NA	NA	
	5/26/21	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	<1	< 0.2	<1	<50	<5	<1	<20	<1	<1	<1	<1	<1	<1	ND	NA	12.7	NA	NA	
	7/1/21	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	<1	< 0.2	<1	<50	<5	<1	<20	<1	<1	<1	<1	<1	<1	ND	NA	9.91	NA	NA	
	Q4 2021	Well Damaged - Decommissioned For Construction- Replaced with Well MW-15R on 12/23/2021																											
MW-15R	3/2/22	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	1.1	0.14	<1	<50	<5	<1	<20	<1	<1	<1	<1	<1	<1	ND	NA	13.1	NA	NA	
MW-16	9/28/20	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	<1	<0.2	<1	71	<5	<1	28	<1	<1	<1	<1	<1	<1	ND	NA	NA	NA	NA	
	12/9/20	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	<1	<0.2	<1	120	<5	<1	62	<1	<1	<1	<1	<1	<1	ND	289	299	NA	NA	
	3/26/21	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	<1	< 0.2	<1	<50	<5	<1	24	<1	<1	<1	<1	<1	<1	ND	218	29.4	NA	NA	
	6/4/2021	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	<1	< 0.2	<1	<50	<5	<1	<20	<1	<1	<1	<1	<1	<1	ND	NA	140	NA	NA	
	Q3 2021	Inaccessible due to Construction																											
	Q4 2021	Well Decommissioned For Construction																											

TABLE 3
2017-2022 Summary of Groundwater Sample Analytical Results
104 - 124 12th Avenue & 1209 E. Fir Street, Seattle, Washington

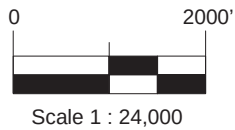
Well ID	Sample Date	TPH-G	TPH-D	TPH-O	Benzene	Toluene	Ethylbenzene	Xylenes	PCE	TCE	Cis 1,2 DCE	Vinyl Chloride	Chloroform	Acetone	Hexane	Cumene	MEK	n-propylbenzene	Naphthalene	p-isopropyltoluene	sec-butylbenzene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Other VOCs	Arsenic (Total)	Arsenic (Dissolved)	Lead (Total)	Chromium (Total)
GEO B-9	12/6/18	<100	76 ^x	<250	<0.35	<1	<1	<3	<1	<1	2.4	0.36	<1	<50	<1	<1	<10	<1	<1	<1	<1	<1	<1	ND	NA	NA	NA	NA
	7/23/19	<100	59 ^x	<250	<0.35	<1	<1	<3	<1	<1	1.4	< 0.2	<1	<50	<1	<1	<10	<1	<1	<1	<1	<1	<1	ND	NA	NA	NA	NA
	12/4/19	<100	<50	<250	<0.35	<1	<1	<3	<1	<1	1.5	0.22	<1	<50	<1	<1	<10	<1	<1	<1	<1	<1	<1	ND	NA	NA	NA	NA
	3/5/20	<100	73 ^x	<250	<0.35	<1	<1	<3	<1	<1	1.1	< 0.2	<1	<50	<1	<1	<10	<1	<1	<1	<1	<1	<1	ND	NA	NA	NA	NA
	5/19/20	<100	63 ^x	<250	<0.35	<1	<1	<3	<1	<1	1.0	< 0.2	<1	<50	<1	<1	<10	<1	<1	<1	<1	<1	<1	ND	NA	NA	NA	NA
	9/28/20	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	<1	< 0.2	<1	<50	<5	<1	56	<1	<1	<1	<1	<1	<1	ND	NA	NA	NA	NA
	12/9/20	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	<1	< 0.2	<1	<50	<5	<1	<20	<1	<1	<1	<1	<1	<1	ND	<1	<1	NA	NA
	3/18/21	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	<1	< 0.2	<1	<50	<5	<1	<20	<1	<1	<1	<1	<1	<1	ND	1.27	<1	NA	NA
	5/24/21	NA	NA	NA	<0.35	<1	<1	<3	<1	<1	<1	< 0.2	<1	<50	<5	<1	<20	<1	<1	<1	<1	<1	<1	ND	NA	1.58	NA	NA
	9/30/21	NA	NA	NA	<0.35	<1	<1	<3	<1	<0.5	<1	< 0.02	<1	<50	<5	<1	33	<1	<1	<1	<1	<1	<1	ND	NA	2.12	NA	NA
	11/22/21	NA	NA	NA	<0.35	<1	<1	<3	<1	<0.5	<1	< 0.02	<1	<50	<5	<1	<20	<1	<1	<1	<1	<1	<1	ND	NA	1.61	NA	NA
	11/22/21	Well Decommissioned For Construction- Replaced with Well GEO B-9R on 12/23/2021																										
B-9R	3/2/22	NA	NA	NA	<0.35	<1	<1	<3	<1	<0.5	<1	< 0.02	<1	<50	<5	<1	<20	<1	<1	<1	<1	<1	<1	ND	NA	5.30	NA	NA
MTCA Groundwater Cleanup Levels		800 ^A	500 ^A	500 ^A	5 ^A	1,000 ^A	700 ^A	1,000 ^A	5 ^A	5 ^A	16 ^B	0.2 ^A	80 ^A	7,200 ^B	480 ^B	800 ^B	4,800 ^B	800 ^B	160 ^B	NV	800 ^B	80 ^B	80 ^B	--	5 ^A	5 ^A	15 ^A	50 ^A

Table Notes:
<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.
Volatile organic compounds by EPA Method 8260C or 8021B. All detected compounds summarized here. See laboratory report for full list of analyzed parameters.
Total Lead and Chromium on unfiltered samples by EPA Method 6020B.
Dissolved and total arsenic by EPA Method 6020B. Total arsenic on unfiltered samples. Dissolved arsenic on field filtered samples using 0.45 micron single-use filters.

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 2020 Cleanup Levels and Risk Calculation (CLARC) database. NV indicates no value available from CLARC.
A - Method A listed or State or Federal MCL
B - Method B Direct Contact
NV - No published value

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

FIGURES



From USGS



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

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

Interpolated Groundwater Contours
Based on Water Level Measurements
on 12/1/2020

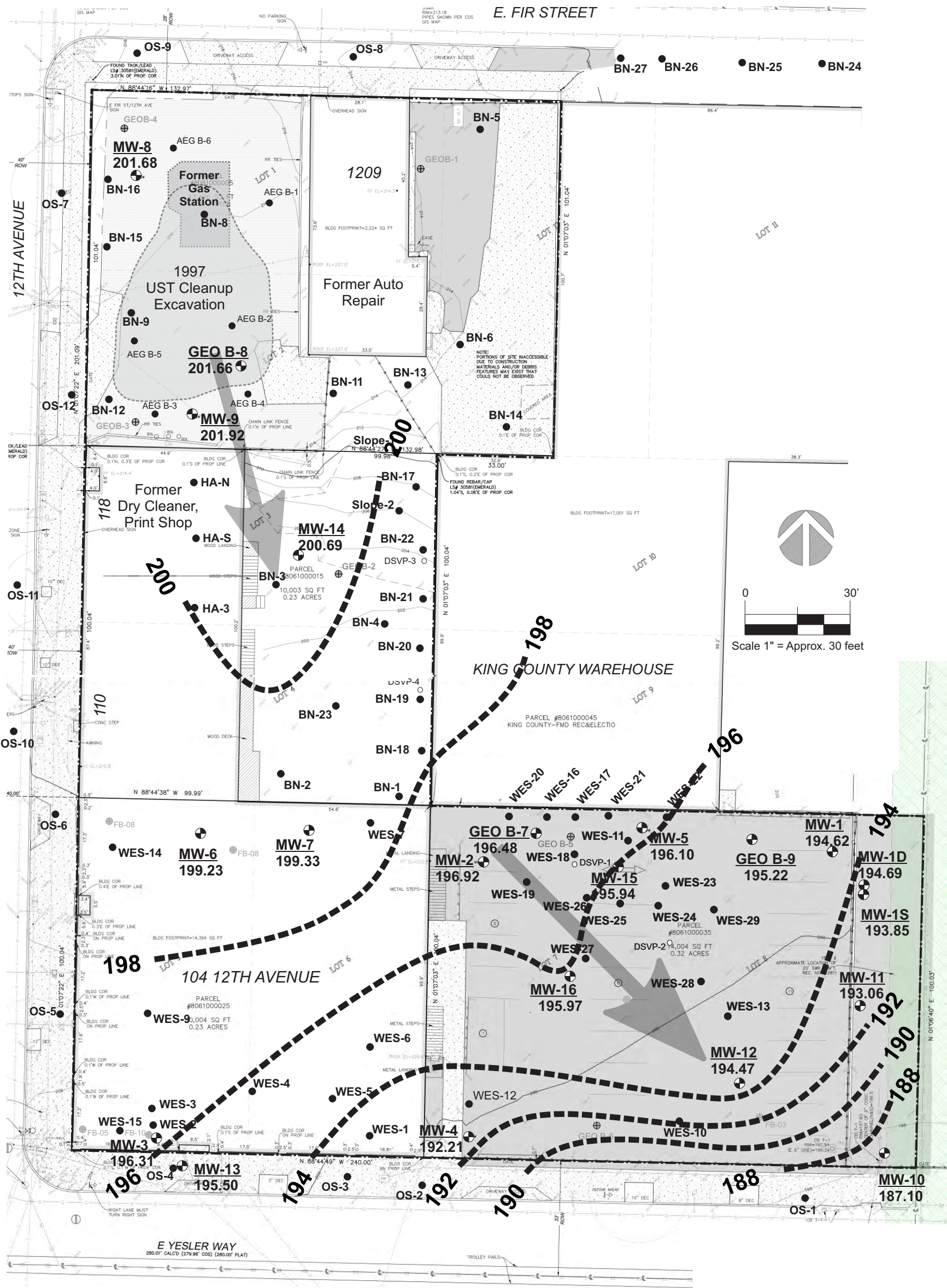
General Direction of Groundwater Migration

Figure 2 - Monitoring Well Location Plan and Interpolated Groundwater Contours - 12/1/2020

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

Project No.	WES - 1591A
Date	Jan 18, 2021
File ID.	1591Q4F2

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 2A - Monitoring Well Location Plan and Inferred Groundwater Contours - 1st Quarter 2021

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

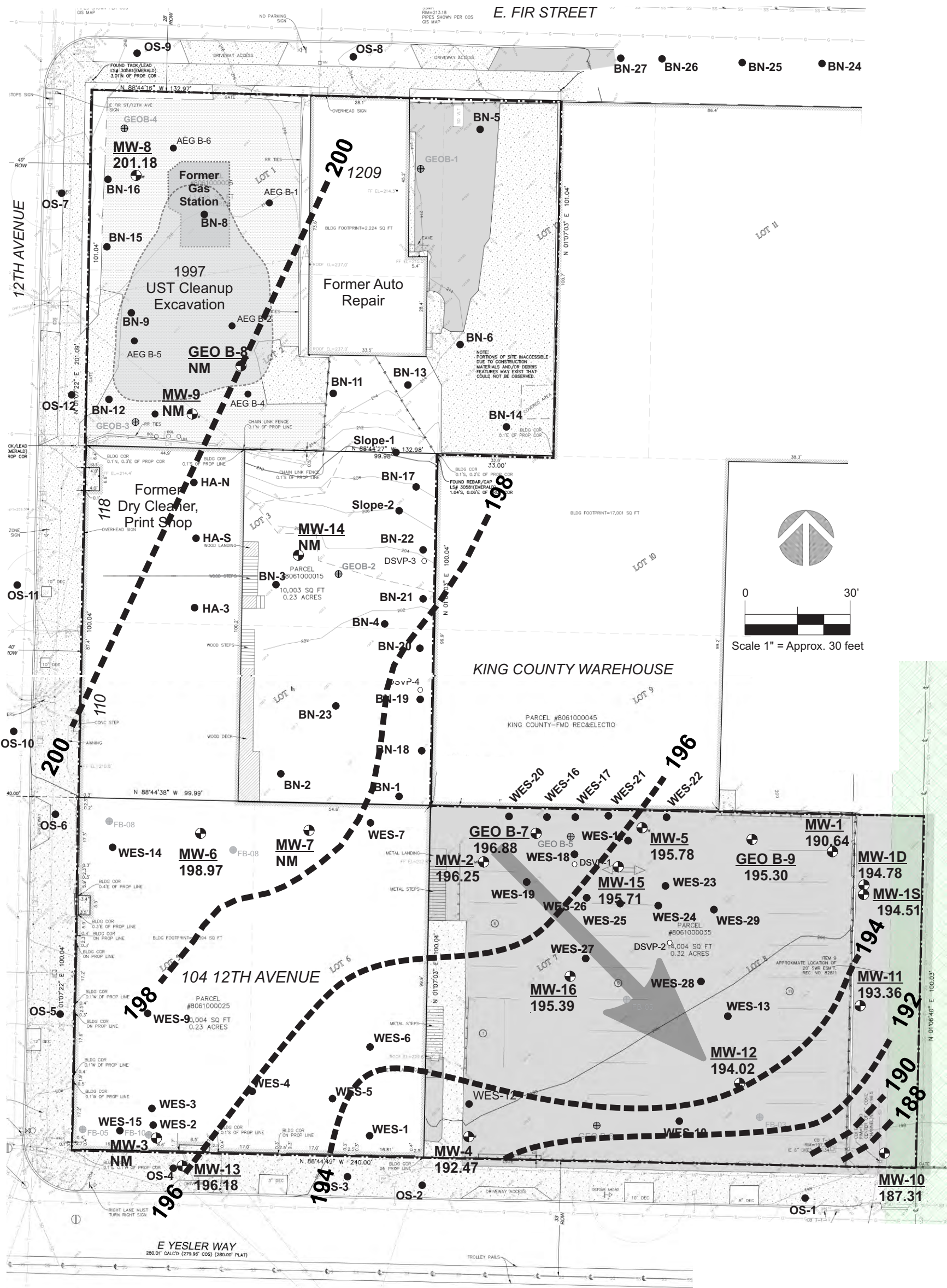
Project No.	WES - 1591A
Date	Jan 18, 2021
File ID.	1591Q4F2

WHITMAN
Environmental Sciences

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

General Direction of Groundwater Migration

Interpolated Groundwater Contours
Based on Water Level Measurements
Taken 3/16 to 3/26/2021



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)
- Approximate Former Location of Decommissioned Monitoring Wells

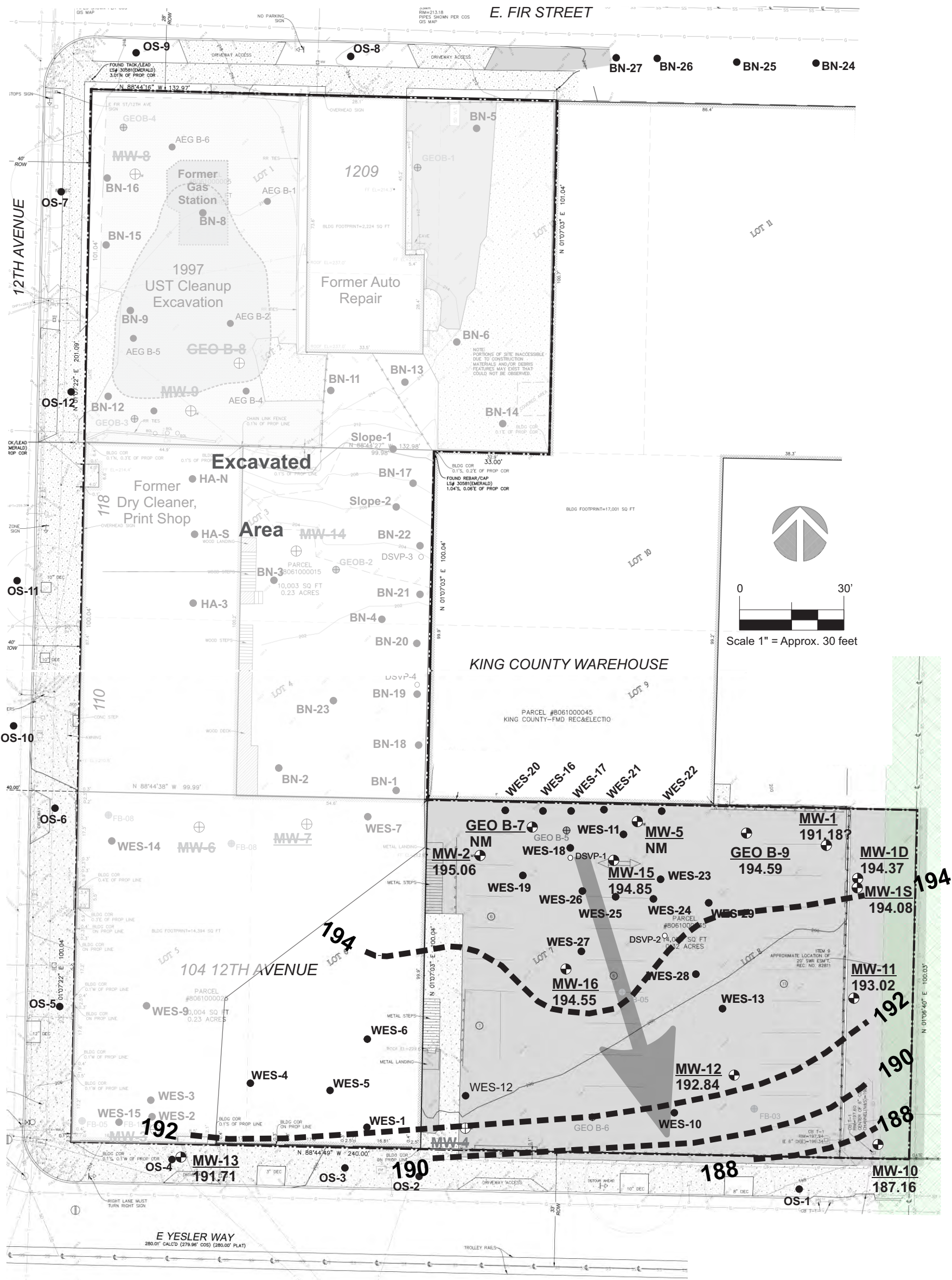
Figure 2B - Monitoring Well Location Plan and Inferred Groundwater Contours - 2nd Quarter 2021

Proposed Redevelopment Property 104-124 12th Avenue & 1209 E. Fir Street Seattle, WA	
Project No.	WES - 1591A
Date	July 18, 2021
File ID.	1591Q221F2B
WHITMAN Environmental Sciences	

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

Interpolated Groundwater Contours
Based on Water Level Measurements
Taken 5/12 to 6/5/2021

General Direction of Groundwater Migration



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)
- Approximate Former Location of Decommissioned Monitoring Wells

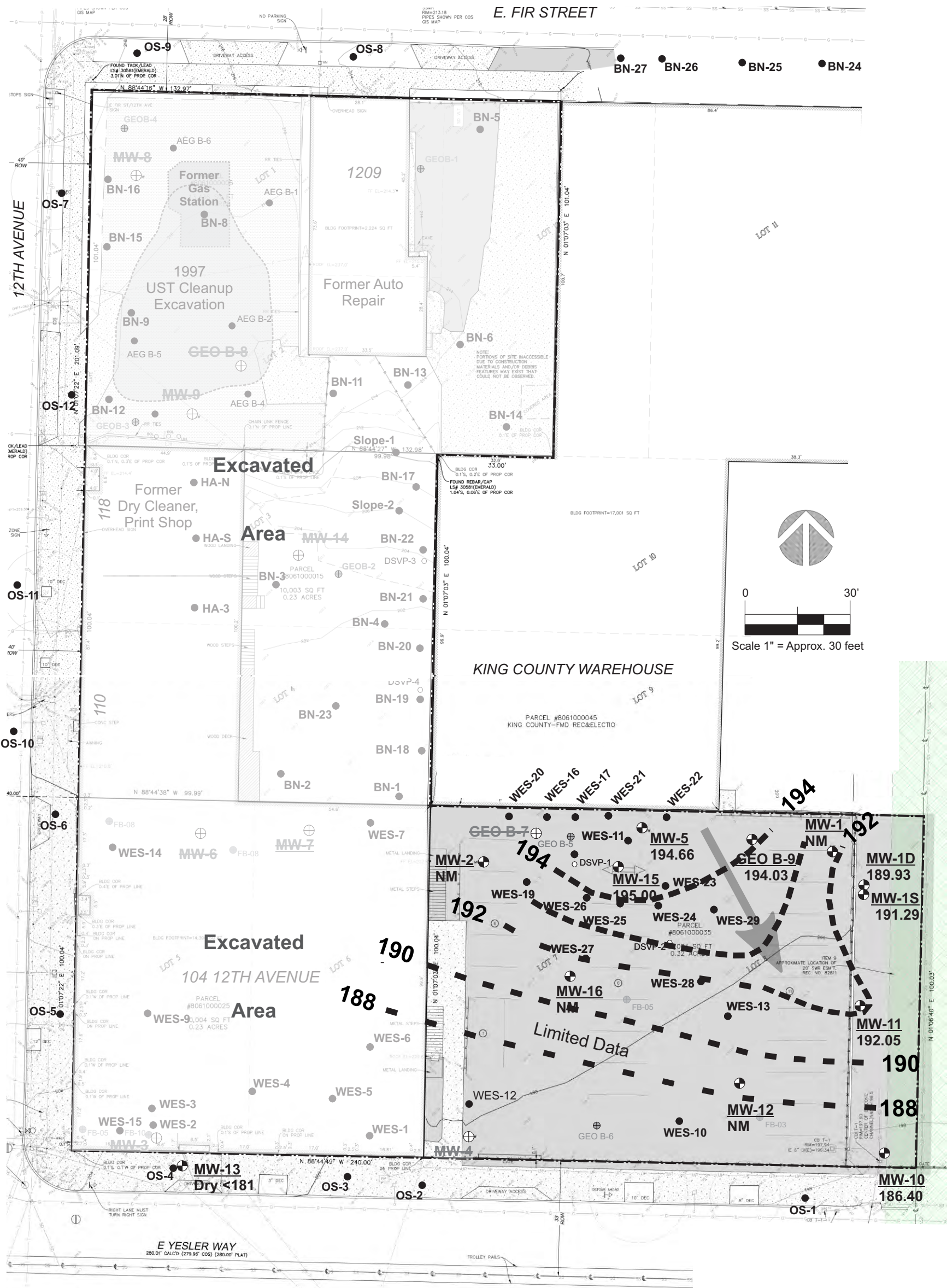
Figure 2C - Monitoring Well Location Plan and Inferred Groundwater Contours - 3rd Quarter 2021

Proposed Redevelopment Property 104-124 12th Avenue & 1209 E. Fir Street Seattle, WA	
Project No.	WES - 1591A
Date	July 18, 2021
File ID.	1591Q321F2C
WHITMAN Environmental Sciences	

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

Interpolated Groundwater Contours Based on Water Level Measurements Taken 9/14 to 9/30/2021

General Direction of Groundwater Migration



Legend

- Approximate Location of Monitoring Well
- Approximate Location of Soil Borings (2016 -2020)
- Approximate Location of Soil Vapor Probe

GEO B-7*

TCE- 2.9
C12DCE- 3.2
As (D) - 1.49

Sample Location I.D

* - Where noted, well shows discolored water associated with remedial injections

Analytical Parameter Concentrations (ug/l)
(Detected Compounds Only)

As (D) - Dissolved Arsenic (ug/l)

Bold Italic Exceeds CUL

Figure 3 - 4th Quarter 2020 Groundwater Sampling Analytical Results

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

Project No. WES - 1591A

Date Jan 11, 2021

File ID. 1591Q420F3

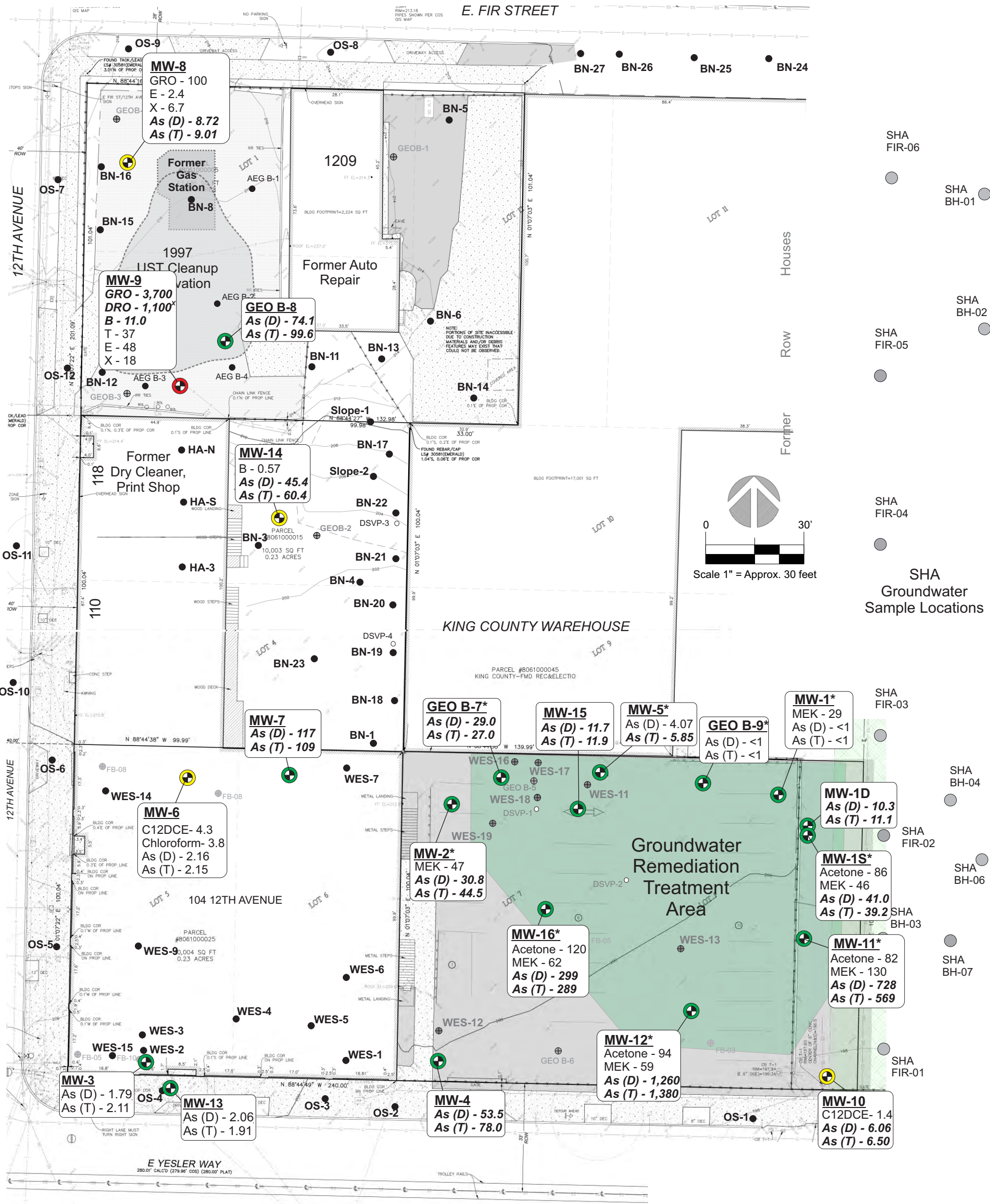
WHITMAN

Environmental Sciences

Monitoring Well with No Detected CVOCs or Petroleum Compounds in Groundwater in 4th Quarter 2020 Sampling

Monitoring Well with Detected CVOCs or Petroleum Compounds in Groundwater in 4th Quarter 2020 Sampling

Monitoring Well with CVOCs or Petroleum Compounds above MTCA Method A in Groundwater in 4th Quarter 2020 Sampling



Legend

- Approximate Location of Monitoring Well
- Approximate Location of Soil Borings (2016 -2020)

GEO B-7*

TCE- 2.9
C12DCE- 3.2
As (D) - 1.49

Sample Location I.D

* - Where noted, well shows discolored water associated with remedial injections

Analytical Parameter Concentrations (ug/l)
(Detected Compounds Only)

As (D) - Dissolved Arsenic (ug/l)

Bold Italic Exceeds CUL

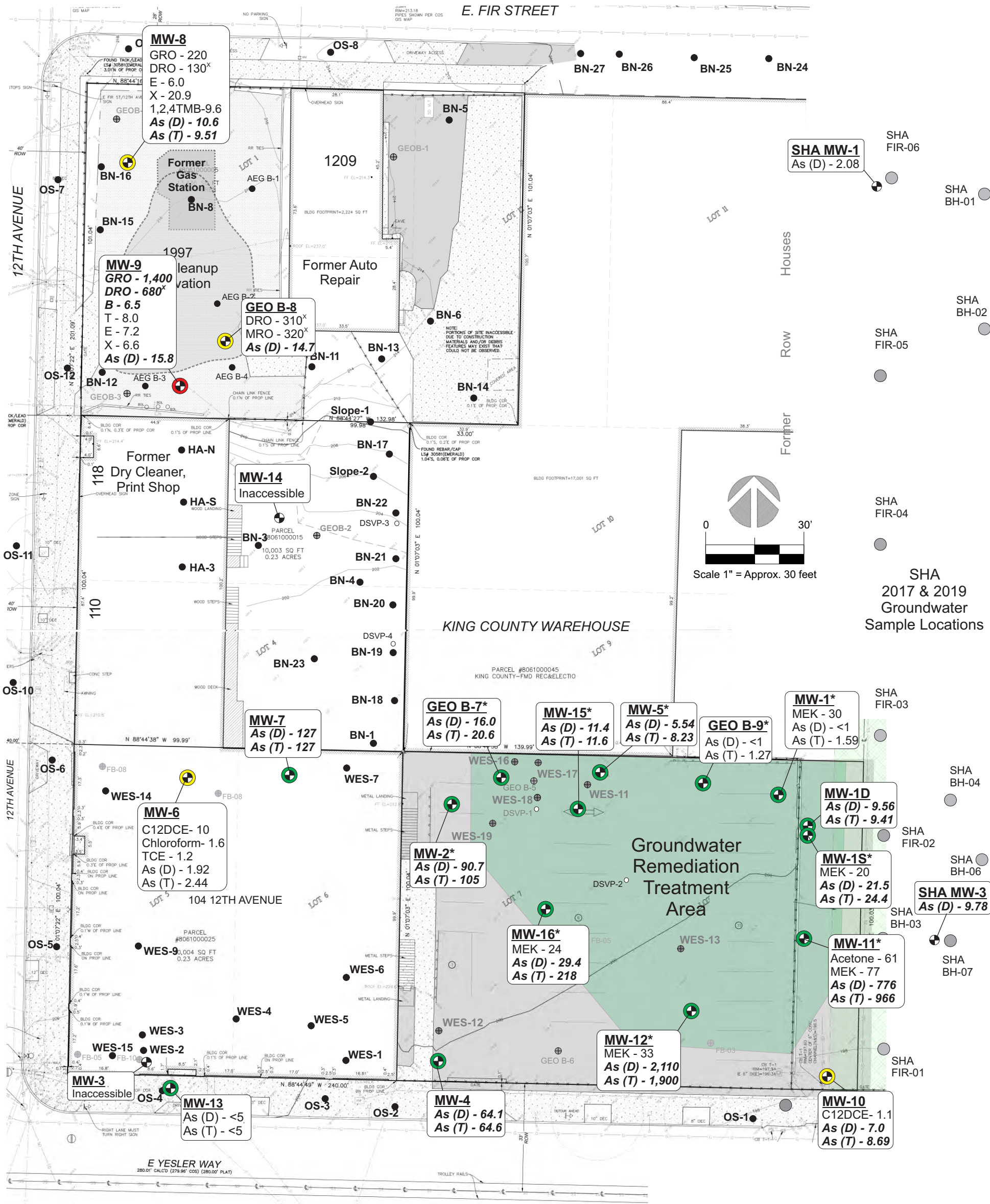
Figure 3A - 1st Quarter 2021 Groundwater Sampling Analytical Results

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

Project No.	WES - 1591A
Date	June 12, 2021
File ID.	1591Q121F3A

WHITMAN
Environmental Sciences

- Monitoring Well with No Detected CVOCs or Petroleum Compounds in Groundwater in 1st Quarter 2021 Sampling
- Monitoring Well with Detected CVOCs or Petroleum Compounds in Groundwater in 1st Quarter 2021 Sampling
- Monitoring Well with CVOCs or Petroleum Compounds above MTCA Method A in Groundwater in 1st Quarter 2021 Sampling



 Approximate Location of Monitoring Well
 Approximate Location of Soil Borings (2016 -2020)
 MW-2 Approximate Location and I.D. of Decommissioned Monitoring Well

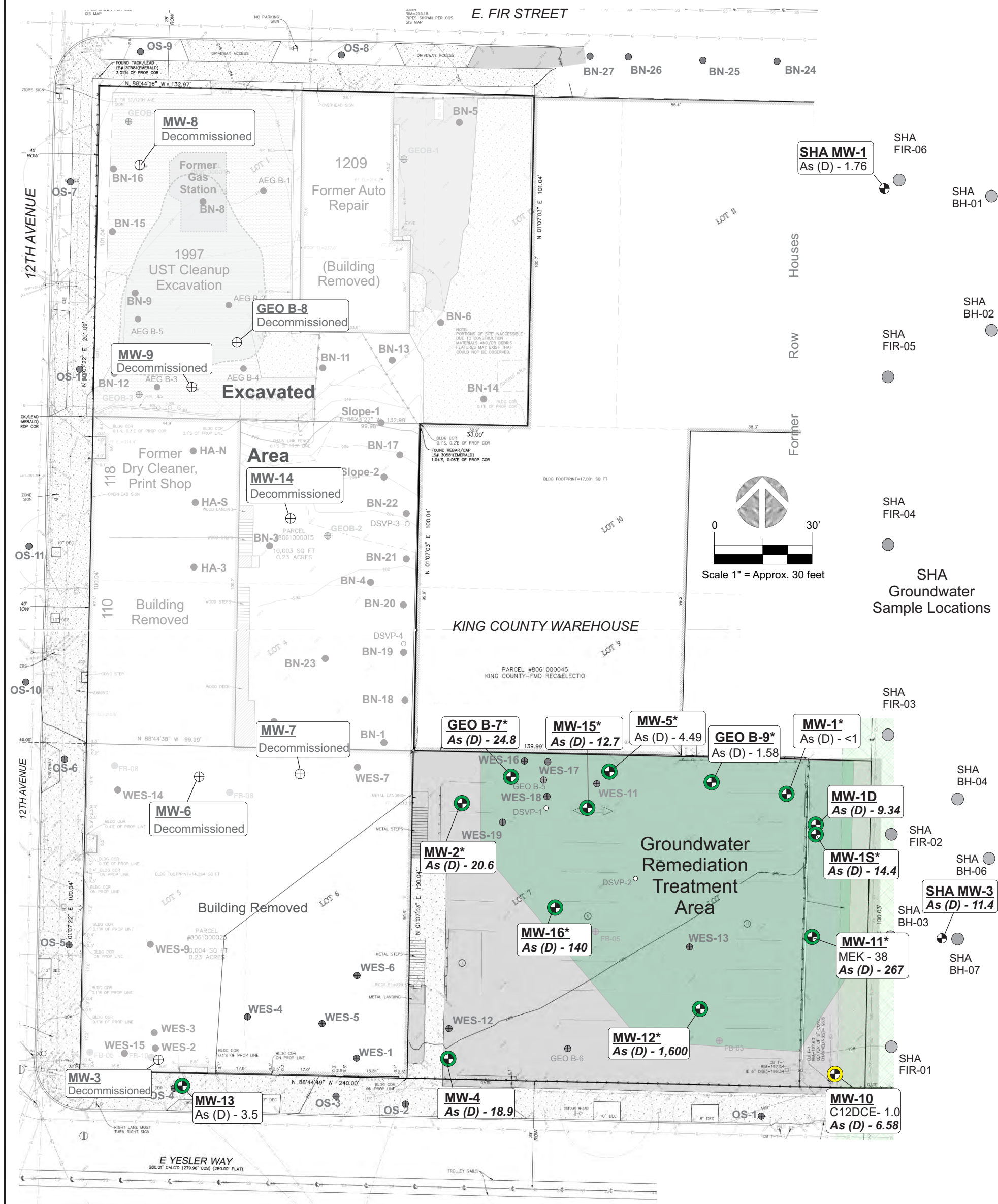
TCE- 2.9
C12DCE- 3.2
As (D) - 1.49

Bold Italic Exceeds CUL

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

Project No.	WES - 1591A	WHITMAN Environmental Sciences
Date	July 15, 2021	
File ID.	1591Q221F3B	

 Monitoring Well with CVOCs or Petroleum Compounds above MTCA Method A in Groundwater in 2nd Quarter 2021 Sampling



 Approximate Location of Monitoring Well
 Approximate Location of Soil Borings (2016 -2020)
 MW-2 Approximate Location and I.D. of Decommissioned Monitoring Well

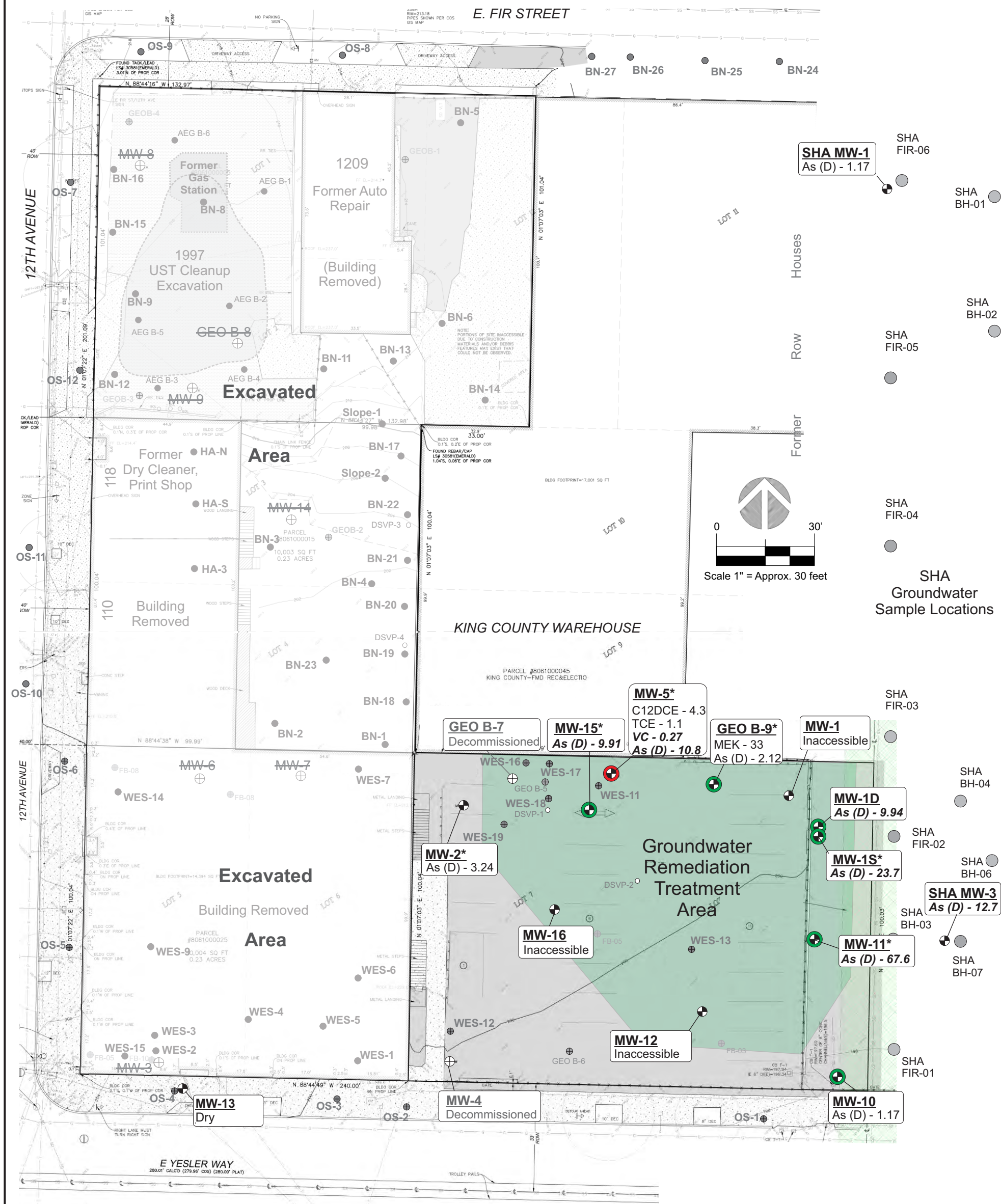
TCE- 2.9
C12DCE- 3.2
As (D) - 1.49

Bold Italic Exceeds CUL

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

Project No.	WES - 1591A	WHITMAN Environmental Sciences
Date	Oct 15, 2021	
File ID.	1591Q321F3C	

 Monitoring Well with CVOCs or Petroleum Compounds above MTCA Method A in Groundwater in 3rd Quarter 2021 Sampling



Legend

- Approximate Location of Monitoring Well
- Approximate Location of Soil Borings (2016 -2020)
- Approximate Location and I.D. of Decommissioned Monitoring Well

GEO B-7*

TCE- 2.9
C12DCE- 3.2
As (D) - 1.49

Sample Location I.D

* - Where noted, well shows discolored water associated with remedial injections

Analytical Parameter Concentrations (ug/l)
(Detected Compounds Only)

As (D) - Dissolved Arsenic (ug/l)

Bold Italic Exceeds CUL

Figure 3D - 4th Quarter 2021 Groundwater Sampling Analytical Results

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

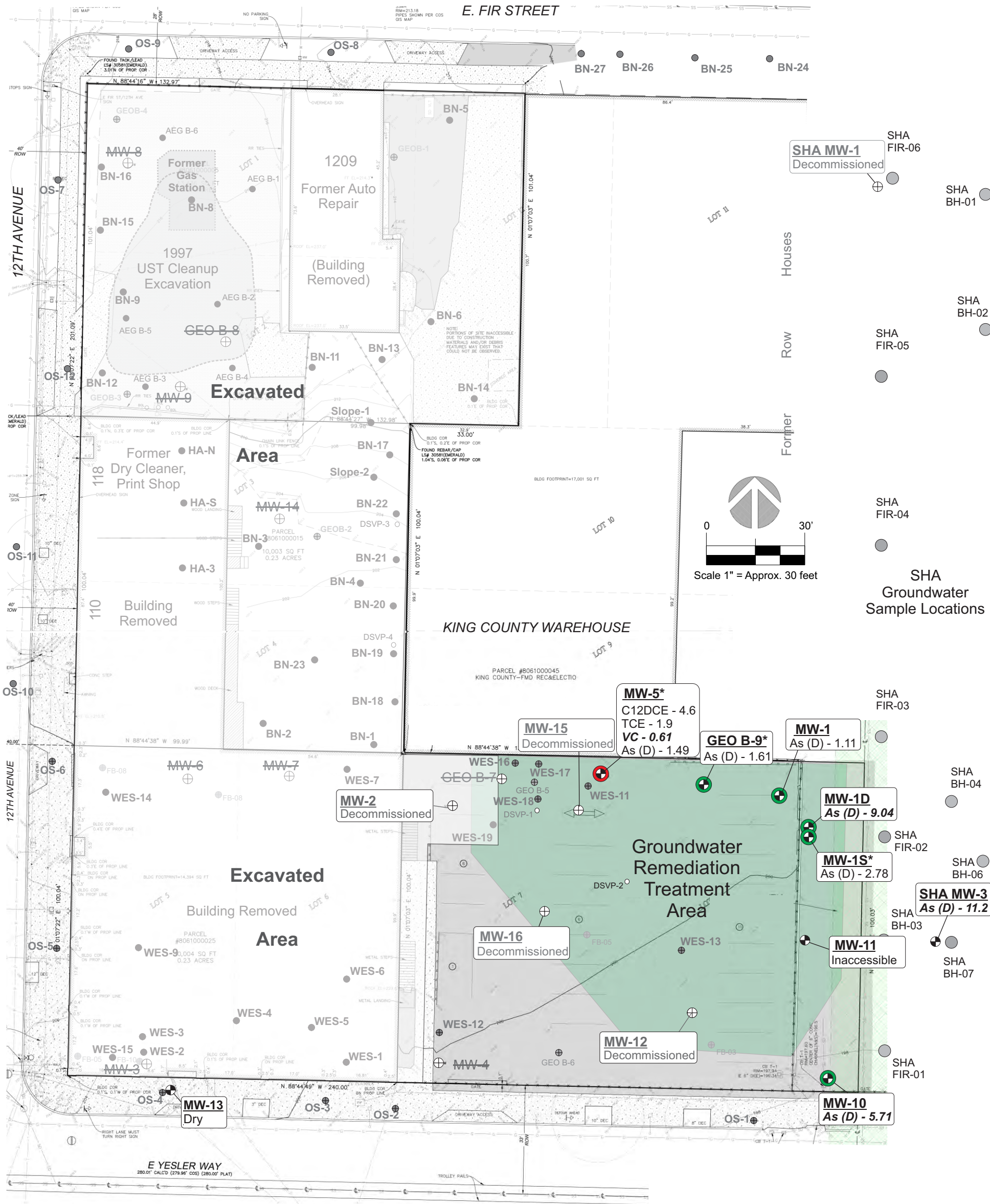
Project No.	WES - 1591A
Date	Jan 12, 2022
File ID.	1591Q421F3D

WHITMAN
Environmental Sciences

Monitoring Well with No Detected CVOCs or Petroleum Compounds in Groundwater in 4th Quarter 2021 Sampling

Monitoring Well with Detected CVOCs or Petroleum Compounds in Groundwater in 4th Quarter 2021 Sampling

Monitoring Well with CVOCs or Petroleum Compounds above MTCA Method A in Groundwater in 4th Quarter 2021 Sampling



Legend

- Approximate Location of Monitoring Well
- Approximate Location of Soil Borings (2016 -2020)
- Approximate Location and I.D. of Decommissioned Monitoring Well
- Approximate Location of Soil Vapor Probe

GEO B-7*

TCE- 2.9
C12DCE- 3.2
As (D) - 1.49

Sample Location I.D

* - Where noted, well shows discolored water associated with remedial injections

Analytical Parameter Concentrations (ug/l)
(Detected Compounds Only)

As (D) - Dissolved Arsenic (ug/l)

Bold Italic Exceeds CUL

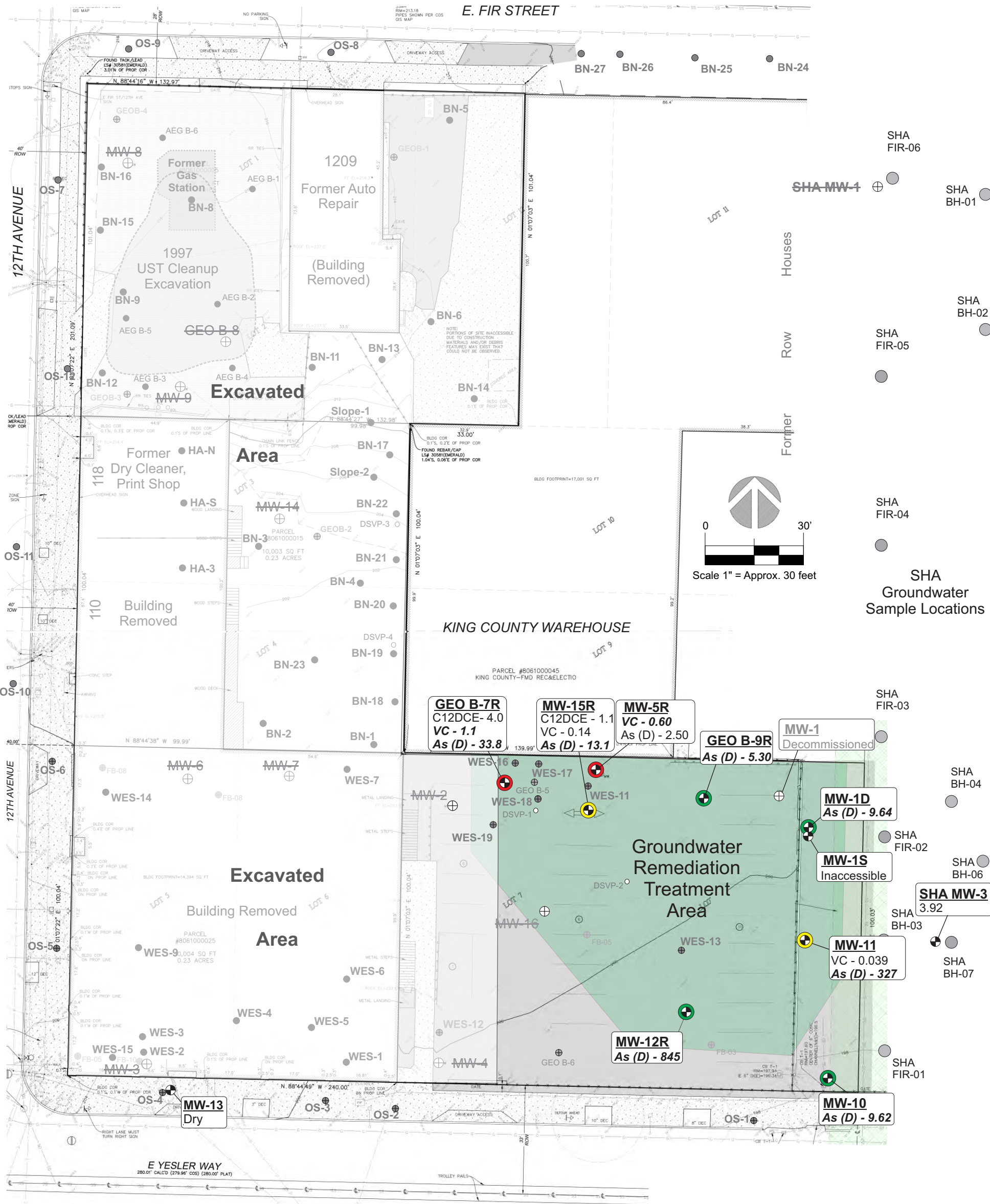
Figure 3E - 1st Quarter 2022 Groundwater Sampling Analytical Results

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

Project No.	WES - 1591A
Date	Apr 12, 2022
File ID.	1591Q122F3E

WHITMAN
Environmental Sciences

- Monitoring Well with No Detected CVOCs or Petroleum Compounds in Groundwater in 4th Quarter 2021 Sampling
- Monitoring Well with Detected CVOCs or Petroleum Compounds in Groundwater in 4th Quarter 2021 Sampling
- Monitoring Well with CVOCs or Petroleum Compounds above MTCA Method A in Groundwater in 4th Quarter 2021 Sampling



APPENDIX A

Laboratory Analytical Reports

4th Quarter 2020

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

December 10, 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 December 1, 2020 from the 12th + Yesler PO 1591, F&BI 012019 project. There are 44 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
WES1210R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on December 1, 2020 by Friedman & Bruya, Inc. from the Whitman Environmental Sciences 12th + Yesler PO 1591, F&BI 012019 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Whitman Environmental Sciences</u>
012019 -01	MW-1-GW
012019 -02	MW-1D-GW
012019 -03	MW-1S-GW
012019 -04	MW-4-GW
012019 -05	MW-5-GW
012019 -06	MW-8-GW
012019 -07	MW-9-GW
012019 -08	MW-10-GW
012019 -09	MW-11-GW
012019 -10	MW-12-GW
012019 -11	MW-14-GW
012019 -12	GEO-B-8

The 8260D calibration standard failed the acceptance criteria for several analytes. The data were flagged accordingly.

All other quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 12/10/20

Date Received: 12/01/20

Project: 12th + Yesler PO 1591, F&BI 012019

Date Extracted: 12/03/20

Date Analyzed: 12/03/20

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR BENZENE, TOLUENE, ETHYLBENZENE,
XYLENES AND TPH AS GASOLINE
USING METHODS 8021B AND NWTPH-Gx**

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Gasoline Range</u>	<u>Surrogate (% Recovery)</u> (Limit 52-124)
MW-8-GW 012019-06	<1	<1	2.4	6.7	100	79
MW-9-GW 012019-07	11	37	48	18	3,700	72
GEO-B-8 012019-12	<1	<1	<1	<3	<100	79
Method Blank 00-2598 MB	<1	<1	<1	<3	<100	74

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-1-GW	Client:	Whitman Environmental Sciences
Date Received:	12/01/20	Project:	12th + Yesler PO 1591
Date Extracted:	12/07/20	Lab ID:	012019-01
Date Analyzed:	12/08/20	Data File:	012019-01.123
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-1D-GW	Client:	Whitman Environmental Sciences
Date Received:	12/01/20	Project:	12th + Yesler PO 1591
Date Extracted:	12/07/20	Lab ID:	012019-02
Date Analyzed:	12/08/20	Data File:	012019-02.124
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	10.3

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-1S-GW	Client:	Whitman Environmental Sciences
Date Received:	12/01/20	Project:	12th + Yesler PO 1591
Date Extracted:	12/07/20	Lab ID:	012019-03 x10
Date Analyzed:	12/08/20	Data File:	012019-03 x10.125
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	41.0

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-4-GW	Client:	Whitman Environmental Sciences
Date Received:	12/01/20	Project:	12th + Yesler PO 1591
Date Extracted:	12/07/20	Lab ID:	012019-04 x10
Date Analyzed:	12/08/20	Data File:	012019-04 x10.133
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	53.5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-5-GW	Client:	Whitman Environmental Sciences
Date Received:	12/01/20	Project:	12th + Yesler PO 1591
Date Extracted:	12/07/20	Lab ID:	012019-05
Date Analyzed:	12/08/20	Data File:	012019-05.134
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	4.07

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-8-GW f	Client:	Whitman Environmental Sciences
Date Received:	12/01/20	Project:	12th + Yesler PO 1591
Date Extracted:	12/03/20	Lab ID:	012019-06
Date Analyzed:	12/04/20	Data File:	012019-06.179
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	8.72

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-10-GW	Client:	Whitman Environmental Sciences
Date Received:	12/01/20	Project:	12th + Yesler PO 1591
Date Extracted:	12/07/20	Lab ID:	012019-08
Date Analyzed:	12/08/20	Data File:	012019-08.135
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	6.06

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-11-GW	Client:	Whitman Environmental Sciences
Date Received:	12/01/20	Project:	12th + Yesler PO 1591
Date Extracted:	12/07/20	Lab ID:	012019-09 x100
Date Analyzed:	12/08/20	Data File:	012019-09 x100.136
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	728

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-12-GW	Client:	Whitman Environmental Sciences
Date Received:	12/01/20	Project:	12th + Yesler PO 1591
Date Extracted:	12/07/20	Lab ID:	012019-10 x100
Date Analyzed:	12/08/20	Data File:	012019-10 x100.137
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	1,260

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-14-GW f	Client:	Whitman Environmental Sciences
Date Received:	12/01/20	Project:	12th + Yesler PO 1591
Date Extracted:	12/03/20	Lab ID:	012019-11
Date Analyzed:	12/04/20	Data File:	012019-11.180
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	45.4

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	GEO-B-8 f	Client:	Whitman Environmental Sciences
Date Received:	12/01/20	Project:	12th + Yesler PO 1591
Date Extracted:	12/03/20	Lab ID:	012019-12
Date Analyzed:	12/04/20	Data File:	012019-12.181
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	74.1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	NA	Project:	12th + Yesler PO 1591
Date Extracted:	12/07/20	Lab ID:	I0-754 mb
Date Analyzed:	12/07/20	Data File:	I0-754 mb.089
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank f	Client:	Whitman Environmental Sciences
Date Received:	NA	Project:	12th + Yesler PO 1591
Date Extracted:	12/03/20	Lab ID:	I0-748 mb
Date Analyzed:	12/03/20	Data File:	I0-748 mb.116
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-1-GW	Client:	Whitman Environmental Sciences
Date Received:	12/01/20	Project:	12th + Yesler PO 1591
Date Extracted:	12/03/20	Lab ID:	012019-01
Date Analyzed:	12/04/20	Data File:	012019-01.186
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-1D-GW	Client:	Whitman Environmental Sciences
Date Received:	12/01/20	Project:	12th + Yesler PO 1591
Date Extracted:	12/03/20	Lab ID:	012019-02
Date Analyzed:	12/04/20	Data File:	012019-02.187
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	11.1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-1S-GW	Client:	Whitman Environmental Sciences
Date Received:	12/01/20	Project:	12th + Yesler PO 1591
Date Extracted:	12/03/20	Lab ID:	012019-03 x10
Date Analyzed:	12/04/20	Data File:	012019-03 x10.188
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	39.2

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-4-GW	Client:	Whitman Environmental Sciences
Date Received:	12/01/20	Project:	12th + Yesler PO 1591
Date Extracted:	12/03/20	Lab ID:	012019-04 x10
Date Analyzed:	12/04/20	Data File:	012019-04 x10.189
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	78.0

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-5-GW	Client:	Whitman Environmental Sciences
Date Received:	12/01/20	Project:	12th + Yesler PO 1591
Date Extracted:	12/03/20	Lab ID:	012019-05
Date Analyzed:	12/04/20	Data File:	012019-05.190
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	5.85

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-8-GW	Client:	Whitman Environmental Sciences
Date Received:	12/01/20	Project:	12th + Yesler PO 1591
Date Extracted:	12/03/20	Lab ID:	012019-06
Date Analyzed:	12/04/20	Data File:	012019-06.191
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	9.01

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-10-GW	Client:	Whitman Environmental Sciences
Date Received:	12/01/20	Project:	12th + Yesler PO 1591
Date Extracted:	12/03/20	Lab ID:	012019-08
Date Analyzed:	12/04/20	Data File:	012019-08.192
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	6.50

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-11-GW	Client:	Whitman Environmental Sciences
Date Received:	12/01/20	Project:	12th + Yesler PO 1591
Date Extracted:	12/03/20	Lab ID:	012019-09 x100
Date Analyzed:	12/04/20	Data File:	012019-09 x100.193
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	569

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-12-GW	Client:	Whitman Environmental Sciences
Date Received:	12/01/20	Project:	12th + Yesler PO 1591
Date Extracted:	12/03/20	Lab ID:	012019-10 x100
Date Analyzed:	12/08/20	Data File:	012019-10 x100.138
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	1,380

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-14-GW	Client:	Whitman Environmental Sciences
Date Received:	12/01/20	Project:	12th + Yesler PO 1591
Date Extracted:	12/03/20	Lab ID:	012019-11 x10
Date Analyzed:	12/04/20	Data File:	012019-11 x10.198
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	60.4

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	GEO-B-8	Client:	Whitman Environmental Sciences
Date Received:	12/01/20	Project:	12th + Yesler PO 1591
Date Extracted:	12/03/20	Lab ID:	012019-12 x10
Date Analyzed:	12/04/20	Data File:	012019-12 x10.199
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	99.6

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	NA	Project:	12th + Yesler PO 1591
Date Extracted:	12/03/20	Lab ID:	I0-746 mb
Date Analyzed:	12/03/20	Data File:	I0-746 mb.121
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID: MW-1-GW	Client: Whitman Environmental Sciences
Date Received: 12/01/20	Project: 12th + Yesler PO 1591
Date Extracted: 12/07/20	Lab ID: 012019-01
Date Analyzed: 12/07/20	Data File: 120705.D
Matrix: Water	Instrument: GCMS11
Units: ug/L (ppb)	Operator: JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	50	150
Toluene-d8	89	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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	29	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 ca	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 ca	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-1D-GW	Client:	Whitman Environmental Sciences
Date Received:	12/01/20	Project:	12th + Yesler PO 1591
Date Extracted:	12/07/20	Lab ID:	012019-02
Date Analyzed:	12/07/20	Data File:	120706.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	109	50	150
Toluene-d8	94	50	150
4-Bromofluorobenzene	98	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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	<20	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 ca	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 ca	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-1S-GW	Client:	Whitman Environmental Sciences
Date Received:	12/01/20	Project:	12th + Yesler PO 1591
Date Extracted:	12/07/20	Lab ID:	012019-03
Date Analyzed:	12/07/20	Data File:	120707.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	111	50	150
Toluene-d8	101	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	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	86	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	46	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 ca	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 ca	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-4-GW	Client:	Whitman Environmental Sciences
Date Received:	12/01/20	Project:	12th + Yesler PO 1591
Date Extracted:	12/07/20	Lab ID:	012019-04
Date Analyzed:	12/07/20	Data File:	120708.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	50	150
Toluene-d8	94	50	150
4-Bromofluorobenzene	105	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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	<20	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 ca	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 ca	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: 12/01/20	Project: 12th + Yesler PO 1591
Date Extracted: 12/07/20	Lab ID: 012019-05
Date Analyzed: 12/07/20	Data File: 120709.D
Matrix: Water	Instrument: GCMS11
Units: ug/L (ppb)	Operator: JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	89	50	150
4-Bromofluorobenzene	107	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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	<20	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 ca	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 ca	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-10-GW	Client: Whitman Environmental Sciences
Date Received: 12/01/20	Project: 12th + Yesler PO 1591
Date Extracted: 12/07/20	Lab ID: 012019-08
Date Analyzed: 12/07/20	Data File: 120710.D
Matrix: Water	Instrument: GCMS11
Units: ug/L (ppb)	Operator: JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	103	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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	<20	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 ca	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 ca	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-11-GW	Client:	Whitman Environmental Sciences
Date Received:	12/01/20	Project:	12th + Yesler PO 1591
Date Extracted:	12/07/20	Lab ID:	012019-09
Date Analyzed:	12/07/20	Data File:	120711.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	103	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	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	82	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	130	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 ca	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 ca	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-12-GW	Client: Whitman Environmental Sciences
Date Received: 12/01/20	Project: 12th + Yesler PO 1591
Date Extracted: 12/07/20	Lab ID: 012019-10
Date Analyzed: 12/07/20	Data File: 120712.D
Matrix: Water	Instrument: GCMS11
Units: ug/L (ppb)	Operator: JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	107	50	150
Toluene-d8	101	50	150
4-Bromofluorobenzene	105	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	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	94	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	59	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 ca	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 ca	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-14-GW	Client:	Whitman Environmental Sciences
Date Received:	12/01/20	Project:	12th + Yesler PO 1591
Date Extracted:	12/07/20	Lab ID:	012019-11
Date Analyzed:	12/07/20	Data File:	120717.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	jcm

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	106	50	150
Toluene-d8	105	50	150
4-Bromofluorobenzene	102	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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	<20	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	0.57	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:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th + Yesler PO 1591
Date Extracted:	12/07/20	Lab ID:	00-2761 mb
Date Analyzed:	12/07/20	Data File:	120708.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	106	63	127
4-Bromofluorobenzene	104	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	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 ca	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	<20	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

Date of Report: 12/10/20

Date Received: 12/01/20

Project: 12th + Yesler PO 1591, F&BI 012019

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE,
XYLENES, AND TPH AS GASOLINE
USING EPA METHOD 8021B AND NWTPH-Gx**

Laboratory Code: 011487-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Benzene	ug/L (ppb)	<1	<1	nm
Toluene	ug/L (ppb)	<1	<1	nm
Ethylbenzene	ug/L (ppb)	<1	<1	nm
Xylenes	ug/L (ppb)	<3	<3	nm
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent	
			Recovery LCS	Acceptance Criteria
Benzene	ug/L (ppb)	50	103	65-118
Toluene	ug/L (ppb)	50	97	72-122
Ethylbenzene	ug/L (ppb)	50	97	73-126
Xylenes	ug/L (ppb)	150	95	74-118
Gasoline	ug/L (ppb)	1,000	94	69-134

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 12/10/20

Date Received: 12/01/20

Project: 12th + Yesler PO 1591, F&BI 012019

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR DISSOLVED METALS USING EPA METHOD 6020B**

Laboratory Code: 012019-01 x10 (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	93	94	75-125	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	89	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 12/10/20

Date Received: 12/01/20

Project: 12th + Yesler PO 1591, F&BI 012019

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR DISSOLVED METALS USING EPA METHOD 6020B**

Laboratory Code: 012018-01 (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	9.80	98	95	75-125	3

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	97	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 12/10/20

Date Received: 12/01/20

Project: 12th + Yesler PO 1591, F&BI 012019

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR TOTAL METALS USING EPA METHOD 6020B**

Laboratory Code: 012019-02 (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	7.69	76	79	75-125	4

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	94	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 12/10/20

Date Received: 12/01/20

Project: 12th + Yesler PO 1591, F&BI 012019

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

Laboratory Code: 012092-15 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	10	<1	121	10-172
Chloromethane	ug/L (ppb)	10	<10	97	25-166
Vinyl chloride	ug/L (ppb)	10	<0.2	96	36-166
Bromomethane	ug/L (ppb)	10	<5	117	47-169
Chloroethane	ug/L (ppb)	10	<1	100	46-160
Trichlorofluoromethane	ug/L (ppb)	10	<1	121	44-165
Acetone	ug/L (ppb)	50	<50	49	10-182
1,1-Dichloroethene	ug/L (ppb)	10	<1	110	60-136
Hexane	ug/L (ppb)	10	<5	93	52-150
Methylene chloride	ug/L (ppb)	10	<5	100	67-132
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	103	74-127
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	110	72-129
1,1-Dichloroethane	ug/L (ppb)	10	<1	109	70-128
2,2-Dichloropropane	ug/L (ppb)	10	<1	109	36-154
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	110	71-127
Chloroform	ug/L (ppb)	10	<1	112	65-132
2-Butanone (MEK)	ug/L (ppb)	50	<20	78	10-129
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<1	123	48-149
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	114	60-146
1,1-Dichloropropene	ug/L (ppb)	10	<1	111	69-133
Carbon tetrachloride	ug/L (ppb)	10	<1	113	56-152
Benzene	ug/L (ppb)	10	<0.35	104	76-125
Trichloroethene	ug/L (ppb)	10	<1	109	66-135
1,2-Dichloropropane	ug/L (ppb)	10	<1	104	78-125
Bromodichloromethane	ug/L (ppb)	10	<1	116	61-150
Dibromomethane	ug/L (ppb)	10	<1	116	66-141
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	112	10-185
cis-1,3-Dichloropropene	ug/L (ppb)	10	<1	107	72-132
Toluene	ug/L (ppb)	10	<1	93	76-122
trans-1,3-Dichloropropene	ug/L (ppb)	10	<1	98	76-130
1,1,2-Trichloroethane	ug/L (ppb)	10	<1	101	68-131
2-Hexanone	ug/L (ppb)	50	<10	89	10-185
1,3-Dichloropropane	ug/L (ppb)	10	<1	98	71-128
Tetrachloroethene	ug/L (ppb)	10	<1	99	10-226
Dibromochloromethane	ug/L (ppb)	10	<1	102	70-139
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<1	103	69-134
Chlorobenzene	ug/L (ppb)	10	<1	98	77-122
Ethylbenzene	ug/L (ppb)	10	<1	96	69-135
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	101	73-137
m,p-Xylene	ug/L (ppb)	20	<2	96	69-135
o-Xylene	ug/L (ppb)	10	<1	96	60-140
Styrene	ug/L (ppb)	10	<1	95	71-133
Isopropylbenzene	ug/L (ppb)	10	<1	94	65-142
Bromoform	ug/L (ppb)	10	<5	105	65-142
n-Propylbenzene	ug/L (ppb)	10	<1	93	58-144
Bromobenzene	ug/L (ppb)	10	<1	98	75-124
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	92	66-137
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<1	98	51-154
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	101	53-150
2-Chlorotoluene	ug/L (ppb)	10	<1	94	66-127
4-Chlorotoluene	ug/L (ppb)	10	<1	97	65-130
tert-Butylbenzene	ug/L (ppb)	10	<1	92	65-137
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	92	59-146
sec-Butylbenzene	ug/L (ppb)	10	<1	90	64-140
p-Isopropyltoluene	ug/L (ppb)	10	<1	90	65-141
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	96	72-123
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	95	69-126
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	93	69-128
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	103	32-164
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	87	66-136
Hexachlorobutadiene	ug/L (ppb)	10	<1	85	60-143
Naphthalene	ug/L (ppb)	10	<1	93	44-164
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	88	69-148

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 12/10/20

Date Received: 12/01/20

Project: 12th + Yesler PO 1591, F&BI 012019

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)	10	132	126	25-158	5
Chloromethane	ug/L (ppb)	10	107	102	45-156	5
Vinyl chloride	ug/L (ppb)	10	105	103	50-154	2
Bromomethane	ug/L (ppb)	10	120	125	55-143	4
Chloroethane	ug/L (ppb)	10	104	104	58-146	0
Trichlorofluoromethane	ug/L (ppb)	10	125	124	50-150	1
Acetone	ug/L (ppb)	50	51	49	22-155	4
1,1-Dichloroethene	ug/L (ppb)	10	111	113	67-136	2
Hexane	ug/L (ppb)	10	103	101	57-137	2
Methylene chloride	ug/L (ppb)	10	105	105	39-148	0
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	111	112	64-147	1
trans-1,2-Dichloroethene	ug/L (ppb)	10	114	112	68-128	2
1,1-Dichloroethane	ug/L (ppb)	10	111	109	74-135	2
2,2-Dichloropropane	ug/L (ppb)	10	137	127	55-143	8
cis-1,2-Dichloroethene	ug/L (ppb)	10	111	109	74-136	2
Chloroform	ug/L (ppb)	10	117	115	74-134	2
2-Butanone (MEK)	ug/L (ppb)	50	82	83	37-150	1
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	124	124	66-129	0
1,1,1-Trichloroethane	ug/L (ppb)	10	121	120	74-142	1
1,1-Dichloropropene	ug/L (ppb)	10	111	114	77-129	3
Carbon tetrachloride	ug/L (ppb)	10	124	121	75-158	2
Benzene	ug/L (ppb)	10	105	104	69-134	1
Trichloroethene	ug/L (ppb)	10	115	111	67-133	4
1,2-Dichloropropane	ug/L (ppb)	10	103	104	71-134	1
Bromodichloromethane	ug/L (ppb)	10	118	119	76-132	1
Dibromomethane	ug/L (ppb)	10	119	116	68-132	3
4-Methyl-2-pentanone	ug/L (ppb)	50	111	113	65-138	2
cis-1,3-Dichloropropene	ug/L (ppb)	10	110	113	74-140	3
Toluene	ug/L (ppb)	10	97	93	72-122	4
trans-1,3-Dichloropropene	ug/L (ppb)	10	104	103	80-136	1
1,1,2-Trichloroethane	ug/L (ppb)	10	101	99	75-124	2
2-Hexanone	ug/L (ppb)	50	91	91	60-136	0
1,3-Dichloropropane	ug/L (ppb)	10	96	97	76-126	1
Tetrachloroethene	ug/L (ppb)	10	105	102	76-121	3
Dibromochloromethane	ug/L (ppb)	10	108	104	84-133	4
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	104	105	82-115	1
Chlorobenzene	ug/L (ppb)	10	100	98	83-114	2
Ethylbenzene	ug/L (ppb)	10	98	96	77-124	2
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	104	102	84-127	2
m,p-Xylene	ug/L (ppb)	20	98	96	81-112	2
o-Xylene	ug/L (ppb)	10	97	93	81-121	4
Styrene	ug/L (ppb)	10	98	97	84-119	1
Isopropylbenzene	ug/L (ppb)	10	97	95	80-117	2
Bromoform	ug/L (ppb)	10	110	108	74-136	2
n-Propylbenzene	ug/L (ppb)	10	94	91	74-126	3
Bromobenzene	ug/L (ppb)	10	99	96	80-121	3
1,3,5-Trimethylbenzene	ug/L (ppb)	10	94	93	78-123	1
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	99	97	66-126	2
1,2,3-Trichloropropane	ug/L (ppb)	10	100	99	67-124	1
2-Chlorotoluene	ug/L (ppb)	10	95	92	77-127	3
4-Chlorotoluene	ug/L (ppb)	10	97	95	78-128	2
tert-Butylbenzene	ug/L (ppb)	10	94	91	80-123	3
1,2,4-Trimethylbenzene	ug/L (ppb)	10	95	92	79-122	3
sec-Butylbenzene	ug/L (ppb)	10	92	89	80-116	3
p-Isopropyltoluene	ug/L (ppb)	10	94	90	81-123	4
1,3-Dichlorobenzene	ug/L (ppb)	10	98	95	83-113	3
1,4-Dichlorobenzene	ug/L (ppb)	10	96	95	81-112	1
1,2-Dichlorobenzene	ug/L (ppb)	10	96	92	84-112	4
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	109	103	57-141	6
1,2,4-Trichlorobenzene	ug/L (ppb)	10	93	88	72-130	6
Hexachlorobutadiene	ug/L (ppb)	10	91	88	53-141	3
Naphthalene	ug/L (ppb)	10	98	91	64-133	7
1,2,3-Trichlorobenzene	ug/L (ppb)	10	93	90	65-136	3

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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.

012019

SAMPLE CHAIN OF CUSTODY

12-01-20 12/3/2019

SAMPLERS (signature)

TURNAROUND TIME

Report To

Company

Address

City, State, ZIP

Phone

Email

PROJECT NAME

PO #

REMARKS

INVOICE TO

Project specific RLS? - Yes / No

Standard turnaround
☒ RUSH
 Rush charges authorized by:
 SAMPLE DISPOSAL
☐ Archive samples
☐ Other
 Default: Dispose after 30 days

ANALYSES REQUESTED

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
MD-1-610	01 A-E	12/1/20	4:05	Water	5					X			
MD-177-610	02		3:05							X			
MD-15-610	03									X			
MD-4-610	04									X			
MD-5-610	05		3:40							X			
MD-8-610	06 A-D												
MD-9-610	07		3:10										
MD-10-610	08 A-E		2:35							X			
MD-11-610	09		3:05							X			
MD-13-610	10									X			

SIGNATURE

PRINT NAME

COMPANY

DATE

TIME

Relinquished by:

Received by:

Relinquished by:

Received by:

Company

Date

Time

Friedman & Bruya, Inc.

3012 16th Avenue West

Seattle, WA 98119-2029

Ph. (206) 285-8282

Samples received at 4:00

12/1/20

5:35

WV3/EO3/ATG

5

Phone _____ Email _____

Default: Dispose after 30 days

[illegible]

Notes

[illegible]

11/10/2020

TIME

5/3

73

Samples received at 4 o'clock

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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December 17, 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 December 9, 2020 from the 12th + Yesler PO WES 1591, F&BI 012161 project. There are 24 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
WES1217R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on December 9, 2020 by Friedman & Bruya, Inc. from the Whitman Environmental Sciences 12th + Yesler PO WES 1591, F&BI 012161 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Whitman Environmental Sciences</u>
012161 -01	MW-2-GW
012161 -02	MW-15-GW
012161 -03	MW-16-GW
012161 -04	GEO B-7-GW
012161 -05	GEO B-9-GW

All quality control requirements were acceptable.

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ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-2-GW	Client:	Whitman Environmental Sciences
Date Received:	12/09/20	Project:	12th + Yesler PO WES 1591
Date Extracted:	12/10/20	Lab ID:	012161-01 x10
Date Analyzed:	12/15/20	Data File:	012161-01 x10.075
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	30.8

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-15-GW	Client:	Whitman Environmental Sciences
Date Received:	12/09/20	Project:	12th + Yesler PO WES 1591
Date Extracted:	12/10/20	Lab ID:	012161-02 x5
Date Analyzed:	12/15/20	Data File:	012161-02 x5.077
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	11.7

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-16-GW	Client:	Whitman Environmental Sciences
Date Received:	12/09/20	Project:	12th + Yesler PO WES 1591
Date Extracted:	12/10/20	Lab ID:	012161-03 x100
Date Analyzed:	12/15/20	Data File:	012161-03 x100.079
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	299

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	GEO B-7-GW	Client:	Whitman Environmental Sciences
Date Received:	12/09/20	Project:	12th + Yesler PO WES 1591
Date Extracted:	12/10/20	Lab ID:	012161-04 x10
Date Analyzed:	12/15/20	Data File:	012161-04 x10.081
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	29.0

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	GEO B-9-GW	Client:	Whitman Environmental Sciences
Date Received:	12/09/20	Project:	12th + Yesler PO WES 1591
Date Extracted:	12/10/20	Lab ID:	012161-05
Date Analyzed:	12/15/20	Data File:	012161-05.085
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th + Yesler PO WES 1591
Date Extracted:	12/10/20	Lab ID:	I0-763 mb2
Date Analyzed:	12/10/20	Data File:	I0-763 mb2.144
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-2-GW	Client:	Whitman Environmental Sciences
Date Received:	12/09/20	Project:	12th + Yesler PO WES 1591
Date Extracted:	12/10/20	Lab ID:	012161-01 x10
Date Analyzed:	12/15/20	Data File:	012161-01 x10.076
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	44.5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-15-GW	Client:	Whitman Environmental Sciences
Date Received:	12/09/20	Project:	12th + Yesler PO WES 1591
Date Extracted:	12/10/20	Lab ID:	012161-02 x5
Date Analyzed:	12/15/20	Data File:	012161-02 x5.078
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	11.9

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-16-GW	Client:	Whitman Environmental Sciences
Date Received:	12/09/20	Project:	12th + Yesler PO WES 1591
Date Extracted:	12/10/20	Lab ID:	012161-03 x100
Date Analyzed:	12/15/20	Data File:	012161-03 x100.080
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	289

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ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	GEO B-7-GW	Client:	Whitman Environmental Sciences
Date Received:	12/09/20	Project:	12th + Yesler PO WES 1591
Date Extracted:	12/10/20	Lab ID:	012161-04 x10
Date Analyzed:	12/15/20	Data File:	012161-04 x10.082
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	27.0

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	GEO B-9-GW	Client:	Whitman Environmental Sciences
Date Received:	12/09/20	Project:	12th + Yesler PO WES 1591
Date Extracted:	12/10/20	Lab ID:	012161-05
Date Analyzed:	12/15/20	Data File:	012161-05.086
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th + Yesler PO WES 1591
Date Extracted:	12/10/20	Lab ID:	I0-765 mb
Date Analyzed:	12/10/20	Data File:	I0-765 mb.232
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-2-GW	Client:	Whitman Environmental Sciences
Date Received:	12/09/20	Project:	12th + Yesler PO WES 1591
Date Extracted:	12/14/20	Lab ID:	012161-01
Date Analyzed:	12/14/20	Data File:	121439.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	93	50	150
Toluene-d8	105	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
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	47	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-15-GW	Client:	Whitman Environmental Sciences
Date Received:	12/09/20	Project:	12th + Yesler PO WES 1591
Date Extracted:	12/14/20	Lab ID:	012161-02
Date Analyzed:	12/14/20	Data File:	121440.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	105	50	150
Toluene-d8	106	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
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	<20	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-16-GW	Client: Whitman Environmental Sciences
Date Received: 12/09/20	Project: 12th + Yesler PO WES 1591
Date Extracted: 12/14/20	Lab ID: 012161-03
Date Analyzed: 12/14/20	Data File: 121441.D
Matrix: Water	Instrument: GCMS13
Units: ug/L (ppb)	Operator: JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	109	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
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	120	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	62	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: GEO B-7-GW	Client: Whitman Environmental Sciences
Date Received: 12/09/20	Project: 12th + Yesler PO WES 1591
Date Extracted: 12/14/20	Lab ID: 012161-04
Date Analyzed: 12/14/20	Data File: 121442.D
Matrix: Water	Instrument: GCMS13
Units: ug/L (ppb)	Operator: JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	91	50	150
Toluene-d8	94	50	150
4-Bromofluorobenzene	105	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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	<20	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: GEO B-9-GW	Client: Whitman Environmental Sciences
Date Received: 12/09/20	Project: 12th + Yesler PO WES 1591
Date Extracted: 12/14/20	Lab ID: 012161-05
Date Analyzed: 12/14/20	Data File: 121443.D
Matrix: Water	Instrument: GCMS13
Units: ug/L (ppb)	Operator: JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	101	50	150
4-Bromofluorobenzene	105	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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	<20	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:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th + Yesler PO WES 1591
Date Extracted:	12/14/20	Lab ID:	00-2817 mb
Date Analyzed:	12/14/20	Data File:	121408.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	102	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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	<20	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

Date of Report: 12/17/20

Date Received: 12/09/20

Project: 12th + Yesler PO WES 1591, F&BI 012161

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR DISSOLVED METALS USING EPA METHOD 6020B**

Laboratory Code: 012114-01 x10 (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	15.3	93	95	75-125	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	99	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 12/17/20

Date Received: 12/09/20

Project: 12th + Yesler PO WES 1591, F&BI 012161

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR TOTAL METALS USING EPA METHOD 6020B**

Laboratory Code: 012114-01 (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	14.1	81	75	70-130	8

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	95	85-115

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 12/17/20

Date Received: 12/09/20

Project: 12th + Yesler PO WES 1591, F&BI 012161

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

Laboratory Code: 012215-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent	Acceptance Criteria
				Recovery MS	
Dichlorodifluoromethane	ug/L (ppb)	10	<1	112	50-150
Chloromethane	ug/L (ppb)	10	<10	111	50-150
Vinyl chloride	ug/L (ppb)	10	<0.2	110	50-150
Bromomethane	ug/L (ppb)	10	<5	106	50-150
Chloroethane	ug/L (ppb)	10	<1	124	50-150
Trichlorofluoromethane	ug/L (ppb)	10	<1	99	50-150
Acetone	ug/L (ppb)	50	<50	119	50-150
1,1-Dichloroethene	ug/L (ppb)	10	<1	106	50-150
Hexane	ug/L (ppb)	10	<5	111	50-150
Methylene chloride	ug/L (ppb)	10	<5	120	50-150
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	111	50-150
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	113	50-150
1,1-Dichloroethane	ug/L (ppb)	10	<1	114	50-150
2,2-Dichloropropane	ug/L (ppb)	10	<1	117	50-150
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	110	50-150
Chloroform	ug/L (ppb)	10	<1	108	50-150
2-Butanone (MEK)	ug/L (ppb)	50	<20	129	50-150
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<1	117	50-150
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	110	50-150
1,1-Dichloropropene	ug/L (ppb)	10	<1	115	50-150
Carbon tetrachloride	ug/L (ppb)	10	<1	111	50-150
Benzene	ug/L (ppb)	10	<0.35	112	50-150
Trichloroethene	ug/L (ppb)	10	<1	108	50-150
1,2-Dichloropropane	ug/L (ppb)	10	<1	118	50-150
Bromodichloromethane	ug/L (ppb)	10	<1	112	50-150
Dibromomethane	ug/L (ppb)	10	<1	118	50-150
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	119	50-150
cis-1,3-Dichloropropene	ug/L (ppb)	10	<1	114	50-150
Toluene	ug/L (ppb)	10	<1	106	50-150
trans-1,3-Dichloropropene	ug/L (ppb)	10	<1	103	50-150
1,1,2-Trichloroethane	ug/L (ppb)	10	<1	104	50-150
2-Hexanone	ug/L (ppb)	50	<10	108	50-150
1,3-Dichloropropene	ug/L (ppb)	10	<1	112	50-150
Tetrachloroethene	ug/L (ppb)	10	<1	101	50-150
Dibromochloromethane	ug/L (ppb)	10	<1	105	50-150
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<1	108	50-150
Chlorobenzene	ug/L (ppb)	10	<1	104	50-150
Ethylbenzene	ug/L (ppb)	10	<1	108	50-150
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	102	50-150
m,p-Xylene	ug/L (ppb)	20	<2	108	50-150
o-Xylene	ug/L (ppb)	10	<1	107	50-150
Styrene	ug/L (ppb)	10	<1	106	50-150
Isopropylbenzene	ug/L (ppb)	10	<1	107	50-150
Bromoform	ug/L (ppb)	10	<5	111	50-150
n-Propylbenzene	ug/L (ppb)	10	<1	100	50-150
Bromobenzene	ug/L (ppb)	10	<1	97	50-150
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	102	50-150
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<1	106	50-150
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	104	50-150
2-Chlorotoluene	ug/L (ppb)	10	<1	101	50-150
4-Chlorotoluene	ug/L (ppb)	10	<1	99	50-150
tert-Butylbenzene	ug/L (ppb)	10	<1	98	50-150
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	102	50-150
sec-Butylbenzene	ug/L (ppb)	10	<1	101	50-150
p-Isopropyltoluene	ug/L (ppb)	10	<1	99	50-150
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	102	50-150
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	103	50-150
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	104	50-150
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	115	50-150
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	95	50-150
Hexachlorobutadiene	ug/L (ppb)	10	<1	107	50-150
Naphthalene	ug/L (ppb)	10	<1	107	50-150
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	113	50-150

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 12/17/20

Date Received: 12/09/20

Project: 12th + Yesler PO WES 1591, F&BI 012161

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)	10	109	117	70-130	7
Chloromethane	ug/L (ppb)	10	104	111	70-130	7
Vinyl chloride	ug/L (ppb)	10	101	107	70-130	6
Bromomethane	ug/L (ppb)	10	98	107	70-130	9
Chloroethane	ug/L (ppb)	10	121	118	70-130	3
Trichlorofluoromethane	ug/L (ppb)	10	99	98	70-130	1
Acetone	ug/L (ppb)	50	111	104	64-131	7
1,1-Dichloroethene	ug/L (ppb)	10	100	101	70-130	1
Hexane	ug/L (ppb)	10	102	112	70-130	9
Methylene chloride	ug/L (ppb)	10	103	98	29-192	5
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	99	102	70-130	3
trans-1,2-Dichloroethene	ug/L (ppb)	10	101	105	70-130	4
1,1-Dichloroethane	ug/L (ppb)	10	101	106	70-130	5
2,2-Dichloropropane	ug/L (ppb)	10	99	110	70-130	11
cis-1,2-Dichloroethene	ug/L (ppb)	10	100	105	70-130	5
Chloroform	ug/L (ppb)	10	97	100	70-130	3
2-Butanone (MEK)	ug/L (ppb)	50	111	117	70-130	5
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	104	108	70-130	4
1,1,1-Trichloroethane	ug/L (ppb)	10	100	104	70-130	4
1,1-Dichloropropene	ug/L (ppb)	10	104	110	70-130	6
Carbon tetrachloride	ug/L (ppb)	10	101	106	70-130	5
Benzene	ug/L (ppb)	10	99	103	70-130	4
Trichloroethene	ug/L (ppb)	10	98	101	70-130	3
1,2-Dichloropropane	ug/L (ppb)	10	104	106	70-130	2
Bromodichloromethane	ug/L (ppb)	10	101	102	70-130	1
Dibromomethane	ug/L (ppb)	10	105	109	70-130	4
4-Methyl-2-pentanone	ug/L (ppb)	50	103	105	70-130	2
cis-1,3-Dichloropropene	ug/L (ppb)	10	104	104	70-130	0
Toluene	ug/L (ppb)	10	106	100	70-130	6
trans-1,3-Dichloropropene	ug/L (ppb)	10	108	100	70-130	8
1,1,2-Trichloroethane	ug/L (ppb)	10	107	100	70-130	7
2-Hexanone	ug/L (ppb)	50	110	101	70-130	9
1,3-Dichloropropene	ug/L (ppb)	10	111	104	70-130	7
Tetrachloroethene	ug/L (ppb)	10	103	98	70-130	5
Dibromochloromethane	ug/L (ppb)	10	107	98	70-130	9
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	109	101	70-130	8
Chlorobenzene	ug/L (ppb)	10	105	101	70-130	4
Ethylbenzene	ug/L (ppb)	10	107	103	70-130	4
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	105	97	70-130	8
m,p-Xylene	ug/L (ppb)	20	106	102	70-130	4
o-Xylene	ug/L (ppb)	10	106	102	70-130	4
Styrene	ug/L (ppb)	10	103	100	70-130	3
Isopropylbenzene	ug/L (ppb)	10	106	101	70-130	5
Bromoform	ug/L (ppb)	10	111	100	63-206	10
n-Propylbenzene	ug/L (ppb)	10	102	96	70-130	6
Bromobenzene	ug/L (ppb)	10	101	93	70-130	8
1,3,5-Trimethylbenzene	ug/L (ppb)	10	102	97	70-130	5
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	108	98	70-130	10
1,2,3-Trichloropropane	ug/L (ppb)	10	107	94	70-130	13
2-Chlorotoluene	ug/L (ppb)	10	102	95	70-130	7
4-Chlorotoluene	ug/L (ppb)	10	102	97	70-130	5
tert-Butylbenzene	ug/L (ppb)	10	101	95	70-130	6
1,2,4-Trimethylbenzene	ug/L (ppb)	10	101	97	70-130	4
sec-Butylbenzene	ug/L (ppb)	10	102	96	70-130	6
p-Isopropyltoluene	ug/L (ppb)	10	100	95	70-130	5
1,3-Dichlorobenzene	ug/L (ppb)	10	103	97	70-130	6
1,4-Dichlorobenzene	ug/L (ppb)	10	106	99	70-130	7
1,2-Dichlorobenzene	ug/L (ppb)	10	105	98	70-130	7
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	120	111	70-130	8
1,2,4-Trichlorobenzene	ug/L (ppb)	10	96	92	70-130	4
Hexachlorobutadiene	ug/L (ppb)	10	112	107	70-130	5
Naphthalene	ug/L (ppb)	10	103	101	70-130	2
1,2,3-Trichlorobenzene	ug/L (ppb)	10	111	109	70-130	2

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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.

012161.

SAMPLE CHAIN OF CUSTODY

ME 12/9/20

A13/vw1

Report To

[Signature]

Company

Friedman & Brzja, Inc.

Address

3012 16th Avenue West

City, State, ZIP

Seattle, WA 98119-2029

Phone

Email

SAMPLERS (signature)

PROJECT NAME

13TH + 14TH

PO #

0265

REMARKS

INVOICE TO

Project specific RIs? - Yes / No

Page# of

TURNAROUND TIME

☒ Standard turnaround☐ RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

☐ Archive samples☐ Other

Default: Dispose after 30 days

ANALYSES REQUESTED

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

WATER + DISINFECTANT

Notes

*135 140 MW
FILED FOR A13
4400 1400
for A13**MD-2-610**01A-E 12-9-20**sample 5**MD-15-610**02**MD-16-610**03**MD-17-610**04**MD-18-610**05*

SIGNATURE

PRINT NAME

COMPANY

DATE

TIME

Relinquished by:

*[Signature]**[Signature]**[Signature]**[Signature]**[Signature]**12-9-20**3:51*

3012 16th Avenue West

Seattle, WA 98119-2029

Ph. (206) 285-8282

Relinquished by:

*[Signature]**[Signature]**[Signature]**[Signature]**[Signature]**12-9-20**15:51*

Received by:

*[Signature]**[Signature]**[Signature]**[Signature]**[Signature]**12-9-20**15:51*

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

January 4, 2021

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 December 23, 2020 from the 12th and Yesler PO WES-1591, F&BI 012412 project. There are 21 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
WES0104R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on December 23, 2020 by Friedman & Bruya, Inc. from the Whitman Environmental Sciences 12th and Yesler PO WES-1591, F&BI 012412 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Whitman Environmental Sciences</u>
012412 -01	MW-3-GW
012412 -02	MW-6-GW
012412 -03	MW-7-GW
012412 -04	MW-13-GW

Methylene chloride failed below the acceptance criteria in the 8260D matrix spike sample. The laboratory control samples met the acceptance criteria, therefore the data were likely due to sample matrix effect.

The 8260D laboratory control sample and laboratory control sample duplicate failed the relative percent difference for hexane. The analyte was not detected therefore the data were acceptable.

All other quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-3-GW	Client:	Whitman Environmental Sciences
Date Received:	12/23/20	Project:	12th and Yesler PO WES-1591
Date Extracted:	12/29/20	Lab ID:	012412-01
Date Analyzed:	12/29/20	Data File:	012412-01.041
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	AP

Analyte:	Concentration ug/L (ppb)

Arsenic	1.79

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-6-GW	Client:	Whitman Environmental Sciences
Date Received:	12/23/20	Project:	12th and Yesler PO WES-1591
Date Extracted:	12/29/20	Lab ID:	012412-02
Date Analyzed:	12/29/20	Data File:	012412-02.042
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	AP

Analyte:	Concentration ug/L (ppb)

Arsenic	2.16

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-7-GW	Client:	Whitman Environmental Sciences
Date Received:	12/23/20	Project:	12th and Yesler PO WES-1591
Date Extracted:	12/29/20	Lab ID:	012412-03
Date Analyzed:	12/29/20	Data File:	012412-03.043
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	AP

Analyte:	Concentration ug/L (ppb)

Arsenic	117

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-13-GW	Client:	Whitman Environmental Sciences
Date Received:	12/23/20	Project:	12th and Yesler PO WES-1591
Date Extracted:	12/29/20	Lab ID:	012412-04
Date Analyzed:	12/29/20	Data File:	012412-04.044
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	AP

Analyte:	Concentration ug/L (ppb)

Arsenic	2.06

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th and Yesler PO WES-1591
Date Extracted:	12/29/20	Lab ID:	I0-801 mb
Date Analyzed:	12/29/20	Data File:	I0-801 mb.031
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	AP

Analyte:	Concentration ug/L (ppb)

Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-3-GW	Client:	Whitman Environmental Sciences
Date Received:	12/23/20	Project:	12th and Yesler PO WES-1591
Date Extracted:	12/24/20	Lab ID:	012412-01
Date Analyzed:	12/24/20	Data File:	012412-01.079
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	2.11

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-6-GW	Client:	Whitman Environmental Sciences
Date Received:	12/23/20	Project:	12th and Yesler PO WES-1591
Date Extracted:	12/24/20	Lab ID:	012412-02
Date Analyzed:	12/24/20	Data File:	012412-02.080
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	2.15

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-7-GW	Client:	Whitman Environmental Sciences
Date Received:	12/23/20	Project:	12th and Yesler PO WES-1591
Date Extracted:	12/24/20	Lab ID:	012412-03
Date Analyzed:	12/24/20	Data File:	012412-03.081
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	109

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-13-GW	Client:	Whitman Environmental Sciences
Date Received:	12/23/20	Project:	12th and Yesler PO WES-1591
Date Extracted:	12/24/20	Lab ID:	012412-04
Date Analyzed:	12/24/20	Data File:	012412-04.082
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	1.91

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th and Yesler PO WES-1591
Date Extracted:	12/24/20	Lab ID:	I0-797 mb2
Date Analyzed:	12/24/20	Data File:	I0-797 mb2.078
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-3-GW	Client:	Whitman Environmental Sciences
Date Received:	12/23/20	Project:	12th and Yesler PO WES-1591
Date Extracted:	12/24/20	Lab ID:	012412-01
Date Analyzed:	12/24/20	Data File:	122405.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	102	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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	<20	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-6-GW	Client:	Whitman Environmental Sciences
Date Received:	12/23/20	Project:	12th and Yesler PO WES-1591
Date Extracted:	12/24/20	Lab ID:	012412-02
Date Analyzed:	12/24/20	Data File:	122406.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	106	50	150
Toluene-d8	102	50	150
4-Bromofluorobenzene	103	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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	4.3	1,3,5-Trimethylbenzene	<1
Chloroform	3.8	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<20	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-7-GW	Client: Whitman Environmental Sciences
Date Received: 12/23/20	Project: 12th and Yesler PO WES-1591
Date Extracted: 12/24/20	Lab ID: 012412-03
Date Analyzed: 12/24/20	Data File: 122407.D
Matrix: Water	Instrument: GCMS11
Units: ug/L (ppb)	Operator: JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	106	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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	<20	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-13-GW	Client:	Whitman Environmental Sciences
Date Received:	12/23/20	Project:	12th and Yesler PO WES-1591
Date Extracted:	12/24/20	Lab ID:	012412-04
Date Analyzed:	12/24/20	Data File:	122408.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	98	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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	<20	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:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th and Yesler PO WES-1591
Date Extracted:	12/24/20	Lab ID:	00-2886 mb
Date Analyzed:	12/24/20	Data File:	122408.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	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
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	<20	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

Date of Report: 01/04/21

Date Received: 12/23/20

Project: 12th and Yesler PO WES-1591, F&BI 012412

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR DISSOLVED METALS USING EPA METHOD 6020B**

Laboratory Code: 012420-02 (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	103	101	75-125	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	102	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 01/04/21

Date Received: 12/23/20

Project: 12th and Yesler PO WES-1591, F&BI 012412

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR TOTAL METALS USING EPA METHOD 6020B**

Laboratory Code: 012387-01 (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	5.16	98	91	75-125	7

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	92	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 01/04/21

Date Received: 12/23/20

Project: 12th and Yesler PO WES-1591, F&BI 012412

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

Laboratory Code: 012413-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent	Acceptance Criteria
				Recovery MS	
Dichlorodifluoromethane	ug/L (ppb)	10	<1	72	50-150
Chloromethane	ug/L (ppb)	10	<10	71	50-150
Vinyl chloride	ug/L (ppb)	10	<0.2	70	50-150
Bromomethane	ug/L (ppb)	10	<5	55	50-150
Chloroethane	ug/L (ppb)	10	<1	81	50-150
Trichlorofluoromethane	ug/L (ppb)	10	<1	61	50-150
Acetone	ug/L (ppb)	50	<50	101	50-150
1,1-Dichloroethene	ug/L (ppb)	10	<1	65	50-150
Hexane	ug/L (ppb)	10	<5	69	50-150
Methylene chloride	ug/L (ppb)	10	<5	45 vo	50-150
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	70	50-150
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	70	50-150
1,1-Dichloroethane	ug/L (ppb)	10	<1	70	50-150
2,2-Dichloropropane	ug/L (ppb)	10	<1	70	50-150
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	68	50-150
Chloroform	ug/L (ppb)	10	<1	65	50-150
2-Butanone (MEK)	ug/L (ppb)	50	<20	112	50-150
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<1	75	50-150
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	69	50-150
1,1-Dichloropropene	ug/L (ppb)	10	<1	70	50-150
Carbon tetrachloride	ug/L (ppb)	10	<1	69	50-150
Benzene	ug/L (ppb)	10	<0.35	67	50-150
Trichloroethene	ug/L (ppb)	10	<1	67	50-150
1,2-Dichloropropane	ug/L (ppb)	10	<1	69	50-150
Bromodichloromethane	ug/L (ppb)	10	<1	68	50-150
Dibromomethane	ug/L (ppb)	10	<1	70	50-150
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	85	50-150
cis-1,3-Dichloropropene	ug/L (ppb)	10	<1	66	50-150
Toluene	ug/L (ppb)	10	1.1	58	50-150
trans-1,3-Dichloropropene	ug/L (ppb)	10	<1	60	50-150
1,1,2-Trichloroethane	ug/L (ppb)	10	<1	65	50-150
2-Hexanone	ug/L (ppb)	50	<10	87	50-150
1,3-Dichloropropene	ug/L (ppb)	10	<1	69	50-150
Tetrachloroethene	ug/L (ppb)	10	<1	63	50-150
Dibromochloromethane	ug/L (ppb)	10	<1	62	50-150
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<1	69	50-150
Chlorobenzene	ug/L (ppb)	10	<1	64	50-150
Ethylbenzene	ug/L (ppb)	10	<1	66	50-150
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	60	50-150
m,p-Xylene	ug/L (ppb)	20	<2	65	50-150
o-Xylene	ug/L (ppb)	10	<1	65	50-150
Styrene	ug/L (ppb)	10	<1	63	50-150
Isopropylbenzene	ug/L (ppb)	10	<1	62	50-150
Bromoform	ug/L (ppb)	10	<5	61	50-150
n-Propylbenzene	ug/L (ppb)	10	<1	63	50-150
Bromobenzene	ug/L (ppb)	10	<1	60	50-150
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	64	50-150
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<1	73	50-150
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	75	50-150
2-Chlorotoluene	ug/L (ppb)	10	<1	64	50-150
4-Chlorotoluene	ug/L (ppb)	10	<1	63	50-150
tert-Butylbenzene	ug/L (ppb)	10	<1	59	50-150
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	63	50-150
sec-Butylbenzene	ug/L (ppb)	10	<1	60	50-150
p-Isopropyltoluene	ug/L (ppb)	10	<1	59	50-150
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	63	50-150
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	65	50-150
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	64	50-150
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	94	50-150
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	62	50-150
Hexachlorobutadiene	ug/L (ppb)	10	<1	62	50-150
Naphthalene	ug/L (ppb)	10	<1	75	50-150
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	73	50-150

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 01/04/21

Date Received: 12/23/20

Project: 12th and Yesler PO WES-1591, F&BI 012412

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)	10	98	87	70-130	12
Chloromethane	ug/L (ppb)	10	119	104	70-130	13
Vinyl chloride	ug/L (ppb)	10	108	94	70-130	14
Bromomethane	ug/L (ppb)	10	97	84	70-130	14
Chloroethane	ug/L (ppb)	10	120	113	70-130	6
Trichlorofluoromethane	ug/L (ppb)	10	113	100	70-130	12
Acetone	ug/L (ppb)	50	123	114	64-131	8
1,1-Dichloroethene	ug/L (ppb)	10	101	90	70-130	12
Hexane	ug/L (ppb)	10	89	71	70-130	22 vo
Methylene chloride	ug/L (ppb)	10	99	91	29-192	8
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	107	97	70-130	10
trans-1,2-Dichloroethene	ug/L (ppb)	10	105	92	70-130	13
1,1-Dichloroethane	ug/L (ppb)	10	107	96	70-130	11
2,2-Dichloropropane	ug/L (ppb)	10	97	87	70-130	11
cis-1,2-Dichloroethene	ug/L (ppb)	10	104	93	70-130	11
Chloroform	ug/L (ppb)	10	103	92	70-130	11
2-Butanone (MEK)	ug/L (ppb)	50	121	119	70-130	2
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	115	103	70-130	11
1,1,1-Trichloroethane	ug/L (ppb)	10	106	94	70-130	12
1,1-Dichloropropene	ug/L (ppb)	10	107	94	70-130	13
Carbon tetrachloride	ug/L (ppb)	10	106	93	70-130	13
Benzene	ug/L (ppb)	10	105	93	70-130	12
Trichloroethene	ug/L (ppb)	10	103	92	70-130	11
1,2-Dichloropropane	ug/L (ppb)	10	108	98	70-130	10
Bromodichloromethane	ug/L (ppb)	10	106	94	70-130	12
Dibromomethane	ug/L (ppb)	10	112	102	70-130	9
4-Methyl-2-pentanone	ug/L (ppb)	50	108	101	70-130	7
cis-1,3-Dichloropropene	ug/L (ppb)	10	103	92	70-130	11
Toluene	ug/L (ppb)	10	104	99	70-130	5
trans-1,3-Dichloropropene	ug/L (ppb)	10	100	93	70-130	7
1,1,2-Trichloroethane	ug/L (ppb)	10	105	101	70-130	4
2-Hexanone	ug/L (ppb)	50	110	108	70-130	2
1,3-Dichloropropene	ug/L (ppb)	10	111	108	70-130	3
Tetrachloroethene	ug/L (ppb)	10	99	93	70-130	6
Dibromochloromethane	ug/L (ppb)	10	102	97	70-130	5
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	107	103	70-130	4
Chlorobenzene	ug/L (ppb)	10	103	100	70-130	3
Ethylbenzene	ug/L (ppb)	10	106	101	70-130	5
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	98	94	70-130	4
m,p-Xylene	ug/L (ppb)	20	106	100	70-130	6
o-Xylene	ug/L (ppb)	10	105	100	70-130	5
Styrene	ug/L (ppb)	10	101	95	70-130	6
Isopropylbenzene	ug/L (ppb)	10	102	96	70-130	6
Bromoform	ug/L (ppb)	10	100	95	63-206	5
n-Propylbenzene	ug/L (ppb)	10	100	93	70-130	7
Bromobenzene	ug/L (ppb)	10	95	92	70-130	3
1,3,5-Trimethylbenzene	ug/L (ppb)	10	103	99	70-130	4
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	107	102	70-130	5
1,2,3-Trichloropropane	ug/L (ppb)	10	106	102	70-130	4
2-Chlorotoluene	ug/L (ppb)	10	101	94	70-130	7
4-Chlorotoluene	ug/L (ppb)	10	100	94	70-130	6
tert-Butylbenzene	ug/L (ppb)	10	98	93	70-130	5
1,2,4-Trimethylbenzene	ug/L (ppb)	10	107	103	70-130	4
sec-Butylbenzene	ug/L (ppb)	10	102	93	70-130	9
p-Isopropyltoluene	ug/L (ppb)	10	99	95	70-130	4
1,3-Dichlorobenzene	ug/L (ppb)	10	99	94	70-130	5
1,4-Dichlorobenzene	ug/L (ppb)	10	103	97	70-130	6
1,2-Dichlorobenzene	ug/L (ppb)	10	101	95	70-130	6
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	118	110	70-130	7
1,2,4-Trichlorobenzene	ug/L (ppb)	10	100	95	70-130	5
Hexachlorobutadiene	ug/L (ppb)	10	101	90	70-130	12
Naphthalene	ug/L (ppb)	10	118	111	70-130	6
1,2,3-Trichlorobenzene	ug/L (ppb)	10	122	117	70-130	4

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

SAMPLE CHAIN OF CUSTODY ME 12/23/20 WU3/ALS

BACKGROUND TIME

[Signature]

MR. ED. STEWART

1574 ME 45

07/6/2015

Email

SAMPLERS (signature)

PROJECT NAME

142-1

REMARKS

PO#

1591

INVOICE TO

☒ Standard turnaround

D RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

☐ Other _____

Default: Dispose after 30 days

ANALYSES REQUESTED

ANALYSES REQUESTED															
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	TOTAL AS	DISSOLVED AS	
MWD-3-600	01AE	12-23	11	SW	5					X			(X)	(X)	TAKE SOLID THIN SLICES AS SAMPLES FOR FIELD PCB ANALYSIS
MWD-6-600	02	"								X			(X)	(X)	
MWD-7-600	03	"								X			(X)	(X)	
MWD-13-600	04	"								X			(X)	(X)	

SIGNATURE

PRINT NAME

COMPANY

DATE	TIME

Friedman & Bryla, Inc.

3012 16th Avenue West

Seattle, WA 98119-2029

Ph. (206) 285-8282

1st Quarter 2021

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, 2021

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, 2021 from the 12th and Yesler WES-1591, F&BI 103334 project. There are 9 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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on March 17, 2020 by Friedman & Bruya, Inc. from the Whitman Environmental Sciences 12th and Yesler WES-1591, F&BI 103334 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Whitman Environmental Sciences</u>
103334 -01	MW-2
103334 -02	MW-5
103334 -03	MW-7
103334 -04	GEO-B-7

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-2	Client:	Whitman Environmental Sciences
Date Received:	03/17/21	Project:	12th and Yesler WES-1591
Date Extracted:	03/18/21	Lab ID:	103334-01
Date Analyzed:	03/18/21	Data File:	031829.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	105	86	113
Toluene-d8	100	88	114
4-Bromofluorobenzene	99	88	112

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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	<20	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	Client:	Whitman Environmental Sciences
Date Received:	03/17/21	Project:	12th and Yesler WES-1591
Date Extracted:	03/18/21	Lab ID:	103334-02
Date Analyzed:	03/18/21	Data File:	031830.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	105	86	113
Toluene-d8	100	88	114
4-Bromofluorobenzene	99	88	112

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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	<20	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-7	Client:	Whitman Environmental Sciences
Date Received:	03/17/21	Project:	12th and Yesler WES-1591
Date Extracted:	03/18/21	Lab ID:	103334-03
Date Analyzed:	03/18/21	Data File:	031831.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	86	113
Toluene-d8	99	88	114
4-Bromofluorobenzene	100	88	112

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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	<20	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:	GEO-B-7	Client:	Whitman Environmental Sciences
Date Received:	03/17/21	Project:	12th and Yesler WES-1591
Date Extracted:	03/18/21	Lab ID:	103334-04
Date Analyzed:	03/18/21	Data File:	031832.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	86	113
Toluene-d8	97	88	114
4-Bromofluorobenzene	103	88	112

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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	<20	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:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th and Yesler WES-1591
Date Extracted:	03/18/21	Lab ID:	01-640 mb
Date Analyzed:	03/18/21	Data File:	031808.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	86	113
Toluene-d8	100	88	114
4-Bromofluorobenzene	100	88	112

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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	<20	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

Date of Report: 03/23/21

Date Received: 03/17/21

Project: 12th and Yesler WES-1591, F&BI 103334

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

Laboratory Code: 103321-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	10	<1	87	10-172
Chloromethane	ug/L (ppb)	10	<10	75	25-166
Vinyl chloride	ug/L (ppb)	10	<0.2	84	36-166
Bromomethane	ug/L (ppb)	10	<5	121	47-169
Chloroethane	ug/L (ppb)	10	<1	86	46-160
Trichlorofluoromethane	ug/L (ppb)	10	<1	85	44-165
Acetone	ug/L (ppb)	50	<50	94	10-182
1,1-Dichloroethene	ug/L (ppb)	10	<1	98	58-142
Hexane	ug/L (ppb)	10	<5	81	38-152
Methylene chloride	ug/L (ppb)	10	<5	112	50-145
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	97	61-136
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	94	61-136
1,1-Dichloroethane	ug/L (ppb)	10	<1	94	63-135
2,2-Dichloropropane	ug/L (ppb)	10	<1	73	36-154
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	97	63-134
Chloroform	ug/L (ppb)	10	<1	100	61-135
2-Butanone (MEK)	ug/L (ppb)	50	<20	103	10-129
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<1	100	48-149
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	95	60-146
1,1-Dichloropropene	ug/L (ppb)	10	<1	97	69-133
Carbon tetrachloride	ug/L (ppb)	10	<1	100	56-152
Benzene	ug/L (ppb)	10	<0.35	98	57-135
Trichloroethene	ug/L (ppb)	10	<1	96	66-135
1,2-Dichloropropane	ug/L (ppb)	10	<1	97	59-136
Bromodichloromethane	ug/L (ppb)	10	<1	93	61-150
Dibromomethane	ug/L (ppb)	10	<1	102	66-141
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	108	10-185
cis-1,3-Dichloropropene	ug/L (ppb)	10	<1	93	52-147
Toluene	ug/L (ppb)	10	<1	101	50-137
trans-1,3-Dichloropropene	ug/L (ppb)	10	<1	88	53-142
1,1,2-Trichloroethane	ug/L (ppb)	10	<1	100	68-131
2-Hexanone	ug/L (ppb)	50	<10	113	10-185
1,3-Dichloropropane	ug/L (ppb)	10	<1	102	60-135
Tetrachloroethene	ug/L (ppb)	10	<1	106	10-226
Dibromochloromethane	ug/L (ppb)	10	<1	95	52-145
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<1	103	62-135
Chlorobenzene	ug/L (ppb)	10	<1	105	63-130
Ethylbenzene	ug/L (ppb)	10	<1	101	60-133
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	99	56-143
m,p-Xylene	ug/L (ppb)	20	<2	102	69-135
o-Xylene	ug/L (ppb)	10	<1	102	60-140
Styrene	ug/L (ppb)	10	<1	100	60-133
Isopropylbenzene	ug/L (ppb)	10	<1	97	65-142
Bromoform	ug/L (ppb)	10	<5	89	54-148
n-Propylbenzene	ug/L (ppb)	10	<1	99	58-144
Bromobenzene	ug/L (ppb)	10	<1	107	61-130
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	99	59-134
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<1	103	51-154
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	105	53-150
2-Chlorotoluene	ug/L (ppb)	10	<1	98	66-127
4-Chlorotoluene	ug/L (ppb)	10	<1	99	65-130
tert-Butylbenzene	ug/L (ppb)	10	<1	98	65-137
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	97	59-146
sec-Butylbenzene	ug/L (ppb)	10	<1	97	64-140
p-Isopropyltoluene	ug/L (ppb)	10	<1	97	65-141
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	103	60-131
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	103	60-129
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	101	60-130
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	92	32-164
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	94	52-138
Hexachlorobutadiene	ug/L (ppb)	10	<1	89	60-143
Naphthalene	ug/L (ppb)	10	<1	95	44-164
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	96	69-148

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/23/21

Date Received: 03/17/21

Project: 12th and Yesler WES-1591, F&BI 103334

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)	10	99	102	25-158	3
Chloromethane	ug/L (ppb)	10	84	80	45-156	5
Vinyl chloride	ug/L (ppb)	10	88	88	50-154	0
Bromomethane	ug/L (ppb)	10	120	125	55-143	4
Chloroethane	ug/L (ppb)	10	87	87	58-146	0
Trichlorofluoromethane	ug/L (ppb)	10	96	92	50-150	4
Acetone	ug/L (ppb)	50	90	83	22-155	8
1,1-Dichloroethene	ug/L (ppb)	10	101	102	67-136	1
Hexane	ug/L (ppb)	10	94	94	57-137	0
Methylene chloride	ug/L (ppb)	10	95	96	19-178	1
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	98	96	64-147	2
trans-1,2-Dichloroethene	ug/L (ppb)	10	96	97	68-128	1
1,1-Dichloroethane	ug/L (ppb)	10	95	94	74-135	1
2,2-Dichloropropane	ug/L (ppb)	10	96	95	55-143	1
cis-1,2-Dichloroethene	ug/L (ppb)	10	95	96	74-136	1
Chloroform	ug/L (ppb)	10	98	98	74-134	0
2-Butanone (MEK)	ug/L (ppb)	50	107	106	37-150	1
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	99	99	66-129	0
1,1,1-Trichloroethane	ug/L (ppb)	10	96	95	74-142	1
1,1-Dichloropropene	ug/L (ppb)	10	97	98	77-129	1
Carbon tetrachloride	ug/L (ppb)	10	102	103	75-158	1
Benzene	ug/L (ppb)	10	98	98	69-134	0
Trichloroethene	ug/L (ppb)	10	98	97	67-133	1
1,2-Dichloropropane	ug/L (ppb)	10	98	98	71-134	0
Bromodichloromethane	ug/L (ppb)	10	92	93	66-126	1
Dibromomethane	ug/L (ppb)	10	101	100	68-132	1
4-Methyl-2-pentanone	ug/L (ppb)	50	109	110	65-138	1
cis-1,3-Dichloropropene	ug/L (ppb)	10	98	97	74-140	1
Toluene	ug/L (ppb)	10	101	101	72-122	0
trans-1,3-Dichloropropene	ug/L (ppb)	10	93	93	80-136	0
1,1,2-Trichloroethane	ug/L (ppb)	10	102	101	75-124	1
2-Hexanone	ug/L (ppb)	50	116	115	60-136	1
1,3-Dichloropropane	ug/L (ppb)	10	100	102	76-126	2
Tetrachloroethene	ug/L (ppb)	10	104	105	76-121	1
Dibromochloromethane	ug/L (ppb)	10	95	95	84-133	0
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	102	105	82-115	3
Chlorobenzene	ug/L (ppb)	10	104	105	83-114	1
Ethylbenzene	ug/L (ppb)	10	99	100	77-124	1
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	98	98	84-127	0
m,p-Xylene	ug/L (ppb)	20	102	103	81-112	1
o-Xylene	ug/L (ppb)	10	101	104	81-121	3
Styrene	ug/L (ppb)	10	101	100	84-119	1
Isopropylbenzene	ug/L (ppb)	10	97	98	80-117	1
Bromoform	ug/L (ppb)	10	94	94	69-121	0
n-Propylbenzene	ug/L (ppb)	10	100	101	74-126	1
Bromobenzene	ug/L (ppb)	10	104	106	80-121	2
1,3,5-Trimethylbenzene	ug/L (ppb)	10	99	101	78-123	2
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	104	101	66-126	3
1,2,3-Trichloropropane	ug/L (ppb)	10	105	108	67-124	3
2-Chlorotoluene	ug/L (ppb)	10	100	100	77-127	0
4-Chlorotoluene	ug/L (ppb)	10	101	101	78-128	0
tert-Butylbenzene	ug/L (ppb)	10	100	98	80-123	2
1,2,4-Trimethylbenzene	ug/L (ppb)	10	97	97	79-122	0
sec-Butylbenzene	ug/L (ppb)	10	100	99	80-116	1
p-Isopropyltoluene	ug/L (ppb)	10	98	98	81-123	0
1,3-Dichlorobenzene	ug/L (ppb)	10	103	104	83-113	1
1,4-Dichlorobenzene	ug/L (ppb)	10	103	104	81-112	1
1,2-Dichlorobenzene	ug/L (ppb)	10	103	100	84-112	3
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	94	93	57-141	1
1,2,4-Trichlorobenzene	ug/L (ppb)	10	94	91	72-130	3
Hexachlorobutadiene	ug/L (ppb)	10	92	89	53-141	3
Naphthalene	ug/L (ppb)	10	96	91	64-133	5
1,2,3-Trichlorobenzene	ug/L (ppb)	10	96	91	65-136	5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
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March 26, 2021

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 19, 2021 from the 12th & Yesler WES-1591, F&BI 103381 project. There are 10 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
WES0326R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on March 19, 2021 by Friedman & Bruya, Inc. from the Whitman Environmental Sciences 12th & Yesler WES-1591, F&BI 103381 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Whitman Environmental Sciences</u>
103381 -01	MW-1-GW
103381 -02	MW-6-GW
103381 -03	MW-12-GW
103381 -04	MW-15-GW
103381 -05	GEO-B9-GW

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-1-GW	Client:	Whitman Environmental Sciences
Date Received:	03/19/21	Project:	12th & Yesler WES-1591, F&BI 103381
Date Extracted:	03/23/21	Lab ID:	103381-01
Date Analyzed:	03/23/21	Data File:	032343.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	106	86	113
Toluene-d8	101	88	114
4-Bromofluorobenzene	97	88	112

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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	30	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-6-GW	Client:	Whitman Environmental Sciences
Date Received:	03/19/21	Project:	12th & Yesler WES-1591, F&BI 103381
Date Extracted:	03/23/21	Lab ID:	103381-02
Date Analyzed:	03/23/21	Data File:	032344.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	86	113
Toluene-d8	99	88	114
4-Bromofluorobenzene	99	88	112

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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	10	1,3,5-Trimethylbenzene	<1
Chloroform	1.6	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<20	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	1.2	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		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID: MW-12-GW	Client: Whitman Environmental Sciences
Date Received: 03/19/21	Project: 12th & Yesler WES-1591, F&BI 103381
Date Extracted: 03/23/21	Lab ID: 103381-03
Date Analyzed: 03/23/21	Data File: 032345.D
Matrix: Water	Instrument: GCMS4
Units: ug/L (ppb)	Operator: JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	86	113
Toluene-d8	99	88	114
4-Bromofluorobenzene	100	88	112

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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	33	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-15-GW	Client:	Whitman Environmental Sciences
Date Received:	03/19/21	Project:	12th & Yesler WES-1591, F&BI 103381
Date Extracted:	03/23/21	Lab ID:	103381-04
Date Analyzed:	03/24/21	Data File:	032346.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	86	113
Toluene-d8	100	88	114
4-Bromofluorobenzene	97	88	112

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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	<20	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: GEO-B9-GW	Client: Whitman Environmental Sciences
Date Received: 03/19/21	Project: 12th & Yesler WES-1591, F&BI 103381
Date Extracted: 03/23/21	Lab ID: 103381-05
Date Analyzed: 03/24/21	Data File: 032347.D
Matrix: Water	Instrument: GCMS4
Units: ug/L (ppb)	Operator: JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	86	113
Toluene-d8	99	88	114
4-Bromofluorobenzene	98	88	112

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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	<20	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:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th & Yesler WES-1591, F&BI 103381
Date Extracted:	03/23/21	Lab ID:	01-648 mb
Date Analyzed:	03/23/21	Data File:	032308.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	86	113
Toluene-d8	100	88	114
4-Bromofluorobenzene	96	88	112

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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	<20	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

Date of Report: 03/26/21

Date Received: 03/19/21

Project: 12th & Yesler WES-1591, F&BI 103381

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

Laboratory Code: 103230-09 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	10	<1	100	10-172
Chloromethane	ug/L (ppb)	10	<10	77	25-166
Vinyl chloride	ug/L (ppb)	10	<0.2	86	36-166
Bromomethane	ug/L (ppb)	10	<5	125	47-169
Chloroethane	ug/L (ppb)	10	<1	86	46-160
Trichlorofluoromethane	ug/L (ppb)	10	<1	85	44-165
Acetone	ug/L (ppb)	50	<50	91	10-182
1,1-Dichloroethene	ug/L (ppb)	10	<1	95	58-142
Hexane	ug/L (ppb)	10	<5	83	38-152
Methylene chloride	ug/L (ppb)	10	<5	102	50-145
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	95	61-136
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	94	61-136
1,1-Dichloroethane	ug/L (ppb)	10	<1	92	63-135
2,2-Dichloropropane	ug/L (ppb)	10	<1	77	36-154
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	92	63-134
Chloroform	ug/L (ppb)	10	<1	95	61-135
2-Butanone (MEK)	ug/L (ppb)	50	<20	101	10-129
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<1	97	48-149
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	94	60-146
1,1-Dichloropropene	ug/L (ppb)	10	<1	94	69-133
Carbon tetrachloride	ug/L (ppb)	10	<1	96	56-152
Benzene	ug/L (ppb)	10	<0.35	96	57-135
Trichloroethene	ug/L (ppb)	10	<1	93	66-135
1,2-Dichloropropane	ug/L (ppb)	10	<1	93	59-136
Bromodichloromethane	ug/L (ppb)	10	<1	86	61-150
Dibromomethane	ug/L (ppb)	10	<1	95	66-141
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	103	10-185
cis-1,3-Dichloropropene	ug/L (ppb)	10	<1	83	52-147
Toluene	ug/L (ppb)	10	<1	95	50-137
trans-1,3-Dichloropropene	ug/L (ppb)	10	<1	79	53-142
1,1,2-Trichloroethane	ug/L (ppb)	10	<1	96	68-131
2-Hexanone	ug/L (ppb)	50	<10	104	10-185
1,3-Dichloropropane	ug/L (ppb)	10	<1	96	60-135
Tetrachloroethene	ug/L (ppb)	10	<1	96	10-226
Dibromochloromethane	ug/L (ppb)	10	<1	86	52-145
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<1	97	62-135
Chlorobenzene	ug/L (ppb)	10	<1	98	63-130
Ethylbenzene	ug/L (ppb)	10	<1	95	60-133
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	90	56-143
m,p-Xylene	ug/L (ppb)	20	<2	95	69-135
o-Xylene	ug/L (ppb)	10	<1	94	60-140
Styrene	ug/L (ppb)	10	<1	89	60-133
Isopropylbenzene	ug/L (ppb)	10	<1	90	65-142
Bromoform	ug/L (ppb)	10	<5	78	54-148
n-Propylbenzene	ug/L (ppb)	10	<1	92	58-144
Bromobenzene	ug/L (ppb)	10	<1	97	61-130
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	92	59-134
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<1	95	51-154
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	97	53-150
2-Chlorotoluene	ug/L (ppb)	10	<1	93	66-127
4-Chlorotoluene	ug/L (ppb)	10	<1	92	65-130
tert-Butylbenzene	ug/L (ppb)	10	<1	92	65-137
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	89	59-146
sec-Butylbenzene	ug/L (ppb)	10	<1	91	64-140
p-Isopropyltoluene	ug/L (ppb)	10	<1	91	65-141
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	96	60-131
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	95	60-129
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	95	60-130
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	79	32-164
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	88	52-138
Hexachlorobutadiene	ug/L (ppb)	10	<1	84	60-143
Naphthalene	ug/L (ppb)	10	<1	85	44-164
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	89	69-148

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/26/21

Date Received: 03/19/21

Project: 12th & Yesler WES-1591, F&BI 103381

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)	10	111	112	25-158	1
Chloromethane	ug/L (ppb)	10	94	90	45-156	4
Vinyl chloride	ug/L (ppb)	10	95	96	50-154	1
Bromomethane	ug/L (ppb)	10	138	133	55-143	4
Chloroethane	ug/L (ppb)	10	93	95	58-146	2
Trichlorofluoromethane	ug/L (ppb)	10	102	104	50-150	2
Acetone	ug/L (ppb)	50	95	94	22-155	1
1,1-Dichloroethene	ug/L (ppb)	10	107	108	67-136	1
Hexane	ug/L (ppb)	10	95	96	57-137	1
Methylene chloride	ug/L (ppb)	10	102	100	19-178	2
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	103	104	64-147	1
trans-1,2-Dichloroethene	ug/L (ppb)	10	99	102	68-128	3
1,1-Dichloroethane	ug/L (ppb)	10	98	100	74-135	2
2,2-Dichloropropane	ug/L (ppb)	10	103	103	55-143	0
cis-1,2-Dichloroethene	ug/L (ppb)	10	101	99	74-136	2
Chloroform	ug/L (ppb)	10	102	103	74-134	1
2-Butanone (MEK)	ug/L (ppb)	50	107	108	37-150	1
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	104	104	66-129	0
1,1,1-Trichloroethane	ug/L (ppb)	10	101	102	74-142	1
1,1-Dichloropropene	ug/L (ppb)	10	102	105	77-129	3
Carbon tetrachloride	ug/L (ppb)	10	106	109	75-158	3
Benzene	ug/L (ppb)	10	101	104	69-134	3
Trichloroethene	ug/L (ppb)	10	101	100	67-133	1
1,2-Dichloropropane	ug/L (ppb)	10	102	100	71-134	2
Bromodichloromethane	ug/L (ppb)	10	97	97	66-126	0
Dibromomethane	ug/L (ppb)	10	106	107	68-132	1
4-Methyl-2-pentanone	ug/L (ppb)	50	109	112	65-138	3
cis-1,3-Dichloropropene	ug/L (ppb)	10	100	102	74-140	2
Toluene	ug/L (ppb)	10	100	102	72-122	2
trans-1,3-Dichloropropene	ug/L (ppb)	10	95	94	80-136	1
1,1,2-Trichloroethane	ug/L (ppb)	10	101	101	75-124	0
2-Hexanone	ug/L (ppb)	50	109	113	60-136	4
1,3-Dichloropropane	ug/L (ppb)	10	101	103	76-126	2
Tetrachloroethene	ug/L (ppb)	10	107	106	76-121	1
Dibromochloromethane	ug/L (ppb)	10	97	97	84-133	0
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	103	102	82-115	1
Chlorobenzene	ug/L (ppb)	10	103	104	83-114	1
Ethylbenzene	ug/L (ppb)	10	100	101	77-124	1
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	99	99	84-127	0
m,p-Xylene	ug/L (ppb)	20	104	103	81-112	1
o-Xylene	ug/L (ppb)	10	100	103	81-121	3
Styrene	ug/L (ppb)	10	99	99	84-119	0
Isopropylbenzene	ug/L (ppb)	10	98	99	80-117	1
Bromoform	ug/L (ppb)	10	94	96	69-121	2
n-Propylbenzene	ug/L (ppb)	10	97	99	74-126	2
Bromobenzene	ug/L (ppb)	10	103	104	80-121	1
1,3,5-Trimethylbenzene	ug/L (ppb)	10	97	99	78-123	2
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	97	101	66-126	4
1,2,3-Trichloropropane	ug/L (ppb)	10	101	104	67-124	3
2-Chlorotoluene	ug/L (ppb)	10	96	98	77-127	2
4-Chlorotoluene	ug/L (ppb)	10	98	99	78-128	1
tert-Butylbenzene	ug/L (ppb)	10	97	99	80-123	2
1,2,4-Trimethylbenzene	ug/L (ppb)	10	95	96	79-122	1
sec-Butylbenzene	ug/L (ppb)	10	96	99	80-116	3
p-Isopropyltoluene	ug/L (ppb)	10	96	99	81-123	3
1,3-Dichlorobenzene	ug/L (ppb)	10	101	104	83-113	3
1,4-Dichlorobenzene	ug/L (ppb)	10	102	104	81-112	2
1,2-Dichlorobenzene	ug/L (ppb)	10	99	100	84-112	1
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	91	93	57-141	2
1,2,4-Trichlorobenzene	ug/L (ppb)	10	92	95	72-130	3
Hexachlorobutadiene	ug/L (ppb)	10	92	94	53-141	2
Naphthalene	ug/L (ppb)	10	92	94	64-133	2
1,2,3-Trichlorobenzene	ug/L (ppb)	10	94	95	65-136	1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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.

103381

SAMPLE CHAIN OF CUSTODY

ME 03/19/21

VW 2

Page # of

TURNAROUND TIME

Standard turnaround

☒ RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

☐ Archive samples☐ Other

Default: Dispose after 30 days

SAMPLERS (signature)

PROJECT NAME

PO #

REMARKS

INVOICE TO

Report To Mr. FriedmanCompany Edman Civil ServicesAddress 5818 15th Ave NECity, State, ZIP Seattle, WA 98115Phone 206-285-8282Email edman@edmancivil.com

Project specific RLS? - Yes / No

ANALYSES REQUESTED

NWTPH-Dx
 NWTPH-Gx
 BTEX EPA 8021
 NWTPH-HCID
 VOCs EPA 8260
 PAHs EPA 8270
 PCBs EPA 8082

Sample ID

Lab ID

Date Sampled

Time Sampled

Sample Type

of Jars

Notes

Samples received at 6 °C

SIGNATURE

PRINT NAME

COMPANY

DATE TIME

Relinquished by:

Received by:

Relinquished by:

Received by:

DATE TIME

Relinquished by:

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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

April 1, 2021

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 25, 2021 from the 12th + Yesler WES 1591, F&BI 103489 project. There are 9 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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on March 25, 2021 by Friedman & Bruya, Inc. from the Whitman Environmental Sciences 12th + Yesler WES 1591, F&BI 103489 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Whitman Environmental Sciences</u>
103489 -01	MW-1D-GW
103489 -02	MW-1S-GW
103489 -03	MW-10-GW
103489 -04	MW-11-GW

The 8260D laboratory control sample and laboratory control sample duplicate failed the relative percent difference for bromomethane. The analyte was not detected in the samples therefore the data were acceptable.

All other quality control requirements were acceptable.

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:	03/25/21	Project:	12th + Yesler WES 1591, F&BI
103489			
Date Extracted:	03/29/21	Lab ID:	103489-01
Date Analyzed:	03/29/21	Data File:	032915.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	86	113
Toluene-d8	97	88	114
4-Bromofluorobenzene	99	88	112

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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	<20	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-1S-GW	Client:	Whitman Environmental Sciences
Date Received:	03/25/21	Project:	12th + Yesler WES 1591, F&BI
103489			
Date Extracted:	03/29/21	Lab ID:	103489-02
Date Analyzed:	03/29/21	Data File:	032916.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	86	113
Toluene-d8	96	88	114
4-Bromofluorobenzene	97	88	112

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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	20	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-10-GW	Client:	Whitman Environmental Sciences
Date Received:	03/25/21	Project:	12th + Yesler WES 1591, F&BI
103489			
Date Extracted:	03/29/21	Lab ID:	103489-03
Date Analyzed:	03/29/21	Data File:	032917.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	106	86	113
Toluene-d8	96	88	114
4-Bromofluorobenzene	99	88	112

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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	<20	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-11-GW	Client:	Whitman Environmental Sciences
Date Received:	03/25/21	Project:	12th + Yesler WES 1591, F&BI
103489			
Date Extracted:	03/29/21	Lab ID:	103489-04
Date Analyzed:	03/29/21	Data File:	032918.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	86	113
Toluene-d8	97	88	114
4-Bromofluorobenzene	100	88	112

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	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	61	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	77	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:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th + Yesler WES 1591, F&BI
103489			
Date Extracted:	03/29/21	Lab ID:	01-670 mb
Date Analyzed:	03/29/21	Data File:	032913.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	86	113
Toluene-d8	96	88	114
4-Bromofluorobenzene	99	88	112

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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	<20	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

Date of Report: 04/01/21

Date Received: 03/25/21

Project: 12th + Yesler WES 1591, F&BI 103489

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

Laboratory Code: 103464-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	10	<1	111	10-172
Chloromethane	ug/L (ppb)	10	<10	80	25-166
Vinyl chloride	ug/L (ppb)	10	<0.2	89	36-166
Bromomethane	ug/L (ppb)	10	<5	129	47-169
Chloroethane	ug/L (ppb)	10	<1	86	46-160
Trichlorofluoromethane	ug/L (ppb)	10	<1	88	44-165
Acetone	ug/L (ppb)	50	<50	89	10-182
1,1-Dichloroethene	ug/L (ppb)	10	<1	98	58-142
Hexane	ug/L (ppb)	10	<5	86	38-152
Methylene chloride	ug/L (ppb)	10	<5	103	50-145
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	95	61-136
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	95	61-136
1,1-Dichloroethane	ug/L (ppb)	10	<1	91	63-135
2,2-Dichloropropane	ug/L (ppb)	10	<1	83	36-154
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	93	63-134
Chloroform	ug/L (ppb)	10	<1	96	61-135
2-Butanone (MEK)	ug/L (ppb)	50	<20	98	10-129
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<1	96	48-149
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	97	60-146
1,1-Dichloropropene	ug/L (ppb)	10	<1	94	69-133
Carbon tetrachloride	ug/L (ppb)	10	<1	98	56-152
Benzene	ug/L (ppb)	10	<0.35	95	57-135
Trichloroethene	ug/L (ppb)	10	<1	93	66-135
1,2-Dichloropropane	ug/L (ppb)	10	<1	93	59-136
Bromodichloromethane	ug/L (ppb)	10	<1	88	61-150
Dibromomethane	ug/L (ppb)	10	<1	98	66-141
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	102	10-185
cis-1,3-Dichloropropene	ug/L (ppb)	10	<1	90	52-147
Toluene	ug/L (ppb)	10	<1	102	50-137
trans-1,3-Dichloropropene	ug/L (ppb)	10	<1	92	53-142
1,1,2-Trichloroethane	ug/L (ppb)	10	<1	103	68-131
2-Hexanone	ug/L (ppb)	50	<10	108	10-185
1,3-Dichloropropane	ug/L (ppb)	10	<1	102	60-135
Tetrachloroethene	ug/L (ppb)	10	<1	105	10-226
Dibromochloromethane	ug/L (ppb)	10	<1	96	52-145
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<1	103	62-135
Chlorobenzene	ug/L (ppb)	10	<1	104	63-130
Ethylbenzene	ug/L (ppb)	10	<1	100	60-133
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	100	56-143
m,p-Xylene	ug/L (ppb)	20	<2	103	69-135
o-Xylene	ug/L (ppb)	10	<1	102	60-140
Styrene	ug/L (ppb)	10	<1	98	60-133
Isopropylbenzene	ug/L (ppb)	10	<1	98	65-142
Bromoform	ug/L (ppb)	10	<5	92	54-148
n-Propylbenzene	ug/L (ppb)	10	<1	102	58-144
Bromobenzene	ug/L (ppb)	10	<1	109	61-130
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	102	59-134
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<1	104	51-154
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	107	53-150
2-Chlorotoluene	ug/L (ppb)	10	<1	103	66-127
4-Chlorotoluene	ug/L (ppb)	10	<1	104	65-130
tert-Butylbenzene	ug/L (ppb)	10	<1	102	65-137
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	99	59-146
sec-Butylbenzene	ug/L (ppb)	10	<1	102	64-140
p-Isopropyltoluene	ug/L (ppb)	10	<1	99	65-141
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	106	60-131
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	105	60-129
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	105	60-130
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	96	32-164
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	93	52-138
Hexachlorobutadiene	ug/L (ppb)	10	<1	93	60-143
Naphthalene	ug/L (ppb)	10	<1	92	44-164
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	95	69-148

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 04/01/21

Date Received: 03/25/21

Project: 12th + Yesler WES 1591, F&BI 103489

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)	10	121	117	25-158	3
Chloromethane	ug/L (ppb)	10	94	94	45-156	0
Vinyl chloride	ug/L (ppb)	10	95	96	50-154	1
Bromomethane	ug/L (ppb)	10	103	127	55-143	21 vo
Chloroethane	ug/L (ppb)	10	84	95	58-146	12
Trichlorofluoromethane	ug/L (ppb)	10	101	104	50-150	3
Acetone	ug/L (ppb)	50	100	102	22-155	2
1,1-Dichloroethene	ug/L (ppb)	10	111	111	67-136	0
Hexane	ug/L (ppb)	10	97	96	57-137	1
Methylene chloride	ug/L (ppb)	10	115	112	19-178	3
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	110	108	64-147	2
trans-1,2-Dichloroethene	ug/L (ppb)	10	107	105	68-128	2
1,1-Dichloroethane	ug/L (ppb)	10	105	103	74-135	2
2,2-Dichloropropane	ug/L (ppb)	10	108	103	55-143	5
cis-1,2-Dichloroethene	ug/L (ppb)	10	106	106	74-136	0
Chloroform	ug/L (ppb)	10	107	107	74-134	0
2-Butanone (MEK)	ug/L (ppb)	50	110	112	37-150	2
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	109	107	66-129	2
1,1,1-Trichloroethane	ug/L (ppb)	10	107	107	74-142	0
1,1-Dichloropropene	ug/L (ppb)	10	108	106	77-129	2
Carbon tetrachloride	ug/L (ppb)	10	111	111	75-158	0
Benzene	ug/L (ppb)	10	108	106	69-134	2
Trichloroethene	ug/L (ppb)	10	108	104	67-133	4
1,2-Dichloropropane	ug/L (ppb)	10	106	103	71-134	3
Bromodichloromethane	ug/L (ppb)	10	102	100	66-126	2
Dibromomethane	ug/L (ppb)	10	110	110	68-132	0
4-Methyl-2-pentanone	ug/L (ppb)	50	116	119	65-138	3
cis-1,3-Dichloropropene	ug/L (ppb)	10	107	105	74-140	2
Toluene	ug/L (ppb)	10	94	91	72-122	3
trans-1,3-Dichloropropene	ug/L (ppb)	10	87	87	80-136	0
1,1,2-Trichloroethane	ug/L (ppb)	10	91	92	75-124	1
2-Hexanone	ug/L (ppb)	50	97	103	60-136	6
1,3-Dichloropropene	ug/L (ppb)	10	91	93	76-126	2
Tetrachloroethene	ug/L (ppb)	10	95	95	76-121	0
Dibromochloromethane	ug/L (ppb)	10	88	90	84-133	2
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	93	96	82-115	3
Chlorobenzene	ug/L (ppb)	10	95	95	83-114	0
Ethylbenzene	ug/L (ppb)	10	91	92	77-124	1
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	90	92	84-127	2
m,p-Xylene	ug/L (ppb)	20	93	94	81-112	1
o-Xylene	ug/L (ppb)	10	93	93	81-121	0
Styrene	ug/L (ppb)	10	91	91	84-119	0
Isopropylbenzene	ug/L (ppb)	10	88	89	80-117	1
Bromoform	ug/L (ppb)	10	87	90	69-121	3
n-Propylbenzene	ug/L (ppb)	10	84	88	74-126	5
Bromobenzene	ug/L (ppb)	10	90	94	80-121	4
1,3,5-Trimethylbenzene	ug/L (ppb)	10	84	87	78-123	4
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	84	90	66-126	7
1,2,3-Trichloropropane	ug/L (ppb)	10	88	92	67-124	4
2-Chlorotoluene	ug/L (ppb)	10	84	88	77-127	5
4-Chlorotoluene	ug/L (ppb)	10	84	88	78-128	5
tert-Butylbenzene	ug/L (ppb)	10	82	85	80-123	4
1,2,4-Trimethylbenzene	ug/L (ppb)	10	82	84	79-122	2
sec-Butylbenzene	ug/L (ppb)	10	83	85	80-116	2
p-Isopropyltoluene	ug/L (ppb)	10	82	85	81-123	4
1,3-Dichlorobenzene	ug/L (ppb)	10	86	90	83-113	5
1,4-Dichlorobenzene	ug/L (ppb)	10	86	90	81-112	5
1,2-Dichlorobenzene	ug/L (ppb)	10	85	87	84-112	2
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	78	77	57-141	1
1,2,4-Trichlorobenzene	ug/L (ppb)	10	78	77	72-130	1
Hexachlorobutadiene	ug/L (ppb)	10	76	73	53-141	4
Naphthalene	ug/L (ppb)	10	77	77	64-133	0
1,2,3-Trichlorobenzene	ug/L (ppb)	10	79	77	65-136	3

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
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April 5, 2021

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 29, 2021 from the 12th & Yesler WES-1591, F&BI 103536 project. There are 15 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
WES0405R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on March 29, 2021 by Friedman & Bruya, Inc. from the Whitman Environmental Sciences 12th & Yesler WES-1591, F&BI 103536 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Whitman Environmental Sciences</u>
103536 -01	MW-4-GW
103536 -02	MW-8-GW
103536 -03	MW-9-GW
103536 -04	MW-13-GW
103536 -05	MW-16-GW
103536 -06	GEO-B8-GW

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 04/05/21

Date Received: 03/29/21

Project: 12th & Yesler WES-1591, F&BI 103536

Date Extracted: 03/31/21

Date Analyzed: 04/01/21

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
USING METHOD NWTPH-G_x**
Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	Surrogate <u>(% Recovery)</u> (Limit 51-134)
MW-8-GW 103536-02	220	93
GEO-B8-GW 103536-06	<100	89
Method Blank 01-595 MB	<100	91

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 04/05/21

Date Received: 03/29/21

Project: 12th & Yesler WES-1591, F&BI 103536

Date Extracted: 03/31/21

Date Analyzed: 04/01/21

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR BENZENE, TOLUENE, ETHYLBENZENE,
XYLENES AND TPH AS GASOLINE
USING METHODS 8021B AND NWTPH-Gx**

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Gasoline Range</u>	<u>Surrogate (% Recovery)</u> (Limit 52-124)
MW-9-GW 103536-03	6.5	8.0	7.2	6.6	1,400	70
Method Blank 01-595 MB	<1	<1	<1	<3	<100	80

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 04/05/21

Date Received: 03/29/21

Project: 12th & Yesler WES-1591, F&BI 103536

Date Extracted: 03/30/21

Date Analyzed: 03/30/21

**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)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C ₁₀ -C ₂₅)	<u>Motor Oil Range</u> (C ₂₅ -C ₃₆)	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 41-152)
MW-8-GW 103536-02	130 x	<250	110
MW-9-GW 103536-03	680 x	<250	121
GEO-B8-GW 103536-06	310 x	320 x	110
Method Blank 01-737 MB2	<50	<250	128

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-4-GW	Client:	Whitman Environmental Sciences
Date Received:	03/29/21	Project:	12th & Yesler WES-1591, F&BI 103536
Date Extracted:	03/30/21	Lab ID:	103536-01
Date Analyzed:	03/30/21	Data File:	033021.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	86	113
Toluene-d8	96	88	114
4-Bromofluorobenzene	100	88	112

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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	<20	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-8-GW	Client: Whitman Environmental Sciences
Date Received: 03/29/21	Project: 12th & Yesler WES-1591, F&BI 103536
Date Extracted: 03/30/21	Lab ID: 103536-02
Date Analyzed: 03/30/21	Data File: 033022.D
Matrix: Water	Instrument: GCMS4
Units: ug/L (ppb)	Operator: JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	106	86	113
Toluene-d8	97	88	114
4-Bromofluorobenzene	100	88	112

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	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	6.0
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	17
Hexane	<5	o-Xylene	3.9
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	1.9
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	2.6
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	2.9
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<20	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	9.6
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-13-GW	Client:	Whitman Environmental Sciences
Date Received:	03/29/21	Project:	12th & Yesler WES-1591, F&BI 103536
Date Extracted:	03/30/21	Lab ID:	103536-04
Date Analyzed:	03/30/21	Data File:	033023.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	86	113
Toluene-d8	98	88	114
4-Bromofluorobenzene	97	88	112

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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	<20	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-16-GW	Client: Whitman Environmental Sciences
Date Received: 03/29/21	Project: 12th & Yesler WES-1591, F&BI 103536
Date Extracted: 03/30/21	Lab ID: 103536-05
Date Analyzed: 03/30/21	Data File: 033024.D
Matrix: Water	Instrument: GCMS4
Units: ug/L (ppb)	Operator: JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	86	113
Toluene-d8	95	88	114
4-Bromofluorobenzene	115 vo	88	112

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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	24	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:	GEO-B8-GW	Client:	Whitman Environmental Sciences
Date Received:	03/29/21	Project:	12th & Yesler WES-1591, F&BI 103536
Date Extracted:	03/30/21	Lab ID:	103536-06
Date Analyzed:	03/30/21	Data File:	033025.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	86	113
Toluene-d8	97	88	114
4-Bromofluorobenzene	100	88	112

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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	2.5
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	8.8
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)	<20	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:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th & Yesler WES-1591, F&BI 103536
Date Extracted:	03/30/21	Lab ID:	01-673 mb
Date Analyzed:	03/30/21	Data File:	033008.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	86	113
Toluene-d8	96	88	114
4-Bromofluorobenzene	102	88	112

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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	<20	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

Date of Report: 04/05/21

Date Received: 03/29/21

Project: 12th & Yesler WES-1591, F&BI 103536

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE,
XYLENES, AND TPH AS GASOLINE
USING EPA METHOD 8021B AND NWTPH-Gx**

Laboratory Code: 103563-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Benzene	ug/L (ppb)	<1	<1	nm
Toluene	ug/L (ppb)	<1	<1	nm
Ethylbenzene	ug/L (ppb)	<1	<1	nm
Xylenes	ug/L (ppb)	<3	<3	nm
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent	
			Recovery LCS	Acceptance Criteria
Benzene	ug/L (ppb)	50	105	65-118
Toluene	ug/L (ppb)	50	94	72-122
Ethylbenzene	ug/L (ppb)	50	91	73-126
Xylenes	ug/L (ppb)	150	89	74-118
Gasoline	ug/L (ppb)	1,000	102	69-134

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 04/05/21

Date Received: 03/29/21

Project: 12th & Yesler WES-1591, F&BI 103536

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

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	128	124	63-142	3

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 04/05/21

Date Received: 03/29/21

Project: 12th & Yesler WES-1591, F&BI 103536

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

Laboratory Code: 103462-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	10	<1	80	84	10-172	5
Chloromethane	ug/L (ppb)	10	<10	58	61	25-166	5
Vinyl chloride	ug/L (ppb)	10	<0.2	65	67	36-166	3
Bromomethane	ug/L (ppb)	10	<5	95	95	47-169	0
Chloroethane	ug/L (ppb)	10	<1	65	69	46-160	6
Trichlorofluoromethane	ug/L (ppb)	10	<1	73	76	44-165	4
Acetone	ug/L (ppb)	50	<50	80	80	10-182	0
1,1-Dichloroethene	ug/L (ppb)	10	<1	79	81	58-142	2
Hexane	ug/L (ppb)	10	<5	72	73	38-152	1
Methylene chloride	ug/L (ppb)	10	<5	94	104	50-145	10
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	85	88	61-136	3
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	77	79	61-136	3
1,1-Dichloroethane	ug/L (ppb)	10	<1	80	80	63-135	0
2,2-Dichloropropane	ug/L (ppb)	10	<1	81	81	36-154	0
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	83	86	63-134	4
Chloroform	ug/L (ppb)	10	<1	88	89	61-135	1
2-Butanone (MEK)	ug/L (ppb)	50	<20	95	95	10-129	0
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<1	91	92	48-149	1
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	85	87	60-146	2
1,1-Dichloropropene	ug/L (ppb)	10	<1	83	85	69-133	2
Carbon tetrachloride	ug/L (ppb)	10	<1	87	90	56-152	3
Benzene	ug/L (ppb)	10	<0.35	86	86	57-135	0
Trichloroethene	ug/L (ppb)	10	<1	88	91	66-135	3
1,2-Dichloropropane	ug/L (ppb)	10	<1	88	90	59-136	2
Bromodichloromethane	ug/L (ppb)	10	<1	86	89	61-150	3
Dibromomethane	ug/L (ppb)	10	<1	95	97	66-141	2
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	107	110	10-185	3
cis-1,3-Dichloropropene	ug/L (ppb)	10	<1	91	94	52-147	3
Toluene	ug/L (ppb)	10	<1	99	100	50-137	1
trans-1,3-Dichloropropene	ug/L (ppb)	10	<1	96	97	53-142	1
1,1,2-Trichloroethane	ug/L (ppb)	10	<1	109	107	68-131	2
2-Hexanone	ug/L (ppb)	50	<10	115	113	10-185	2
1,3-Dichloropropene	ug/L (ppb)	10	<1	106	107	60-135	1
Tetrachloroethene	ug/L (ppb)	10	<1	105	105	10-226	0
Dibromochloromethane	ug/L (ppb)	10	<1	99	99	52-145	0
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<1	107	109	62-135	2
Chlorobenzene	ug/L (ppb)	10	<1	107	109	63-130	2
Ethylbenzene	ug/L (ppb)	10	<1	104	103	60-133	1
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	103	105	56-143	2
m,p-Xylene	ug/L (ppb)	20	<2	108	105	69-135	3
o-Xylene	ug/L (ppb)	10	<1	106	107	60-140	1
Styrene	ug/L (ppb)	10	<1	106	105	60-133	1
Isopropylbenzene	ug/L (ppb)	10	<1	104	103	65-142	1
Bromoform	ug/L (ppb)	10	<5	100	100	54-148	0
n-Propylbenzene	ug/L (ppb)	10	<1	108	110	58-144	2
Bromobenzene	ug/L (ppb)	10	<1	116	118	61-130	2
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	107	110	59-134	3
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<1	113	113	51-154	0
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	115	116	53-150	1
2-Chlorotoluene	ug/L (ppb)	10	<1	107	110	66-127	3
4-Chlorotoluene	ug/L (ppb)	10	<1	108	111	65-130	3
tert-Butylbenzene	ug/L (ppb)	10	<1	109	110	65-137	1
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	105	107	59-146	2
sec-Butylbenzene	ug/L (ppb)	10	<1	109	110	64-140	1
p-Isopropyltoluene	ug/L (ppb)	10	<1	108	108	65-141	0
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	114	115	60-131	1
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	113	116	60-129	3
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	113	114	60-130	1
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	99	100	32-164	1
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	105	101	52-138	4
Hexachlorobutadiene	ug/L (ppb)	10	<1	106	102	60-143	4
Naphthalene	ug/L (ppb)	10	<1	102	99	44-164	3
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	108	100	69-148	8

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 04/05/21

Date Received: 03/29/21

Project: 12th & Yesler WES-1591, F&BI 103536

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)	10	111	108	25-158	3
Chloromethane	ug/L (ppb)	10	83	83	45-156	0
Vinyl chloride	ug/L (ppb)	10	88	87	50-154	1
Bromomethane	ug/L (ppb)	10	128	125	55-143	2
Chloroethane	ug/L (ppb)	10	88	85	58-146	3
Trichlorofluoromethane	ug/L (ppb)	10	95	95	50-150	0
Acetone	ug/L (ppb)	50	88	90	22-155	2
1,1-Dichloroethene	ug/L (ppb)	10	99	96	67-136	3
Hexane	ug/L (ppb)	10	88	87	57-137	1
Methylene chloride	ug/L (ppb)	10	97	96	19-178	1
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	95	95	64-147	0
trans-1,2-Dichloroethene	ug/L (ppb)	10	94	92	68-128	2
1,1-Dichloroethane	ug/L (ppb)	10	90	89	74-135	1
2,2-Dichloropropane	ug/L (ppb)	10	97	95	55-143	2
cis-1,2-Dichloroethene	ug/L (ppb)	10	93	92	74-136	1
Chloroform	ug/L (ppb)	10	94	93	74-134	1
2-Butanone (MEK)	ug/L (ppb)	50	97	97	37-150	0
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	94	94	66-129	0
1,1,1-Trichloroethane	ug/L (ppb)	10	95	94	74-142	1
1,1-Dichloropropene	ug/L (ppb)	10	95	93	77-129	2
Carbon tetrachloride	ug/L (ppb)	10	97	95	75-158	2
Benzene	ug/L (ppb)	10	93	94	69-134	1
Trichloroethene	ug/L (ppb)	10	92	93	67-133	1
1,2-Dichloropropane	ug/L (ppb)	10	92	91	71-134	1
Bromodichloromethane	ug/L (ppb)	10	88	86	66-126	2
Dibromomethane	ug/L (ppb)	10	96	97	68-132	1
4-Methyl-2-pentanone	ug/L (ppb)	50	103	103	65-138	0
cis-1,3-Dichloropropene	ug/L (ppb)	10	92	92	74-140	0
Toluene	ug/L (ppb)	10	102	98	72-122	4
trans-1,3-Dichloropropene	ug/L (ppb)	10	95	91	80-136	4
1,1,2-Trichloroethane	ug/L (ppb)	10	102	97	75-124	5
2-Hexanone	ug/L (ppb)	50	109	109	60-136	0
1,3-Dichloropropene	ug/L (ppb)	10	102	98	76-126	4
Tetrachloroethene	ug/L (ppb)	10	108	104	76-121	4
Dibromochloromethane	ug/L (ppb)	10	97	91	84-133	6
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	104	100	82-115	4
Chlorobenzene	ug/L (ppb)	10	106	102	83-114	4
Ethylbenzene	ug/L (ppb)	10	102	97	77-124	5
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	99	94	84-127	5
m,p-Xylene	ug/L (ppb)	20	104	100	81-112	4
o-Xylene	ug/L (ppb)	10	102	98	81-121	4
Styrene	ug/L (ppb)	10	101	97	84-119	4
Isopropylbenzene	ug/L (ppb)	10	100	95	80-117	5
Bromoform	ug/L (ppb)	10	93	90	69-121	3
n-Propylbenzene	ug/L (ppb)	10	102	98	74-126	4
Bromobenzene	ug/L (ppb)	10	108	104	80-121	4
1,3,5-Trimethylbenzene	ug/L (ppb)	10	100	98	78-123	2
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	103	99	66-126	4
1,2,3-Trichloropropane	ug/L (ppb)	10	105	102	67-124	3
2-Chlorotoluene	ug/L (ppb)	10	102	98	77-127	4
4-Chlorotoluene	ug/L (ppb)	10	102	98	78-128	4
tert-Butylbenzene	ug/L (ppb)	10	101	98	80-123	3
1,2,4-Trimethylbenzene	ug/L (ppb)	10	97	95	79-122	2
sec-Butylbenzene	ug/L (ppb)	10	99	97	80-116	2
p-Isopropyltoluene	ug/L (ppb)	10	100	95	81-123	5
1,3-Dichlorobenzene	ug/L (ppb)	10	104	101	83-113	3
1,4-Dichlorobenzene	ug/L (ppb)	10	106	102	81-112	4
1,2-Dichlorobenzene	ug/L (ppb)	10	101	100	84-112	1
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	88	88	57-141	0
1,2,4-Trichlorobenzene	ug/L (ppb)	10	89	92	72-130	3
Hexachlorobutadiene	ug/L (ppb)	10	89	91	53-141	2
Naphthalene	ug/L (ppb)	10	89	92	64-133	3
1,2,3-Trichlorobenzene	ug/L (ppb)	10	88	93	65-136	6

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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.



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Wednesday, April 7, 2021

Dan Whitman

Whitman Environmental Science

6812 16th Avenue NE

Seattle, WA 98115

RE: A1C1039 - 12th & Yesler - WES-1591

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A1C1039, which was received by the laboratory on 3/24/2021 at 11:01:00AM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: apatton@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of sample receipt, unless prior arrangements have been made.

Cooler Receipt Information

(See Cooler Receipt Form for details)

Cooler #1

11.2 degC

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.

All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.



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Amy Patton For Kurt Johnson, Senior Chemist



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323

ORELAP ID: OR100062

Whitman Environmental Science

6812 16th Avenue NE
Seattle, WA 98115

Project: 12th & Yesler

Project Number: WES-1591

Project Manager: Dan Whitman

Report ID:

A1C1039 - 04 07 21 1040

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1-GW-Dis-BF-0.2	A1C1039-01	Water	03/18/21 15:45	03/24/21 11:01
MW-1-GW-Dis-BF-0.45	A1C1039-02	Water	03/18/21 15:45	03/24/21 11:01
MW-1-GW-TR	A1C1039-04	Water	03/18/21 15:45	03/24/21 11:01
MW-2-GW-Dis-BF-0.2	A1C1039-06	Water	03/16/21 13:14	03/24/21 11:01
MW-2-GW-Dis-BF-0.45	A1C1039-07	Water	03/16/21 13:10	03/24/21 11:01
MW-2-GW-Dis-LF-0.1	A1C1039-08	Water	03/16/21 13:10	03/24/21 11:01
MW-2-GW-TR	A1C1039-10	Water	03/16/21 13:10	03/24/21 11:01
MW-5-GW-Dis-BF-0.2	A1C1039-12	Water	03/16/21 12:42	03/24/21 11:01
MW-5-GW-Dis-BF-0.45	A1C1039-13	Water	03/16/21 12:33	03/24/21 11:01
MW-5-GW-Dis-LF-0.1	A1C1039-14	Water	03/16/21 11:59	03/24/21 11:01
MW-5-GW-TR	A1C1039-16	Water	03/16/21 11:50	03/24/21 11:01
MW-6-GW-Dis-BF-0.2	A1C1039-18	Water	03/18/21 16:05	03/24/21 11:01
MW-6-GW-Dis-BF-0.45	A1C1039-19	Water	03/18/21 16:30	03/24/21 11:01
MW-6-GW-TR	A1C1039-22	Water	03/18/21 16:05	03/24/21 11:01
MW-7-GW-Dis-BF-0.2	A1C1039-24	Water	03/16/21 12:50	03/24/21 11:01
MW-7-GW-Dis-BF-0.45	A1C1039-25	Water	03/16/21 12:50	03/24/21 11:01
MW-7-GW-Dis-LF-0.1	A1C1039-26	Water	03/16/21 12:50	03/24/21 11:01
MW-7-GW-Dis-LF-0.45	A1C1039-27	Water	03/16/21 12:50	03/24/21 11:01
MW-7-GW-TR	A1C1039-28	Water	03/16/21 12:50	03/24/21 11:01
MW-12-GW-Dis-BF-0.2	A1C1039-30	Water	03/18/21 15:10	03/24/21 11:01
MW-12-GW-Dis-BF-0.45	A1C1039-31	Water	03/18/21 15:10	03/24/21 11:01
MW-12-GW-Dis-LF-0.1	A1C1039-32	Water	03/18/21 15:10	03/24/21 11:01
MW-12-GW-TR	A1C1039-34	Water	03/18/21 15:10	03/24/21 11:01
MW-15-GW-Dis-BF-0.2	A1C1039-36	Water	03/18/21 13:45	03/24/21 11:01
MW-15-GW-Dis-BF-0.45	A1C1039-37	Water	03/18/21 13:45	03/24/21 11:01
MW-15-GW-TR	A1C1039-40	Water	03/18/21 13:45	03/24/21 11:01
GEO-B9-GW-Dis-BF-0.2	A1C1039-42	Water	03/18/21 14:20	03/24/21 11:01
GEO-B9-GW-Dis-BF-0.45	A1C1039-43	Water	03/18/21 14:20	03/24/21 11:01
GEO-B9-GW-Dis-LF-0.1	A1C1039-44	Water	03/18/21 14:20	03/24/21 11:01
GEO-B9-GW-TR	A1C1039-46	Water	03/18/21 14:20	03/24/21 11:01
GEO-B7-GW-Dis-BF-0.2	A1C1039-48	Water	03/16/21 11:57	03/24/21 11:01
GEO-B7-GW-Dis-BF-0.45	A1C1039-49	Water	03/16/21 11:57	03/24/21 11:01

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Amy Patton For Kurt Johnson, Senior Chemist



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323

ORELAP ID: OR100062

Whitman Environmental Science

6812 16th Avenue NE
Seattle, WA 98115

Project: 12th & Yesler

Project Number: WES-1591

Project Manager: Dan Whitman

Report ID:

A1C1039 - 04 07 21 1040

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GEO-B7-GW-Dis-LF-0.1	A1C1039-50	Water	03/16/21 11:57	03/24/21 11:01
GEO-B7-GW-TR	A1C1039-52	Water	03/16/21 11:57	03/24/21 11:01

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Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062**Whitman Environmental Science**6812 16th Avenue NE
Seattle, WA 98115Project: **12th & Yesler**Project Number: **WES-1591**Project Manager: **Dan Whitman****Report ID:****A1C1039 - 04 07 21 1040**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-1-GW-Dis-BF-0.2 (A1C1039-01)				Matrix: Water				
Batch: 1040115								
Arsenic	ND	---	1.00	ug/L	1	04/05/21 13:52	EPA 6020B	
MW-1-GW-Dis-BF-0.45 (A1C1039-02)				Matrix: Water				
Batch: 1040115								
Arsenic	ND	---	1.00	ug/L	1	04/05/21 13:57	EPA 6020B	
MW-1-GW-TR (A1C1039-04)				Matrix: Water				
Batch: 1040115								
Arsenic	1.59	---	1.00	ug/L	1	04/05/21 14:02	EPA 6020B	
MW-2-GW-Dis-BF-0.2 (A1C1039-06)				Matrix: Water				
Batch: 1040115								
Arsenic	81.9	---	1.00	ug/L	1	04/05/21 14:07	EPA 6020B	
MW-2-GW-Dis-BF-0.45 (A1C1039-07)				Matrix: Water				
Batch: 1040115								
Arsenic	90.7	---	1.00	ug/L	1	04/05/21 14:32	EPA 6020B	
MW-2-GW-Dis-LF-0.1 (A1C1039-08)				Matrix: Water				
Batch: 1040115								
Arsenic	95.8	---	1.00	ug/L	1	04/05/21 14:37	EPA 6020B	
MW-2-GW-TR (A1C1039-10)				Matrix: Water				
Batch: 1040115								
Arsenic	105	---	1.00	ug/L	1	04/05/21 14:42	EPA 6020B	
MW-5-GW-Dis-BF-0.2 (A1C1039-12)				Matrix: Water				
Batch: 1040115								
Arsenic	4.90	---	1.00	ug/L	1	04/05/21 14:47	EPA 6020B	
MW-5-GW-Dis-BF-0.45 (A1C1039-13)				Matrix: Water				
Batch: 1040115								
Arsenic	5.54	---	1.00	ug/L	1	04/05/21 14:52	EPA 6020B	

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Seattle, WA 98115Project: 12th & Yesler
Project Number: WES-1591
Project Manager: Dan WhitmanReport ID:
A1C1039 - 04 07 21 1040

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-5-GW-Dis-LF-0.1 (A1C1039-14)				Matrix: Water				
Batch: 1040115								
Arsenic	4.54	---	1.00	ug/L	1	04/05/21 14:57	EPA 6020B	
MW-5-GW-TR (A1C1039-16)				Matrix: Water				
Batch: 1040115								
Arsenic	8.23	---	1.00	ug/L	1	04/05/21 15:02	EPA 6020B	
MW-6-GW-Dis-BF-0.2 (A1C1039-18)				Matrix: Water				
Batch: 1040115								
Arsenic	2.15	---	1.00	ug/L	1	04/05/21 15:08	EPA 6020B	
MW-6-GW-Dis-BF-0.45 (A1C1039-19)				Matrix: Water				
Batch: 1040115								
Arsenic	1.92	---	1.00	ug/L	1	04/05/21 15:13	EPA 6020B	
MW-6-GW-TR (A1C1039-22)				Matrix: Water				
Batch: 1040115								
Arsenic	2.44	---	1.00	ug/L	1	04/05/21 15:28	EPA 6020B	
MW-7-GW-Dis-BF-0.2 (A1C1039-24)				Matrix: Water				
Batch: 1040115								
Arsenic	141	---	1.00	ug/L	1	04/05/21 15:33	EPA 6020B	
MW-7-GW-Dis-BF-0.45 (A1C1039-25)				Matrix: Water				
Batch: 1040115								
Arsenic	127	---	1.00	ug/L	1	04/05/21 15:38	EPA 6020B	
MW-7-GW-Dis-LF-0.1 (A1C1039-26)				Matrix: Water				
Batch: 1040115								
Arsenic	111	---	1.00	ug/L	1	04/05/21 15:43	EPA 6020B	
MW-7-GW-Dis-LF-0.45 (A1C1039-27)				Matrix: Water				
Batch: 1040115								
Arsenic	140	---	1.00	ug/L	1	04/05/21 15:48	EPA 6020B	

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6812 16th Avenue NE
Seattle, WA 98115Project: 12th & Yesler
Project Number: WES-1591
Project Manager: Dan WhitmanReport ID:
A1C1039 - 04 07 21 1040

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-7-GW-TR (A1C1039-28)				Matrix: Water				
Batch: 1040115								
Arsenic	127	---	1.00	ug/L	1	04/05/21 15:53	EPA 6020B	
MW-12-GW-Dis-BF-0.2 (A1C1039-30RE1)				Matrix: Water				
Batch: 1040115								
Arsenic	1610	---	10.0	ug/L	10	04/06/21 14:12	EPA 6020B	
MW-12-GW-Dis-BF-0.45 (A1C1039-31RE1)				Matrix: Water				
Batch: 1040138								
Arsenic	2110	---	10.0	ug/L	10	04/06/21 14:17	EPA 6020B	
MW-12-GW-Dis-LF-0.1 (A1C1039-32RE1)				Matrix: Water				
Batch: 1040138								
Arsenic	1740	---	10.0	ug/L	10	04/06/21 14:22	EPA 6020B	
MW-12-GW-TR (A1C1039-34RE1)				Matrix: Water				
Batch: 1040138								
Arsenic	1900	---	10.0	ug/L	10	04/06/21 14:27	EPA 6020B	
MW-15-GW-Dis-BF-0.2 (A1C1039-36)				Matrix: Water				
Batch: 1040138								
Arsenic	11.5	---	1.00	ug/L	1	04/05/21 19:04	EPA 6020B	
MW-15-GW-Dis-BF-0.45 (A1C1039-37)				Matrix: Water				
Batch: 1040138								
Arsenic	11.4	---	1.00	ug/L	1	04/05/21 19:29	EPA 6020B	
MW-15-GW-TR (A1C1039-40)				Matrix: Water				
Batch: 1040138								
Arsenic	11.6	---	1.00	ug/L	1	04/05/21 19:34	EPA 6020B	
GEO-B9-GW-Dis-BF-0.2 (A1C1039-42)				Matrix: Water				
Batch: 1040138								
Arsenic	ND	---	1.00	ug/L	1	04/05/21 19:40	EPA 6020B	

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Seattle, WA 98115Project: **12th & Yesler**Project Number: **WES-1591**Project Manager: **Dan Whitman****Report ID:****A1C1039 - 04 07 21 1040**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GEO-B9-GW-Dis-BF-0.45 (A1C1039-43)				Matrix: Water				
Batch: 1040138								
Arsenic	ND	---	1.00	ug/L	1	04/05/21 19:45	EPA 6020B	
GEO-B9-GW-Dis-LF-0.1 (A1C1039-44)				Matrix: Water				
Batch: 1040138								
Arsenic	ND	---	1.00	ug/L	1	04/05/21 19:50	EPA 6020B	
GEO-B9-GW-TR (A1C1039-46)				Matrix: Water				
Batch: 1040138								
Arsenic	1.27	---	1.00	ug/L	1	04/05/21 19:55	EPA 6020B	
GEO-B7-GW-Dis-BF-0.2 (A1C1039-48)				Matrix: Water				
Batch: 1040138								
Arsenic	15.2	---	1.00	ug/L	1	04/05/21 20:00	EPA 6020B	
GEO-B7-GW-Dis-BF-0.45 (A1C1039-49)				Matrix: Water				
Batch: 1040138								
Arsenic	16.0	---	1.00	ug/L	1	04/05/21 20:05	EPA 6020B	
GEO-B7-GW-Dis-LF-0.1 (A1C1039-50)				Matrix: Water				
Batch: 1040138								
Arsenic	18.4	---	1.00	ug/L	1	04/05/21 20:10	EPA 6020B	
GEO-B7-GW-TR (A1C1039-52)				Matrix: Water				
Batch: 1040138								
Arsenic	20.6	---	1.00	ug/L	1	04/05/21 20:15	EPA 6020B	

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Report ID:

A1C1039 - 04 07 21 1040

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1040115 - EPA 3015A							Water					
Blank (1040115-BLK1)		Prepared: 04/05/21 09:25		Analyzed: 04/05/21 13:42								
EPA 6020B												
Arsenic	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
LCS (1040115-BS1)		Prepared: 04/05/21 09:25		Analyzed: 04/05/21 13:47								
EPA 6020B												
Arsenic	53.6	---	1.00	ug/L	1	55.6	---	96	80 - 120%	---	---	
Duplicate (1040115-DUP1)		Prepared: 04/05/21 09:25		Analyzed: 04/05/21 14:12								
QC Source Sample: MW-2-GW-Dis-BF-0.2 (A1C1039-06)												
EPA 6020B												
Arsenic	81.8	---	1.00	ug/L	1	---	81.9	---	---	0.2	20%	
Matrix Spike (1040115-MS1)		Prepared: 04/05/21 09:25		Analyzed: 04/05/21 14:27								
QC Source Sample: MW-2-GW-Dis-BF-0.2 (A1C1039-06)												
EPA 6020B												
Arsenic	134	---	1.00	ug/L	1	55.6	81.9	94	75 - 125%	---	---	
Batch 1040138 - EPA 3015A							Water					
Blank (1040138-BLK1)		Prepared: 04/05/21 13:47		Analyzed: 04/05/21 18:39								
EPA 6020B												
Arsenic	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
LCS (1040138-BS1)		Prepared: 04/05/21 13:47		Analyzed: 04/05/21 18:44								
EPA 6020B												
Arsenic	50.1	---	1.00	ug/L	1	55.6	---	90	80 - 120%	---	---	
Duplicate (1040138-DUP1)		Prepared: 04/05/21 13:47		Analyzed: 04/05/21 19:09								
QC Source Sample: MW-15-GW-Dis-BF-0.2 (A1C1039-36)												
EPA 6020B												
Arsenic	11.5	---	1.00	ug/L	1	---	11.5	---	---	0.2	20%	
Matrix Spike (1040138-MS1)		Prepared: 04/05/21 13:47		Analyzed: 04/05/21 19:14								
QC Source Sample: MW-15-GW-Dis-BF-0.2 (A1C1039-36)												

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ANALYTICAL REPORT

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ORELAP ID: OR100062

Whitman Environmental Science6812 16th Avenue NE
Seattle, WA 98115Project: 12th & Yesler

Project Number: WES-1591

Project Manager: Dan Whitman

Report ID:

A1C1039 - 04 07 21 1040

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1040138 - EPA 3015A							Water					
Matrix Spike (1040138-MS1)		Prepared: 04/05/21 13:47 Analyzed: 04/05/21 19:14										
QC Source Sample: MW-15-GW-Dis-BF-0.2 (A1C1039-36)												
EPA 6020B												
Arsenic	62.1	---	1.00	ug/L	1	55.6	11.5	91	75 - 125%	---	---	

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ORELAP ID: OR100062

Whitman Environmental Science6812 16th Avenue NE
Seattle, WA 98115Project: **12th & Yesler**Project Number: **WES-1591**Project Manager: **Dan Whitman****Report ID:****A1C1039 - 04 07 21 1040****SAMPLE PREPARATION INFORMATION****Total Metals by EPA 6020B (ICPMS)****Prep: EPA 3015A**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 1040115							
A1C1039-01	Water	EPA 6020B	03/18/21 15:45	04/05/21 09:25	45mL/50mL	45mL/50mL	1.00
A1C1039-02	Water	EPA 6020B	03/18/21 15:45	04/05/21 09:25	45mL/50mL	45mL/50mL	1.00
A1C1039-04	Water	EPA 6020B	03/18/21 15:45	04/05/21 09:25	45mL/50mL	45mL/50mL	1.00
A1C1039-06	Water	EPA 6020B	03/16/21 13:14	04/05/21 09:25	45mL/50mL	45mL/50mL	1.00
A1C1039-07	Water	EPA 6020B	03/16/21 13:10	04/05/21 09:25	45mL/50mL	45mL/50mL	1.00
A1C1039-08	Water	EPA 6020B	03/16/21 13:10	04/05/21 09:25	45mL/50mL	45mL/50mL	1.00
A1C1039-10	Water	EPA 6020B	03/16/21 13:10	04/05/21 09:25	45mL/50mL	45mL/50mL	1.00
A1C1039-12	Water	EPA 6020B	03/16/21 12:42	04/05/21 09:25	45mL/50mL	45mL/50mL	1.00
A1C1039-13	Water	EPA 6020B	03/16/21 12:33	04/05/21 09:25	45mL/50mL	45mL/50mL	1.00
A1C1039-14	Water	EPA 6020B	03/16/21 11:59	04/05/21 09:25	45mL/50mL	45mL/50mL	1.00
A1C1039-16	Water	EPA 6020B	03/16/21 11:50	04/05/21 09:25	45mL/50mL	45mL/50mL	1.00
A1C1039-18	Water	EPA 6020B	03/18/21 16:05	04/05/21 09:25	45mL/50mL	45mL/50mL	1.00
A1C1039-19	Water	EPA 6020B	03/18/21 16:30	04/05/21 09:25	45mL/50mL	45mL/50mL	1.00
A1C1039-22	Water	EPA 6020B	03/18/21 16:05	04/05/21 09:25	45mL/50mL	45mL/50mL	1.00
A1C1039-24	Water	EPA 6020B	03/16/21 12:50	04/05/21 09:25	45mL/50mL	45mL/50mL	1.00
A1C1039-25	Water	EPA 6020B	03/16/21 12:50	04/05/21 09:25	45mL/50mL	45mL/50mL	1.00
A1C1039-26	Water	EPA 6020B	03/16/21 12:50	04/05/21 09:25	45mL/50mL	45mL/50mL	1.00
A1C1039-27	Water	EPA 6020B	03/16/21 12:50	04/05/21 09:25	45mL/50mL	45mL/50mL	1.00
A1C1039-28	Water	EPA 6020B	03/16/21 12:50	04/05/21 09:25	45mL/50mL	45mL/50mL	1.00
A1C1039-30RE1	Water	EPA 6020B	03/18/21 15:10	04/05/21 09:25	45mL/50mL	45mL/50mL	1.00
Batch: 1040138							
A1C1039-31RE1	Water	EPA 6020B	03/18/21 15:10	04/05/21 13:47	45mL/50mL	45mL/50mL	1.00
A1C1039-32RE1	Water	EPA 6020B	03/18/21 15:10	04/05/21 13:47	45mL/50mL	45mL/50mL	1.00
A1C1039-34RE1	Water	EPA 6020B	03/18/21 15:10	04/05/21 13:47	45mL/50mL	45mL/50mL	1.00
A1C1039-36	Water	EPA 6020B	03/18/21 13:45	04/05/21 13:47	45mL/50mL	45mL/50mL	1.00
A1C1039-37	Water	EPA 6020B	03/18/21 13:45	04/05/21 13:47	45mL/50mL	45mL/50mL	1.00
A1C1039-40	Water	EPA 6020B	03/18/21 13:45	04/05/21 13:47	45mL/50mL	45mL/50mL	1.00
A1C1039-42	Water	EPA 6020B	03/18/21 14:20	04/05/21 13:47	45mL/50mL	45mL/50mL	1.00
A1C1039-43	Water	EPA 6020B	03/18/21 14:20	04/05/21 13:47	45mL/50mL	45mL/50mL	1.00
A1C1039-44	Water	EPA 6020B	03/18/21 14:20	04/05/21 13:47	45mL/50mL	45mL/50mL	1.00
A1C1039-46	Water	EPA 6020B	03/18/21 14:20	04/05/21 13:47	45mL/50mL	45mL/50mL	1.00
A1C1039-48	Water	EPA 6020B	03/16/21 11:57	04/05/21 13:47	45mL/50mL	45mL/50mL	1.00
A1C1039-49	Water	EPA 6020B	03/16/21 11:57	04/05/21 13:47	45mL/50mL	45mL/50mL	1.00
A1C1039-50	Water	EPA 6020B	03/16/21 11:57	04/05/21 13:47	45mL/50mL	45mL/50mL	1.00
A1C1039-52	Water	EPA 6020B	03/16/21 11:57	04/05/21 13:47	45mL/50mL	45mL/50mL	1.00

Apex Laboratories

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Amy Patton For Kurt Johnson, Senior Chemist



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323

ORELAP ID: OR100062

Whitman Environmental Science

6812 16th Avenue NE
Seattle, WA 98115

Project: 12th & Yesler

Project Number: WES-1591

Project Manager: Dan Whitman

Report ID:

A1C1039 - 04 07 21 1040

QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

There are No Qualifiers on Sample or QC Data for this report

Apex Laboratories

A handwritten signature in black ink, appearing to read "Amy Patton", on a light gray rectangular background.

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ANALYTICAL REPORT

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Project Manager: **Dan Whitman**

Report ID:

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REPORTING NOTES AND CONVENTIONS:

Abbreviations:

DET Analyte DETECTED at or above the detection or reporting limit.
ND Analyte NOT DETECTED at or above the detection or reporting limit.
NR Result Not Reported.
RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

Detection Limits: Limit of Detection (LOD)

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).
If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

Basis: Results for soil samples are generally reported on a 100% dry weight basis.
The Result Basis is listed following the units as "dry", "wet", or " " (blank) designation.

"dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")
See Percent Solids section for details of dry weight analysis.

"wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.

" " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) are not included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

" --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

" *** " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to ½ the Reporting Limit (RL).
-For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.
-For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.
For further details, please request a copy of this document.

Apex Laboratories

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ANALYTICAL REPORT

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503-718-2323
ORELAP ID: OR100062

Whitman Environmental Science

6812 16th Avenue NE
Seattle, WA 98115

Project: **12th & Yesler**

Project Number: **WES-1591**

Project Manager: **Dan Whitman**

Report ID:

A1C1039 - 04 07 21 1040

REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks (Cont.):

Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

Apex Laboratories

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Amy Patton For Kurt Johnson, Senior Chemist



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
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503-718-2323
ORELAP ID: OR100062

Whitman Environmental Science
6812 16th Avenue NE
Seattle, WA 98115

Project: **12th & Yesler**
Project Number: **WES-1591**
Project Manager: **Dan Whitman**

Report ID:
A1C1039 - 04 07 21 1040

LABORATORY ACCREDITATION INFORMATION

ORELAP Certification ID: OR100062 (Primary Accreditation)

EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

Apex Laboratories

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation
<u>All reported analytes are included in Apex Laboratories' current ORELAP scope.</u>					

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation.
Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provided by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

Whitman Environmental Science

6812 16th Avenue NE

Seattle, WA 98115

Project: 12th & Yesler

Project Number: WES-1591

Project Manager: Dan Whitman

Report ID:

A1C1039 - 04 07 21 1040

Send Report To: Whitman Env Project Mgr: Dan Whitman Project Name: 12th & Yesler Project #PO#: WES 1591

Company: Whitman Env Address: 6812 16th Avenue NE Phone: 206 481 1039 Email: dan@whitmanenv.com

Send Invoice To: ☐ Same as above ☐ Other: WES 1591

Sampled by: WES 1591

LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	ANALYSIS REQUEST	NOTES
1 MW-16-6W-Dis-LE-0.15	3/18/18	05:12	S=Sol, W=Water, P=Product, A=Air, O=Other	1	ASTM D7096-10	
2 MW-16-6W-TR	3/18/18	05:12		1	ASTM D7096-10	
3 MW-16-6W-TSS/TDS	3/18/18	05:12		1	ASTM D7096-10	
4 MW-7-6W-Dis-BF-0.1	3/16/18	12:50		1	ASTM D7096-10	
5 MW-7-6W-Dis-BF-0.45	3/16/18	12:50		1	ASTM D7096-10	
6 MW-7-6W-TSS-TDS	3/16/18	12:50		1	ASTM D7096-10	
7 MW-7-6W-TSS-TDS	3/16/18	12:50		1	ASTM D7096-10	
8 MW-7-6W-TSS-TDS	3/16/18	12:50		1	ASTM D7096-10	
9 MW-7-6W-TSS-TDS	3/16/18	12:50		1	ASTM D7096-10	
10 MW-12-6W-Dis-BF-0.1	3/18/18	3:10		1	ASTM D7096-10	

Special Instructions:

Sample Storage Required:

Turnaround Time Requested (Circle):

1 DAY 2 DAY 5 DAY 10 DAY (Std) Other:

RECEIVED BY: [Signature] Date: 3/18/18 Time: 10:10

RELINQUISHED BY: [Signature] Date: 3/18/18 Time: 10:10

Signature: [Signature] Date: 3/18/18 Time: 10:10

Printed Name: [Name] Time: 10:10

Company: [Company]

Apex Laboratories

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Amy Patton For Kurt Johnson, Senior Chemist



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

Whitman Environmental Science

6812 16th Avenue NE

Seattle, WA 98115

Project: 12th & Yesler

Project Number: WES-1591

Project Manager: Dan Whitman

Report ID:

A1C1039 - 04 07 21 1040

FORENSICS CHAIN OF CUSTODY

6700 SW Sandburg St., Tigard, OR 97223 info@apex-labs.com Ph. 503-718-2323

Send Report To: Vel Whitman Project Mgr: Dan Whitman Project Name: 12th & Yesler Project #/PO#: WES 1591

Company: Whitman Environmental Science Address: 6812 16th Avenue NE, Seattle, WA 98115

Phone: 206-441-1591 Email: dan@whitmanenv.com

Send Invoice To: ☐ Same as above ☐ Other:

Sampled by:

LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	ASTM D7096-10	ASTM D2887-14	ASTM D6730-01 Cryogenic (DHA)	BTEXN by DHA	Forensic Parent & Alkylated PAHs (PAH Homologs) and isoprenoid Evaluation	Organic Lead and Manganese Speciation	Total Lead and Manganese	Filtered Total Lead and Manganese	Forensic VOCs for Gasoline Contaminated Sites	Forensic VOCs for Gasoline Contaminated Sites (Water Soluble Fraction)	Forensic SVOCs for Unidentified or Contaminants	Forensic SVOCs for Unidentified or Contaminants + TICs	9015M TPH-Gas (C8-C10)	9015M TPH-D / TPH-MO (C10-C39)	9015M TPH-D / TPH-MO (C10-C39) with Silex Gel Column	DNA/PL Fragment	NOTES
1. MW-12-640-DIS-0F-0.45	3/18/21	3:40	12	1																	
2. MW-12-640-DIS-0F-0.1																					
3. MW-12-640-DIS-0F-0.45																					
4. MW-12-640-TL																					
5. MW-12-640-TSS/IDS																					
6. MW-15-640-DIS-0F-0.2	3/18/21	1:45																			
7. MW-15-640-DIS-0F-0.45																					
8. MW-15-640-DIS-0F-0.1																					
9. MW-15-640-DIS-0F-0.45																					
10. MW-15-640-TL																					

Turnaround Time Requested (Circle): 1 DAY 2 DAY 5 DAY 10 DAY (Std) Other:

Sample Storage Required: ☐ Dispose after 30 days (No Charge) ☐ Long Term Evidence Storage (\$50 per quarter, up to 20 samples)

Special Instructions:

RELINQUISHED BY: Signature: [Signature] Date: 3/18/21 Time: 1:45 Printed Name: Dan Whitman Company: Apex

RECEIVED BY: Signature: [Signature] Date: 3/18/21 Time: 1:45 Printed Name: Dan Whitman Company: Apex

Apex Laboratories

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Amy Patton For Kurt Johnson, Senior Chemist



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Whitman Environmental Science
6812 16th Avenue NE
Seattle, WA 98115

Project: 12th & Yesler
Project Number: WES-1591
Project Manager: Dan Whitman

Report ID:
A1C1039 - 04 07 21 1040

FORENSICS CHAIN OF CUSTODY			
COC <u>5 of 10</u> Lab # <u>A1C1039</u> Project #PO# <u>WES-1591</u>		Project Name: <u>12th & Yesler</u> Project Manager: <u>Dan Whitman</u> Phone: _____ Email: _____	
Send Report To: <u>VEP Whitman Env</u> Company: _____ Address: _____ Send Invoice To: ☐ Same as above ☐ Other: _____ Sampled by: _____	LAB ID # DATE TIME MATRIX # OF CONTAINERS ASTM D7099-10 ASTM D2887-14 ASTM D6730-01 Cryogenic Detailed Hydrocarbon Analysis (DHA) BTEX by DHA Forensic Parent & Alkylated PAHs (PAH Homologs) and Isoprenoid Evaluation Organic Lead and Manganese Speciation Total Lead and Manganese Filtered Total Lead and Manganese Forensic VOCs for Gasoline Contaminated Sites (Water Soluble Fraction) Forensic VOCs for Unidentified or Specialty Contaminants Forensic SVOCs for Unidentified or Specialty Contaminants + TICs 8015M TPH-Gas (C6-C10) 8015M TPH-D / TPH-MO (C10-C36) 8015M TPH-D / TPH-MO (C10-C36) with Silica Gel Column DNAPL Fingerprint	NOTES	
1. <u>NU-15-GW-TSS/ADS</u>	<u>3/8/11 1:45</u>		
2. <u>610-B9-GW-BF-0.2</u>	<u>3/8/11 2:00</u>		
3. <u>610-B9-GW-DK-BF-0.45</u>			
4. <u>610-B9-GW-DK-LF-0.1</u>			
5. <u>610-B9-GW-DK-LF-0.45</u>			
6. <u>610-B9-GW-TL</u>			
7. <u>610-B9-GW-TSS/ADS</u>			
8. <u>610-B9-GW-BF-0.2</u>	<u>3/12/11 1:54</u>		
9. <u>610-B9-GW-BF-0.45</u>			
10. <u>610-B9-GW-DK-LF-0.1</u>			
Turnaround Time Requested (Circle): 1 DAY 2 DAY 5 DAY 10 DAY (Std) Other: _____		Sample Storage Required: ☐ Dispose after 30 days (No Charge) ☐ Long Term Evidence Storage (\$100 per quarter, up to 20 samples)	Special Instructions:
RELINQUISHED BY: Signature: _____ Date: _____ Printed Name: _____ Time: _____ Company: _____	RECEIVED BY: Signature: _____ Date: _____ Printed Name: _____ Time: _____ Company: _____	RELINQUISHED BY: Signature: _____ Date: _____ Printed Name: _____ Time: _____ Company: _____	RECEIVED BY: Signature: _____ Date: _____ Printed Name: _____ Time: _____ Company: _____

Apex Laboratories

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Amy Patton For Kurt Johnson, Senior Chemist



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

Whitman Environmental Science

6812 16th Avenue NE

Seattle, WA 98115

Project: 12th & Yesler

Project Number: WES-1591

Project Manager: Dan Whitman

Report ID:

A1C1039 - 04 07 21 1040

FORENSICS CHAIN OF CUSTODY

Send Report To: Dep/Whitman Project Mgr: Dan Whitman Project Name: 12th & Yesler Email:

Company: Whitman Environmental Science Project #/PO#: WES-1591

Address: Phone:

Send Invoice To: ☐ Same as above ☐ Other:

Sampled by:

LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	ASTM D7098-10	ASTM D2887-14	ASTM D6730-07 Cryogenic	Detailed Hydrocarbon Analysis (DHA)	ASTEXN by DHA	Forensic Parent & Alkylated PAHs (PAHs)	Homologs) and isoprenoid Evaluation	Organic Lead and Manganese Speciation	Total Lead and Manganese	Filtered Total Lead and Manganese	Forensic VOCs for Gasoline Contaminated Sites	Forensic VOCs for Gasoline Contaminated Sites (Water Soluble Fraction)	Forensic VOCs for Unidentified or Contaminants	Forensic SVOCs for Unidentified or Contaminants	Specialty Contaminants + TICs	8015M TPH-D / TPH-MO (C10-C30)	8015M TPH-D / TPH-MO (C10-C30) with Silica Gel Column	DNAPL Fingerprint	NOTES	
1	6/10/17	11:57	Soil	1																				
2	6/10/17	12:00	Soil	1																				
3	6/10/17	12:00	Soil	1																				
4	6/10/17	12:00	Soil	1																				
5	6/10/17	12:00	Soil	1																				
6																								
7																								
8																								
9																								
10																								

Turnaround Time Requested (Circle): 1 DAY 2 DAY 5 DAY 10 DAY (Std) Other:

Sample Storage Required: ☐ Dispose after 30 days (No Charge) ☐ Long Term Evidence Storage (\$500 per quarter, up to 20 samples)

Special Instructions:

RECEIVED BY: Signature: [Signature] Date: 6/10/17 Time: 11:57

RELINQUISHED BY: Signature: [Signature] Date: 6/10/17 Time: 12:00

Printed Name: [Name] Printed Name: [Name]

Company: [Company] Company: [Company]

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ANALYTICAL REPORT

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ORELAP ID: OR100062

Whitman Environmental Science

6812 16th Avenue NE

Seattle, WA 98115

Project: 12th & Yesler

Project Number: WES-1591

Project Manager: Dan Whitman

Report ID:

A1C1039 - 04 07 21 1040

APEX LABS COOLER RECEIPT FORM

Client: Whitman Env. S Element WO#: A1 C1039

Project/Project #: 12th + Yesler WES 1591

Delivery Info:

Date/time received: 3/24/21 @ 1101 By: JS

Delivered by: Apex Client ESS FedEx UPS Swift Senvoy SDS Other

Cooler Inspection Date/time inspected: 3/24/21 @ 1101 By: JS

Chain of Custody included? Yes X No Custody seals? Yes No X

Signed/dated by client? Yes X No

Signed/dated by Apex? Yes X No

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	11.2						

Received on ice? (Y/N) Y

Temp. blanks? (Y/N) Y

Ice type: (Gel/Real/Other) gel

Condition: out

Cooler out of temp? (Y/N) Possible reason why: two melted gel ice packs / metals testing

Green dots applied to out of temperature samples? Yes No

Out of temperature samples form initiated? Yes No

Sample Inspection: Date/time inspected: 3/24/21 @ 10:15 By: MS

All samples intact? Yes X No Comments:

Bottle labels/COCs agree? Yes X No Comments:

COC/container discrepancies form initiated? Yes No X

Containers/volumes received appropriate for analysis? Yes X No Comments:

Do VOA vials have visible headspace? Yes No NA X

Comments:

Water samples: pH checked: Yes X No NA pH appropriate? Yes X No NA

Comments:

Additional information: FRK # 7911 3598 3150

Labeled by: JS 3/24/21

Witness: JS 3/24/21

Cooler Inspected by: JS

Apex Laboratories

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Monday, April 12, 2021

Dan Whitman

Whitman Environmental Science

6812 16th Avenue NE

Seattle, WA 98115

RE: A1D0017 - 12th & Yesler - WES 1591

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A1D0017, which was received by the laboratory on 3/30/2021 at 10:20:00AM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: apatton@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of sample receipt, unless prior arrangements have been made.

Cooler Receipt Information

(See Cooler Receipt Form for details)

Cooler #1

9.6 degC

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.

All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.



Apex Laboratories

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Amy Patton For Kurt Johnson, Senior Chemist

**ANALYTICAL REPORT****Apex Laboratories, LLC**6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062**Whitman Environmental Science**6812 16th Avenue NE
Seattle, WA 98115Project: **12th & Yesler**Project Number: **WES 1591**Project Manager: **Dan Whitman****Report ID:****A1D0017 - 04 12 21 1006****ANALYTICAL REPORT FOR SAMPLES****SAMPLE INFORMATION**

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
12Y-MW-1D-GW TR	A1D0017-01	Water	03/23/21 15:16	03/30/21 10:20
12Y-MW-1D-GW DIS-BF-0.45	A1D0017-05	Water	03/23/21 15:16	03/30/21 10:20
12Y-MW-1D-GW DIS-BF-0.22	A1D0017-06	Water	03/23/21 15:16	03/30/21 10:20
12Y-MW-1S-GW TR	A1D0017-07	Water	03/23/21 15:55	03/30/21 10:20
12Y-MW-1S-GW DIS-LF-0.1	A1D0017-10	Water	03/23/21 15:55	03/30/21 10:20
12Y-MW-1S-GW DIS-BF-0.45	A1D0017-11	Water	03/23/21 15:55	03/30/21 10:20
12Y-MW-1S-GW DIS-BF-0.22	A1D0017-12	Water	03/23/21 15:55	03/30/21 10:20
12Y-MW-4-GW TR	A1D0017-13	Water	03/26/21 15:55	03/30/21 10:20
12Y-MW-4-GW DIS-BF-0.45	A1D0017-16	Water	03/26/21 15:55	03/30/21 10:20
12Y-MW-4-GW DIS-BF-0.22	A1D0017-17	Water	03/26/21 15:55	03/30/21 10:20
12Y-MW-8-GW TR	A1D0017-18	Water	03/26/21 12:40	03/30/21 10:20
12Y-MW-8-GW DIS-BF-0.45	A1D0017-20	Water	03/26/21 12:40	03/30/21 10:20
12Y-MW-8-GW DIS-BF-0.22	A1D0017-21	Water	03/26/21 12:40	03/30/21 10:20
12Y-MW-9-GW DIS-BF-0.45	A1D0017-23	Water	03/26/21 15:05	03/30/21 10:20
12Y-MW-9-GW DIS-BF-0.22	A1D0017-24	Water	03/26/21 15:05	03/30/21 10:20
12Y-MW-10-GW TR	A1D0017-25	Water	03/23/21 15:55	03/30/21 10:20
12Y-MW-10-GW DIS-LF-0.1	A1D0017-28	Water	03/23/21 15:55	03/30/21 10:20
12Y-MW-10-GW DIS-BF-0.45	A1D0017-29	Water	03/23/21 15:55	03/30/21 10:20
12Y-MW-10-GW DIS-BF-0.22	A1D0017-30	Water	03/23/21 15:55	03/30/21 10:20
12Y-MW-11-GW TR	A1D0017-31	Water	03/23/21 16:50	03/30/21 10:20
12Y-MW-11-GW DIS-LF-0.45	A1D0017-33	Water	03/23/21 16:50	03/30/21 10:20
12Y-MW-11-GW DIS-LF-0.1	A1D0017-34	Water	03/23/21 16:50	03/30/21 10:20
12Y-MW-11-GW DIS-BF-0.45	A1D0017-35	Water	03/23/21 16:50	03/30/21 10:20
12Y-MW-11-GW DIS-BF-0.22	A1D0017-36	Water	03/23/21 16:50	03/30/21 10:20
12Y-MW-13-GW TR	A1D0017-37	Water	03/26/21 17:20	03/30/21 10:20
12Y-MW-13-GW DIS-BF-0.45	A1D0017-40	Water	03/26/21 17:20	03/30/21 10:20
12Y-MW-13-GW DIS-BF-0.22	A1D0017-41	Water	03/26/21 17:20	03/30/21 10:20
12Y-MW-16-GW TR	A1D0017-42	Water	03/26/21 17:45	03/30/21 10:20
12Y-MW-16-GW DIS-LF-0.45	A1D0017-44	Water	03/26/21 17:45	03/30/21 10:20
12Y-MW-16-GW DIS-BF-0.45	A1D0017-45	Water	03/26/21 17:45	03/30/21 10:20
12Y-MW-16-GW DIS-BF-0.22	A1D0017-46	Water	03/26/21 17:45	03/30/21 10:20
12Y-GEO-B8-GW DIS-BF-0.45	A1D0017-48	Water	03/26/21 14:30	03/30/21 10:20

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Amy Patton For Kurt Johnson, Senior Chemist



ANALYTICAL REPORT

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6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323

ORELAP ID: OR100062

Whitman Environmental Science

6812 16th Avenue NE
Seattle, WA 98115

Project: 12th & Yesler

Project Number: WES 1591

Project Manager: Dan Whitman

Report ID:

A1D0017 - 04 12 21 1006

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
12Y-GEO-B8-GW DIS-BF-0.22	A1D0017-49	Water	03/26/21 14:30	03/30/21 10:20

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ANALYTICAL REPORT

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6812 16th Avenue NE
Seattle, WA 98115Project: 12th & Yesler
Project Number: WES 1591
Project Manager: Dan WhitmanReport ID:
A1D0017 - 04 12 21 1006

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
12Y-MW-1D-GW TR (A1D0017-01)				Matrix: Water				
Batch: 1040209								
Arsenic	9.41	---	1.00	ug/L	1	04/08/21 00:03	EPA 6020B	
12Y-MW-1D-GW DIS-BF-0.45 (A1D0017-05)				Matrix: Water				
Batch: 1040209								
Arsenic	9.56	---	1.00	ug/L	1	04/08/21 00:18	EPA 6020B	
12Y-MW-1D-GW DIS-BF-0.22 (A1D0017-06)				Matrix: Water				
Batch: 1040209								
Arsenic	9.60	---	1.00	ug/L	1	04/08/21 00:23	EPA 6020B	
12Y-MW-1S-GW TR (A1D0017-07)				Matrix: Water				
Batch: 1040209								
Arsenic	24.4	---	1.00	ug/L	1	04/08/21 00:28	EPA 6020B	
12Y-MW-1S-GW DIS-LF-0.1 (A1D0017-10)				Matrix: Water				
Batch: 1040209								
Arsenic	22.8	---	1.00	ug/L	1	04/08/21 00:43	EPA 6020B	
12Y-MW-1S-GW DIS-BF-0.45 (A1D0017-11)				Matrix: Water				
Batch: 1040209								
Arsenic	21.5	---	1.00	ug/L	1	04/08/21 00:48	EPA 6020B	
12Y-MW-1S-GW DIS-BF-0.22 (A1D0017-12)				Matrix: Water				
Batch: 1040209								
Arsenic	22.2	---	1.00	ug/L	1	04/08/21 00:53	EPA 6020B	
12Y-MW-4-GW TR (A1D0017-13)				Matrix: Water				
Batch: 1040209								
Arsenic	64.6	---	1.00	ug/L	1	04/08/21 00:58	EPA 6020B	
12Y-MW-4-GW DIS-BF-0.45 (A1D0017-16)				Matrix: Water				
Batch: 1040209								
Arsenic	64.1	---	1.00	ug/L	1	04/08/21 01:03	EPA 6020B	

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ORELAP ID: OR100062

Whitman Environmental Science6812 16th Avenue NE
Seattle, WA 98115Project: 12th & Yesler

Project Number: WES 1591

Project Manager: Dan Whitman

Report ID:

A1D0017 - 04 12 21 1006

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
12Y-MW-4-GW DIS-BF-0.22 (A1D0017-17RE1)				Matrix: Water				
Batch: 1040209								
Arsenic	60.1	---	5.00	ug/L	5	04/09/21 01:59	EPA 6020B	
12Y-MW-8-GW TR (A1D0017-18RE1)				Matrix: Water				
Batch: 1040209								
Arsenic	9.51	---	5.00	ug/L	5	04/09/21 02:04	EPA 6020B	
12Y-MW-8-GW DIS-BF-0.45 (A1D0017-20RE1)				Matrix: Water				
Batch: 1040209								
Arsenic	10.6	---	5.00	ug/L	5	04/09/21 02:09	EPA 6020B	
12Y-MW-8-GW DIS-BF-0.22 (A1D0017-21RE1)				Matrix: Water				
Batch: 1040209								
Arsenic	9.85	---	5.00	ug/L	5	04/09/21 02:14	EPA 6020B	
12Y-MW-9-GW DIS-BF-0.45 (A1D0017-23RE1)				Matrix: Water				
Batch: 1040209								
Arsenic	15.8	---	5.00	ug/L	5	04/09/21 02:20	EPA 6020B	
12Y-MW-9-GW DIS-BF-0.22 (A1D0017-24RE1)				Matrix: Water				
Batch: 1040209								
Arsenic	15.6	---	5.00	ug/L	5	04/09/21 02:35	EPA 6020B	
12Y-MW-10-GW TR (A1D0017-25RE1)				Matrix: Water				
Batch: 1040209								
Arsenic	8.69	---	5.00	ug/L	5	04/09/21 02:40	EPA 6020B	
12Y-MW-10-GW DIS-LF-0.1 (A1D0017-28RE1)				Matrix: Water				
Batch: 1040209								
Arsenic	7.30	---	5.00	ug/L	5	04/09/21 02:45	EPA 6020B	
12Y-MW-10-GW DIS-BF-0.45 (A1D0017-29RE1)				Matrix: Water				
Batch: 1040209								
Arsenic	7.00	---	5.00	ug/L	5	04/09/21 02:50	EPA 6020B	

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ANALYTICAL REPORT

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6812 16th Avenue NE
Seattle, WA 98115Project: 12th & Yesler
Project Number: WES 1591
Project Manager: Dan WhitmanReport ID:
A1D0017 - 04 12 21 1006

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
12Y-MW-10-GW DIS-BF-0.22 (A1D0017-30RE1)				Matrix: Water				
Batch: 1040209								
Arsenic	6.94	---	5.00	ug/L	5	04/09/21 02:55	EPA 6020B	
12Y-MW-11-GW TR (A1D0017-31RE1)				Matrix: Water				
Batch: 1040209								
Arsenic	966	---	10.0	ug/L	10	04/09/21 03:00	EPA 6020B	
12Y-MW-11-GW DIS-LF-0.45 (A1D0017-33)				Matrix: Water				
Batch: 1040247								
Arsenic	770	---	5.00	ug/L	5	04/08/21 20:21	EPA 6020B	
12Y-MW-11-GW DIS-LF-0.1 (A1D0017-34)				Matrix: Water				
Batch: 1040247								
Arsenic	758	---	5.00	ug/L	5	04/08/21 20:25	EPA 6020B	
12Y-MW-11-GW DIS-BF-0.45 (A1D0017-35)				Matrix: Water				
Batch: 1040247								
Arsenic	776	---	5.00	ug/L	5	04/08/21 20:29	EPA 6020B	
12Y-MW-11-GW DIS-BF-0.22 (A1D0017-36)				Matrix: Water				
Batch: 1040247								
Arsenic	735	---	5.00	ug/L	5	04/08/21 20:34	EPA 6020B	
12Y-MW-13-GW TR (A1D0017-37)				Matrix: Water				
Batch: 1040247								
Arsenic	ND	---	5.00	ug/L	5	04/08/21 20:39	EPA 6020B	R-04
12Y-MW-13-GW DIS-BF-0.45 (A1D0017-40)				Matrix: Water				
Batch: 1040247								
Arsenic	ND	---	5.00	ug/L	5	04/08/21 20:53	EPA 6020B	R-04
12Y-MW-13-GW DIS-BF-0.22 (A1D0017-41)				Matrix: Water				
Batch: 1040247								
Arsenic	ND	---	5.00	ug/L	5	04/08/21 20:57	EPA 6020B	R-04

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Seattle, WA 98115Project: **12th & Yesler**Project Number: **WES 1591**Project Manager: **Dan Whitman****Report ID:****A1D0017 - 04 12 21 1006**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
12Y-MW-16-GW TR (A1D0017-42)				Matrix: Water				
Batch: 1040247								
Arsenic	218	---	10.0	ug/L	10	04/08/21 21:02	EPA 6020B	
12Y-MW-16-GW DIS-LF-0.45 (A1D0017-44)				Matrix: Water				
Batch: 1040262								
Arsenic	29.2	---	5.00	ug/L	5	04/08/21 23:42	EPA 6020B	
12Y-MW-16-GW DIS-BF-0.45 (A1D0017-45)				Matrix: Water				
Batch: 1040262								
Arsenic	29.4	---	5.00	ug/L	5	04/08/21 23:47	EPA 6020B	
12Y-MW-16-GW DIS-BF-0.22 (A1D0017-46)				Matrix: Water				
Batch: 1040262								
Arsenic	28.6	---	5.00	ug/L	5	04/08/21 23:51	EPA 6020B	
12Y-GEO-B8-GW DIS-BF-0.45 (A1D0017-48)				Matrix: Water				
Batch: 1040262								
Arsenic	14.7	---	5.00	ug/L	5	04/08/21 23:55	EPA 6020B	
12Y-GEO-B8-GW DIS-BF-0.22 (A1D0017-49)				Matrix: Water				
Batch: 1040262								
Arsenic	13.4	---	5.00	ug/L	5	04/09/21 00:00	EPA 6020B	

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ORELAP ID: OR100062

Whitman Environmental Science6812 16th Avenue NE
Seattle, WA 98115Project: **12th & Yesler**Project Number: **WES 1591**Project Manager: **Dan Whitman****Report ID:****A1D0017 - 04 12 21 1006**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1040209 - EPA 3015A												
Water												
Blank (1040209-BLK1)												
Prepared: 04/07/21 10:59 Analyzed: 04/07/21 23:53												
EPA 6020B												
Arsenic	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
LCS (1040209-BS1)												
Prepared: 04/07/21 10:59 Analyzed: 04/07/21 23:58												
EPA 6020B												
Arsenic	50.9	---	1.00	ug/L	1	55.6	---	92	80 - 120%	---	---	
Duplicate (1040209-DUP1)												
Prepared: 04/07/21 10:59 Analyzed: 04/08/21 00:33												
QC Source Sample: 12Y-MW-1S-GW TR (A1D0017-07)												
EPA 6020B												
Arsenic	24.2	---	1.00	ug/L	1	---	24.4	---	---	0.8	20%	
Matrix Spike (1040209-MS1)												
Prepared: 04/07/21 10:59 Analyzed: 04/08/21 00:38												
QC Source Sample: 12Y-MW-1S-GW TR (A1D0017-07)												
EPA 6020B												
Arsenic	76.1	---	1.00	ug/L	1	55.6	24.4	93	75 - 125%	---	---	
Batch 1040247 - EPA 3015A												
Water												
Blank (1040247-BLK1)												
Prepared: 04/08/21 09:15 Analyzed: 04/08/21 17:37												
EPA 6020B												
Arsenic	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
LCS (1040247-BS1)												
Prepared: 04/08/21 09:15 Analyzed: 04/08/21 17:41												
EPA 6020B												
Arsenic	53.7	---	1.00	ug/L	1	55.6	---	97	80 - 120%	---	---	
Batch 1040262 - EPA 3015A												
Water												
Blank (1040262-BLK1)												
Prepared: 04/08/21 11:01 Analyzed: 04/08/21 22:49												
EPA 6020B												
Arsenic	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
LCS (1040262-BS1)												
Prepared: 04/08/21 11:01 Analyzed: 04/08/21 22:53												
EPA 6020B												

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Whitman Environmental Science

6812 16th Avenue NE
Seattle, WA 98115

Project: 12th & Yesler

Project Number: WES 1591

Project Manager: Dan Whitman

Report ID:

A1D0017 - 04 12 21 1006

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1040262 - EPA 3015A							Water					
LCS (1040262-BS1)		Prepared: 04/08/21 11:01			Analyzed: 04/08/21 22:53							
Arsenic	51.0	---	1.00	ug/L	1	55.6	---	92	80 - 120%	---	---	

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Whitman Environmental Science6812 16th Avenue NE
Seattle, WA 98115Project: **12th & Yesler**Project Number: **WES 1591**Project Manager: **Dan Whitman****Report ID:****A1D0017 - 04 12 21 1006****SAMPLE PREPARATION INFORMATION****Total Metals by EPA 6020B (ICPMS)****Prep: EPA 3015A**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 1040209							
A1D0017-01	Water	EPA 6020B	03/23/21 15:16	04/07/21 10:59	45mL/50mL	45mL/50mL	1.00
A1D0017-05	Water	EPA 6020B	03/23/21 15:16	04/07/21 10:59	45mL/50mL	45mL/50mL	1.00
A1D0017-06	Water	EPA 6020B	03/23/21 15:16	04/07/21 10:59	45mL/50mL	45mL/50mL	1.00
A1D0017-07	Water	EPA 6020B	03/23/21 15:55	04/07/21 10:59	45mL/50mL	45mL/50mL	1.00
A1D0017-10	Water	EPA 6020B	03/23/21 15:55	04/07/21 10:59	45mL/50mL	45mL/50mL	1.00
A1D0017-11	Water	EPA 6020B	03/23/21 15:55	04/07/21 10:59	45mL/50mL	45mL/50mL	1.00
A1D0017-12	Water	EPA 6020B	03/23/21 15:55	04/07/21 10:59	45mL/50mL	45mL/50mL	1.00
A1D0017-13	Water	EPA 6020B	03/26/21 15:55	04/07/21 10:59	45mL/50mL	45mL/50mL	1.00
A1D0017-16	Water	EPA 6020B	03/26/21 15:55	04/07/21 10:59	45mL/50mL	45mL/50mL	1.00
A1D0017-17RE1	Water	EPA 6020B	03/26/21 15:55	04/07/21 10:59	45mL/50mL	45mL/50mL	1.00
A1D0017-18RE1	Water	EPA 6020B	03/26/21 12:40	04/07/21 10:59	45mL/50mL	45mL/50mL	1.00
A1D0017-20RE1	Water	EPA 6020B	03/26/21 12:40	04/07/21 10:59	45mL/50mL	45mL/50mL	1.00
A1D0017-21RE1	Water	EPA 6020B	03/26/21 12:40	04/07/21 10:59	45mL/50mL	45mL/50mL	1.00
A1D0017-23RE1	Water	EPA 6020B	03/26/21 15:05	04/07/21 10:59	45mL/50mL	45mL/50mL	1.00
A1D0017-24RE1	Water	EPA 6020B	03/26/21 15:05	04/07/21 10:59	45mL/50mL	45mL/50mL	1.00
A1D0017-25RE1	Water	EPA 6020B	03/23/21 15:55	04/07/21 10:59	45mL/50mL	45mL/50mL	1.00
A1D0017-28RE1	Water	EPA 6020B	03/23/21 15:55	04/07/21 10:59	45mL/50mL	45mL/50mL	1.00
A1D0017-29RE1	Water	EPA 6020B	03/23/21 15:55	04/07/21 10:59	45mL/50mL	45mL/50mL	1.00
A1D0017-30RE1	Water	EPA 6020B	03/23/21 15:55	04/07/21 10:59	45mL/50mL	45mL/50mL	1.00
A1D0017-31RE1	Water	EPA 6020B	03/23/21 16:50	04/07/21 10:59	45mL/50mL	45mL/50mL	1.00
Batch: 1040247							
A1D0017-33	Water	EPA 6020B	03/23/21 16:50	04/08/21 09:16	45mL/50mL	45mL/50mL	1.00
A1D0017-34	Water	EPA 6020B	03/23/21 16:50	04/08/21 09:16	45mL/50mL	45mL/50mL	1.00
A1D0017-35	Water	EPA 6020B	03/23/21 16:50	04/08/21 09:16	45mL/50mL	45mL/50mL	1.00
A1D0017-36	Water	EPA 6020B	03/23/21 16:50	04/08/21 09:16	45mL/50mL	45mL/50mL	1.00
A1D0017-37	Water	EPA 6020B	03/26/21 17:20	04/08/21 09:16	45mL/50mL	45mL/50mL	1.00
A1D0017-40	Water	EPA 6020B	03/26/21 17:20	04/08/21 09:16	45mL/50mL	45mL/50mL	1.00
A1D0017-41	Water	EPA 6020B	03/26/21 17:20	04/08/21 09:16	45mL/50mL	45mL/50mL	1.00
A1D0017-42	Water	EPA 6020B	03/26/21 17:45	04/08/21 09:16	45mL/50mL	45mL/50mL	1.00
Batch: 1040262							
A1D0017-44	Water	EPA 6020B	03/26/21 17:45	04/08/21 11:01	45mL/50mL	45mL/50mL	1.00
A1D0017-45	Water	EPA 6020B	03/26/21 17:45	04/08/21 11:01	45mL/50mL	45mL/50mL	1.00
A1D0017-46	Water	EPA 6020B	03/26/21 17:45	04/08/21 11:01	45mL/50mL	45mL/50mL	1.00
A1D0017-48	Water	EPA 6020B	03/26/21 14:30	04/08/21 11:01	45mL/50mL	45mL/50mL	1.00
A1D0017-49	Water	EPA 6020B	03/26/21 14:30	04/08/21 11:01	45mL/50mL	45mL/50mL	1.00

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Project Manager: Dan Whitman

Report ID:

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QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

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R-04 Reporting levels elevated due to preparation and/or analytical dilution necessary for analysis.

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REPORTING NOTES AND CONVENTIONS:

Abbreviations:

DET Analyte DETECTED at or above the detection or reporting limit.
ND Analyte NOT DETECTED at or above the detection or reporting limit.
NR Result Not Reported.
RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

Detection Limits: Limit of Detection (LOD)

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).
If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

Basis: Results for soil samples are generally reported on a 100% dry weight basis.
The Result Basis is listed following the units as "dry", "wet", or " " (blank) designation.

"dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")
See Percent Solids section for details of dry weight analysis.

"wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.

" " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) are not included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

" --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

" *** " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to ½ the Reporting Limit (RL).
-For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.
-For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.
For further details, please request a copy of this document.

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Amy Patton For Kurt Johnson, Senior Chemist



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Whitman Environmental Science

6812 16th Avenue NE
Seattle, WA 98115

Project: **12th & Yesler**

Project Number: **WES 1591**

Project Manager: **Dan Whitman**

Report ID:

A1D0017 - 04 12 21 1006

REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks (Cont.):

Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

Apex Laboratories

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Amy Patton For Kurt Johnson, Senior Chemist



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Whitman Environmental Science
6812 16th Avenue NE
Seattle, WA 98115

Project: **12th & Yesler**
Project Number: **WES 1591**
Project Manager: **Dan Whitman**

Report ID:
A1D0017 - 04 12 21 1006

LABORATORY ACCREDITATION INFORMATION

ORELAP Certification ID: OR100062 (Primary Accreditation)

EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

Apex Laboratories

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation
<u>All reported analytes are included in Apex Laboratories' current ORELAP scope.</u>					

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation.
Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provided by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

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Amy Patton For Kurt Johnson, Senior Chemist



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Whitman Environmental Science

6812 16th Avenue NE
Seattle, WA 98115

Project: 12th & Yesler

Project Number: WES 1591

Project Manager: Dan Whitman

Report ID:

A1D0017 - 04 12 21 1006

FORENSICS CHAIN OF CUSTODY

Send Report To: **Whitman** Project Name: **12th & Yesler** Project #PO#: **6812-1591**
Company: **Whitman** Project Mgr: **Dan Whitman** Lab # **100017**
Address: **6700 SW Sandburg St, Tigard, OR 97223** info@apex-labs.com Ph: 503-718-2323
Email: **dan@whitman.com**

Send Invoice To: ☐ Same as above ☐ Other: **Whitman**
Sampled by: **Dan Whitman**

LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	ASTM D7096-10	ASTM D2887-14	ASTM D6730-01 Cryogenic (DHA)	Forensic Parent & Alkylated PAHs (PAH Homologs) and Isoprenoid Evaluation	Organic Lead and Manganese Speciation	Total Lead and Manganese	Filtered Total Lead and Manganese	Forensic VOCs for Gasoline Contaminated Sites	Forensic VOCs for Gasoline Contaminated Sites (Water Soluble Fraction)	Forensic VOCs for Unidentified or Specialty Contaminants	Forensic SVOCs for Unidentified or Specialty Contaminants + TICs	8015M TPH-D / TPH-MO (C10-C36)	8015M TPH-D / TPH-MO (C10-C36) with DNAPL Fingerprint	NOTES
12th & Yesler-9-610	3/21/20	11:00	Soil	1														
12th & Yesler-BF-0-22	3/21/20	11:00	Soil	1														
12th & Yesler-MD-10-00	3/23/20	11:00	Soil	1														
12th & Yesler-BF-0-22	3/23/20	11:00	Soil	1														
12th & Yesler-BF-0-22	3/23/20	11:00	Soil	1														
12th & Yesler-BF-0-22	3/23/20	11:00	Soil	1														
12th & Yesler-BF-0-22	3/23/20	11:00	Soil	1														
12th & Yesler-BF-0-22	3/23/20	11:00	Soil	1														
12th & Yesler-BF-0-22	3/23/20	11:00	Soil	1														
12th & Yesler-BF-0-22	3/23/20	11:00	Soil	1														
12th & Yesler-BF-0-22	3/23/20	11:00	Soil	1														

Turnaround Time Requested (Circle):
1 DAY 2 DAY 5 DAY 10 DAY (Std) Other: _____

Sample Storage Required:
☐ Dispose after 30 days (No Charge)
☐ Long Term Evidence Storage (\$50 per quarter, up to 20 samples)

Special Instructions:

RECEIVED BY: Signature: **[Signature]** Date: **3/23/20**
Printed Name: **[Name]** Time: **10:20**
Company: **Apex**

RELINQUISHED BY: Signature: **[Signature]** Date: **3/23/20**
Printed Name: **[Name]** Time: **10:20**
Company: **Apex**

Apex Laboratories

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Amy Patton For Kurt Johnson, Senior Chemist



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Whitman Environmental Science
6812 16th Avenue NE
Seattle, WA 98115

Project: 12th & Yesler
Project Number: WES 1591
Project Manager: Dan Whitman

Report ID:
A1D0017 - 04 12 21 1006

Send Report To: Company: <u>WES</u>		Send Invoice To: ☐ Same as above ☐ Other		Sampled by:	
Address: 6700 SW Sandburg St., Tigard, OR 97223 info@apex-labs.com Ph: 503-718-2323		Project Mgr: <u>Dan Whitman</u>		Project Name: <u>12th & Yesler</u>	
Phone:		Email:		Project #/PO# <u>WES-1591</u>	
FORENSICS CHAIN OF CUSTODY					
COC 5 of 7 Lab # <u>A1D0017</u>					
ANALYSIS REQUEST					
SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS
1 <u>RY-MIS-11-G62</u>		<u>3-23-10</u>	<u>12:00</u>	<u>1</u>	<u>1</u>
2 <u>TR</u>		<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>
3 <u>TS-1005</u>		<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>
4 <u>TS-LF-0.43</u>		<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>
5 <u>TS-LF-0.1</u>		<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>
6 <u>TS-LF-0.46</u>		<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>
7 <u>TS-LF-0.27</u>		<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>
8 <u>RY-MIS-13-G60</u>		<u>3-23-10</u>	<u>12:00</u>	<u>5</u>	<u>5</u>
9 <u>TR</u>		<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>
10 <u>TS-1005</u>		<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>
SPECIAL INSTRUCTIONS:					
Turnaround Time Requested (Circle): 1 DAY 2 DAY 5 DAY 10 DAY (Std) Other: _____					
Sample Storage Required: ☐ Dispose after 30 days (No Charge) ☐ Long Term Evidence Storage (\$50 per quarter, up to 20 samples)					
RECEIVED BY: Signature: <u>[Signature]</u> Date: <u>3/30/11</u>					
RELINQUISHED BY: Signature: <u>[Signature]</u> Date: <u>3/30/11</u>					
Printed Name: <u>[Name]</u> Time: <u>10:20</u>					
Company: <u>[Company]</u>					
NOTES					
DNAPL Fingerprint					
8015M TPH-D / TPH-MO (C10-C36) with					
8015M TPH-D / TPH-MO (C10-C36)					
8015M TPH-Gas (C8-C10)					
Forensic VOCs for Unidentified or Specialty Contaminants + TICs					
Forensic VOCs for Unidentified or Specialty Contaminants					
Forensic VOCs for Gasoline Contaminated Sites (Water Soluble Fraction)					
Forensic VOCs for Gasoline Contaminated Sites					
Filtered Total Lead and Manganese					
Total Lead and Manganese					
Organic Lead and Manganese Speciation					
Homologs and Isoprenoid Evaluation					
Forensic Parent & Alkylated PAHs (PAH)					
ASTM D6730-01 Cryogenic (DHA)					
ASTM D2887-14					
ASTM D7096-10					

Apex Laboratories

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

Whitman Environmental Science

6812 16th Avenue NE

Seattle, WA 98115

Project: 12th & Yesler

Project Number: WES 1591

Project Manager: Dan Whitman

Report ID:

A1D0017 - 04 12 21 1006

FORENSICS CHAIN OF CUSTODY

Send Report To: **7 of 7**
COC Lab # **A1D0017**

Send Invoice To: **WES**
Project #/PO# **1591**

Company: **WES**
Project Name: **12th & Yesler**

Address: **6700 SW Sandburg St., Tigard, OR 97223**
info@apex-labs.com Ph: 503-718-2323

Phone: **503-718-2323**

Send Invoice To: ☐ Same as above ☐ Other

Sampled by: **WES**

SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	ASTM D7096-10	ASTM D2887-14	ASTM D6730-01 Cryogenic Delisted Hydrocarbon Analysis (DHA)	BTEXN by DHA	Forensic Parent & Alkylated PAHs (PAH Homologs) and Isoprenoid Evaluation	Organic Lead and Manganese Speciation	Total Lead and Manganese	Filtered Total Lead and Manganese	Forensic VOCs for Gasoline Contaminated Sites	Forensic VOCs for Gasoline Contaminated Sites (Water Soluble Fraction)	Forensic VOCs for Unidentified or Specialty Contaminants	Forensic SVOCs for Unidentified or Specialty Contaminants + TICs	8015M TPH-Gas (C6-C10)	8015M TPH-D / TPH-MO (C10-C39)	8015M TPH-D / TPH-MO (C10-C39) with Silica Gel Column	DNAFL Fingerprint	NOTES	
12th-080-08-02	3/21/2012	3/21/2012	12:00	Soil, W=Water, P=Product, A=Air, O=Other	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
WES-LF-015	3/21/2012	3/21/2012	12:00	Soil, W=Water, P=Product, A=Air, O=Other	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
WES-BF-015	3/21/2012	3/21/2012	12:00	Soil, W=Water, P=Product, A=Air, O=Other	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
WES-BF-017	3/21/2012	3/21/2012	12:00	Soil, W=Water, P=Product, A=Air, O=Other	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Turnaround Time Requested (Circle):
1 DAY 2 DAY 5 DAY 10 DAY (Std) Other: _____

Sample Storage Required:
☐ Dispose after 30 days (No Charge)
☐ Long Term Evidence Storage (\$50 per quarter, up to 20 samples)

Special Instructions:

RECEIVED BY: Signature: **[Signature]** Date: **3/21/2012**
Printed Name: **WES** Time: **10:20**
Company: **WES**

RELINQUISHED BY: Signature: **[Signature]** Date: **3/21/2012**
Printed Name: **WES** Time: **10:20**
Company: **WES**

Apex Laboratories

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Amy Patton For Kurt Johnson, Senior Chemist



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

Whitman Environmental Science

6812 16th Avenue NE

Seattle, WA 98115

Project: 12th & Yesler

Project Number: WES 1591

Project Manager: Dan Whitman

Report ID:

A1D0017 - 04 12 21 1006

APEX LABS COOLER RECEIPT FORM

Client: Whitman Env. Sciences Element WO#: A1 D0017

Project/Project #: 12th & Yesler #WES 1591

Delivery Info:

Date/time received: 3/30/21 @ 1020 By: JS

Delivered by: Apex Client ESS FedEx X UPS Swift Senvoy SDS Other

Cooler Inspection Date/time inspected: 3/30/21 @ 1020 By: JS

Chain of Custody included? Yes X No Custody seals? Yes No X

Signed/dated by client? Yes X No

Signed/dated by Apex? Yes X No

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	9.6						

Received on ice? (Y/N) N

Temp. blanks? (Y/N) N

Ice type: (Gel/Real/Other) n/a

Condition: out

Cooler out of temp? (Y/N) Possible reason why: No metals / No ice needed acc 4/11/21

Green dots applied to out of temperature samples? Yes No acc 4/11/21

Out of temperature samples form initiated? Yes No

Sample Inspection: Date/time inspected: 4/11/21 @ 1247 By: MKK

All samples intact? Yes X No Comments:

Bottle labels/COCs agree? Yes No X Comments: acc 4/11/21
ID reads 12Y-MW-10-GW DIS-BF-0.22 12Y-MW-10-GW DIS-BF-0.22 12Y-MW-9-GW DIS-BF-0.45 + DIS-BF-0.22

COC/container discrepancies form initiated? Yes No X

Containers/volumes received appropriate for analysis? Yes X No Comments:

Do VOA vials have visible headspace? Yes No NA X

Comments:

Water samples: pH checked: Yes X No NA pH appropriate? Yes X No NA

Comments:

Additional information: [4911 3598 3182] T's read 120. 12Y-MW-10-GW
TR + TSS/TDS + DIS-LF-0.45 + LF DIS-LF-0.22 T's read 3.
acc 4/11/21 acc 4/11/21

Labeled by:

Witness:

Cooler Inspected by:

Apex Laboratories

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Amy Patton For Kurt Johnson, Senior Chemist

2nd Quarter 2021

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

May 13, 2021

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 May 5, 2021 from the 12th and Yesler WES-1591, F&BI 105071 project. There are 9 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
WES0513R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on May 5, 2020 by Friedman & Bruya, Inc. from the Whitman Environmental Sciences 12th and Yesler WES-1591, F&BI 105071 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID

105071 -01

Whitman Environmental Sciences

MW-4-GW

The 8260D calibration standard failed the acceptance criteria for several analytes in the method blank. The data were flagged accordingly.

All other quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-4-GW	Client:	Whitman Environmental Sciences
Date Received:	05/05/21	Project:	12th and Yesler WES-1591
Date Extracted:	05/06/21	Lab ID:	105071-01
Date Analyzed:	05/06/21	Data File:	105071-01.040
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	18.9

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved 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:	05/06/21	Lab ID:	I1-298 mb2
Date Analyzed:	05/06/21	Data File:	I1-298 mb2.048
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-4-GW	Client:	Whitman Environmental Sciences
Date Received:	05/05/21	Project:	12th and Yesler WES-1591
Date Extracted:	05/07/21	Lab ID:	105071-01
Date Analyzed:	05/12/21	Data File:	051217.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	86	113
Toluene-d8	100	88	114
4-Bromofluorobenzene	101	88	112

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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	<20	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:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th and Yesler WES-1591
Date Extracted:	05/07/21	Lab ID:	01-1062 mb
Date Analyzed:	05/07/21	Data File:	050708.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	86	113
Toluene-d8	102	88	114
4-Bromofluorobenzene	99	88	112

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	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 ca	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5 ca	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	<20	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 ca
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

Date of Report: 05/13/21

Date Received: 05/05/21

Project: 12th and Yesler WES-1591, F&BI 105071

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR DISSOLVED METALS USING EPA METHOD 6020B**

Laboratory Code: 105046-01 (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	102	103	75-125	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	96	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 05/13/21

Date Received: 05/05/21

Project: 12th and Yesler WES-1591, F&BI 105071

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

Laboratory Code: 105066-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	10	<1	102	10-172
Chloromethane	ug/L (ppb)	10	<10	91	25-166
Vinyl chloride	ug/L (ppb)	10	<0.2	93	36-166
Bromomethane	ug/L (ppb)	10	<5	116	47-169
Chloroethane	ug/L (ppb)	10	<1	102	46-160
Trichlorofluoromethane	ug/L (ppb)	10	<1	113	44-165
Acetone	ug/L (ppb)	50	<50	55	10-182
1,1-Dichloroethene	ug/L (ppb)	10	<1	94	58-142
Hexane	ug/L (ppb)	10	<5	106	38-152
Methylene chloride	ug/L (ppb)	10	<5	95	50-145
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	103	61-136
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	96	61-136
1,1-Dichloroethane	ug/L (ppb)	10	<1	99	63-135
2,2-Dichloropropane	ug/L (ppb)	10	<1	112	36-154
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	96	63-134
Chloroform	ug/L (ppb)	10	<1	98	61-135
2-Butanone (MEK)	ug/L (ppb)	50	<20	78	10-129
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<1	100	48-149
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	97	60-146
1,1-Dichloropropene	ug/L (ppb)	10	<1	97	69-133
Carbon tetrachloride	ug/L (ppb)	10	<1	102	56-152
Benzene	ug/L (ppb)	10	<0.35	99	57-135
Trichloroethene	ug/L (ppb)	10	<1	94	66-135
1,2-Dichloropropane	ug/L (ppb)	10	<1	94	59-136
Bromodichloromethane	ug/L (ppb)	10	<1	92	61-150
Dibromomethane	ug/L (ppb)	10	<1	99	66-141
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	102	10-185
cis-1,3-Dichloropropene	ug/L (ppb)	10	<1	96	52-147
Toluene	ug/L (ppb)	10	<1	93	50-137
trans-1,3-Dichloropropene	ug/L (ppb)	10	<1	92	53-142
1,1,2-Trichloroethane	ug/L (ppb)	10	<1	91	68-131
2-Hexanone	ug/L (ppb)	50	<10	89	10-185
1,3-Dichloropropane	ug/L (ppb)	10	<1	94	60-135
Tetrachloroethene	ug/L (ppb)	10	<1	101	10-226
Dibromochloromethane	ug/L (ppb)	10	<1	88	52-145
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<1	96	62-135
Chlorobenzene	ug/L (ppb)	10	<1	96	63-130
Ethylbenzene	ug/L (ppb)	10	<1	94	60-133
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	95	56-143
m,p-Xylene	ug/L (ppb)	20	<2	97	69-135
o-Xylene	ug/L (ppb)	10	<1	96	60-140
Styrene	ug/L (ppb)	10	<1	91	60-133
Isopropylbenzene	ug/L (ppb)	10	<1	94	65-142
Bromoform	ug/L (ppb)	10	<5	93	54-148
n-Propylbenzene	ug/L (ppb)	10	<1	95	58-144
Bromobenzene	ug/L (ppb)	10	<1	96	61-130
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	94	59-134
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<1	92	51-154
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	95	53-150
2-Chlorotoluene	ug/L (ppb)	10	<1	93	66-127
4-Chlorotoluene	ug/L (ppb)	10	<1	93	65-130
tert-Butylbenzene	ug/L (ppb)	10	<1	95	65-137
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	92	59-146
sec-Butylbenzene	ug/L (ppb)	10	<1	94	64-140
p-Isopropyltoluene	ug/L (ppb)	10	<1	95	65-141
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	97	60-131
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	95	60-129
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	98	60-130
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	92	32-164
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	101	52-138
Hexachlorobutadiene	ug/L (ppb)	10	<1	102	60-143
Naphthalene	ug/L (ppb)	10	<1	97	44-164
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	104	69-148

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 05/13/21

Date Received: 05/05/21

Project: 12th and Yesler WES-1591, F&BI 105071

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)	10	107	104	25-158	3
Chloromethane	ug/L (ppb)	10	96	92	45-156	4
Vinyl chloride	ug/L (ppb)	10	98	97	50-154	1
Bromomethane	ug/L (ppb)	10	114	117	55-143	3
Chloroethane	ug/L (ppb)	10	108	106	58-146	2
Trichlorofluoromethane	ug/L (ppb)	10	112	108	50-150	4
Acetone	ug/L (ppb)	50	55	55	22-155	0
1,1-Dichloroethene	ug/L (ppb)	10	97	94	67-136	3
Hexane	ug/L (ppb)	10	96	90	57-137	6
Methylene chloride	ug/L (ppb)	10	102	96	19-178	6
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	103	100	64-147	3
trans-1,2-Dichloroethene	ug/L (ppb)	10	98	98	68-128	0
1,1-Dichloroethane	ug/L (ppb)	10	100	97	74-135	3
2,2-Dichloropropane	ug/L (ppb)	10	113	109	55-143	4
cis-1,2-Dichloroethene	ug/L (ppb)	10	100	98	74-136	2
Chloroform	ug/L (ppb)	10	100	97	74-134	3
2-Butanone (MEK)	ug/L (ppb)	50	77	75	37-150	3
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	104	99	66-129	5
1,1,1-Trichloroethane	ug/L (ppb)	10	97	95	74-142	2
1,1-Dichloropropene	ug/L (ppb)	10	101	96	77-129	5
Carbon tetrachloride	ug/L (ppb)	10	104	102	75-158	2
Benzene	ug/L (ppb)	10	100	97	69-134	3
Trichloroethene	ug/L (ppb)	10	97	92	67-133	5
1,2-Dichloropropane	ug/L (ppb)	10	95	94	71-134	1
Bromodichloromethane	ug/L (ppb)	10	95	92	66-126	3
Dibromomethane	ug/L (ppb)	10	100	96	68-132	4
4-Methyl-2-pentanone	ug/L (ppb)	50	100	97	65-138	3
cis-1,3-Dichloropropene	ug/L (ppb)	10	100	95	74-140	5
Toluene	ug/L (ppb)	10	95	97	72-122	2
trans-1,3-Dichloropropene	ug/L (ppb)	10	96	95	80-136	1
1,1,2-Trichloroethane	ug/L (ppb)	10	93	92	75-124	1
2-Hexanone	ug/L (ppb)	50	90	90	60-136	0
1,3-Dichloropropene	ug/L (ppb)	10	95	96	76-126	1
Tetrachloroethene	ug/L (ppb)	10	100	100	76-121	0
Dibromochloromethane	ug/L (ppb)	10	91	91	84-133	0
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	94	97	82-115	3
Chlorobenzene	ug/L (ppb)	10	99	100	83-114	1
Ethylbenzene	ug/L (ppb)	10	96	97	77-124	1
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	95	98	84-127	3
m,p-Xylene	ug/L (ppb)	20	96	98	81-112	2
o-Xylene	ug/L (ppb)	10	96	97	81-121	1
Styrene	ug/L (ppb)	10	96	98	84-119	2
Isopropylbenzene	ug/L (ppb)	10	96	95	80-117	1
Bromoform	ug/L (ppb)	10	95	94	69-121	1
n-Propylbenzene	ug/L (ppb)	10	95	95	74-126	0
Bromobenzene	ug/L (ppb)	10	98	98	80-121	0
1,3,5-Trimethylbenzene	ug/L (ppb)	10	97	94	78-123	3
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	95	94	66-126	1
1,2,3-Trichloropropane	ug/L (ppb)	10	95	94	67-124	1
2-Chlorotoluene	ug/L (ppb)	10	95	93	77-127	2
4-Chlorotoluene	ug/L (ppb)	10	95	94	78-128	1
tert-Butylbenzene	ug/L (ppb)	10	95	96	80-123	1
1,2,4-Trimethylbenzene	ug/L (ppb)	10	93	93	79-122	0
sec-Butylbenzene	ug/L (ppb)	10	95	94	80-116	1
p-Isopropyltoluene	ug/L (ppb)	10	96	95	81-123	1
1,3-Dichlorobenzene	ug/L (ppb)	10	98	97	83-113	1
1,4-Dichlorobenzene	ug/L (ppb)	10	98	97	81-112	1
1,2-Dichlorobenzene	ug/L (ppb)	10	98	99	84-112	1
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	90	90	57-141	0
1,2,4-Trichlorobenzene	ug/L (ppb)	10	104	100	72-130	4
Hexachlorobutadiene	ug/L (ppb)	10	104	101	53-141	3
Naphthalene	ug/L (ppb)	10	101	98	64-133	3
1,2,3-Trichlorobenzene	ug/L (ppb)	10	107	103	65-136	4

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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.

AT-7

TURNAROUND TIME vw/

☒ Standard turnaround

☐ RUSH

Rush charges authorized by: _____

SAMPLE DISPOSAL

☐ Archive samples

☐ Other _____

Default: Dispose after 30 days

[illegible]

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
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

May 21, 2021

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 May 13, 2021 from the 12th and Yesler WES 1591, F&BI 105243 project. The lab filtered qualifier has been removed since the samples were field filtered. The sample IDs have also been corrected.

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
WES0521R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
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fbi@isomedia.com
www.friedmanandbruya.com

May 21, 2021

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 May 13, 2021 from the 12th and Yesler WES 1591, F&BI 105243 project. There are 13 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
WES0521R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on May 13, 2021 by Friedman & Bruya, Inc. from the Whitman Environmental Sciences 12th and Yesler WES 1591, F&BI 105243 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Whitman Environmental Sciences</u>
105243 -01	MW-1D-GW
105243 -02	MW-1F-GW Sample I.D MW-1S-GW
105243 -03	MW-10-GW

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-1D-GW	Client:	Whitman Environmental Sciences
Date Received:	05/13/21	Project:	12th and Yesler WES 1591
Date Extracted:	05/19/21	Lab ID:	105243-01
Date Analyzed:	05/19/21	Data File:	105243-01.126
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	9.34

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-1F-GW	Sample I.D	Client:	Whitman Environmental Sciences
Date Received:	05/13/21	MW-1S-GW	Project:	12th and Yesler WES 1591
Date Extracted:	05/19/21		Lab ID:	105243-02
Date Analyzed:	05/19/21		Data File:	105243-02.129
Matrix:	Water		Instrument:	ICPMS2
Units:	ug/L (ppb)		Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	14.4

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-10-GW	Client:	Whitman Environmental Sciences
Date Received:	05/13/21	Project:	12th and Yesler WES 1591
Date Extracted:	05/19/21	Lab ID:	105243-03
Date Analyzed:	05/19/21	Data File:	105243-03.130
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	6.58

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved 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:	05/19/21	Lab ID:	I1-322 mb
Date Analyzed:	05/19/21	Data File:	I1-322 mb.114
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	<1

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:	05/13/21	Project:	12th and Yesler WES 1591
Date Extracted:	05/14/21	Lab ID:	105243-01
Date Analyzed:	05/14/21	Data File:	051419.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	86	113
Toluene-d8	102	88	114
4-Bromofluorobenzene	99	88	112

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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	<20	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-1F-GW Sample I.D	Client:	Whitman Environmental Sciences
Date Received:	05/13/21 MW-1S-GW	Project:	12th and Yesler WES 1591
Date Extracted:	05/14/21	Lab ID:	105243-02
Date Analyzed:	05/14/21	Data File:	051420.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	86	113
Toluene-d8	104	88	114
4-Bromofluorobenzene	102	88	112

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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	<20	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-10-GW	Client:	Whitman Environmental Sciences
Date Received:	05/13/21	Project:	12th and Yesler WES 1591
Date Extracted:	05/14/21	Lab ID:	105243-03
Date Analyzed:	05/14/21	Data File:	051421.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	86	113
Toluene-d8	102	88	114
4-Bromofluorobenzene	102	88	112

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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	1.0	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<20	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:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th and Yesler WES 1591
Date Extracted:	05/14/21	Lab ID:	01-1082 mb
Date Analyzed:	05/14/21	Data File:	051408.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	86	113
Toluene-d8	101	88	114
4-Bromofluorobenzene	102	88	112

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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	<20	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

Date of Report: 05/21/21

Date Received: 05/13/21

Project: 12th and Yesler WES 1591, F&BI 105243

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR DISSOLVED METALS USING EPA METHOD 6020B**

Laboratory Code: 105243-01 (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	9.34	98	88	75-125	11

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	86	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 05/21/21

Date Received: 05/13/21

Project: 12th and Yesler WES 1591, F&BI 105243

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

Laboratory Code: 105243-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent	Acceptance Criteria
				Recovery MS	
Dichlorodifluoromethane	ug/L (ppb)	10	<1	105	10-172
Chloromethane	ug/L (ppb)	10	<10	107	25-166
Vinyl chloride	ug/L (ppb)	10	<0.2	102	36-166
Bromomethane	ug/L (ppb)	10	<5	93	47-169
Chloroethane	ug/L (ppb)	10	<1	96	46-160
Trichlorofluoromethane	ug/L (ppb)	10	<1	110	44-165
Acetone	ug/L (ppb)	50	<50	57	10-182
1,1-Dichloroethene	ug/L (ppb)	10	<1	101	58-142
Hexane	ug/L (ppb)	10	<5	108	38-152
Methylene chloride	ug/L (ppb)	10	<5	100	50-145
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	100	61-136
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	100	61-136
1,1-Dichloroethane	ug/L (ppb)	10	<1	98	63-135
2,2-Dichloropropane	ug/L (ppb)	10	<1	122	36-154
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	98	63-134
Chloroform	ug/L (ppb)	10	<1	101	61-135
2-Butanone (MEK)	ug/L (ppb)	50	<20	85	10-129
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<1	101	48-149
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	104	60-146
1,1-Dichloropropene	ug/L (ppb)	10	<1	105	69-133
Carbon tetrachloride	ug/L (ppb)	10	<1	104	56-152
Benzene	ug/L (ppb)	10	<0.35	100	57-135
Trichloroethene	ug/L (ppb)	10	<1	103	66-135
1,2-Dichloropropane	ug/L (ppb)	10	<1	103	59-136
Bromodichloromethane	ug/L (ppb)	10	<1	101	61-150
Dibromomethane	ug/L (ppb)	10	<1	103	66-141
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	102	10-185
cis-1,3-Dichloropropene	ug/L (ppb)	10	<1	103	52-147
Toluene	ug/L (ppb)	10	<1	97	50-137
trans-1,3-Dichloropropene	ug/L (ppb)	10	<1	97	53-142
1,1,2-Trichloroethane	ug/L (ppb)	10	<1	94	68-131
2-Hexanone	ug/L (ppb)	50	<10	94	10-185
1,3-Dichloropropane	ug/L (ppb)	10	<1	96	60-135
Tetrachloroethene	ug/L (ppb)	10	<1	101	10-226
Dibromochloromethane	ug/L (ppb)	10	<1	96	52-145
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<1	97	62-135
Chlorobenzene	ug/L (ppb)	10	<1	99	63-130
Ethylbenzene	ug/L (ppb)	10	<1	97	60-133
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	101	56-143
m,p-Xylene	ug/L (ppb)	20	<2	99	69-135
o-Xylene	ug/L (ppb)	10	<1	98	60-140
Styrene	ug/L (ppb)	10	<1	96	60-133
Isopropylbenzene	ug/L (ppb)	10	<1	98	65-142
Bromoform	ug/L (ppb)	10	<5	93	54-148
n-Propylbenzene	ug/L (ppb)	10	<1	99	58-144
Bromobenzene	ug/L (ppb)	10	<1	99	61-130
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	99	59-134
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<1	100	51-154
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	98	53-150
2-Chlorotoluene	ug/L (ppb)	10	<1	99	66-127
4-Chlorotoluene	ug/L (ppb)	10	<1	99	65-130
tert-Butylbenzene	ug/L (ppb)	10	<1	100	65-137
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	99	59-146
sec-Butylbenzene	ug/L (ppb)	10	<1	102	64-140
p-Isopropyltoluene	ug/L (ppb)	10	<1	101	65-141
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	99	60-131
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	99	60-129
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	98	60-130
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	95	32-164
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	102	52-138
Hexachlorobutadiene	ug/L (ppb)	10	<1	103	60-143
Naphthalene	ug/L (ppb)	10	<1	101	44-164
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	102	69-148

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 05/21/21

Date Received: 05/13/21

Project: 12th and Yesler WES 1591, F&BI 105243

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)	10	112	108	25-158	4
Chloromethane	ug/L (ppb)	10	103	100	45-156	3
Vinyl chloride	ug/L (ppb)	10	109	106	50-154	3
Bromomethane	ug/L (ppb)	10	132	122	55-143	8
Chloroethane	ug/L (ppb)	10	101	97	58-146	4
Trichlorofluoromethane	ug/L (ppb)	10	115	111	50-150	4
Acetone	ug/L (ppb)	50	59	58	22-155	2
1,1-Dichloroethene	ug/L (ppb)	10	108	100	67-136	8
Hexane	ug/L (ppb)	10	92	88	57-137	4
Methylene chloride	ug/L (ppb)	10	113	106	19-178	6
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	109	103	64-147	6
trans-1,2-Dichloroethene	ug/L (ppb)	10	108	102	68-128	6
1,1-Dichloroethane	ug/L (ppb)	10	106	101	74-135	5
2,2-Dichloropropane	ug/L (ppb)	10	135	129	55-143	5
cis-1,2-Dichloroethene	ug/L (ppb)	10	108	104	74-136	4
Chloroform	ug/L (ppb)	10	107	104	74-134	3
2-Butanone (MEK)	ug/L (ppb)	50	87	85	37-150	2
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	107	105	66-129	2
1,1,1-Trichloroethane	ug/L (ppb)	10	114	106	74-142	7
1,1-Dichloropropene	ug/L (ppb)	10	110	105	77-129	5
Carbon tetrachloride	ug/L (ppb)	10	107	104	75-158	3
Benzene	ug/L (ppb)	10	106	102	69-134	4
Trichloroethene	ug/L (ppb)	10	107	106	67-133	1
1,2-Dichloropropane	ug/L (ppb)	10	107	104	71-134	3
Bromodichloromethane	ug/L (ppb)	10	110	103	66-126	7
Dibromomethane	ug/L (ppb)	10	109	108	68-132	1
4-Methyl-2-pentanone	ug/L (ppb)	50	104	102	65-138	2
cis-1,3-Dichloropropene	ug/L (ppb)	10	109	104	74-140	5
Toluene	ug/L (ppb)	10	104	99	72-122	5
trans-1,3-Dichloropropene	ug/L (ppb)	10	107	98	80-136	9
1,1,2-Trichloroethane	ug/L (ppb)	10	103	100	75-124	3
2-Hexanone	ug/L (ppb)	50	99	98	60-136	1
1,3-Dichloropropene	ug/L (ppb)	10	104	98	76-126	6
Tetrachloroethene	ug/L (ppb)	10	101	99	76-121	2
Dibromochloromethane	ug/L (ppb)	10	106	97	84-133	9
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	103	99	82-115	4
Chlorobenzene	ug/L (ppb)	10	105	102	83-114	3
Ethylbenzene	ug/L (ppb)	10	105	100	77-124	5
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	108	104	84-127	4
m,p-Xylene	ug/L (ppb)	20	105	100	81-112	5
o-Xylene	ug/L (ppb)	10	107	100	81-121	7
Styrene	ug/L (ppb)	10	105	100	84-119	5
Isopropylbenzene	ug/L (ppb)	10	105	100	80-117	5
Bromoform	ug/L (ppb)	10	105	99	69-121	6
n-Propylbenzene	ug/L (ppb)	10	101	96	74-126	5
Bromobenzene	ug/L (ppb)	10	103	97	80-121	6
1,3,5-Trimethylbenzene	ug/L (ppb)	10	102	96	78-123	6
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	104	97	66-126	7
1,2,3-Trichloropropane	ug/L (ppb)	10	102	98	67-124	4
2-Chlorotoluene	ug/L (ppb)	10	103	96	77-127	7
4-Chlorotoluene	ug/L (ppb)	10	101	95	78-128	6
tert-Butylbenzene	ug/L (ppb)	10	103	99	80-123	4
1,2,4-Trimethylbenzene	ug/L (ppb)	10	103	97	79-122	6
sec-Butylbenzene	ug/L (ppb)	10	103	97	80-116	6
p-Isopropyltoluene	ug/L (ppb)	10	103	99	81-123	4
1,3-Dichlorobenzene	ug/L (ppb)	10	104	98	83-113	6
1,4-Dichlorobenzene	ug/L (ppb)	10	104	97	81-112	7
1,2-Dichlorobenzene	ug/L (ppb)	10	104	98	84-112	6
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	113	103	57-141	9
1,2,4-Trichlorobenzene	ug/L (ppb)	10	111	102	72-130	8
Hexachlorobutadiene	ug/L (ppb)	10	112	104	53-141	7
Naphthalene	ug/L (ppb)	10	114	107	64-133	6
1,2,3-Trichlorobenzene	ug/L (ppb)	10	117	110	65-136	6

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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.

AT 5

SAMPLE DISPOSAL
☐ Archive samples
☐ Other _____
 Default: Dispose after 30 days

$\frac{1}{2}$ 2

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: 			5/16/81	3:28
Received by: 	VIN#	FA	5/13/81	15:37
Relinquished by:				
Received by:				

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
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June 7, 2021

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 May 20, 2021 from the 12th and Yesler WES 1591, F&BI 105389 project. There are 9 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
WES0607R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on May 20, 2021 by Friedman & Bruya, Inc. from the Whitman Environmental Sciences 12th and Yesler WES 1591, F&BI 105389 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID
105389 -01

Whitman Environmental Sciences
MW-11-GW

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-11-GW	Client:	Whitman Environmental Sciences
Date Received:	05/20/21	Project:	12th and Yesler WES 1591
Date Extracted:	05/24/21	Lab ID:	105389-01
Date Analyzed:	05/24/21	Data File:	105389-01.059
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	267

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved 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:	05/24/21	Lab ID:	I1-329 mb
Date Analyzed:	05/24/21	Data File:	I1-329 mb.048
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-11-GW	Client:	Whitman Environmental Sciences
Date Received:	05/20/21	Project:	12th and Yesler WES 1591
Date Extracted:	05/24/21	Lab ID:	105389-01
Date Analyzed:	05/24/21	Data File:	052409.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	78	126
Toluene-d8	104	87	115
4-Bromofluorobenzene	105	92	112

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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	38	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:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th and Yesler WES 1591
Date Extracted:	05/24/21	Lab ID:	01-1151 mb
Date Analyzed:	05/24/21	Data File:	052408.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	94	86	113
Toluene-d8	96	88	114
4-Bromofluorobenzene	100	88	112

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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	<20	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

Date of Report: 06/07/21

Date Received: 05/20/21

Project: 12th and Yesler WES 1591, F&BI 105389

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR DISSOLVED METALS USING EPA METHOD 6020B**

Laboratory Code: 105391-01 (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	104	105	75-125	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	95	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/07/21

Date Received: 05/20/21

Project: 12th and Yesler WES 1591, F&BI 105389

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

Laboratory Code: 105376-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	10	<1	94	10-172
Chloromethane	ug/L (ppb)	10	<10	87	25-166
Vinyl chloride	ug/L (ppb)	10	<0.2	84	36-166
Bromomethane	ug/L (ppb)	10	<5	100	47-169
Chloroethane	ug/L (ppb)	10	<1	90	46-160
Trichlorofluoromethane	ug/L (ppb)	10	<1	99	44-165
Acetone	ug/L (ppb)	50	<50	52	10-182
1,1-Dichloroethene	ug/L (ppb)	10	<1	61	58-142
Hexane	ug/L (ppb)	10	<5	87	38-152
Methylene chloride	ug/L (ppb)	10	<5	94	50-145
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	91	61-136
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	91	61-136
1,1-Dichloroethane	ug/L (ppb)	10	<1	90	63-135
2,2-Dichloropropane	ug/L (ppb)	10	<1	94	36-154
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	94	63-134
Chloroform	ug/L (ppb)	10	<1	94	61-135
2-Butanone (MEK)	ug/L (ppb)	50	<20	76	10-129
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<1	94	48-149
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	96	60-146
1,1-Dichloropropene	ug/L (ppb)	10	<1	96	69-133
Carbon tetrachloride	ug/L (ppb)	10	<1	92	56-152
Benzene	ug/L (ppb)	10	<0.35	92	57-135
Trichloroethene	ug/L (ppb)	10	<1	94	66-135
1,2-Dichloropropane	ug/L (ppb)	10	<1	93	59-136
Bromodichloromethane	ug/L (ppb)	10	<1	92	61-150
Dibromomethane	ug/L (ppb)	10	<1	95	66-141
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	95	10-185
cis-1,3-Dichloropropene	ug/L (ppb)	10	<1	80	52-147
Toluene	ug/L (ppb)	10	<1	103	50-137
trans-1,3-Dichloropropene	ug/L (ppb)	10	<1	86	53-142
1,1,2-Trichloroethane	ug/L (ppb)	10	<1	99	68-131
2-Hexanone	ug/L (ppb)	50	<10	105	10-185
1,3-Dichloropropane	ug/L (ppb)	10	<1	103	60-135
Tetrachloroethene	ug/L (ppb)	10	<1	106	10-226
Dibromochloromethane	ug/L (ppb)	10	<1	99	52-145
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<1	103	62-135
Chlorobenzene	ug/L (ppb)	10	<1	105	63-130
Ethylbenzene	ug/L (ppb)	10	<1	101	60-133
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	104	56-143
m,p-Xylene	ug/L (ppb)	20	<2	102	69-135
o-Xylene	ug/L (ppb)	10	<1	103	60-140
Styrene	ug/L (ppb)	10	<1	102	60-133
Isopropylbenzene	ug/L (ppb)	10	<1	101	65-142
Bromoform	ug/L (ppb)	10	<5	91	54-148
n-Propylbenzene	ug/L (ppb)	10	<1	104	58-144
Bromobenzene	ug/L (ppb)	10	<1	108	61-130
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	104	59-134
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<1	109	51-154
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	108	53-150
2-Chlorotoluene	ug/L (ppb)	10	<1	105	66-127
4-Chlorotoluene	ug/L (ppb)	10	<1	104	65-130
tert-Butylbenzene	ug/L (ppb)	10	<1	105	65-137
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	102	59-146
sec-Butylbenzene	ug/L (ppb)	10	<1	104	64-140
p-Isopropyltoluene	ug/L (ppb)	10	<1	105	65-141
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	106	60-131
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	106	60-129
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	105	60-130
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	106	32-164
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	107	52-138
Hexachlorobutadiene	ug/L (ppb)	10	<1	105	60-143
Naphthalene	ug/L (ppb)	10	<1	110	44-164
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	112	69-148

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/07/21

Date Received: 05/20/21

Project: 12th and Yesler WES 1591, F&BI 105389

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)	10	89	84	25-158	6
Chloromethane	ug/L (ppb)	10	82	82	45-156	0
Vinyl chloride	ug/L (ppb)	10	83	81	50-154	2
Bromomethane	ug/L (ppb)	10	99	95	55-143	4
Chloroethane	ug/L (ppb)	10	85	82	58-146	4
Trichlorofluoromethane	ug/L (ppb)	10	100	101	50-150	1
Acetone	ug/L (ppb)	50	53	55	22-155	4
1,1-Dichloroethene	ug/L (ppb)	10	91	91	67-136	0
Hexane	ug/L (ppb)	10	84	76	57-137	10
Methylene chloride	ug/L (ppb)	10	92	91	19-178	1
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	91	91	64-147	0
trans-1,2-Dichloroethene	ug/L (ppb)	10	90	93	68-128	3
1,1-Dichloroethane	ug/L (ppb)	10	91	91	74-135	0
2,2-Dichloropropane	ug/L (ppb)	10	112	113	55-143	1
cis-1,2-Dichloroethene	ug/L (ppb)	10	93	93	74-136	0
Chloroform	ug/L (ppb)	10	95	93	74-134	2
2-Butanone (MEK)	ug/L (ppb)	50	80	79	37-150	1
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	94	96	66-129	2
1,1,1-Trichloroethane	ug/L (ppb)	10	94	96	74-142	2
1,1-Dichloropropene	ug/L (ppb)	10	94	95	77-129	1
Carbon tetrachloride	ug/L (ppb)	10	90	89	75-158	1
Benzene	ug/L (ppb)	10	92	93	69-134	1
Trichloroethene	ug/L (ppb)	10	93	94	67-133	1
1,2-Dichloropropane	ug/L (ppb)	10	94	94	71-134	0
Bromodichloromethane	ug/L (ppb)	10	93	96	66-126	3
Dibromomethane	ug/L (ppb)	10	95	96	68-132	1
4-Methyl-2-pentanone	ug/L (ppb)	50	99	99	65-138	0
cis-1,3-Dichloropropene	ug/L (ppb)	10	94	93	74-140	1
Toluene	ug/L (ppb)	10	100	103	72-122	3
trans-1,3-Dichloropropene	ug/L (ppb)	10	102	104	80-136	2
1,1,2-Trichloroethane	ug/L (ppb)	10	101	104	75-124	3
2-Hexanone	ug/L (ppb)	50	109	112	60-136	3
1,3-Dichloropropane	ug/L (ppb)	10	102	106	76-126	4
Tetrachloroethene	ug/L (ppb)	10	105	103	76-121	2
Dibromochloromethane	ug/L (ppb)	10	104	104	84-133	0
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	107	106	82-115	1
Chlorobenzene	ug/L (ppb)	10	105	107	83-114	2
Ethylbenzene	ug/L (ppb)	10	103	105	77-124	2
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	106	111	84-127	5
m,p-Xylene	ug/L (ppb)	20	105	107	81-112	2
o-Xylene	ug/L (ppb)	10	104	108	81-121	4
Styrene	ug/L (ppb)	10	104	106	84-119	2
Isopropylbenzene	ug/L (ppb)	10	103	105	80-117	2
Bromoform	ug/L (ppb)	10	102	108	69-121	6
n-Propylbenzene	ug/L (ppb)	10	107	109	74-126	2
Bromobenzene	ug/L (ppb)	10	110	111	80-121	1
1,3,5-Trimethylbenzene	ug/L (ppb)	10	105	109	78-123	4
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	110	113	66-126	3
1,2,3-Trichloropropane	ug/L (ppb)	10	108	113	67-124	5
2-Chlorotoluene	ug/L (ppb)	10	106	107	77-127	1
4-Chlorotoluene	ug/L (ppb)	10	106	108	78-128	2
tert-Butylbenzene	ug/L (ppb)	10	107	109	80-123	2
1,2,4-Trimethylbenzene	ug/L (ppb)	10	105	108	79-122	3
sec-Butylbenzene	ug/L (ppb)	10	108	108	80-116	0
p-Isopropyltoluene	ug/L (ppb)	10	106	108	81-123	2
1,3-Dichlorobenzene	ug/L (ppb)	10	108	110	83-113	2
1,4-Dichlorobenzene	ug/L (ppb)	10	106	110	81-112	4
1,2-Dichlorobenzene	ug/L (ppb)	10	106	109	84-112	3
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	111	114	57-141	3
1,2,4-Trichlorobenzene	ug/L (ppb)	10	114	113	72-130	1
Hexachlorobutadiene	ug/L (ppb)	10	118	116	53-141	2
Naphthalene	ug/L (ppb)	10	117	119	64-133	2
1,2,3-Trichlorobenzene	ug/L (ppb)	10	118	121	65-136	3

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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.

Page # of VM2

Phone _____ Email CHUCK@VIA CD 11

Default: Dispose after 30 days

ANALYSES REQUESTED

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED								Notes	
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082			
MCD-11-BLD	01A-D	5-14		CONCRETE	4					X					SAMPLE ALREADY FILLED AND PRESERVED

Ph. (206) 285-8282

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
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Michael Erdahl, B.S.
Arina Podnozova, B.S.
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June 2, 2021

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 May 25, 2021 from the 12th and Yesler WES-1591, F&BI 105465 project. There are 15 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
WES0602R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on May 25, 2020 by Friedman & Bruya, Inc. from the Whitman Environmental Sciences 12th and Yesler WES-1591, F&BI 105465 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Whitman Environmental Sciences</u>
105465 -01	MW-1-GW
105465 -02	MW-5-GW
105465 -03	GEO-B7-GW
105465 -04	GEO-B9-GW

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-1-GW	Client:	Whitman Environmental Sciences
Date Received:	05/25/21	Project:	12th and Yesler WES-1591
Date Extracted:	05/26/21	Lab ID:	105465-01
Date Analyzed:	05/27/21	Data File:	105465-01.100
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-5-GW	Client:	Whitman Environmental Sciences
Date Received:	05/25/21	Project:	12th and Yesler WES-1591
Date Extracted:	05/26/21	Lab ID:	105465-02
Date Analyzed:	05/27/21	Data File:	105465-02.101
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	4.49

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	GEO-B7-GW	Client:	Whitman Environmental Sciences
Date Received:	05/25/21	Project:	12th and Yesler WES-1591
Date Extracted:	05/26/21	Lab ID:	105465-03
Date Analyzed:	05/27/21	Data File:	105465-03.102
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	24.8

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	GEO-B9-GW	Client:	Whitman Environmental Sciences
Date Received:	05/25/21	Project:	12th and Yesler WES-1591
Date Extracted:	05/26/21	Lab ID:	105465-04
Date Analyzed:	05/27/21	Data File:	105465-04.105
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	1.58

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved 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:	05/26/21	Lab ID:	I1-334 mb
Date Analyzed:	05/26/21	Data File:	I1-334 mb.092
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-1-GW	Client:	Whitman Environmental Sciences
Date Received:	05/25/21	Project:	12th and Yesler WES-1591
Date Extracted:	05/26/21	Lab ID:	105465-01
Date Analyzed:	05/26/21	Data File:	052611.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	86	113
Toluene-d8	95	88	114
4-Bromofluorobenzene	103	88	112

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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	<20	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: 05/25/21	Project: 12th and Yesler WES-1591
Date Extracted: 05/26/21	Lab ID: 105465-02
Date Analyzed: 05/26/21	Data File: 052612.D
Matrix: Water	Instrument: GCMS4
Units: ug/L (ppb)	Operator: JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	86	113
Toluene-d8	95	88	114
4-Bromofluorobenzene	102	88	112

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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	<20	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:	GEO-B7-GW	Client:	Whitman Environmental Sciences
Date Received:	05/25/21	Project:	12th and Yesler WES-1591
Date Extracted:	05/26/21	Lab ID:	105465-03
Date Analyzed:	05/26/21	Data File:	052613.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	86	113
Toluene-d8	95	88	114
4-Bromofluorobenzene	105	88	112

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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	<20	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:	GEO-B9-GW	Client:	Whitman Environmental Sciences
Date Received:	05/25/21	Project:	12th and Yesler WES-1591
Date Extracted:	05/26/21	Lab ID:	105465-04
Date Analyzed:	05/26/21	Data File:	052614.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	86	113
Toluene-d8	97	88	114
4-Bromofluorobenzene	106	88	112

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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	<20	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:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th and Yesler WES-1591
Date Extracted:	05/26/21	Lab ID:	01-1156 mb
Date Analyzed:	05/26/21	Data File:	052608.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	93	86	113
Toluene-d8	95	88	114
4-Bromofluorobenzene	101	88	112

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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	<20	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

Date of Report: 06/02/21

Date Received: 05/25/21

Project: 12th and Yesler WES-1591, F&BI 105465

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR DISSOLVED METALS USING EPA METHOD 6020B**

Laboratory Code: 105472-01 x10 (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	119	111	75-125	7

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	95	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/02/21

Date Received: 05/25/21

Project: 12th and Yesler WES-1591, F&BI 105465

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

Laboratory Code: 105439-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	10	<1	94	10-172
Chloromethane	ug/L (ppb)	10	<10	83	25-166
Vinyl chloride	ug/L (ppb)	10	<0.2	79	36-166
Bromomethane	ug/L (ppb)	10	<5	104	47-169
Chloroethane	ug/L (ppb)	10	<1	88	46-160
Trichlorofluoromethane	ug/L (ppb)	10	<1	106	44-165
Acetone	ug/L (ppb)	50	<50	54	10-182
1,1-Dichloroethene	ug/L (ppb)	10	<1	92	58-142
Hexane	ug/L (ppb)	10	<5	86	38-152
Methylene chloride	ug/L (ppb)	10	<5	93	50-145
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	92	61-136
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	94	61-136
1,1-Dichloroethane	ug/L (ppb)	10	<1	89	63-135
2,2-Dichloropropane	ug/L (ppb)	10	<1	110	36-154
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	94	63-134
Chloroform	ug/L (ppb)	10	<1	94	61-135
2-Butanone (MEK)	ug/L (ppb)	50	<20	79	10-129
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<1	95	48-149
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	96	60-146
1,1-Dichloropropene	ug/L (ppb)	10	<1	95	69-133
Carbon tetrachloride	ug/L (ppb)	10	<1	93	56-152
Benzene	ug/L (ppb)	10	<0.35	92	57-135
Trichloroethene	ug/L (ppb)	10	<1	95	66-135
1,2-Dichloropropane	ug/L (ppb)	10	<1	95	59-136
Bromodichloromethane	ug/L (ppb)	10	<1	94	61-150
Dibromomethane	ug/L (ppb)	10	<1	98	66-141
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	98	10-185
cis-1,3-Dichloropropene	ug/L (ppb)	10	<1	91	52-147
Toluene	ug/L (ppb)	10	<1	100	50-137
trans-1,3-Dichloropropene	ug/L (ppb)	10	<1	99	53-142
1,1,2-Trichloroethane	ug/L (ppb)	10	<1	103	68-131
2-Hexanone	ug/L (ppb)	50	<10	106	10-185
1,3-Dichloropropane	ug/L (ppb)	10	<1	102	60-135
Tetrachloroethene	ug/L (ppb)	10	<1	103	10-226
Dibromochloromethane	ug/L (ppb)	10	<1	100	52-145
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<1	105	62-135
Chlorobenzene	ug/L (ppb)	10	<1	104	63-130
Ethylbenzene	ug/L (ppb)	10	<1	103	60-133
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	107	56-143
m,p-Xylene	ug/L (ppb)	20	<2	105	69-135
o-Xylene	ug/L (ppb)	10	<1	104	60-140
Styrene	ug/L (ppb)	10	<1	103	60-133
Isopropylbenzene	ug/L (ppb)	10	<1	103	65-142
Bromoform	ug/L (ppb)	10	<5	96	54-148
n-Propylbenzene	ug/L (ppb)	10	<1	106	58-144
Bromobenzene	ug/L (ppb)	10	<1	109	61-130
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	105	59-134
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<1	110	51-154
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	107	53-150
2-Chlorotoluene	ug/L (ppb)	10	<1	106	66-127
4-Chlorotoluene	ug/L (ppb)	10	<1	105	65-130
tert-Butylbenzene	ug/L (ppb)	10	<1	107	65-137
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	104	59-146
sec-Butylbenzene	ug/L (ppb)	10	<1	106	64-140
p-Isopropyltoluene	ug/L (ppb)	10	<1	107	65-141
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	108	60-131
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	107	60-129
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	105	60-130
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	102	32-164
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	112	52-138
Hexachlorobutadiene	ug/L (ppb)	10	<1	112	60-143
Naphthalene	ug/L (ppb)	10	<1	111	44-164
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	116	69-148

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/02/21

Date Received: 05/25/21

Project: 12th and Yesler WES-1591, F&BI 105465

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)	10	83	94	25-158	12
Chloromethane	ug/L (ppb)	10	75	80	45-156	6
Vinyl chloride	ug/L (ppb)	10	77	81	50-154	5
Bromomethane	ug/L (ppb)	10	102	103	55-143	1
Chloroethane	ug/L (ppb)	10	81	84	58-146	4
Trichlorofluoromethane	ug/L (ppb)	10	95	99	50-150	4
Acetone	ug/L (ppb)	50	49	51	22-155	4
1,1-Dichloroethene	ug/L (ppb)	10	87	92	67-136	6
Hexane	ug/L (ppb)	10	71	74	57-137	4
Methylene chloride	ug/L (ppb)	10	95	99	19-178	4
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	84	89	64-147	6
trans-1,2-Dichloroethene	ug/L (ppb)	10	87	90	68-128	3
1,1-Dichloroethane	ug/L (ppb)	10	83	89	74-135	7
2,2-Dichloropropane	ug/L (ppb)	10	102	105	55-143	3
cis-1,2-Dichloroethene	ug/L (ppb)	10	86	92	74-136	7
Chloroform	ug/L (ppb)	10	87	91	74-134	4
2-Butanone (MEK)	ug/L (ppb)	50	74	78	37-150	5
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	87	91	66-129	4
1,1,1-Trichloroethane	ug/L (ppb)	10	90	95	74-142	5
1,1-Dichloropropene	ug/L (ppb)	10	88	93	77-129	6
Carbon tetrachloride	ug/L (ppb)	10	87	92	75-158	6
Benzene	ug/L (ppb)	10	85	90	69-134	6
Trichloroethene	ug/L (ppb)	10	88	93	67-133	6
1,2-Dichloropropane	ug/L (ppb)	10	89	91	71-134	2
Bromodichloromethane	ug/L (ppb)	10	88	91	66-126	3
Dibromomethane	ug/L (ppb)	10	89	92	68-132	3
4-Methyl-2-pentanone	ug/L (ppb)	50	92	96	65-138	4
cis-1,3-Dichloropropene	ug/L (ppb)	10	85	89	74-140	5
Toluene	ug/L (ppb)	10	94	99	72-122	5
trans-1,3-Dichloropropene	ug/L (ppb)	10	92	99	80-136	7
1,1,2-Trichloroethane	ug/L (ppb)	10	92	100	75-124	8
2-Hexanone	ug/L (ppb)	50	99	106	60-136	7
1,3-Dichloropropane	ug/L (ppb)	10	95	103	76-126	8
Tetrachloroethene	ug/L (ppb)	10	94	100	76-121	6
Dibromochloromethane	ug/L (ppb)	10	96	102	84-133	6
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	96	105	82-115	9
Chlorobenzene	ug/L (ppb)	10	96	105	83-114	9
Ethylbenzene	ug/L (ppb)	10	94	101	77-124	7
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	96	106	84-127	10
m,p-Xylene	ug/L (ppb)	20	96	104	81-112	8
o-Xylene	ug/L (ppb)	10	93	102	81-121	9
Styrene	ug/L (ppb)	10	95	103	84-119	8
Isopropylbenzene	ug/L (ppb)	10	93	102	80-117	9
Bromoform	ug/L (ppb)	10	91	99	69-121	8
n-Propylbenzene	ug/L (ppb)	10	96	101	74-126	5
Bromobenzene	ug/L (ppb)	10	101	106	80-121	5
1,3,5-Trimethylbenzene	ug/L (ppb)	10	95	102	78-123	7
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	102	107	66-126	5
1,2,3-Trichloropropane	ug/L (ppb)	10	100	105	67-124	5
2-Chlorotoluene	ug/L (ppb)	10	96	103	77-127	7
4-Chlorotoluene	ug/L (ppb)	10	96	102	78-128	6
tert-Butylbenzene	ug/L (ppb)	10	98	105	80-123	7
1,2,4-Trimethylbenzene	ug/L (ppb)	10	95	101	79-122	6
sec-Butylbenzene	ug/L (ppb)	10	96	102	80-116	6
p-Isopropyltoluene	ug/L (ppb)	10	97	103	81-123	6
1,3-Dichlorobenzene	ug/L (ppb)	10	98	103	83-113	5
1,4-Dichlorobenzene	ug/L (ppb)	10	99	104	81-112	5
1,2-Dichlorobenzene	ug/L (ppb)	10	96	103	84-112	7
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	97	109	57-141	12
1,2,4-Trichlorobenzene	ug/L (ppb)	10	102	109	72-130	7
Hexachlorobutadiene	ug/L (ppb)	10	101	111	53-141	9
Naphthalene	ug/L (ppb)	10	106	112	64-133	6
1,2,3-Trichlorobenzene	ug/L (ppb)	10	107	114	65-136	6

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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.

Wick ATG

Page # _____

☒ Standard turnaround
☐ RUSH

Rush charges authorized by: _____

SAMPLE DISPOSAL

☐ Archive samples
☐ Other _____

Default: Dispose after 30 days

[illegible]

TIME

5-10-82

5/25/21	19:30

[illegible][illegible]

Ph. (206) 285-8282

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
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June 9, 2021

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 June 2, 2021 from the 12th and Yesler WES 1591, F&BI 106036 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
WES0609R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on June 2, 2020 by Friedman & Bruya, Inc. from the Whitman Environmental Sciences 12th and Yesler WES 1591, F&BI 106036 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Whitman Environmental Sciences</u>
106036 -01	MW-13-GW
106036 -02	MW-15-GW

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-13-GW	Client:	Whitman Environmental Sciences
Date Received:	06/02/21	Project:	12th and Yesler WES 1591
Date Extracted:	06/04/21	Lab ID:	106036-01
Date Analyzed:	06/04/21	Data File:	106036-01.109
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	3.50

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-15-GW	Client:	Whitman Environmental Sciences
Date Received:	06/02/21	Project:	12th and Yesler WES 1591
Date Extracted:	06/04/21	Lab ID:	106036-02
Date Analyzed:	06/04/21	Data File:	106036-02.110
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	12.7

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved 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:	06/04/21	Lab ID:	I1-353 mb
Date Analyzed:	06/04/21	Data File:	I1-353 mb.085
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-13-GW	Client:	Whitman Environmental Sciences
Date Received:	06/02/21	Project:	12th and Yesler WES 1591
Date Extracted:	06/03/21	Lab ID:	106036-01
Date Analyzed:	06/03/21	Data File:	060326.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	86	113
Toluene-d8	98	88	114
4-Bromofluorobenzene	104	88	112

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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	<20	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-15-GW	Client:	Whitman Environmental Sciences
Date Received:	06/02/21	Project:	12th and Yesler WES 1591
Date Extracted:	06/03/21	Lab ID:	106036-02
Date Analyzed:	06/03/21	Data File:	060327.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	86	113
Toluene-d8	98	88	114
4-Bromofluorobenzene	101	88	112

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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	<20	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:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th and Yesler WES 1591
Date Extracted:	06/03/21	Lab ID:	01-1184 mb
Date Analyzed:	06/03/21	Data File:	060308.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	86	113
Toluene-d8	99	88	114
4-Bromofluorobenzene	100	88	112

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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	<20	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

Date of Report: 06/09/21

Date Received: 06/02/21

Project: 12th and Yesler WES 1591, F&BI 106036

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR DISSOLVED METALS USING EPA METHOD 6020B**

Laboratory Code: 105493-01 (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	2.15	99	97	75-125	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	93	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/09/21

Date Received: 06/02/21

Project: 12th and Yesler WES 1591, F&BI 106036

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

Laboratory Code: 106040-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	10	<1	84	10-172
Chloromethane	ug/L (ppb)	10	<10	81	25-166
Vinyl chloride	ug/L (ppb)	10	<0.2	86	36-166
Bromomethane	ug/L (ppb)	10	<5	99	47-169
Chloroethane	ug/L (ppb)	10	<1	89	46-160
Trichlorofluoromethane	ug/L (ppb)	10	<1	106	44-165
Acetone	ug/L (ppb)	50	<50	52	10-182
1,1-Dichloroethene	ug/L (ppb)	10	<1	95	58-142
Hexane	ug/L (ppb)	10	<5	81	38-152
Methylene chloride	ug/L (ppb)	10	<5	82	50-145
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	85	61-136
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	93	61-136
1,1-Dichloroethane	ug/L (ppb)	10	<1	88	63-135
2,2-Dichloropropane	ug/L (ppb)	10	<1	87	36-154
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	95	63-134
Chloroform	ug/L (ppb)	10	<1	93	61-135
2-Butanone (MEK)	ug/L (ppb)	50	<20	76	10-129
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<1	92	48-149
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	96	60-146
1,1-Dichloropropene	ug/L (ppb)	10	<1	94	69-133
Carbon tetrachloride	ug/L (ppb)	10	<1	96	56-152
Benzene	ug/L (ppb)	10	<0.35	93	57-135
Trichloroethene	ug/L (ppb)	10	<1	97	66-135
1,2-Dichloropropane	ug/L (ppb)	10	<1	95	59-136
Bromodichloromethane	ug/L (ppb)	10	<1	95	61-150
Dibromomethane	ug/L (ppb)	10	<1	97	66-141
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	100	10-185
cis-1,3-Dichloropropene	ug/L (ppb)	10	<1	89	52-147
Toluene	ug/L (ppb)	10	<1	97	50-137
trans-1,3-Dichloropropene	ug/L (ppb)	10	<1	90	53-142
1,1,2-Trichloroethane	ug/L (ppb)	10	<1	96	68-131
2-Hexanone	ug/L (ppb)	50	<10	99	10-185
1,3-Dichloropropane	ug/L (ppb)	10	<1	98	60-135
Tetrachloroethene	ug/L (ppb)	10	<1	117	10-226
Dibromochloromethane	ug/L (ppb)	10	<1	98	52-145
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<1	99	62-135
Chlorobenzene	ug/L (ppb)	10	<1	101	63-130
Ethylbenzene	ug/L (ppb)	10	<1	98	60-133
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	102	56-143
m,p-Xylene	ug/L (ppb)	20	<2	100	69-135
o-Xylene	ug/L (ppb)	10	<1	98	60-140
Styrene	ug/L (ppb)	10	<1	98	60-133
Isopropylbenzene	ug/L (ppb)	10	<1	96	65-142
Bromoform	ug/L (ppb)	10	<5	95	54-148
n-Propylbenzene	ug/L (ppb)	10	<1	102	58-144
Bromobenzene	ug/L (ppb)	10	<1	106	61-130
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	101	59-134
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<1	107	51-154
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	104	53-150
2-Chlorotoluene	ug/L (ppb)	10	<1	102	66-127
4-Chlorotoluene	ug/L (ppb)	10	<1	102	65-130
tert-Butylbenzene	ug/L (ppb)	10	<1	100	65-137
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	98	59-146
sec-Butylbenzene	ug/L (ppb)	10	<1	100	64-140
p-Isopropyltoluene	ug/L (ppb)	10	<1	99	65-141
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	102	60-131
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	104	60-129
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	100	60-130
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	97	32-164
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	93	52-138
Hexachlorobutadiene	ug/L (ppb)	10	<1	95	60-143
Naphthalene	ug/L (ppb)	10	<1	98	44-164
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	95	69-148

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/09/21

Date Received: 06/02/21

Project: 12th and Yesler WES 1591, F&BI 106036

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)	10	80	83	25-158	4
Chloromethane	ug/L (ppb)	10	82	85	45-156	4
Vinyl chloride	ug/L (ppb)	10	87	86	50-154	1
Bromomethane	ug/L (ppb)	10	116	110	55-143	5
Chloroethane	ug/L (ppb)	10	88	89	58-146	1
Trichlorofluoromethane	ug/L (ppb)	10	110	107	50-150	3
Acetone	ug/L (ppb)	50	54	52	22-155	4
1,1-Dichloroethene	ug/L (ppb)	10	96	94	67-136	2
Hexane	ug/L (ppb)	10	70	69	57-137	1
Methylene chloride	ug/L (ppb)	10	97	93	19-178	4
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	92	91	64-147	1
trans-1,2-Dichloroethene	ug/L (ppb)	10	96	95	68-128	1
1,1-Dichloroethane	ug/L (ppb)	10	94	90	74-135	4
2,2-Dichloropropane	ug/L (ppb)	10	113	111	55-143	2
cis-1,2-Dichloroethene	ug/L (ppb)	10	97	96	74-136	1
Chloroform	ug/L (ppb)	10	98	96	74-134	2
2-Butanone (MEK)	ug/L (ppb)	50	81	78	37-150	4
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	96	93	66-129	3
1,1,1-Trichloroethane	ug/L (ppb)	10	100	97	74-142	3
1,1-Dichloropropene	ug/L (ppb)	10	97	95	77-129	2
Carbon tetrachloride	ug/L (ppb)	10	98	96	75-158	2
Benzene	ug/L (ppb)	10	96	94	69-134	2
Trichloroethene	ug/L (ppb)	10	96	98	67-133	2
1,2-Dichloropropane	ug/L (ppb)	10	98	95	71-134	3
Bromodichloromethane	ug/L (ppb)	10	99	96	66-126	3
Dibromomethane	ug/L (ppb)	10	101	99	68-132	2
4-Methyl-2-pentanone	ug/L (ppb)	50	102	97	65-138	5
cis-1,3-Dichloropropene	ug/L (ppb)	10	97	96	74-140	1
Toluene	ug/L (ppb)	10	100	98	72-122	2
trans-1,3-Dichloropropene	ug/L (ppb)	10	101	100	80-136	1
1,1,2-Trichloroethane	ug/L (ppb)	10	101	99	75-124	2
2-Hexanone	ug/L (ppb)	50	103	100	60-136	3
1,3-Dichloropropene	ug/L (ppb)	10	103	101	76-126	2
Tetrachloroethene	ug/L (ppb)	10	103	98	76-121	5
Dibromochloromethane	ug/L (ppb)	10	103	103	84-133	0
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	105	102	82-115	3
Chlorobenzene	ug/L (ppb)	10	105	103	83-114	2
Ethylbenzene	ug/L (ppb)	10	102	100	77-124	2
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	107	103	84-127	4
m,p-Xylene	ug/L (ppb)	20	103	100	81-112	3
o-Xylene	ug/L (ppb)	10	100	100	81-121	0
Styrene	ug/L (ppb)	10	101	98	84-119	3
Isopropylbenzene	ug/L (ppb)	10	98	97	80-117	1
Bromoform	ug/L (ppb)	10	103	104	69-121	1
n-Propylbenzene	ug/L (ppb)	10	102	98	74-126	4
Bromobenzene	ug/L (ppb)	10	112	105	80-121	6
1,3,5-Trimethylbenzene	ug/L (ppb)	10	103	98	78-123	5
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	110	106	66-126	4
1,2,3-Trichloropropane	ug/L (ppb)	10	109	102	67-124	7
2-Chlorotoluene	ug/L (ppb)	10	104	100	77-127	4
4-Chlorotoluene	ug/L (ppb)	10	103	98	78-128	5
tert-Butylbenzene	ug/L (ppb)	10	105	100	80-123	5
1,2,4-Trimethylbenzene	ug/L (ppb)	10	104	99	79-122	5
sec-Butylbenzene	ug/L (ppb)	10	103	99	80-116	4
p-Isopropyltoluene	ug/L (ppb)	10	103	97	81-123	6
1,3-Dichlorobenzene	ug/L (ppb)	10	105	101	83-113	4
1,4-Dichlorobenzene	ug/L (ppb)	10	106	101	81-112	5
1,2-Dichlorobenzene	ug/L (ppb)	10	105	100	84-112	5
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	104	102	57-141	2
1,2,4-Trichlorobenzene	ug/L (ppb)	10	106	100	72-130	6
Hexachlorobutadiene	ug/L (ppb)	10	107	98	53-141	9
Naphthalene	ug/L (ppb)	10	114	106	64-133	7
1,2,3-Trichlorobenzene	ug/L (ppb)	10	111	106	65-136	5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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.

AI 2 / v w 1

Page # _____ of _____

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Result: Dispose after 30 days

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 Default: Dispose after 30 days

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Ph. (206) 285-8282

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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June 14, 2021

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 June 4, 2021 from the 12th and Yesler WES-1591, F&BI 106084 project. There are 13 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
WES0614R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on June 4, 2020 by Friedman & Bruya, Inc. from the Whitman Environmental Sciences 12th and Yesler WES-1591, F&BI 106084 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Whitman Environmental Sciences</u>
106084 -01	MW-2
106084 -02	MW-12
106084 -03	MW-16

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-2	Client:	Whitman Environmental Sciences
Date Received:	06/04/21	Project:	12th and Yesler WES-1591, F&BI 106084
Date Extracted:	06/09/21	Lab ID:	106084-01
Date Analyzed:	06/09/21	Data File:	106084-01.047
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	20.6

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-12	Client:	Whitman Environmental Sciences
Date Received:	06/04/21	Project:	12th and Yesler WES-1591, F&BI 106084
Date Extracted:	06/09/21	Lab ID:	106084-02 x10
Date Analyzed:	06/09/21	Data File:	106084-02 x10.053
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	1,600

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-16	Client:	Whitman Environmental Sciences
Date Received:	06/04/21	Project:	12th and Yesler WES-1591, F&BI 106084
Date Extracted:	06/09/21	Lab ID:	106084-03
Date Analyzed:	06/09/21	Data File:	106084-03.051
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	140

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th and Yesler WES-1591, F&BI 106084
Date Extracted:	06/09/21	Lab ID:	I1-359 mb
Date Analyzed:	06/09/21	Data File:	I1-359 mb.045
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-2	Client:	Whitman Environmental Sciences
Date Received:	06/04/21	Project:	12th and Yesler WES-1591, F&BI 106084
Date Extracted:	06/07/21	Lab ID:	106084-01
Date Analyzed:	06/07/21	Data File:	060720.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	107	85	117
Toluene-d8	103	88	112
4-Bromofluorobenzene	98	90	111

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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	<20	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-12	Client:	Whitman Environmental Sciences
Date Received:	06/04/21	Project:	12th and Yesler WES-1591, F&BI 106084
Date Extracted:	06/07/21	Lab ID:	106084-02
Date Analyzed:	06/07/21	Data File:	060721.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	106	85	117
Toluene-d8	102	88	112
4-Bromofluorobenzene	99	90	111

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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	<20	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-16	Client:	Whitman Environmental Sciences
Date Received:	06/04/21	Project:	12th and Yesler WES-1591, F&BI 106084
Date Extracted:	06/07/21	Lab ID:	106084-03
Date Analyzed:	06/07/21	Data File:	060722.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	92	85	117
Toluene-d8	92	88	112
4-Bromofluorobenzene	104	90	111

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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	<20	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:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th and Yesler WES-1591, F&BI 106084
Date Extracted:	06/07/21	Lab ID:	01-1189 mb
Date Analyzed:	06/07/21	Data File:	060708.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	86	113
Toluene-d8	102	88	114
4-Bromofluorobenzene	101	88	112

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	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 ca	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	<20 ca	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

Date of Report: 06/14/21

Date Received: 06/04/21

Project: 12th and Yesler WES-1591, F&BI 106084

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR DISSOLVED METALS USING EPA METHOD 6020B**

Laboratory Code: 106084-01 (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	20.6	107	112	75-125	5

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	96	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/21

Date Received: 06/04/21

Project: 12th and Yesler WES-1591, F&BI 106084

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

Laboratory Code: 106093-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	10	<1	97	10-172
Chloromethane	ug/L (ppb)	10	<10	94	25-166
Vinyl chloride	ug/L (ppb)	10	<0.2	94	36-166
Bromomethane	ug/L (ppb)	10	<5	112	47-169
Chloroethane	ug/L (ppb)	10	<1	94	46-160
Trichlorofluoromethane	ug/L (ppb)	10	<1	121	44-165
Acetone	ug/L (ppb)	50	<50	58	10-182
1,1-Dichloroethene	ug/L (ppb)	10	<1	102	58-142
Hexane	ug/L (ppb)	10	<5	95	38-152
Methylene chloride	ug/L (ppb)	10	<5	96	50-145
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	88	61-136
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	99	61-136
1,1-Dichloroethane	ug/L (ppb)	10	<1	94	63-135
2,2-Dichloropropane	ug/L (ppb)	10	<1	127	36-154
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	99	63-134
Chloroform	ug/L (ppb)	10	<1	97	61-135
2-Butanone (MEK)	ug/L (ppb)	50	<20	82	10-129
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<1	95	48-149
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	99	60-146
1,1-Dichloropropene	ug/L (ppb)	10	<1	101	69-133
Carbon tetrachloride	ug/L (ppb)	10	<1	101	56-152
Benzene	ug/L (ppb)	10	<0.35	97	57-135
Trichloroethene	ug/L (ppb)	10	<1	101	66-135
1,2-Dichloropropane	ug/L (ppb)	10	<1	96	59-136
Bromodichloromethane	ug/L (ppb)	10	<1	97	61-150
Dibromomethane	ug/L (ppb)	10	<1	103	66-141
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	104	10-185
cis-1,3-Dichloropropene	ug/L (ppb)	10	<1	96	52-147
Toluene	ug/L (ppb)	10	<1	96	50-137
trans-1,3-Dichloropropene	ug/L (ppb)	10	<1	97	53-142
1,1,2-Trichloroethane	ug/L (ppb)	10	<1	93	68-131
2-Hexanone	ug/L (ppb)	50	<10	98	10-185
1,3-Dichloropropane	ug/L (ppb)	10	<1	96	60-135
Tetrachloroethene	ug/L (ppb)	10	<1	101	10-226
Dibromochloromethane	ug/L (ppb)	10	<1	97	52-145
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<1	99	62-135
Chlorobenzene	ug/L (ppb)	10	<1	100	63-130
Ethylbenzene	ug/L (ppb)	10	<1	97	60-133
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	100	56-143
m,p-Xylene	ug/L (ppb)	20	<2	98	69-135
o-Xylene	ug/L (ppb)	10	<1	98	60-140
Styrene	ug/L (ppb)	10	<1	97	60-133
Isopropylbenzene	ug/L (ppb)	10	<1	96	65-142
Bromoform	ug/L (ppb)	10	<5	95	54-148
n-Propylbenzene	ug/L (ppb)	10	<1	102	58-144
Bromobenzene	ug/L (ppb)	10	<1	105	61-130
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	99	59-134
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<1	104	51-154
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	102	53-150
2-Chlorotoluene	ug/L (ppb)	10	<1	100	66-127
4-Chlorotoluene	ug/L (ppb)	10	<1	101	65-130
tert-Butylbenzene	ug/L (ppb)	10	<1	102	65-137
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	100	59-146
sec-Butylbenzene	ug/L (ppb)	10	<1	102	64-140
p-Isopropyltoluene	ug/L (ppb)	10	<1	102	65-141
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	103	60-131
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	103	60-129
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	102	60-130
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	96	32-164
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	104	52-138
Hexachlorobutadiene	ug/L (ppb)	10	<1	108	60-143
Naphthalene	ug/L (ppb)	10	<1	106	44-164
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	108	69-148

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/21

Date Received: 06/04/21

Project: 12th and Yesler WES-1591, F&BI 106084

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)	10	100	98	25-158	2
Chloromethane	ug/L (ppb)	10	96	93	45-156	3
Vinyl chloride	ug/L (ppb)	10	97	95	50-154	2
Bromomethane	ug/L (ppb)	10	129	115	55-143	11
Chloroethane	ug/L (ppb)	10	97	95	58-146	2
Trichlorofluoromethane	ug/L (ppb)	10	115	116	50-150	1
Acetone	ug/L (ppb)	50	56	58	22-155	4
1,1-Dichloroethene	ug/L (ppb)	10	103	101	67-136	2
Hexane	ug/L (ppb)	10	93	95	57-137	2
Methylene chloride	ug/L (ppb)	10	99	100	19-178	1
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	95	94	64-147	1
trans-1,2-Dichloroethene	ug/L (ppb)	10	103	102	68-128	1
1,1-Dichloroethane	ug/L (ppb)	10	97	98	74-135	1
2,2-Dichloropropane	ug/L (ppb)	10	131	127	55-143	3
cis-1,2-Dichloroethene	ug/L (ppb)	10	102	102	74-136	0
Chloroform	ug/L (ppb)	10	102	101	74-134	1
2-Butanone (MEK)	ug/L (ppb)	50	84	83	37-150	1
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	99	99	66-129	0
1,1,1-Trichloroethane	ug/L (ppb)	10	106	105	74-142	1
1,1-Dichloropropene	ug/L (ppb)	10	103	102	77-129	1
Carbon tetrachloride	ug/L (ppb)	10	104	103	75-158	1
Benzene	ug/L (ppb)	10	101	100	69-134	1
Trichloroethene	ug/L (ppb)	10	104	102	67-133	2
1,2-Dichloropropane	ug/L (ppb)	10	102	101	71-134	1
Bromodichloromethane	ug/L (ppb)	10	102	103	66-126	1
Dibromomethane	ug/L (ppb)	10	105	106	68-132	1
4-Methyl-2-pentanone	ug/L (ppb)	50	108	106	65-138	2
cis-1,3-Dichloropropene	ug/L (ppb)	10	103	102	74-140	1
Toluene	ug/L (ppb)	10	101	99	72-122	2
trans-1,3-Dichloropropene	ug/L (ppb)	10	103	102	80-136	1
1,1,2-Trichloroethane	ug/L (ppb)	10	102	99	75-124	3
2-Hexanone	ug/L (ppb)	50	104	103	60-136	1
1,3-Dichloropropane	ug/L (ppb)	10	104	101	76-126	3
Tetrachloroethene	ug/L (ppb)	10	104	101	76-121	3
Dibromochloromethane	ug/L (ppb)	10	106	104	84-133	2
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	106	104	82-115	2
Chlorobenzene	ug/L (ppb)	10	107	105	83-114	2
Ethylbenzene	ug/L (ppb)	10	104	103	77-124	1
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	106	107	84-127	1
m,p-Xylene	ug/L (ppb)	20	107	103	81-112	4
o-Xylene	ug/L (ppb)	10	101	100	81-121	1
Styrene	ug/L (ppb)	10	104	101	84-119	3
Isopropylbenzene	ug/L (ppb)	10	102	100	80-117	2
Bromoform	ug/L (ppb)	10	107	104	69-121	3
n-Propylbenzene	ug/L (ppb)	10	104	104	74-126	0
Bromobenzene	ug/L (ppb)	10	108	108	80-121	0
1,3,5-Trimethylbenzene	ug/L (ppb)	10	101	101	78-123	0
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	108	107	66-126	1
1,2,3-Trichloropropane	ug/L (ppb)	10	108	105	67-124	3
2-Chlorotoluene	ug/L (ppb)	10	103	104	77-127	1
4-Chlorotoluene	ug/L (ppb)	10	103	103	78-128	0
tert-Butylbenzene	ug/L (ppb)	10	103	103	80-123	0
1,2,4-Trimethylbenzene	ug/L (ppb)	10	102	103	79-122	1
sec-Butylbenzene	ug/L (ppb)	10	102	104	80-116	2
p-Isopropyltoluene	ug/L (ppb)	10	102	103	81-123	1
1,3-Dichlorobenzene	ug/L (ppb)	10	105	105	83-113	0
1,4-Dichlorobenzene	ug/L (ppb)	10	106	105	81-112	1
1,2-Dichlorobenzene	ug/L (ppb)	10	102	103	84-112	1
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	102	103	57-141	1
1,2,4-Trichlorobenzene	ug/L (ppb)	10	104	105	72-130	1
Hexachlorobutadiene	ug/L (ppb)	10	107	106	53-141	1
Naphthalene	ug/L (ppb)	10	108	105	64-133	3
1,2,3-Trichlorobenzene	ug/L (ppb)	10	107	106	65-136	1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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.

AE 4 / 1001

ME at low

Page # 1 of 1

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3rd Quarter 2021

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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July 12, 2021

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 July 2, 2021 from the 12th and Yesler WES1591, F&BI 107030 project. There are 9 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
WES0712R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on July 2, 2020 by Friedman & Bruya, Inc. from the Whitman Environmental Sciences 12th and Yesler WES1591 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID

107030 -01

Whitman Environmental Sciences

MW-15-GW

Bromomethane in the 8260D laboratory control sample and laboratory control sample duplicate exceeded the acceptance criteria. The analyte was not detected in the samples, therefore the data were acceptable.

All other quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-15-GW	Client:	Whitman Environmental Sciences
Date Received:	07/02/21	Project:	12th and Yesler WES1591
Date Extracted:	07/02/21	Lab ID:	107030-01
Date Analyzed:	07/03/21	Data File:	107030-01.230
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	9.91

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th and Yesler WES1591
Date Extracted:	07/01/21	Lab ID:	I1-409 mb2
Date Analyzed:	07/02/21	Data File:	I1-409 mb2.103
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-15-GW	Client:	Whitman Environmental Sciences
Date Received:	07/02/21	Project:	12th and Yesler WES1591
Date Extracted:	07/07/21	Lab ID:	107030-01
Date Analyzed:	07/07/21	Data File:	070729.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	86	113
Toluene-d8	97	88	114
4-Bromofluorobenzene	101	88	112

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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	<20	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:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th and Yesler WES1591
Date Extracted:	07/07/21	Lab ID:	01-1519 mb
Date Analyzed:	07/07/21	Data File:	070708.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	86	113
Toluene-d8	97	88	114
4-Bromofluorobenzene	99	88	112

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	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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)	<20	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

Date of Report: 07/12/21

Date Received: 07/02/21

Project: 12th and Yesler WES1591, F&BI 107030

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR DISSOLVED METALS USING EPA METHOD 6020B**

Laboratory Code: 106511-05 x10 (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	95	95	75-125	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	95	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 07/12/21

Date Received: 07/02/21

Project: 12th and Yesler WES1591, F&BI 107030

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

Laboratory Code: 107057-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	10	<1	119	10-172
Chloromethane	ug/L (ppb)	10	<10	105	25-166
Vinyl chloride	ug/L (ppb)	10	<0.2	98	36-166
Bromomethane	ug/L (ppb)	10	<5	149	47-169
Chloroethane	ug/L (ppb)	10	<1	110	46-160
Trichlorofluoromethane	ug/L (ppb)	10	<1	104	44-165
Acetone	ug/L (ppb)	50	<50	53	10-182
1,1-Dichloroethene	ug/L (ppb)	10	<1	100	58-142
Hexane	ug/L (ppb)	10	<5	98	38-152
Methylene chloride	ug/L (ppb)	10	<5	77	50-145
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	98	61-136
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	104	61-136
1,1-Dichloroethane	ug/L (ppb)	10	<1	99	63-135
2,2-Dichloropropane	ug/L (ppb)	10	<1	124	36-154
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	102	63-134
Chloroform	ug/L (ppb)	10	<1	100	61-135
2-Butanone (MEK)	ug/L (ppb)	50	<20	76	10-129
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<1	102	48-149
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	108	60-146
1,1-Dichloropropene	ug/L (ppb)	10	<1	102	69-133
Carbon tetrachloride	ug/L (ppb)	10	<1	99	56-152
Benzene	ug/L (ppb)	10	<0.35	100	57-135
Trichloroethene	ug/L (ppb)	10	<1	100	66-135
1,2-Dichloropropane	ug/L (ppb)	10	<1	97	59-136
Bromodichloromethane	ug/L (ppb)	10	<1	101	61-150
Dibromomethane	ug/L (ppb)	10	<1	101	66-141
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	104	10-185
cis-1,3-Dichloropropene	ug/L (ppb)	10	<1	98	52-147
Toluene	ug/L (ppb)	10	<1	97	50-137
trans-1,3-Dichloropropene	ug/L (ppb)	10	<1	96	53-142
1,1,2-Trichloroethane	ug/L (ppb)	10	<1	99	68-131
2-Hexanone	ug/L (ppb)	50	<10	95	10-185
1,3-Dichloropropane	ug/L (ppb)	10	<1	97	60-135
Tetrachloroethene	ug/L (ppb)	10	<1	100	10-226
Dibromochloromethane	ug/L (ppb)	10	<1	96	52-145
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<1	103	62-135
Chlorobenzene	ug/L (ppb)	10	<1	100	63-130
Ethylbenzene	ug/L (ppb)	10	<1	100	60-133
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	101	56-143
m,p-Xylene	ug/L (ppb)	20	<2	100	69-135
o-Xylene	ug/L (ppb)	10	<1	100	60-140
Styrene	ug/L (ppb)	10	<1	101	60-133
Isopropylbenzene	ug/L (ppb)	10	<1	102	65-142
Bromoform	ug/L (ppb)	10	<5	102	54-148
n-Propylbenzene	ug/L (ppb)	10	<1	96	58-144
Bromobenzene	ug/L (ppb)	10	<1	102	61-130
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	97	59-134
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<1	101	51-154
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	99	53-150
2-Chlorotoluene	ug/L (ppb)	10	<1	98	66-127
4-Chlorotoluene	ug/L (ppb)	10	<1	96	65-130
tert-Butylbenzene	ug/L (ppb)	10	<1	97	65-137
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	98	59-146
sec-Butylbenzene	ug/L (ppb)	10	<1	97	64-140
p-Isopropyltoluene	ug/L (ppb)	10	<1	98	65-141
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	98	60-131
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	101	60-129
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	98	60-130
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	100	32-164
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	95	52-138
Hexachlorobutadiene	ug/L (ppb)	10	<1	100	60-143
Naphthalene	ug/L (ppb)	10	<1	97	44-164
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	95	69-148

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 07/12/21

Date Received: 07/02/21

Project: 12th and Yesler WES1591, F&BI 107030

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)	10	113	127	25-158	12
Chloromethane	ug/L (ppb)	10	100	104	45-156	4
Vinyl chloride	ug/L (ppb)	10	105	109	50-154	4
Bromomethane	ug/L (ppb)	10	152 vo	161 vo	55-143	6
Chloroethane	ug/L (ppb)	10	107	115	58-146	7
Trichlorofluoromethane	ug/L (ppb)	10	104	110	50-150	6
Acetone	ug/L (ppb)	50	56	58	22-155	4
1,1-Dichloroethene	ug/L (ppb)	10	102	105	67-136	3
Hexane	ug/L (ppb)	10	94	102	57-137	8
Methylene chloride	ug/L (ppb)	10	95	101	19-178	6
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	102	105	64-147	3
trans-1,2-Dichloroethene	ug/L (ppb)	10	103	107	68-128	4
1,1-Dichloroethane	ug/L (ppb)	10	103	103	74-135	0
2,2-Dichloropropane	ug/L (ppb)	10	128	141	55-143	10
cis-1,2-Dichloroethene	ug/L (ppb)	10	104	104	74-136	0
Chloroform	ug/L (ppb)	10	102	106	74-134	4
2-Butanone (MEK)	ug/L (ppb)	50	77	80	37-150	4
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	103	105	66-129	2
1,1,1-Trichloroethane	ug/L (ppb)	10	108	112	74-142	4
1,1-Dichloropropene	ug/L (ppb)	10	104	105	77-129	1
Carbon tetrachloride	ug/L (ppb)	10	102	104	75-158	2
Benzene	ug/L (ppb)	10	102	104	69-134	2
Trichloroethene	ug/L (ppb)	10	100	106	67-133	6
1,2-Dichloropropane	ug/L (ppb)	10	101	102	71-134	1
Bromodichloromethane	ug/L (ppb)	10	101	102	66-126	1
Dibromomethane	ug/L (ppb)	10	104	104	68-132	0
4-Methyl-2-pentanone	ug/L (ppb)	50	105	106	65-138	1
cis-1,3-Dichloropropene	ug/L (ppb)	10	104	105	74-140	1
Toluene	ug/L (ppb)	10	100	103	72-122	3
trans-1,3-Dichloropropene	ug/L (ppb)	10	100	101	80-136	1
1,1,2-Trichloroethane	ug/L (ppb)	10	104	104	75-124	0
2-Hexanone	ug/L (ppb)	50	98	99	60-136	1
1,3-Dichloropropane	ug/L (ppb)	10	100	102	76-126	2
Tetrachloroethene	ug/L (ppb)	10	100	103	76-121	3
Dibromochloromethane	ug/L (ppb)	10	98	98	84-133	0
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	104	103	82-115	1
Chlorobenzene	ug/L (ppb)	10	102	103	83-114	1
Ethylbenzene	ug/L (ppb)	10	102	104	77-124	2
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	103	106	84-127	3
m,p-Xylene	ug/L (ppb)	20	101	104	81-112	3
o-Xylene	ug/L (ppb)	10	100	104	81-121	4
Styrene	ug/L (ppb)	10	102	105	84-119	3
Isopropylbenzene	ug/L (ppb)	10	101	105	80-117	4
Bromoform	ug/L (ppb)	10	105	100	69-121	5
n-Propylbenzene	ug/L (ppb)	10	98	102	74-126	4
Bromobenzene	ug/L (ppb)	10	101	104	80-121	3
1,3,5-Trimethylbenzene	ug/L (ppb)	10	99	102	78-123	3
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	104	108	66-126	4
1,2,3-Trichloropropane	ug/L (ppb)	10	103	106	67-124	3
2-Chlorotoluene	ug/L (ppb)	10	100	104	77-127	4
4-Chlorotoluene	ug/L (ppb)	10	100	104	78-128	4
tert-Butylbenzene	ug/L (ppb)	10	101	105	80-123	4
1,2,4-Trimethylbenzene	ug/L (ppb)	10	100	104	79-122	4
sec-Butylbenzene	ug/L (ppb)	10	97	103	80-116	6
p-Isopropyltoluene	ug/L (ppb)	10	98	103	81-123	5
1,3-Dichlorobenzene	ug/L (ppb)	10	100	103	83-113	3
1,4-Dichlorobenzene	ug/L (ppb)	10	101	103	81-112	2
1,2-Dichlorobenzene	ug/L (ppb)	10	102	106	84-112	4
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	101	103	57-141	2
1,2,4-Trichlorobenzene	ug/L (ppb)	10	96	102	72-130	6
Hexachlorobutadiene	ug/L (ppb)	10	101	107	53-141	6
Naphthalene	ug/L (ppb)	10	99	104	64-133	5
1,2,3-Trichlorobenzene	ug/L (ppb)	10	96	101	65-136	5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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.

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

July 30, 2021

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 July 26, 2021 from the 12th and Yesler WES-1591, F&BI 107419 project. There are 5 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
WES0730R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on July 26, 2021 by Friedman & Bruya, Inc. from the Whitman Environmental Sciences 12th and Yesler WES-1591, F&BI 107419 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID

107419 -01

Whitman Environmental Sciences

MW-2-GW

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-2-GW	Client:	Whitman Environmental Sciences
Date Received:	07/26/21	Project:	12th and Yesler WES-1591
Date Extracted:	07/27/21	Lab ID:	107419-01 x2
Date Analyzed:	07/28/21	Data File:	107419-01 x2.137
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	3.24

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved 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:	07/27/21	Lab ID:	I1-451 mb
Date Analyzed:	07/27/21	Data File:	I1-451 mb.056
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 07/30/21

Date Received: 07/26/21

Project: 12th and Yesler WES-1591, F&BI 107419

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR DISSOLVED METALS USING EPA METHOD 6020B**

Laboratory Code: 107336-01 (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	101	97	75-125	4

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	97	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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.

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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fbi@isomedia.com
www.friedmanandbruya.com

September 27, 2021

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 September 17, 2021 from the 12th + Yesler WES 1591, F&BI 109327 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
WES0927R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on September 17, 2021 by Friedman & Bruya, Inc. from the Whitman Environmental Sciences 12th + Yesler WES 1591, F&BI 109327 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Whitman Environmental Sciences</u>
109327 -01	MW-1S-GW
109327 -02	MW-1D-GW
109327 -03	MW-10-GW

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-1S-GW	Client:	Whitman Environmental Sciences
Date Received:	09/17/21	Project:	12th + Yesler WES 1591, F&BI
109327			
Date Extracted:	09/23/21	Lab ID:	109327-01
Date Analyzed:	09/23/21	Data File:	109327-01.090
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	23.7

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-1D-GW	Client:	Whitman Environmental Sciences
Date Received:	09/17/21	Project:	12th + Yesler WES 1591, F&BI
109327			
Date Extracted:	09/23/21	Lab ID:	109327-02
Date Analyzed:	09/23/21	Data File:	109327-02.091
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	9.94

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th + Yesler WES 1591, F&BI
109327			
Date Extracted:	09/23/21	Lab ID:	I1-595 mb
Date Analyzed:	09/23/21	Data File:	I1-595 mb.040
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID: MW-1S-GW	Client: Whitman Environmental Sciences
Date Received: 09/17/21	Project: 12th + Yesler WES 1591, F&BI
109327	
Date Extracted: 09/21/21	Lab ID: 109327-01
Date Analyzed: 09/21/21	Data File: 092124.D
Matrix: Water	Instrument: GCMS11
Units: ug/L (ppb)	Operator: WE

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	78	126
Toluene-d8	105	87	115
4-Bromofluorobenzene	109	92	112

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	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	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID: MW-1D-GW	Client: Whitman Environmental Sciences
Date Received: 09/17/21	Project: 12th + Yesler WES 1591, F&BI
109327	
Date Extracted: 09/21/21	Lab ID: 109327-02
Date Analyzed: 09/21/21	Data File: 092125.D
Matrix: Water	Instrument: GCMS11
Units: ug/L (ppb)	Operator: WE

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	78	126
Toluene-d8	102	87	115
4-Bromofluorobenzene	106	92	112

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	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	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID: MW-10-GW	Client: Whitman Environmental Sciences
Date Received: 09/17/21	Project: 12th + Yesler WES 1591, F&BI
109327	
Date Extracted: 09/21/21	Lab ID: 109327-03
Date Analyzed: 09/21/21	Data File: 092126.D
Matrix: Water	Instrument: GCMS11
Units: ug/L (ppb)	Operator: WE

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	91	78	126
Toluene-d8	95	87	115
4-Bromofluorobenzene	106	92	112

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	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	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th + Yesler WES 1591, F&BI
109327			
Date Extracted:	09/21/21	Lab ID:	01-2123 mb
Date Analyzed:	09/21/21	Data File:	092107.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	WE

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	78	126
Toluene-d8	101	87	115
4-Bromofluorobenzene	106	92	112

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	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	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/27/21

Date Received: 09/17/21

Project: 12th + Yesler WES 1591, F&BI 109327

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR DISSOLVED METALS USING EPA METHOD 6020B**

Laboratory Code: 109331-01 (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	96	98	75-125	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	93	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/27/21

Date Received: 09/17/21

Project: 12th + Yesler WES 1591, F&BI 109327

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

Laboratory Code: 109331-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent	Acceptance Criteria
				Recovery MS	
Dichlorodifluoromethane	ug/L (ppb)	10	<1	110	50-150
Chloromethane	ug/L (ppb)	10	<10	80	50-150
Vinyl chloride	ug/L (ppb)	10	<0.02	113	50-150
Bromomethane	ug/L (ppb)	10	<5	93	50-150
Chloroethane	ug/L (ppb)	10	<1	113	50-150
Trichlorofluoromethane	ug/L (ppb)	10	<1	106	50-150
Acetone	ug/L (ppb)	50	<50	62	50-150
1,1-Dichloroethene	ug/L (ppb)	10	<1	121	50-150
Hexane	ug/L (ppb)	10	<5	92	50-150
Methylene chloride	ug/L (ppb)	10	<5	108	50-150
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	69	50-150
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	95	50-150
1,1-Dichloroethane	ug/L (ppb)	10	<1	88	50-150
2,2-Dichloropropane	ug/L (ppb)	10	<1	84	50-150
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	96	50-150
Chloroform	ug/L (ppb)	10	<1	94	50-150
2-Butanone (MEK)	ug/L (ppb)	50	<20	63	50-150
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<0.2	99	50-150
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	82	50-150
1,1-Dichloropropene	ug/L (ppb)	10	<1	95	50-150
Carbon tetrachloride	ug/L (ppb)	10	<0.5	89	50-150
Benzene	ug/L (ppb)	10	<0.35	94	50-150
Trichloroethene	ug/L (ppb)	10	<0.5	91	50-150
1,2-Dichloropropane	ug/L (ppb)	10	<1	90	50-150
Bromodichloromethane	ug/L (ppb)	10	<0.5	96	50-150
Dibromomethane	ug/L (ppb)	10	<1	95	50-150
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	93	50-150
cis-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	82	50-150
Toluene	ug/L (ppb)	10	<1	96	50-150
trans-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	82	50-150
1,1,2-Trichloroethane	ug/L (ppb)	10	<0.5	102	50-150
2-Hexanone	ug/L (ppb)	50	<10	74	50-150
1,3-Dichloropropane	ug/L (ppb)	10	<1	97	50-150
Tetrachloroethene	ug/L (ppb)	10	<1	98	50-150
Dibromochloromethane	ug/L (ppb)	10	<0.5	96	50-150
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<1	96	50-150
Chlorobenzene	ug/L (ppb)	10	<1	100	50-150
Ethylbenzene	ug/L (ppb)	10	<1	97	50-150
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	90	50-150
m,p-Xylene	ug/L (ppb)	20	<2	95	50-150
o-Xylene	ug/L (ppb)	10	<1	96	50-150
Styrene	ug/L (ppb)	10	<1	97	50-150
Isopropylbenzene	ug/L (ppb)	10	<1	99	50-150
Bromoform	ug/L (ppb)	10	<5	80	50-150
n-Propylbenzene	ug/L (ppb)	10	<1	96	50-150
Bromobenzene	ug/L (ppb)	10	<1	91	50-150
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	96	50-150
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<0.2	94	50-150
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	96	50-150
2-Chlorotoluene	ug/L (ppb)	10	<1	96	50-150
4-Chlorotoluene	ug/L (ppb)	10	<1	94	50-150
tert-Butylbenzene	ug/L (ppb)	10	<1	94	50-150
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	92	50-150
sec-Butylbenzene	ug/L (ppb)	10	<1	94	50-150
p-Isopropyltoluene	ug/L (ppb)	10	<1	92	50-150
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	95	50-150
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	93	50-150
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	97	50-150
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	90	50-150
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	97	50-150
Hexachlorobutadiene	ug/L (ppb)	10	<0.5	91	50-150
Naphthalene	ug/L (ppb)	10	<1	96	50-150
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	98	50-150

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/27/21

Date Received: 09/17/21

Project: 12th + Yesler WES 1591, F&BI 109327

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)	10	107	110	46-206	3
Chloromethane	ug/L (ppb)	10	75	92	70-142	20
Vinyl chloride	ug/L (ppb)	10	108	112	70-130	4
Bromomethane	ug/L (ppb)	10	98	111	56-197	12
Chloroethane	ug/L (ppb)	10	106	111	70-130	5
Trichlorofluoromethane	ug/L (ppb)	10	104	119	70-130	13
Acetone	ug/L (ppb)	50	50	60	10-140	18
1,1-Dichloroethene	ug/L (ppb)	10	104	109	70-130	5
Hexane	ug/L (ppb)	10	98	99	54-136	1
Methylene chloride	ug/L (ppb)	10	124	142 vo	43-134	14
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	74	70	70-130	6
trans-1,2-Dichloroethene	ug/L (ppb)	10	93	95	70-130	2
1,1-Dichloroethane	ug/L (ppb)	10	94	94	70-130	0
2,2-Dichloropropane	ug/L (ppb)	10	93	90	70-130	3
cis-1,2-Dichloroethene	ug/L (ppb)	10	94	97	70-130	3
Chloroform	ug/L (ppb)	10	93	94	70-130	1
2-Butanone (MEK)	ug/L (ppb)	50	66	63	17-154	5
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	97	98	70-130	1
1,1,1-Trichloroethane	ug/L (ppb)	10	92	89	70-130	3
1,1-Dichloropropene	ug/L (ppb)	10	98	97	70-130	1
Carbon tetrachloride	ug/L (ppb)	10	98	102	70-130	4
Benzene	ug/L (ppb)	10	92	93	70-130	1
Trichloroethene	ug/L (ppb)	10	90	91	70-130	1
1,2-Dichloropropane	ug/L (ppb)	10	91	90	70-130	1
Bromodichloromethane	ug/L (ppb)	10	94	96	70-130	2
Dibromomethane	ug/L (ppb)	10	87	92	70-130	6
4-Methyl-2-pentanone	ug/L (ppb)	50	85	93	68-130	9
cis-1,3-Dichloropropene	ug/L (ppb)	10	86	85	69-131	1
Toluene	ug/L (ppb)	10	94	95	70-130	1
trans-1,3-Dichloropropene	ug/L (ppb)	10	94	92	70-130	2
1,1,2-Trichloroethane	ug/L (ppb)	10	103	100	70-130	3
2-Hexanone	ug/L (ppb)	50	72	75	45-138	4
1,3-Dichloropropane	ug/L (ppb)	10	99	97	70-130	2
Tetrachloroethene	ug/L (ppb)	10	97	98	70-130	1
Dibromochloromethane	ug/L (ppb)	10	103	102	60-148	1
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	97	96	70-130	1
Chlorobenzene	ug/L (ppb)	10	99	99	70-130	0
Ethylbenzene	ug/L (ppb)	10	97	98	70-130	1
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	99	100	70-130	1
m,p-Xylene	ug/L (ppb)	20	95	96	70-130	1
o-Xylene	ug/L (ppb)	10	96	96	70-130	0
Styrene	ug/L (ppb)	10	97	98	70-130	1
Isopropylbenzene	ug/L (ppb)	10	99	100	70-130	1
Bromoform	ug/L (ppb)	10	95	97	69-138	2
n-Propylbenzene	ug/L (ppb)	10	98	100	70-130	2
Bromobenzene	ug/L (ppb)	10	94	92	70-130	2
1,3,5-Trimethylbenzene	ug/L (ppb)	10	97	98	70-130	1
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	96	98	70-130	2
1,2,3-Trichloropropane	ug/L (ppb)	10	95	100	70-130	5
2-Chlorotoluene	ug/L (ppb)	10	95	96	70-130	1
4-Chlorotoluene	ug/L (ppb)	10	94	96	70-130	2
tert-Butylbenzene	ug/L (ppb)	10	94	96	70-130	2
1,2,4-Trimethylbenzene	ug/L (ppb)	10	96	95	70-130	1
sec-Butylbenzene	ug/L (ppb)	10	95	98	70-130	3
p-Isopropyltoluene	ug/L (ppb)	10	97	96	70-130	1
1,3-Dichlorobenzene	ug/L (ppb)	10	96	97	70-130	1
1,4-Dichlorobenzene	ug/L (ppb)	10	94	94	70-130	0
1,2-Dichlorobenzene	ug/L (ppb)	10	97	97	70-130	0
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	91	95	70-130	4
1,2,4-Trichlorobenzene	ug/L (ppb)	10	103	98	70-130	5
Hexachlorobutadiene	ug/L (ppb)	10	94	96	70-130	2
Naphthalene	ug/L (ppb)	10	99	96	70-130	3
1,2,3-Trichlorobenzene	ug/L (ppb)	10	100	95	70-130	5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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.

10832 R

ME 09-17-2

Page # _____ of _____

11-51112

2014-2015

1000

The geological cross-section shows several distinct geological units. From top to bottom, the units are: a thin layer of 'Gravelly sandstone', a layer of 'Sandstone', a thick layer of 'Shale', a layer of 'Siltstone', a layer of 'Claystone', and a layer of 'Limestone'. The boundaries between these units are marked with different patterns: horizontal lines for sandstone, wavy lines for shale, and diagonal lines for siltstone and claystone. The limestone layer is at the base and is marked with a pattern of small circles. The cross-section is labeled with 'Gravelly sandstone', 'Sandstone', 'Shale', 'Siltstone', 'Claystone', and 'Limestone'.

Email 221122@1122

Page # _____ of _____
 TURNAROUND TIME *NW2*
☒ Standard turnaround
☐ RUSH *ATZ*
 Rush charges authorized by: _____

 SAMPLE DISPOSAL
☐ Archive samples
☐ Other _____
 Default: Dispose after 30 days

ANALYSES REQUESTED

[illegible]

Friedman & Bruya, Inc.

3012 16th Avenue West

Seattle, WA 98119-2029

Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
			9-17-81	4:40
Received by:	VINCE	FBI	9/17/81	1650
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

October 8, 2021

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 September 30, 2021 from the 12th+Yesler WES 1591, F&BI 109595 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
WES1008R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on September 30, 2020 by Friedman & Bruya, Inc. from the Whitman Environmental Sciences 12th+Yesler WES 1591, F&BI 109595 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Whitman Environmental Sciences</u>
109595 -01	MW-5-GW
109595 -02	MW-10-GW
109595 -03	GEO-B9-GW

The 8260D laboratory control sample and laboratory control sample duplicate failed the relative percent difference for hexane. The analyte was not detected therefore the data were acceptable.

All other quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-5-GW	Client:	Whitman Environmental Sciences
Date Received:	09/30/21	Project:	12th+Yesler WES 1591, F&BI 109595
Date Extracted:	10/01/21	Lab ID:	109595-01
Date Analyzed:	10/01/21	Data File:	109595-01.112
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	10.8

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-10-GW	Client:	Whitman Environmental Sciences
Date Received:	09/30/21	Project:	12th+Yesler WES 1591, F&BI 109595
Date Extracted:	10/01/21	Lab ID:	109595-02
Date Analyzed:	10/01/21	Data File:	109595-02.113
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	1.17

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	GEO-B9-GW	Client:	Whitman Environmental Sciences
Date Received:	09/30/21	Project:	12th+Yesler WES 1591, F&BI 109595
Date Extracted:	10/01/21	Lab ID:	109595-03
Date Analyzed:	10/01/21	Data File:	109595-03.119
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	2.12

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th+Yesler WES 1591, F&BI 109595
Date Extracted:	10/01/21	Lab ID:	I1-620 mb
Date Analyzed:	10/01/21	Data File:	I1-620 mb.107
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-5-GW	Client:	Whitman Environmental Sciences
Date Received:	09/30/21	Project:	12th+Yesler WES 1591, F&BI 109595
Date Extracted:	10/04/21	Lab ID:	109595-01
Date Analyzed:	10/04/21	Data File:	100417.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	WE

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	85	117
Toluene-d8	99	88	112
4-Bromofluorobenzene	98	90	111

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	0.27	Dibromochloromethane	<0.5
Bromomethane	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	4.3	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	1.1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	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	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	GEO-B9-GW	Client:	Whitman Environmental Sciences
Date Received:	09/30/21	Project:	12th+Yesler WES 1591, F&BI 109595
Date Extracted:	10/04/21	Lab ID:	109595-03
Date Analyzed:	10/04/21	Data File:	100418.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	WE

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	85	117
Toluene-d8	96	88	112
4-Bromofluorobenzene	103	90	111

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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	<0.2
2-Butanone (MEK)	33	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	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	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th+Yesler WES 1591, F&BI 109595
Date Extracted:	10/04/21	Lab ID:	01-2216 mb
Date Analyzed:	10/05/21	Data File:	100518.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	WE

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	108	85	117
Toluene-d8	100	88	112
4-Bromofluorobenzene	101	90	111

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	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	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/08/21

Date Received: 09/30/21

Project: 12th+Yesler WES 1591, F&BI 109595

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR DISSOLVED METALS USING EPA METHOD 6020B**

Laboratory Code: 109481-05 (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	10.8	94	97	75-125	3

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	88	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/08/21

Date Received: 09/30/21

Project: 12th+Yesler WES 1591, F&BI 109595

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

Laboratory Code: 110023-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent	Acceptance Criteria
				Recovery MS	
Dichlorodifluoromethane	ug/L (ppb)	10	<1	105	50-150
Chloromethane	ug/L (ppb)	10	<10	103	50-150
Vinyl chloride	ug/L (ppb)	10	<0.02	100	16-176
Bromomethane	ug/L (ppb)	10	<5	96	10-193
Chloroethane	ug/L (ppb)	10	<1	88	50-150
Trichlorofluoromethane	ug/L (ppb)	10	<1	104	50-150
Acetone	ug/L (ppb)	50	<50	77	15-179
1,1-Dichloroethene	ug/L (ppb)	10	<1	109	50-150
Hexane	ug/L (ppb)	10	<5	85	49-161
Methylene chloride	ug/L (ppb)	10	<5	108	40-143
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	92	50-150
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	98	50-150
1,1-Dichloroethane	ug/L (ppb)	10	<1	98	50-150
2,2-Dichloropropane	ug/L (ppb)	10	<1	93	10-335
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	99	50-150
Chloroform	ug/L (ppb)	10	<1	93	50-150
2-Butanone (MEK)	ug/L (ppb)	50	<20	95	34-168
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<0.2	98	50-150
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	96	50-150
1,1-Dichloropropene	ug/L (ppb)	10	<1	93	50-150
Carbon tetrachloride	ug/L (ppb)	10	<0.5	96	50-150
Benzene	ug/L (ppb)	10	<0.35	95	50-150
Trichloroethene	ug/L (ppb)	10	<0.5	93	43-133
1,2-Dichloropropane	ug/L (ppb)	10	<1	96	50-150
Bromodichloromethane	ug/L (ppb)	10	<0.5	97	50-150
Dibromomethane	ug/L (ppb)	10	<1	101	50-150
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	104	50-150
cis-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	93	48-145
Toluene	ug/L (ppb)	10	<1	92	50-150
trans-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	92	37-152
1,1,2-Trichloroethane	ug/L (ppb)	10	<0.5	100	50-150
2-Hexanone	ug/L (ppb)	50	<10	101	50-150
1,3-Dichloropropene	ug/L (ppb)	10	<1	95	50-150
Tetrachloroethene	ug/L (ppb)	10	<1	94	50-150
Dibromochloromethane	ug/L (ppb)	10	<0.5	99	33-164
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<1	98	50-150
Chlorobenzene	ug/L (ppb)	10	<1	94	50-150
Ethylbenzene	ug/L (ppb)	10	<1	94	50-150
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	99	50-150
m,p-Xylene	ug/L (ppb)	20	<2	96	50-150
o-Xylene	ug/L (ppb)	10	<1	93	50-150
Styrene	ug/L (ppb)	10	<1	93	50-150
Isopropylbenzene	ug/L (ppb)	10	<1	93	50-150
Bromoform	ug/L (ppb)	10	<5	98	23-161
n-Propylbenzene	ug/L (ppb)	10	<1	94	50-150
Bromobenzene	ug/L (ppb)	10	<1	91	50-150
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	96	50-150
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<0.2	101	10-235
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	98	33-151
2-Chlorotoluene	ug/L (ppb)	10	<1	92	50-150
4-Chlorotoluene	ug/L (ppb)	10	<1	93	50-150
tert-Butylbenzene	ug/L (ppb)	10	<1	93	50-150
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	94	50-150
sec-Butylbenzene	ug/L (ppb)	10	<1	95	46-139
p-Isopropyltoluene	ug/L (ppb)	10	<1	93	46-140
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	93	50-150
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	92	50-150
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	89	50-150
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	94	50-150
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	79	50-150
Hexachlorobutadiene	ug/L (ppb)	10	<0.5	89	42-150
Naphthalene	ug/L (ppb)	10	<1	66	50-150
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	76	44-155

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/08/21

Date Received: 09/30/21

Project: 12th+Yesler WES 1591, F&BI 109595

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)	10	111	109	70-130	2
Chloromethane	ug/L (ppb)	10	99	102	70-130	3
Vinyl chloride	ug/L (ppb)	10	103	97	70-130	6
Bromomethane	ug/L (ppb)	10	111	92	28-182	19
Chloroethane	ug/L (ppb)	10	101	91	70-130	10
Trichlorofluoromethane	ug/L (ppb)	10	97	96	70-130	1
Acetone	ug/L (ppb)	50	71	67	42-155	6
1,1-Dichloroethene	ug/L (ppb)	10	103	101	70-130	2
Hexane	ug/L (ppb)	10	71	91	50-161	25 vo
Methylene chloride	ug/L (ppb)	10	101	101	29-192	0
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	89	90	70-130	1
trans-1,2-Dichloroethene	ug/L (ppb)	10	94	95	70-130	1
1,1-Dichloroethane	ug/L (ppb)	10	94	93	70-130	1
2,2-Dichloropropane	ug/L (ppb)	10	89	92	70-130	3
cis-1,2-Dichloroethene	ug/L (ppb)	10	96	96	70-130	0
Chloroform	ug/L (ppb)	10	90	90	70-130	0
2-Butanone (MEK)	ug/L (ppb)	50	82	81	50-157	1
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	95	95	70-130	0
1,1,1-Trichloroethane	ug/L (ppb)	10	94	94	70-130	0
1,1-Dichloropropene	ug/L (ppb)	10	92	89	70-130	3
Carbon tetrachloride	ug/L (ppb)	10	94	91	70-130	3
Benzene	ug/L (ppb)	10	93	93	70-130	0
Trichloroethene	ug/L (ppb)	10	89	90	70-130	1
1,2-Dichloropropane	ug/L (ppb)	10	95	95	70-130	0
Bromodichloromethane	ug/L (ppb)	10	95	95	70-130	0
Dibromomethane	ug/L (ppb)	10	99	97	70-130	2
4-Methyl-2-pentanone	ug/L (ppb)	50	106	102	70-130	4
cis-1,3-Dichloropropene	ug/L (ppb)	10	94	93	70-130	1
Toluene	ug/L (ppb)	10	91	91	70-130	0
trans-1,3-Dichloropropene	ug/L (ppb)	10	93	91	70-130	2
1,1,2-Trichloroethane	ug/L (ppb)	10	100	99	70-130	1
2-Hexanone	ug/L (ppb)	50	103	99	69-130	4
1,3-Dichloropropene	ug/L (ppb)	10	94	95	70-130	1
Tetrachloroethene	ug/L (ppb)	10	91	93	70-130	2
Dibromochloromethane	ug/L (ppb)	10	100	100	63-142	0
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	99	98	70-130	1
Chlorobenzene	ug/L (ppb)	10	94	94	70-130	0
Ethylbenzene	ug/L (ppb)	10	94	94	70-130	0
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	99	96	70-130	3
m,p-Xylene	ug/L (ppb)	20	96	96	70-130	0
o-Xylene	ug/L (ppb)	10	94	94	70-130	0
Styrene	ug/L (ppb)	10	95	95	70-130	0
Isopropylbenzene	ug/L (ppb)	10	92	94	70-130	2
Bromoform	ug/L (ppb)	10	104	99	50-157	5
n-Propylbenzene	ug/L (ppb)	10	92	90	70-130	2
Bromobenzene	ug/L (ppb)	10	94	92	70-130	2
1,3,5-Trimethylbenzene	ug/L (ppb)	10	94	93	52-150	1
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	100	96	70-130	4
1,2,3-Trichloropropane	ug/L (ppb)	10	99	95	70-130	4
2-Chlorotoluene	ug/L (ppb)	10	92	91	70-130	1
4-Chlorotoluene	ug/L (ppb)	10	94	92	70-130	2
tert-Butylbenzene	ug/L (ppb)	10	91	87	70-130	4
1,2,4-Trimethylbenzene	ug/L (ppb)	10	93	91	70-130	2
sec-Butylbenzene	ug/L (ppb)	10	92	91	70-130	1
p-Isopropyltoluene	ug/L (ppb)	10	90	90	70-130	0
1,3-Dichlorobenzene	ug/L (ppb)	10	95	92	70-130	3
1,4-Dichlorobenzene	ug/L (ppb)	10	95	92	70-130	3
1,2-Dichlorobenzene	ug/L (ppb)	10	92	91	70-130	1
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	99	94	70-130	5
1,2,4-Trichlorobenzene	ug/L (ppb)	10	86	84	70-130	2
Hexachlorobutadiene	ug/L (ppb)	10	81	81	70-130	0
Naphthalene	ug/L (ppb)	10	89	86	70-130	3
1,2,3-Trichlorobenzene	ug/L (ppb)	10	85	82	69-143	4

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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.

470/1111

23

25

Page # _____ of _____

TURNAROUND TIME

☒ Standard turnaround

☐ RUSH _____

Rush charges authorized by: _____

SAMPLE DISPOSAL

☐ Archive samples

☐ Other _____

Default: Dispose after 30 days

[illegible]

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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October 12, 2021

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 October 4, 2021 from the 12th + Yesler WES 1591, F&BI 110066 project. There are 9 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
WES1012R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on October 4, 2021 by Friedman & Bruya, Inc. from the Whitman Environmental Sciences 12th + Yesler WES 1591, F&BI 110066 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID

110066 -01

Whitman Environmental Sciences

MW-11-GW

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-11-GW	Client:	Whitman Environmental Sciences
Date Received:	10/04/21	Project:	12th + Yesler WES 1591, F&BI
	110066		
Date Extracted:	10/08/21	Lab ID:	110066-01
Date Analyzed:	10/09/21	Data File:	110066-01.205
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	67.6

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th + Yesler WES 1591, F&BI
110066			
Date Extracted:	10/08/21	Lab ID:	I1-637 mb
Date Analyzed:	10/08/21	Data File:	I1-637 mb.038
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-11-GW	Client:	Whitman Environmental Sciences
Date Received:	10/04/21	Project:	12th + Yesler WES 1591, F&BI
	110066		
Date Extracted:	10/05/21	Lab ID:	110066-01
Date Analyzed:	10/05/21	Data File:	100517.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	WE

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	106	85	117
Toluene-d8	97	88	112
4-Bromofluorobenzene	107	90	111

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	<0.5
Bromomethane	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	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	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th + Yesler WES 1591, F&BI
110066			
Date Extracted:	10/05/21	Lab ID:	01-2218 mb
Date Analyzed:	10/05/21	Data File:	100507.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	WE

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	85	117
Toluene-d8	98	88	112
4-Bromofluorobenzene	98	90	111

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	<0.5
Bromomethane	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	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	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/12/21

Date Received: 10/04/21

Project: 12th + Yesler WES 1591, F&BI 110066

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR DISSOLVED METALS USING EPA METHOD 6020B**

Laboratory Code: 110068-01 (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	2.17	83	84	75-125	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	88	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/12/21

Date Received: 10/04/21

Project: 12th + Yesler WES 1591, F&BI 110066

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

Laboratory Code: 110017-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent	Acceptance Criteria
				Recovery MS	
Dichlorodifluoromethane	ug/L (ppb)	10	<1	123	50-150
Chloromethane	ug/L (ppb)	10	<10	87	50-150
Vinyl chloride	ug/L (ppb)	10	<0.2	111	16-176
Bromomethane	ug/L (ppb)	10	<5	90	10-193
Chloroethane	ug/L (ppb)	10	<1	86	50-150
Trichlorofluoromethane	ug/L (ppb)	10	<1	107	50-150
Acetone	ug/L (ppb)	50	<50	79	15-179
1,1-Dichloroethene	ug/L (ppb)	10	<1	107	50-150
Hexane	ug/L (ppb)	10	<5	96	49-161
Methylene chloride	ug/L (ppb)	10	<5	126	40-143
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	105	50-150
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	109	50-150
1,1-Dichloroethane	ug/L (ppb)	10	<1	107	50-150
2,2-Dichloropropane	ug/L (ppb)	10	<1	107	10-335
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	110	50-150
Chloroform	ug/L (ppb)	10	<1	103	50-150
2-Butanone (MEK)	ug/L (ppb)	50	<20	89	34-168
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<0.2	106	50-150
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	106	50-150
1,1-Dichloropropene	ug/L (ppb)	10	<1	106	50-150
Carbon tetrachloride	ug/L (ppb)	10	<0.5	99	50-150
Benzene	ug/L (ppb)	10	<0.35	105	50-150
Trichloroethene	ug/L (ppb)	10	<0.5	101	43-133
1,2-Dichloropropane	ug/L (ppb)	10	<1	107	50-150
Bromodichloromethane	ug/L (ppb)	10	<0.5	103	50-150
Dibromomethane	ug/L (ppb)	10	<1	107	50-150
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	115	50-150
cis-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	103	48-145
Toluene	ug/L (ppb)	10	<1	92	50-150
trans-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	90	37-152
1,1,2-Trichloroethane	ug/L (ppb)	10	<0.5	98	50-150
2-Hexanone	ug/L (ppb)	50	<10	101	50-150
1,3-Dichloropropene	ug/L (ppb)	10	<1	95	50-150
Tetrachloroethene	ug/L (ppb)	10	<1	93	50-150
Dibromochloromethane	ug/L (ppb)	10	<0.5	97	33-164
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<1	96	50-150
Chlorobenzene	ug/L (ppb)	10	<1	94	50-150
Ethylbenzene	ug/L (ppb)	10	<1	95	50-150
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	96	50-150
m,p-Xylene	ug/L (ppb)	20	<2	95	50-150
o-Xylene	ug/L (ppb)	10	<1	95	50-150
Styrene	ug/L (ppb)	10	<1	95	50-150
Isopropylbenzene	ug/L (ppb)	10	<1	96	50-150
Bromoform	ug/L (ppb)	10	<5	96	23-161
n-Propylbenzene	ug/L (ppb)	10	<1	93	50-150
Bromobenzene	ug/L (ppb)	10	<1	92	50-150
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	95	50-150
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<0.2	100	10-235
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	93	33-151
2-Chlorotoluene	ug/L (ppb)	10	<1	92	50-150
4-Chlorotoluene	ug/L (ppb)	10	<1	94	50-150
tert-Butylbenzene	ug/L (ppb)	10	<1	91	50-150
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	93	50-150
sec-Butylbenzene	ug/L (ppb)	10	<1	92	46-139
p-Isopropyltoluene	ug/L (ppb)	10	<1	92	46-140
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	93	50-150
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	93	50-150
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	94	50-150
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	101	50-150
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	97	50-150
Hexachlorobutadiene	ug/L (ppb)	10	<0.5	88	42-150
Naphthalene	ug/L (ppb)	10	<1	102	50-150
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	96	44-155

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/12/21

Date Received: 10/04/21

Project: 12th + Yesler WES 1591, F&BI 110066

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)	10	89	85	70-130	5
Chloromethane	ug/L (ppb)	10	89	86	70-130	3
Vinyl chloride	ug/L (ppb)	10	90	87	70-130	3
Bromomethane	ug/L (ppb)	10	95	86	28-182	10
Chloroethane	ug/L (ppb)	10	92	80	70-130	14
Trichlorofluoromethane	ug/L (ppb)	10	91	93	70-130	2
Acetone	ug/L (ppb)	50	70	68	42-155	3
1,1-Dichloroethene	ug/L (ppb)	10	99	86	70-130	14
Hexane	ug/L (ppb)	10	91	75	50-161	19
Methylene chloride	ug/L (ppb)	10	98	92	29-192	6
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	90	85	70-130	6
trans-1,2-Dichloroethene	ug/L (ppb)	10	93	90	70-130	3
1,1-Dichloroethane	ug/L (ppb)	10	93	89	70-130	4
2,2-Dichloropropane	ug/L (ppb)	10	94	87	70-130	8
cis-1,2-Dichloroethene	ug/L (ppb)	10	95	91	70-130	4
Chloroform	ug/L (ppb)	10	89	87	70-130	2
2-Butanone (MEK)	ug/L (ppb)	50	90	90	50-157	0
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	93	90	70-130	3
1,1,1-Trichloroethane	ug/L (ppb)	10	93	89	70-130	4
1,1-Dichloropropene	ug/L (ppb)	10	91	86	70-130	6
Carbon tetrachloride	ug/L (ppb)	10	91	86	70-130	6
Benzene	ug/L (ppb)	10	91	88	70-130	3
Trichloroethene	ug/L (ppb)	10	87	84	70-130	4
1,2-Dichloropropane	ug/L (ppb)	10	90	89	70-130	1
Bromodichloromethane	ug/L (ppb)	10	91	88	70-130	3
Dibromomethane	ug/L (ppb)	10	98	92	70-130	6
4-Methyl-2-pentanone	ug/L (ppb)	50	97	95	70-130	2
cis-1,3-Dichloropropene	ug/L (ppb)	10	90	86	70-130	5
Toluene	ug/L (ppb)	10	90	85	70-130	6
trans-1,3-Dichloropropene	ug/L (ppb)	10	92	84	70-130	9
1,1,2-Trichloroethane	ug/L (ppb)	10	97	92	70-130	5
2-Hexanone	ug/L (ppb)	50	99	93	69-130	6
1,3-Dichloropropene	ug/L (ppb)	10	93	90	70-130	3
Tetrachloroethene	ug/L (ppb)	10	92	86	70-130	7
Dibromochloromethane	ug/L (ppb)	10	96	92	63-142	4
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	96	91	70-130	5
Chlorobenzene	ug/L (ppb)	10	92	88	70-130	4
Ethylbenzene	ug/L (ppb)	10	93	88	70-130	6
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	94	90	70-130	4
m,p-Xylene	ug/L (ppb)	20	94	90	70-130	4
o-Xylene	ug/L (ppb)	10	92	88	70-130	4
Styrene	ug/L (ppb)	10	94	90	70-130	4
Isopropylbenzene	ug/L (ppb)	10	94	88	70-130	7
Bromoform	ug/L (ppb)	10	96	89	50-157	8
n-Propylbenzene	ug/L (ppb)	10	90	86	70-130	5
Bromobenzene	ug/L (ppb)	10	90	86	70-130	5
1,3,5-Trimethylbenzene	ug/L (ppb)	10	94	88	52-150	7
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	96	92	70-130	4
1,2,3-Trichloropropane	ug/L (ppb)	10	95	91	70-130	4
2-Chlorotoluene	ug/L (ppb)	10	91	86	70-130	6
4-Chlorotoluene	ug/L (ppb)	10	91	87	70-130	4
tert-Butylbenzene	ug/L (ppb)	10	89	83	70-130	7
1,2,4-Trimethylbenzene	ug/L (ppb)	10	92	87	70-130	6
sec-Butylbenzene	ug/L (ppb)	10	91	86	70-130	6
p-Isopropyltoluene	ug/L (ppb)	10	91	86	70-130	6
1,3-Dichlorobenzene	ug/L (ppb)	10	93	87	70-130	7
1,4-Dichlorobenzene	ug/L (ppb)	10	94	88	70-130	7
1,2-Dichlorobenzene	ug/L (ppb)	10	91	86	70-130	6
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	93	87	70-130	7
1,2,4-Trichlorobenzene	ug/L (ppb)	10	88	82	70-130	7
Hexachlorobutadiene	ug/L (ppb)	10	89	81	70-130	9
Naphthalene	ug/L (ppb)	10	89	82	70-130	8
1,2,3-Trichlorobenzene	ug/L (ppb)	10	87	80	69-143	8

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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.

AI

Report To Mr. J. Edgar Hoover

Company CHITARRA E.V. Services

Address 8813 167th Avenue NE

City, State, ZIP Seattle WA 98115

Phone _____ Email 206-573-380

SAMPLEERS (*signature*)

PROJECT NAME

PO#

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 d

☐ Archive samples
☐ Other
Default: Dispose

Default: Dispose after 30 days

AI

Report To Mr. J. Edgar Hoover

Company CHITARRA E.V. Services

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City, State, ZIP Seattle WA 98115

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SAMPLE DISPOSAL
☐ Archive samples
☐ Other
Default: Dispose after 30 d

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☐ Other
Default: Dispose

Default: Dispose after 30 days

[illegible]

Friedman & Bruya, Inc

3012 16th Avenue West

Seattle, WA 98119-2029

Ph. (206) 285-8282

SIGNATURE

PRINT NAME _____

COMPANY

DATE _____

TIME

Relinquished by:

Received by _____

Relinquished by:

Received by:

4th Quarter 2021

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

December 2, 2021

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 November 22, 2021 from the 12th & Yesler WES 1591, F&BI 111429 project. There are 15 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
WES1202R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on November 22, 2021 by Friedman & Bruya, Inc. from the Whitman Environmental Sciences 12th & Yesler WES 1591, F&BI 111429 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Whitman Environmental Sciences</u>
111429 -01	MW-1-GW
111429 -02	MW-5-GW
111429 -03	GEO-B9-GW

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-1-GW	Client:	Whitman Environmental Sciences
Date Received:	11/22/21	Project:	12th & Yesler WES 1591, F&BI 111429
Date Extracted:	11/30/21	Lab ID:	111429-01
Date Analyzed:	11/30/21	Data File:	111429-01.061
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	AP

Analyte:	Concentration ug/L (ppb)

Arsenic	1.11

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-5-GW	Client:	Whitman Environmental Sciences
Date Received:	11/22/21	Project:	12th & Yesler WES 1591, F&BI 111429
Date Extracted:	11/29/21	Lab ID:	111429-02
Date Analyzed:	11/30/21	Data File:	111429-02.081
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	AP

Analyte:	Concentration ug/L (ppb)

Arsenic	1.49

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	GEO-B9-GW	Client:	Whitman Environmental Sciences
Date Received:	11/22/21	Project:	12th & Yesler WES 1591, F&BI 111429
Date Extracted:	11/29/21	Lab ID:	111429-03
Date Analyzed:	11/30/21	Data File:	111429-03.082
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	AP

Analyte:	Concentration ug/L (ppb)

Arsenic	1.61

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th & Yesler WES 1591, F&BI 111429
Date Extracted:	11/30/21	Lab ID:	I1-787 mb
Date Analyzed:	11/30/21	Data File:	I1-787 mb.053
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	AP

Analyte:	Concentration ug/L (ppb)

Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th & Yesler WES 1591, F&BI 111429
Date Extracted:	11/30/21	Lab ID:	I1-788 mb
Date Analyzed:	11/30/21	Data File:	I1-788 mb.047
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	AP

Analyte:	Concentration ug/L (ppb)

Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-1-GW	Client:	Whitman Environmental Sciences
Date Received:	11/22/21	Project:	12th & Yesler WES 1591, F&BI 111429
Date Extracted:	11/23/21	Lab ID:	111429-01
Date Analyzed:	12/01/21	Data File:	120114.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	WE

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	107	78	126
Toluene-d8	102	87	115
4-Bromofluorobenzene	95	92	112

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	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	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-5-GW	Client:	Whitman Environmental Sciences
Date Received:	11/22/21	Project:	12th & Yesler WES 1591, F&BI 111429
Date Extracted:	11/23/21	Lab ID:	111429-02
Date Analyzed:	11/23/21	Data File:	112331.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	WE

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	107	78	126
Toluene-d8	95	87	115
4-Bromofluorobenzene	95	92	112

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	0.61	Dibromochloromethane	<0.5
Bromomethane	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	4.6	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	1.9	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	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	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	GEO-B9-GW	Client:	Whitman Environmental Sciences
Date Received:	11/22/21	Project:	12th & Yesler WES 1591, F&BI 111429
Date Extracted:	11/23/21	Lab ID:	111429-03
Date Analyzed:	11/29/21	Data File:	112926.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	WE

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	109	78	126
Toluene-d8	95	87	115
4-Bromofluorobenzene	97	92	112

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	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	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th & Yesler WES 1591, F&BI 111429
Date Extracted:	11/23/21	Lab ID:	01-2717 mb
Date Analyzed:	11/23/21	Data File:	112307.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	WE

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	109	78	126
Toluene-d8	97	87	115
4-Bromofluorobenzene	102	92	112

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	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	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 12/02/21

Date Received: 11/22/21

Project: 12th & Yesler WES 1591, F&BI 111429

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR DISSOLVED METALS USING EPA METHOD 6020B**

Laboratory Code: 111429-01 (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	1.11	104	105	75-125	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	97	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 12/02/21

Date Received: 11/22/21

Project: 12th & Yesler WES 1591, F&BI 111429

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR DISSOLVED METALS USING EPA METHOD 6020B**

Laboratory Code: 111427-01 (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	1.04	99	100	75-125	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	89	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 12/02/21

Date Received: 11/22/21

Project: 12th & Yesler WES 1591, F&BI 111429

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

Laboratory Code: 111423-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent	Acceptance Criteria
				Recovery MS	
Dichlorodifluoromethane	ug/L (ppb)	10	<1	114	50-150
Chloromethane	ug/L (ppb)	10	<10	102	50-150
Vinyl chloride	ug/L (ppb)	10	<0.02	112	50-150
Bromomethane	ug/L (ppb)	10	<5	128	50-150
Chloroethane	ug/L (ppb)	10	<1	129	50-150
Trichlorofluoromethane	ug/L (ppb)	10	<1	121	50-150
Acetone	ug/L (ppb)	50	<50	104	50-150
1,1-Dichloroethene	ug/L (ppb)	10	<1	126	50-150
Hexane	ug/L (ppb)	10	<5	118	50-150
Methylene chloride	ug/L (ppb)	10	<5	118	50-150
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	114	50-150
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	119	50-150
1,1-Dichloroethane	ug/L (ppb)	10	<1	114	50-150
2,2-Dichloropropane	ug/L (ppb)	10	<1	127	50-150
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	116	50-150
Chloroform	ug/L (ppb)	10	<1	113	50-150
2-Butanone (MEK)	ug/L (ppb)	50	<20	89	50-150
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<0.2	104	50-150
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	115	50-150
1,1-Dichloropropene	ug/L (ppb)	10	<1	105	50-150
Carbon tetrachloride	ug/L (ppb)	10	<0.5	113	50-150
Benzene	ug/L (ppb)	10	<0.35	102	50-150
Trichloroethene	ug/L (ppb)	10	<0.5	100	50-150
1,2-Dichloropropane	ug/L (ppb)	10	<1	100	50-150
Bromodichloromethane	ug/L (ppb)	10	<0.5	112	50-150
Dibromomethane	ug/L (ppb)	10	<1	107	50-150
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	106	50-150
cis-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	87	50-150
Toluene	ug/L (ppb)	10	<1	102	50-150
trans-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	92	50-150
1,1,2-Trichloroethane	ug/L (ppb)	10	<0.5	101	50-150
2-Hexanone	ug/L (ppb)	50	<10	101	50-150
1,3-Dichloropropane	ug/L (ppb)	10	<1	90	50-150
Tetrachloroethene	ug/L (ppb)	10	<1	111	50-150
Dibromochloromethane	ug/L (ppb)	10	<0.5	97	50-150
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<1	98	50-150
Chlorobenzene	ug/L (ppb)	10	<1	98	50-150
Ethylbenzene	ug/L (ppb)	10	<1	108	50-150
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	117	50-150
m,p-Xylene	ug/L (ppb)	20	<2	113	50-150
o-Xylene	ug/L (ppb)	10	<1	115	50-150
Styrene	ug/L (ppb)	10	<1	111	50-150
Isopropylbenzene	ug/L (ppb)	10	<1	115	50-150
Bromoform	ug/L (ppb)	10	<5	92	50-150
n-Propylbenzene	ug/L (ppb)	10	<1	105	50-150
Bromobenzene	ug/L (ppb)	10	<1	95	50-150
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	108	50-150
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<0.2	100	50-150
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	97	50-150
2-Chlorotoluene	ug/L (ppb)	10	<1	104	50-150
4-Chlorotoluene	ug/L (ppb)	10	<1	101	50-150
tert-Butylbenzene	ug/L (ppb)	10	<1	96	50-150
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	110	50-150
sec-Butylbenzene	ug/L (ppb)	10	<1	107	50-150
p-Isopropyltoluene	ug/L (ppb)	10	<1	110	50-150
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	101	50-150
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	103	50-150
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	104	50-150
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	104	50-150
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	107	50-150
Hexachlorobutadiene	ug/L (ppb)	10	<0.5	109	50-150
Naphthalene	ug/L (ppb)	10	<1	88	50-150
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	109	50-150

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 12/02/21

Date Received: 11/22/21

Project: 12th & Yesler WES 1591, F&BI 111429

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)	10	104	104	46-206	0
Chloromethane	ug/L (ppb)	10	97	93	70-142	4
Vinyl chloride	ug/L (ppb)	10	99	99	70-130	0
Bromomethane	ug/L (ppb)	10	114	104	56-197	9
Chloroethane	ug/L (ppb)	10	112	113	70-130	1
Trichlorofluoromethane	ug/L (ppb)	10	104	104	70-130	0
Acetone	ug/L (ppb)	50	93	87	10-140	7
1,1-Dichloroethene	ug/L (ppb)	10	109	109	70-130	0
Hexane	ug/L (ppb)	10	102	104	54-136	2
Methylene chloride	ug/L (ppb)	10	102	102	43-134	0
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	103	103	70-130	0
trans-1,2-Dichloroethene	ug/L (ppb)	10	103	103	70-130	0
1,1-Dichloroethane	ug/L (ppb)	10	101	101	70-130	0
2,2-Dichloropropane	ug/L (ppb)	10	108	110	70-130	2
cis-1,2-Dichloroethene	ug/L (ppb)	10	102	102	70-130	0
Chloroform	ug/L (ppb)	10	100	101	70-130	1
2-Butanone (MEK)	ug/L (ppb)	50	105	99	17-154	6
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	102	102	70-130	0
1,1,1-Trichloroethane	ug/L (ppb)	10	104	103	70-130	1
1,1-Dichloropropene	ug/L (ppb)	10	99	97	70-130	2
Carbon tetrachloride	ug/L (ppb)	10	101	107	70-130	6
Benzene	ug/L (ppb)	10	98	99	70-130	1
Trichloroethene	ug/L (ppb)	10	98	98	70-130	0
1,2-Dichloropropane	ug/L (ppb)	10	98	95	70-130	3
Bromodichloromethane	ug/L (ppb)	10	113	111	70-130	2
Dibromomethane	ug/L (ppb)	10	105	109	70-130	4
4-Methyl-2-pentanone	ug/L (ppb)	50	107	105	68-130	2
cis-1,3-Dichloropropene	ug/L (ppb)	10	99	94	69-131	5
Toluene	ug/L (ppb)	10	101	101	70-130	0
trans-1,3-Dichloropropene	ug/L (ppb)	10	103	95	70-130	8
1,1,2-Trichloroethane	ug/L (ppb)	10	105	104	70-130	1
2-Hexanone	ug/L (ppb)	50	106	103	45-138	3
1,3-Dichloropropane	ug/L (ppb)	10	98	103	70-130	5
Tetrachloroethene	ug/L (ppb)	10	105	104	70-130	1
Dibromochloromethane	ug/L (ppb)	10	106	98	60-148	8
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	104	104	70-130	0
Chlorobenzene	ug/L (ppb)	10	96	98	70-130	2
Ethylbenzene	ug/L (ppb)	10	102	102	70-130	0
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	107	105	70-130	2
m,p-Xylene	ug/L (ppb)	20	106	105	70-130	1
o-Xylene	ug/L (ppb)	10	106	105	70-130	1
Styrene	ug/L (ppb)	10	107	106	70-130	1
Isopropylbenzene	ug/L (ppb)	10	106	105	70-130	1
Bromoform	ug/L (ppb)	10	105	93	69-138	12
n-Propylbenzene	ug/L (ppb)	10	100	100	70-130	0
Bromobenzene	ug/L (ppb)	10	97	96	70-130	1
1,3,5-Trimethylbenzene	ug/L (ppb)	10	102	100	70-130	2
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	97	96	70-130	1
1,2,3-Trichloropropane	ug/L (ppb)	10	97	99	70-130	2
2-Chlorotoluene	ug/L (ppb)	10	99	97	70-130	2
4-Chlorotoluene	ug/L (ppb)	10	99	96	70-130	3
tert-Butylbenzene	ug/L (ppb)	10	97	97	70-130	0
1,2,4-Trimethylbenzene	ug/L (ppb)	10	104	104	70-130	0
sec-Butylbenzene	ug/L (ppb)	10	101	100	70-130	1
p-Isopropyltoluene	ug/L (ppb)	10	102	103	70-130	1
1,3-Dichlorobenzene	ug/L (ppb)	10	98	97	70-130	1
1,4-Dichlorobenzene	ug/L (ppb)	10	99	100	70-130	1
1,2-Dichlorobenzene	ug/L (ppb)	10	97	100	70-130	3
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	100	101	70-130	1
1,2,4-Trichlorobenzene	ug/L (ppb)	10	95	96	70-130	1
Hexachlorobutadiene	ug/L (ppb)	10	97	100	70-130	3
Naphthalene	ug/L (ppb)	10	82	81	70-130	1
1,2,3-Trichlorobenzene	ug/L (ppb)	10	98	95	70-130	3

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
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www.friedmanandbruya.com

January 12, 2022

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 January 4, 2022 from the 12th & Yesler WES-1591, F&BI 201019 project. There are 15 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
WES0112R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on January 4, 2021 by Friedman & Bruya, Inc. from the Whitman Environmental Sciences 12th & Yesler WES-1591, F&BI 201019 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Whitman Environmental Sciences</u>
201019 -01	MW-1S-GW
201019 -02	MW-1D-GW
201019 -03	MW-10-GW

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-1S-GW f	Client:	Whitman Environmental Sciences
Date Received:	01/04/22	Project:	12th & Yesler WES-1591
Date Extracted:	01/10/22	Lab ID:	201019-01
Date Analyzed:	01/10/22	Data File:	201019-01.064
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	2.78

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-1D-GW	Client:	Whitman Environmental Sciences
Date Received:	01/04/22	Project:	12th & Yesler WES-1591
Date Extracted:	01/07/22	Lab ID:	201019-02
Date Analyzed:	01/07/22	Data File:	201019-02.061
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	9.04

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-10-GW	Client:	Whitman Environmental Sciences
Date Received:	01/04/22	Project:	12th & Yesler WES-1591
Date Extracted:	01/07/22	Lab ID:	201019-03
Date Analyzed:	01/07/22	Data File:	201019-03.062
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	5.71

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank f	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th & Yesler WES-1591
Date Extracted:	01/10/22	Lab ID:	I2-13 mb
Date Analyzed:	01/10/22	Data File:	I2-13 mb.050
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th & Yesler WES-1591
Date Extracted:	01/10/22	Lab ID:	I2-13 mb
Date Analyzed:	01/10/22	Data File:	I2-13 mb.050
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-1S-GW	Client:	Whitman Environmental Sciences
Date Received:	01/04/22	Project:	12th & Yesler WES-1591
Date Extracted:	01/05/22	Lab ID:	201019-01
Date Analyzed:	01/05/22	Data File:	010512.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	RF

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	89	85	117
Toluene-d8	98	88	112
4-Bromofluorobenzene	106	90	111

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	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	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-1D-GW	Client:	Whitman Environmental Sciences
Date Received:	01/04/22	Project:	12th & Yesler WES-1591
Date Extracted:	01/05/22	Lab ID:	201019-02
Date Analyzed:	01/05/22	Data File:	010513.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	RF

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	85	117
Toluene-d8	100	88	112
4-Bromofluorobenzene	108	90	111

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	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	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-10-GW	Client:	Whitman Environmental Sciences
Date Received:	01/04/22	Project:	12th & Yesler WES-1591
Date Extracted:	01/05/22	Lab ID:	201019-03
Date Analyzed:	01/05/22	Data File:	010514.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	RF

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	85	117
Toluene-d8	99	88	112
4-Bromofluorobenzene	108	90	111

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	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	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th & Yesler WES-1591
Date Extracted:	01/05/22	Lab ID:	02-016 mb
Date Analyzed:	01/05/22	Data File:	010506.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	RF

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	85	117
Toluene-d8	100	88	112
4-Bromofluorobenzene	103	90	111

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	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	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 01/12/22

Date Received: 01/04/22

Project: 12th & Yesler WES-1591, F&BI 201019

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR DISSOLVED METALS USING EPA METHOD 6020B**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	94	92	80-120	2

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 01/12/22

Date Received: 01/04/22

Project: 12th & Yesler WES-1591, F&BI 201019

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR TOTAL METALS USING EPA METHOD 6020B**

Laboratory Code: 201029-01 (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	2.69	96	94	75-125	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	94	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 01/12/22

Date Received: 01/04/22

Project: 12th & Yesler WES-1591, F&BI 201019

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

Laboratory Code: 201019-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent	Acceptance Criteria
				Recovery MS	
Dichlorodifluoromethane	ug/L (ppb)	10	<1	101	50-150
Chloromethane	ug/L (ppb)	10	<10	104	50-150
Vinyl chloride	ug/L (ppb)	10	<0.02	112	16-176
Bromomethane	ug/L (ppb)	10	<5	121	10-193
Chloroethane	ug/L (ppb)	10	<1	117	50-150
Trichlorofluoromethane	ug/L (ppb)	10	<1	112	50-150
Acetone	ug/L (ppb)	50	<50	91	15-179
1,1-Dichloroethene	ug/L (ppb)	10	<1	97	50-150
Hexane	ug/L (ppb)	10	<5	105	49-161
Methylene chloride	ug/L (ppb)	10	<5	63	40-143
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	100	50-150
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	96	50-150
1,1-Dichloroethane	ug/L (ppb)	10	<1	95	50-150
2,2-Dichloropropane	ug/L (ppb)	10	<1	112	10-335
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	96	50-150
Chloroform	ug/L (ppb)	10	<1	97	50-150
2-Butanone (MEK)	ug/L (ppb)	50	<20	85	34-168
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<0.2	98	50-150
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	99	50-150
1,1-Dichloropropene	ug/L (ppb)	10	<1	99	50-150
Carbon tetrachloride	ug/L (ppb)	10	<0.5	97	50-150
Benzene	ug/L (ppb)	10	<0.35	97	50-150
Trichloroethene	ug/L (ppb)	10	<0.5	94	43-133
1,2-Dichloropropane	ug/L (ppb)	10	<1	99	50-150
Bromodichloromethane	ug/L (ppb)	10	<0.5	99	50-150
Dibromomethane	ug/L (ppb)	10	<1	100	50-150
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	100	50-150
cis-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	99	48-145
Toluene	ug/L (ppb)	10	<1	99	50-150
trans-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	102	37-152
1,1,2-Trichloroethane	ug/L (ppb)	10	<0.5	96	50-150
2-Hexanone	ug/L (ppb)	50	<10	103	50-150
1,3-Dichloropropene	ug/L (ppb)	10	<1	98	50-150
Tetrachloroethene	ug/L (ppb)	10	<1	96	50-150
Dibromochloromethane	ug/L (ppb)	10	<0.5	102	33-164
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<1	99	50-150
Chlorobenzene	ug/L (ppb)	10	<1	96	50-150
Ethylbenzene	ug/L (ppb)	10	<1	104	50-150
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	98	50-150
m,p-Xylene	ug/L (ppb)	20	<2	107	50-150
o-Xylene	ug/L (ppb)	10	<1	104	50-150
Styrene	ug/L (ppb)	10	<1	104	50-150
Isopropylbenzene	ug/L (ppb)	10	<1	105	50-150
Bromoform	ug/L (ppb)	10	<5	102	23-161
n-Propylbenzene	ug/L (ppb)	10	<1	104	50-150
Bromobenzene	ug/L (ppb)	10	<1	101	50-150
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	106	50-150
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<0.2	110	10-235
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	98	33-151
2-Chlorotoluene	ug/L (ppb)	10	<1	100	50-150
4-Chlorotoluene	ug/L (ppb)	10	<1	107	50-150
tert-Butylbenzene	ug/L (ppb)	10	<1	104	50-150
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	108	50-150
sec-Butylbenzene	ug/L (ppb)	10	<1	107	46-139
p-Isopropyltoluene	ug/L (ppb)	10	<1	109	46-140
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	100	50-150
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	100	50-150
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	99	50-150
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	104	50-150
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	101	50-150
Hexachlorobutadiene	ug/L (ppb)	10	<0.5	94	42-150
Naphthalene	ug/L (ppb)	10	<1	105	50-150
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	101	44-155

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 01/12/22

Date Received: 01/04/22

Project: 12th & Yesler WES-1591, F&BI 201019

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)	10	94	93	70-130	1
Chloromethane	ug/L (ppb)	10	95	94	70-130	1
Vinyl chloride	ug/L (ppb)	10	98	101	70-130	3
Bromomethane	ug/L (ppb)	10	118	126	28-182	7
Chloroethane	ug/L (ppb)	10	101	104	70-130	3
Trichlorofluoromethane	ug/L (ppb)	10	90	95	70-130	5
Acetone	ug/L (ppb)	50	78	79	42-155	1
1,1-Dichloroethene	ug/L (ppb)	10	90	89	70-130	1
Hexane	ug/L (ppb)	10	106	105	50-161	1
Methylene chloride	ug/L (ppb)	10	121	102	29-192	17
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	97	99	70-130	2
trans-1,2-Dichloroethene	ug/L (ppb)	10	92	92	70-130	0
1,1-Dichloroethane	ug/L (ppb)	10	87	89	70-130	2
2,2-Dichloropropane	ug/L (ppb)	10	110	110	70-130	0
cis-1,2-Dichloroethene	ug/L (ppb)	10	92	93	70-130	1
Chloroform	ug/L (ppb)	10	89	92	70-130	3
2-Butanone (MEK)	ug/L (ppb)	50	83	92	50-157	10
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	86	89	70-130	3
1,1,1-Trichloroethane	ug/L (ppb)	10	91	93	70-130	2
1,1-Dichloropropene	ug/L (ppb)	10	95	98	70-130	3
Carbon tetrachloride	ug/L (ppb)	10	93	93	70-130	0
Benzene	ug/L (ppb)	10	92	94	70-130	2
Trichloroethene	ug/L (ppb)	10	89	90	70-130	1
1,2-Dichloropropane	ug/L (ppb)	10	92	95	70-130	3
Bromodichloromethane	ug/L (ppb)	10	90	94	70-130	4
Dibromomethane	ug/L (ppb)	10	92	93	70-130	1
4-Methyl-2-pentanone	ug/L (ppb)	50	107	102	70-130	5
cis-1,3-Dichloropropene	ug/L (ppb)	10	91	99	70-130	8
Toluene	ug/L (ppb)	10	90	94	70-130	4
trans-1,3-Dichloropropene	ug/L (ppb)	10	102	99	70-130	3
1,1,2-Trichloroethane	ug/L (ppb)	10	89	89	70-130	0
2-Hexanone	ug/L (ppb)	50	90	91	69-130	1
1,3-Dichloropropene	ug/L (ppb)	10	87	88	70-130	1
Tetrachloroethene	ug/L (ppb)	10	91	91	70-130	0
Dibromochloromethane	ug/L (ppb)	10	94	96	63-142	2
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	93	94	70-130	1
Chlorobenzene	ug/L (ppb)	10	92	94	70-130	2
Ethylbenzene	ug/L (ppb)	10	99	100	70-130	1
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	91	94	70-130	3
m,p-Xylene	ug/L (ppb)	20	102	103	70-130	1
o-Xylene	ug/L (ppb)	10	101	102	70-130	1
Styrene	ug/L (ppb)	10	100	101	70-130	1
Isopropylbenzene	ug/L (ppb)	10	104	104	70-130	0
Bromoform	ug/L (ppb)	10	96	94	50-157	2
n-Propylbenzene	ug/L (ppb)	10	101	103	70-130	2
Bromobenzene	ug/L (ppb)	10	98	99	70-130	1
1,3,5-Trimethylbenzene	ug/L (ppb)	10	105	105	52-150	0
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	96	104	70-130	8
1,2,3-Trichloropropane	ug/L (ppb)	10	89	94	70-130	5
2-Chlorotoluene	ug/L (ppb)	10	95	98	70-130	3
4-Chlorotoluene	ug/L (ppb)	10	102	104	70-130	2
tert-Butylbenzene	ug/L (ppb)	10	105	107	70-130	2
1,2,4-Trimethylbenzene	ug/L (ppb)	10	107	107	70-130	0
sec-Butylbenzene	ug/L (ppb)	10	106	106	70-130	0
p-Isopropyltoluene	ug/L (ppb)	10	109	110	70-130	1
1,3-Dichlorobenzene	ug/L (ppb)	10	96	97	70-130	1
1,4-Dichlorobenzene	ug/L (ppb)	10	94	98	70-130	4
1,2-Dichlorobenzene	ug/L (ppb)	10	96	98	70-130	2
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	94	100	70-130	6
1,2,4-Trichlorobenzene	ug/L (ppb)	10	101	103	70-130	2
Hexachlorobutadiene	ug/L (ppb)	10	98	96	70-130	2
Naphthalene	ug/L (ppb)	10	107	110	70-130	3
1,2,3-Trichlorobenzene	ug/L (ppb)	10	97	101	69-143	4

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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.

201019

SAMPLE CHAIN OF CUSTODY

01-04-22

VW1/A12

Page # of

TURNAROUND TIME

☒ Standard turnaround☐ RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

☐ Archive samples☐ Other

Default: Dispose after 30 days

SAMPLERS (signature)

PROJECT NAME

130114 / 130106

PO #

4265-1591

REMARKS

INVOICE TO

Report To John L. WilliamsCompany ENVIRONMENTAL SERVICESAddress 8818 17th Ave NECity, State, ZIP Seattle, WA 98119-2029Phone 206-285-8282Email john.williams@envservices.com

Project specific RLS? Yes / No

ANALYSES REQUESTED

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

(3) added per SW 1/5/12 re Notes

MW-15-010
MW-17-010
MW-10-01001A-D
02
0312-13-21
"
"PM
"
"Water
"
"4
4
4Treated
Residual

- NOT FILTERED yet

- Treated
- NOT FILTERED yetNOTE: 1/4/12
G.M. MC
1/4/12

SIGNATURE

PRINT NAME

COMPANY

DATE

TIME

Relinquished by:

Signature

Signature

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Signature

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029

Received by:

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Received by:

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Ph. (206) 285-8282

Received by:

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Signature

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1st Quarter 2022

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

March 3, 2022

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 February 18, 2022 from the 12th and Yesler WES-1591, F&BI 202368 project. The VOC list has been expanded to the full VOC list as requested on the chain of custody.

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
WES0228R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

3012 16th Avenue West
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(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

February 28, 2022

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 18, 2022 from the 12th and Yesler WES-1591, F&BI 202368 project. There are 9 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
WES0228R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on February 18, 2022 by Friedman & Bruya, Inc. from the Whitman Environmental Sciences 12th and Yesler WES-1591, F&BI 202368 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID

202368 -01

Whitman Environmental Sciences

MW-5R-GW

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-5R-GW	Client:	Whitman Environmental Sciences
Date Received:	02/18/22	Project:	12th and Yesler WES-1591
Date Extracted:	02/24/22	Lab ID:	202368-01
Date Analyzed:	02/24/22	Data File:	202368-01.091
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	AR

Analyte:	Concentration ug/L (ppb)

Arsenic	2.50

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved 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:	02/24/22	Lab ID:	I2-146 mb
Date Analyzed:	02/24/22	Data File:	I2-146 mb.083
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	AR

Analyte:	Concentration ug/L (ppb)

Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-5R-GW	Client:	Whitman Environmental Sciences
Date Received:	02/18/22	Project:	12th and Yesler WES-1591
Date Extracted:	02/21/22	Lab ID:	202368-01
Date Analyzed:	02/21/22	Data File:	022117.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	RF

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	107	78	126
Toluene-d8	99	84	115
4-Bromofluorobenzene	92	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	0.60	Dibromochloromethane	<0.5
Bromomethane	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	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	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th and Yesler WES-1591
Date Extracted:	02/21/22	Lab ID:	02-454 mb
Date Analyzed:	02/21/22	Data File:	022107.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	RF

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	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	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/28/22

Date Received: 02/18/22

Project: 12th and Yesler WES-1591, F&BI 202368

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR DISSOLVED METALS USING EPA METHOD 6020B**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	94	94	80-120	0

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/28/22

Date Received: 02/18/22

Project: 12th and Yesler WES-1591, F&BI 202368

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

Laboratory Code: 202368-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent	Acceptance Criteria
				Recovery MS	
Dichlorodifluoromethane	ug/L (ppb)	10	<1	97	50-150
Chloromethane	ug/L (ppb)	10	<10	103	50-150
Vinyl chloride	ug/L (ppb)	10	0.60	95	50-150
Bromomethane	ug/L (ppb)	10	<5	115	50-150
Chloroethane	ug/L (ppb)	10	<1	108	50-150
Trichlorofluoromethane	ug/L (ppb)	10	<1	101	50-150
Acetone	ug/L (ppb)	50	<50	87	50-150
1,1-Dichloroethene	ug/L (ppb)	10	<1	100	50-150
Hexane	ug/L (ppb)	10	<5	122	50-150
Methylene chloride	ug/L (ppb)	10	<5	91	50-150
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	93	50-150
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	95	50-150
1,1-Dichloroethane	ug/L (ppb)	10	<1	98	50-150
2,2-Dichloropropane	ug/L (ppb)	10	<1	104	50-150
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	98	50-150
Chloroform	ug/L (ppb)	10	<1	100	50-150
2-Butanone (MEK)	ug/L (ppb)	50	<20	97	50-150
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<0.2	110	50-150
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	100	50-150
1,1-Dichloropropene	ug/L (ppb)	10	<1	94	50-150
Carbon tetrachloride	ug/L (ppb)	10	<0.5	102	50-150
Benzene	ug/L (ppb)	10	<0.35	95	50-150
Trichloroethene	ug/L (ppb)	10	<0.5	105	50-150
1,2-Dichloropropane	ug/L (ppb)	10	<1	98	50-150
Bromodichloromethane	ug/L (ppb)	10	<0.5	111	50-150
Dibromomethane	ug/L (ppb)	10	<1	99	50-150
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	103	50-150
cis-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	91	50-150
Toluene	ug/L (ppb)	10	<1	104	50-150
trans-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	94	50-150
1,1,2-Trichloroethane	ug/L (ppb)	10	<0.5	99	50-150
2-Hexanone	ug/L (ppb)	50	<10	99	50-150
1,3-Dichloropropane	ug/L (ppb)	10	<1	98	50-150
Tetrachloroethene	ug/L (ppb)	10	<1	112	50-150
Dibromochloromethane	ug/L (ppb)	10	<0.5	106	50-150
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<1	102	50-150
Chlorobenzene	ug/L (ppb)	10	<1	97	50-150
Ethylbenzene	ug/L (ppb)	10	<1	96	50-150
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	103	50-150
m,p-Xylene	ug/L (ppb)	20	<2	102	50-150
o-Xylene	ug/L (ppb)	10	<1	96	50-150
Styrene	ug/L (ppb)	10	<1	109	50-150
Isopropylbenzene	ug/L (ppb)	10	<1	101	50-150
Bromoform	ug/L (ppb)	10	<5	112	50-150
n-Propylbenzene	ug/L (ppb)	10	<1	88	50-150
Bromobenzene	ug/L (ppb)	10	<1	89	50-150
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	94	50-150
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<0.2	87	50-150
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	89	50-150
2-Chlorotoluene	ug/L (ppb)	10	<1	92	50-150
4-Chlorotoluene	ug/L (ppb)	10	<1	100	50-150
tert-Butylbenzene	ug/L (ppb)	10	<1	89	50-150
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	99	50-150
sec-Butylbenzene	ug/L (ppb)	10	<1	93	50-150
p-Isopropyltoluene	ug/L (ppb)	10	<1	99	50-150
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	95	50-150
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	93	50-150
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	91	50-150
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	91	50-150
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	92	50-150
Hexachlorobutadiene	ug/L (ppb)	10	<0.5	100	50-150
Naphthalene	ug/L (ppb)	10	<1	84	50-150
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	98	50-150

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/28/22

Date Received: 02/18/22

Project: 12th and Yesler WES-1591, F&BI 202368

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)	10	99	101	46-206	2
Chloromethane	ug/L (ppb)	10	102	103	70-142	1
Vinyl chloride	ug/L (ppb)	10	94	95	70-130	1
Bromomethane	ug/L (ppb)	10	112	113	56-197	1
Chloroethane	ug/L (ppb)	10	104	106	70-130	2
Trichlorofluoromethane	ug/L (ppb)	10	103	98	70-130	5
Acetone	ug/L (ppb)	50	90	94	10-140	4
1,1-Dichloroethene	ug/L (ppb)	10	95	98	70-130	3
Hexane	ug/L (ppb)	10	104	92	54-136	12
Methylene chloride	ug/L (ppb)	10	98	104	43-134	6
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	92	95	70-130	3
trans-1,2-Dichloroethene	ug/L (ppb)	10	91	93	70-130	2
1,1-Dichloroethane	ug/L (ppb)	10	93	96	70-130	3
2,2-Dichloropropane	ug/L (ppb)	10	99	105	70-130	6
cis-1,2-Dichloroethene	ug/L (ppb)	10	93	96	70-130	3
Chloroform	ug/L (ppb)	10	92	96	70-130	4
2-Butanone (MEK)	ug/L (ppb)	50	107	99	17-154	8
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	104	106	70-130	2
1,1,1-Trichloroethane	ug/L (ppb)	10	95	98	70-130	3
1,1-Dichloropropene	ug/L (ppb)	10	92	92	70-130	0
Carbon tetrachloride	ug/L (ppb)	10	96	100	70-130	4
Benzene	ug/L (ppb)	10	89	93	70-130	4
Trichloroethene	ug/L (ppb)	10	100	103	70-130	3
1,2-Dichloropropane	ug/L (ppb)	10	95	100	70-130	5
Bromodichloromethane	ug/L (ppb)	10	91	109	70-130	18
Dibromomethane	ug/L (ppb)	10	93	94	70-130	1
4-Methyl-2-pentanone	ug/L (ppb)	50	104	108	68-130	4
cis-1,3-Dichloropropene	ug/L (ppb)	10	93	95	69-131	2
Toluene	ug/L (ppb)	10	101	103	70-130	2
trans-1,3-Dichloropropene	ug/L (ppb)	10	97	96	70-130	1
1,1,2-Trichloroethane	ug/L (ppb)	10	96	97	70-130	1
2-Hexanone	ug/L (ppb)	50	100	99	45-138	1
1,3-Dichloropropene	ug/L (ppb)	10	89	92	70-130	3
Tetrachloroethene	ug/L (ppb)	10	107	107	70-130	0
Dibromochloromethane	ug/L (ppb)	10	106	106	60-148	0
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	99	99	70-130	0
Chlorobenzene	ug/L (ppb)	10	96	97	70-130	1
Ethylbenzene	ug/L (ppb)	10	93	95	70-130	2
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	100	103	70-130	3
m,p-Xylene	ug/L (ppb)	20	97	99	70-130	2
o-Xylene	ug/L (ppb)	10	94	96	70-130	2
Styrene	ug/L (ppb)	10	103	106	70-130	3
Isopropylbenzene	ug/L (ppb)	10	97	100	70-130	3
Bromoform	ug/L (ppb)	10	116	112	69-138	4
n-Propylbenzene	ug/L (ppb)	10	86	89	70-130	3
Bromobenzene	ug/L (ppb)	10	87	89	70-130	2
1,3,5-Trimethylbenzene	ug/L (ppb)	10	93	104	70-130	11
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	84	88	70-130	5
1,2,3-Trichloropropane	ug/L (ppb)	10	89	88	70-130	1
2-Chlorotoluene	ug/L (ppb)	10	88	92	70-130	4
4-Chlorotoluene	ug/L (ppb)	10	98	91	70-130	7
tert-Butylbenzene	ug/L (ppb)	10	87	92	70-130	6
1,2,4-Trimethylbenzene	ug/L (ppb)	10	97	100	70-130	3
sec-Butylbenzene	ug/L (ppb)	10	90	94	70-130	4
p-Isopropyltoluene	ug/L (ppb)	10	95	98	70-130	3
1,3-Dichlorobenzene	ug/L (ppb)	10	91	95	70-130	4
1,4-Dichlorobenzene	ug/L (ppb)	10	89	92	70-130	3
1,2-Dichlorobenzene	ug/L (ppb)	10	90	91	70-130	1
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	96	97	70-130	1
1,2,4-Trichlorobenzene	ug/L (ppb)	10	92	95	70-130	3
Hexachlorobutadiene	ug/L (ppb)	10	96	96	70-130	0
Naphthalene	ug/L (ppb)	10	86	89	70-130	3
1,2,3-Trichlorobenzene	ug/L (ppb)	10	97	102	70-130	5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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.

ATb/1447

Page # of

TURNAROUND TIMES

☒ Standard turnaround
☐ RUSH

Rush charges authorized by: _____

SAMPLE DISPOSAL

☐ Archive samples

☐ Other _____

Default: Dispose after 30 days

ANALYSES REQUESTED

[illegible]

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
	~~XXXXXXXXXX~~	~~XXXXXXXXXX~~	~~11/18/22~~	~~4:26~~
Received by:	Tokala Christensen	FTS	02/18/22	16:28
Relinquished by:		Samples received at	600	
Received by:				

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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March 14, 2022

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 8, 2022 from the 12th and Yesler, F&BI 203146 project. There are 9 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
WES0314R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on March 8, 2022 by Friedman & Bruya, Inc. from the Whitman Environmental Sciences 12th and Yesler, F&BI 203146 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID
203146 -01

Whitman Environmental Sciences
MW-12R-GW

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-12R-GW	Client:	Whitman Environmental Sciences
Date Received:	03/08/22	Project:	12th and Yesler, F&BI 203146
Date Extracted:	03/09/22	Lab ID:	203146-01 x10
Date Analyzed:	03/10/22	Data File:	203146-01 x10.048
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	845

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th and Yesler, F&BI 203146
Date Extracted:	03/09/22	Lab ID:	I2-185 mb
Date Analyzed:	03/09/22	Data File:	I2-185 mb.100
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-12R-GW	Client:	Whitman Environmental Sciences
Date Received:	03/08/22	Project:	12th and Yesler, F&BI 203146
Date Extracted:	03/09/22	Lab ID:	203146-01
Date Analyzed:	03/09/22	Data File:	030908.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	we

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	85	117
Toluene-d8	102	88	112
4-Bromofluorobenzene	103	90	111

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.1	Dibromochloromethane	<0.5
Bromomethane	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	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	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th and Yesler, F&BI 203146
Date Extracted:	03/09/22	Lab ID:	02-554 mb
Date Analyzed:	03/09/22	Data File:	030907.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	RF

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	111	78	126
Toluene-d8	99	84	115
4-Bromofluorobenzene	87	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	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	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/14/22

Date Received: 03/08/22

Project: 12th and Yesler, F&BI 203146

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR DISSOLVED METALS USING EPA METHOD 6020B**

Laboratory Code: 203144-01 x10 (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	15.7	102	89	75-125	14

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	103	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/14/22

Date Received: 03/08/22

Project: 12th and Yesler, F&BI 203146

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

Laboratory Code: 203146-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent	Acceptance Criteria
				Recovery MS	
Dichlorodifluoromethane	ug/L (ppb)	10	<1	104	50-150
Chloromethane	ug/L (ppb)	10	<10	99	50-150
Vinyl chloride	ug/L (ppb)	10	<0.1	102	16-176
Bromomethane	ug/L (ppb)	10	<5	112	10-193
Chloroethane	ug/L (ppb)	10	<1	103	50-150
Trichlorofluoromethane	ug/L (ppb)	10	<1	102	50-150
Acetone	ug/L (ppb)	50	<50	82	15-179
1,1-Dichloroethene	ug/L (ppb)	10	<1	92	50-150
Hexane	ug/L (ppb)	10	<5	102	49-161
Methylene chloride	ug/L (ppb)	10	<5	96	40-143
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	103	50-150
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	95	50-150
1,1-Dichloroethane	ug/L (ppb)	10	<1	99	50-150
2,2-Dichloropropane	ug/L (ppb)	10	<1	105	10-335
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	96	50-150
Chloroform	ug/L (ppb)	10	<1	96	50-150
2-Butanone (MEK)	ug/L (ppb)	50	<20	103	34-168
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<0.2	97	50-150
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	106	50-150
1,1-Dichloropropene	ug/L (ppb)	10	<1	101	50-150
Carbon tetrachloride	ug/L (ppb)	10	<0.5	107	50-150
Benzene	ug/L (ppb)	10	<0.35	97	50-150
Trichloroethene	ug/L (ppb)	10	<0.5	94	43-133
1,2-Dichloropropane	ug/L (ppb)	10	<1	96	50-150
Bromodichloromethane	ug/L (ppb)	10	<0.5	106	50-150
Dibromomethane	ug/L (ppb)	10	<1	104	50-150
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	110	50-150
cis-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	108	48-145
Toluene	ug/L (ppb)	10	<1	92	50-150
trans-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	103	37-152
1,1,2-Trichloroethane	ug/L (ppb)	10	<0.5	101	50-150
2-Hexanone	ug/L (ppb)	50	<10	106	50-150
1,3-Dichloropropane	ug/L (ppb)	10	<1	100	50-150
Tetrachloroethene	ug/L (ppb)	10	<1	94	50-150
Dibromochloromethane	ug/L (ppb)	10	<0.5	105	33-164
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<1	102	50-150
Chlorobenzene	ug/L (ppb)	10	<1	99	50-150
Ethylbenzene	ug/L (ppb)	10	<1	98	50-150
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	108	50-150
m,p-Xylene	ug/L (ppb)	20	<2	97	50-150
o-Xylene	ug/L (ppb)	10	<1	97	50-150
Styrene	ug/L (ppb)	10	<1	98	50-150
Isopropylbenzene	ug/L (ppb)	10	<1	100	50-150
Bromoform	ug/L (ppb)	10	<5	100	23-161
n-Propylbenzene	ug/L (ppb)	10	<1	97	50-150
Bromobenzene	ug/L (ppb)	10	<1	94	50-150
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	94	50-150
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<0.2	97	10-235
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	91	33-151
2-Chlorotoluene	ug/L (ppb)	10	<1	94	50-150
4-Chlorotoluene	ug/L (ppb)	10	<1	95	50-150
tert-Butylbenzene	ug/L (ppb)	10	<1	94	50-150
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	95	50-150
sec-Butylbenzene	ug/L (ppb)	10	<1	98	46-139
p-Isopropyltoluene	ug/L (ppb)	10	<1	97	46-140
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	94	50-150
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	95	50-150
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	94	50-150
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	100	50-150
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	96	50-150
Hexachlorobutadiene	ug/L (ppb)	10	<0.5	93	42-150
Naphthalene	ug/L (ppb)	10	<1	99	50-150
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	96	44-155

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/14/22

Date Received: 03/08/22

Project: 12th and Yesler, F&BI 203146

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)	10	102	107	70-130	5
Chloromethane	ug/L (ppb)	10	98	102	70-130	4
Vinyl chloride	ug/L (ppb)	10	100	106	70-130	6
Bromomethane	ug/L (ppb)	10	102	107	28-182	5
Chloroethane	ug/L (ppb)	10	102	109	70-130	7
Trichlorofluoromethane	ug/L (ppb)	10	96	99	70-130	3
Acetone	ug/L (ppb)	50	81	95	42-155	16
1,1-Dichloroethene	ug/L (ppb)	10	92	101	70-130	9
Hexane	ug/L (ppb)	10	91	100	50-161	9
Methylene chloride	ug/L (ppb)	10	93	102	29-192	9
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	96	102	70-130	6
trans-1,2-Dichloroethene	ug/L (ppb)	10	89	97	70-130	9
1,1-Dichloroethane	ug/L (ppb)	10	93	101	70-130	8
2,2-Dichloropropane	ug/L (ppb)	10	102	106	70-130	4
cis-1,2-Dichloroethene	ug/L (ppb)	10	91	99	70-130	8
Chloroform	ug/L (ppb)	10	93	100	70-130	7
2-Butanone (MEK)	ug/L (ppb)	50	96	109	50-157	13
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	91	99	70-130	8
1,1,1-Trichloroethane	ug/L (ppb)	10	99	108	70-130	9
1,1-Dichloropropene	ug/L (ppb)	10	92	102	70-130	10
Carbon tetrachloride	ug/L (ppb)	10	103	109	70-130	6
Benzene	ug/L (ppb)	10	92	100	70-130	8
Trichloroethene	ug/L (ppb)	10	88	95	70-130	8
1,2-Dichloropropane	ug/L (ppb)	10	89	97	70-130	9
Bromodichloromethane	ug/L (ppb)	10	92	100	70-130	8
Dibromomethane	ug/L (ppb)	10	93	99	70-130	6
4-Methyl-2-pentanone	ug/L (ppb)	50	101	114	70-130	12
cis-1,3-Dichloropropene	ug/L (ppb)	10	97	102	70-130	5
Toluene	ug/L (ppb)	10	96	99	70-130	3
trans-1,3-Dichloropropene	ug/L (ppb)	10	106	93	70-130	13
1,1,2-Trichloroethane	ug/L (ppb)	10	103	102	70-130	1
2-Hexanone	ug/L (ppb)	50	107	109	69-130	2
1,3-Dichloropropane	ug/L (ppb)	10	100	103	70-130	3
Tetrachloroethene	ug/L (ppb)	10	95	94	70-130	1
Dibromochloromethane	ug/L (ppb)	10	108	105	63-142	3
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	103	106	70-130	3
Chlorobenzene	ug/L (ppb)	10	101	100	70-130	1
Ethylbenzene	ug/L (ppb)	10	102	102	70-130	0
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	109	110	70-130	1
m,p-Xylene	ug/L (ppb)	20	100	100	70-130	0
o-Xylene	ug/L (ppb)	10	101	101	70-130	0
Styrene	ug/L (ppb)	10	100	102	70-130	2
Isopropylbenzene	ug/L (ppb)	10	104	103	70-130	1
Bromoform	ug/L (ppb)	10	105	94	50-157	11
n-Propylbenzene	ug/L (ppb)	10	102	101	70-130	1
Bromobenzene	ug/L (ppb)	10	98	98	70-130	0
1,3,5-Trimethylbenzene	ug/L (ppb)	10	100	100	52-150	0
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	105	105	70-130	0
1,2,3-Trichloropropane	ug/L (ppb)	10	99	102	70-130	3
2-Chlorotoluene	ug/L (ppb)	10	103	100	70-130	3
4-Chlorotoluene	ug/L (ppb)	10	103	101	70-130	2
tert-Butylbenzene	ug/L (ppb)	10	104	101	70-130	3
1,2,4-Trimethylbenzene	ug/L (ppb)	10	102	100	70-130	2
sec-Butylbenzene	ug/L (ppb)	10	104	102	70-130	2
p-Isopropyltoluene	ug/L (ppb)	10	103	102	70-130	1
1,3-Dichlorobenzene	ug/L (ppb)	10	101	98	70-130	3
1,4-Dichlorobenzene	ug/L (ppb)	10	100	99	70-130	1
1,2-Dichlorobenzene	ug/L (ppb)	10	102	99	70-130	3
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	108	108	70-130	0
1,2,4-Trichlorobenzene	ug/L (ppb)	10	100	98	70-130	2
Hexachlorobutadiene	ug/L (ppb)	10	96	94	70-130	2
Naphthalene	ug/L (ppb)	10	105	104	70-130	1
1,2,3-Trichlorobenzene	ug/L (ppb)	10	102	97	69-143	5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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.

Report To _____

SAMPLE CHAIN OF CUSTODY

02.00

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Report To _____

Company W. J. M. Co.

Address 518 16th Ave NE

City, State, ZIP Seattle, WA 98115

Phone ~~563-3546~~ mail ~~cell 761 1100 09~~ Y.M.W.C.

PROJECT NAME

1771/6568

PO#

6/5/68

REMARKS :

INVOICE TO

Project specific RIs? - Yes / No

☐ Standard turnaround
~~X~~ **RUSH** *See us this afternoon*
Rush charges authorized by: _____

SAMPLE DISPOSAL

☐ Archive samples
☐ Other _____

Default: Dispose after 30 days

SAMPLE DISPOSAL

archive samples

ther

Default: Dispose after 30 days.

ANALYSES REQUESTED

[illegible]

Friedman & Bruya, Inc.
Ph. (206) 285-8282

Ph. (206) 285-8282

SIGNATURE

PRINT NAME _____

COMPANY

DATE _____

TIME

Relinquished by:
Received by:

Received by:

Relinquished by:

Received by:

14701 Honey

FBI

3-8-22

1444

Samples received at 12°C

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

March 18, 2022

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 11, 2022 from the 12th+Yesler WES-1591, F&BI 203240 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
WES0318R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on March 11, 2022 by Friedman & Bruya, Inc. from the Whitman Environmental Sciences 12th+Yesler WES-1591, F&BI 203240 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Whitman Environmental Sciences</u>
203240 -01	MW-1D-GW
203240 -02	MW-10-GW

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-1D-GW	Client:	Whitman Environmental Sciences
Date Received:	03/11/22	Project:	12th+Yesler WES-1591
Date Extracted:	03/15/22	Lab ID:	203240-01
Date Analyzed:	03/15/22	Data File:	203240-01.052
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	9.64

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-10-GW	Client:	Whitman Environmental Sciences
Date Received:	03/11/22	Project:	12th+Yesler WES-1591
Date Extracted:	03/15/22	Lab ID:	203240-02
Date Analyzed:	03/15/22	Data File:	203240-02.053
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	9.62

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th+Yesler WES-1591
Date Extracted:	03/15/22	Lab ID:	I2-198 mb2
Date Analyzed:	03/16/22	Data File:	I2-198 mb2.089
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-1D-GW	Client:	Whitman Environmental Sciences
Date Received:	03/11/22	Project:	12th+Yesler WES-1591
Date Extracted:	03/15/22	Lab ID:	203240-01
Date Analyzed:	03/15/22	Data File:	0315021.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	106	85	117
Toluene-d8	99	88	112
4-Bromofluorobenzene	102	90	111

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	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	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-10-GW	Client:	Whitman Environmental Sciences
Date Received:	03/11/22	Project:	12th+Yesler WES-1591
Date Extracted:	03/15/22	Lab ID:	203240-02
Date Analyzed:	03/15/22	Data File:	0315022.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	85	117
Toluene-d8	97	88	112
4-Bromofluorobenzene	100	90	111

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	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	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th+Yesler WES-1591
Date Extracted:	03/15/22	Lab ID:	02-0651 mb
Date Analyzed:	03/15/22	Data File:	0315020.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	85	117
Toluene-d8	96	88	112
4-Bromofluorobenzene	102	90	111

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	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	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/18/22

Date Received: 03/11/22

Project: 12th+Yesler WES-1591, F&BI 203240

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR DISSOLVED METALS USING EPA METHOD 6020B**

Laboratory Code: 203208-02 (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	1.61	106	106	75-125	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	86	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/18/22

Date Received: 03/11/22

Project: 12th+Yesler WES-1591, F&BI 203240

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

Laboratory Code: 203240-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent	Acceptance Criteria
				Recovery MS	
Dichlorodifluoromethane	ug/L (ppb)	10	<1	100	50-150
Chloromethane	ug/L (ppb)	10	<10	93	50-150
Vinyl chloride	ug/L (ppb)	10	<0.02	107	16-176
Bromomethane	ug/L (ppb)	10	<5	92	10-193
Chloroethane	ug/L (ppb)	10	<1	100	50-150
Trichlorofluoromethane	ug/L (ppb)	10	<1	89	50-150
Acetone	ug/L (ppb)	50	<50	84	15-179
1,1-Dichloroethene	ug/L (ppb)	10	<1	87	50-150
Hexane	ug/L (ppb)	10	<5	99	49-161
Methylene chloride	ug/L (ppb)	10	<5	89	40-143
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	95	50-150
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	89	50-150
1,1-Dichloroethane	ug/L (ppb)	10	<1	92	50-150
2,2-Dichloropropane	ug/L (ppb)	10	<1	102	10-335
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	91	50-150
Chloroform	ug/L (ppb)	10	<1	89	50-150
2-Butanone (MEK)	ug/L (ppb)	50	<20	98	34-168
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<0.2	90	50-150
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	100	50-150
1,1-Dichloropropene	ug/L (ppb)	10	<1	93	50-150
Carbon tetrachloride	ug/L (ppb)	10	<0.5	101	50-150
Benzene	ug/L (ppb)	10	<0.35	91	50-150
Trichloroethene	ug/L (ppb)	10	<0.5	88	43-133
1,2-Dichloropropane	ug/L (ppb)	10	<1	92	50-150
Bromodichloromethane	ug/L (ppb)	10	<0.5	94	50-150
Dibromomethane	ug/L (ppb)	10	<1	92	50-150
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	106	50-150
cis-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	105	48-145
Toluene	ug/L (ppb)	10	<1	97	50-150
trans-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	95	37-152
1,1,2-Trichloroethane	ug/L (ppb)	10	<0.5	98	50-150
2-Hexanone	ug/L (ppb)	50	<10	102	50-150
1,3-Dichloropropene	ug/L (ppb)	10	<1	101	50-150
Tetrachloroethene	ug/L (ppb)	10	<1	92	50-150
Dibromochloromethane	ug/L (ppb)	10	<0.5	104	33-164
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<1	104	50-150
Chlorobenzene	ug/L (ppb)	10	<1	98	50-150
Ethylbenzene	ug/L (ppb)	10	<1	98	50-150
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	107	50-150
m,p-Xylene	ug/L (ppb)	20	<2	97	50-150
o-Xylene	ug/L (ppb)	10	<1	97	50-150
Styrene	ug/L (ppb)	10	<1	101	50-150
Isopropylbenzene	ug/L (ppb)	10	<1	100	50-150
Bromoform	ug/L (ppb)	10	<5	100	23-161
n-Propylbenzene	ug/L (ppb)	10	<1	99	50-150
Bromobenzene	ug/L (ppb)	10	<1	98	50-150
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	97	50-150
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<0.2	101	10-235
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	97	33-151
2-Chlorotoluene	ug/L (ppb)	10	<1	98	50-150
4-Chlorotoluene	ug/L (ppb)	10	<1	99	50-150
tert-Butylbenzene	ug/L (ppb)	10	<1	96	50-150
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	98	50-150
sec-Butylbenzene	ug/L (ppb)	10	<1	99	46-139
p-Isopropyltoluene	ug/L (ppb)	10	<1	99	46-140
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	99	50-150
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	99	50-150
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	99	50-150
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	106	50-150
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	96	50-150
Hexachlorobutadiene	ug/L (ppb)	10	<0.5	93	42-150
Naphthalene	ug/L (ppb)	10	<1	99	50-150
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	97	44-155

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/18/22

Date Received: 03/11/22

Project: 12th+Yesler WES-1591, F&BI 203240

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)	10	104	103	70-130	1
Chloromethane	ug/L (ppb)	10	96	97	70-130	1
Vinyl chloride	ug/L (ppb)	10	108	109	70-130	1
Bromomethane	ug/L (ppb)	10	99	100	28-182	1
Chloroethane	ug/L (ppb)	10	101	102	70-130	1
Trichlorofluoromethane	ug/L (ppb)	10	91	92	70-130	1
Acetone	ug/L (ppb)	50	82	86	42-155	5
1,1-Dichloroethene	ug/L (ppb)	10	92	90	70-130	2
Hexane	ug/L (ppb)	10	101	101	50-161	0
Methylene chloride	ug/L (ppb)	10	95	93	29-192	2
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	96	96	70-130	0
trans-1,2-Dichloroethene	ug/L (ppb)	10	91	92	70-130	1
1,1-Dichloroethane	ug/L (ppb)	10	94	95	70-130	1
2,2-Dichloropropane	ug/L (ppb)	10	106	107	70-130	1
cis-1,2-Dichloroethene	ug/L (ppb)	10	93	93	70-130	0
Chloroform	ug/L (ppb)	10	94	94	70-130	0
2-Butanone (MEK)	ug/L (ppb)	50	106	90	50-157	16
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	91	91	70-130	0
1,1,1-Trichloroethane	ug/L (ppb)	10	101	101	70-130	0
1,1-Dichloropropene	ug/L (ppb)	10	97	99	70-130	2
Carbon tetrachloride	ug/L (ppb)	10	105	102	70-130	3
Benzene	ug/L (ppb)	10	93	93	70-130	0
Trichloroethene	ug/L (ppb)	10	89	90	70-130	1
1,2-Dichloropropane	ug/L (ppb)	10	95	95	70-130	0
Bromodichloromethane	ug/L (ppb)	10	97	96	70-130	1
Dibromomethane	ug/L (ppb)	10	92	95	70-130	3
4-Methyl-2-pentanone	ug/L (ppb)	50	100	103	70-130	3
cis-1,3-Dichloropropene	ug/L (ppb)	10	107	106	70-130	1
Toluene	ug/L (ppb)	10	98	98	70-130	0
trans-1,3-Dichloropropene	ug/L (ppb)	10	95	103	70-130	8
1,1,2-Trichloroethane	ug/L (ppb)	10	98	98	70-130	0
2-Hexanone	ug/L (ppb)	50	102	103	69-130	1
1,3-Dichloropropene	ug/L (ppb)	10	100	102	70-130	2
Tetrachloroethene	ug/L (ppb)	10	92	94	70-130	2
Dibromochloromethane	ug/L (ppb)	10	107	104	63-142	3
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	103	105	70-130	2
Chlorobenzene	ug/L (ppb)	10	100	100	70-130	0
Ethylbenzene	ug/L (ppb)	10	98	99	70-130	1
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	107	109	70-130	2
m,p-Xylene	ug/L (ppb)	20	98	99	70-130	1
o-Xylene	ug/L (ppb)	10	98	99	70-130	1
Styrene	ug/L (ppb)	10	100	103	70-130	3
Isopropylbenzene	ug/L (ppb)	10	102	102	70-130	0
Bromoform	ug/L (ppb)	10	98	103	50-157	5
n-Propylbenzene	ug/L (ppb)	10	101	100	70-130	1
Bromobenzene	ug/L (ppb)	10	99	97	70-130	2
1,3,5-Trimethylbenzene	ug/L (ppb)	10	99	97	52-150	2
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	103	99	70-130	4
1,2,3-Trichloropropane	ug/L (ppb)	10	99	94	70-130	5
2-Chlorotoluene	ug/L (ppb)	10	99	99	70-130	0
4-Chlorotoluene	ug/L (ppb)	10	102	100	70-130	2
tert-Butylbenzene	ug/L (ppb)	10	100	96	70-130	4
1,2,4-Trimethylbenzene	ug/L (ppb)	10	101	98	70-130	3
sec-Butylbenzene	ug/L (ppb)	10	101	100	70-130	1
p-Isopropyltoluene	ug/L (ppb)	10	103	100	70-130	3
1,3-Dichlorobenzene	ug/L (ppb)	10	101	100	70-130	1
1,4-Dichlorobenzene	ug/L (ppb)	10	102	99	70-130	3
1,2-Dichlorobenzene	ug/L (ppb)	10	100	101	70-130	1
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	107	108	70-130	1
1,2,4-Trichlorobenzene	ug/L (ppb)	10	100	100	70-130	0
Hexachlorobutadiene	ug/L (ppb)	10	97	94	70-130	3
Naphthalene	ug/L (ppb)	10	99	98	70-130	1
1,2,3-Trichlorobenzene	ug/L (ppb)	10	98	100	69-143	2

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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.

03-11-22

VEV

Page # _____ of _____

Report To Mr. T. J. [Signature]

Company W. H. T. M. Co., Sellers

Address 817 15th Ave NE

City, State, ZIP Seattle, WA 98115

Phone _____ Email WILLIAM@GMAIL.COM

SAMPLERS (signature)

PROJECT NAME

PO#

12/11/18

6/5/9

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

ANALYSES REQUESTED

[illegible]

Friedman & Bruya, Inc.
Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Reinquished by: 			5/11/22	3:03
Received by: 	Tolosa Carrasco	F+D	3/11/22	15:03
Reinquished by:				
Received by:		Samples received at	6	00

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

April 4, 2022

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 25, 2022 from the 12th+Yesler WES-1591, F&BI 203473 project. There are 9 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
WES0404R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on March 25, 2022 by Friedman & Bruya, Inc. from the Whitman Environmental Sciences 12th+Yesler WES-1591, F&BI 203473 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID

203473 -01

Whitman Environmental Sciences

MW-11-GW

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-11-GW	Client:	Whitman Environmental Sciences
Date Received:	03/25/22	Project:	12th+Yesler WES-1591, F&BI 203473
Date Extracted:	03/30/22	Lab ID:	203473-01
Date Analyzed:	03/30/22	Data File:	203473-01.074
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	327

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th+Yesler WES-1591, F&BI 203473
Date Extracted:	03/30/22	Lab ID:	I2-255 mb
Date Analyzed:	03/30/22	Data File:	I2-255 mb.067
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)

Arsenic	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-11-GW	Client:	Whitman Environmental Sciences
Date Received:	03/25/22	Project:	12th+Yesler WES-1591, F&BI 203473
Date Extracted:	03/02/22	Lab ID:	203473-01
Date Analyzed:	03/28/22	Data File:	032824.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	RF

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	109	78	126
Toluene-d8	97	84	115
4-Bromofluorobenzene	103	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	0.039	Dibromochloromethane	<0.5
Bromomethane	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	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	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	12th+Yesler WES-1591, F&BI 203473
Date Extracted:	03/28/22	Lab ID:	02-700 mb
Date Analyzed:	03/28/22	Data File:	032807.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	RF

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	78	126
Toluene-d8	97	84	115
4-Bromofluorobenzene	105	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	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	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
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	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	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	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 04/04/22

Date Received: 03/25/22

Project: 12th+Yesler WES-1591, F&BI 203473

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR DISSOLVED METALS USING EPA METHOD 6020B**

Laboratory Code: 203473-01 (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	327	91	30 b	75-125	101 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	91	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 04/04/22

Date Received: 03/25/22

Project: 12th+Yesler WES-1591, F&BI 203473

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

Laboratory Code: 203473-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent	Acceptance Criteria
				Recovery MS	
Dichlorodifluoromethane	ug/L (ppb)	10	<1	118	50-150
Chloromethane	ug/L (ppb)	10	<10	100	50-150
Vinyl chloride	ug/L (ppb)	10	0.039	102	50-150
Bromomethane	ug/L (ppb)	10	<5	120	50-150
Chloroethane	ug/L (ppb)	10	<1	110	50-150
Trichlorofluoromethane	ug/L (ppb)	10	<1	106	50-150
Acetone	ug/L (ppb)	50	<50	85	50-150
1,1-Dichloroethene	ug/L (ppb)	10	<1	94	50-150
Hexane	ug/L (ppb)	10	<5	89	50-150
Methylene chloride	ug/L (ppb)	10	<5	104	50-150
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	98	50-150
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	93	50-150
1,1-Dichloroethane	ug/L (ppb)	10	<1	97	50-150
2,2-Dichloropropane	ug/L (ppb)	10	<1	98	50-150
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	96	50-150
Chloroform	ug/L (ppb)	10	<1	95	50-150
2-Butanone (MEK)	ug/L (ppb)	50	<20	94	50-150
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<0.2	92	50-150
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	96	50-150
1,1-Dichloropropene	ug/L (ppb)	10	<1	91	50-150
Carbon tetrachloride	ug/L (ppb)	10	<0.5	97	50-150
Benzene	ug/L (ppb)	10	<0.35	91	50-150
Trichloroethene	ug/L (ppb)	10	<0.5	87	50-150
1,2-Dichloropropane	ug/L (ppb)	10	<1	90	50-150
Bromodichloromethane	ug/L (ppb)	10	<0.5	90	50-150
Dibromomethane	ug/L (ppb)	10	<1	100	50-150
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	102	50-150
cis-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	83	50-150
Toluene	ug/L (ppb)	10	<1	92	50-150
trans-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	89	50-150
1,1,2-Trichloroethane	ug/L (ppb)	10	<0.5	98	50-150
2-Hexanone	ug/L (ppb)	50	<10	98	50-150
1,3-Dichloropropane	ug/L (ppb)	10	<1	97	50-150
Tetrachloroethene	ug/L (ppb)	10	<1	95	50-150
Dibromochloromethane	ug/L (ppb)	10	<0.5	93	50-150
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<1	96	50-150
Chlorobenzene	ug/L (ppb)	10	<1	84	50-150
Ethylbenzene	ug/L (ppb)	10	<1	91	50-150
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	95	50-150
m,p-Xylene	ug/L (ppb)	20	<2	97	50-150
o-Xylene	ug/L (ppb)	10	<1	94	50-150
Styrene	ug/L (ppb)	10	<1	92	50-150
Isopropylbenzene	ug/L (ppb)	10	<1	80	50-150
Bromoform	ug/L (ppb)	10	<5	89	50-150
n-Propylbenzene	ug/L (ppb)	10	<1	82	50-150
Bromobenzene	ug/L (ppb)	10	<1	78	50-150
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	90	50-150
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<0.2	85	50-150
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	83	50-150
2-Chlorotoluene	ug/L (ppb)	10	<1	83	50-150
4-Chlorotoluene	ug/L (ppb)	10	<1	80	50-150
tert-Butylbenzene	ug/L (ppb)	10	<1	91	50-150
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	96	50-150
sec-Butylbenzene	ug/L (ppb)	10	<1	95	50-150
p-Isopropyltoluene	ug/L (ppb)	10	<1	96	50-150
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	78	50-150
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	75	50-150
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	78	50-150
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	88	50-150
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	71	50-150
Hexachlorobutadiene	ug/L (ppb)	10	<0.5	80	50-150
Naphthalene	ug/L (ppb)	10	<1	74	50-150
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	76	50-150

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 04/04/22

Date Received: 03/25/22

Project: 12th+Yesler WES-1591, F&BI 203473

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)	10	113	120	46-206	6
Chloromethane	ug/L (ppb)	10	98	103	70-142	5
Vinyl chloride	ug/L (ppb)	10	101	105	70-130	4
Bromomethane	ug/L (ppb)	10	113	123	56-197	8
Chloroethane	ug/L (ppb)	10	110	114	70-130	4
Trichlorofluoromethane	ug/L (ppb)	10	105	108	70-130	3
Acetone	ug/L (ppb)	50	86	89	10-140	3
1,1-Dichloroethene	ug/L (ppb)	10	97	102	70-130	5
Hexane	ug/L (ppb)	10	91	97	54-136	6
Methylene chloride	ug/L (ppb)	10	113	108	43-134	5
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	102	105	70-130	3
trans-1,2-Dichloroethene	ug/L (ppb)	10	98	104	70-130	6
1,1-Dichloroethane	ug/L (ppb)	10	100	104	70-130	4
2,2-Dichloropropane	ug/L (ppb)	10	101	102	70-130	1
cis-1,2-Dichloroethene	ug/L (ppb)	10	102	106	70-130	4
Chloroform	ug/L (ppb)	10	97	100	70-130	3
2-Butanone (MEK)	ug/L (ppb)	50	98	102	17-154	4
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	96	99	70-130	3
1,1,1-Trichloroethane	ug/L (ppb)	10	100	103	70-130	3
1,1-Dichloropropene	ug/L (ppb)	10	100	105	70-130	5
Carbon tetrachloride	ug/L (ppb)	10	99	102	70-130	3
Benzene	ug/L (ppb)	10	100	104	70-130	4
Trichloroethene	ug/L (ppb)	10	97	101	70-130	4
1,2-Dichloropropane	ug/L (ppb)	10	95	100	70-130	5
Bromodichloromethane	ug/L (ppb)	10	96	100	70-130	4
Dibromomethane	ug/L (ppb)	10	108	109	70-130	1
4-Methyl-2-pentanone	ug/L (ppb)	50	109	115	68-130	5
cis-1,3-Dichloropropene	ug/L (ppb)	10	98	101	69-131	3
Toluene	ug/L (ppb)	10	103	106	70-130	3
trans-1,3-Dichloropropene	ug/L (ppb)	10	98	100	70-130	2
1,1,2-Trichloroethane	ug/L (ppb)	10	104	107	70-130	3
2-Hexanone	ug/L (ppb)	50	109	111	45-138	2
1,3-Dichloropropene	ug/L (ppb)	10	103	106	70-130	3
Tetrachloroethene	ug/L (ppb)	10	103	106	70-130	3
Dibromochloromethane	ug/L (ppb)	10	101	104	60-148	3
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	104	106	70-130	2
Chlorobenzene	ug/L (ppb)	10	102	103	70-130	1
Ethylbenzene	ug/L (ppb)	10	106	110	70-130	4
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	103	103	70-130	0
m,p-Xylene	ug/L (ppb)	20	113	117	70-130	3
o-Xylene	ug/L (ppb)	10	109	113	70-130	4
Styrene	ug/L (ppb)	10	114	116	70-130	2
Isopropylbenzene	ug/L (ppb)	10	90	93	70-130	3
Bromoform	ug/L (ppb)	10	104	107	69-138	3
n-Propylbenzene	ug/L (ppb)	10	101	107	70-130	6
Bromobenzene	ug/L (ppb)	10	95	100	70-130	5
1,3,5-Trimethylbenzene	ug/L (ppb)	10	108	111	70-130	3
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	95	99	70-130	4
1,2,3-Trichloropropane	ug/L (ppb)	10	94	97	70-130	3
2-Chlorotoluene	ug/L (ppb)	10	102	106	70-130	4
4-Chlorotoluene	ug/L (ppb)	10	104	107	70-130	3
tert-Butylbenzene	ug/L (ppb)	10	106	111	70-130	5
1,2,4-Trimethylbenzene	ug/L (ppb)	10	116	121	70-130	4
sec-Butylbenzene	ug/L (ppb)	10	113	117	70-130	3
p-Isopropyltoluene	ug/L (ppb)	10	116	119	70-130	3
1,3-Dichlorobenzene	ug/L (ppb)	10	102	103	70-130	1
1,4-Dichlorobenzene	ug/L (ppb)	10	101	104	70-130	3
1,2-Dichlorobenzene	ug/L (ppb)	10	99	103	70-130	4
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	106	105	70-130	1
1,2,4-Trichlorobenzene	ug/L (ppb)	10	99	103	70-130	4
Hexachlorobutadiene	ug/L (ppb)	10	92	93	70-130	1
Naphthalene	ug/L (ppb)	10	106	110	70-130	4
1,2,3-Trichlorobenzene	ug/L (ppb)	10	104	109	70-130	5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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.

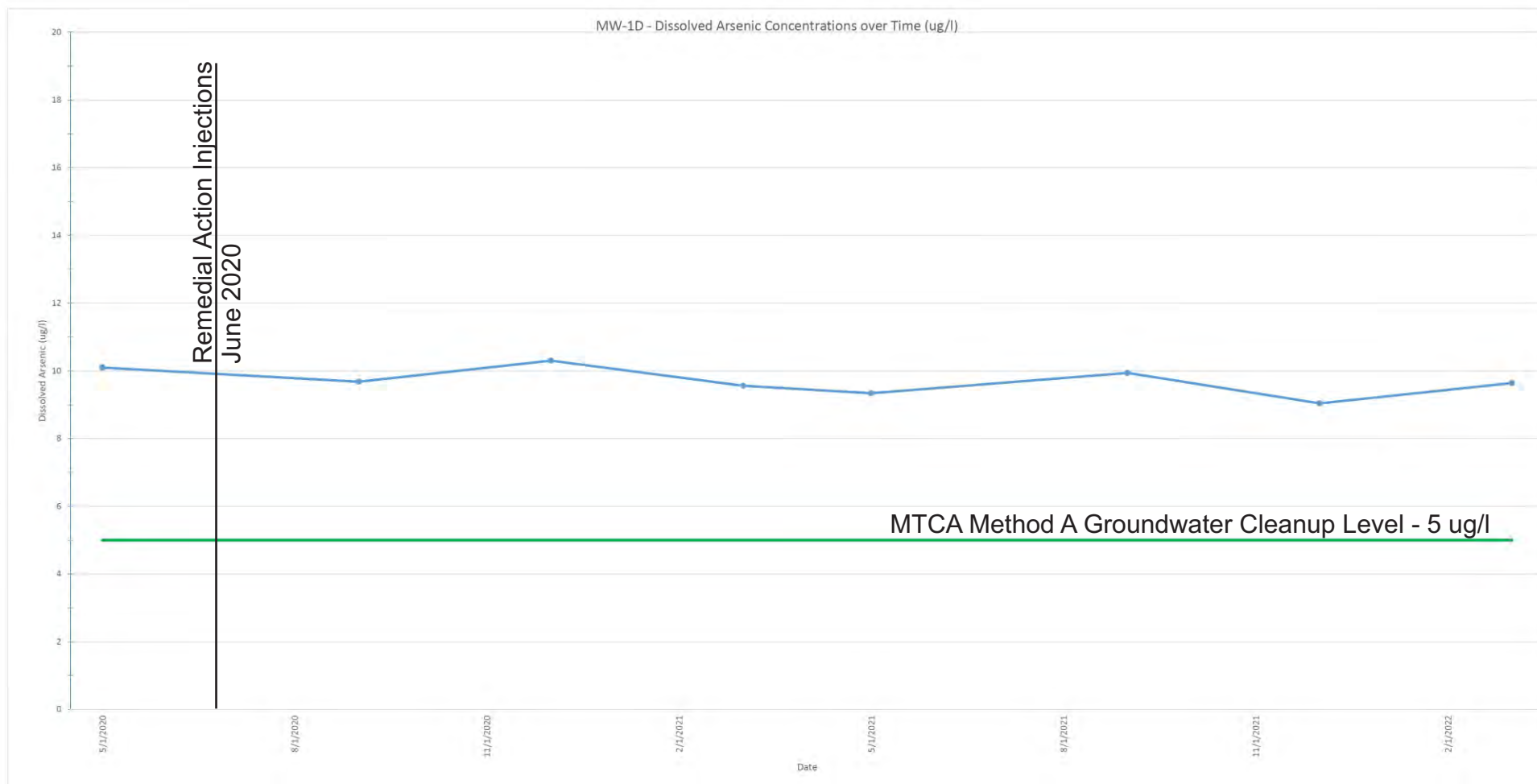
ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

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.

APPENDIX B

Dissolved Arsenic Time Series Plots



Dissolved Arsenic Over Time - MW-1D

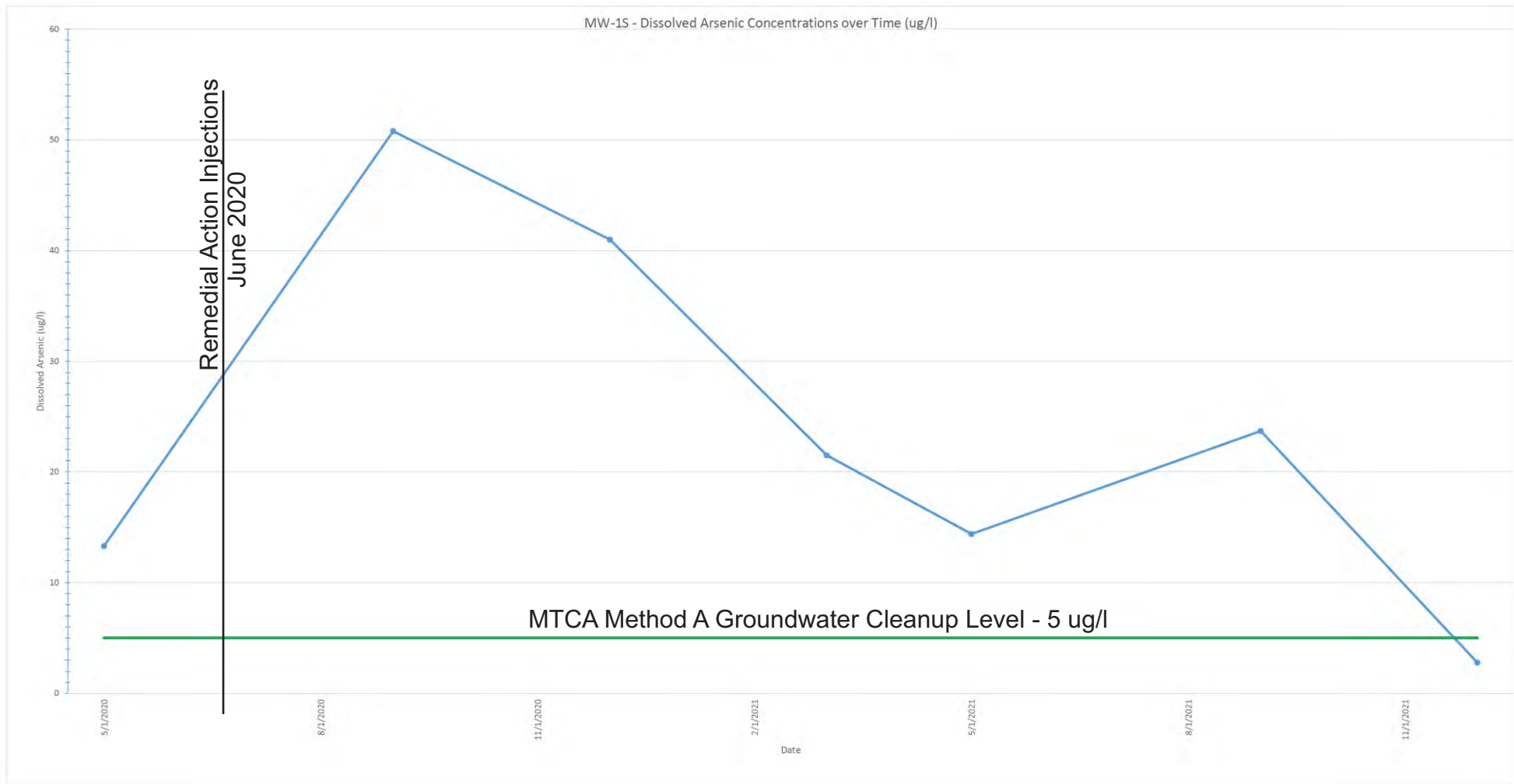
Proposed Redevelopment Property
104-124 12th Avenue & 1209 E. Fir Street
Seattle, WA

Project No. WES - 1591A

Date Apr 15, 2022

File ID. 1591TSMW1D

WHITMAN
Environmental Sciences



Dissolved Arsenic Over Time - MW-1S

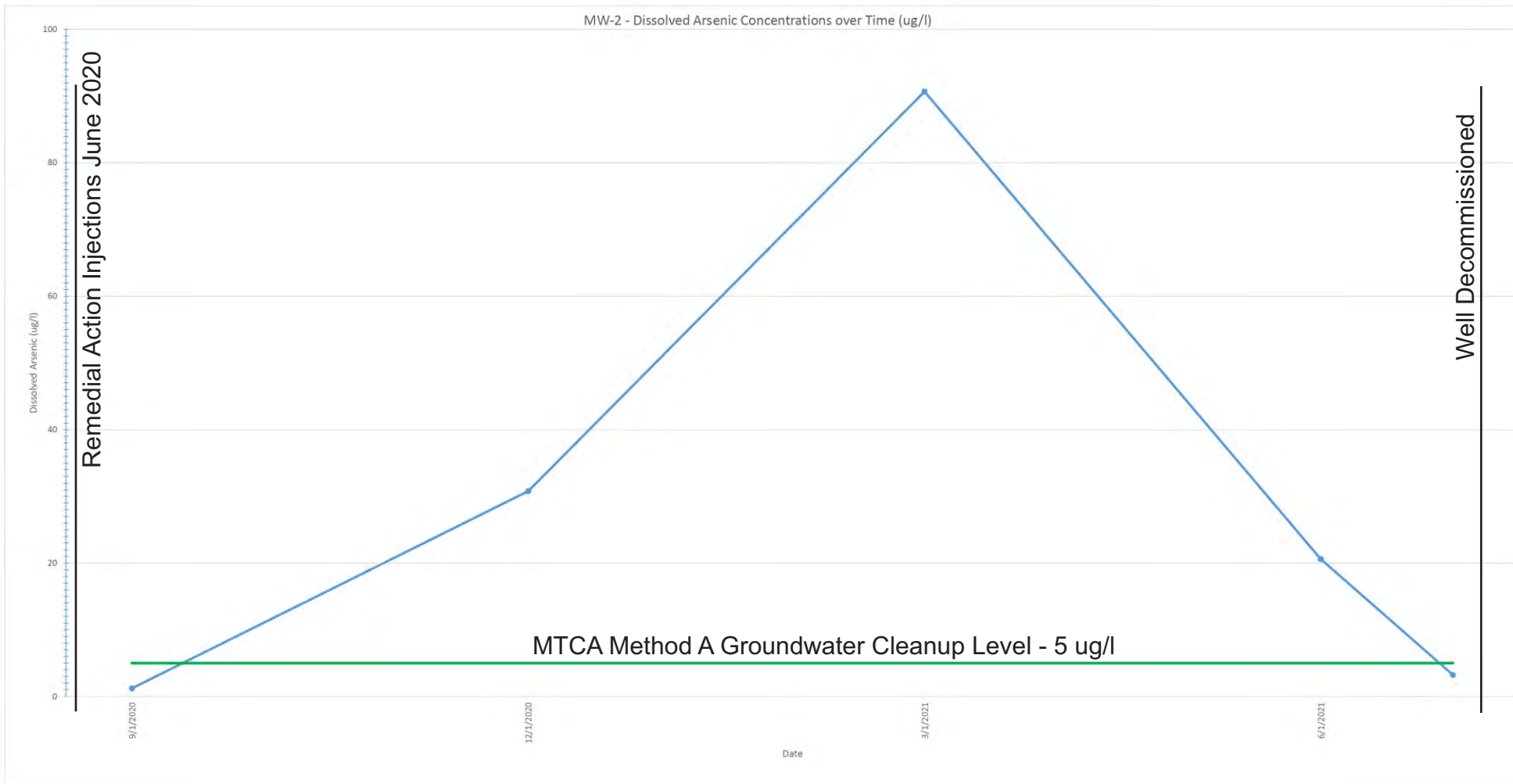
Proposed Redevelopment Property
104-124 12th Avenue & 1209 E. Fir Street
Seattle, WA

Project No. WES - 1591A

Date Apr 15, 2022

File ID. 1591TSMW1

WHITMAN
Environmental Sciences



Dissolved Arsenic Over Time - MW-2

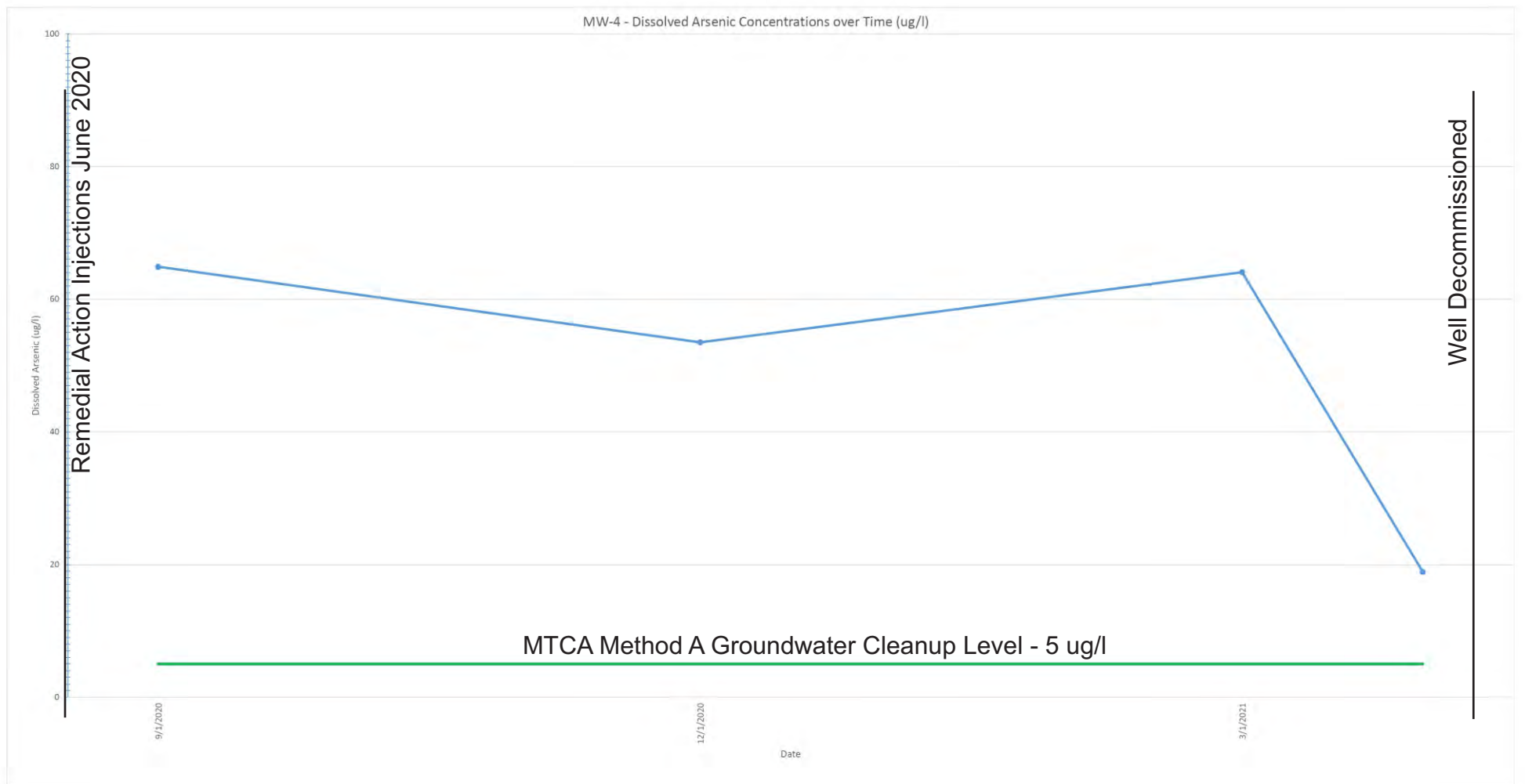
Proposed Redevelopment Property
104-124 12th Avenue & 1209 E. Fir Street
Seattle, WA

Project No. WES - 1591A

Date Apr 15, 2022

File ID. 1591TSMW2

WHITMAN
Environmental Sciences



Dissolved Arsenic Over Time - MW-4

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

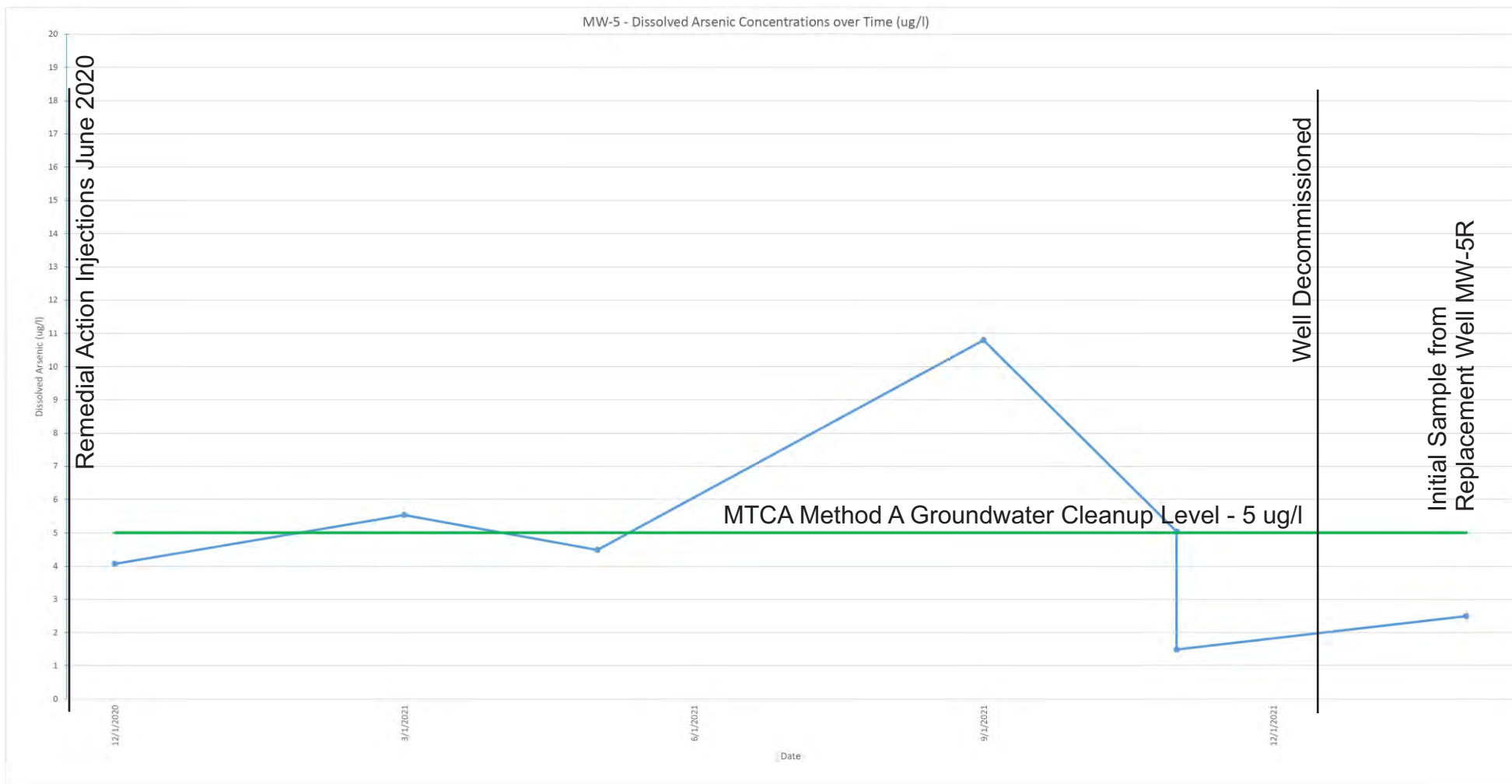
Project No. WES - 1591A

Date Apr 15, 2022

File ID. 1591TSMW4

WHITMAN

Environmental Sciences



Dissolved Arsenic Over Time - MW-5

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

Project No. WES - 1591A

Date Apr 15, 2022

File ID. 1591TSMW5

WHITMAN
Environmental Sciences



Dissolved Arsenic Over Time - MW-10

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

Project No. WES - 1591A

Date Apr 15, 2022

File ID. 1591TSMW10

WHITMAN
Environmental Sciences



Dissolved Arsenic Over Time - MW-11

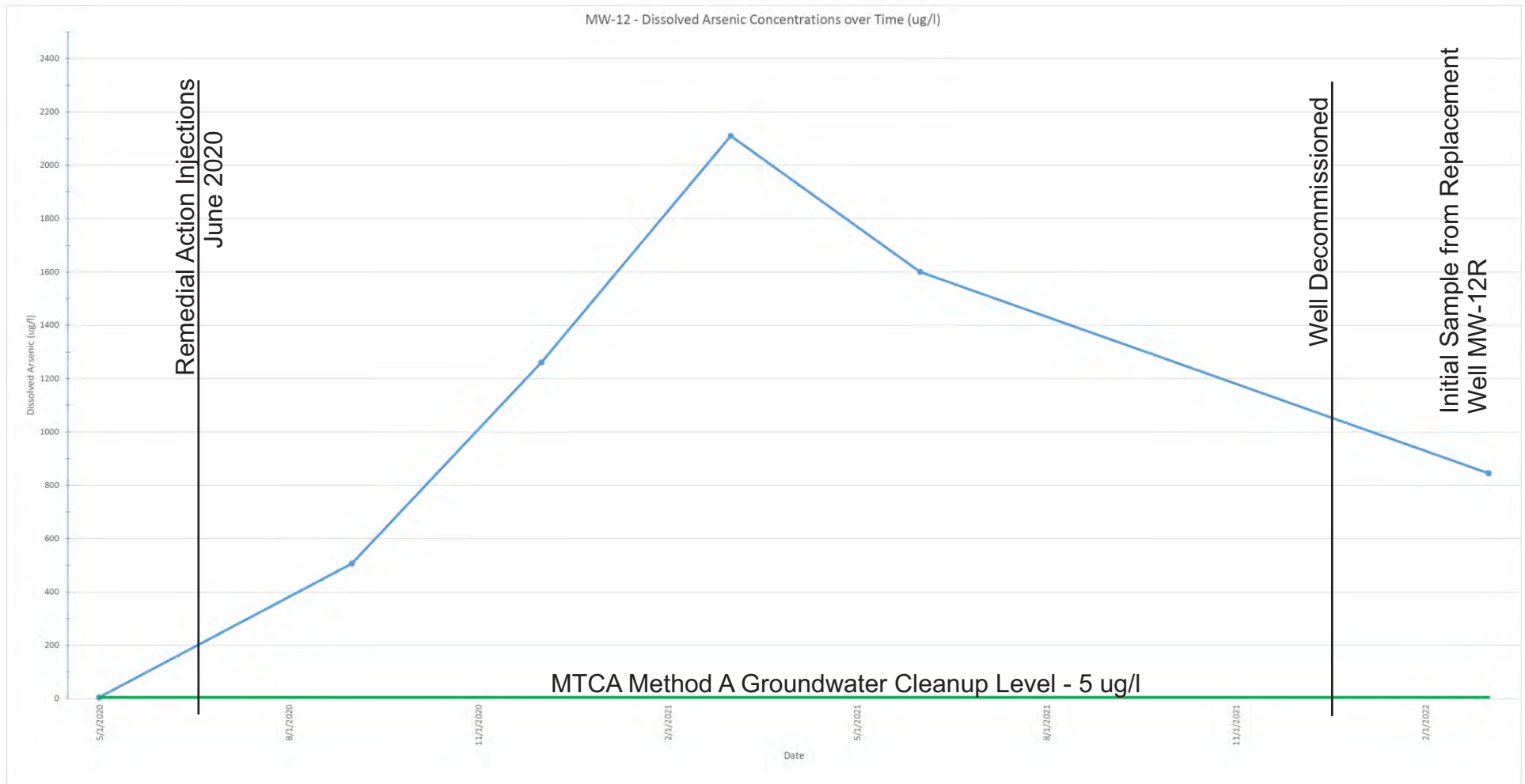
Proposed Redevelopment Property
104-124 12th Avenue & 1209 E. Fir Street
Seattle, WA

Project No. WES - 1591A

Date Apr 15, 2022

File ID. 1591TSMW11

WHITMAN
Environmental Sciences



Dissolved Arsenic Over Time - MW-12

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

Project No. WES - 1591A

Date Apr 15, 2022

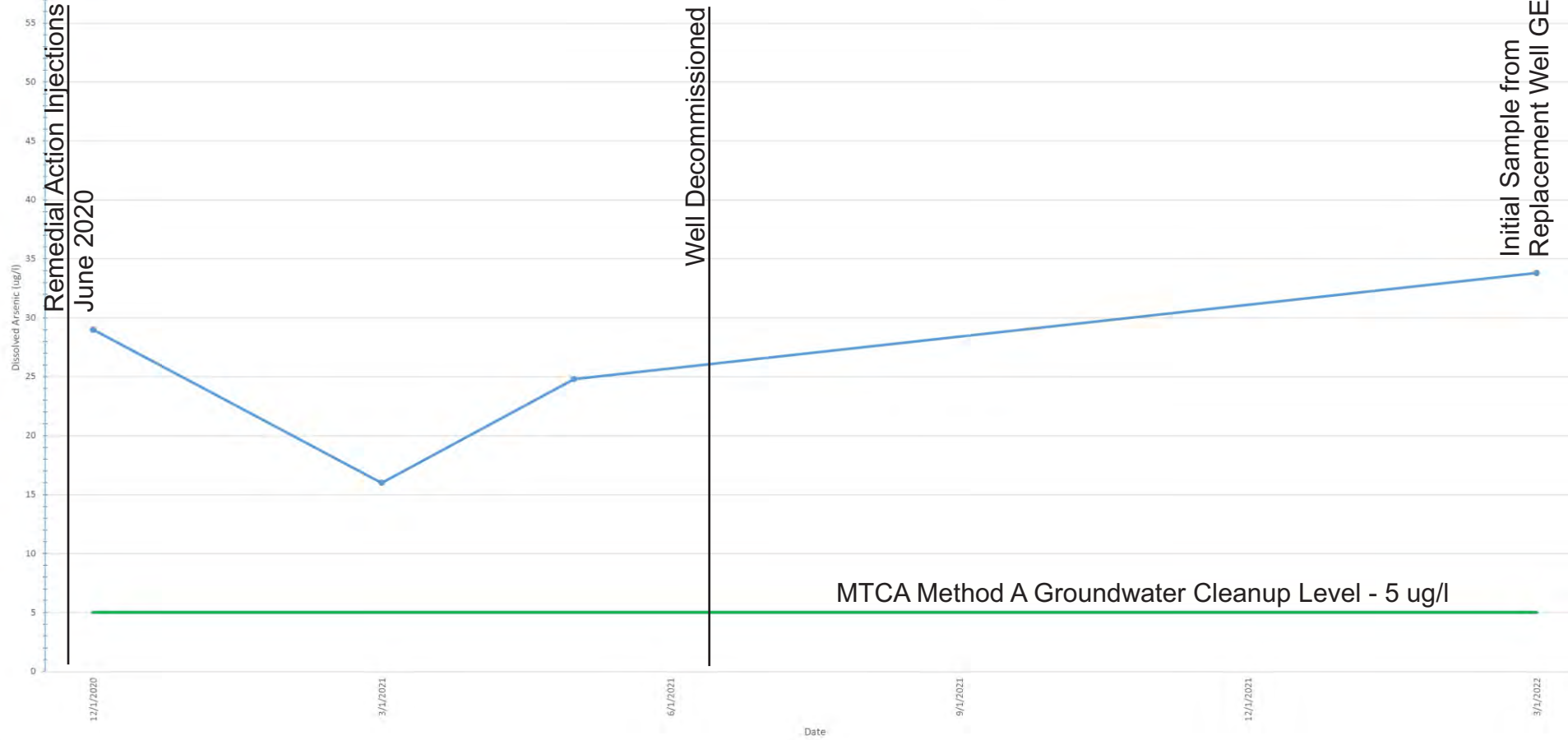
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WHITMAN
Environmental Sciences



Dissolved Arsenic Over Time - MW-15		
Proposed Redevelopment Property 104-124 12th Avenue & 1209 E. Fir Street Seattle, WA		
Project No.	WES - 1591A	WHITMAN Environmental Sciences
Date	Apr 15, 2022	
File ID.	1591TSMW15	

GEO B-7 - Dissolved Arsenic Concentrations over Time (ug/l)

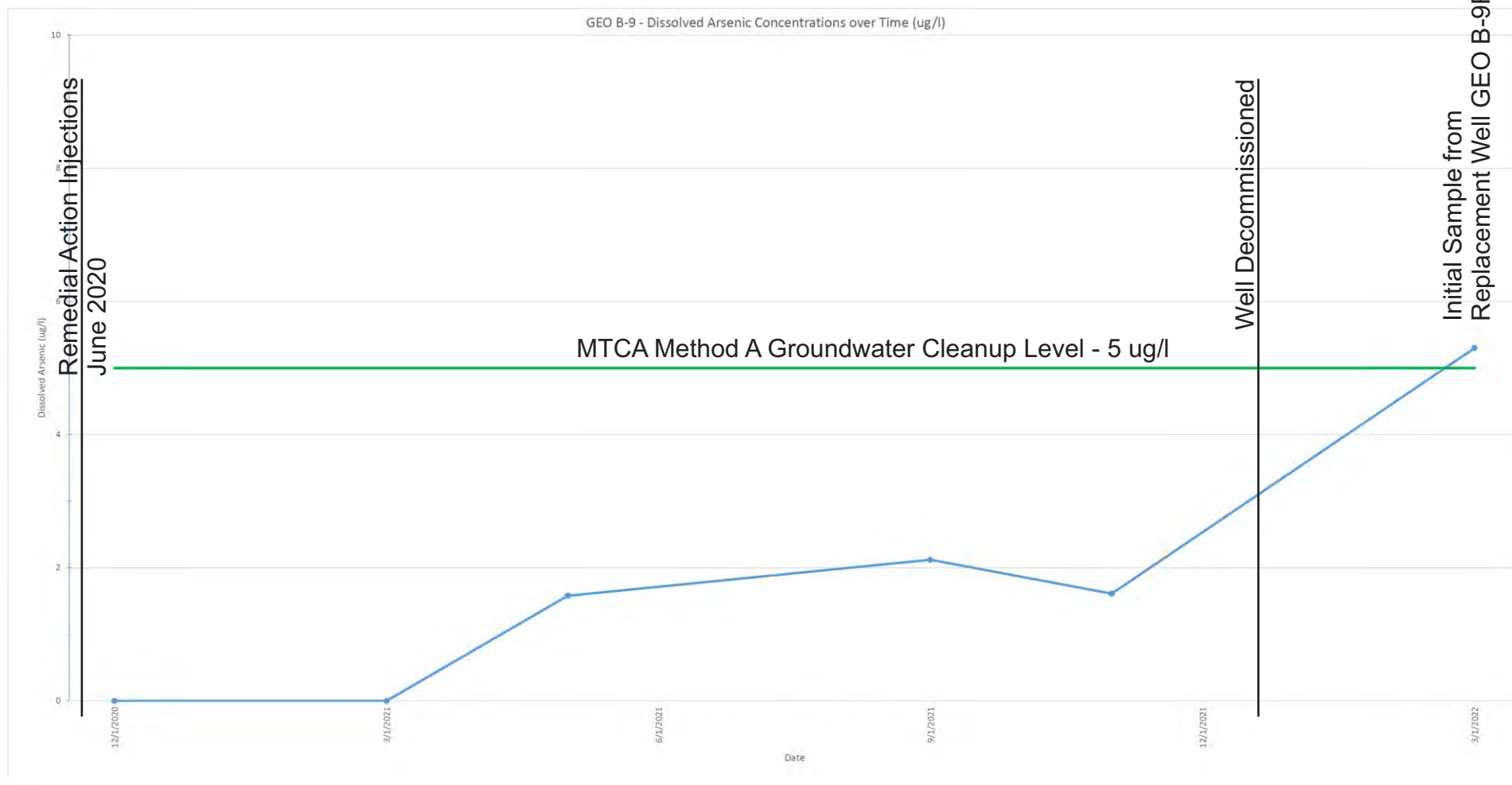


Dissolved Arsenic Over Time - GEO B-7

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

Project No.	WES - 1591A
Date	Apr 15, 2022
File ID.	1591TSGE0B7

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Dissolved Arsenic Over Time - GEO B-9

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

Project No.	WES - 1591A
Date	Apr 15, 2022
File ID.	1591TSGE0B9

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