AECOM **Environment**

Prepared for
Port of Vancouver USA
3103 NW Lower River Road
Vancouver, Washington 98660

Submitted to
Washington Department of Ecology

Submitted by
AECOM
111 SW Columbia
Suite 1500
Portland, Oregon 97201

60624310
February 2020

Groundwater Monitoring Letter Report - 2019

Former Automotive Services, Inc. Site

Port of Vancouver USA
2327 West Mill Plain Boulevard
Vancouver, Washington

AECOM

February 14, 2020

Mr. Panjini Balaraju
Environmental Engineer
Toxics Cleanup Program
Ecology SW Regional Office
Lacey, WA
(PDF copy via email: PBAL461@ecy.wa.gov)

Re: Groundwater Monitoring Letter Report - 2019
Former Automotive Services, Inc. Site
Port of Vancouver USA
2327 West Mill Plain Boulevard
Vancouver, Washington
AECOM Job No. 60519969

Dear Mr. Balaraju:

AECOM has prepared this Groundwater Monitoring Letter Report (herein referred to as the report) on behalf of the Port of Vancouver USA (the Port). This report summarizes the results of the 2019 groundwater monitoring events conducted at the Former Automotive Services, Inc. (ASI) Site (herein referred to as the Site). Results of June and December monitoring events are presented in this report.

1 Site Location and Background

The Site is located at 2327 West Mill Plain Boulevard in Vancouver, Washington (Figure 1). The Site consists of approximately 4.33 acres of nearly level unpaved land. The current tax parcel number is 059115-068 and is owned by the Port (Ecology, 2014). The Site is leased by CalPortland for a ready-mix plant (Figure 2).

The Site was historically an agricultural field until the ASI car wash facility was constructed on the Site in 1972 and 1973. The car wash process used hot water with kerosene to clean off a Cosmoline-based protective coating from newly imported cars upon arrival via ship to the Port. The car wash facility originally covered a larger area; however, the site was dissected by the Mill Plain Boulevard extension in 1998. Residual contamination and former car wash areas are located at the Site as summarized below (Ecology, 2014).

- In 1980, due to a process malfunction in the facility's water treatment system, water with kerosene flowed onto the ground surface west of the car wash building resulting in petroleum soil contamination.
- In 1991, four underground storage tanks (USTs) (containing kerosene, gasoline, and diesel) at the car wash facility were removed; confirmation soil samples collected following the removal activities indicated residual petroleum contamination. During the UST removal activities, approximately 1,500 cubic yards of soil was excavated; however, further excavation to remove the remaining impacted soil was not feasible as it would have undermined an on-Site structure.
- In 1992, diesel-impacted soil was encountered on the west side of the Site near the adjacent Tesoro aboveground storage tank farm. The source, based on field evidence, appeared to be from a surface spill which occurred in the 1960s prior to placement of Columbia River sand and silt dredge spoils on the ground surface.

Between September 1999 and February 2001, cleanup activities included the on-Site bioremediation of diesel- and kerosene-impacted soils from two soil excavation events described below (Ecology, 2014):

- In August 1999, during the initial excavation event, soils were excavated to approximately 16 feet below ground surface (bgs) where a change in lithology was observed and groundwater was encountered. The excavation was halted because of the presence of groundwater, lack of available stockpile space, and constraints along the Tesoro property boundary.

- In July 2000, a second excavation event occurred to remove diesel contamination left from the initial event. Deeper excavation depths were reached, varying from 17 to 20 feet bgs, and the footprint of the excavation area was expanded to follow contamination in all directions, even into the adjoining Tesoro property. Confirmation soil samples were collected from the walls and bottom of the final excavation. Based on samples collected, it was estimated that approximately 389 cubic yards of diesel-impacted soil remained at the Site below 16 feet bgs. Groundwater impacts are limited to the center of the Site around well GL-2 (Figure 2).

As detailed in the No Further Action (NFA) letter from the Washington Department of Ecology (Ecology), an Environmental Covenant 3407456 was filed with Clark County in 2012 and revised in September 2013 to address the remaining impacted areas (Ecology, 2014). To confirm the long-term effectiveness of the cleanup operations completed at the Site, conformational monitoring is necessary; the data will be used by Ecology during periodic reviews. In the NFA, Ecology approved a monitoring plan for the Site's monitoring wells; the monitoring program is summarized in Section 3 below.

A total of seven monitoring wells have been installed at the Site to date: GL-1, GL-2 and GL-3 (formerly identified as MW-1, MW-2 and MW-3) in 1991 and GL-4, GL-5, GL-6 and GL-7 in 2002. All monitoring wells listed on Table 1 are constructed with screened intervals of 10 to 30 feet below top of casing (btoc).

2 Site Hydrogeology and Soils

The depth to groundwater seasonally ranges between 14 to 21 feet bgs (Ecology, 2014). The direction of hydraulic gradient is seasonally variable to the northwest and south-southeast but is nearly flat. Soils beneath the Site have been classified as Hillsboro loam with McBee silty clay loam located diagonally across the center of the property from the northwest corner to southeast corner. The soils become sandy at approximately 10 to 15 feet and the sand becomes coarser at 18 to 20 feet bgs (Ecology, 2014).

3 Groundwater Monitoring Program and Cleanup Levels

The ASI Site was closed under the Environmental Covenant 3407456, revised in 2012. As part of Ecology's NFA, a site-specific monitoring plan was required. Long-term groundwater monitoring has been conducted at the Site in accordance with the following monitoring plans and revisions since 2009:

- *Long-Term Confirmational Groundwater Monitoring Plan* (CEC, 2007)
- Ecology approval email for use of low-flow sampling techniques (Ecology, 2009)
- *Revised Long-Term Confirmational Groundwater Monitoring Plan for the ASI/Glacier Site* (Kennedy/Jenks Consultants, 2010)

The *Revised Long-Term Monitoring Plan* proposed a reduction in the number of wells sampled during each event and the abandonment of monitoring wells GL-5 and GL-7. In 2010, Ecology agreed that the remaining wells were deemed sufficient to monitor the localized area of diesel impacts in groundwater near GL-2 (Ecology, 2014). Decommissioning activities at GL-7 were completed in October 2019. GL-5 was not located until the December 2019 event; the well is scheduled to be decommissioned in 2020.

Based on the *Revised Long-Term Confirmational Groundwater Monitoring Plan*, the current compliance monitoring plan (Table 1) includes the collection of depth-to-groundwater measurements and groundwater samples from the following five monitoring wells every 18 months:

- GL-1
- GL-2
- GL-3
- GL-4

- GL-6

The analyte list for groundwater samples collected includes full list of Volatile Organic Compounds (VOCs) and diesel- and oil-range total petroleum hydrocarbons (diesel and oil) at all monitoring wells.

In accordance with *Revised Long-Term Confirmational Groundwater Monitoring Plan*, the analytical results are compared to the Ecology Model Toxics Control Act (MTCA) Method A groundwater cleanup levels (CULs).

4 Activities Conducted During 2019

Groundwater monitoring activities completed during the June and December 2019 events were conducted in accordance with the following three documents.

- Environmental Protection Agency (EPA) guidance document titled *Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures* (EPA, 1996)
- *Revised Long-Term Confirmational Groundwater Monitoring Plan for the ASI/Glacier Site* (Kennedy/Jenks Consultants, 2010)
- Ecology NFA letter (Ecology, 2014)

The groundwater monitoring activities completed during the June and December 2019 events are as follows:

- Depth-to-groundwater measurements were collected from the five monitoring wells included in the current monitoring plan (see Section 3) using an electronic water level meter. The depth to groundwater was measured from the top of casing (TOC) at each well and recorded on the Groundwater Level Form (Appendix A). Depth-to-groundwater measurements and calculated groundwater elevations are presented on Table 2.
- Groundwater samples were collected from the five monitoring wells included in the current monitoring plan (see Section 3). Each groundwater sample was collected following low-flow purging and stabilization of the following field parameters: temperature, pH, conductivity, dissolved oxygen (DO), and oxidation reduction potential (ORP). A peristaltic pump was used for purging the five monitoring wells. Groundwater samples were collected at each monitoring well using a disposable double check valve bailer. The peristaltic pump tubing and disposable bailers were all lowered and retrieved gently and set at the center of the screen interval. Monitoring Well Sampling Field Logs for both monitoring events are included in Appendix A, and final field parameters are reported in Table 3.
- A field duplicate sample collected from monitoring well GL-2, a field blank, and a trip blank were also collected and submitted for analysis.
- Sample containers were stored in a cooler with ice from the time of sample collection until delivery to the laboratory.
- Groundwater samples were delivered to Apex Laboratories of Tigard, Oregon under strict chain-of-custody procedures. The samples were submitted for the analyses listed below in accordance with Table 1.
    - Full list of VOCs by EPA Method 8260C
    - Diesel and oil by the NWTPH-Dx Method
- Chain-of-custody forms are included in Appendix B with the laboratory analytical reports. Purge and decontamination water was placed into a labeled, aboveground polyethylene tank, which is temporarily staged under the 26th Avenue overpass pending characterization and disposal. Disposable sampling equipment (including tubing and nitrile gloves) was managed as municipal solid waste.

5 Results of the 2019 Monitoring Events

Depth-to-groundwater measurements and groundwater samples were collected on June 10 and December 5, 2019. Groundwater level measurements are summarized in Table 2. Stabilized groundwater field parameters are provided in Table 3. Groundwater analytical results are summarized in Table 4. The laboratory analytical reports are included in Appendix B.

5.1 Groundwater Elevation Monitoring

Depth-to-groundwater measurements recorded in June and December 2019 were used to calculate groundwater elevations above mean sea level at each monitoring well. The groundwater elevations are presented in Table 2 in feet relative to the National Geodetic Vertical Datum based on the City of Vancouver Benchmark L-181.

- On June 10, 2019, the groundwater elevations ranged from 19.39 feet at GL-6 to 20.91 feet at GL-4.
- On December 5, 2019, the groundwater elevation ranged from 22.12 feet at GL-6 to 24.48 feet at GL-4.

Groundwater elevation contours and the inferred direction of groundwater flow from the June and December 2019 events are shown on Figures 3 and 4, respectively. The hydraulic gradient was calculated to be 0.005 ft/ft to the west-northwest in June 2019 and 0.003 ft/ft to the west-southwest in December 2019. Calculated hydraulic gradients for both events are consistent with those of previous sampling events.

5.2 Groundwater Analytical Results

Groundwater analytical results are summarized in the following subsections.

5.2.1 Volatile Organic Compounds

Samples collected during the 2019 monitoring events were analyzed for VOCs using EPA Method 8260C. The VOC results for the historically detected VOCs (not the full list) are presented on Table 4 and summarized below:

- In June 2019, sec-butylbenzene, isopropylbenzene and n-propylbenzene were detected in monitoring well GL-1 above their respective method reporting limits (MRLs) but below the established MTCA Method A groundwater CULs. Acetone was detected in monitoring wells GL-1 and GL-3 at concentrations above the MRL but below the established MTCA Method A groundwater CUL.
- In December 2019, VOCs sec-butylbenzene, isopropylbenzene and n-propylbenzene were detected in monitoring well GL-1 at concentrations above the method detection limits (MDLs) but below the established MTCA Method A groundwater CULs.

5.2.2 Total Petroleum Hydrocarbons

Samples collected during the 2019 monitoring events were analyzed for diesel and oil by Method NWTPH-Dx. The diesel and oil results for the groundwater samples are presented on Table 4 and summarized below:

- In June 2019, diesel was detected above the MRL in monitoring wells GL-1 and GL-2 at concentrations of 0.404 mg/L and 0.695 mg/L, respectively. The concentration in GL-2 exceeds the MTCA Method A groundwater CUL of 0.5 mg/L.
- In December 2019, diesel was detected above the MDLs in monitoring wells GL-1, GL-2, GL-3, and GL-4 at concentrations ranging from 0.0629 mg/L at GL-4 to 0.647 mg/L at GL-2. The concentration of diesel exceeds the MTCA Method A groundwater CUL of 0.5 mg/L only in the sample form GL-2.
- Oil was not detected in any monitoring well in 2019.

6 Data Quality and Management

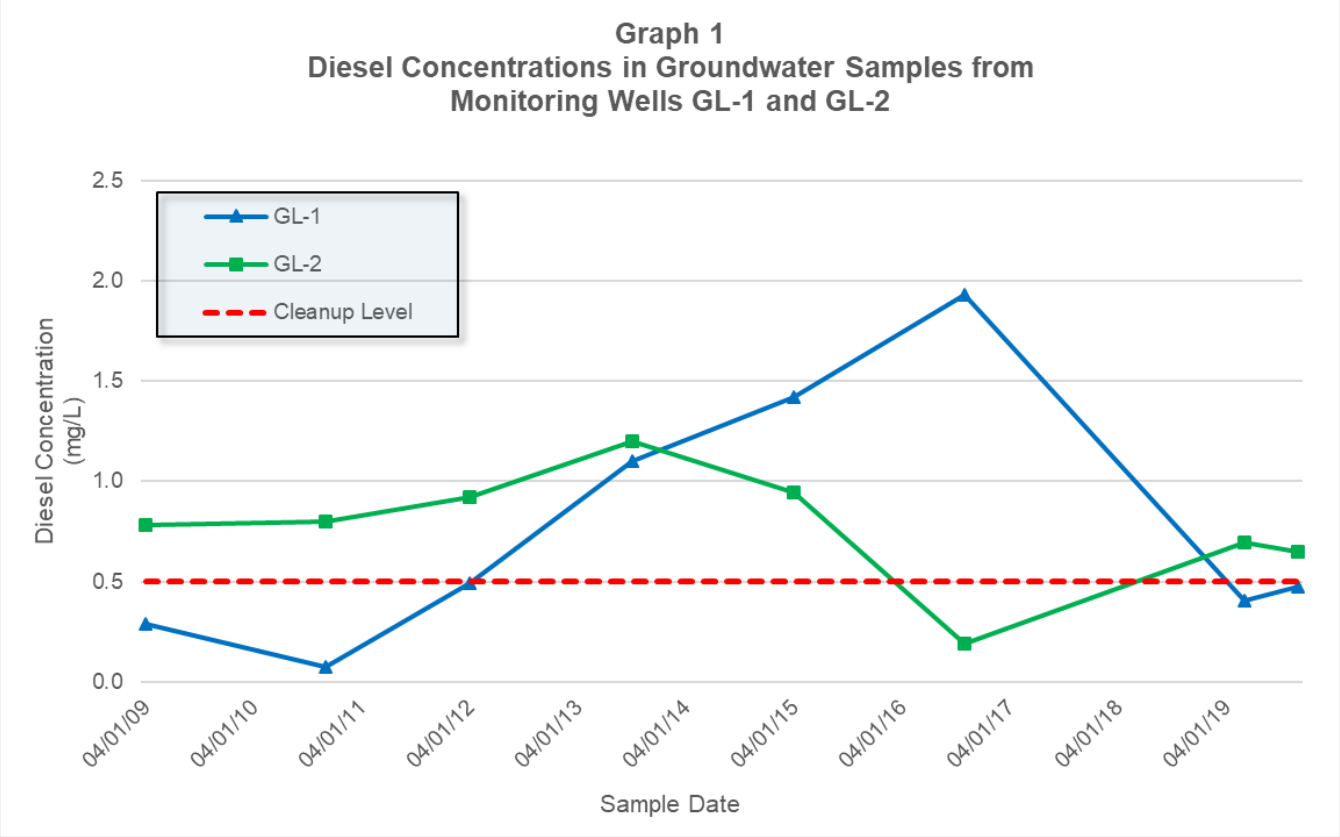
Based on a review of the laboratory reports, the analyses and results conformed to quality assurance standards, and the analytical data are of acceptable quality for their intended use. A data quality review is included in Appendix C.

The data from the June and December 2019 monitoring events will be uploaded into Ecology's Environmental Information Management (EIM) database within the next 30 days. Prior data has been uploaded onto the EIM database. Under WAC 173-340-840(5), environmental sampling data for all cleanup sites must be submitted in both printed and electronic form.

7 Conclusions

Groundwater monitoring was conducted at the Site on June 10 and December 5, 2019. The analytical results were generally consistent with previous monitoring events. All detected concentrations of VOCs in groundwater were less than the established MCTA Method A groundwater CULs. The concentration of diesel in groundwater was above the MCTA Method A groundwater CUL only in the sample collected from well GL-2. Oil was not detected in any of the groundwater samples.

Historically diesel has exceeded the CUL in groundwater samples from only GL-1 and GL-2; however, diesel was not detected in GL-1 above the MCTA Method A groundwater CUL during the two groundwater monitoring events in 2019 (Table 4). Graph 1 below shows the diesel concentrations in these two monitoring wells over time.



8 Recommendations and Future Sampling Activities

AECOM does not recommend any changes to the groundwater monitoring program. Groundwater monitoring will continue every 18 months and include measuring depth to groundwater and collecting samples from five wells. Samples will continue to be analyzed for VOCs, diesel, and oil. The next monitoring event is scheduled for June 2021. Monitoring well GL-5 in 2020 will be decommissioned as planned now that the monitoring well has been located.

9 References

CEC, 2007. *Long-Term Confirmational Groundwater Monitoring Plan for the ASI/Glacier Site.* Port of Vancouver USA. March 9.

Ecology, 2014. Letter from Washington State Department of Ecology to Port of Vancouver. *No Further Action for the Former Automotive Services Inc Site.* March 7.

EPA, 1996. *Ground Water Issue. Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures.* By Robert W. Puls and Michael J. Barcelona. EPA/540/S-95/504. April.

Kennedy/Jenks, 2010. Letter from Kennedy/Jenks Consultants to the Washington State Department of Ecology. *Subject: Automotive Services, Inc. – REVISED Long Term Groundwater Monitoring Plan, Former ASI/Glacier Site, Port of Vancouver USA.* May 10.

10 Limitations

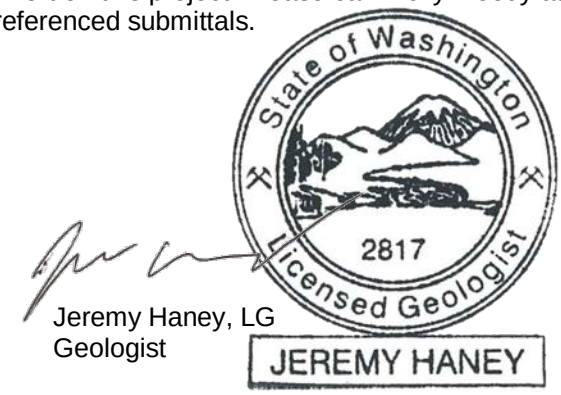
AECOM has prepared this report for use by the Port. Within the limitations of scope, schedule, and budget, our services have been executed in accordance with accepted environmental science practices in this area at the time this report was prepared. No other warranty or conditions, expressed or implied, should be understood.

We appreciate the opportunity to be of service to the Port on this project. Please call Nicky Moody at (503) 478-2765 with any questions regarding this or any other referenced submittals.

Sincerely,

AECOM

Nicky Moody
Project Manager



Jeremy Haney, LG
Geologist

cc: Craig Rankine, RG, LHG, Cleanup Project Manager/Hydrogeologist, Washington Department of Ecology, Toxics Cleanup Program, Vancouver Field Office, 12121 NE 99th Street, Suite 2100, Vancouver, WA 98682, cran461@ECY.WA.GOV

Matt Graves, LG, Environmental Manager, Port of Vancouver USA, 3103 NW Lower River Road, Vancouver, WA 98660, mgraves@Portvanusa.com

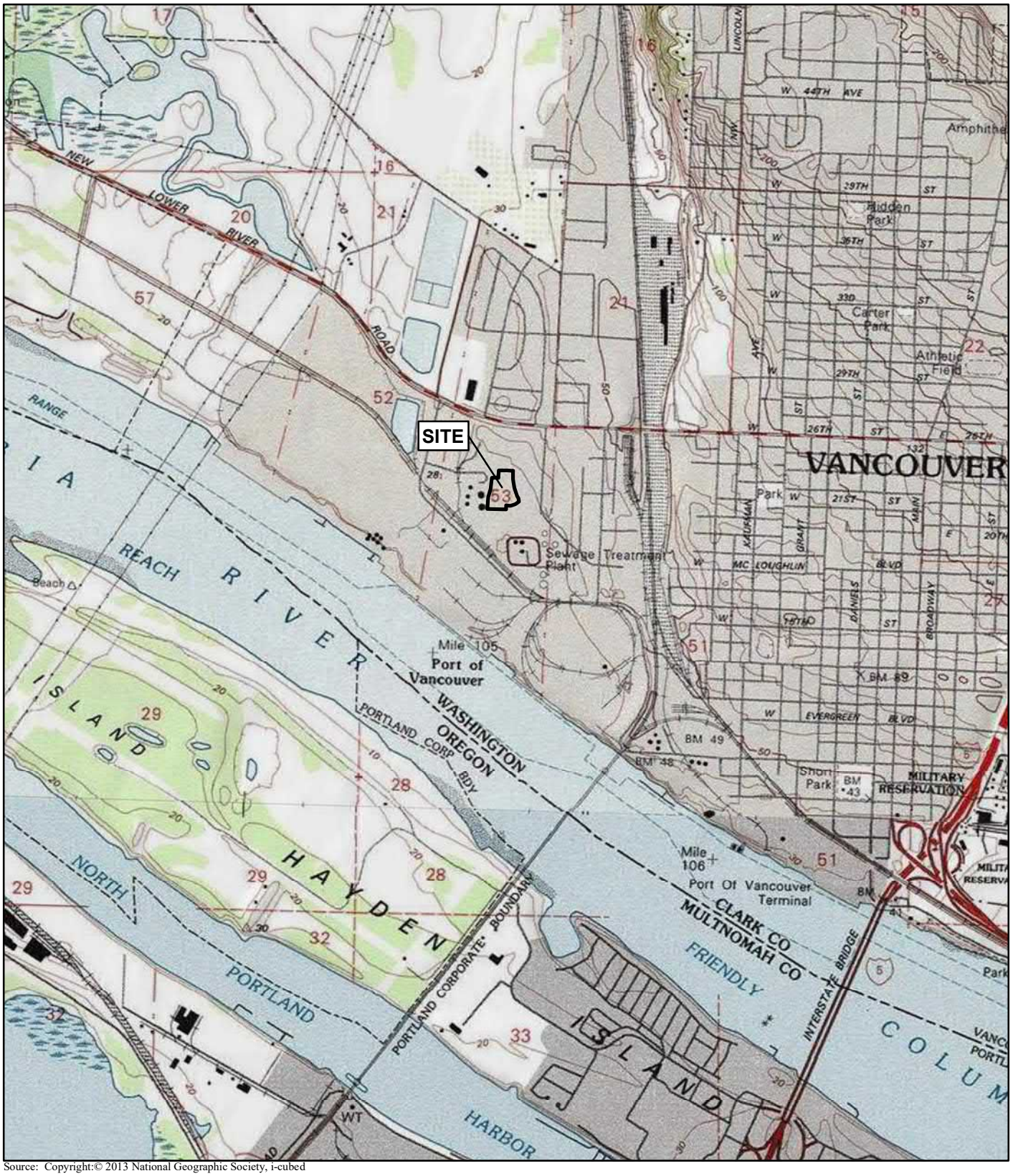
Attachments

List of Figures

List of Tables

List of Appendices

Figures



Source: Copyright:© 2013 National Geographic Society, i-cubed

1,000 0 1,000 2,000

SCALE IN FEET

AECOM

VICINITY MAP

FORMER AUTOMOTIVE SERVICES, INC. SITE
PORT OF VANCOUVER USA
2327 WEST MILL PLAIN BOULEVARD, VANCOUVER, WA

FIGURE 1

O:\60519969 PoV GW Monitoring Services\900-CAD, GIS\MXD\Figure 1 Viciniy Map.mxd

Sources: USGS Imagery, 2012. Clark County GIS, 2019.

50 0 50 100

SCALE IN FEET

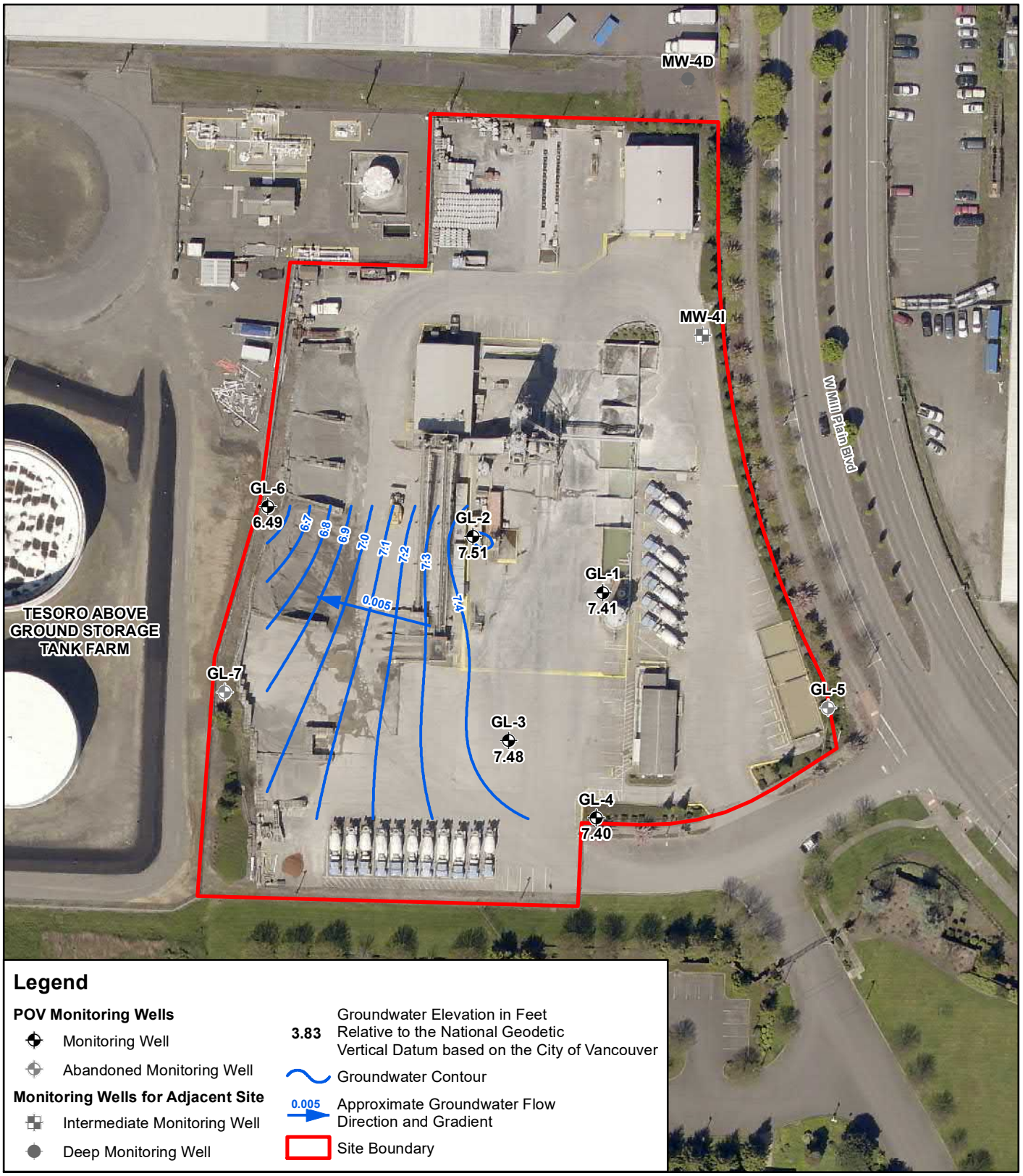
AECOM

SITE MAP

FORMER AUTOMOTIVE SERVICES, INC. SITE
PORT OF VANCOUVER USA
2327 WEST MILL PLAIN BOULEVARD, VANCOUVER, WA

FIGURE 2

O:\60519969 PoV GW Monitoring Services\900-CAD, GIS\MXD\Figure 2 Site Map.mxd



Legend

POV Monitoring Wells

- Monitoring Well
- Abandoned Monitoring Well

Monitoring Wells for Adjacent Site

- Intermediate Monitoring Well
- Deep Monitoring Well

3.83 Groundwater Elevation in Feet Relative to the National Geodetic Vertical Datum based on the City of Vancouver

Groundwater Contour

0.005 Approximate Groundwater Flow Direction and Gradient

Site Boundary

50 0 50 100

SCALE IN FEET

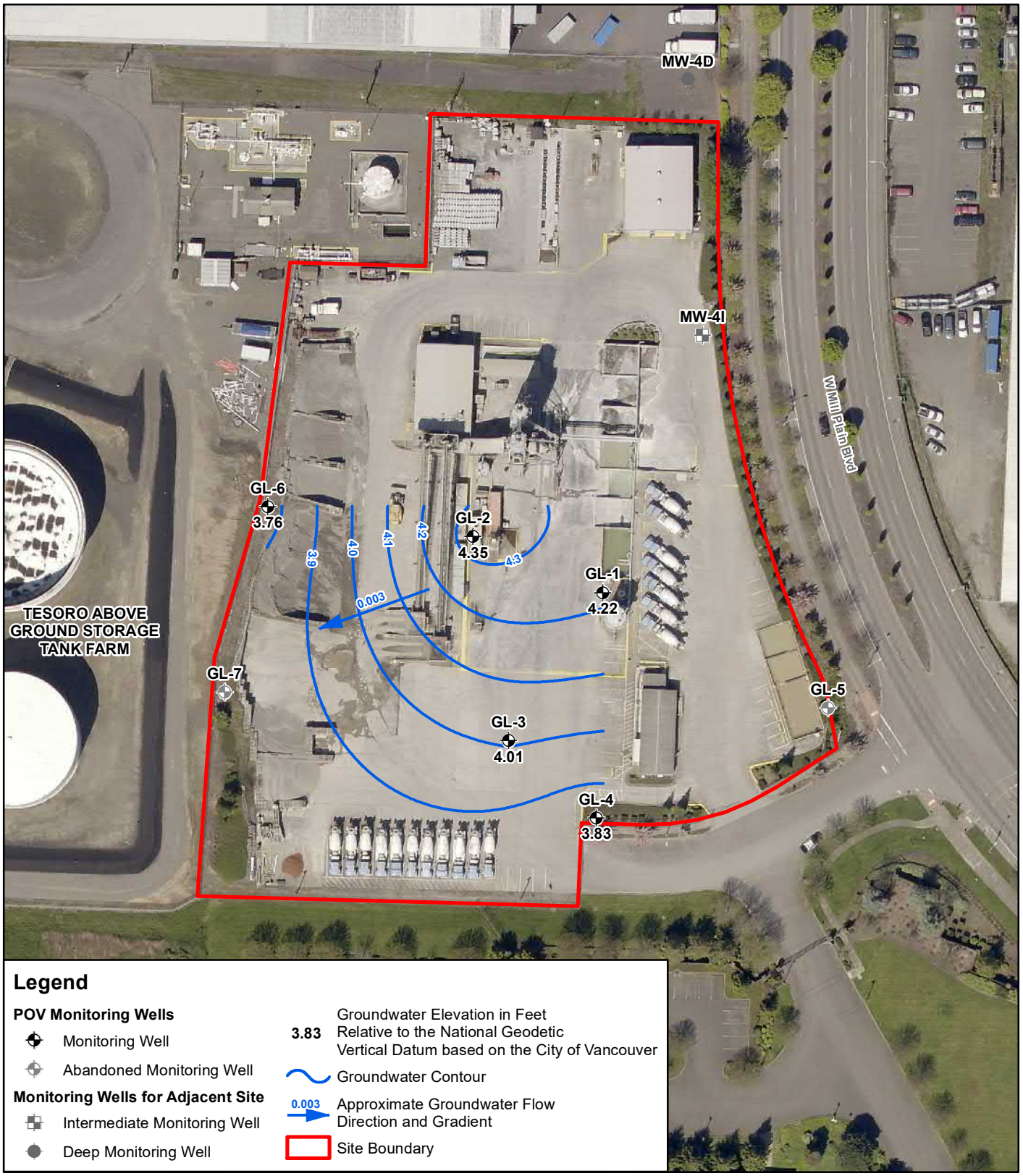
GROUNDWATER ELEVATION, CONTOURS, AND FLOW DIRECTION – JUNE 2019

FORMER AUTOMOTIVE SERVICES, INC. SITE
PORT OF VANCOUVER USA
2327 WEST MILL PLAIN BOULEVARD, VANCOUVER, WA

AECOM

FIGURE 3

O:\60519969 PoV GW Monitoring Services\900-CAD, GIS\MXD\Figure 3 GW – June 2019.mxd



Legend

POV Monitoring Wells

- Monitoring Well
- Abandoned Monitoring Well

Monitoring Wells for Adjacent Site

- Intermediate Monitoring Well
- Deep Monitoring Well

3.83 Groundwater Elevation in Feet Relative to the National Geodetic Vertical Datum based on the City of Vancouver

Groundwater Contour

0.003 Approximate Groundwater Flow Direction and Gradient

Site Boundary

50 0 50 100

SCALE IN FEET

GROUNDWATER ELEVATION, CONTOURS, AND FLOW DIRECTION – DECEMBER 2019

FORMER AUTOMOTIVE SERVICES, INC. SITE
PORT OF VANCOUVER USA
2327 WEST MILL PLAIN BOULEVARD, VANCOUVER, WA

AECOM

FIGURE 4

O:\60519969 PoV GW Monitoring Services\900-CAD, GIS\MXD\Figure 4 GW – Dec 2019.mxd

Tables

Table 1. Compliance Monitoring Plan
Former Automotive Services, Inc. Site

Monitoring Well ID	Current Analytical Requirements		Well Log Total Depth (feet)	Measured Total Depth (feet BTOC)	Well Screen Interval (feet BTOC)	Monument Type	Diameter (inches)
	VOCs	NWTPH-Dx					
Onsite Shallow							
GL-1	18 mo		33.00	33.00	10-30	Flush	2.00
GL-2			27.20	27.20	10-30	Flush	2.00
GL-3			26.80	26.80	10-30	Flush	2.00
GL-4			30.40	30.40	10-30	Flush	2.00
GL-6			28.00	28.00	10-30	Flush	2.00
Abandonment Pending							
GL-5	n/a		30.00	34.65	10-30	Flush	2.00
Abandoned/Outside Monitoring Program							
GL-7	n/a		30.00	30.00	10-30	Flush	2.00
MW-4D MW-4I			Installed a part of the adjacent Cadet Manufacturing site investigation and not monitored for ASI program per NFA				

Acronyms and Abbreviations:
BTOC = below top of well casing
18 mo = monitoring conducted every 18 months

Notes:
D = Deep
NWTPH-Dx = Diesel and oil-range total petroleum hydrocarbons
I = intermediate
n/a = not included
S = shallow
VOCs = volatile organic compounds

Table 2. Groundwater Elevation Results
Former Automotive Services, Inc. Site

Monitoring Well ID	Date	Top of Casing Elevation [a] (feet)	Depth to Groundwater [b] (feet)	Total Well Depth (feet)	Groundwater Elevation (feet)
GL-1	4/1/2009	27.42	21.03	33.00	6.39
	12/16/2010	27.42	18.03	33.00	9.39
	4/26/2012	27.42	13.79	33.00	13.63
	10/17/2013	27.42	23.41	33.00	4.01
	4/29/2015	27.42	22.48	33.00	4.94
	11/3/2016	27.42	20.70	33.00	6.72
	6/10/2019	27.42	20.01	33.00	7.41
	12/5/2019	27.42	23.20	33.00	4.22
GL-2	4/1/2009	27.82	21.41	27.20	6.41
	12/16/2010	27.82	18.41	27.22	9.41
	4/26/2012	27.82	14.23	27.22	13.59
	10/17/2013	27.82	23.75	27.20	4.07
	4/29/2015	27.82	22.85	27.20	4.97
	11/2/2016	27.82	21.62	27.20	6.20
	6/10/2019	27.82	20.31	27.20	7.51
	12/5/2019	27.82	23.47	27.20	4.35
GL-3	4/1/2009	27.17	20.79	26.70	6.38
	12/16/2010	27.17	17.75	26.75	9.42
	4/26/2012	27.17	13.51	26.75	13.66
	10/17/2013	27.17	23.08	26.80	4.09
	4/29/2015	27.17	22.48	26.80	4.69
	11/2/2016	27.17	20.72	26.80	6.45
	6/10/2019	27.17	19.69	26.80	7.48
	12/5/2019	27.17	23.16	26.80	4.01
GL-4	4/1/2009	28.31	21.95	30.80	6.36
	12/16/2010	28.31	18.87	30.44	9.44
	4/26/2012	28.31	14.71	30.44	13.60
	10/17/2013	28.31	24.28	30.40	4.03
	4/29/2015	28.31	23.31	30.40	5.00
	11/1/2016	28.31	21.91	30.40	6.40
	6/10/2019	28.31	20.91	30.40	7.40
	12/5/2019	28.31	24.48	30.40	3.83
GL-6	4/1/2009	25.88	19.51	28.00	6.37
	12/16/2010	25.88	16.53	27.98	9.35
	4/26/2012	25.88	12.45	27.98	13.43
	10/17/2013	25.88	21.85	28.00	4.03
	4/30/2015	25.88	22.90	28.00	2.98
	11/2/2016	25.88	19.17	28.00	6.71
	6/11/2019	25.88	19.39	28.00	6.49
	12/5/2019	25.88	22.12	28.00	3.76

Notes:

(a) Elevation in feet relative to the National Geodetic Vertical Datum based on the City of Vancouver Benchmark L-181.

(b) Measured in feet below the top of the well casing.

Table 3. Groundwater Field Parameter Measurements
Former Automotive Services, Inc. Site

Monitoring Well ID	Sample Date	Field Parameters				
		Temperature (°C)[(a)]	**Conductivity** (mS/cm)	**Dissolved Oxygen** (mg/l)	**pH**	**ORP** (mV)
GL-1	4/1/2009	55.69	0.369	0.78	6.53	-
	12/16/2010	55.92	0.537	0.54	-	-
	4/26/2012	57.40	0.300	2.97	6.79	-
	10/17/2013	57.30	0.890	0.1	6.61	-
	4/29/2015	57.25	0.946	0.1	6.42	-
	11/3/2016	54.91	0.514	17.2	6.64	-
	6/10/2019	57.96	0.794	6.92	-	-
	12/5/2019	14.10	0.991	0.0	7.05	-113
GL-2	4/1/2009	54.71	0.858	1.38	6.03	-
	12/16/2010	55.26	0.890	1.00	NA	-
	4/26/2012	55.40	0.715	0.71	6.92	-
	10/17/2013	55.80	1.000	0.08	6.68	-
	4/29/2015	56.91	0.946	0.54	6.7	-
	11/2/2016	54.17	0.540	1.91	6.72	-
	6/10/2019	57.61	0.845	-	6.59	-
	12/5/2019	12.97	1.030	0.00	6.85	37
GL-3	4/1/2009	55.77	0.363	1.83	6.20	-
	12/16/2010	56.79	0.375	0.74	NA	-
	4/26/2012	56.57	0.236	0.95	6.55	-
	10/17/2013	58.80	0.468	0.51	6.02	-
	4/29/2015	59.68	0.346	0.48	6.1	-
	11/2/2016	56.48	0.238	1.86	5.93	-
	6/10/2019	64.18	0.370	-	6.12	-
	12/5/2019	14.40	0.486	0.0	6.42	158
GL-4	4/1/2009	56.78	0.389	1.42	6.38	-
	12/16/2010	56.68	0.593	0.71	NA	-
	4/26/2012	55.33	0.373	1.37	6.71	-
	10/18/2013	57.60	0.293	0.25	6.23	-
	4/29/2015	58.04	0.376	0.49	6.2	-
	11/1/2016	55.24	0.184	2.31	5.82	-
	6/10/2019	58.55	0.260	-	6.11	-
	12/5/2019	12.30	0.320	0.0	6.50	186
GL-6	4/1/2009	52.65	0.175	3.50	5.92	-
	12/16/2010	54.00	0.190	4.93	NA	-
	4/26/2012	52.23	0.089	8.03	6.19	-
	10/18/2013	53.60	0.070	7.50	6.15	-
	4/30/2015	56.62	0.070	7.21	5.79	-
	11/2/2016	53.64	0.140	7.07	5.62	-
	6/11/2019	55.20	0.125	4.11	6.17	-
	12/5/2019	11.86	0.136	4.12	6.21	209

Notes:
(a) °C = Degrees Celsius, readings collected prior to Decemeber 2019 collected in °F = Degrees Fahrenheit
mS/cm = millisiemens per centimeter
mg/l = milligrams per liter
mV = millivolts
ORP = oxidation reduction potential
- = not available to AECOM for this report.

Table 4. Volatile Organic Compounds and Total Petroleum Hydrocarbons in Groundwater
Former Automotive Services, Inc. Site

Monitoring Well ID	Sample Date	Historically Site Detected VOCs						NWTPH-Dx	
		Acetone µg/L	sec-Butylbenzene µg/L	Isopropylbenzene µg/L	Naphthalene µg/L	n-Propylbenzene µg/L	PCE µg/L	Diesel mg/L	Oil mg/L
MTCA Method A GW Cleanup Level		NE	NE	NE	160	NE	5	0.5	0.5
Active Monitoring Wells									
GL-1	4/1/2009	**100**	NA	NA	5.0 U	NA	1.0 U	**0.29**	0.40 U
GL-1	12/16/2010	5.0 U	NA	NA	1.0 U	NA	**1.2**	**0.077**	0.38 U
GL-1	4/26/2012	5.0 U	NA	NA	**3.4**	NA	1.0 U	**0.49**	0.38 U
GL-1	10/17/2013	25 U	NA	NA	2.0 U	NA	0.5 U	**1.1**	0.24 U
GL-1	4/29/2015	20 U	NA	NA	2.0 U	NA	0.5 U	**1.4**	0.38 U
GL-1	11/3/2016	---	NA	NA	2.0 U	NA	---	**1.9**	0.38 U
GL-1	6/10/2019	**24.6**	**2.85**	**6.74**	2.00 UJ	**10.6**	0.400 U	**0.404**	0.381 U
GL-1	12/5/2019	10.0 U	**0.610 J**	**1.88**	2.00 UJ	**1.18**	0.200 U	**0.475**	0.0755 U
GL-2	4/1/2009	20 U	NA	NA	5.0 U	NA	1.0 U	**0.78**	0.40 U
GL-2	12/16/2010	5.0 U	NA	NA	1.0 U	NA	1.0 U	**0.8**	0.40 U
GL-2	4/26/2012	5.0 U	NA	NA	1.0 U	NA	1.0 U	**0.92**	0.38 U
GL-2	10/17/2013	25 U	NA	NA	2.0 U	NA	0.5 U	**1.2**	0.24 U
GL-2	4/29/2015	20 U	NA	NA	2.0 U	NA	0.5 U	**0.943**	0.38 U
GL-2	11/2/2016	---	NA	NA	2.0 U	NA	---	0.189 U	0.38 U
GL-2	6/10/2019	20.0 U	1.00 U	1.00 U	2.00 UJ	0.500 U	0.400 U	**0.659**	0.381 U
GL-2	12/5/2019	10.0 U	0.500 U	0.500 U	2.00 UJ	0.250 U	0.200 U	**0.647**	0.0755 U
GL-3	4/1/2009	20 U	NA	NA	5.0 U	NA	1.0 U	**0.084**	0.42 U
GL-3	12/16/2010	5.0 U	NA	NA	1.0 U	NA	**1.1**	0.080 U	0.40 U
GL-3	4/26/2012	5.0 U	NA	NA	1.0 U	NA	1.0 U	0.077 U	0.38 U
GL-3	10/17/2013	25 U	NA	NA	2.0 U	NA	0.5 U	**0.15**	0.24 U
GL-3	4/29/2015	20 U	NA	NA	2.0 U	NA	0.5 U	0.19 U	0.38 U
GL-3	11/2/2016	---	NA	NA	2.0 U	NA	---	0.19 U	0.38 U
GL-3	6/10/2019	**20.6**	1.00 U	1.00 U	2.00 UJ	0.500 U	0.400 U	0.190 U	0.381 U
GL-3	12/5/2019	10.0 U	0.500 U	0.500 U	2.00 UJ	0.250 U	0.200 U	0.120	0.0792 U
GL-4	4/1/2009	20 U	NA	NA	5.0 U	NA	1.0 U	0.19 U	0.41 U
GL-4	12/16/2010	5.0 U	NA	NA	1.0 U	NA	1.0 U	**0.077**	0.38 U
GL-4	4/26/2012	5.0 U	NA	NA	1.0 U	NA	1.0 U	**0.28**	0.38 U
GL-4	10/18/2013	25 U	NA	NA	2.0 U	NA	0.5 U	0.096 U	0.24 U
GL-4	4/29/2015	20 U	NA	NA	2.0 U	NA	0.5 U	0.19 U	0.38 U
GL-4	11/2/2016	---	NA	NA	2.0 U	NA	---	0.19 U	0.38 U
GL-4	6/10/2019	20.0 U	1.00 U	1.00 U	2.00 UJ	0.500 U	0.400 U	0.190 U	0.381 U
GL-4	12/5/2019	20.0 UJ	0.500 U	0.500 U	2.00 UJ	0.250 U	0.200 U	**0.0629 J**	0.0784 U
GL-6	4/1/2009	20 U	NA	NA	5.0 U	NA	1.0 U	0.082 U	0.41 U
GL-6	12/16/2010	5.0 U	NA	NA	1.0 U	NA	1.0 U	**0.34**	0.38 U
GL-6	4/26/2012	5.0 U	NA	NA	1.0 U	NA	1.0 U	0.079 U	0.40 U
GL-6	10/18/2013	25 U	NA	NA	2.0 U	NA	0.5 U	0.096 U	0.24 U
GL-6	4/30/2015	20 U	NA	NA	2.0 U	NA	0.5 U	0.189 U	0.377 U
GL-6	11/2/2016	---	NA	NA	2.0 U	NA	---	0.189 U	0.381 U
GL-6	6/11/2019	20.0 U	1.00 U	1.00 U	2.00 UJ	0.500 U	0.400 U	0.190 U	0.381 U
GL-6	12/5/2019	20.0 UJ	0.500 U	0.500 U	2.00 UJ	0.250 U	0.200 U	0.0385 U	0.0769 U

Table 4. Volatile Organic Compounds and Total Petroleum Hydrocarbons in Groundwater
Former Automotive Services, Inc. Site

Monitoring Well ID	Sample Date	Historically Site Detected VOCs						NWTPH-Dx	
		Acetone µg/L	sec-Butylbenzene µg/L	Isopropylbenzene µg/L	Naphthalene µg/L	n-Propylbenzene µg/L	PCE µg/L	Diesel mg/L	Oil mg/L
MTCA Method A GW Cleanup Level		NE	NE	NE	160	NE	5	0.5	0.5
Abandoned Monitoring Wells									
GL-7	4/1/2009	20 U	NA	NA	5.0 U	NA	1.0 U	**0.11**	0.42 U

Notes:
--- = Sample not analyzed for constituent
MTCA = Washington State Department of Ecology Model Toxics Control Act
NA = Not Available
NE = Not Established
PCE = Tetrachloroethene
NWTPH-Dx = Diesel- and oil-range total petroleum hydrocarbons
mg/L = milligrams per liter
ug/l = Micrograms per liter
U = Constituent not detected above the reported limit.
UJ = Constituent not detected above the reported limit; however, the reported limit is approximate.
VOCs = volatile organic compounds
Values in **bold** were detected above the laboratory detection and/or reporting limit.
= Indicates an exceedance of a screening criterion.
= Indicates the analyte was not detected; however, the reported method detection limit exceeds a screening criterion.
Ecology's MTCA values were obtained from the Washington State Department of Ecology Cleanup Level and Risk Calculations (CLARC) web site. The lower of the carcinogen and noncarcinogen MTCA Method B value is presented. https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx

Appendix A
Field Forms

GROUNDWATER LEVEL MEASUREMENTS

Port of Vancouver USA

Name: Phil Martello
Date: 4/10/19
Weather: Sunny, 70's

WELL ID	TIME	DTW	COMMENTS
GL-6	10:05	18.1	Large manhole orange
GL-4	10:10	20.92	needs 1 washer, seal & cap in good condition
GL-1	10:11	20.04	needs rubber seal, cap good condition, sediment accumulation
GL-2	10:12	20.39	everything in good shape
GL-3	10:15	19.79	everything good condition

3103 NW Lower River Road, Vancouver, WA 98660 • (360) 693-3611 • Fax (360) 735-1565 • www.portvanusa.com

FIELD SAMPLING DATA SHEET

Port of Vancouver USA

PROJECT NAME: Former ASI Site
SITE ADRESS: 2327 Mill Plain Blvd Vancouver, Wa

WELL ID: GL-4
BLIND ID:
DUP ID:

WIND:	N	NE	E	SE	S	SW	W	NW	LIGHT	MEDIUM	HEAVY
WEATHER:	SUNNY		CLOUDY		RAIN				TEMPERATURE:	70's	

HYDROLOGY/LEVEL MEASUREMENTS (nearest 0.01 ft)

Date	Time	DT-Water	Purge Rate (liters per minute)
6/10/19	10:25	20.91	0.3 lpm

GROUNDWATER SAMPLING DATA (if product is detected do NOT sample)

Sample ID	Bottle Type	Date	Time Collected	# of Containers	Analysis Required	Amount & Volume mL	Preservative
	VOA - Glass			3	VOCs	40 mL	HCl
	AMBER - Glass			1	Dx	1L	HCl

WATER QUALITY DATA Purge Start Time:

Time	Cummlative Liters Purged	Temperature °C	ORP mV	Conductivity us/cm	pH	Dissolved Oxygen (mg/L)	DTW	Comments (i.e., odor, sediment, color)
10:32	2	14.68		227	6.15		21.02	clear, no odor
10:35	2	14.70		233	6.15		21.02	clear, no odor
10:40	2	14.69		239	6.12		21.02	clear, no odor
10:44	2	14.73		252	6.11		21.02	clear, no odor
10:47	2	14.75		260	6.11			

Sampler: Phil Martello
(PRINTED NAME)

(SIGNATURE)

FIELD SAMPLING DATA SHEET

Port of Vancouver USA

PROJECT NAME: Former ASI Site
SITE ADRESS: 2327 Mill Plain Blvd Vancouver, Wa

WELL ID: GL-1
BLIND ID:
DUP ID:

WIND:	N	NE	E	SE	S	SW	W	NW	LIGHT	MEDIUM	HEAVY
WEATHER:	SUNNY		CLOUDY		RAIN				TEMPERATURE:	70's	

HYDROLOGY/LEVEL MEASUREMENTS (nearest 0.01ft)

Date	Time	DT-Water	Purge Rate (liters per minute)
6/10/19	11:05	20.01	0.3 lpm

GROUNDWATER SAMPLING DATA (if product is detected do NOT sample)

Sample ID	Bottle Type	Date	Time Collected	# of Containers	Analysis Required	Amount & Volume mL	Preservative
	VOA - Glass			3	VOCs	40 mL	HCl
	AMBER - Glass			1	Dx	1L	HCl

WATER QUALITY DATA Purge Start Time:

Time	Cummlative Liters Purged	Temperature °C	ORP mV	Conductivity us/cm	pH	Dissolved Oxygen (mg/L)	DTW	Comments (i.e., odor, sediment, color)
11:10	2	14.66		791		6.81	20.01	mind (donation
11:15	2	14.42		804		6.90	20.01	clear, no odor
11:19	2	14.38		797		6.91	20.01	clear, no odor
11:23	2	14.42		794		6.92	20.01	clear, odor-diesel

Sampler: _____ _____
(PRINTED NAME) (SIGNATURE)

FIELD SAMPLING DATA SHEET

Port of Vancouver USA

PROJECT NAME: Former ASI Site
SITE ADRESS: 2327 Mill Plain Blvd Vancouver, Wa

WELL ID: GL-2
BLIND ID:
DUP ID: GL-2

WIND:	N	NE	E	SE	S	SW	W	NW	LIGHT	MEDIUM	HEAVY
WEATHER:	SUNNY		CLOUDY		RAIN				TEMPERATURE:		

HYDROLOGY/LEVEL MEASUREMENTS (nearest 0.01ft)

Date	Time	DT-Water	Purge Rate (liters per minute)
6/10/19	12:45	20.31	0.3 lpm

GROUNDWATER SAMPLING DATA (if product is detected do NOT sample)

Sample ID	Bottle Type	Date	Time Collected	# of Containers	Analysis Required	Amount & Volume mL	Preservative
	VOA - Glass			3	VOCs	40 mL	HCl
	AMBER - Glass			1	Dx	1L	HCl

WATER QUALITY DATA Purge Start Time:

Time	Cummlative Liters Purged	Temperature °C	ORP mV	Conductivity us/cm	pH	Dissolved Oxygen (mg/L)	DTW	Comments (i.e., odor, sediment, color)
12:50	2	14.25		832	6.62		20.91	clear, no odor
12:53	2	14.06		839	6.60		21.05	clear, no odor
12:57	2	14.19		847	6.60		21.09	clear, no odor
1:01	2	14.23		845	6.59		21.09	clear, no odor

Sampler: _____
(PRINTED NAME)

_____
(SIGNATURE)

FIELD SAMPLING DATA SHEET

Port of Vancouver USA

PROJECT NAME: Former ASI Site
SITE ADRESS: 2327 Mill Plain Blvd Vancouver, Wa

WELL ID: GL-3
BLIND ID:
DUP ID:

WIND:	N	NE	E	SE	S	SW	W	NW	LIGHT	MEDIUM	HEAVY
WEATHER:	SUNNY		CLOUDY		RAIN				TEMPERATURE:		

HYDROLOGY/LEVEL MEASUREMENTS (nearest 0.01ft)

Date	Time	DT-Water	Purge Rate (liters per minute)
6/10/19	1:37	19.69	0.3 lpm

GROUNDWATER SAMPLING DATA (if product is detected do NOT sample)

Sample ID	Bottle Type	Date	Time Collected	# of Containers	Analysis Required	Amount & Volume mL	Preservative
	VOA - Glass			3	VOCs	40 mL	HCl
	AMBER - Glass			1	Dx	1L	HCl

WATER QUALITY DATA Purge Start Time:

Time	Cummlative Liters Purged	Temperature °C	ORP mV	Conductivity us/cm	pH	Dissolved Oxygen (mg/L)	DTW	Comments (i.e., odor, sediment, color)
1:42	2	18.15		391	6.04		19.71	clear, no odor
1:48	2	17.90		380	6.11		19.71	clear, no odor
1:53	2	17.95		375	6.12		19.71	clear, no odor
1:59	2	17.88		370	6.12		19.71	clear, no odor

Sampler: _____ _____
(PRINTED NAME) (SIGNATURE)

FIELD SAMPLING DATA SHEET

Port of Vancouver USA

PROJECT NAME: Former ASI Site
SITE ADRESS: 2327 Mill Plain Blvd Vancouver, Wa

WELL ID: GL-6
BLIND ID:
DUP ID:

WIND:	N	NE	E	SE	S	SW	W	NW	LIGHT	MEDIUM	HEAVY
WEATHER:	SUNNY		CLOUDY		RAIN				TEMPERATURE:		

HYDROLOGY/LEVEL MEASUREMENTS (nearest 0.01ft)

Date	Time	DT-Water	Purge Rate (liters per minute)
6/11/19	9:35	19.39	0.3 lpm

GROUNDWATER SAMPLING DATA (if product is detected do NOT sample)

Sample ID	Bottle Type	Date	Time Collected	# of Containers	Analysis Required	Amount & Volume mL	Preservative
	VOA - Glass			3	VOCs	40 mL	HCl
	AMBER - Glass			1	Dx	1L	HCl

WATER QUALITY DATA Purge Start Time:

Time	Cummlative Liters Purged	Temperature °C	ORP mV	Conductivity us/cm	pH	Dissolved Oxygen (mg/L)	DTW	Comments (i.e., odor, sediment, color)
9:40	2	13.01		127	6.10	4.70	18.39	no odor, cloudy
9:44	2	12.91		125	6.15	4.19	18.39	no odor, cloudy
9:47	2	12.87		125	6.17	4.11	18.41	"

Sampler: Phil Markello
(PRINTED NAME)

(SIGNATURE)

Groundwater Monitoring Field Form

AECOM

Project Information				
Project Name:	Automotive Services, Inc. (ASI)	**Field Team:**	T. Lovsche K	
Project Number:	60519969	**Date:**	12/5/19	Page 1 of 1

Field Measurements and Observations

Well ID	Time	Depth to Water (feet BTOC)	Condition Assessment • Well Tag ID verification • Status of each well • Replace broken lids, bolts, gaskets, caps, & locks	Aquifer	Screen Interval (feet)	Sampling Plan					
						Collect Sample	Sampling Method	Analytes	QC	Containers	
GL-6	0845	22.12	AHE593 · well good · manhole lid	Shallow	10-30	X	PP/Bailer	VOCs, Dx		3 VOAs	2 Ambers
GL-4	0912	24.48	AHE596 · well good	Shallow	10-30	X	PP/Bailer	VOCs, Dx		3 VOAs	2 Ambers
GL-3	0917	23.16	NO card present · well good · -unset flat metal plate	Shallow	10-30	X	PP/Bailer	VOCs, Dx		3 VOAs	2 Ambers
GL-2	0923	~~23.20~~ 23.47	NO CARD · well good	Shallow	10-30	X	PP/Bailer	VOCs, Dx	FD**	3 VOAs 3 VOAs	2 Ambers 2 Ambers
GL-1	0931	23.20	NO CARD present · -well good · -replaced 1 bolt.	Shallow	10-30	X	PP/Bailer	VOCs, Dx		3 VOAs	2 Ambers

Definitions:
FD = field duplicate
Dx = diesel and heavy oil range organics
PP/Bailer = purging conducted using peristaltic pump and then sampling conducted using a double check ball disposable bailer
QC = quality control samples
VOA = volatile organic analysis
VOC = volatile organic carbon

Sampling Schedule (18+ months):
December 2019
June 2021
December 2022
June 2024

Sampling Notes:
FD ** = Field duplicate - collect field duplicate on GL-2. If not accessible, collect the field duplicate on GL-1 or GL-3. Run duplicate for all analyses.
Lab = Apex Labs
Drum purge water. Store drums under the 26th Ave Underpass until they are full enough for disposal.
Trip and Field Blank - VOCs only

Monitoring Well Sampling Field Log

Page 1 of ____

Well Number: GL-1

Date: 12-9-19

Project Information	
Project Name:	POV ASI
Project Number:	

Sampling Information	
Field Team:	TAUSCHER
Purge Method:	P-PUMP
Pump Intake Depth (ft btc):	28'
Flow-Through Cell:	HORIBA U52
Sampling Method:	BAILER
Decontamination Method:	
Purge Water Disposal:	on site tank
Field Conditions:	SUNNY 50

Comments:

Initial DTW: 23.20

NO well card present.

Well Information — Stick-up or Flush (circle one)

Well Diameter (in)	Drilled Well Depth (ft bgs)	Drilled Well Depth (ft btc)	Top of Screen (ft bgs)	Top of Screen (ft btc)	Screen Interval (ft bgs)
2	33.45	33.10			-

CMT Port=0.006 gal/ft 3/4"=0.023 gal/ft 2"=0.17 gal/ft 4"=0.66 gal/ft 6"=1.5 gal/ft

Sample Containers

Number	Type	Preservative	Analytical Parameters	Filtered?
3	VOA	HCL	VOC	N
2	1L AMB	HCL	DX	N

Well Purge Data

Time	Volume Purged (L)	Purge Rate (mL/m)	DTW (ft btc)	Temp. (°C)	Conductivity (mS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTUs)	Clarity / Color / Remarks
1247	Pump On		Initial	-	±3%	±greater of 10% or 0.2mg/L	±0.1	±10mv	±10%	<= Stabilization Criteria
1250	0.5	200	23.21	13.69	0.992	0.14	7.29	-120	67.5	clear
1255	1.5	200	23.22	13.70	0.995	0.04	7.23	-105	69.3	clear
1300	2.5	200	23.22	13.78	0.996	0.00	7.10	-112	68.9	clear
1305	3.5	200	23.22	13.78	0.995	0.0	7.10	-113	67.9	clear
1310	4.5	200	23.23	13.92	0.997	0.0	7.12	-113	59.7	clear
1315	5.5	200	23.23	13.97	0.996	0.0	7.12	-113	58.5	clear
1320	6.5	200	23.23	14.04	0.993	0.0	7.08	-113	36.2	clear
1323	7.1	200	23.22	14.13	0.991	0.0	7.05	-113	35.1	clear
1326	7.7	200	23.22	14.10	0.991	0.0	7.05	-113	36.4	clear
1330	SAMPLE									
	Start Sampling	1330								
	End Sampling	1349	Final							

Sample Number: GL-1 **Sample Time:** 1330

Notes: AC = almost clear; bgs = below ground surface; btc = below top of casing; Cl = cloudy; DTW = depth to water; C = clear; VC = very cloudy; SC = slightly cloudy

Monitoring Well Sampling Field Log

Page 1 of ____

Well Number: GL-2

Date: 12/5/19

Project Information	
Project Name:	POV ASI
Project Number:	

Sampling Information	
Field Team:	TAUSCHER
Purge Method:	P-PUMP
Pump Intake Depth (ft btc):	26'
Flow-Through Cell:	HORIBA U52
Sampling Method:	BAILER
Decontamination Method:	ALCANOX / DI
Purge Water Disposal:	on site tank
Field Conditions:	SUNNY 50°

Comments:

Initial DTW: 23.47

Well Information — Stick-up or (Flush) (circle one)

Well Diameter (in)	Drilled Well Depth (ft bgs)	Drilled Well Depth (ft btc)	Top of Screen (ft bgs)	Top of Screen (ft btc)	Screen Interval (ft bgs)
2	27.60	27.33			-

CMT Port=0.006 gal/ft 3/4"=0.023 gal/ft 2"=0.17 gal/ft 4"=0.66 gal/ft 6"=1.5 gal/ft

Sample Containers

Number	Type	Preservative	Analytical Parameters	Filtered?
2	1L AMB	HCL	DX	
3	VOA	HCL	VOC	
2	1L AMB	HCL	DX	
3	VOA	HCL	VOC	

Well Purge Data

Time	Volume Purged (L)	Purge Rate (mL/m)	DTW (ft btc)	Temp. (°C)	Conductivity (µS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTUs)	Clarity / Color / Remarks
1430	Pump On		Initial	-	±3%	±greater of 10% or 0.2mg/L	±0.1	±10mv	±10%	<= Stabilization Criteria
1435	0	180	23.60	14.22	0.980	2.79	6.89	-31	2	clear
1440	1	200	23.87	13.94	0.992	2.49	6.82	-12	31.6	clear
1445	2	200	23.91	13.53	1.00	0.34	6.84	17	14.4	clear
1450	3	200	23.93	13.46	1.00	0.14	6.84	20	17.6	clear
1455	4	200	23.94	13.18	1.01	0.0	6.85	32	17.1	clear
1500	5	200	23.94	13.14	1.02	0.0	6.85	33	17.0	clear
1505	6	200	23.94	12.97	1.03	0.0	6.85	36	16.6	clear
1510	7	200	23.97	12.97	1.03	0.0	6.85	37	16.1	clear
1515	SAMPLE									

	Start Sampling	1515	DUPLICATE	GL-2-DUP	1520		
	End Sampling	1549	Sample Number:	GL-2		Sample Time:	1515
		Final					

Notes: AC = almost clear; bgs = below ground surface; btc = below top of casing; Cl = cloudy; DTW = depth to water; C = clear; VC = very cloudy; SC = slightly cloudy

Monitoring Well Sampling Field Log

Page 1 of ____

Well Number: GL-3

Date: 12-5-19

Project Information	
Project Name:	POV ASI
Project Number:	

Sampling Information	
Field Team:	TAUSCHER
Purge Method:	P-PUMP
Pump Intake Depth (ft btc):	25'
Flow-Through Cell:	HORIBA U52
Sampling Method:	BAILER
Decontamination Method:	ALCANOX / DI
Purge Water Disposal:	ON site tank
Field Conditions:	SUNNY 49°

Comments:

Initial DTW: 23.16

NO well card present.

Well Information					Stick-up or Flush (circle one)
Well Diameter (in)	Drilled Well Depth (ft bgs)	Drilled Well Depth (ft btc)	Top of Screen (ft bgs)	Top of Screen (ft btc)	Screen Interval (ft bgs)
2	27.3	26.7			-

CMT Port=0.006 gal/ft 3/4"=0.023 gal/ft 2"=0.17 gal/ft 4"=0.66 gal/ft 6"=1.5 gal/ft

Sample Containers				Filtered?
Number	Type	Preservative	Analytical Parameters	
2	1L AMB	HCL	DX	
3	VOA	HCL	VOC	

Well Purge Data

Time	Volume Purged (L)	Purge Rate (mL/m)	DTW (ft btc)	Temp. (°C)	Conductivity (mS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTUs)	Clarity / Color / Remarks
1123	Pump On		Initial 23.16	-	±3%	±greater of 10% or 0.2mg/L	±0.1	±10mv	±10%	<= Stabilization Criteria
1145	0	200	23.22	13.42	0.493	1.01	6.46	121	67.1	cloudy
1150	1	200	23.09	13.71	0.482	0.08	6.44	125	46.0	AC
1155	2	200	23.10	14.11	0.484	0.0	6.43	138	32.1	AC
1200	3	200	23.10	14.17	0.484	0.0	6.43	143	32.3	clear
1205	4	200	23.10	14.27	0.485	0.0	6.43	149	31.4	clear
1210	5	200	23.10	14.37	0.486	0.0	6.42	156	33.9	clear
1215	6	200	23.11	14.39	0.486	0.0	6.42	157	33.9	clear
1220	7	200	23.11	14.40	0.486	0.0	6.42	158	33.9	clear
1220	SAMPLE									
	Start Sampling	1220								
	End Sampling	1237	Final							

Sample Number: GL-3 **Sample Time:** 1220

Notes: AC = almost clear; bgs = below ground surface; btc = below top of casing; Cl = cloudy; DTW = depth to water; C = clear; VC = very cloudy; SC = slightly cloudy

Monitoring Well Sampling Field Log

Page 1 of ____

Well Number: GL-4

Date: 12/9/19

Project Information	
Project Name:	POV ASI
Project Number:	

Sampling Information	
Field Team:	TAUSCHER
Purge Method:	P-PUMP
Pump Intake Depth (ft btc):	27.5
Flow-Through Cell:	HORIBA U52
Sampling Method:	BAILER
Decontamination Method:	ALCANOX / DI
Purge Water Disposal:	on site tank
Field Conditions:	sunny 45°

Comments:

Initial DTW: 24.48

-Trouble w/ purging at this depth. w/ P pump

AHE 596

Well Information					Stick-up or (Flush) (circle one)
Well Diameter (in)	Drilled Well Depth (ft bgs)	Drilled Well Depth (ft btc)	Top of Screen (ft bgs)	Top of Screen (ft btc)	Screen Interval (ft bgs)
2	30.96	30.68			10 - 30

CMT Port=0.006 gal/ft 3/4"=0.023 gal/ft 2"=0.17 gal/ft 4"=0.66 gal/ft 6"=1.5 gal/ft

Sample Containers				
Number	Type	Preservative	Analytical Parameters	Filtered?
2	1L AMB	HCL	DX	N
3	VOA	HCL	VOC	N

Well Purge Data

Time	Volume Purged (L)	Purge Rate (mL/m)	DTW (ft btc)	Temp. (°C)	Conductivity (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTUs)	Clarity / Color / Remarks
1000	Pump On		Initial	-	±3%	±greater of 10% or 0.2mg/L	±0.1	±10mv	±10%	<= Stabilization Criteria
1020	0	200	25.01	11.26	0.304	0.93	6.24	184	51.7	AC
1025	1	200		11.64	0.311	0.0	6.42	185	39.2	AC
1030	1.5	100		11.83	0.315	0.0	6.45	188	36.4	AC
1035	2.0	100		11.85	0.316	0.0	6.46	188	36.9	clear
1040	2.5	100		12.06	0.323	0.0	6.48	187	35.9	clear
1045	3.0	100		12.27	0.319	0.0	6.49	186	35.5	clear
1050	3.5	100		12.30	0.320	0.0	6.50	186	35.3	clear
1055	SAMPLE									
						NT				
	Start Sampling	1055								
	End Sampling	1111	Final	Sample Number: GL-4					Sample Time: 1055	

Notes: AC = almost clear; bgs = below ground surface; btc = below top of casing; Cl = cloudy; DTW = depth to water; C = clear; VC = very cloudy; SC = slightly cloudy

Monitoring Well Sampling Field Log

Page 1 of ____

Well Number: GL-6

Date: 12-5-19

Project Information	
Project Name:	POV ASI
Project Number:	

Sampling Information	
Field Team:	TAUSCHER
Purge Method:	P-PUMP
Pump Intake Depth (ft btc):	26
Flow-Through Cell:	HORIBA U52
Sampling Method:	BAILER
Decontamination Method:	Alconox / DI
Purge Water Disposal:	DRUM - TANK
Field Conditions:	SUN 45°

Comments:

Initial DTW: 22.12

well located in Manhole, under cover w/ concrete pad.

AHES93

Well Information — Stick-up or (Flush) (circle one)

Well Diameter (in)	Drilled Well Depth (ft bgs)	Drilled Well Depth (ft btc)	Top of Screen (ft bgs)	Top of Screen (ft btc)	Screen Interval (ft bgs)
2	29.50	28.30			10 - 30

CMT Port=0.006 gal/ft 3/4"=0.023 gal/ft 2"=0.17 gal/ft 4"=0.66 gal/ft 6"=1.5 gal/ft

Sample Containers

Number	Type	Preservative	Analytical Parameters	Filtered?
2	1L AMB	HCL	DX	
3	VOA	HCL	VOC	

Well Purge Data

Time	Volume Purged (L)	Purge Rate (mL/m)	DTW (ft btc)	Temp. (°C)	Conductivity (mS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTUs)	Clarity / Color / Remarks
0848	Pump On		Initial	-	±3%	±greater of 10% or 0.2mg/L	±0.1	±10mv	±10%	<= Stabilization Criteria
0855	1	150	22.50	12.37	0.190	5.74	6.39	187	95.8	AC/cloudy
0900	2	200	22.26	12.17	0.163	4.94	6.31	190	58.8	AC
0905	3	200	22.22	11.74	0.149	4.15	6.25	198	60.0	AC
0910	4	200	22.21	11.69	0.140	4.14	6.23	203	49.4	clear
0915	5	200	22.22	11.67	0.138	4.14	6.24	203	49.3	clear
0920	6	200	22.22	11.69	0.136	4.13	6.23	204	48.2	clear
0925	6.5	100	22.21	11.76	0.135	4.13	6.22	207	47.3	clear
0930	7.0	100	22.21	11.86	0.136	4.12	6.21	209	45.5	clear
0930	SAMPLE									
	Start Sampling	0930								
	End Sampling	0941	Final							

Sample Number: GL-6 **Sample Time:** 0930

Notes: AC = almost clear; bgs = below ground surface; btc = below top of casing; Cl = cloudy; DTW = depth to water; C = clear; VC = very cloudy; SC = slightly cloudy

Appendix B
Laboratory Report and Chain-of-Custody Form

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Friday, June 21, 2019

Matt Graves
Port of Vancouver
3103 NW Lower River Road
Vancouver, WA 98660

RE: A9F0368 - ASI - [none]

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 A9F0368, which was received by the laboratory on 6/11/2019 at 4:03:00PM.

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

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

Cooler Receipt Information

(See Cooler Receipt Form for details)

Cooler #1 4.9 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

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.

Darrell Auvil, Project Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Port of Vancouver	Project: **ASI**	
3103 NW Lower River Road	Project Number: **[none]**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Matt Graves**	**A9F0368 - 06 21 19 1005**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Dup	A9F0368-01	Water	06/10/19 13:05	06/11/19 16:03
GL-1	A9F0368-02	Water	06/10/19 11:25	06/11/19 16:03
GL-2	A9F0368-03	Water	06/10/19 13:15	06/11/19 16:03
GL-3	A9F0368-04	Water	06/10/19 14:00	06/11/19 16:03
GL-4	A9F0368-05	Water	06/10/19 10:30	06/11/19 16:03
GL-6	A9F0368-06	Water	06/11/19 00:00	06/11/19 16:03
Trip	A9F0368-07	Water	06/10/19 00:00	06/11/19 16:03

Apex Laboratories

Darrell Auvil, Project Manager

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.

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Port of Vancouver	Project: **ASI**	
3103 NW Lower River Road	Project Number: **[none]**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Matt Graves**	**A9F0368 - 06 21 19 1005**

ANALYTICAL SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Dup (A9F0368-01)				**Matrix: Water**		**Batch: 9060943**		
Diesel	**0.563**	---	0.190	mg/L	1	06/14/19 02:28	NWTPH-Dx	**F-11**
Oil	ND	---	0.381	mg/L	1	06/14/19 02:28	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 92 %*	*Limits: 50-150 %*		*1*	*06/14/19 02:28*	*NWTPH-Dx*	
GL-1 (A9F0368-02)				**Matrix: Water**		**Batch: 9060943**		
Diesel	**0.404**	---	0.190	mg/L	1	06/14/19 02:51	NWTPH-Dx	**F-20**
Oil	ND	---	0.381	mg/L	1	06/14/19 02:51	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 91 %*	*Limits: 50-150 %*		*1*	*06/14/19 02:51*	*NWTPH-Dx*	
GL-2 (A9F0368-03)				**Matrix: Water**		**Batch: 9060943**		
Diesel	**0.659**	---	0.190	mg/L	1	06/14/19 03:14	NWTPH-Dx	**F-11**
Oil	ND	---	0.381	mg/L	1	06/14/19 03:14	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 99 %*	*Limits: 50-150 %*		*1*	*06/14/19 03:14*	*NWTPH-Dx*	
GL-3 (A9F0368-04)				**Matrix: Water**		**Batch: 9060943**		
Diesel	ND	---	0.190	mg/L	1	06/14/19 03:36	NWTPH-Dx	
Oil	ND	---	0.381	mg/L	1	06/14/19 03:36	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 94 %*	*Limits: 50-150 %*		*1*	*06/14/19 03:36*	*NWTPH-Dx*	
GL-4 (A9F0368-05)				**Matrix: Water**		**Batch: 9060943**		
Diesel	ND	---	0.190	mg/L	1	06/14/19 03:59	NWTPH-Dx	
Oil	ND	---	0.381	mg/L	1	06/14/19 03:59	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 93 %*	*Limits: 50-150 %*		*1*	*06/14/19 03:59*	*NWTPH-Dx*	
GL-6 (A9F0368-06)				**Matrix: Water**		**Batch: 9060943**		
Diesel	ND	---	0.190	mg/L	1	06/14/19 04:22	NWTPH-Dx	
Oil	ND	---	0.381	mg/L	1	06/14/19 04:22	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 93 %*	*Limits: 50-150 %*		*1*	*06/14/19 04:22*	*NWTPH-Dx*	

Apex Laboratories

Darrell Auvil, Project Manager

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.

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Port of Vancouver	Project: **ASI**	
3103 NW Lower River Road	Project Number: **[none]**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Matt Graves**	**A9F0368 - 06 21 19 1005**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Dup (A9F0368-01)				**Matrix: Water**		**Batch: 9060861**		
Acetone	**47.0**	---	20.0	ug/L	1	06/12/19 15:16	EPA 8260C	
Acrylonitrile	ND	---	2.00	ug/L	1	06/12/19 15:16	EPA 8260C	
Benzene	ND	---	0.200	ug/L	1	06/12/19 15:16	EPA 8260C	
Bromobenzene	ND	---	0.500	ug/L	1	06/12/19 15:16	EPA 8260C	
Bromochloromethane	ND	---	1.00	ug/L	1	06/12/19 15:16	EPA 8260C	
Bromodichloromethane	ND	---	1.00	ug/L	1	06/12/19 15:16	EPA 8260C	
Bromoform	ND	---	1.00	ug/L	1	06/12/19 15:16	EPA 8260C	
Bromomethane	ND	---	5.00	ug/L	1	06/12/19 15:16	EPA 8260C	
2-Butanone (MEK)	ND	---	10.0	ug/L	1	06/12/19 15:16	EPA 8260C	
n-Butylbenzene	ND	---	1.00	ug/L	1	06/12/19 15:16	EPA 8260C	
sec-Butylbenzene	ND	---	1.00	ug/L	1	06/12/19 15:16	EPA 8260C	
tert-Butylbenzene	ND	---	1.00	ug/L	1	06/12/19 15:16	EPA 8260C	
Carbon disulfide	ND	---	10.0	ug/L	1	06/12/19 15:16	EPA 8260C	
Carbon tetrachloride	ND	---	1.00	ug/L	1	06/12/19 15:16	EPA 8260C	
Chlorobenzene	ND	---	0.500	ug/L	1	06/12/19 15:16	EPA 8260C	
Chloroethane	ND	---	5.00	ug/L	1	06/12/19 15:16	EPA 8260C	
Chloroform	ND	---	1.00	ug/L	1	06/12/19 15:16	EPA 8260C	
Chloromethane	ND	---	5.00	ug/L	1	06/12/19 15:16	EPA 8260C	
2-Chlorotoluene	ND	---	1.00	ug/L	1	06/12/19 15:16	EPA 8260C	
4-Chlorotoluene	ND	---	1.00	ug/L	1	06/12/19 15:16	EPA 8260C	
Dibromochloromethane	ND	---	1.00	ug/L	1	06/12/19 15:16	EPA 8260C	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	06/12/19 15:16	EPA 8260C	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	06/12/19 15:16	EPA 8260C	
Dibromomethane	ND	---	1.00	ug/L	1	06/12/19 15:16	EPA 8260C	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	06/12/19 15:16	EPA 8260C	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	06/12/19 15:16	EPA 8260C	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	06/12/19 15:16	EPA 8260C	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	06/12/19 15:16	EPA 8260C	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	06/12/19 15:16	EPA 8260C	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	06/12/19 15:16	EPA 8260C	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	06/12/19 15:16	EPA 8260C	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	06/12/19 15:16	EPA 8260C	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	06/12/19 15:16	EPA 8260C	

Apex Laboratories

Darrell Auvil, Project Manager

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.

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Port of Vancouver	Project: **ASI**	
3103 NW Lower River Road	Project Number: **[none]**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Matt Graves**	**A9F0368 - 06 21 19 1005**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Dup (A9F0368-01)				**Matrix: Water**		**Batch: 9060861**		
1,2-Dichloropropane	ND	---	0.500	ug/L	1	06/12/19 15:16	EPA 8260C	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	06/12/19 15:16	EPA 8260C	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	06/12/19 15:16	EPA 8260C	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	06/12/19 15:16	EPA 8260C	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	06/12/19 15:16	EPA 8260C	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	06/12/19 15:16	EPA 8260C	
Ethylbenzene	ND	---	0.500	ug/L	1	06/12/19 15:16	EPA 8260C	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	06/12/19 15:16	EPA 8260C	
2-Hexanone	ND	---	10.0	ug/L	1	06/12/19 15:16	EPA 8260C	
Isopropylbenzene	ND	---	1.00	ug/L	1	06/12/19 15:16	EPA 8260C	
4-Isopropyltoluene	ND	---	1.00	ug/L	1	06/12/19 15:16	EPA 8260C	
Methylene chloride	ND	---	3.00	ug/L	1	06/12/19 15:16	EPA 8260C	
4-Methyl-2-pentanone (MiBK)	ND	---	10.0	ug/L	1	06/12/19 15:16	EPA 8260C	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	ug/L	1	06/12/19 15:16	EPA 8260C	
Naphthalene	ND	---	2.00	ug/L	1	06/12/19 15:16	EPA 8260C	
n-Propylbenzene	ND	---	0.500	ug/L	1	06/12/19 15:16	EPA 8260C	
Styrene	ND	---	1.00	ug/L	1	06/12/19 15:16	EPA 8260C	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	06/12/19 15:16	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	06/12/19 15:16	EPA 8260C	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	06/12/19 15:16	EPA 8260C	
Toluene	ND	---	1.00	ug/L	1	06/12/19 15:16	EPA 8260C	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	06/12/19 15:16	EPA 8260C	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	06/12/19 15:16	EPA 8260C	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	06/12/19 15:16	EPA 8260C	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	06/12/19 15:16	EPA 8260C	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	06/12/19 15:16	EPA 8260C	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	06/12/19 15:16	EPA 8260C	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	06/12/19 15:16	EPA 8260C	
1,2,4-Trimethylbenzene	ND	---	1.00	ug/L	1	06/12/19 15:16	EPA 8260C	
1,3,5-Trimethylbenzene	ND	---	1.00	ug/L	1	06/12/19 15:16	EPA 8260C	
Vinyl chloride	ND	---	0.400	ug/L	1	06/12/19 15:16	EPA 8260C	
m,p-Xylene	ND	---	1.00	ug/L	1	06/12/19 15:16	EPA 8260C	
o-Xylene	ND	---	0.500	ug/L	1	06/12/19 15:16	EPA 8260C	

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.

Darrell Auvil, Project Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Port of Vancouver	Project: **ASI**	
3103 NW Lower River Road	Project Number: **[none]**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Matt Graves**	**A9F0368 - 06 21 19 1005**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Dup (A9F0368-01)				**Matrix: Water**		**Batch: 9060861**		
Surrogate: 1,4-Difluorobenzene (Surr)			*Recovery: 111 %*	*Limits: 80-120 %*	*1*	*06/12/19 15:16*	*EPA 8260C*	
Toluene-d8 (Surr)			*101 %*	*80-120 %*	*1*	*06/12/19 15:16*	*EPA 8260C*	
4-Bromofluorobenzene (Surr)			*101 %*	*80-120 %*	*1*	*06/12/19 15:16*	*EPA 8260C*	
GL-1 (A9F0368-02)				**Matrix: Water**		**Batch: 9060861**		
Acetone	**24.6**	---	20.0	ug/L	1	06/12/19 15:43	EPA 8260C	
Acrylonitrile	ND	---	2.00	ug/L	1	06/12/19 15:43	EPA 8260C	
Benzene	ND	---	0.200	ug/L	1	06/12/19 15:43	EPA 8260C	
Bromobenzene	ND	---	0.500	ug/L	1	06/12/19 15:43	EPA 8260C	
Bromochloromethane	ND	---	1.00	ug/L	1	06/12/19 15:43	EPA 8260C	
Bromodichloromethane	ND	---	1.00	ug/L	1	06/12/19 15:43	EPA 8260C	
Bromoform	ND	---	1.00	ug/L	1	06/12/19 15:43	EPA 8260C	
Bromomethane	ND	---	5.00	ug/L	1	06/12/19 15:43	EPA 8260C	
2-Butanone (MEK)	ND	---	10.0	ug/L	1	06/12/19 15:43	EPA 8260C	
n-Butylbenzene	ND	---	1.00	ug/L	1	06/12/19 15:43	EPA 8260C	
sec-Butylbenzene	**2.85**	---	1.00	ug/L	1	06/12/19 15:43	EPA 8260C	
tert-Butylbenzene	ND	---	1.00	ug/L	1	06/12/19 15:43	EPA 8260C	
Carbon disulfide	ND	---	10.0	ug/L	1	06/12/19 15:43	EPA 8260C	
Carbon tetrachloride	ND	---	1.00	ug/L	1	06/12/19 15:43	EPA 8260C	
Chlorobenzene	ND	---	0.500	ug/L	1	06/12/19 15:43	EPA 8260C	
Chloroethane	ND	---	5.00	ug/L	1	06/12/19 15:43	EPA 8260C	
Chloroform	ND	---	1.00	ug/L	1	06/12/19 15:43	EPA 8260C	
Chloromethane	ND	---	5.00	ug/L	1	06/12/19 15:43	EPA 8260C	
2-Chlorotoluene	ND	---	1.00	ug/L	1	06/12/19 15:43	EPA 8260C	
4-Chlorotoluene	ND	---	1.00	ug/L	1	06/12/19 15:43	EPA 8260C	
Dibromochloromethane	ND	---	1.00	ug/L	1	06/12/19 15:43	EPA 8260C	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	06/12/19 15:43	EPA 8260C	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	06/12/19 15:43	EPA 8260C	
Dibromomethane	ND	---	1.00	ug/L	1	06/12/19 15:43	EPA 8260C	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	06/12/19 15:43	EPA 8260C	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	06/12/19 15:43	EPA 8260C	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	06/12/19 15:43	EPA 8260C	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	06/12/19 15:43	EPA 8260C	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	06/12/19 15:43	EPA 8260C	

Apex Laboratories

Darrell Auvil, Project Manager

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.

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Port of Vancouver	Project: **ASI**	
3103 NW Lower River Road	Project Number: **[none]**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Matt Graves**	**A9F0368 - 06 21 19 1005**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GL-1 (A9F0368-02)				**Matrix: Water**		**Batch: 9060861**		
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	06/12/19 15:43	EPA 8260C	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	06/12/19 15:43	EPA 8260C	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	06/12/19 15:43	EPA 8260C	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	06/12/19 15:43	EPA 8260C	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	06/12/19 15:43	EPA 8260C	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	06/12/19 15:43	EPA 8260C	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	06/12/19 15:43	EPA 8260C	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	06/12/19 15:43	EPA 8260C	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	06/12/19 15:43	EPA 8260C	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	06/12/19 15:43	EPA 8260C	
Ethylbenzene	ND	---	0.500	ug/L	1	06/12/19 15:43	EPA 8260C	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	06/12/19 15:43	EPA 8260C	
2-Hexanone	ND	---	10.0	ug/L	1	06/12/19 15:43	EPA 8260C	
Isopropylbenzene	**6.74**	---	1.00	ug/L	1	06/12/19 15:43	EPA 8260C	
4-Isopropyltoluene	ND	---	1.00	ug/L	1	06/12/19 15:43	EPA 8260C	
Methylene chloride	ND	---	3.00	ug/L	1	06/12/19 15:43	EPA 8260C	
4-Methyl-2-pentanone (MiBK)	ND	---	10.0	ug/L	1	06/12/19 15:43	EPA 8260C	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	ug/L	1	06/12/19 15:43	EPA 8260C	
Naphthalene	ND	---	2.00	ug/L	1	06/12/19 15:43	EPA 8260C	
n-Propylbenzene	**10.6**	---	0.500	ug/L	1	06/12/19 15:43	EPA 8260C	
Styrene	ND	---	1.00	ug/L	1	06/12/19 15:43	EPA 8260C	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	06/12/19 15:43	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	06/12/19 15:43	EPA 8260C	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	06/12/19 15:43	EPA 8260C	
Toluene	ND	---	1.00	ug/L	1	06/12/19 15:43	EPA 8260C	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	06/12/19 15:43	EPA 8260C	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	06/12/19 15:43	EPA 8260C	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	06/12/19 15:43	EPA 8260C	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	06/12/19 15:43	EPA 8260C	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	06/12/19 15:43	EPA 8260C	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	06/12/19 15:43	EPA 8260C	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	06/12/19 15:43	EPA 8260C	
1,2,4-Trimethylbenzene	ND	---	1.00	ug/L	1	06/12/19 15:43	EPA 8260C	

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.

Darrell Auvil, Project Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Port of Vancouver	Project: **ASI**	
3103 NW Lower River Road	Project Number: **[none]**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Matt Graves**	**A9F0368 - 06 21 19 1005**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GL-1 (A9F0368-02)				**Matrix: Water**		**Batch: 9060861**		
1,3,5-Trimethylbenzene	ND	---	1.00	ug/L	1	06/12/19 15:43	EPA 8260C	
Vinyl chloride	ND	---	0.400	ug/L	1	06/12/19 15:43	EPA 8260C	
m,p-Xylene	ND	---	1.00	ug/L	1	06/12/19 15:43	EPA 8260C	
o-Xylene	ND	---	0.500	ug/L	1	06/12/19 15:43	EPA 8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*108 %*	*Limits: 80-120 %*	*1*	*06/12/19 15:43*	*EPA 8260C*	
Toluene-d8 (Surr)			*100 %*	*80-120 %*	*1*	*06/12/19 15:43*	*EPA 8260C*	
4-Bromofluorobenzene (Surr)			*100 %*	*80-120 %*	*1*	*06/12/19 15:43*	*EPA 8260C*	
GL-2 (A9F0368-03)				**Matrix: Water**		**Batch: 9060861**		
Acetone	ND	---	20.0	ug/L	1	06/12/19 16:10	EPA 8260C	
Acrylonitrile	ND	---	2.00	ug/L	1	06/12/19 16:10	EPA 8260C	
Benzene	ND	---	0.200	ug/L	1	06/12/19 16:10	EPA 8260C	
Bromobenzene	ND	---	0.500	ug/L	1	06/12/19 16:10	EPA 8260C	
Bromochloromethane	ND	---	1.00	ug/L	1	06/12/19 16:10	EPA 8260C	
Bromodichloromethane	ND	---	1.00	ug/L	1	06/12/19 16:10	EPA 8260C	
Bromoform	ND	---	1.00	ug/L	1	06/12/19 16:10	EPA 8260C	
Bromomethane	ND	---	5.00	ug/L	1	06/12/19 16:10	EPA 8260C	
2-Butanone (MEK)	ND	---	10.0	ug/L	1	06/12/19 16:10	EPA 8260C	
n-Butylbenzene	ND	---	1.00	ug/L	1	06/12/19 16:10	EPA 8260C	
sec-Butylbenzene	ND	---	1.00	ug/L	1	06/12/19 16:10	EPA 8260C	
tert-Butylbenzene	ND	---	1.00	ug/L	1	06/12/19 16:10	EPA 8260C	
Carbon disulfide	ND	---	10.0	ug/L	1	06/12/19 16:10	EPA 8260C	
Carbon tetrachloride	ND	---	1.00	ug/L	1	06/12/19 16:10	EPA 8260C	
Chlorobenzene	ND	---	0.500	ug/L	1	06/12/19 16:10	EPA 8260C	
Chloroethane	ND	---	5.00	ug/L	1	06/12/19 16:10	EPA 8260C	
Chloroform	ND	---	1.00	ug/L	1	06/12/19 16:10	EPA 8260C	
Chloromethane	ND	---	5.00	ug/L	1	06/12/19 16:10	EPA 8260C	
2-Chlorotoluene	ND	---	1.00	ug/L	1	06/12/19 16:10	EPA 8260C	
4-Chlorotoluene	ND	---	1.00	ug/L	1	06/12/19 16:10	EPA 8260C	
Dibromochloromethane	ND	---	1.00	ug/L	1	06/12/19 16:10	EPA 8260C	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	06/12/19 16:10	EPA 8260C	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	06/12/19 16:10	EPA 8260C	
Dibromomethane	ND	---	1.00	ug/L	1	06/12/19 16:10	EPA 8260C	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	06/12/19 16:10	EPA 8260C	

Apex Laboratories

Darrell Auvil, Project Manager

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.

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Port of Vancouver	Project: **ASI**	
3103 NW Lower River Road	Project Number: **[none]**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Matt Graves**	**A9F0368 - 06 21 19 1005**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GL-2 (A9F0368-03)				**Matrix: Water**		**Batch: 9060861**		
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	06/12/19 16:10	EPA 8260C	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	06/12/19 16:10	EPA 8260C	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	06/12/19 16:10	EPA 8260C	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	06/12/19 16:10	EPA 8260C	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	06/12/19 16:10	EPA 8260C	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	06/12/19 16:10	EPA 8260C	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	06/12/19 16:10	EPA 8260C	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	06/12/19 16:10	EPA 8260C	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	06/12/19 16:10	EPA 8260C	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	06/12/19 16:10	EPA 8260C	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	06/12/19 16:10	EPA 8260C	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	06/12/19 16:10	EPA 8260C	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	06/12/19 16:10	EPA 8260C	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	06/12/19 16:10	EPA 8260C	
Ethylbenzene	ND	---	0.500	ug/L	1	06/12/19 16:10	EPA 8260C	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	06/12/19 16:10	EPA 8260C	
2-Hexanone	ND	---	10.0	ug/L	1	06/12/19 16:10	EPA 8260C	
Isopropylbenzene	ND	---	1.00	ug/L	1	06/12/19 16:10	EPA 8260C	
4-Isopropyltoluene	ND	---	1.00	ug/L	1	06/12/19 16:10	EPA 8260C	
Methylene chloride	ND	---	3.00	ug/L	1	06/12/19 16:10	EPA 8260C	
4-Methyl-2-pentanone (MiBK)	ND	---	10.0	ug/L	1	06/12/19 16:10	EPA 8260C	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	ug/L	1	06/12/19 16:10	EPA 8260C	
Naphthalene	ND	---	2.00	ug/L	1	06/12/19 16:10	EPA 8260C	
n-Propylbenzene	ND	---	0.500	ug/L	1	06/12/19 16:10	EPA 8260C	
Styrene	ND	---	1.00	ug/L	1	06/12/19 16:10	EPA 8260C	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	06/12/19 16:10	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	06/12/19 16:10	EPA 8260C	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	06/12/19 16:10	EPA 8260C	
Toluene	ND	---	1.00	ug/L	1	06/12/19 16:10	EPA 8260C	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	06/12/19 16:10	EPA 8260C	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	06/12/19 16:10	EPA 8260C	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	06/12/19 16:10	EPA 8260C	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	06/12/19 16:10	EPA 8260C	

Apex Laboratories

Darrell Auvil, Project Manager

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.

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Port of Vancouver	Project: **ASI**	
3103 NW Lower River Road	Project Number: **[none]**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Matt Graves**	**A9F0368 - 06 21 19 1005**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GL-2 (A9F0368-03)				**Matrix: Water**		**Batch: 9060861**		
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	06/12/19 16:10	EPA 8260C	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	06/12/19 16:10	EPA 8260C	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	06/12/19 16:10	EPA 8260C	
1,2,4-Trimethylbenzene	ND	---	1.00	ug/L	1	06/12/19 16:10	EPA 8260C	
1,3,5-Trimethylbenzene	ND	---	1.00	ug/L	1	06/12/19 16:10	EPA 8260C	
Vinyl chloride	ND	---	0.400	ug/L	1	06/12/19 16:10	EPA 8260C	
m,p-Xylene	ND	---	1.00	ug/L	1	06/12/19 16:10	EPA 8260C	
o-Xylene	ND	---	0.500	ug/L	1	06/12/19 16:10	EPA 8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*110 %*	*Limits: 80-120 %*	*1*	*06/12/19 16:10*	*EPA 8260C*	
Toluene-d8 (Surr)			*102 %*	*80-120 %*	*1*	*06/12/19 16:10*	*EPA 8260C*	
4-Bromofluorobenzene (Surr)			*100 %*	*80-120 %*	*1*	*06/12/19 16:10*	*EPA 8260C*	
GL-3 (A9F0368-04)				**Matrix: Water**		**Batch: 9060861**		
Acetone	**20.6**	---	20.0	ug/L	1	06/12/19 16:38	EPA 8260C	
Acrylonitrile	ND	---	2.00	ug/L	1	06/12/19 16:38	EPA 8260C	
Benzene	ND	---	0.200	ug/L	1	06/12/19 16:38	EPA 8260C	
Bromobenzene	ND	---	0.500	ug/L	1	06/12/19 16:38	EPA 8260C	
Bromochloromethane	ND	---	1.00	ug/L	1	06/12/19 16:38	EPA 8260C	
Bromodichloromethane	ND	---	1.00	ug/L	1	06/12/19 16:38	EPA 8260C	
Bromoform	ND	---	1.00	ug/L	1	06/12/19 16:38	EPA 8260C	
Bromomethane	ND	---	5.00	ug/L	1	06/12/19 16:38	EPA 8260C	
2-Butanone (MEK)	ND	---	10.0	ug/L	1	06/12/19 16:38	EPA 8260C	
n-Butylbenzene	ND	---	1.00	ug/L	1	06/12/19 16:38	EPA 8260C	
sec-Butylbenzene	ND	---	1.00	ug/L	1	06/12/19 16:38	EPA 8260C	
tert-Butylbenzene	ND	---	1.00	ug/L	1	06/12/19 16:38	EPA 8260C	
Carbon disulfide	ND	---	10.0	ug/L	1	06/12/19 16:38	EPA 8260C	
Carbon tetrachloride	ND	---	1.00	ug/L	1	06/12/19 16:38	EPA 8260C	
Chlorobenzene	ND	---	0.500	ug/L	1	06/12/19 16:38	EPA 8260C	
Chloroethane	ND	---	5.00	ug/L	1	06/12/19 16:38	EPA 8260C	
Chloroform	ND	---	1.00	ug/L	1	06/12/19 16:38	EPA 8260C	
Chloromethane	ND	---	5.00	ug/L	1	06/12/19 16:38	EPA 8260C	
2-Chlorotoluene	ND	---	1.00	ug/L	1	06/12/19 16:38	EPA 8260C	
4-Chlorotoluene	ND	---	1.00	ug/L	1	06/12/19 16:38	EPA 8260C	
Dibromochloromethane	ND	---	1.00	ug/L	1	06/12/19 16:38	EPA 8260C	

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.

Darrell Auvil, Project Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Port of Vancouver	Project: **ASI**	
3103 NW Lower River Road	Project Number: **[none]**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Matt Graves**	**A9F0368 - 06 21 19 1005**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GL-3 (A9F0368-04)				**Matrix: Water**		**Batch: 9060861**		
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	06/12/19 16:38	EPA 8260C	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	06/12/19 16:38	EPA 8260C	
Dibromomethane	ND	---	1.00	ug/L	1	06/12/19 16:38	EPA 8260C	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	06/12/19 16:38	EPA 8260C	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	06/12/19 16:38	EPA 8260C	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	06/12/19 16:38	EPA 8260C	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	06/12/19 16:38	EPA 8260C	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	06/12/19 16:38	EPA 8260C	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	06/12/19 16:38	EPA 8260C	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	06/12/19 16:38	EPA 8260C	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	06/12/19 16:38	EPA 8260C	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	06/12/19 16:38	EPA 8260C	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	06/12/19 16:38	EPA 8260C	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	06/12/19 16:38	EPA 8260C	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	06/12/19 16:38	EPA 8260C	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	06/12/19 16:38	EPA 8260C	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	06/12/19 16:38	EPA 8260C	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	06/12/19 16:38	EPA 8260C	
Ethylbenzene	ND	---	0.500	ug/L	1	06/12/19 16:38	EPA 8260C	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	06/12/19 16:38	EPA 8260C	
2-Hexanone	ND	---	10.0	ug/L	1	06/12/19 16:38	EPA 8260C	
Isopropylbenzene	ND	---	1.00	ug/L	1	06/12/19 16:38	EPA 8260C	
4-Isopropyltoluene	ND	---	1.00	ug/L	1	06/12/19 16:38	EPA 8260C	
Methylene chloride	ND	---	3.00	ug/L	1	06/12/19 16:38	EPA 8260C	
4-Methyl-2-pentanone (MiBK)	ND	---	10.0	ug/L	1	06/12/19 16:38	EPA 8260C	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	ug/L	1	06/12/19 16:38	EPA 8260C	
Naphthalene	ND	---	2.00	ug/L	1	06/12/19 16:38	EPA 8260C	
n-Propylbenzene	ND	---	0.500	ug/L	1	06/12/19 16:38	EPA 8260C	
Styrene	ND	---	1.00	ug/L	1	06/12/19 16:38	EPA 8260C	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	06/12/19 16:38	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	06/12/19 16:38	EPA 8260C	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	06/12/19 16:38	EPA 8260C	
Toluene	ND	---	1.00	ug/L	1	06/12/19 16:38	EPA 8260C	

Apex Laboratories

Darrell Auvil, Project Manager

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.

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Port of Vancouver	Project: **ASI**	
3103 NW Lower River Road	Project Number: **[none]**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Matt Graves**	**A9F0368 - 06 21 19 1005**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GL-3 (A9F0368-04)				**Matrix: Water**		**Batch: 9060861**		
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	06/12/19 16:38	EPA 8260C	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	06/12/19 16:38	EPA 8260C	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	06/12/19 16:38	EPA 8260C	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	06/12/19 16:38	EPA 8260C	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	06/12/19 16:38	EPA 8260C	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	06/12/19 16:38	EPA 8260C	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	06/12/19 16:38	EPA 8260C	
1,2,4-Trimethylbenzene	ND	---	1.00	ug/L	1	06/12/19 16:38	EPA 8260C	
1,3,5-Trimethylbenzene	ND	---	1.00	ug/L	1	06/12/19 16:38	EPA 8260C	
Vinyl chloride	ND	---	0.400	ug/L	1	06/12/19 16:38	EPA 8260C	
m,p-Xylene	ND	---	1.00	ug/L	1	06/12/19 16:38	EPA 8260C	
o-Xylene	ND	---	0.500	ug/L	1	06/12/19 16:38	EPA 8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*110 %*	*Limits: 80-120 %*	*1*	*06/12/19 16:38*	*EPA 8260C*	
Toluene-d8 (Surr)			*102 %*	*80-120 %*	*1*	*06/12/19 16:38*	*EPA 8260C*	
4-Bromofluorobenzene (Surr)			*102 %*	*80-120 %*	*1*	*06/12/19 16:38*	*EPA 8260C*	
GL-4 (A9F0368-05)				**Matrix: Water**		**Batch: 9060861**		
Acetone	ND	---	20.0	ug/L	1	06/12/19 17:05	EPA 8260C	
Acrylonitrile	ND	---	2.00	ug/L	1	06/12/19 17:05	EPA 8260C	
Benzene	ND	---	0.200	ug/L	1	06/12/19 17:05	EPA 8260C	
Bromobenzene	ND	---	0.500	ug/L	1	06/12/19 17:05	EPA 8260C	
Bromochloromethane	ND	---	1.00	ug/L	1	06/12/19 17:05	EPA 8260C	
Bromodichloromethane	ND	---	1.00	ug/L	1	06/12/19 17:05	EPA 8260C	
Bromoform	ND	---	1.00	ug/L	1	06/12/19 17:05	EPA 8260C	
Bromomethane	ND	---	5.00	ug/L	1	06/12/19 17:05	EPA 8260C	
2-Butanone (MEK)	ND	---	10.0	ug/L	1	06/12/19 17:05	EPA 8260C	
n-Butylbenzene	ND	---	1.00	ug/L	1	06/12/19 17:05	EPA 8260C	
sec-Butylbenzene	ND	---	1.00	ug/L	1	06/12/19 17:05	EPA 8260C	
tert-Butylbenzene	ND	---	1.00	ug/L	1	06/12/19 17:05	EPA 8260C	
Carbon disulfide	ND	---	10.0	ug/L	1	06/12/19 17:05	EPA 8260C	
Carbon tetrachloride	ND	---	1.00	ug/L	1	06/12/19 17:05	EPA 8260C	
Chlorobenzene	ND	---	0.500	ug/L	1	06/12/19 17:05	EPA 8260C	
Chloroethane	ND	---	5.00	ug/L	1	06/12/19 17:05	EPA 8260C	
Chloroform	ND	---	1.00	ug/L	1	06/12/19 17:05	EPA 8260C	

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.

Darrell Auvil, Project Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Port of Vancouver	Project: **ASI**	
3103 NW Lower River Road	Project Number: **[none]**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Matt Graves**	**A9F0368 - 06 21 19 1005**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GL-4 (A9F0368-05)				**Matrix: Water**		**Batch: 9060861**		
Chloromethane	ND	---	5.00	ug/L	1	06/12/19 17:05	EPA 8260C	
2-Chlorotoluene	ND	---	1.00	ug/L	1	06/12/19 17:05	EPA 8260C	
4-Chlorotoluene	ND	---	1.00	ug/L	1	06/12/19 17:05	EPA 8260C	
Dibromochloromethane	ND	---	1.00	ug/L	1	06/12/19 17:05	EPA 8260C	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	06/12/19 17:05	EPA 8260C	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	06/12/19 17:05	EPA 8260C	
Dibromomethane	ND	---	1.00	ug/L	1	06/12/19 17:05	EPA 8260C	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	06/12/19 17:05	EPA 8260C	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	06/12/19 17:05	EPA 8260C	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	06/12/19 17:05	EPA 8260C	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	06/12/19 17:05	EPA 8260C	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	06/12/19 17:05	EPA 8260C	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	06/12/19 17:05	EPA 8260C	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	06/12/19 17:05	EPA 8260C	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	06/12/19 17:05	EPA 8260C	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	06/12/19 17:05	EPA 8260C	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	06/12/19 17:05	EPA 8260C	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	06/12/19 17:05	EPA 8260C	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	06/12/19 17:05	EPA 8260C	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	06/12/19 17:05	EPA 8260C	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	06/12/19 17:05	EPA 8260C	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	06/12/19 17:05	EPA 8260C	
Ethylbenzene	ND	---	0.500	ug/L	1	06/12/19 17:05	EPA 8260C	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	06/12/19 17:05	EPA 8260C	
2-Hexanone	ND	---	10.0	ug/L	1	06/12/19 17:05	EPA 8260C	
Isopropylbenzene	ND	---	1.00	ug/L	1	06/12/19 17:05	EPA 8260C	
4-Isopropyltoluene	ND	---	1.00	ug/L	1	06/12/19 17:05	EPA 8260C	
Methylene chloride	ND	---	3.00	ug/L	1	06/12/19 17:05	EPA 8260C	
4-Methyl-2-pentanone (MiBK)	ND	---	10.0	ug/L	1	06/12/19 17:05	EPA 8260C	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	ug/L	1	06/12/19 17:05	EPA 8260C	
Naphthalene	ND	---	2.00	ug/L	1	06/12/19 17:05	EPA 8260C	
n-Propylbenzene	ND	---	0.500	ug/L	1	06/12/19 17:05	EPA 8260C	
Styrene	ND	---	1.00	ug/L	1	06/12/19 17:05	EPA 8260C	

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.

Darrell Auvil, Project Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Port of Vancouver	Project: **ASI**	
3103 NW Lower River Road	Project Number: **[none]**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Matt Graves**	**A9F0368 - 06 21 19 1005**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GL-4 (A9F0368-05)				**Matrix: Water**		**Batch: 9060861**		
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	06/12/19 17:05	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	06/12/19 17:05	EPA 8260C	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	06/12/19 17:05	EPA 8260C	
Toluene	ND	---	1.00	ug/L	1	06/12/19 17:05	EPA 8260C	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	06/12/19 17:05	EPA 8260C	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	06/12/19 17:05	EPA 8260C	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	06/12/19 17:05	EPA 8260C	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	06/12/19 17:05	EPA 8260C	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	06/12/19 17:05	EPA 8260C	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	06/12/19 17:05	EPA 8260C	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	06/12/19 17:05	EPA 8260C	
1,2,4-Trimethylbenzene	ND	---	1.00	ug/L	1	06/12/19 17:05	EPA 8260C	
1,3,5-Trimethylbenzene	ND	---	1.00	ug/L	1	06/12/19 17:05	EPA 8260C	
Vinyl chloride	ND	---	0.400	ug/L	1	06/12/19 17:05	EPA 8260C	
m,p-Xylene	ND	---	1.00	ug/L	1	06/12/19 17:05	EPA 8260C	
o-Xylene	ND	---	0.500	ug/L	1	06/12/19 17:05	EPA 8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*111 %*	*Limits: 80-120 %*	*1*	*06/12/19 17:05*	*EPA 8260C*	
Toluene-d8 (Surr)			*103 %*	*80-120 %*	*1*	*06/12/19 17:05*	*EPA 8260C*	
4-Bromofluorobenzene (Surr)			*100 %*	*80-120 %*	*1*	*06/12/19 17:05*	*EPA 8260C*	
GL-6 (A9F0368-06)				**Matrix: Water**		**Batch: 9060861**		
Acetone	ND	---	20.0	ug/L	1	06/12/19 17:33	EPA 8260C	
Acrylonitrile	ND	---	2.00	ug/L	1	06/12/19 17:33	EPA 8260C	
Benzene	ND	---	0.200	ug/L	1	06/12/19 17:33	EPA 8260C	
Bromobenzene	ND	---	0.500	ug/L	1	06/12/19 17:33	EPA 8260C	
Bromochloromethane	ND	---	1.00	ug/L	1	06/12/19 17:33	EPA 8260C	
Bromodichloromethane	ND	---	1.00	ug/L	1	06/12/19 17:33	EPA 8260C	
Bromoform	ND	---	1.00	ug/L	1	06/12/19 17:33	EPA 8260C	
Bromomethane	ND	---	5.00	ug/L	1	06/12/19 17:33	EPA 8260C	
2-Butanone (MEK)	ND	---	10.0	ug/L	1	06/12/19 17:33	EPA 8260C	
n-Butylbenzene	ND	---	1.00	ug/L	1	06/12/19 17:33	EPA 8260C	
sec-Butylbenzene	ND	---	1.00	ug/L	1	06/12/19 17:33	EPA 8260C	
tert-Butylbenzene	ND	---	1.00	ug/L	1	06/12/19 17:33	EPA 8260C	
Carbon disulfide	ND	---	10.0	ug/L	1	06/12/19 17:33	EPA 8260C	

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.

Darrell Auvil, Project Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Port of Vancouver	Project: **ASI**	
3103 NW Lower River Road	Project Number: **[none]**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Matt Graves**	**A9F0368 - 06 21 19 1005**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GL-6 (A9F0368-06)				**Matrix: Water**		**Batch: 9060861**		
Carbon tetrachloride	ND	---	1.00	ug/L	1	06/12/19 17:33	EPA 8260C	
Chlorobenzene	ND	---	0.500	ug/L	1	06/12/19 17:33	EPA 8260C	
Chloroethane	ND	---	5.00	ug/L	1	06/12/19 17:33	EPA 8260C	
Chloroform	ND	---	1.00	ug/L	1	06/12/19 17:33	EPA 8260C	
Chloromethane	ND	---	5.00	ug/L	1	06/12/19 17:33	EPA 8260C	
2-Chlorotoluene	ND	---	1.00	ug/L	1	06/12/19 17:33	EPA 8260C	
4-Chlorotoluene	ND	---	1.00	ug/L	1	06/12/19 17:33	EPA 8260C	
Dibromochloromethane	ND	---	1.00	ug/L	1	06/12/19 17:33	EPA 8260C	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	06/12/19 17:33	EPA 8260C	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	06/12/19 17:33	EPA 8260C	
Dibromomethane	ND	---	1.00	ug/L	1	06/12/19 17:33	EPA 8260C	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	06/12/19 17:33	EPA 8260C	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	06/12/19 17:33	EPA 8260C	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	06/12/19 17:33	EPA 8260C	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	06/12/19 17:33	EPA 8260C	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	06/12/19 17:33	EPA 8260C	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	06/12/19 17:33	EPA 8260C	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	06/12/19 17:33	EPA 8260C	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	06/12/19 17:33	EPA 8260C	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	06/12/19 17:33	EPA 8260C	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	06/12/19 17:33	EPA 8260C	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	06/12/19 17:33	EPA 8260C	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	06/12/19 17:33	EPA 8260C	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	06/12/19 17:33	EPA 8260C	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	06/12/19 17:33	EPA 8260C	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	06/12/19 17:33	EPA 8260C	
Ethylbenzene	ND	---	0.500	ug/L	1	06/12/19 17:33	EPA 8260C	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	06/12/19 17:33	EPA 8260C	
2-Hexanone	ND	---	10.0	ug/L	1	06/12/19 17:33	EPA 8260C	
Isopropylbenzene	ND	---	1.00	ug/L	1	06/12/19 17:33	EPA 8260C	
4-Isopropyltoluene	ND	---	1.00	ug/L	1	06/12/19 17:33	EPA 8260C	
Methylene chloride	ND	---	3.00	ug/L	1	06/12/19 17:33	EPA 8260C	
4-Methyl-2-pentanone (MiBK)	ND	---	10.0	ug/L	1	06/12/19 17:33	EPA 8260C	

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.

Darrell Auvil, Project Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Port of Vancouver	Project: **ASI**	
3103 NW Lower River Road	Project Number: **[none]**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Matt Graves**	**A9F0368 - 06 21 19 1005**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GL-6 (A9F0368-06)				**Matrix: Water**		**Batch: 9060861**		
Methyl tert-butyl ether (MTBE)	ND	---	1.00	ug/L	1	06/12/19 17:33	EPA 8260C	
Naphthalene	ND	---	2.00	ug/L	1	06/12/19 17:33	EPA 8260C	
n-Propylbenzene	ND	---	0.500	ug/L	1	06/12/19 17:33	EPA 8260C	
Styrene	ND	---	1.00	ug/L	1	06/12/19 17:33	EPA 8260C	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	06/12/19 17:33	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	06/12/19 17:33	EPA 8260C	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	06/12/19 17:33	EPA 8260C	
Toluene	ND	---	1.00	ug/L	1	06/12/19 17:33	EPA 8260C	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	06/12/19 17:33	EPA 8260C	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	06/12/19 17:33	EPA 8260C	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	06/12/19 17:33	EPA 8260C	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	06/12/19 17:33	EPA 8260C	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	06/12/19 17:33	EPA 8260C	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	06/12/19 17:33	EPA 8260C	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	06/12/19 17:33	EPA 8260C	
1,2,4-Trimethylbenzene	ND	---	1.00	ug/L	1	06/12/19 17:33	EPA 8260C	
1,3,5-Trimethylbenzene	ND	---	1.00	ug/L	1	06/12/19 17:33	EPA 8260C	
Vinyl chloride	ND	---	0.400	ug/L	1	06/12/19 17:33	EPA 8260C	
m,p-Xylene	ND	---	1.00	ug/L	1	06/12/19 17:33	EPA 8260C	
o-Xylene	ND	---	0.500	ug/L	1	06/12/19 17:33	EPA 8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*111 %*	*Limits: 80-120 %*	*1*	*06/12/19 17:33*	*EPA 8260C*	
Toluene-d8 (Surr)			*102 %*	*80-120 %*	*1*	*06/12/19 17:33*	*EPA 8260C*	
4-Bromofluorobenzene (Surr)			*100 %*	*80-120 %*	*1*	*06/12/19 17:33*	*EPA 8260C*	
Trip (A9F0368-07)				**Matrix: Water**		**Batch: 9060861**		
Acetone	ND	---	20.0	ug/L	1	06/12/19 14:48	EPA 8260C	
Acrylonitrile	ND	---	2.00	ug/L	1	06/12/19 14:48	EPA 8260C	
Benzene	ND	---	0.200	ug/L	1	06/12/19 14:48	EPA 8260C	
Bromobenzene	ND	---	0.500	ug/L	1	06/12/19 14:48	EPA 8260C	
Bromochloromethane	ND	---	1.00	ug/L	1	06/12/19 14:48	EPA 8260C	
Bromodichloromethane	ND	---	1.00	ug/L	1	06/12/19 14:48	EPA 8260C	
Bromoform	ND	---	1.00	ug/L	1	06/12/19 14:48	EPA 8260C	
Bromomethane	ND	---	5.00	ug/L	1	06/12/19 14:48	EPA 8260C	
2-Butanone (MEK)	ND	---	10.0	ug/L	1	06/12/19 14:48	EPA 8260C	

Apex Laboratories

Darrell Auvil, Project Manager

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.

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Port of Vancouver	Project: **ASI**	
3103 NW Lower River Road	Project Number: **[none]**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Matt Graves**	**A9F0368 - 06 21 19 1005**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Trip (A9F0368-07)				**Matrix: Water**		**Batch: 9060861**		
n-Butylbenzene	ND	---	1.00	ug/L	1	06/12/19 14:48	EPA 8260C	
sec-Butylbenzene	ND	---	1.00	ug/L	1	06/12/19 14:48	EPA 8260C	
tert-Butylbenzene	ND	---	1.00	ug/L	1	06/12/19 14:48	EPA 8260C	
Carbon disulfide	ND	---	10.0	ug/L	1	06/12/19 14:48	EPA 8260C	
Carbon tetrachloride	ND	---	1.00	ug/L	1	06/12/19 14:48	EPA 8260C	
Chlorobenzene	ND	---	0.500	ug/L	1	06/12/19 14:48	EPA 8260C	
Chloroethane	ND	---	5.00	ug/L	1	06/12/19 14:48	EPA 8260C	
Chloroform	ND	---	1.00	ug/L	1	06/12/19 14:48	EPA 8260C	
Chloromethane	ND	---	5.00	ug/L	1	06/12/19 14:48	EPA 8260C	
2-Chlorotoluene	ND	---	1.00	ug/L	1	06/12/19 14:48	EPA 8260C	
4-Chlorotoluene	ND	---	1.00	ug/L	1	06/12/19 14:48	EPA 8260C	
Dibromochloromethane	ND	---	1.00	ug/L	1	06/12/19 14:48	EPA 8260C	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	06/12/19 14:48	EPA 8260C	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	06/12/19 14:48	EPA 8260C	
Dibromomethane	ND	---	1.00	ug/L	1	06/12/19 14:48	EPA 8260C	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	06/12/19 14:48	EPA 8260C	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	06/12/19 14:48	EPA 8260C	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	06/12/19 14:48	EPA 8260C	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	06/12/19 14:48	EPA 8260C	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	06/12/19 14:48	EPA 8260C	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	06/12/19 14:48	EPA 8260C	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	06/12/19 14:48	EPA 8260C	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	06/12/19 14:48	EPA 8260C	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	06/12/19 14:48	EPA 8260C	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	06/12/19 14:48	EPA 8260C	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	06/12/19 14:48	EPA 8260C	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	06/12/19 14:48	EPA 8260C	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	06/12/19 14:48	EPA 8260C	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	06/12/19 14:48	EPA 8260C	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	06/12/19 14:48	EPA 8260C	
Ethylbenzene	ND	---	0.500	ug/L	1	06/12/19 14:48	EPA 8260C	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	06/12/19 14:48	EPA 8260C	
2-Hexanone	ND	---	10.0	ug/L	1	06/12/19 14:48	EPA 8260C	

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.

Darrell Auvil, Project Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Port of Vancouver	Project: **ASI**	
3103 NW Lower River Road	Project Number: **[none]**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Matt Graves**	**A9F0368 - 06 21 19 1005**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Trip (A9F0368-07)				**Matrix: Water**		**Batch: 9060861**		
Isopropylbenzene	ND	---	1.00	ug/L	1	06/12/19 14:48	EPA 8260C	
4-Isopropyltoluene	ND	---	1.00	ug/L	1	06/12/19 14:48	EPA 8260C	
Methylene chloride	ND	---	3.00	ug/L	1	06/12/19 14:48	EPA 8260C	
4-Methyl-2-pentanone (MiBK)	ND	---	10.0	ug/L	1	06/12/19 14:48	EPA 8260C	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	ug/L	1	06/12/19 14:48	EPA 8260C	
Naphthalene	ND	---	2.00	ug/L	1	06/12/19 14:48	EPA 8260C	
n-Propylbenzene	ND	---	0.500	ug/L	1	06/12/19 14:48	EPA 8260C	
Styrene	ND	---	1.00	ug/L	1	06/12/19 14:48	EPA 8260C	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	06/12/19 14:48	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	06/12/19 14:48	EPA 8260C	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	06/12/19 14:48	EPA 8260C	
Toluene	ND	---	1.00	ug/L	1	06/12/19 14:48	EPA 8260C	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	06/12/19 14:48	EPA 8260C	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	06/12/19 14:48	EPA 8260C	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	06/12/19 14:48	EPA 8260C	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	06/12/19 14:48	EPA 8260C	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	06/12/19 14:48	EPA 8260C	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	06/12/19 14:48	EPA 8260C	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	06/12/19 14:48	EPA 8260C	
1,2,4-Trimethylbenzene	ND	---	1.00	ug/L	1	06/12/19 14:48	EPA 8260C	
1,3,5-Trimethylbenzene	ND	---	1.00	ug/L	1	06/12/19 14:48	EPA 8260C	
Vinyl chloride	ND	---	0.400	ug/L	1	06/12/19 14:48	EPA 8260C	
m,p-Xylene	ND	---	1.00	ug/L	1	06/12/19 14:48	EPA 8260C	
o-Xylene	ND	---	0.500	ug/L	1	06/12/19 14:48	EPA 8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*108 %*	*Limits:*	*80-120 %*	*1*	*06/12/19 14:48*	*EPA 8260C*	
Toluene-d8 (Surr)			*102 %*		*80-120 %*	*1*	*06/12/19 14:48*	*EPA 8260C*	
4-Bromofluorobenzene (Surr)			*103 %*		*80-120 %*	*1*	*06/12/19 14:48*	*EPA 8260C*	

Apex Laboratories

Darrell Auvil, Project Manager

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.

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Port of Vancouver	Project: **ASI**	
3103 NW Lower River Road	Project Number: **[none]**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Matt Graves**	**A9F0368 - 06 21 19 1005**

QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9060943 - EPA 3510C (Fuels/Acid Ext.)							**Water**					
Blank (9060943-BLK1)			Prepared: 06/13/19 13:38		Analyzed: 06/14/19 00:35							
NWTPH-Dx												
Diesel	ND	---	0.182	mg/L	1	---	---	---	---	---	---	
Oil	ND	---	0.364	mg/L	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 90 %*		*Limits: 50-150 %*		*Dilution: 1x*					
LCS (9060943-BS1)			Prepared: 06/13/19 13:38		Analyzed: 06/14/19 00:57							
NWTPH-Dx												
Diesel	1.06	---	0.200	mg/L	1	1.25	---	85	58-115%	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 98 %*		*Limits: 50-150 %*		*Dilution: 1x*					
LCS Dup (9060943-BSD1)			Prepared: 06/13/19 13:38		Analyzed: 06/14/19 01:20							**Q-19**
NWTPH-Dx												
Diesel	1.01	---	0.200	mg/L	1	1.25	---	81	58-115%	5	20%	
Surr: o-Terphenyl (Surr)			*Recovery: 90 %*		*Limits: 50-150 %*		*Dilution: 1x*					

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.

Darrell Auvil, Project Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Port of Vancouver	Project: **ASI**	
3103 NW Lower River Road	Project Number: **[none]**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Matt Graves**	**A9F0368 - 06 21 19 1005**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9060861 - EPA 5030B							**Water**					
Blank (9060861-BLK1)			Prepared: 06/12/19 09:30 Analyzed: 06/12/19 12:48									
EPA 8260C												
Acetone	ND	---	20.0	ug/L	1	---	---	---	---	---	---	
Acrylonitrile	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
Benzene	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Bromobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Bromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromodichloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromoform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromomethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
2-Butanone (MEK)	ND	---	10.0	ug/L	1	---	---	---	---	---	---	
n-Butylbenzene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
sec-Butylbenzene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
tert-Butylbenzene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Carbon disulfide	ND	---	10.0	ug/L	1	---	---	---	---	---	---	
Carbon tetrachloride	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Chloroethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Chloroform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chloromethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
2-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
4-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Dibromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dibromomethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	

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.

Darrell Auvil, Project Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Port of Vancouver	Project: **ASI**	
3103 NW Lower River Road	Project Number: **[none]**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Matt Graves**	**A9F0368 - 06 21 19 1005**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9060861 - EPA 5030B							**Water**					
Blank (9060861-BLK1)			Prepared: 06/12/19 09:30		Analyzed: 06/12/19 12:48							
1,2-Dichloropropane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Ethylbenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
2-Hexanone	ND	---	10.0	ug/L	1	---	---	---	---	---	---	
Isopropylbenzene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
4-Isopropyltoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Methylene chloride	ND	---	3.00	ug/L	1	---	---	---	---	---	---	
4-Methyl-2-pentanone (MiBK)	ND	---	10.0	ug/L	1	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Naphthalene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
n-Propylbenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Styrene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Toluene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2,4-Trimethylbenzene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,3,5-Trimethylbenzene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Vinyl chloride	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
m,p-Xylene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
o-Xylene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	

Surr: 1,4-Difluorobenzene (Surr) *Recovery: 111 %* *Limits: 80-120 %* *Dilution: 1x*

Apex Laboratories

Darrell Auvil, Project Manager

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.

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Port of Vancouver	Project: **ASI**	
3103 NW Lower River Road	Project Number: **[none]**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Matt Graves**	**A9F0368 - 06 21 19 1005**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9060861 - EPA 5030B							**Water**					
Blank (9060861-BLK1)				Prepared: 06/12/19 09:30 Analyzed: 06/12/19 12:48								
Surr: Toluene-d8 (Surr)			*Recovery: 102 %*	*Limits: 80-120 %*			*Dilution: 1x*					
4-Bromofluorobenzene (Surr)			*102 %*	*80-120 %*			*"*					
LCS (9060861-BS1)				Prepared: 06/12/19 09:30 Analyzed: 06/12/19 11:53								
EPA 8260C												
Acetone	36.2	---	20.0	ug/L	1	40.0	---	90	80-120%	---	---	
Acrylonitrile	20.4	---	2.00	ug/L	1	20.0	---	102	80-120%	---	---	
Benzene	19.1	---	0.200	ug/L	1	20.0	---	95	80-120%	---	---	
Bromobenzene	19.8	---	0.500	ug/L	1	20.0	---	99	80-120%	---	---	
Bromochloromethane	21.4	---	1.00	ug/L	1	20.0	---	107	80-120%	---	---	
Bromodichloromethane	20.9	---	1.00	ug/L	1	20.0	---	105	80-120%	---	---	
Bromoform	23.3	---	1.00	ug/L	1	20.0	---	117	80-120%	---	---	
Bromomethane	21.3	---	5.00	ug/L	1	20.0	---	106	80-120%	---	---	
2-Butanone (MEK)	39.5	---	10.0	ug/L	1	40.0	---	99	80-120%	---	---	
n-Butylbenzene	20.2	---	1.00	ug/L	1	20.0	---	101	80-120%	---	---	
sec-Butylbenzene	18.9	---	1.00	ug/L	1	20.0	---	94	80-120%	---	---	
tert-Butylbenzene	17.1	---	1.00	ug/L	1	20.0	---	86	80-120%	---	---	
Carbon disulfide	16.4	---	10.0	ug/L	1	20.0	---	82	80-120%	---	---	
Carbon tetrachloride	20.0	---	1.00	ug/L	1	20.0	---	100	80-120%	---	---	
Chlorobenzene	19.7	---	0.500	ug/L	1	20.0	---	99	80-120%	---	---	
Chloroethane	13.6	---	5.00	ug/L	1	20.0	---	**68**	**80-120%**	---	---	Q-55
Chloroform	19.9	---	1.00	ug/L	1	20.0	---	99	80-120%	---	---	
Chloromethane	17.7	---	5.00	ug/L	1	20.0	---	88	80-120%	---	---	
2-Chlorotoluene	18.8	---	1.00	ug/L	1	20.0	---	94	80-120%	---	---	
4-Chlorotoluene	18.7	---	1.00	ug/L	1	20.0	---	94	80-120%	---	---	
Dibromochloromethane	19.1	---	1.00	ug/L	1	20.0	---	96	80-120%	---	---	
1,2-Dibromo-3-chloropropane	18.6	---	5.00	ug/L	1	20.0	---	93	80-120%	---	---	
1,2-Dibromoethane (EDB)	19.7	---	0.500	ug/L	1	20.0	---	99	80-120%	---	---	
Dibromomethane	21.0	---	1.00	ug/L	1	20.0	---	105	80-120%	---	---	
1,2-Dichlorobenzene	19.8	---	0.500	ug/L	1	20.0	---	99	80-120%	---	---	
1,3-Dichlorobenzene	19.8	---	0.500	ug/L	1	20.0	---	99	80-120%	---	---	
1,4-Dichlorobenzene	19.5	---	0.500	ug/L	1	20.0	---	97	80-120%	---	---	
Dichlorodifluoromethane	15.1	---	1.00	ug/L	1	20.0	---	**76**	**80-120%**	---	---	Q-55
1,1-Dichloroethane	19.0	---	0.400	ug/L	1	20.0	---	95	80-120%	---	---	

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.

Darrell Auvil, Project Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Port of Vancouver	Project: **ASI**	
3103 NW Lower River Road	Project Number: **[none]**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Matt Graves**	**A9F0368 - 06 21 19 1005**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9060861 - EPA 5030B							**Water**					
LCS (9060861-BS1)			Prepared: 06/12/19 09:30		Analyzed: 06/12/19 11:53							
1,2-Dichloroethane (EDC)	20.0	---	0.400	ug/L	1	20.0	---	100	80-120%	---	---	
1,1-Dichloroethene	17.3	---	0.400	ug/L	1	20.0	---	87	80-120%	---	---	
cis-1,2-Dichloroethene	19.1	---	0.400	ug/L	1	20.0	---	96	80-120%	---	---	
trans-1,2-Dichloroethene	19.1	---	0.400	ug/L	1	20.0	---	95	80-120%	---	---	
1,2-Dichloropropane	19.8	---	0.500	ug/L	1	20.0	---	99	80-120%	---	---	
1,3-Dichloropropane	19.2	---	1.00	ug/L	1	20.0	---	96	80-120%	---	---	
2,2-Dichloropropane	16.9	---	1.00	ug/L	1	20.0	---	85	80-120%	---	---	
1,1-Dichloropropene	18.6	---	1.00	ug/L	1	20.0	---	93	80-120%	---	---	
cis-1,3-Dichloropropene	18.0	---	1.00	ug/L	1	20.0	---	90	80-120%	---	---	
trans-1,3-Dichloropropene	18.0	---	1.00	ug/L	1	20.0	---	90	80-120%	---	---	
Ethylbenzene	18.3	---	0.500	ug/L	1	20.0	---	92	80-120%	---	---	
Hexachlorobutadiene	20.4	---	5.00	ug/L	1	20.0	---	102	80-120%	---	---	
2-Hexanone	38.2	---	10.0	ug/L	1	40.0	---	95	80-120%	---	---	
Isopropylbenzene	18.0	---	1.00	ug/L	1	20.0	---	90	80-120%	---	---	
4-Isopropyltoluene	18.9	---	1.00	ug/L	1	20.0	---	94	80-120%	---	---	
Methylene chloride	19.1	---	3.00	ug/L	1	20.0	---	96	80-120%	---	---	
4-Methyl-2-pentanone (MiBK)	37.1	---	10.0	ug/L	1	40.0	---	93	80-120%	---	---	
Methyl tert-butyl ether (MTBE)	16.1	---	1.00	ug/L	1	20.0	---	81	80-120%	---	---	
Naphthalene	15.4	---	2.00	ug/L	1	20.0	---	**77**	**80-120%**	---	---	Q-55
n-Propylbenzene	18.2	---	0.500	ug/L	1	20.0	---	91	80-120%	---	---	
Styrene	19.8	---	1.00	ug/L	1	20.0	---	99	80-120%	---	---	
1,1,1,2-Tetrachloroethane	19.4	---	0.400	ug/L	1	20.0	---	97	80-120%	---	---	
1,1,2,2-Tetrachloroethane	21.1	---	0.500	ug/L	1	20.0	---	105	80-120%	---	---	
Tetrachloroethene (PCE)	18.8	---	0.400	ug/L	1	20.0	---	94	80-120%	---	---	
Toluene	18.1	---	0.500	ug/L	1	20.0	---	91	80-120%	---	---	
1,2,3-Trichlorobenzene	19.6	---	2.00	ug/L	1	20.0	---	98	80-120%	---	---	
1,2,4-Trichlorobenzene	18.2	---	2.00	ug/L	1	20.0	---	91	80-120%	---	---	
1,1,1-Trichloroethane	18.0	---	0.400	ug/L	1	20.0	---	90	80-120%	---	---	
1,1,2-Trichloroethane	20.2	---	0.500	ug/L	1	20.0	---	101	80-120%	---	---	
Trichloroethene (TCE)	19.2	---	0.400	ug/L	1	20.0	---	96	80-120%	---	---	
Trichlorofluoromethane	22.5	---	2.00	ug/L	1	20.0	---	112	80-120%	---	---	
1,2,3-Trichloropropane	19.4	---	1.00	ug/L	1	20.0	---	97	80-120%	---	---	
1,2,4-Trimethylbenzene	19.0	---	1.00	ug/L	1	20.0	---	95	80-120%	---	---	
1,3,5-Trimethylbenzene	18.8	---	1.00	ug/L	1	20.0	---	94	80-120%	---	---	

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.

Darrell Auvil, Project Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Port of Vancouver	Project: **ASI**	
3103 NW Lower River Road	Project Number: **[none]**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Matt Graves**	**A9F0368 - 06 21 19 1005**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9060861 - EPA 5030B							**Water**					
LCS (9060861-BS1)			Prepared: 06/12/19 09:30		Analyzed: 06/12/19 11:53							
Vinyl chloride	17.4	---	0.400	ug/L	1	20.0	---	87	80-120%	---	---	
m,p-Xylene	37.5	---	1.00	ug/L	1	40.0	---	94	80-120%	---	---	
o-Xylene	17.0	---	0.500	ug/L	1	20.0	---	85	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery: 105 %*		*Limits: 80-120 %*			*Dilution: 1x*					
Toluene-d8 (Surr)			*99 %*		*80-120 %*		*"*					
4-Bromofluorobenzene (Surr)			*94 %*		*80-120 %*		*"*					
Duplicate (9060861-DUP1)			Prepared: 06/12/19 13:38		Analyzed: 06/12/19 23:01							**T-02**
QC Source Sample: Non-SDG (A9F0387-01)												
Acetone	ND	---	200	ug/L	10	---	ND	---	---	---	30%	
Acrylonitrile	ND	---	20.0	ug/L	10	---	ND	---	---	---	30%	
Benzene	**240**	---	2.00	ug/L	10	---	238	---	---	0.9	30%	
Bromobenzene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
Bromochloromethane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Bromodichloromethane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Bromoform	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Bromomethane	ND	---	50.0	ug/L	10	---	ND	---	---	---	30%	
2-Butanone (MEK)	ND	---	100	ug/L	10	---	ND	---	---	---	30%	
n-Butylbenzene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
sec-Butylbenzene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
tert-Butylbenzene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Carbon disulfide	ND	---	100	ug/L	10	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Chlorobenzene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
Chloroethane	ND	---	50.0	ug/L	10	---	ND	---	---	---	30%	
Chloroform	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Chloromethane	ND	---	50.0	ug/L	10	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Dibromochloromethane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	---	50.0	ug/L	10	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
Dibromomethane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	

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.

Darrell Auvil, Project Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Port of Vancouver	Project: **ASI**	
3103 NW Lower River Road	Project Number: **[none]**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Matt Graves**	**A9F0368 - 06 21 19 1005**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9060861 - EPA 5030B							**Water**					
Duplicate (9060861-DUP1)			Prepared: 06/12/19 13:38		Analyzed: 06/12/19 23:01							**T-02**
QC Source Sample: Non-SDG (A9F0387-01)												
1,3-Dichlorobenzene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	**12.9**	---	4.00	ug/L	10	---	11.8	---	---	9	30%	
trans-1,2-Dichloroethene	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Ethylbenzene	**165**	---	5.00	ug/L	10	---	172	---	---	4	30%	
Hexachlorobutadiene	ND	---	50.0	ug/L	10	---	ND	---	---	---	30%	
2-Hexanone	ND	---	100	ug/L	10	---	ND	---	---	---	30%	
Isopropylbenzene	ND	---	10.0	ug/L	10	---	5.34	---	---	***	30%	
4-Isopropyltoluene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Methylene chloride	ND	---	30.0	ug/L	10	---	ND	---	---	---	30%	
4-Methyl-2-pentanone (MiBK)	ND	---	100	ug/L	10	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Naphthalene	**5560**	---	20.0	ug/L	10	---	5730	---	---	3	30%	E, Q-54a
n-Propylbenzene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
Styrene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
Toluene	**6.67**	---	5.00	ug/L	10	---	7.11	---	---	6	30%	
1,2,3-Trichlorobenzene	ND	---	20.0	ug/L	10	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	---	20.0	ug/L	10	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	

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.

Darrell Auvil, Project Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Port of Vancouver	Project: **ASI**	
3103 NW Lower River Road	Project Number: **[none]**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Matt Graves**	**A9F0368 - 06 21 19 1005**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9060861 - EPA 5030B							**Water**					
Duplicate (9060861-DUP1)			Prepared: 06/12/19 13:38 Analyzed: 06/12/19 23:01									**T-02**
QC Source Sample: Non-SDG (A9F0387-01)												
Trichloroethene (TCE)	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	---	20.0	ug/L	10	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	**37.2**	---	10.0	ug/L	10	---	38.5	---	---	3	30%	
1,3,5-Trimethylbenzene	**10.7**	---	10.0	ug/L	10	---	11.3	---	---	5	30%	
Vinyl chloride	**20.2**	---	4.00	ug/L	10	---	19.5	---	---	4	30%	
m,p-Xylene	**93.4**	---	10.0	ug/L	10	---	98.5	---	---	5	30%	
o-Xylene	**55.6**	---	5.00	ug/L	10	---	57.2	---	---	3	30%	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*103 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*100 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*97 %*		*80-120 %*			*"*				
Matrix Spike (9060861-MS1)			Prepared: 06/12/19 13:38 Analyzed: 06/12/19 18:00									
QC Source Sample: GL-6 (A9F0368-06)												
EPA 8260C												
Acetone	40.1	---	20.0	ug/L	1	40.0	ND	100	39-160%	---	---	
Acrylonitrile	22.0	---	2.00	ug/L	1	20.0	ND	110	63-135%	---	---	
Benzene	21.1	---	0.200	ug/L	1	20.0	ND	105	79-120%	---	---	
Bromobenzene	21.0	---	0.500	ug/L	1	20.0	ND	105	80-120%	---	---	
Bromochloromethane	23.3	---	1.00	ug/L	1	20.0	ND	117	78-123%	---	---	
Bromodichloromethane	23.0	---	1.00	ug/L	1	20.0	ND	115	79-125%	---	---	
Bromoform	24.3	---	1.00	ug/L	1	20.0	ND	122	66-130%	---	---	
Bromomethane	20.5	---	5.00	ug/L	1	20.0	ND	102	53-141%	---	---	
2-Butanone (MEK)	41.8	---	10.0	ug/L	1	40.0	ND	104	56-143%	---	---	
n-Butylbenzene	20.5	---	1.00	ug/L	1	20.0	ND	102	75-128%	---	---	
sec-Butylbenzene	19.9	---	1.00	ug/L	1	20.0	ND	100	77-126%	---	---	
tert-Butylbenzene	18.3	---	1.00	ug/L	1	20.0	ND	92	78-124%	---	---	
Carbon disulfide	17.2	---	10.0	ug/L	1	20.0	ND	86	64-133%	---	---	
Carbon tetrachloride	22.0	---	1.00	ug/L	1	20.0	ND	110	72-136%	---	---	
Chlorobenzene	21.2	---	0.500	ug/L	1	20.0	ND	106	80-120%	---	---	
Chloroethane	13.0	---	5.00	ug/L	1	20.0	ND	65	60-138%	---	---	Q-54
Chloroform	23.0	---	1.00	ug/L	1	20.0	0.929	110	79-124%	---	---	
Chloromethane	18.7	---	5.00	ug/L	1	20.0	ND	94	50-139%	---	---	

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.

Darrell Auvil, Project Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Port of Vancouver	Project: **ASI**	
3103 NW Lower River Road	Project Number: **[none]**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Matt Graves**	**A9F0368 - 06 21 19 1005**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9060861 - EPA 5030B							**Water**					
Matrix Spike (9060861-MS1)			Prepared: 06/12/19 13:38		Analyzed: 06/12/19 18:00							
QC Source Sample: GL-6 (A9F0368-06)												
2-Chlorotoluene	19.7	---	1.00	ug/L	1	20.0	ND	99	79-122%	---	---	
4-Chlorotoluene	19.6	---	1.00	ug/L	1	20.0	ND	98	78-122%	---	---	
Dibromochloromethane	20.0	---	1.00	ug/L	1	20.0	ND	100	74-126%	---	---	
1,2-Dibromo-3-chloropropane	19.1	---	5.00	ug/L	1	20.0	ND	96	62-128%	---	---	
1,2-Dibromoethane (EDB)	20.7	---	0.500	ug/L	1	20.0	ND	103	77-121%	---	---	
Dibromomethane	22.5	---	1.00	ug/L	1	20.0	ND	112	79-123%	---	---	
1,2-Dichlorobenzene	20.7	---	0.500	ug/L	1	20.0	ND	103	80-120%	---	---	
1,3-Dichlorobenzene	20.5	---	0.500	ug/L	1	20.0	ND	103	80-120%	---	---	
1,4-Dichlorobenzene	20.4	---	0.500	ug/L	1	20.0	ND	102	79-120%	---	---	
Dichlorodifluoromethane	16.2	---	1.00	ug/L	1	20.0	ND	81	32-152%	---	---	Q-54b
1,1-Dichloroethane	21.0	---	0.400	ug/L	1	20.0	ND	105	77-125%	---	---	
1,2-Dichloroethane (EDC)	21.8	---	0.400	ug/L	1	20.0	ND	109	73-128%	---	---	
1,1-Dichloroethene	17.6	---	0.400	ug/L	1	20.0	ND	88	71-131%	---	---	
cis-1,2-Dichloroethene	20.6	---	0.400	ug/L	1	20.0	ND	103	78-123%	---	---	
trans-1,2-Dichloroethene	20.6	---	0.400	ug/L	1	20.0	ND	103	75-124%	---	---	
1,2-Dichloropropane	21.6	---	0.500	ug/L	1	20.0	ND	108	78-122%	---	---	
1,3-Dichloropropane	20.2	---	1.00	ug/L	1	20.0	ND	101	80-120%	---	---	
2,2-Dichloropropane	15.3	---	1.00	ug/L	1	20.0	ND	77	60-139%	---	---	
1,1-Dichloropropene	20.2	---	1.00	ug/L	1	20.0	ND	101	79-125%	---	---	
cis-1,3-Dichloropropene	16.1	---	1.00	ug/L	1	20.0	ND	81	75-124%	---	---	
trans-1,3-Dichloropropene	17.8	---	1.00	ug/L	1	20.0	ND	89	73-127%	---	---	
Ethylbenzene	19.6	---	0.500	ug/L	1	20.0	ND	98	79-121%	---	---	
Hexachlorobutadiene	21.6	---	5.00	ug/L	1	20.0	ND	108	66-134%	---	---	
2-Hexanone	40.2	---	10.0	ug/L	1	40.0	ND	101	57-139%	---	---	
Isopropylbenzene	19.2	---	1.00	ug/L	1	20.0	ND	96	72-131%	---	---	
4-Isopropyltoluene	19.5	---	1.00	ug/L	1	20.0	ND	97	77-127%	---	---	
Methylene chloride	19.0	---	3.00	ug/L	1	20.0	ND	95	74-124%	---	---	
4-Methyl-2-pentanone (MiBK)	38.1	---	10.0	ug/L	1	40.0	ND	95	67-130%	---	---	
Methyl tert-butyl ether (MTBE)	16.9	---	1.00	ug/L	1	20.0	ND	85	71-124%	---	---	
Naphthalene	16.2	---	2.00	ug/L	1	20.0	ND	81	61-128%	---	---	Q-54a
n-Propylbenzene	19.3	---	0.500	ug/L	1	20.0	ND	96	76-126%	---	---	
Styrene	21.0	---	1.00	ug/L	1	20.0	ND	105	78-123%	---	---	
1,1,1,2-Tetrachloroethane	20.4	---	0.400	ug/L	1	20.0	ND	102	78-124%	---	---	

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.

Darrell Auvil, Project Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Port of Vancouver	Project: **ASI**	
3103 NW Lower River Road	Project Number: **[none]**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Matt Graves**	**A9F0368 - 06 21 19 1005**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9060861 - EPA 5030B							**Water**					
Matrix Spike (9060861-MS1)			Prepared: 06/12/19 13:38		Analyzed: 06/12/19 18:00							
QC Source Sample: GL-6 (A9F0368-06)												
1,1,2,2-Tetrachloroethane	22.9	---	0.500	ug/L	1	20.0	ND	115	71-121%	---	---	
Tetrachloroethene (PCE)	19.9	---	0.400	ug/L	1	20.0	ND	100	74-129%	---	---	
Toluene	19.2	---	0.500	ug/L	1	20.0	ND	96	80-121%	---	---	
1,2,3-Trichlorobenzene	20.9	---	2.00	ug/L	1	20.0	ND	105	69-129%	---	---	
1,2,4-Trichlorobenzene	18.4	---	2.00	ug/L	1	20.0	ND	92	69-130%	---	---	
1,1,1-Trichloroethane	20.4	---	0.400	ug/L	1	20.0	ND	102	74-131%	---	---	
1,1,2-Trichloroethane	21.2	---	0.500	ug/L	1	20.0	ND	106	80-120%	---	---	
Trichloroethene (TCE)	21.0	---	0.400	ug/L	1	20.0	ND	105	79-123%	---	---	
Trichlorofluoromethane	25.8	---	2.00	ug/L	1	20.0	ND	129	65-141%	---	---	
1,2,3-Trichloropropane	20.0	---	1.00	ug/L	1	20.0	ND	100	73-122%	---	---	
1,2,4-Trimethylbenzene	19.9	---	1.00	ug/L	1	20.0	ND	99	76-124%	---	---	
1,3,5-Trimethylbenzene	19.8	---	1.00	ug/L	1	20.0	ND	99	75-124%	---	---	
Vinyl chloride	19.4	---	0.400	ug/L	1	20.0	ND	97	58-137%	---	---	
m,p-Xylene	39.4	---	1.00	ug/L	1	40.0	ND	99	80-121%	---	---	
o-Xylene	18.2	---	0.500	ug/L	1	20.0	ND	91	78-122%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 106 %*		*Limits: 80-120 %*				*Dilution: 1x*			
Toluene-d8 (Surr)			*97 %*		*80-120 %*				*"*			
4-Bromofluorobenzene (Surr)			*92 %*		*80-120 %*				*"*			

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.

Darrell Auvil, Project Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Port of Vancouver	Project: **ASI**	
3103 NW Lower River Road	Project Number: **[none]**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Matt Graves**	**A9F0368 - 06 21 19 1005**

SAMPLE PREPARATION INFORMATION

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Prep: EPA 3510C (Fuels/Acid Ext.)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 9060943							
A9F0368-01	Water	NWTPH-Dx	06/10/19 13:05	06/13/19 13:38	1050mL/5mL	1000mL/5mL	0.95
A9F0368-02	Water	NWTPH-Dx	06/10/19 11:25	06/13/19 13:38	1050mL/5mL	1000mL/5mL	0.95
A9F0368-03	Water	NWTPH-Dx	06/10/19 13:15	06/13/19 13:38	1050mL/5mL	1000mL/5mL	0.95
A9F0368-04	Water	NWTPH-Dx	06/10/19 14:00	06/13/19 13:38	1050mL/5mL	1000mL/5mL	0.95
A9F0368-05	Water	NWTPH-Dx	06/10/19 10:30	06/13/19 13:38	1050mL/5mL	1000mL/5mL	0.95
A9F0368-06	Water	NWTPH-Dx	06/11/19 00:00	06/13/19 13:38	1050mL/5mL	1000mL/5mL	0.95

Volatile Organic Compounds by EPA 8260C

Prep: EPA 5030B

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 9060861							
A9F0368-01	Water	EPA 8260C	06/10/19 13:05	06/12/19 13:38	5mL/5mL	5mL/5mL	1.00
A9F0368-02	Water	EPA 8260C	06/10/19 11:25	06/12/19 13:38	5mL/5mL	5mL/5mL	1.00
A9F0368-03	Water	EPA 8260C	06/10/19 13:15	06/12/19 13:38	5mL/5mL	5mL/5mL	1.00
A9F0368-04	Water	EPA 8260C	06/10/19 14:00	06/12/19 13:38	5mL/5mL	5mL/5mL	1.00
A9F0368-05	Water	EPA 8260C	06/10/19 10:30	06/12/19 13:38	5mL/5mL	5mL/5mL	1.00
A9F0368-06	Water	EPA 8260C	06/11/19 00:00	06/12/19 13:38	5mL/5mL	5mL/5mL	1.00
A9F0368-07	Water	EPA 8260C	06/10/19 00:00	06/12/19 13:38	5mL/5mL	5mL/5mL	1.00

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.

Darrell Auvil, Project Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Port of Vancouver	Project: **ASI**	
3103 NW Lower River Road	Project Number: **[none]**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Matt Graves**	**A9F0368 - 06 21 19 1005**

QUALIFIER DEFINITIONS

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

Apex Laboratories

E	Estimated Value. The result is above the calibration range of the instrument.
F-11	The hydrocarbon pattern indicates possible weathered diesel, mineral oil, or a contribution from a related component.
F-20	Result for Diesel is Estimated due to overlap from Gasoline Range Organics or other VOCs.
Q-19	Blank Spike Duplicate (BSD) sample analyzed in place of Matrix Spike/Duplicate samples due to limited sample amount available for analysis.
Q-54	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260C/8270D by -12%. The results are reported as Estimated Values.
Q-54a	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260C/8270D by -3%. The results are reported as Estimated Values.
Q-54b	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260C/8270D by -4%. The results are reported as Estimated Values.
Q-55	Daily CCV/LCS recovery for this analyte was below the +/-20% criteria listed in EPA 8260C, however there is adequate sensitivity to ensure detection at the reporting level.
T-02	This Batch QC sample was analyzed outside of the method specified 12 hour tune window. Results are estimated.

Apex Laboratories

Darrell Auvil, Project Manager

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.

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Port of Vancouver	Project: **ASI**	
3103 NW Lower River Road	Project Number: **[none]**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Matt Graves**	**A9F0368 - 06 21 19 1005**

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) may not be 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.

Darrell Auvil, Project Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Port of Vancouver	Project: **ASI**	
3103 NW Lower River Road	Project Number: **[none]**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Matt Graves**	**A9F0368 - 06 21 19 1005**

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, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Port of Vancouver	Project: **ASI**	
3103 NW Lower River Road	Project Number: **[none]**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Matt Graves**	**A9F0368 - 06 21 19 1005**

LABORATORY ACCREDITATION INFORMATION

TNI 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

All reported analytes are included in Apex Laboratories' current ORELAP scope.

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 provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

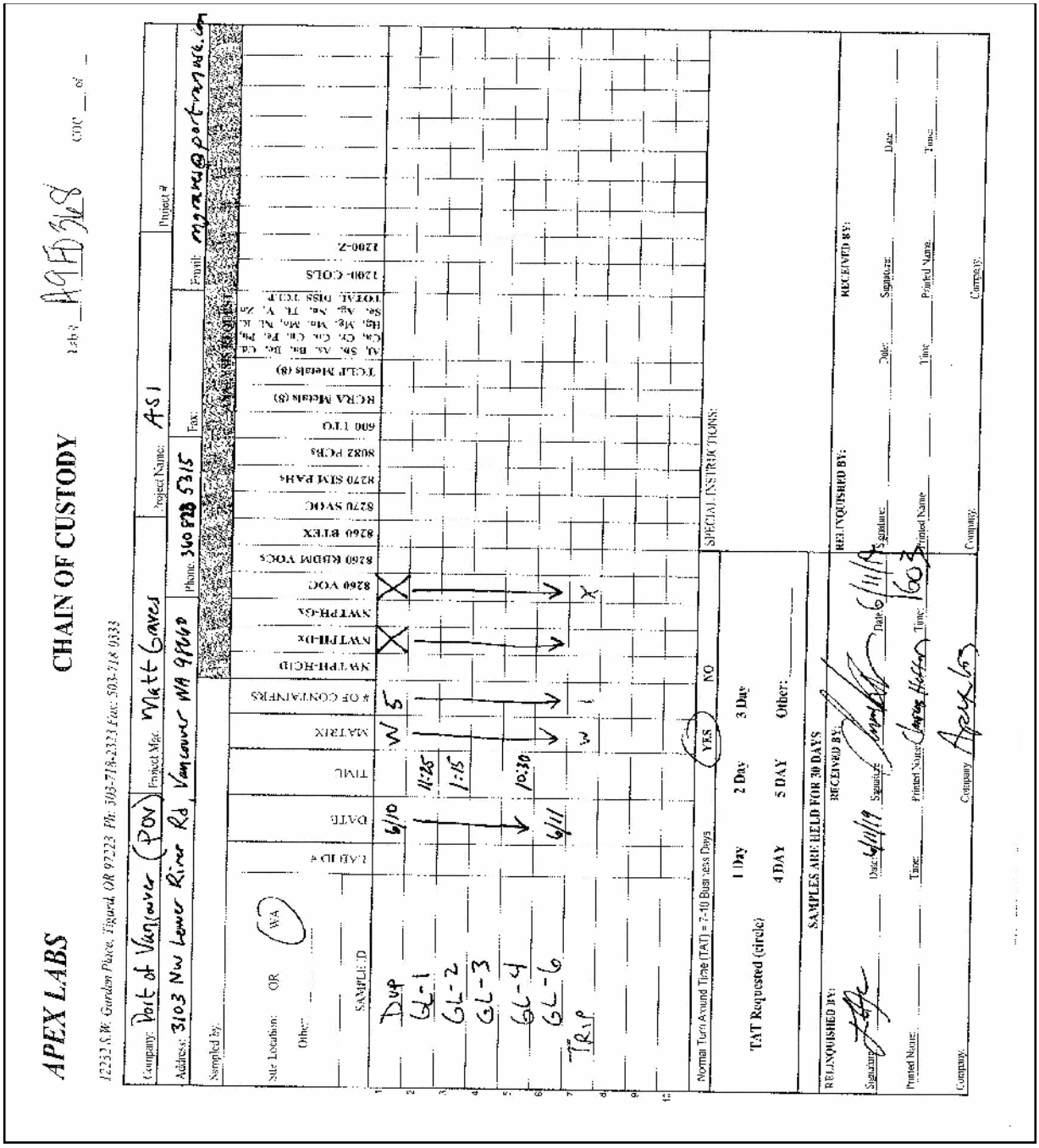
Darrell Auvil, Project Manager

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.

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Port of Vancouver	Project: **ASI**	
3103 NW Lower River Road	Project Number: **[none]**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Matt Graves**	**A9F0368 - 06 21 19 1005**



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.

Darrell Auvil, Project Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Port of Vancouver	Project: **ASI**	
3103 NW Lower River Road	Project Number: **[none]**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Matt Graves**	**A9F0368 - 06 21 19 1005**

APEX LABS COOLER RECEIPT FORM

Client: Port of Vancouver Element WO#: A9E0368

Project/Project #: ASI

Delivery Info:

Date/time received: 6/11/19 @ 1603 By: CFH

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

Cooler Inspection Date/time inspected: 6/11/19 @ 1810 By: CFH

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)	4.9						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	N						
Ice type: (Gel/Real/Other)	Gel						
Condition:	Good						

Cooler out of temp? (Y/(N)) Possible reason why:

If some coolers are in temp and some out, were green dots applied to out of temperature samples? Yes/No/(NA)

Out of temperature samples form initiated? Yes/No/(NA)

Samples Inspection: Date/time inspected: 6/12/19 @ 915 By: JS

All samples intact? Yes X No Comments:

Bottle labels/COCs agree? Yes X No Comments: No T on COC for DUP Sample Ton Cont. reads 1305, No T on COC for GL-3 Sample Ton Cont. reads

COC/container discrepancies form initiated? Yes No NA X

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

Do VOA vials have visible headspace? Yes No X NA

Comments

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

Comments:

Additional information: 440. No T on COC/Cont. for GL-6.

Labeled by: JS Witness: Cooler Inspected by: See Project Contact Form: Y

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Monday, December 23, 2019

Nicky Moody
AECOM
111 SW Columbia St. Ste. 1500
Portland, OR 97201

RE: A9L0182 - POV ASI - 60519969

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 A9L0182, which was received by the laboratory on 12/6/2019 at 8:46:00AM.

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

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

Cooler Receipt Information

(See Cooler Receipt Form for details)

Cooler #1	4.3 degC	Cooler #2	1.3 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

Darrell Auvil, Project Manager

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.

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AECOM	Project: **POV ASI**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A9L0182 - 12 23 19 1609**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GL-1	A9L0182-01	Water	12/05/19 13:30	12/06/19 08:46
GL-2	A9L0182-02	Water	12/05/19 15:15	12/06/19 08:46
GL-2-DUP	A9L0182-03	Water	12/05/19 15:20	12/06/19 08:46
GL-3	A9L0182-04	Water	12/05/19 12:20	12/06/19 08:46
GL-4	A9L0182-05	Water	12/05/19 10:55	12/06/19 08:46
GL-6	A9L0182-06	Water	12/05/19 09:30	12/06/19 08:46
Field Blank	A9L0182-07	Water	12/05/19 16:00	12/06/19 08:46
Trip Blank	A9L0182-08	Water	12/05/19 00:00	12/06/19 08:46

Apex Laboratories

Darrell Auvil, Project Manager

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.

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AECOM	Project: **POV ASI**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A9L0182 - 12 23 19 1609**

ANALYTICAL SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GL-1 (A9L0182-01)				**Matrix: Water**		**Batch: 9120818**		
Diesel	**0.475**	0.0377	0.0755	mg/L	1	12/12/19 23:00	NWTPH-Dx	
Oil	ND	0.0755	0.151	mg/L	1	12/12/19 23:00	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 79 %*		*Limits: 50-150 %*	*1*	*12/12/19 23:00*	*NWTPH-Dx*	
GL-2 (A9L0182-02)				**Matrix: Water**		**Batch: 9120818**		
Diesel	**0.647**	0.0377	0.0755	mg/L	1	12/12/19 23:23	NWTPH-Dx	**F-11**
Oil	ND	0.0755	0.151	mg/L	1	12/12/19 23:23	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 79 %*		*Limits: 50-150 %*	*1*	*12/12/19 23:23*	*NWTPH-Dx*	
GL-2-DUP (A9L0182-03)				**Matrix: Water**		**Batch: 9120818**		
Diesel	**0.715**	0.0392	0.0784	mg/L	1	12/12/19 23:46	NWTPH-Dx	**F-11**
Oil	ND	0.0784	0.157	mg/L	1	12/12/19 23:46	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 85 %*		*Limits: 50-150 %*	*1*	*12/12/19 23:46*	*NWTPH-Dx*	
GL-3 (A9L0182-04)				**Matrix: Water**		**Batch: 9120818**		
Diesel	**0.120**	0.0396	0.0792	mg/L	1	12/13/19 00:08	NWTPH-Dx	**F-11**
Oil	ND	0.0792	0.158	mg/L	1	12/13/19 00:08	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 83 %*		*Limits: 50-150 %*	*1*	*12/13/19 00:08*	*NWTPH-Dx*	
GL-4 (A9L0182-05)				**Matrix: Water**		**Batch: 9120818**		
Diesel	**0.0629**	0.0392	0.0784	mg/L	1	12/13/19 00:31	NWTPH-Dx	**J**
Oil	ND	0.0784	0.157	mg/L	1	12/13/19 00:31	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 77 %*		*Limits: 50-150 %*	*1*	*12/13/19 00:31*	*NWTPH-Dx*	
GL-6 (A9L0182-06)				**Matrix: Water**		**Batch: 9120716**		
Diesel	ND	0.0385	0.0769	mg/L	1	12/11/19 00:39	NWTPH-Dx	
Oil	ND	0.0769	0.154	mg/L	1	12/11/19 00:39	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 88 %*		*Limits: 50-150 %*	*1*	*12/11/19 00:39*	*NWTPH-Dx*	

Apex Laboratories

Darrell Auvil, Project Manager

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.

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AECOM	Project: **POV ASI**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A9L0182 - 12 23 19 1609**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GL-1 (A9L0182-01)				**Matrix: Water**		**Batch: 9120635**		
Acetone	ND	10.0	20.0	ug/L	1	12/07/19 20:13	EPA 8260C	
Acrylonitrile	ND	1.00	2.00	ug/L	1	12/07/19 20:13	EPA 8260C	
Benzene	ND	0.100	0.200	ug/L	1	12/07/19 20:13	EPA 8260C	
Bromobenzene	ND	0.250	0.500	ug/L	1	12/07/19 20:13	EPA 8260C	
Bromochloromethane	ND	0.500	1.00	ug/L	1	12/07/19 20:13	EPA 8260C	
Bromodichloromethane	ND	0.500	1.00	ug/L	1	12/07/19 20:13	EPA 8260C	
Bromoform	ND	0.500	1.00	ug/L	1	12/07/19 20:13	EPA 8260C	
Bromomethane	ND	5.00	5.00	ug/L	1	12/07/19 20:13	EPA 8260C	
2-Butanone (MEK)	ND	5.00	10.0	ug/L	1	12/07/19 20:13	EPA 8260C	
n-Butylbenzene	ND	0.500	1.00	ug/L	1	12/07/19 20:13	EPA 8260C	
sec-Butylbenzene	**0.610**	0.500	1.00	ug/L	1	12/07/19 20:13	EPA 8260C	**J**
tert-Butylbenzene	ND	0.500	1.00	ug/L	1	12/07/19 20:13	EPA 8260C	
Carbon disulfide	ND	5.00	10.0	ug/L	1	12/07/19 20:13	EPA 8260C	
Carbon tetrachloride	ND	0.500	1.00	ug/L	1	12/07/19 20:13	EPA 8260C	
Chlorobenzene	ND	0.250	0.500	ug/L	1	12/07/19 20:13	EPA 8260C	
Chloroethane	ND	5.00	5.00	ug/L	1	12/07/19 20:13	EPA 8260C	
Chloroform	ND	0.500	1.00	ug/L	1	12/07/19 20:13	EPA 8260C	
Chloromethane	ND	2.50	5.00	ug/L	1	12/07/19 20:13	EPA 8260C	
2-Chlorotoluene	ND	0.500	1.00	ug/L	1	12/07/19 20:13	EPA 8260C	
4-Chlorotoluene	ND	0.500	1.00	ug/L	1	12/07/19 20:13	EPA 8260C	
Dibromochloromethane	ND	0.500	1.00	ug/L	1	12/07/19 20:13	EPA 8260C	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1	12/07/19 20:13	EPA 8260C	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1	12/07/19 20:13	EPA 8260C	
Dibromomethane	ND	0.500	1.00	ug/L	1	12/07/19 20:13	EPA 8260C	
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1	12/07/19 20:13	EPA 8260C	
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1	12/07/19 20:13	EPA 8260C	
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1	12/07/19 20:13	EPA 8260C	
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1	12/07/19 20:13	EPA 8260C	
1,1-Dichloroethane	ND	0.200	0.400	ug/L	1	12/07/19 20:13	EPA 8260C	
1,2-Dichloroethane (EDC)	ND	0.200	0.400	ug/L	1	12/07/19 20:13	EPA 8260C	
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1	12/07/19 20:13	EPA 8260C	
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	12/07/19 20:13	EPA 8260C	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	12/07/19 20:13	EPA 8260C	
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1	12/07/19 20:13	EPA 8260C	
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1	12/07/19 20:13	EPA 8260C	
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1	12/07/19 20:13	EPA 8260C	
1,1-Dichloropropene	ND	0.500	1.00	ug/L	1	12/07/19 20:13	EPA 8260C	
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	12/07/19 20:13	EPA 8260C	
trans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	12/07/19 20:13	EPA 8260C	

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.

Darrell Auvil, Project Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AECOM	Project: **POV ASI**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A9L0182 - 12 23 19 1609**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GL-1 (A9L0182-01)				**Matrix: Water**		**Batch: 9120635**		
Ethylbenzene	ND	0.250	0.500	ug/L	1	12/07/19 20:13	EPA 8260C	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	12/07/19 20:13	EPA 8260C	
2-Hexanone	ND	5.00	10.0	ug/L	1	12/07/19 20:13	EPA 8260C	
Isopropylbenzene	**1.88**	0.500	1.00	ug/L	1	12/07/19 20:13	EPA 8260C	
4-Isopropyltoluene	ND	0.500	1.00	ug/L	1	12/07/19 20:13	EPA 8260C	
Methylene chloride	ND	2.50	5.00	ug/L	1	12/07/19 20:13	EPA 8260C	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	ug/L	1	12/07/19 20:13	EPA 8260C	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1	12/07/19 20:13	EPA 8260C	
Naphthalene	ND	2.00	2.00	ug/L	1	12/07/19 20:13	EPA 8260C	
n-Propylbenzene	**1.18**	0.250	0.500	ug/L	1	12/07/19 20:13	EPA 8260C	
Styrene	ND	0.500	1.00	ug/L	1	12/07/19 20:13	EPA 8260C	
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	ug/L	1	12/07/19 20:13	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	12/07/19 20:13	EPA 8260C	
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	12/07/19 20:13	EPA 8260C	
Toluene	ND	0.500	1.00	ug/L	1	12/07/19 20:13	EPA 8260C	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	12/07/19 20:13	EPA 8260C	
1,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1	12/07/19 20:13	EPA 8260C	
1,1,1-Trichloroethane	ND	0.200	0.400	ug/L	1	12/07/19 20:13	EPA 8260C	
1,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1	12/07/19 20:13	EPA 8260C	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	12/07/19 20:13	EPA 8260C	
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1	12/07/19 20:13	EPA 8260C	
1,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1	12/07/19 20:13	EPA 8260C	
1,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1	12/07/19 20:13	EPA 8260C	
1,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1	12/07/19 20:13	EPA 8260C	
Vinyl chloride	ND	0.200	0.400	ug/L	1	12/07/19 20:13	EPA 8260C	
m,p-Xylene	ND	0.500	1.00	ug/L	1	12/07/19 20:13	EPA 8260C	
o-Xylene	ND	0.250	0.500	ug/L	1	12/07/19 20:13	EPA 8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*112 %*	*Limits:*	*80-120 %*	*1*	*12/07/19 20:13*	*EPA 8260C*	
Toluene-d8 (Surr)			*100 %*		*80-120 %*	*1*	*12/07/19 20:13*	*EPA 8260C*	
4-Bromofluorobenzene (Surr)			*98 %*		*80-120 %*	*1*	*12/07/19 20:13*	*EPA 8260C*	
GL-2 (A9L0182-02)				**Matrix: Water**		**Batch: 9120635**		
Acetone	ND	10.0	20.0	ug/L	1	12/07/19 20:40	EPA 8260C	
Acrylonitrile	ND	1.00	2.00	ug/L	1	12/07/19 20:40	EPA 8260C	
Benzene	ND	0.100	0.200	ug/L	1	12/07/19 20:40	EPA 8260C	
Bromobenzene	ND	0.250	0.500	ug/L	1	12/07/19 20:40	EPA 8260C	
Bromochloromethane	ND	0.500	1.00	ug/L	1	12/07/19 20:40	EPA 8260C	
Bromodichloromethane	ND	0.500	1.00	ug/L	1	12/07/19 20:40	EPA 8260C	

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.

Darrell Auvil, Project Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AECOM	Project: **POV ASI**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A9L0182 - 12 23 19 1609**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GL-2 (A9L0182-02)				**Matrix: Water**		**Batch: 9120635**		
Bromoform	ND	0.500	1.00	ug/L	1	12/07/19 20:40	EPA 8260C	
Bromomethane	ND	5.00	5.00	ug/L	1	12/07/19 20:40	EPA 8260C	
2-Butanone (MEK)	ND	5.00	10.0	ug/L	1	12/07/19 20:40	EPA 8260C	
n-Butylbenzene	ND	0.500	1.00	ug/L	1	12/07/19 20:40	EPA 8260C	
sec-Butylbenzene	ND	0.500	1.00	ug/L	1	12/07/19 20:40	EPA 8260C	
tert-Butylbenzene	ND	0.500	1.00	ug/L	1	12/07/19 20:40	EPA 8260C	
Carbon disulfide	ND	5.00	10.0	ug/L	1	12/07/19 20:40	EPA 8260C	
Carbon tetrachloride	ND	0.500	1.00	ug/L	1	12/07/19 20:40	EPA 8260C	
Chlorobenzene	ND	0.250	0.500	ug/L	1	12/07/19 20:40	EPA 8260C	
Chloroethane	ND	5.00	5.00	ug/L	1	12/07/19 20:40	EPA 8260C	
Chloroform	ND	0.500	1.00	ug/L	1	12/07/19 20:40	EPA 8260C	
Chloromethane	ND	2.50	5.00	ug/L	1	12/07/19 20:40	EPA 8260C	
2-Chlorotoluene	ND	0.500	1.00	ug/L	1	12/07/19 20:40	EPA 8260C	
4-Chlorotoluene	ND	0.500	1.00	ug/L	1	12/07/19 20:40	EPA 8260C	
Dibromochloromethane	ND	0.500	1.00	ug/L	1	12/07/19 20:40	EPA 8260C	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1	12/07/19 20:40	EPA 8260C	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1	12/07/19 20:40	EPA 8260C	
Dibromomethane	ND	0.500	1.00	ug/L	1	12/07/19 20:40	EPA 8260C	
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1	12/07/19 20:40	EPA 8260C	
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1	12/07/19 20:40	EPA 8260C	
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1	12/07/19 20:40	EPA 8260C	
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1	12/07/19 20:40	EPA 8260C	
1,1-Dichloroethane	ND	0.200	0.400	ug/L	1	12/07/19 20:40	EPA 8260C	
1,2-Dichloroethane (EDC)	ND	0.200	0.400	ug/L	1	12/07/19 20:40	EPA 8260C	
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1	12/07/19 20:40	EPA 8260C	
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	12/07/19 20:40	EPA 8260C	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	12/07/19 20:40	EPA 8260C	
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1	12/07/19 20:40	EPA 8260C	
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1	12/07/19 20:40	EPA 8260C	
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1	12/07/19 20:40	EPA 8260C	
1,1-Dichloropropene	ND	0.500	1.00	ug/L	1	12/07/19 20:40	EPA 8260C	
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	12/07/19 20:40	EPA 8260C	
trans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	12/07/19 20:40	EPA 8260C	
Ethylbenzene	ND	0.250	0.500	ug/L	1	12/07/19 20:40	EPA 8260C	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	12/07/19 20:40	EPA 8260C	
2-Hexanone	ND	5.00	10.0	ug/L	1	12/07/19 20:40	EPA 8260C	
Isopropylbenzene	ND	0.500	1.00	ug/L	1	12/07/19 20:40	EPA 8260C	
4-Isopropyltoluene	ND	0.500	1.00	ug/L	1	12/07/19 20:40	EPA 8260C	
Methylene chloride	ND	2.50	5.00	ug/L	1	12/07/19 20:40	EPA 8260C	

Apex Laboratories

Darrell Auvil, Project Manager

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.

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AECOM	Project: **POV ASI**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A9L0182 - 12 23 19 1609**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GL-2 (A9L0182-02)				**Matrix: Water**		**Batch: 9120635**		
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	ug/L	1	12/07/19 20:40	EPA 8260C	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1	12/07/19 20:40	EPA 8260C	
Naphthalene	ND	2.00	2.00	ug/L	1	12/07/19 20:40	EPA 8260C	
n-Propylbenzene	ND	0.250	0.500	ug/L	1	12/07/19 20:40	EPA 8260C	
Styrene	ND	0.500	1.00	ug/L	1	12/07/19 20:40	EPA 8260C	
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	ug/L	1	12/07/19 20:40	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	12/07/19 20:40	EPA 8260C	
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	12/07/19 20:40	EPA 8260C	
Toluene	ND	0.500	1.00	ug/L	1	12/07/19 20:40	EPA 8260C	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	12/07/19 20:40	EPA 8260C	
1,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1	12/07/19 20:40	EPA 8260C	
1,1,1-Trichloroethane	ND	0.200	0.400	ug/L	1	12/07/19 20:40	EPA 8260C	
1,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1	12/07/19 20:40	EPA 8260C	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	12/07/19 20:40	EPA 8260C	
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1	12/07/19 20:40	EPA 8260C	
1,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1	12/07/19 20:40	EPA 8260C	
1,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1	12/07/19 20:40	EPA 8260C	
1,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1	12/07/19 20:40	EPA 8260C	
Vinyl chloride	ND	0.200	0.400	ug/L	1	12/07/19 20:40	EPA 8260C	
m,p-Xylene	ND	0.500	1.00	ug/L	1	12/07/19 20:40	EPA 8260C	
o-Xylene	ND	0.250	0.500	ug/L	1	12/07/19 20:40	EPA 8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*114 %*	*Limits: 80-120 %*	*1*	*12/07/19 20:40*	*EPA 8260C*	
Toluene-d8 (Surr)			*100 %*	*80-120 %*	*1*	*12/07/19 20:40*	*EPA 8260C*	
4-Bromofluorobenzene (Surr)			*99 %*	*80-120 %*	*1*	*12/07/19 20:40*	*EPA 8260C*	
GL-2-DUP (A9L0182-03)				**Matrix: Water**		**Batch: 9120635**		
Acetone	ND	10.0	20.0	ug/L	1	12/07/19 21:07	EPA 8260C	
Acrylonitrile	ND	1.00	2.00	ug/L	1	12/07/19 21:07	EPA 8260C	
Benzene	ND	0.100	0.200	ug/L	1	12/07/19 21:07	EPA 8260C	
Bromobenzene	ND	0.250	0.500	ug/L	1	12/07/19 21:07	EPA 8260C	
Bromochloromethane	ND	0.500	1.00	ug/L	1	12/07/19 21:07	EPA 8260C	
Bromodichloromethane	ND	0.500	1.00	ug/L	1	12/07/19 21:07	EPA 8260C	
Bromoform	ND	0.500	1.00	ug/L	1	12/07/19 21:07	EPA 8260C	
Bromomethane	ND	5.00	5.00	ug/L	1	12/07/19 21:07	EPA 8260C	
2-Butanone (MEK)	ND	5.00	10.0	ug/L	1	12/07/19 21:07	EPA 8260C	
n-Butylbenzene	ND	0.500	1.00	ug/L	1	12/07/19 21:07	EPA 8260C	
sec-Butylbenzene	ND	0.500	1.00	ug/L	1	12/07/19 21:07	EPA 8260C	
tert-Butylbenzene	ND	0.500	1.00	ug/L	1	12/07/19 21:07	EPA 8260C	

Apex Laboratories

Darrell Auvil, Project Manager

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.

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AECOM	Project: **POV ASI**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A9L0182 - 12 23 19 1609**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GL-2-DUP (A9L0182-03)				**Matrix: Water**		**Batch: 9120635**		
Carbon disulfide	ND	5.00	10.0	ug/L	1	12/07/19 21:07	EPA 8260C	
Carbon tetrachloride	ND	0.500	1.00	ug/L	1	12/07/19 21:07	EPA 8260C	
Chlorobenzene	ND	0.250	0.500	ug/L	1	12/07/19 21:07	EPA 8260C	
Chloroethane	ND	5.00	5.00	ug/L	1	12/07/19 21:07	EPA 8260C	
Chloroform	ND	0.500	1.00	ug/L	1	12/07/19 21:07	EPA 8260C	
Chloromethane	ND	2.50	5.00	ug/L	1	12/07/19 21:07	EPA 8260C	
2-Chlorotoluene	ND	0.500	1.00	ug/L	1	12/07/19 21:07	EPA 8260C	
4-Chlorotoluene	ND	0.500	1.00	ug/L	1	12/07/19 21:07	EPA 8260C	
Dibromochloromethane	ND	0.500	1.00	ug/L	1	12/07/19 21:07	EPA 8260C	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1	12/07/19 21:07	EPA 8260C	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1	12/07/19 21:07	EPA 8260C	
Dibromomethane	ND	0.500	1.00	ug/L	1	12/07/19 21:07	EPA 8260C	
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1	12/07/19 21:07	EPA 8260C	
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1	12/07/19 21:07	EPA 8260C	
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1	12/07/19 21:07	EPA 8260C	
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1	12/07/19 21:07	EPA 8260C	
1,1-Dichloroethane	ND	0.200	0.400	ug/L	1	12/07/19 21:07	EPA 8260C	
1,2-Dichloroethane (EDC)	ND	0.200	0.400	ug/L	1	12/07/19 21:07	EPA 8260C	
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1	12/07/19 21:07	EPA 8260C	
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	12/07/19 21:07	EPA 8260C	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	12/07/19 21:07	EPA 8260C	
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1	12/07/19 21:07	EPA 8260C	
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1	12/07/19 21:07	EPA 8260C	
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1	12/07/19 21:07	EPA 8260C	
1,1-Dichloropropene	ND	0.500	1.00	ug/L	1	12/07/19 21:07	EPA 8260C	
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	12/07/19 21:07	EPA 8260C	
trans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	12/07/19 21:07	EPA 8260C	
Ethylbenzene	ND	0.250	0.500	ug/L	1	12/07/19 21:07	EPA 8260C	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	12/07/19 21:07	EPA 8260C	
2-Hexanone	ND	5.00	10.0	ug/L	1	12/07/19 21:07	EPA 8260C	
Isopropylbenzene	ND	0.500	1.00	ug/L	1	12/07/19 21:07	EPA 8260C	
4-Isopropyltoluene	ND	0.500	1.00	ug/L	1	12/07/19 21:07	EPA 8260C	
Methylene chloride	ND	2.50	5.00	ug/L	1	12/07/19 21:07	EPA 8260C	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	ug/L	1	12/07/19 21:07	EPA 8260C	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1	12/07/19 21:07	EPA 8260C	
Naphthalene	ND	2.00	2.00	ug/L	1	12/07/19 21:07	EPA 8260C	
n-Propylbenzene	ND	0.250	0.500	ug/L	1	12/07/19 21:07	EPA 8260C	
Styrene	ND	0.500	1.00	ug/L	1	12/07/19 21:07	EPA 8260C	
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	ug/L	1	12/07/19 21:07	EPA 8260C	

Apex Laboratories

Darrell Auvil, Project Manager

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.

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AECOM	Project: **POV ASI**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A9L0182 - 12 23 19 1609**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GL-2-DUP (A9L0182-03)				**Matrix: Water**		**Batch: 9120635**		
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	12/07/19 21:07	EPA 8260C	
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	12/07/19 21:07	EPA 8260C	
Toluene	ND	0.500	1.00	ug/L	1	12/07/19 21:07	EPA 8260C	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	12/07/19 21:07	EPA 8260C	
1,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1	12/07/19 21:07	EPA 8260C	
1,1,1-Trichloroethane	ND	0.200	0.400	ug/L	1	12/07/19 21:07	EPA 8260C	
1,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1	12/07/19 21:07	EPA 8260C	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	12/07/19 21:07	EPA 8260C	
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1	12/07/19 21:07	EPA 8260C	
1,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1	12/07/19 21:07	EPA 8260C	
1,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1	12/07/19 21:07	EPA 8260C	
1,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1	12/07/19 21:07	EPA 8260C	
Vinyl chloride	ND	0.200	0.400	ug/L	1	12/07/19 21:07	EPA 8260C	
m,p-Xylene	ND	0.500	1.00	ug/L	1	12/07/19 21:07	EPA 8260C	
o-Xylene	ND	0.250	0.500	ug/L	1	12/07/19 21:07	EPA 8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*115 %*	*Limits: 80-120 %*	*1*	*12/07/19 21:07*	*EPA 8260C*	
Toluene-d8 (Surr)			*101 %*	*80-120 %*	*1*	*12/07/19 21:07*	*EPA 8260C*	
4-Bromofluorobenzene (Surr)			*99 %*	*80-120 %*	*1*	*12/07/19 21:07*	*EPA 8260C*	
GL-3 (A9L0182-04)				**Matrix: Water**		**Batch: 9120635**		
Acetone	ND	10.0	20.0	ug/L	1	12/07/19 21:34	EPA 8260C	
Acrylonitrile	ND	1.00	2.00	ug/L	1	12/07/19 21:34	EPA 8260C	
Benzene	ND	0.100	0.200	ug/L	1	12/07/19 21:34	EPA 8260C	
Bromobenzene	ND	0.250	0.500	ug/L	1	12/07/19 21:34	EPA 8260C	
Bromochloromethane	ND	0.500	1.00	ug/L	1	12/07/19 21:34	EPA 8260C	
Bromodichloromethane	ND	0.500	1.00	ug/L	1	12/07/19 21:34	EPA 8260C	
Bromoform	ND	0.500	1.00	ug/L	1	12/07/19 21:34	EPA 8260C	
Bromomethane	ND	5.00	5.00	ug/L	1	12/07/19 21:34	EPA 8260C	
2-Butanone (MEK)	ND	5.00	10.0	ug/L	1	12/07/19 21:34	EPA 8260C	
n-Butylbenzene	ND	0.500	1.00	ug/L	1	12/07/19 21:34	EPA 8260C	
sec-Butylbenzene	ND	0.500	1.00	ug/L	1	12/07/19 21:34	EPA 8260C	
tert-Butylbenzene	ND	0.500	1.00	ug/L	1	12/07/19 21:34	EPA 8260C	
Carbon disulfide	ND	5.00	10.0	ug/L	1	12/07/19 21:34	EPA 8260C	
Carbon tetrachloride	ND	0.500	1.00	ug/L	1	12/07/19 21:34	EPA 8260C	
Chlorobenzene	ND	0.250	0.500	ug/L	1	12/07/19 21:34	EPA 8260C	
Chloroethane	ND	5.00	5.00	ug/L	1	12/07/19 21:34	EPA 8260C	
Chloroform	ND	0.500	1.00	ug/L	1	12/07/19 21:34	EPA 8260C	
Chloromethane	ND	2.50	5.00	ug/L	1	12/07/19 21:34	EPA 8260C	

Apex Laboratories

Darrell Auvil, Project Manager

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.

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AECOM	Project: **POV ASI**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A9L0182 - 12 23 19 1609**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GL-3 (A9L0182-04)				**Matrix: Water**		**Batch: 9120635**		
2-Chlorotoluene	ND	0.500	1.00	ug/L	1	12/07/19 21:34	EPA 8260C	
4-Chlorotoluene	ND	0.500	1.00	ug/L	1	12/07/19 21:34	EPA 8260C	
Dibromochloromethane	ND	0.500	1.00	ug/L	1	12/07/19 21:34	EPA 8260C	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1	12/07/19 21:34	EPA 8260C	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1	12/07/19 21:34	EPA 8260C	
Dibromomethane	ND	0.500	1.00	ug/L	1	12/07/19 21:34	EPA 8260C	
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1	12/07/19 21:34	EPA 8260C	
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1	12/07/19 21:34	EPA 8260C	
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1	12/07/19 21:34	EPA 8260C	
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1	12/07/19 21:34	EPA 8260C	
1,1-Dichloroethane	ND	0.200	0.400	ug/L	1	12/07/19 21:34	EPA 8260C	
1,2-Dichloroethane (EDC)	ND	0.200	0.400	ug/L	1	12/07/19 21:34	EPA 8260C	
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1	12/07/19 21:34	EPA 8260C	
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	12/07/19 21:34	EPA 8260C	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	12/07/19 21:34	EPA 8260C	
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1	12/07/19 21:34	EPA 8260C	
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1	12/07/19 21:34	EPA 8260C	
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1	12/07/19 21:34	EPA 8260C	
1,1-Dichloropropene	ND	0.500	1.00	ug/L	1	12/07/19 21:34	EPA 8260C	
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	12/07/19 21:34	EPA 8260C	
trans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	12/07/19 21:34	EPA 8260C	
Ethylbenzene	ND	0.250	0.500	ug/L	1	12/07/19 21:34	EPA 8260C	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	12/07/19 21:34	EPA 8260C	
2-Hexanone	ND	5.00	10.0	ug/L	1	12/07/19 21:34	EPA 8260C	
Isopropylbenzene	ND	0.500	1.00	ug/L	1	12/07/19 21:34	EPA 8260C	
4-Isopropyltoluene	ND	0.500	1.00	ug/L	1	12/07/19 21:34	EPA 8260C	
Methylene chloride	ND	2.50	5.00	ug/L	1	12/07/19 21:34	EPA 8260C	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	ug/L	1	12/07/19 21:34	EPA 8260C	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1	12/07/19 21:34	EPA 8260C	
Naphthalene	ND	2.00	2.00	ug/L	1	12/07/19 21:34	EPA 8260C	
n-Propylbenzene	ND	0.250	0.500	ug/L	1	12/07/19 21:34	EPA 8260C	
Styrene	ND	0.500	1.00	ug/L	1	12/07/19 21:34	EPA 8260C	
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	ug/L	1	12/07/19 21:34	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	12/07/19 21:34	EPA 8260C	
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	12/07/19 21:34	EPA 8260C	
Toluene	ND	0.500	1.00	ug/L	1	12/07/19 21:34	EPA 8260C	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	12/07/19 21:34	EPA 8260C	
1,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1	12/07/19 21:34	EPA 8260C	
1,1,1-Trichloroethane	ND	0.200	0.400	ug/L	1	12/07/19 21:34	EPA 8260C	

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.

Darrell Auvil, Project Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AECOM	Project: **POV ASI**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A9L0182 - 12 23 19 1609**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GL-3 (A9L0182-04)				**Matrix: Water**		**Batch: 9120635**		
1,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1	12/07/19 21:34	EPA 8260C	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	12/07/19 21:34	EPA 8260C	
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1	12/07/19 21:34	EPA 8260C	
1,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1	12/07/19 21:34	EPA 8260C	
1,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1	12/07/19 21:34	EPA 8260C	
1,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1	12/07/19 21:34	EPA 8260C	
Vinyl chloride	ND	0.200	0.400	ug/L	1	12/07/19 21:34	EPA 8260C	
m,p-Xylene	ND	0.500	1.00	ug/L	1	12/07/19 21:34	EPA 8260C	
o-Xylene	ND	0.250	0.500	ug/L	1	12/07/19 21:34	EPA 8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*115 %*	*Limits: 80-120 %*	*1*	*12/07/19 21:34*	*EPA 8260C*	
Toluene-d8 (Surr)			*100 %*	*80-120 %*	*1*	*12/07/19 21:34*	*EPA 8260C*	
4-Bromofluorobenzene (Surr)			*98 %*	*80-120 %*	*1*	*12/07/19 21:34*	*EPA 8260C*	
GL-4 (A9L0182-05)				**Matrix: Water**		**Batch: 9120654**		
Acetone	ND	20.0	20.0	ug/L	1	12/09/19 20:32	EPA 8260C	
Acrylonitrile	ND	1.00	2.00	ug/L	1	12/09/19 20:32	EPA 8260C	
Benzene	ND	0.100	0.200	ug/L	1	12/09/19 20:32	EPA 8260C	
Bromobenzene	ND	0.250	0.500	ug/L	1	12/09/19 20:32	EPA 8260C	
Bromochloromethane	ND	0.500	1.00	ug/L	1	12/09/19 20:32	EPA 8260C	
Bromodichloromethane	ND	0.500	1.00	ug/L	1	12/09/19 20:32	EPA 8260C	
Bromoform	ND	0.500	1.00	ug/L	1	12/09/19 20:32	EPA 8260C	
Bromomethane	ND	5.00	5.00	ug/L	1	12/09/19 20:32	EPA 8260C	
2-Butanone (MEK)	ND	5.00	10.0	ug/L	1	12/09/19 20:32	EPA 8260C	
n-Butylbenzene	ND	0.500	1.00	ug/L	1	12/09/19 20:32	EPA 8260C	
sec-Butylbenzene	ND	0.500	1.00	ug/L	1	12/09/19 20:32	EPA 8260C	
tert-Butylbenzene	ND	0.500	1.00	ug/L	1	12/09/19 20:32	EPA 8260C	
Carbon disulfide	ND	5.00	10.0	ug/L	1	12/09/19 20:32	EPA 8260C	
Carbon tetrachloride	ND	0.500	1.00	ug/L	1	12/09/19 20:32	EPA 8260C	
Chlorobenzene	ND	0.250	0.500	ug/L	1	12/09/19 20:32	EPA 8260C	
Chloroethane	ND	5.00	5.00	ug/L	1	12/09/19 20:32	EPA 8260C	
Chloroform	ND	0.500	1.00	ug/L	1	12/09/19 20:32	EPA 8260C	
Chloromethane	ND	2.50	5.00	ug/L	1	12/09/19 20:32	EPA 8260C	
2-Chlorotoluene	ND	0.500	1.00	ug/L	1	12/09/19 20:32	EPA 8260C	
4-Chlorotoluene	ND	0.500	1.00	ug/L	1	12/09/19 20:32	EPA 8260C	
Dibromochloromethane	ND	0.500	1.00	ug/L	1	12/09/19 20:32	EPA 8260C	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1	12/09/19 20:32	EPA 8260C	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1	12/09/19 20:32	EPA 8260C	
Dibromomethane	ND	0.500	1.00	ug/L	1	12/09/19 20:32	EPA 8260C	

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.

Darrell Auvil, Project Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AECOM	Project: **POV ASI**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A9L0182 - 12 23 19 1609**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GL-4 (A9L0182-05)				**Matrix: Water**		**Batch: 9120654**		
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1	12/09/19 20:32	EPA 8260C	
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1	12/09/19 20:32	EPA 8260C	
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1	12/09/19 20:32	EPA 8260C	
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1	12/09/19 20:32	EPA 8260C	
1,1-Dichloroethane	ND	0.200	0.400	ug/L	1	12/09/19 20:32	EPA 8260C	
1,2-Dichloroethane (EDC)	ND	0.200	0.400	ug/L	1	12/09/19 20:32	EPA 8260C	
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1	12/09/19 20:32	EPA 8260C	
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	12/09/19 20:32	EPA 8260C	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	12/09/19 20:32	EPA 8260C	
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1	12/09/19 20:32	EPA 8260C	
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1	12/09/19 20:32	EPA 8260C	
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1	12/09/19 20:32	EPA 8260C	
1,1-Dichloropropene	ND	0.500	1.00	ug/L	1	12/09/19 20:32	EPA 8260C	
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	12/09/19 20:32	EPA 8260C	
trans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	12/09/19 20:32	EPA 8260C	
Ethylbenzene	ND	0.250	0.500	ug/L	1	12/09/19 20:32	EPA 8260C	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	12/09/19 20:32	EPA 8260C	
2-Hexanone	ND	10.0	10.0	ug/L	1	12/09/19 20:32	EPA 8260C	
Isopropylbenzene	ND	0.500	1.00	ug/L	1	12/09/19 20:32	EPA 8260C	
4-Isopropyltoluene	ND	0.500	1.00	ug/L	1	12/09/19 20:32	EPA 8260C	
Methylene chloride	ND	1.50	3.00	ug/L	1	12/09/19 20:32	EPA 8260C	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	ug/L	1	12/09/19 20:32	EPA 8260C	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1	12/09/19 20:32	EPA 8260C	
Naphthalene	ND	2.00	2.00	ug/L	1	12/09/19 20:32	EPA 8260C	
n-Propylbenzene	ND	0.250	0.500	ug/L	1	12/09/19 20:32	EPA 8260C	
Styrene	ND	0.500	1.00	ug/L	1	12/09/19 20:32	EPA 8260C	
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	ug/L	1	12/09/19 20:32	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	12/09/19 20:32	EPA 8260C	
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	12/09/19 20:32	EPA 8260C	
Toluene	ND	0.500	1.00	ug/L	1	12/09/19 20:32	EPA 8260C	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	12/09/19 20:32	EPA 8260C	
1,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1	12/09/19 20:32	EPA 8260C	
1,1,1-Trichloroethane	ND	0.200	0.400	ug/L	1	12/09/19 20:32	EPA 8260C	
1,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1	12/09/19 20:32	EPA 8260C	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	12/09/19 20:32	EPA 8260C	
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1	12/09/19 20:32	EPA 8260C	
1,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1	12/09/19 20:32	EPA 8260C	
1,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1	12/09/19 20:32	EPA 8260C	
1,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1	12/09/19 20:32	EPA 8260C	

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.

Darrell Auvil, Project Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AECOM	Project: **POV ASI**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A9L0182 - 12 23 19 1609**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GL-4 (A9L0182-05)				**Matrix: Water**		**Batch: 9120654**		
Vinyl chloride	ND	0.200	0.400	ug/L	1	12/09/19 20:32	EPA 8260C	
m,p-Xylene	ND	0.500	1.00	ug/L	1	12/09/19 20:32	EPA 8260C	
o-Xylene	ND	0.250	0.500	ug/L	1	12/09/19 20:32	EPA 8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*113 %*	*Limits: 80-120 %*	*1*	*12/09/19 20:32*	*EPA 8260C*	
Toluene-d8 (Surr)			*100 %*	*80-120 %*	*1*	*12/09/19 20:32*	*EPA 8260C*	
4-Bromofluorobenzene (Surr)			*98 %*	*80-120 %*	*1*	*12/09/19 20:32*	*EPA 8260C*	
GL-6 (A9L0182-06)				**Matrix: Water**		**Batch: 9120654**		
Acetone	ND	20.0	20.0	ug/L	1	12/09/19 20:59	EPA 8260C	
Acrylonitrile	ND	1.00	2.00	ug/L	1	12/09/19 20:59	EPA 8260C	
Benzene	ND	0.100	0.200	ug/L	1	12/09/19 20:59	EPA 8260C	
Bromobenzene	ND	0.250	0.500	ug/L	1	12/09/19 20:59	EPA 8260C	
Bromochloromethane	ND	0.500	1.00	ug/L	1	12/09/19 20:59	EPA 8260C	
Bromodichloromethane	ND	0.500	1.00	ug/L	1	12/09/19 20:59	EPA 8260C	
Bromoform	ND	0.500	1.00	ug/L	1	12/09/19 20:59	EPA 8260C	
Bromomethane	ND	5.00	5.00	ug/L	1	12/09/19 20:59	EPA 8260C	
2-Butanone (MEK)	ND	5.00	10.0	ug/L	1	12/09/19 20:59	EPA 8260C	
n-Butylbenzene	ND	0.500	1.00	ug/L	1	12/09/19 20:59	EPA 8260C	
sec-Butylbenzene	ND	0.500	1.00	ug/L	1	12/09/19 20:59	EPA 8260C	
tert-Butylbenzene	ND	0.500	1.00	ug/L	1	12/09/19 20:59	EPA 8260C	
Carbon disulfide	ND	5.00	10.0	ug/L	1	12/09/19 20:59	EPA 8260C	
Carbon tetrachloride	ND	0.500	1.00	ug/L	1	12/09/19 20:59	EPA 8260C	
Chlorobenzene	ND	0.250	0.500	ug/L	1	12/09/19 20:59	EPA 8260C	
Chloroethane	ND	5.00	5.00	ug/L	1	12/09/19 20:59	EPA 8260C	
Chloroform	ND	0.500	1.00	ug/L	1	12/09/19 20:59	EPA 8260C	
Chloromethane	ND	2.50	5.00	ug/L	1	12/09/19 20:59	EPA 8260C	
2-Chlorotoluene	ND	0.500	1.00	ug/L	1	12/09/19 20:59	EPA 8260C	
4-Chlorotoluene	ND	0.500	1.00	ug/L	1	12/09/19 20:59	EPA 8260C	
Dibromochloromethane	ND	0.500	1.00	ug/L	1	12/09/19 20:59	EPA 8260C	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1	12/09/19 20:59	EPA 8260C	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1	12/09/19 20:59	EPA 8260C	
Dibromomethane	ND	0.500	1.00	ug/L	1	12/09/19 20:59	EPA 8260C	
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1	12/09/19 20:59	EPA 8260C	
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1	12/09/19 20:59	EPA 8260C	
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1	12/09/19 20:59	EPA 8260C	
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1	12/09/19 20:59	EPA 8260C	
1,1-Dichloroethane	ND	0.200	0.400	ug/L	1	12/09/19 20:59	EPA 8260C	
1,2-Dichloroethane (EDC)	ND	0.200	0.400	ug/L	1	12/09/19 20:59	EPA 8260C	

Apex Laboratories

Darrell Auvil, Project Manager

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.

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AECOM	Project: **POV ASI**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A9L0182 - 12 23 19 1609**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GL-6 (A9L0182-06)				**Matrix: Water**		**Batch: 9120654**		
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1	12/09/19 20:59	EPA 8260C	
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	12/09/19 20:59	EPA 8260C	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	12/09/19 20:59	EPA 8260C	
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1	12/09/19 20:59	EPA 8260C	
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1	12/09/19 20:59	EPA 8260C	
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1	12/09/19 20:59	EPA 8260C	
1,1-Dichloropropene	ND	0.500	1.00	ug/L	1	12/09/19 20:59	EPA 8260C	
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	12/09/19 20:59	EPA 8260C	
trans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	12/09/19 20:59	EPA 8260C	
Ethylbenzene	ND	0.250	0.500	ug/L	1	12/09/19 20:59	EPA 8260C	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	12/09/19 20:59	EPA 8260C	
2-Hexanone	ND	10.0	10.0	ug/L	1	12/09/19 20:59	EPA 8260C	
Isopropylbenzene	ND	0.500	1.00	ug/L	1	12/09/19 20:59	EPA 8260C	
4-Isopropyltoluene	ND	0.500	1.00	ug/L	1	12/09/19 20:59	EPA 8260C	
Methylene chloride	ND	1.50	3.00	ug/L	1	12/09/19 20:59	EPA 8260C	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	ug/L	1	12/09/19 20:59	EPA 8260C	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1	12/09/19 20:59	EPA 8260C	
Naphthalene	ND	2.00	2.00	ug/L	1	12/09/19 20:59	EPA 8260C	
n-Propylbenzene	ND	0.250	0.500	ug/L	1	12/09/19 20:59	EPA 8260C	
Styrene	ND	0.500	1.00	ug/L	1	12/09/19 20:59	EPA 8260C	
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	ug/L	1	12/09/19 20:59	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	12/09/19 20:59	EPA 8260C	
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	12/09/19 20:59	EPA 8260C	
Toluene	ND	0.500	1.00	ug/L	1	12/09/19 20:59	EPA 8260C	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	12/09/19 20:59	EPA 8260C	
1,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1	12/09/19 20:59	EPA 8260C	
1,1,1-Trichloroethane	ND	0.200	0.400	ug/L	1	12/09/19 20:59	EPA 8260C	
1,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1	12/09/19 20:59	EPA 8260C	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	12/09/19 20:59	EPA 8260C	
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1	12/09/19 20:59	EPA 8260C	
1,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1	12/09/19 20:59	EPA 8260C	
1,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1	12/09/19 20:59	EPA 8260C	
1,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1	12/09/19 20:59	EPA 8260C	
Vinyl chloride	ND	0.200	0.400	ug/L	1	12/09/19 20:59	EPA 8260C	
m,p-Xylene	ND	0.500	1.00	ug/L	1	12/09/19 20:59	EPA 8260C	
o-Xylene	ND	0.250	0.500	ug/L	1	12/09/19 20:59	EPA 8260C	
Surrogate: 1,4-Difluorobenzene (Surr)			*Recovery: 113 %*	*Limits: 80-120 %*	*1*	*12/09/19 20:59*	*EPA 8260C*	
Toluene-d8 (Surr)			*100 %*	*80-120 %*	*1*	*12/09/19 20:59*	*EPA 8260C*	

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.

Darrell Auvil, Project Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AECOM	Project: **POV ASI**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A9L0182 - 12 23 19 1609**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GL-6 (A9L0182-06)				**Matrix: Water**		**Batch: 9120654**		
Surrogate: 4-Bromofluorobenzene (Surr)		*Recovery: 99 %*	*Limits: 80-120 %*		*1*	*12/09/19 20:59*	*EPA 8260C*	
Field Blank (A9L0182-07)				**Matrix: Water**		**Batch: 9120635**		
Acetone	ND	10.0	20.0	ug/L	1	12/07/19 11:44	EPA 8260C	
Acrylonitrile	ND	1.00	2.00	ug/L	1	12/07/19 11:44	EPA 8260C	
Benzene	ND	0.100	0.200	ug/L	1	12/07/19 11:44	EPA 8260C	
Bromobenzene	ND	0.250	0.500	ug/L	1	12/07/19 11:44	EPA 8260C	
Bromochloromethane	ND	0.500	1.00	ug/L	1	12/07/19 11:44	EPA 8260C	
Bromodichloromethane	ND	0.500	1.00	ug/L	1	12/07/19 11:44	EPA 8260C	
Bromoform	ND	0.500	1.00	ug/L	1	12/07/19 11:44	EPA 8260C	
Bromomethane	ND	5.00	5.00	ug/L	1	12/07/19 11:44	EPA 8260C	
2-Butanone (MEK)	ND	5.00	10.0	ug/L	1	12/07/19 11:44	EPA 8260C	
n-Butylbenzene	ND	0.500	1.00	ug/L	1	12/07/19 11:44	EPA 8260C	
sec-Butylbenzene	ND	0.500	1.00	ug/L	1	12/07/19 11:44	EPA 8260C	
tert-Butylbenzene	ND	0.500	1.00	ug/L	1	12/07/19 11:44	EPA 8260C	
Carbon disulfide	ND	5.00	10.0	ug/L	1	12/07/19 11:44	EPA 8260C	
Carbon tetrachloride	ND	0.500	1.00	ug/L	1	12/07/19 11:44	EPA 8260C	
Chlorobenzene	ND	0.250	0.500	ug/L	1	12/07/19 11:44	EPA 8260C	
Chloroethane	ND	5.00	5.00	ug/L	1	12/07/19 11:44	EPA 8260C	
Chloroform	ND	0.500	1.00	ug/L	1	12/07/19 11:44	EPA 8260C	
Chloromethane	ND	2.50	5.00	ug/L	1	12/07/19 11:44	EPA 8260C	
2-Chlorotoluene	ND	0.500	1.00	ug/L	1	12/07/19 11:44	EPA 8260C	
4-Chlorotoluene	ND	0.500	1.00	ug/L	1	12/07/19 11:44	EPA 8260C	
Dibromochloromethane	ND	0.500	1.00	ug/L	1	12/07/19 11:44	EPA 8260C	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1	12/07/19 11:44	EPA 8260C	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1	12/07/19 11:44	EPA 8260C	
Dibromomethane	ND	0.500	1.00	ug/L	1	12/07/19 11:44	EPA 8260C	
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1	12/07/19 11:44	EPA 8260C	
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1	12/07/19 11:44	EPA 8260C	
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1	12/07/19 11:44	EPA 8260C	
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1	12/07/19 11:44	EPA 8260C	
1,1-Dichloroethane	ND	0.200	0.400	ug/L	1	12/07/19 11:44	EPA 8260C	
1,2-Dichloroethane (EDC)	ND	0.200	0.400	ug/L	1	12/07/19 11:44	EPA 8260C	
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1	12/07/19 11:44	EPA 8260C	
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	12/07/19 11:44	EPA 8260C	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	12/07/19 11:44	EPA 8260C	
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1	12/07/19 11:44	EPA 8260C	
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1	12/07/19 11:44	EPA 8260C	
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1	12/07/19 11:44	EPA 8260C	

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.

Darrell Auvil, Project Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AECOM	Project: **POV ASI**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A9L0182 - 12 23 19 1609**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Field Blank (A9L0182-07)				**Matrix: Water**		**Batch: 9120635**		
1,1-Dichloropropene	ND	0.500	1.00	ug/L	1	12/07/19 11:44	EPA 8260C	
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	12/07/19 11:44	EPA 8260C	
trans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	12/07/19 11:44	EPA 8260C	
Ethylbenzene	ND	0.250	0.500	ug/L	1	12/07/19 11:44	EPA 8260C	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	12/07/19 11:44	EPA 8260C	
2-Hexanone	ND	5.00	10.0	ug/L	1	12/07/19 11:44	EPA 8260C	
Isopropylbenzene	ND	0.500	1.00	ug/L	1	12/07/19 11:44	EPA 8260C	
4-Isopropyltoluene	ND	0.500	1.00	ug/L	1	12/07/19 11:44	EPA 8260C	
Methylene chloride	ND	2.50	5.00	ug/L	1	12/07/19 11:44	EPA 8260C	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	ug/L	1	12/07/19 11:44	EPA 8260C	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1	12/07/19 11:44	EPA 8260C	
Naphthalene	ND	2.00	2.00	ug/L	1	12/07/19 11:44	EPA 8260C	
n-Propylbenzene	ND	0.250	0.500	ug/L	1	12/07/19 11:44	EPA 8260C	
Styrene	ND	0.500	1.00	ug/L	1	12/07/19 11:44	EPA 8260C	
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	ug/L	1	12/07/19 11:44	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	12/07/19 11:44	EPA 8260C	
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	12/07/19 11:44	EPA 8260C	
Toluene	ND	0.500	1.00	ug/L	1	12/07/19 11:44	EPA 8260C	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	12/07/19 11:44	EPA 8260C	
1,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1	12/07/19 11:44	EPA 8260C	
1,1,1-Trichloroethane	ND	0.200	0.400	ug/L	1	12/07/19 11:44	EPA 8260C	
1,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1	12/07/19 11:44	EPA 8260C	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	12/07/19 11:44	EPA 8260C	
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1	12/07/19 11:44	EPA 8260C	
1,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1	12/07/19 11:44	EPA 8260C	
1,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1	12/07/19 11:44	EPA 8260C	
1,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1	12/07/19 11:44	EPA 8260C	
Vinyl chloride	ND	0.200	0.400	ug/L	1	12/07/19 11:44	EPA 8260C	
m,p-Xylene	ND	0.500	1.00	ug/L	1	12/07/19 11:44	EPA 8260C	
o-Xylene	ND	0.250	0.500	ug/L	1	12/07/19 11:44	EPA 8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*113 %*	*Limits: 80-120 %*	*1*	*12/07/19 11:44*	*EPA 8260C*	
Toluene-d8 (Surr)			*102 %*	*80-120 %*	*1*	*12/07/19 11:44*	*EPA 8260C*	
4-Bromofluorobenzene (Surr)			*99 %*	*80-120 %*	*1*	*12/07/19 11:44*	*EPA 8260C*	
Trip Blank (A9L0182-08)				**Matrix: Water**		**Batch: 9120635**		
Acetone	ND	10.0	20.0	ug/L	1	12/07/19 12:11	EPA 8260C	
Acrylonitrile	ND	1.00	2.00	ug/L	1	12/07/19 12:11	EPA 8260C	
Benzene	ND	0.100	0.200	ug/L	1	12/07/19 12:11	EPA 8260C	

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.

Darrell Auvil, Project Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AECOM	Project: **POV ASI**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A9L0182 - 12 23 19 1609**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Trip Blank (A9L0182-08)				**Matrix: Water**		**Batch: 9120635**		
Bromobenzene	ND	0.250	0.500	ug/L	1	12/07/19 12:11	EPA 8260C	
Bromochloromethane	ND	0.500	1.00	ug/L	1	12/07/19 12:11	EPA 8260C	
Bromodichloromethane	ND	0.500	1.00	ug/L	1	12/07/19 12:11	EPA 8260C	
Bromoform	ND	0.500	1.00	ug/L	1	12/07/19 12:11	EPA 8260C	
Bromomethane	ND	5.00	5.00	ug/L	1	12/07/19 12:11	EPA 8260C	
2-Butanone (MEK)	ND	5.00	10.0	ug/L	1	12/07/19 12:11	EPA 8260C	
n-Butylbenzene	ND	0.500	1.00	ug/L	1	12/07/19 12:11	EPA 8260C	
sec-Butylbenzene	ND	0.500	1.00	ug/L	1	12/07/19 12:11	EPA 8260C	
tert-Butylbenzene	ND	0.500	1.00	ug/L	1	12/07/19 12:11	EPA 8260C	
Carbon disulfide	ND	5.00	10.0	ug/L	1	12/07/19 12:11	EPA 8260C	
Carbon tetrachloride	ND	0.500	1.00	ug/L	1	12/07/19 12:11	EPA 8260C	
Chlorobenzene	ND	0.250	0.500	ug/L	1	12/07/19 12:11	EPA 8260C	
Chloroethane	ND	5.00	5.00	ug/L	1	12/07/19 12:11	EPA 8260C	
Chloroform	ND	0.500	1.00	ug/L	1	12/07/19 12:11	EPA 8260C	
Chloromethane	ND	2.50	5.00	ug/L	1	12/07/19 12:11	EPA 8260C	
2-Chlorotoluene	ND	0.500	1.00	ug/L	1	12/07/19 12:11	EPA 8260C	
4-Chlorotoluene	ND	0.500	1.00	ug/L	1	12/07/19 12:11	EPA 8260C	
Dibromochloromethane	ND	0.500	1.00	ug/L	1	12/07/19 12:11	EPA 8260C	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1	12/07/19 12:11	EPA 8260C	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1	12/07/19 12:11	EPA 8260C	
Dibromomethane	ND	0.500	1.00	ug/L	1	12/07/19 12:11	EPA 8260C	
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1	12/07/19 12:11	EPA 8260C	
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1	12/07/19 12:11	EPA 8260C	
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1	12/07/19 12:11	EPA 8260C	
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1	12/07/19 12:11	EPA 8260C	
1,1-Dichloroethane	ND	0.200	0.400	ug/L	1	12/07/19 12:11	EPA 8260C	
1,2-Dichloroethane (EDC)	ND	0.200	0.400	ug/L	1	12/07/19 12:11	EPA 8260C	
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1	12/07/19 12:11	EPA 8260C	
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	12/07/19 12:11	EPA 8260C	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	12/07/19 12:11	EPA 8260C	
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1	12/07/19 12:11	EPA 8260C	
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1	12/07/19 12:11	EPA 8260C	
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1	12/07/19 12:11	EPA 8260C	
1,1-Dichloropropene	ND	0.500	1.00	ug/L	1	12/07/19 12:11	EPA 8260C	
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	12/07/19 12:11	EPA 8260C	
trans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	12/07/19 12:11	EPA 8260C	
Ethylbenzene	ND	0.250	0.500	ug/L	1	12/07/19 12:11	EPA 8260C	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	12/07/19 12:11	EPA 8260C	
2-Hexanone	ND	5.00	10.0	ug/L	1	12/07/19 12:11	EPA 8260C	

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.

Darrell Auvil, Project Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AECOM	Project: **POV ASI**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A9L0182 - 12 23 19 1609**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Trip Blank (A9L0182-08)				**Matrix: Water**		**Batch: 9120635**		
Isopropylbenzene	ND	0.500	1.00	ug/L	1	12/07/19 12:11	EPA 8260C	
4-Isopropyltoluene	ND	0.500	1.00	ug/L	1	12/07/19 12:11	EPA 8260C	
Methylene chloride	ND	2.50	5.00	ug/L	1	12/07/19 12:11	EPA 8260C	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	ug/L	1	12/07/19 12:11	EPA 8260C	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1	12/07/19 12:11	EPA 8260C	
Naphthalene	ND	2.00	2.00	ug/L	1	12/07/19 12:11	EPA 8260C	
n-Propylbenzene	ND	0.250	0.500	ug/L	1	12/07/19 12:11	EPA 8260C	
Styrene	ND	0.500	1.00	ug/L	1	12/07/19 12:11	EPA 8260C	
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	ug/L	1	12/07/19 12:11	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	12/07/19 12:11	EPA 8260C	
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	12/07/19 12:11	EPA 8260C	
Toluene	ND	0.500	1.00	ug/L	1	12/07/19 12:11	EPA 8260C	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	12/07/19 12:11	EPA 8260C	
1,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1	12/07/19 12:11	EPA 8260C	
1,1,1-Trichloroethane	ND	0.200	0.400	ug/L	1	12/07/19 12:11	EPA 8260C	
1,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1	12/07/19 12:11	EPA 8260C	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	12/07/19 12:11	EPA 8260C	
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1	12/07/19 12:11	EPA 8260C	
1,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1	12/07/19 12:11	EPA 8260C	
1,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1	12/07/19 12:11	EPA 8260C	
1,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1	12/07/19 12:11	EPA 8260C	
Vinyl chloride	ND	0.200	0.400	ug/L	1	12/07/19 12:11	EPA 8260C	
m,p-Xylene	ND	0.500	1.00	ug/L	1	12/07/19 12:11	EPA 8260C	
o-Xylene	ND	0.250	0.500	ug/L	1	12/07/19 12:11	EPA 8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*113 %*	*Limits:*	*80-120 %*	*1*	*12/07/19 12:11*	*EPA 8260C*	
Toluene-d8 (Surr)			*101 %*		*80-120 %*	*1*	*12/07/19 12:11*	*EPA 8260C*	
4-Bromofluorobenzene (Surr)			*98 %*		*80-120 %*	*1*	*12/07/19 12:11*	*EPA 8260C*	

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.

Darrell Auvil, Project Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AECOM	Project: **POV ASI**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A9L0182 - 12 23 19 1609**

QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9120716 - EPA 3510C (Fuels/Acid Ext.)												**Water**
Blank (9120716-BLK1)			Prepared: 12/10/19 12:06		Analyzed: 12/10/19 20:12							
NWTPH-Dx												
Diesel	ND	0.0364	0.0727	mg/L	1	---	---	---	---	---	---	
Oil	ND	0.0727	0.145	mg/L	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 90 %*		*Limits: 50-150 %*		*Dilution: 1x*					
LCS (9120716-BS1)			Prepared: 12/10/19 12:06		Analyzed: 12/10/19 20:33							
NWTPH-Dx												
Diesel	0.361	0.0400	0.0800	mg/L	1	0.500	---	72	58 - 115%	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 106 %*		*Limits: 50-150 %*		*Dilution: 1x*					
LCS Dup (9120716-BSD1)			Prepared: 12/10/19 12:06		Analyzed: 12/10/19 20:53							**Q-19**
NWTPH-Dx												
Diesel	0.336	0.0400	0.0800	mg/L	1	0.500	---	67	58 - 115%	7	20%	
Surr: o-Terphenyl (Surr)			*Recovery: 102 %*		*Limits: 50-150 %*		*Dilution: 1x*					
Batch 9120818 - EPA 3510C (Fuels/Acid Ext.)												**Water**
Blank (9120818-BLK1)			Prepared: 12/12/19 10:10		Analyzed: 12/12/19 21:52							
NWTPH-Dx												
Diesel	ND	0.0364	0.0727	mg/L	1	---	---	---	---	---	---	
Oil	ND	0.0727	0.145	mg/L	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 91 %*		*Limits: 50-150 %*		*Dilution: 1x*					
LCS (9120818-BS1)			Prepared: 12/12/19 10:10		Analyzed: 12/12/19 22:15							
NWTPH-Dx												
Diesel	0.359	0.0400	0.0800	mg/L	1	0.500	---	72	58 - 115%	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 93 %*		*Limits: 50-150 %*		*Dilution: 1x*					
LCS Dup (9120818-BSD1)			Prepared: 12/12/19 10:10		Analyzed: 12/12/19 22:37							**Q-19**
NWTPH-Dx												
Diesel	0.364	0.0400	0.0800	mg/L	1	0.500	---	73	58 - 115%	1	20%	
Surr: o-Terphenyl (Surr)			*Recovery: 91 %*		*Limits: 50-150 %*		*Dilution: 1x*					

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.

Darrell Auvil, Project Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AECOM	Project: **POV ASI**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A9L0182 - 12 23 19 1609**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9120635 - EPA 5030B							**Water**					
Blank (9120635-BLK1)		Prepared: 12/07/19 08:30		Analyzed: 12/07/19 10:51								
EPA 8260C												
Acetone	ND	10.0	20.0	ug/L	1	---	---	---	---	---	---	
Acrylonitrile	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
Benzene	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
Bromobenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Bromochloromethane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Bromodichloromethane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Bromoform	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Bromomethane	ND	5.00	5.00	ug/L	1	---	---	---	---	---	---	
2-Butanone (MEK)	ND	5.00	10.0	ug/L	1	---	---	---	---	---	---	
n-Butylbenzene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
sec-Butylbenzene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
tert-Butylbenzene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Carbon disulfide	ND	5.00	10.0	ug/L	1	---	---	---	---	---	---	
Carbon tetrachloride	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Chlorobenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Chloroethane	ND	5.00	5.00	ug/L	1	---	---	---	---	---	---	
Chloroform	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Chloromethane	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
2-Chlorotoluene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
4-Chlorotoluene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Dibromochloromethane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Dibromomethane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethane	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	

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.

Darrell Auvil, Project Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AECOM	Project: **POV ASI**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A9L0182 - 12 23 19 1609**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9120635 - EPA 5030B							**Water**					
Blank (9120635-BLK1)		Prepared: 12/07/19 08:30		Analyzed: 12/07/19 10:51								
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloropropene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Ethylbenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
2-Hexanone	ND	5.00	10.0	ug/L	1	---	---	---	---	---	---	
Isopropylbenzene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
4-Isopropyltoluene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Methylene chloride	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	ug/L	1	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Naphthalene	ND	2.00	2.00	ug/L	1	---	---	---	---	---	---	
n-Propylbenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Styrene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
Toluene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Vinyl chloride	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
m,p-Xylene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
o-Xylene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery: 111 %*		*Limits: 80-120 %*				*Dilution: 1x*				

Apex Laboratories

Darrell Auvil, Project Manager

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.

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AECOM	Project: **POV ASI**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A9L0182 - 12 23 19 1609**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9120635 - EPA 5030B									Water			
Blank (9120635-BLK1)			Prepared: 12/07/19 08:30 Analyzed: 12/07/19 10:51									
Surr: Toluene-d8 (Surr)			*Recovery: 101 %*	*Limits: 80-120 %*				*Dilution: 1x*				
4-Bromofluorobenzene (Surr)			*101 %*	*80-120 %*				*"*				
LCS (9120635-BS1)			Prepared: 12/07/19 08:30 Analyzed: 12/07/19 09:57									
EPA 8260C												
Acetone	33.9	10.0	20.0	ug/L	1	40.0	---	85	80 - 120%	---	---	
Acrylonitrile	21.0	1.00	2.00	ug/L	1	20.0	---	105	80 - 120%	---	---	
Benzene	20.9	0.100	0.200	ug/L	1	20.0	---	104	80 - 120%	---	---	
Bromobenzene	20.2	0.250	0.500	ug/L	1	20.0	---	101	80 - 120%	---	---	
Bromochloromethane	24.6	0.500	1.00	ug/L	1	20.0	---	**123**	**80 - 120%**	---	---	Q-56
Bromodichloromethane	22.1	0.500	1.00	ug/L	1	20.0	---	110	80 - 120%	---	---	
Bromoform	25.3	0.500	1.00	ug/L	1	20.0	---	**126**	**80 - 120%**	---	---	Q-56
Bromomethane	24.0	5.00	5.00	ug/L	1	20.0	---	120	80 - 120%	---	---	
2-Butanone (MEK)	36.6	5.00	10.0	ug/L	1	40.0	---	91	80 - 120%	---	---	
n-Butylbenzene	19.4	0.500	1.00	ug/L	1	20.0	---	97	80 - 120%	---	---	
sec-Butylbenzene	18.7	0.500	1.00	ug/L	1	20.0	---	94	80 - 120%	---	---	
tert-Butylbenzene	17.2	0.500	1.00	ug/L	1	20.0	---	86	80 - 120%	---	---	
Carbon disulfide	20.1	5.00	10.0	ug/L	1	20.0	---	100	80 - 120%	---	---	
Carbon tetrachloride	23.1	0.500	1.00	ug/L	1	20.0	---	115	80 - 120%	---	---	
Chlorobenzene	20.3	0.250	0.500	ug/L	1	20.0	---	101	80 - 120%	---	---	
Chloroethane	17.5	5.00	5.00	ug/L	1	20.0	---	87	80 - 120%	---	---	
Chloroform	21.4	0.500	1.00	ug/L	1	20.0	---	107	80 - 120%	---	---	
Chloromethane	18.3	2.50	5.00	ug/L	1	20.0	---	92	80 - 120%	---	---	
2-Chlorotoluene	19.1	0.500	1.00	ug/L	1	20.0	---	96	80 - 120%	---	---	
4-Chlorotoluene	18.6	0.500	1.00	ug/L	1	20.0	---	93	80 - 120%	---	---	
Dibromochloromethane	25.6	0.500	1.00	ug/L	1	20.0	---	**128**	**80 - 120%**	---	---	Q-56
1,2-Dibromo-3-chloropropane	18.5	2.50	5.00	ug/L	1	20.0	---	92	80 - 120%	---	---	
1,2-Dibromoethane (EDB)	20.0	0.250	0.500	ug/L	1	20.0	---	100	80 - 120%	---	---	
Dibromomethane	22.5	0.500	1.00	ug/L	1	20.0	---	112	80 - 120%	---	---	
1,2-Dichlorobenzene	19.7	0.250	0.500	ug/L	1	20.0	---	99	80 - 120%	---	---	
1,3-Dichlorobenzene	19.8	0.250	0.500	ug/L	1	20.0	---	99	80 - 120%	---	---	
1,4-Dichlorobenzene	19.8	0.250	0.500	ug/L	1	20.0	---	99	80 - 120%	---	---	
Dichlorodifluoromethane	20.9	0.500	1.00	ug/L	1	20.0	---	105	80 - 120%	---	---	
1,1-Dichloroethane	20.1	0.200	0.400	ug/L	1	20.0	---	100	80 - 120%	---	---	

Apex Laboratories

Darrell Auvil, Project Manager

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.

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AECOM	Project: **POV ASI**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A9L0182 - 12 23 19 1609**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9120635 - EPA 5030B							**Water**					
LCS (9120635-BS1)		Prepared: 12/07/19 08:30		Analyzed: 12/07/19 09:57								
1,2-Dichloroethane (EDC)	19.2	0.200	0.400	ug/L	1	20.0	---	96	80 - 120%	---	---	
1,1-Dichloroethene	19.7	0.200	0.400	ug/L	1	20.0	---	98	80 - 120%	---	---	
cis-1,2-Dichloroethene	19.6	0.200	0.400	ug/L	1	20.0	---	98	80 - 120%	---	---	
trans-1,2-Dichloroethene	20.5	0.200	0.400	ug/L	1	20.0	---	102	80 - 120%	---	---	
1,2-Dichloropropane	20.3	0.250	0.500	ug/L	1	20.0	---	102	80 - 120%	---	---	
1,3-Dichloropropane	19.5	0.500	1.00	ug/L	1	20.0	---	98	80 - 120%	---	---	
2,2-Dichloropropane	19.3	0.500	1.00	ug/L	1	20.0	---	96	80 - 120%	---	---	
1,1-Dichloropropene	19.8	0.500	1.00	ug/L	1	20.0	---	99	80 - 120%	---	---	
cis-1,3-Dichloropropene	18.7	0.500	1.00	ug/L	1	20.0	---	94	80 - 120%	---	---	
trans-1,3-Dichloropropene	18.5	0.500	1.00	ug/L	1	20.0	---	92	80 - 120%	---	---	
Ethylbenzene	18.9	0.250	0.500	ug/L	1	20.0	---	95	80 - 120%	---	---	
Hexachlorobutadiene	17.5	2.50	5.00	ug/L	1	20.0	---	87	80 - 120%	---	---	
2-Hexanone	32.8	5.00	10.0	ug/L	1	40.0	---	82	80 - 120%	---	---	
Isopropylbenzene	18.4	0.500	1.00	ug/L	1	20.0	---	92	80 - 120%	---	---	
4-Isopropyltoluene	19.2	0.500	1.00	ug/L	1	20.0	---	96	80 - 120%	---	---	
Methylene chloride	22.0	2.50	5.00	ug/L	1	20.0	---	110	80 - 120%	---	---	
4-Methyl-2-pentanone (MiBK)	34.3	5.00	10.0	ug/L	1	40.0	---	86	80 - 120%	---	---	
Methyl tert-butyl ether (MTBE)	17.5	0.500	1.00	ug/L	1	20.0	---	87	80 - 120%	---	---	
Naphthalene	15.6	2.00	2.00	ug/L	1	20.0	---	**78**	**80 - 120%**	---	---	Q-55
n-Propylbenzene	19.0	0.250	0.500	ug/L	1	20.0	---	95	80 - 120%	---	---	
Styrene	19.1	0.500	1.00	ug/L	1	20.0	---	96	80 - 120%	---	---	
1,1,1,2-Tetrachloroethane	22.5	0.200	0.400	ug/L	1	20.0	---	112	80 - 120%	---	---	
1,1,2,2-Tetrachloroethane	20.9	0.250	0.500	ug/L	1	20.0	---	104	80 - 120%	---	---	
Tetrachloroethene (PCE)	20.7	0.200	0.400	ug/L	1	20.0	---	103	80 - 120%	---	---	
Toluene	19.2	0.500	1.00	ug/L	1	20.0	---	96	80 - 120%	---	---	
1,2,3-Trichlorobenzene	18.3	1.00	2.00	ug/L	1	20.0	---	91	80 - 120%	---	---	
1,2,4-Trichlorobenzene	17.0	1.00	2.00	ug/L	1	20.0	---	85	80 - 120%	---	---	
1,1,1-Trichloroethane	19.8	0.200	0.400	ug/L	1	20.0	---	99	80 - 120%	---	---	
1,1,2-Trichloroethane	21.2	0.250	0.500	ug/L	1	20.0	---	106	80 - 120%	---	---	
Trichloroethene (TCE)	22.4	0.200	0.400	ug/L	1	20.0	---	112	80 - 120%	---	---	
Trichlorofluoromethane	21.4	1.00	2.00	ug/L	1	20.0	---	107	80 - 120%	---	---	
1,2,3-Trichloropropane	20.3	0.500	1.00	ug/L	1	20.0	---	101	80 - 120%	---	---	
1,2,4-Trimethylbenzene	19.4	0.500	1.00	ug/L	1	20.0	---	97	80 - 120%	---	---	
1,3,5-Trimethylbenzene	19.5	0.500	1.00	ug/L	1	20.0	---	97	80 - 120%	---	---	

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.

Darrell Auvil, Project Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AECOM	Project: **POV ASI**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A9L0182 - 12 23 19 1609**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9120635 - EPA 5030B												**Water**
LCS (9120635-BS1)		Prepared: 12/07/19 08:30		Analyzed: 12/07/19 09:57								
Vinyl chloride	20.3	0.200	0.400	ug/L	1	20.0	---	102	80 - 120%	---	---	
m,p-Xylene	37.8	0.500	1.00	ug/L	1	40.0	---	95	80 - 120%	---	---	
o-Xylene	17.6	0.250	0.500	ug/L	1	20.0	---	88	80 - 120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery: 108 %*		*Limits: 80-120 %*			*Dilution: 1x*					
Toluene-d8 (Surr)		*99 %*		*80-120 %*			*"*					
4-Bromofluorobenzene (Surr)		*96 %*		*80-120 %*			*"*					

Apex Laboratories

Darrell Auvil, Project Manager

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.

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AECOM	Project: **POV ASI**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A9L0182 - 12 23 19 1609**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9120654 - EPA 5030B							**Water**					
Blank (9120654-BLK1)		Prepared: 12/09/19 11:00		Analyzed: 12/09/19 12:56								
EPA 8260C												
Acetone	ND	20.0	20.0	ug/L	1	---	---	---	---	---	---	
Acrylonitrile	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
Benzene	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
Bromobenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Bromochloromethane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Bromodichloromethane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Bromoform	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Bromomethane	ND	5.00	5.00	ug/L	1	---	---	---	---	---	---	
2-Butanone (MEK)	ND	5.00	10.0	ug/L	1	---	---	---	---	---	---	
n-Butylbenzene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
sec-Butylbenzene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
tert-Butylbenzene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Carbon disulfide	ND	5.00	10.0	ug/L	1	---	---	---	---	---	---	
Carbon tetrachloride	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Chlorobenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Chloroethane	ND	5.00	5.00	ug/L	1	---	---	---	---	---	---	
Chloroform	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Chloromethane	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
2-Chlorotoluene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
4-Chlorotoluene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Dibromochloromethane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Dibromomethane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethane	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	

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.

Darrell Auvil, Project Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AECOM	Project: **POV ASI**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A9L0182 - 12 23 19 1609**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9120654 - EPA 5030B							**Water**					
Blank (9120654-BLK1)		Prepared: 12/09/19 11:00		Analyzed: 12/09/19 12:56								
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloropropene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Ethylbenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
2-Hexanone	ND	10.0	10.0	ug/L	1	---	---	---	---	---	---	
Isopropylbenzene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
4-Isopropyltoluene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Methylene chloride	ND	1.50	3.00	ug/L	1	---	---	---	---	---	---	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	ug/L	1	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Naphthalene	ND	2.00	2.00	ug/L	1	---	---	---	---	---	---	
n-Propylbenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Styrene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
Toluene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Vinyl chloride	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
m,p-Xylene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
o-Xylene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery: 112 %*		*Limits: 80-120 %*			*Dilution: 1x*					

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.

Darrell Auvil, Project Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AECOM	Project: **POV ASI**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A9L0182 - 12 23 19 1609**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9120654 - EPA 5030B												
Blank (9120654-BLK1)		Prepared: 12/09/19 11:00 Analyzed: 12/09/19 12:56										
Surr: Toluene-d8 (Surr)		*Recovery: 101 %*	*Limits: 80-120 %*		*Dilution: 1x*							
4-Bromofluorobenzene (Surr)			*98 %*	*80-120 %*								
LCS (9120654-BS1)		Prepared: 12/09/19 11:00 Analyzed: 12/09/19 12:03										
EPA 8260C												
Acetone	31.4	20.0	20.0	ug/L	1	40.0	---	**78**	**80 - 120%**	---	---	Q-55
Acrylonitrile	20.2	1.00	2.00	ug/L	1	20.0	---	101	80 - 120%	---	---	
Benzene	20.3	0.100	0.200	ug/L	1	20.0	---	101	80 - 120%	---	---	
Bromobenzene	20.0	0.250	0.500	ug/L	1	20.0	---	100	80 - 120%	---	---	
Bromochloromethane	24.5	0.500	1.00	ug/L	1	20.0	---	**122**	**80 - 120%**	---	---	Q-56
Bromodichloromethane	21.8	0.500	1.00	ug/L	1	20.0	---	109	80 - 120%	---	---	
Bromoform	25.6	0.500	1.00	ug/L	1	20.0	---	**128**	**80 - 120%**	---	---	Q-56
Bromomethane	21.2	5.00	5.00	ug/L	1	20.0	---	106	80 - 120%	---	---	
2-Butanone (MEK)	34.9	5.00	10.0	ug/L	1	40.0	---	87	80 - 120%	---	---	
n-Butylbenzene	18.0	0.500	1.00	ug/L	1	20.0	---	90	80 - 120%	---	---	
sec-Butylbenzene	17.8	0.500	1.00	ug/L	1	20.0	---	89	80 - 120%	---	---	
tert-Butylbenzene	16.3	0.500	1.00	ug/L	1	20.0	---	82	80 - 120%	---	---	
Carbon disulfide	19.4	5.00	10.0	ug/L	1	20.0	---	97	80 - 120%	---	---	
Carbon tetrachloride	22.5	0.500	1.00	ug/L	1	20.0	---	113	80 - 120%	---	---	
Chlorobenzene	19.6	0.250	0.500	ug/L	1	20.0	---	98	80 - 120%	---	---	
Chloroethane	16.6	5.00	5.00	ug/L	1	20.0	---	83	80 - 120%	---	---	
Chloroform	20.6	0.500	1.00	ug/L	1	20.0	---	103	80 - 120%	---	---	
Chloromethane	16.9	2.50	5.00	ug/L	1	20.0	---	84	80 - 120%	---	---	
2-Chlorotoluene	18.4	0.500	1.00	ug/L	1	20.0	---	92	80 - 120%	---	---	
4-Chlorotoluene	17.8	0.500	1.00	ug/L	1	20.0	---	89	80 - 120%	---	---	
Dibromochloromethane	25.9	0.500	1.00	ug/L	1	20.0	---	**130**	**80 - 120%**	---	---	Q-56
1,2-Dibromo-3-chloropropane	19.3	2.50	5.00	ug/L	1	20.0	---	97	80 - 120%	---	---	
1,2-Dibromoethane (EDB)	19.9	0.250	0.500	ug/L	1	20.0	---	99	80 - 120%	---	---	
Dibromomethane	22.6	0.500	1.00	ug/L	1	20.0	---	113	80 - 120%	---	---	
1,2-Dichlorobenzene	19.2	0.250	0.500	ug/L	1	20.0	---	96	80 - 120%	---	---	
1,3-Dichlorobenzene	19.6	0.250	0.500	ug/L	1	20.0	---	98	80 - 120%	---	---	
1,4-Dichlorobenzene	19.3	0.250	0.500	ug/L	1	20.0	---	97	80 - 120%	---	---	
Dichlorodifluoromethane	19.7	0.500	1.00	ug/L	1	20.0	---	98	80 - 120%	---	---	
1,1-Dichloroethane	19.0	0.200	0.400	ug/L	1	20.0	---	95	80 - 120%	---	---	

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.

Darrell Auvil, Project Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AECOM	Project: **POV ASI**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A9L0182 - 12 23 19 1609**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9120654 - EPA 5030B							**Water**					
LCS (9120654-BS1)		Prepared: 12/09/19 11:00		Analyzed: 12/09/19 12:03								
1,2-Dichloroethane (EDC)	18.0	0.200	0.400	ug/L	1	20.0	---	90	80 - 120%	---	---	
1,1-Dichloroethene	18.5	0.200	0.400	ug/L	1	20.0	---	92	80 - 120%	---	---	
cis-1,2-Dichloroethene	18.6	0.200	0.400	ug/L	1	20.0	---	93	80 - 120%	---	---	
trans-1,2-Dichloroethene	19.1	0.200	0.400	ug/L	1	20.0	---	96	80 - 120%	---	---	
1,2-Dichloropropane	20.2	0.250	0.500	ug/L	1	20.0	---	101	80 - 120%	---	---	
1,3-Dichloropropane	18.9	0.500	1.00	ug/L	1	20.0	---	95	80 - 120%	---	---	
2,2-Dichloropropane	17.9	0.500	1.00	ug/L	1	20.0	---	90	80 - 120%	---	---	
1,1-Dichloropropene	18.9	0.500	1.00	ug/L	1	20.0	---	95	80 - 120%	---	---	
cis-1,3-Dichloropropene	18.4	0.500	1.00	ug/L	1	20.0	---	92	80 - 120%	---	---	
trans-1,3-Dichloropropene	18.1	0.500	1.00	ug/L	1	20.0	---	90	80 - 120%	---	---	
Ethylbenzene	18.1	0.250	0.500	ug/L	1	20.0	---	91	80 - 120%	---	---	
Hexachlorobutadiene	16.8	2.50	5.00	ug/L	1	20.0	---	84	80 - 120%	---	---	
2-Hexanone	31.0	10.0	10.0	ug/L	1	40.0	---	**77**	**80 - 120%**	---	---	Q-55
Isopropylbenzene	18.0	0.500	1.00	ug/L	1	20.0	---	90	80 - 120%	---	---	
4-Isopropyltoluene	18.1	0.500	1.00	ug/L	1	20.0	---	91	80 - 120%	---	---	
Methylene chloride	21.0	1.50	3.00	ug/L	1	20.0	---	105	80 - 120%	---	---	
4-Methyl-2-pentanone (MiBK)	32.2	5.00	10.0	ug/L	1	40.0	---	81	80 - 120%	---	---	
Methyl tert-butyl ether (MTBE)	17.5	0.500	1.00	ug/L	1	20.0	---	87	80 - 120%	---	---	
Naphthalene	15.9	2.00	2.00	ug/L	1	20.0	---	**79**	**80 - 120%**	---	---	Q-55
n-Propylbenzene	18.0	0.250	0.500	ug/L	1	20.0	---	90	80 - 120%	---	---	
Styrene	18.5	0.500	1.00	ug/L	1	20.0	---	92	80 - 120%	---	---	
1,1,1,2-Tetrachloroethane	21.9	0.200	0.400	ug/L	1	20.0	---	110	80 - 120%	---	---	
1,1,2,2-Tetrachloroethane	20.0	0.250	0.500	ug/L	1	20.0	---	100	80 - 120%	---	---	
Tetrachloroethene (PCE)	19.8	0.200	0.400	ug/L	1	20.0	---	99	80 - 120%	---	---	
Toluene	18.3	0.500	1.00	ug/L	1	20.0	---	91	80 - 120%	---	---	
1,2,3-Trichlorobenzene	18.0	1.00	2.00	ug/L	1	20.0	---	90	80 - 120%	---	---	
1,2,4-Trichlorobenzene	16.9	1.00	2.00	ug/L	1	20.0	---	84	80 - 120%	---	---	
1,1,1-Trichloroethane	19.0	0.200	0.400	ug/L	1	20.0	---	95	80 - 120%	---	---	
1,1,2-Trichloroethane	20.5	0.250	0.500	ug/L	1	20.0	---	103	80 - 120%	---	---	
Trichloroethene (TCE)	21.5	0.200	0.400	ug/L	1	20.0	---	108	80 - 120%	---	---	
Trichlorofluoromethane	20.7	1.00	2.00	ug/L	1	20.0	---	103	80 - 120%	---	---	
1,2,3-Trichloropropane	19.8	0.500	1.00	ug/L	1	20.0	---	99	80 - 120%	---	---	
1,2,4-Trimethylbenzene	18.5	0.500	1.00	ug/L	1	20.0	---	92	80 - 120%	---	---	
1,3,5-Trimethylbenzene	18.3	0.500	1.00	ug/L	1	20.0	---	92	80 - 120%	---	---	

Apex Laboratories

Darrell Auvil, Project Manager

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.

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AECOM	Project: **POV ASI**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A9L0182 - 12 23 19 1609**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9120654 - EPA 5030B												**Water**
LCS (9120654-BS1)		Prepared: 12/09/19 11:00		Analyzed: 12/09/19 12:03								
Vinyl chloride	19.3	0.200	0.400	ug/L	1	20.0	---	96	80 - 120%	---	---	
m,p-Xylene	35.8	0.500	1.00	ug/L	1	40.0	---	89	80 - 120%	---	---	
o-Xylene	17.5	0.250	0.500	ug/L	1	20.0	---	87	80 - 120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery: 111 %*		*Limits: 80-120 %*			*Dilution: 1x*					
Toluene-d8 (Surr)		*99 %*		*80-120 %*			*"*					
4-Bromofluorobenzene (Surr)		*96 %*		*80-120 %*			*"*					

Apex Laboratories

Darrell Auvil, Project Manager

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.

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AECOM	Project: **POV ASI**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A9L0182 - 12 23 19 1609**

SAMPLE PREPARATION INFORMATION

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Prep: EPA 3510C (Fuels/Acid Ext.)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 9120716							
A9L0182-06	Water	NWTPH-Dx	12/05/19 09:30	12/10/19 15:26	1040mL/2mL	1000mL/2mL	0.96
Batch: 9120818							
A9L0182-01	Water	NWTPH-Dx	12/05/19 13:30	12/12/19 10:10	1060mL/2mL	1000mL/2mL	0.94
A9L0182-02	Water	NWTPH-Dx	12/05/19 15:15	12/12/19 10:10	1060mL/2mL	1000mL/2mL	0.94
A9L0182-03	Water	NWTPH-Dx	12/05/19 15:20	12/12/19 10:10	1020mL/2mL	1000mL/2mL	0.98
A9L0182-04	Water	NWTPH-Dx	12/05/19 12:20	12/12/19 10:10	1010mL/2mL	1000mL/2mL	0.99
A9L0182-05	Water	NWTPH-Dx	12/05/19 10:55	12/12/19 10:10	1020mL/2mL	1000mL/2mL	0.98

Volatile Organic Compounds by EPA 8260C

Prep: EPA 5030B

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 9120635							
A9L0182-01	Water	EPA 8260C	12/05/19 13:30	12/07/19 11:00	5mL/5mL	5mL/5mL	1.00
A9L0182-02	Water	EPA 8260C	12/05/19 15:15	12/07/19 11:00	5mL/5mL	5mL/5mL	1.00
A9L0182-03	Water	EPA 8260C	12/05/19 15:20	12/07/19 11:00	5mL/5mL	5mL/5mL	1.00
A9L0182-04	Water	EPA 8260C	12/05/19 12:20	12/07/19 11:00	5mL/5mL	5mL/5mL	1.00
A9L0182-07	Water	EPA 8260C	12/05/19 16:00	12/07/19 11:00	5mL/5mL	5mL/5mL	1.00
A9L0182-08	Water	EPA 8260C	12/05/19 00:00	12/07/19 11:00	5mL/5mL	5mL/5mL	1.00
Batch: 9120654							
A9L0182-05	Water	EPA 8260C	12/05/19 10:55	12/09/19 12:34	5mL/5mL	5mL/5mL	1.00
A9L0182-06	Water	EPA 8260C	12/05/19 09:30	12/09/19 12:34	5mL/5mL	5mL/5mL	1.00

Apex Laboratories

Darrell Auvil, Project Manager

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.

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AECOM	Project: **POV ASI**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A9L0182 - 12 23 19 1609**

QUALIFIER DEFINITIONS

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

Apex Laboratories

F-11	The hydrocarbon pattern indicates possible weathered diesel, mineral oil, or a contribution from a related component.
J	Estimated Result. Result detected below the lowest point of the calibration curve, but above the specified MDL.
Q-19	Blank Spike Duplicate (BSD) sample analyzed in place of Matrix Spike/Duplicate samples due to limited sample amount available for analysis.
Q-55	Daily CCV/LCS recovery for this analyte was below the +/-20% criteria listed in EPA 8260C, however there is adequate sensitivity to ensure detection at the reporting level.
Q-56	Daily CCV/LCS recovery for this analyte was above the +/-20% criteria listed in EPA 8260C

Apex Laboratories

Darrell Auvil, Project Manager

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.

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AECOM	Project: **POV ASI**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A9L0182 - 12 23 19 1609**

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

Darrell Auvil, Project Manager

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.

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AECOM	Project: **POV ASI**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A9L0182 - 12 23 19 1609**

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, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AECOM	Project: **POV ASI**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A9L0182 - 12 23 19 1609**

LABORATORY ACCREDITATION INFORMATION

TNI 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

All reported analytes are included in Apex Laboratories' current ORELAP scope.

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 provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

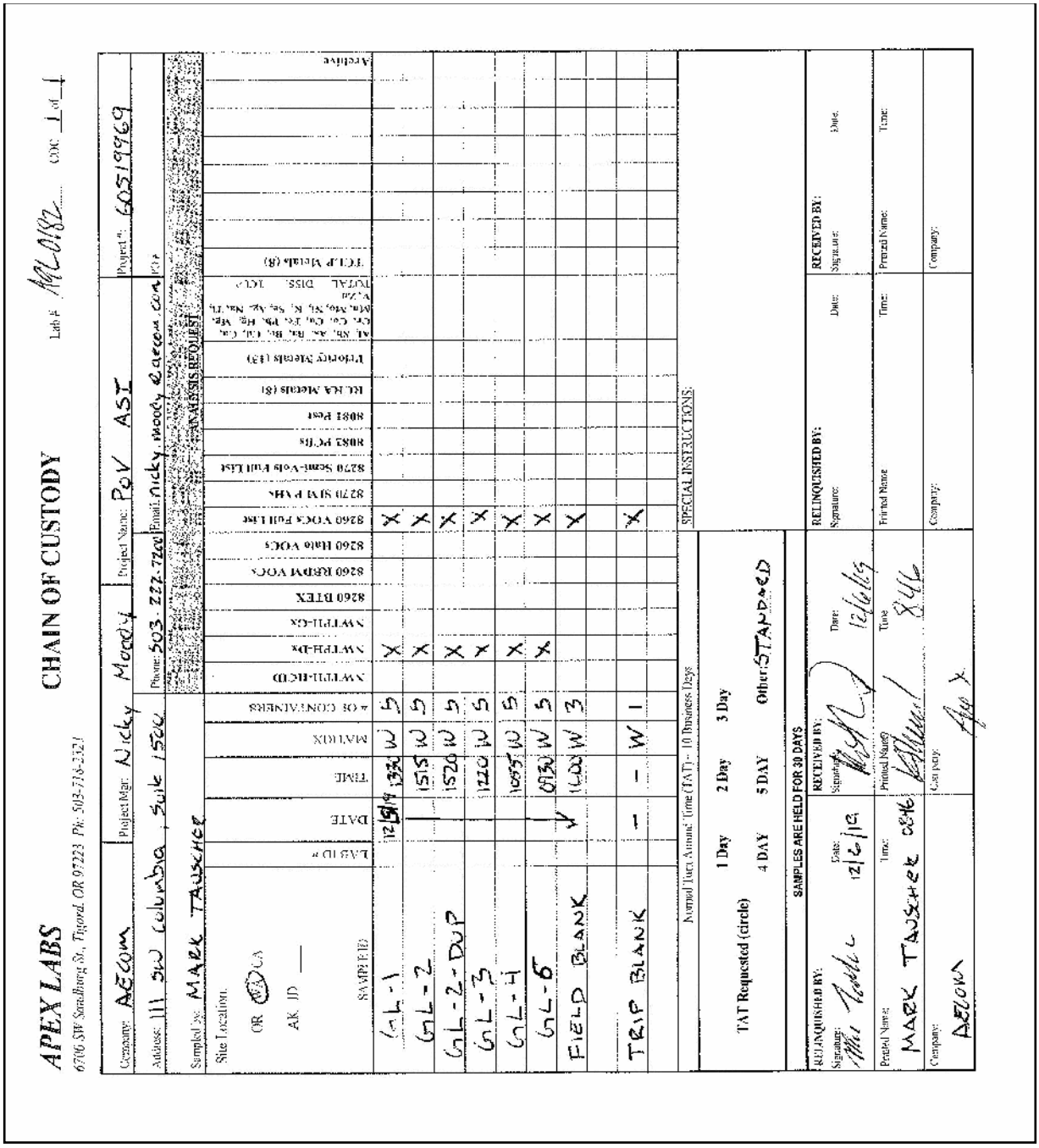
Darrell Auvil, Project Manager

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.

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AECOM	Project: **POV ASI**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A9L0182 - 12 23 19 1609**



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.

Darrell Auvil, Project Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AECOM	Project: **POV ASI**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A9L0182 - 12 23 19 1609**

APEX LABS COOLER RECEIPT FORM

Client: AECOM Element WO#: A9L0182

Project/Project #: POV ASI / 60519969

Delivery Info:

Date/time received: 12/16/19 @ 8:46 By: MJ

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

Cooler Inspection Date/time inspected: 12/16/19 @ 8:46 By: MJ

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)	4.3	1.3					
Received on ice? (Y/N)	Y	Y					
Temp. blanks? (Y/N)							
Ice type: (Gel/Real/Other)	Gel	Gel					
Condition:	Good	Good					

Cooler out of temp? (Y/N) Possible reason why: ___

If some coolers are in temp and some out, were green dots applied to out of temperature samples? Yes/No/NA

Out of temperature samples form initiated? Yes/No/NA

Samples Inspection: Date/time inspected: 12/16/19 @ 9:20 By: MJ

All samples intact? Yes X No ___ Comments: ___

Bottle labels/COCs agree? Yes X No ___ Comments: ___

COC/container discrepancies form initiated? Yes ___ No ___ NA X

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

Do VOA vials have visible headspace? Yes ___ No X NA ___

Comments ___

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

Comments: ___

Additional information: TB# 2198

Labeled by: MJ Witness: Cooler Inspected by: MJ See Project Contact Form: Y

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.

Darrell Auvil, Project Manager

Appendix C
Data Quality Review Report

AECOM
111 SW Columbia
Suite 1500
Portland, OR 97201
www.aecom.com

503 222 7200 tel
503 222 4292 fax

Data Quality Review Report

Laboratory & Report No.	Apex Laboratories, Incorporated #A9F0368 and #A9L0182
Report Date	January 21, 2020
Sampling Event	June and December 2019
Site Location	Port of Vancouver, ASI
AECOM Project No.	60519969, Task 11
Project Name	2019 Groundwater Monitoring

This document summarizes the data quality review of the five primary groundwater samples, one field duplicate groundwater sample, and one trip blank collected on June 10 and June 11, 2019 and reported in laboratory group A9F0368 as well as, five primary groundwater samples, one field duplicate groundwater sample, one field blank, and one trip blank collected on December 5, 2019, and reported in laboratory group A9L0182, at the former Automotive Services, Incorporated (ASI) site located at the Port of Vancouver in Vancouver, Washington. Samples were submitted to Apex Laboratories (Apex) of Tigard, Oregon and analyzed for the following:

- Volatile organic compounds (VOCs) by US Environmental Protection Agency (EPA) Method 8260C
- Diesel-range and oil-range hydrocarbons by NWTPH-Dx

Analytical data results are presented in Apex reports A9F0368 and A9L0182. The data was reviewed based on *National Functional Guidelines for Superfund Organic Methods Data Review*, January 2017, and/or laboratory quality control criteria. Items reviewed included: chain-of-custody (COC) records and holding times, along with results for surrogate recoveries, laboratory control sample and laboratory control sample duplicates (LCS/LCSD), matrix spike sample and matrix spike sample duplicates (MS/MSD), laboratory duplicates, field duplicates, method blanks, and field/trip blanks, where applicable. Qualifiers assigned as a result of this review are included in Table 1. The following criteria were evaluated during the review:

- COC Records – Acceptable except as noted below:

  Samples DUP, GL-3, and GL-6 reported in laboratory group A9F0368 did not have sample times listed on the COC. The laboratory logged the samples using the time recorded on the sample containers.

- Temperature – Acceptable
- Preservation – Acceptable
- Holding Times – Acceptable
- Field/Trip Blanks – Acceptable
- Method Blanks – Acceptable
- Surrogates – Acceptable

AECOM
111 SW Columbia
Suite 1500
Portland, OR 97201
www.aecom.com

503 222 7200 tel
503 222 4292 fax

- Laboratory Control Samples (LCS) – Acceptable except as noted below:

  VOCs by EPA Method 8260C – The percent recoveries for one or more analytes in the laboratory control samples listed below were outside the control limits of 80-120%:

Batch	Analyte	Percent Recovery
9060861	Chloroethane	68%
	Dichlorodifluoromethane	76%
	Naphthalene	77%
9120635	Bromochloromethane	123%
	Bromoform	126%
	Dibromochloromethane	128%
	Naphthalene	78%
9120654	Acetone	78%
	Bromochloromethane	122%
	Bromoform	128%
	Dibromochloromethane	130%
	2-Hexanone	77%
	Naphthalene	79%

  The results for chloroethane and dichlorodifluoromethane in all the samples reported in laboratory group A9F0368 were qualified as estimated and flagged 'UJ' based on the LCS recoveries associated with batch 9060861. Bromochloromethane, bromoform, and dibromochloromethane were not detected in the samples associated with batches 9120635 and 9120635; therefore, data were not qualified for these analytes based on the elevated LCS recoveries. The results for acetone and 2-hexanone in GL-4 and GL-6 reported in laboratory group A9L0182 were qualified as estimated and flagged 'UJ' based on the LCS recoveries associated with batch 9120654. The results for naphthalene in all the samples reported in laboratory groups A9F0368 and A9L0182 were qualified as estimated and flagged 'UJ' based on the LCS recoveries associated with batches 9060861, 9120635, and 9120654.

- Matrix Spike Samples (MS) – Acceptable

  VOCs by EPA Method 8260C – A matrix spike was performed using GL-6 reported in laboratory group A9F0368. Results were acceptable.

  Diesel and Oil-range Hydrocarbons by NWTPH-Dx – Matrix spikes were not performed using project samples. Accuracy was assessed using the LCS and/or LCSD results.

- Laboratory Duplicates

  Laboratory duplicates were not performed using project samples. Precision was assessed using LCS/LCSD and field duplicate results, where applicable.

- Field Duplicate – Acceptable

  Two field duplicates were submitted for these groundwater monitoring events. The field duplicates were submitted for GL-2 in both laboratory groups A9F0368 and A9L0182 and identified as DUP and GL-2-DUP, respectively. Relative percent differences (RPDs) were calculated on sample results that were greater than five times the associated reporting limits and compared to the

AECOM
111 SW Columbia
Suite 1500
Portland, OR 97201
www.aecom.com

503 222 7200 tel
503 222 4292 fax

laboratory duplicate criteria of 30%. Results were comparable.

- Reporting Limits – Acceptable
- Laboratory Notes and Qualifiers

  The results for sec-butylbenzene in GL-1 and diesel-range hydrocarbons in GL-4 reported in laboratory group A9L0182 were flagged 'J' by the laboratory to indicate that the sample concentrations were less than the laboratory reporting limits but above the method detection limits. As there are greater levels of uncertainty with these concentrations, these results are considered estimated.

  The laboratory noted that the diesel-range hydrocarbons patterns in GL-2 and DUP reported in laboratory group A9F0368 and GL-2, GL-2-DUP, and GL-3 reported in laboratory group A9L0182 indicated possible weathered diesel, mineral oil, or a contribution from a related component. No data qualifiers were assigned based on these qualitative observations by the laboratory.

  The laboratory noted that the diesel-range hydrocarbons result in GL-1 reported in laboratory group A9F0368 is estimated due to overlap from gasoline-range organics or other VOCs. No data qualifiers were assigned based on these qualitative observations by the laboratory.

  VOCs by EPA Method 8260C – The laboratory noted that the percent differences (%Ds) for chloroethane (-12% low), dibromochloromethane (-3% low), and naphthalene (-4% low) were outside the method limits of ±20% in the continuing calibration verification (CCV) analyzed on June 12, 2019. The results for these analytes for the samples reported in laboratory group A9F0368 were qualified based on the associated LCS recoveries and no further qualifications based on these CCV %Ds were required.

Overall Assessment of Data

The completeness of the analytical report for this groundwater monitoring event is 100%. The usefulness of the data is based on the EPA guidance documents referenced in the introduction of this report. Upon consideration of the information presented above, the data are considered usable. The data qualifiers assigned by the laboratory are shown on the laboratory reports.

Data Qualifier Definitions

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

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria.

DNR Do Not Report. Another result is available that is more reliable.

AECOM
111 SW Columbia
Suite 1500
Portland, OR 97201
www.aecom.com

503 222 7200 tel
503 222 4292 fax

References

EPA, 2017 EPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review. EPA-540-R-2016-002. January.

Table 1. Sample Qualification Summary

Field Sample ID	Laboratory Sample ID	Analyte	Qualifier	Rationale
DUP	A9F0368-01	Chloroethane Dichlorodifluoromethane	UJ	Low LCS Recovery
GL-1	A9F0368-02			
GL-2	A9F0368-03			
GL-3	A9F0368-04			
GL-4	A9F0368-05			
GL-6	A9F0368-06			
Trip	A9F0368-07			
DUP	A9F0368-01	Naphthalene	UJ	Low LCS Recovery
GL-1	A9F0368-02			
GL-2	A9F0368-03			
GL-3	A9F0368-04			
GL-4	A9F0368-05			
GL-6	A9F0368-06			
Trip	A9F0368-07			
GL-1	A9F0459-01			
GL-2	A9F0459-02			
GL-2 DUP	A9F0459-03			
GL-3	A9F0459-04			
GL-4	A9F0459-05			
GL-6	A9F0459-06			
Field Blank	A9F0459-07			
Trip Blank	A9F0459-08			
GL-4	A9F0459-05	Acetone 2-Hexanone	UJ	Low LCS Recovery
GL-6	A9F0459-06			

About AECOM

AECOM (NYSE: ACM) is a global provider of professional technical and management support services to a broad range of markets, including transportation, facilities, environmental, energy, water and government. With approximately 100,000 employees around the world, AECOM is a leader in all of the key markets that it serves. AECOM provides a blend of global reach, local knowledge, innovation, and collaborative technical excellence in delivering solutions that enhance and sustain the world's built, natural, and social environments. A Fortune 500 company, AECOM serves clients in more than 100 countries and has annual revenue in excess of $6 billion.

More information on AECOM and its services can be found at www.aecom.com.

111 SW Columbia, Suite 1500
Portland, OR 97201-5850
(503) 222-7200