GROUNDWATER MONITORING REPORT

First Quarter 2018 – First Consecutive Sampling Event

Gig Harbor Transmission
14610 Purdy Drive Northwest
Gig Harbor, Washington 98332

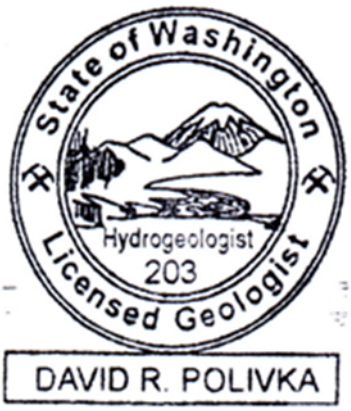
February 28, 2018

***Prepared For**:*

Tracey Larson
14610 Purdy Drive Northwest
Gig Harbor, Washington 98332

Kaden Reed
Sr. Environmental Technician

David Polivka, L.G.
Senior Environmental Geologist



Prepared by:

ECI | Environmental Services
PO Box 153
Fox Island, Washington 98333
Office: (253) 238-9270

ECI Project No.: 0359-01-05

Table of Contents

List of Appendices

Appendix A - Project Figures

- Figure 1: Site Location Map
- Figure 2: Project Topographic Map
- Figure 3 : Groundwater Sample Location Map

Appendix B: Project Documentation

- Groundwater Sampling Documentation

Appendix C: Project Tables

- Table 1: Summary of Soil Analytical Results
- Table 2: Summary of Compliance Groundwater Analytical Results

Appendix D: Project Analytical Results

- Laboratory Analytical Report
- Chain of Custody

1.0 INTRODUCTION

EcoCon, Inc. (ECI) has prepared this Groundwater Monitoring Report to document the first consecutive compliance groundwater sampling event conducted on February 5, 2018 at 14610 Purdy Drive Northwest in Gig Harbor, Washington (the Property) (Figures 1 and 2; Appendix A). This report details field activities and observations, sampling activities, chemical analysis, and provides conclusions and recommendations.

1.1 Property Description/Location

The Property consists of a commercial lot, 0.36 acres in size, currently improved with two structures. Both structures are occupied by Gig Harbor Transmission. The service garage was reportedly constructed in 1951 with the second structure, primarily used as storage, erected in 1975.

According to the USGS, Burley, WA topographic map (2014), the central elevation of the Property is at approximately 50 feet above mean sea level (NAD83/WGS84). The ground surface (or topography) at the Property generally slopes towards the Burley Lagoon to the west and southwest. The vicinity of the Property also gradually slopes towards the Burley Lagoon to the west and southwest.

As established in WAC 173-340-200, a "Site" is defined by the full lateral and vertical extent of contamination that has resulted from a release of hazardous substances. Based on the findings of environmental investigations and results of previous remedial actions discussed within this report, this Site had been defined as soil contaminated with: oil-range organics (ORO); polycyclic aromatic hydrocarbons (PAHs); and total lead. As discussed within this report, the release was associated with an above ground leaking hydraulic lift, and the area of impact was limited to two drainage trenches adjacent to this site feature.

1.2 Physical Setting

1.2.1 Regional Geology

The Site is located in the region of the Puget Lowlands an elongated topographic and structural depression filled with complex sequences of glacial and nonglacial sediments that overlie bedrock. Continental ice sheets up to 3,000 feet thick covered portions of the Puget Lowland several times during the Quaternary period. Retreating ice carved new landscapes, rechanneled rivers, drained or formed lakes, and deposited glacial drift including till and outwash (WA DNR, 2002).

Based on previous investigations conducted by EMS discussed in Section 1.3, the Site's surface geology varies across the Site. South of the Site's main structure, shallow soils consist clayey sands and concrete within a former underground storage tank (UST) pit to clayey, gravelly sand to clay (till) at depth. The soils in boring B2 consisted of clayey, silty and gravelly sand fill to approximately 15 feet bgs. The shallow soils around location B6 consisted of clayey, silty and gravelly sand fill to a depth of 14 feet bgs.

1.2.2 Regional Hydrogeology

The primary aquifers in the Puget Sound region are typically overlain by relatively impermeable glacial till deposits that are present at or near the ground surface. Within these till deposits are localized areas or lenses of water-bearing sands and gravels that may result in a shallow, perched water table. Lateral and vertical migration of shallow groundwater may be impeded by the relatively impermeable nature of the till and by the sometimes-discontinuous nature of the perched water-bearing sands and gravel. Perched and discontinuous zones of shallow groundwater may be seasonally or perennially present, depending on site-specific conditions. Shallow groundwater flow directions fluctuate and tend to follow topographic gradient but are also affected by seasonal high water tables and variable soil porosity characteristics. Groundwater migration pathways may also follow underground conduits.

A review of Washington State Department of Ecology (Ecology) well logs for the Site vicinity within one-eighth of a mile indicates depth to the first water bearing zone at approximately 33 feet below ground surface (bgs) and a second water bearing zone at depths greater than 110 feet bgs. At the Subject Site, shallow groundwater (perched water table) ranges from approximately 8.5 to 10.5 feet (bgs). It appears to be seasonal and exists as discontinuous lenses. No settling ponds, lagoons, surface impoundments, wetlands or natural catch basins were observed at the Site or surrounding properties.

1.3 Previous Investigations / Interim Actions

1.3.1 Tacoma Pierce County Health Department 2009 – Site Hazard Assessment

In 2009, the Tacoma Pierce County Health Department (TPCHD) visited the Property and collected soil samples from a drainage trench adjacent to the north Property boundary (abutting a concrete pad containing an exterior hydraulic hoist) and a drainage trench on the western side of the main service garage. Both areas receive runoff from the vicinity of the uncovered, above-ground hydraulic hoist. The soil samples collected contained concentrations of ORO, PAHs, cadmium, and/or lead above their respective Model Toxics Control Act (MTCA) Method A Soil Cleanup Levels for Unrestricted Land Use. The exact location of the samples within the trenches was not provided in the TPCHD records.

1.3.2 Alkai Consultants 2010 – Phase I ESA

In January of 2010, a Phase I ESA was conducted by Alkai Consultants, LLC (Alkai). Within the Phase I ESA report, two RECs were identified. The first REC was contamination previously discovered by the TPCHD within the drainage trenches on the Property. The second REC was Environmental Cleanup Liens or Activity and Use Limitations filed against the Subject Property. ECI reviewed available records at the Pierce County Recorder's Office, and was not able to identify any Environmental Cleanup Lien or Activity and Use Limitations filed against the Subject Property.

The Alkai Phase I report also included details pertaining to the decommissioning of four Underground Storage Tanks (USTs) on the Property in 1989. According to Alkai, one 10,000 gallon UST, one 5,000 gallon UST, two 2,000 gallon USTs, and all of the associated piping and dispenser islands were tested for leaks

prior to being decommissioned. The Petro Tite Tank Tester representative onsite reported that all four USTs and associated piping had no detectable leaks. During the decommissioning, no holes or damage was identified on the USTs and no contamination was discovered in the surrounding soil. Two soil samples were reportedly collected from the bottom of the tank pits and analyzed as verification, however, the laboratory analytical report was not included within the Alkai Phase I report that was reviewed. Groundwater was reportedly not encountered during the decommissioning of the USTs.

1.3.3 EMS 2010 – Interim Cleanup Action and Confirmation Sampling

In February of 2010, the owner of the Property had the contaminated soil within the two drainage trenches excavated and removed.

Environmental Management Services (EMS) subsequently completed a Phase II Subsurface Investigation to evaluate the effectiveness of the interim cleanup action. The Phase II Subsurface Investigation involved the advancement of six (6) soil borings (B1, B2, B3, B4, B5 and B6) on the Property using direct push drilling techniques. Borings B1, B3, B4 and B5 were placed on the south side of the site building. Boring B2 was placed in the southwest area of the exterior lift area and B6 was placed in front of the north working bay. EMS also collected four (4) surface soil samples (T1-T4) from the north trench along the exterior lift area and the trench running parallel to the west side of the main building. One (1) surface soil sample was collected just off the sidewalk south of the building office area (SS1).

Shallow groundwater was encountered in five (5) of the six (6) borings in isolated, perched lenses. Groundwater water was encountered in B1 at 9 feet bgs, in B2 at 8.5 feet bgs, in B4 at 11.5 feet bgs, in B5 at 10.5 feet bgs and in B6 at 9.5 feet bgs. Groundwater was not encountered in boring B3. At the completion of the drilling, each boring was backfilled with bentonite pellets and sealed at the surface with an asphalt or concrete plug and patch.

Ten (10) soil samples and three (3) water samples were collected from the soil borings, and five (5) discrete soil samples were collected using hand tools. The boring locations, sample locations and sample depths, were selected based on historical site use to best characterize the subsurface.

Selected soil and groundwater samples were analyzed for: diesel-range organics (DRO) and ORO by Ecology Method NWTPH-Dx; gasoline-range organics (GRO) by Ecology Method NWTPH-Gx; benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method 8021b, metals (lead, chromium, and cadmium) by EPA Method 6020; and/or PAHs by EPA Method 8270C.

Analytical results reported metal concentrations in the five (5) shallow soil samples (T1, T2, T3, T4 and SS1) above the laboratories practical quantification limit but below the MTCA Method A Soil Cleanup Levels. No other contaminants were detected above their respective laboratory reporting limits. A summary of the laboratory analytical results is provided on Table 1 in Appendix C.

None of the groundwater samples contained detectable concentrations of any petroleum related contaminant. The groundwater sample collected from B2 did contain a concentration of lead above the MTCA Method A Cleanup Level, however the concentration was considered anomalous as suspended solids within reconnaissance groundwater samples typically bias metal concentrations high, and none of the carrier contaminants of concern were detected.

Based on these results, EMS concluded that the contamination identified by TPCHD in 2009 had been successfully remediated. The northern drainage trench was then filled with clean soil to surface grade and the western drainage trench filled to approximately 6-inches bgs. Oil absorbent socks were lined within the western drainage trench to avoid further contamination.

1.3.4 ECI 2017 – Phase I ESA

In January of 2017, a Phase I ESA was conducted by ECI in connection to a potential purchase of the Property. ECI noted that the exterior hydraulic hoist was still uncovered, and noted some oil staining on the concrete pad. Oil absorbent socks were present within the western drainage trench; however ECI did not consider this to be a sufficient engineering control to avoid potential contamination from the leaking hoist. The exposed soils to the north of the hydraulic pad, where the northern drainage trench formerly existed, also was identified as a potential receptor for contaminated runoff. One REC was identified during the assessment in reference to the leaking hoist and lack of secondary containment.

ECI recommended additional assessment of the western trench, and former northern trench areas, to evaluate if impacts from the leaking hoist had occurred since the interim cleanup action was conducted in 2010.

1.3.5 ECI 2017 – Focused Subsurface Investigation

On January 24, 2017, ECI collected four (4) near surface soil samples (TN1-6, TN1-12; TS1-6; and TS2-6) using stainless steel hand tools (spade and trowel). The sample locations were strategically selected along the trench lines, within the areas of concern previously identified by the TPCHD and ECI's Phase I ESA. The samples were collected at depths between 6 and 12 inches below ground surface (bgs).

Four (4) soil samples were submitted to the Libby Environmental, of Olympia Washington, and analyzed for one or more of the following COCs:

- GRO by NWTPH-Gx;
- BTEX by EPA Method 8260C; and/or
- DRO and ORO by Northwest Method NWTPH-Dx.

Soil sample TS1-6 contained a concentration of ORO above its MTCA Method Cleanup Level of 2,000 mg/kg. The three remaining soil samples also contained concentrations of ORO; however they were below the MTCA Method A Cleanup Level. No other COC was detected above its respective laboratory reporting

limit in any of the four samples. A summary of the laboratory analytical results is provided on Table 1 in Appendix C.

As required in Table 830-1 in MTCA, an additional sample (TS1-6B) was collected in the vicinity of TS1-6 and analyzed for:

- DRO and ORO by Northwest Method NWTPH-Dx;
- Volatile Organic Compounds by EPA Method 8260C;
- Polychlorinated Biphenyls (PCBs) by EPA Method 8082;
- PAHs by EPA Method EPA Method 8270 (SIM); and
- Total lead by EPA Method 7010 Series.

The soil sample contained concentrations of ORO, PAHs, and lead above their respective MTCA Method A Cleanup Level. The remaining contaminants were not detected above their respective laboratory reporting limits. A summary of the laboratory analytical results is provided on Table 1 in Appendix C.

1.3.6 ECI 2018 – Groundwater Monitoring Well Installation

In January of 2018, ECI supervised the installation of groundwater monitoring well MW1 on the Property by ESN. MW1 was advanced to approximately fourteen (14) feet bgs before encountering groundwater. After encountering groundwater, the groundwater level rose within the boring to approximately seven (7) feet bgs.

MW1 was installed with approximately ten (10) feet of screen and backfilled with sand to approximately one (1) foot above the screened interval. Hydrated bentonite chips were then inserted within the boring up to approximately one (1) foot bgs. A four (4) inch monitoring well monument was installed over the groundwater monitoring well (MW1) with the surrounding concrete given a slight elevation so accumulated surface run-off does not congregate on top of the groundwater monitoring well, (Appendix A, Figure 3).

2.0 GROUNDWATER MONITORING PROGRAM

2.1 Monitoring Well Installation

ECI, at the request of Ecology installed a 1-inch 20-foot source protection monitoring well on January 30, 2018. The monitoring well construction consists of five feet of PVC schedule 40 casing extending from the surface to five feet below ground surface followed by 0.010 slot schedule 40 PVC well screen extending from five to 20 feet below bgs. Silica sand was used to bed the well casing and screen extending from approximately 4 feet bgs to 20 feet bgs. Bentonite was used to seal the well starting at 4 feet bgs and extending to the base of the well monument. The well was competed using a standard 8-inch monument and concrete.

2.2 Regulatory Compliance

This groundwater-monitoring program is being performed at the request of Ecology as part of an independent action being conducted through Ecology's Voluntary Cleanup Program. The purpose of the voluntary cleanup action is to comply with the requirements of MTCA Cleanup Regulation, as established in Chapter 340 of Title 173 of the Washington Administrative Code (WAC 173-340), to protect human health and the environment. Once four consecutive quarters of compliant, post-remediation groundwater analytical data are achieved, the groundwater beneath the Property will be considered compliant with MTCA cleanup requirements.

This report documents the first of four consecutive quarterly sampling events. The results of this sampling event and previous sampling events are available in Table 2, Appendix C.

2.3 Contaminants of Concern (COCs) and Cleanup Levels

Based upon the results of previous investigations, the COCs and respective cleanup levels for the Site are presented below:

Table 1: Project Contaminants of Concern

MTCA Method-A Cleanup Levels for Groundwater (MTCA Cleanup Regulation 173-340-900: Tables 720-1)	
Contaminant of Concern (COCs)	**Groundwater Cleanup Levels µg/L**
Diesel-Range Organics (DRO)	500
Oil-Range Organics (ORO)	500
Total cPAHs (referenced to benzo[a]pyrene)	0.1
Total and Dissolved Cadmium	2
Total and Dissolved Chromium/Hexavalent Chromium	50
Total and Dissolved Lead	15

2.4 First Quarter Sampling Activities

Groundwater sampling was competed on February 5, 2018. Samples were collected in accordance with American Society of Testing and Materials (*ASTM) Guideline* D6771-02 "*Standard Practice for Low-Flow Purging and Sampling for Wells and Devices Used for Ground-Water Quality Investigations*".

ECI field staff followed the procedures described below when collecting groundwater samples:

- The cap from the monitoring well was removed and the groundwater level was allowed to equilibrate to atmospheric pressure for a minimum of 20 minutes.
- The depth to groundwater in the monitoring well was measured relative to the top of the well casing using an electronic water-level meter.

- Each monitoring well was purged at a low-flow rate (100 to 300 milliliters per minute) using a peristaltic pump and dedicated polyethylene tubing. Temperature, pH, turbidity, dissolved oxygen and specific conductivity were monitored during purging using a water quality meter to determine when these parameters stabilized.

Samples were collected in new laboratory-provided analyte-specific sample containers and assigned a unique sample ID. The samples were placed in a climate-controlled container and maintained at or below 4° Celsius until they were delivered to the laboratory under industry standard chain of custody protocol.

2.5 Analytical Results

One groundwater sample was submitted to Libby Environmental, of Olympia, Washington and analyzed for site specific COCs. Analytical methods were consistent with those presented in Section 2.2.

The analysis of the collected groundwater sample did not contain any of the concentrations of the identified COCs in excess of their respective laboratory reporting limits which are below the MTCA Method A Cleanup Levels. A summary of the laboratory analytical results, as well as results from previous environmental investigations, is provided in Table 1 and Table 2 in Appendix C and shown on Figure 4; Appendix A.

3.0 CONCLUSION

On February 5, 2018, confirmation/compliance groundwater samples were collected from the groundwater monitoring well installed at the Site (MW1). The sample was collected to evaluate the groundwater quality. The groundwater sample analytical results reported concentrations of all COCs below their applicable cleanup levels.

3.1 Opinion

Ecology has requested groundwater sampling for three additional consecutive quarters. Although ECI does not consider the continued sampling necessary, ECI will continue to collect samples on a 90-day interval until Ecology has determined sampling results are representative of groundwater condition underlying the Site are in compliance with the substantive requirements outline in WAC 173-340.

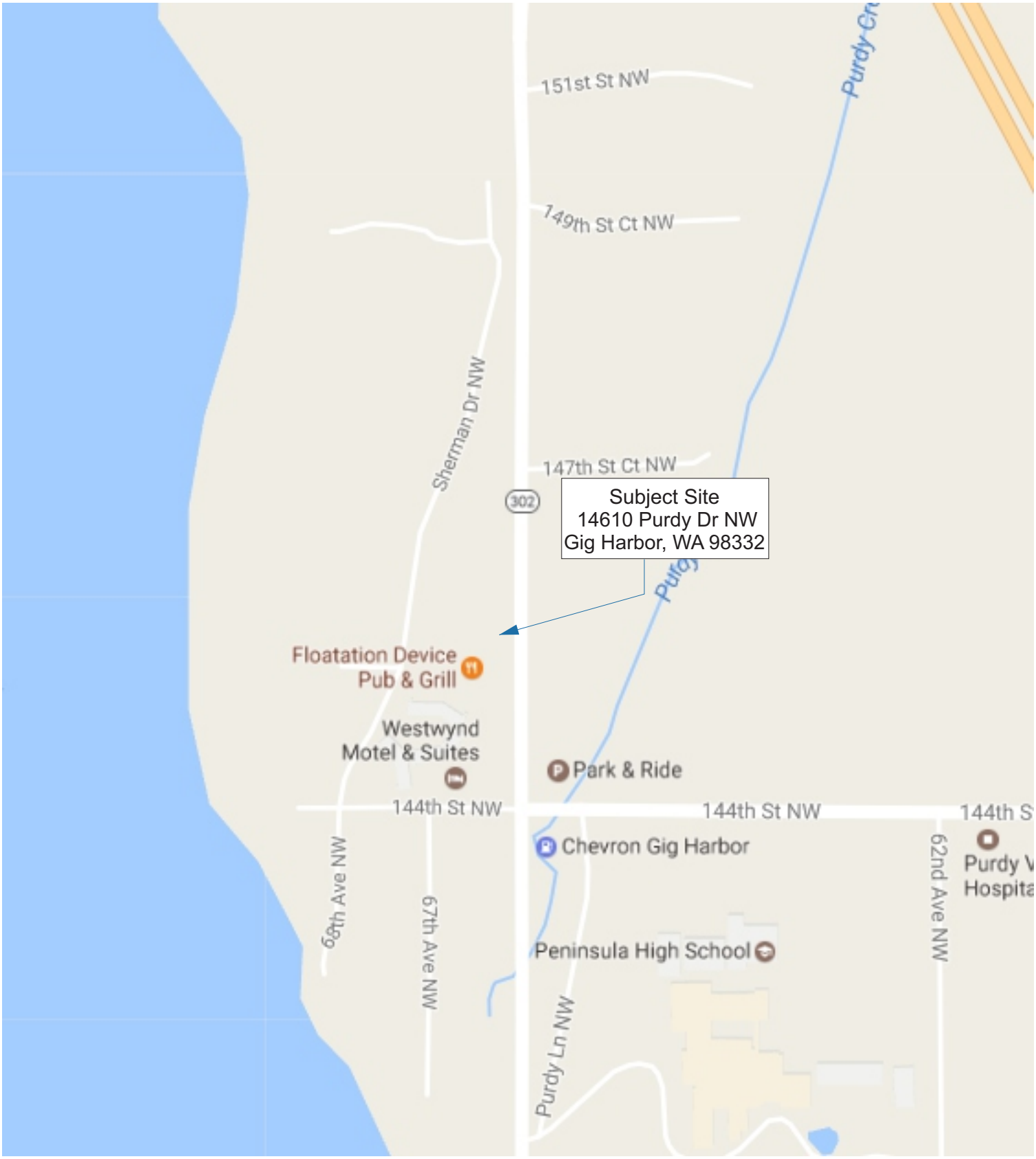
Lead, previously identified during the February 2010 subsurface investigation (B2H2O-021010 @ 35 ug/L) at the Site appears to have been reported as a result of suspended solid interface during analysis due to the direct push style of sampling collection. Results during this sampling event for both total and dissolved lead were reported non-detect. ECI does recommend that the specific COCs be reduced to lead only. Concentrations of petroleum hydrocarbons, PAHs, chromium or cadmium have not been identified in groundwater underlying the Site. Further sampling for these COCs based on the most recent analytical results reported below the laboratory MLR appears to validate our opinion.

ECI appreciates the opportunity to provide environmental consulting services on this project. Should you have any questions, please contact our office at (253) 238-9270.

Appendix A

Project Figures

- Figure 1: Subject Site Location Map
- Figure 2: Subject Site Topographic Map
- Figure 3: Monitor Well Location Map
- Figure 4: Subject Site Photographs

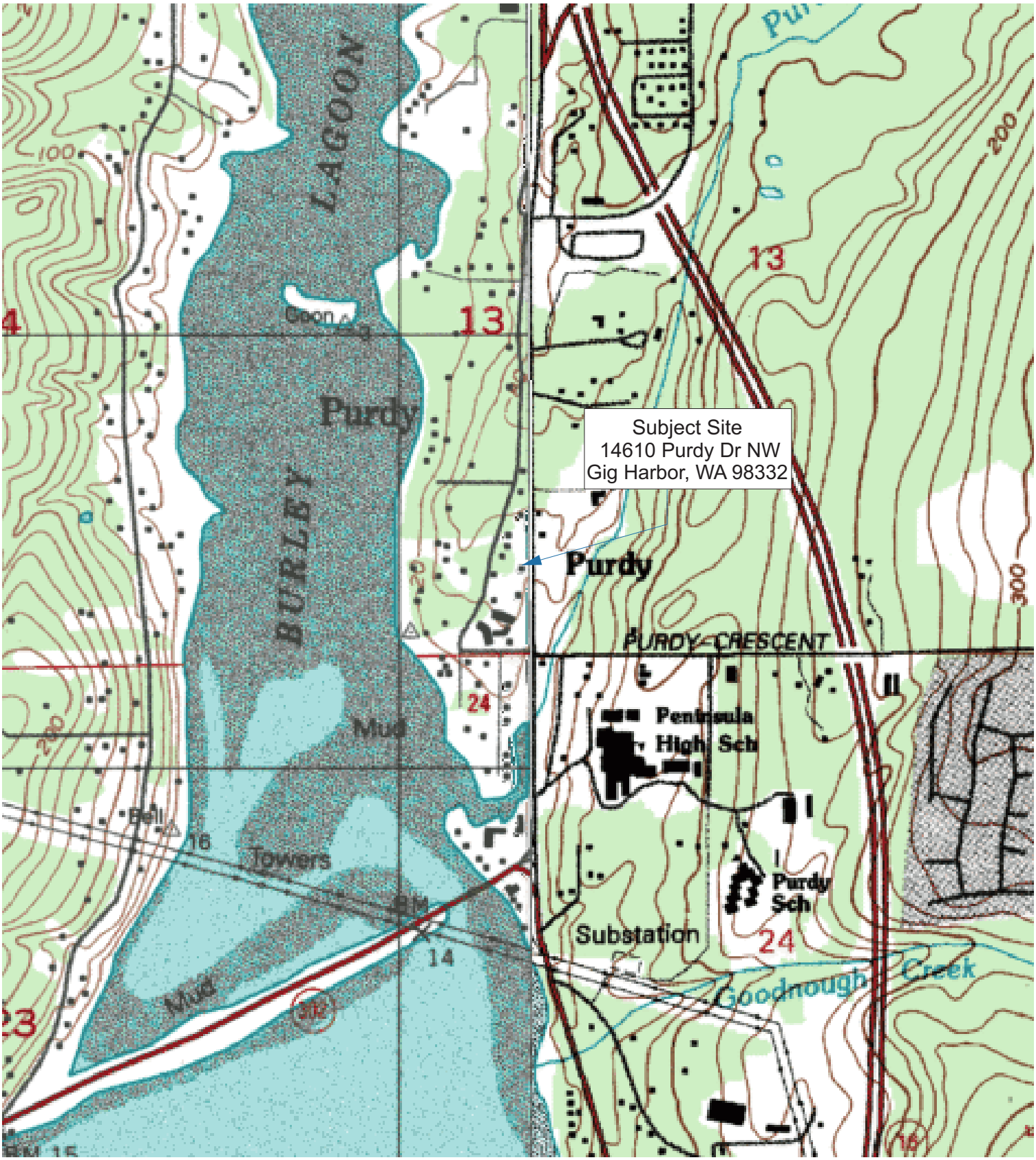


N
Not To Scale

Property Vicinity Map
Cleanup Action Report
14610 Purdy Dr NW
Gig Harbor, WA 98332

Date:	February 27, 2018
Completed By:	K. Spencer
Reviewed By.:	S. Spencer
Version:	ECI-001
Project No.:	0359-01-04

Figure No.:
01
Sheet 01 of 03

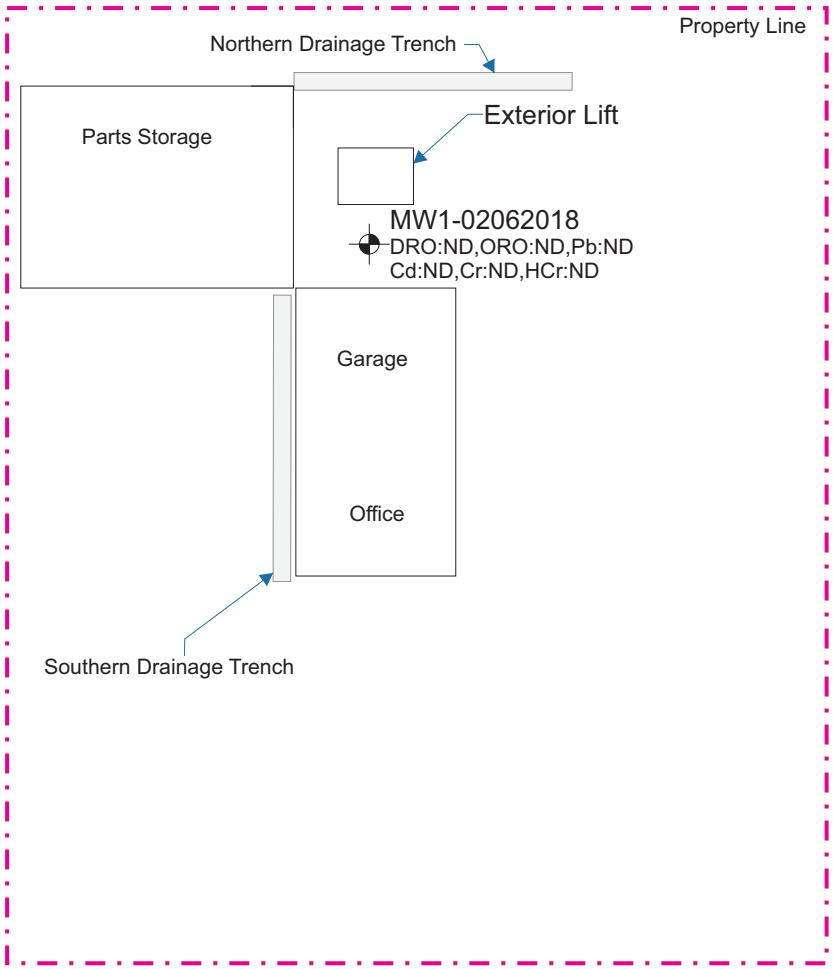


N
Not To Scale

Property Topographic Map
Cleanup Action Report
14610 Purdy Dr NW
Gig Harbor, WA 98332

Date:	February 27, 2018
Completed By:	K. Spencer
Reviewed By.:	S. Spencer
Version:	ECI-001
Project No.:	0359-01-04

Figure No.: 02
Sheet 02 of 03



Explanation

Monitoring Well Location

N

Monitoring Well Location Map
Groundwater Samplign Project
14610 Purdy Dr NW
Gig Harbor, WA 98332

Date:	February 27, 2018
Completed By:	K. Spencer
Reviewed By.:	S. Spencer
Version:	ECI-001
Project No.:	0359-01-04

03

Sheet 03 of 03

Appendix B

Appendix B: Project Documentation

- Field Sampling Forms

ECI MONITORING WELL PURGE AND SAMPLE FORM Date: 2/5/18

Project Name: Gig Harbor Trade Project No.: 0354-01-05 Well No.: MW1

Field Personnel: KJR Static Water Level: 6.39

Water Level Measurement Method: E-tape

Time Start Purge: 0945 Time End Purge: 1010 Time Sampled: 1015

Measuring Point Description: TOC

Purge Method: Low flow Purge Depth: 1 ft from bottom

Well Volume Calculation (Fill in before purging)	Total Depth (ft)	Depth to Water (ft)	Water Column (ft)	Multiplier for Casing Diameter (in) (Circle) V = (d²h/77.01)			Casing Volume (gal)
	13.2	6.39					
Time	0950	0955	1000	1005	1010		
Volume Purged (mL)	500	1000	1500	2000	2500		
pH (0.1)	5.51	5.55	5.56	5.57	5.57		
Temperature C. (3%)	10.47	10.41	10.43	10.45	10.41		
Conductivity uS/cm (3%)	~~0.0570~~	59	58	58	58		
Turbidity (10%)	92.6	89.7	86.3	87.6	87.2		
Color	clear	clear	clear	clear	clear		
Odor/Sheen	None	none	none	none	none		
Comments: DO	16.24	10.88	8.64	8.52	8.43		
ORP	288.4	268.2	255.2	253.6	252.3		

100 ml/min →

Percent Recovery: Depth to Water at Sampling (ft): 6.52

Sampling Equipment: Peristaltic

Sample No.	No. of Containers	Container Type	Preservative	Field Filtration	Analysis Request (Method)	Comments
MW1	6	multi	HNO3/N/A	N	multi	

Total Discharge (gal): 0.5 Disposal Method: Drum Drum Designation(s)/Volume:

WELL HEAD CONDITIONS CHECKLIST (Circle YES or NO - if NO, add comments)

Well Security Devices OK (Bollards, Christy Lid, Casing Lid and Lock): YES / NO

Inside of Well Head and Outer Casing Dry: YES / NO

Well Casing: YES / NO

Notes:

Appendix C

Appendix C: Project Tables

- Table 1: Groundwater Monitoring Data

Practical Environmental Compliance Solutions

Offices In: Anchorage | Tacoma | Portland

Table 1: Summary of Soil Analytical Results
Gig Harbor Transmission
14610 Purdy Drive Northwest
Gig Harbor, Washington 98332

Sample ID	Sample Date	Sample Depth (Feet)	Total Petroleum Hydrocarbons (mg/kg)			Volatile Organic Compounds (mg/kg)				Carcinogenic PAHs (mg/kg)								Metals (mg/kg)							
			Gasoline-Range	Diesel-Range	Oil- Range	Benzene	Toluene	Ethylbenzene	Total Xylenes	Benz(a)anthracene	Chrysene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(1,2,3-cd)pyrene	Dibenz(a,h)anthracene	Total cPAHs*	Arsenic	Barium	Cadmium	Total Chromium	Lead	Mercury	Selenium	Silver
TPCHD 2009 - Site Inspection																									
S1-surface-031209	3/12/2009	Surface	<25	<31	**180**	<0.0012	<0.0062	<0.0012	<0.0037	<0.0083	<0.0083	<0.0083	<0.0083	<0.0083	<0.0083	<0.0083	ND	<13	**100**	<0.63	**57**	**120**	<0.31	<13	<0.63
S2-surface-031209	3/12/2009	Surface	<270	<4,200	**29,000**	<0.0013	<0.0065	<0.0013	<0.0026	**0.094**	**0.21**	**0.33**	<0.090	**0.13**	**0.11**	<0.090	**0.20**	<14	**130**	**8.8**	**30**	**400**	0.53	<14	<0.68
EMS 2010 - Phase II Subsurface Investigation																									
B1-10-021010	2/10/2010	10	<5	<20	<50	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B2-8-021010	2/10/2010	8	--	<20	<50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B3-10-021010	2/10/2010	10	<5	<20	<50	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B4-11-021010	2/10/2010	11	<5	<20	<50	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B5-14-021010	2/10/2010	14	<5	<20	<50	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B6-8-021010	2/10/2010	8	--	<20	<50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SS1	2/10/2010	0.5-1	--	<20	<50	--	--	--	--	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	--	--	--	**0.6**	**3.4**	**17**	--	--	--
T1	2/10/2010	0.5-1	--	--	--	--	--	--	--	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	--	--	--	**0.5**	**8.4**	**35**	--	--	--
T2	2/10/2010	0.5-1	--	--	--	--	--	--	--	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	--	--	--	**0.3**	**13**	**20**	--	--	--
T3	2/10/2010	0.5-1	--	--	--	--	--	--	--	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	--	--	--	**0.4**	**35**	**53**	--	--	--
T4	2/10/2010	0.5-1	--	--	--	--	--	--	--	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	--	--	--	**1.2**	**33**	**30**	--	--	--
ECI 2017 - Focused Subsurface Investigation																									
TN1-6	1/24/2017	0.5	--	<50	**1,040**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TS1-6	1/24/2017	0.5	<10	<50	**3,440**	<0.02	<0.1	<0.05	<0.15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TS1-12	1/24/2017	1	--	<50	**638**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TS2-6	1/24/2017	0.5	--	<50	**714**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TS1-6B	1/24/2017	0.5	--	<50	**5,660**	--	--	--	--	<0.0703	**0.156**	**0.174**	<0.0703	**0.0868**	<0.0703	<0.0703	**0.13**	--	--	--	--	**660**	--	--	--
ECI 2017 - Confirmation Soil Sampling																									
EX1-18	4/4/2017	1.5	--	<50	**1,170**	--	--	--	--	<0.0451	<0.0451	<0.0451	<0.0451	<0.0451	<0.0451	<0.0451	ND	--	--	--	--	**100**	--	--	--
EX2-18	4/4/2017	1.5	--	<50	<250	--	--	--	--	<0.0466	<0.0466	<0.0466	<0.0466	<0.0466	<0.0466	<0.0466	ND	--	--	--	--	**55**	--	--	--
MTCA Method A Cleanup Levels			100	2,000	2,000	0.03	7	6	9	NA	NA	NA	NA	0.1	NA	NA	0.1	20	NA	2	2,000	250	2	NA	NA

ND: Not detected above laboratory reporting limit
*: Total Concentration using the toxicity equivalency methodology in WAC 173-340-708 (8)
Bold: Contaminant Detected Above Laboratory Reporting Limit
Red: Contaminant Concentration Exceeds MTCA Method A Cleanup Level
--: Not Analyzed

eci Environmental Services

Practical Environmental Compliance Solutions

Offices In: Anchorage | Tacoma | Portland

Table 2: Summary of Groundwater Analytical Results
Gig Harbor Transmission
14610 Purdy Drive Northwest
Gig Harbor, Washington 98332

Sample ID	Sample Date	Total Petroleum Hydrocarbons (µg/L)			Volatile Organic Compounds (µg/L)				Carcinogenic PAHs (µg/L)								Metals (µg/L)						
		Gasoline-Range	Diesel-Range	Oil- Range	Benzene	Toluene	Ethylbenzene	Total Xylenes	Benz(a)anthracene	Chrysene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(1,2,3-cd)pyrene	Dibenz(a,h)anthracene	Total cPAHs[1]	Hexavalent Chromium	Dissolved Cadmium	Total Cadmium	Dissolved Chromium	Total Chromium	Dissolved Lead	Total Lead
ECI 2017 - Focused Subsurface Investigation																							
B1H2O	2/10/2010	<50	<100	<200	<1	<1	<1	<2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B2H2O	2/10/2010	<50	<100	<200	<1	<1	<1	<2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ND	--	--	<0.4	--	**50**	--	**35**[2]
B6H2O	2/10/2010	<50	<100	<200	<1	<1	<1	<2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ND	--	--	--	--	--	--	--
ECI 2018 - Groundwater Monitoring																							
MW1	2/5/2018	--	<200	<400	--	--	--	--	<0.0998	<0.0998	<0.0998	<0.0998	<0.0998	<0.0998	<0.0998	ND	<0.01	<0.5	<0.5	<5	<5	<5	<5
A Method A Cleanup L		800	500	500	5	1,000	700	1,000	NA	NA	NA	NA	0.1	NA	NA	0.1	50	5	5	50	50	15	15

ND: Not detected above laboratory reporting limit

[1]: Total Concentration using the toxicity equivalency methodology in WAC 173-340-708 (8)

[2]: Concentration is considered anomolous. Reconnassaince groundwater samples tend to bias metal concentrations high due to presence of suspended solids.

--: Not Analyzed

Appendix D

Appendix D: Project Analytical Results

- Laboratory Analytical Reports
- Sample Chain of Custody

Libby Environmental, Inc.
4139 Libby Road NE • Olympia, WA 98506-2518

February 14, 2018

David Polivka
ECI
P.O. Box 153
Fox Island, WA 98333

Dear Mr. Polivka:

Please find enclosed the analytical data report for the Gig Harbor Transmission Project located in Gig Harbor, Washington.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. The sample(s) will be disposed of in 30 days unless we are contacted to arrange long term storage.

Libby Environmental, Inc. appreciates the opportunity to have provided analytical services for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Sherry L. Chilcutt
Senior Chemist
Libby Environmental, Inc.

Phone (360) 352-2110 • Fax (360) 352-4154 • libbyenv@aol.com

Libby Environmental, Inc.

Chain of Custody Record

www.LibbyEnvironmental.com

4139 Libby Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Date: 2/5/18 Page: 1 of 1

Client: ECI
Project Manager: David Polivka
Address: PO Box 153
Project Name: Gig Harbor Transmission
City: Fox Island State: WA Zip: 98333
Location: 14610 Purdy Dr. NW City, State: Gig Harbor, WA
Phone: 360-349-0851 Fax:
Collector: Kaden Reed Date of Collection: 2/5/18
Client Project # 0359-01-05
Email: David@ecocon.us

Sample Number	Depth	Time	Sample Type	Container Type	VOC 8260	NWTPH-Gx	BTEX 8021	NWTPH-HCID	NWTPH-Dx	NWTPH-Dx/Dx	c PAH 8270	PAH 8270	Semi Vol 8270	PCB 8082	MTCA 5 Metals	RCRA 8 Metals	Hexavalent Chrome	Total Cadmium + Pb	D's. Cadmium + Pb	Field Notes
1 MW1	—	1015	W	4 poly 2 amber						X	X					X	X	X	X	
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15																				
16																				
17																				

Relinquished by:	Date / Time	Received by:	Date / Time
David A. Polivka	2/5/18 1124	Hadley Elez	2/5/18 1124
Relinquished by:	Date / Time	Received by:	Date / Time
Relinquished by:	Date / Time	Received by:	Date / Time

Sample Receipt

Good Condition?	Y	N	
Temp.		°C	
Seals Intact?	Y	N	N/A
Total Number of Containers	6		

Remarks:

TAT: 24HR 48HR 5-DAY

Distribution: White - Lab, Yellow - File, Pink - Originator

Libby Environmental, Inc.

4139 Libby Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@aol.com

GIG HARBOR TRANSMISSION PROJECT
ECI
Gig Harbor, Washington
Libby Project # L180205-2
Client Project # 0359-01-05

Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Water

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (µg/L)	Oil (µg/L)
Method Blank	2/6/18	121	nd	nd
MW1	2/6/18	118	nd	nd
MW1 Dup	2/6/18	119	nd	nd
Practical Quantitation Limit			200	400

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Vanessa Cheang

Libby Environmental, Inc.

4139 Libby Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@aol.com

GIG HARBOR TRANSMISSION PROJECT
ECI
Gig Harbor, Washington
Libby Project # L180205-2
Client Project # 0359-01-05

Analyses of Total Metals in Water by EPA Method 7010 Series

Sample Number	Date Analyzed	Lead (µg/L)	Cadmium (µg/L)	Chromium (µg/L)
Method Blank	2/11/18	nd	nd	nd
MW1	2/11/18	nd	nd	nd
Practical Quantitation Limit		5.0	0.5	5.0

"nd" Indicates not detected at the listed detection limits.

ANALYSES PERFORMED BY: Dirk Peterson

Libby Environmental, Inc.

4139 Libby Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@aol.com

GIG HARBOR TRANSMISSION PROJECT
ECI
Gig Harbor, Washington
Libby Project # L180205-2
Client Project # 0359-01-05

QA/QC for Total Metals in Water by EPA Method 7010 Series

Sample Number	Date Analyzed	Lead (% Recovery)	Cadmium (% Recovery)	Chromium (% Recovery)
LCS	2/11/18	107%	88%	90%
MW1 MS	2/11/18	88%	81%	83%
MW1 MSD	2/11/18	91%	83%	85%
RPD	2/11/18	3%	2%	2%

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 75%-125%
ACCEPTABLE RPD IS 20%

ANALYSES PERFORMED BY: Dirk Peterson

Libby Environmental, Inc.

4139 Libby Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@aol.com

GIG HARBOR TRANSMISSION PROJECT
ECI
Gig Harbor, Washington
Libby Project # L180205-2
Client Project # 0359-01-05

Analyses of Dissolved Metals in Water by EPA Method 7010 Series

Sample Number	Date Analyzed	Lead (µg/L)	Cadmium (µg/L)	Chromium (µg/L)
Method Blank	2/11/18	nd	nd	nd
MW1	2/11/18	nd	nd	nd
MW1 Dup	2/11/18	nd	nd	nd
Practical Quantitation Limit		5.0	0.5	5.0

"nd" Indicates not detected at the listed detection limits.

ANALYSES PERFORMED BY: Dirk Peterson

Libby Environmental, Inc.

4139 Libby Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@aol.com

GIG HARBOR TRANSMISSION PROJECT
ECI
Gig Harbor, Washington
Libby Project # L180205-2
Client Project # 0359-01-05

QA/QC for Dissolved Metals in Water by EPA Method 7010 Series

Sample Number	Date Analyzed	Lead (% Recovery)	Cadmium (% Recovery)	Chromium (% Recovery)
LCS	2/11/18	107%	88%	90%
MW1 MS	2/11/18	88%	81%	83%
MW1 MSD	2/11/18	91%	83%	85%
RPD	2/11/18	3%	2%	2%

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 75%-125%
ACCEPTABLE RPD IS 20%

ANALYSES PERFORMED BY: Dirk Peterson

SPECTRA Laboratories ...Where experience matters

2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

02/07/2018

Libby Environmental, Inc.
4139 Libby Rd NE
Olympia, WA 98506
Attn: Jamie Deyman

Project:	Gig Harbor Transmission
Client ID:	MW1
Sample Matrix:	Water
Date Sampled:	02/05/2018
Date Received:	02/05/2018
Spectra Project:	2018020094
Spectra Number:	1

Analyte	Result	Units	Method
Hexavalent Chromium	<0.01	mg/L	SW846 7196A

Hexavalent chromium analysis: CK 2/5/2018

SPECTRA LABORATORIES

Jeffrey Cooper, Laboratory Manager

a6.jac

SPECTRA Laboratories ...Where experience matters
2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

February 7, 2018

Libby Environmental
4139 Libby Rd NE
Olympia, WA 98506

Units: mg/L
Spectra Project: 2018020094
Applies to Spectra #'s 1

QUALITY CONTROL RESULTS

Hexavalent Chromium in Water/Liquid - Method SM 3500 Cr-D/ SW846 7196A

Method Blank

Date Analyzed: 2/5/2018

	Result
Hexavalent Chromium	<0.01

Blank Spike (LCS)

Date Analyzed: 2/5/2018

	Spike Added	LCS Conc.	LCS %Rec
Hexavalent Chromium	0.1	0.106	106

LCS Recovery limits 73-120%

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Date Analyzed: 2/5/2018

Sample Spiked: 2018020094-1

	Sample Conc.	Spike Conc.	MS Conc.	MS %Rec	MSD Conc	MSD %Rec	RPD
Hexavalent Chromium	<0.01	0.1	0.106	106	0.116	116	9.0

Recovery Limits 75-125%
RPD Limit 20

SPECTRA LABORATORIES

Jeffrey Cooper
Laboratory Manager

Libby Environmental, Inc.

Chain of Custody Record 2018020094

www.LibbyEnvironmental.com

4139 Libby Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Client: Libby Environmental
Address: See above
City: State: Zip:
Phone: Fax:
Client Project # L180205-HE

Date: 2/5/18 Page: 1 of 1
Project Manager: Sherry
Project Name: Gig Harbor Transmission
Location: City, State: Gig Harbor, WA
Collector: HR Date of Collection: 2/5/18
Email: libbyenv@aol.com

	Sample Number	Depth	Time	Sample Type	Container Type	VOC 8260	NWTPH-Gx	BTEX 8021	NWTPH-HCID	NWTPH-Dx	NWTPH-Dx/Dx	c PAH 8270	PAH 8270	Semi Vol 8270	PCB 8082	MTCA 5 Metals	RCRA 8 Metals	Hex Chrom		Field Notes
1	MW1	—	1015	W	Poly												X			
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15																				
16																				
17																				

Relinquished by:	Date / Time	Received by:	Date / Time
Rhodey Clay	2/5/18 1147	Spectrum	2-5-18 11:47
Relinquished by:	Date / Time	Received by:	Date / Time
Relinquished by:	Date / Time	Received by:	Date / Time

Sample Receipt

Good Condition?	Y	N	
Temp.		°C	
Seals Intact?	Y	N	N/A
Total Number of Containers			

Remarks: Std TAT

TAT: 24HR 48HR (5-DAY)

LEGAL ACTION CLAUSE: *In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a cout of law.*

Distribution: White - Lab, Yellow - File, Pink - Originator

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Libby Environmental
Sherry Chilcutt
4139 Libby Rd. NE
Olympia, WA 98506

RE: Gig Harbor Transmission
Work Order Number: 1802086

February 14, 2018

Attention Sherry Chilcutt:

Fremont Analytical, Inc. received 1 sample(s) on 2/7/2018 for the analyses presented in the following report.

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Chelsea Ward
Project Manager

Date: *02/14/2018*

CLIENT: Libby Environmental
Project: Gig Harbor Transmission
Work Order: 1802086

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1802086-001	MW1	02/05/2018 10:15 AM	02/07/2018 12:45 PM

Case Narrative

WO#: **1802086**
Date: **2/14/2018**

CLIENT: Libby Environmental
Project: Gig Harbor Transmission

WorkOrder Narrative:
I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **1802086**
Date Reported: **2/14/2018**

Client: Libby Environmental
Collection Date: 2/5/2018 10:15:00 AM
Project: Gig Harbor Transmission
Lab ID: 1802086-001
Matrix: Water
Client Sample ID: **MW1**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)				Batch ID: 19760		Analyst: IH
Benz(a)anthracene	ND	0.0998		µg/L	1	2/12/2018 3:42:19 PM
Chrysene	ND	0.0998		µg/L	1	2/12/2018 3:42:19 PM
Benzo(b)fluoranthene	ND	0.0998		µg/L	1	2/12/2018 3:42:19 PM
Benzo(k)fluoranthene	ND	0.0998		µg/L	1	2/12/2018 3:42:19 PM
Benzo(a)pyrene	ND	0.0998		µg/L	1	2/12/2018 3:42:19 PM
Indeno(1,2,3-cd)pyrene	ND	0.0998		µg/L	1	2/12/2018 3:42:19 PM
Dibenz(a,h)anthracene	ND	0.0998		µg/L	1	2/12/2018 3:42:19 PM
Surr: 2-Fluorobiphenyl	93.2	31.2 - 159		%Rec	1	2/12/2018 3:42:19 PM
Surr: Terphenyl-d14 (surr)	89.9	28.5 - 134		%Rec	1	2/12/2018 3:42:19 PM

Work Order: 1802086
CLIENT: Libby Environmental
Project: Gig Harbor Transmission

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID **MB-19760** SampType: **MBLK** Units: **µg/L** Prep Date: **2/8/2018** RunNo: **41672**
Client ID: **MBLKW** Batch ID: **19760** Analysis Date: **2/12/2018** SeqNo: **803344**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benz(a)anthracene	ND	0.100									
Chrysene	ND	0.100									
Benzo(b)fluoranthene	ND	0.100									
Benzo(k)fluoranthene	ND	0.100									
Benzo(a)pyrene	ND	0.100									
Indeno(1,2,3-cd)pyrene	ND	0.100									
Dibenz(a,h)anthracene	ND	0.100									
Surr: 2-Fluorobiphenyl	2.01		2.000		101	31.2	159				
Surr: Terphenyl-d14	2.43		2.000		121	28.5	134				

Sample ID **LCS-19760** SampType: **LCS** Units: **µg/L** Prep Date: **2/8/2018** RunNo: **41672**
Client ID: **LCSW** Batch ID: **19760** Analysis Date: **2/12/2018** SeqNo: **803346**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benz(a)anthracene	3.61	0.100	4.000	0	90.3	42.8	125				
Chrysene	3.22	0.100	4.000	0	80.6	32.3	120				
Benzo(b)fluoranthene	3.38	0.100	4.000	0	84.5	25.9	132				
Benzo(k)fluoranthene	2.79	0.100	4.000	0	69.7	25.1	118				
Benzo(a)pyrene	3.28	0.100	4.000	0	81.9	18.7	120				
Indeno(1,2,3-cd)pyrene	3.62	0.100	4.000	0	90.5	21.3	131				
Dibenz(a,h)anthracene	3.73	0.100	4.000	0	93.4	21.3	137				
Surr: 2-Fluorobiphenyl	1.70		2.000		85.0	31.2	159				
Surr: Terphenyl-d14	1.67		2.000		83.5	28.5	134				

Sample ID **LCSD-19760** SampType: **LCSD** Units: **µg/L** Prep Date: **2/8/2018** RunNo: **41672**
Client ID: **LCSW02** Batch ID: **19760** Analysis Date: **2/12/2018** SeqNo: **803347**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benz(a)anthracene	3.89	0.100	4.000	0	97.2	42.8	125	3.612	7.39	30	
Chrysene	3.41	0.100	4.000	0	85.3	32.3	120	3.224	5.67	30	

Work Order: 1802086
CLIENT: Libby Environmental
Project: Gig Harbor Transmission

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID **LCSD-19760** SampType: **LCSD** Units: **µg/L** Prep Date: **2/8/2018** RunNo: **41672**
Client ID: **LCSW02** Batch ID: **19760** Analysis Date: **2/12/2018** SeqNo: **803347**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(b)fluoranthene	3.60	0.100	4.000	0	90.1	25.9	132	3.380	6.37	30	
Benzo(k)fluoranthene	3.17	0.100	4.000	0	79.1	25.1	118	2.787	12.7	30	
Benzo(a)pyrene	3.62	0.100	4.000	0	90.5	18.7	120	3.275	10.0	30	
Indeno(1,2,3-cd)pyrene	4.04	0.100	4.000	0	101	21.3	131	3.620	11.1	30	
Dibenz(a,h)anthracene	4.13	0.100	4.000	0	103	21.3	137	3.734	10.2	30	
Surr: 2-Fluorobiphenyl	1.84		2.000		91.8	31.2	159		0	0	
Surr: Terphenyl-d14	1.84		2.000		92.1	28.5	134		0	0	

Sample ID **1802086-001ADUP** SampType: **DUP** Units: **µg/L** Prep Date: **2/8/2018** RunNo: **41672**
Client ID: **MW1** Batch ID: **19760** Analysis Date: **2/12/2018** SeqNo: **803349**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benz(a)anthracene	ND	0.118						0		30	
Chrysene	ND	0.118						0		30	
Benzo(b)fluoranthene	ND	0.118						0		30	
Benzo(k)fluoranthene	ND	0.118						0		30	
Benzo(a)pyrene	ND	0.118						0		30	
Indeno(1,2,3-cd)pyrene	ND	0.118						0		30	
Dibenz(a,h)anthracene	ND	0.118						0		30	
Surr: 2-Fluorobiphenyl	2.09		2.354		88.6	31.2	159		0		
Surr: Terphenyl-d14	2.00		2.354		85.0	28.5	134		0		

Sample Log-In Check List

Client Name:	**LIBBY**	Work Order Number:	**1802086**
Logged by:	**Clare Griggs**	Date Received:	**2/7/2018 12:45:00 PM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	UPS		

Log In

3.	Coolers are present?	Yes ☑	No ☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Required ☑
6.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
7.	Were all items received at a temperature of >0°C to 10.0°C*	Yes ☑	No ☐	NA ☐
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

Item #	Temp ºC
Cooler	6.5
Sample	6.0

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Libby Environmental, Inc.

Chain of Custody Record

1802086

www.LibbyEnvironmental.com

4139 Libby Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Date: 2/5/18 Page: 1 of 1

Client: Libby Environmental

Project Manager: Sherry Chilcutt

Address: See Above

Project Name: Gig Harbor Transmission

City: State: Zip:

Location: City, State: Gig Harbor, WA

Phone: Fax:

Collector: KR Date of Collection: 2/5/18

Client Project # L180205-2

Email: libbyenv@aol.com

	Sample Number	Depth	Time	Sample Type	Container Type	VOC 8260	NWTPH-Gx	BTEX 8021	NWTPH-HCID	NWTPH-Dx	NWTPH-Dx/Dx	c PAH 8270	PAH 8270	Semi Vol 8270	PCB 8082	MTCA 5 Metals	RCRA 8 Metals			Field Notes
1	MW1	—	1015	H_2O	Amber							X								
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15																				
16																				
17																				

Relinquished by:	Date / Time	Received by:	Date / Time
Cheryl Chilcutt	2/5/18 1530		2/7/18 1245
Relinquished by:	Date / Time	Received by:	Date / Time
Relinquished by:	Date / Time	Received by:	Date / Time

Sample Receipt

Good Condition?	Y	N	
Temp.		°C	
Seals Intact?	Y	N	N/A
Total Number of Containers			

Remarks:

TAT: 24HR 48HR 5-DAY

Distribution: White - Lab, Yellow - File, Pink - Originator