

GROUNDWATER MONITORING REPORT

Second Quarter 2018 – Second Consecutive Sampling Event

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

Facility/Site No.: 11876
Cleanup Site No.: 1952
VCP Project No.: SW1590

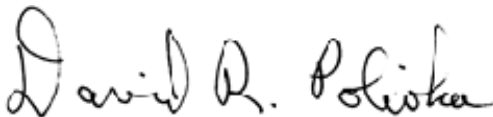
May 18, 2018

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



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1.0 INTRODUCTION

EcoCon, Inc. (ECI) has prepared this Groundwater Monitoring Report to document the second consecutive compliance groundwater sampling event conducted on May 8, 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 Environmental Management Services (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 Environmental Site Assessment

In January of 2010, a Phase I Environmental Site Assessment (ESA) was conducted by Alkai Consultants, LLC (Alkai). Within the Phase I ESA report, two Recognized Environmental Conditions (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 ESA 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 ESA report that was reviewed. Groundwater was reportedly not encountered during the decommissioning of the USTs.

1.3.3 Environmental Management Services 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 that was identified by the TPCHD excavated and removed.

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 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.

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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 EcoCon, Inc. 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 EcoCon, Inc. 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 EcoCon, Inc. 2018 – Groundwater Monitoring Well Installation

In January of 2018, at the request of Ecology, 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).

1.3.7 EcoCon, Inc. 2018 – Quarterly Groundwater Monitoring

On February 5, 2018, ECI collected groundwater samples from the groundwater monitoring well (MW1) on the Property, as part of the first of four consecutive groundwater monitoring events. The groundwater sample was 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 Groundwater Quality Investigations"*.

The collected groundwater sample from MW1 was submitted to Libby Environmental, of Olympia, Washington and analyzed for site specific COCs which were identified as:

- Diesel-range organics (DRO);
- Oil-range organics (ORO);
- Total cPAHs;
- Total and dissolved cadmium;
- Total and dissolved chromium/hexavalent chromium; and
- Total and dissolved lead.

The analysis of the groundwater sample collected from MW1 indicated that the concentrations of the identified COCs were below their respective Laboratory Practical Quantitative Limits which were below their respective MTCA Method A Cleanup Levels. A summary of the laboratory analytical results, as well as results from previous groundwater sampling events, is provided in Table 2 in Appendix C.

2.0 GROUNDWATER MONITORING PROGRAM

2.1 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 second of four consecutive quarterly sampling events. The results of this groundwater sampling event and previous groundwater sampling events are available in Table 2, Appendix C.

2.2 Contaminants of Concern (COCs) and Cleanup Levels

The analytical results from the first groundwater monitoring event, in February 5, 2018, indicated that the concentrations of the identified COCs were below their respective Laboratory Practical Quantitative Limits (PQL) which is below their respective MTCA Method A Cleanup Levels. Therefore, satisfying the requirements provided by Ecology according to a Department of Ecology Opinion Letter, dated September 27, 2017:

“Groundwater samples collected from the new monitoring well should be analyzed for: Heavy oil, cPAHs, total and dissolved cadmium, total and dissolved chromium, hexavalent chromium, and total lead and dissolved lead.

1. *If the concentration of cPAHs from the first sampling event is less than the laboratory PQL, then cPAHs only need to be sampled for once in groundwater.*
2. *If the concentration of hexavalent chromium from the first sampling event is less than the laboratory PQL, then hexavalent chromium only needs to be sampled for once in groundwater.*
3. *If the concentration of cadmium from the first sampling event is less than the laboratory PQL, then cadmium only needs to be sampled for once in groundwater.”*

For the second quarterly sampling event, ECI adjusted the COCs to match the updated requirements.

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

2.3 Second Quarter Sampling Activities

Groundwater sampling was completed on May 8, 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.

2.4 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 Practical Quantitative 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 May 8, 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 MTCA Method A Cleanup Levels.

3.1 Opinion

Ecology has requested groundwater sampling for two 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 outlined in WAC 173-340.

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

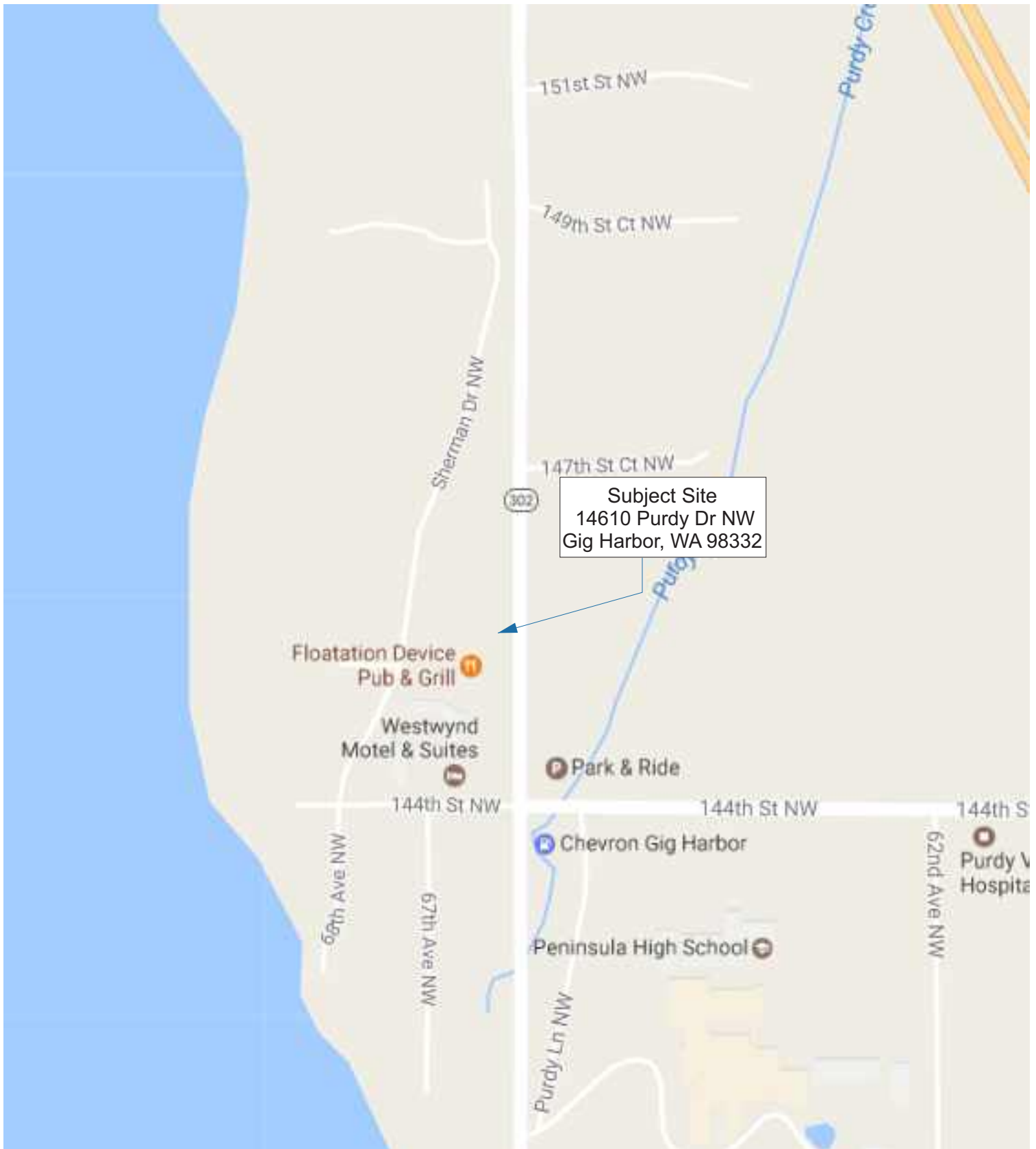
Appendix B

Appendix B: Project Documentation

- Field Sampling Forms

Appendix B

Project Documentation

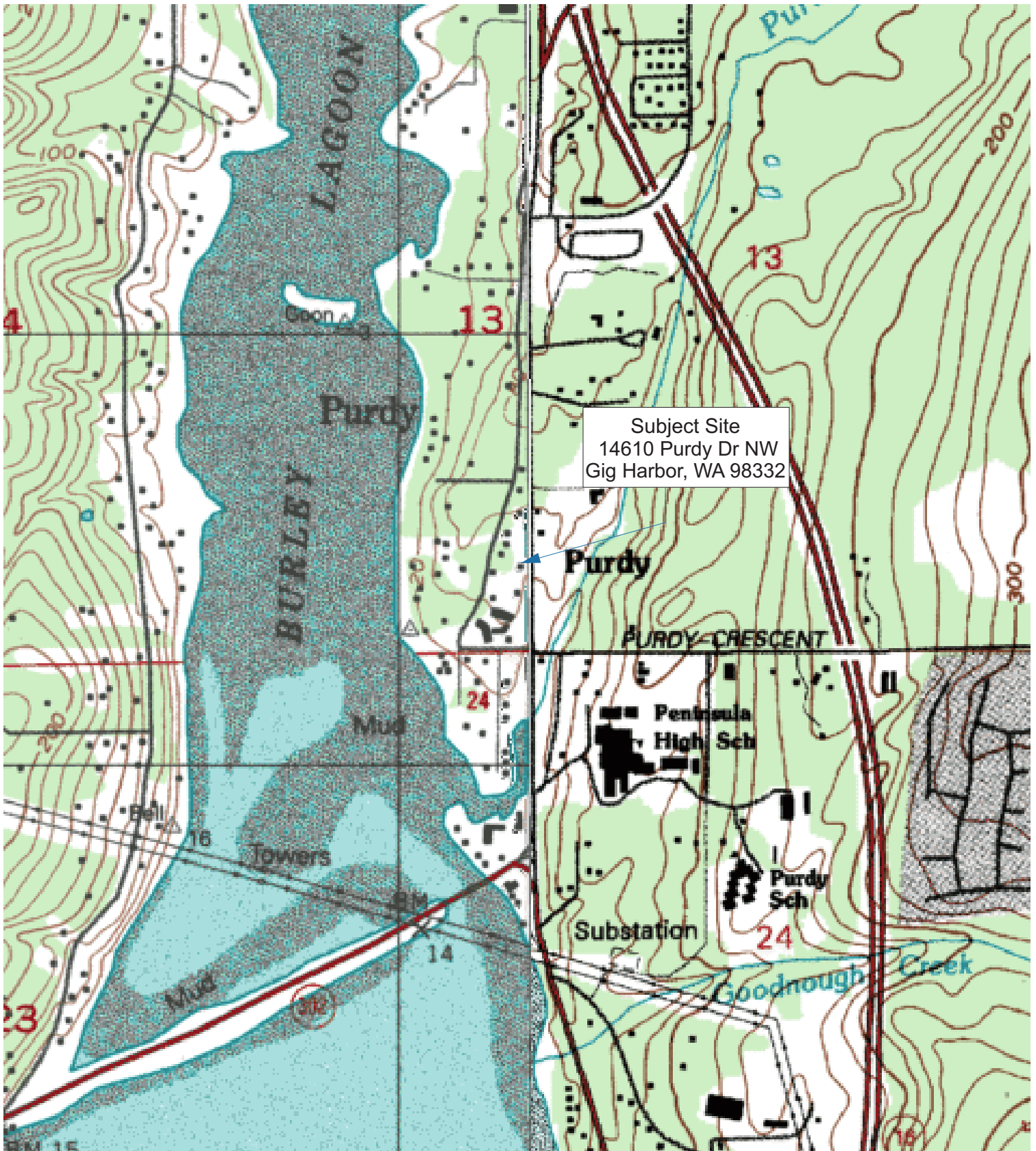


Property Vicinity Map
 Cleanup Action Report
 14610 Purdy Dr NW
 Gig Harbor, WA 98332

Date: May 18, 2018
 Completed By: K. Spencer
 Reviewed By.: S. Spencer
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01
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Property Topographic Map
 Cleanup Action Report
 14610 Purdy Dr NW
 Gig Harbor, WA 98332

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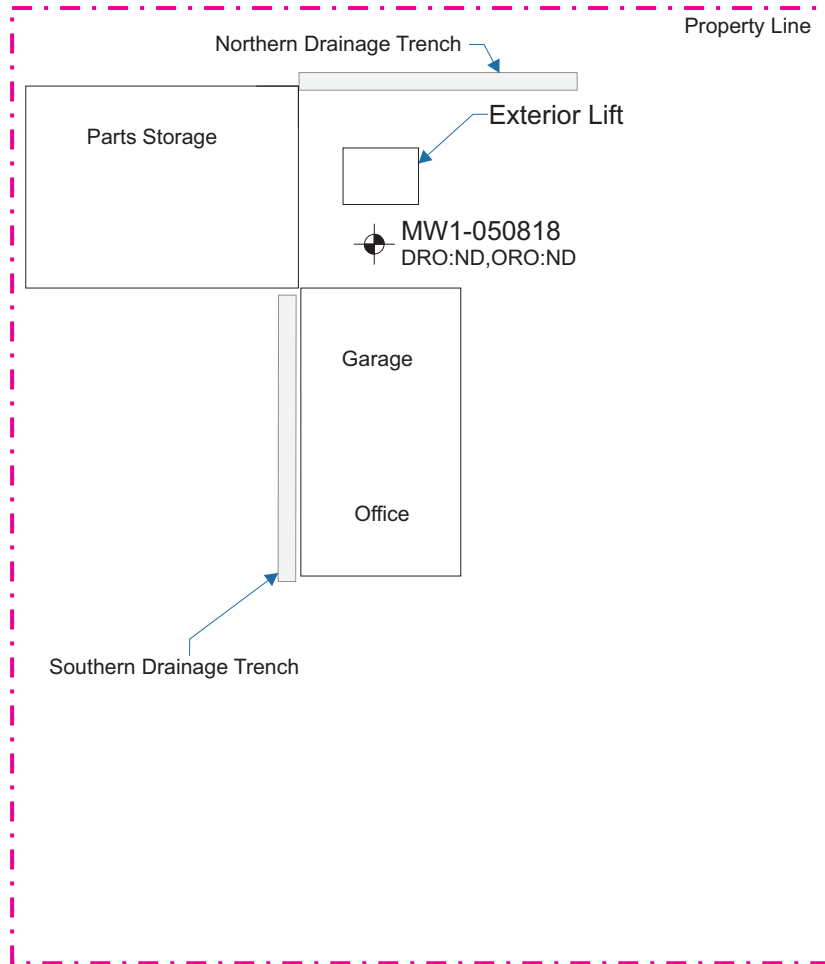
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Explanation

 Monitoring Well Location



Monitoring Well Location Map
 Groundwater Samplign Project
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Appendix C

Appendix C: Project Tables

- Table 1: Groundwater Monitoring Data
- Table 2: Summary of Compliance Groundwater Analytical Results

Appendix C

Project Tables

Table 1: Summary of Soil Analytical Results
Gig Harbor Transmission
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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	Dibenzo(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



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Table 2: Summary of Groundwater Analytical Results
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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	Benzo(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	--	35²
B6H2O	2/10/2010	<50	<100	<200	<1	<1	<1	<2	<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
MW1	5/8/2018	--	<200	<400	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MTCA Method A Cleanup Levels		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. Reconnaissance 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
- Chain of Custody

Appendix D

Project Analytical Results



Libby Environmental, Inc.

4139 Libby Road NE • Olympia, WA 98506-2518

May 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.

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: 5/8/18 Page: 1 of 1

Client: ECT

Project Manager: David Polivka

Address: PO Box 153

Project Name: Big Harbor Transmission

City: Fox Island State: WA Zip: 98333

Location: 14610 Purdy Dr. NW City, State: Big Harbor, WA

Phone: 253-561-3298 Fax:

Collector: Karen Reed Date of Collection: 5/8/18

Client Project # David@ecocoanus / KReed@ecocoanus

Email: 060359-01-05



Sample Number	Depth	Time	Sample Type	Container Type	Analytes											Field Notes										
					VOC 8260	NWTPH-Gx	BTEX 8021	NWTPH-HCID	NWTPH-Dx	c PAH 8270	PAH 8270	Semi Vol 8270	PCB 8082	MTCA 5 Metals	RCRA 8 Metals											
1	<u>Mwl</u>	<u>~</u>	<u>W</u>	<u>1 L. Amber</u>																						
2																										
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										
13																										
14																										
15																										
16																										
17																										

Relinquished by: <u>Karen Reed</u>	Date / Time: <u>5/8/18 1315</u>	Received by: <u>Melissa HJT</u>	Date / Time: <u>5/8/18 1315</u>	Sample Receipt Good Condition? <input checked="" type="radio"/> Y <input type="radio"/> N Temp. <u>17</u> <u>43</u> °C Seals Intact? <input checked="" type="radio"/> Y <input type="radio"/> N <input type="radio"/> N/A Total Number of Containers: <u>1</u>	Remarks: <u>Cooler 0°</u> TAT: 24HR 48HR <u>5-DAY</u>
Relinquished by:	Date / Time:	Received by:	Date / Time:		
Relinquished by:	Date / Time:	Received by:	Date / Time:		
Relinquished by:	Date / Time:	Received by:	Date / Time:		

Libby Environmental, Inc.

Gig Harbor Transmission PROJECT
ECI
Gig Harbor, WA
Libby Project # L180508-3
Client Project # 0359-01-05

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

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

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (µg/L)	Oil (µg/L)
Method Blank	5/9/18	97	nd	nd
MW-1	5/9/18	108	nd	nd
MW-1 Dup	5/9/18	106	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: Melissa Harrington

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

Libby Project # L180508-3

Date Received 5/8/2018

Time Received 1:15 PM

Received By MH

Sample Receipt Checklist

Chain of Custody

1. Is the Chain of Custody is complete? Yes No
2. How was the sample delivered? Hand Delivered Picked Up Shipped

Log In

3. Cooler or Shipping Container is present. Yes No N/A
4. Cooler or Shipping Container is in good condition. Yes No N/A
5. Cooler or Shipping Container has Custody Seals present. Yes No N/A
6. Was an attempt made to cool the samples? Yes No N/A
7. Temperature of cooler (0°C to 8°C recommended) 0.0 °C
8. Temperature of sample(s) (0°C to 8°C recommended) 17.0 °C
9. Did all containers arrive in good condition (unbroken)? Yes No
10. Is it clear what analyses were requested? Yes No
11. Did container labels match Chain of Custody? Yes No
12. Are matrices correctly identified on Chain of Custody? Yes No
13. Are correct containers used for the analysis indicated? Yes No
14. Is there sufficient sample volume for indicated analysis? Yes No
15. Were all containers properly preserved per each analysis? Yes No
16. Were VOA vials collected correctly (no headspace)? Yes No N/A
17. Were all holding times able to be met? Yes No

Discrepancies/ Notes

18. Was client notified of all discrepancies? Yes No N/A

Person Notified: _____

Date: _____

By Whom: _____

Via: _____

Regarding: _____

19. Comments. _____

