



Transmittal

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Washington Department of Ecology
3190 160th Avenue Southeast
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Subject: Remedial Investigation Work Plan

No. of Copies	Description/Title	Drawing No./ Document Ref.	Issue
1	Remedial Investigation Work Plan	2	

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Remarks:

Copy to: De Holbrook, PNEC Corporation d.b.a
SC Fuels

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[Please Print]

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Remedial Investigation Work Plan

Former Tosco Bainbridge Bulk Plant 1784
Weaver Avenue and
Shepard Way Northwest
Bainbridge Island, Washington
Facility Site ID: 2659127

PNEC Corporation d.b.a. SC Fuels

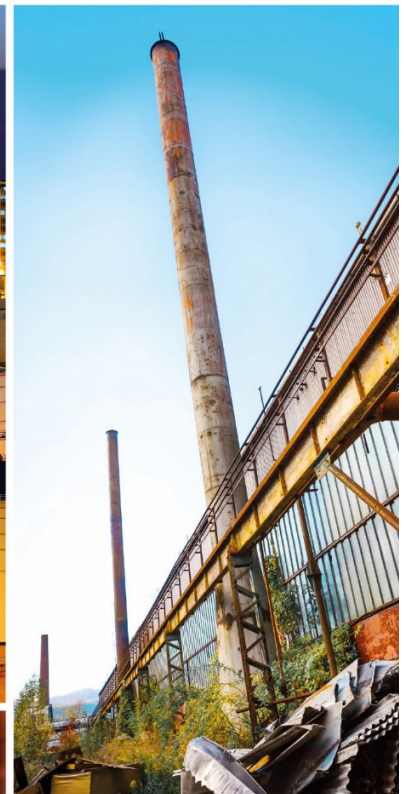
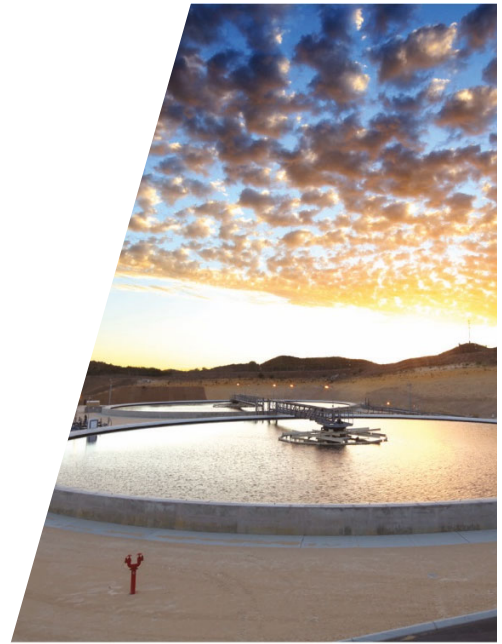




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1. Introduction

GHD is submitting this *Remedial Investigation Work Plan* on behalf of PNEC Corporation d.b.a. SC Fuels for the former Tosco Bainbridge Island Bulk Plant 1784, located at Weaver Avenue and Shepard Way Northwest, Bainbridge Island, Kitsap County, Washington (Property; Figure 1). The scope of work detailed below addresses the data gaps identified during a meeting with the Washington State Department of Ecology (Ecology) on January 29, 2020, and follow-up electronic communications and conference calls through March 24, 2020.

The property currently consists of vacant land and is comprised of a 0.9-acre parcel (Kitsap County Parcel No. 272502-4-005-2001) that measures approximately 60 feet wide (east to west) and 990 feet long. Weaver Creek is located along a portion of the west side of the Property, and Eagle Harbor is located at the south end of the Property. Historically a heating oil bulk petroleum storage facility occupied the Property from 1970 to 1997. Former Site features consisted of two 10,000-gallon and two 4,000-gallon horizontal above ground storage tanks (ASTs), a pumping station, an overhead loading rack, and a detention pond in the southern portion of the Property. A Site Plan and Detailed Site Plan showing the approximate locations of former Property features are included as Figures 2 and 3, respectively. The former facility ASTs, pumping station, and overhead loading rack structures were removed in September 1997. Petroleum impacted soil and groundwater has been identified at the Property during several investigations that have taken place since 1997 and several remedial treatment activities were completed at the Property from 1999 through 2015.

The Property is bounded to the north by Shepard Way Northwest, beyond which are residences, to the east by a City of Bainbridge Island walking path right-of-way (ROW), beyond which is Bromley Place Northwest and residences, to the south by Eagle Harbor, and to the west by the City of Bainbridge Island Strawberry Plant Park.

Based on the Property history and Ecology's risk assessment matrix, contaminants of concern (COCs) for the Property have been identified as total petroleum hydrocarbons (TPH) as gasoline range (TPHg), as diesel range (TPHd), and as oil range (TPHo); and naphthalenes. Ecology and GHD have jointly agreed that the use of the Model Toxics Control Act (MTCA) Method A cleanup levels is sufficient for the Site, with the exception of TPHd. Concentrations of TPHd will be compared to 460 milligrams per kilogram (mg/kg), the cleanup level for soil identified for unrestricted land use in Table 749-2 *Priority Contaminants of Ecological concern for Sites that Qualify for the Simplified Terrestrial Ecological Evaluation Procedure*.

Based on the comparison of the 2018 Site investigation results and the above identified cleanup levels, impacted soil remains along the eastern sidewall of the main remedial excavation, near soil borings GB-2 through GB-4, from depths of approximately 8 to 14 feet below ground surface (bgs). Impacted groundwater remains in the vicinity of well MW-2A, located west of the main remedial excavation and along the western property boundary, and well MW-5, located along the western edge of the detention pond. Additionally, impacted groundwater was identified in grab samples collected from the 2018 temporary groundwater monitoring wells installed in direct-push soil borings GB-10, located in the vicinity of MW-2A; GB-13, located along the northern edge of the detention pond; and GB-14, located in the vicinity of MW-5.



2. Objectives and Scope

The objectives and scope of this Remedial Investigation are as follows:

- Evaluate groundwater conditions southwest and down-gradient of MW-2A and GB-10, and down-gradient of SB7 and GB-13.

Historical soil data are provided in Table 1, and historical groundwater data are provided in Table 2. A Site Plan and a Detailed Site Plan with the proposed well locations are provided as Figures 2 and 3, respectively.

3. Pre-field Activities

GHD will complete the following pre-field activities:

3.1 Health and Safety Plan

GHD will prepare a Site-specific Health and Safety Plan (HASP) in accordance with federal regulations (Title 40, Code of Federal Regulations, Section 1910.120). The HASP will identify potential physical and chemical hazards associated with the proposed field activities and will outline safe work practices.

3.2 Underground Utility Clearance

Prior to any Site work involving soil disturbance, Washington State One Call Utility Notification Service will be called to alert the utility companies in the area of the scheduled work and to request identification of all underground utilities in the vicinity of the disturbance area. A private utility locating contractor will be retained to mark private utilities and to verify the absence of underground utilities near each of the proposed boring locations.

3.3 Permitting

GHD will acquire the necessary permits from the City of Bainbridge Island to install one permanent groundwater monitoring well on the west-adjointing City of Bainbridge Island Strawberry Plant Park.

4. Investigation Activities

4.1 Soil Assessment

Two soil borings (A and B) will be advanced to further characterize groundwater at the Site. The borings will be advanced by a Washington State licensed driller using a direct push drill rig. The locations of the proposed borings are presented on Figures 2 and 3. The table below outlines sample location, sample depth, proposed completion depths, purpose, and selected analysis per boring location.



Table 4.1 Soil Boring Plan

Proposed Boring	Anticipated Soil Samples Per Boring	Anticipated Total Depth / Well Details	Purpose	Soil and Groundwater Analysis
A and B	Up to 2 samples 1 sample in the vadose zone, based on field screening 1 at the soil/groundwater interface	15 feet bgs, final depth based on field screening and observed water table Boring will be completed as a permanent monitoring well screened from 5-15 feet bgs	Assess groundwater conditions southwest and down-gradient of MW-2A and GB-10 (A), and SB7 and GB-13 (B).	TPHg, TPHd, TPHo, BTEX, naphthalenes

Notes:

bgs = below ground surface

TPHg = Gasoline range organics per Northwest Total Petroleum Hydrocarbon Method for Gasoline Range Organics (NWTPH) Gx

TPHd = Diesel range organics per Northwest Total Petroleum Hydrocarbon for Diesel Range Organics and Heavy Oils (NWTPH) Dx

TPHo = Oil range organics per NWTPH Dx

BTEX = benzene, toluene, ethylbenzene and xylenes per EPA Method 8260B

Naphthalenes = 1-methyl-naphthalene, 2-methyl-naphthalene, and naphthalene per EPA Method 8270 with selected ion monitoring (SIM)

4.2 Soil Sampling and Logging

The borings will then be advanced by dual tube direct push technology to the depths noted above. Soil samples will be collected using 2-inch diameter direct push rods with Macrocore® sampling liners. Soil will be continuously logged using the modified Unified Soil Classification System. Soil samples will be screened continuously using a photo ionization detector (PID) and visual inspection. Soil samples will be collected in accordance with Table 4.1 above. Soil samples submitted for chemical analyses will be labeled, entered onto a chain of custody form, packed on ice, and sent to ALS Laboratory (ALS) in Everett, Washington.

4.3 Permanent Groundwater Monitoring Well Installation & Sampling

Soil borings A and B will be completed as monitoring wells. The final depths are estimated to be approximately 15 feet bgs. The wells will be installed with 10 feet of pre-packed screen as noted in the table above. The wells will be constructed with 2-inch Schedule 40 polyvinyl chloride (PVC), 0.010-inch slot pre-packed screen, flush threaded with PVC blank well casing from the top of the screen to the top of the well. The well annulus will be backfilled with a 2/16 Monterey sand pack to a minimum of 1 foot above the top of the screen and sealed with a minimum of 2 feet of hydrated bentonite chips above the filter pack, followed by 2 feet of cement mix. The surface of the wells will be completed with 8-inch diameter flush mount, traffic rated well boxes set in concrete mix.



The wells utilize pre-packed screen so only minimal development is necessary; however, the wells will be developed following installation by pumping on the well with a monsoon-style down-hole pump. Grab samples will be collected and analyzed for turbidity with a calibrated field turbidity meter after each well volume. Well development will be considered complete when turbidity is below 100 nephelometric turbidity units (NTU) or when the well has pumped dry. In addition, existing monitoring wells MW-1, MW-2A, MW-4, and MW-5 will be redeveloped to remove organics and fines that may have accumulated in the wells over time.

The newly installed monitoring wells and existing wells will be surveyed by a licensed surveyor to determine the horizontal coordinates and vertical elevation of the top of well casing (TOC).

4.3.1 Groundwater Sampling

Prior to sampling the Site wells will be gauged. The measured depth to groundwater and well TOC elevations will be used to establish the groundwater gradient at the Site.

Existing wells MW-1, MW-2A, MW-4, and MW-5; and the two newly installed wells will be sampled for one or more quarters. Groundwater samples will be collected and analyzed for TPHg, TPHd, TPHo, benzene, toluene, ethylbenzene, and xylenes (BTEX), and naphthalenes. Samples will be labeled, entered onto a chain of custody form, packed on ice, and transported to ALS.

4.4 Investigation Derived Waste (IDW)

IDW will include decontamination fluids, soil from borings, and purged well water. All IDW will be placed in properly labeled 55-gallon drums and stored on Site pending analyses. All IDW will be disposed of according to applicable regulatory requirements.

5. Reporting and Scheduling

Following completion of the above activities and receipt of laboratory analytical data, GHD will prepare a remedial investigation report to summarize the completed Site investigation activities to date.

GHD will begin the proposed work upon receipt of Ecology's approval of this work plan.



All of Which is Respectfully Submitted,

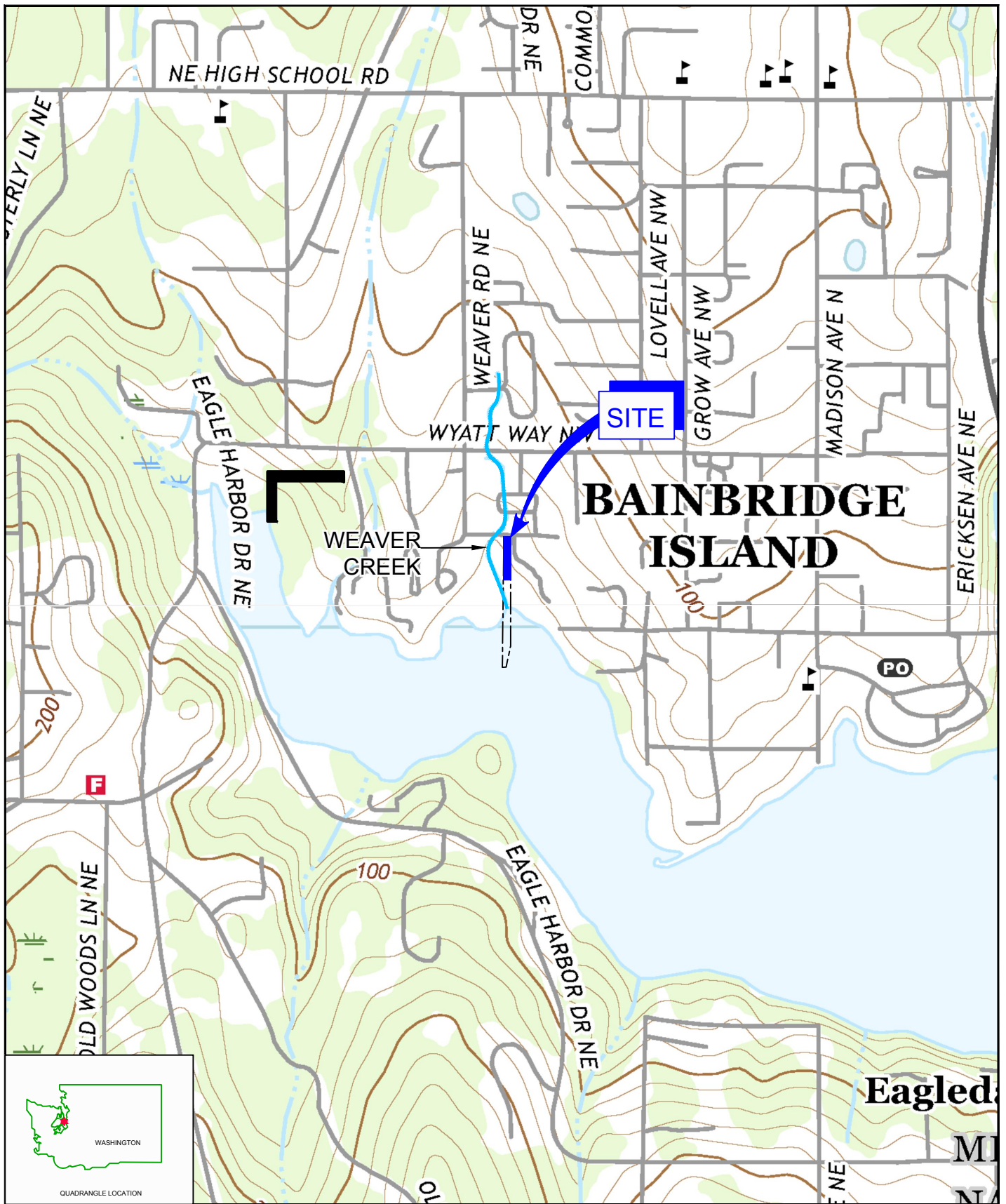
GHD

Emily Blakeway
Emily Blakeway

Michael D. Noll
Michael D. Noll, L.G., L.Hg.



Figures



Source: USGS Quadrangle Map, Suquamish and Bremerton East, WA 2017.

0 500 1000ft

Coordinate System:
Washington State
Plane North
WA83-NF



LEGEND



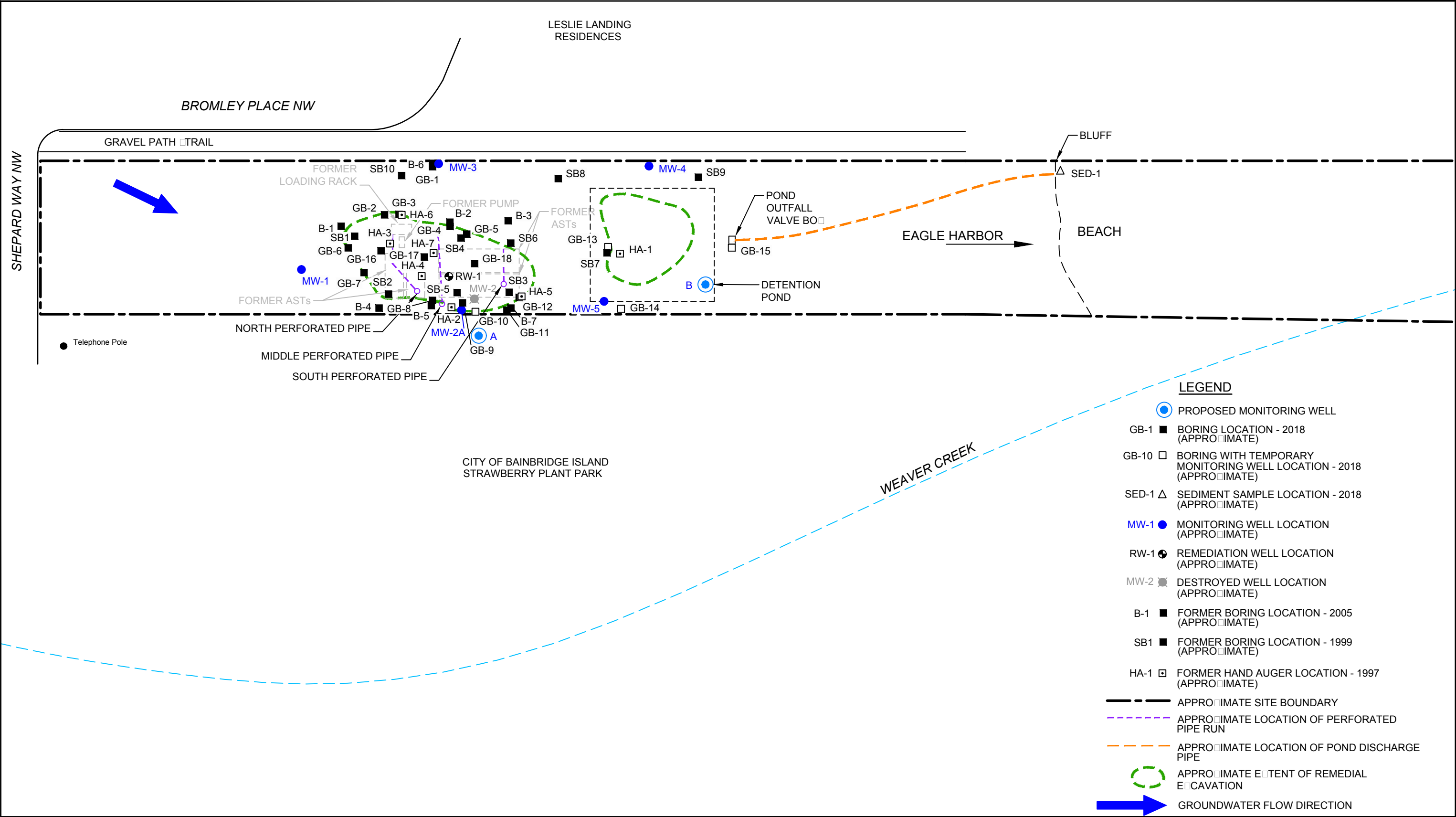
FORMER TOSCO BULK PLANT 1784
WEAVER AVENUE AND SHEPARD WAY NW
BAINBRIDGE ISLAND, WASHINGTON

11187604-18.01

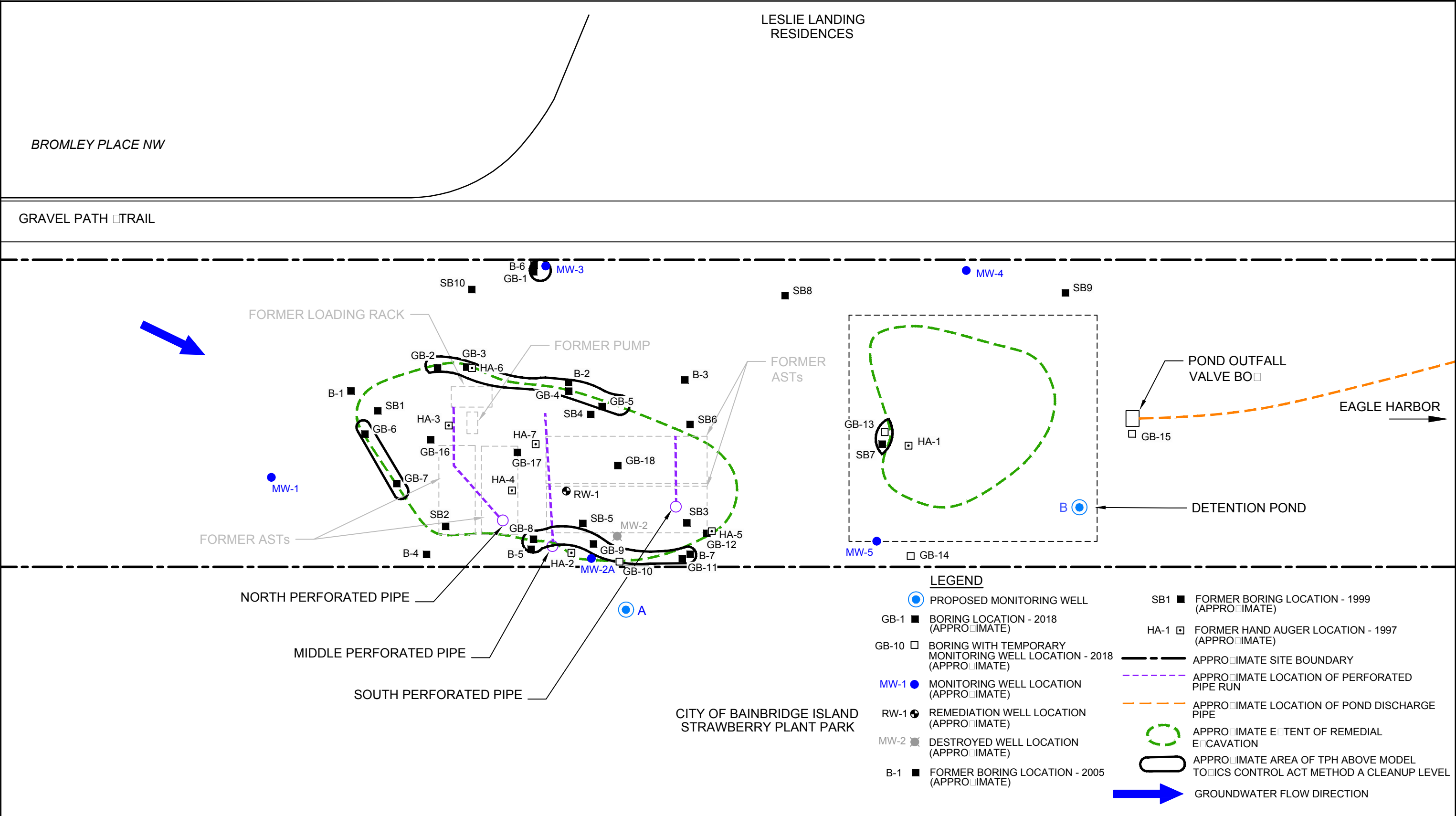
Jan 7, 2019

VICINTY MAP

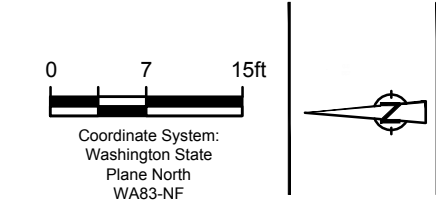
FIGURE 1



Source: Terracon Consulting Engineers and Scientists Site Diagram dated Sept 2017.



Source: Terracon Consulting Engineers and Scientists Site Diagram dated Sept 2017 and Proposed Boring Location Map dated Jan 2018.



FORMER TOSCO BULK PLANT 1784
WEAVER AVENUE AND SHEPARD WAY NW
BAINBRIDGE ISLAND, KITSAP COUNTY, WASHINGTON

DETAILED SITE PLAN

11187604-18.01
Apr 7, 2020

FIGURE 3

Tables

Table 1
Summary of Soil Analytical Data
Former Tosco Bainbridge Island Bulk Plant 1784
Weaver Avenue and Shepard Way Northwest
Bainbridge Island, Washington

Boring ID/Monitoring Well ID/Sample Location	Sample ID	Sample Date	Sample Depth	Soil Sample Removed/In- place	Hydrocarbons			VOCs ¹				PAHs ¹
					TPHg	TPHd	TPHo	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalenes ³
					100	460 ⁴		0.03	7	6	9	5
								(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
MTCA Method A Cleanup Level												
			ft bgs	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
GHD Subsurface Investigation - December 2018												
GB-1	S.11187604.121418.MN.GB.1.8'	12/14/18	8	In-Place	<3.0	<25	<50	<0.005	<0.010	<0.010	<0.020	--
	S.11187604.121418.MN.GB.1.14.5'	12/14/18	14.5	In-Place	<3.0	<25	<50	<0.005	<0.010	<0.010	<0.020	--
GB-2	S.11187604.121418.MN.GB.2.9'	12/14/18	9	In-Place	<60	1,400 ²	<50	<0.005	<0.010	0.028	0.070	7.27
	S.11187604.121418.MN.GB.2.11'	12/14/18	11	In-Place	<3.0	860 ²	<50	<0.005	<0.010	<0.010	<0.020	--
GB-3	S.11187604.121418.MN.GB.3.8'	12/14/18	8	In-Place	<30	2,300 ²	<100	<0.005	<0.010	<0.010	<0.020	5.35
	S.11187604.121418.MN.GB.3.12'	12/14/18	12	In-Place	<30	2,000 ²	<100	<0.005	<0.010	<0.010	0.021	--
GB-4	S.11187604.121418.MN.GB.4.9'	12/14/18	9	In-Place	<30	1,200 ²	<100	<0.005	<0.010	<0.010	<0.020	--
	S.11187604.121418.MN.GB.4.14'	12/14/18	14	In-Place	<3.0	840 ²	<100	<0.005	<0.010	<0.010	<0.020	--
GB-5	S.11187604.121418.MN.GB.5.8'	12/14/18	8	In-Place	<3.0	160 ²	<50	<0.005	<0.010	<0.010	<0.020	--
	S.11187604.121418.MN.GB.5.14'	12/14/18	14	In-Place	<3.0	<25	<50	<0.005	<0.010	<0.010	<0.020	--
GB-6	S.11187604.122118.MN.GB.6.9'	12/21/18	9	In-Place	<3.0	<25	<50	<0.005	<0.010	<0.010	<0.020	--
	S.11187604.122118.MN.GB.6.13'	12/21/18	13	In-Place	<3.0	<25	<50	<0.005	<0.010	<0.010	<0.020	--
GB-7	S.11187604.122118.MN.GB.7.14'	12/21/18	14	In-Place	<3.0	<25	<50	<0.005	<0.010	<0.010	<0.020	--
GB-8	S.11187604.122118.MN.GB.8.13'	12/21/18	13	In-Place	<3.0	<25	<50	<0.005	<0.010	<0.010	<0.020	--
GB-9	S.11187604.122118.MN.GB.9.9'	12/21/18	9	In-Place	<3.0	73	<50	<0.005	<0.010	<0.010	<0.020	--
	S.11187604.122118.MN.GB.9.13'	12/21/18	13	In-Place	<3.0	41	<50	<0.005	<0.010	<0.010	<0.020	--
GB-10	S.11187604.121418.MN.GB.10.7'	12/14/18	7	In-Place	<3.0	220 ²	<50	<0.005	<0.010	<0.010	<0.020	--
	S.11187604.121418.MN.GB.10.12'	12/14/18	12	In-Place	<3.0	<25	<50	<0.005	<0.010	<0.010	<0.020	--
GB-11	S.11187604.122118.MN.GB.11.9'	12/21/18	9	In-Place	<3.0	380	<50	<0.005	<0.010	<0.010	<0.020	--
	S.11187604.122118.MN.GB.11.14'	12/21/18	14	In-Place	<3.0	400	<50	<0.005	<0.010	<0.010	<0.020	--
GB-12	S.11187604.122118.MN.GB.12.8'	12/21/18	8	In-Place	<3.0	100	<50	<0.005	<0.010	<0.010	<0.020	--
	S.11187604.122118.MN.GB.12.12'	12/21/18	12	In-Place	<3.0	<25	<50	<0.005	<0.010	<0.010	<0.020	--
GB-13	S.11187604.121418.MN.GB.13.9'	12/14/18	9	In-Place	<3.0	190 ²	<50	<0.005	<0.010	<0.010	<0.020	--
	S.11187604.121418.MN.GB.13.12'	12/14/18	12	In-Place	<3.0	<25	<50	<0.005	<0.010	<0.010	<0.020	--
GB-14	S.11187604.121418.MN.GB.14.7'	12/14/18	7	In-Place	<3.0	<25	<50	<0.005	<0.010	<0.010	<0.020	--
	S.11187604.121418.MN.GB.14.12'	12/14/18	12	In-Place	<3.0	<25	<50	<0.005	<0.010	<0.010	<0.020	--
GB-15	S.11187604.121418.MN.GB.15.7'	12/14/18	7	In-Place	<3.0	<25	<50	<0.005	<0.010	<0.010	<0.020	--
	S.11187604.121418.MN.GB.15.12'	12/14/18	12	In-Place	<3.0	<25	<50	<0.005	<0.010	<0.010	<0.020	--
GB-16	S.11187604.122118.MN.GB.16.4'	12/21/18	4	In-Place	<3.0	<25	<50	<0.005	<0.010	<0.010	<0.020	--
GB-17	S.11187604.122118.MN.GB.17.4'	12/21/18	4	In-Place	<3.0	71	<50	<0.005	<0.010	<0.010	<0.020	--
GB-18	S.11187604.122118.MN.GB.18.4'	12/21/18	4	In-Place	<3.0	<25	<50	<0.005	<0.010	<0.010	<0.020	--
SED-1	S.11187604.121418.MN.SED-1	12/14/18		In-Place	<3.0	<25	<50	<0.005	<0.010	<0.010	<0.020	<0.020
SECOR Subsurface Investigation - May 2005												
B-1	B1-8'	2/16/2005	8	In-Place	<4	<24.2	<48.3	<0.04	<0.04	<0.04	<0.04	--
B-2	B2-8'	2/16/2005	8	In-Place	619	1,220 ²	<52.6	<0.19	<0.19	<0.19	<0.19	7.756
B-3	B3-8'	2/16/2005	8	In-Place	11.9	<24.8	<49.5	<0.0364	<0.0364	<0.0364	<0.0364	--

Table 1
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Weaver Avenue and Shepard Way Northwest
Bainbridge Island, Washington

Boring ID/Monitoring Well ID/Sample Location	Sample ID	Sample Date	Sample Depth	Soil Sample Removed/In- place	Hydrocarbons			VOCs ¹				PAHs ¹	
					TPHg	TPHd	TPHo	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalenes ³	
					100	460 ⁴		0.03	7	6	9	5	
			ft bgs	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	
MTCA Method A Cleanup Level													
SECOR Subsurface Investigation - May 2005													
B-4	B4-8'	2/16/2005	8	In-Place	5.27	<24.7	<49.3	<0.0363	<0.0363	<0.0363	<0.0363	--	
B-5	B5-8'	2/16/2005	8	In-Place	355	3,300 ²	54.8	<0.204	<0.204	<0.204	<0.204	24.450	
B-6	B6-8'	2/16/2005	8	In-Place	121	<22.6	<45.3	<0.179	<0.179	<0.179	<0.179	--	
B-7	B7-8'	2/16/2005	7	In-Place	291	1,830 ²	<48.6	<0.167	<0.167	<0.167	<0.167	1.669	
Recovery Well and MW-2 replacement Well Installation - March 2003													
MW-2A	MW2A-10'	3/19/2003	10	In-Place	79.3	891	<25	<0.12	<0.2	<0.2	0.415	--	
	MW-2A-12.5'	3/19/2003	12.5	In-Place	<5	28.5	<25	<0.03	<0.05	<0.05	<0.1	--	
	MW-2A-15'	3/19/2003	15	In-Place	<5	18.1	<25	<0.03	<0.05	<0.05	<0.1	--	
RW-1	RW1-10'	3/19/2003	10	In-Place	53.0	1,050	<25	<0.06	<0.1	<0.1	0.270	--	
	RW1-12.5'	3/19/2003	12.5	In-Place	<5	13.6	<25	<0.03	<0.05	<0.05	<0.1	--	
	RW1-15'	3/19/2003	15	In-Place	<5	<10	<25	<0.03	<0.05	<0.05	<0.1	--	
Former Tank Excavation at MW-2 - March 2003													
MW-2 Excavation/ Former Tank Excavation	WWALL-4	3/7/2003	4	In-Place	<20	567	<25	<0.03	<0.5	<0.5	<0.1	--	
	WWALL-7	3/7/2003	7	In-Place	367	6,550	<250	<0.03	<0.5	<0.5	1.81	--	
	WWALL-8	3/7/2003	8	In-Place	107	1,240	<25	<0.06	<0.1	0.145	0.411	--	
Monitoring Well Installation - June 2001													
MW-1	MW1-5	6/27/2001	5	In-Place	<20	<50	<100	--	--	--	--	--	
	MW1-10	6/27/2001	10	In-Place	<20	<50	<100	--	--	--	--	--	
	MW2-5	6/27/2001	5	Removed	<5	24.4	<25	<0.05	<0.05	<0.05	<0.1	--	
MW-2	MW2-10	6/27/2001	10	Removed	186	900	<25	<0.05	<0.05	0.179	0.461	--	
	MW2-15	6/27/2001	15	In-Place	75.9	477	<25	<0.05	<0.05	0.0604	0.179	--	
MW-3	MW3-5	6/27/2001	5	In-Place	<20	<50	<100	--	--	--	--	--	
	MW3-10	6/27/2001	10	In-Place	<20	<50	<100	--	--	--	--	--	
MW-4	MW4-5	6/27/2001	5	In-Place	<20	<50	<100	--	--	--	--	--	
	MW4-10	6/27/2001	10	In-Place	<20	<50	<100	--	--	--	--	--	
MW-5	MW5-5	6/27/2001	5	In-Place	<20	<50	<100	--	--	--	--	--	
	MW5-10	6/27/2001	10	In-Place	<20	<50	<100	--	--	--	--	--	
Retention Pond and Former AST Excavation Sampling - June 2001													
North Trench	N-Trench-E-11'	6/13/2001	11	In-Place	<5	<10	<25	<0.05	<0.05	<0.05	<0.1	--	
South Trench	S-Trench-E-10'	6/13/2001	10	In-Place	<5	<10	<25	<0.05	<0.05	<0.05	<0.1	--	
East Wall	EWALL-N-5'	6/13/2001	5	In-Place	715	2,530	<275	<0.05	<0.05	<0.05	1.17	--	
	EWALL-MID-10'	6/13/2001	10	In-Place	183	804	<75	<0.2	<0.2	<0.2	<0.4	--	
	EWALL-S-8'	6/13/2001	8	In-Place	122	586	<25	<0.5	<0.5	<0.5	<1	--	
North Wall	NWALL-E-6'	6/13/2001	6	In-Place	183	655	<75	<0.2	<0.2	<0.2	<0.4	--	
	NWALL-W-7'	6/13/2001	7	In-Place	<5	<10	<25	<0.05	<0.05	<0.05	<0.1	--	

Table 1
Summary of Soil Analytical Data
Former Tosco Bainbridge Island Bulk Plant 1784
Weaver Avenue and Shepard Way Northwest
Bainbridge Island, Washington

Boring ID/Monitoring Well ID/Sample Location	Sample ID	Sample Date	Sample Depth	Soil Sample Removed/In- place	Hydrocarbons			VOCs ¹				PAHs ¹
					TPHg	TPHd	TPHo	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalenes ³
					100	460 ⁴		0.03	7	6	9	5
			ft bgs	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
MTCA Method A Cleanup Level												
Retention Pond and Former AST Excavation Sampling - June 2001												
West Wall	WWALL-N-7'	6/13/2001	7	In-Place	295	984	<275	ND	ND	ND	ND	--
	WWALL-MID-10'	6/13/2001	10	In-Place	264	1,330	<275	<0.05	<0.5	<0.5	<1	--
	WWALL-S-9'	6/13/2001	9	In-Place	179	723	<25	<0.05	<0.5	<0.5	<1	--
South Wall	WWALL-PIPES-8'	6/13/2001	8	In-Place	302	1,660	<275	<0.05	<0.5	<0.5	<1	--
	SWALL-8'	6/13/2001	8	In-Place	7.55	40.30	<25	<0.05	<0.05	<0.05	<0.1	--
Mid-Trench	Mid-Trench-E-12'	6/12/2001	12	In-Place	14.9	57.2	<25	<0.05	<0.05	<0.05	<0.1	--
	Mid-Trench-W-12'	6/12/2001	12	In-Place	<5	<10	<25	<0.05	<0.05	<0.05	<0.1	--
Pondsed	Pondsed-1-6'	6/27/2000	6	In-Place	<5	353	<275	<0.05	<0.05	<0.05	<0.1	--
	Pondsed-2-6'	6/27/2000	6	In-Place	<5	29.5	40.8	<0.05	<0.05	<0.05	<0.1	--
	Pondsed-3-6'	6/27/2000	6	In-Place	<5	<10	<25	<0.05	<0.05	<0.05	<0.1	--
	Pondsed-4-6'	6/27/2000	6	In-Place	<5	<10	<25	<0.05	<0.05	<0.05	<0.1	--
Additionally Site Assessment - December 1999												
SB1	SB1-4	12/3/1999	4	Removed	<5	<10	<25	<0.05	<0.05	<0.05	<0.1	--
	SB1-6	12/3/1999	6	Removed	--	--	--	--	--	--	--	--
SB2	SB2-4	12/3/1999	4	Removed	--	--	--	--	--	--	--	--
	SB2-7	12/3/1999	7	Removed	<5	<10	<25	<0.05	<0.05	<0.05	<0.1	--
SB3	SB3-3	12/3/1999	3	Removed	681	4,410	<50	<1	<1	<1	<44	--
	SB3-6	12/3/1999	6	Removed	779	2,790	<30	<1	<1	<1	<2	--
SB4	SB4-7	12/3/1999	7	Removed	777	1,410	<25	<1	<1	<1	<2	--
SB5	SB5-4	12/3/1999	4	Removed	ND	ND	<25	<0.05	<0.05	<0.05	<0.1	--
	SB5-7	12/3/1999	7	Removed	223	1,110	<25	<0.5	<0.5	<0.5	<1	--
SB6	SB6-4	12/3/1999	4	In-Place	41.2	138	<25	<0.05	<0.05	<0.05	<0.1	--
	SB6-6	12/3/1999	6	In-Place	<5	<10	<25	<0.05	<0.05	<0.05	<0.1	--
SB7	SB7-3	12/3/1999	3	In-Place	<5	14.4	<25	<0.05	<0.05	<0.05	<0.1	--
	SB7-6	12/3/1999	6	In-Place	189	182	<25	<0.2	<0.2	<0.2	<0.4	--
SB8	SB8-7	12/3/1999	7	In-Place	<5	<10	<25	<0.05	<0.05	<0.05	<0.1	--
SB9	SB9-7	12/3/1999	7	In-Place	<5	<10	<25	<0.05	<0.05	<0.05	<0.1	--
SB10	SB10-7	12/3/1999	7	In-Place	50.7	360	<25	<0.05	<0.05	<0.05	<0.1	--
Pacific Environmental Group, Inc. Soil Investigation - September 1997												
HA-1	HA1-1	9/15/1997	1	Removed	--	12	<25	--	--	--	--	--
HA-2	HA2-1	9/15/1997	1	Removed	--	293	59.8	--	--	--	--	--
	HA2-3	9/15/1997	3	Removed	--	232	27.7	--	--	--	--	--
HA-3	HA3-0.5	9/15/1997	0.5	Removed	--	9,390	<275	--	--	--	--	--
	HA3-3	9/15/1997	3	Removed	--	9,110	<525	--	--	--	--	--
	HA3-5	9/15/1997	5	Removed	--	2,360	<275	--	--	--	--	--

Table 1
Summary of Soil Analytical Data
Former Tosco Bainbridge Island Bulk Plant 1784
Weaver Avenue and Shepard Way Northwest
Bainbridge Island, Washington

Boring ID/Monitoring Well ID/Sample Location	Sample ID				Hydrocarbons			VOCs ¹				PAHs ¹
		Sample Date	Sample Depth	Soil Sample Removed/In- place	TPHg	TPHd	TPHo	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalenes ³
					100	460 ⁴		0.03	7	6	9	5
			ft bgs	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
	MTCA Method A Cleanup Level											
		Pacific Environmental Group, Inc. Soil Investigation - September 1997										
HA-4	HA4-1	9/15/1997	1	Removed	--	1,110	31.3	--	--	--	--	--
	HA4-2.5	9/15/1997	2.5	Removed	--	29	<25	--	--	--	--	--
HA-5	HA5-1	9/15/1997	1	Removed	--	21,200	710	--	--	--	--	--
	HA5-4.5	9/15/1997	4.5	Removed	--	8,240	<275	--	--	--	--	--
HA-6	HA6-1	9/15/1997	1	Removed	--	15,600	<525	--	--	--	--	--
	HA6-3.5	9/15/1997	3.5	Removed	--	240	<25	--	--	--	--	--
HA-7	HA7-1	9/15/1997	1	Removed	--	7,370	<275	--	--	--	--	--

Notes:
Bold values equal or exceed MTCA Method A Cleanup Level.

- cPAHs = Carcinogenic polycyclic aromatic hydrocarbons
EPH = Extractable petroleum hydrocarbons
ft bgs = feet below ground surface
mg/kg = Milligrams per kilogram
MTCA = Model Toxics Control Act (Chapter 173-340 WAC)
NA = Not applicable
ND = Less than the laboratory method reporting limit (MRL)
TPHd = Total petroleum hydrocarbons as diesel-range hydrocarbons
TPHg = TPH as gasoline-range hydrocarbons
TPHo = TPH as heavy oil-range hydrocarbons
VOCs = Volatile organic compounds
VPH = Volatile petroleum hydrocarbons
< = Not detected greater than laboratory MRL. Value listed is laboratory MRL.
-- = Not analyzed, not applicable, or not sampled.
1 Only select analytes are listed. See laboratory report for a full list of analytes.
2 Chromatogram indicates that it is likely that sample contains weathered to highly weathered diesel.
3 Reported naphthalenes concentration is the total value of naphthalene, 1-methyl naphthalene, and 2-methyl naphthalene.
4 This is the cleanup identified for unrestricted land use in Table 749-2 Priority Contaminants of Ecological concern for Sites that Qualify for the Simplified terrestrial Ecological Evaluation Procedure.

ANALYTICAL METHOD:
EPH by NWEPH
PAHs by USEPA Method 8270D Selected Ion Monitoring (SIM)
TPHg by Northwest TPH-Gx
TPHd and TPHo by Northwest TPH-Dx
VOCs by USEPA Method 8260

Table 2

Summary of Groundwater Analytical Data
Former Tosco Bainbridge Island Bulk Plant 1784
Weaver Avenue and Shepard Way Northwest
Bainbridge Island, Washington

Well ID	Sample Date	TOC Elevation	Depth to Water	Groundwater Elevation	Hydrocarbons			VOCs ¹						Lead		PAHs
					TPHg	TPHd	TPHo	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	Other VOCs	Total Lead	Dissolved Lead	Naphthalenes ⁷
					1,000 (µg/L)	500 (µg/L)		5 (µg/L)	1,000 (µg/L)	700 (µg/L)	1,000 (µg/L)	20 (µg/L)	Varies (µg/L)	15 (µg/L)	15 (µg/L)	160 (µg/L)
MTCA Method A Cleanup Level:																
		(ft)	(ft)	(ft)												
W.11187604.121418.MN.GB-10	12/14/18	NA	NA	NA	<50	9,400 ²	<250	<2.0	<2.0	<2.0	<4.0	<2.0	1.6 ⁶	--	--	0.025
W.11187604.121418.MN.GB-13 ³	12/14/18	NA	NA	NA	550	2,800 ⁴	<250	<2.0	<2.0	<2.0	<4.0	<2.0	ND	--	--	30.3
W.11187604.122118.MN.GB-14	12/21/18	NA	NA	NA	<50	770 ²	<250	<2.0	2.2	<2.0	<4.0	<2.0	ND	--	--	<0.020
MW-1 (Ecology)	3/18/2019	19.51	--	--	--	340	<390	--	--	--	--	--	--	--	--	--
MW -1	12/14/2018	19.51	2.93	16.58						Gauged only, not sampled.						
MW -1	2/2/2017	19.51	4.05	15.46						Gauged only, not sampled.						
MW -1	11/30/2016	19.51	4.00	15.51	<50	<130	<250	<2.0	<2.0	<2.0	<4.0	--	--	--	--	--
MW -1	7/7/2016	19.51	8.61	10.90	<130	<310	<310	<2.0	<2.0	<2.0	<4.0	--	--	--	--	--
MW -1	4/20/2016	19.51	5.32	14.19	<130	<310	<310	<2.0	<2.0	<2.0	<4.0	--	--	--	--	--
MW -1	2/11/2016	19.51	4.33	15.18						Gauged only, not sampled.						
MW -1	7/1/2015	19.51	8.53	10.98						Gauged only, not sampled.						
MW -1	4/9/2015	19.51	4.88	14.63						Gauged only, not sampled.						
MW -1	2/11/2015	19.51	--	--						Well not sampled or gauged.						
MW -1	8/21/2014	19.51	9.09	10.42	<100	<100	<250	<0.5	<5.0	<0.50	<1.5	--	--	--	--	--
MW -1	8/19/2014	19.51	9.00	10.51						Gauged only, not sampled.						
MW -1	6/18/2007	19.51	7.08	12.43	<50	<76	<95	<0.5	<0.7	<0.8	<0.8	<0.5	--	--	--	--
MW -1	3/26/2007	19.51	4.49	15.02	<240	<75	<94	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	--
MW -1	12/20/2006	19.51	3.85	15.66	<48	<76	<95	<0.5	<0.7	<0.8	<0.8	<0.5	--	--	--	--
MW -1	9/13/2006	19.51	9.40	10.11	<48	160	150	<0.5	<0.7	<0.7	<0.8	<0.5	--	--	--	--
MW -1	6/26/2003	19.51	6.93	12.58	<50	<250	<500	<0.5	<0.5	<0.5	<1	--	--	--	--	--
MW -1	3/30/2003	19.51	4.43	15.08	<50	<250	<500	<0.5	<0.5	<0.5	<1	--	--	--	--	--
MW -1	12/21/2002	19.51	4.42	15.09	<50	<250	<500	<0.5	<0.5	<0.5	<1	--	--	--	--	<0.01
MW -1	9/30/2002	19.51	8.83	10.68	<50	<250	<500	<0.5	<0.5	<0.5	<1	--	--	--	--	<0.01
MW -1	5/23/2002	19.51	5.89	13.62	<50	<250	<500	<0.5	<0.5	<0.5	<1	--	ND	<1	<1	<0.01
MW -1	3/26/2002	19.51	4.45	15.06	<50	<250	<500	<0.5	<0.5	<0.5	<1	--	--	--	--	--
MW -1	12/11/2001	19.51	4.19	15.32	<50	<250	<500	<0.5	<0.5	<0.5	<1	--	--	--	--	--
MW -1	9/13/2001	19.51	6.78	12.73	<50	<250	<500	<0.5	<0.5	<0.5	<1	--	--	--	--	--
MW -1	6/28/2001	19.51	7.03	12.48	<50	<250	<500	<0.5	<0.5	<0.5	1.02	--	--	<1	<1	--
MW-2	3/4/2003	18.64						Monitoring Well Decomissioned 3/4/2003								
MW-2	12/21/2002	18.64	5.14	13.50	157	3,810	<500	<0.5	<0.5	<0.5	<1	--	--	--	--	0.21
MW-2	9/30/2002	18.64	8.61	10.03	368	5,020	<500	<0.5	<0.5	1.46	2.14	--	--	--	--	8.0
MW-2	5/23/2002	18.64	5.91	12.73	327	1,240	<500	<0.5	<0.5	2.23	2.01	--	ND	<1	<1	18.2
MW-2	3/26/2002	18.64	4.86	13.78	134	512	<500	<0.5	<0.5	<0.5	<1	--	--	--	--	--
MW-2	12/11/2001	18.64	4.71	13.93	77.8	<250	<500	<0.5	<0.5	<0.5	<1	--	--	--	--	--

Table 2

Summary of Groundwater Analytical Data
Former Tosco Bainbridge Island Bulk Plant 1784
Weaver Avenue and Shepard Way Northwest
Bainbridge Island, Washington

Well ID	Sample Date	TOC Elevation	Depth to Water	Groundwater Elevation	Hydrocarbons			VOCs ¹						Lead		PAHs
					TPHg	TPHd	TPHo	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	Other VOCs	Total Lead	Dissolved Lead	Naphthalenes ⁷
					1,000 (µg/L)	500 (µg/L)		5 (µg/L)	1,000 (µg/L)	700 (µg/L)	1,000 (µg/L)	20 (µg/L)	Varies (µg/L)	15 (µg/L)	15 (µg/L)	160 (µg/L)
	MTCA Method A Cleanup Level:	(ft)	(ft)	(ft)												
MW-2	9/13/2001	18.64	6.71	11.93	697	649	<500	<0.5	0.762	5.93	5.61	--	--	--	--	--
MW-2	6/28/2001	18.64	7.17	11.47	1,370	1,780	<500	0.677	<0.5	11.0	18.6	--	--	--	--	5.41 ⁵
MW-2A	12/14/18	18.28	3.74	14.54	<50	730 ²	<250	<2.0	<2.0	<2.0	<4.0	--	--	--	--	--
MW-2A	2/2/2017	18.28	4.07	14.21	<50	180	<250	<2.0	<2.0	<2.0	<4.0	--	--	--	--	--
MW-2A	11/30/2016	18.28	4.02	14.26	<50	200	<250	<2.0	<2.0	<2.0	<4.0	--	--	--	--	--
MW-2A	7/7/2016	18.28	7.80	10.48	<130	770	<250	<2.0	<2.0	<2.0	<4.0	--	--	--	--	<0.022
MW-2A	4/20/2016	18.28	5.42	12.86	<130	<310	470	<2.0	<2.0	<2.0	<4.0	--	--	--	--	<0.020
MW-2A	2/11/2016	18.28	4.46	13.82	--	210	<250	--	--	--	--	--	--	--	--	<0.050
MW-2A	7/1/2015	18.28	7.61	10.67	--	510	<250	--	--	--	--	--	--	--	--	--
MW-2A	4/9/2015	18.28	4.97	13.31	--	<400	<400	--	--	--	--	--	--	--	--	--
MW-2A	2/11/2015	18.28	3.83	14.45	--	330	<250	--	--	--	--	--	--	--	--	--
MW-2A	8/21/2014	18.28	8.31	9.97	<100	920	360	<0.50	<5.0	<0.50	<1.5	--	--	--	--	--
MW-2A	8/19/2014	18.28	8.24	10.04						Gauged only, not sampled.						--
MW-2A	6/18/2007	18.28	6.78	11.50	<50	330	<95	<0.5	<0.7	<0.8	<0.8	<0.5	--	--	--	--
MW-2A	3/26/2007	18.28	4.79	13.49	<48	300	120	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	--
MW-2A	12/20/2006	18.28	4.46	13.82	<48	280	<95	<0.5	<0.7	<0.8	<0.8	<0.5	--	--	--	--
MW-2A	9/13/2006	18.28	8.88	9.40	300	2,700	530	<0.5	<0.7	2	<0.8	<0.5	--	--	--	--
MW-2A	6/26/2003	18.28	6.49	11.79	728	8,180	533	<0.5	33.4	2.87	3.79	--	--	--	--	--
MW-2A	3/30/2003	18.28	4.43	13.85	567	4,370	<500	<0.5	<0.5	2.24	4.55	--	--	--	--	--
MW-3	12/14/2018	17.55	2.05	15.50						Gauged only, not sampled.						
MW-3	2/2/2017	17.55	3.41	14.14						Gauged only, not sampled.						
MW-3	11/30/2016	17.55	3.32	14.23	<50	<130	<250	<2.0	<2.0	<2.0	<4.0	--	--	--	--	--
MW-3	7/7/2016	17.55	7.04	10.51	<130	<310	<310	<2.0	<2.0	<2.0	<4.0	--	--	--	--	--
MW-3	4/20/2016	17.55	4.32	13.23	<130	<310	<310	<2.0	<2.0	<2.0	<4.0	--	--	--	--	--
MW-3	2/11/2016	17.55	2.96	14.59						Gauged only, not sampled.						--
MW-3	7/1/2015	17.55	6.93	10.62						Gauged only, not sampled.						--
MW-3	4/9/2015	17.55	3.85	13.70						Gauged only, not sampled.						--
MW-3	2/11/2015	17.55	--	--						Well not sampled or gauged.						--
MW-3	8/21/2014	17.55	7.30	10.25	<100	<100	<250	<0.50	<5.0	<0.50	<1.5	--	--	--	--	--
MW-3	8/19/2014	17.55	7.19	10.36						Gauged only, not sampled.						--
MW-3	6/18/2007	17.55	5.77	11.78	<50	<76	<95	<0.5	<0.7	<0.8	<0.8	<0.5	--	--	--	--
MW-3	3/26/2007	17.55	3.41	14.14	<48	<76	<94	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	--
MW-3	12/20/2006	17.55	3.95	13.60	<48	88	<95	<0.5	<0.7	<0.8	<0.8	<0.5	--	--	--	--
MW-3	9/13/2006	17.55	7.40	10.15	<48	88	97	<0.5	<0.7	<0.8	<0.8	<0.5	--	--	--	--

Table 2

Summary of Groundwater Analytical Data
Former Tosco Bainbridge Island Bulk Plant 1784
Weaver Avenue and Shepard Way Northwest
Bainbridge Island, Washington

Well ID	Sample Date	TOC Elevation	Depth to Water	Groundwater Elevation	Hydrocarbons			VOCs ¹						Lead		PAHs
					TPHg	TPHd	TPHo	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	Other VOCs	Total Lead	Dissolved Lead	Naphthalenes ⁷
					1,000 (µg/L)	500 (µg/L)	5 (µg/L)	1,000 (µg/L)	700 (µg/L)	1,000 (µg/L)	20 (µg/L)	Varies (µg/L)	15 (µg/L)	15 (µg/L)	160 (µg/L)	
		MTCA Method A Cleanup Level: (ft)	(ft)	(ft)												
MW-3	6/26/2003	17.55	5.59	11.96	<50	<250	<500	<0.5	<0.5	<0.5	<1	--	--	--	--	--
MW-3	3/30/2003	17.55	3.16	14.39	<50	<250	<500	<0.5	<0.5	<0.5	<1	--	--	--	--	--
MW-3	12/21/2002	17.55	3.27	14.28	<50	<250	<500	<0.5	<0.5	<0.5	<1	--	--	--	--	<0.01
MW-3	9/30/2002	17.55	7.11	10.44	<50	<250	<500	<0.5	0.513	<0.5	<1	--	--	--	--	<0.01
MW-3	5/23/2002	17.55	4.73	12.82	<50	<250	<500	<0.5	<0.5	<0.5	<1	--	ND	<1	<1	<0.1
MW-3	3/26/2002	17.55	3.38	14.17	<50	<250	<500	<0.5	<0.5	<0.5	<1	--	--	--	--	--
MW-3	12/11/2001	17.55	2.83	14.72	<50	<250	<500	<0.5	<0.5	<0.5	<1	--	--	--	--	--
MW-3	9/13/2001	17.55	5.75	11.80	905	<250	<500	<0.5	0.738	5.92	5.68	--	--	--	--	--
MW-3	6/28/2001	17.55	5.30	12.25	<50	<250	<500	<0.5	<0.5	<0.5	<1	--	--	<1	<1	--
MW-4	12/14/18	17.04	3.50	13.54	<50	800 ²	<250	<2.0	<2.0	<2.0	<4.0	--	--	--	--	--
MW-4	2/2/2017	17.04	3.53	13.51	<50	<130	160	<2.0	<2.0	<2.0	<4.0	--	--	--	--	--
MW-4	11/30/2016	17.04	3.42	13.62	<50	<130	380	<2.0	<2.0	<2.0	<4.0	--	--	--	--	--
MW-4	7/7/2016	17.04	8.40	8.64	<130	240	<360	<2.0	<2.0	<2.0	<4.0	--	--	--	--	--
MW-4	4/20/2016	17.04	4.45	12.59	<130	<310	320	<2.0	<2.0	<2.0	<4.0	--	--	--	--	--
MW-4	2/11/2016	17.04	3.67	13.37						Gauged only, not sampled.						
MW-4	7/1/2015	17.04	8.33	8.71						Gauged only, not sampled.						
MW-4	4/9/2015	17.04	4.20	12.84						Gauged only, not sampled.						
MW-4	2/11/2015	17.04	--	--						Well not sampled or gauged.						
MW-4	8/21/2014	17.04	8.94	8.10	<100	410	270	<0.50	<5.0	<0.50	<1.5	--	--	--	--	--
MW-4	8/19/2014	17.04	8.76	8.28						Gauged only, not sampled.						
MW-4	6/18/2007	17.04	6.90	10.14	<50	430	<95	<0.5	<0.7	<0.8	<0.8	<0.5	--	--	--	--
MW-4	3/26/2007	17.04	3.91	13.13	<48	150	<95	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	--
MW-4	12/20/2006	17.04	3.34	13.70	<48	230	110	<0.5	<0.7	<0.8	<0.8	<0.5	--	--	--	--
MW-4	9/13/2006	17.04	9.65	7.39	<48	390	200	<0.5	<0.7	<0.8	<0.8	<0.5	--	--	--	--
MW-4	6/26/2003	17.04	6.57	10.47	<50	496	<500	<0.5	<0.5	<0.5	<1	--	--	--	--	--
MW-4	3/30/2003	17.04	3.62	13.42	<50	<250	<500	<0.5	<0.5	<0.5	<1	--	--	--	--	--
MW-4	12/21/2002	17.04	4.00	13.04	<50	<250	<500	<0.5	<0.5	<0.5	<1	--	--	--	--	<0.01
MW-4	9/30/2002	17.04	9.32	7.72	<50	<250	<500	<0.5	<0.5	<0.5	<1	--	--	--	--	<0.01
MW-4	5/23/2002	17.04	4.53	12.51	<50	<250	<500	<0.5	<0.5	<0.5	<1	--	ND	<1	<1	<0.1
MW-4	3/26/2002	17.04	3.63	13.41	<50	<250	<500	<0.5	<0.5	<0.5	<1	--	--	--	--	--
MW-4	12/11/2001	17.04	3.44	13.60	<50	<250	<500	<0.5	<0.5	<0.5	<1	--	--	--	--	--
MW-4	9/13/2001	17.04	7.05	9.99	<50	<250	<500	<0.5	<0.5	<0.5	<1	--	--	--	--	--
MW-4	6/28/2001	17.04	8.30	8.74	<50	<250	<500	<0.5	<0.5	<0.5	1.18	--	--	--	--	--
MW-5 (Ecology)	3/18/2019	17.53	--	--	--	590	410	--	--	--	--	--	--	--	--	--

Table 2

Summary of Groundwater Analytical Data
Former Tosco Bainbridge Island Bulk Plant 1784
Weaver Avenue and Shepard Way Northwest
Bainbridge Island, Washington

Well ID	Sample Date	TOC Elevation	Depth to Water	Groundwater Elevation	Hydrocarbons			VOCs ¹						Lead		PAHs
					TPHg	TPHd	TPHo	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	Other VOCs	Total Lead	Dissolved Lead	Naphthalenes ⁷
					1,000 (µg/L)	500 (µg/L)		5 (µg/L)	1,000 (µg/L)	700 (µg/L)	1,000 (µg/L)	20 (µg/L)	Varies (µg/L)	15 (µg/L)	15 (µg/L)	160 (µg/L)
	MTCA Method A Cleanup Level:	(ft)	(ft)	(ft)												
MW-5	12/14/2018	17.53	3.75	13.78	<50	4,400 ²	<250	<2.0	<2.0	<2.0	<4.0	--	--	--	--	0.51
MW-5	12/14/2018 ⁵	17.53	3.75	13.78	<50	4,300 ²	<250	<2.0	<2.0	<2.0	<4.0	--	--	--	--	1.31
MW-5	2/2/2017	17.53	3.85	13.68	<50	720	<250	<2.0	<2.0	<2.0	<4.0	--	--	--	--	<0.020
MW-5	11/30/2016	17.53	3.76	13.77	<50	960	<250	<2.0	<2.0	<2.0	<4.0	--	--	--	--	0.83
MW-5	7/7/2016	17.53	9.49	8.04	<130	560	<250	<2.0	<2.0	<2.0	<4.0	--	--	--	--	<0.022
MW-5	4/20/2016	17.53	4.85	12.68	<130	<310	1,300	<2.0	<2.0	<2.0	<4.0	--	--	--	--	0.27
MW-5	2/11/2016	17.53	4.09	13.44	--	810	<250	--	--	--	--	--	--	--	--	<0.50
MW-5	7/1/2015	17.53	8.01	9.52	--	620	<250	--	--	--	--	--	--	--	--	--
MW-5	4/9/2015	17.53	4.61	12.92	--	940	<400	--	--	--	--	--	--	--	--	--
MW-5	2/11/2015	17.53	3.82	13.71	--	1,200	560	--	--	--	--	--	--	--	--	--
MW-5	8/21/2014	17.53	10.71	6.82	<100	800	<500	<0.5	<0.5	<0.5	<1.5	--	--	--	--	--
MW-5	8/19/2014	17.53	8.76	8.77						Gauged only, not sampled.						
MW-5	6/18/2007	17.53	6.10	11.43	130	1,100	120	<0.5	<0.7	<0.8	<0.8	<0.5	--	--	--	--
MW-5	3/26/2007	17.53	4.28	13.25	250	1,300	300	<0.5	0.7	<0.5	<0.5	<0.5	--	--	--	--
MW-5	12/20/2006	17.53	3.97	13.56	200	2,000	390	<0.5	8	<0.8	<0.8	<0.5	--	--	--	--
MW-5	9/13/2006	17.53	11.60	5.93	61	810	230	<0.5	12	<0.8	<0.8	<0.5	--	--	--	--
MW-5	6/26/2003	17.53	5.81	11.72	111	537	<500	<0.5	<0.5	<0.5	<1	--	--	--	--	--
MW-5	3/30/2003	17.53	4.00	13.53	377	1,410	<500	<0.5	<0.5	0.52	<1	--	--	--	--	--
MW-5	12/21/2002	17.53	4.24	13.29	385	734	<500	<0.5	<0.5	5.38	3.77	--	--	--	--	12
MW-5	9/30/2002	17.53	11.12	6.41	95.2	<250	<500	<0.5	<0.5	<0.5	<1	--	--	--	--	<0.01
MW-5	5/23/2002	17.53	4.81	12.72	236	428	<500	<0.5	<0.5	<0.5	<1	--	ND	<1	<1	<0.1
MW-5	3/26/2002	17.53	4.00	13.53	469	454	<500	<0.5	<0.5	1.94	1.87	--	--	--	--	--
MW-5	12/11/2001	17.53	3.91	13.62	571	358	<500	<0.5	<0.5	<0.5	<1	--	--	--	--	--
MW-5	9/13/2001	17.53	5.61	11.92	77.8	<250	<500	<0.5	<0.5	<0.5	<1	--	--	--	--	--
MW-5	6/28/2001	17.53	6.05	11.48	<50	290	<500	<0.5	<0.5	<0.5	<1	--	--	--	--	<0.1 ⁵
RW-1	2/2/2017	18.53	4.31	14.22	<50	130	<250	<2.0	<2.0	<2.0	<4.0	--	--	--	--	--
RW-1	11/30/2016	18.53	4.27	14.26	<50	160	<250	<2.0	<2.0	<2.0	<4.0	--	--	--	--	--
RW-1	7/7/2016	18.53	7.98	10.55	<130	300	<250	<2.0	<2.0	<2.0	<4.0	--	--	--	--	2.71
RW-1	4/20/2016	18.53	5.65	12.88	<130	<310	<310	<2.0	<2.0	<2.0	<4.0	--	--	--	--	--
RW-1	2/11/2016	18.53	4.70	13.83	--	290	<250	--	--	--	--	--	--	--	--	<0.50
RW-1	7/1/2015	18.53	7.79	10.74	--	870	<250	--	--	--	--	--	--	--	--	--
RW-1	4/9/2015	18.53	5.21	13.32	--	540	<400	--	--	--	--	--	--	--	--	--
RW-1	2/11/2015	18.53	4.06	14.47	--	410	<250	--	--	--	--	--	--	--	--	--
RW-1	8/21/2014	18.53	8.45	10.08	<100	210	<250	<0.50	<5.0	<0.50	<1.5	--	--	--	--	--

Table 2

Summary of Groundwater Analytical Data
Former Tosco Bainbridge Island Bulk Plant 1784
Weaver Avenue and Shepard Way Northwest
Bainbridge Island, Washington

Well ID	Sample Date	TOC	Depth to	Groundwater	Hydrocarbons			VOCs ¹						Lead		PAHs
		Elevation	Water	Elevation	TPHg	TPHd	TPHo	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	Other VOCs	Total Lead	Dissolved Lead	Naphthalenes ⁷
		MTCA Method A Cleanup Level: (ft)	(ft)	(ft)	1,000 (µg/L)	500 (µg/L)	(µg/L)	5 (µg/L)	1,000 (µg/L)	700 (µg/L)	1,000 (µg/L)	20 (µg/L)	Varies (µg/L)	15 (µg/L)	15 (µg/L)	160 (µg/L)
RW-1	6/18/2007	18.53	7.02	11.51	<50	280	<96	<0.5	<0.7	<0.8	<0.8	<0.5	--	--	--	--
RW-1	3/26/2007	18.53	5.03	13.50	<48	210	<95	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	--
RW-1	12/20/2006	18.53	4.70	13.83	<48	180	<96	<0.5	<0.7	<0.8	<0.8	<0.5	--	--	--	--
RW-1	9/13/2006	18.53	8.80	9.73	<48	<77	<96	<0.5	<0.7	<0.8	<0.8	<0.5	--	--	--	--
RW-1	6/26/2003	18.53	6.73	11.80	<50	471	<500	<0.5	<0.5	<0.5	<1	--	--	--	--	--
RW-1	3/30/2003	18.53	4.64	13.89	179	1,600	<500	<0.5	<0.5	0.52	<1	--	--	--	--	--
N-PERF PIPE	12/21/2002	NA	NA	NA	<50	<250	<500	<0.5	<0.5	<0.5	<1	--	--	--	--	12
N-PERF PIPE	9/30/2002	NA	NA	NA	<50	<250	<500	<0.5	<0.5	<0.5	<1	--	--	--	--	--
N-PERF PIPE	5/22/2002	NA	NA	NA	<50	<250	<500	<0.5	<0.5	<0.5	<1	--	ND	<1	<1	<0.1
N-PERF PIPE	3/26/2002	NA	NA	NA	<50	<250	<500	<0.5	<0.5	<0.5	<1	--	--	--	--	--
N-PERF PIPE	12/11/2001	NA	NA	NA	<50	<250	<500	<0.5	<0.5	<0.5	<1	--	--	--	--	--
N-PERF PIPE	9/13/2001	NA	NA	NA	<50	<250	<500	<0.5	<0.5	<0.5	<1	--	--	--	--	--
N-PERF PIPE	6/27/2001	NA	NA	NA	160	663	<500	<0.5	<0.5	<0.5	1.53	--	--	--	--	--
MID-PERF PIPE	12/21/2002	NA	NA	NA	<50	<250	<500	<0.5	<0.5	<0.5	<1	--	--	--	--	0.11
MID-PERF PIPE	9/30/2002	NA	NA	NA	<50	<250	<500	<0.5	<0.5	<0.5	<1	--	--	--	--	--
MID-PERF PIPE	5/22/2002	NA	NA	NA	<50	<250	<500	<0.5	<0.5	<0.5	<1	--	ND	<1	<1	<0.1
MID-PERF PIPE	3/26/2002	NA	NA	NA	<50	<250	<500	<0.5	<0.5	<0.5	<1	--	--	--	--	--
MID-PERF PIPE	12/11/2001	NA	NA	NA	57	<250	<500	<0.5	<0.5	<0.5	<1	--	--	--	--	--
MID-PERF PIPE	9/13/2001	NA	NA	NA	289	426	<500	<0.5	<0.5	0.766	2.12	--	--	--	--	--
MID-PERF PIPE	6/27/2001	NA	NA	NA	604	1,110	<500	0.796	<0.5	1.52	6.06	--	--	--	--	<0.2
S-PERF PIPE	12/21/2002	NA	NA	NA	<50	289	<500	<0.5	<0.5	<0.5	<1	--	--	--	--	0.07
S-PERF PIPE	9/30/2002	NA	NA	NA	<50	<250	<500	<0.5	<0.5	<0.5	<1	--	--	--	--	--
S-PERF PIPE	5/22/2002	NA	NA	NA	154	<250	<500	<0.5	<0.5	<0.5	<1	--	ND	<1	<1	2.44
S-PERF PIPE	3/26/2002	NA	NA	NA	204	<250	<500	<0.5	<0.5	<0.5	<1	--	--	--	--	--

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Summary of Groundwater Analytical Data
Former Tosco Bainbridge Island Bulk Plant 1784
Weaver Avenue and Shepard Way Northwest
Bainbridge Island, Washington

Well ID	Sample Date	TOC Elevation	Depth to Water	Groundwater Elevation	Hydrocarbons			VOCs ¹						Lead		PAHs
					TPHg	TPHd	TPHo	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	Other VOCs	Total Lead	Dissolved Lead	Naphthalenes ⁷
					1,000 (µg/L)	500 (µg/L)		5 (µg/L)	1,000 (µg/L)	700 (µg/L)	1,000 (µg/L)	20 (µg/L)	Varies (µg/L)	15 (µg/L)	15 (µg/L)	160 (µg/L)
	MTCA Method A Cleanup Level:	(ft)	(ft)	(ft)												
S-PERF PIPE	12/11/2001	NA	NA	NA	116	<250	<500	<0.5	<0.5	<0.5	<1	--	--	--	--	--
S-PERF PIPE	9/13/2001	NA	NA	NA	246	406	<500	<0.5	1.51	<0.5	<1	--	--	--	--	--
S-PERF PIPE	6/27/2001	NA	NA	NA	241	842	<500	<0.5	0.641	0.754	2.25	--	--	--	--	--
SB1	12/7/1999	NA	6	NA	<50	394	<1.37	<0.5	<0.5	<0.5	<1	--	--	--	--	--
SB2	12/7/1999	NA	6	NA	<50	470	<1.39	<0.5	0.611	<0.5	<1	--	--	6.28	<1	--
SB3	12/7/1999	NA	6	NA	2,490	404,000	<75.8	4.79	<2.5	51.1	82.5	--	--	2.89	<1	--
SB7	12/7/1999	NA	4	NA	32,300	104,000	<30.8	<100	<100	<100	<200	--	--	--	--	--
SB8	12/7/1999	NA	6	NA	<50	1,370	<0.75	<0.5	<0.5	<0.5	<1	--	--	--	--	--
SB9	12/7/1999	NA	6	NA	<50	4,404	<0.75	<0.5	<0.5	<0.5	<1	--	--	--	--	--
SB10	12/7/1999	NA	6	NA	363	14,900	<0.75	<0.5	<0.5	<0.5	1.03	--	--	--	--	--

Notes:
Bold values equal or exceed MTCA Method A cleanup level.
Ecology = Washington State Department of Ecology
EPH = Extractable petroleum hydrocarbons
ft = feet
LCS = Laboratory control sample
MTBE = Methyl tert-butyl ether
MTCA = Model Toxics Control Act
NA = Not applicable
ND = Less than laboratory method reporting limit (MRL)
PAH - Polycyclic aromatic hydrocarbons
TOC = Top of casing
TPHd = Total petroleum hydrocarbons (TPH) as diesel-range hydrocarbons
TPHg = TPH as gasoline-range hydrocarbons
TPHo = TPH as heavy oil-range hydrocarbons
USEPA = United States Environmental Protection Agency
µg/L = Micrograms per liter
VOCs = volatile organic compounds
-- = Not Analyzed or Sampled
< = Less than the stated laboratory reporting limit
1 = Only analytes with concentrations above laboratory MRLs and established cleanup levels are listed. See laboratory report for full list of analytes.
2 = Chromatogram indicates that it is likely that sample contains highly weathered diesel.
3 = Chromatogram indicates that it is likely that sample contains an unidentified gasoline range product and highly weathered diesel.
4 = Diesel range product results biased high due to gasoline range product overlap.
5 = This sample was collected as a field duplicate.
6 = Sample contained n-hexane at a concentration of 1.6 µg/L; MTCA Method B cleanup level is 480 µg/L.
7 = Reported naphthalenes concentrations is the total value of naphthalene, 1-methyl naphthalene, and 2-methyl naphthalene.

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Well ID	Sample Date	TOC Elevation	Depth to Water	Groundwater Elevation	Hydrocarbons			VOCs ¹					Lead		PAHs		
					TPHg	TPHd	TPHo	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	Other VOCs	Total Lead	Dissolved Lead	Naphthalenes ⁷	
MTCA Method A Cleanup Level:					1,000	500		5	1,000	700	1,000	20	Varies	15	15	160	
		(ft)	(ft)	(ft)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)

ANALYTICAL METHOD:

- EPH by NWEPH Method
- PAHs by USEPA Method 8270D with Selected Ion Monitoring (SIM)
- TPHg by Northwest TPH-Gx
- TPHd and TPHo by Northwest TPH-Dx
- Total lead by USEPA Method 6010D
- VOCs by USEPA Method 8260



about GHD

GHD is one of the world's leading professional services companies operating in the global markets of water, energy and resources, environment, property and buildings, and transportation. We provide engineering, environmental, and construction services to private and public sector clients.

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