



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

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March X, 2019

Justin Foslien
Aerotech Environmental Consulting, Inc.
13925 Interurban Avenue South Suite 210
Seattle, WA 98168

Re: No Further Action at the following Site:

- **Name:** Unocal 5905
- **Address:** 18015 Bothell Way NE, Bothell, WA 98011
- **Facility/Site No.:** 35644949
- **VCP No.:** NW3177
- **Cleanup Site ID No.:** 8853

Dear Justin Foslien:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your independent cleanup of the Unocal 5905 facility (Site). This letter provides our opinion. We are providing this opinion under the authority of the Model Toxics Control Act (MTCA), Chapter 70.105D RCW.

Issue Presented and Opinion

Is further remedial action necessary to clean up contamination at the Site?

NO. Ecology has determined that no further remedial action is necessary to clean up contamination at the Site.

This opinion is based on an analysis of whether the remedial action meets the substantive requirements of MTCA, Chapter 70.105D RCW, and its implementing regulations, Chapter 173-340 WAC (collectively “substantive requirements of MTCA”). The analysis is provided below.

Description of the Site

This opinion applies only to the Site described below. The Site is defined by the nature and extent of contamination associated with the following releases:

- Gasoline Range Organics (GRO), Diesel Range Organics (DRO), and Heavy Oil (HO) into the Soil and Ground Water
- Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) in the Soil and Ground Water

Enclosure A includes a detailed description and diagram of the Site, as currently known to Ecology.

Please note a parcel of real property can be affected by multiple sites. At this time, we have no information that the parcel(s) associated with this Site are affected by other sites.

Basis for the Opinion

This opinion is based on the information contained in the following documents:

1. Aerotech Environmental Consulting, Inc. (Aerotech), *Remedial Investigation Revision 1*. January 31, 2019.
2. Aerotech, *Remedial Investigation*. October 30, 2017.
3. Aerotech, *Phase I Environmental Site Assessment*. March 4, 2017.
4. Aerotech, *Phase II – Groundwater Sampling*. February 21, 2017.
5. GeoEngineers, *Results of Ground Water Sampling December 1994*. January 19, 1996.
6. GeoEngineers, *Results of Ground Water Sampling January and March 1994*. May 12, 1994.
7. GeoEngineers, *Results of Ground Water Sampling April 1994*. May 17, 1994.
8. GeoEngineers, *Results of Ground Water Sampling June and September 1994*. November 18, 1994.
9. GeoEngineers, *Progress Report No.2 Quarterly Ground Water Monitoring and Supplemental Subsurface Investigation Former Unocal Service Station 5905 Bothell, Washington*. January, 1993.
10. GeoEngineers, *Progress Report No.1 Quarterly Ground Water Monitoring and Supplemental Subsurface Investigation Former Unocal Service Station 5905 Bothell, Washington*. January, 1993.
11. GeoEngineers, *Report of Geoenvironmental Services Supplemental Subsurface Investigation and Remedial Excavation Monitoring Activities*. March 30, 1993.
12. GeoEngineers, *Results of Ground Water Sampling June and September 1993*. December 8, 1993.
13. GeoEngineers, *Report of Geoenvironmental Services Underground Storage Tank Removal and Remedial Excavation Activities*. May 15, 1992.
14. GeoEngineers, *Project Status: Underground Storage Tank Removal*. June 12, 1991.
15. GeoEngineers, *Report of Geotechnical Services Subsurface Contamination Study*. January 24, 1990.

These documents are kept in the Central Files of the Northwest Regional Office of Ecology (NWRO) for review by appointment only. You can make an appointment by calling the NWRO resource contact at (425) 649-7235 or sending an email to nwro_public_request@ecy.wa.gov.

This opinion is void if any of the information contained in those documents is materially false or misleading.

The Site is located in Bothell, Washington (Figure 1), and is more particularly described in **Enclosure A** to this letter, which also includes detailed Site diagrams. The description of the Site is based solely on the information contained in the documents listed above.

Analysis of the Cleanup

Ecology has concluded that **no further remedial action** is necessary to clean up contamination at the Site. That conclusion is based on the following analysis:

1. Characterization of the Site.

Characterization Activities:

Soil and ground water impacted by petroleum hydrocarbons and related constituents were encountered during 1991 and 1992, when the former Unocal Service Station No. 5905 was demolished (Figure 2). The level of lead was only found to be above its screening levels in some unfiltered ground water samples but not in any soil sample or filtered ground water sample. Soil confirmation samples, after a series of excavation events, indicated that impacted soil was only left in place in an area represented by soil sample FIE-7, which contained elevated levels of GRO and BTEX (Figure 3).

Site characterization efforts in prior to 2019 had been summarized in an opinion letter issued by Ecology on October 8, 2018¹. In the opinion letter Ecology determined that additional information regarding the residual soil contamination was needed to fully understand the current conditions of the release associated with the former Unocal facility.

In January 2019, five soil borings were advanced in the immediate vicinity of FIE-7 (B1) and at four step out locations (B2 through B5; Figure 4). Three samples from B1 were analyzed for GRO and BTEX, but no concentration was above the lab reporting limits or the cleanup levels (CULs) based on MTCA Method A Soil CULs for Unrestricted Land Uses.

¹ <https://fortress.wa.gov/ecy/gsp/CleanupSiteDocuments.aspx?csid=8853>

Exposure Pathways:

Soil-Direct Contact:

This pathway is *incomplete*. Confirmation soil samples from the historical and most recent sampling work collectively demonstrated no concentrations of contaminants of concern (CoCs) exceeding their CULs.

Soil-Leaching:

This pathway is *incomplete*. For the CoCs at the Site, the established CULs for soil are also considered protective of ground water.

Groundwater:

The pathway is *incomplete*. Ground water monitoring results prior to 1994 and between 2017 and 2018, indicated that concentrations of CoCs are below MTCA Method A CULs for ground water.

Surface Water:

The pathway is *incomplete*. No surface water features are located within the immediate vicinity of the Site. In addition, the Site ground water is not impacted.

Ecological:

This pathway is *incomplete*. Aerotech completed a simplified terrestrial ecological evaluation, concluding no further evaluation is necessary.

2. Establishment of cleanup standards.

Ecology has determined the CULs you established for the Site meet the substantive requirements of MTCA.

Substance	Soil – MTCA Method A for Unrestricted Land Uses milligram per kilogram (mg/kg)	Ground water – MTCA Method A microgram per liter (µg/L)
GRO	30/100 ²	800/1,000 ³
DRO	2,000	500
HO	2,000	500
Benzene	0.03	5

² GRO soil cleanup level is 100 mg/kg for gasoline mixtures without benzene and total toluene, ethylbenzene, and xylene are less than 1% of the gasoline mixture. For all other gasoline mixtures, the cleanup level is 30 mg/kg;

³ 800 µg/L if benzene is present in groundwater; 1,000 µg/L if no detectable benzene in groundwater

Substance	Soil – MTCA Method A for Unrestricted Land Uses milligram per kilogram (mg/kg)	Ground water – MTCA Method A microgram per liter (µg/L)
Toluene	7	1,000
Ethylbenzene	6	700
Xylenes	9	1,000

Ecology has determined the points of compliance (POCs) you established for the Site meet the substantive requirements of MTCA.

Media	Points of Compliance
Soil-Direct Contact	<i>“The MTCA standard POC for direct contact with soil is from the ground surface to a depth of 15 feet bgs.”</i>
Soil- Protection of Groundwater	<i>“This is a cross-media pathway that concerns all Site soil that is a potential source of COPCs to groundwater.”</i>
Groundwater	<i>“The POC for groundwater, therefore, is the shallow saturated zone beneath the Site.”</i>

3. **Cleanup.**

Ecology has determined the cleanup you performed meets the cleanup standards established for the Site.

Between 1991 and 1992, a total of approximately 2,150 cubic yards of petroleum-contaminated soil was excavated and disposed of as the former Unocal Service Station No.5905 was demolished. Analytical results from confirmation soil samples, collected recently and in the history, demonstrated the concentrations of CoCs in the soil are below CULs.

Ground water monitoring of CoCs demonstrated that no exceedances of any CULs were detected in the ground water in four consecutive monitoring events.

Decommissioning of Site Monitoring Wells

Resource protection wells⁴ associated with this Site no longer being used for their intended purpose must be properly decommissioned.⁴

⁴ WAC 173-160-460

Specific standards apply to decommissioning resource protection wells.⁵ Please work with a licensed well driller, and report to Ecology the decommissioning of Site resource protection wells MW-5, etc.

Ecology may revoke this no further action opinion determination, if resource protection wells at the Site are not properly decommissioned.

Listing of the Site

Based on this opinion, Ecology will remove the Site from our Confirmed and Suspected Contaminated Sites List.

Limitations of the Opinion

1. Opinion does not settle liability with the state.

Liable persons are strictly liable, jointly and severally, for all remedial action costs and for all natural resource damages resulting from the release or releases of hazardous substances at the Site. This opinion **does not**:

- Resolve or alter a person's liability to the state.
- Protect liable persons from contribution claims by third parties.

To settle liability with the state and obtain protection from contribution claims, a person must enter into a consent decree with Ecology under RCW 70.105D.040(4).

2. Opinion does not constitute a determination of substantial equivalence.

To recover remedial action costs from other liable persons under MTCA, one must demonstrate that the action is the substantial equivalent of an Ecology-conducted or Ecology-supervised action. This opinion does not determine whether the action you performed is substantially equivalent. Courts make that determination. *See* RCW 70.105D.080 and WAC 173-340-545.

3. State is immune from liability.

The state, Ecology, and its officers and employees are immune from all liability, and no cause of action of any nature may arise from any act or omission in providing this opinion. *See* RCW 70.105D.030(1)(i).

⁵ WAC 173-160-381

Termination of Agreement

Thank you for cleaning up the Site under the Voluntary Cleanup Program (VCP). This opinion terminates the VCP Agreement governing this project (NW3177).

For more information about the VCP and the cleanup process, please visit our web site: www.ecy.wa.gov/programs/tcp/vcp/vcpmain.htm. If you have any questions about this opinion or the termination of the Agreement, please contact me by phone at (360) 407-7239 or sam.meng@ecy.wa.gov.

Sincerely,

Sam Meng, PhD, EIT
Site Manager
Toxics Cleanup Program

SM:AF

Enclosures (1): A – Description and Diagrams of the Site

cc: Brent Johnson, Federal Way Union Inc.
Sandra Caldwell, Ecology
Sonia Fernandez, Ecology
Beth McKee, Ecology
Anthony Wenke, Ecology

Enclosure A

Description and Diagrams of the Site

Site Description

Site Location:

The Site is located at 18015 Bothell Way Northeast, Bothell, and is currently comprised of a single King County Parcel (no. 072605-9114), totaling 0.73-acre (Figure 1). The Site is within an area zoned as general commercial (GC) according to the City of Bothell Zoning Map (City of Bothell, January 2017). It is developed with a 2,488-square foot masonry building originally constructed in 1993.

Property Historical and Current Use:

The Site was occupied by Unocal Service Station #5905 from 1967 to 1993. During 1991 and 1993, the Unocal facilities were demolished including: a service station with five service bays, three 10,000-gallon USTs, one 550-gallon underground heating oil tank, one underground waste oil tank and aboveground propane tank with two covered fuel dispenser islands with a kiosk (Figure 2). Petroleum-impacted soil and groundwater were discovered during the demolition. A series of excavation activities were conducted to remove the PCS (Figure 3).

From 1993 until 2013, the Site was operated as Chevron Extra Mile & Car Wash. The Site has operated as a 76-branded gas station and car wash since 2013. The current Site facilities include: a convenience store, a car wash, two fuel islands, a 12,000-gallon and two 8,000-gallon unleaded gasoline USTs, a 6,000-gallon diesel UST, and associated fuel conveyance system piping (Figure 2).

There is currently no planned redevelopment for the Site.

Surface/Storm Water System:

No surface water features are located on the Site. The Sammamish River is located approximately 550-foot southeast of the Site.

The Site stormwater surface runoff is collected via a catch basin in front of the convenience store and catch basins along the southeast edge of the property. The catch basins collect and drain the stormwater in a 6-inch PVC pipe that flows to a 30-inch and then 70-inch corrugated metal pipe. The stormwater eventually discharges at an outfall in the Sammamish River.

Soils and Geology:

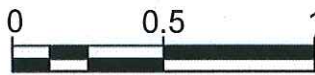
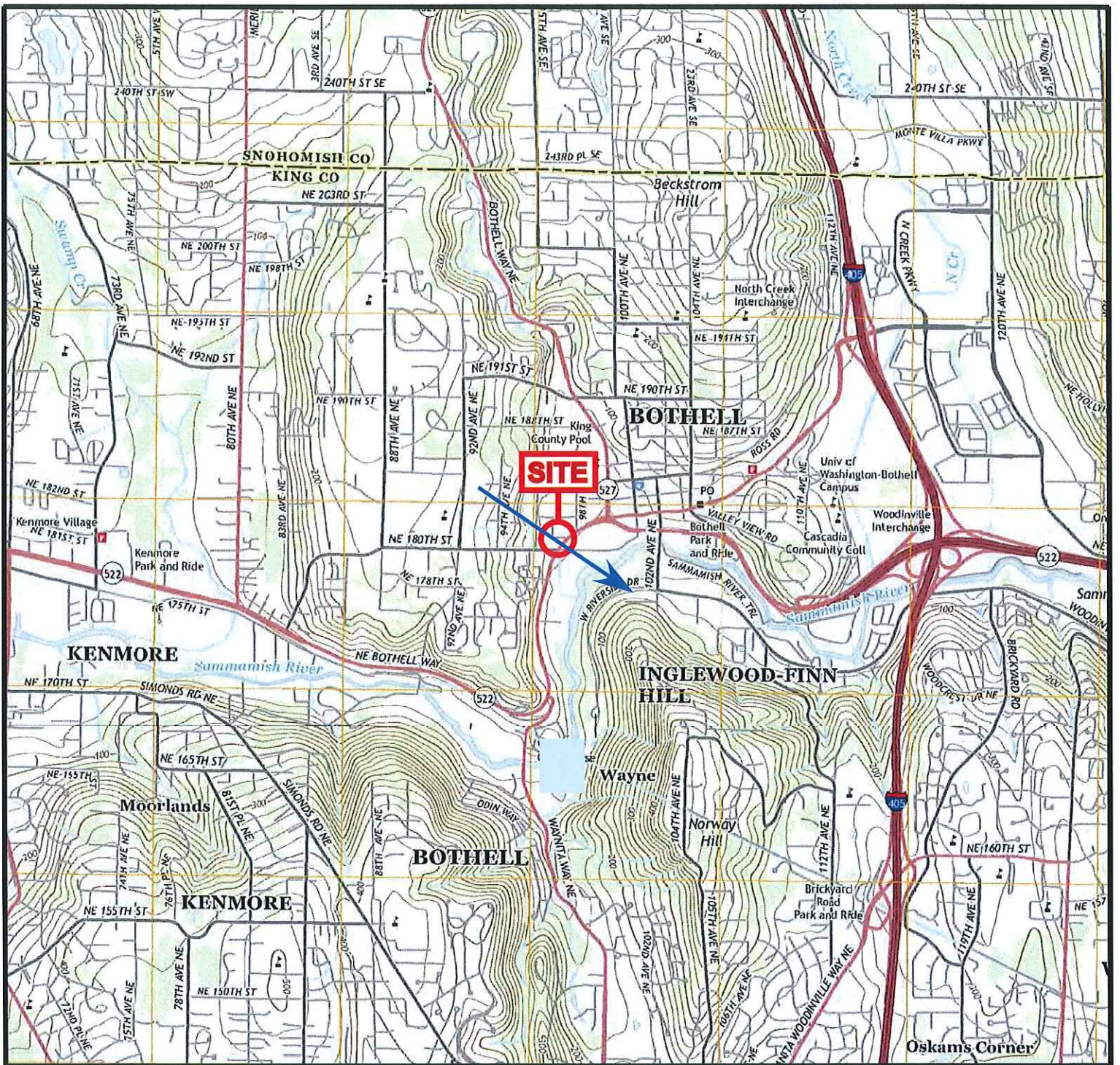
The Site is located within the northern portion of the Puget Sound Lowland physiographic province. The Puget Sound Lowland is a north-south trending through between the Olympia Mountains to the west and the Cascade Mountains to the east. The primary geological units in the island are glacial sediments since the Puget Lowland was glaciated several times in the

Pleistocene by ice originating in the mountains of British Columbia. The predominant sandy silty soils were encountered from the surface to approximately 19 feet below ground surface (bgs) in previous investigations by GeoEngineers, which is consistent with those commonly observed in Quaternary Vashon Glacial Till.

Groundwater:

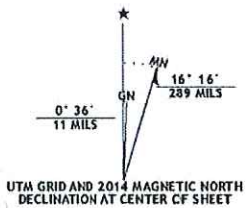
The Site groundwater occurs in the shallow saturated zone comprised of silt, sandy silt, sand and gravel, and is present under unconfined conditions. The water table was encountered between approximately 7 to 10 feet bgs. The predominant groundwater flow direction is currently determined as southeast and toward the Sammamish River, which is consistently with the historical trend at the Site.

Site Diagrams



SCALE (mile)

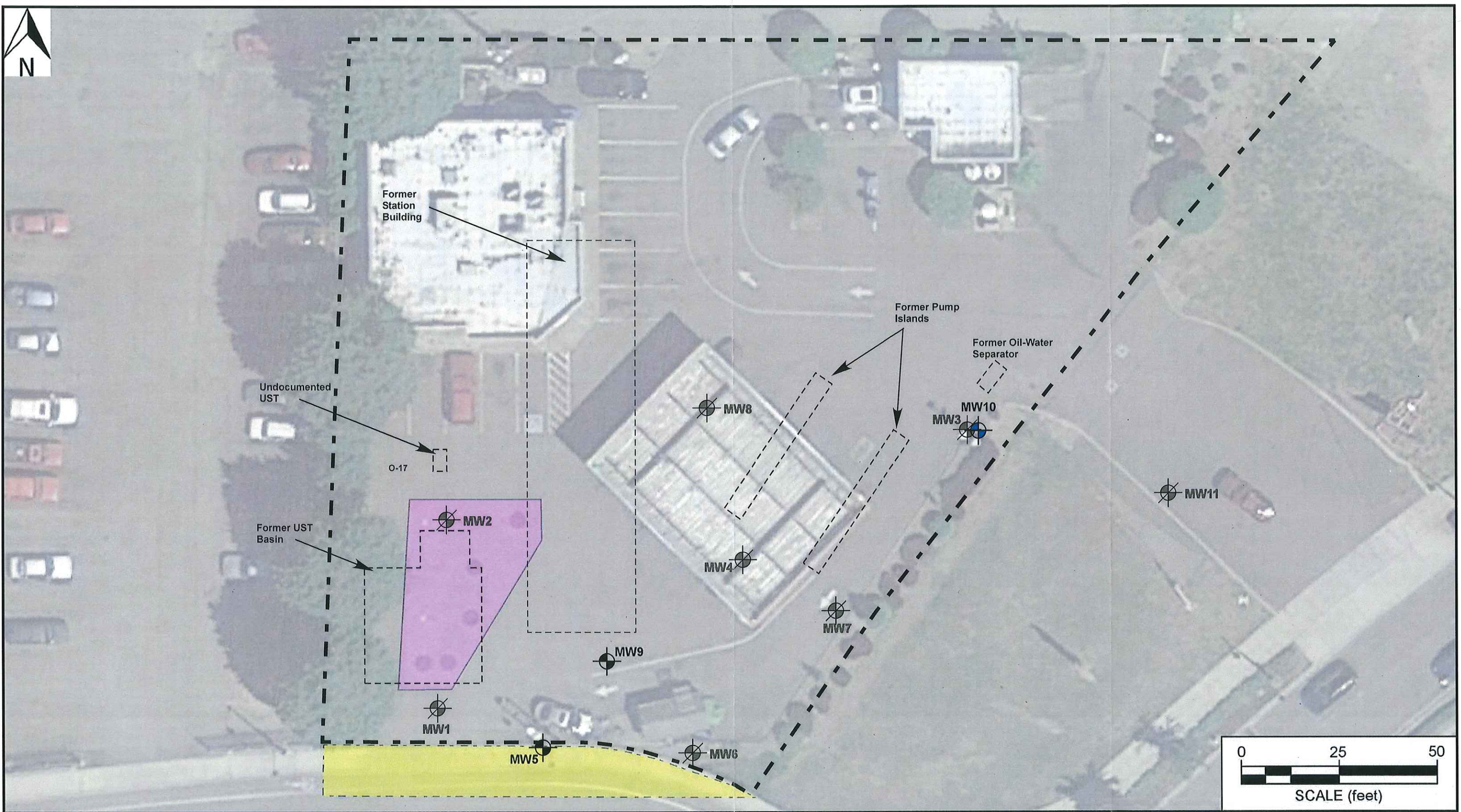
CONTOUR INTERVAL 20 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988



Calculated Groundwater
Flow Direction



QUADRANGLE LOCATION



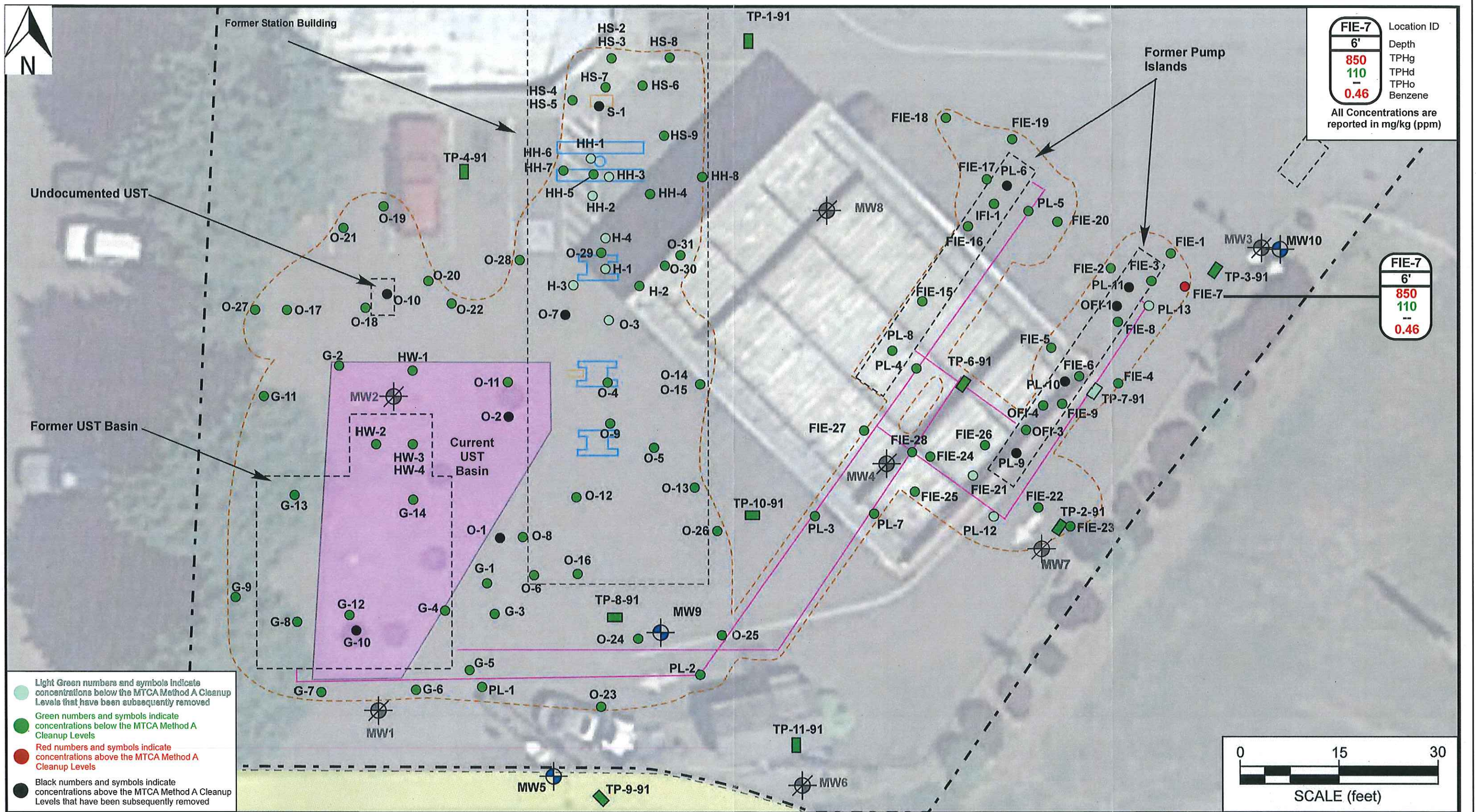
EXPLANATION	
	MW10 Groundwater Monitoring Well
	MW8 Destroyed Groundwater Monitoring Well
	Extent of Excavation
	1st Generation Service Station Features
	Property Boundary
	Parcel Purchased by City of Bothell in 2013

GROUNDWATER MONITORING WELL LOCATIONS MAP

Bothell 76
18015 Bothell Way Northeast
Bothell, Washington

Date: 10/19/17
By: Nick Gerkin
Figure:
2

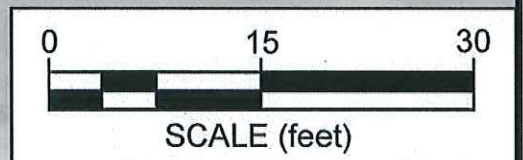




FIE-7 Location ID
 6' Depth
 850 TPHg
 110 TPHd
 - TPHo
 0.46 Benzene
 All Concentrations are reported in mg/kg (ppm)

FIE-7
 6' Depth
 850 TPHg
 110 TPHd
 - TPHo
 0.46 Benzene

Light Green numbers and symbols indicate concentrations below the MTCA Method A Cleanup Levels that have been subsequently removed
 Green numbers and symbols indicate concentrations below the MTCA Method A Cleanup Levels
 Red numbers and symbols indicate concentrations above the MTCA Method A Cleanup Levels
 Black numbers and symbols indicate concentrations above the MTCA Method A Cleanup Levels that have been subsequently removed



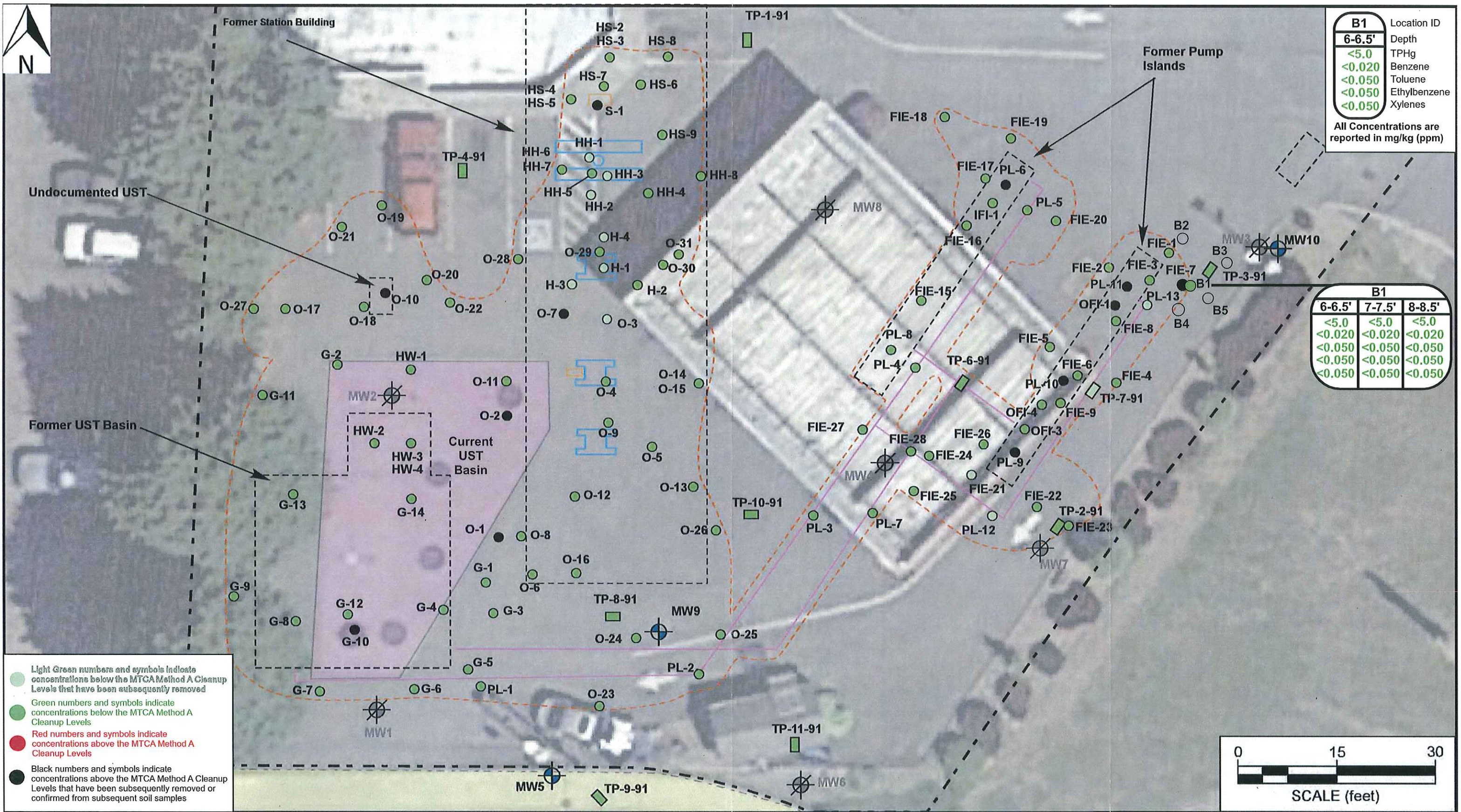
EXPLANATION	
MW10	Groundwater Monitoring Well
MW8	Destroyed Groundwater Monitoring Well
O-32	Soil Sample Location
	Former Hoist Location
	1st Generation Fuel Lines
	Sump
	Test Pit Location
	Extent of Excavation
	1st Generation Service Station Features
	Property Boundary
	Parcel Purchased by City of Bothell in 2013

CUMULATIVE SOIL ANALYTICAL RESULTS MAP - GAS AREA

Bothell 76
 18015 Bothell Way Northeast
 Bothell, Washington

Date: 10/19/17
 By: Nick Gerkin
 Figure: 3



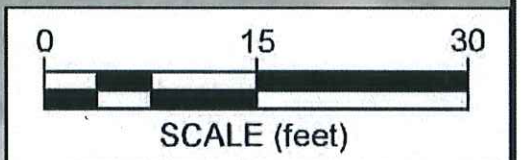


B1		Location ID
6-6.5'	<5.0	Depth
	<0.020	TPHg
	<0.050	Benzene
	<0.050	Toluene
	<0.050	Ethylbenzene
	<0.050	Xylenes

All Concentrations are reported in mg/kg (ppm)

B1		
6-6.5'	7-7.5'	8-8.5'
<5.0	<5.0	<5.0
<0.020	<0.020	<0.020
<0.050	<0.050	<0.050
<0.050	<0.050	<0.050
<0.050	<0.050	<0.050

- Light Green numbers and symbols indicate concentrations below the MTCA Method A Cleanup Levels that have been subsequently removed
- Green numbers and symbols indicate concentrations below the MTCA Method A Cleanup Levels
- Red numbers and symbols indicate concentrations above the MTCA Method A Cleanup Levels
- Black numbers and symbols indicate concentrations above the MTCA Method A Cleanup Levels that have been subsequently removed or confirmed from subsequent soil samples



EXPLANATION	
MW10	Groundwater Monitoring Well
MW8	Destroyed Groundwater Monitoring Well
O-32	Soil Sample Location
B5	Soil Boring Location
	Former Hoist Location
	1st Generation Fuel Lines
	Sump
	Test Pit Location
	Extent of Excavation
	1st Generation Service Station Features
	Property Boundary
	Parcel Purchased by City of Bothell in 2013

CUMULATIVE SOIL ANALYTICAL RESULTS MAP - GAS AREA

Bothell 76 18015 Bothell Way Northeast Bothell, Washington	Date: 01/19/19
	By: Nick Gerkin
	Figure: 4

