Electronic Copy

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
Northwest Region Office
PO Box 330316, Shoreline, WA 98133-9716 • 206-594-0000

August 15, 2022

Ryan Roberts
Project Engineer
Public Works Department
City Hall
18415 101st NE
Bothell, WA 98011
(Ryan.Roberts@bothellwa.gov)

Re: Proposal for a path toward cleanup next steps:

- **Site Name**: Bothell Landing
- **Address**: 18120, 18132, and 18126 Bothell Way NE, Bothell 98011, 10001 Woodinville Dr., Bothell 98011
- **County Assessor's Parcel Numbers** 3945720-0015 and 945720-0020
- **Facility/Site No**.: 73975762

Dear Ryan Roberts:

The City of Bothell (City) is the "potentially liable person" or "PLP" for the Bothell Landing site (Site). Under Agreed Order No. DE 15746, the City has been cleaning up the site and recently concluded a program of quarterly groundwater monitoring as required in the Cleanup Action Plan (CAP) for the Site.

Based on the remedial actions that addressed the soil and groundwater contamination documented at the Site in the May 24, 2018 Remedial Investigation/Feasibility Study (RI/FS), May 24, 2018 Final Cleanup Action Plan (CAP), and subsequent groundwater monitoring results, the Department of Ecology (Ecology) proposes a path forward to completing the regulatory requirements for cleaning up the Site.

Completed remedial actions

Interim action soil cleanups were conducted in September 2 and 27, 2010; between October 2013 and May 2014; September 19 and 28, 2015; and January 11 and 13, 2017. Following the excavations, confirmation samples were taken. Oxygen Release Compound (ORC) was placed in the 2010 and 2013/2014 excavations.

Residual soil and groundwater contamination

Based on the studies before the interim cleanups, chemicals of potential concern (COPCs) in the soil at the Site were:

- HVOCs (Halogenated Volatile Organic Compounds, primarily PCE, TCE, (cis)-1,2-DCE, and vinyl chloride)
- Total petroleum hydrocarbons (gasoline-, diesel- and motor oil-range)
- BTEX (benzene, toluene, ethylbenzene, and xylenes)
- Lead
- Polycyclic aromatic hydrocarbons (PAHs) (including naphthalenes)

Following the interim action soil cleanups, only one area had soils remaining on Site with cleanup level exceedances, namely the area containing sample L-PEX-8-10 (under the Horse Creek culvert) that is now under the SR 522 roadway. The soil chemicals of concern (COCs) remaining on Site are:

- Total petroleum hydrocarbons, gasoline-range
- Benzene

COPCs for ground water at the Site before the interim cleanups were:

- HVOCs
- Total petroleum hydrocarbons (gasoline-, diesel- and motor oil-range)
- BTEX
- Metals (arsenic, cadmium, chromium, and lead)

Ground water monitoring data following the soil cleanups indicated the following COCs remain on Site at the time of the final CAP:

- Arsenic

HVOC contamination originating from an off Site source is not considered to be a COC at the Site requiring site-specific remediation because cleanup at the Ultra Cleaners Agreed Order Site is expected to remedy HVOC ground water contamination at the Bothell Landing site

Groundwater compliance monitoring and silica gel cleanup results

The original 2018 CAP had arsenic as the only contaminant of concern. The CAP and June 5, 2018 Compliance Monitoring Plan (CMP) required eight quarters of monitoring for TPH and arsenic to determine if the arsenic concentrations are naturally elevated concentrations unrelated to historical or current contamination at the site. It allows a modified sampling frequency based on results and consultation with Ecology.

Ecology has reviewed data from two years of quarterly monitoring and notes the following:

1. High levels of groundwater arsenic occur in BL-MW-11 and BL-MW-12 (south end of Site, see map attachment). Groundwater arsenic exhibited no pattern with redox measurements and dissolved iron concentrations. Extended groundwater monitoring indicate localized and naturally high arsenic in some groundwater wells.

2. TPH-Diesel is non-detect. TPH-Oil was initially below cleanup levels, but sudden exceedances above Site cleanup levels (500 µg/L) occurred in 2020 (marginal levels at MW-1 and BL-MW-11, while slightly higher in BL-MW-12)

3. There is no apparent correlation of arsenic concentrations with TPH contamination based on extended monitoring.

As reported in a January 18, 2022 memorandum to Ecology by Kane Environmental, two additional rounds of groundwater monitoring were conducted in August-September 2021 and December 2021. In these rounds, groundwater samples were analyzed for diesel and heavy oil range petroleum hydrocarbons, both with and without a silica gel cleanup (SGC), to "assess whether biogenic organics were contributing to the diesel and heavy oil concentrations in groundwater." In this case, the difference between SGC treated and non-treated analysis is interpreted to indicate degradation of the heavy dissolved petroleum hydrocarbons in groundwater as the silica gel adsorbs the polar non-hydrocarbons from the sample (polar metabolites). The analytical concentrations after SGC would therefore indicate residual primary dissolved petroleum hydrocarbon compounds that can be compared to Site cleanup levels to assess risk and compliance to cleanup standards.

The memorandum reported that samples taken at the Site were nondetect after SGC, despite TPH-Oil detections of up to 450 µg/L:

	TPH-Diesel				**TPH-Oil**			
	Sept 2021		**Dec 2021**		**Sept 2021**		**Dec 2021**	
Well	***Result***	***Result with SGC***	***Result***	***Result with SGC***	***Result***	***Result with SGC***	***Result***	***Result with SGC***
MW-1	<220	<220	<150	<150	**270**	<220	<210	<210
BL-MW-11	<210	<210	<160	<160	**390**	<210	**330**	<210
BL-MW-12	<210	<210	<160	<160	**450**	<210	<210	<210

Concentrations in µg/L.

Ecology has determined that these results indicate that observed concentrations of TPH-Oil at these wells constitute polar metabolites produced from dissolved petroleum hydrocarbon compounds that naturally degraded in the environment. Therefore, cleanup levels set for these contaminants of concern have been met at the Site.

Institutional Controls

A portion of the site beneath SR 522 ROW (including the area of residual soil contamination) is subject to institutional controls established under the Memorandum of Agreement (MOA) between Ecology and the City on Right of Ways at its downtown MTCA sites.

South of SR 522, the southern half of the site and southern portion of the Bothell Former Hertz site is under a May 13, 2021 environmental covenant ((Instrument Number 20200513000356) (Parcel 4) available here: https://apps.ecology.wa.gov/gsp/DocViewer.ashx?did=101090

The environmental covenants address remaining groundwater contamination at the Site (petroleum hydrocarbon and arsenic) and specific requirements such as prohibitions on groundwater withdrawal and use, preservation of monitoring wells, and vapor controls.

Site status conclusion

Some residual petroleum contaminated soil exist at the Site. The area containing sample L-PEX-8-10 (under the Horse Creek culvert) is now under the Bothell Way NE roadway. It remains physically contained under the roadway, and subject to institutional controls under the Memorandum of Agreement (MOA) between Ecology and the City on Right of Ways at its downtown MTCA sites.

Extended groundwater monitoring indicate localized and naturally high arsenic in some groundwater wells at the Site. Petroleum hydrocarbon impacts (heavy oil) are sporadic and slightly in exceedance with cleanup levels at Site wells, but appear to be detections of TPH-Oil due to degradation products (polar metabolites) of petroleum hydrocarbons in groundwater.

Proposed path forward to final cleanup

Ecology would like to propose the following:

1. If the City so desires, submit a request to terminate and remove the environmental covenant (Parcel 4) for the southern half of the Bothell Former Hertz and Bothell Landing sites (Instrument Number 2020051356).

2. The Environmental Covenant shall remain in place where the pocket of residual petroleum hydrocarbon contaminated soil exists at the northern portion of the site, under the MOA with Ecology.

3. Wells MW-1, BLMW-11, and BLMW-12 can be decommissioned following state regulations, including submitting a NOI (Notice of Intent) and required fees to Ecology's Water Resources Program and following WAC 173-160-460. Ecology Publication Number 09-11-011 provides answers to Frequently Asked Questions on resource protection wells.

4. Ecology shall issue a letter to the City on the status of Agreed Order No. DE 15746 that will explain that the City has satisfactorily completed the remedial actions required by the Order for the Site, except for actions still necessary to control and monitor the remaining contamination and periodically review conditions.

Next Steps in Cleanup Process

Please reply in writing with your response to the proposed path forward for the Site. Note that should this proposal be accepted, the Site shall not be delisted due to the residual contamination that remains in place.

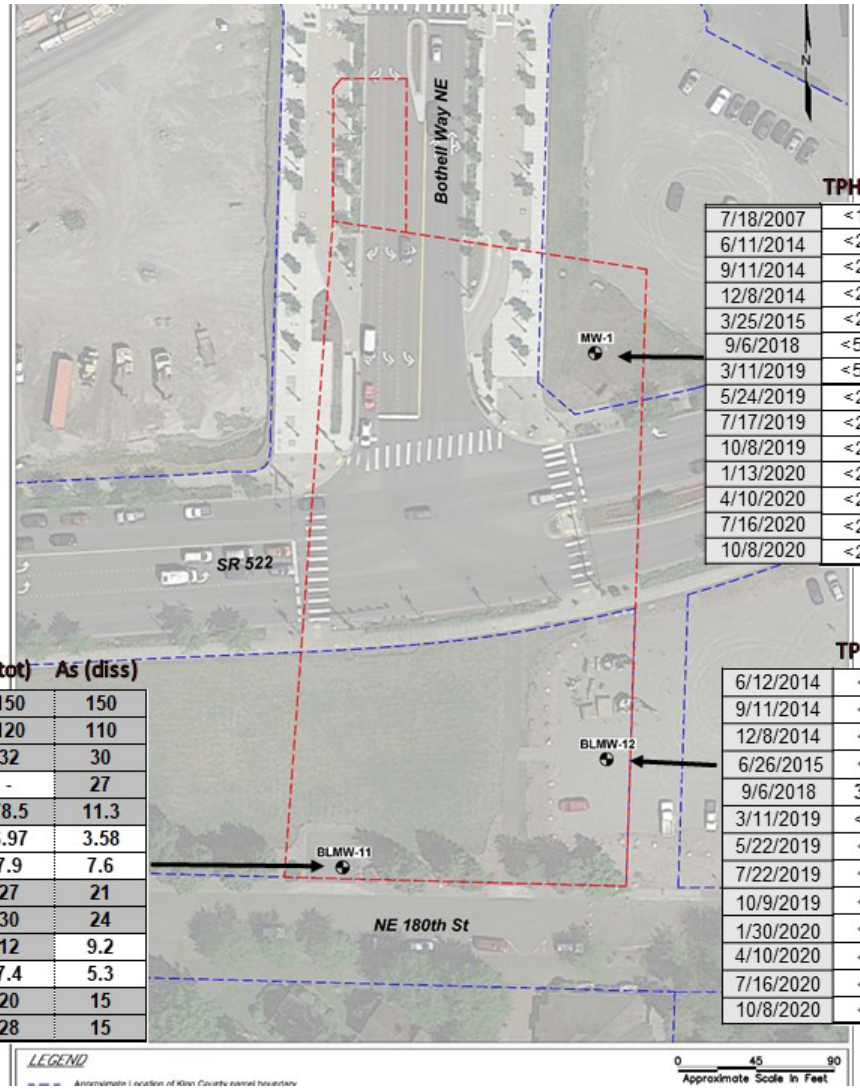
If you have any questions regarding this letter, please do not hesitate to contact me by email at sunny.becker@ecy.wa.gov or by phone at (425) 457-3842.

Sincerely,

Sunny Becker
Site Manager
Toxics Cleanup Program, NWRO

Enclosures: 1

ATTACHMENT 1



	TPH-DX	TPH-O	As (tot)	As (diss)
7/18/2007	<130	-	-	-
6/11/2014	<280	<450	10	6.6
9/11/2014	<260	<410	17	30
12/8/2014	<260	<410	-	<3.0
3/25/2015	<260	<410	-	<3.0
9/6/2018	<50.0	101	<1.75	<1.75
3/11/2019	<52.8	<106	<1.75	<1.75
5/24/2019	<260	<420	<3.3	<3.0
7/17/2019	<260	470	<3.3	<3.0
10/8/2019	<250	<400	<3.3	<3.0
1/13/2020	<250	<400	<3.3	<3.0
4/10/2020	<250	410	9.6	8.20
7/16/2020	<200	270	<3.3	<3.0
10/8/2020	<220	530	<3.3	<3.0

	TPH-DX	TPH-O	As (tot)	As (diss)
6/11/2014	<280	<470	150	150
9/10/2014	320	430	120	110
12/8/2014	<260	<410	32	30
3/26/2015	<260	<410	-	27
9/6/2018	91.8 b	167	78.5	11.3
3/6/2019	<50.5	159	6.97	3.58
5/22/2019	<260	510	7.9	7.6
7/19/2019	<260	<420	27	21
10/9/2019	<260	450	30	24
1/8/2020	<260	420	12	9.2
4/10/2020	<260	270	7.4	5.3
7/16/2020	<210	520	20	15
10/8/2020	<230	570	28	15

	TPH-DX	TPH-O	As (tot)	As (diss)
6/12/2014	<260	<410	130	120
9/11/2014	<260	<410	88	77
12/8/2014	<260	<410	200	180
6/26/2015	<260	430	-	63
9/6/2018	362 b	144	87.6	14.4
3/11/2019	<53.1	114	17.7	3.6
5/22/2019	<260	<420	<3.3	<3.0
7/22/2019	<260	790	16	14
10/9/2019	<250	<400	<3.3	<3.0
1/30/2020	<210	<210	<3.3	<3.0
4/10/2020	<210	<210	<3.3	<3.0
7/16/2020	<210	980	26	22
10/8/2020	<230	780	22	20