



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

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May 13, 2019

Larry Wilson
Glacier Recycle Real Property, LLC
813 R Street NW
Auburn, WA 98001

Re: Further Action at the following Site:

- **Site Name:** Glacier Recycle
- **Site Address:** 32300 148th Ave., SE, Auburn, WA
- **Facility/Site No.:** 21135
- **Cleanup Site ID No.:** 12326
- **VCP Project No.:** NW3202

Dear Larry Wilson:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your independent cleanup of the Glacier Recycle 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?

YES. Ecology has determined that 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:

- Total petroleum hydrocarbons as gasoline (TPH-G), as diesel (TPH-D), and as oil (TPH-O) range organics, and carcinogenic polycyclic aromatic hydrocarbons (cPAHs), arsenic and chromium in soil.

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 parcels associated with this Site are affected by other sites.

Basis for the Opinion

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

1. ECI Environmental Services, Groundwater Monitoring Report, Fourth Quarter 2018, Glacier Recycle, January 3, 2019.
2. ECI Environmental Services, Groundwater Monitoring Report, Third Quarter 2018, Glacier Recycle, September 21, 2018.
3. ECI Environmental Services, Resubmittal of Remedial Investigation Report (Remedial Investigation (Revised), Glacier Recycle, August 27, 2018.
4. ECI Environmental Services, Remedial Investigation, Former Glacial Recycle facility, June 1, 2018.
5. Farallon Consulting, Additional Subsurface Investigation Report, Glacial Recycling Property, September 10, 2014.

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 completing a Request for Public Record form (<https://www.ecology.wa.gov/About-us/Accountability-transparency/Public-records-requests>) and emailing it to PublicRecordsOfficer@ecy.wa.gov, or contacting the Public Records Officer at 360-407-6040. The document is also accessible in electronic form from the Site web page (<https://fortress.wa.gov/ecy/gsp/Sitepage.aspx?csid=12326>).

This opinion is void if any of the information contained in the document are materially false or

misleading.

Analysis of the Cleanup

Ecology has concluded that **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.

Ecology has determined your characterization of the Site is not sufficient to establish cleanup standards and select a cleanup action. The Site is described above and in **Enclosure A**.

The Remedial Investigation (RI) report (ECI, June 1, 2018) indicates that a number of the chemicals defined as chemicals of concern (COCs) at this Site were detected exceeding MTCA Method A cleanup levels. The following table lists the COCs with the maximum levels detected in soil samples:

Table 1 The Maximum Level of COCs in Soil Samples

Sample Location	Sample Depth (f)	TPH-G (mg/kg)	TPH-D (mg/kg)	TPH-O (mg/kg)	Arsenic (mg/kg)	Chromium (mg/kg)	cPAHs (mg/kg)
F3	1.5	1,100					
H5	2.0	1,100	4,800				
E8	2.5			53,000			
H6	1.5				30	220	
H5	2.0						68.9
MTCA Cleanup Method A Level		100	2,000	2,000	20	19	0.1

Elevated levels of TPH-G, TPH-D, and TPH-O, arsenic, cadmium chromium, copper, manganese, lead and zinc were also found in ground water samples collected in the previous multi-phase Site investigations. However, concentrations of the chemicals did not exceed MTCA Method A cleanup levels.

In accordance with the latest monitoring report (ECI, January 3, 2019), the analytical results obtained from MW1 and MW2 confirmed that all the analytes (TPH-G, TPH-D, and TPH-O, arsenic, cadmium chromium, copper, manganese, lead and zinc) were below the laboratory detection limits or MTCA Method A cleanup levels for four consecutive quarters.

At this time, Ecology has determined that the following additional information is needed to support an adequate site characterization:

- The horizontal and vertical boundaries of COCs exceeding the cleanup levels in soil need to be further delineated prior to developing a cleanup action plan (CAP).
- All the three existing ground water monitoring wells were installed around the Property boundary. Ecology recommends addition of at least three monitoring wells at locations within the Property boundaries, to identify contamination status in the ground water immediately downgradient of identified soil contamination (see **Enclosure A, Figure 4**). The data can also provide more information to develop an accurate ground water contour map and assess the ground water flow directions.
- The pattern of surface water and storm water runoff flow are not described in the RI report.
- Information regarding water supply wells located within 1 mile of the Site is needed to assess potential impacts on ground water. See Section "Remedial Investigation Figures, Section I(b)" of the Remediation Investigation Checklist (<https://fortress.wa.gov/ecy/publications/SummaryPages/1609006.html>).
- Revise the geologic cross sections presented in the Revised Remedial Investigation (ECI, August 27, 2018) to include the following:
 - Vertical scale in feet above mean sea level (National Geodetic Vertical Datum of 1988).
 - Geologic units encountered in subsurface explorations.
 - Perched ground water reportedly encountered at the base of the fill (at depths of 3 to 9 feet below ground surface (bgs), and in the former underground storage tank (UST) excavation at approximately 14 feet bgs.
 - Monitoring wells as control points (existing and new wells), including well screen intervals.
 - Range of high and low ground water levels measured in monitoring wells.
 - Contaminant concentrations in soil and ground water samples, at depth intervals where the samples were collected.
- Include ground water elevations at monitoring well control points on any ground water elevation contour maps.

2. Establishment of cleanup standards.

Ecology has determined the cleanup levels and points of compliance at this Site are described as follows:

a. Cleanup levels.

Soil

Soil cleanup levels suitable for unrestricted land use are appropriate for this Site. For the direct contact and soil-to-ground water pathways, Method A cleanup levels defined in MTCA can be utilized.

Documentation of an exclusion from a Terrestrial Ecological Evaluation (TEE) was provided in the August 28, 2018 ECI report; therefore, soil cleanup levels do not require adjustment for potential ecological exposure.

Ground Water

This Site is also appropriate to utilize MTCA Method A ground water cleanup levels.

b. Points of compliance.

Soil

The points of compliance for contamination in soil at the Site are summarized as follows:

Basis for Point of Compliance	Depths to Meet Cleanup Levels	Standard vs Conditional Point of Compliance
Protection of ground water	All depths throughout the Site, to uppermost ground water	Standard point of compliance
Prevention of direct contact	15 feet below ground surface	Standard point of compliance
Prevention of contact with biologically active soil zone	6 feet below ground surface	Conditional point of compliance

Ground Water

The point of compliance for ground water is throughout the Site from the uppermost level of the saturated zone extending vertically and horizontally to the

lowest depth which could potentially be affected.

3. Selection of cleanup action.

Ecology has determined the cleanup action you selected for the Site does not meet the substantive requirements of MTCA, because the characterization of the Site to date is not sufficient to support a Feasibility Study (FS) of cleanup alternatives. Requirements for completing an FS can be found in the Feasibility Study Report Checklist:

<https://ecology.wa.gov/Spills-Cleanup/Contamination-cleanup/Cleanup-process/Cleanup-options/Voluntary-cleanup-program/Reporting-requirements>.

Please note that in order for Ecology to consider inclusion of an environmental covenant as a component of the Site cleanup action, a Disproportionate Cost Analysis meeting MTCA requirements must be completed as part of the FS report.

4. Cleanup.

Ecology has determined that the following cleanup actions performed to date at the Site are considered interim actions:

- Removal of three 10,000-gallon USTs containing gasoline, diesel, and heating oil, and excavation of approximately 90 cubic yards of petroleum-contaminated soil for off-Site disposal.
- Removal of five above-ground storage tanks that contained diesel, lube oil, and waste oil.

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).

Contact Information

Thank you for choosing to clean up the Site under the Voluntary Cleanup Program (VCP). After you have addressed our concerns, you may request another review of your cleanup. Please do not hesitate to request additional services as your cleanup progresses. We look forward to working with you.

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 (425) 649-7126 or e-mail at grant.yang@ecy.wa.gov.

Sincerely,



Grant Yang
NWRO/Toxics Cleanup Program

By Certified Mail: 9171 9690 0935 0214 2151 29

Enclosure (1) A - Description and Diagrams of the Site

cc: David Polivka, ECI Environmental Services (via e-mail)
Sonia Fernandez, VCP Coordinator, Ecology (via e-mail)

Enclosure A

Description and Diagrams of the Site

Site Description

This enclosure provides Ecology's understanding and interpretation of Site conditions and forms part of the basis for the opinion expressed in the letter.

Site: The Site, defined as contamination in soil with petroleum hydrocarbons, is located at 32300 148th Ave SE, Auburn, Washington (the Property, **Figure 1**). The Property corresponds to King County tax parcel numbers: 215200-0075, 215200-0082, and 215200-0083.

Area and Property Description: The Property was used for a light industrial facility from 1962 to 2013 and consists of a 25-acre irregularly shaped land. According to the King County Assessor's record, the Property is zoned of Rural Residential, one dwelling unit per 5 acres (RA-5). Surrounding land is the ravine and forested land, commercial storage yard, King County Fire District Headquarters Station, and commercial equipment storage yard to the north, south, west and east, respectively. The greater vicinity is a heavily wooded and rural area.

Property History and Current Use: The Property was used for various industrial facilities as early as 1962. The operations included a wood chipping plant from 1962 to 2002, and a construction and demolition material recycling center from 2006 to 2013. There are no current operations and the Site has been vacant since 2013.

Source of Contamination: Releases in the soil were discovered from three 10,000-gallon capacity underground storage tanks (USTs) and five above-ground storage tanks (ASTs; three 250-gallon, one 12,000-gallon, and one 4,000-gallon) and two unknown aboveground storage tanks (ASTs). Subsequent site assessments confirmed that the USTs, ASTs and their associated operation systems were the contamination sources, resulting in COCs exceedances. Locations of soil borings and monitoring wells completed on the Site are shown on **Figure 2**.

Physiographic Setting: The Site is situated along the eastern margin of the lowlands of the Puget Sound basin in western Washington. Elevations in the lowlands range from sea level up to several hundred feet. Land surface elevations at the Site range from approximately 375 to 380 feet above mean sea level. The topography is dominated by north-south trending valleys and low flat topped highlands cut by streams. The Puget Sound occupies a large part of the western portion of the basin, and lakes and streams occur frequently throughout the area.

Surface/Storm Water System: Big Soos Creek is located approximately 1,800 feet north of the Property, and Lake Holm is approximately 4,000 feet south-west of the Property. The Property is relatively flat and stormwater likely infiltrates into the ground.

Ecological Setting: The land surface of the Property is vacant and currently used for a parking

facility for King County's Fire Station fleet and equipment. The Property is surrounded by commercial storage facilities and wooded areas.

Geology: The Property is underlain by fill materials with a depth ranging from 0 to 11 feet below ground surface (bgs). The materials include crushed concrete, bricks, rock slabs and other debris. Site geology consists of alluvial deposits at a thickness of 0.3 to 10 feet, underlain by glacial till to a depth of approximately 25 feet bgs. Glacial deposits consisting of silty sand to sandy silt are present beneath the till to the total depth explored of 50 feet bgs.

Ground Water: Perched ground water was reportedly encountered at the base of the fill at depths of 3 to 9 feet bgs, and in the former underground storage tank (UST) excavation at approximately 14 feet bgs. Regional ground water at the Site occurs under unconfined conditions at depths ranging from 31 to 50 feet bgs, with a north to north-west flow direction towards Big Soos Creek (**Figure 3**).

Water Supply: Public water supply is currently provided to the Site by the Covington Water District. Information regarding any water wells located within 1 mile of the Site was not provided.

Contamination and Remediation: Soil and ground water contamination were found during a Phase II Site Investigation conducted in 2013. The following Site investigation in 2014 further confirmed six USTs, two ASTs and applications of the land-use (a wood chipping plant and construction material recycling facility) were the contamination source. The contaminants in soil exceeding the cleanup levels include TPH-G, TPH-D, TPH-O, cPAHs, arsenic and chromium. The estimated extent of COC impacts to soil are shown on **Figure 4** (Figure 10; ECI, August 27, 2018).

In 2014, three of the monitoring wells were installed to identify contamination status in ground water at the Site (**Figure 3**). Ground water encountered at 31 to 50 feet bgs in MW -1, MW-2 and MW-3 were collected for the COCs analysis. The following table lists copper, manganese and zinc were detected with maximum concentrations in the water samples during the four quarterly monitoring events from February to November 2018:

Table 2 The Contaminants with Detected Levels in Ground Water Samples

Monitoring Well	Depth to Water Table(f)	Copper (µg/L)	Manganese (µg/L)	Zinc (µg/L)
MW1	49.3	34.4	250	41.1
MW2	47.1	7.1	123	
MW3	33.5	5.4	101	
MTCA Method B Cleanup Level		640	2,200	4,800

The laboratory results indicated that copper, manganese and zinc in the ground water were below the MTCA Method B cleanup levels.

Site Diagrams

Figure 1 Site Location and Vicinity Map



Figure 3 Ground Water Contour Map and Flow Direction

