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DEPARTMENT OF ECOLOGY
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February 22, 2021

Rebecca Ralston
River's Edge WA LLP
909 5th Avenue, Suite 2401
North Bend, WA 98045

Re: Further Action at the following Site:

- **Site Name:** Monroe Auto Salvage
- **Site Address:** 526 Simons Road, Monroe, Washington
- **Facility/Site No.:** 2753
- **Cleanup Site ID No.:** 4539
- **VCP Project No.:** NW3251

Dear Rebecca Ralston:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your independent cleanup of the Monroe Auto Salvage 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

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 release(s):

- Total Petroleum Hydrocarbons-Diesel Range (TPH-Dx), Total Petroleum Hydrocarbons-Heavy Oil Range (TPH-HO), Polycyclic Aromatic Hydrocarbons (PAHs), Polychlorinated Biphenyls (PCBs), Zinc, Lead, & Arsenic into Groundwater, Soil, and potentially Sediment and Surface 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 documents listed below.

- Landau Associates, Inc., (LAI). 2017a. Draft Phase I Environmental Site Assessment, Monroe-Woods Creek Site C, Snohomish County, Washington. Landau Associates, Inc. April 20.
- LAI. 2017b. Draft Phase II Environmental Site Assessment Monroe-Woods Creek Site D Ring Bus, Monroe, Washington. July 31.
- LAI. 2018a. Excavated Materials Management Plan, Former Monroe Auto Wrecking/River's Edge Site, Monroe, Washington. December 18.
- LAI. 2018b. Supplemental Phase II Environmental Site Assessment, Former Monroe Auto Wrecking Site, Monroe, Washington. November 12.
- LAI. 2019a. Technical Memorandum: Supplemental Soil Sampling Results, Former Monroe Auto Wrecking Site/River's Edge Site, Monroe, Washington. November 14.
- LAI. 2019b. Underground Storage Tank Decommissioning and Site Assessment Report, River's Edge Property, Monroe, Washington. October 15.
- LAI, 2019c. Soil Cleanup Summary Report Former Monroe Auto Wrecking Site/River's Edge Site, Monroe, Washington. November 20.
- LAI, 2020. Groundwater Monitoring Report Former Monroe Auto Wrecking Site/River's Edge Site, Monroe, Washington. September 18.

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.

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 following characterization activities have commenced on the Site to date. A detailed description of the below-listed characterization activities is included in Enclosure A.

Characterization Activities:

- In 1990, Hart-Crowser conducted a subsurface investigation, which identified an area of soil, approximately 4,200 square-feet in-size. Hart-Crowser determined the soil is impacted with TPH, Zinc, & Lead. Sampling results also indicated groundwater is impacted with Zinc, & Cadmium.
- In 1996 & 1997, Emcon and Glacier Environmental conducted subsurface sampling, which identified TPH-Dx &-HO, and PCBs. A total of 18-tons of PCB-impacted soil was subsequently removed in accordance with Cleanup Standards.
- In 2000, Farallon advanced five monitoring wells (MWs) and 22 test-pits. Farallon detected TPH-Dx & -HO in soils above the respective Cleanup Levels (CULs). Farallon subsequently excavated 2,140-tons of impacted soil. Residual impacted soil reportedly remained in-place in the southwestern portion of the Site.
- In 2001, Ecology issued a No Further Action (NFA) determination for the Site, which was rescinded in 2008 due to the aforementioned residual soil impacts.
- In 2017, LAI performed a Phase One Environmental Site Assessment (PHI). Several Recognized Environmental Conditions (RECs) were identified in the PHI associated with the past usage of the Site.
- Also in 2017, LAI conducted a Phase Two Environmental Site Assessment (PHII), and advanced five test pits and a geotechnical boring to approximately 42-feet below ground surface (bgs). LAI identified seven data gaps and four areas of concern (AOCs).
- In 2018, LAI conducted a Supplemental PHII, and advanced seven soil borings. LAI also collected surface water samples at Woods Creek from up- & down-gradient positions with respect to the Site. Arsenic was detected well above surface water criteria and the groundwater CUL. Zinc was detected above the surface water criteria in both samples collected from Woods Creek.

- In 2019, LAI performed additional soil sampling, including the advancement of several test-pits. In summary, LAI identified three areas that require further soil excavation. LAI excavated these areas in concurrence with Site redevelopment. Groundwater monitoring and surface water sampling also took place in 2019.

Exposure Pathways:

Soil-Direct Contact:
This pathway is remains *complete*. Residual impacted soil remains above 15-feet bgs in the eastern portion of AOC-1. This area is small and bounded in all directions. An Environmental Covenant, statistical evaluation (95% Upper Confidence Limit), or further excavation of this area will render this pathway incomplete.

Soil-Leaching:
This pathway is remains *complete*. Residual impacted soil is likely in contact with groundwater. Groundwater is impacted with metals and TPH-Dx & -HO above the respective CULs. Fill material comprised of metal, glass wood debris, and paint were identified to depths up to 35-feet bgs (LAI, 2018).

Soil-Vapor:
This pathway is *incomplete*. None of the residual constituents pose a risk to soil vapor or indoor air.

Groundwater:
This pathway is *complete*. As indicated above and in detail in Enclosure A, Arsenic, Cadmium, Lead, TPH-Dx &-HO have been detected in groundwater above the respective MTCA Method A CULs in samples collected from MWs.

Surface Water:
This pathway remains *potentially-complete*. Woods Creek defines the southern & eastern perimeters of the Site. This pathway remains *potentially-complete* until further hydrogeological studies are performed. Sediment as well as pore water may require further sampling and characterization.

Ecological:
This pathway is likely *potentially-complete*. It is unknown to Ecology if a Terrestrial Ecological Evaluation has been prepared.

Ecology Comments:

Based on a review of the above-listed reports and investigations, Ecology has the following comments:

1. LAI cited the presence of turbid groundwater conditions in existing MWs. Ecology is requesting the MWs are redeveloped and resampled in an effort to eliminate turbidity and consequent sample bias. Please include field turbidity measurements during monitoring well sampling to allow consideration of turbidity data.

2. Please construct a potentiometric map depicting groundwater flow direction & gradient. This may include the advancement of additional MWs and/or piezometers to provide for more accurate potentiometric surface.

3. Please construct a cross-section, depicting soil types, fill material, groundwater and surface water head elevations, and residual contamination locations. This should include at least one cross section parallel with the groundwater flow direction.

4. Please construct a contamination map showing residual groundwater and soil contamination. It appears that additional MWs may be warranted to accurately illustrate the extent of residual impacted groundwater.

5. Please determine the interaction between Woods Creek and the Site groundwater flow regime. This will include accurate seasonal assessment of stream & groundwater levels by advancing surveyed staff gauges and piezometers screened at variable depths and placed on either side of Woods Creek (i.e. LAI sampling location DP-1). Provide an accurate flow network including vertical and lateral flow directions, equipotential lines, and velocities.

   Depending on the conclusions derived from the hydrological assessment, sediment and pore water sampling may be warranted.

6. On-site sample location DP6-MW is considered the most up-gradient or background sampling location. Groundwater samples collected from this location did not exhibit any contaminants of concern (CoCs) above the respective CUL or laboratory method detection limit (MDL) other than one detection of TPH-Dx detected at 190 µg/L (well below the Method A cleanup level of 500 µg/L). TPH-Dx was below detection limits in two other samples from this well. Therefore, background metals or TPH which may provide sample bias, is not present at sample location DP6-MW at levels which suggest potential use of silica gel cleanup analysis in samples from down-gradient MWs. As such, groundwater analytical results without silica gel cleanup shall be used for compliance determination.

7. Ecology concurs with the determination that the TPH-Dx & HO petroleum constituents are separate releases, and can be treated as such when determining compliance with Cleanup Standards.

8. Residual impacted soil remains above 15-feet bgs in the eastern portion of AOC-1. This area is small and bounded in all directions. In an effort to eliminate the Soil-Direct Contact Pathway, please conduct one of the following:

    a. File an Environmental Covenant at Snohomish County Auditor Office, restricting access to the residual soil contamination above 15-feet bgs.
    b. Perform a statistical evaluation (i.e. 95% Upper Confidence Limit).[1]
    c. Perform further excavation of this area.

9. In accordance with WAC 173-340-7490, please complete a Terrestrial Ecological Evaluation (TEE) for the Site. Fill out the TEE form and submit it to Ecology (along with supporting information, as appropriate)[2].

10. Please provide a comprehensive data table, to include all soil, groundwater, & surface water sample data collected from all previous Site investigations to-date.

11. In accordance with WAC 173-340-840(5) and Ecology Toxics Cleanup Program Policy 840 (Data Submittal Requirements), data generated for Independent Remedial Actions shall be submitted in both a written and electronic format. For additional information regarding electronic format requirements, see the website http://www.ecy.wa.gov/eim. Be advised that according to the policy, any reports containing sampling data that are submitted for Ecology review are considered incomplete until the electronic data has been entered into Ecology's EIM database.

2. Establishment of Cleanup Standards.

Ecology has determined the cleanup levels and points of compliance (POCs) you established for the Site do not meet the substantive requirements of MTCA, as the Site requires further characterization and hydrological assessment.

Of the CoCs addressed, the following CULs apply.

The Groundwater MTCA Method A CULs are:

TPH-Dx	2,000 µg/L
TPH-HO	2,000 µg/L
Arsenic	5 µg/L
Cadmium	5 µg/L

[1] WAC 173-340-740 (7)(d)(i)
[2] https://fortress.wa.gov/ecy/publications/SummaryPages/ECY090300.html

Lead	15 µg/L
Zinc	4,800 µg/L
Total PCBs	0.1 µg/L
PAHs (TEQ)	0.1 µg/L

The Soil MTCA Method A CULs are:

TPH-Dx	2,000 mg/L
TPH-HO	2,000 mg/L
Arsenic	20 mg/L
Cadmium	2 mg/L
Lead	250 mg/Kg
Total PCBs	1 mg/Kg
PAHs (TEQ)	0.1 mg/Kg

The Surface Water MTCA Method B or Applicable or Relevant and Appropriate Requirements (ARARs) Cleanup Criteria / CULs are:

Arsenic	0.018 µg/L
Cadmium	1.0 µg/L
Lead	2.5 µg/L
Zinc	100 µg/L

Based on the conceptual Site model (CSM), Ecology determined the following POCs apply to the Site:

Soil - Direct Contact: For soil CULs based on human exposure via direct contact, the point of compliance is: "*…throughout the Site from ground surface to 15-feet below the ground surface.*"

Soil - Leaching: For Sites where soil CULs are based on the protection of groundwater: "*…the point of compliance is throughout the Site."*

Groundwater: For groundwater, the standard POC as established under WAC 173-340-720(8) is: "*…throughout the Site from the uppermost level of the saturated zone extending vertically to the lowest most depth which could potentially be affected by the Site.*"

Surface Water: For surface water, the standard POC is established under WAC 173-340-730(6)(a) is: "*…shall be the point of points at which hazardous substances are released to surface waters of the state…*" If the creek is gaining, then POCs will likely be at MWs located in proximity to the creek.

3. Selection of Cleanup Action.

Ecology has determined the Cleanup Action you selected for the Site does not meet the substantive requirements of MTCA at this time because the Site contains residual soil and groundwater contamination above MTCA cleanup levels, as well as potential sediment & surface water impacts.

4. Cleanup.

Ecology has determined the cleanup actions do not meet Cleanup Standards at this time.

Enclosure A provides a detailed rendition of cleanup activities conducted to date.

To date, the following cleanup actions have commenced to date:

- Advancement of soil borings, MWs, & test pits, and subsequent soil, groundwater, & surface water sampling.
- Excavation of approximately 5,766-tons of impacted soil in-total from the Site.
- Removal of a 500-gallon underground storage tank and a subsurface rinse tank.

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.

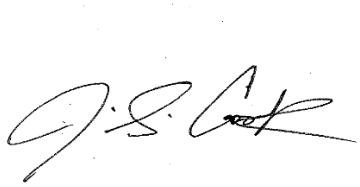
The state, Ecology, and its officers and employees are immune from all liability, and no cause of action of any nature may arise from any act or omission in providing this opinion. *See* RCW 70.105D.030(1)(i).

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, please contact me by phone at (360) 407-6834 or e-mail at jason.cook@ecy.wa.gov.

Sincerely,



J.G. Cook, LG, RG
Headquarters - Toxics Cleanup Program

JGC: AF

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

cc: Dylan Frasier, Landau Associates, Inc.
Sandra Caldwell, Ecology
Sonia Fernandez, Ecology

Enclosure A

Description and Diagrams of the Site

Site Description

Site:
The Site is located within a mixed-use commercial and residential area in Monroe, located at 526 Simons Road, Monroe, Washington 98272 (Snohomish County Department of Assessment, January 2021). The Site is comprised of a single Snohomish County Parcel, (no. 27070600300500), totaling 8.89-acres. The Site is currently used for multi-family residential purposes, and is improved with five, three-story, multi-family residential structures. Four of these structures is 10,094 square-feet in size, and the remaining multi-family residential structure is 7,167 square-feet in size. The on-Site building has a total of 166 apartment units and was constructed in 2020.

Property Historical and Current Use:
Currently, the Site is improved with a five multi-family residential structures in Monroe, constructed in 2020. The Site was formally utilized as a lumber yard and scrap yard.

By at least 1905 until the 1940s, the Site was occupied by a J. Simon Shingle Mill and an electric light plant & pump station. From the 1940s to the 1990s, the Site was utilized as a lumber mill, with operations concentrated in the northeastern portion of the Site. The lumber mill ceased operations by the 1990s. By the 1950s, an automobile and metal salvage facility occupied the western & southern portions of the Site, which ceased operation by the late-1990s. All debris, including automobiles were reportedly removed from the Site from 1998 to 2000, thereafter the Site was used for storage of undisclosed materials. The Site was developed with its current multi-family residential improvements in 2020 (LAI, April 2017).

Surface/Storm Water System:
Woods Creek defines the southern perimeter of the Site.

It is assumed stormwater is conveyed to the municipal separate storm sewer system operated and maintained under the NPDES Phase Two Municipal Stormwater Permit for the City of Monroe.

Soils and Geology:
The Site and much of the Puget Sound Region is underlain by alluvial Quaternary sediments deposited during multiple glacial episodes. The sediments consist of interlayered alluvial clays, silts, sands, & gravels. These alluvial sediments are typically situated over glacial till, primarily comprised of consolidated silts, sands & gravels.

Soils encountered at the Site generally consist of an assortment of fluvial sediments, consisting of silt, silty-sand with gravel (LAI, November 2018). Fill derived from previous Site usage, comprised of wood, metal, glass, & paint debris is present in the subsurface at the south end of the Site to depths up to 35-feet bgs (LAI, November 2019).

Groundwater:
Groundwater at the Site is encountered between approximately 24- to 29-feet bgs. Groundwater is presumed to flow towards Woods Creek, to the south-southwest (LAI, November 2018).

Due to the potential hydrological complexity of the Site, specifically with the presence of Woods Creek along the southern perimeter of the Site, further hydrogeological assessment is required to determine an accurate flow direction, and interactions with the aforementioned surface water bodies during variable seasons.

Sediment:
It is unknown if sediment is impacted due to the past usage of the Site as a lumber mill and auto salvage facility. As such, sediment and pore water sampling may be warranted, following a more extensive hydro-geologic Site assessment.

Source of Contamination & Contamination Extent:
The primary source of contamination reportedly originates from the past usage of the Site as an automobile salvage/metal scrapyard, shingle mill, electric light plant and pump station, as well as a lumber mill.

In 1990, Hart-Crowser conducted a subsurface investigation, which identified an area of soil impacted with TPH, lead, and zinc the respective CULs. Hart-Crowser identified an area of soil contamination approximately 4,200 square-feet in-size, and 1 to 2-feet in-depth. In addition, groundwater was determined to be impacted with cadmium, chromium, & zinc above the respective CULs (LAI, April 2017).

In 1996 & 1997, Emcon and Glacier Environmental conducted soil and groundwater sampling at the Site. Emcon identified PCBs adjacent to an on-Site power pole. In addition, Emcon detected TPH-Dx & -HO above the respective CULs at that time. It is unknown if groundwater was impacted. In response to the sampling results, Glacier Environmental excavated 18-tons of PCB-impacted soil. It is unknown if the TPH-Dx & -HO soils were excavated at this time (LAI, November 2019).

In 2000, Farallon performed a Remedial Investigation & Feasibility Study (RI/FS). Farallon advanced a total of 22 test pits and advanced five MWs. Farallon focused on two areas of the Site based on historical use to include the former lumber mill area and the former salvage yard area (LAI, November 2019). Farallon detected TPH-Dx &-HO concentrations above the respective CULs in soil in eight areas of the Site. Farallon subsequently excavated approximately 2,140-tons of impacted soil from the Site. Residual soil contamination reportedly remained in-place in the southwestern areas of the Site. These soils could not be excavated due to the presence of structural and vegetative obstacles (LAI, November 2019).

In 2001, Ecology issued a No Further Action determination, which was rescinded in 2008 due to the presence of residual contamination on-Site.

In 2017, LAI conducted a PHI and a PHII. Several RECs were identified in the PHI associated with the past usage of the Site. LAI advanced a total of five test pits and advanced a geotechnical hollow stem auger boring to approximately 42-feet bgs. The PHII identified a total of seven data gaps. LAI subsequently identified four areas of concern (AOCs) that warranted further sampling and characterization.

In 2018, LAI conducted a supplemental PHII, which included the advancement of seven soil borings to depths ranging between 20- to 29-feet bgs. LAI only analyzed a total of six soil samples from three soil borings (B-1 to -3). No contaminants of concern in soil were identified at concentrations exceeding the respective CULs. LAI reportedly analyzed the chromatograms for the samples, and determined the TPH-Dx & -HO components were separate releases, as such, the individual TPH-Dx & -HO concentrations do not need to be combined. In addition, a surface water sample was collected from Woods Creek up- & down-gradient from the Site. Dissolved arsenic was detected above the respective surface water criteria and above the groundwater CUL. Zinc was detected above the surface water criteria, but below the groundwater CUL. Arsenic was detected in both surface water samples at a concentration of 1.8 µg/L, two orders of magnitude greater than the surface water criteria of 0.018 µg/L (LAI, November 2019). In addition, fill material comprised of wood debris, metal debris, and paint were confirmed at depths to approximately 35-feet bgs at the south end of the Site.

In 2019, LAI performed additional soil sampling. This investigation included advancing several test-pits in the vicinity of the previous Site excavations performed by Farallon in 2000 (AOC 2 / Excavations 3 & 4 and AOC-4 / Excavation 6), (LAI, November 2019). Residual CoCs were not identified at concentrations above the respective CULs, as such, AOC 2 & -4 were determined to be in compliance with Cleanup Standards. Sampling also indicated the presence of PAHs above the respective CULs in soil at AOC-3 (LAI, November 2019).

In summary, LAI identified three areas that required further soil remediation, AOC-1, -3, & Building-C Excavation Area (Bldg. C), which were addressed concurrently with Site re-development (LAI, November 2019).

Subsequently in 2019, LAI initiated cleanup activities at the three aforementioned locations. During excavation at AOC-1, two, 1-foot thick black layers were discovered. The black layers are comprised of wood and metal debris, including car parts. These layers are located between 7- to 12-feet bgs and between 11- to 17-feet bgs (LAI, November 2019). The black layers were determined to contain Cadmium and Lead above the respective soil CULs. These black layers were excavated from AOC-1, with the exception of areas below/deeper than 15-feet bgs and to the south, outside of the Site development clearing limits (LAI, November 2019). Following initial- and over-excavation of AOC-1, two areas of residual contamination remain to include a small area in the vicinity of sample location AOC1-SW-17 (12-13). This area is bounded by excavation sidewall samples and to the east with soil boring AOC1-DP. LAI indicated areas to the east could not be further excavated due to unspecified constraints (LAI, November 2019). The additional area where residual Lead & Cadmium in soil remained is towards the south of AOC-1, where the aforementioned black layer was observed at depths over 15-feet bgs.

LAI indicated further excavation to the south was not feasible as it was out of the Site clearing limits (LAI, November 2019). As such, the extent of soil contamination is still unknown to the south of AOC-1, and requires further characterization.

LAI excavated residual PAH-impacted soil in AOC-3. AOC-3 was excavated to a depth of approximately 2.5-feet bgs. Conformational soil samples exhibited compliance with Cleanup Standards (LAI, November 2019).

LAI additionally excavated residual soil in the Bldg. C area. A subsurface rinse tank was discovered. LAI subsequently removed the rinse tank and excavated surrounding soil. Conformational soil samples exhibited compliance with Cleanup Standards (LAI, November 2019). In addition, a 500-gallon UST was decommissioned by removal. Conformational soil samples did not indicate a release had occurred. LAI removed a total of 3,608-tons of impacted soil from the three excavations.

LAI sampled groundwater for four quarters (Aug. & Nov. 2019 and Feb. & June, 2020) from four MWs. In addition, a temporary well point was advanced adjacent to Woods Creek in the transition zone between ground- & surface water. Cleanup Standards were not achieved in two of the MWs and the temporary well point installed adjacent to Woods Creek, where Arsenic was detected at a concentration of 120 µg/L, well above the groundwater and surface water CULs/Water Quality Criteria of 5.0 & 0.018 µg/L, respectively. TPH-Dx, -HO, Arsenic, Lead, & Cadmium were all detected in groundwater above the respective CULs. The up-gradient/background MW did not exhibit detections above the respective CULs for all quarterly samples collected. As such, postulations that the CoC concentrations are derived from background conditions is not viable.

In summary, soil in the vicinity of AOC-1 needs further characterization to the south of the excavation. Groundwater flow direction and gradient, as well as the hydrological interaction with Woods Creek needs further assessment and characterization of dissolved phase contaminants in the vicinity of AOC-1.

Site Diagrams