



STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

1250 W Alder St • Union Gap, WA 98903-0009 • (509) 575-2490

December 13, 2017

Paul Fairbairn  
Stantec Consulting Services, Inc.  
11130 NE 33rd Pl Ste 200  
Bellevue, WA 98004

Re: Further Action at the following Site:

Site Name: 7 Eleven 25821  
Site Address: 1824 George Washington Way, Richland  
Facility Site No.: 77113577  
Cleanup Site No.: 6650  
VCP Project No.: CE0457

Dear Mr. Fairbairn:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your independent cleanup of the 7 Eleven 25821 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**

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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**

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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:

- Gasoline Range Petroleum Hydrocarbons (GRPH), Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) into soil.
- GRPH, BTEX, and lead into groundwater.



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:

<b>Report Title</b>	<b>Prepared by</b>	<b>Date</b>
Underground Fuel Storage Tank Closure Chronology Store Number 25821, 1824 George Washington Way, Richland, WA	Kleinfelder	June 1989
Phase II Soil and Ground Water Assessment Store, Number 25821, 1824 George Washington Way, Richland, WA	Kleinfelder	Sept. 1989
Draft Feasibility Review and Draft Cleanup Action Plan, 7-11 Store No 25821, 1824 George Washington Way, Richland, WA	Kleinfelder	Jan. 1992
Limited Phase II Environmental Site Assessment Report for 7-Eleven, Inc., 1824 George Washington Way, Richland, WA	SECOR International, Inc.	Dec. 2004
Cleanup Action Report, Former 7-Eleven Store 25821, Wascher Mobil Station, 1824 George Washington Way, Richland, WA	Stantec Consulting Services, Inc. (Stantec)	May 2017
Quarterly Groundwater Monitoring and Remediation Progress Reports for Former 7-Eleven Store No. 25821	Various Authors	1989-2016
Department of Ecology Correspondence File	--	--

These documents are kept at the Central Regional Office (CRO) of Ecology for review by appointment only. You can make an appointment by calling the CRO resource contact at (509) 575-2027.

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 or select a cleanup action.

A retail fueling station operated at the Site property from the late 1940s until the late 1980s. Three (3) generations of Underground Storage Tanks (USTs), and two (2) separate UST and dispenser island locations were identified in reports.

In 1989, petroleum contamination was discovered at the base of the excavation for the decommissioning and removal of the final generation of USTs, dispenser island, and canopy. Petroleum contamination was also discovered in a former tank basin, associated with the 1940s era USTs, located north of the existing restaurant building. The petroleum product was determined to be an aged-gasoline, but the exact source of the release(s) was never identified. The recently removed USTs were less than 3 years old, so are unlikely the source. The property has been utilized as a restaurant and parking lot since 1990.

Characterization activities performed at the Site include several soil and groundwater investigations between 1989 and 2015. A total of twelve (12) groundwater monitoring wells have been installed and sampled intermittently since 1989.

### a. Model Remedy Requirements

- i. Groundwater Model Remedy #5 was selected to demonstrate the Site has been cleaned up. In addition to the characterization data gaps discussed below, the following requirement of this model remedy **has not been** met:
  - Sufficient groundwater monitoring data to confirm the MTCA Method A CULs are met throughout the Site.

This model remedy relies on an empirical demonstration to show the residual soil contamination at the Site is no longer impacting groundwater and cleanup levels will not be exceeded in the future. Section 10.3 of Ecology's *Guidance for Remediation of Petroleum Contaminated Sites* outlines the requirements for groundwater confirmational monitoring to support the empirical demonstration. This Site falls under Stage 3 Monitoring, and requires samples be collected from each compliance monitoring point for at least eight (8) consecutive quarters. Only 3-5 quarterly sampling events were performed at each point. Certain conditions allow for the monitoring to be decreased to four (4) quarters. Ecology does not believe the Site qualifies for reduced monitoring considering source removal to the maximum extent practicable was not the primary remedy used for cleanup at the Site.

**b. Data Gaps**

- i.* Documents provided in Appendix C of the 2017 report appear to show fueling USTs located east of the former service station building, pump islands to the north and west, and an additional UST (waste oil?) to the south. This documentation does not match the locations of historic Site features shown on current site plans.

Additional documentation or clarification is necessary to verify the locations and Contaminants of Potential Concern (COPCs) selected for investigation are representative of the historic use of the Site property as a service station.

- ii.* More information is necessary to understand the Site groundwater flow direction; and thus, evaluate the sufficiency of the well network to demonstrate compliance with cleanup standards.

The 2017 report depicts the flow direction towards both the south and the northwest (Figures 7a-d). However, Site groundwater flow was consistently calculated towards the southeast from at least 1989 to 1997. Regional groundwater is typically influenced by the close proximity to the Columbia River, and is expected to flow generally towards the east. A brief review of nearby cleanup sites confirms a groundwater flow direction toward the east and southeast.

- iii.* The existing Site data has not characterized soil or groundwater to the east and southeast of the 1940s era UST location.

The soil boring log for monitoring well MW-5 documented staining at 16 ft bgs. No sample was submitted for analysis, but this depth is consistent with contamination found elsewhere at the Site.

Groundwater samples collected from monitoring well MW-5 had a maximum GRPH concentration of 470,000 ug/L in May 1990. MW-5 has been primarily dry during sampling events, and no attempt to investigate further has been made. Note: The groundwater monitoring data from June 1989 to January 1991, was not included in the results summary table.

- iv.* Inadequate justification has been made for the exclusion of lead, diesel, heavy oil, and nitrates from the list of Site Contaminants of Concern (COCs).

- **Lead** – The 2017 report states the “total lead exceedances observed in February 2014 in well MW-10 and March 2015 in well MW-11 are not representative of lead concentrations in groundwater based on historical groundwater results and dissolved analytical results (February 2016).” Very little data has been collected regarding lead, and more will be necessary to support this conclusion.

A single petroleum contaminated soil sample was analyzed for lead in 1989. All other soil results have been from clean, or nearly clean, samples.

It is possible the concentrations in groundwater are the result of suspended solids in the samples. It is recommended that analysis for dissolved and total lead be performed during future sampling events.

- **Nitrate** - Nitrate concentrations in groundwater exceeded both the MTCA Method B CUL and the National Primary Drinking Water Maximum Contaminant Level (MCL) for drinking water quality during the September 2014 and June 2015 sampling events. The elevated concentrations are assumed to be the result of interim action subsurface injections, and sufficient monitoring is required to verify nitrate concentrations have decreased to an appropriate level.
  - **Diesel and Heavy Oil** – Diesel was not considered a COPC because there was no record of storage or use at the Site. Heavy oil has never been considered a COPC. However, several soil samples collected during the 2004 and 2015 investigations had reported concentrations of diesel and/or heavy oil below MTCA Method A cleanup levels. The Site was an active service station from the late 1940s, and the use or storage of these products is probable.
- v. The 2015 confirmatory soil samples are not sufficient to demonstrate soil concentrations are below the direct contact cleanup level for Total Petroleum Hydrocarbons (TPH).

The 1989 reports describe a visible smear zone between about 11 – 14 feet below ground surface (ft bgs) in the open excavation. Only a few soil samples have been collected from this range, but GRPH above MTCA Method A cleanup levels were reported east of the larger tank pit excavation at 12 ft bgs during the 2000 investigation.

- vi. The empirical demonstration performed did not sufficiently demonstrate that the characteristics of the Site (e.g. depth to groundwater) are representative of future Site conditions.

Groundwater contaminant concentrations have historically been higher during high water table sampling events; presumably due to exposure to soil contamination in the smear zone. The sampling data collected (both soil and groundwater) does not sufficiently demonstrate that: 1) soil contamination does not still exist in the smear zone, and 2) if soil contamination is still present in the smear zone, it will not recontaminate groundwater if the water table rises above the recent average.

## **2. Establishment of cleanup standards.**

Ecology has determined the cleanup levels and points of compliance you established for the Site **do not** meet the substantive requirements of MTCA.

### **a. Soil**

The soil cleanup standards selected rely upon an empirical demonstration that the soil to groundwater leaching pathway is no longer complete; and therefore, the human direct contact cleanup levels are applicable.

In order to justify the use of the direct contact cleanup level, a demonstration that the characteristics of the Site (e.g. depth to groundwater) are representative of future Site conditions still needs to be made.

### **b. Groundwater**

MTCA Method A cleanup levels and the standard point of compliance were selected for groundwater, and meet the requirements of MTCA

## **3. Cleanup.**

Ecology has determined the cleanup you performed does not meet any cleanup standards at the Site.

The extent of soil and groundwater contamination at the Site has not been sufficiently characterized. Ecology is unable to evaluate compliance with the selected cleanup standards.

The cleanup actions performed include:

- 1989 – Limited contaminated soil removal during UST decommissioning.
- 1996 – Oxygen Releasing Compound (ORC) was placed in the bottom of MW-7.
- 1999-2001 – Nitrate solution injected into MW-7.
- 2014 – BOS 200® was injected into subsurface to enhance biodegradation processes.

### **Limitations of the Opinion**

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#### **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).

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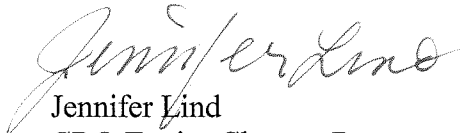
**Contact Information**

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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](http://www.ecy.wa.gov/programs/tcp/vcp/vcpmain.htm). If you have any questions about this opinion, please contact me by phone at (509) 454-7839 or e-mail at [Jennifer.Lind@ecy.wa.gov](mailto:Jennifer.Lind@ecy.wa.gov).

Sincerely,

  
Jennifer Lind  
CRO Toxics Cleanup Program

cc: Jose Rios, 7 Eleven  
Matt Alexander, VCP Billing