



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

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

October 27, 2015

Mr. Ronald Santos
Leidos Engineering, LLC
18912 North Creek Parkway, Suite 101
Bothell, WA 98011

Re: Opinion on Proposed Cleanup of the following Site:

- Site Name: Unocal Bulk Plant 0853
- Site Address: 6 N 5th Street, Wenatchee
- Facility/Site No.: 346
- VCP Project No.: CE0351

Dear Mr. Santos:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your proposed independent cleanup of the Unocal Bulk Plant 0853 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:

- Gasoline-range petroleum hydrocarbons (TPH-G), diesel-range petroleum hydrocarbons (TPH-D), heavy oil-range petroleum hydrocarbons (TPH-O), benzene, xylenes, and lead into the groundwater.
- TPH-G, TPH-D, Benzene, Toluene Ethylbenzene, Xylenes (BTEX), and Polycyclic Aromatic Hydrocarbons (PAHs) into the soil.

Additional characterization is necessary to define the nature and extent of contamination associated with the Site. The description of the Site may be revised after the additional characterization has been performed.

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. GeoEngineers, Subsurface Contamination Study, February 27, 1990
2. GeoEngineers, Progress Report No. 1 – Remedial Monitoring Services and Supplemental Subsurface Contamination Study, March 13, 1991
3. DPRA Incorporated, Draft Site Hazard Assessment, May 1991
4. GeoEngineers, Progress Report No. 2 – Supplemental Subsurface Contamination Study, May 26, 1992
5. Unocal, Wenatchee Bulk Plan BP 0853 Environmental Status Memorandum, May 24, 1993
6. GeoEngineers, Progress Report No. 5 – Groundwater Monitoring and Air Permeability Test, September 23, 1993
7. GeoEngineers, Updated Summary of Remedial Recommendations and Fee Estimates, February 7, 1995
8. Pacific Environmental Group, Summary of Assessment Activities, January 28, 1998
9. Stantec Consulting Corporation, Groundwater Monitoring Report, January 16, 2009
10. Ecology, VCP Further Action Letter, March 31, 2009

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11. Email from Ecology (Norm Hepner) regarding the frequency of groundwater monitoring and additional groundwater characterization, April 10, 2012
12. Email from Ecology (Norm Hepner) regarding the conceptual site model report, November 6, 2012
13. SAIC Energy, Environment, & Infrastructure, LLC, Conceptual Site Model, September 27, 2012
14. Leidos Engineering, LLC, Site Assessment Report, February 28, 2014
15. Leidos Engineering, LLC, Fourth Quarter 2014 Groundwater Monitoring and Sampling Report, March 19, 2015

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

The hydrogeologic reports submitted to Ecology were not stamped by a licensed professional. This type of work, when submitted to Ecology for review, must be under the seal of an appropriately licensed professional, as required by Chapters 18.43 and 18.220 RCW.

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 extent and nature of contamination has not been adequately evaluated, and the following deficiencies in the site characterization are noted:

- a. The extent of groundwater contamination has not been characterized along the northern property boundary in the vicinity of MW-15.

- b. Three (3) areas of contaminated soil were discussed in the Updated Summary of Remedial Recommendations and Fee Estimates prepared by GeoEngineers (1995). The contamination is described as heating oil present from the 0-7 feet in the vicinity of a leaking pump valve, gasoline and diesel contamination is present from 23-26 feet in the vicinity of the former truck loading rack, and diesel contamination from 21-25 feet beneath the former drywell. GeoEngineers estimated that deep soil and rock contamination is present beneath one-third (1/3) of the Site in the vicinity of the former drywell, former loading rack, and possibly the Aboveground Storage Tanks (ASTs).

The submitted reports do not clearly discuss the current status of the contamination, and the summary table of soil sampling in the Conceptual Site Model (2012) does not appear to contain samples corresponding to the estimated locations and depths. It is assumed petroleum contaminated soil remains in these locations, but the nature and extent have not been characterized.

- c. The Site has been operating as a bulk plant facility since about 1921. The source of Site contaminants are assumed to be from general operations of the bulk plant facility, and no specific release or petroleum product has been identified. In addition to the ASTs and product lines for bulk fuel storage; potential sources of contamination include a maintenance building, warehouse with loading platform, drum storage areas, and underground drum filler lines, loading racks, fuel dispensers, drywell, underground heating oil tank, etc. Many of the Site features were removed or replaced during the Site cleanup activities. In addition to the known impacts to the Site from gasoline, diesel, and heavy oil, it is possible that a release of waste oil or solvents has occurred due to historical Site usage.

Not all required compounds, outlined in Table 830-1 of the MTCA Cleanup Regulation, have been analyzed for in soil and groundwater. Additionally, some compounds have been analyzed for, but either the location is not representative of Site conditions, or the frequency of analysis during compliance monitoring is insufficient. At a minimum, the groundwater should be analyzed for all potential contaminants of concern.

Analytical data gaps include: carcinogenic PAHs (cPAHs), Polychlorinated biphenyls (PCBs), Halogenated Volatile Organic Compounds (HVOCs), and lead.

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.

No cleanup levels or point of compliance were established for the Site. The evaluation of exposure pathways and the lack of established cleanup standards are both insufficient and unsubstantiated for the current conditions at the Site.

a. Soil

- 1) Soil at the site is contaminated with TPH-G and benzene above MTCA Method A cleanup levels.

SAIC determined residual Petroleum Contaminated Soil (PCS) was inaccessible due to the proximity of the Above Ground Tanks (ASTs), equipment, and secondary containment berm. The PCS is located at depths between 3.5 to 5 feet and 15 feet below ground surface (Conceptual Site Model, 2012).

Unlikely exposure pathway scenarios, like inaccessible soil contamination underneath a structure, do not eliminate the necessity to establish cleanup standards or institutional controls.

- 2) SAIC stated the leaching pathway was not complete because the underlying groundwater was not considered a source of drinking water (Site Assessment Report, 2014).

The criteria outlined in WAC 173-340-720 for demonstrating non-potable groundwater have not been met.

- 3) The standard point of compliance defined as throughout the Site, is appropriate for soil.

b. Groundwater

- 1) Groundwater at the Site is contaminated with TPH-D and benzene above MTCA Method A cleanup levels. SAIC concluded the Site groundwater was perched, not a source of drinking water, and therefore not a likely source of potable groundwater (2012 & 2014).

The criteria outlined in WAC 173-340-720 for demonstrating non-potable groundwater have not been met.

- 2) The standard point of compliance, defined as throughout the Site from the uppermost level of the saturated zone extending vertically to the lowest most depth that could potentially be affected by the Site, is appropriate for groundwater.

3. Selection of cleanup action.

Ecology has determined the cleanup action you selected for the Site does not meet the substantive requirements of MTCA.

The cleanup action at the Site consisted of remedial excavation, on-site land farming and reuse of excavated soils, and the placement of Oxidation Release Compound (ORC) socks into MW-13. The Site has been undergoing long-term ground water monitoring since remedial excavation was completed in 1991. Ground water concentrations of the contaminants of concern have decreased significantly during that time; however, no restoration time frame has been established.

The remedial actions taken at the Site have not been successful in meeting site cleanup levels in soil or groundwater.

- a. The selected cleanup action is insufficient and does not meet the minimum requirements in WAC 173-340-360(2).
- b. The cleanup standards established do not meet substantive requirements as discussed in Section 2.
- c. The cleanup performed has not yet achieved cleanup standards.

4. Cleanup.

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

Remedial excavation, on-site landfarming and reuse of excavated soils, and the placement and ORC socks placed in MW-13 have resulted in concentrations of TPH-G and benzene in soil, and TPH-D and benzene in groundwater, above MTCA Method A cleanup levels.

The Conceptual Site Model (CSM) (2012) and Site Assessment Report (2014) prepared by SAIC state “all current exposure pathways to residual hydrocarbon-affected soil and groundwater are not complete and are highly unlikely to affect any potential receptors. In addition, further remedial actions are not warranted because there are no completed pathways to current receptors, and there are no technically feasible remedial alternatives that can be implemented to also accommodate current site conditions”.

A discussion of the feasibility of cleanup alternatives is necessary to select or substantiate a cleanup action, or lack thereof.

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**:

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- 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 (509) 454-7839 or e-mail at jeli461@ecy.wa.gov.

Sincerely,


Jennifer Lind
Toxics Cleanup Program

cc: Ladeena Childress, Apple Valley Petroleum, LLC
J. Mark Inglis, Chevron Environmental Management Company
Dolores Mitchell, VCP Financial Manager