



STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

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

December 21, 2015

Joan Davenport  
City of Yakima  
129 N. 2nd Street  
Yakima, WA 98901

Re: **Opinion Pursuant to WAC 173-340-515(5) on Remedial Investigation at the following Site:**

Site Name:	Interstate 82 Exit 33A Yakima City Landfill
Site Address:	805 N. 7th Street, Yakima
Parcel Numbers:	191318-41001 and 191318-42001
Facility/Site No.:	1927
VCP Project No.:	CE0406

Dear Ms. Davenport:

The Washington State Department of Ecology (Ecology) thanks you for submitting documents for review under the Voluntary Cleanup Program (VCP). This letter provides our opinion regarding your remedial investigation (RI) for the above-referenced site under the authority of the Model Toxics Control Act (MTCA), Chapter 70.105D RCW.

This letter constitutes an advisory opinion on the submitted documents and report pursuant to the requirements of MTCA and its implementing regulations, Chapter 70.105D RCW and Chapter 173-340 WAC, for characterizing and addressing the following releases at the Site:

- Gasoline range organics into soil.
- Heavy oils, vinyl chloride, bis(2-ethylhexyl)phthalate, 3,3'-dichlorobenzidine, arsenic, iron, manganese, nitrate, sodium, and low pH into the groundwater. Lead and chromium were initially detected above MTCA cleanup levels in site hazard assessment sampling conducted in 1997, although neither have been detected above cleanup levels since that time.

Please note a parcel of real property can be affected by multiple sites. Releases from the upgradient Boise Cascade Mill facility (# 450), which have resulted in a contaminated groundwater plume, may be potentially comingled with releases at the Interstate 82 Exit 33A Yakima City Landfill Site and affect parcel(s) of real property associated with this Site. This opinion does not apply to any contamination associated with the Boise Cascade Mill facility. Please note that for liability purposes under MTCA, **it may be difficult to distinguish the boundary between these two facilities if contamination is comingled.**

This opinion is based on the information contained in the documents listed below:

1. Landau Associates, September 29, 2015. *Supplemental Remedial Investigation Report (September 2014 Through June 2015) Closed City of Yakima Landfill Site, Yakima, Washington.*



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2. Landau Associates, April 14, 2015. *Remedial Investigation – Interim Data Report (September 2014 Through January 2015) Closed City of Yakima Landfill Site Yakima, Washington.*
3. Landau Associates, November 26, 2014. *Closed City of Yakima Landfill Site September 2014 Soil and Groundwater Investigation Summary and Results.*
4. SLR International Corporation, July 17, 2012. *Soil Vapor and Groundwater Sampling Report – May 2012 Event, Closed City of Yakima Landfill, Yakima, Washington.*
5. SLR International Corporation, March 17, 2010. *Additional Investigation Report, Closed City of Yakima Landfill Site.*
6. SLR International Corporation, October 12, 2009. *Remedial Investigation Report, Closed City of Yakima Landfill Site.*
7. Parametrix, October 2008, *Phase II Environmental Site Assessment, Former City of Yakima Municipal Landfill, Yakima, Washington.*
8. Contents of Ecology site file.

Those 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 (509) 575-2027.

This opinion is void if any of the information contained in those documents is materially false or misleading.

**Ecology has concluded that your characterization of the Site is sufficient. You can move on to the feasibility study stage and select a cleanup action.**

Please see **Enclosure A** for a description of the characterization of the Site and recommendations for finalizing the *Supplemental Remedial Investigation Report*.

Ecology has determined the screening levels and cleanup levels you proposed for the Site, as presented in the September 29, 2015, Landau Associates *Supplemental Remedial Investigation Report*, **do not meet** the substantive requirements of MTCA. Please review **Enclosure B** to determine how best to move forward.

**Note that this 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.

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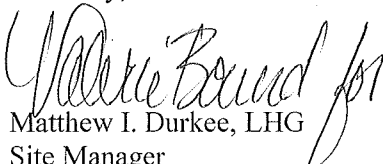
To settle liability with the state and obtain protection from contribution claims, a person must enter into a consent decree with Ecology under RCW 70.105D.040(4).

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.

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).

Thank you for choosing to solicit an opinion about the Site under the Voluntary Cleanup Program (VCP). After you have addressed our concerns, you may request another review. Please do not hesitate to request additional services as your cleanup progresses. We look forward to working with you. If you have any questions about this opinion, please contact me by phone at (509) 454-7835 or e-mail at [matthew.durkee@ecy.wa.gov](mailto:matthew.durkee@ecy.wa.gov).

Sincerely,

  
Matthew I. Durkee, LHG  
Site Manager  
CRO Toxics Cleanup Program

cc: Greg Demers, LeeLynn, Inc. & Wiley Mt., Inc.  
Jeffrey Fellows, Landau Associates  
Brad Hill, LeeLynn, Inc. & Wiley Mt., Inc.  
Jenifer Hill, WSDOT  
Ryan Mathews, Fulcrum Environmental Consulting  
Dolores Mitchell, Ecology  
Kurt Peterson, Cascadia Law Group, PLLC  
Jason Smith, WSDOT  
Dennis Radocha, OfficeMax Inc.  
Matthew Wells, Tupper Mack Wells, PLLC

## Enclosure A

### Description of Site Characterization

The Site is described as releases associated with a former municipal landfill that operated during the 1960s. It is important to note that groundwater contamination and methane gas may be potentially comingled with plumes associated with the upgradient Boise Cascade Mill site.

In February 2008, a Phase II site assessment was conducted and work consisted of a geophysical survey, 14 test pits, two soil borings, installation of one new monitoring well, three soil vapor probes, and collecting samples from three monitoring wells. A rough lateral extent of the municipal solid waste (MSW) was delineated. Iron, manganese, and vinyl chloride were detected in groundwater above MTCA Method B cleanup levels. Soil vapor concentrations of methane were found near the boundaries of the MSW above the lower explosive limit (LEL), including near the plywood plant building. No soil samples were ever analyzed for any contaminants of concern.

In October 2009 through May 2012, a remedial investigation was conducted and work consisted of 56 test pits to delineate lateral extent of the MSW, 41 soil borings to define vertical extent of the landfill, five temporary monitoring wells to assess groundwater quality, 20 soil vapor probes, installation of eight new monitoring wells for continued monitoring of groundwater, and sampling of 11 monitoring wells. Based on the investigation, the landfill is estimated to hold ~408,500 cubic yards of MSW. Arsenic, iron, manganese, sodium, nitrate, and low pH were detected in groundwater above MTCA cleanup levels and/or EPA maximum contaminant levels (MCLs). Soil vapor concentrations of methane were found above the LEL near the boundary of the MSW at the plywood plant building and the eastern boundary of the landfill. Besides limited sampling for disposal purposes, no soil samples were analyzed during this investigation.

In September 2014 through June 2015, a supplemental remedial investigation was conducted. Work included installation of 10 additional groundwater monitoring wells and collection of associated soil samples, four quarterly groundwater monitoring events of the 26 wells associated with the Site including the 10 new wells, 14 test pits (no soil samples) to delineate the extent of MSW along the eastern boundary, installation of eight (8) new gas probes (including two replacements for damaged probes) and associated soil samples, and two site-wide landfill gas surveys. Gasoline range organics were detected in soil above MTCA cleanup levels. N-nitrosodiphenylamine and 4,4'-DDD were listed as detected above MTCA Method B soil cleanup levels in the June 2015 Ecology VCP opinion letter, although this was based on a MTCA Method B soil cleanup level protective of groundwater using surface water criteria; when applying the MTCA soil cleanup level protective of groundwater (drinking water), the concentrations of these substances are below the MTCA cleanup level. Within the MSW landfill footprint or down gradient, heavy oils, vinyl chloride, bis(2-ethylhexyl)phthalate (BEHP; also known as DEHP), 3,3'-dichlorobenzidine, arsenic, nitrate, and low pH (outside of the range of 6.5-8.5) were detected in groundwater above MTCA cleanup levels. Manganese, iron, and sodium exceeded EPA secondary MCLs.

During the 2014-2015 supplemental remedial investigation, methane gas was detected above the LEL of 5% both within and outside (west and north) the MSW footprint. Hydrogen sulfide gas data was also collected and detected only within or slightly outside (southwest corner) the MSW footprint. The September 2015 Landau Associates report also asserts that the methane LEL exceedances for sampling points to the north and northwest of the MSW footprint may be related to wood waste rather than the MSW because hydrogen sulfide gas, which is not usually produced by decaying wood waste, was not detected in these areas. Hydrogen sulfide gas is a potential tracer for landfill gas, although it is still difficult to conclusively differentiate between methane associated with landfill gas and methane originating from the decaying wood waste.

### **Ecology Recommendations:**

It would be beneficial to provide a delineation on maps within the report of the area wide reducing conditions groundwater plume within the extent of this Site's study area (primarily south of the railroad tracks that bisect the former mill properties). This could also apply to the methane gas concentrations. **It is also important to note that the down gradient extent in groundwater of some substances, such as those with EPA secondary MCLs, has not been fully characterized**, although it is not anticipated that this should significantly alter the potential remedies to be considered as part of the feasibility study.

# Enclosure B

## Cleanup Standards and Environmental Information Management System

### 1. Establishment of Cleanup Standards.

A point of compliance for soil and groundwater has not been established for the Site at this point in the process, although a standard point of compliance throughout the Site for soil and conditional points of compliance for groundwater and landfill gas have been proposed.

Please keep in mind that the extent of the cleanup site is anywhere contamination is present that is associated with the Site and that this may extend beyond the MSW footprint. In several instances in the September 2015 report, the extent of the Site is described as being the footprint of the MSW. Groundwater contamination and landfill gas outside of the MSW footprint, but originating from the MSW are also part of the Site.

#### a. Screening and Cleanup Levels.

The use of MTCA Method A and B soil and groundwater cleanup levels for Unrestricted Land Uses and/or applicable or relevant and appropriate requirements (ARARs) are appropriate throughout the Site.

The September 2015 *Supplemental Remedial Investigation Report* does not include gasoline range organics as a contaminant of concern (COC) in soil because the Method A cleanup level of 100 mg/kg was applied. Benzene was not analyzed for this particular sample, so the MTCA Method A cleanup level of 30 mg/kg when benzene is present is applicable in this case. The sample concentration did exceed this lower cleanup level.

The September 2015 report asserts that detections in groundwater of several contaminants are not representative of actual groundwater conditions. Heavy oils were eliminated as a COC based on laboratory results with silica gel cleanup (SGC) showing concentrations below MTCA cleanup levels. Ecology only considers the use of SGC with groundwater samples in specific circumstances. Given the possibility of organics in the groundwater associated with the MSW, this may be applicable at this Site, although discussion of multiple lines of evidence are necessary. BEHP was also eliminated as a COC because it is thought these detections were due to laboratory cross contamination. Again, multiple lines of evidence are needed such as analyses of field blanks or having a different laboratory analyze the samples and having similar results. The semivolatile compound 3,3'-dichlorobenzidine was eliminated as a COC even though it exceeds the MTCA cleanup level. Additional lines of evidence may be needed to eliminate this COC through the selection of indicator hazardous substances.

EPA MCLs were selected as proposed cleanup levels for arsenic and vinyl chloride in groundwater. However, the MTCA Method A cleanup levels are lower and thus more appropriate. As previously discussed in the June 2015 Ecology VCP opinion, Ecology has not

finalized any changes/alternatives to the arsenic cleanup level or determined a statewide/regional background level at this time, although possible changes are still currently under consideration. The regional background concentration currently under consideration that will most likely be applicable at this Site is only slightly (<1 ug/L) higher than the MTCA Method A cleanup level.

**b. Terrestrial Ecological Evaluation (TEE).**

A simplified TEE was conducted for the Site. MSW and hazardous substances including priority contaminants of ecological concern (e.g. BEHP) have been detected within 15 feet of the ground surface at the Site. It is proposed that if institutional and engineering controls are placed at the Site with a conditional point of compliance (six feet below ground surface), Site conditions will meet the TEE simplified evaluation procedure criteria for no further evaluation. The conditional point of compliance may be less than the standard of six feet, depending on the type of barrier installed.

**2. Environmental Information Management System (EIM).**

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 simultaneously in both a written and electronic format. For additional information regarding electronic format requirements, see the website <http://www.ecy.wa.gov/eim>.

Data must be submitted to Ecology in this format for Ecology to issue a No Further Action determination.

EIM data submittals have been received by for the remedial investigation (2009-2012) and the supplemental remedial investigation (2014-2015). This data is still pending review by the Site Manager and there is potential that a resubmittal may be necessary in the future which is quite common.

Please submit any additional data that is collected.