



Columbia Riverkeeper  
724 Oak Street  
Hood River, OR 97031  
Phone: (541) 387-3030  
[www.columbiariverkeeper.org](http://www.columbiariverkeeper.org)

December 6, 2010

Paul Skyllingstad  
Department of Ecology  
Industrial Section  
P.O. Box 47600  
Olympia, WA 98504-7600  
[paul.skylingstad@ecy.wa.gov](mailto:paul.skylingstad@ecy.wa.gov)

*Submitted Via Email*

**RE: Comments on Alcoa/Evergreen Vancouver Aluminum Smelter,  
Supplemental Cleanup Action Plan and Consent Decree Amendment for the  
East Landfill**

Dear Mr. Skyllingstad,

Columbia Riverkeeper ("Riverkeeper") and the Rosemere Neighborhood Association ("Rosemere") appreciate the opportunity to comment on the important East Landfill cleanup decision at the former Alcoa/Evergreen aluminum smelter site in Vancouver, Washington. Located on the banks of the Columbia River, the former aluminum smelter site has a long history of impacting the Columbia River.

As you know, Columbia Riverkeeper and Rosemere are deeply invested in clean water, strong salmon runs, and healthy communities. Over the years, Riverkeeper and Vancouver-based Rosemere have raised serious concerns about the pace of cleanup and Ecology's oversight at the former Alcoa/Evergreen smelter. Most recently, Riverkeeper and Rosemere submitted detailed comments on Alcoa's 2008 Draft Cleanup Action Plan and Consent Decree. Among other issues, our organizations raised serious concerns about Ecology's decision to piecemeal and delay the cleanup process by separating the East Landfill groundwater contamination decision from other cleanup actions. As the Draft Supplemental Cleanup Action Plan explains, the East Landfill, which is located along the banks of the Columbia River, contains highly contaminated soil and groundwater. Soil samples collected from the East Landfill demonstrate the presence of lead, cyanide, fluoride PCBs, trichloroethylene ("TCE") (and its degradation products such as vinyl chloride), and polycyclic aromatic hydrocarbons ("PAHs"). Draft Supplemental Cleanup Action Plan at 5. Groundwater samples identify the presence of TCE (and its degradation products) and PAHs. *Id.*

After two years, Ecology has selected a monitored natural attenuation approach to address polluted groundwater from the East Landfill.<sup>1</sup> In particular, Ecology's final cleanup action for the East Landfill includes the existing landfill cover to minimize the movement of contaminants from the landfill, institutional controls to control how the land and groundwater are used, and ongoing monitoring of groundwater—but not sediment—to assess if the landfill is functioning as designed. Riverkeeper and Rosemere submit the following comments and questions on this decision.

### **TCE, Vinyl Chloride and PAHs**

The Draft Supplemental Cleanup Action Plan (“Supplemental Plan”) focuses on East Landfill groundwater contaminated with TCE and its degradation products, namely vinyl chloride. The Supplemental Plan also notes that groundwater at the East Landfill is contaminated with PAHs. The importance of the Supplemental Plan is underscored by the serious risks to human health and the environment posed by the East Landfill's pollutants. For this reason, we are providing a brief overview of TCE, vinyl chloride, and PAHs.

Trichloroethylene is a volatile organic compound which was extensively used in the United States as a metal greaser, a solvent in adhesives, textile manufacturing, paint stripping, and dry cleaning. According to the U.S. Environmental Protection Agency (“EPA”), “[b]ased on the available human epidemiologic data and experimental and mechanistic studies, it is concluded that TCE poses a potential human health hazard for noncancer toxicity to the central nervous system, the kidney, the liver, the immune system, the male reproductive system, and the developing fetus.” U.S. EPA, *Draft Toxicological Review of Trichloroethylene* at xliiii (Oct. 2009). In addition, “TCE is characterized as carcinogenic in humans by all routes of exposure.” *Id.* In soils, TCE degradation varies with the amount and type of local microorganisms. California E.P.A., *Public Health Goal for Trichloroethylene in Drinking Water* at 7 (Feb. 1999), available online at: [http://oehha.ca.gov/water/phg/pdf/tce\\_f.pdf](http://oehha.ca.gov/water/phg/pdf/tce_f.pdf). In groundwater, “TCE has been found to degrade slowly by microbial action.” *Id.* at 6.

TCE degrades to three DCE isomers, which then degrade to vinyl chloride (“VC”). According to EPA, “[h]uman and animal data indicate that VC is rapidly and efficiently absorbed via the inhalation and oral routes, is rapidly converted to water-soluble metabolites and is rapidly excreted.” U.S. EPA, *Toxicological Review of Vinyl Chloride*, CAS No. 75-01-4 (May 2000). EPA Integrated Risk Information System (IRIS) further explains that “VC exposure, including polyvinyl chloride, has also been associated with increased death due to primary liver cancer, as well as cancer of the brain, lung, and lymphopoietic system.” *Id.*

---

<sup>1</sup>The Supplemental Cleanup Action Plan explains the source of the East Landfill's contamination, stating: “During early [aluminum] plant operations, the East Landfill was filled with miscellaneous industrial solid waste, construction debris, steel wire, cable, metal piping, alumina, scrap aluminum, and carbon bake oven furnace brick.” Draft Supplemental Cleanup Action Plan at 5

PAHs are a group of over 100 different chemicals that are formed during the incomplete burning of coal, oil and gas, garbage, or other organic substances. PAHs typically enter water through discharges from industrial and wastewater treatment plant. Additionally, some PAHs move through soil and contaminate groundwater. *See generally* ATSDR, *Polycyclic Aromatic Hydrocarbons (PAHs)* (Sept. 1996), available online at: <http://www.atsdr.cdc.gov/tfacts69.pdf>. The Department of Health and Human Service identifies some PAHs as being “reasonably expected to be carcinogens.” According to the Agency for Toxic Substances and Disease Registry (“ATSDR”), “[a]nimal studies have also shown that PAHs can cause harmful effects on the skin, body fluids, and ability to fight disease after both short- and long-term exposure.” *Id.* Overall, pollutants identified in East Landfill groundwater are associated with serious impacts to human health and the environment.

### **Specific Comments & Questions**

#### **1. Exclusion of PAHs in the Supplemental Plan and Draft Amended Consent Decree.**

The Supplemental Plan and Draft Amended Consent Decree (“Consent Decree”) acknowledge that the East Landfill’s soil and groundwater are contaminated with PAHs. In particular, the Supplemental Plan states that the East Landfill exceeds MTCA Method A industrial site soil cleanup levels and MTCA Method A groundwater cleanup levels within the footprint of the landfill. However, the Supplemental Plan exclusively addresses TCEs and vinyl chloride and fails to explain why PAHs in the East Landfill’s soil and groundwater are not addressed within the Plan.

*Question:* Why does the Supplemental Plan fail to address PAHs?

*Question:* Does Ecology intend to address PAHs in a second amendment to the Consent Decree? If so, what authority does the Department rely on to delay this decision and how does it protect human health and the environment?

#### **2. Revisions to State Surface Water Quality Standards.**

Currently, Washington and Oregon’s human health criteria water quality standards for toxics do not protect many populations of fish consumers, particularly Native Americans. In response to many years of work by Columbia River tribes and others, Oregon is currently revising its state water quality standards to significantly reduce the amount of toxic pollution that can be legally discharged into rivers, streams, and lakes within the state. Washington is poised to undertake a similar revision. *See* Ecology Website, Triennial Review, “Water Quality Toxics Criteria Poster”:

<http://www.ecy.wa.gov/programs/wq/swqs/2010SWQSTriennialRevdocs/WQToxicsCriteriaPoster.pdf> (explaining that Oregon, the EPA, and the Umatilla Tribe recently developed a fish

consumption rate of 175 grams per day for use in Oregon and stating that “Washington may consider starting with this number if it gets approval from EPA.”).

Under Oregon’s revised water quality standards, the fish consumption rate will change from 6.5 grams of fish per day to 175 grams per day. Like Oregon, Washington’s toxics standards are currently based on a fish consumption of 6.5 grams per day. As the fish consumption rate rises, the water quality standards for human health criteria toxics will decrease. Thus, the new standards would, for the first time, protect many fish consumers who are not currently protected by the state’s low fish consumption rate.

For example, under Oregon’s revised fish consumption rate<sup>2</sup>, the human health criteria for TCEs and vinyl chloride will decrease as follows:

<b>Pollutant</b>	<b>Water + Organism Human Health Criteria (µg/L)</b>	<b>Organism Only (µg/L)</b>
TCE	1.4	3.0
Vinyl Chloride	0.023	0.24

The Supplemental Cleanup Action Plan and Amended Consent Decree do not specifically address whether Ecology intends to reopen the Supplemental Plan and Consent Decree if the water quality standards are revised during the anticipated 30 plus year time frame for natural attenuation.

*Question:* If Washington’s human health criteria are revised, as discussed above, would Ecology reopen the Supplemental Plan and Consent Decree to change the cleanup standards accordingly? Please explain.

### **3. Point of Compliance.**

Ecology’s Draft Supplemental Cleanup Action Plan describes Alcoa’s 2008 – 2009 transition zone water (TZW) investigation, including the various sampling points. Alcoa initiated the TZW investigation to characterize groundwater as it flows from the East Landfill toward the riverbed. The TZW investigation included samples in the following areas:

---

<sup>2</sup>For pollutants categorized as carcinogens, values represent a cancer risk of one additional case of cancer in one million people (i.e., 10<sup>-6</sup>).

- Sediments at discharge zones along the East Landfill Columbia River boundary using Trident probes that collect discrete groundwater samples;
- Surface water samples in the Columbia River (6 inches above the mudline);
- Groundwater sampled using passive samplers called peepers.

Ecology summarized the sampling results, stating:

The Trident probe samples provided an indication of groundwater conditions at 14 inches below the mudline at the time of the sample event. The samples showed levels of TCE and vinyl chloride ranging from non-detect to 110 µg/L and from 0.07 to 400 µg/L, respectively. Peeper samples were collected at 0 to 5 inches and 5 to 10 inches below the mudline. The peeper samples showed that TCE levels in groundwater over 30-day equilibrium conditions were non-detect and vinyl chloride levels ranged from non-detect to 0.26 µg/L at 0 to 5 inches below the mudline and from non-detected to 12 µg/L at 5 to 10 inches below the mudline. Surface water sampling showed no TCE in the water column at 6 inches above the mudline. Vinyl chloride levels were also non-detect except for one sample collected above a discharge area. This sample showed vinyl chloride at 0.046 µg/L, which is below the PQL for gas chromatography.

Section 3.6, “Surface Water Cleanup Levels and Point of Compliance,” describes Ecology’s selected alternative: monitored natural attenuation. The draft Supplemental Plan states: “As defined in the MTCA regulations, the point of compliance for surface water cleanup levels is the point or points at which hazardous substances are released to surface waters of the state (WAC 173-340-730(6)).” Plan at 13. In the draft Supplemental Plan, Ecology selected the Point of Compliance at 6 inches above the Columbia River riverbed, adjacent to the East Landfill. Riverkeeper notes that the most stringent cleanup standards for the East Landfill are associated with surface water quality, not groundwater. However, due to dilution, Ecology’s POC decision fails to protect aquatic life associated with transition zone water.

*Question:* How does the Supplemental Plan protect aquatic life, and associated human health impacts, in the TZW?

Ecology’s Supplemental Plan states that Alcoa must monitor groundwater and surface water quality, but fails to address sediment monitoring. Given the results of Alcoa’s recent sediment monitoring, Columbia Riverkeeper and Rosemere have serious concerns about Ecology decision to omit sediment monitoring.

*Question:* What is Ecology’s rationale from overlooking sediment monitoring from pollution associated with the East Landfill?

*Question:* How does Ecology’s decision to omit sediment sampling protect human health and the environment?

*Question:* How does Ecology's decision to omit sediment sampling comply with MTCA?

#### **4. Compliance Monitoring Plan.**

Under the draft Supplemental Plan and Consent Decree, Ecology will allow Alcoa to submit a Compliance Monitoring Plan at a later date. Given Ecology's chosen approach (*i.e.*, monitored natural attenuation), the design and effectiveness of the Compliance Monitoring Plan is an integral component of the selected alternative. Thus, Ecology should have required that Alcoa submit the Compliance Monitoring Plan as part of the Supplemental Plan, Amended Consent Decree, and associated public review process. At this time, the public is being asked to comment on a "cleanup" approach without a major piece of the puzzle.

*Question:* What was Ecology's rationale for delaying agency and public review of the Compliance Monitoring Plan?

*Question:* Does Ecology plan to offer a public comment period on the Compliance Monitoring Plan?

#### **5. Institutional Controls.**

Ecology identifies institutional controls as one component of the Supplemental Plan. According to the Supplemental Plan, "[i]nstitutional controls . . . are a requirement of the final cleanup action to ensure the long-term integrity of the landfill cap." Based on the importance of institutional controls to Ecology's selected cleanup alternative, Columbia Riverkeeper and Rosemere urge Ecology to set forth specific institutional controls, instead of describing a future process whereby Ecology approval for site uses will be required.

*Question:* What criteria will Ecology employ to ensure the integrity of the landfill cap is not compromised? Is this established in the Supplemental Plan or Consent Decree? If not, please explain why.

The Supplemental Plan describes Alcoa's restrictive covenant for the East Landfill. *See* Supplemental Plan at 17 (stating that the restrictive covenant restricts disturbance of the engineered landfill caps, prohibits the modification of the caps without prior written approval by Ecology, and controls the extraction of groundwater from the Site.).

*Question:* Will Ecology engage in a notice and comment process if the Port of Vancouver seeks to modify the East Landfill cap?

*Question:* Does the restrictive covenant prevent activities that could compromise the integrity of the East Landfill cap?

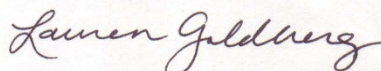
The Supplemental Plan states that “[t]he current and future Site use plans include industrial storage and light, medium, and heavy industrial operation. . . .” Supplemental Plan at 11. The Plan further states, “Ecology understands that the Port of Vancouver plans to use the East Landfill area for light cargo storage (e.g. light wheeled vehicles).” As Ecology is aware, lower Columbia River ports are currently the target of coal speculators, who are interested in using port property for coal storage and export terminals. Based on Public Records Act requests, Columbia Riverkeeper is aware that Terminal 5 at the Port of Vancouver is one of several sites on the Columbia where coal export is being considered. At this time, it is not clear if the East Landfill is part of a coal storage and export proposal.

*Question:* In the context of institutional controls, does Ecology have the authority to ensure that the East Landfill’s cap is not compromised by coal storage or other similar bulk commodities? Please explain.

### **Conclusion**

Overall, the pollutants associated with this highly contaminated site pose serious risks to human health and the Columbia River. Riverkeeper urges Ecology to take additional steps to ensure that natural attenuation (*i.e.*, natural breakdown of pollutants in groundwater without removing the pollutants) protects human health, salmon, and other aquatic, terrestrial, and avian life in and around the Columbia River. Thank you in advance for considering and responding to Columbia Riverkeeper’s comments. If you would like to discuss any of the issues raised in this comment, please contact me at 541-965-0985 or lauren@columbiariverkeeper.org.

Sincerely,



Lauren Goldberg  
Staff Attorney, Columbia Riverkeeper  
*Submitted on behalf of Columbia  
Riverkeeper and the Rosemere  
Neighborhood Association*

cc:

Dvija Michael Bertish, Rosemere Neighborhood Association

Columbia Riverkeeper and Rosemere Comments  
December 6, 2010