



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

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February 12, 2021

Sent via email and hard copy

Shane DeGross
BNSF Railway Company
605 Puyallup Avenue
Tacoma, WA 98421

RE: Ecology comments on agency review draft of Sediment Remedial Investigation Work Plan:

- **Site Name:** BNSF Track Switching Facility aka Wishram Railyard
- **Site Address:** 500 Main Street, Wishram, Klickitat County
- **FSID No.:** 1625461
- **CSID No.:** 230
- **Agreed Order:** DE 12897

Dear Shane DeGross:

Thank you for the submittal of the above-referenced draft work plan in accordance with Agreed Order DE 12897. Below are most of the Department of Ecology's (Ecology) highlighted comments. Please refer to all of the text mark-ups and Ecology comments on the draft Work Plan and the Sampling and Analysis Plan, some of which we do not reference in this letter.

General Comments on Work Plan

- 1. Screening for Contaminants of Potential Concern:** As stated previously, adherence to a complete assessment of the contaminants of potential concern listed in Table VI, Sediment Management Standards (SMS) is required. The proposed investigation approach, which limits the suite of chemicals for assessment based solely on the existing uplands data and without consideration of the nature of sediment deposition as a historical sink for certain contaminants, is not approved. For sediment, the potential chemicals of concern may not necessarily match what has been identified or detected in the uplands. In addition, detecting a chemical in the uplands at a concentration that is below the SMS benthic standards does not mean that this chemical will not be above the SMS benthic standards in sediment.

The analyte list must include the ten metals listed in Table VI, and the Total PCB Arochlors and PCB congeners, dioxin/furans congeners, and the carcinogenic PAH (cPAH) congeners. To keep costs down, the PCB congeners can be analyzed in lieu of the Arochlors. Proper screening will ensure that the objective of the sediment remedial investigation is met consistent with SMS WAC 173-204-550(1).



- 2. Use of Hazard Assessment Language:** It is reasonable to suspect releases of certain hazardous substances whose presence appears more incidental than deliberate. An example of deliberate use is the use of a chemical as a degreasing agent. A release can also occur due to causes such as building demolition and disposal. In this situation, the release relates to the handling and use of the waste material. In particular, the riprap near former sewer outfall #2 is different from the riprap over the majority of the shoreline. At this specific location, Ecology observed construction demolition debris, such as concrete and other waste material, and have photographs of this material. Note that this area may have undergone cleanup of some of the waste material, such as metal piping and plastic or rubber material, since the last observation.

Refer to Ecology's comments on the draft documents for additional details regarding our stance on this issue.

- 3. Evaluation of Groundwater to Surface Water Pathway:** Ecology understands the inclusion of the Trident Probe sampling in this work plan as a matter of logistical consideration. However, the evaluation of surface water is another matter outside of the scope of this phase of the sediments investigation. First, the full extent of sediments contamination, including screening for the larger list of contaminants of potential concern, must be determined.

Ecology has not discussed the formal establishment of the cleanup standards. As such, it is premature to refer to Ecology's Implementation Memorandum No. 16 (Developing Conditional Points of Compliance at MTCA Site Where Groundwater Discharges to Surface Water). A discussion should include whether Ecology will accept conditional points of compliance for surface water before we can approve the use of the Trident Probe sampling for evaluation of the groundwater to surface water pathway. One item for discussion is the timing and frequency of this type of sampling, if Ecology approves this method. In addition, other conditions to maintain consistency with requirements under WAC 173-340-720 and -730 must be met.

- 4. Assessment for Surface Water Compliance from Contaminated Sediments:** Previously, in the draft Initial Investigation Work Plan (March 13, 2020), EPA LEAF Method 1316 was proposed to assess the degree of NAPL dissolution in the sediments within and at the periphery of the NAPL-affected area for surface water compliance. This method was intended to provide an estimate of pore water concentrations within the NAPL intervals in the sediments.

Instead, using the Trident Probe to assess pore water concentrations is proposed. With that change, the emphasis shifts from assessing the impacts to pore water and/or surface water near the NAPL-laden sediments to one that assesses the shoreline sediments to assist in evaluating the groundwater to surface water pathway.

Please describe how to propose to assess surface water compliance for the aqueous phase in the bedlands. Bedlands are the Department of Natural Resources (DNR) designation for aquatic land under submergence at all times.

5. **Surface Water Compliance:** WAC 173-340-730(5)(d) states that the cleanup level shall not exceed a concentration that would result in NAPL being present in or on the surface water. The vertical distribution of NAPL determined in the Initial Investigation suggests that the NAPL is covered by up to 6 inches of sediment, although additional investigation may show that some NAPL exists shallower in other portions of the sediment cleanup unit. However, the presence of occasional sheen and oil droplets violates this provision, even if the cause for the violation is ebullition processes as NAPL migrates upwards through the sediment. The presence of sheen indicates surface water impacts from the NAPL body in at least some portions of the affected bedlands, but not necessarily all of it.
6. **Biologically Active Zone:** Using a six-inch (15 centimeter) biologically active zone (BAZ) is proposed. Reference to site documentation for the Columbia Gorge Aluminum Site indicates that this value was not selected based on actual local conditions but that the investigators chose six inches as an assumption. In the SMS, WAC 173-204-505(4), it states, "*abiotic factors...can affect the vertical distribution of organisms in the biologically active zone.*" Likewise, it states in SCUM that the freshwater sediment is highly site-specific and will need to be determined on a site-specific basis for the remedial investigation. Therefore, Ecology does not accept using a default value of six inches for the BAZ and the sampling should extend deeper if feasible with the Van Veen sampler. If not feasible, please describe an alternative method.

In addition, the depth that is determined to represent the BAZ has implications for the demarcation of the boundary between groundwater and surface water as well as for marking where each regulation applies, either SMS or MTCA. Factors including abiotic conditions such as groundwater upwelling and hyporheic flow can affect the boundary.

7. **Representative Background Samples:** It was proposed to use the sediment chemistry values from a reference area upstream of the Columbia Gorge Aluminum Site to serve as background samples. Nine sediment samples were collected from transects upstream of that site, with an additional three collected from the mouth of the John Day River. Ecology does not support sole reliance on these samples due to local differences, such as stream dynamics and sedimentation. Ecology requires the collection of background samples upstream but closer to the Wishram site. In 2016, one background sample was collected along the north shore near the west of Miller Island but a single sample is insufficient.
8. **Proposed classification schema:** For the reason listed above, Ecology does not accept the given classification schema proposed in Section 1.3 until further investigation is proposed. Ecology does not concur with some of the specific language related to the schema.

For instance, *“Where data or detection limits are not sufficient to allow for screening, the assessment also considers whether chemicals could be associated with any known or suspected facility use.”*

However, Ecology does not reject the proposed two-step approach, provided responsiveness to our comments on this approach.

9. **Consistency of language:** With regard to Ecology’s comments, please ensure consistency of language between the Work Plan and the Sampling and Analysis Plan when revising.

Comments on Work Plan

10. **Section 1.3 Hazard Assessment:** Sampling under SMS is not limited to known releases. The regulation provides for screening of contaminants of potential concern for suspected releases. For instance, PCBs though not found in the fuel product, Ecology has determined that it is reasonable to suspect that these hazardous substances or related hazardous substances were or are present in other areas of the site due to sources such as building materials. Ecology has documented the presence of PCBs in a variety of building materials at concentrations that exceed regulatory criteria. Quantities of these hazardous substances may have been concentrated in effluent or wastewaters and deposited in sediments at or near the locations where the waste exited the pipe or other conveyance and possibly at some distance from the end of that structure or feature. Ecology therefore finds it reasonable to investigate the sediments near outfalls for the presence of these hazardous substances.

Ecology reiterates this rationale in Section 3.36.1 of SCUM II. Refer to the more detailed comments within the marked-up version of the draft documents with regard to the proposed approach.

11. **Section 1.3 Table 1-1:** Revise this table to include the larger list of chemicals to assess. Respond to Ecology’s four specific comments.
12. **Section 1.4 Remedial Investigation Work Plan Requirements:** Other information required by the department includes (1) knowledge of factors that may potentially affect the work schedule and (2) adequate understanding of the groundwater flow and discharge areas together with the geochemistry of the groundwater. See the full comment in the marked-up draft. This second listed requirement may have bearing on the secondary contaminant issue where changes in geochemistry may lead to exceedances due to metals, such as mineral forms of arsenic, iron and manganese, alternating between solution and precipitation.

13. **Section 1.5 Objectives of the Remedial Investigation:** The objectives extend to the determination of the cleanup standards, which include the appropriate cleanup levels and points of compliance.
14. **Section 3 Preliminary Conceptual Site Model:** Revise the text in the second bullet point.
15. **Section 3.1.3 Sedimentation:** Estimate the sedimentation rate in the water column empirically by another method. See Ecology's comment in the marked-up draft.
16. **Section 3.4 Release and Transport Mechanisms:** Refer to Ecology's comment in the draft document regarding the unusual nature of the berm materials, including debris near the former Pumphouse #2.
17. **Section 3.5.2 Human Health:** This section is minimized. Please expand by adding more detail regarding human health exposure pathways, including fish consumption.
18. **Section 4.2 Table 4-1:**
 - Please clarify that there are different SCOs.
 - In addition, run bioassays for any sample that exceeds the benthic SCOs for any chemical.
 - Analyze grain size and TOC for all samples.
 - Please respond to Chance Asher's comment on footnote b.
 - Note in reference to footnote c that bioassays are compared to control, not to a reference location, so there is no need to sample "beyond site-related impacts."
19. **Section 4.2 Table 4-2:** Revise this table to include the additional chemicals that Ecology requires to be screened. Establish the natural background. Then compare the bioaccumulatives such as cPAH congeners and PCB congeners to natural background as the SCO.
20. **Section 4.2 Remedial Investigation Approach, page 4-6:** Please refer to Ecology's specific comment regarding the 'clusters of concern' approach.
21. **Section 4.3.1.1 Surface Sediment Samples, page 4-8:** What distinction is made when evaluating burrowing organisms to determine whether the organism is a shallow burrower versus a deep burrower?
22. **Section 4.3.2.1 Potential Additional Surface Sediment Sampling:** Ecology clarifies that bioassays should be performed in Step 1 and run on any sample that exceeds the benthic SCO for chemistry in Step 1. To stay within the holding time, run the chemical analysis on an expedited schedule so that the same sediment sample can have bioassays run if the chemistry exceeds the SCO.

23. **Section 4.3.2.2 TarGOST Profiling:** Submit the raw TarGOST data files including the binary files as part of the data package to Ecology. If electrical conductivity (EC) data is collected, submit that as well.
24. **Section 4.3.2.4 Bioassay:** Perform synoptic sampling to run bioassays for any sampling station that exceeds the benthic SCO for chemistry in Step 1. See Ecology's comment. In addition, do not composite from different stations.
25. **Section 4.5.2 Groundwater-Surface Water Interface Evaluation, NAPL Extent, Subsurface Sediments, Bioassay:** See Ecology comments regarding details in this section.

Comments on Sampling and Analysis Plan

26. **Section 3 Table 3-1:** Ecology has not had the necessary discussion about setting points of compliance to approve using the Trident Probe to evaluate the groundwater to surface water pathway. The plan was to discuss the cleanup standards in the Uplands Feasibility Study.
27. **Section 3.1.1 Table 3-2 List of COPCs for Remedial Investigation Step 1 Sediment Sampling:** Include all chemicals in SMS with the exception of pesticides and butyltins. Add cPAH congeners and PCB congeners.
28. **Section 3.1.1 Other Sample Locations:** Please clarify sediment ingestion or fish consumption. If fish consumption, then this should be mentioned as a risk driver exposure pathway.
29. **Section 3.1.2 Surface Sample Collection and Handling:** Composites must be from the same station but can be from different grabs. Compositing of different stations is not allowed. See the other comment in this paragraph that pertains to sample collection.
30. **Section 3.2.1 Potential Additional Surface Sediment Sampling:** See the notes in the marked-up draft. Certain activities must be performed in the initial step. Note also the necessity of an expedited schedule related to holding time for bioassay.
31. **Section 3.2.4 Bioassay:** Bioassays must be performed for each station that exceeds the SCO. Collect enough volume to run chemistry and bioassays in Step 1. Revise this section in accordance. Collect cores to inform cleanup actions alternatives by calculating volume of contaminated sediment and sedimentation rates.
32. **Section 3.4 Equipment Decontamination:** SCUM recommends an acetone or hexane solvent rinse, versus the current proposal using a 10% nitric acid rinse. Please explain why this will work better.

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33. **Section 4 Table 4-3 Bioassay Test Conditions:** Add *Chironomus* 20-day growth.
34. **Table 4-3 footnote b:** Ecology does not have an approved reference so controls should be used.
35. **Section 6 Data Analysis, Record Keeping, and Reporting:** Use site-specific human health screening values and site-specific natural background values.

As always, we appreciate your commitment to cooperation and cleanup. You can reach me at (509) 731-9613.

Sincerely,



John Mefford, LHG
Cleanup Project Manager/Hydrogeologist
Toxics Cleanup Program
Central Region Office

cc: Allyson Bazan, AGO Ecology Division
Brooke Kuhl, BNSF Railway Company
Matt Wells, Tupper Mack Wells PLLC