



STATE OF WASHINGTON  
**DEPARTMENT OF ECOLOGY**

Southwest Region Office  
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September 11, 2024

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**Re: Comments on Draft Engineering Design Report**

- **Site Name:** Cowlitz Food & Fuel (Also known as Former Texaco Service No. 211556)
- **Site Address:** 101 Mulford Rd, Toledo, Lewis County, WA 98591
- **Agreed Order:** DE 5236
- **Facility/Site No.:** 1166
- **Cleanup Site ID No.:** 7025

Dear James P. Kiernan and Shamsher Singh:

Thank you for submitting the Draft Engineering Design Report (EDR) for Washington State Department of Ecology (Ecology) review.<sup>1</sup> The scope of this review is to evaluate whether the EDR components, if properly constructed, can be expected to meet the cleanup standards set in the Cleanup Action Plan (CAP).<sup>2</sup> The organizations that issue permits or provide substantive requirements will perform the other necessary reviews. Please revise the EDR to incorporate the following comments and then resubmit for our review within 30 days of the date of this letter:

1. **Stormwater Permit:** As stated in Agreed Order, Exhibit D and in CAP Section 4, coverage under the National Pollutant Discharge Elimination System (NPDES) and State Waste Discharge General Permit for Stormwater Discharges Associated with Construction Activity (Construction Stormwater General Permit [CSWGP]), will likely be required by the Washington State Department of Ecology, Water Quality Program. This is a federal permit,

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<sup>1</sup> Arcadis and Chevron Environmental Management Company, 2024, Draft Engineering Design Report, Cowlitz Food & Fuel Site, 101 Mulford Road, Toledo, Washington, July 29.

<sup>2</sup> Ecology, 2024, Cowlitz Food and Fuel, Cleanup Action Plan, May 14.

administered by the State of Washington, and is not included in the Model Toxics Control Act (MTCA) exemption. However, mention of this permit requirement is not included in the EDR text or in Appendix A, Construction Plans and Specifications. Please add this requirement to the documents unless you have received confirmation from Ecology's Water Quality Program that this coverage is not required.<sup>3</sup> Whether or not a stormwater permit is required, a separate stormwater pollution prevention plan should be prepared and included as an appendix to the EDR as was done by Arcadis for a previous cleanup project (Arcadis, 2016).<sup>4</sup>

2. **Appendix A, Sheet 1, General Notes, Earthwork Notes, Item 6:** Remove text stating that "Well [sic] soils will be temporarily placed on a bench inside the excavation to allow drainage" and replace with the following text (or equivalent wording):

Impacted soil that is saturated will be placed in a separate stockpile outside of the excavation area on 10-mil plastic sheeting and sloped toward a temporary lined sump so that accumulated water can be collected for disposal. The saturated soil will be allowed time to drain into the temporary sump before being loaded into trucks and transported offsite.

The above requirement is consistent with the methods used during the 2010 interim action (SAIC, 2010).<sup>5</sup>

3. **Reuse of excavation soils:** Section 4.1.1 states that excavated soil will be temporarily stockpiled in designated areas prior to loadout, transportation, and offsite disposal. There is no mention of reuse of excavation soils. However, Appendix A, Sheet 9, Miscellaneous Details, Notes, Item 5 states that excavated material intended for use as clean backfill will be collected and characterized by the engineer. This appears to be inconsistent with the wording in the EDR text that implies that all excavated material will be transported offsite. If there is a possibility that excavated material will be reused as clean backfill then additional details will need to be added to the EDR that describes how stockpiles will be segregated and characterized (including number of samples, sampling methods, analytical requirements, and acceptable reuse concentration limits).

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<sup>3</sup> For information on CSWGP, see: <https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Stormwater-general-permits/Construction-stormwater-permit> and <https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Stormwater-permittee-guidance-resources/Contaminated-water-on-construction-sites>

<sup>4</sup> Arcadis, 2016, Construction Plans and Specifications Summary Report, Former ARCO Olympia Bulk Terminal, Industrial Petroleum Distributors Site, 1120 West Bay Drive, Olympia, Washington, October 3.

<sup>5</sup> Science Applications International Corporation (SAIC), 2010, Final Interim Remedial Action Work Plan, Former Texaco Service Station No. 21-1556, 101 Mulford Road, Toledo, Washington, August 18.

4. **Excavation Depth Measurement:** Please add a description that describes in sufficient detail, the acceptable options for measuring the depth of the excavation and the depth of soil confirmation samples. The acceptable level of accuracy for these measurements shall also be stated. This description shall be included in Appendix A and may also be included in the EDR text, or the text may contain a call-out that this information is included in Appendix A.
5. **Soil Sampling and Analysis:** Section 4.1.2 contains a general description of soil confirmation testing. However, the EDR lacks some of the detail that is generally provided in a sampling and analysis plan, such as:
  - a. Sample volume, container type, preservatives, and maximum holding times.
  - b. Laboratory reporting limits and method detection limits for each analysis.
  - c. Field sampling quality control procedures.
  - d. Data validation.

Please add the above details to the document.

6. **Dewatering:** During the 2010 interim action, in an effort to lower the water table and excavate as much impacted soil as possible, a sump was excavated in the bottom of each excavation, and a diaphragm pump was installed to remove groundwater (SAIC, 2011).<sup>6</sup> Pumped groundwater was stored onsite in temporary tanks prior to testing and offsite transportation and disposal. This dewatering lowered the water table by approximately 2 feet and enabled the excavation of additional petroleum hydrocarbon impacted soil (SAIC, 2011). Please consider adding this method of dewatering to the EDR so that more contaminated soil can be removed.
7. **Oxidation-Reduction Potential Measurements:** Section 5.1.1 includes oxidation-reduction potential (ORP) measurements by flow-through cell and field instrument in the list of groundwater parameters for assessment of natural attenuation. As stated by EPA (2023), in the absence of a specified reference scale, ORP data has no meaning.<sup>7</sup> Therefore, the reference scale used should always be specified. ORP measurements that are converted to a hydrogen scale can be reported as “Eh”. EPA (2023) recommends that direct measurement data recorded on field forms be described as “ORP referenced to Ag/AgCl electrode” (example if a silver/silver chloride electrode is used). In addition to the type of ORP electrode, the field form should also indicate the type of electrode solution used (for

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<sup>6</sup> SAIC Energy, Environment, & Infrastructure, LLC, 2011, Final – Interim Remedial Action Report, Former Texaco Service Station No. 21-1556, 101 Mulford Road, Toledo, Washington, April 14.

<sup>7</sup> U.S. Environmental Protection Agency (EPA), 2023, Operating Procedure: Field Measurement of Oxidation-Reduction Potential, LSASDPROC-113-R4, Laboratory Services & Applied Science Division, Athens, Georgia, Effective Date April 22.

example potassium chloride or KCl) and the strength (for example saturated/4 molar [M] or 3.5M, or 3.3M). EPA (2023) includes a table with correction factors for temperature and various molar KCl solutions for use in converting field ORP data to Eh. This would be performed using the formula:

$$\text{Redox Potential (Eh)} = (\text{Potential correction factor, in millivolts [mV]}) + (\text{field ORP measurement [mV]}).^8$$

When reporting results, please show ORP data converted to Eh. EPA (2023) also recommends that final reporting values of Eh or ORP should be rounded to the nearest 10 mV.

8. **Section 5.1.2, Institutional Controls:** Ecology agrees to draft the Environmental Covenant and consult with the local land use planning authority.
9. **Section 6, Schedule:** Please revise the last sentence to state that the remedial excavation work may take place while the Property Owner is installing the new underground storage tanks (UST) unless there are logistical or safety issues that cannot be resolved.
10. **Table 1, item (v):** Please reword “Figure and 6” so it is clearer what is being referred to.
11. **Table 1, item (xii)((B):** Section 2.3.1 only discusses topography and climate and does not discuss probability of flooding or seismic activity or mention if there are any local planning and development issues. Please revise the text and table to address these items.
12. **Sections 2.2.3.5:** Please remove the statement that the “release was subsequently confirmed by the Property Owner” unless documentation for this provided or referenced.
13. **Section 2.4.3:** Please remove the sentence that “This was later confirmed by the Property Owner” unless documentation for this provided or referenced.
14. **Appendix B, Health and Safety Plan:** Some sections of the plan contain information for a different site. Please update the information in the following sections so that it applies to the Cowlitz Food & Fuel Site:
  - a. PDF page 108 of 254.
  - b. The Traffic Safety Plan on PDF pages 152-154.
  - c. Smoke Respiratory Protection Plan on PDF pages 157-159.
  - d. Task Improvement Process form on PDF page 168.

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<sup>8</sup> <https://in-situ.com/us/news/orp-field-measurements-reporting-redox-potential-eh-correctly>.

If you have any questions about this letter, please contact me at (360) 890-0059 or [steve.teel@ecy.wa.gov](mailto:steve.teel@ecy.wa.gov).

Sincerely,



Steve Teel, LHG  
Cleanup Project Manager/Hydrogeologist  
Toxics Cleanup Program  
Southwest Region Office

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