



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

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

September 10, 2021

Sent via email and hard copy

Allison Geiselbrecht
Floyd Snider
601 Union Street, Suite 600
Seattle, WA 98101

RE: Ecology comments on agency review draft, Smith-Kem Site Remedial Investigation/Feasibility Study, dated June 2021

- **Site Name:** Smith-Kem Ellensburg Inc.
- **Site Address:** 200 South Railroad Avenue, Ellensburg
- **FSID No.:** 12832256
- **CSID No.:** 4257
- **Agreed Order:** DE 12908

Dear Allison Geiselbrecht:

Thank you for submitting the above-referenced document in accordance with Agreed Order DE 12908. Below are the Department of Ecology's (Ecology) comments on the draft Remedial Investigation/Feasibility Study. Ecology welcomes a discussion of the comments.

Ecology comments – notes on text

Comment 1: General Comment on Data Gaps: The report calls out data gaps that pertain to the extent of particular soil contaminants and states that actions will be taken prior to the selection and design of the final remedy. These sections include Sections 7.1.2, 7.2 and 8.4.1.3 and include the following gaps:

- Delineation of the extent of dioxin/furan soil contamination along the southwestern corner of AOC 3;
- Establishment of whether nitrate in the saturated zone extends deeper vertically near the southwest area of the Site;
- Bounding the extent of dieldrin soil contamination that could potentially leach to the saturated zone in the vicinity of MW-6 and MW-7, between AOC 2 and AOC 5; and



- Bounding the extent of dieldrin soil contamination that may potentially leach to the saturated zone in the vicinity of MW-1.

Ecology's expectation is that data gaps field work will be completed, post-FS, either during the development of the Cleanup Action Plan (CAP) and/or incorporated into the implementation of the final CAP or its associated components.

Comment 2. General Comment on Conditional Points of Compliance: Ecology iterates that under MTCA, the CPOCs cannot exceed the property boundary unless groundwater cleanup levels for the site are based on protection of surface water or where groundwater has been impacted by multiple sources that have resulted in co-mingled plumes of contamination that are not practicable to address separately (area-wide groundwater contamination). Ecology is aware that in some cases the groundwater point of compliance has been interpreted to extend beyond the property boundary, e.g., to the middle of the right-of-way, if sufficient monitoring points are available to bound the contaminant plume. However, this is not written into the rule, rather it is a specific interpretation that has been applied in limited cases, mostly involving sites in the Voluntary Cleanup Program.

The rule does allow for different points of groundwater compliance for different contaminants, e.g., those contaminants with significantly different mobility. With regard to the vertical distribution of nitrate in groundwater, the CPOC must screen to the lowest depth potentially affected by the site to properly capture the plume morphology at its downgradient end.

Comment 3. Turbidity: As stated in **Section 4.3.1.1, Field Methods**, the six wells installed in 2016 and the wells installed in 2018 were developed by pumping out the fines. Well development was terminated when the turbidity readings stabilized or were less than 50 nephelometric turbidity units (NTUs). Turbidity, however, is an optical property of water or transparency that may not be solely caused by particles but may also be influenced by colored material in the water. So, for instance, the presence of sodium lignosulfonate, may have contributed to the high turbidity values in the groundwater, given that the wells were initially developed and the well logs show a relatively coarse-grained substrate. Since Total Suspended Solids (TSS) was not measured we do not know if the turbidity was caused by coloration or by colloidal material. For this reason, the default assumption that turbidity readings may indicate a monitoring well sample that should be considered unrepresentative for aqueous phase concentrations does not always hold true without substantiation through quantitative TSS results.

In some cases, the data quality objectives which govern why a sample is being collected and which analytes are being measured allows for the interpretation of data that might be rejected simply due to turbidity under a blanket rejection. The important consideration for protection of human health is to measure what is truly mobile within the formation that may eventually arrive at a Group A or B water supply well or a private residential well.

Comment 4. Executive Summary, Preferred Cleanup Action, page 5: The text states, *“The Preferred Cleanup Action Alternative meets the other MTCA requirements for selection of a cleanup action, including using permanent solutions to the maximum extent practicable, providing for a reasonable restoration time frame, and consideration of public concerns.”*

Portions of this statement are unfounded or are contradicted. For instance, it states that public concerns have been considered yet in several subsequent sections, it states that public concerns will be reviewed later. Ecology acknowledges that public concerns are included as a component of the DCA (e.g., Tables 11.1 & 11.2) however, a score of “7” across all considered alternatives is given before any consideration of input that should follow after the solicitation of public comment.

The basis for this token score is given in a statement in the footnotes of Table 11.2 regarding public concerns: *“The public concerns score for all alternatives were considered to be equal because there were no elements that would cause considerable public scrutiny.”* Ecology notes that is statement is presumptive since this scoring fails to take into account possible public input from Mr. Steven Carter who owns a residential property due west of the Site and/or the possible input by others within the community.

Comment 5. Section 9.1.2, Institutional Controls: The text states, *“ICs often involve restrictions or covenants, site advisories, use restrictions, or consent decrees and would be implemented at the Site to limit or prohibit activities that may interfere with the integrity of any cleanup action or result in exposures to hazardous substances at the Site.”*

A consent decree is one mechanism for imposing and maintaining an institutional control. An agreed order may also function in like manner. The decision to use a consent decree as the mechanism to implement remedial action is at Ecology’s discretion as provided for under WAC 173-340-520. Typically, a consent decree may be granted by Ecology provided sufficient characterization was performed such that notable data gaps no longer exist.

- Comment 6. Section 9.1.5, Surface Capping:** Leaving soil contamination at depth appears to be the justification for the use of CPOCs via a discussion of an estimated restoration time frame though absent further assessment and/or expenditure to refine the estimate. The MTCA perspective regarding use of CPOCs favors the use of more complete or “permanent” remedies. Removal of a greater volume of source mass either deeper in the soil profile or increasing lateral excavation extent is consistent with a more complete or permanent remedy. This extension requires the further assessment of contaminant distribution, e.g., as discussed in the data gaps analysis.
- Comment 7. Section 12.1.2, Geosynthetic Clay Liner:** This remedy component focuses on infiltration but not on lateral groundwater movement.
- Comment 8. Section 12.1.4, Groundwater Monitoring and Proposed Conditional Points of Compliance:** The case for using conditional points of compliance for groundwater at the Site has not sufficiently been demonstrated. Ecology does not agree to CPOCs.

The text states that monitored natural attenuation is a component of the Preferred Cleanup Action Alternative, then explains that it is not technically feasible to naturally attenuate the site contaminants within a reasonable restoration time frame. A review of the use of CPOCs is predicated on meeting the conditions imposed under MTCA which, in particular, creates a bias towards implementation of a more complete or “permanent” remedy. This condition has not been sufficiently demonstrated to Ecology for the Preferred Cleanup Action Alternative, sufficient enough to warrant use of CPOCs.

Also, according to WAC 173-340-360(c), a permanent cleanup action shall be used to achieve the groundwater CULs in WAC 173-340-720 at the **standard** points of compliance where a permanent cleanup action is practicable or determined by the department to be in the public interest. It has not been sufficiently demonstrated to Ecology that a permanent groundwater cleanup action is not practicable. A permanent groundwater cleanup action is required for situations involving potable groundwater even though it is not being currently used as a drinking water source.

Ecology does not support the proposed Preferred Cleanup Action Alternative if it, in effect, results in a nonpermanent groundwater cleanup action. Refer to WAC 173-340-360(2)(c).

Comment 9. Section 12.5, Compliance with ARARS: The text states, *“Implementation of the Preferred Cleanup Action Alternative would typically trigger a suite of environmental permits; however, cleanup actions conducted under a Consent Decree with Ecology are exempt from state and local ARAR procedural requirements, such as permitting and approval requirements.”*

A waiver or exemption generally applies to the administrative (or procedural) requirements but not for all permits. Administrative requirements will still apply for certain permits.

Substantive requirements still apply for all permits regardless of the mechanism used to administer the ARARs including agreed orders and consent decrees.

Comment 10. Section 12.6, Compliance with Site RAOS: The text states *“Excavation and capping of contaminated soil with COC concentrations greater than respective RELs or CULs will minimize leaching and direct contact risk, which will significantly reduce the source of COCs to groundwater. In situ groundwater treatment will reduce dissolved-phase mass and improve groundwater quality. Contaminated soil with COC concentrations greater than the proposed CULs and RELs that remain on-site that could pose a risk to the direct contact and leaching pathways will be controlled through ICs and a cap (GCL, concrete pads, or buildings).”*

Reduction of groundwater concentrations contributed through the leaching pathway is presumed on the removal of sufficient volume of the contaminated soil mass, however, the lower depth of contamination has not been bounded empirically through sampling in some instances but alternatively are estimated on the basis of vertically decreasing concentrations.

For example, on page 6-26, the discussion on Aldrin state that *“The maximum depth of contamination in AOC1 is expected to be approximately 7 feet bgs based on the sample result in the 5 to 6 feet bgs sample interval at FS-05 and the observed rate of decline in concentration with depth at other sampling locations.”*

Furthermore the text states *“The depth of contamination will be further refined during remedy design.”*

This statement about the expected depth of contamination is the standard answer throughout the draft report regarding many of the contaminants including Aldrin, Chlordane, Dieldrin and Toxaphene.

In some cases, the expected depth of contamination appears to extend below the maximum depth of proposed excavation. This also holds true for those results that demonstrate non-detect exceedances, for example, at or near MW-14.

The use of CPOCs only at the southwest portion of the Site sidesteps this issue of contaminant depth at particular AOCs and only addresses that portion of the contaminant mass that may be near the down-gradient CPOCs and that may be captured by the well screen specifications such as the particular screen interval length and placement (e.g., bottom of screen). This situation as it currently stands is not acceptable to Ecology.

Ecology questions/requests for further information

Comment 11. General Comment on Well Decommissioning: Will any existing monitoring wells be decommissioned or destroyed during the excavation or implementation of any of the alternatives? If so, identify these specific wells. What is the contingency if a well is decommissioned or destroyed, under the presumption that standard points of compliance apply to this Site?

Comment 12. As outlined in WAC 173-340-370(7) with regard to the criteria for allowing natural attenuation, Ecology expects several stipulations to be met, including (1) providing evidence that natural biodegradation or chemical degradation is occurring and will continue to occur at a reasonable rate at the site, and (2) conductance of appropriate monitoring requirements to ensure that the natural attenuation process is taking place and that human health and the environment are protected.

What are your lines of evidence to demonstrate that natural attenuation, as described in WAC 173-340-200, of the various contaminants will actually occur under the proposed remedies? Provide the corroborated data that the mass, toxicity, mobility, volume, or concentration of the hazardous substances are being reduced as opposed to processes such as dilution alone.

Comment 13. Executive Summary, Preferred Cleanup Action, page 5: There is no mention of periodic reviews or financial assurances in the executive summary. However, **Section 12.10, Estimated Remedy Cost Summary**, does state that the estimated costs associated with the preferred remedy include long-term operations, maintenance, and monitoring costs following remedy completion, and agency oversight that will include periodic reviews of the constructed remedy. Some of these costs are summarized as \$275,000 that includes agency oversight and \$15,000 for cap inspection and maintenance costs.

What actions will constitute the proposed periodic reviews? Do you propose that the compliance groundwater monitoring will be confined entirely within the framework of the periodic reviews?

Comment 14. Same Section: Periodic reviews are typically performed on a 5-year basis but may be performed at a shorter interval, per Ecology's discretion as provided under WAC 173-340-420. At this time, Ecology has not agreed to a 5-year review period.

If a 5-year review period is accepted for the preferred alternative, this monitoring scheme under the proposed preferred remedy will require a minimum of two periodic reviews since the restoration time frame is estimated to be 10 years from the completion of remediation.

Contingency for additional periodic reviews should be incorporated in the event of exceedance of the estimated restoration time frame for any of the contaminants of concern at the applicable points of compliance after remedial action. Please clarify if contingency for a time frame greater than 10 years will be written into the LTCMP.

Comment 15. Section 5.1.1.1, Potential Sources of Contamination and Contaminant Transport Pathways: This section refers to the criteria for empirical demonstration. It is recognized elsewhere in the draft report that nitrate may continue to leach to groundwater based on current facility operations. What steps, if any, will be taken to assess and mitigate continual source mass loading from incidental or accidental spills of fertilizer?

Comment 16. Section 6.3.2, Pesticides and Herbicides: How does one reconcile the interpretation of decreasing concentration trends as specified in this Section and as shown in the Figure 6.9 series with what is stated in **Section 12.1.4, Groundwater Monitoring and Proposed Conditional Point of Compliance**, "*A CPOC is recommended for this Site because of widespread pesticide and nitrate/nitrite contamination across the Site; multiple COCs in groundwater exceed their respective CULs in groundwater by an order of magnitude or more and are not technically feasible to naturally attenuate within a reasonable restoration time frame.*"

Comment 17. Section 6.3.2.2, Active-Use Pesticides and Herbicides: Deethylatrazine or desethyl atrazine, a common atrazine degradant, was not detected at the reporting limit of 0.06 ug/L in all samples from a select group of wells in the source area or immediately downgradient of the source areas.

Yet, in the prior paragraph, the text states that the groundwater data shows a decreasing concentration trend. As stated earlier in regards to dieldrin, could the apparent trend in concentration be explained by dilution or by some artifact, rather than degradation? What are any lines of evidence that supports degradation? In lieu of that information, the data can be interpreted as dilution or as representing an artifact related to fluctuations in groundwater conditions.

Comment 18. Section 7.1, Conceptual Site Model: The text states, “*Groundwater contamination is present at the Site at a maximum depth of 15 feet bgs for all groundwater COCs except for nitrate. Nitrate may exceed the proposed CUL at depths deeper than 15 feet bgs in the southwest Property boundary (i.e., MW-12, FS-30, and MW-14).*”

The standard POC for the groundwater at this site is from the uppermost level of the saturated zone extending down to the lowest depth at which contamination is present, likewise for the vertical compliance interval of a CPOC. How do you plan to assess the lowest depth of nitrate contamination or otherwise account for this discrepancy in groundwater compliance monitoring?

Comment 19. Section 7.1, Table 7.2, Soil Chemicals of Concern, Proposed Cleanup Standards, and AOCs, Footnote #1: The text states, “*...the standard POC for the leaching pathway is throughout the soil column. If deeper contamination is encountered during remedial activities, the POC depth will be expanded as appropriate.*”

It is repeatedly mentioned throughout the draft FS that further assessment of spatial distribution of contamination, particularly to bound it at depth will occur. Will this issue be approached as a data gap? If so, will these further assessments of contaminant depth be provided for in the draft Cleanup Action Plan or associated element such as the Engineering Design Report? Or alternatively, are you planning to address this issue based on existing data interpretation?

Comment 20. Section 8.3, Areas of Concern: Regarding pesticides at AOC 1 and AOC 4, the text states, “*...additional data collection is needed to better define this boundary ... prior to design of the final remedy.*”

Does this statement merely point to the need for further investigation but not offer any concrete steps to assess? If the latter, what specific steps are proposed?

Comment 21. Section 8.4.1, Soil Remediation Levels: The text states, “*During engineering design, a Long-Term Compliance Monitoring Plan (LTCMP) will be developed that meets the requirements of WAC 173-340-410. In this plan, cleanup action plans requirements will be evaluated where soil RELs are used.*”

I note that the proposed RELs are about one Order of Magnitude (OoM) greater than the applicable CUL for direct contact and are about two OoM greater than the applicable CULs for leaching. At locations such as the southwest corner of the property, what currently-available information do you possess that indicates that the proposed RELs (for leaching) will be sufficient to comply with the requirements of WAC 173-340-360 with respect to meeting the cleanup standards?

Also, the presumption is that the LTCMP will be implemented under another agreement whether a consent decree or another agreed order. Ecology cautions that amending any of the terms and conditions of a consent decree, e.g., work plan components, to implement the CAP has to be filed with the court and can be a cumbersome process as opposed to the amendment process for an agreed order. Thus, Ecology’s preference is using an agreed order if changes that may lead to amendment are anticipated.

Comment 22. Section 8.4.1.3 Dioxins/Furans: The report states that the dioxin/furan data gap will be addressed with additional pre-design sampling. What specific steps will be taken to address the other data gaps?

Please provide further information on your proposal to address this gap at this time or alternatively, commit to providing information at a different stage of the process, e.g., during implementation of the CAP.

Comment 23. Section 9.1.4, Engineering Controls: The text states, “*Engineering controls require maintenance in perpetuity to ensure proper function and prevent exposures.*”

Engineering controls and other measures that require maintenance and/or oversight for a long period of time e.g., greater than five years, may require provision for financial assurance written into the implementing agreement. I did not see any references to period reviews with the exception of a brief mention in Section 12.10. What is the contingency for financial assurance required to maintain proper oversight?

Comment 24. Section 9.1.5, Surface Capping: The text states, “*Surface capping is a containment remedy that places a physical barrier over contaminated soil to control surface water infiltration...*”

The water depth across the site varies from 3 to 6 feet bgs with the average groundwater table at 3.5 feet bgs. Seasonally, this groundwater surface fluctuates with highs in the early spring and lows in the late summer and winter. A representative “snapshot” of groundwater fluctuation across the site can be seen in Figure 2.5 which plots about one year of transducer data. Based on this data set, the fluctuation in the water table shows as much as 3 feet in wells closer to Mercer Creek and about 1.5 feet for most of the other wells on the property.

Will data or estimates based on the data support the contention that the proposed soil excavations will sufficiently remove enough dieldrin source mass in areas such as near AOC 2 and AOC 5 between MW-6 and MW-7, if the maximum depth of the dieldrin soil contamination is below the average water table?

Comment 25. Section 10.0 Identification of Cleanup Action Alternatives: The standard POC for groundwater is from the uppermost level of the saturated zone extending vertically to the lowest depth that could potentially be affected by the site. What are the depths of the standard POCs for groundwater throughout the Site? Can we determine the depth if we don’t know the maximum depth of contamination?

Comment 26. Section 11.3, Evaluation of Restoration Time Frame: The draft text states, “*Two of the COCs in groundwater, dieldrin and nitrate, are present at high magnitudes across a large portion of the Site and extend off-Property in the southwest corner.*”

Does the monitoring data to date, either through Concentration versus Time or Concentration versus Distance, show that the nitrate plume stable or shrinking? Or, is the data inconclusive? If the former, what other lines of evidence support a stable or shrinking groundwater nitrate plume?

Comment 27. Section 12.1, Preferred Cleanup Action Alternative Description: Monitored natural attenuation is one listed component of this combined remedy. The length of time for MNA as a cleanup component is not the same as the issue regarding restoration time frame or how long it will take to meet the cleanup standards. What is the estimated length of time that MNA will have to be evaluated under this remedy and what information is the basis for this estimate?

Comment 28. Section 12.1.1, Soil Excavation with Off-Site Disposal: In the discussion of AOC 1, how will you address the two concrete culverts at the east end of the surface depression when implementing the preferred remedy?

Comment 29. Section 12.1.4 Groundwater Monitoring and Proposed Conditional Point of Compliance: The text states, “*MNA for groundwater is a component of the Preferred Cleanup Action Alternative after removal of the soil source contamination. As part of the MNA, post-remedy groundwater monitoring will be required after remedy implementation.*”

Furthermore, the text states, “*A CPOC is recommended for this Site because of widespread pesticide and nitrate/nitrite contamination across the Site; multiple COCs in groundwater exceed their respective CULs in groundwater by an order of magnitude or more and are not technically feasible to naturally attenuate within a reasonable restoration time frame.*”

In this draft, Alternative 4 which is based on building demolition and maximum excavation is deemed the most permanent remedy to the maximum extent practicable but this alternative is eliminated due to the technical infeasibility of the required demolition in the context of current operations at the facility. Alternate 3 is then considered to be the baseline remedy since, by default, it becomes the most permanent remedy to the maximum extent practicable, as determined through the DCA evaluation.

However, this draft FS fails to include the consideration and discussion of alternatives with the standard points of compliance for each environmental media containing hazardous substance, as required under WAC 173-340-350(8)(c)(i)(F), unless those alternatives have been eliminated under (b) of subsection 8, as permitted for Alternative 4.

More specifically, this draft FS does not include any estimates of restoration time frame at the standard points of compliance. Each of the alternatives that have been proposed relies on the use of CPOCs as a given.

The proposal to use CPOCs also is contingent upon the establishment of restoration time frames and comparison to what is considered to be a reasonable time frame. Only **Section 11.3 Evaluation of Restoration Time Frame**, speaks to this issue in any sense but merely gives comparative estimates for the alternatives at the CPOCs. Please provide the estimates for restoration time frame for each alternative.

Also, provide the basis for those estimates, especially in light of the criteria listed in WAC 173-340-360(4)(b), including the criterion that appears most applicable in this case which refers to the ability to control and monitor migration of hazardous substances from the site.

Comment 30. Section 12.4, Compliance with MTCA: The text states “*The Preferred Cleanup Action Alternative for soil and groundwater meets the minimum requirements for selection of a cleanup action under MTCA (WAC 173-340-360(2)(a)) because it is protective of human health and the environment, complies with cleanup standards, complies with applicable state and federal laws, and provides for compliance monitoring.*”

The preferred cleanup action alternative for soil and groundwater does not meet the cleanup standards if contaminant concentrations exceed the CUL at any of the conditional points of compliance (CPOCs). The contaminants, dieldrin and nitrate, are already shown to exceed at MW-14 (draft FS, page 6-13, 2nd paragraph and page 6-16) and it is likely that exceedances for these two contaminants will continue to exceed the CUL for at least one of the proposed CPOCs. The situation is likewise if we use standard points of compliance.

Please explain your rationale regarding the issue outlined in WAC 173-340-720(8), which states “*the department may approve a conditional point of compliance that shall be as close as practicable to the source of hazardous substances, and except as provided under (d) of this subsection, not to exceed the property boundary.*”

Ecology directive and/or changes to text

Comment 31. Executive Summary, Development of Cleanup Action Alternatives: The text in the third bullet point states, “*Installation of a geosynthetic clay liner (GCL) to provide a protective barrier to remaining pesticide contamination at concentrations than RELs or CULs.*”

There appears to be a missing word or words in that sentence. Please revise.

Comment 32. Section 2.0, Identification of COPCS: In the heading, **Groundwater COPC Considerations**, the text states, “*This sampling artifact bias is particularly common for metals, so Ecology guidance for sampling water supply wells recommends sampling wells for metals only if turbidity is less than 10 nephelometric turbidity units (Ecology 2019).*”

This citation is absent from the references. The citation appears to be Ecology Publ. No. 19-03-204, *Standard Operating Procedure EAP098, Version 1.1, Collecting Groundwater Samples for Metals Analysis from Water Supply Wells*. Add this citation to the references, however, state in the text that the reference specifically refers to analysis of drinking water as opposed to potable groundwater not obtained from a water supply well.

In noting that this guidance applies to sampling of drinking water and not necessarily for evaluation of potable groundwater as defined under MTCA, the rule requires the collection of unfiltered groundwater samples collected from a properly constructed monitoring well, including appropriate well development. In the case where turbidity remains high in a well appropriately designed and constructed for the particular substrate conditions, then MTCA gives provision for the collection of both unfiltered and filtered groundwater samples for further comparison. Once both sets of data are collected then the data is evaluated by Ecology per WAC 173-340-720(9)(b).

Comment 33. Section 4.3.1.1, Field Methods: Add text to state the horizontal and vertical datums that were referenced for the survey of the monitoring wells.

Comment 34. Section 4.3.3, Groundwater Screening Sampling: The text states, “*Six temporary wells were installed on the Property to characterize the vertical extent of contamination in the vicinity of MW-4 and FS-12, which included three screened intervals (at 5 feet bgs, 10 feet bgs, and 15 feet bgs) installed 1 foot apart at boring locations FS-22 and FS-30.*”

In the report, please communicate the results from the characterization of the vertical extent of all groundwater contamination mentioned in this section or point out where this information exists in the report. Ecology is interested in seeing if the Site is characterized by vertical stratification of any of the groundwater contamination.

If vertical stratification of the aqueous phase contamination is evident in the substrate, then state what steps were taken either in the monitoring well design and/or in the sampling protocol to mitigate potential sampling bias so that representative groundwater samples are yielded.

Comment 35. Section 5.1.1.1, Potential Sources of Contamination and Contaminant Transport Pathways: In addition to WAC 173-340-747(9), add reference to TCP Implementation Memorandum No. 15, including whether all of the applicable policy stipulations provided in this memo were followed.

If these portions are not specified in the text, then state which applicable portion or portions were not specifically followed and add this text to the draft report. The title of IM#15 is *Frequently Asked Questions (FAQ's) Regarding Empirical Demonstrations and Related Issues*.

Comment 36. Section 6.1.1, Table 6.2: This table shows the proposed groundwater CULs for TPH separately as diesel-range and as oil-range. In contrast, Table 6.7 shows the proposed soil CULs for TPH as a value for the combination of diesel-range and oil-range.

Please ensure that assessment for TPH compliance accounts for the combined sum of TPH-D and TPH-O.

Comment 37. Section 6.2.1.1, Lead and Zinc: The text states, *“The proposed site-specific TEE criterion for zinc is 470 mg/kg and is equivalent to the maximum detected zinc concentration onsite. This criterion is appropriately conservative because despite some samples with concentrations as great as 470 mg/kg, the TEE criterion for lead is not exceeded when the site-wide depth-weighted average calculations are performed (refer to Table 6.4).*

Is there some wording missing or are there other errors in this section? Please revise accordingly.

Comment 38. Section 7.1, Table 7.1, Groundwater Chemicals of Concern, Proposed Cleanup Standards, and AOCs: Total Petroleum Hydrocarbons are listed separately as diesel-range TPH and oil-range TPH, each with a proposed cleanup level of 500 ug/L. A compliance sample's combined diesel-range and oil-range values for TPH should meet the CUL of 500 ug/L. Compare to **Table 7.2, Soil Chemicals of Concern, Proposed Cleanup Standards, and AOCs**, where the diesel-range and oil-range are combined for comparison to one TPH CUL. Please ensure consistency for determining groundwater compliance and revise text accordingly.

Comment 39. Section 7.2, Recommendations: The text states that the data gaps addressed in this section will be further addressed in the FS as needed. The *“as needed”* stipulation is ambiguous with respect to some of the bulleted items. Please state what actions will be taken in reference to an explicit decision framework or at a minimum, outline the decision framework. For instance, what actions will be taken regarding nitrate contamination since what is stated in the last bulleted item is unclear with respect to specific steps.

Allison Geiselbrecht
Floyd Snider
September 10, 2021
Page 15

Comment 40. Section 12.3, Contingency Actions: The text states “*There are not data to quantify the ongoing contribution from current operations; therefore, it will be important to assess the potential for ongoing contributions post-remedy.*”

“If it is determined that fertilizer handling on-site is an ongoing source of nitrate/nitrite in groundwater and post-remedy groundwater concentrations of nitrate/nitrite are not adequately improving, as measured at the proposed CPOC, then a contingency source control evaluation will be done to propose additional BMPs for the Site.”

This will require a quantification of mass loading in soil that is potentially leachable to groundwater, followed by evaluation of the contribution of current sources to historical sources. The presumption based on vertical distribution is that the majority of the nitrate mass is consequent of older releases from the rail tanker and/or the distribution and storage system for the anhydrous ammonia.

Also, the significance of the continuing impact on the groundwater nitrate/nitrate plume should be assessed with the goal of stabilizing or shrinking the nitrate plume.

Provide additional information that will address this issue including the outline of a plan to collect information to address this issue.

You can reach me at (509) 731-7613 or John.Mefford@ecy.wa.gov, if you require any clarification of these comments or have further questions.

Sincerely,



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

cc: Andrea Wing, Shell Oil Products US