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STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
Southwest Region Office
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December 10, 2024

Scott Hooton
Port of Tacoma
1 Sitcum Way
Tacoma, WA 98421
shooton@portoftacoma.com

Re: Technical assistance at the following contaminated Site

Site name: PQ Corporation
Site address: 1202 Taylor Way, Tacoma, Pierce County, WA 98421
Facility/Site ID: 68592738
Cleanup Site ID: 11532
VCP Project No.: SW1269

Dear Scott Hooton:

On February 9, 2024, the Washington State Department of Ecology (Ecology) received your request for technical assistance on your independent cleanup of the PQ Corporation facility (Site) under the Voluntary Cleanup Program (VCP).[1] Accordingly, this technical assistance is provided pursuant to the Model Toxics Control Act, RCW 70A.305 and WAC 173-340-515(5).

Issue Presented and Opinion

Ecology issued a Further Action opinion for the Site on August 7, 2024. On October 2, 2024, Ecology received a response to comments table via email with responses to Ecology's opinion letter comments.[2] In the email, you stated that you wanted to schedule some time to discuss the Port of Tacoma's response to Ecology's Further Action opinion letter with the objective of reaching a common understanding of the revisions needed for the Remedial Investigation/Feasibility Study/draft Cleanup Action Plan (RI/FS/dCAP).

[1] https://ecology.wa.gov/Spills-Cleanup/Contamination-cleanup/Voluntary-Cleanup-Program
[2] PQ, Response to Further Action Comments, Email from Scott Hooton, Port of Tacoma, to Steve Teel, Ecology, October 2, 2024.

In preparation for our meeting, Ecology has prepared the attached revised response to comments table with Ecology's responses added to your responses. This table was also sent via email on November 6, 2024.[3]

Limitations of the opinion

Technical Assistance 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.

To settle liability with the state and obtain protection from contribution claims, a person must enter into a consent decree with Ecology under RCW 70A.305.040(4).[4]

Technical Assistance does not constitute a determination of substantial equivalence
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 would make that determination. See RCW 70A.305.080[5] and WAC 173-340-545.[6]

State is immune from liability

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 70A.305.170(6).[7]

[3] RE: PQ, Response to Further Action Comments, Email from Steve Teel, Ecology, to Scott Hooton, Port of Tacoma, November 6, 2024.
[4] https://app.leg.wa.gov/RCW/default.aspx?cite=70A.305.040
[5] https://app.leg.wa.gov/RCW/default.aspx?cite=70A.305.080
[6] https://apps.leg.wa.gov/WAC/default.aspx?cite=173-340-545
[7] https://app.leg.wa.gov/RCW/default.aspx?cite=70A.305.170

Contact information

Thank you for choosing to clean up your Site under the VCP. Please do not hesitate to request additional services as your investigation and cleanup progresses. We look forward to working with you.

If you have any questions about this opinion, please contact me at 360-890-0059 or steve.teel@ecy.wa.gov. Ecology looks forward to receiving your next submittal or report.

Sincerely,

Steve Teel, LHG
Toxics Cleanup Program
Southwest Region Office

ST/at

Enclosures (1):
A – Ecology Response to Comments Table

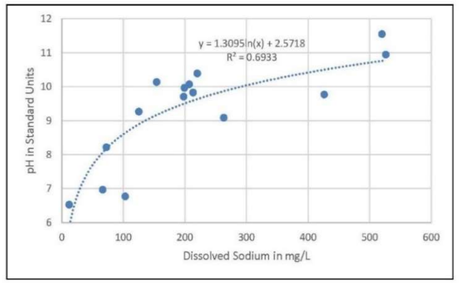
cc: Steve Germiat, LHG, Aspect Consulting, sgermiat@aspectconsulting.com
Karla Kluge, City of Tacoma, kkluge@cityoftacoma.org
Zach Meyer, Ecology SEA Program, zachary.meyer@ecy.wa.gov
Tim Mullin, LHG, Ecology, tim.mullin@ecy.wa.gov
Marian Abbett, P.E., Ecology, marian.abbett@ecy.wa.gov
Ecology Site File

Enclosure A

Ecology Response to Comments Table

Ecology Response to Response to Comments Table, draft RI/FS/CAP for PQ Corporation Site, dated August 8, 2024

Comment No.	Section	Ecology Comment	Response to Ecology Comment	Ecology Response
	1. Characterization of the Site	Ecology has determined your characterization of the Site is not sufficient to establish cleanup standards and select a cleanup action. The subject of this current letter is to provide a response to RI/FS/CAP (Aspect, 2023), that was prepared in response to Ecology's June 21, 2022 and October 4, 2021, opinion letters.	Comment noted.	Response noted.
Section 2 - Remedial Investigation				
1	1.	The RI report is incomplete because copies of laboratory reports were not included. Please include copies of all laboratory reports in the revised report.	Lab reports will be attached to the revised RI and transmitted as a separate file because it is >100 Mb in size.	Response noted.
2	Section 2.1.4.2 Stormwater Ditch:	a. This Section and the referenced Appendix B is a repeat of a response provided by the Port of Tacoma (Port) in Aspect (2021a) to Ecology's February 18, 2021 letter. It is also important to note that the Port of Tacoma and Ecology met on October 28, 2021 to discuss the issue of the wetlands status of the Stormwater Ditch. As summarized in the referenced email: For the purposes of this opinion, it is assumed that the Stormwater Ditch is a water of the U.S. and/or State of Washington. i. Before the Stormwater Ditch can be filled-in, all necessary permits will be required. ii. Opinions issued by Ecology are contingent on the Port of Tacoma attaining the required permits to fill in the ditch as part of a remedial action and/or combined redevelopment/remedial action. b. Permitting Process: As summarized in Ecology's October 4, 2021 Opinion Letter, the Port of Tacoma would need official determination from the U.S. Army Corps of Engineers (USACE) and Ecology that the wetland features are not waters of the U.S. and/or State of Washington, or the Port would need to obtain 404/401 permitting under the Clean Water Act. If the wetland areas are determined to not be subject to USACE jurisdiction (not a water of the U.S.), but remains a jurisdictional wetland for Ecology (water of the State), then the project would require Ecology wetland permitting under RCW 90.48. From a wetland point of view, Ecology recommends that the next step would be for the Port of Tacoma to request a jurisdictional determination from USACE.	The report text will be revised to clarify that the Port will request the jurisdictional determination and follow up with whatever permitting is required, at the time of integrated cleanup/redevelopment.	Response noted.
3	Section 2.2.4.1:	**a. 1st bullet, cadmium:** Ecology does not concur that sufficient groundwater data has been collected for an empirical demonstration that cadmium concentrations in Site soils are protective of groundwater quality. Additional groundwater monitoring events are needed to demonstrate this. No cadmium groundwater data were collected after 2014 and the number of sampling events are limited to a total of three non-consecutive events from six wells, two consecutive events at 11 wells and no events from the remaining 11 wells that were installed in 2022. Collection of additional cadmium groundwater data was previously recommended in Ecology's June 21, 2022 opinion letter. Please modify the text in this section and Figure 12 accordingly.	The sitewide soil dataset for cadmium does not comply (barely) with the 2 mg/kg CUL, applying the MTCA 3-fold compliance criteria, because magnitude of exceedance = 2.8 vs 2.0 (the 95% UCL complies (0.53 mg/kg) and frequency of exceedance complies (5.5%)). The two highest cadmium exceedances are in DFA soil, the other exceedance is near the east end of ditch. Consistent with lack of elevated cadmium in soil, no exceedance for cadmium has been detected in 40 groundwater samples; in fact, 30 of 40 samples were ND and the maximum detect (1.0 ug/L) was only 11% of the CUL. In our experience, that should be a more-than-adequate groundwater dataset with which to make an empirical demonstration for the site, given the fact that the groundwater-protection soil screening level applied is an intentionally highly conservative prediction and site soils don't comply with it by a very thin margin. However, given the presence of other collocated metals on the site, cadmium is inconsequential to the FS/cleanup and we will remove reference to its empirical demonstration in the revised document.	Thank you for agreeing to incorporate Ecology's comment in the revised document.
		b. 2nd bullet, total xylenes: Ecology does not concur that sufficient total xylenes groundwater data has been collected for an empirical demonstration that total xylenes concentrations in Site soils are protective of groundwater quality. Additional groundwater monitoring events would be needed to demonstrate this as previously recommended in Ecology's June 21, 2022 opinion letter.	Additional groundwater monitoring events for BTEX including xylenes have been conducted since Ecology's June 21, 2022 opinion letter was drafted. Both soil and groundwater at the Site comply with cleanup levels for total xylenes, when applying the MTCA 3-fold compliance criteria for soil. As noted in Table 16, there were zero xylenes exceedances in 65 groundwater samples, thus it complies with groundwater CULs. For soil samples, there is 2% exceedance (<10% needed for compliance) and the maximum magnitude of exceedance is 1.5 (<2x needed for compliance). Using EPA's ProUCL software, the best-estimate 95% UCL on the mean xylenes concentration for soil is 0.66 mg/kg, which is only 7% of the 9 mg/kg CUL (UCL calculation not included in Table 16). Therefore, total xylenes in Site soil comply with the CUL per MTCA (WAC 173-340-745(8)). The empirical demonstration discussion for the single xylene soil exceedance will be deleted, and the compliance evaluation added, in the revised report.	Ecology generally requires a minimum of four quarters of groundwater data for determining compliance with cleanup levels (See: Guidance for Remediation of Petroleum Contaminated Sites, Department of Ecology, Toxics Cleanup Program Publication No. 10-09-057, June 2016). The groundwater sample dataset that is summarized in Table 16 does not sufficient quarterly data for determining compliance with total xylenes cleanup levels. For example, the location of the soil total xylenes exceedance is MW-2S. However, the two closest downgradient wells to this location, MW-20S and -21S have only been sampled twice and there are no total xylenes data from wells MW-17s, -18s, -22S, 23S, -24S, and -25S. Additionally, please note that groundwater cleanup levels need to be protective of suface water aquatic life protection criteria. Protective concentrations for this have been published in Toxics Cleanup Program Implementation Memo #23 (available at https://apps.ecology.wa.gov/publications/SummaryPages/1909043.html) For example, the total xylenes aquatic life protective value for marine water is 106 micrograms per liter (µg/L).
		c. 3rd bullet, methylene chloride: Following a review of Site data, Ecology concurs that methylene chloride is not a constituent of concern for the Site.	Comment noted.	Response noted.
4	Section 2.2.4.1.1:	Ecology does not agree that there is an empirical demonstration that PAH and TPH concentrations in soil are protective of groundwater because there are groundwater exceedances for cPAHs at MW-2S, -5S, -9S, -12S, -15S, and -16S and TPH exceedances in wells MW-2S,-5S, -9S, -11S, -12S, -15S, and -16S. Also, TPH data were not collected from recently installed groundwater monitoring well MW-22S. As stated in Ecology's empirical demonstration memorandum: a. The purpose of an empirical demonstration is to demonstrate that measured soil concentrations are not causing and will not cause exceedances of the applicable groundwater cleanup levels. This applies to groundwater anywhere on the site. b. At sites where a conditional point of compliance is used, exceedances of the groundwater cleanup levels will exist between the source and the point at which groundwater is monitored, which is inconsistent with the requirements for an empirical demonstration. Please modify the text in this section and Figure 11 accordingly. The revisions should remove all references indicating that there is an empirical demonstration that TPH and PAH soil concentrations are protective of groundwater.	Per Section 747 of MTCA and Ecology's guidance on empirical demonstrations, the empirical demonstration is made for "measured soil concentrations" and we see nothing in the regulation or guidance that precludes making the demonstration for a specific area of the site (for specific measured soil concentrations) vs for the entire site. We applied the empirical demonstration for TPH/PAH in the Debris Fill Area and Ditch only, not for the Boiler House area, therefore wells MW-9S, -12S, -15S, and -16S are not applicable for the demonstration made. Wells MW-2S and -5S within the DFA are applicable and have groundwater exceedances, albeit not high nor reproducible over time. We agree to remove the referenced empirical demonstration discussion, but continue to document lack of downgradient migration of TPH/PAH from the DFA and ditch as documented by wells MW-19S, -20S, and -21S.	Thank you for agreeing to remove the referenced empirical demonstration discussion. See also above comment regarding the amount of data needed to determine groundwater compliance. Only two quarters of data are available for well MW-19S also.

Comment No.	Section	Ecology Comment	Response to Ecology Comment	Ecology Response
5	Section 2.2.4.1.2 and Figure 12:	Similar to the comment above, Ecology does not agree that there is an empirical demonstration that nickel, mercury, and zinc concentrations in soil are protective of groundwater because there are groundwater exceedances for these constituents.	Same as above, these demonstrations were made for specific isolated soil metals exceedance locations, each of which are wells with clean groundwater for the metals of interest, so the demonstration is appropriate and defensible in our opinion. Mercury, nickel, and zinc are identified as indicator hazardous substances for the site as a whole, based on other areas. However, we agree to remove the referenced statement regarding empirical demonstration.	Thank you for agreeing to remove the referenced empirical demonstration discussion.
6	Section 2.2.4.1.3:	This section presents the opinion that the highest pH and dissolved metals concentrations in groundwater are collocated in the former AST/Boiler House Area (for example wells MW-9S and MW-16S) and in areas where average soil pH is greater than 10. Based on this, three of the five metals remedial alternatives considered in the FS focus on remedial actions within the former above-ground storage tank (AST)/Boiler House Area (Alternative 1 – in-situ solidification; Alternative 2 – in-situ neutralization; Alternative 3 – in-situ neutralization plus groundwater neutralization at the northern property boundary). However, these alternatives would have limited and/or inadequate effectiveness at remediating dissolved groundwater concentrations at the southern boundary of the property (for example wells MW-5S, -5D, within the Debris Fill Area) because total and dissolved arsenic and/or copper concentrations in groundwater increase in these wells compared to wells MW-9S and MW-16S. This indicates that the Debris Fill Area needs to be a greater focus area for active remedial actions for metals. Please revise the remedial alternatives accordingly.	We will reassess the alternatives for discussion with Ecology.	Response noted.
7	Section 2.2.4.2.1, page 26:	The "non-reproducible" exceedances mentioned in the first paragraph may be caused by seasonality (lower water level conditions) as discussed on page 25.	Agree and we will add that statement.	Thank you for agreeing to incorporate Ecology's comment in the revised document.
8	Section 2.2.4.2.2, Metals in Groundwater, page 28, 1st paragraph:	Ecology concurs that for selected wells, there appears to be a correlation of higher sodium concentrations with higher pH in groundwater. This is illustrated in Figure 1 (enclosed, note blue trend line). However, the fact that there is a set of wells that do not follow this trend should also be considered in the conceptual site model development for the Site (see red circled area on Figure 1). As shown on Table 14, these wells include MW-1S (sodium 213 milligrams per liter [mg/L], pH 9.83), MW-3S (sodium 107 mg/L, pH 9.92), MW-6S (sodium 125 mg/L, pH 9.27), MW-8S (sodium 207 mg/L, pH 10.07), MW-11S (sodium 154 mg/L, pH 10.14), MW-12S (sodium 220 mg/L, pH 10.39), MW-14S (sodium 199 mg/L, pH 9.97), and MW-15S (sodium 198 mg/L, pH 9.71).	Because pH is a logarithmic term, it's better to assess a logarithmic relationship between the values, as done in the plot below. While an R^2 of 0.7 is not a perfect correlation , there is a definitive relationship between groundwater sodium concentrations and pH in the shallow zone. Also, there is no probable source of elevated pH other than sodium silicate releases given the historical site operations. 	A trendline is most accurate when its R-squared value is at or near 1. The set of wells that do not follow the trend still show up as an anomalous area above the curve. Wells with elevated pH need to be addressed Site-wide because of the impact on metals mobility.
9	Section 2.2.4.2.2, Metals in Groundwater, page 28, 3rd paragraph:	The statement that there are "no pH impacts in the intermediate zone due to the significant pH buffering capacity of the silt unit aquitard" is misleading because it seems to imply that this is adequate to address metals exceedances in the intermediate aquifer. This is not the case because there are dissolved metals exceedances for arsenic and/or copper in all three intermediate wells (MW-5D, -12D, and -16D).	The statement addresses pH only, backed up by the data included in the paragraph. We agree to remove the word "significant" from the referenced sentence as it is subjective and not necessary.	Response noted.
10	Table 5, soil laboratory reporting limits exceeding preliminary cleanup levels (PCULs):	Please revise the table to indicate with shading or color, instances where laboratory reporting limits exceed the PCUL. For example, benzene laboratory reporting limits from soil sample locations MW-16S, TP-1E, TP-1W, TP-2, and TR-3A exceeded the PCUL. There are occurrences of this in other tables as well. For example, on Table 14, the result for copper for MW-22S (10/25/2022) was <25 micrograms per liter (ug/L) but the PCUL is 3.1 ug/L. Please revise any such instances in all soil and groundwater tables.	Change will be made in revised report.	Thank you for agreeing to incorporate Ecology's comment in the revised document.
11	Table 14:	As stated by EPA (2023), in the absence of a specified reference scale, ORP data has no meaning. 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 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: Redox Potential (Eh) = (Potential correction factor, in millivolts [mV]) + (field ORP measurement [mV]). Please include in the revised report an ORP summary table of data converted to Eh. EPA (2023) also recommends that final reporting values of Eh or ORP should be rounded to the nearest 10 mV.	Change will be made in revised report.	Thank you for agreeing to incorporate Ecology's comment in the revised document.
Section 3 – Feasibility Study				

Ecology Response to Response to Comments Table, draft RI/FS/CAP for PQ Corporation Site, dated August 8, 2024

Comment No.	Section	Ecology Comment	Response to Ecology Comment	Ecology Response
12	Feasibility Study:	As explained in WAC 173-340-700, cleanup standards consist of: a) cleanup levels for the hazardous substances present at the site; b) the location where the cleanup levels must be met (point of compliance), and c) other regulatory requirements that apply to the site. In the FS, there are statements regarding the potential for contaminated groundwater to migrate to surface water. Please keep in mind that while surface water is a pathway of concern for groundwater, the groundwater cleanup level will need to be met at the point of compliance for the cleanup standard. Therefore, the cleanup alternatives will need to be designed so that cleanup standards can be met in the required timeframe. See also comment 20, below.	The alternatives presented can achieve a reasonable restoration timeframe, which will be discussed more fully per the current WAC 173-340-360(4)), in the revised document.	Respnse noted. However, as stated in our comments, further development of FS alternatives is needed.
13	Feasibility Study – New MTCA Requirements:	The MTCA was recently modified to include new requirements effective January 1, 2024. These requirements include additional information that needs to be included in the FS. Please revise the FS accordingly to include the following: a. Disproportionate cost analysis (DCA) criteria consist of protectiveness, permanence, effectiveness over the long term, management of implementation risks, technical and administrative implementability, and total present worth of construction and post-construction costs. b. Considering Vulnerable Populations and Overburdened Communities: The revised rule requires that when a determination is being made on whether a cleanup action uses permanent solutions to the maximum extent practicable, the impacts of cleanup action alternatives on likely vulnerable populations and overburdened communities need to be considered for three criteria (protectiveness, effectiveness over the long term, and management of implementation risks). This analysis needs to be documented in the FS and draft CAP and should include at least: i. Background information identifying likely vulnerable populations and overburdened communities, if any, likely to be affected by one of the cleanup action alternatives in the DCA. ii. An explanation of the how impacts on these populations and communities are accounted for when scoring or weighting each of the three relevant DCA criteria. iii. An assessment of the overall impact on the outcome of the permanent to the maximum extent practicable (PMEP) evaluation.	Per the 2024 MTCA revision, we have conducted an environmental justice screening and will include it in Section 2 of the revised document. Based on the screening, the potentially exposed population includes a likely vulnerable population or overburdened community. We will also adjust the DCA to be consistent with the revised WAC 173-340-360 approach for DCA, and, in the evaluation of alernatives, incorporate the points i, ii, and iii in Ecology's comment.	Thank you for agreeing to incorporate Ecology's comment in the revised document.
14	Feasibility Study, Section 3.2:	WAC 173-340-703 states that selection of indicator hazardous substances (IHS) may be used at sites that are contaminated with a large number of hazardous substances if the department considers that this approach is appropriate for a particular site. **Ecology does not consider that the IHS approach is appropriate for the PQ Site.** The Site is contaminated with relatively few constituents, and it is not appropriate to eliminate total petroleum hydrocarbons – gasoline range (TPH-G), total xylenes, and cadmium from cleanup consideration.	We identified 9 IHS that we believe are the 'risk drivers', which we feel is defensible based on site data and in accordance with WAC 173-340-703 (MTCA does not intend that every constituent with exceedances is an IHS for purposes of defining cleanup requirements). However, we will revise the document to include TPH-G and cadmium. Xylenes comply with CULs in soil and groundwater, so will not be included.	See above response to comment #3 re: xylenes.
15	Feasibility Study, Section 3.3 and Figure 21:	Section 3.3 and Figure 21 do not show the full extent of soils that could leach metals to groundwater due to elevated pH in the aquifer solids and/or groundwater. For example, when the pH > 9, contaminants such as arsenic can have greatly increased solubility. Determining the processes controlling arsenic mobility in groundwater and forecasting the capacity and timeframe for attenuation is dependent on understanding the chemical processes controlling partitioning of arsenic onto aquifer solids. The aqueous and solid phase speciation of arsenic provides clues to the processes controlling solid-liquid partitioning and changes in mobility that may come from chemical changes within the aquifer. Therefore, determination of arsenic fractionation and mobility in groundwater provides a basis for assessing the factors contributing to arsenic mobilization and the potential for arsenic partitioning to aquifer solids within the plume and downgradient (EPA, 2007). Knowledge of this is important relative to determining the current conditions controlling arsenic mobility (or immobility) as well as estimating the potential for changes in arsenic mobility that will occur as the aquifer returns to pre-contamination conditions (EPA, 2007). Such an evaluation should be part of the FS.	As discussed in the report, we believe it is the high pH that has mobilized arsenic and other metals, particularly given there are not elevated metals concentrations in the Boiler House area where the highest groundwater pH and metals concentrations persist. There is every reason to believe that reaction is reversible, so that lowering the pH again will cause the dissolved metals to complex with aquifer solids and be removed from solution - pH adjustment is a relatively common remediation technique for dissolved metals. Given the reducing (low Eh) conditions, the arsenic is present predominantly as arsenic (III) (arsenite). Because the reducing conditions are created by biodegradation of organic matter in the dredge fill, they will not change appreciably as a result of remedial actions. We will embellish the geochemical discussion, including addition of a Eh-pH diagram for arsenic, to help clarify these concepts in the revised report.	Arsenic solubility is also complicated by the following: According to The Scenarios Approach to Attenuation -Based Remedies for Inorganic and Radionuclide Contaminants (Savannah River National Laboratory, SRNL-STI-2011-00459, 2011), arsenic will be present as arsenite under low ORP conditions and as As(V) under high ORP. Arsenite can form low solubility arsenic sulfide minerals, or arsenic sulfide inclusions in pyrite, under low ORP conditions. Under high ORP conditions, As(V) sorbs to iron hydroxides from roughly pH 5 to 7, but is unlikely to form insoluble solids. Phosphate can inhibit As(V) adsorptions. As(III) sorbs less strongly to iron hydroxides but can coordinate to clay edges. In between low and high ORP conditions, the attenuation of arsenic is complicated by the ORP-sensitive presence of iron hydroxides; transformations between As(III) and As(V); and the ORP-sensitive presence of sulfide. Also, high cation exchange capacity may increase sorption.
16	Feasibility Study, Section 3.3.2, Debris Fill Area:	Ecology does not agree with the statement in this section that “there are no TPH/PAH concentrations in soil in this area that represent an ongoing source of TPH/PAH to groundwater…” The boring log for well MW-2S notes “heavy petroleum sheen” starting at a depth of 7.0 feet below ground surface (bgs). However, no samples were collected for laboratory analysis from this depth. Periodic exceedances of preliminary groundwater cleanup levels for TPH diesel plus oil range have been observed in well MW-5S. MW-2S has an exceedance of TPH-G and total xylenes from a soil sample at a depth of 2 feet.	The referenced statement will be deleted in the revised document.	Thank you for agreeing to incorporate Ecology's comment in the revised document.
17	Table 20:	a. The protective cover remedial alternative will not be effective for metals in the Stormwater Ditch Area because most of the soil that contains metals contamination will remain below the water table. Therefore, a protective cover to prevent leaching will have little or no effect. Please modify the alternatives to indicate removal or another effective technology (such as carbon dioxide sparging) instead of protective cover for each of the metals alternatives in the Stormwater Ditch area. b. A protective cover to prevent leaching will also have limited effect in the Debris Fill Area because the vadose zone is only about 4 feet thick and has an average pH of 9.27 while the saturated zone has a higher average pH of 9.71 (based on boring SB-15). Please revise this alternative to include a more effective remedial strategy for metals in the Debris Fill Area.	We will reassess the alternatives for discussion with Ecology.	Response noted.

Ecology Response to Response to Comments Table, draft RI/FS/CAP for PQ Corporation Site, dated August 8, 2024

Comment No.	Section	Ecology Comment	Response to Ecology Comment	Ecology Response
18	Section 3.6.4.1, Solidification/ Stabilization:	Guidance for implementing solidification/stabilization recommends that the feasibility study consider groundwater, pH, and alkalinity changes from in-situ solidification/stabilization (Bates and Hills, 2015). This is especially important to consider at the Site because high pH is considered to be the cause for the mobilization of metals into groundwater at the Site. Immediately after in-situ solidification/stabilization (ISSS) treatment, there will generally be an increase in pH in the groundwater contacting the treated material (Bates and Hills, 2015). At most sites, this pH increase generally dissipates in a few months. However, due to the elevated pH of the Site aquifer matrix and groundwater, it is unknown how ISSS would affect groundwater pH at the Site over the long term. Therefore, Ecology is concerned that ISSS may not be an appropriate technology to be retained in the FS without further study and/or bench and/or pilot scale testing.	We feel the ISS concepts are established well enough to incorporate it into an alternative in an FS. However, we will embellish the discussion of ISS and pH change in the technology screening section, and stress the need for treatability testing in remedial design if/when ISS is included in an alternative.	Response noted.
19	Section 3.6.4.2, pH Buffering/ Neutralization:	Carbon dioxide (CO2) sparging is not included as a possible implementation strategy; please include this technology in the FS alternatives. As summarized by the Federal Remediation Technologies Roundtable (FRTR), CO2 can be used to neutralize contaminant plumes with high pH.20 In this technology, CO2 introduced into the aquifer reacts with groundwater to produce carbonic acid, which lowers the pH. It has been successfully used to neutralize a caustic brine plume at the LCP Chemical Site having a pH of 12 prior to the remedial action (Carbonaro et al., 2015; Mutch, 2016). CO2 sparging is implemented similar to biosparging. CO2 is easily transported to a site by refrigerated tanker truck and supplied in liquid form. Heated vaporizers are used to convert the liquid to a gas and then it is transferred through a manifold to injection points or wells. As in air sparging, pulsed flow can be applied to optimize the introduction and distribution of CO2 within the aquifer (FRTR, 2020). One advantage of CO2 sparging is that a large fraction may dissolve and remain in the aquifer after injection has ceased and this may provide long-term neutralization and mitigate the potential for pH rebound. Use of CO2 sparging at the Site would likely be effective to reduce pH Sitewide and would be much quicker and cost-effective than the proposed possible amendments of siderite, ferrous sulfate, pyrite, or dilute sulfuric acid. This is because injection spacing would likely be able to be much further apart, than the 10-foot spacing assumed in Section 3.7.3. This would result in fewer injection points. Also, it is unlikely that injection events would need to last as long as 29 working days, as assumed. At the LCP Chemical Site, the Phase I report (Mutch, 2014) concluded that the optimal sparging regimen was once per week (or longer if necessary due to scheduling). An average beneficial lowered pH radius of influence (ROI) of 33 feet was estimated for the deep Satilla aquifer, which was the primary zone for remedial activities (Mutch, 2014). However, an ROI or greater than 60 feet was observed at the water table surface and some gas channels were observed to travel as far as 100 feet. Sparge durations were generally for 4 hours at a time but some sparge wells required longer durations of 8 to 24 hours to provide adequate flow. CO2 sparging into the fine to medium sands of the Satilla formation was feasible without the need for fracturing (Mutch et al., 2015). The ability to influence pH at a given distance away from a sparge well is affected by the density of gas channels which is a function of the permeability and heterogeneity of the aquifer (Mutch, 2014). Sparging once to twice per week (as opposed to sparging day after day) allows the residual saturation of CO2 gas to dissolve into the water. When sparging is stopped, partial collapse of the gas channels induces local mixing within the ROI as water is forced into spaces once occupied by CO2 (Mutch, 2014). Operation of CO2 sparging at the PQ Site would also need to factor in mounding of the water table that occurs during sparging. At the LCP Chemicals Site, no sharp loss of aquifer transmissivity was observed (Mutch, 2016) and each time sparging ceased, the piezometric surface declined rapidly to levels below the original static surface (Mutch et al., 2015). CO2 sparging was extremely effective at lower concentrations of mercury (the primary metal of concern) in the deep Satilla aquifer at the LCP Chemicals Site (Mutch, 2016). Dissolved concentrations of arsenic, chromium, silicon, and vanadium all also decreased in deep Satilla wells after sparging (Carbonaro et al., 2015).	We will include CO2 sparging in the technology screening for in situ neutralization (Section 3.6.4.2), including using some of this information.	Thank you for agreeing to incorporate Ecology's comment in the revised document.
20	Section 3.7, Conditional Point of Compliance:	Ecology concurs that it would be possible to use a conditional point of compliance (CPOC) at the Site as long as the CPOC was located on the property, was located as close as possible to the source, and did not extend beyond the extent of groundwater contamination above cleanup levels at the time that Ecology approves the CPOC (WAC 173-340-720[8][d][ii]). A CPOC could not be used along Alexander Avenue to the south (as suggested at the bottom of page 43 and shown on Figures 22 through 26 and Figure 28) because it has not been demonstrated to be within the extent of groundwater contamination above cleanup levels. As illustrated on Figure 9, there is a seasonal shallow groundwater mound in the vicinity of MW-8S and -16S and groundwater flows radially from this mound. For Ecology to approve a CPOC, there would need to be sufficient on-property and downgradient CPOC monitoring wells, each within the extent of groundwater contamination above cleanup levels. The monitoring well locations shown in Figures 22 through 26 and Figure 28 do not meet this criteria.	In the document revision, we will adjust locations for southern CPOC wells to be adjacent to the Ditch, and add wells along the eastern property boundary given the eastern flow path.	Thank you for agreeing to incorporate Ecology's comment in the revised document.
21	Section 3.7, Remedial Alternatives Development:	a. Several alternatives include the construction of a pavement protective cover over contaminated soils in the Debris Fill Area and Stormwater Ditch. As mentioned in above comment 17a, the protective cover remedial alternative will not be effective for metals in the Stormwater Ditch Area because most of the soil that contains metals contamination will remain below the water table. Therefore, a protective cover to prevent leaching will have little or no effect. A protective cover to prevent leaching will also have limited effect in the Debris Fill Area because the vadose zone is only about 4 feet thick and has an average pH of 9.27 while the saturated zone has a higher average pH of 9.71 (based on boring SB-15). Please revise the alternatives to include a more effective remedial strategy for metals in the Debris Fill Area and the Stormwater Ditch.	We will reassess alternatives for discussion with Ecology.	Response noted.
		b. Monitored natural attenuation (MNA) will likely not be effective Site-wide for Alternatives 1 through 4 within a reasonable restoration timeframe because only a limited portion of the aquifer will be treated for pH/metals under these alternatives. Likewise, the proposed addition of in-situ neutralization along the northern property boundary would likely not be sufficient to reduce concentrations in a reasonable restoration timeframe in the southern and eastern portions of the Site. Additionally, as noted in Section 3.6.4.4, MNA as a cleanup action component must conform to expectations set forth in WAC 173-340-370(7). Specifically, source control must be conducted to the maximum extent practicable. It has not been demonstrated that the limited portion of the aquifer that will be treated for pH/metals meets the expectation of maximum extent practicable.	We will reassess the alternatives for discussion with Ecology. Note that the in situ treatment of dissolved-phase contaminants (outside of the inferred pH source area within the Boiler House area) included in some alternatives is not source control.	The "pH source area" should consist of the entire area that has a groundwater pH of 9 or greater. Therefore the "inferred pH source area within the Boiler House area" only includes a portion of the true source area. Please revise the document to show the pH source area as the entire area where the groundwater pH is ≥9. Groundwater dissolved metals exceedances are summarized as tabular inserts on Figures 17-20 for the 2010-2014, 2017, October 2022, and January 2023 time periods, respectively. However, isoconcentration maps for individual metals constituents (for example As, Cu, Hg, Ni, and Pb) are not shown. These would be useful and we recommend that they be included.
		c. The proposed strategy of only positioning shallow groundwater monitoring wells after cleanup and redevelopment along the northern and southern groundwater flow directions is not sufficient because of the groundwater mound that is present (see above comment 20).	See response to comment 20 re: adding CPOC wells along eastern property boundary.	Thank you for agreeing to incorporate Ecology's comment in the revised document.

Ecology Response to Response to Comments Table, draft RI/FS/CAP for PQ Corporation Site, dated August 8, 2024

Comment No.	Section	Ecology Comment	Response to Ecology Comment	Ecology Response
22	Section 3.7.1, Alternative 1 Description:	It should not be assumed that a routine Construction Stormwater General Permit (CSWGP) could be obtained for on-site treatment and discharge to surface water of groundwater from excavation dewatering. A routine CSWGP is not an option because of the contamination present at the Site and the type of treatment that would be necessary. The CSWGP only has sampling criteria for pH, turbidity, fine sediment, and phosphorous. Additional sampling and treatment criteria would be necessary for the Site. These criteria would be defined within a Site-specific Administrative Order (AO) that would be prepared by Ecology's Water Quality Program. The other options for handling of dewatering water consist of: 1) capture, contain, and transport to an appropriate disposal facility; or 2) capture, contain, and discharge to sanitary sewer. These two options would require review and approval by Ecology's Water Quality Program but would not require an AO.	Agree that an Administrative Order would be added for the CSGWP if the permit were required (if there would be discharges to surface waters of the state). That will be added to Section 3.5 and Section 3.7.1 in the revised document.	Response noted.
23	Feasibility Study, Section 3.10, DCA and Table 22:	a. The default assumption for a DCA should be unweighted criteria. If you are choosing to assign benefit criteria unevenly, the FS should document Site-specific reasons for the uneven weightings and discuss the effect on the PMEP evaluation. The observation in this section that Ecology has previously approved particular weightings on other sites is not a sufficient explanation to be considered Site-specific.	Most FS Aspect has worked on, and most FS prepared by others we have reviewed (e.g. Arkema site in Port of Tacoma), use a weighting of criteria for the DCA, and Ecology has commonly required it in our experience. The reason is protectiveness, permanence, and long-term effectiveness are (usually) recognized as more important environmental benefits than others. We don't view that as a site-specific concept, it is generally applicable. (in fact, this DCA approach is the one presented in NWETC's MTCA training that Ecology staff participate in). We will embellish the rationale for the weighed criteria in the FS.	Response noted.
		b. WAC 173-340-351(6)(b)(ii) requires at least one permanent cleanup action alternative. Please identify this alternative in the FS.	We'll revise the DCA approach consistent with the current MTCA requirements.	Response noted.
		c. For the PQ Site, Ecology does not agree with the method of subdividing the criteria of into subcategories with scoring for each subcategory because it creates layers of unnecessary complexity and subjectivity to the DCA and reduces its accuracy and usefulness. Please revise the DCA to use single scores for each of the 5 criteria (protectiveness, permanence, effectiveness over the long term, management of implementation risks, technical and administrative implementability) with narrative explaining the rationale for the scoring. When scoring the relative benefits of each alternative, use the full range of scores for each criteria. The FS may assume that a CPOC could be used (see above comment 20).	We think the detailed breakdown an appropriate way to assess the MTCA-stated factors making up each criterion and will keep it, but we will hide those rows so only the roll-up score for each critierion shows.	Response noted. However, Ecology does not agree that the detailed breakdown is appropriate and requests that our original comment be reconsidered.
		d. When discussing/comparing alternative scoring for each criteria it is preferable to refer to scores prior to applying a weighting factor (if weighting factors are used).	See response above.	Response noted. However, Ecology does not agree and requests that our original comment be reconsidered.
24	Feasibility Study, Section 3.10.2.1, Degree of Reduction in Toxicity, Mobility and Volume:	a. Alternatives 1,2, and 3 - 1st bullet: The TPH/PAH contaminated soil estimate of 100% is incorrect because it does not include TPH/PAH contamination in the Debris Fill Area.	Will add requested clarifications.	Thank you for agreeing to incorporate Ecology's comment in the revised document.
		b. Alternative 1, 2, and 3 - 2nd and 4th bullets: Please add an explanation of how this estimate was determined. Also, add the estimated gallons or acre-feet of water that is impacted and/or treated	Will add requested clarifications.	Thank you for agreeing to incorporate Ecology's comment in the revised document.
		c. Alternative 1, 2, 3, and 4 - 3rd bullet: The inferred pH soil and groundwater source area is an underestimate of the actual area of pH source (see above comments 8 and 15).	Based on the full data collection, we think the predominant pH source to groundwater is within the Boiler House area, as identified. The RI describes the presence of some solid process materials within the debris fill and ditch that may contribute to elevated pH, but not to the degree that the Boiler House area source does; that will be clarified in the revised document.	The highest groundwater pH values are within the Boiler House area (>11). However, only focusing on this area will likely significantly limit the effectiveness of the remedy because of the much larger area of groundwater pH ≥9 and the corresponding dissolved metals concentrations and area of significanly elevated soil pH. See also the response to comment 21b. Pilot-scale testing of remedial alternatives in the boiler house area might be useful to inform on the final cleanup remedy that would be effective for the Site.
		d. Alternative 4 - 4th and 5th bullets: Please add an explanation of how these estimates were determined. Also, add the estimated gallons or acre-feet of water that is impacted and/or treated.	Will add requested clarifications.	Thank you for agreeing to incorporate Ecology's comment in the revised document.
25	Feasibility Study, Section 3.10.3, Long-Term Effectiveness:	Ecology does not agree that Alternatives 1 and 2 each provide moderate effectiveness certainty for the reasons stated in the above comments. Likewise, Ecology does not agree that Alternatives 3 or 4 provide adequate long-term effectiveness.	We will reassess alternatives for discussion with Ecology.	Response noted.
26	Feasibility Study, Section 3.10.4, Short-Term Risk Management:	Ecology disagrees that the score for this criterion should necessarily be decreased with construction duration and quantities of contaminated materials handled. There needs also be more consideration given to the effectiveness of measures that will be taken to manage such risks.	We think the approach used is a reasonable basis for scoring that criterion. If you conclude every implementation worker risk is mitigated w/ engineering controls (HSP), then each alternative scores the same for that criterion, which is not the MTCA intent (i.e., there would be no reason to include the criterion in the DCA). We are open to discussion if there's a better basis than 'project size/duration' to score this criterion in a relative sense.	Ecology disagrees with your rationale. The key is the effectiveness of the the alternative to reduce existing risks. If the risk can be reduced effectively throughout the duration, then the score would be the same. However, if the effectiveness of risk reduction changes due to the length of the duration, then there would be a difference in the score. If you think there is a reduced effectiveness due to duraction then there needs to be a detailed explanation of why that is so. Otherwise, the scores would not be different.
27	Feasibility Study, Section 3.10.6, Consideration of Public Concerns:	The January 1, 2024 revised MTCA includes consideration of public concerns for Ecology-conducted or Ecology-supervised remedial actions only. Please revise the FS accordingly.	Will revise the text accordingly per new MTCA language.	Response noted.
28	Feasibility Study, Section 3.10 through 3.13:	Ecology does not concur that Alternative 2 is the preferred alternative. See above comments.	We will reassess alternatives for discussion with Ecology.	Response noted.
29	Appendix E, FS cost estimates:	a. Please explain in more detail how the lump sum cost estimates for water management were determined for each of the alternatives. This additional detail should include:	We will add more detail, although the estimated costs are based on actual construction bids for comparable projects.	PQ is a rather unique site. We are surprised that there are "comparable projects" available.

<table>
<tr><th>Comment No.</th><th>Section</th><th>Ecology Comment</th><th>Response to Ecology Comment</th><th>Ecology Response</th></tr>
<tr><td></td><td></td><td>i. Estimated area that needs to be dewatered and length of time that dewatering needs to occur.
ii. Total volume of groundwater to be pumped and storage requirements.
iii. Groundwater treatment methods to be used and cost.
iv. Cost to obtain permit approval. Discharges to surface water will require an AO from Ecology’s Water Quality Program (see above comment 22).</td><td></td><td></td></tr>
<tr><td></td><td></td><td>b. Please revise the cost estimates to assume quarterly groundwater monitoring for the first 5 years, then 5 years of semi-annual, followed by annual monitoring for the remaining years.</td><td>Agree, we will revise the cost estimate for each alternative to assume the monitoring frequency suggested in the comment. We will note that compliance at a well may be demonstrated if CULs are achieved for all analytes in four consecutive samples.</td><td>Groundwater monitorng for all wells will need to continue until compliance has been reached in all Site monitoring wells.</td></tr>
<tr><td colspan="5">Section 4 – Cleanup Action Plan</td></tr>
<tr><td>30</td><td></td><td>Following the revision of the FS, the draft CAP will need to be revised also.</td><td>Comment noted.</td><td>Response noted.</td></tr>
<tr><td colspan="5">General Comments:</td></tr>
<tr><td>31</td><td>Data Submittal:</td><td>Please ensure that all environmental data is provided in accordance with WAC 173-340-840(5) and Ecology Toxics Cleanup Program Policy 840 (Data Submittal Requirements). Data after September 28, 2017 still needs to be entered into EIM.</td><td>The validated 2022-2023 data were uploaded to Ecology's EIM on 1/17/2024. Ecology EIM staff have provided no response to the upload yet.</td><td>Response noted.</td></tr>
<tr><td>32</td><td></td><td>Please evaluate TEE and submit a terrestrial ecological evaluation (TEE) form for Ecology review and approval.</td><td>Per Chapter 1 of Ecology's (2019) TEE guidance, no TEE is required (including filling out the form to determine whether a site qualifies for simplified TEE). Section 2.2.3.1 describes the TEE exclusion applicable for the future site use and the fact that it will be enforced via environmental covenant as a component of the selected remedy.</td><td>On page 9 of the 2019 TEE guidance, in Chapter 1, under "Step 7 - Document the Process" it states "For consultants who are submitting a VCP cleanup report to Ecology, the TEE process must be filled out on a consultant form, which has been provided (see Compendium – Section D)." Please submit the completed TEE form to Ecology.</td></tr>
<tr><td>33</td><td>2. Establishment of Cleanup Standards.</td><td>Ecology has determined the cleanup levels and points of compliance you established for the Site do not meet the substantive requirements of MTCA. Additional remedial investigation and documentation of cleanup standard selection is needed prior to selecting cleanup standards.</td><td>Let us know if there are comments on our responses to specific comments below.</td><td>Response noted.</td></tr>
<tr><td>34</td><td>Cleanup Standards:</td><td>Under MTCA, cleanup standards consist of three primary components; points of compliance, cleanup levels, and applicable state and federal laws.
Ecology will need you to propose specific:
• Applicable local, state, and federal laws.
• Points of compliance.
• Cleanup screening levels used for all hazardous substances detected at all points of compliance.
• Appropriate cleanup levels for all hazardous substances that exceeded cleanup screening levels.
Ecology suggests providing revised tables detailing the specific proposed cleanup standards.</td><td>Section 2.2.3.4 and 2.2.3.5 describe, for soil and groundwater respectively, proposed cleanup standards including points of compliance. The cleanup levels include numeric standards from applicable state and federal law (e.g., listed in Table 4). We revise the cleanup levels tables to include POC information.</td><td>Response noted.</td></tr>
<tr><td>35</td><td>a. Points of Compliance.</td><td>Points of compliance, that you need to propose, are the specific locations at the Site where cleanup levels must be attained. For clarity, Ecology provides the following table of standard points of compliance:
<table><tr><th>Media</th><th>Points of Compliance</th></tr><tr><td>Soil-Direct Contact</td><td>Based on human exposure via direct contact, the standard point of compliance is throughout the Site from ground surface to fifteen feet below the ground surface.
WAC 173-340-740 (6)(d)</td></tr><tr><td>Soil- Protection of Groundwater</td><td>Based on the protection of groundwater, the standard point of compliance is throughout the Site.
WAC 173-340-747</td></tr><tr><td>Soil-Protection of Plants, Animals, and Soil Biota</td><td>Based on ecological protection, the standard point of compliance is throughout the Site from ground surface to fifteen feet below the ground surface.
WAC 173-340-7490(4)(b)</td></tr><tr><td>Groundwater</td><td>Based on the protection of groundwater quality, the standard point of compliance is throughout the site from the uppermost level of the saturated zone extending vertically to the lowest most depth which could potentially be affected by the Site.
WAC 173-340-720(8)(b)</td></tr><tr><td>Groundwater-Surface Water Protection</td><td>Based on the protection of surface water, the standard point of compliance is all locations where hazardous substances are released to surface water.
WAC 173-340-730(6)</td></tr><tr><td>Air Quality</td><td>Based on the protection of air quality, the point of compliance is indoor and ambient air throughout the Site.
WAC 173-340-750(6)</td></tr><tr><td>Sediment</td><td>Based on the protection of sediment quality, compliance with the requirements of 173-204 WAC.
WAC 173-340-760</td></tr></table></td><td>Because of the TEE exclusion, soil cleanup standards protective of terrestrial ecological receptors will be met via site-wide capping (containment), so are not otherwise discussed.</td><td>Response noted. Please see response to comment 32.</td></tr>
<tr><td>36</td><td>b. Cleanup Levels.</td><td>Cleanup levels are the concentrations of a hazardous substance in soil, water, air, or sediment that are determined to be protective of human health and the environment. Previous proposed cleanup/screening levels included MTCA Method A Industrial Land Use (soil), MTCA Method A (groundwater for protection of marine surface water), MTCA Method B (marine surface water), MTCA Method C (soil direct contact, groundwater protective of vapor intrusion), natural background (soil), and other marine surface water criteria.</td><td>Comment noted.</td><td>Response noted.</td></tr>
<tr><td>37</td><td></td><td>The appropriate gasoline range TPH Method A Cleanup Level is 30 mg/kg for soil because benzene was detected in sample TR-3C, and the benzene result for sample TR-3A exceeded the MTCA Method A Cleanup Level. Please also note that groundwater benzene results with reporting limits above applicable cleanup levels are considered exceedances of the cleanup level. Please ensure that future reporting limits are less than applicable cleanup levels.</td><td>We will change this cleanup level and update text, tables, and figures accordingly.</td><td>Thank you for agreeing to incorporate Ecology's comment in the revised document.</td></tr>
</table>

Ecology Response to Response to Comments Table, draft RI/FS/CAP for PQ Corporation Site, dated August 8, 2024

Comment No.	Section	Ecology Comment	Response to Ecology Comment	Ecology Response
38		At the nearby ProLogis Site (CSID #2240), Ecology concurred with the conclusion in the FS (Floyd | Snider, 2006a) that the shallow and intermediate groundwater is considered nonpotable based on the proximity and hydraulic connection to the brackish waters of Commencement Bay. Likewise, Ecology also concurs that shallow and intermediate groundwater beneath the Site would be considered nonpotable. However, groundwater will need to be protective of marine surface water for human health and aquatic receptors.	Comment noted. Groundwater cleanup levels incorporate applicable state and federal marine surface water quality standards as described in the document.	Response noted.
39		**Ecology will review and comment on the proposed cleanup levels after the RI/FS/dCAP has been revised and submitted.**	Comment noted.	Response noted.
40	**c. Applicable Laws and Regulations.**	In addition to establishing minimum requirements for cleanup standards, applicable local, state, and federal laws may also impose certain technical and procedural requirements for performing cleanup actions. These requirements are described in WAC 173-340-710. An online tool is currently available to help you evaluate the local requirements that may be necessary. All cleanup actions conducted under MTCA shall comply with applicable state and federal laws. The person conducting a cleanup action shall identify all applicable local, state, and federal laws. The department shall make the final interpretation on whether these requirements have been correctly identified and are legally applicable or relevant and appropriate. There are three general groups of applicable local, state, and federal laws that need to be included: **i. Chemical-Specific:** Examples of chemical-specific laws include promulgated concentrations from another rule that result in adjusting proposed cleanup levels. Method A is inclusive of these laws. For Methods B or C, additional evaluation of chemical-specific applicable state and federal laws is required. **ii. Action-Specific:** Examples of action-specific laws include requirements for obtaining local permits to excavate and/or dispose of contaminated soil, stormwater construction permits, or the requirement to notify local law enforcement in case human remains are discovered during excavation. All MTCA cleanups require evaluation of action-specific applicable state and federal laws. **iii. Location-Specific:** Examples of location-specific laws include specific requirements for working near wetlands or archeologically important areas. All MTCA cleanups require evaluation of location-specific applicable state and federal laws.	Sections 3.5 and 4.3 present state and federal laws and local requirements applicable for the site cleanup action. Chemical-, action-, location-specific are CERCLA terms, not MTCA terms, and some of the laws/requirements address more than one of them, so we did not group them by those categories. Let us know if there are specific comments regarding the applicable local, state. and federal requirements presented.	Response noted.
41	**3. Selection of Cleanup Action.**	Ecology has determined that the RI/FS/dCAP needs to be revised before selecting a cleanup action.	Comment noted, a revised report will be submitted.	Response noted.