Ecology Comments Summary (2022 to 2024)
Lakeview Facility
Lakewood, Washington
Farallon PNL 188-004

Topic	Ecology Comments Summary (2022 - 2024 Opinion Letters)[1]	Farallon Comments (2025)	Nature and Extent Defined	Number of Sampling Events (2023 to 2025)	Interim Actions Conducted	Interim Action Status	Further Action Required	Location Documented
Remedial Investigation Work								
Soil								
Soil sources	Ecology did not concur that DRO/ORO/cPAH areas remaining following prior interim actions could be covered during reclamation. Accessible soil should be removed.	Additional interim action conducted in Fall 2025 to remove affected soil.	Yes	Not Applicable	Soil excavation in Fall 2025	MTCA Method A CULs achieved for all COCs	No	2026 Interim Action Report and forthcoming revised RI report
Equipment Parking Area	TPH is an issue at MW-13. Recommended delineation of source.	TPH appears to be organic-based (polar and/or native), based on groundwater sampling data. No further assessment is necessary since source is naturally attenuated.	Yes	Not Applicable	Soil excavation in Fall 2025	MTCA Method A CULs achieved for all COCs	No	2026 Interim Action Report and forthcoming revised RI report
Former Recycled Stockpile Area	Further assessment of source of contamination to MW-24T and MW-6.	This area was further investigated and affected soil was successfully removed.	Yes	Not Applicable	Soil excavation in Fall 2025	MTCA Method A CULs achieved for all COCs	No	2026 Interim Action Report and forthcoming revised RI report
Hot-Mix Storage Area	Area around boring B-19 requires further delineation to direct interim action soil removal.	This area was further investigated and affected soil was successfully removed.	Yes	Not Applicable	Soil excavation in Fall 2025	MTCA Method A CULs achieved for all COCs	No	2026 Interim Action Report and forthcoming revised RI report
Equipment Storage Carport Area	Area around boring B-12 requires further delineation to direct an interim action for soil removal.	This area was further investigated and affected soil was successfully removed. Groundwater was not encountered to a depth of 10 feet bgs.	Yes	Not Applicable	Soil excavation in Fall 2025	MTCA Method A CULs achieved for all COCs	No	2026 Interim Action Report and forthcoming revised RI report
Former Asphalt Testing Laboratory Area	Area around boring B-16 requires further delineation to direct an interim action for soil removal.	This area was further investigated and affected soil was successfully removed.	Yes	Not Applicable	Soil excavation in Fall 2025	MTCA Method A CULs achieved for all COCs	No	2026 Interim Action Report and forthcoming revised RI report
Other - RA-MW54	No comment was provided; well was not yet installed.	DRO/ORO exceeding the MTCA Method A cleanup level was detected at a depth of 2.5 feet bgs during drilling. Lab data indicated detections appeared to be primarily polar and/or native organics. Test pits were placed in four locations adjacent to the newly installed well and all were non-detect for DRO/ORO.	Yes	Not Applicable	None required	No soil contamination identified surrounding well location	No	2026 Interim Action Report and forthcoming revised RI report
Groundwater								
Shallow Water-Bearing Zone	Additional quarterly monitoring required.	Four quarters of groundwater sampling was completed between 2023 and 2024 for the purpose of completing the RI work.	Yes	4	Removal of DRO/ORO/PAH source in soil	Groundwater monitoring required to evaluate further	Yes - future groundwater sampling as component of cleanup action	September 2024 Technical Memorandum
Deep Water-Bearing Zone	Additional quarterly monitoring required.	Four quarters of groundwater sampling was completed between 2023 and 2024 for the purpose of completing the RI work.	Yes	4	None	Not Applicable	Yes - future groundwater sampling as component of cleanup action	September 2024 Technical Memorandum
Regional Aquifer	Delineation and sampling required to assess risk to RA and Lakewood Water District supply wells and groundwater flow direction.	RA wells were installed and sampled for three quarters as of December 2025. Last quarterly sampling for purpose of completing the RI will be completed in March 2026	Yes	3	None	Not Applicable	Yes - future groundwater sampling as component of cleanup action	2026 Interim Action Report and forthcoming revised RI report
Lakewood Water District Supply Wells (Laurel Lane and Majestic Oaks)	Requested sampling data acquired by Farallon in 2024.	Sampling results were provided to Ecology in 2024. No further action is currently recommended.	Not Applicable	1	None	Not Applicable	Not at this time	Discussed in September 2024 Technical Memorandum. Documentation to be provided in forthcoming revised RI report
Arsenic and lead evaluation	Further evaluation at the Northern Parcel was requested.	Based on Ecology's comments to quarterly sampling data from 2023 to 2024, sufficient sampling has been conducted to evaluate nature and extent of arsenic and lead for the purpose of an RI. Continued groundwater monitoring to evaluate groundwater geochemistry and related dissolved arsenic concentrations will likely be conducted as a component of the future cleanup action.	Yes	4	None	Not Applicable	Yes - future groundwater sampling as component of cleanup action	September 2024 Technical Memorandum
Former Recycled Stockpile Area (Western MW-24 Area)	Further assessment of TPH nature and extent required.	Monitoring wells MW-37, -38, and -39 installed in April 2025 and sampled. DRO/ORO detected is polar organics and/or native biogenic carbon TPH. Sufficient data exists on TPH delineation. Groundwater monitoring program for the cleanup action can include periodic checks of groundwater quality at the western Site boundary.	Yes	1 to 2	None	Not Applicable	Yes - future groundwater sampling as component of cleanup action	2026 Interim Action Report and forthcoming revised RI report
DRO/ORO/PAH extent	Ecology cited data gaps for refining nature and extent in various locations and water-bearings zones.	Additional monitoring wells installed and sampled. Regional aquifer also assessed. Groundwater data indicates that PAHs are not present in groundwater and can be eliminated as a constituent of concern for the cleanup action. DRO/ORO detected is primarily polar organics and/or native biogenic carbon. No active cleanup measures will be required and monitored natural attenuation is appropriate due to evidence of polar organics.	Yes	4	None	Not Applicable	Yes - future groundwater sampling as component of cleanup action	2026 Interim Action Report and forthcoming revised RI report
Compromised well seals contributing to DRO/ORO	Additional monitoring to confirm well rehabilitation completed was successful.	Repairs conducted were documented and presented to Ecology. Groundwater monitoring as a component of the future cleanup action will be used to assess effectiveness of the well repairs.	Not Applicable	4	None	Not Applicable	Yes - future groundwater sampling as component of cleanup action	September 2024 Technical Memorandum
TCE impacts to groundwater	Further evaluation of nature and extent in the Regional Aquifer required.	RA wells were installed and sampled for three quarters as of December 2025. Last quarterly sampling for purpose of completing the RI will be completed in March 2026.	Yes	3	None	Not Applicable	Yes - future groundwater sampling as component of cleanup action	2026 Interim Action Report and forthcoming revised RI report
WBZ Impacts at the Site	Ecology concurred that TCE/DRO/ORO/cPAHs in SWBZ and DWBZ appear confined to the property but RA requires further investigation.	Groundwater monitoring at key indicator wells is being conducted to complete RI work and refine approach for groundwater monitoring for cleanup action.	Yes	4	None	Not Applicable	Yes - future groundwater sampling as component of cleanup action	2026 Interim Action Report and forthcoming revised RI report
Other - Area around AS-9,SVE-10, AS-10, and SVE-11	These locations were covered by gravel stockpiles and Ecology requested further assessment once piles are removed.	AS-10 has been accessible and has been sampled. SVE-11 is being sampled too. AS-9 and SVE-10 remain inaccessible due to the gravel stockpile. Future groundwater monitoring for the cleanup action can include the wells. If results indicate that all constituents of concern are less than the MTCA cleanup levels, sampling at these locations can be discontinued.	Not Applicable	1 to 2	None	Not Applicable	Yes - future groundwater sampling as component of cleanup action	2026 Interim Action Report and forthcoming revised RI report
Other - Area around MW-13	Ecology recommended additional characterization of DRO/ORO in the area of MW-13.	The groundwater data indicates that DRO/ORO detected at this location is polar organics and/or native biogenic carbon. Since there is no apparent actual DRO/ORO remaining, no further delineation of TPH is necessary. Monitored natural attention of residual polar organics is appropriate under MTCA.	Yes	4	None	Not Applicable	Yes - future groundwater sampling as component of cleanup action	September 2024 Technical Memorandum
Other - Area around MW-16R	Ecology believed that DRO/ORO at this location is DWBZ required further delineation.	The groundwater data indicates that DRO/ORO detected at this location is polar organics and/or native biogenic carbon. Since there is no apparent actual DRO/ORO remaining, no further delineation of TPH is necessary. Monitored natural attention of residual polar organics is appropriate under MTCA.	Yes	4	None	Not Applicable	Yes - future groundwater sampling as component of cleanup action	September 2024 Technical Memorandum
SVE Well Decommissioning	Ecology expressed concerns about SVE wells that may be screened across the SWBZ and DWBZ creating intercommunication between the water-bearing zones. Ecology recommended decommissioning wells screened over multiple water-bearing zones.	SVE-5 was the only SVE well decommissioned in 2021. Evaluation of the other SVE wells indicated SVE-3, -6, and -10 could be decommissioned. SVE-3 and -6 do not have MTCA exceedances. SVE-10 is inaccessible at this time due to the overlying gravel pile.	Not Applicable	0	None	Not Applicable	Yes - future groundwater sampling as component of cleanup action	Groundwater data is presented in September 2024 Technical Memorandum
MW-16R Area	Assessment of source of ORO in this area. Are SVE-3 and SVE-6 potential conduits to the DWBZ?	Additional groundwater sampling was conducted. The SWBZ and DWBZ appear interconnected in this area regardless of the SVE wells being screened across both WBZs. The analytical results from the SVE wells indicate that there is no DRO/ORO/cPAHs at these locations that could be transferred vertically to the DWBZ from the SWBZ. The DRO/ORO that is present at MW-16R is polar organics and/or native biogenic carbon. Therefore no further evaluation of extent of DRO/ORO/cPAHs is necessary to evaluate cleanup alternatives.	Yes	4	None	Not Applicable	Yes - future groundwater sampling as component of cleanup action	September 2024 Technical Memorandum

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General Comments								
Conceptual Site Model	Ecology recommended completing the recommended RI work to refine conceptual site model.	Sufficient work has been completed to complete an RI/FS/CAP.	Not Applicable	Not Applicable	Not Applicable	Not Applicable	To be evaluated in revised RI report	Forthcoming revised RI report
Cleanup Levels/Standards	Ecology does not approve mixing MTCA Method A and B cleanup levels with regard to soil or groundwater. One or the other must be selected.	The MTCA Method A cleanup levels for soil and groundwater are being used.	Not Applicable	Not Applicable	Not Applicable	Not Applicable	To be evaluated in revised RI report and finalized for the cleanup action following Ecology review	Forthcoming revised RI report
Revised Remedial Investigation Report	Once all recommended work has been completed a revised RI report should be submitted for Ecology's use.	Additional soil and groundwater investigation work has been conducted and will conclude in March 2026 with the completion of the Regional Aquifer groundwater evaluation work. A revised RI report will be submitted to support the selected cleanup action.	Not Applicable	Not Applicable	Not Applicable	Not Applicable	To be revised following Ecology review and comment on 2026 Interim Action Report	Forthcoming revised RI report
Feasibility Study	Ecology recommended completing a FS with a DCA following completing the work required for a revised RI report.	A Feasibility Study is not necessary. Soil excavation and removal was conducted in various stages as an interim action and has been successful at remediating soil to the extent practicable under MTCA. Groundwater quality has been improving in response to past interim actions, including application of air sparging/soil vapor extraction and source removal via excavation. Natural attenuation evaluation work has confirmed that TCE is biodegrading and is not a risk to any receptors, assuming soil and groundwater restrictions are applied to the Site cleanup to restrict access to areas and media where residual TCE that exceeds the MTCA Method A cleanup levels exists. Similarly, DRO/ORO sources have been successfully remediated and evaluation of natural attenuation has indicated that residual DRO/ORO present in groundwater is primarily a mixture of polar organics, which are less toxic than the parent petroleum products, and naturally occurring organic carbon. No further active cleanup of groundwater is necessary. Further, the groundwater impacts from DRO/ORO and CPAHs is restricted to the Site. Therefore, in light of the source area interim actions and natural attenuation evaluation, monitored natural attenuation with restrictions on use of groundwater at the Site is an acceptable cleanup alternative for groundwater under MTCA.	Not Applicable	Not Applicable	Not Applicable	Not Applicable	No formal FS planned based on RI and Interim Actions results. MNA with institutional/engineering controls is appropriate under MTCA	Not Applicable
Cleanup Action Plan	Ecology recommended completing a CAP following completing the FS.	A CAP will be provided following receipt of comments on the revised RI report with limited FS components focused on the selected cleanup action.	Not Applicable	Not Applicable	Not Applicable	Not Applicable	CAP to be prepared following Ecology review and comment on revised RI report in 2026	Forthcoming CAP
No Further Action Plan	Ecology willingness to discuss path forward after work recommended in their 2023 and 2024 opinion letters is addressed.	Additional RI and Interim Action work has been conducted between 2023 and 2025 with one additional quarterly sampling event of the newly installed RA monitoring wells remaining in March 2026. A revised RI report will then be presented for Ecology's use. A preliminary assessment of the RI and Interim Action work indicates that monitored natural attenuation and Environmental Covenant restricting access/use of soil and groundwater where the MTCA cleanup levels have not yet been achieved will be a path that meets the MTCA cleanup requirements.	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Yes, Revised RI report with applicable components of an FS, and a CAP is required	Forthcoming CAP

Notes:
[1]Comments have summarized with respect to general messaging and content for brevity purposes.

Acronyms
AS = Air sparge
COCs = Constituents of concern
cPAHs = carcinogenic polycyclic aromatic hydrocarbons
CAP = Cleanup Action Plan
CULs = cleanup levels
DRO = diesel range organics
DWBZ = Deep water-bearing zone
FS = Feasibility Study
MTCA = Model Toxics Control Act
ORO = Oil range organics
RA = Regional Aquifer
RI = Remedial Investigation
SVE = Soil Vapor Extraction
SWBZ = Shallow water-bearing zone
TCE = Trichloroethene
TPH = Total Petroleum Hydrocarbons