STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
Richland Field Office
3100 Port of Benton Blvd., Richland, WA 99354 • 509-372-7950

December 23, 2024 24-NWP-226

Ricky Bang, Deputy Assistant Manager
Tank Farms Division
Hanford Field Office
United States Department of Energy
PO Box 550
Richland, Washington 99352

Re: Transmittal of the Department of Ecology's Comments for the *FY2023 Interim Surface Barriers Annual Monitoring Report*, RPP-RPT-64887, Rev. 0

References: See page 2

Dear Ricky Bang:

The Department of Ecology (Ecology) is transmitting comments for the *FY2023 Interim Surface Barriers Annual Monitoring Report*, RPP-RPT-64887, Revision 0 (Reference 1). Ecology acknowledges that we required an extension to complete our review. Ecology transmitted a letter to ensure the United States Department of Energy was informed appropriately (Reference 2).

Enclosed is the Review Comment Record (RCR) with Ecology's comments.

We appreciate your review of these comments and look forward to resolving them at your earliest convenience.

If you have any questions or concerns, please contact Cathrene Glick, Lead Hydrogeologist, at cathrene.glick@ecy.wa.gov or (509) 209-7444.

Sincerely,

Digitally signed by
Lyon, Jeffery (ECY)
Date: 2024.12.23
13:41:12 -08'00'

Jeffery J. Lyon
Tank Systems Operation & Closure Project Manager
Nuclear Waste Program

lj/mo
Enclosure

cc: See page 3

References:

1. Letter 24-TWO-0125, dated October 17, 2024, “The U.S. Department of Energy, Hanford Field Office Transmittal of RPP-RPT-64887, 'Fiscal Year 2023 Interim Surface Barriers Annual Monitoring Report,’ Rev. 0, to Meet Hanford Federal Facility Agreement and Consent Order Interim Milestone M-045-92AH”
2. Letter 24-NWP-218-Reissue, dated November 27, 2024, “Extension of the Department of Ecology’s Comment Review Period for the *FY2023 Interim Surface Barriers Annual Monitoring Report*, RPP-RPT-64887, Rev. 0”

cc electronic w/enc:

Dave Einan, EPA
Delmar Noyes, USDOE
Jon Perry, HMIS
Michael Turner, HMIS
Thomas Beam, WRPS
James Hamilton, WRPS
Marc Levitt, WRPS
Ruben Mendoza, WRPS
Carly Nelson, WRPS
Andrew Scott, WRPS
Mason Murphy, CTUIR
Anthony Smith, NPT
Alyssa Buck, Wanapum
Laurene Contreras, YN
ERWM Staff, YN
Susan Coleman, HAB
David Reeploeg, Hanford Communities
Max Woods, ODOE
Jay Decker, Ecology
Cathrene Glick, Ecology
Edward Holbrook, Ecology
Luissa Johnston, Ecology
Jeff Lyon, Ecology
Steve Needles, Ecology
Eric Pierce, Ecology
Beth Rochette, Ecology
Stephanie Schleif, Ecology
Environmental Portal
Hanford Administrative Record
Hanford Facility Operating Record
HAB Correspondence Control
HMIS Correspondence Control
USDOE Correspondence Control
WRPS Correspondence Control

Review Comment Record	Washington State Department of Ecology Nuclear Waste Program	Date: 12/19/2024 Page 1 of 9

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Document Manager	Telephone Number	Project Manager	Telephone Number	Facility Site ID	Cleanup Site ID
		Jeff Lyon	(509) 539-1996		

Item No.	Pg. # Sec. # Para./Sent.	Comment or Question	Modification Needed	Basis/Justification	Permittee Response	Ecology Response	Open/Close	Reviewer Initials
1		General comment: Are the number of monitoring locations within the tank farms covered by the barrier enough to justify the reasoning that the barriers work? Having just one location for testing within TY farm does not seem adequate enough to justify that conclusion. In addition, the limited monitoring of SX and TY farm does not seem like a solid reason as to w24-NWPhy monitoring at TX farm is not done.	Revise future interim surface barrier designs to increase monitoring locations within a tank farm and revise and update the "Maintenance and Performance Monitoring Plan for the Interim Barriers Program".	RPP-RPT-61684, Rev. 3B states that the purpose of the ISB surveillance and monitoring is to ensure "effective prevention of moisture intrusion under the ISB over the 25-year service life" Without enough monitoring locations, it is inaccurate to state that the barriers at each farm work as each farm will have slightly different variables affecting efficiency.				LJ
2		General: In many instances, it is stated that there are cracks in the ISB. Observed cracks should be patched. If patches continue to crack, then this demonstrates barrier is not going to be effective.	Submit justification that cracks in the barrier do not need to be patched for the barrier to be effective. Otherwise, submit plan to patch the cracks and observe over time to determine if cracking continues. Submit plan to address the potential problem of continued cracking of patched areas.	Justification				LJ
3		General: With all the malfunctioning monitoring equipment across the tank farms and the basis for conclusions as "not strong" for some of the results, how can a conclusion that the ISB is serving its intended purpose be accurate? Is there a baseline or does the data shown in the tables include the baseline?	Malfunctioning monitoring equipment would need to be repaired in order to meet the criteria of being routinely included in the ISBs annual monitoring report. Revise text to clarify how the ISB is serving its intended purpose without functional equipment as a source. Clarify in the text if the data in the tables includes a baseline, or include baseline information in the tables if it is not present.	RPP-RPT-61684, Rev. 3B states that "Data from these monitoring stations will be routinely published in the ISBs annual monitoring report." If equipment is malfunctioning, data is not able to be reported per the monitoring plan. Report also states that "Because the monitoring systems have fulfilled their intended purpose and show that the ISBs effectively control moisture beneath the barriers, there is no need, nor are thre plans to replace failed monitoring equipment." If there is no plan on equipment being repaired or replaced, the conclusion that the ISB is serving it's intended purpose is inaccurate.				LJ

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4	Pg. 1-3 Sec. 1-1 Para.1/bullet 3	Is the MatCon sealant applied approximately every 10 years per MatCon recommendations?	State specifically how the MatCon surface will be maintained and any variations to MatCon recommendations.	Clarification.				MCM
5	Pg. 1-6 Sec. 1-3 Para. 1/Sent.	Efficacy of a test cannot be determined without a control. No justification was stated.	In the future add a control. State why no control was used.	Quality control. Clarification				MCM
6	Pg. 1-7 Sec. 1-4 Para. 4/Sent	The text reads: "The performance monitoring instruments at T Farm, TY Farm, and SX Farm have yielded significant data demonstrating the effectiveness of the ISBs in redirecting precipitation and significantly reducing infiltration." A good portion of the data is statistically insignificant.	Remove the word "significant."	Realistic representation.				MCM
7	Pg. 1-7 Sec. 1.4 Para. 1	Text reads "The performance monitoring instruments at T Farm, TY Farm, and SX Farm have yielded significant data demonstrating the effectiveness of the ISBs in redirecting precipitation and significantly reducing infiltration. Consequently, the TX Farm ISB design, which has received approval from both the DOE and Ecology, did not include subsurface monitoring. For TX Farm ISB, Performance monitoring is demonstrated through the surveillance and maintenance program described in section 2.0 of this report." It is noted that the ISBs have demonstrated the ability to redirect precipitation and surface water the actual infiltration reduction of the MatCon asphalt product is still subject to individual contractor batching, spreading, thickness, and compaction effort which is a case-by-case/ site-by-site issues and not a "one and done" situation. In addition, existing MatCon ISBs were installed during a prolonged drought period and have only been subjected to short 1-2 day rain events with individual rain events totals below or reaching 125 year mean rain totals and have not experienced long persistent rain seasons to test the infiltration performance.	There is a potential for vadose zone sediment varitions at each WMA, combined with opportunites for material variations and construction processes of each MatCon ISB, such that each ISB requires an independant subsurface/vadose zone monitoring system to demonstrate that each ISB is reducing infiltration and maintaining low soil moisture conditions not only through periods of extended drought but during seasons of extended precipitation.	Each closure action, including interim closure actions such as the ISBs, requires independent verifiable monitoring of subsurface/vadose zone moisture conditions to assure the effectiveness of the closure action. Because of this, it is necessary to verify that these systems are effective for extended periods of time. This design feature has not been included and performance is not monitored sufficiently to support verification of barrier effectiveness. Ecology would like to discuss this concern and to consider the basis of your current design. Following our discussion Ecology will determine if further monitoring is required, and provide our response."				CDG
8	Pg. 2-1 Sec. 2.1 Para. 3/Sent.2	The sentence related to T-Farm states that "Despite the wear, ISB still meets the intended purpose and design function of the demonstration project by limiting infiltration into the vadose zone beneath the polyurea barrier."	Include where the wear is in relation to the monitoring locations. It is unclear how it has been concluded that the barrier has met its intended purpose and limits infiltration if the areas beneath the worn out sections of the barrier are not monitored.	RPP-RPT-61684, Rev. 3B states that "The purpose of the ISB surveillance and maintenance program at T Tank farm is to ensure effective preventative moistire intrusion under the				LJ

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				ISB over the 25-year service life."				
9	Pg. 2-2 Table 2-1 241-T Tank Farm	In the "Corrective Action Status" column it states that no repairs are planned since the barrier will be removed in FY25. What happens if the removal is delayed? Would repairs still not be done?	Clarify what interim corrective action will be completed in the event that the barrier removal is delayed so as to ensure the current barrier is still effective	RPP-RPT-61684, Rev. 3B states that "The purpose of the ISB surveillance and maintenance program at T Tank farm is to ensure effective preventative moistire intrusion under the ISB over the 25-year service life."				LJ
10	Pg. 2-2 Table 2-1 241-TY Tank Farm	Fourth quarter inspection states that signs of pooling water indicate water is not penetrating ISB. This does not seem like enough of a justification.	Submit a stronger argument based off of testing that shows that pooling water is not penetrating the ISB, or submit plan to assist water to run off the barrier in areas where it is significantly pooling, as in areas where there are tears or dips causing pooling. Revise future interim surface barrier designs to describe how pooling of water will be prevented/mitigated and revise and update the "Maintenance and Performance Monitoring Plan for the Interim Barriers Program" with this informaiton.	Pooling of water is not addressed in the Maintenance and Performance Monitorign Plan. As that seems to be an on-going issue, it should be added.				LJ
11	Pg. 2-2 Table 2-1 241-TY Tank Farm	It is stated that cracks were patched during Fall of 2023, but does not indicate if the patches changed over time.	Clarify if the patches remained unchanged after initial patching. If patches have changed since patching, submit plan to determine cause and plan to fix. Revise future interim surface barrier designs to describe how cracks will be prevented/mitigated and revise and update the "Maintenance and Performance Monitoring Plan for the Interim Barriers Program" with this informaiton.	Cracks in the ISB is not addressed in the Maintenance and Performance Monitorign Plan. As that seems to be an on-going issue, it should be added.				LJ
12	Pg. 2-2 Table 2-1 241-TY Tank Farm	"Pooling water is consistent with design of ISB. There are no barrier integrity concerns." Is the design of the ISB not made to have water run off the barrier rather than pool onto it? If that is not the case then wouldn't pooling in some locations indicate pooling could be occurring at other locations where integrity is weaker and intruding into the tank farm?	Provide content that pooling and intrusion is not occurring at areas of the barrier of potential weaker integrity (as seen by cracks). Add a reference to where "pooling of water is consistent with design of ISB" is mentioned in other reports.	Address how pooling of water still meets the obligations of RPP-RPT-61684, Rev. 3B that states "The purpose of the ISB surveillance and maintenance program at T Tank farm is to ensure effective preventative moistire intrusion under the ISB over the 25-year service life."				LJ
13	Pg. 2-2 Table 2-1	Text states "The size of the cracks above the "mound" have remained stable over the past four	Clarify how the presence of cracks demonstrates the effectiveness of the ISB surface and if these cracks were patched. If these cracks were patched,	Cracks in the ISB is not addressed in the Maintenance and Performance Monitorign				LJ

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	241-TY Tank Farm	years, demonstrating the stability and effectiveness of the ISB surface." Stability of cracks is not an indication of stability and effectiveness of the ISB surface, only that the cracks have not grown. It is also not stated if these are the cracks that were patched, and if so, if the patching remained stable.	clarify if the patches remained unchanged after initial patching. If patches have changed since patching, submit plan to determine cause and plan to fix. Revise future interim surface barrier designs to describe how cracks will be prevented/mitigated and revise and update the "Maintenance and Performance Monitoring Plan for the Interim Barriers Program" with this informaiton.	Plan. As that seems to be an on-going issue, it should be added.				
14	Pg. 2-2 Table 2-1 241-TY Tank Farm	Walkdown Observations identify cracks in the MatCon asphalt ISB which have been patched. The Corrective Action Status states "The size of the cracks above the "mound" have remained stable over the past four years, demonstrating the stability and effectiveness of the ISB surface." Observation of crack conditions does not by itself support the statement for "effectiveness of the ISB surface" without supporting subsurface monitoring data documenting continued low moisture conditions in the vadose zone.	Provide content and/or reference data supporting continuity of low soil moisture conditions supporting that these cracks in the MatCon ISB are not of engineering significance for infiltration of water into the vadose zone.	Provide supporting data or engineering information for conclusion.				CDG
15	Pg. 2-3 Table 2-1 241-SX Tank Farm	Second quarter states that the "area around evapotranspiration basin was repaired."	Include what the repair was.	Statement is vague as to the type of repair that was performed.				LJ
16	Pg. 2-4 Table 2-1 241-TX Tank Farm	Second Quarter Walkdown Observations identify "Tank 241-TX-101 has rainwater pooling on some pits." Given the latest information on intrusion into TX-101 which is attributed to "funneling from the ISB", the conclusion that "pooling of water above the pits evaporates and does not impact the performance of the ISB."	Reconcile how observing pooling of water can be confirmation that there is no infiltration thru the ISB – specifically in relationship to knowledge of water intrusion into TX-101. Absence of ex-tank monitoring data can not corroborate this conclusion.	Provide supporting data or engineering information for conclusion.				CDG
17	Pg. 2-4 Table 2-1 241-TX Tank Farm	Second quarter states that "minor pooling of water above the pits evaporates and does not impact the performance of the ISB" for Tank 241-TX-101. Pooling of water does not seem to be enough validation that the ISB are performing properly. The fact that this tank possibly has some issues of intrusion now shows the flaw in this logic.	Additional justification is needed to prove the ISB works at TX farm via monitoring, especially given the circumstance where TX-101 might have intrusion issues. Justify how pooling of water at TX-101 does not impact performance of the ISB, or what fixes will be implemented to address the absence of monitoring that would otherwise have helped determine if intrusion was occurring into the vadose zone. Revise future interim surface barrier designs to describe how pooling of water will be prevented/mitigated and revise and update the "Maintenance and Performance Monitoring Plan for the Interim Barriers Program" with this information, especially in locations where pits are below grade.	Pooling of water is not addressed in the Maintenance and Performance Monitorign Plan. As that seems to be an on-going issue, it should be added.				LJ

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18	Page 2-4 Table 2-1 241-TX Tank Farm	Third Quarter Walkdown Observations identify "Some of the sealant appears to be aged and to have sunk into locations where applied. Current condition is not leaking and acceptable. May want to consider performing another application in the near future." It is unclear how a surface observation can conclude "current condition is not leaking".	Provide content and/or reference data supporting conclusion that "current condition is not leaking and acceptable.	Provide supporting data or engineering information for conclusion.				CDG
19	Pg. 3-1 Sec. 3 Table 3-1	The functionality is only listed for 2023.	Include a graph(s) for the functionality of each year of operation.	Quality control.				MCM
20	Pg. 3-2 Sec. 3.1 Para. 2/Sent. 4-5	The text reads: "Replacement of nest batteries and other above ground equipment restored service temporarily to a few CPs." CP data stopped between 2017 and 2022, why did it take so long to perform maintenance?	Maintain equipment.	Quality control.				MCM
21	Pg. 3-2 Sec. 3.1.1 Para. 4/Sent. 2	The text reads: "Replacement of nest batteries and other above ground equipment in May 2022 restored service or communication with most of the HDUs that had previously not provided results, except for at Nest TA." Why did it take so long to perform maintenance?	Maintain equipment	Quality control.				MCM
22	Pg. 3-2 Sec. 3.1.1 Para. 4/Sent. 3	The text reads: "Wireless communication at Nest TA was reestablished in March 2023 and the data gap was filled in from the last communication in June 2020." How was the data during the gap determined for the years where communication was down?	Clarify how the data gap was filled.	Clarification.				MCM
23	Pg. 3-3 Sec. 3.2 Para. Last	The paragraph states that there were many data collection problems and interruptions. If so, how did you determine statistical significance?	State how statistical significance was determined.	Data quality.				MCM
24	Pg. 3-3 Sec. 3.3 Para. 1/Sent. Last	The text reads: "are presented relative to the end of FY2023." There is no reference to where the data is presented.	Add a reference, table number or whatnot.	Clarification.				MCM
25	Pg. 3-3 Sec. 3.3 Para. 2/Sent. 1	Which statistical method did you use to determine outliers?	State which statistical method was used.	Clarification and data quality.				MCM
26	Pg. 3-3 Sec. 3.3.1.1 Para. 4/Sent. 1	The text reads: "HDU data collected at Nest TA illustrate the dampening effect of depth on the cyclic infiltration that occurs at the surface in response to precipitation events."	Add a precipitation graph.	Reference material.				MCM

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		It would be helpful to see a precipitation graph for reference.						
27	Pg. 3-6 Sec. 3.3.1.1 Para. 1/Sent. Last	The text reads: "These results indicate that the changes in matric potential at Nest TA have been relatively small in magnitude (i.e., less than 1 m), and the changes from year to year exhibit no consistent or apparent trend (Figure 3-2)." It would be helpful to see a comparison of yearly precipitation.	Add a precipitation graph.	Reference material.				MCM
28	Pg. 3-6 Para. 1/ Sent. 1	Table 3-3 text seems to be inaccurate. The linked table referencing Nest TA shows as Table 3-2.	Confirm the table referenced in the text is referencing the correct table below.	Clarification.				LJ
29	Pg. 3-9 Para. 1/ Sent. 1	Table 3-4 text seems to be inaccurate. The linked table referencing Nest TB shows as Table 3-3.	Confirm the table referenced in the text is referencing the correct table below.	Clarification.				LJ
30	Pg. 3-12 Para. 1/ Sent. 2	Table 3-5 text seems to be inaccurate. The linked table referencing Nest TC shows as Table 3-4.	Confirm the table referenced in the text is referencing the correct table below.	Clarification.				LJ
31	Pg. 3-12 Para. 1/ Sent. 2	Table 3-6 text seems to be inaccurate. The linked table referencing Nest TD shows as Table 3-5.	Confirm the table referenced in the text is referencing the correct table below.	Clarification.				LJ
32	Pg. 3-12 Sec. 3.3.1.2 Para. 2/ Sent. 2, 3, 4	Table 3-7 text seems to be inaccurate. The linked table referencing neutron probe moisture content shows as Table 3-6.	Confirm the table referenced in the text is referencing the correct table below.	Clarification.				LJ
33	Pg. 3-25 Sec. 3.3.2.1 Para. 2/ Sent. 3	Table 3-8 text seems to be inaccurate. The linked table referencing Nest TYA shows as Table 3-7.	Confirm the table referenced in the text is referencing the correct table below.	Clarification.				LJ
34	Pg. 3-18, 19, 20, 21, 31, 32 Sec. 3.3.1.2 Figures 3-7, 3-8, 3-9, 3-10, 15, 16	From the uncertainty bounds, there appears to be a difference in precision from the initial year compared to 2023.	List differences or changes to testing methods between dates.	Data quality.				MCM
35	Pg. 3-24 Section 3.3.1.3	Text reads "Monitoring results at T Tank Farm indicate that the ISB is serving its intended purpose to decrease recharge of water to the vadose zone and reduce the impact of meteoric water on subsurface vadose zone contamination." Noting that the ISB was constructed, and all monitoring has been performed, during a prolonged drought period the presence of the ISB is not the only factor in play for subsurface soil/vadose zone moisture reduction.	Include hydrologic data addressing continued drought conditions as a contributing factor to the decrease in recharge of water to the vadose zone not just the presence of the ISB.	Provide supporting hydrologic data addressing the prolonged lack of precipitation supporting conclusion.				CDG
36	Pg. 3-28 Sec. 3.3.2.1 Para. 2	Text reads "The sudden increases in the matric potential observed at Nest TYB on January 26, 2012, January 23, 2017, and March 15, 2019 appear to be caused by the melt and infiltration of snow, ice pellets (sleet), or ice through a 7 m (12 ft) diameter circular open area that is 2 m (7 ft) away from Nest TYB." Data supports the concern that moisture can/does penetrate through the ISB,	There is a potential for vadose zone sediment varitions at each WMA, combined with opportunites for material variations and construction processes of each MatCon ISB, such that each ISB requires an independant subsurface/vadose zone monitoring system to demonstrate that each ISB is reducing infiltration and maintaining low soil moisture conditions not	Each closure action, including interim closure actions such as the ISBs, requires independent verifiable monitoring of subsurface/vadose zone moisture conditions to assure				CDG

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		although not necessarily through the MatCon asphalt material, reinforcing the need for subsurface soil/vadose zone monitoring at each ISB for compliance purposes.	only through periods of extended drought but during seasons of extended precipitation.	the effectiveness of the closure action. Because of this, it is necessary to verify that these systems are effective for extended periods of time. This design feature has not been included and performance is not monitored sufficiently to support verification of barrier effectiveness. Ecology would like to discuss this concern and to consider the basis of your current design. Following our discussion Ecology will determine if further monitoring is required, and provide our response."			
37	Pg. 3-28 Para. 1/ Sent. 2	Table 3-9 text seems to be inaccurate. The linked table referencing Nest TYB shows as Table 3-8.	Confirm the table referenced in the text is referencing the correct table below.	Clarification.				LJ
38	Pg. 3-28 Sec. 3.3.2.2 Para. 2/ Sent. 2, 3, 4	Table 3-10 text seems to be inaccurate. The linked table referencing Nest TYA shows as Table 3-9.	Confirm the table referenced in the text is referencing the correct table below.	Clarification.				LJ
39	Pg. 3-34 Sec. 3.3.2.3	Text reads "The Nest TYB HDU and neutron probe measurements appear to be impacted by the melt and infiltration of snow, ice pellets (sleet), or ice through a 7 m (12 ft) diameter circular open area that is 2 m (7 ft) away from the nest (RPP-RPT-64463)." Again, data supports the concern that moisture can/does penetrate through the ISB, although not necessarily through the MatCon asphalt material, reinforcing the need for subsurface soil/vadose zone monitoring at each ISB for compliance purposes.	There is a potential for vadose zone sediment varitions at each WMA, combined with opportunites for material variations and construction processes of each MatCon ISB, such that each ISB requires an independant subsurface/vadose zone monitoring system to demonstrate that each ISB is reducing infiltration and maintaining low soil moisture conditions not only through periods of extended drought but during seasons of extended precipitation.	Each closure action, including interim closure actions such as the ISBs, requires independent verifiable monitoring of subsurface/vadose zone moisture conditions to assure the effectiveness of the closure action. Because of this, it is necessary to verify that these systems are effective for extended periods of time. This design feature has not been included and performance is not monitored sufficiently to support verification of barrier effectiveness. Ecology would like to discuss this concern and to consider the basis of your current design. Following our discussion Ecology will determine if			CDG

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				further monitoring is required, and provide our response."				
40	Pg. 3-34 Sec. 3.3.2.3	If the Nest TYB which is the only nest within the tank farm ISB is being impacted by melt and infiltration of snow, ice pellets, or ice, how can it be used to justify the entire barrier is working?	Clarify how the only monitoring location within the tank farm for TY Farm can be used to justify the entire barrier is working if it is known to be impacted by melt. Revise future interim surface barrier designs to describe how melt, infiltration of snow, ice pellets, or ice will be prevented/mitigated and revise and update the "Maintenance and Performance Monitoring Plan for the Interim Barriers Program" with this information. .	Melt, infiltration of snow, ice pellets or ice is not addressed in the Maintenance and Performance Monitorign Plan. As that seems to be an on-going issue, it should be added. If melt, infiltration of snow, ice pellets or ice has not been addressed before, the justification that the barrier is working based off of past data is now inaccurate.				LJ
41	Pg. 3-36 Para. 1/ Sent. 2	Table 3-11 and 3-12 text seem to be inaccurate. The linked tables referencing HDU data for SX1 and SX2 show as Table 3-10 and Table 3-11.	Confirm the table referenced in the text is referencing the correct table below.	Clarification.				LJ
42	Pg. 3-41 Sec. 3.3.3.2 Para. 1/ Sent.5, 7, 8	Table 3-13 text seems to be inaccurate. The linked table referencing count of moisture content shows as Table 3-12.	Confirm the table referenced in the text is referencing the correct table below.	Clarification.				LJ
43	Pg. 3-50 Sec. 3.4	Text reads "While some HDU equipment malfunctions were noted, the prevailing trend indicates a decrease in soil moisture in proximity to the monitoring sensors, attributable to the ISB installations." and "Neutron probe data collected outside the ISBs at the TA and TYA instrument nests clearly illustrate soil moisture changes due to environmental conditions." Data indicates/documents that soil moisture conditions change beyond the extent of the ISB due to "environmental conditions" with little moisture change beneath the ISB however it is again stated that the ISBs were installed and have been monitored during extended drought conditions. The limited daily precipitation and snow accumulation at the SST sites is insufficient to support evidence that the lack of subsurface moisture change is wholly attributed to the ISB.	There is a potential for vadose zone sediment varitions at each WMA, combined with opportunites for material variations and construction processes of each MatCon ISB, such that each ISB requires an independant subsurface/vadose zone monitoring system to demonstrate that each ISB is reducing infiltration and maintaining low soil moisture conditions not only through periods of extended drought but during seasons of extended precipitation.	Each closure action, including interim closure actions such as the ISBs, requires independent verifiable monitoring of subsurface/vadose zone moisture conditions to assure the effectiveness of the closure action. Because of this, it is necessary to verify that these systems are effective for extended periods of time. This design feature has not been included and performance is not monitored sufficiently to support verification of barrier effectiveness. Ecology would like to discuss this concern and to consider the basis of your current design. Following our discussion Ecology will determine if further monitoring is required, and provide our response."				CDG

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44	Pg. 3-50 Sec. 3.5 Para. 1/ Sent. 2	Table 3-2 seems to be missing from the report. It is not linked to any other table.	Confirm if this table is supposed to be in this report, or is referencing a table in document RPP-RPT-61684	Clarification.				LJ
45	Pg. 5-1 Section 5.0	Text reads: "The Ecology approved design for the U Tank Farm ISB did not include performance monitoring equipment based on the premise that monitoring systems have effectively fulfilled their intended purpose of showing effective moisture control under the barrier and that ISBs are reducing the impact of meteoric water on the near-surface soil-retained moisture conditions."	Understanding that the decision was made not to require performance monitoring for U-Farm, given that the ISBs have not been subjected to above average precipitation for extended periods of time the need for in-situ monitoring should be re-evaluated.	Each closure action, including interim closure actions such as the ISBs, requires independent verifiable monitoring of subsurface/vadose zone moisture conditions to assure the effectiveness of the closure action.				CDG
46	Page A-28, A-29, A-30 Q2 and Q4 FY2023 TX Farm Photos	Photos depict snow/snowmelt/rain in pit above TX-101. Given the latest information on intrusion into TX-101 which is attributed to "funneling from the ISB", the conclusion that "pooling of water above the pits evaporates and does not impact the performance of the ISB".	Reconcile how observing pooling of water can be confirmation that there is no infiltration thru the ISB – specifically in relationship to knowledge of water intrusion into TX-101. Absence of ex-tank monitoring data can not corroborate this conclusion.	Provide supporting data or engineering information for conclusion.				CDG