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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 10  
HANFORD/INL PROJECT OFFICE  
825 Jadwin Ave., Suite 210  
Richland, Washington 99352

OFFICE OF  
ENVIRONMENTAL  
CLEANUP

November 2, 2015

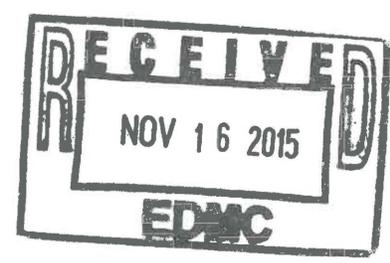
Ray J. Corey  
Assistant Manager for the River and Plateau  
U.S. Department of Energy  
PO Box 550, A5-11  
Richland, Washington 99352

**RE: Comments on the Remedial Design/Remedial Action (RD/RA) Work Plan for the 200-CW-5, 200-PW-1, 200-PW-3, and 200-PW-6 Operable Units, DOE/RL-2015-23, Draft B and the Sampling and Analysis Plan for the 200-CW-5, 200-PW-1, 200-PW-3, and 200-PW-6 Operable Units, DOE/RL-2015-32, Draft A**

Dear Mr. Corey,

The U.S. Environmental Protection Agency (EPA) received the documents referenced above on September 30, 2015. EPA would like to note that although the work plan is identified as a Draft B, this is the first draft that EPA is reviewing for both documents. The following items are high level concerns we would like to discuss with the Department of Energy (DOE).

- 1) Schedules for cleanup are enforceable and should be clearly identified in the RD/RA work plan. EPA does not support the use of duration schedules in RD/RA work plans nor do we support the accompanying milestone package to "submit a change package to establish schedules for cleanup". EPA expects a revised schedule with actual dates for initiation and completion of cleanup. EPA understands the challenges of establishing schedules that involve disposal at the Waste Isolation Pilot Plant (WIPP), however, we note that schedules and milestones can be adjusted if justified based on issues related to WIPP.
- 2) The cost estimates for this work are much higher than those estimates from the Record of Decision. It appears a large portion of this cost can be attributed to the increased use of weather enclosures, an 8 year timeframe to acquire remediation systems, an overall 20 year cleanup timeframe, and a 60% efficiency rate for soil removal. This long timeframe and low efficiency rate are of concern to EPA and warrant additional discussion.
- 3) EPA and DOE should work together to identify which criteria will be used to determine if additional excavation will be conducted at the 216-A-1A Tile Field, 216-Z-9 Trench, and the 216-Z-18 Crib and include those criteria in the RD/RA Work Plan. The work plan currently states an assumption that additional excavation will not be conducted at these sites.



DOE/RL-2015-23 Draft B - 1231411

EPA wants the 30% and 90% designs to be transmitted to the local office for review. Final review and approval will occur when the final remedial design report (100% design) is submitted. Enclosed are specific comments on the documents. We look forward to working with DOE on editing and finalizing the RD/RA work plan and accompanying SAP. Feel free to contact me at [laija.emerald@epa.gov](mailto:laija.emerald@epa.gov) or (509) 376-4919 with any questions or concerns.

Sincerely,



Emerald Laija  
Remedial Project Manager

Enclosure

Cc (electronically):

Administrative Record (200-CW-5, 200-PW-1, 200-PW-3, 200-PW-6 OUs)

Jane Hedges, Ecology

Nina Menard, Ecology

Robert Long, Jr., DOE

Ken Niles, ODOE

**Enclosure (7 pages)**

- 1) **General Comment:** Schedules for cleanup are enforceable and should be clearly identified in the RD/RA work plan. EPA does not support the use of duration schedules in RD/RA work plans nor do we support the accompanying milestone package to “submit a change package to establish schedules for cleanup”. EPA expects a revised schedule with actual dates for initiation and completion of cleanup. EPA understands the challenges of establishing schedules that involve disposal at the Waste Isolation Pilot Plant (WIPP), however, we note that schedules and milestones can be adjusted if justified based on issues related to WIPP.
- 2) **General Comment:** The cost estimates for this work are much higher than those estimates from the Record of Decision. It appears a large portion of this cost can be attributed to the increased use of weather enclosures, an 8 year timeframe to acquire remediation systems, an overall 20 year cleanup timeframe, and a 60% efficiency rate for soil removal. This long timeframe and low efficiency rate are of concern to EPA and warrant additional discussion.

Why was it determined that enclosures would be used for any material >5 nCi/g. What are the associated health and safety precautions usually taken for material that is >5 nCi/g and <100 nCi/g?

- 3) **Executive Summary, Pg. vi, Lines 1-7:** The language describing transferring of the pipelines should be removed from this section. EPA and DOE have discussed this issue and identified that an ESD will not be necessary.
- 4) **Executive Summary, Pg. vii, Lines 21-25:** The settling tank work will require an Explanation of Significant Difference (ESD) or ROD Amendment. A sentence should be added that describes the need for an additional decision document to address this change.
- 5) **Executive Summary, Pg. viii, Line 13:** A 20 year timeframe does not seem like a reasonable timeframe for this work. This timeframe should be clarified and discussed further with EPA.
- 6) **Section 1.4, Site Description and Background, Pg. 1-4, Lines 21-25:** This language is different from the land use language used in the ROD. These lines should be deleted or edited to match the ROD as follows:

“DOE issued the *Hanford Comprehensive Land-Use Plan Environmental Impact Statement* (HCP EIS [DOE/EIS-0222-F]) and associated HCP EIS ROD (64 FR 61615) in 1999. The HCP EIS presents the potential environmental impacts of alternative land-use plans for Hanford and presents the land-use implication of ongoing and proposed activities. Under the preferred land-use alternative selected in the HCP EIS ROD, the Central Plateau was designated for industrial exclusive use, defined

as areas suitable and desirable for TSD of hazardous, dangerous, radioactive, and nonradioactive wastes, as well as related activities.”

- 7) **Section 2.2.1.4, Settling Tank Waste Group Remedy Components. Page. 2-4, Line 13:** It is unclear what “previous investigation” refers to in this sentence. Is this paragraph suggesting that since the structural integrity of the tanks could not be verified, that an alternative remedial action (RA) should be considered? What new information came to light that made DOE change from the remedy selected in the ROD to this alternative RA?
- 8) **Section 2.2.1.4, Settling Tank Waste Group Remedy Components. Page. 2-4, Line 31:** If this alternative RA is implemented, it would require an ESD or ROD Amendment. This sentence should be clarified.
- 9) **Section 3.4, Design Approach, Pg. 3-3 through 3-4, Line 39:** What type of integration is envisioned between CERCLA documentation and DOE O 413.3B CD deliverables? Minimizing duplication should not negatively affect or change the intent of CERCLA documents.
- 10) **Section 3.4.1, Remedial Design Report, Pg. 3-5, Lines 30-33:** EPA wants the 30% and 90% designs to be transmitted to the local office for review. Final review and approval will occur when the final remedial design report (100% design) is submitted.

It is unclear if UMMs refer to the standing 200 Area UMMs or if these refer to project specific meetings. Project-specific meetings should be held to discuss design progress and to address issues. Update the language in this paragraph to address these expectations.

- 11) **Section 3.4.1, Remedial Design Report, Pg. 3-5, Lines 34-35:** Any changes to process will require agreement from both DOE and EPA. Clarify the language accordingly.
- 12) **Section 3.4.1, Remedial Design Report, Pg. 3-5, Lines 36-37:** Edit the sentence to state that DOE-RL will transmit a hard copy of the draft remedial design package and design schedule to EPA at the local field office.
- 13) **Section 3.4.1, Remedial Design Report, Pg. 3-6, Lines 2-4:** Two weeks is not sufficient time to review a design document. Schedules should assume a minimum of 30 days review time.
- 14) **Section 3.4.1, Remedial Design Report, Pg. 3-6, Lines 8-9:** Edit the sentence to state that DOE-RL will transmit a hard copy of the final remedial design package and design schedule to EPA at the local field office.
- 15) **Section 3.4.2, Air Monitoring Plans, Pg. 3-6, Lines 24-25:** EPA wants the air monitoring plan to be transmitted to the local office for review. Clarify the language accordingly.

- 16) **Section 3.4.2, Air Monitoring Plans, Pg. 3-6, Lines 33-35:** Two weeks is not sufficient time to review a design document. Schedules should assume a minimum of 30 days review time.
- 17) **Section 3.4.2, Air Monitoring Plans, Pg. 3-7, Lines 1-2:** Edit the sentence to state that DOE-RL will transmit a hard copy of the AMP to EPA at the local field office.
- 18) **Section 4.3.1.3, Assumptions, Pg. 4-11, Lines 8-9:** How will it be determined if samples are greater than 2g of plutonium?
- 19) **Section 4.3.2.1, Scope, Pg. 4-18, Line 4:** EPA will want to see survey data confirming appropriate levels before backfilling occurs. This bullet only references DOE, but does not mention EPA.
- 20) **Section 4.3.2.2, Deliverables, Pg. 4-20, Lines 10-13:** This bullet states that DOE-RL will determine if additional plutonium will be removed from a waste site, but there is no section in the document that discusses the criteria that will be used to determine if further excavation is warranted. DOE and EPA should have a discussion on this criteria and include it in the work plan.
- 21) **Section 4.3.2.3, Assumptions, Pg. 4-20, Lines 32-33:** This bullet states the assumption that additional excavation will not be required at the high-salt waste sites. This seems to go against the intent of the ROD which states "After excavating to the specified depths in these waste sites, plutonium-239/240 levels will be assessed in accordance with a sampling and analysis plan that will be part of the RD/RA work plan. DOE will consider removing additional plutonium-contaminated soil from these waste sites." If DOE is already assuming excavation is no needed, then it seems no considerations will be made. This assumption should be removed. EPA and DOE should work together to identify which criteria will be used to determine if additional excavation will be conducted at the 216-A-1A Tile Field, 216-Z-9 Trench, and the 216-Z-18 Crib and include those criteria in the work plan.
- 22) **Section 4.3.2.3, Assumptions, Pg. 4-21, Lines 18-19:** Explain why TRU soil and debris will not require treatment to meet the current WIPP waste criteria. How will this waste be packaged?
- 23) **Section 4.3.2.3, Assumptions, Pg. 4-21, Lines 31-32:** Explain how mixing during excavation will increase or decrease the relative volume of TRU or LLW. It seems it should either increase or decrease the volume, but not both. Clarify the language.
- 24) **Section 4.3.2.6, Completion Criteria, Pg. 4-24, Lines 6-8:** Where will the contaminated soil and debris removed from the listed waste sites be sent for treatment and disposal?

- 25) **Section 4.3.2.6, Completion Criteria, Pg. 4-24, Line 9:** EPA also expects to see the results of verification sampling.
- 26) **Section 4.3.3.1, Scope, Pg. 4-25, Line 15:** Clarify where dispositioned soil will be disposed after assay is done.
- 27) **Section 4.3.3.1, Scope, Pg. 4-25, Lines 28-29:** EPA also expects to see the results of verification sampling.
- 28) **Section 4.3.3.1, Scope, Pg. 4-27, Line 10:** Clarify where dispositioned excavated soil will be disposed.
- 29) **Section 4.3.3.1, Scope, Pg. 4-28, Lines 14-15:** EPA also expects to see the results of verification sampling.
- 30) **Section 4.3.3.1, Scope, Pg. 4-28, Lines 16-17:** When will the technology demonstration be completed? It is not listed as a line item in the schedule in Figure 7-1.
- 31) **Section 4.3.3.3, Assumptions, Pg. 4-29, Lines 18-20:** It should not be assumed that a Site-Specific Treatment Variance will be issued to not require treatment of LLW waste prior to disposal at ERDF.
- 32) **Section 4.3.3.3, Assumptions, Pg. 4-34, Line 6:** The phrase “not the extent of contamination” suggests that the remedial investigation for each waste site was not done appropriately. Delete this phrase.
- 33) **Section 4.3.5.5, Assumptions, Pg. 4-38, Bulleted items:** Since SVE activities at 200-PW-1 are nearly complete, this section should be updated. It no longer seems logical to assume a 10-year operations period after start of long-term stewardship. This may also change IC costs. The last bullet in this section regarding ICs is confusing and should be clarified.
- 34) **Section 5.2, Reporting Requirements for Nonroutine Releases:** EPA should also be notified in case of a nonroutine release to the environment.
- 35) **Section 5.3.8, Waste Treatment, Lines 36-39:** It should not be assumed that a variance will be given. Is this variance in regards to soil contaminated with carbon tetrachloride or other hazardous constituents? Issuance of a variance typically involves a public involvement process and incorporation into a decision document such as a ROD or ROD amendment. Considering an ESD or ROD amendment will be needed to change the remedy for the settling tanks, this could potentially be incorporated into that decision document. Update the language appropriately.

- 36) **Section 6.4, Remedy Final Inspection and Site Completion Report:** EPA will want to conduct a final inspection.
- 37) **Section 7.1, Cost Summary, Pg. 7-1, Bulleted Items:** It is unclear why there is such a large difference in the ROD estimates versus the work plan. Granted, this is still below the +50% mark used for ROD cost estimates, but a more accurate ROD estimate would have allowed for a better comparison of alternatives. It is unclear why the ROD estimate did not better anticipate the volumes that would need to be removed as part of RTD activities given the removal depths were identified. This section should be clarified.
- 38) **Section 7.1, Cost Summary, Pg. 7-1, Lines 31-35:** Section 10.7 of the ROD identified remedy alternatives costs including WIPP disposal costs. These are the same totals shown in Table 34 of the ROD. In a response to public comment, the agencies stated that WIPP costs were included in the Proposed Plan in order to fully present the full range of life-cycle costs for each alternative. Why does this bullet state that WIPP disposal costs were not included in the ROD?
- 39) **Section 7.1, Cost Summary, Pg. 7-1, Lines 36-38:** A 60% operating efficiency rate is unacceptable. Although a 100% efficiency rate assumed in the ROD is not likely, it is unclear why such a low rate is identified. This number should be fully explained and additional opportunities to increase the efficiency rate should be identified.
- 40) **Section 7.2, Schedule, Pg. 7-2:** A duration of approximately 20 years is unacceptable and seems unreasonably long. Opportunities to decrease the duration should be identified and discussed with EPA.
- 41) **Table 7-1, Pg. 7-3:** A duration schedule is unacceptable in an RD/RA Work Plan. Initiation and completion dates for remediation should be identified. Eight years to acquire the remediation systems for these OUs seems unreasonably long. Additionally, 8 years to complete RTD also seems unreasonably long.
- 42) **Figure A-2, Pg. A-3:** The wells in this figure are too small. The size of the well icons should be increased.
- 43) **Appendix A, Pg. A-29, Lines 4-6:** There are typos when referencing the 241-Z-8 settling tank.
- 44) **Appendix C, Table C-1, Pg. C-7:** The costs for the Perma-Con structures seems significantly high at \$5.9 million for a single structure. The other associated costs (6 gantry cranes) of these structures are also high. Granted, these are 120' by 150' structures, but were other structures and approaches considered before these Perma-Con structures were selected? If

these structures are intended to be moved to different waste sites, how will it be ensured that the enclosures themselves are not spreading contamination?

- 45) **Appendix C, Table C-2, Pg. C-18 and C-19:** Costs of greater than \$2.7 million seem high for pipeline removal. Are these costs accurate?
- 46) **Appendix C, Table C-2, Pg. C-30:** Are WIPP disposal costs paid through a separate budget? EPA agrees that identifying WIPP disposal costs are important, but if these costs are not paid out of the Hanford budget, they should not be included in the cost total for the project.
- 47) **SAP, Section 1.1, Project Scope and Objective, Pg. 1-1, Line 11:** Refer to the agencies at "Tri-Party agencies" instead of Tri-Parties.
- 48) **SAP, Section 1-3, Systematic Planning, Pg. 1-5, Line 30:** Remove the work "exclusive" from this sentence.
- 49) **SAP, Section 1.3.1, Table 1-1, Pg. 1-7:** Why is the distinction in the note made? How will waste that is >5 nCi/g but <100 nCi/g be managed and packaged? Will this LLW also be loaded into roll-on/roll-off containers for disposal at ERDF?
- 50) **SAP, Section 1.2.1, Pg. 1-8, Lines 11-12:** If radiological survey measurements at depths more shallow than 15 ft bgs exceed ROD cleanup levels, additional excavation will be needed. It is unclear what "or provide the data to DOE for discussion with EPA" means.
- 51) **SAP, Section 1.3.2, PS 2, Pg. 1-11, Lines 4-6:** What other storage and disposal options besides ERDF and SWOC storage for WIPP disposal are being considered?
- 52) **SAP, Section 1.3.2, PS 2, Pg. 1-11 through 1-12:** What off-site treatment options are being considered?
- 53) **SAP, Section 1.3.3, PS 3, P. 1-13, Lines 1-3:** There are no criteria listed to determine if additional soil removal is warranted. DOE and EPA should discuss this criteria and include it in the RD/RA Work Plan and SAP before these documents are finalized.
- 54) **SAP, Section 1.3.3, PS 3, Pg. 1-15, Lines 4-7:** EPA also wants to be provided with survey data.
- 55) **SAP, Section 1.3.3, PS 3, Pg. 1-15, Lines 8-13:** As previously mentioned, DOE and EPA should identify what criteria will be used to determine if the nature and extent of COCs greater than 15 ft bgs are acceptable before completing the remedial action.

- 56) **SAP, Section 2.1.3, Special Training/Certification, Pg. 2-9, Line 26:** EPA should be referenced as the lead regulatory agency. This should also be clarified in Table 2-2.
- 57) **SAP, Section 2.2.1, Laboratory Analytical Methods, Pg. 2-11, Line 6:** Nonstandard or unapproved methods should not be used. Under what circumstances would nonstandard or unapproved methods be considered? Use of such methods should require approval from EPA.
- 58) **SAP, Section 3.1, Sampling Objective, Pg. 3-1, Lines 29-30:** This sentence does not seem to make sense. Clarify the language.
- 59) **SAP, Section 3.2 Sampling Design, Pg. 3-2, Lines 11-15:** This paragraph states the difficulties with sampling TRU contaminants from soil remaining after remediation is conducted to the design depth; however, there is no mention of the benefits of this data for long-term stewardship. This benefit should also be listed.
- 60) **SAP, Section 3.2.1.1, Field Radiological Survey Methods, Pg. 3-2, Lines 29-32:** Explain the phrase "emitted about 36 percent of the time."
- 61) **SAP, Section 3.2.1.3, Focused/Judgmental Sampling, Pg. 3-4, Lines 22-25:** It should not be assumed that a treatability variance will be obtained. (See comments regarding variance in work plan comments).