

Hanford Second Five-Year Review
Protectiveness Determination Discussion
May 2007

Deferral to Final Action Records of Decision (RODs)

There have been substantial benefits from issuing interim action RODs at Hanford. Interim actions required early remediation of high priority waste sites, such as at liquid disposal trenches and ponds. Interim RODs authorized cleanup along the river corridor prior to completion of lengthy and complicated baseline risk assessments. The River Corridor Baseline Risk Assessment (RCBRA) is well under way and a report is due this summer. The outcome of the RCBRA will allow for the development of final action RODs.

The U.S. Department of Energy (DOE) chose to defer protectiveness statements for many of the river corridor operable units until the remedial investigation/feasibility study (RI/FS) process is complete and final action RODs are signed. Although it is sometimes appropriate to defer protectiveness determinations until additional needed information is gathered, this can only be done when the report includes action items and due dates for obtaining the needed information. The required information needed for completing final RODs is a determination of ecological risk, which is expected to be provided in the final report on the RCBRA, due June 30, 2007. EPA has determined that protectiveness determinations should be deferred until information from the RCBRA can be evaluated for the following operable units: 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-IU-2, 100-IU-6, 100-KR-1, 100-KR-2, 100-NR-1, 300-FF-1, and 300-FF-2. Once results from the RCBRA have been evaluated, protectiveness shall be reassessed and an Addendum submitted to EPA with, as appropriate, updated Protectiveness Determinations, Issues, and Follow-Up Actions. EPA is therefore adding a new action item, Action 1-3.

Action 1-3: Reassess and resubmit to EPA the protectiveness determination for operable units 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-HR-3, 100-IU-2, 100-IU-6, 100-KR-1, 100-KR-2, 100-KR-4, 100-NR-1, 300-FF-1, and 300-FF-2 using new information from the River Corridor Baseline Risk Assessment and submit to EPA an Addendum with, as appropriate, updated Protectiveness Determinations, Issues, and Follow-Up Actions. Due 2/15/2008 to EPA.

Action 1-3 has a due date of February 15, 2008. This due date should allow sufficient time for a public comment period for the RCBRA, resolution of comments, revision of the RCBRA report, and revision and resubmission of protectiveness determinations.

Strategy for Obtaining Final Action RODs

TPA Milestone M-16-00 requires the completion of remedial actions for all non-tank farm operable units by the year 2024. Currently, there is no TPA schedule for

completing RI/FS work on all groundwater operable units in the river corridor. Many of the interim action RODs for groundwater have limited scope and/or address a limited contaminant-of-concern list. In these cases especially, new investigations will need to be conducted as current information may not answer questions regarding the full extent of contamination.

Although there was little discussion on this subject in the five-year review report, the following were listed as Issues and Actions:

Issue 2: A strategy to obtain the final records of decisions and integrate the waste sites, deep vadose zone and groundwater has not been developed and agreed upon with the regulator agencies.

Action 2-1: Submit Draft A of the River Corridor Strategy for Achieving Final Cleanup Decisions in the River Corridor. Document will identify issues for integration and provide alternatives for future discussions between the Tri-Parties on milestone for final records of decision in the River Corridor.

The due date for Action 2-1 was 11/2006 and the document was submitted by that date. EPA would like to comment that although Action 2-1 has been completed, Issue 2 is still unresolved. EPA continues to be equally concerned about both the strategy and schedule to achieve final RODs in the river corridor. EPA is therefore identifying two new action items, Action 2-2, and Action 2-3.

Action 2-2: Reach agreement between the Tri-Party Agencies on a strategy and schedule to obtain final records of decision in the river corridor. Due 11/30/2007.

Action 2-3: Submit a TPA change package with new milestones for submitting RI/FS workplans and proposed plans for all operable units in the river corridor. New milestones shall require submission of RI/FS workplans and proposed plans for final actions at all of the following operable units that do not already have these documents approved: 100-BC-1, 100-BC-2, 100-BC-5, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-FR-3, 100-HR-1, 100-HR-2, 100-HR-3, 100-IU-2, 100-IU-6, 100-KR-1, 100-KR-2, 100-KR-4, 100-NR-1, 100-NR-2, 300-FF-2, and 300-FF-5. Due 2/1/2008 to EPA.

100-IU-2 and 100-IU-6 Operable Units

The technical assessment summary for the 100 Area operable units included a statement that the following operable units were functioning as intended by the decision documents: 100-1U-1, 100-IU-3, 100-IU-4, 100-IU-5, and 100-1U-6. There was no discussion about how this decision was made for these operable units. There was no text explaining the

omission of the 100-IU-2 OU from this list. Also, the Protectiveness Statement section did not address any of the six 100-IU-X operable units in any manner.

EPA has determined that protectiveness determinations should be deferred until information from the RCBRA can be evaluated for 100-IU-2 and 100-IU-6 in accordance with Action 1-3. The 100-IU-1, 100-IU-3, 100-IU-4, and 100-IU-5 operable units no longer require five-year reviews because the remedial actions allow for unrestricted use and unlimited exposure. No additional information has come to light to question the remedy selected in the 1996 Record of Decision.

100-NR-2 Operable Unit

DOE stated in section 1.7 of *The Second CERCLA Five-Year Review Report for the Hanford Site* that the 100-NR-2 groundwater operable unit is not currently protective. EPA concurs with this protectiveness determination. For a determination of “not protective” a separate determination for the long-term protectiveness is not needed. EPA agrees that Action 6-1 (*Implement the treatability test plan for permeable reactive barrier utilizing apatite sequestration as described in the Strontium-90 Treatability Test Plan for 100-NR-02 Groundwater Operable Unit (DOE 2005c). Issue Treatability Test Report.*) is appropriate. EPA would also like to acknowledge the two existing TPA milestones related to this project. M-16-14A, which is due 5/31/2007 requires completion of the construction of the permeable reactive barrier. M-16-14B, which is due 8/31/2008, requires submission of a draft CERCLA proposed plan to either amend the existing 1999 100-NR-1/NR-2 ROD or to propose a new ROD. These requirements appear sufficient to address the deficiencies which are currently impacting the protectiveness of the remedy at the 100-NR-2 operable unit.

200-UP-1 and 200-ZP-1 Groundwater Operable Units

EPA acknowledges that for both of these operable units the remedial action objectives (RAO) were of limited scope. Both of these operable units have pump-and-treat systems to extract contaminants from the groundwater. However, the purpose of a five-year review is to “evaluate the implementation and performance of a remedy in order to determine if the remedy is or will be protective of human health and the environment.” At the present time, both actions are either meeting the RAOs listed in the RODs or are expected to meet RAOs once modifications to the system are complete. Institutional controls are limiting exposure pathways that could result in unacceptable risks. There are no complete exposure pathways for human or ecological receptors at this time. For these reasons, EPA has determined that the remedies at 200-UP-1 and 200-ZP-1 are protective in the short term. Final remedies will need to be selected to address long-term protectiveness. A proposed plan for 200-ZP-1 will be submitted to EPA in accordance with existing TPA Milestone M-15-48B. A proposed plan for 200-UP-1 will be submitted to Ecology in accordance with existing TPA Milestone M-15-17A.

EPA would like to note that additional characterization now shows that contaminant plumes are both larger and deeper in the 200-ZP-1 operable unit than were believed at the time the ROD was issued. This new information will be addressed in the RI/FS process and will be incorporated in the final action ROD for 200-ZP-1.

200-PW-1 Operable Unit

The vapor extraction system for carbon tetrachloride in the 200-PW-1 operable unit was implemented as part of an expedited response action. The remedy is functioning as intended by the decision document, the exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of remedy selection are still valid, and there is no new information that could call into question the protectiveness of the remedy for 200-PW-1. These three protectiveness criteria would normally lead to a determination of “protective” for a remedial action based on a ROD. The first RAO for the operable unit was to “mitigate the threat to site workers.” As stated in *The Second CERCLA Five-Year Review Report for the Hanford Site*, only limited progress has been achieved toward mitigating risk to site workers. There is currently a TPA Milestone (M-15-45B, due 9/30/2007) requiring the submittal of a feasibility study report and proposed plan for this operable unit. For this reason, EPA concurs with the DOE decision to defer protectiveness on this operable unit.