



STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION

Division of Remediation - Oak Ridge
761 Emory Valley Road
Oak Ridge, Tennessee 37830

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COUNTY MAYOR'S OFFICE

October 21, 2025

Mr. Roger Petrie
Federal Facility Agreement Manager
U.S. Department of Energy
Oak Ridge Office of Environmental Management
Post Office Box 4067
Oak Ridge, TN 37831

Dear Mr. Petrie

TDEC Comment Letter for the 2025 CERCLA Five-Year Review for the Bear Creek Valley Administrative Watershed on the U.S. Department of Energy Oak Ridge National Priorities List Site, Oak Ridge, Tennessee (DOE/OR/01-2990&D1)

The Tennessee Department of Environment and Conservation (TDEC), Division of Remediation-Oak Ridge Office, received the above referenced submittal on August 1, 2025. The document has been reviewed pursuant to the Federal Facility Agreement for the Oak Ridge Reservation. TDEC provides the following comments:

General Comments

1. Section 2.2 of the Five-Year Review (FYR) describes the actions that were performed under the Bear Creek Valley (BCV) OU-2 Record of Decision (ROD) (DOE/OR/02-1435&D2) and makes several conclusions including "*all the assumptions used at the time of the selection of the remedy are still valid*", "*no impacts related to effectiveness of the remedy were noted*", and "*the remedy implemented at the BCV OU 2 (containment and LUCs [land use controls]) is protective of human health and the environment*". Recent discussions regarding the persistence of mercury contamination in and around Bear Creek and the impairment designation of the stream have raised concerns regarding the potential impact the SY-200 area may have on Bear Creek.
 - a. The OU-2 ROD includes applicable or relevant and appropriate requirement (ARARs) that specify general performance monitoring requirements for waste left in place including controlling the "*post-closure escape of solid waste, solid waste constituents, leachate, contaminated rainfall, or waste decomposition products*" and that the operator must not limit the present or future uses of groundwater underlying the area. TDEC's concerns with mercury being left in the SY-200 Yard were documented in the BCV OU-2 ROD Concurrence Letter dated July 1996 with

an additional statement that *"the levels of mercury in the wet weather conveyance at the SY-200 Yard should be monitored and reviewed annually to determine the need for further action to mitigate an unacceptable impact to Bear Creek."* Please provide details on how the U.S. Department of Energy (DOE) is ensuring that waste and waste products including leachate and contaminated rainfall are not impacting Bear Creek.

- b. In response to TDEC comments on the 2025 Remedial Effectiveness Report and on the site interview forms preceding the submittal of this FYR, DOE clarified the remedy as implemented under the BCV OU-2 ROD consisted of covering the waste left in place with 5 feet (ft) of clean soil and 2 ft of vegetative cover and all above ARARs were being met through a combination of institutional controls and soil cover maintenance. While this eliminates a direct pathway between a receptor and the waste material, please provide additional detail regarding how DOE is ensuring no subsurface migration and impacts to the environment from leachate through seeps and/or springs is occurring.
 - c. The Proposed Plan (DOE/OR/02-1338&D2) as presented to the public, outlined that the chosen alternative (Alternative 2) included *"monitoring of surface water and groundwater near the sites to determine if contamination is migrating off site"* and the ROD proceeded to conclude that *"no significant changes have been made to the remedial action decision selected in the proposed plan through the regulatory and public comment periods"*. Please provide additional details regarding how the remedy changed from what was presented in the Proposed Plan to the ROD allowing for the removal of surface water and groundwater monitoring and what post-ROD document presented those changes.
2. Does the DOE anticipate any changes to cleanup goals or impact to evaluating cleanup goals within Bear Creek Valley as a result of the land use changes presented within the September 2024 Non-Significant Change (NSC) to the BCV Phase I ROD?
 3. Several sections in the Environmental Management Waste Management Facility (EMWMF) chapter mention the "pending resolution" of discharge limits for landfill wastewater. As noted in the text, the U.S. Environmental Protection Agency (EPA) Administrator resolved the wastewater management dispute in 2020, and TDEC and EPA approved the related Focused Feasibility Study (FFS) in 2022. Despite considerable effort by the FFA parties, Clean Water Act ARARs still need to be added to the ROD through an Explanation of Significant Differences, and protective wastewater discharge limits still need to be established.

Specific Comments

1. **Page 1-18, Section 1.1.3.1.1** – This section appears to define "recreational use" which is not currently a goal of any Bear Creek Valley Zone. Please either correct the designated use to "restricted recreational use" or include any additional requirements of restricted recreational use that may not already be included in the recreational use definition.

2. **Page 2-12, Section 2.1.2.2, Fourth Paragraph** – The text explains the identification of a future resident receptor is inconsistent with the revised land use for Zone 1, however the *"revised situation and future goals"* column in Table 2.3 of this document and presented in the NSC to the ROD for the Phase I Activities in Bear Creek Valley at the Oak Ridge Y-12 Plant, Oak Ridge, Tennessee (DOE/OR/01-1750&D4) both state *"no unacceptable risk posed to a hypothetical resident or a recreational worker"* for Zone 1. Please either revise this section to remove the language that the evaluation of exposure to a hypothetical resident is now inconsistent with the revised land use or provide additional detail regarding how DOE plans to change the language presented in the NSC to remove the hypothetical resident exposure.
3. **Page 2-12, Section 2.1.2.2, First Paragraph After Bullets** – Please provide a schedule for implementing remaining S-3 pond pathway work (e.g., S-3 Site Pathway 3) in the context of the remedial action goals listed in Table 2.5.
4. **Page 2-26, Section 2.1.4.2.1, Figure 2.6** – The nitrate concentration trend at Bear Creek kilometer (BCK) 12.34 seems to have been steadily rising over the last 3 to 4 years (since the last FYR covering this watershed). This trend is in contrast to the continuing decline seen at NT-2. Please discuss these trends and explain any changes in conditions that could explain why the nitrate concentration has recently been behaving differently at BCK 12.34.
5. **Page 2-28, Section 2.1.4.2.2, Last Paragraph** – The recreational organisms only criteria for manganese is an EPA NAWQC, not a TDEC AWQC. Please correct the referenced criteria source.
6. **Page 2-35, Section 2.1.4.2.6, Table 2.13:**
 - a. Please update the table to include the TDEC drinking water standards for nitrate of 10,000 ug/L as found in TDEC rule 0400-40-03-.03.
 - b. TDEC rule 0400-40-03-.03, as cited in footnote "a", does not list a domestic water supply criterion for uranium. However, TDEC rule 0400-45-01-.06(5)(c) lists State maximum contaminant levels (MCLs) including uranium and gross alpha activity. Please update the citation in the footnote and update the table to include these TDEC criteria.
7. **Page 2-59, Section 2.3.2.1, First Paragraph** – The language here states *"Table 2.19 provides the key and extended list COCs [contaminants of concern] that are monitored in uncontaminated stormwater that is discharged from EMWMF."* Please correct the table reference to Table 2.21.

8. **Page 2-66, Section 2.3.3, Last Sentence** – Revise the text to reflect the plan for two Explanation of Significant Differences (ESDs), as shown in the EMWMF document flow chart shared at the monthly project team meetings.
9. **Page 2-70, Section 2.3.4.2.3, Last Paragraph** – Since the EMWMF ROD cites leachate from EMWMF will be treated at the Central Neutralization Facility (CNF), which no longer exists, please revise the text to clarify what document identifies the Liquid and Gaseous Waste Operations (LGWO) for EMWMF leachate treatment.
10. **Page 2-71, Section 2.3.4.2.4, First Paragraph, Second Full Sentence** – Please revise the text as follows:
One former detection-monitoring well on the east side of the EMWMF disposal cells, GW-923, was eliminated from the monitoring network because it was damaged and no longer provided representative hydrologic or groundwater quality data. ~~because of extensive post-installation changes to well construction.~~
11. **Page 2-74, Section 2.3.4.2.4, First Paragraph** – Please change “TDEC participating” to “TDEC observing.”
12. **Page 2-75, Section 2.3.4.2.4, First Bullet** – While algae has been observed throughout the 1-acre Sediment Basin, the text only mentions a shade cover at the V-weir. Please expand on what evidence supports effectiveness of the shade covering at the V-weir for controlling the impact of algae on pH at the outfall.
13. **Appendix B, Page B-16, Last Paragraph** – The text here states “*The FYR guidance requires identification of any new contaminants in the watershed. No new contaminants are indicated by FYs 2021–2024 monitoring data.*” In April 2024, the EPA finalized the rule identifying Perfluorooctanesulfonic acid (PFOS) and Perfluorooctanoic acid (PFOA) as Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) hazardous substances. Please provide additional discussion explaining how the DOE is evaluating the impacts of PFAS in Bear Creek Valley to ensure remedies remain protective.

Review of this document meets the review cycle protocol of 90 days. Questions or comments concerning the contents of this letter should be directed to David Carlone at the above address or by phone at (865) 839-3362.

Sincerely



Eileen Marcillo
FFA Project Manager
Division of Remediation – Oak Ridge Office

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