



**STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION**

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

April 17, 2019

Mr. John Michael Japp
DOE FFA Project Manager
Oak Ridge Office of Environmental Management
U.S. Department of Energy
Post Office Box 2001
Oak Ridge, Tennessee 37831-8540

Re: Several Critical Composite Analysis Issues Related to the CERCLA Process for the Proposed Environmental Management Disposal Facility (EMDF)

Dear Mr. Japp

As the Responsible Party and Lead Agency for cleanup of the Oak Ridge Reservation (ORR), a National Priorities List (NPL) Site, the Department of Energy (DOE) entered into the Federal Facility Agreement (FFA) for the ORR in accordance with applicable sections of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the Resource Conservation and Recovery Act (RCRA), Executive Order 12580, the National Environmental Policy Act, and the Atomic Energy Act (AEA).

DOE proposes to construct the Environmental Management Disposal Facility (EMDF) in Oak Ridge to dispose of radioactive, hazardous, and toxic waste generated from planned ORR environmental cleanups under CERCLA and the FFA. DOE committed to pursuing authorization for radionuclide disposal under DOE Orders in addition to seeking approval for this action through a CERCLA Record of Decision (ROD). For the CERCLA decision, the Tennessee Department of Environment and Conservation (TDEC) and the Environmental Protection Agency (EPA) must determine whether the planned landfill and disposal would meet CERCLA threshold criteria: (1) overall protection of human health and the environment and (2) compliance with applicable or relevant and appropriate requirements (ARARs). This CERCLA determination applies to hazardous substances, pollutants, and contaminants, whether radionuclides or non-radionuclides. It also includes both carcinogenic and non-carcinogenic endpoints.

After five attempts on a Remedial Investigation/Feasibility Study (RI/FS) for EMDF spanning from 2012 to 2018, the RI/FS went to formal dispute. The Dispute Resolution Agreement (DRA) on the fifth draft (D5) RI/FS allowed DOE to present a Proposed Plan to the public for review and comment. The DRA and the RI/FS commit DOE to developing the Performance Assessment (PA) and Composite Analysis (CA) pursuant to DOE Orders prior to a CERCLA ROD. Therefore, the State must rely on

evaluation of DOE's PA and CA, including associated modeling, as a means to determine if CERCLA threshold criteria related to overall protection of human health would be met. This determination must also be complete prior to a CERCLA ROD.

Although the Oak Ridge Office of Environmental Management (OREM) has not finalized the PA or the CA, TDEC has identified critical issues in the draft CA and shares the following concerns.

1. Uranium-238 contamination from the Bear Creek Burial Grounds (BCBG) and the S-3 Ponds already exceeds risk-based radioactivity in Bear Creek surface water. BCBG is a major source of depleted uranium in Bear Creek Valley (BCV).¹
2. Currently, there are interim (Phase 1) ROD goal exceedances in the BCV. DOE acknowledges a poor understanding of the inventories of radioactive isotopes in BCV contaminant sources, including BCBG and the S-3 Ponds. Yet, the CA assumes that these and other sources are no longer contributing to the contaminant loading of BCV.
3. The draft CA assumes future cleanups will achieve CERCLA risk goals, but it cites no basis for this assumption. The *Proposed Plan for the Bear Creek Burial Grounds at the Y-12 National Security Complex, Oak Ridge, Tennessee* (DOE/OR/01-2383&D1), dated September 2008, notes that the BCV Phase 1 ROD deferred decisions on BCBG and BCV groundwater.²
4. EMDF would be constructed of similar material and design to EMWMF. Over the long term, due to natural processes and material deterioration, EMWMF and the proposed new EMDF may release contaminants to groundwater and surface water at the same time.
5. Some surface water from the BCBG is collected and treated. In the future, stopping treatment of water discharging from BCBG would increase contamination in Bear Creek.
6. TDEC understands that the sensitivity analysis in the CA modeling assumes current conditions represent the worst case—i.e., that concentrations would decrease.

The most recent Remediation Effectiveness Report¹ notes that DOE has *not* fully implemented BCV Phase 1 remediation activities and that DOE will prepare the final ROD for the BCV watershed *after* reaching a decision and completing remedial actions for BCBG. Per FFA Appendix J, the ROD milestone for BCBG is 2034, but the 2019 Planning Case forecasts a BCBG ROD in 2053, with remedial action occurring from 2055 through 2059. The total projected cost is less than \$60M in FY2019 dollars, suggesting little, if any, substantive remediation is intended for one of the more

¹ *2019 Remediation Effectiveness Report for the U.S. Department of Energy Oak Ridge Site Oak Ridge, Tennessee, Data and Evaluations* (DOE/OR/01-2787&D1)

² The Proposed Plan remains an unapproved draft. In March 2009, TDEC notified DOE that "Since the proposed Appendix J to the FFA does not require an action on [BCBG] for years to come, the State is suspending review of [the Feasibility Study and Proposed Plan] until the overriding issues of long term institutional controls can be resolved between the State and DOE."

technically challenging sites on the ORR. The Planning Case shows a similar ROD date for one of the other primary sources in BCV, the S-3 Ponds, with *no* planned remedial action.

For DOE to take credit in the EMDF CA for having remediated contamination sources in BCV there must be a plan for their actual remediation. TDEC requests more information regarding DOE's basis for these assumptions and recommends revising the CA to better reflect the current status of other sources in BCV. This should include discussions of current FFA schedules for remediation of BCV sources and the continued contaminant releases from these sources until remediation occurs. If DOE resolves the State's key concerns documented in the EMDF Proposed Plan, it would be TDEC's expectation that the EMDF ROD capture commitments with specific timeframes for cleaning up these sources as a condition for construction of EMDF.

Please direct any questions or comments regarding this letter to Brad Stephenson at (865) 220-6587.

Sincerely

A handwritten signature in blue ink, appearing to read "Randy C. Young". The signature is stylized and cursive.

Randy C. Young
FFA Manager

cc: Connie Jones, EPA
Pat Halsey, DOE
Amy Fitzgerald, ORRCA
Shelley Kimel, SSAB
Ron Woody, ORRCA
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Chris Thompson, DoR
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