



## Department of Energy

Oak Ridge Office  
P.O. Box 2001  
Oak Ridge, Tennessee 37831—

January 10, 2010

Mr. Ron Murphree, Chairman  
Oak Ridge Site Specific Advisory Board  
Post Office Box 2001  
Oak Ridge, Tennessee 37830

Dear Mr. Murphree:

**RESPONSE TO THE OAK RIDGE SITE SPECIFIC ADVISORY BOARD  
RECOMMENDATION ON THE FACT SHEET FOR THE EXPLANATION OF  
SIGNIFICANT DIFFERENCES FOR THE RECORD OF DECISION FOR DISPOSAL  
OF COMPREHENSIVE RESPONSE, COMPENSATION, AND LIABILITY ACT  
WASTE, OAK RIDGE, TENNESSEE**

Thank you for your October 14, 2009, letter transmitting the board's comments and recommendations on the fact sheet referenced above. As you know, the purpose of the fact sheet is to describe the rationale for expanding the Environmental Management Waste Management Facility (EMWMF) to 2.2 million cubic yards by building an additional disposal cell (number six) at the current site.

The Department of Energy (DOE) has incorporated the board's editorial comments into the final fact sheet as requested. A copy of the final document is enclosed.

Regarding the board's three recommendations:

- We have deleted the explanation of alternatives considered in the engineering evaluation in paragraph 5 under the Description of Proposed Action.

We have replaced the drawing of the EMWMF Cell 6 conceptual design and facility layout with a site plan illustration to address the board's concerns about the legibility of the illustration. We have also placed the aerial photograph and illustration on separate pages to improve legibility.

- We agree with the board's recommendation to establish EMWMF as a proper name for the waste disposal facility established by the Record of Decision and have noted it in the fact sheet as well as in the 2009 issue of the DOE *Cleanup Progress* report scheduled for release in January.

The comments and recommendations provided by the board have been invaluable to DOE in creating a clear and more easily read document that will allow the public to understand the issues being presented in the Explanation of Significant Differences.

Ron Murphree

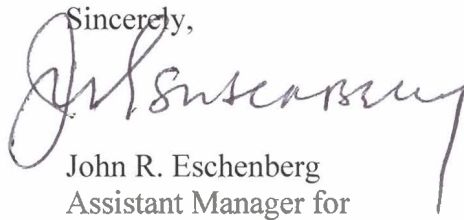
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If you have questions or if we can be of any further assistance, please contact me at 576-0742, Dave Adler at 576-4094, or Pat Halsey at 576-4025.

Sincerely,



John R. Eschenberg  
Assistant Manager for  
Environmental Management

Enclosure

cc w/enclosure:

Mike Farmer, Roane County Mayor  
Connie Jones, EPA Region 4  
Rex Lynch, Anderson County Mayor  
James O'Connor, Oak Ridge City Manager  
John Owsley, TDEC, Oak Ridge  
Catherine Brennan, DOE HQ, EM-13, FORS  
Fred Butterfield, DOE HQ, EM-13, FORS  
Melissa Nielson, DOE HQ, EM-13, FORS



## DOE Environmental Management Program

# Information Sheet

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### **Explanation of Significant Differences for Expansion of the DOE-ORR Environmental Management Waste Management Facility (DOE/OR/01-2426&D1, November 2009)**

#### **Purpose**

The U.S. Department of Energy (DOE) has prepared a document called an Explanation of Significant Differences (ESD) to modify the *Record of Decision for the Disposal of Oak Ridge Reservation Comprehensive Environmental Response, Compensation, and Liability Act of 1980 Waste, Oak Ridge, Tennessee* (ROD). This modification will authorize the expansion of the on-site disposal facility for wastes generated from the cleanup programs at the DOE Oak Ridge Reservation (ORR) to its maximum available capacity. While the ROD did not establish a formal name for this facility, it has subsequently been designated as the Environmental Management Waste Management Facility (EMWMF).

#### **Background**

The ROD was issued in 1999 to document a decision by the DOE, the Tennessee Department of Environment and Conservation (TDEC), and the U.S. Environmental Protection Agency (EPA) to construct a dedicated disposal facility on the ORR to receive low-level radioactive waste (LLW), hazardous waste regulated under the Resource Conservation and Recovery Act of 1976 (RCRA), waste regulated under the Toxic Substances Control Act of 1976 (TSCA), and mixed wastes generated from the cleanup programs at the ORR conducted under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). The EMWMF has been actively accepting ORR CERCLA waste in compliance with the approved EMWMF waste acceptance criteria (WAC) since May 2002.

The ROD specifies a conceptual design for the EMWMF that is modular in nature. Cells 1 and 2 were initially constructed and went into operation in 2002, with disposal capacity of 400,000 cubic yards. Build-out of Cells 3 and 4 was completed in 2005, increasing total disposal capacity to 1,200,000 cubic yards. Cell 5 is currently under construction and will bring the disposal capacity to 1,650,000 cubic yards. Current waste generation forecasts indicate that current capacity (Cells 1-5) may be exhausted by approximately 2014-2015. While the ROD does not explicitly limit the maximum volume of waste to be disposed of at the EMWMF, the evaluation of alternatives in the Feasibility Study considered a range of waste volume estimates that could require a total disposal capacity up to approximately 1.7 million cubic yards. This ESD has been developed to evaluate the expansion of the EMWMF to a larger total disposal capacity.

An ESD is required to document a significant change to a component of a remedy selected in a ROD. This ESD is being issued by DOE, as lead agency for remedial activities at ORR, with concurrence by the EPA and TDEC, as support agencies. In accordance with Sections 300.435(c)(2)(i) and 300.825(a)(2) of the National Oil and Hazardous Substances Pollution Contingency Plan, DOE is issuing the ESD to explain the change to the ROD, and making it available to the public in the Administrative Record File and at the DOE Information Center, 475 Oak Ridge Turnpike, Oak Ridge, TN 37830; phone: 865-241-4780.

## Description of Proposed Action

The proposed action under the ESD is the expansion of the EMWMF to a design capacity of approximately 2,200,000 cubic yards through the construction of an additional disposal cell, designated Cell 6. Figure 1 presents an aerial photograph of the EMWMF site, and Figure 2 depicts the conceptual design for the EMWMF, including the proposed Cell 6.

Additional CERCLA waste disposal capacity will be needed sooner than originally planned due to acceleration of the schedule and increase in the scope of cleanup activities at ORR facilities from the previous baseline. In addition, a major new program currently undergoing conceptual design, called the Integrated Facility Disposition Program (IFDP), would generate significant additional waste volume. The total volume of wastes generated from the CERCLA program at the ORR, including the IFDP, is estimated to exceed the capacity of the EMWMF, even with the additional capacity provided by this ESD. However, the proposed expansion of EMWMF will allow adequate time for the evaluation of additional disposal capacity to meet longer-term requirements for future CERCLA wastes generated at the ORR. This ESD represents the maximum potential capacity of the landfill under the scope of the 1999 ROD.

The ESD adopts the recommendations of the *Engineering Evaluation of Alternatives for Expansion of the Environmental Management Waste Management Facility*, which was developed in 2008 to evaluate whether the physical and topographical characteristics of the EMWMF site would permit the construction of additional disposal capacity beyond that described in the ROD. The objective of this analysis was to provide as much additional capacity as is economically feasible based on site physical and topographical features that act as constraints on lateral expansion of the facility to the north, south, east, and west.

The Engineering Evaluation recommended that the EMWMF should be expanded through the construction of one additional disposal cell (Cell 6) with design characteristics very similar to Cells 1-5. This alternative was determined to provide the optimal balance of increased disposal capacity, lack of negative impacts on predicted facility performance, and cost effectiveness (cost per cubic yard of additional airspace).

Preliminary performance assessment and groundwater transport modeling has been performed to evaluate any potential impact from the increased inventory of disposed waste following expansion. This analysis predicted minimal impact on the groundwater flow regime from the construction of Cells 5 and 6, and no encroachment of groundwater into the 10-foot-thick geologic buffer that lies directly beneath the low permeability clay liner. The current WAC will remain protective for the expanded facility.

CERCLA requires that the selected remedy must be protective of human health and the environment, comply with (or waive) applicable or relevant and appropriate requirements (ARARs) of Federal and State environmental regulations, be cost effective, and utilize permanent solutions and alternative treatment technologies or resource recovery to the maximum extent practicable. The modified remedy meets the requirements of CERCLA as described in the ROD. The remedy selected and described in the ROD is not fundamentally changed by the proposed expansion of disposal capacity. The siting, design, construction, and operation of the proposed Cell 6 at the EMWMF will meet all ARARs identified in the ROD.

## Public Availability

The approved ESD will be placed in the Administrative Record file for the EMWMF and will be made available to the public at the DOE Information Center.

The Oak Ridge Site Specific Advisory Board issued a letter to DOE in July 2009 recommending that DOE “proceed expeditiously to expand the current facility and plan for the development of a new facility to meet



waste disposal needs forecast as a result of work to be done through the anticipated Integrated Facility Disposition Project.” The siting and design of a new disposal facility to accommodate the IFDP wastes is beyond the scope of this ESD.

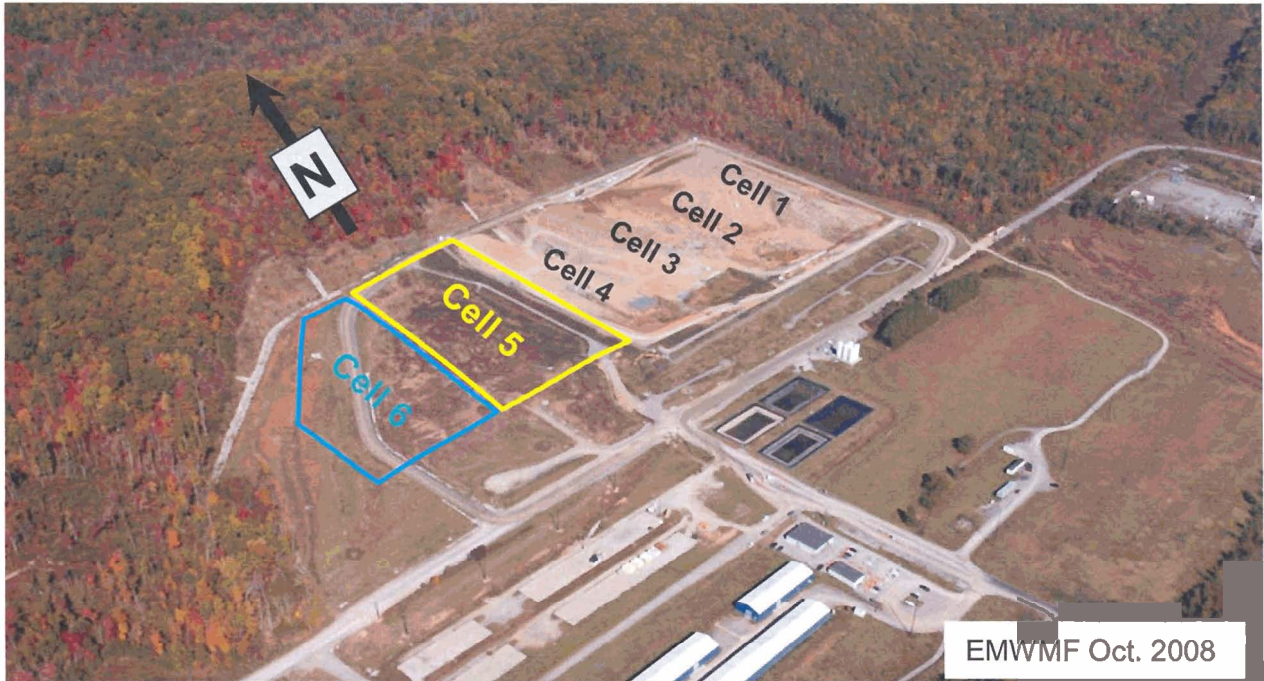


Figure 1. Aerial Photograph of EMWMF Site.

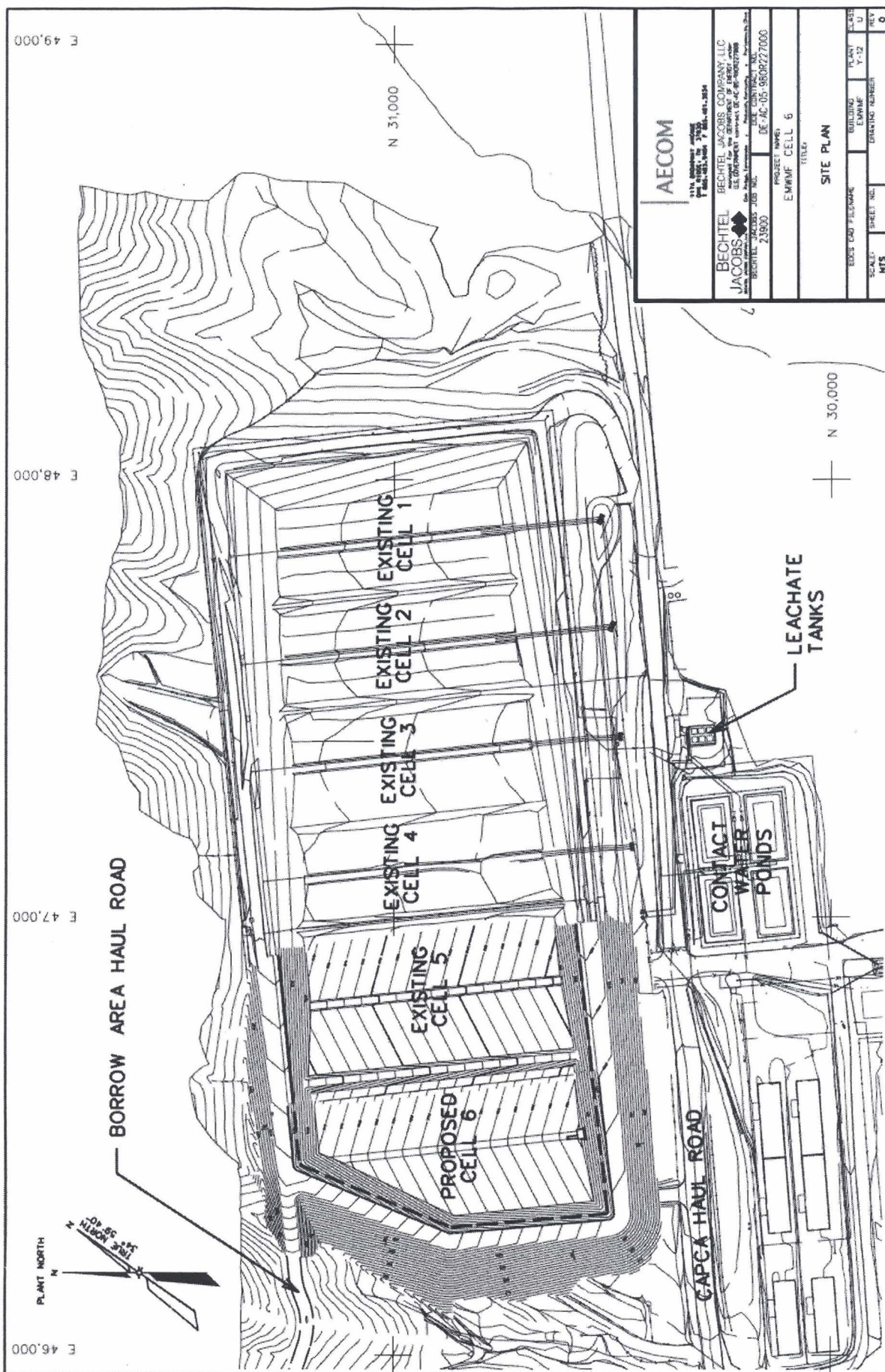


Figure 2. EMWMF site plan including proposed Cell 6.