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**PROGRESS REPORT OPERABLE UNIT 2 OTHER  
WASTE UNITS OCTOBER 1992**

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# Fernald Project

# Remedial Investigation/ Feasibility Study 3914

PROGRESS REPORT

OCTOBER 1992

## Operable Unit 2 OTHER WASTE UNITS

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### Introduction

The Remedial Investigation/Feasibility Study (RI/FS) is the blueprint for cleanup at the U.S. Department of Energy's Fernald Environmental Management Project. The nature and extent of contamination at the Fernald site and surrounding areas is being thoroughly investigated so that appropriate remedial actions can be formulated and implemented.

The Fernald site has been divided into five sections, known as Operable Units, for environmental investigation and cleanup. The Operable Units were defined based on their location or the potential for similar technologies to be used in the ultimate cleanup.

During the course of the RI/FS effort, certain conditions are occasionally identified which call for more immediate action. These actions are called "Removal Actions" and are initiated when there is a need to accelerate cleanup activities to address releases or potential releases of hazardous substances. Removal Actions are coordinated with the U.S. EPA and the Ohio EPA.

Following is a progress report on Operable Unit 2 including its history, the current status of RI/FS activities, cleanup alternatives under consideration, and work that is being done to alleviate near-term concerns.

### Background

Operable Unit 2 includes the sanitary landfill, lime sludge ponds, inactive flyash disposal area, active flyash pile and the southfield area. These areas were used to dispose of flyash, spent lime, sanitary waste and construction rubble from past operations at the Fernald site. Operable Unit 2 contains large volumes of waste materials with relatively low concentrations of radioactive and chemical contaminants. While uranium is the primary contaminant, investigations are in progress to confirm that elevated concentrations of other hazardous constituents are not present within Operable Unit 2 facilities.

### RI/FS Activities

**Sampling:** Samples from all of the Operable Unit 2 waste facilities have been analyzed for a full range of radiological and chemical constituents. Laboratory data from the analyses of these samples has been validated for use in the RI/FS process. All field investigations associated with Operable Unit 2 have been completed. Data results are now being used to support the Operable Unit 2 RI/FS, waste treatment studies and ongoing modeling efforts. These samples were collected to supplement existing characterization data available for these facilities.

Validated analytical data has been incorporated into the Remedial Investigation Report. Included in the Remedial Investigation Report is a Baseline Risk Assessment which evaluates the potential risks to public health and the environment associated with the existing conditions within Operable Unit 2 facilities. This information will be used to help establish remedial action objectives and cleanup levels for Operable Unit 2 waste facilities.

Recent analyses of soil samples taken from the former Firing Range area located in the southwestern portion of the Fernald site identified elevated levels of lead contamination in soils. The Firing Range is an isolated area formerly used by site armed security personnel for weapons qualifications. Air sampling has been conducted at the Firing Range to determine if lead-contaminated soils have the potential to become airborne and pose a risk to human health and the environment. Analytical results of air samples determined that airborne emissions are below U.S. EPA's health-based regulatory limits. This data has been included in the RI/FS for Operable Unit 2.

**Reports:** Treatability studies to establish whether identified waste treatment technologies are effective when applied to Fernald site waste material are complete for Operable Unit 2. Data included in the study will be used to support Operable Unit 2 treatment technology selection and remedy implementation. A Treatability Study Report for Operable Unit 2 was submitted to the U.S. EPA in July 1992.

Operable Unit 2 treatability investigations were focused on the application of cement-based solidification to Operable Unit 2 waste material. A three-stage treatability study was completed at the IT Environmental Technology Development Center in April 1992. The final stage of treatability involved leachate analysis and permeability testing of select waste-cement mix designs.

The Draft Remedial Investigation Report for Operable Unit 2 was submitted to the U.S. EPA on October 19, 1992. The purpose of the Remedial Investigation Report is to provide a summary of available field and analytical data on Operable Unit 2, and to complete a Baseline Risk Assessment to evaluate the risks to human health and the environment posed by Operable Unit 2 waste facilities. The Draft Remedial Investigation Report is available at the Public Environmental Information Center, located in the JAMTEK building at 10845 Hamilton-Cleves Highway.

The compilation of other Operable Unit 2 RI/FS reports, including the Feasibility Study Report and Proposed Plan, are proceeding consistent with the schedules set forth in the 1991 Amended Consent Agreement. Based on Consent Agreement schedules, Operable Unit 2 is the leading Operable Unit with a Proposed Plan tentatively scheduled to be issued in March 1993. The Operable Unit 2 Feasibility Study will serve a dual role as a sitewide Environmental Impact Statement (EIS). The Operable Unit 2 Feasibility Study/EIS and Proposed Plan will be issued jointly by the DOE for public review when they become available in late 1992 or early 1993.

Remedial Design: Conceptual design engineering was initiated for Operable Unit 2 for purposes of establishing preliminary design parameters and cost estimates. Conceptual engineering is proceeding based upon adapting representative remedial action alternatives for each of the Operable Unit 2 waste facilities as identified in available RI/FS documents. Conceptual design of engineered waste coverings is in progress for the Active Flyash Pile, Solid Waste Landfill, and Lime Sludge Pond. Conceptual engineering is proceeding in parallel with the RI/FS to properly position Operable Unit 2 waste facilities for the prompt implementation of remedial action following issuance of the Record of Decision for Operable Unit 2.

#### **Removal Actions**

##### **Inactive Flyash Pile (Removal Action No. 23):**

This Removal Action focused on isolated areas of

radiological surface contamination in the Inactive Flyash Pile/Other South Field Disposal Areas. The Removal Action was completed when a small amount of contaminated debris (soil and transite) was removed from the Inactive Flyash Pile and placed in appropriate containers for storage pending final disposition. Subsequent radiological monitoring of the Inactive Flyash Pile determined that no additional action is required until the Record of Decision is issued for final remediation of Operable Unit 2 waste facilities.

##### **Active Flyash Pile Controls (Removal Action No. 10):**

The objective of this Removal Action was to mitigate potential wind and water erosion at the Active Flyash Pile. This Removal Action was completed with the installation of a silt fence around the base of the pile to mitigate stormwater runoff, and the placement of wind barriers to mitigate wind erosion. Minor grading and compaction were conducted and a chemical spray was also applied to the surface of the Active Flyash Pile to further mitigate the possibility of wind erosion and provide surface stabilization. A large portion of the pile is now inactive and will not receive new ash deposits. The potential use of flyash as an additive to soil for use in backfill, structural fill, and slope stability applications, is being investigated.

##### **Cleanup Alternatives**

Several cleanup options have been evaluated for Operable Unit 2. One method would entail placing a cover over the wastes to cap them in place and prevent stormwater runoff from carrying contaminants to groundwater and surface waterways.

Under a second alternative, contaminated water located beneath the waste units would be isolated, removed, and treated before being discharged to the Great Miami River. Then a cover would be placed over the waste units as a final step.

Other options include removing the waste, treating it, and either disposing of it in an engineered structure at the Fernald site or transporting it to an approved off-site waste disposal facility.

More information about Operable Unit 2 is available in the Public Environmental Information Center (PEIC), where Fernald Project cleanup documents are kept in the Administrative Record. The PEIC is located in the JAMTEK building, 10845 Hamilton-Cleves Highway, Harrison, Ohio, 45030. The telephone number is (513) 738-0164.