

4356

**CATEGORICAL EXCLUSION (CX)  
DETERMINATION WASTE PIT AREA  
CONTAINMENT IMPROVEMENT REMOVAL  
ACTION NEPA DOC. NO. 404**

**DOE-FN/DOE-HQ**

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**CAT EXC**

**NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)****CATEGORICAL EXCLUSION (CX) DETERMINATION****Waste Pit Area Containment Improvements Removal Action  
NEPA Document No. 404  
Fernald Environmental Management Project (FEMP)  
Fernald, Ohio****Proposed Action**

The United States Department of Energy (DOE) proposes to perform the Waste Pit Area (WPA) Containment Improvements Removal Action at the Fernald Environmental Management Project (FEMP).

**Location**

The proposed action will take place at the WPA located in the northwest section of the FEMP, just to the northwest of the Process area. The 1050 acre FEMP site is located approximately 18 miles northwest of downtown Cincinnati, Ohio.

**Background**

The WPA covers approximately 23 acres of the FEMP site and consists of Waste Pits 1 through 6, the Clearwell, and the Burn Pit. When the FEMP was in operation, low-level radioactive waste generated by the various chemical and metallurgical processes were deposited in one of the six waste pits or burned in the Burn Pit. The Clearwell was used as a final settling basin for process water that passed through Waste Pits 3 and 5 prior to being discharged into the Great Miami River.

The six waste pits were closed at various points in time. The Burn Pit is currently overgrown with grass and partially covered by the Waste Pit 4 berm and liner. There is also a dirt road on the Burn Pit used to access the monitoring wells in the area. The Clearwell currently receives surface water runoff from Waste Pits 1, 2, and 3 and excess storm water from Waste Pit 5.

Elevated radioactive contamination levels have been detected along several of the WPA drainage ditches. In addition, wind erosion and lack of vegetation are exposing potentially contaminated soil in the WPA.

**Description of Proposed Action**

The proposed removal action in the WPA involves four areas of concern. These areas of concern are improving the containment of specified contaminated soil areas, correcting the Waste Pit 4 south berm erosion, protecting the Burn Pit from wind erosion, and improving the vegetation cover on the Waste Pits. Addressing these four areas will reduce the spread of contamination by windborne and waterborne transport, thereby reducing or eliminating exposure to individuals working in the WPA vicinity and reduce or eliminate the level of effort required

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for decontamination of equipment entering and leaving the WPA. Each area of concern is described below in detail.

**Improving Containment of Specified Contaminated Soil Areas**

Some ditches in the WPA have pools of stagnant water and areas of inadequate flow. This proposed action entails regrading the ditches and improving the pitch of the ditches. The pitch is the degree of the slope or inclination of the sides of the ditch. After regrading, a metal ditch liner will be imbedded in the ditches. Once the ditch construction is complete, any storm water will flow to the storm water collection sump, located south of the Clearwell and Waste Pit 1. The water will then be pumped to the Bionitrification-Effluent Treatment System (BDN-ETS) Interim Advanced Waste Water Treatment (IAWWT) System for treatment.

The contaminated soil areas in the WPA have been divided into three construction zones: 1) ditches along the road between Waste Pits 3 and 5; 2) ditches along the road between Waste Pits 4 and 6; and 3) ditches south of Waste Pits 4 and 6. Soil and debris will need to be moved within the ditches to establish a sufficient drainage pitch. Material may be moved in the construction zone from which it was generated, but it will not be moved from one construction zone to another. Any soil and debris generated as a result of this removal action, not used as fill material to create a proper drainage pitch, will be handled according to the Removal Action 17 Work Plan for the Improved Storage of Soil and Debris.

**Ditches Between Waste Pits 3 and 5**

Work on the road between Waste Pits 3 and 5 will first begin on the ditch along the south side of the road. This ditch will be established outside of the existing Waste Pit 3 cap and will drain east to west. A field survey of the existing ditches will be used to determine the proper pitch. The ditch will be regraded using a backhoe. The backhoe will be the primary piece of equipment for redistribution and placement of any materials used. A metal ditch liner will then be installed and the sides of the ditch will be graded to blend in with the ditch liner. The sides of the ditch will be given a grass or stone covering to limit erosion. If stone is used, a cement grout may be used to reduce required maintenance and extend the life of the cover.

Once this south ditch is established, a culvert (the tubular ditch running underneath a road) will be installed at the far west end of the south side of the Waste Pit 5 road. The outfall for this culvert will drain onto the Waste Pit 3 west slope. Culverts will be constructed of corrugated metal pipe, concrete pipe, or high density polyethylene pipe. Riprap will be installed at each end of the culverts and partially up the slope of the ditch. The riprap would then be covered with cement grout to improve maintainability and durability for protection against erosion.

Ditch excavation will proceed from this culvert and continue east along the south edge of the Waste Pit 5 road. A culvert will then be installed to drain the ditch from the north side of the road to the south ditch. The ditch on the north side of the road is at the bottom of the Waste

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Pit 5 berm. Excavation into this ditch will be limited to prevent any stability problems.

Nine-hundred lineal feet of the road along the south berm of Waste Pit 5 will be disturbed by adjacent ditch construction. After the drainage ditches have been improved, the road will be regraded as necessary and a drainage pitch of two percent will be established across the width of the road. Then, a three inch layer of crushed stone will be placed on the road surface as needed and compacted with a vibratory roller.

**Ditches Between Waste Pits 4 and 6**

The ditches along the road between Waste Pits 4 and 6 also have little to no drainage pitch. The ditches will need to be regraded with a metal ditch liner installed, as discussed above. The road is covered with a layer of wooden mats because the road is radioactively contaminated. Drainage in the area will be pitched away from the wooden mats, and the ditches will be excavated to provide a more well defined channel. Currently, the flow from the ditches between Waste Pits 4 and 6 meanders over a wide flat area, and therefore, needs to be constricted.

After the ditch excavation and construction, the road will be improved to seal the contamination. The road will be completed with an additional layer of wooden mats that interlock with the existing wooden mat. The mats will then be finished with an asphalt permatizing process. This process includes the covering of the mats with a liquid asphalt/polymer emulsion. Crushed stone is then placed over the emulsion to provide a wearing surface. The stone is also placed on the sides and approaches to the road to provide for more even transitions.

**Ditches South of Waste Pits 4 and 6**

Ditches next to the road south of Waste Pit 4 and Waste Pit 6 are properly pitched, however, certain areas are tightly constricted. In addition, a culvert used for a temporary road crossing is nearly clogged. The construction for this area will include reshaping ditches at the constricted locations and placing a new culvert adjacent to the existing clogged culvert. Ditches in this area need only to be reseeded and covered with jute matting at disturbed areas. The culvert will have the same riprap protection as previously described.

**Correcting Waste Pit 4 South Berm Erosion**

The south berm of Waste Pit 4 is being eroded by storm water and wind. To correct and contain the erosion damage, riprap will be placed at the bottom of the berm and partially up the slope of the hill. The dirt ditch below the south berm will be regraded into a channel configuration. Any standing water in the existing ditch will be drained into the existing storm water management system. Any soft mud at the bottom of the ditch will be stabilized by adding a stabilizing agent, such as lime or cement. A geotextile filter fabric will then be installed over the channel configuration and manually secured to the dirt with steel pins. A four inch bedding of crushed stone will be placed uniformly on the

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fabric. This bedding will be covered with twelve inches of riprap, upon which cement grout will be applied to fill in void spaces between rock pieces and encapsulate the ditch contaminants. These measures will also improve the ditch durability and hydraulics.

**Protecting the Burn Pit from Wind Erosion**

Excessive traffic and wind erosion have resulted in areas of the Burn Pit becoming exposed. This exposure could result in the migration of fugitive dust emissions or surface water runoff.

This action proposes that the Burn Pit be covered with a high clay content soil. This soil will be compacted and graded to form a cap which will be covered with topsoil and then seeded, sodded, or matted with grass as required. Currently, traffic on the Burn Pit is limited to providing access to the monitoring wells in that area. Wooden mats will be used for the necessary vehicles to obtain access to the Burn Pit to complete the soil cap and grass planting.

**Improving Vegetation Cover on the Waste Pits**

There are several visible areas of stressed vegetation on Waste Pits 1, 2, and 3 which need to be improved. These areas are exposing potentially contaminated soil which could possibly become airborne or migrate through surface water runoff, thereby increasing radiation exposures. Data from a site investigation will be used to identify the areas of stressed vegetation in the WPA.

The investigation will include compiling and reviewing existing data, such as recent aerial photographs and radiation surveys of the WPA. The investigation will also include site reconnaissance, field notes measurements, sketches describing the stressed vegetation areas of concern, and a layout and boundary/topographic survey of identified stressed vegetation areas. This process will identify the necessary dimensions, construction materials, and construction techniques to improve the vegetation cover. This cover will provide protection from wind erosion and minimize radiation exposure resulting from exposed WPA surface soils.

An agronomist will be consulted concerning selection and maintenance of the grass species for the revegetation. In areas of extremely stressed vegetation, geotextile fabric and gravel may be used. Correct and uniform soil moisture must be maintained and can be added with a sprinkler device. A moisture application will also be used to minimize fugitive dust at any construction site.

**Categorical Exclusion to be Applied**

The authority for finding this project to be subject to NEPA Categorical Exclusion is contained in Subpart D of the revision to 10 CFR Part 1021, entitled "National Environmental Policy Act Implementing Procedures and Guidelines." The Final Rule and Notice, effective May 26, 1992, includes a revised and expanded list of categorical exclusions that are classes of actions that normally do not require the preparation of either an Environmental Impact Statement or an Environmental Assessment.

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The Final Rule and Notice specifically lists in Part 1021, Appendix B to Subpart D, Sec. 1021.410, B6.1(a),(e), and (g), the following as types of actions that are Categorical Exclusions applicable to Specific Agency Actions:

Removal actions under CERCLA (including those taken as final response actions and those taken before remedial action) and removal-type actions similar in scope under RCRA and other authorities (including those taken as partial closure actions and those taken before corrective action), including treatment (e.g., incineration), recovery, storage, or disposal of wastes at existing facilities currently handling the type of waste involved in the removal action. These actions will meet the CERCLA regulatory cost and time limits or satisfy either of the two regulatory exemptions from those cost and time limits (National Contingency Plan, 40 CFR part 300). These actions include, but are not limited to:

(a) Excavation or consolidation of contaminated soils or materials from drainage channels, retention basins, ponds, and spill areas that are not receiving contaminated surface water or waste water, if surface water or groundwater would not collect and if such actions would reduce the spread of, or direct contact with, the contamination.

(e) Capping or other containment of contaminated soils or sludges if the capping or containment would not affect future groundwater remediation and if needed to reduce migration of hazardous substances, pollutants, contaminants, or CERCLA excluded petroleum and natural gas products into soil, groundwater, surface water, or air.

(g) Confinement or perimeter protection using dikes, trenches, ditches, or diversions if needed to reduce the spread of, or direct contact with, the contamination.

The correction of the four areas of concern discussed in this categorical exclusion shall reduce the spread of contamination by airborne and waterborne transport. The effort will reduce or eliminate the exposure to individuals working in the immediate vicinity of the WPA and will reduce or eliminate the level of effort required for decontamination of equipment entering and leaving the WPA.

Furthermore, the proposed action will not violate applicable statutory, regulatory, or permit requirements; it will not require siting and construction or major expansion of waste disposal, recovery or treatment facilities; and it will not significantly impact any environmentally sensitive areas (e.g., wetlands, floodplains, or the sole-source aquifer) or archeological significant areas. The proposed area has been visually inspected and will not involve wetlands.

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Compliance Action

I have determined that the proposed action meets the requirements for the CX referenced. Therefore, the proposed action is categorically excluded from further NEPA review and documentation.

Approval:

*Ray Hansen for*  
Thomas J. Rowland, Acting Manager  
U.S. Department of Energy, Fernald Office

Date:

*May 6, 1993*