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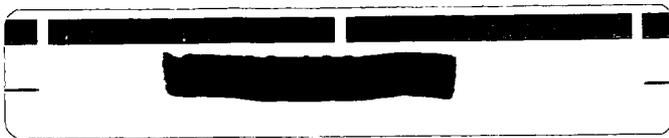
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**REMOVAL OF CONTAMINATED RUBBLE NEAR THE FEMP WASTEWATER
DISCHARGE IN THE GREAT MIAMI RIVER JULY 1992**

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**Removal of Contaminated Rubble
Near the FEMP Wastewater Discharge
in the Great Miami River**

**Fernald Environmental Management Project
Fernald, Ohio**

July 1992

INTRODUCTION

Wastewater from the Fernald Environmental Management Project (FEMP) is discharged through an outfall line into the Great Miami River. The present outfall, used since the mid-1950s, is currently being replaced with a new pipeline. The new pipeline is being constructed parallel to the existing outfall line, with completion of the new line by the end of 1992.

The original discharge structure on the outfall line at the Great Miami River toppled in 1965 because of the river's movement. As a result of this incident, sheet piling was placed on both sides of the discharge structure to prevent further erosion. This sheet piling extends approximately 100 feet from the end of the outfall back into the bank of the river. Only a small portion of the sheet piling is currently exposed. Concrete was used to encapsulate the outfall line where it enters the river. In addition, an 18-foot extension was placed on the outfall line to allow the effluent to be discharged under the surface of the river.

In 1968, it was discovered that the sheet piling was separating from the concrete and settling into the river bed. This separation permitted the concrete surrounding the outfall line to be exposed to the river causing erosion. Riprap, material used on a shoreline to prevent erosion, was placed around the outfall. Thirty to forty loads of construction rubble from a worksite (not associated with the FEMP) were placed at the outfall for use as riprap. Additional riprap has since been placed at the outfall discharge structure since 1968 to control erosion. Construction rubble from the FEMP has been used as some of this additional riprap.

In April 1992, radiologically contaminated riprap was discovered at the outfall on the bank of the Great Miami River. This riprap is believed to have been placed at the outfall approximately 10 years ago as a continuing erosion control measure. Wastewater in the outfall pipeline contains above background concentrations of radiological constituents and other hazardous substances. The wastewater is not suspected to be the source of the contamination on the riprap because the material is located on a higher bank elevation away from the outfall. A Westinghouse Environmental Management Company of Ohio (WEMCO) Radiological Survey Report identified nine contaminated items (consisting of rubble and soil) located in this area that exceeded the allowable Department of Energy (DOE) limits for residual surface contamination. This free release criteria is established by DOE Order 5400.5.

Technical direction issued by the DOE to WEMCO indicated that the contaminated riprap should be removed and containerized. WEMCO implemented this action on July 9, 1992.

DESCRIPTION OF ACTION TAKEN

On July 9, 1992, WEMCO personnel arrived at the outfall to implement the action to remove the contaminated items identified in the radiation survey. Utilizing a small backhoe, forklift, and shovels, the contaminated material was removed and placed into two B-25 boxes for transportation to the FEMP. A B-25 box is a metal container that is used for the storage of low-level radioactive materials and meets all Department of Transportation (DOT) requirements. The total amount of material removed from the outfall area was approximately four cubic yards. Approximately 10% of the material removed was soil. The largest piece of riprap removed was 4' x 2' x 1/2' and weighed over 400 lbs.

Prior to the removal, an evaluation of the material was completed by WEMCO personnel to classify the material in accordance with Ohio hazardous waste regulations. It was determined that the material was radiologically contaminated and no hazardous wastes were present. To verify the absence of any volatile organic compounds, WEMCO Industrial Hygiene personnel monitored the material with a hand held organic vapor analyzer as it was being removed. No elevated readings were collected by this monitoring to indicate the presence of volatile organic compounds.

During the removal of the contaminated material, a radiation survey was performed to insure that all items exceeding the DOE limits for residual surface contamination were removed. Also, all equipment utilized during the removal of material was surveyed to detect surface contamination.

FOLLOWUP ACTIONS

The containerized material removed from the outfall area was transported to the FEMP for storage on the Plant 1 Pad. The containers will remain on the Plant 1 Pad until their final disposition is determined.

Surface soil samples were collected by WEMCO to insure that the area satisfies the DOE free release criteria. Soil samples provide the ability to analyze for the radiological constituents to much lower levels of detection than available by hand held radiological instruments. The samples were sent to the WEMCO Laboratory for analysis. The results of this sampling were not available for this report. The results will be included in the Administrative Record upon their availability.

Exhibit 3-1 presents before and after photographs of some of the locations where the contaminated riprap was identified and removed.

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(AFTER)



Exhibit 3-1 - Before and After Photographs of the Affected Areas (Page 1 of 2)

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Exhibit 3-1 - Before and After Photographs of the Affected Areas (Page 2 of 2)

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