

4506

*CATEGORICAL EXCLUSION DETERMINATION FOR  
SOUTH GROUNDWATER CONTAMINATION PLUME  
REMOVAL ACTION - PART 5 GROUNDWATER  
MODELING AND GEOCHEMICAL INVESTIGATION  
NEPA DOC. NO. 360*

*11/07/91*

*DOE-FN/DOE-HQ  
NEPA DOC. 360  
5  
CAT EX*

CATEGORICAL EXCLUSION DETERMINATION  
FOR SOUTH GROUNDWATER CONTAMINATION PLUME REMOVAL ACTION - PART 5  
GROUNDWATER MODELING AND GEOCHEMICAL INVESTIGATION (NEPA No. 360)  
Fernald Environmental Management Project, Fernald, Ohio

Proposed Action

The U.S. Department of Energy (DOE) proposes to conduct site characterization and groundwater monitoring activities, including hydropunch sampling, soil vapor surveys, and the drilling and installation of groundwater monitoring wells in an area south of the Fernald Environmental Management Project (FEMP), referred to as the South Groundwater Contamination Plume (South Plume).

Location of Action

The proposed action will occur in an area south of the FEMP referred to as the South Plume. The South Plume extends south of the FEMP in an elongated ellipse oriented in a northwest/southeast direction underlying approximately 100 acres. The FEMP is located 20 miles northwest of downtown Cincinnati, Ohio.

Background

The South Plume contains groundwater with concentrations exceeding the DOE-Derived Concentration Guide for uranium in drinking water. An Engineering Evaluation/Cost Analysis (EE/CA) was prepared in accordance with 40 CFR 300.415 to evaluate removal action alternatives for the South Plume. The U.S. Environmental Protection Agency (EPA) and the Ohio EPA approved the EE/CA and the preferred removal action alternative in November 1990. The South Plume Removal Action has three main objectives: (1) to protect public health by limiting access to and use of groundwater with uranium concentrations exceeding the DOE-Derived Concentration of 30  $\mu\text{g/L}$ ; (2) to protect the groundwater environment; and (3) to control plume migration. Originally, the South Plume Removal Action consisted of four parts:

- Part 1 - Alternate Water Supply,
- Part 2 - Pumping and Discharge System,
- Part 3 - Interim Advanced Wastewater Treatment System, and
- Part 4 - Groundwater Monitoring and institutional Controls.

Recently, it was determined that if the extraction well field (included in Part 2 of the removal action) is located as proposed in the November 1990 EE/CA, there is a strong possibility of extracting or significantly influencing organic and inorganic contaminants from the Paddy's Run Road Site (PRRS). In May 1991, DOE, U.S. EPA, and Ohio EPA decided to relocate the well field to the north of the Albright & Wilson Americas' property to eliminate this possibility. Although no contaminants from the PRRS plumes are expected to be extracted by the wells at the new proposed location, a higher concentration of uranium has been predicted by the computer model at this location. A Part 5, Groundwater Modeling and Geochemical Investigation, has been added to the South Plume Removal Action to verify the computer model

predictions and to determine the most effective pumping configuration. The November 1990 EE/CA is currently being revised to address the relocation of the extraction well field and any additional changes to the scope of the South Plume Removal Action that have occurred subsequent to November 1990.

### Description of Proposed Action

The DOE proposes to conduct site characterization and groundwater monitoring activities that comprise Part 5 of the South Plume Removal Action at the FEMP. These activities include hydropunch sampling, soil vapor surveys, and the drilling and installation of groundwater monitoring wells.

Hydropunch sampling will be conducted at approximately 20 sample points within the South Plume area. Hydropunch sampling enables the vertical profile of the South Plume to be measured with a greater degree of accuracy than conventional monitoring wells by collecting successively deeper samples at a given location. The process uses augers driven into the aquifer to a depth of no more than 50 feet where the groundwater samples will be taken. A stainless steel tool is driven into the aquifer ahead of the auger and will collect a 1.2 liter sample of groundwater. After the samples are collected, the auger hole will be filled and sealed with bentonite and covered with soil.

Soil vapor surveys will be conducted to delineate the northern and eastern boundaries of the plume containing volatile organic compounds associated with the PRRS. The surveys will be conducted on a grid with 100-foot centers within approximately a 6.5 acre area. The soil vapor survey consists of driving a 3/8 inch diameter hollow rod to a depth of 60 inches. A tube will be connected to the hollow and an Organic Vapor Analyzer will be attached to take a semiquantitative measurement of the volatile organic material.

Seven groundwater monitoring wells will be installed in the South Plume area in four locations. These wells will be used to verify the uranium concentrations in groundwater in the area immediately north of the proposed location of the extraction wells and will provide baseline samples for determining the actual concentration of uranium that will be pumped from the extraction wells. The total area expected to be disturbed during a single drilling will be approximately 30 feet by 30 feet, including the drilling rig placement and personnel work area. The ground disturbed by the drilling rig will be regraded, reseeded with grass, and restored to near original condition upon completion of the drilling operation. Where possible, all vehicles and drilling rigs will use existing roads or clearings to reach the drilling site.

The Swift III Groundwater Model will be used to optimize the locations and designs of the removal action wells. The model will also be used to investigate the impacts of the removal action wells on the inorganic and organic plumes associated with the PRRS.

Much of the field work proposed for Part 5 of the South Plume Removal Action will be conducted within the 100-year floodplain of the Great Miami River (GMR). The proposed actions will result in some temporary disturbances to the

floodplain; however, none of the proposed actions will result in the construction of any permanent structures and there will be no adverse impact on the floodplain. A Floodplain Involvement Notification for the South Plume Removal Action was published in the Federal Register on June 14, 1991. A Floodplain Assessment and a Floodplain Statement of Findings have been prepared pursuant to the requirements of 10 CFR 1022, "Compliance with Floodplains/Wetlands Environmental Review Requirements". The Floodplain Assessment will be included in the South Plume EE/CA-Environmental Assessment to be submitted for approval after the South Plume EE/CA has been revised to reflect changes in the scope of the proposed action subsequent to November 1990. The Floodplain Statement of Findings is expected to be published in the Federal Register in October 1991. The DOE will allow at least 15 days for public review of the Floodplain Statement of Findings before implementing the proposed action.

All activities will be conducted as specified by the Sampling and Quality Assurance Project Plans, included in the FEMP Remedial Investigation/Feasibility Study Workplan, to prevent the inadvertent or uncontrolled movement of contaminants.

#### Categorical Exclusion (CX) to be Applied

The Amendments to Section D of DOE's National Environmental Policy Act (NEPA) Guidelines, published in the Federal Register on September 7, 1990, add classes of actions generally applicable to all DOE that normally do not require Environmental Assessments or Environmental Impact Statements.

The Amendments specifically list the following as types of actions that are included:

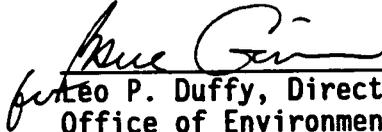
Site characterization and environmental monitoring, including siting, construction, or operation of characterization and monitoring devices, where the activities would not introduce or cause the inadvertent or uncontrolled movement of hazardous substances as defined in Section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), pollutants or contaminants as defined in Section 101(33) of CERCLA, or nonnative organisms, and would not adversely affect environmentally sensitive areas. Activities covered include but are not limited to: drilling of groundwater or vadose zone sampling and monitoring wells; sampling and characterization of water, soil, rock and contaminants; and geological and engineering surveys and mapping.

The CX is appropriate since the proposed action, as described above, is to drill groundwater monitoring wells, and to conduct hydropunch sampling, soil vapor surveys, and groundwater modeling activities. These activities will not introduce or cause the inadvertent or uncontrolled movement of contaminants; and will not adversely affect environmentally sensitive areas.

Compliance Action

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

APPROVAL:

  
Leo P. Duffy, Director  
Office of Environmental Restoration  
and Waste Management, EM-1

Date:

11/7/91

EH-25 has reviewed this determination and has no objection.

Signature:

  
~~Carol Borgstrom, Director~~  
Office of NEPA Oversight, EH-25

Date:

11/22/91

NEPA # 6550

# memorandum

4506 360

DATE:

REPLY TO

ATTN OF: EM-424 (S. Frush, 3-8159)

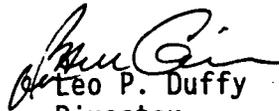
SUBJECT: Categorical Exclusion Determination - South Groundwater Contamination  
Plume Removal Action - Part 5, Groundwater Modeling and Geochemical  
Investigation, Fernald Environmental Management Project, Fernald, Ohio 73

TO:

Carol Borgstrom, EH-25

I have approved the subject categorical exclusion under Section D of the Department of Energy's National Environmental Policy Act Guidelines and am forwarding it to you for review.

I request that you notify me within 2 weeks, in accordance with the Interim Procedural Guidelines for implementation of SEN-15-90, whether you have any objection to this determination.



Leo P. Duffy  
Director  
Office of Environmental Restoration  
and Waste Management

Attachment

CC:

L. Lawson, EM-431  
M. Kleinrock, EM-20

(EH-25)  
RECEIVED  
NOV 8 1991

NEPA#0530

005