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**CONSENT AGREEMENT/FEDERAL FACILITY COMPLIANCE
AGREEMENT/FEDERAL FACILITY AGREEMENT AND REMEDIAL
INVESTIGATION/FEASIBILITY STUDY MONTHLY PROGRESS REPORT
FOR DECEMBER 1994**

01/19/95

DOE-0450-95
DOE-FN EPAS
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REPORT



Department of Energy
Fernald Environmental Management Project
P. O. Box 398705
Cincinnati, Ohio 45239-8705
(513) 648-3155

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JAN 19 1995

DOE-0450-95

Mr. James A. Saric, Remedial Project Director
U.S. Environmental Protection Agency
Region V - 5HRE-8J
77 W. Jackson Boulevard
Chicago, Illinois 60604-3590

Mr. Tom Schneider, Project Manager
Ohio Environmental Protection Agency
401 East 5th Street
Dayton, Ohio 45402-2911

Dear Mr. Saric and Mr. Schneider:

CONSENT AGREEMENT/FEDERAL FACILITY COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT AND REMEDIAL INVESTIGATION/FEASIBILITY STUDY MONTHLY PROGRESS REPORT FOR DECEMBER 1994

Enclosure 1 is the consolidated CA/FFCA/FFA and RI/FS Monthly Progress Report which describes the activities accomplished December 1-31, 1994, and planned actions for the period of January 1995. Also, enclosed are diskettes containing Lotus 1-2-3 (Version 2.2) data files of the K-65 hourly data (see Enclosure 2).

If you or your staff should have any questions, please contact me at (513) 648-3107.

Sincerely,

for

Jack R. Craig
Fernald Remedial Action
Project Manager

Enclosures: As Stated

cc w/enc:

K. A. Chaney, EM-423, QO
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Introduction

The Consent Agreement (CA) As Amended under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Sections 120 and 106(a), the Federal Facility Compliance Agreement (FFCA), and the Federal Facility Agreement for Control and Abatement of Radon-222 Emissions (FFA-CARE) between the U.S. Department of Energy (DOE) and the U.S. Environmental Protection Agency (U.S. EPA) signed September 20, 1991, July 18, 1986, and November 19, 1991, respectively, require that monthly reports be submitted to the U.S. EPA regarding progress made to meet the provisions of those agreements. This report fulfills those requirements by describing actions undertaken at the Fernald Environmental Management Project (FEMP) during the period December 1 through December 31, 1994, and planned actions for the period January 1 through January 31, 1995.

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WORK ASSIGNMENTS AND PROGRESS

Descriptions of work progress are presented in the following sections and/or enclosures to this report:

- CA Section IX - Removal Actions
- CA Section X - Remedial Investigation/Feasibility Study
- Enclosure A - Waste Water Flows and Radionuclide Concentrations under CA Section XXIII.B
- Enclosure B - FFCA: Initial Remedial Measures and Other Open Actions
- Enclosure C - FFA: Control and Abatement of Radon-222 Emissions
- Enclosure D - Effluent Radiation Discharges to the Great Miami River

CA Section IX. Removal Actions

This section provides an update of activities associated with the implementation of Removal Actions (RAs) at the FEMP during December 1994. Information is presented for each of the Removal Actions identified in the Consent Agreement As Amended.

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REMOVAL ACTION SUMMARY

NO.	TITLE	SCOPE	STATUS
Phase I			
1	Contaminated Water Under FEMP Buildings	Pump water from extraction wells underneath Plants 2/3, 6, 8, and 9. Treat extracted water for volatile organic chemicals and uranium removal before discharge.	Plants 2/3 & 6 Operational Plant 8 Temp. Inoperable
2	Waste Pit Area Run-off Control	Collect and treat contaminated storm water run-off from the waste pit area.	Operational: 7/30/92 Operation Ongoing
3	South Groundwater Contamination Plume	Part 1 - Install new alternate water supply and transfer to industrial user.	Operational: 12/7/92 Operation Ongoing
		Part 2 - Pump and discharge groundwater from South Plume.	Operational: 8/27/93 Operation RW 5 offline indefinitely
		Part 3 - Install and operate Interim Advanced Waste Water Treatment system to reduce uranium contaminant loading to the Great Miami River.	Operational: 7/30/92 Operation Ongoing
		Part 4 - Conduct groundwater monitoring and institutional controls by sampling private and existing RI/FS wells in the South Plume area and installing homeowner treatment systems.	Ongoing
		Part 5 - Conduct groundwater modeling and geochemical investigating to define the extent of the groundwater plume contaminated with uranium.	Completed: 2/25/94
		OU 2 Dispute Resolution Supplemental Project - Provide for partial treatment of the South Plume discharge to further reduce uranium flow to the Great Miami River.	Operational: 3/31/94 Operation Ongoing
4		Silos 1 & 2	Install bentonite cap to reduce and monitor radon emissions. Provide follow-on monitoring.

*Shading denotes completed actions

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NO.	TITLE	SCOPE	STATUS
5	Decant Sump Tank	Periodically remove liquid from K-65 decant sump tank.	Ongoing
6	Waste Pit 6 Residues	Eliminate potential airborne contamination by resubmerging exposed pit material.	Completed: 12/19/90
7	Plant 1 Pad Continuing Release	Stage I - Implement run-on/off control measures.	Completed: 1/17/92
		Stage II - Install new pad.	Completed: 12/4/92
		Stage III - Upgrade existing Plant 1 Storage Pad	Ongoing
Phase II			
8	Inactive Flyash Pile Control	Install plastic chain-link barrier and post warning signs.	Completed: 12/23/91
9	Removal of Waste Inventories	Disposition of low-level waste off-site.	Ongoing
10	Active Flyash Pile Controls	Phase I - Complete interim surface stabilization.	Completed: 6/29/92
		Phase II - Complete active flyash pile controls.	Maintenance: Ongoing
11	Pit 5 - Experimental Treatment Facility	Remove contents, structure, and filter material. Backfill and cap with clay cover.	Completed: 3/20/92
12	Safe Shutdown	Remove uranium and other material from former processing equipment and ship material and equipment off-site.	Ongoing
13	Plant 1 Ore Silos	Dismantle fourteen ore silos and their support structures.	Completed: 12/19/94
14	Contaminated Soil Adjacent to Sewage Treatment Plant Incinerator	Isolate or remove and dispose of contaminated soils from the vicinity of the sewage treatment plant.	Final Report Submitted 11/18/94
15	Scrap Metal Piles	Phase I - Disposition LLW ferrous/non-ferrous scrap metal	Ongoing
		Phase II - IIA - Containerization of scrap copper	Completed: 9/29/92
		IIB - Disposition of scrap copper	Ongoing
16	Collect Uncontrolled Production Area Run-off - Northeast	Collect storm water run-off from the northeast perimeter of the former production area in the Storm Water Retention Basin.	Completed: 8/20/93

* Shading denotes completed actions

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NO.	TITLE	SCOPE	STATUS
17	Improved Storage of Soil and Debris	Improve storage of existing and future generated soils and debris.	Ongoing
18	Control Exposed Material in Pit 5	Eliminate potential airborne contamination by re-submerging exposed pit material.	Completed: 6/30/93
Phase III			
19	Plant 7 Dismantling	Dismantle and dispose of the Plant 7 structure.	Ongoing
20	Stabilization of UNH Inventories	Neutralize, filter and package UNH inventory.	Ongoing
21	Expedited Silo 3	Mitigate the potential release of hazardous waste material by covering and sealing dust collector hopper, removing dust collector, and capping and covering obvious release pathways.	Completed: 2/24/93
22	Waste Pit Area Containment Improvement	Stabilize south berm of Pit 4; regrade drainage ditches along Pits 3, 4, 5, and 6; and resurface road between Pits 3, 4, 5, and 6.	Completed: 7/30/93
23	Inactive Flyash Pile	Conduct field investigation to identify locations requiring material removal.	Completed: 4/30/92
24	Pilot Plant Sump	Remove liquid and sludge from the sump.	Completed: 10/15/93
25	Nitric Acid Tank Car and Surrounding Area	Remove residual contents from tank car and decontaminate and dispose of tank car.	Completed: 10/11/93
26	Asbestos Removals (Asbestos Program)	Mitigate the potential for contaminant and migration of asbestos fibers.	Ongoing
27	Management of Contaminated Structures at the FEMP	Submit an Engineering Evaluation/Cost Analysis for managing contaminated structures. Identify alternatives for managing contaminated structures.	Final EE/CA Approved 6/16/93
28	Contamination at the Fire Training Facility	Remove, decontaminate, dispose, treat or store contaminated structures, equipment, and soil from the former Fire Training Facility.	Ongoing
29	Erosion Control at Inactive Flyash Pile	Mitigate the threat of erosion induced slope failure and discharge of flyash to Paddy's Run.	Final Report Submitted to DOE 2/94 Maintenance: Ongoing
30	Seepage Control at the South Field and Inactive Flyash Pile	Minimize future groundwater contamination by intercepting contaminated seeps that drain from the South Field and Inactive Flyash Pile and infiltrate to the GMA.	Ongoing

*Shading denotes completed actions

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Removal Actions

RA No. 1, Contaminated Water Under FEMP Buildings

Current Month:

The Plant 8 Volatile Organic Compounds (VOC) treatment system, the Plant 6 perched water wells, and Plant 6 Motor Bay Sump pumping system remain in operation.

Planned Activities:

- Complete corrective maintenance and reestablish operations of Plants 2/3, 8, and 9 perched groundwater extraction wells.

RA No. 3, South Groundwater Contamination Plume

Part 1 - Alternate Water Supply

Current Month:

Groundbreaking ceremony for Public Water Supply (PWS) Project A was performed December 5, 1994. Actual construction should begin in mid-January 1995 based on pipe delivery.

Delta Steel requested that they be provided bottled water service from the FEMP until the PWS is complete. A decision was made to provide Delta Steel with bottled water using the same service being employed to supply other bottled water users in the affected groundwater areas. A letter/agreement to Delta Steel addressing this issue was reviewed internally.

Cultural resource efforts, including reports and data recovery, are ongoing in conjunction with the installation of the Public Water Supply. Completion of PWS is scheduled for late 1995.

Planned Activities:

- Continue proceedings to transfer ownership of the AWS to Albright and Wilson in accordance with the settlement agreement of 1990.
- Continue to support Hamilton County Department of Public Works (HCDPW) on installation of the entire PWS including service connections.
- Provide cultural resource monitoring during construction of Project A.
- Complete cultural resources efforts for area in Project B along State Route 128.
- Prepare requisition for Delta Steel regarding the requested bottled water service.

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Removal Actions

Part 2 - Pumping and Discharge System

Current Month:

Pumping of Recovery Wells 2 and 3 continue. Recovery Wells 1, 4, and 5 remain shut down as previously reported.

Work has begun to prepare a Construction Work Plan and Health and Safety Plan for the installation of a new recovery well to replace Recovery Well 1. Recovery Well 1 is being replaced due to a damaged screen.

Mobilization for the installation of the new pump and a pressure transducer to measure water elevations began on Recovery Well 4 the last week of December.

Arsenic concentrations in three south plume observation wells (2128, 2548 and 2625) are still below detection limits as of December 12, 1994.

Part 3 - Interim Advanced Waste Water Treatment (IAWWT)

IAWWT Storm Water Retention Basin (SWRB) Unit

Current Month:

Nothing to report.

Planned Activities:

- Continue to operate IAWWT(SWRB).

IAWWT Bionitrification Effluent Treatment System (BDN-ETS) Unit

Current Month:

Nothing to report.

Planned Activities:

- Continue to operate IAWWT(BDN-ETS) unit.

Part 4 - Groundwater Monitoring and Institutional Controls

Current Month:

Sampling of private homeowner and existing RI/FS wells in the South Plume area continues. The FEMP continues to monitor the effectiveness of the ion exchange water systems currently in use at two private residences.

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Removal Actions

RA No. 3, South Groundwater Contamination Plume - (continued)

Planned Activities:

- Continue to monitor performance of the ion exchange systems in use at private residences.

Operable Unit 2 Dispute Resolution Supplemental Project (Uranium Reduction in FEMP Discharge)

Step 1

Current Month:

Nothing to report.

Planned Activities:

- Continue full operation of the system.

Step 2

Current Month:

Nothing to report.

Planned Activities:

- The off-peak capacity will be available when Phase I of the AWWT system becomes operational in January 1995.

Step 3

Current Month:

In December, conditional construction acceptance of the AWWT Phase I system was accepted by the FEMP from the construction contractor. This acceptance was based upon completion of the punchlist items. Began systems operability testing of instruments and controls in the portion of the new pipeline going to the AWWT Phase II equalization tanks.

Planned Activities:

- Continue systems operability testing of instrumentation and controls in the portion of the new pipeline going to the Phase II equalization tanks in preparation for turnover of the system to Operations in January 1995.

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Operable Unit 2 Dispute Resolution Supplemental Project (Uranium Reduction in FEMP Discharge) (continued)

Step 4

Current Month:

Nothing to report.

Planned Activities:

- Conversion of the IAWWT(SWRB) to South Plume groundwater treatment is scheduled to be accomplished between January and March 1995.

RA No. 5, K-65 Decant Sump Tank

Current Month:

Nothing to report.

Planned Activities:

- None

RA No. 7, Plant 1 Pad Continuing Release

Current Month:

The contractor has completed all the outstanding punchlist items with the exception of the expansion joint material failure. The repair process of the expansion joint material (weather permitting) will continue after an engineering evaluation of the repair is completed. The completion of the evaluation is anticipated by the end of February 1995. The Final Report was submitted internally (DOE-FN) on December 16, 1994 for transmittal to U.S. EPA on February 21, 1995.

Planned Activities:

- Complete the repair (weather permitting) of the expansion joint material.

KEY MILESTONES	STATUS	DUE DATE
Complete Resurfacing of Phase III pad	Completed	September 30, 1994
Issue Final Report to EPA	On Schedule	February 21, 1995

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Removal Actions

RA No. 9, Removal of Waste Inventories

Current Month:

The volume of waste shipped off-site in December 1994 was 6,108 drum equivalents (DEs) for a total of 13,494 DEs shipped to the NTS in FY-95. This volume includes 5,038 drums of residues removed from inventory and shipped to-date.

The FY 1995 volume shipped to the NTS is 7,152 DEs behind schedule; however, the schedule slippage has been reduced by 23% based upon comparison with November 1994 data. Reduction of schedule slippage is primarily due to release of ISO and large metal box shipments that were temporarily staged pending revised tie-down procedures. Additional reduction of schedule slippage is anticipated in January 1995, since approximately 4,617 DEs of waste are currently staged awaiting shipment. Lastly, an additional 5,100 DEs of construction waste is being held pending development of a compaction plan. The compaction plan will reduce the volume of material shipped for disposal by 3,570 DEs.

The FEMP ALARA Committee granted approval to initiate thorium material disposition activities in December 1994. Three shipments of thorium materials were packaged, temporarily staged, loaded, and released for transportation to NTS in December 1994.

The volume of low level waste materials shipped in FY-95 per waste stream is as follows:

<u>Waste Stream</u>	<u>DEs Shipped to Date</u>
Process Area Scrap	2,153.66
Thorium	203.52
Residues to NTS	3,725.16
Contaminated Trash	182.30
SEG Residues	2,095.40
Construction (Legacy)	883.08
Construction (Newly Generated)	4,250.90

Planned Activities:

- During January, the FEMP intends to ship an additional 5,537 DEs of low level waste to NTS.
- Three additional shipments to NTS of thorium will be completed in January 1995.

RA No. 12, Safe Shutdown

Current Month:

Preparation of implementation plans for Safe Shutdown activities, including Hazardous Waste Management Unit (HWMU) closures, continues with emphasis on the work in Plant 1. The implementation plan for Plant 4 has been completed and the work is ongoing.

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RA No. 12, Safe Shutdown (continued)

Plans were initiated for repackaging and relocating enriched nuclear materials currently located in Plant 1 and at the Pilot Plant.

Two underground storage tanks were removed and are being size-reduced. They are as follows: Tank No. 5, removed from east of the Garage, and Tank No. 17, removed from the north side of the Heavy Equipment Building. Tank No. 7, North of Plant 9, is in process of being removed. Tank No. 14, located at Plant 6, will be filled with inert material (combination of sand, cement, and flyash) and abandoned in place. Disposition of the metal from the tanks will be determined based on contamination levels.

The following is the status of capital equipment: of an estimated 1,875 items, 1,286 have been or will be excessed, and 589 have been identified as "In Use/Future Use" items.

To date, 1,355 maintenance work orders to isolate and disconnect all utilities/energy sources from equipment not in use have been prepared. Of these, 786 have been completed. Completion of utility disconnects has been a necessary action prior to removal of hold-up material from process equipment in preparation for eventual equipment removal and decontamination and decommissioning. This concept is changing, however, as Safe Shutdown focuses on Plant 1. The power to the building will be cut and portable power packs controlled by Safe Shutdown will be utilized providing a safer and more efficient power supply.

To date, 261 task orders to remove the hold-up material from equipment have been prepared; of those, 60 have been completed.

The number of task orders and work orders decreased this month as they were canceled due to change in status of equipment.

A load of derbies was shipped to Manufacturing Sciences Corporation on December 16, 1994. Total derbies shipped to-date is 142 metric tons uranium weight (MTU) of 440 MTU to be shipped.

Planned Activities:

- Begin to utilize portable power packs.
- Continue to issue task orders to identify and/or remove hold-up materials from process equipment.
- Continue verification of the equipment in Plants 2 and 3 Refinery.
- Continue to prepare implementation packages and obtain appropriate approvals.

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RA No. 12, Safe Shutdown (continued)

- Continue shipping depleted derbies to MSC in Oak Ridge, Tennessee.
- Continue the removal of Plants 5 and 6 equipment to be used in the OU 4 Pilot Plant vitrification project.
- Continue to pursue other government interest in FEMP process equipment and nuclear materials.

RA No. 13, Plant 1 Ore Silos

Current Month:

Activities in December included decontamination of equipment and materials as part of the close out of the construction portion of the Removal Action.

Planned Activities:

- Continue to decontaminate equipment and materials.

KEY MILESTONES	STATUS	DUE DATE
Complete Removal Action	Completed	December 19, 1994

RA No. 14, Contaminated Soils Adjacent to Sewage Treatment Plant Incinerator (STPI)

Current Month:

None to report.

Planned Activities:

- None to report - Removal Action complete. Awaiting comments and/or approval from Ohio EPA and U.S. EPA.

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Removal Actions

RA No. 15, Scrap Metal Piles

Current Month:

Phase I: None to report.

Phase II: None to report.

Planned Activities:

- Phase I: Final disposition of the 84 remaining oxide boxes is delayed until February 28, 1995 due to sampling and analysis of the stabilized waste. Confirmatory sampling of the treated slag and two oxide boxes will begin upon completion of stabilization by SEG.
- Phase II: Determine path forward for project since it is not currently baselined.

KEY MILESTONES	STATUS	DUE DATE
Phase I - On-Site Processing Off-Site Processing	Completed Completed	Sept. 30, 1993 March 25, 1994
Phase I - Submit draft Final Report to U.S. EPA	Completed	October 4, 1994
Phase IIB: Submittal of Subcontractor's Removal Action Project Plan	On hold until funding is available	Sept. 30, 1993
Phase IIB: Submittal of Final Report	On hold until funding is available	March 30, 1995

RA No. 17, Improved Storage of Soil and Debris

Current Month:

December activities included completion of the removal of all visible scrap metal and wood from the pile north of Third Street. All of this debris has been placed into 3 large white metal containers for off-site shipment. Concrete within the pile has been segregated to the east side of the pile and is being size reduced into smaller pieces for efficient stockpiling. Grading has begun on the west side of the pile including compaction of each lift to ensure slope stabilization.

The remaining Radiation Worker Permits (RWP's), requests for heavy equipment operators, and procurement difficulties associated with loading equipment were resolved and secured in December.

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RA No. 17, Improved Storage of Soil and Debris (continued)

Planned Activities:

- Continue size reducing and stockpiling concrete to the East side of pile.
- Continue grading and compacting soil to the specified slopes.
- Containerization and removal of the remaining debris/residue at the Scrap Metal Pad is scheduled to begin week of January 3, 1995.

RA No. 19, Plant 7 Dismantling

Current Month:

December activities included completion of all remaining punchlist items and decontamination of the remaining shear head. All subcontractor activities were completed by December 14, 1994.

Planned Activities:

- Close out remaining contractual issues and make final payment to the subcontractor.

RA No. 20, Stabilization of UNH Inventories

Current Month:

Construction of the new UNH transfer piping was completed on December 1, 1994. The double-diaphragm pumps and the inlet and outlet piping to the pumps were modified to reduce vibration. UNH operating procedures were revised to reflect comments received during table top review training of operators and re-issued on December 28. Training on the operating procedures, Project Health and Safety Plan, and several other documents were completed for operators and supervisors.

On December 27, 1994 Ohio EPA issued Director's Findings and Orders (DFOs). Within the DFOs, it was directed to change the start-up date from January 16, to January 17, 1995.

Weekly telephone conferences between Ohio EPA, DOE-HQ, DOE-OH, DOE-FN, FERMCO, and DNFSB occurred on a regular basis throughout the month of December and will continue at least through start-up on January 17, 1995.

The System Operability Testing (SOT) was started but ran into several problems. The system was returned to construction to address more than one issue at a time. The SOT was restarted, but not completed by the end of December.

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RA No. 20, Stabilization of UNH Inventories (continued)

Safety Analysis Report (SAR) comment responses were prepared and issued internally (DOE-FN). The document was conditionally approved pending incorporation of the comment responses. The Project Specific Health and Safety Plan was revised to incorporate internal (DOE-FN) comments.

A piping joint failed on December 28, 1994. An engineering design review team has been formed to evaluate this and other issues which have occurred during start-up testing.

Planned Activities

- Complete Operational Readiness Reviews (ORR).
- Complete System Operability Testing (SOT).

RA No. 26, Asbestos Removals (Asbestos Program)

Current Month:

The Water Treatment Building abatement of water lines continues. The removal has been completed in front of filters 3, 4, and 5. The abatement of the NAR Tower was completed in December. Asbestos floor tile removal for the Security Building began in December and has a completion date of January 12, 1995.

Planned Activities:

- Continue the compilation of work packages.
- Construction activity on the thermal system insulation removal is ongoing.

RA No. 28, Contamination at the Fire Training Facility

Current Month:

December activities included backfilling of surface soil excavations, sampling and backfilling the open tank trench, sampling the three excavated soil stockpiles, analyzing the verification samples, and installing four perched water borings near the pond.

Planned Activities:

- Continue to size reduce and containerize the open top tank.
- Continue to move remaining boxes of soils to proper mixed waste storage.

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RA No. 28, Contamination at the Fire Training Facility (continued)

- Continue to excavate the remaining asphalt pad.
- Continue to seed all excavated areas.
- Continue to work all "free release" issues with Ohio EPA and U.S. EPA.
- Begin work on Close-out Report for the removal action.

RA No. 30, Seepage Control at the South Field and Inactive Flyash Pile

Current Month:

An alternative evaluation was completed and a draft work plan submitted for internal (DOE-FN) review on December 22, 1994. A statement of work for design services was provided to PARSONS on December 15, 1994.

Planned Activities for January:

- Submit work plan to EPA.
- Negotiate design services with Parsons.

KEY MILESTONES	STATUS	DUE DATE
Submit RSE	Completed	October 11, 1994
Submit work plan to DOE	Completed	December 22, 1994
Complete Removal Action	Work plan in progress	October 17, 1995

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Remedial Investigations/Feasibility Studies

1.0 Operable Unit 1

Operable Unit 1 (OU 1), as defined in the Amended Consent Agreement, includes Waste Pits 1 - 6, Clearwell, Burn Pit, berms, liners, and soil within the operable unit boundary.

1.1 RI/FS Work Plan

Status:

Complete.

1.2 Remedial Investigation

Status:

Complete.

OPERABLE UNIT 1 REMEDIAL INVESTIGATION REPORT

PRIMARY MILESTONES

SCOPE	SUBMIT TO EPA	RECEIVE FROM EPA	SUBMIT TO EPA FINAL
Details the nature and extent of contaminants within the OU 1 study area. Estimates the volume of contaminated media and materials. Provides a baseline risk assessment and establishes remedial action objectives.	10/4/93 A	12/20/93 A	02/04/94 A

C = Consent Agreement Date

A = Actual

* = Request for extension

1.3 Feasibility Study/Proposed Plan

Status:

Complete.

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OPERABLE UNIT 1 FEASIBILITY STUDY/PROPOSED PLAN

PRIMARY MILESTONES

SCOPE	SUBMIT TO EPA	RECEIVE FROM EPA	SUBMIT TO EPA FINAL
Describes and analyzes potential remedial alternatives. A comparative analysis is performed for all alternatives. The Proposed Plan identifies potential remedial alternatives as listed in the FS and presents the preferred alternative to the U.S. EPA and the public.	03/04/94 A	06/01/94 A	07/01/94 A

C = Consent Agreement Date
A = Actual

1.4 Treatability Studies

Status:

Wet excavation, Phase II of the Dewatering and Excavation Evaluation Program (DEEP), is scheduled to begin in mid-January. Procurement and Safety Analysis delays have caused this activity to slip from late December to mid-January.

Issues/Corrective Actions:

None to report.

1.5 Record of Decision

Status:

U.S. EPA approval of the Draft OU 1 Proposed Record of Decision was received December 27, 1994. Responses to comments and document preparation Draft Final submittal to U.S. and Ohio EPAs are in process.

Issues/Corrective Actions:

None to report.

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1.6 RD/RA Work Plan

The Remedial Design Work Plan identifies and defines the activities required to develop the final construction plans, specifications, and bid documents for the implementation of the selected remedy described in the OU 1 Record of Decision. The Remedial Action Work Plan provides the basis for implementation of the Remedial Design Work Plan and includes, but is not limited to, the following: Safety & Analysis Plan, Quality Assurance Project Plan, Health & Safety Plan, Operations & Maintenance Plan, and a plan for satisfying permitting requirements.

Status:

Within 60 days of finalization of the OU 1 Record of Decision, a Remedial Design Work Plan must be submitted to U.S. EPA.

Issues/Corrective Actions:

None to report.

1.7 Planned Activities for January 1995

- Begin Phase II of the DEEP project, wet excavation, in mid-January.
- Submit Draft OU 1 Proposed Record of Decision responses to comments to U.S. and Ohio EPAs.
- Submit Draft Final OU 1 Record of Decision to U.S. and Ohio EPAs by January 26, 1995.
- A Public Availability Session on the RD/RA Process is tentatively scheduled for January 31, 1995.

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2.0 Operable Unit 2

Operable Unit 2 (OU 2), as defined in the Amended Consent Agreement, includes the Flyash Piles, other South Field disposal areas, Lime Sludge Ponds, Solid Waste Landfill, berms, liners, and soil within the operable unit boundary.

2.1 RI/FS Work Plan Addendum

Status:

Complete.

2.1.1 RI Field Investigation

Status:

Complete.

2.2 Remedial Investigation

Status:

U.S. EPA approval of the Operable Unit 2 Remedial Investigation Report (RI) was received on December 22, 1994. The Final RI report will be submitted by January 21, 1995.

Issues/Corrective Actions:

None to report.

OPERABLE UNIT 2 REMEDIAL INVESTIGATION REPORT

PRIMARY MILESTONES

SCOPE	SUBMIT TO EPA	RECEIVE FROM EPA	SUBMIT FINAL to EPA
Details the nature and extent of contaminants within the OU 2 study area. Estimates the volume of contaminated media and materials. Provides a baseline risk assessment and establishes remedial action objectives.	02/18/94 C	04/22/94	01/21/95

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2.3 Feasibility Study/Proposed Plan

Status:

The Feasibility Study/Proposed Plan was conditionally approved by U.S. EPA on October 5, 1994. Final comment responses were submitted on November 10, 1994. DOE is currently awaiting final approval from U.S. EPA.

Issues/Corrective Actions:

None to report.

OPERABLE UNIT 2 FEASIBILITY STUDY/PP REPORT

PRIMARY MILESTONES

SCOPE	SUBMIT DRAFT TO EPA	RECEIVE FROM EPA	SUBMIT TO EPA DRAFT FINAL
Describes and analyzes potential remedial alternatives. A comparative analysis will be performed for all alternatives. The Proposed Plan identifies potential remedial alternatives as listed in the FS and presents the preferred alternative to the U.S. EPA and the public.	04/29/94 C	07/05/94 C	08/24/94 C

C = Consent Agreement Date

2.4 Treatability Studies

Status:

None to report.

Issues/Corrective Actions:

None to report.

2.5 RD/RA Work Plan

Status:

Work is being rescheduled to begin in 1995 consistent with plans for the sitewide disposal facility.

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2.6 Record of Decision

Status:

The revised Draft Record of Decision (ROD) was submitted to DOE on December 13, 1994. Internal review comments on the revised ROD are expected on January 12, 1995. The public comment period started October 26, 1994 and was scheduled to end November 25, 1994. However, the public twice requested additional time to comment and the comment period was extended first to December 30, 1994 and then to January 20, 1995. The Draft Responsiveness Summary was originally scheduled to be submitted on December 13, 1994. However, due to the public comment period extensions, the Draft Responsiveness Summary will be submitted on January 13, 1994. The comment period extensions also necessitated an amendment to the Consent Agreement, which changed the submittal of the ROD with Responsiveness Summary to U.S. EPA from January 5, 1995 to February 4, 1995.

SCOPE	SUBMIT DRAFT TO EPA	SUBMIT TO EPA DRAFT FINAL
Presents the selected remedial action for OU 2 in accordance with CERCLA.	2/4/95	5/29/95

2.7 Pre-Design Field Investigation

Status:

The Project Specific Plan for Phases I and II of the Operable Unit 2 Pre-Design Field Investigation has been reviewed by U.S. EPA and Ohio EPA. U.S. EPA comments on the Project Specific Plan were issued on December 6, 1994 and comment resolution began on December 13, 1994. Ohio EPA approval of the Project Specific Plan was received on December 12, 1994. Task Orders for the laboratory analysis and the drilling activities were issued by December 9, 1994. Verbal approval from U.S. EPA and Ohio EPA to proceed with the field investigation was received on December 5, 1994, and field activities were initiated on December 14, 1994. The development of the inverse groundwater model continued through the month of December.

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3.0 Operable Unit 3

Operable Unit 3 (OU 3), as defined in the Amended Consent Agreement, includes the Production Area and production-associated facilities and equipment (including all above-and below-grade improvements) including all structures, equipment, utilities, drums, tanks, solid waste, waste, product, thorium, effluent lines, K-65 transfer lines, waste water treatment facilities, fire training facilities, scrap metal piles, feed stocks, and coal pile.

3.1 RI/FS Work Plan

Status:

Nothing to report.

Issues/Corrective Actions:

None to report.

3.2 Remedial Investigation

Status:

An accelerated schedule and revised approach for the RI have been approved and includes the elimination of the Baseline Risk Assessment, trending of early data, and a combined RI/FS Report. Significant cost savings will result from the accelerated schedule and revised approach. One-hundred percent of the chemical field characterization analytical data have been received from the laboratories, validated, and entered into the sitewide environmental database. As of December 20, 1994, 90% of the radiological field characterization analytical data have been received from the off-site laboratories and is undergoing quality control checks and data validation.

Issues/Corrective Actions:

None to report.

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OPERABLE UNIT 3 REMEDIAL INVESTIGATION REPORT PRIMARY MILESTONES

SCOPE	SUBMIT TO EPA	RECEIVE FROM EPA	SUBMIT TO EPA FINAL
Details the nature of contaminants within the OU 3 study area. Estimates the volume of contaminated media and materials. Characterizes contamination in the former production area and establishes remedial action objectives.	03/13/96 C 09/11/95 F	05/12/96 C 12/05/95 F	06/11/96 C 01/24/96 F

C = Consent Agreement Date

F = Forecast Date

3.3 Feasibility Study/Proposed Plan

Status:

Sections of the Feasibility Study are currently being developed for internal review and approval. The ARARs and Off-Site Waste Acceptance Criteria appendices have been developed in preliminary draft form. Laboratory studies for determining the leachability of OU 3 remediation wastes (concrete and structural steel) were completed. Pathways and receptors for evaluation of short-term risks associated with the activities for each alternative were developed to assess risks to occupational workers and the public. Volume estimates to calculate the total volume of materials associated with OU 3 were completed and loaded into the SWIFTS database.

OPERABLE UNIT 3 FEASIBILITY STUDY/PP REPORT PRIMARY MILESTONES

SCOPE	SUBMIT TO EPA	RECEIVE FROM EPA	SUBMIT TO EPA FINAL
Describes and analyzes potential remedial alternatives. A comparative analysis will be performed for all alternatives. The Proposed Plan identifies potential remedial alternatives as listed in the FS and presents the preferred alternative to the U.S. EPA and the public.	04/12/96 C 09/11/95 F	08/07/96 C 12/05/95 F	11/05/96 C 01/24/96 F

C = Consent Agreement Date

F = Forecast (FS, PP, and ROD anticipated to be delivered early)

Issues/Corrective Actions:

None to Report.

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3.4 Treatability Studies

Status:

Activities in December included planning and/or performing the additional treatability studies: Surface Decontamination/Removal of Metal, Transite Characterization, N-Scan PGNAA, EET Decontamination of Transite, Ultrasonic Decontamination of Strategic Metals, Recycling of Copper Scrap Metal, and the Thorium Nitrate Treatability. Final Treatability Reports continue to be written for the Chemical Leaching of Concrete and the Kelly Decontamination of Concrete Treatability Studies.

Issues/Corrective Actions:

None to report.

3.5 Interim Action - Record of Decision

Status:

Complete.

3.6 Interim Action RD/RA Work Plan

Status:

In response to comments received from U.S. EPA on November 8, 1994 and Ohio EPA on November 17, 1994, the RD/RA Work Plan for the Interim Action and the Building 4A Implementation Plan were transmitted to U.S. EPA and Ohio EPA on December 15, 1994. The development of this material reflects discussions had and agreements reached during a conference call with U.S. EPA and Ohio EPA on November 28, 1994, and a meeting held with both agencies on December 6, 1994. The submittal package contained: 1) a comment response document that reiterates U.S. EPA and Ohio EPA comments received and DOE-FN/ FERMCO responses; 2) the revised Volume 1 of the OU 3 RD/RA Work Plan (Draft Final); 3) Changed Pages for Volume 2 of the OU 3 RD/RA Work Plan; and 4) the revised Building 4A Implementation Plan (Draft Final).

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3.6 Interim Action RD/RA Work Plan (continued)

Substantive revisions to the OU 3 RD/RA Work Plan included the addition and highlighting of waste acceptance criteria for material disposition options (Section 3.4, Appendix A, Sampling and Analysis Plan), conceptual organization drawings and discussions (Section 7), demonstration of subcontractor oversight for compliance (Sections 4.6.3 and 7), and the addition of the Building 4A performance specifications for decontamination and dismantlement in a newly created Appendix C. Substantive revisions to the Building 4A Implementation Plan included the addition of greater detail from the performance specifications, project Statement of Work (Sections 2 and 3), greater specificity on material management (Section 2.2), demonstration of subcontractor oversight for compliance (Sections 5), pertinent design drawings (Appendix D), and selected photographs of Building 4A (Appendix E).

A first draft of the Remedial Design Prioritization and Sequencing Report (PSR) and Material Balance Model (MBM), was completed, copied, and distributed for site-wide review on December 31, 1994, in order to keep on schedule to meet the submittal date of March 17, 1995 to U.S. EPA/Ohio EPA. This document is specified in the RD/RA Work Plan and is intended to meet the intent of the Amended Consent Agreement requirement for "a schedule for implementation of the RD/RA tasks and submittal of RD/RA reports." The PSR is set up to present two base schedules, one unconstrained, and one constrained. The MBM defines the types of material that will be generated during the interim remedial action, addresses the rate of generation of those material types, and evaluates the impacts of the remedial action schedule to on-property storage availability.

Issues/Corrective Actions:

None to report.

3.7 Planned Activities for January 1995

- Continue efforts to unilaterally refine the PSR, and then revise it based on comments received through the site-wide review of the document.
- Revise the Implementation Plans for Phase I of the Plant 1 Complex and the "Outlying Components" of the Pilot Plant design package based on comments received from U. S. EPA/Ohio EPA on the Building 4A Implementation Plan and agreements reached through the various discussions with U.S. EPA/Ohio EPA. Submittal of at least the Plant 1 - Phase Implementation Plan for U.S. EPA/Ohio EPA review is expected in January 1995.

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3.7 Planned Activities for January 1995 (continued)

- Continue efforts to develop a fact sheet for the public providing information on the design process, including specific efforts which have been undertaken, and upcoming remedial action activities. Distribution of this fact sheet is expected to occur in mid to late January 1995.
- Initiate planning efforts for a public meeting on RD/RA efforts at the site, with a focus on OU 1, OU 3, and OU 4 activities. For OU 3, this briefing will reemphasize some of the same material presented in the fact sheet, and allow the public the opportunity to ask questions about the RD/RA process. It is anticipated that this meeting will be held in late January or early February 1995.
- Initiate any efforts which might be necessary to address possible comments received from U.S. EPA/Ohio EPA on the Draft Final RD/RA Work Plan and the Building 4A Implementation Plan.
- Continue development of potential Contaminants of Concern List for OU 3. Source terms continue to be calculated by linking sitewide environmental database information to the material quantity database.
- Continue work on summarizing contaminant characterization and estimation of volumes of contaminated materials for inclusion in the combined RI/FS Report.
- Finalize the development of FS alternatives to support the Detailed Analysis of Alternatives. Preliminary draft sections will undergo review by the RI/FS team and be revised to incorporate comments.
- Assess the results from the initiate bounding calculations based on invalidated radiological data. If the bounding calculations present acceptable risks to workers and the public, then the appendix will be completed in preliminary draft form. If the risks are not acceptable, then refinement of the models and calculations will be performed.
- Collect samples for concrete, painted metals, and asphalt to perform additional leachability testing to verify and validate preliminary results.
- Kick-off the treatability study to recycle 710 tons of structural steel from Plant 7.

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3.7 Planned Activities for January 1995 (continued)

- Continue planning and/or performing the additional treatability studies: Surface Decontamination/Removal of Metal, Transite Characterization, N-Scan PGNA, EET Decontamination of Transite, Ultrasonic Decontamination of Strategic Metals, Recycling of Copper Scrap Metal, and the Thorium Nitrate Treatability Study.
- Continue writing final treatability reports for the following Treatability Studies: Chemical Leaching of Concrete and the Kelly Decontamination of Concrete.

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4.0 Operable Unit 4

Operable Unit 4 (OU 4), as defined in the Amended Consent Agreement, consists of Silos 1, 2, 3, and 4, the silo berms, the Decant Sump Tank System, and soil within the operable unit boundary.

4.1 RI/FS Work Plan

Status:

Complete.

4.2 Remedial Investigation

Status:

Complete.

4.3 Feasibility Study/Proposed Plan

Status:

Complete.

OPERABLE UNIT 4 FEASIBILITY STUDY/PP REPORT

PRIMARY MILESTONES

SCOPE	SUBMIT TO EPA	RECEIVE FROM EPA	SUBMIT TO EPA FINAL
Describes and analyzes potential remedial alternatives. A comparative analysis is performed for all alternatives. The Proposed Plan identifies potential remedial alternatives as listed in the FS and presents the preferred alternative to the U.S. EPA and the public.	09/10/93 C 09/09/93 A	11/10/93 C 11/12/93 A	12/28/93 C 12/21/93 A

C = Consent Agreement Date
A = Actual Date

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4.4 Treatability Studies

4.4.1 Bench Scale Treatability Studies

Status:

Complete.

4.4.2 Pilot Plant Treatability Studies

Status:

The Test Plan will be submitted to the EPA as a Phase II Work Plan attachment in January 1995.

Issues/Corrective Actions:

None to report.

4.5 Record of Decision

Status:

The Final Record of Decision for Remedial Actions at Operable Unit 4 was submitted to the U.S. EPA and Ohio EPA on November 4, 1994. U.S. EPA approval of the Final Record of Decision was received on December 7, 1994.

4.6 Planned Activities for January 1995

- Continue construction of the Phase I Pilot Plant facility.
- Complete distribution of the Final Record of Decision for Operable Unit 4.

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5.0 Operable Unit 5

Operable Unit 5 (OU 5), as defined in the Amended Consent Agreement, includes: groundwater, surface water, and soil not included in the definitions of Operable Units 1 through 4, sediment, flora and fauna.

5.1 Remedial Investigation

Status:

By late December, both agencies submitted a few comments on the draft Final RI. Responses to these comments, along with the appropriate page changes, will be returned to the agencies by early to mid-January.

Issues/Corrective Actions:

None to report.

OPERABLE UNIT 5 REMEDIAL INVESTIGATION REPORT PRIMARY MILESTONES

SCOPE	SUBMIT TO EPA	RECEIVE FROM EPA	SUBMIT TO EPA FINAL
Details the nature and extent of contaminants within the OU 5 study area. Estimates the volume of contaminated media and materials. Provides a baseline risk assessment and establishes remedial action objectives.	06/24/94 C	09/12/94 C	11/01/94 C 11/01/94 A

C = Consent Agreement Date

5.2 Feasibility Study/Proposed Plan

Status:

One draft comment was received from U.S. EPA on December 21 regarding Appendix H, the Comprehensive Response Action Risk Evaluation. A conference call is scheduled for early January to discuss the applicability of the comment.

Formal comments are expected from the agencies by January 16, 1995, unless one of the EPAs request an extension.

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5.2 Feasibility Study/Proposed Plan (continued)

Issues/Corrective Actions:

The K₁ Sampling Report is being delayed by issues involving the radiological analysis by EPI Laboratory. The projected submittal date for the data is January 7, 1995.

OPERABLE UNIT 5 FEASIBILITY STUDY/PP REPORT

PRIMARY MILESTONES

SCOPE	SUBMIT TO EPA	RECEIVE FROM EPA	SUBMIT TO EPA FINAL
Describes and analyses potential remedial alternatives. A comparative analysis will be performed for all alternatives. The Proposed Plan identifies potential remedial alternatives as listed in the FS and presents the preferred alternative to the U.S. EPA and the public.	11/16/94 C 11/16/94 A	01/16/95 C	02/14/95

C = Consent Agreement Date

5.3 RCRA Monitoring

Status:

Preparation of the RCRA Annual Report continued during the month of December. Activities include: finalizing data entry and validation of the RCRA groundwater samples; preparing graphical presentation of data; and preparing report on smectite (grout) intrusion.

5.4 Treatability Studies

Treatability activities in support of the OU 5 FS Report have been concluded.

5.5 Planned Activities for January 1995

- Respond to the comments received from the U.S. and Ohio EPAs on the draft final RI Report and issue page changes.
- Respond to comments from the U.S. and Ohio EPAs on the draft FS and the Proposed Plan and revise the documents in accordance with the comments.

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5.5 Planned Activities for January 1995 (continued)

- Compile final K_i Sampling Report for issuance in January 1995.
- Perform desorption tests for uranium on archived samples of Great Miami Aquifer soil originally collected from Type 2 and Type 3 wells at select locations. The locations were selected to target areas with greater than 20 ppb of uranium contamination.
- Continue preparation of the 1994 RCRA Annual Report.
- Complete closeout activities related to inventorying and archiving selected soil samples obtained during treatability study activities. Targeted completion is mid-January 1995.

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6.0 Community Relations

Status:

On December 6, DOE held a public meeting on its draft Work Force Restructuring Plan at the Plantation in Harrison, Ohio. Approximately 100 people attended including DOE-FN representatives, members of the public, and FERMCO employees. DOE explained the plan's objectives including the key points and the schedule of major actions involved in the down-sizing process. About 50 questions were asked at the meeting and more than 50 written comments were received. All questions will be answered through the internal electronic network and through employee bulletins. The entire meeting was transcribed by a court reporter and the transcript was available at the Public Environmental Information Center by December 13, 1994.

On December 7, 1994 the Fernald Envoys held their monthly meeting. About 40 envoys were updated on several issues including a briefing on the CERCLA process. The Task Force Interim Report was distributed to everyone. Beginning the first of the year, a new reporting protocol will be set in place and individual evaluations on each envoy will take place.

The Fernald Citizens Task Force's monthly meeting was held December 8, 1994 at the Joint Information Center in Fairfield, Ohio. About 30 people, including the Task Force members, representatives from DOE, U.S. EPA, Ohio EPA, the Ohio Department of Health, the agency for Toxic Substances and Disease Registry, the University of Cincinnati Center for Environmental Communication Studies, and FERMCO were in attendance. The Task Force discussed several housekeeping issues such as how to deal with the staggered terms of the membership and whether to continue having meetings on the second Saturday of every month. The Task Force agreed to continue the meeting schedule as is and to address the membership issue at a later date. The Task Force agreed to hold a public workshop on waste disposal issues on January 25, 1995, at 7:00 p.m., at the Plantation. A short presentation was given by Steve Depoe, a faculty member at the University of Cincinnati, whose Center for Environmental Communication Studies is assisting Xavier University with the inventorying of public concerns that is part of the Consortium for Environmental Risk Evaluation (CERE) project. Doug Samo presented the proposed 1995 Work Plan and the Task Force accepted it as proposed.

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6.0 Community Relations (continued)

The Center for Environmental Communication Studies at the University of Cincinnati has been chosen as a member of the Consortium for Environmental Risk Evaluation (CERE). The Department of Energy has contracted with CERE to conduct a comprehensive review of existing risks and public concerns associated with the cleanup activities at Fernald. A public meeting was held December 13 at the Plantation in Harrison, Ohio to explain the purpose of the CERE and solicit input from the community. About 35 stakeholders attended including representatives from Ohio EPA and DOE. UC's Department of Communication is in charge of researching and collecting public concerns in the form of news clips, articles, books, etc. Focus groups will be formed and meetings will be held during January and February. CERE will submit a report on their findings to DOE in March.

The original timeframe for the public comment period for the Operable Unit 2 Proposed Plan was October 26 - November 25. A request for an extension to the comment period was granted and the official ending date was extended to December 30. On November 30, representatives from EPA, DOE and FERMCO met with the trustees from Ross, Crosby, and Morgan townships to discuss the proposed on-site disposal cell. The meeting was facilitated by Ohio EPA personnel and addressed concerns that had surfaced during the public comment period for the OU 2 Proposed Plan. DOE and Ohio EPA agreed to provide information as it developed on the cell and to consult with and involve the trustees more actively in decisions regarding the design and location of the cell. On December 30, the Ross Township trustees requested another extension to the comment period. DOE and EPA granted the second extension. The comment period closes January 20, 1995.

On December 22, 1994 the U.S. EPA conditionally approved the Draft Operable Unit 1 ROD pending incorporation of responses to their comments.

Issues/Corrective Action:

None.

6.1 Planned Activities for January 1995

- On January 11, the Ohio EPA will hold their Agreement in Principle (AIP) implementation meeting on the Environmental Monitoring Program on Wednesday, January 11, 1995 from 6:30 - 8:30 p.m. at the Venice Presbyterian Church in Ross, Ohio.
- On January 14, the Fernald Citizens Task Force will hold their regular monthly meeting at the Joint Information Center in Fairfield, Ohio beginning at 8:30 a.m.

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6.1 Planned Activities for January 1995

- On January 18, the Centers for Disease Control and Radiological Assessments Corp. will conduct another workshop on the Fernald Dosimetry Reconstruction Project.
- The public comment period extension on the Operable Unit 2 Proposed Plan ends on January 20, 1995.
- On January 25, the Fernald Citizens Task Force will sponsor a public workshop at the Plantation in Harrison, Ohio on the issue of waste disposition at the FEMP.
- The regular monthly meeting of FRESH will be held on Thursday, January 26 at the Venice Presbyterian Church in Ross, Ohio beginning at 7:30 p.m.
- On January 31, DOE will conduct a workshop on the Remedial Design and Remedial Action phase of the cleanup. This supports DOE's commitment to the community to continue public involvement during the RD/RA phase. Operable Units 1, 3 and 4 will give briefings on where they are in the process.

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ENCLOSURE A

**WASTE WATER FLOWS AND RADIONUCLIDE
CONCENTRATIONS UNDER CA SECTION XXIII.B**

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Introduction

The accompanying Effluent Radiation Reports provide, in accordance with the requirements of Section XXIII.B of the Consent Agreement As Amended under CERCLA Sections 120 and 106 (a), data on the daily waste water flows, radionuclide concentrations, and loadings released to the Great Miami River and an estimate of runoff and radionuclide concentrations to Paddy's Run during December 1994.

Summary - December 1994

The total quantity of uranium discharged from the FEMP to the Great Miami River via Manhole 175 (Outfall 11o00004001) was 8.59 kilograms. The average uranium concentration for the previous 12 months was 0.45 mg/L. This is 50.6% of the Derived Concentration Guide (DOE Order 5400.5) for ingested water.

There was no discharge from the Storm Water Retention Basin Spillway (Outfall 11o00004002) to Paddy's Run via the Storm Sewer Outfall Ditch in December 1994. Based on 2.99 inches of rainfall in December 1994, the total quantity of uranium discharged to Paddy's Run from uncontrolled areas of the FEMP is estimated to be 8.49 kilograms.

**CONSOLIDATED CONSENT AGREEMENT FACILITY
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS
MONTHLY PROGRESS REPORT**

Period Ending December 31, 1994

EFFLUENT RADIATION REPORT

FACILITY: Fernald Environmental Management Project
U.S. Department of Energy
7400 Willey Road, P.O.Box 398705
Cincinnati, Ohio 45239-8705
9002 M 9501 900212

LOCATION: 11O00004001
001 Total Discharge
Manhole 175 (Effluent to Great Miami River)

DATE: DECEMBER 1994

Day	Flow (MGD)	Total Alpha (pCi/l)	Total Beta (pCi/l)	Total U (mg/l)	Total U (kgs)	Calculated Total U-238 (pCi/l) (1)
1	0.113	**	**	0.50	0.21	169
2	0.163	**	**	0.63	0.39	213
3	0.116	**	**	0.69	0.30	233
4	0.138	**	**	0.56	0.29	189
5	0.141	**	**	0.27	0.14	91
6	0.143	**	**	0.21	0.11	71
7	0.118	**	**	0.05	0.02	18
8	0.123	**	**	0.10	0.05	34
9	0.208	**	**	0.45	0.35	152
10	0.202	**	**	0.56	0.43	189
11	0.150	**	**	0.72	0.41	243
12	0.181	**	**	0.60	0.41	203
13	0.178	**	**	0.54	0.36	182
14	0.211	**	**	0.39	0.31	132
15	0.156	**	**	0.42	0.25	142
16	0.209	**	**	0.51	0.40	172
17	0.080	**	**	0.59	0.18	199
18	0.108	**	**	0.64	0.26	216
19	0.171	**	**	0.53	0.34	179
20	0.149	**	**	0.48	0.27	162
21	0.152	**	**	0.48	0.28	162
22	0.160	**	**	0.50	0.30	169
23	0.101	**	**	0.58	0.22	196
24	0.123	**	**	0.54	0.25	182
25	0.107	**	**	0.60	0.24	203
26	0.111	**	**	0.60	0.25	203
27	0.149	**	**	0.48	0.27	162
28	0.142	**	**	0.56	0.30	189
29	0.156	**	**	0.73	0.43	247
30	0.137	**	**	0.57	0.30	193
31	0.110	**	**	0.58	0.24	196
Total	4.506				8.59	

** Analytical results not yet available.

000041

**CONSOLIDATED CONSENT AGREEMENT FACILITY
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS
MONTHLY PROGRESS REPORT**

Period Ending December 31, 1994

EFFLUENT RADIATION REPORT (cont.)

FACILITY: Fernald Environmental Management Project

LOCATION: 001 Total Discharge

DATE: DECEMBER 1994

	Flow (MGD)	Total Alpha (pCi/l)(2)	Total Beta (pCi/l)(2)	Total U (mg/l)(2)	Total U (kgs)	Calculated Total U-238 (pCi/l)(1)(2)
Avg.	0.145	**	**	0.50	0.28	170
Max.	0.211	**	**	0.73	0.43	247
Min.	0.080	**	**	0.05	0.02	18

The average uranium concentration for the previous twelve months was 0.45 mg/l. This is 50.6 percent of the Derived Concentration Guide(DOE Order 5400.5) for ingested water.

Comments: (1) The activity of this discharge has been and will continue to be reported as Uranium-238 (pCi/l) in accordance with the Ohio EPA format for reporting uranium. Since this does not account for the activity of the other uranium isotopes in the effluent, the total uranium data is also presented. The calculated total U-238 is based on a conversion factor of 337.84 pCi U-238/mg Total U applied to the measured value of total uranium.

(2) Average values presented are flow-weighted.

CONSOLIDATED CONSENT AGREEMENT FACILITY
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS
MONTHLY PROGRESS REPORT

Period Ending December 31, 1994

EFFLUENT RADIATION REPORT

FACILITY: Fernald Environmental Management Project
U.S. Department of Energy
7400 Willey Road, P.O.Box 398705
Cincinnati, Ohio 45239-8705
9002 M 9501 900212

LOCATION: 11O00004002
002 Discharge (Overflow) to Storm Sewer Outfall Ditch
Stormwater Retention Basin Spillway (Effluent to Paddy's Run)

DATE: DECEMBER 1994

There was no discharge to Paddy's Run from the Stormwater Retention Basin.

Based on 2.99 inches of rainfall for the month, the uranium discharge to Paddy's Run from uncontrolled areas of the FEMP is estimated to be 8.49 kgs.

000043

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY COMPLIANCE
AGREEMENT/FEDERAL FACILITY AGREEMENT FOR
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS
MONTHLY PROGRESS REPORT**

PERIOD ENDING DECEMBER 31, 1994

ENCLOSURE B

**FFCA: INITIAL REMEDIAL MEASURES
AND OTHER OPEN ACTIONS**

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS
MONTHLY PROGRESS REPORT**

Period Ending December 31, 1994

INTRODUCTION

Enclosure B describes actions undertaken at the FEMP during the period December 1, through December 31, 1994, that are not covered by the reporting requirements of the Consent Agreement As Amended under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Sections 120 and 106(a).

WORK ASSIGNMENTS AND PROGRESS

Descriptions of ongoing work progress are presented in the following sections of this report. The status of ongoing work in support of the Federal Facility Compliance Agreement (FFCA) is summarized in Table 1 of Enclosure B. Completed work previously reported upon has been eliminated for the sake of brevity. In this portion of the report and in Table 1, descriptions of actions are presented in a format consistent with that of the FFCA.

**COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND
LIABILITY ACT (CERCLA)**

1. Initial Remedial Measures

Section C

K-65 Silo Project - Status information on the K-65 Silo project normally reported in this section is being provided under Operable Unit 4: Silos 1-4.

2. Remedial Investigation/Feasibility Study (RI/FS)

Status information on the Remedial Investigation/Feasibility Study (RI/FS) normally reported in this section is being provided separately in accordance with the requirements of Section X of the Consent Agreement As Amended under CERCLA Sections 120 and 106(a).

3. Reports and Record Keeping

Section B

The RI/FS Monthly Technical Progress Report for November 1994 was transmitted to the U.S. EPA on December 16, 1994, as an integral part of the Consolidated Consent Agreement/Federal Facility Compliance Agreement/Federal Facility Agreement for Control and Abatement of Radon-222 Emissions (CA/FFCA/FFA-CARE) Monthly Progress Report in accordance with the requirements of Section X of the Consent Agreement As Amended.

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS
MONTHLY PROGRESS REPORT**

Period Ending December 31, 1994

CLEAN AIR ACT (CAA)

Section E

The Quarterly Particulate Emissions Report will now be incorporated into the Annual NESHAP Compliance Report.

RADIATION DISCHARGE INFORMATION

Section A

This information will now be submitted on an annual basis as part of the FEMP Site Environmental Report.

REPORTING REQUIREMENTS

Section B

The Federal Facility Compliance Agreement Monthly Progress Report for November 1994, was transmitted to the U.S. EPA on December 16, 1994 as Enclosure B of the Consolidated Consent Agreement/Federal Facility Compliance Agreement/Federal Facility Agreement for Control and Abatement of Radon-222 Emissions (CA/FFCA/FFA-CARE) Monthly Progress Report.

**STATUS OF ASSIGNMENTS FOR WORK REQUIRED ON
FEDERAL FACILITY COMPLIANCE AGREEMENT ACTIONS**

December 31, 1994

<u>ACTION</u>	<u>DESCRIPTION</u>	<u>COMPLETION TIME AFTER FFCA SIGNED</u>	<u>FY1995 STATUS</u>
CERCLA			
1.	INITIAL REMEDIAL MEASURES		
1.C	Implement radon control plan approved by the U.S. EPA.	-----	No longer applicable. Progress on actions to address radon emissions from the K-65 Silos are being reported separately under Section IX-Removal Actions of the Consent Agreement/FFCA Monthly Progress Report.
2.	REMEDIAL INVESTIGATION/FEASIBILITY STUDY		No action required.
2.A	RI/FS work is to be conducted in accordance with the U.S. EPA guidelines.	N/A	
2.B	--No Action Required--	-----	Status information on the RI/FS is being reported in accordance with the requirements of Section X of the Consent Agreement As Amended under CERCLA Sections 120 and 106(a).
2.E	Amend and submit revised RI/FS Work Plan to U.S. EPA if deficiencies are found.		Status information on the RI/FS is being reported in accordance with the requirements of Section X of the Consent Agreement As Amended under CERCLA Sections 120 and 106(a).
2.F	Implement tasks described in the approved RI/FS Work Plan		Status information on the RI/FS is being reported in accordance with the requirements of Section X of the Consent Agreement As Amended under CERCLA sections 120 and 106(a).
3.	REPORTS AND RECORD KEEPING		
3.B	Submit monthly RI/FS progress reports.	monthly	The RI/FS Monthly Progress Report for November 1994 was transmitted to the U.S. EPA on December 16, 1994.

TABLE 1

**STATUS OF ASSIGNMENTS FOR WORK REQUIRED ON
FEDERAL FACILITY COMPLIANCE AGREEMENT ACTIONS**

December 31, 1994

CLEAN AIR ACT

B.4	Prepare annual progress report installation and replacement of emission control devices.	yearly	The Sixth Annual Progress Report on the installation and replacement of emission control devices was prepared by the Effluent Monitoring and Control Section of the ES&H Division. The report was transmitted to DOE on July 15, 1994.
C.	Provide annual reports to the U.S. EPA per 40 CFR 61.94(c).	yearly	The Annual NESHAP Compliance Report for CY1993 was transmitted to the U.S. EPA on June 10, 1994 (DOE-1907-94).
D.1	Provide U.S. EPA with yearly stack-testing schedule.	yearly	No stacks related to production were operating in 1993. Periodic confirmatory measurements to demonstrate compliance with NESHAP Subpart H were conducted on three laboratory exhaust stacks. These tests were conducted in accordance with a program to verify low emissions from stacks without continuous in-stack monitoring. Due to the permanent shutdown of metals production, resumption of the FFCA Stack Testing Program is unlikely. A proposal is being developed to substitute the NESHAP Subpart H testing/monitoring program for the FFCA Stack Testing. When this proposal is completed it will be formally submitted to U.S. EPA.
D.2	Provide U.S. EPA with stack-test results for stacks tested that year.	45 days	No stacks related to production were operated or tested in 1994.
E.1	Maintain records of monthly particulate matter emissions.	-----	Ongoing.

TABLE 1

**STATUS OF ASSIGNMENTS FOR WORK REQUIRED ON
FEDERAL FACILITY COMPLIANCE AGREEMENT ACTIONS**

December 31, 1994

RCRA

A.1	Conduct a hazardous waste determination on all waste streams.	30 days	Complete. Pursuant to the Proposed Amended Consent Decree, a RCRA waste evaluation was conducted on all identified waste streams pertaining to the PACD.
A.2	Commence a hazardous waste analysis program for materials in the landfill and going to the incinerator.	30 days	Complete. Operation of these units was discontinued and data on the waste which had gone to them was provided in a 30-day FFCA deliverable on August 17, 1986.
A.5	Update the facility closure plan to reflect the year the facility expects to begin closure.	30 days	The Facility closure date is dependent upon closure schedules for individual TSD units as presented most recently in Section I of the RCRA Part B Permit Application transmitted to the Ohio EPA and the U.S. EPA on March 26, 1993 (DOE-1471-93). Facility closure will be completed on a date the last TSD unit is closed.

REPORTING REQUIREMENTS

B.	Issue monthly progress report of actions taken to ensure compliance with FFCA requirements.	monthly	November's FFCA Monthly Progress Report was transmitted to the U.S. EPA on December 16, 1994.
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**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS
MONTHLY PROGRESS REPORT**

PERIOD ENDING DECEMBER 31, 1994

ENCLOSURE C

**FEDERAL FACILITY AGREEMENT:
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS**

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS
MONTHLY PROGRESS REPORT**

Period Ending December 31, 1994

Introduction

The Federal Facility Agreement for Control and Abatement of Radon-222 Emissions (FFA-CARE) between the U.S. Department of Energy (DOE) and the U.S. Environmental Protection Agency (U.S. EPA), signed November 19, 1991, requires that a monthly report be submitted to the U.S. EPA regarding all steps undertaken in the preceding month to implement Part V of the agreement and that all data generated as a result of those actions be submitted.

Enclosure C fulfills those requirements by describing steps taken at the FEMP during the period December 1, through December 31, 1994, to implement Part V, Radon-222 Control and Abatement Plan, paragraphs 19-33 of the FFA-CARE.

Work Assignments and Progress

In this section of Enclosure C, action descriptions and work progress are presented in a format consistent with that of the FFA-CARE. Immediately following this section are the K-65 Silos Report and the Selected Radon Data Report. Reporting this data is also a requirement included in the U.S. EPA approved Silos 1 and 2 Removal Action Work Plan (Removal Action No. 4).

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS
MONTHLY PROGRESS REPORT**

Period Ending December 31, 1994

<u>FFA Part, Paragraph(s)</u>	<u>Description of Commitment</u>	<u>FFA Due Date</u>	<u>Status of Commitment</u>
Part V, 19 & 21	Implement the K-65 Silos 1 and 2 Removal Action in accordance with the approved Silos 1 and 2 Removal Action Work Plan.	12/1/91	Completed.
Part V, 20	Reduce radon-222 to a level As-Low-As Reasonably Achievable (ALARA) with the goal as specified in the Silos 1 and 2 Removal Action Work Plan.	5/22/92	Completed.
Part V, 22	Submit proposed methodology for estimating radon-222 concentration reductions resulting from completion of the Silos 1 and 2 Removal Action.	Within 60 days of completing removal action; 1/27/92:	Completed.
Part V, 23	Evaluate performance of the removal action and determine whether or not additional actions are needed prior to final remediation.	None specified.	Completed.
Part V, 24, 25, and 33	Demonstrate compliance with NESHAP Subpart Q at the completion of final remediation using a methodology approved by the U.S. EPA. Applicable to: Silos 1, 2, and 3; Waste Pits 1, 2, 3, 4, and 5 and the Clearwell; and any newly discovered radon-222 emission sources.	None specified.	No information to report for December 1994.

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS
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Period Ending December 31, 1994

<u>FFA Part, Paragraph(s)</u>	<u>Description of Commitment</u>	<u>FFA Due Date</u>	<u>Status of Commitment</u>
Part V, 26	Directly measure radon-222 flux from Waste Pits 1, 2, 3, 4, and 5 and the Clearwell in the RI/FS under the CERCLA Consent Agreement.	None specified.	Radon sampling is complete for Pits 1, 2, and 3. All measurements were below the criteria set by the U.S. EPA. A final report was issued to the U.S. EPA on 6/25/92. A letter was received from the U.S. EPA on 10/16/92 giving approval of the proposed method for measuring the radon flux from Pit 4. The letter also stated that since the Clearwell is water covered, and Pit 5 is nearly 100% water covered, the flux from Pit 5 and the Clearwell may be assumed to be zero.
Part V, 26	Include direct measurement data from Waste Pits 1, 2, 3, 4, and 5 and the Clearwell in the RI/FS under the CERCLA Consent Agreement.	None specified.	See above.
Part V, 27	Estimate radon-222 emissions from Silo 3 based upon characterization data; include the estimated radon-222 emission data from Silo 3 in the RI/FS that includes Silo 3 under the CERCLA Consent Agreement.	None specified.	Completed.
Part V, 28	Submit documentation or estimates of current radon-222 emissions from existing but newly discovered sources that contain radium-226 in sufficient concentrations to emit radon-222 in excess of NESHAP Subpart Q prior to final remediation.	Within 30 days of discovery.	No new sources identified.

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS
MONTHLY PROGRESS REPORT**

Period Ending December 31, 1994

<u>FFA Part, Paragraph(s)</u>	<u>Description of Commitment</u>	<u>FFA Due Date</u>	<u>Status of Commitment</u>
Part V, 30	Submit methodology for direct measurement or other appropriate means of characterization of the relevant emissions pursuant to paragraph 29 of the FFA.	Within 45 days of the U.S. EPA response pursuant to paragraph 29.	None required.
Part V, 31	Submit results of measurements pursuant to paragraph 30.	Within 30 days of U.S. EPA approval of characterization method.	None required.
Part VI, 31	Submit monthly report on steps undertaken to implement Part V of the FFA-CARE and the data obtained in the preceding month.	20th day of succeeding month.	The progress report being submitted herewith as an integral part of the CERCLA Consent Agreement Monthly Progress Report.

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS
MONTHLY PROGRESS REPORT**

Period Ending December 31, 1994

Data Reporting Requirements: RA No. 4: Silos 1 and 2

As defined in the Silos 1 and 2 Removal Action Work Plan and the Federal Facility Agreement, data associated with monitoring the effectiveness of the bentonite installation are included in the following tables: the K-65 Silos Report and the Selected Radon Data Report.

The K-65 Silos Report includes data on the following parameters:

- Ambient temperature and pressure near the silos.
- Silos 1 and 2 headspace temperature.
- Silos 1 and 2 differential pressure.
- Silos 1 and 2 radon headspace concentration.
- Silos 1 and 2 headspace humidity

The Selected Radon Data Report includes radon data from the following locations:

- Air monitoring station number 5 (AMS-5)
- Air monitoring station number 6 (AMS-6)
- Pilot Plant
- Background data
- K-65 Monitoring Data (K-65 NW, K-65 SW, K-65 NE, K-65 SE).

The radon data submitted in Enclosure C: Due to its high source strength, unique measurement methods had to be devised to measure radon emissions from this nonstandard source. The data that has been gathered since 1992 is collected by qualified technicians using detailed procedures. This data although not yet verified, serves as a very good qualitative indicator of the integrity of the bentonite sealant layer covering the residues in the silos. Activities have been initiated to enhance the quality and independently verify the data that is being collected.

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITIES COMPLIANCE AGREEMENT/
FEDERAL FACILITY AGREEMENT MONTHLY PROGRESS REPORT**

MONTH: DECEMBER
YEAR: 94

FACILITY: Fernald Environmental Management Report
U.S. Department of Energy
7400 Willey Road, P.O. Box 399704
Cincinnati, Ohio 45239 Hamilton

SELECTED RADON DATA REPORT
(Monthly Summary of Selected Sampling Locations)

Daily Averages:	K-65, NW (pCi/L)	K-65, SW (pCi/L)	K-65, NE (pCi/L)	K-65, SE (pCi/L)
12/01/94	2.2	0.9 (b)	9.5	4.5
12/02/94	1.8	1.9	5.1	3.6
12/03/94	2.2	2.2	4.3	4.2
12/04/94	2.6	4.7	2.1	2.3
12/05/94	3.0	1.8	3.1	2.2
12/06/94	2.4	1.4	3.6	3.0
12/07/94	0.6	0.5	1.0	0.7
12/08/94	3.3	1.9	0.6	0.5
12/09/94	2.5	1.4	1.3	2.0
12/10/94	0.8	3.2	0.9	1.3
12/11/94	0.9	0.8	1.4	1.6
12/12/94	4.6	4.6	6.0	5.3
12/13/94	2.0	4.9 (b)	13.4	8.6
12/14/94	0.9	(b)	0.9	0.7
12/15/94	2.0 (a)	(b)	4.9	3.1
12/16/94	2.4	(b)	1.5	1.4
12/17/94	1.0	(b)	2.9	1.2
12/18/94	1.0	(b)	5.6	2.5
12/19/94	1.3	1.5 (b)	6.4	3.8
12/20/94	3.0	3.9	9.5	5.6
12/21/94	2.4	3.7	10.1	5.4
12/22/94	3.1	3.2	6.2	4.9
12/23/94	3.2	0.7	10.0	4.8
12/24/94	0.7	1.1	0.7	0.8
12/25/94	0.9	3.3	4.9	2.2
12/26/94	2.5	1.5	2.9	2.5
12/27/94	1.8	2.7	7.8	6.0
12/28/94	1.9	1.5	11.5	6.5
12/29/94	0.8	4.3	0.9	0.9
12/30/94	1.9	3.2	2.2	2.0
12/31/94	2.2	0.9	2.4	1.9

Monthly Averages:	K-65, NW (pCi/L)	K-65, SW (pCi/L)	K-65, NE (pCi/L)	K-65, SE (pCi/L)
AVERAGE:	2.0	2.4	4.7	3.1
MAXIMUM:	4.6	4.9	13.4	8.6
MINIMUM:	0.6	0.5	0.6	0.5
MEDIAN:	2.2	1.8	4.3	2.5
STD. DEV.:	0.9	1.4	3.6	2.0

STANDARD LEGEND:

1. "(a)" indicates censored data due to erroneous readings.
2. "(b)" indicates data loss due to monitor malfunction.
3. "(c)" indicates programming error in monitor.
4. "(d)" indicates data loss due to relocation of monitor.

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITIES COMPLIANCE AGREEMENT/
FEDERAL FACILITY AGREEMENT MONTHLY PROGRESS REPORT**

FACILITY: Fernald Environmental Management Report
U.S. Department of Energy
7400 Willey Road, P.O. Box 398704
Cincinnati, Ohio 45239 Hamilton

MONTH: DECEMBER
YEAR: 94

SELECTED RADON DATA REPORT
(Monthly Summary of Selected Sampling Locations)

Daily Averages:	AMS-6 (pCi/L)	AMS-8 (pCi/L)	PILOT PLANT (pCi/L)	BKGD-1 (pCi/L)	BKGD-2 (pCi/L)
12/01/94	1.3	(b)	(b)	0.8	0.9
12/02/94	1.1	(b)	(b)	0.5	0.8
12/03/94	1.5	(b)	(b)	0.6	0.9
12/04/94	1.3	(b)	(b)	0.8	1.0
12/05/94	0.8	(b)	0.6 (b)	0.6	0.8
12/06/94	0.7	0.5 (b)	1.1	0.8	0.5
12/07/94	0.4	0.5	1.0	0.5	0.4
12/08/94	0.3	0.5	1.0	0.4	0.4
12/09/94	0.5	0.8 (a)	1.0	0.5	0.4
12/10/94	0.5	0.8	1.1	0.5	0.5
12/11/94	0.8	0.7	1.4	0.8	0.6
12/12/94	0.8	0.8	1.4	0.7	0.6
12/13/94	1.1	1.2	1.9	0.8	0.9
12/14/94	0.8	0.7	1.4	0.6	0.8
12/15/94	1.0	1.0	1.5	0.9	0.9
12/16/94	0.8	1.0	1.3	0.7	0.8
12/17/94	0.4	0.5	1.0	0.4	0.4
12/18/94	0.6	0.6	1.2	0.6	0.6
12/18/94	0.6	0.7	1.4	0.6	0.5
12/19/94	0.6	0.7	1.4	0.6	0.5
12/20/94	1.0	1.1	2.0	0.8	0.8
12/20/94	1.0	1.1	2.0	0.8	0.8
12/21/94	1.3	1.3	2.0	0.9	0.9
12/21/94	1.3	1.3	2.0	1.0	1.0
12/22/94	1.4	1.4	2.0	1.0	1.0
12/22/94	1.2	1.2	1.8	0.8	0.8
12/23/94	0.4	0.5	1.1	0.5	0.4
12/24/94	0.4	0.5	1.1	0.5	0.4
12/24/94	0.4	0.5	1.1	0.5	0.4
12/25/94	0.5	0.6	1.4	0.5	0.5
12/25/94	0.5	0.6	1.4	0.5	0.5
12/26/94	0.6	0.7	1.3	0.6	0.5
12/26/94	0.6	0.7	1.3	0.6	0.5
12/27/94	0.8	0.9	1.7	0.7	0.7
12/27/94	0.8	0.9	1.7	0.7	0.7
12/28/94	1.1	1.2	1.8 (b)	0.8	0.8
12/28/94	1.1	1.2	1.8 (b)	0.8	0.8
12/29/94	0.5	0.6	(b)	0.6	0.5
12/29/94	0.5	0.6	(b)	0.6	0.5
12/30/94	0.7	0.8	(b)	0.6	0.5
12/30/94	0.7	0.8	(b)	0.6	0.5
12/31/94	1.1	1.1	(b)	0.7	0.7

Monthly Averages:	AMS-6 (pCi/L)	AMS-8 (pCi/L)	PILOT PLANT (pCi/L)	BKGD-1 (pCi/L)	BKGD-2 (pCi/L)
AVERAGE:	0.8	0.8	1.4	0.7	0.7
MAXIMUM:	1.5	1.4	2.0	1.0	1.0
MINIMUM:	0.3	0.5	0.6	0.4	0.4
MEDIAN:	0.8	0.7	1.3	0.6	0.6
STD. DEV.:	0.3	0.3	0.4	0.1	0.2

STANDARD LEGEND:

1. "(a)" indicates censored data due to erroneous readings.
2. "(b)" indicates data loss due to monitor malfunction.
3. "(c)" indicates programming error in monitor.
4. "(d)" indicates data loss due to relocation of monitor.

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**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY COMPLIANCE AGREEMENT/
FEDERAL FACILITY AGREEMENT MONTHLY PROGRESS REPORT**

FACILITY Fernald Environmental Management Project
U.S. Department of Energy
7400 Willey Road, P.O. Box 398704
Cincinnati, Ohio 45239 Hamilton

**K-65 SILO REPORT
RADON CONCENTRATIONS**

MONTH: DECEMBER 1994

REPORT GENERATED: 01/06/95

Daily Summary of Recorded Headspace Concentrations
(recorded at 5 minute intervals)

Date	SILO 1				SILO 2			
	Average	Maximum	Minimum	Std. Dev.	Average	Maximum	Minimum	Std. Dev.
12/01/94	646,000	1,350,000	284,000	275,000	4,000,000	4,210,000	3,630,000	109,000
12/02/94	503,000	1,340,000	47,500	301,000	4,040,000	4,280,000	3,480,000	186,000
12/03/94	665,000	1,260,000	161,000	294,000	4,130,000	4,300,000	3,670,000	121,000
12/04/94	1,040,000	1,560,000	334,000	374,000	4,270,000	4,360,000	4,140,000	40,900
12/05/94	865,000	1,610,000	127,000	405,000	4,170,000	4,320,000	3,870,000	73,800
12/06/94	916,000	1,500,000	248,000	365,000	4,120,000	4,230,000	3,780,000	67,400
12/07/94	311,000	1,520,000	11,100	439,000	3,760,000	4,190,000	2,920,000	193,000
12/08/94	515,000	1,400,000	57,500	413,000	3,820,000	4,160,000	2,960,000	235,000
* 12/09/94	1,080,000	1,560,000	545,000	327,000	4,030,000	4,140,000	3,720,000	80,300
* 12/10/94	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
* 12/11/94	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
* 12/12/94	786,000	1,360,000	416,000	281,000	3,950,000	4,120,000	3,450,000	133,000
12/13/94	356,000	1,230,000	51,100	167,000	4,050,000	4,190,000	3,810,000	64,600
12/14/94	268,000	1,040,000	44,600	131,000	4,040,000	4,320,000	3,520,000	143,000
12/15/94	615,000	1,360,000	288,000	295,000	4,250,000	4,380,000	3,900,000	83,700
12/16/94	802,000	1,720,000	45,400	492,000	4,060,000	4,480,000	150,000	904,000
** 12/17/94	219,000	1,180,000	42,500	233,000	4,120,000	4,390,000	3,700,000	153,000
** 12/18/94	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
** 12/19/94	456,000	1,480,000	47,500	390,000	4,290,000	4,520,000	3,940,000	127,000
12/20/94	558,000	1,470,000	165,000	383,000	4,380,000	4,540,000	4,140,000	75,400
12/21/94	555,000	1,490,000	46,800	417,000	4,450,000	4,610,000	4,230,000	61,600
12/22/94	783,000	1,480,000	130,000	376,000	4,520,000	4,630,000	4,250,000	63,100
12/23/94	343,000	1,390,000	11,800	384,000	4,300,000	4,670,000	3,470,000	280,000
12/24/94	94,800	995,000	18,200	109,000	4,260,000	4,580,000	3,790,000	162,000
12/25/94	297,000	1,180,000	81,800	235,000	4,380,000	4,630,000	4,050,000	119,000
12/26/94	386,000	1,330,000	48,900	321,000	4,390,000	4,610,000	4,120,000	117,000
12/27/94	667,000	1,370,000	88,900	330,000	4,480,000	4,720,000	4,050,000	109,000
12/28/94	519,000	1,370,000	23,200	364,000	4,440,000	4,760,000	3,610,000	200,000
12/29/94	128,000	1,020,000	11,800	154,000	3,900,000	4,590,000	2,940,000	446,000
12/30/94	541,000	1,500,000	43,200	467,000	4,300,000	4,610,000	3,540,000	217,000
12/31/94	982,000	1,530,000	348,000	356,000	4,500,000	4,610,000	4,270,000	61,100

Grab Samples of Headspace

Date	SILO 1	SILO 2
	Concentration	Concentration
12/01/94	341,000	2,913,000
12/08/94	208,000	2,998,000
12/12/94	234,000	2,959,000
12/15/94	1,195,000	3,512,000
12/19/94	242,000	251,000
12/22/94	2,136,000	3,589,000
12/27/94	1,882,000	3,508,000
12/30/94	226,000	3,515,000

- Notes:
- All values reported in pCi/L.
 - Continuous data reported to three significant digits to remain consistent with the calibration data.
 - * DLS malfunction, loss of trend data.
 - ** Power outage.

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY COMPLIANCE AGREEMENT/
FEDERAL FACILITY AGREEMENT MONTHLY PROGRESS REPORT

FACILITY: Fernald Environmental Management Project
U.S. Department of Energy
7400 Willey Road, P.O. Box 398704
Cincinnati, Ohio 45239 Hamilton

K-65 SILO REPORT

LOCATION: Silo # 1

DATE: December 1994

Day	Ambient Temp ° F	Press In. Hg.	Temperature Head Space ° F	Inter. Hum. %	Diff. Press In. HG	Head Space Radon (pCi/l)
1	30	29.79	48	*	-0.01	646,000
2	39	29.63	47	*	0.00	503,000
3	44	29.59	47	*	0.00	665,000
4	50	29.54	48	*	-0.01	1,040,000
5	53	29.44	49	*	-0.04	865,000
** 6	51	29.54	50	*	0.04	916,000
** 7	45	29.47	50	*	0.05	311,000
** 8	36	29.77	49	*	0.00	515,000
** 9	36	29.46	48	*	0.04	1,080,000
** 10	31	29.44	48	*	-0.01	n/a
** 11	23	29.72	47	*	0.05	n/a
** 12	27	29.76	48	*	0.02	786,000
13	29	29.73	45	*	0.01	356,000
14	29	29.75	45	*	-0.01	268,000
15	31	29.74	44	*	-0.01	615,000
** 16	40	29.55	45	*	-0.09	802,000
17	41	29.50	45	*	0.03	219,000
18	n/a	n/a	n/a	n/a	n/a	n/a
19	30	29.72	45	*	-0.01	456,000
20	30	29.72	44	*	-0.01	558,000
21	34	29.74	44	*	-0.01	555,000
22	37	29.63	44	*	0.00	783,000
23	35	29.49	44	*	-0.01	343,000
24	35	29.54	44	*	-0.01	94,800
25	31	29.58	44	*	-0.01	297,000
26	30	29.69	43	*	-0.01	386,000
27	28	29.63	43	*	-0.01	667,000
28	33	29.52	43	*	-0.01	519,000
29	34	29.69	43	*	0.00	128,000
30	37	29.64	43	*	0.00	541,000
31	40	29.53	43	*	0.00	982,000
ARITHMETIC MEAN	35.5	29.62	45.6	*	0.002	567,743
MAXIMUM	53	29.79	50	*	0.05	1,080,000
MINIMUM	23	29.44	43	*	-0.09	94,800
MEDIAN	34	29.63	45	*	-0.01	548,000

Note: * - Silo #1 Relative Humidity was inoperable.

** - Some Delta Pressure values were outside of range restrictions.
DLS malfunction on 12/09 through 12/12, loss of data trends.
Power outage 12/17 through 12/19.

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY COMPLIANCE AGREEMENT/
FEDERAL FACILITY AGREEMENT MONTHLY PROGRESS REPORT

FACILITY: Fernald Environmental Management Project
U.S. Department of Energy
7400 Willey Road, P.O. Box 398704
Cincinnati, Ohio 45239 Hamilton

K-65 SILO REPORT

LOCATION: Silo # 2

DATE: December 1994

Day	Ambient Temp °F	Press In. Hg.	Temperature Head Space °F	Inter. Hum. %	Diff. Press In. HG	Head Space Radon (pCi/l)
1	30	29.79	48	*	-0.01	4,000,000
2	39	29.63	48	*	-0.01	4,040,000
3	44	29.59	48	*	-0.01	4,130,000
4	50	29.54	49	*	-0.02	4,270,000
5	53	29.44	49	*	-0.04	4,170,000
** 6	51	29.54	50	*	0.05	4,120,000
** 7	45	29.47	50	*	0.02	3,760,000
** 8	36	29.77	49	*	0.04	3,820,000
** 9	36	29.46	49	*	0.00	4,030,000
** 10	31	29.44	48	*	0.04	n/a
** 11	23	29.72	47	*	0.20	n/a
** 12	27	29.76	47	*	0.03	3,950,000
** 13	29	29.73	46	*	-0.01	4,050,000
14	29	29.75	45	*	-0.01	4,040,000
15	31	29.74	45	*	-0.01	4,250,000
** 16	40	29.55	45	*	-0.04	4,060,000
** 17	41	29.50	46	*	0.02	4,120,000
18	n/a	n/a	n/a	n/a	n/a	n/a
19	30	29.72	45	*	-0.01	4,290,000
20	30	29.72	45	*	-0.01	4,380,000
21	34	29.74	45	*	-0.01	4,450,000
22	37	29.63	45	*	-0.01	4,520,000
23	35	29.49	45	*	-0.01	4,300,000
24	35	29.54	45	*	-0.01	4,260,000
25	31	29.58	44	*	-0.01	4,380,000
26	30	29.69	44	*	-0.01	4,390,000
27	26	29.63	44	*	-0.01	4,480,000
28	33	29.52	44	*	-0.01	4,440,000
29	34	29.69	44	*	-0.01	3,900,000
30	37	29.64	44	*	-0.01	4,300,000
31	40	29.53	44	*	-0.01	4,500,000
ARITHMETIC MEAN	35.5	29.62	46.2	*	0.004	4,192,857
MAXIMUM	53	29.79	50	*	0.20	4,520,000
MINIMUM	23	29.44	44	*	-0.04	3,760,000
MEDIAN	34	29.63	45	*	-0.01	4,210,000

Note: * - Silo #2 Relative Humidity was inoperable.
** - Some Delta Pressure values were outside of range restrictions.
DLS malfunction on 12/09 through 12/12, loss of data trends.
Power outage 12/17 through 12/19.

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS
MONTHLY PROGRESS REPORT**

PERIOD ENDING DECEMBER 31, 1994

ENCLOSURE D

EFFLUENT RADIATION DISCHARGES TO THE GREAT MIAMI RIVER

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS
MONTHLY PROGRESS REPORT

Period Ending December 31, 1994

Introduction

Enclosure D lists monthly discharges to the Great Miami River. This information is required by the DOE/U.S. EPA Agreement Resolving Dispute Concerning Denial of Request for Extension of Time to Submit Operable Unit 2 Document and discussed in the "Addendum No. 1 to the South Groundwater Contamination Plume Removal Action Parts 2 and 3 Work Plan."

**CONSOLIDATED CONSENT AGREEMENT FACILITY
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS
MONTHLY PROGRESS REPORT**

Period Ending December 31, 1994

EFFLUENT RADIATION REPORT

FACILITY: Fernald Environmental Management Project
U.S. Department of Energy
7400 Willey Road, P.O.Box 398705
Cincinnati, Ohio 45239-8705
9002 M 9501 900212

LOCATION: [SP1]
IAWWT - T108 (SWRB) Discharge
Interim Advanced Wastewater Treatment Effluent

DATE: OCTOBER 1994

Day	Flow (MGD)	Total Alpha (pCi/l)	Total Beta (pCi/l)	Total U (ug/l)	Total U (kgs)	TSS (mg/l)	pH (MIN) (S.U.)	pH (MAX) (S.U.)
1	0.074	1.4	4.5	2.3	0.0006	2.2	7.8	8.2
2	0.222	0.5	4.5	1.7	0.0014 <	1.0	8.4	8.7
3	0.217	1.4	4.5	1.8	0.0015	1.2	8.7	8.8
4	0.167	1.8	5.4	2.9	0.0018 <	1.0	8.6	8.8
5	0.129	3.6	5.9	6.2	0.0030 <	1.0	8.7	8.9
6	0.215	0.9	4.1	1.5	0.0012 <	1.0	8.0	8.6
7	0.208	1.4	5.9	2.7	0.0021 <	1.0	8.9	9.2
8	0.130	1.4	5.4	1.6	0.0008	1.0	9.1	9.3
9	0.000							
10	0.122	5.9	11.7	17.7	0.0082	***	9.1	9.2
11	0.212	2.3	8.1	4.2	0.0034	2.0	9.1	9.2
12	0.213	2.3	8.6	3.6	0.0029	2.6	9.1	9.2
13	0.195	2.3	8.6	2.9	0.0021	2.8	9.1	9.4
14	0.182	5.0	6.3	9.6	0.0066 <	1.0	7.7	8.8
15	0.216	4.1	5.4	7.8	0.0064 <	1.0	7.6	7.7
16	0.212	3.2	5.0	7.9	0.0063 <	1.0	7.6	7.7
17	0.224	2.7	5.0	7.4	0.0063	1.4	7.6	7.7
18	0.241	2.7	5.4	9.6	0.0088 <	1.0	7.6	8.0
19	0.277	3.2	5.0	8.7	0.0091 <	1.0	7.6	7.7
20	0.301	3.2	4.1	7.3	0.0083 <	1.0	7.5	7.6
21	0.265	1.4	4.1	1.8	0.0018	1.6	7.9	8.6
22	0.285	***	***	2.3	0.0025	1.6	8.8	9.0
23	0.259	***	***	2.3	0.0023	2.2	8.9	9.1
24	0.209	***	***	9.1	0.0072	1.6	8.4	8.6
25	0.055	***	***	8.8	0.0018	1.2	8.4	8.6
26	0.000	***	***					
27	0.000	***	***					
28	0.093	***	***	1.3	0.0005	1.2	7.4	8.4
29	0.212	***	***	2.7	0.0022	1.0	8.4	8.5
30	0.236	***	***	2.6	0.0023	1.0	8.4	8.6
31	0.204	***	***	2.8	0.0022	2.6	8.4	8.6
Total	5.575				0.1036			

*** Analytical results not yet available.

**CONSOLIDATED CONSENT AGREEMENT FACILITY
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS
MONTHLY PROGRESS REPORT**

Period Ending December 31, 1994

EFFLUENT RADIATION REPORT (cont.)

FACILITY: Fernald Environmental Management Project

LOCATION: [SP1] IAWWT - T108

DATE: OCTOBER 1994

	Flow (MGD)	Total Alpha(2) (pCi/l)	Total Beta(2) (pCi/l)	Total U (ug/l)(2)	Total U (kgs)
Avg.	0.180	1.8	4.1	4.9	0.0037
Max.	0.301	5.9	11.7	17.7	0.0091
Min.	0.000	***	***	1.3	0.0005

Comments: (1) The activity of this discharge has been and will continue to be reported as Uranium-238 (pCi/l) in accordance with the Ohio EPA format for reporting uranium. Since this does not account for the activity of the other uranium isotopes in the effluent, the total uranium data is also presented. The calculated total U-238 is based on a conversion factor of 337.84 pCi U-238/mg Total U applied to the measured value of total uranium.

(2) Average values presented are flow-weighted.

**CONSOLIDATED CONSENT AGREEMENT FACILITY
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS
MONTHLY PROGRESS REPORT**

Period Ending December 31, 1994

EFFLUENT RADIATION REPORT

FACILITY: Fernald Environmental Management Project
U.S. Department of Energy
7400 Willey Road, P.O.Box 398705
Cincinnati, Ohio 45239-8705
9002 M 9501 900212

LOCATION: [SP1]
IAWWT - T109 (SWRB) Discharge
Interim Advanced Wastewater Treatment Effluent

DATE: OCTOBER 1994

Day	Flow (MGD)	Total Alpha (pCi/l)	Total Beta (pCi/l)	Total U (ug/l)	Total U (kgs)	TSS (mg/l)	pH (MIN) (S.U.)	pH (MAX) (S.U.)
1	0.000							
2	0.000							
3	0.000							
4	0.000							
5	0.000							
6	0.000							
7	0.000							
8	0.000							
9	0.000							
10	0.118	5.0	12.2	14.4	0.0064	***	9.1	9.2
11	0.195	1.8	8.1	2.3	0.0017	2.0	9.1	9.2
12	0.196	1.4	9.9	1.8	0.0013	2.2	9.1	9.2
13	0.170	1.4	8.1	2.0	0.0013	2.0	9.1	9.4
14	0.183	5.4	8.1	15.2	0.0105	< 1.0	7.7	8.8
15	0.220	3.6	5.9	9.4	0.0078	< 1.0	7.6	7.7
16	0.227	3.2	7.7	9.3	0.0080	< 1.0	7.6	7.7
17	0.263	4.5	6.3	9.1	0.0091	1.2	7.6	7.7
18	0.258	3.6	6.3	10.3	0.0101	< 1.0	7.6	8.0
19	0.242	3.6	5.9	10.7	0.0098	< 1.0	7.6	7.7
20	0.235	3.2	5.9	9.0	0.0080	< 1.0	7.5	7.6
21	0.274	1.4	5.4	2.7	0.0028	2.4	7.9	8.6
22	0.293	***	***	2.7	0.0030	2.2	8.8	9.0
23	0.263	***	***	2.7	0.0027	2.0	8.9	9.1
24	0.218	***	***	10.7	0.0088	1.0	8.4	8.6
25	0.054	***	***	10.3	0.0021	2.0	8.4	8.6
26	0.000	***	***					
27	0.000	***	***					
28	0.086	***	***	1.6	0.0005	1.2	7.4	8.4
29	0.197	***	***	2.7	0.0020	1.0	8.4	8.5
30	0.228	***	***	3.6	0.0031	1.2	8.4	8.6
31	0.204	***	***	3.4	0.0026	2.0	8.4	8.6
Total	4.124				0.1017			

*** Analytical results not yet available.

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**CONSOLIDATED CONSENT AGREEMENT FACILITY
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS
MONTHLY PROGRESS REPORT**

Period Ending December 31, 1994

EFFLUENT RADIATION REPORT (cont.)

FACILITY: Fernald Environmental Management Project

LOCATION: [SP1] IAWWT - T109

DATE: OCTOBER 1994

	Flow (MGD)	Total Alpha(2) (pCi/l)	Total Beta(2) (pCi/l)	Total U (ug/l)(2)	Total U (kgs)
Avg.	0.133	1.9	4.5	6.5	0.0051
Max.	0.293	5.4	12.2	15.2	0.0105
Min.	0.000	***	***	1.6	0.0005

Comments: (1) The activity of this discharge has been and will continue to be reported as Uranium-238 (pCi/l) in accordance with the Ohio EPA format for reporting uranium. Since this does not account for the activity of the other uranium isotopes in the effluent, the total uranium data is also presented. The calculated total U-238 is based on a conversion factor of 337.84 pCi U-238/mg Total U applied to the measured value of total uranium.

(2) Average values presented are flow-weighted.

**CONSOLIDATED CONSENT AGREEMENT FACILITY
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS
MONTHLY PROGRESS REPORT**

Period Ending December 31, 1994

EFFLUENT RADIATION REPORT

FACILITY: Fernald Environmental Management Project
U.S. Department of Energy
7400 Willey Road, P.O.Box 398705
Cincinnati, Ohio 45239-8705
9002 M 9501 900212

LOCATION: [606]
SWRB Pump Station Discharge
Stormwater Retention Basin Effluent

DATE: OCTOBER 1994

Day	Flow (MGD)	Total Alpha (pCi/l)	Total Beta (pCi/l)	Total U (mg/l)	Total U (kgs)
1	0.074	203	68	0.36	0.10
2	0.222	153	63	0.36	0.30
3	0.217	203	72	0.32	0.26
4	0.167	158	113	0.34	0.21
5	0.129	122	63	0.20	0.10
6	0.215	239	72	0.36	0.29
7	0.208	410	122	0.38	0.30
8	0.130	212	122	0.37	0.18
9	0.000				
10	0.240	248	108	0.41	0.37
11	0.407	243	122	0.41	0.63
12	0.409	203	72	0.42	0.65
13	0.365	248	86	0.42	0.58
14	0.365	99 <	68	0.18	0.25
15	0.436	54 <	68	0.01	0.02
16	0.439	9 <	68	0.01	0.02
17	0.487 <	9 <	68	0.01	0.02
18	0.499 <	9 <	68	0.01	0.02
19	0.519 <	9 <	68	0.01	0.02
20	0.536 <	9 <	68	0.01	0.02
21	0.539	275	131	0.41	0.84
22	0.578	230	104	0.41	0.90
23	0.522	248	113	0.41	0.81
24	0.427	131	95	0.22	0.36
25	0.109 <	14 <	63	0.01	0.01
26	0.000				
27	0.000				
28	0.179	225	72	0.34	0.23
29	0.409	176	81	0.34	0.53
30	0.464	225	90	0.35	0.61
31	0.408	243 <	63	0.35	0.54
	9.699				9.19

000068

**CONSOLIDATED CONSENT AGREEMENT FACILITY
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS
MONTHLY PROGRESS REPORT**

Period Ending December 31, 1994

EFFLUENT RADIATION REPORT (cont.)

FACILITY: Fernald Environmental Management Project

LOCATION: (606) SWRB

DATE: OCTOBER 1994

	Flow (MGD)	Total Alpha(2) (pCi/l)	Total Beta(2) (pCi/l)	Total U (mg/l)(2)	Total U (kgs)
Avg.	0.313	154	85	0.25	0.33
Max.	0.578	410	131	0.42	0.90
Min.	0.000	9	63	0.01	0.01

Comments: (1) The activity of this discharge has been and will continue to be reported as Uranium-238 (pCi/l) in accordance with the Ohio EPA format for reporting uranium. Since this does not account for the activity of the other uranium isotopes in the effluent, the total uranium data is also presented. The calculated total U-238 is based on a conversion factor of 337.84 pCi U-238/mg Total U applied to the measured value of total uranium.

(2) Average values presented are flow-weighted.

**CONSOLIDATED CONSENT AGREEMENT FACILITY
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS
MONTHLY PROGRESS REPORT**

Period Ending December 31, 1994

EFFLUENT RADIATION REPORT

FACILITY: Fernald Environmental Management Project
U.S. Department of Energy
7400 Willey Road, P.O.Box 398705
Cincinnati, Ohio 45239-8705
9002 M 9501 900212

LOCATION: [605]
Biodenitrification Tower
BDN Tower Effluent

DATE: OCTOBER 1994

Day	Flow (MGD)	Total Alpha (pCi/l)	Total Beta (pCi/l)	Total U (mg/l)	Total U (kgs)
1	0.055	32	149	0.06	0.01
2	0.053	32	225	0.06	0.01
3	0.062	36	495	0.36	0.08
4	0.070	284	541	0.55	0.15
5	0.046	117	320	0.21	0.04
6	0.042 <	9	117	0.01	0.00
7	0.040	9	81	0.01	0.00
8	0.040	9	135	0.01	0.00
9	0.041	14	122	0.03	0.00
10	0.040	41	207	0.08	0.01
11	0.040	50	243	0.11	0.02
12	0.037	99	252	0.17	0.02
13	0.040	104	252	0.20	0.03
14	0.053	248	356	0.35	0.07
15	0.084 <	9	95	0.00	0.00
16	0.082	23	90	0.03	0.01
17	0.068	9	95	0.02	0.00
18	0.070	9	122	0.01	0.00
19	0.068	108	428	0.20	0.05
20	0.054	225	450	0.46	0.09
21	0.052	248	676	0.50	0.10
22	0.055	275	586	0.49	0.10
23	0.054	351	586	0.55	0.11
24	0.055 <	14	72	0.01	0.00
25	0.054 <	14	90	0.00	0.00
26	0.060	14	99	0.03	0.01
27	0.068 <	14 <	63	0.00	0.00
28	0.058 <	14	81	0.00	0.00
29	0.054 <	14	99	0.07	0.01
30	0.054	225	243	0.34	0.07
31	0.057	27	63	0.01	0.00
Total	1.706				1.03

000070

**CONSOLIDATED CONSENT AGREEMENT FACILITY
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS
MONTHLY PROGRESS REPORT**

Period Ending December 31, 1994

EFFLUENT RADIATION REPORT (cont.)

FACILITY: Fernald Environmental Management Project

LOCATION: (605) BDN/ETS

DATE: OCTOBER 1994

	Flow (MGD)	Total Alpha(2) (pCi/l)	Total Beta(2) (pCi/l)	Total U (mg/l)(2)	Total U (kgs)
Avg.	0.055	85	238	0.16	0.03
Max.	0.084	351	676	0.55	0.15
Min.	0.037	9	63	0.00	0.00

Comments: (1) The activity of this discharge has been and will continue to be reported as Uranium-238 (pCi/l) in accordance with the Ohio EPA format for reporting uranium. Since this does not account for the activity of the other uranium isotopes in the effluent, the total uranium data is also presented. The calculated total U-238 is based on a conversion factor of 337.84 pCi U-238/mg Total U applied to the measured value of total uranium.

(2) Average values presented are flow-weighted.

**CONSOLIDATED CONSENT AGREEMENT FACILITY
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS
MONTHLY PROGRESS REPORT**

Period Ending December 31, 1994

EFFLUENT REPORT

FACILITY: Femald Environmental Management Project
U.S. Department of Energy
7400 Willey Road, P.O.Box 398705
Cincinnati, Ohio 45239-8705
9002 M 9501 900212

LOCATION: [605]
Biode-nitrification Tower
BDN Tower Effluent

DATE: OCTOBER 1994

Day	C-BOD5 (mg/l)	TSS (mg/l)	NH3-N (mg/l)	NO3-N (mg/l)	Chromium (ug/l)	Copper (ug/l)	Nickel (ug/l)	Hex-Chrom (ug/l)
1								
2								
3								
4	1.75							
5		10 <	0.10	0.9 <	6.0 <	14.0 <	17.0 <	6.0
6								
7								
8								
9								
10								
11	1.27 <	2 <	0.10	1.1 <	6.0 <	14.0 <	17.0 <	6.0
12								
13								
14								
15								
16								
17		10 <	0.10	0.3 <	6.0 <	14.0 <	17.0 <	6.0
18	2.41							
19								
20								
21								
22								
23		11 <	0.10	0.4 <	6.0 <	14.0 <	17.0 <	6.0
24								
25	1.47							
26								
27								
28								
29								
30								
31								

**CONSOLIDATED CONSENT AGREEMENT FACILITY
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS
MONTHLY PROGRESS REPORT**

Period Ending December 31, 1994

EFFLUENT RADIATION REPORT

FACILITY: Fernald Environmental Management Project
U.S. Department of Energy
7400 Willey Road, P.O.Box 398705
Cincinnati, Ohio 45239-8705
9002 M 9501 900212

LOCATION: Valve House
South Groundwater Contamination Plume

DATE: OCTOBER 1994

Day	Flow (MGD)	Total U (ug/l)	Total U (kgs)
1	1.507	9.1	0.05
2	1.454	9.1	0.05
3	1.420	8.8	0.05
4	1.431	8.7	0.05
5	1.614	8.5	0.05
6	1.307	9.2	0.05
7	1.459	9.6	0.05
8	1.496	9.5	0.05
9	1.444	9.7	0.05
10	1.425	8.4	0.05
11	1.431	20.2	0.11
12	1.049	3.3	0.01
13	0.509	3.1	0.01
14	0.829	11.0	0.03
15	1.287	10.5	0.05
16	1.507	10.5	0.06
17	1.413	9.6	0.05
18	1.416	10.1	0.05
19	1.603	11.2	0.07
20	1.332	8.9	0.04
21	1.460	10.4	0.06
22	1.472	10.3	0.06
23	1.471	9.4	0.05
24	1.400	9.4	0.05
25	1.349	10.3	0.05
26	1.188	10.1	0.05
27	1.313	9.3	0.05
28	1.526	9.4	0.05
29	1.377	9.4	0.05
30	1.648	9.4	0.06
31	1.443	10.5	0.06
Total	42.580		1.57

* No sample collected, monthly average used.

000073

**CONSOLIDATED CONSENT AGREEMENT FACILITY
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS
MONTHLY PROGRESS REPORT**

Period Ending December 31, 1994

EFFLUENT RADIATION REPORT (cont.)

FACILITY: Fernald Environmental Management Project

LOCATION: South Plume

DATE: OCTOBER 1994

	Flow (MGD)	Total U (ug/l)(2)	Total U (kgs)
Avg.	1.374	9.8	0.05
Max.	1.648	20.2	0.11
Min.	0.509	3.1	0.01

Comments: (1) The activity of this discharge has been and will continue to be reported as Uranium-238 (pCi/l) in accordance with the Ohio EPA format for reporting uranium. Since this does not account for the activity of the other uranium isotopes in the effluent, the total uranium data is also presented. The calculated total U-238 is based on a conversion factor of 337.84 pCi U-238/mg Total U applied to the measured value of total uranium.

(2) Average values presented are flow-weighted.

000074

6522

**CONSOLIDATED CONSENT AGREEMENT FACILITY
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS
MONTHLY PROGRESS REPORT**

Period Ending December 31, 1994

EFFLUENT RADIATION REPORT

FACILITY: Fernald Environmental Management Project
U.S. Department of Energy
7400 Willey Road, P.O.Box 398705
Cincinnati, Ohio 45239-8705
9002 M 9501 900212

LOCATION: [SP3]
Valve House
South Plume/Stormwater Retention Basin *

DATE: OCTOBER 1994

Day	Flow (MGD)	Total Alpha (pCi/l)	Total Beta (pCi/l)	Total U (ug/l)	Total U (kgs)	TSS (mg/l)	pH (Grab) (S.U.)
1	1.581	9.0 <	63.1	17	0.10		7.3
2	1.676	13.5 <	63.1	31	0.20		7.3
3	1.637	22.5 <	63.1	32	0.20		7.4
4	1.598	13.5 <	63.1	29	0.18		7.4
5	1.743	9.0 <	63.1	24	0.16		7.4
6	1.522	13.5 <	63.1	35	0.20	1.4	7.3
7	1.667	27.0 <	63.1	37	0.23		7.3
8	1.626	13.5 <	63.1	29	0.18		7.4
9	1.444 <	9.0 <	63.1	10	0.05		7.4
10	1.665	9.0 <	63.1	17	0.11		7.4
11	1.838	13.5 <	63.1	31	0.22		7.6
12	1.458	13.5 <	63.1	44	0.24		7.4
13	0.874	31.5 <	63.1	31	0.10	6.4	8
14	1.194	9.0 <	63.1	9	0.04		7.9
15	1.723 <	9.0 <	63.1	8	0.05		7.3
16	1.946	13.5 <	63.1	8	0.06		7.3
17	1.900 <	9.0 <	63.1	8	0.06		7.3
18	1.915	9.0	67.6	8	0.06		7.4
19	2.122	9.0	67.6	8	0.07		7.3
20	1.868	9.0	67.6	9	0.06	1.0	7.3
21	1.999	13.5	72.1	8	0.06		7.4
22	2.050	9.0	72.1	9	0.07		7.5
23	1.993	13.5	72.1	10	0.08		7.5
24	1.827	13.5	72.1	14	0.10		7.4
25	1.458	9.0	72.1	10	0.06		7.3
26	1.188	9.0	72.1	10	0.04		7.2
27	1.313	13.5	72.1	8	0.04	2.4	7.3
28	1.705	13.5	72.1	12	0.08		7.5
29	1.786	13.5	72.1	17	0.11		7.3
30	2.112	13.5	72.1	17	0.14		7.3
31	1.851	13.5	72.1	14	0.10		7.3
Total	52.279				3.43		

* Effective 3/11/94, the SWRB discharges were combined with the South Plume.

**CONSOLIDATED CONSENT AGREEMENT FACILITY
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS
MONTHLY PROGRESS REPORT**

Period Ending December 31, 1994

EFFLUENT RADIATION REPORT (cont.)

FACILITY: Fernald Environmental Management Project

LOCATION: [SP3] Valve House

DATE: OCTOBER 1994

	Flow (MGD)	Total Alpha(2) (pCi/l)	Total Beta(2) (pCi/l)	Total U (ug/l)(2)	Total U (kgs)
Avg.	1.686	12.6	66.9	17	0.11
Max.	2.122	31.5	72.1	44	0.24
Min.	0.874	9.0	63.1	8	0.04

Comments: (1) The activity of this discharge has been and will continue to be reported as Uranium-238 (pCi/l) in accordance with the Ohio EPA format for reporting uranium. Since this does not account for the activity of the other uranium isotopes in the effluent, the total uranium data is also presented. The calculated total U-238 is based on a conversion factor of 337.84 pCi U-238/mg Total U applied to the measured value of total uranium.

(2) Average values presented are flow-weighted.

000076

**CONSOLIDATED CONSENT AGREEMENT FACILITY
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS
MONTHLY PROGRESS REPORT**

Period Ending December 31, 1994

EFFLUENT REPORT

FACILITY: Fernald Environmental Management Project
U.S. Department of Energy
7400 Willey Road, P.O.Box 398705
Cincinnati, Ohio 45239-8705
9002 M 9501 900212

LOCATION: [SP4]
Parshall Flume
Effluent Downstream of Manhole 176B

DATE: OCTOBER 1994

Day	DO (mg/l)	IRON (mg/l)	MANGANESE (mg/l)
---	-----	-----	-----
1			
2			
3			
4			
5			
6	9.4	0.84	0.2
7			
8			
9			
10			
11			
12			
13	9.3	0.43	0.2
14			
15			
16			
17			
18			
19			
20	9.7	1.98	0.2
21			
22			
23			
24			
25			
26			
27	9.4	1.02	0.2
28			
29			
30			
31			

**CONSOLIDATED CONSENT AGREEMENT FACILITY
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS
MONTHLY PROGRESS REPORT**

Period Ending December 31, 1994

EFFLUENT RADIATION REPORT

FACILITY: Fernald Environmental Management Project
U.S. Department of Energy
7400 Willey Road, P.O.Box 398705
Cincinnati, Ohio 45239-8705
9002 M 9501 900212

LOCATION: [SP1]
IAWWT - T108 (SWRB) Discharge
Interim Advanced Wastewater Treatment Effluent

DATE: NOVEMBER 1994

Day	Flow (MGD)	Total Alpha (pCi/l)	Total Beta (pCi/l)	Total U (ug/l)	Total U (kgs)	TSS (mg/l)	pH (MIN) (S.U.)	pH (MAX) (S.U.)
1	0.057	***	***	2.1	0.0005 <	1.0	8.5	8.6
2	0.000							
3	0.000							
4	0.000							
5	0.000							
6	0.149	***	***	1.4	0.0008	2.8	8.4	8.7
7	0.212	***	***	8.6	0.0069	***	8.5	8.6
8	0.212	***	***	1.5	0.0012	1.4	8.4	8.6
9	0.212	***	***	1.5	0.0012	1.6	8.4	8.5
10	0.213	***	***	1.6	0.0013	1.6	8.0	8.4
11	0.103	***	***	1.9	0.0007	2.4	8.0	8.1
12	0.217	***	***	2.5	0.0021	1.0	8.0	8.1
13	0.204	***	***	1.8	0.0014	1.6	8.1	8.2
14	0.163	***	***	2.8	0.0017	1.2	8.0	8.4
15	0.204	***	***	< 1.0	0.0008	2.4	7.7	8.1
16	0.195	***	***	1.3	0.0010	1.2	7.7	7.8
17	0.198	***	***	1.6	0.0012	1.2	7.7	7.8
18	0.192	***	***	2.1	0.0015	1.0	7.8	7.9
19	0.213	***	***	2.5	0.0020	1.2	7.8	7.9
20	0.203	***	***	2.2	0.0017	1.2	7.9	8.4
21	0.229	***	***	1.7	0.0015	1.4	8.1	8.2
22	0.060	***	***	1.6	0.0004	1.0	8.0	8.1
23	0.130	***	***	1.1	0.0005	1.6	7.9	8.1
24	0.205	***	***	1.1	0.0009	1.4	7.9	8.2
25	0.193	***	***	1.1	0.0008	1.8	8.0	8.1
26	0.201	***	***	1.2	0.0009	2.2	8.0	8.2
27	0.224	***	***	1.2	0.0010 <	1.0	8.1	8.2
28	0.212	***	***	< 1.0	0.0008 <	1.0	8.1	8.3
29	0.206	***	***	1.1	0.0009	**	8.0	8.1
30	0.212	***	***	**	**	**	8.0	8.1
Total	4.819				0.0335			

*** Analytical results not yet available.
** No sample collected.

000078

**CONSOLIDATED CONSENT AGREEMENT FACILITY
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS
MONTHLY PROGRESS REPORT**

Period Ending December 31, 1994

EFFLUENT RADIATION REPORT (cont.)

FACILITY: Fernald Environmental Management Project

LOCATION: [SP1] IAWWT - T108

DATE: NOVEMBER 1994

	Flow (MGD)	Total Alpha(2) (pCi/l)	Total Beta(2) (pCi/l)	Total U (ug/l)(2)	Total U (kgs)
Avg.	0.161	***	***	1.8	0.0013
Max.	0.229	***	***	8.6	0.0069
Min.	0.000	***	***	< 1.0	0.0004

Comments: (1) The activity of this discharge has been and will continue to be reported as Uranium-238 (pCi/l) in accordance with the Ohio EPA format for reporting uranium. Since this does not account for the activity of the other uranium isotopes in the effluent, the total uranium data is also presented. The calculated total U-238 is based on a conversion factor of 337.84 pCi U-238/mg Total U applied to the measured value of total uranium.

(2) Average values presented are flow-weighted.

**CONSOLIDATED CONSENT AGREEMENT FACILITY
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS
MONTHLY PROGRESS REPORT**

Period Ending December 31, 1994

EFFLUENT RADIATION REPORT

FACILITY: Fernald Environmental Management Project
U.S. Department of Energy
7400 Willey Road, P.O.Box 398705
Cincinnati, Ohio 45239-8705
9002 M 9501 900212

LOCATION: [SP1]
IAWWT - T109 (SWRB) Discharge
Interim Advanced Wastewater Treatment Effluent

DATE: NOVEMBER 1994

Day	Flow (MGD)	Total Alpha (pCi/l)	Total Beta (pCi/l)	Total U (ug/l)	Total U (kgs)	TSS (mg/l)	pH (MIN) (S.U.)	pH (MAX) (S.U.)
1	0.057	***	***	2.6	0.0006	1.6	8.5	8.6
2	0.000							
3	0.000							
4	0.000							
5	0.000							
6	0.150	***	***	1.6	0.0009	1.0	8.4	8.7
7	0.208	***	***	2.0	0.0016	**	8.5	8.6
8	0.205	***	***	1.7	0.0013	2.0	8.4	8.6
9	0.203	***	***	1.7	0.0013	1.8	8.4	8.5
10	0.220	***	***	1.8	0.0015	1.4	8.0	8.4
11	0.106	***	***	2.2	0.0009	2.0	8.0	8.1
12	0.207	***	***	2.0	0.0016	1.8	8.0	8.1
13	0.196	***	***	2.1	0.0016	2.0	8.1	8.2
14	0.159	***	***	3.7	0.0022	1.4	8.0	8.4
15	0.200	***	***	< 1.0	0.0008	2.8	7.7	8.1
16	0.195	***	***	1.5	0.0011	1.0	7.7	7.8
17	0.197	***	***	1.8	0.0013	1.0	7.7	7.8
18	0.187	***	***	2.1	0.0015	1.6	7.8	7.9
19	0.195	***	***	2.5	0.0018	1.8	7.8	7.9
20	0.205	***	***	2.2	0.0017	1.6	7.9	8.4
21	0.242	***	***	1.9	0.0017	1.2	8.1	8.2
22	0.063	***	***	1.6	0.0004	2.0	8.0	8.1
23	0.126	***	***	1.3	0.0006	1.0	7.9	8.1
24	0.208	***	***	1.2	0.0009	2.8	7.9	8.2
25	0.190	***	***	1.3	0.0009	1.4	8.0	8.1
26	0.196	***	***	1.3	0.0010	< 1.0	8.0	8.2
27	0.214	***	***	1.3	0.0011	< 1.0	8.1	8.2
28	0.197	***	***	1.2	0.0009	< 1.0	8.1	8.3
29	0.200	***	***	1.3	0.0010	**	8.0	8.1
30	0.189	***	***	**	**	**	8.0	8.1
Total		4.715			0.0302			

*** Analytical results not yet available.
** No sample collected.

000080

**CONSOLIDATED CONSENT AGREEMENT FACILITY
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS
MONTHLY PROGRESS REPORT**

Period Ending December 31, 1994

EFFLUENT RADIATION REPORT (cont.)

FACILITY: Fernald Environmental Management Project

LOCATION: [SP1] IAWWT - T109

DATE: NOVEMBER 1994

	Flow (MGD)	Total Alpha(2) (pCi/l)	Total Beta(2) (pCi/l)	Total U (ug/l)(2)	Total U (kgs)
Avg.	0.157	***	***	1.7	0.0012
Max.	0.242	***	***	3.7	0.0022
Min.	0.000	***	***	< 1.0	0.0004

Comments: (1) The activity of this discharge has been and will continue to be reported as Uranium-238 (pCi/l) in accordance with the Ohio EPA format for reporting uranium. Since this does not account for the activity of the other uranium isotopes in the effluent, the total uranium data is also presented. The calculated total U-238 is based on a conversion factor of 337.84 pCi U-238/mg Total U applied to the measured value of total uranium.

(2) Average values presented are flow-weighted.

**CONSOLIDATED CONSENT AGREEMENT FACILITY
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS
MONTHLY PROGRESS REPORT**

Period Ending December 31, 1994

EFFLUENT RADIATION REPORT

FACILITY: Fernald Environmental Management Project
U.S. Department of Energy
7400 Willey Road, P.O.Box 398705
Cincinnati, Ohio 45239-8705
9002 M 9501 900212

LOCATION: [606]
SWRB Pump Station Discharge
Stormwater Retention Basin Effluent

DATE: NOVEMBER 1994

Day	Flow (MGD)	Total Alpha (pCi/l)	Total Beta (pCi/l)	Total U (mg/l)	Total U (kgs)
1	0.114	234	90	0.35	0.15
2	0.000				
3	0.000				
4	0.000				
5	0.000				
6	0.299	212	95	0.33	0.37
7	0.420	203 <	68	0.34	0.54
8	0.417	176 <	68	0.39	0.62
9	0.415	194	95	0.41	0.64
10	0.433	324	99	0.44	0.72
11	0.209	302	72	***	
12	0.424	293	140	0.50	0.80
13	0.400	378	153	0.51	0.77
14	0.322	234	131	0.46	0.56
15	0.404	288	135	0.50	0.76
16	0.390	284	135	0.49	0.72
17	0.395	311	***	0.52	0.78
18	0.379	419	***	0.54	0.77
19	0.408	279	***	0.55	0.85
20	0.408	324	***	0.49	0.76
21	0.471	324	***	0.53	0.94
22	0.123	***	***	0.49	0.23
23	0.256	324	***	0.51	0.49
24	0.413	306	***	0.50	0.78
25	0.383	275	***	0.50	0.72
26	0.397	***	***	0.50	0.75
27	0.438	***	***	0.49	0.81
28	0.409	***	***	0.41	0.63
29	0.406	***	***	0.41	0.63
30	0.401	***	***	0.42	0.64
	9.534				16.47

*** Analytical results not yet available.

000082

**CONSOLIDATED CONSENT AGREEMENT FACILITY
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS
MONTHLY PROGRESS REPORT**

Period Ending December 31, 1994

EFFLUENT RADIATION REPORT (cont.)

FACILITY: Fernald Environmental Management Project

LOCATION: (606) SWRB

DATE: NOVEMBER 1994

	Flow (MGD)	Total Alpha(2) (pCi/l)	Total Beta(2) (pCi/l)	Total U (mg/l)(2)	Total U (kgs)
Avg.	0.318	221	48	0.46	0.66
Max.	0.471	419	153	0.55	0.94
Min.	0.000	***	***	***	0.15

Comments: (1) The activity of this discharge has been and will continue to be reported as Uranium-238 (pCi/l) in accordance with the Ohio EPA format for reporting uranium. Since this does not account for the activity of the other uranium isotopes in the effluent, the total uranium data is also presented. The calculated total U-238 is based on a conversion factor of 337.84 pCi U-238/mg Total U applied to the measured value of total uranium.

(2) Average values presented are flow-weighted.

**CONSOLIDATED CONSENT AGREEMENT FACILITY
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS
MONTHLY PROGRESS REPORT**

Period Ending December 31, 1994

EFFLUENT RADIATION REPORT

FACILITY: Fernald Environmental Management Project
U.S. Department of Energy
7400 Willey Road, P.O.Box 398705
Cincinnati, Ohio 45239-8705
9002 M 9501 900212

LOCATION: [605]
Biodenitrification Tower
BDN Tower Effluent

DATE: NOVEMBER 1994

Day	Flow (MGD)	Total Alpha (pCi/l)	Total Beta (pCi/l)	Total U (mg/l)	Total U (kgs)
1	0.054 <	14	144	0.01	0.00
2	0.051	41	140	0.08	0.02
3	0.029	203	297	0.38	0.04
4	0.048 <	14	135	0.01	0.00
5	0.046 <	14	95	0.01	0.00
6	0.096	234	450	0.50	0.18
7	0.103	342	495	0.61	0.24
8	0.098	351	320	0.58	0.22
9	0.108	450	541	0.82	0.34
10	0.120	495	676	0.84	0.38
11	0.032	405	586	0.78	0.09
12	0.029	419	586	0.81	0.09
13	0.128	450	541	0.83	0.40
14	0.127	495	676	0.89	0.43
15	0.129	495	1036	0.91	0.44
16	0.125	541	***	0.93	0.44
17	0.128	495	***	0.97	0.47
18	0.126	676	***	0.87	0.41
19	0.129	***	***	0.90	0.44
20	0.131	***	***	0.92	0.46
21	0.128	***	***	0.74	0.36
22	0.117	***	***	0.76	0.34
23	0.125	***	***	0.83	0.39
24	0.120	***	***	0.83	0.38
25	0.124	***	***	0.77	0.36
26	0.133	***	***	0.82	0.41
27	0.119	***	***	0.82	0.37
28	0.126	***	***	0.87	0.41
29	0.121	***	***	0.81	0.37
30	0.043	***	***	0.70	0.11
Total	2.993				8.60

*** Analytical results not yet available.

000084

**CONSOLIDATED CONSENT AGREEMENT FACILITY
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS
MONTHLY PROGRESS REPORT**

Period Ending December 31, 1994

EFFLUENT RADIATION REPORT (cont.)

FACILITY: Fernald Environmental Management Project

LOCATION: (605) BDN/ETS

DATE: NOVEMBER 1994

	Flow (MGD)	Total Alpha(2) (pCi/l)	Total Beta(2) (pCi/l)	Total U (mg/l)(2)	Total U (kgs)
Avg.	0.100	212	208	0.76	0.287
Max.	0.133	676	1036	0.97	0.470
Min.	0.029	***	***	0.01	0.002

Comments: (1) The activity of this discharge has been and will continue to be reported as Uranium-238 (pCi/l) in accordance with the Ohio EPA format for reporting uranium. Since this does not account for the activity of the other uranium isotopes in the effluent, the total uranium data is also presented. The calculated total U-238 is based on a conversion factor of 337.84 pCi U-238/mg Total U applied to the measured value of total uranium.

(2) Average values presented are flow-weighted.

**CONSOLIDATED CONSENT AGREEMENT FACILITY
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS
MONTHLY PROGRESS REPORT**

Period Ending December 31, 1994

EFFLUENT REPORT

FACILITY: Fernald Environmental Management Project
U.S. Department of Energy
7400 Willey Road, P.O.Box 398705
Cincinnati, Ohio 45239-8705
9002 M 9501 900212

LOCATION: [605]
Biodenitrification Tower
BDN Tower Effluent

DATE: NOVEMBER 1994

Day	C-BOD5 (mg/l)	TSS (mg/l)	NH3-N (mg/l)	NO3-N (mg/l)	Chromium (ug/l)	Copper (ug/l)	Nickel (ug/l)	Hex-Chrom (ug/l)
1	1.80							
2	<	2 <	0.10	1.8 <	6.0 <	14.0 <	17.0 <	6.0
3								
4								
5								
6								
7								
8	3.02	14 <	0.10	0.2 <	6.0 <	14.0 <	17.0 <	6.0
9								
10								
11								
12								
13								
14								
15	7.28							
16		7 <	0.10	0.1 <	6.0 <	14.0 <	17.0 <	6.0
17								
18								
19								
20								
21								
22	6.22							
23								
24								
25								
26								
27		13	0.20	1.3 <	6.0	20.1 <	17.0 <	6.0
28								
29	4.52							
30								

**CONSOLIDATED CONSENT AGREEMENT FACILITY
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS
MONTHLY PROGRESS REPORT**

Period Ending December 31, 1994

EFFLUENT RADIATION REPORT

FACILITY: Fernald Environmental Management Project
U.S. Department of Energy
7400 Willey Road, P.O.Box 398705
Cincinnati, Ohio 45239-8705
9002 M 9501 900212

LOCATION: Valve House
South Groundwater Contamination Plume

DATE: NOVEMBER 1994

Day	Flow (MGD)	Total U (ug/l)	Total U (kgs)
---	-----	-----	-----
1	1.360	8.9	0.05
2	1.500	6.2	0.04
3	1.483	10.3	0.06
4	1.394	9.8	0.05
5	1.497	9.6	0.05
6	1.343	10.1	0.05
7	1.452	10.3	0.06
8	1.352	9.8	0.05
9	1.487	9.5	0.05
10	1.481	9.5	0.05
11	1.252	9.5	0.05
12	0.957	9.4	0.03
13	1.448	9.3	0.05
14	1.534	10.5	0.06
15	1.462	10.7	0.06
16	1.419	10.3	0.06
17	1.471	10.4	0.06
18	1.334	10.1	0.05
19	1.506	9.4	0.05
20	1.420	9.1	0.05
21	1.429	9.8	0.05
22	0.000		
23	1.236	9.8	0.05
24	1.232	9.4	0.04
25	1.435	9.2	0.05
26	1.474	9.2	0.05
27	1.507	9.0	0.05
28	1.204	10.3	0.05
29	1.426	10.5	0.06
30	1.484	5.6	0.03
Total	----- 40.579		----- 1.46

**CONSOLIDATED CONSENT AGREEMENT FACILITY
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS
MONTHLY PROGRESS REPORT**

Period Ending December 31, 1994

EFFLUENT RADIATION REPORT (cont.)

FACILITY: Fernald Environmental Management Project

LOCATION: South Plume

DATE: NOVEMBER 1994

	Flow (MGD)	Total U (ug/l)(2)	Total U (kgs)
Avg.	1.353	9.5	0.05
Max.	1.534	10.7	0.06
Min.	0.000	5.6	0.03

Comments: (1) The activity of this discharge has been and will continue to be reported as Uranium-238 (pCi/l) in accordance with the Ohio EPA format for reporting uranium. Since this does not account for the activity of the other uranium isotopes in the effluent, the total uranium data is also presented. The calculated total U-238 is based on a conversion factor of 337.84 pCi U-238/mg Total U applied to the measured value of total uranium.

(2) Average values presented are flow-weighted.

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**CONSOLIDATED CONSENT AGREEMENT FACILITY
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS
MONTHLY PROGRESS REPORT**

Period Ending December 31, 1994

EFFLUENT RADIATION REPORT

FACILITY: Fernald Environmental Management Project
U.S. Department of Energy
7400 Willey Road, P.O.Box 398705
Cincinnati, Ohio 45239-8705
9002 M 9501 900212

LOCATION: [SP3]
Valve House
South Plume/Stormwater Retention Basin *

DATE: NOVEMBER 1994

Day	Flow (MGD)	Total Alpha (pCi/l)	Total Beta (pCi/l)	Total U (ug/l)	Total U (kgs)	TSS (mg/l)	pH (Grab) (S.U.)
1	1.474 <	13.5 <	67.6	10	0.06		7.4
2	1.500	13.5 <	67.6	9	0.05		7.4
3	1.483	36.0 <	67.6	9	0.05	1.4	7.4
4	1.394 <	13.5 <	67.6	9	0.04		7.3
5	1.497 <	13.5 <	67.6	9	0.05		7.4
6	1.642 <	13.5 <	67.6	13	0.08		7.3
7	1.872 <	13.5 <	67.6	17	0.12		7.3
8	1.769 <	13.5 <	67.6	16	0.11		7.3
9	1.902	13.5 <	67.6	18	0.13		7.6
10	1.914	13.5 <	67.6	23	0.17		7.3
11	1.461 <	13.5 <	67.6	20	0.11	2.4	7.2
12	1.381	18.0 <	67.6	37	0.19		7.4
13	1.848 <	13.5 <	67.6	29	0.20		7.4
14	1.856	13.5 <	67.6	27	0.19		7.4
15	1.866	22.5 <	67.6	33	0.23		7.4
16	1.809	13.5 <	67.6	30	0.21		7.3
17	1.866	18.0 <	67.6	37	0.26	1.8	7.4
18	1.713	18.0 <	67.6	42	0.27		7.6
19	1.914	18.0 <	72.1	37	0.27		7.3
20	1.828	18.0 <	72.1	31	0.21		7.5
21	1.900 <	13.5 <	72.1	36	0.26		7.4
22	0.123	22.5 <	72.1	26	0.01		7.9
23	1.492	18.0	76.6	20	0.11		7.4
24	1.645	13.5 <	76.6	27	0.17	1.4	7.4
25	1.818	18.0 <	76.6	31	0.21		7.5
26	1.871	18.0 <	76.6	30	0.21		7.4
27	1.945	18.0 <	76.6	33	0.24		7.4
28	1.613	13.5 <	76.6	26	0.16		7
29	1.832	18.0 <	76.6	24	0.17		7.3
30	1.885	9.0 <	76.6	25	0.18		7.4
Total	50.113				4.73		

* Effective 3/11/94, the SWRB discharges were combined with the South Plume.

**CONSOLIDATED CONSENT AGREEMENT FACILITY
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS
MONTHLY PROGRESS REPORT**

Period Ending December 31, 1994

EFFLUENT RADIATION REPORT (cont.)

FACILITY: Fernald Environmental Management Project

LOCATION: [SP3] Valve House

DATE: NOVEMBER 1994

	Flow (MGD)	Total Alpha(2) (pCi/l)	Total Beta(2) (pCi/l)	Total U (ug/l)(2)	Total U (kgs)
Avg.	1.670	16.0	70.6	25	0.16
Max.	1.945	36.0	76.6	42	0.27
Min.	0.123	9.0	67.6	9	0.01

Comments: (1) The activity of this discharge has been and will continue to be reported as Uranium-238 (pCi/l) in accordance with the Ohio EPA format for reporting uranium. Since this does not account for the activity of the other uranium isotopes in the effluent, the total uranium data is also presented. The calculated total U-238 is based on a conversion factor of 337.84 pCi U-238/mg Total U applied to the measured value of total uranium.

(2) Average values presented are flow-weighted.

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CONSOLIDATED CONSENT AGREEMENT FACILITY
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS
MONTHLY PROGRESS REPORT

Period Ending December 31, 1994

EFFLUENT REPORT

FACILITY: Fernald Environmental Management Project
U.S. Department of Energy
7400 Willey Road, P.O.Box 398705
Cincinnati, Ohio 45239-8705
9002 M 9501 900212

LOCATION: [SP4]
Parshall Flume
Effluent Downstream of Manhole 176B

DATE: NOVEMBER 1994

Day	DO (mg/l)	IRON (mg/l)	MANGANESE (mg/l)
1			
2			
3	9.7	0.96	0.2
4			
5			
6			
7			
8			
9			
10			
11	6.3	0.63	0.1
12			
13			
14			
15			
16			
17	9.3	0.54	0.1
18			
19			
20			
21			
22			
23			
24	10.4	0.40	< 0.1
25			
26			
27			
28			
29			
30			