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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 FOR  
PERIOD ENDING APRIL 30, 1994**

05/17/94

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REPORT

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**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
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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 April 1 through April 30, 1994, and planned actions for the period May 1 through May 31, 1994.

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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 April 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 piezometers and extraction wells underneath Plants 2/3, 6, 8, and 9. Treat extracted water for volatile organic chemicals and uranium removal before discharge.	Treatment: Operational  Pumping has not resumed
2	Waste Pit Area Run-off Control	Collect and treat contaminated storm water run-off from the waste pit area.	Construction Completed: 6/15/92 Operational: 7/30/92
3	South Groundwater Contamination Plume	<p>Part 1 - Install new alternate water supply and transfer to industrial user.</p> <p>Part 2 - Pump and discharge groundwater from South Plume.</p> <p>Part 3 - Install and operate Interim Advanced Waste Water Treatment system to reduce uranium contaminant loading to the Great Miami River.</p> <p>Part 4 - Conduct groundwater monitoring and institutional controls by sampling private and existing R/FS wells in the South Plume area and installing homeowner treatment systems.</p> <p>Part 5 - Conduct groundwater modeling and geochemical investigating to define the extent of the groundwater plume contaminated with uranium.</p> <p>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.</p>	<p>Operational: 12/7/92</p> <p>Transfer: Ongoing</p> <p>Ongoing</p> <p>Ongoing</p> <p>Ongoing</p> <p>Completed: 2/25/94</p> <p>Operational: 3/31/94</p>
4	Silos 1 & 2	Install bentonite cap to reduce and monitor radon emissions. Provide follow-on monitoring.	Cap Completed: 11/28/91  Monitoring: Ongoing
5	Decant Sump Tank	Periodically remove liquid from K-65 decant sump tank.	Ongoing
6	Waste Pit 6 Residues	Eliminate potential airborne contamination by re-submerging exposed pit material.	Completed: 12/19/90

Shading denotes completed actions

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**REMOVAL ACTION SUMMARY**

NO.	TITLE	SCOPE	STATUS
7	Plant 1 Pad Continuing Release	Stage I - Implement run-on/off control measures. Stage II - Install new pad. Stage III - Upgrade existing Plant 1 Storage Pad.	Completed: 1/17/92 Completed: 12/4/92 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. Phase II - Complete active flyash pile controls.	Completed: 6/29/92 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.	Project work resumed in March 1994
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.	Ongoing
15	Scrap Metal Piles	Phase I - Disposition LLW ferrous/non-ferrous scrap metal Phase II - IIA - Containerization of scrap copper IIB - Disposition of scrap copper	Ongoing Completed: 9/29/92 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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**REMOVAL ACTION SUMMARY**

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.	Final Report Approved by U.S. EPA 3/31/94 at TIE Meeting
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.	Final Report Approved by U.S. EPA 3/31/94 at TIE Meeting
23	Inactive Flyash Pile	Conduct field investigation to identify locations requiring material removal.	Final Report Submitted to U.S. EPA 6/30/92
24	Pilot Plant Sump	Remove liquid and sludge from the sump.	U.S. EPA Approved Final Report 1/14/94
25	Nitric Acid Tank Car and Surrounding Area	Remove residual contents from tank car and decontaminate and dispose of tank car.	U.S. EPA Approved Final Report 12/9/93
26	Asbestos Removals (Asbestos Program)	Mitigate the potential for contaminant release and migration of asbestos fibers.	Ongoing

Shading denotes completed actions

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**REMOVAL ACTION SUMMARY**

NO.	TITLE	SCOPE	STATUS
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

Shading denotes completed actions

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**RA No. 1, Contaminated Water Under FEMP Buildings**

**Current Month:**

The Plant 8 VOC Treatment System was restarted on April 18, 1994. The Plant 6 Motor Bay Sumps Perched Groundwater Collection System was placed in operation.

**Planned Activities:**

- Reestablish operation of the perched groundwater extraction wells.

**RA No. 3, South Groundwater Contamination Plume**

**Part 1 - Alternate Water Supply**

**Current Month:**

Activities to complete the transfer of ownership of the Alternate Water Supply System from DOE to Albright and Wilson Americas (A&W) is ongoing. In 1992, the U.S. EPA and Ohio EPA approved deleting Delta Steel from the current scope of the project, with agreement that they would be served by a planned Public Water Supply (PWS). Progress on the PWS continues with some delays being encountered to address archeological and historical items. Phase I of PWS from Bolton Plant to Hamilton/Butler County line is scheduled to bid in July 1994.

**Planned Activities:**

- Continue the transfer of ownership of the Alternate Water Supply to A&W.
- Continue to support Hamilton County on installation of the PWS.
- Finalize basis for DOE participation in construction costs for PWS.

**Part 2 - Pumping and Discharge System**

**Current Month:**

The capture zone evaluation for the well field continues to suggest that arsenic concentrations in the monitoring wells south of the recovery wells are returning to prepumping levels. Operation of the recovery well field continued at a total rate of 1500 gallons per minute (gpm) (300 gpm each well).

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

**Part 2 - Pumping and Discharge System (Continued)**

**Planned Activities:**

- Continue operating recovery well field at a rate of 1500 gpm.
- Data collected during the first quarter of the recovery well field operation will be compiled and submitted to the U.S. EPA and Ohio EPA in May 1994. The report was originally scheduled for submittal during April but has been delayed due to problems experienced with the Sitewide Environmental Database and Data Management System. This quarterly report will meet the first reporting requirement defined in the Design, Monitoring and Evaluation Program (DMEPP).

**Part 3 - Interim Advanced Waste Water Treatment (IAWWT)**

**IAWWT Storm Water Retention Basin Unit**

**Current Month:**

With installation of the multimedia filtration unit upstream of the ion exchange units, the operation of the IAWWT has been well maintained with infrequent bag and cartridge filter element replacement.

**Planned Activities:**

- Continue to operate IAWWT (SWRB) with little downtime due to improved filtration.

**IAWWT Bionitrification Effluent Treatment System Unit**

**Current Month:**

Operation of the IAWWT unit continues. Temporary repairs of the ion exchange vessels have kept the system operational with little downtime. The internal flow distribution piping system, made of PVC, has developed cracks at the joints. The piping will be replaced with stainless steel.

**Planned Activities:**

- Pursue permanent repair of ion exchange vessels.

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

**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 two homeowner systems installed south of the FEMP continue to operate successfully. The FEMP is continuing to monitor the effectiveness of the ion exchange resins at these two residences. Trending analysis in collected data indicate the changeout of the resin in the lead columns will be required during 1994. A procedure for resin vessel changeout has been prepared for review and approval.

**Planned Activities:**

- Approve resin vessel changeout procedure in May and continue to monitor performance.

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

**Step 1**

**Current Month:**

The new IAWWT unit referred to as the South Plume Interim Treatment (SPIT) project was completed and placed in operation on March 31, 1994; satisfactory operation continues.

**Planned Activities:**

- Continue full operation of the system, treating 200 gpm of South Plume flow.

**Step 2**

**Current Month:**

Use off-peak capacity in Phase I of the Advanced Waste Water Treatment (AWWT) system for South Plume flow when no storm water requires treatment. The AWWT package, now under construction, contains piping and valving to transfer South Plume flow to the existing SWRB pumping station for subsequent transfer to Phase I.

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

Step 2 (Continued)

**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:**

Changes have been made to the AWWT project scope to eliminate scheduled improvements which would have specifically addressed the Sewage Treatment Plant and clean-side General Sump flows. Installation of the AWWT Phase III line began in April which will eventually serve a future AWWT system, Phase III. This will allow South Plume groundwater to be transferred to the AWWT Phase II system to meet this commitment.

**Planned Activities:**

- Continue installation of AWWT Phase III line. Step 3 will be available when Phase II of the AWWT becomes operational in January 1995.

Step 4

**Current Month:**

No action was taken in April to extend the planned operational life of the existing IAWWT SWRB unit by converting it from treating storm water to treating South Plume flow, and increasing capacity from 300 gpm to approximately 400 gpm.

**Planned Activities:**

- The conversion of the IAWWT SWRB unit will occur after currently treated waste stream is routed to AWWT Phase I in January 1995. Conversion will be accomplished by March 30, 1995.

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RA No. 4, Silos 1 and 2

**Current Month:**

The results of the video camera investigation of the Silo 2 bentonite cap (due to a slight upward trend in headspace radon concentration) were compared against baseline videos of the bentonite surface taken immediately following its installation. Overall, the bentonite cap integrity is in very good condition. The Removal Action No. 4 Final Report was issued to DOE-HQ on March 25, 1994. Comments from DOE-HQ on the Final Report were received on April 21, 1994 and a comment resolution meeting was conducted on April 28, 1994.

**Planned Activities:**

- The comment responses will be incorporated into the Removal Action Final Report and resubmitted by May 15, 1994.

RA No. 5, K-65 Decant Sump Tank

**Current Month:**

In an effort to reduce worker exposure to the Decant Sump Tank and to improve confidence in the liquid level measurements, DOE is proceeding to install a submersible pressure indicator/transmitter in the tank. The new water level indicator equipment will allow for accurate, continuous, and remote level readings from the tank.

**Planned Activities:**

- The action to install the new water level indicator is expected to be completed by the end of May 1994.

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**RA No. 7, Plant 1 Pad Continuing Release**

**Current Month:**

All concrete slab work, electrical light, and controls were completed for Phases C and D and Tension Support Structure (TSS) #6 in March 1994. Special coating operations on the Pad resumed in April 1994.

**Planned Activities:**

- Coating operation for TSS#6 is to be completed the week of May 2; Phase C is to be completed the week of May 9; and Phase D the week of May 16, 1994.
- In order for construction on Phase E to resume in June 1994, drum movements will occur during the last part of May.

KEY MILESTONES	STATUS	DUE DATE
Complete Installation of Stage III and Tension Support Structure	Open, ahead of schedule	February 21, 1995

**RA No. 9, Removal of Waste Inventories**

**Current Month:**

The volume of waste shipped off-site in April was 4,575 DEs for a total of 34,278 DEs shipped to the NTS in FY-94. This volume includes 6,696 drums of residues removed from inventory and shipped to-date.

A project team focused on legacy construction waste has characterized and approved for shipment 84 white metal boxes (WMB) (840 DEs). This project is tasked with the characterization of 10 WMBs per week.

DOE-NV approval of the revised FEMP Application to Ship Waste to the Nevada Test Site, Rev. 5.1, and approval of the final confirmatory sampling results for FEMP residues was received in March. The official application approval from DOE-NV which will release the AMCCOM metal for shipment to the Nevada Test Site is expected in May.

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**RA No. 9, Removal of Waste Inventories (continued)**

During April, shipping activities included the resumption of contaminated trash shipments.

**Planned Activities:**

- Awaiting DOE-NV approval of the FEMP waste application.
- Residue shipments to SEG to resume in May 1994.
- Initiation of AMCCOM and thorium shipments will resume in June 1994.

KEY MILESTONES	STATUS	DUE DATE
Submit Annual Work Procedures for 1994	Open, on schedule	June 30, 1994

**RA No. 12, Safe Shutdown**

**Current Month:**

Of the first three Implementation Plans for the removal of hold-up materials from equipment in Plant 4, the Potassium Hydroxide (KOH) system has been completed except for an area that contained frozen liquid, a Safety Assessment has been completed for the HF Recovery System, and the plan for clean-out of the H<sub>2</sub> off-gas system should be initiated in May.

The verification of process equipment located in Plant 5 and the Pilot Plant was completed. The verification of the production equipment in all process plants has been completed, except for Plant 2/3, Refinery. The red-lining of as-built floor plan drawings to agree with equipment verification is continuing.

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RA No. 12, Safe Shutdown (continued)

The following is the status of capital equipment: of an estimated 1,675 total number of items, 1,187 have been reported on AC-563 Forms to be excessed, and 488 have been identified as "In Use/Future Use" items. This information may vary from month-to-month due to change in status of equipment items and/or as a result of field verification.

Eight hundred seventeen (817) maintenance work orders to isolate and disconnect all utilities/energy sources from equipment not in use have been prepared. Of these, 443 have been completed. Field verification of the completed orders is ongoing. Completion of these work orders is a preliminary step for removal of hold-up material from the equipment in preparation for equipment removal and decontamination and decommissioning. These numbers may vary from month-to-month due to change in status of the equipment.

Three-hundred ninety-three (393) task orders to determine if hold-up material is present in equipment have been prepared; of these, 114 have been completed. Also, one hundred twenty-four (124) task orders to remove the hold-up material from equipment have been prepared.

Work continues with Westinghouse Hanford Company, DOE-Richland, and DOE Headquarters in finalizing the "Environmental Assessment (EA) for the Packaging/Repackaging, Loading, and Transportation Associated with the Sale of Uranium Materials Located at the Hanford Site, Richland, Washington, and the Fernald Site, Fernald, Ohio." Presently, the preparation of this NEPA document continues to be on hold awaiting details of the type of packaging to be used by COGEMA, the French Company which is purchasing a major portion of the material being sold.

In April, Manufacturing Sciences Corporation (MSC) in Oak Ridge, Tennessee, the company that purchased all of the depleted derbies, exercised their contractual option to cancel a month's shipment. This month's cancellation will not impact projected completion date of December 1996. We have shipped 302 derbies of 2,613 total, or 112,118 net pounds of 973,651 total.

British Nuclear Fuels was the successful bidder for 350,000 net pounds (120 metric tons uranium weight) of depleted UF<sub>6</sub>. On April 29, 1994, the Shipping/Receiving Plan was issued for this transfer. The customer had requested that the plan be finalized before the contract is signed. Completion of this plan will allow the process to go forward. However, actual transfer of the material is contingent upon completion of the EA in a timely manner.

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**RA No. 12, Safe Shutdown (continued)**

Removal of dust collector G5A-100 components for transfer to Martin Marietta Energy Systems (MMES), Oak Ridge, TN, began this month. The equipment will be used to provide air filtration for five (5) separate projects at the Y-12 plant. The FEMP acquisition cost was \$1.1 million and the scrap metal value of the equipment is approximately \$1,000. However, due to the strict radiological controls maintained on-site, this equipment may require burial, which would have cost approximately \$100,000 for packaging, transportation, and burial at the Nevada Test Site. The removal and transfer of equipment to MMES will result in an overall cost savings to the government of approximately \$1.5 million.

An additional four (4) dust collectors will be removed in May for transfer to MMES, with a similar cost savings.

**Planned Activities:**

- Continue preparation, with Hanford and the DOE, of the NEPA documentation for the sale of the excess uranium materials.
- Continue to issue work orders to disconnect utilities from process equipment and issue task orders to identify and/or remove hold-up materials from process equipment.
- Continue to expedite utility isolation, identify hold-up in equipment, and remove/drum hold-up from process equipment.
- Initiate verification of the equipment in Plant 2/3.
- Continue to prepare implementation packages and obtain appropriate approvals. Continue field inspections of implementation activities.
- Continue to follow the status of 4A metal removal to the Nevada Test Site.
- Continue shipping depleted durbies to MSC in Oak Ridge, Tennessee.
- Continue process of removing Plant 5 dust collectors for disposition to MMES, Oak Ridge, Tennessee.

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**RA No. 12, Safe Shutdown (continued)**

KEY MILESTONES	STATUS	DUE DATE
Submit Annual Work Procedures for 1994	Open, ahead of schedule	June 30, 1994

**RA No. 13, Plant 1 Ore Silos**

**Current Month:**

DOE-FN concurred with changes in the Work Plan for dismantling the tile silos and the U.S EPA has been notified. The new dismantling method involves knocking the tile inward, where they fall into a chute which directs them into a 7a box. The 90% design review for the new method was completed and the CFC drawings were received April 1. The remaining four concrete silos were dismantled (except for the cones) as of April 21, 1994. They are being stored on the west side of the tile silos. The tiles on the southwest silo have been repaired.

**Planned Activities:**

- Remove conveyors and deck from top of tall tile silos
- Dismantle concrete silos cones
- Install scaffold around tile silos

KEY MILESTONES	STATUS	DUE DATE
Complete Removal Action	Estimated completion date November 1994	December 19, 1994

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**RA No. 14, Contaminated Soils Adjacent to Sewage Treatment Plant Incinerator**

**Current Month:**

April activities included completion of verification soil sampling in and around Zones 1, 2, and 4. Once the verification soil sampling results are returned, it will be determined if all of the contamination has been removed to below the action levels.

**Planned Activities:**

- Receive and analyze verification sampling data. Further field activity will depend upon the results.
- Continue compiling maps and data charts for the final report. The first draft of the report is due in June 1994.

KEY MILESTONES	STATUS	DUE DATE
Phase V - Submittal of Final Report	Open	September 26, 1994

**RA No. 15, Scrap Metal Piles**

**Current Month:**

Phase I FERMCO analysis results of SEG slag and oxides was completed the week of April 8, and data validation was completed by April 28, 1994. SEG slag compaction and overpacking was initiated on April 26, 1994. Waste certification/DOE-NV audit was completed the week of April 25, 1994.

Phase II Technical Evaluation Cost Proposal was issued to Acquisitions on April 7, 1994. Draft of pre-award audit findings was issued to SEG on April 22, 1994. Phase II completion/beneficial reuse options were presented to DOE on April 29, 1994.

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**RA No. 15, Scrap Metal Piles (continued)**

**Planned Activities:**

- Phase I slag compaction and overpacking of about 100 slag boxes is in progress. DOE-NV surveillance report is to be issued within 30 days from April 28, 1994. SEG sampling and analysis of remaining slag/oxides in progress with completion expected by May 27, 1994. Equipment procured by SEG to treat mixed waste streams is scheduled to arrive on May 13, 1994.
- Awaiting responses by FERMCO to questions concerning Phase II completion/beneficial reuse options.

KEY MILESTONES	STATUS	DUE DATE
Complete Phase I	Completed	March 27, 1994
Phase I - Submit Final Report	Open, ahead of schedule	September 30, 1994
Phase IIB: Submittal of Subcontractor's Removal Action Plan	Open, behind Schedule	September 30, 1993
Phase IIB: Submittal of Final Report	Open, behind schedule	March 30, 1995

**RA No. 17, Improved Storage of Soil and Debris**

**Current Month:**

April activities included re-evaluation efforts involving the possibility of: (1) relocating the Central Storage Facility (CSF) near the OU5 RD/RA proposed facilities, and (2) deleting the Scrap Metal Pad (SMP) tent structure from the RA 17 Scope. The re-evaluation is due as a result of CRU Integration Strategic Planning efforts. Title II design for the regrading and placement of a vegetative cover over the existing soil and rubble pile north of Third Street began on April 1, 1994. Analysis of samples taken of residues/debris left from the scrap metal previously stored on the SMP is ongoing and the implementation plan for removing these debris/residues is being developed. Preparation of the bid package for the CFC "merged" design package for subsequent transmittal to qualified bidders is on hold due to the re-evaluation efforts for the CSF and SMP structures.

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

**Planned Activities:**

- Continue Title II design of the regrading and seeding plan for the existing Third Street soil and rubble pile with a 50% design presentation scheduled for May 11, 1994.
- Removal and containerization of the remaining debris/residue in the SMP area planned to commence in late May 1994.

**RA No. 19, Plant 7 Dismantling**

**Current Month:**

Interim removal work, removal of interior transite, and the application of encapsulant coating to the interior surface of the exterior transite, all of which began in March continued through the month of April. Additionally, all subcontractor submittals have been received, commented upon, returned, and revised.

**Planned Activities:**

- Review and approve remaining subcontractor submittal revisions.
- Continue with the interior removal work, removal of interior transite and batt insulation, and the application of encapsulant coating.

**RA No. 20, Stabilization of UNH Inventories**

**Current Month:**

Construction of the new UNH transfer pipe continued. The work package to prepare tank F1-2 to receive the UNH from tank F1-26 was completed. An additional tank, F3E-220, was found to contain approximately 2,000 gallons of UNH. This tank is located in the denitration area of Plant 2/3. This tank has been added to the UNH project thus raising the total number of tanks to 19.

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*Removal Actions*

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

**Planned Activities:**

- Review and update UNH project schedule.
- Continue lab analysis of UNH tank samples.
- Continuation of bench-scale testing of the UNH will be performed at the FERMCO laboratory facility to determine the process chemistry.

**RA No. 26, Asbestos Removals (Asbestos Program)**

**Current Month:**

FERMCO provided the annual submittal of updated work procedures for this removal action to DOE-FN on April 5, 1994. Ongoing abatements within the Asbestos Program to-date include, small-scale in-situ repairs, encasement, encapsulation, and removals, and the initiation of large-scale asbestos abatement within Plant 7.

**Planned Activities:**

- Continue design on several thermal system insulation (TSI) removal projects.
- Receive and resolve internal DOE comments on the work procedures submittal in support of the Consent Agreement Commitment to provide these procedures to the EPA by June 30, 1994.

**RA No. 28, Contamination at the Fire Training Facility**

**Current Month:**

Sediments and surface water sampling was conducted.

**Planned Activities:**

- Receive sampling results. The design will be finalized after the sampling results are in.
- Continue sediments and surface water sampling.
- Resolve issue concerning the suet on the inside of the building (i.e. hazardous or not).

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*Removal Actions*

RA No. 29, Erosion Control at Inactive Flyash Pile

**Current Month:**

The final report of RA No. 29 was reviewed with no comments. Additional copies of the report were requested and delivered.

**Planned Activities:**

None to report.

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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.

**Issues/Corrective Actions:**

None to report.

**1.2 Remedial Investigation**

**Status:**

Received conditional approval of OU 1 Remedial Investigation/Baseline Risk Assessment from U.S. EPA on April 4, 1994. Comment resolution for final document preparation and approval is in progress.

**Issues/Corrective Actions:**

None to report.

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**1.2 Remedial Investigation (continued)**

**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:**

Received acknowledgement of receipt from U.S. EPA on April 22, 1994. EPA acknowledged receipt of document on March 4, 1994, and specified EPA would exercise the Amended Consent Agreement provision allowing them (EPA) an additional 20 days to review and provide comments. These comments are anticipated on May 24, 1994.

A Change Proposal (CP) is being prepared to extend the milestone date an additional 20 days to May 24, 1994, based on the U.S. EPA decision to invoke the option of the additional 20 day review cycle.

**Issues/Corrective Actions:**

None to report.

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**1.3 Feasibility Study/Proposed Plan (continued)**

**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	05/24/94 C	06/03/94 C

C = Consent Agreement Date

A = Actual

**1.4 Treatability Studies**

The OU 1 treatability studies have evaluated several treatment process options identified in the OU 1 Initial Screening of Alternatives document, including cement stabilization, vitrification, thermal treatment, and agglomeration. The FEMP evaluated the technical feasibility of these technologies through a series of laboratory experiments.

Where appropriate, the FEMP investigated performance criteria, including formulation ranges, compressive strength, leachability, bulking factor, and permeability. Cement stabilization binding agents, including portland cement, flyash, blast furnace slag, and sodium silicate, were evaluated. Glass formers and modifiers considered for vitrification were flyash, soil, and sodium hydroxide.

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***Remedial Investigations/Feasibility Studies***

**1.4 Treatability Studies (continued)**

**Status:**

Remedy Screening/Remedy Selection Treatability Studies in support of the OU 1 Remedial Investigation/Feasibility Study are complete. OU 1 treatability studies to support remedy design will be developed as needed based on the Proposed Plan and Record of Decision.

**Issues/Corrective Actions:**

None to report.

**1.5 Record of Decision**

Draft OU 1 Record of Decision (ROD) was prepared and submitted to DOE-FN/HQ April 28, 1994, in accordance with the Amended Consent Agreement.

**1.6 Planned Activities for May 1994**

- Comment responses and change pages on the draft OU 1 Final Remedial Investigation (RI)/Baseline Risk Assessment are scheduled for transmittal on May 4, 1994, to the EPAs.
- Comments from the March 1, 1994, submittal of the OU 1 Feasibility Study/Proposed Plan are anticipated the month of May 1994. Schedule of response to be determined.
- The new milestone date will be incorporated upon DOE approval scheduled for May 27, 1994.

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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**

DOE-FN submitted the Remedial Investigation Report for OU 2 to the U.S. EPA and Ohio EPA in October 1992. Based on December 17, 1992, review comments from the U.S. EPA and Ohio EPA on the RI Report and subsequent disapproval of the document, OU 2 required a second phase of Remedial Investigation sampling and analysis in order to meet the objectives of the March 1988 RI/FS Work Plan.

**Status:**

Complete.

**Issues/Corrective Actions:**

None to report.

**2.1.1 RI Field Investigation**

**Status:**

Analysis of Round Two sample collections of monitoring wells is expected to be complete by May 1, 1994.

**Issues/Corrective Actions:**

None to report.

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**2.2 Remedial Investigation**

**Status:**

Formal comments on the February submittal of the OU 2 Draft Remedial Investigation (RI) Report were received from the OEPA and U.S. EPA on April 19 and April 22, 1994, respectfully. Comments are being reviewed and responses are being incorporated into the document. The revised RI is due on May 21, 1994. Should a 20 day extension be requested, the due date would then be June 9, 1994.

**Issues/Corrective Actions:**

None to report.

**OPERABLE UNIT 2 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 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	04/15/94 C	06/15/94 C (due to extension)

C = Consent Agreement Date

**2.3 Feasibility Study/Proposed Plan**

**Status:**

DOE Comments to the Feasibility Study were incorporated and the revised draft was submitted to EPA on April 28, 1994.

**Issues/Corrective Actions:**

None to report.

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*Remedial Investigations/Feasibility Studies*

**2.3 Feasibility Study/Proposed Plan (Continued)**

**OPERABLE UNIT 2 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.	04/29/94 C	06/27/94 C	07/25/94 C

C = Consent Agreement Date

**2.4 Treatability Studies**

**Status:**

None to report.

**Issues/Corrective Actions:**

None to report.

**2.5 Planned Activities for May 1994**

- Complete analysis of geotechnical samples from the Solid Waste Landfill.
- Continue engineering support work for the Solid Waste Landfill including Conceptual Cost Estimate and documentation of Preliminary Safety Analysis Requirements.
- Awaiting comments from EPA on the Revised Draft FS Report, comments are due June 26, 1994.
- Complete Round Two sample collections of monitoring wells.
- Public Comment meeting scheduled on May 10, 1994 to present solid block modeling concept.

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***Remedial Investigations/Feasibility Studies***

**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:**

Fourteen Field Work Packages (FWPs) were completed, approved, and distributed in April 1994 with the sampling identified therein, encompassing a large extent of the samples anticipated to be taken in the next couple months of OU 3 RI/FS sampling.

**Issues/Corrective Actions:**

None to report.

**3.1.1 Field Investigations**

**Status:**

**Scope:**

The Operable Unit 3 Field Investigations Program gathers information necessary to perform a baseline risk assessment. The program also identifies the nature of contaminants in the operable unit, refines estimates of volume of contaminated materials, and supports initial screening of applicable alternatives.

**Status:**

Field screening for chemical and metals contamination continued throughout April 1994 using two field portable X-Ray fluorescence analyzers, a field portable gas chromatograph and photo-ionization detectors. Chemical screening was performed to support selection of intrusive media locations on the Plant 9 Electrical Station, Trailer Substation #1, Trailer Substation #2, Main Electrical Substation, Main Electrical Transformer, and Heavy Equipment Building.

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***Remedial Investigations/Feasibility Studies***

**3.1.1 Field Investigations (continued)**

In addition to the RI/FS Program, soil screening using the X-Ray Fluorescence Analyzer (XRF), was also performed in support of the MAWS and Removal Action 14, Contaminated Soils Adjacent to the Sewage Treatment Plant Incinerator.

Intrusive media sampling was initiated in the Old North Tank Farm, Combined Raffinate Tanks, Plant 8 North Pad, Plant 5 Ingot Storage Shelter, Refinery Sump, Refrigeration Building, Plant 1 Pad, Building 39A Pad, Plant 8 West Pad, Plant 8 East Pad, Plant 6 Covered Storage Area, Old Drum Washer, Plant 5 South Pad, Trickling Filters, Sludge Drying Beds, Salt Oil Heat Treatment Building, Railroad Scale House, Pilot Plant Warehouse, Waste Oil Decant Shelter, Refinery Sump, Plant 2 East Pad, Plant 2 West Pad, Storm Water Retention Basin, Plant 6 Electrostatic Precipitator North, and Electrical Panels/Transformers. Intrusive media sampling continued in the Digester Control Building, Refinery Maintenance Building, Pilot Plant Maintenance Building, and Incinerator Building. A total of 103 intrusive samples were collected in April 1994.

Intrusive media sampling was interrupted by the power outage on April 27, 1994. Two samples were compromised in the Sample Processing Laboratory (SPL) and will have to be resampled. Sampling was also postponed in observance of the Safety Awareness days.

The remaining samples for Task Order 2 against the Radioanalytical Laboratory Services Task Order Subcontract (all liquid) were shipped to Datachem Laboratories in April 1994. Some liquid samples for Task Order 3 remain to be shipped, and planned to be shipped in early May 1994. Task Order 4 was awarded to TMA/Eberline in April 1994, and shipment of the associated samples is expected to begin in early May 1994. Bids have been received on Task Order 5, but award is not expected until May 1994 due to the low bidder having not yet been SCQ-approved, with shipment of samples beginning in May 1994. Task Orders 7 and 8 have been sent to procurement, and award is expected in May 1994.

**Issues/Corrective Actions:**

As indicated above, bids have been received on Task Order 5 against the Radioanalytical Laboratory Services Task Order Subcontract. The low bidder, however, has not yet been SCQ-approved. It is anticipated that there should not be a problem in the getting the information from the laboratory and awarding the Task Order as planned.

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*Remedial Investigations/Feasibility Studies*

**3.2 Remedial Investigation**

**OPERABLE UNIT 3 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 3 study area. Estimates the volume of contaminated media and materials. Provides a baseline risk assessment and establishes remedial action objectives.	03/13/96 C	05/12/96 C	06/11/96 C

C = Consent Agreement Date

**Status:**

Formal development of the RI has begun in the form of report planning, RI Report layout, Baseline Risk Assessment Report layout, non-data dependent background information collection/integration, and Baseline Risk Assessment approach and scenario development. Data management procedures have been implemented to track and manipulate field characterization data. As of April 27, 1994, approximately 57% of the chemical field characterization analytical data and 1% of the radiological field characterization analytical data have been received from the laboratories. Approximately 38% of planned chemical data to be collected has been validated.

**Issues/Corrective Actions:**

None to report.

**3.3 Feasibility Study/Proposed Plan**

**Status:**

OU 3 has not begun formal activities on the Feasibility Study, although alternatives research, initial screening, and document layout planning have been initiated. Based upon a DOE proposal to EPA to eliminate the OU 3 Baseline Risk Assessment (BRA), the schedule for the FS is being evaluated for potential acceleration and cost savings. As a result of the development of a Proposed Plan for Interim Action, the Feasibility Study will not address initial decontamination or dismantling, but will focus on treatment and disposition issues, which remain the scope of the final action and final Record Of Decision.

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**3.3 Feasibility Study/Proposed Plan (continued)**

**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	08/07/96 C	11/05/96 C

C = Consent Agreement Date

**Issues/Corrective Actions:**

None to report.

**3.4 Treatability Studies**

**Status:**

The FEMP will conduct remedy screening treatability studies in parallel with the field investigation and alternatives development. OU 3 has developed a Treatability Study Work Plan (TSWP) to include initially-identified studies to be performed. Current actions involve planning the initial studies. The Work Plan was transmitted to U.S. EPA December 22, 1993, ahead of the scheduled January 15, 1994 due date. U.S. EPA approval was received April 13, 1994 for the TSWP. Additional tests will be planned and submitted as addenda to the Treatability Study Work Plan, once identified and detailed. Contracting activities are well underway for initially identified tests. Additional small-scale demonstration tests are also being planned.

**Issues/Corrective Actions:**

None to report.

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**3.5 Interim Action - Record of Decision**

**Status:**

The public comment period for the PP/EA closed February 8, 1994. Comments received indicated general support for the preferred alternative with several issues requiring either further explanation, future commitment, or modification to the selected remedy. The Proposed Draft IROD with a draft responsiveness summary were submitted to U.S. and Ohio EPA on April 8, 1994. Comments on the IROD are expected back from both EPAs on May 9, 1994.

**Issues/Corrective Actions:**

None to report.

**3.6 RD/RA Work Plan**

The Interim RD/RA Work Plan will detail how design activities will be performed to meet the scope of the interim remedial action for facility decontamination and dismantlement, and how this design will then be implemented through the remedial action program.

**Status:**

All comments were received April 11, 1994 on the March 14, 1994 draft of the RD/RA Work Plan. Several meetings were held between FERMCO, DOE-FN, and others to discuss the DOE comments and come to resolution. Based on these comments, and agreements reached through the comment resolution process, the Work Plan is being revised for submittal to DOE-HQ in May 1994.

**Issues/Corrective Actions:**

None to report.

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**3.7 Planned Activities for May 1994**

- Efforts will continue on resolving comments on the March 14, 1994 Draft of the RD/RA Work Plan, and revising the document for subsequent submittal to DOE-HQ in May 1994.
- Continue efforts to complete the shipment of samples under the third Task Order against the Radioanalytical Laboratory Services Task Order Subcontract. Begin shipment of samples under the fourth Task Order.
- Continue efforts to support the placement of the fifth, seventh, and eighth task orders in May 1994, with possible shipment of samples for radioanalytical analysis beginning in May 1994.
- Begin the process of preparing Task Orders 9 - 12, for potentially putting these Task Orders out for bid in May 1994.
- Continue writing Field Work Packages (FWPs). It is anticipated that about 15 -20 FWPs will be reviewed and approved in May 1994.
- Initiate Feasibility Study staffing and early initiation of key FS activities.
- Receive and respond to U.S. EPA and OEPA comments on the draft Proposed Interim Action Record of Decision.

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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.

**Issues/Corrective Actions:**

None to report.

**4.2 Remedial Investigation**

**Status:**

The OU 4 Remedial Investigation Final Report was transmitted to the U.S. EPA on October 29, 1993. Ohio EPA approved the document on November 23, 1993. DOE received comments on the Baseline Risk Assessment portion of this report from the U.S. EPA Region V. Revisions to the OU 4 Remedial Investigation Final Report were issued during February 1994.

**Issues/Corrective Actions:**

Three additional comments on the OU 4 Remedial Investigation Final Report were received from U.S. EPA on April 27, 1994. Responses and changed pages will be transmitted to U.S. EPA by May 27, 1994.

**4.3 Feasibility Study/Proposed Plan**

**Status:**

Ohio EPA comments on the Draft Final OU 4 Feasibility Study/Proposed Plan were received on January 25, 1994. U.S. EPA comments on the Draft Final OU 4 Feasibility Study Report were received on January 31, 1994. The report was revised to incorporate the comments and the Final Feasibility Study Report for OU 4 was submitted to U.S. and OEPAs on February 22, 1994.

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**4.3 Feasibility Study/Proposed Plan**

**Status (Continued):**

The formal public review period began on March 7, 1994 for the Operable Unit 4 Feasibility Study Report and Proposed Plan documents. The public comment period has been extended until May 20, 1994 at the request of the public. All comments received will be addressed in the responsiveness summary and attached to the Proposed Draft Record of Decision for Operable Unit 4.

**Issues/Corrective Actions:**

None to report.

**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

**4.4 Treatability Studies**

**4.4.1 Bench Scale Treatability Studies**

A Treatability Study Work Plan addresses the additional information that is required to support the FS and subsequent remedy selection for OU 4. There are two separate treatability studies to support the OU 4 FS. One study considers cement stabilization of Silos 1, 2, and 3 material and chemical extraction, leachate precipitation, and leachate stabilization of Silos 1 and 2 material. The second treatability study considers the vitrification of Silos 1, 2, and 3 material.

**Status:**

Complete.

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**4.4 Treatability Studies (continued)**

**4.4.2 Pilot Plant Treatability Studies**

A two phase Pilot Plant Treatability Study is being conducted to develop the design of facilities and equipment for the final remediation of Operable Unit 4. Phase I will utilize bentonite and surrogate materials, the pilot plant scale vitrification facility, and the empty Silo 4 as a test bed for demonstrating both vitrification and waste retrieval technologies. Phase II will utilize bentonite, actual K-65 and Silo 3 materials retrieved from the silos in addition to treating radon gas. A work plan will be developed for each phase.

**Status:**

Comments received on The Pilot Plant Phase I Work Plan from U.S. EPA have been responded to and the impacts have been incorporated into the Pilot Plant Phase II Work Plan.

The Pilot Plant Phase II Work Plan will be submitted to U.S. EPA on May 13, 1994.

The Preliminary Safety Analysis Report for Operable Unit 4 was submitted to DOE-HQ for review. Formal transmittal of comments is scheduled for May 5, 1994.

Construction of the Pilot Plant facility is expected to be started by June 16, 1994.

Pilot Plant Phase I Operations are projected to begin in March 1995.

**4.5 Record of Decision**

**Status:**

A proposed draft ROD for OU 4 was completed on December 14, 1993. This proposed draft ROD is based on the Final Feasibility Study and Proposed Plan issued to the U.S. EPA and Ohio EPA on February 22, 1994. The proposed draft ROD was revised to reflect the additional comments received on the FS/PP and submitted to the DOE for review on February 25, 1994.

DOE-HQ comments on the proposed draft Record of Decision (ROD) for OU 4 were received on March 29, 1994. The comment responses are being prepared and incorporated into the Proposed Draft Record of Decision for OU 4. The revised Proposed Draft Record of Decision for OU 4 was submitted to DOE-HQ on April 11, 1994. Final DOE-HQ comments are anticipated to be resubmitted by May 2, 1994.

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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 April 1 through April 30, 1994, and planned actions for the period May 1 through May 31, 1994.

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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 April 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 piezometers and extraction wells underneath Plants 2/3, 6, 8, and 9. Treat extracted water for volatile organic chemicals and uranium removal before discharge.	Treatment: Operational  Pumping has not resumed
2	Waste Pit Area Run-off Control	Collect and treat contaminated storm water run-off from the waste pit area.	Construction Completed: 6/15/92 Operational: 7/30/92
3	South Groundwater Contamination Plume	<p>Part 1 - Install new alternate water supply and transfer to industrial user.</p> <p>Part 2 - Pump and discharge groundwater from South Plume.</p> <p>Part 3 - Install and operate Interim Advanced Waste Water Treatment system to reduce uranium contaminant loading to the Great Miami River.</p> <p>Part 4 - Conduct groundwater monitoring and institutional controls by sampling private and existing RVFS wells in the South Plume area and installing homeowner treatment systems.</p> <p>Part 5 - Conduct groundwater modeling and geochemical investigating to define the extent of the groundwater plume contaminated with uranium</p> <p>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.</p>	<p>Operational: 12/7/92</p> <p>Transfer: Ongoing</p> <p>Ongoing</p> <p>Ongoing</p> <p>Ongoing</p> <p>Completed: 2/25/94</p> <p>Operational: 3/31/94</p>
4	Silos 1 & 2	Install bentonite cap to reduce and monitor radon emissions. Provide follow-on monitoring.	Cap Completed: 11/28/91  Monitoring: Ongoing
5	Decant Sump Tank	Periodically remove liquid from K-65 decant sump tank.	Ongoing
6	Waste Pit 6 Residues	Eliminate potential airborne contamination by re-submerging exposed pit material.	Completed: 12/19/90

Shading denotes completed actions

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**REMOVAL ACTION SUMMARY**

NO.	TITLE	SCOPE	STATUS
7	Plant 1 Pad Continuing Release	Stage I - Implement run-on/off control measures. Stage II - Install new pad. Stage III - Upgrade existing Plant 1 Storage Pad.	Completed: 1/17/92 Completed: 12/4/92 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. Phase II - Complete active flyash pile controls.	Completed: 6/29/92 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.	Project work resumed in March 1994
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.	Ongoing
15	Scrap Metal Piles	Phase I - Disposition LLW ferrous/non-ferrous scrap metal Phase II - IIA - Containerization of scrap copper IIB - Disposition of scrap copper	Ongoing Completed: 9/29/92 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.	Final Report Approved by U.S. EPA 3/31/94 at TIE Meeting
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.	Final Report Approved by U.S. EPA 3/31/94 at TIE Meeting
23	Inactive Flyash Pile	Conduct field investigation to identify locations requiring material removal.	Final Report Submitted to U.S. EPA 6/30/92
24	Pilot Plant Sump	Remove liquid and sludge from the sump.	U.S. EPA Approved Final Report 1/14/94
25	Nitric Acid Tank Car and Surrounding Area	Remove residual contents from tank car and decontaminate and dispose of tank car.	U.S. EPA Approved Final Report 12/9/93
26	Asbestos Removals (Asbestos Program)	Mitigate the potential for contaminant release and migration of asbestos fibers.	Ongoing

\*Shading denotes completed actions

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**REMOVAL ACTION SUMMARY**

NO.	TITLE	SCOPE	STATUS
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

Shading denotes completed actions

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**RA No. 1, Contaminated Water Under FEMP Buildings**

**Current Month:**

The Plant 8 VOC Treatment System was restarted on April 18, 1994. The Plant 6 Motor Bay Sumps Perched Groundwater Collection System was placed in operation.

**Planned Activities:**

- Reestablish operation of the perched groundwater extraction wells.

**RA No. 3, South Groundwater Contamination Plume**

**Part 1 - Alternate Water Supply**

**Current Month:**

Activities to complete the transfer of ownership of the Alternate Water Supply System from DOE to Albright and Wilson Americas (A&W) is ongoing. In 1992, the U.S. EPA and Ohio EPA approved deleting Delta Steel from the current scope of the project, with agreement that they would be served by a planned Public Water Supply (PWS). Progress on the PWS continues with some delays being encountered to address archeological and historical items. Phase I of PWS from Bolton Plant to Hamilton/Butler County line is scheduled to bid in July 1994.

**Planned Activities:**

- Continue the transfer of ownership of the Alternate Water Supply to A&W.
- Continue to support Hamilton County on installation of the PWS.
- Finalize basis for DOE participation in construction costs for PWS.

**Part 2 - Pumping and Discharge System**

**Current Month:**

The capture zone evaluation for the well field continues to suggest that arsenic concentrations in the monitoring wells south of the recovery wells are returning to prepumping levels. Operation of the recovery well field continued at a total rate of 1500 gallons per minute (gpm) (300 gpm each well).

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

**Part 2 - Pumping and Discharge System (Continued)**

**Planned Activities:**

- Continue operating recovery well field at a rate of 1500 gpm.
- Data collected during the first quarter of the recovery well field operation will be compiled and submitted to the U.S. EPA and Ohio EPA in May 1994. The report was originally scheduled for submittal during April but has been delayed due to problems experienced with the Sitewide Environmental Database and Data Management System. This quarterly report will meet the first reporting requirement defined in the Design, Monitoring and Evaluation Program (DMEPP).

**Part 3 - Interim Advanced Waste Water Treatment (IAWWT)**

**IAWWT Storm Water Retention Basin Unit**

**Current Month:**

With installation of the multimedia filtration unit upstream of the ion exchange units, the operation of the IAWWT has been well maintained with infrequent bag and cartridge filter element replacement.

**Planned Activities:**

- Continue to operate IAWWT (SWRB) with little downtime due to improved filtration.

**IAWWT Bionitrification Effluent Treatment System Unit**

**Current Month:**

Operation of the IAWWT unit continues. Temporary repairs of the ion exchange vessels have kept the system operational with little downtime. The internal flow distribution piping system, made of PVC, has developed cracks at the joints. The piping will be replaced with stainless steel.

**Planned Activities:**

- Pursue permanent repair of ion exchange vessels.

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

**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 two homeowner systems installed south of the FEMP continue to operate successfully. The FEMP is continuing to monitor the effectiveness of the ion exchange resins at these two residences. Trending analysis in collected data indicate the changeout of the resin in the lead columns will be required during 1994. A procedure for resin vessel changeout has been prepared for review and approval.

**Planned Activities:**

- Approve resin vessel changeout procedure in May and continue to monitor performance.

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

**Step 1**

**Current Month:**

The new IAWWT unit referred to as the South Plume Interim Treatment (SPIT) project was completed and placed in operation on March 31, 1994; satisfactory operation continues.

**Planned Activities:**

- Continue full operation of the system, treating 200 gpm of South Plume flow.

**Step 2**

**Current Month:**

Use off-peak capacity in Phase I of the Advanced Waste Water Treatment (AWWT) system for South Plume flow when no storm water requires treatment. The AWWT package, now under construction, contains piping and valving to transfer South Plume flow to the existing SWRB pumping station for subsequent transfer to Phase I.

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

**Step 2 (Continued)**

**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:**

Changes have been made to the AWWT project scope to eliminate scheduled improvements which would have specifically addressed the Sewage Treatment Plant and clean-side General Sump flows. Installation of the AWWT Phase III line began in April which will eventually serve a future AWWT system, Phase III. This will allow South Plume groundwater to be transferred to the AWWT Phase II system to meet this commitment.

**Planned Activities:**

- Continue installation of AWWT Phase III line. Step 3 will be available when Phase II of the AWWT becomes operational in January 1995.

**Step 4**

**Current Month:**

No action was taken in April to extend the planned operational life of the existing IAWWT SWRB unit by converting it from treating storm water to treating South Plume flow, and increasing capacity from 300 gpm to approximately 400 gpm.

**Planned Activities:**

- The conversion of the IAWWT SWRB unit will occur after currently treated waste stream is routed to AWWT Phase I in January 1995. Conversion will be accomplished by March 30, 1995.

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**RA No. 4, Silos 1 and 2**

**Current Month:**

The results of the video camera investigation of the Silo 2 bentonite cap (due to a slight upward trend in headspace radon concentration) were compared against baseline videos of the bentonite surface taken immediately following its installation. Overall, the bentonite cap integrity is in very good condition. The Removal Action No. 4 Final Report was issued to DOE-HQ on March 25, 1994. Comments from DOE-HQ on the Final Report were received on April 21, 1994 and a comment resolution meeting was conducted on April 28, 1994.

**Planned Activities:**

- The comment responses will be incorporated into the Removal Action Final Report and resubmitted by May 15, 1994.

**RA No. 5, K-65 Decant Sump Tank**

**Current Month:**

In an effort to reduce worker exposure to the Decant Sump Tank and to improve confidence in the liquid level measurements, DOE is proceeding to install a submersible pressure indicator/transmitter in the tank. The new water level indicator equipment will allow for accurate, continuous, and remote level readings from the tank.

**Planned Activities:**

- The action to install the new water level indicator is expected to be completed by the end of May 1994.

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**RA No. 7, Plant 1 Pad Continuing Release**

**Current Month:**

All concrete slab work, electrical light, and controls were completed for Phases C and D and Tension Support Structure (TSS) #6 in March 1994. Special coating operations on the Pad resumed in April 1994.

**Planned Activities:**

- Coating operation for TSS#6 is to be completed the week of May 2; Phase C is to be completed the week of May 9; and Phase D the week of May 16, 1994.
- In order for construction on Phase E to resume in June 1994, drum movements will occur during the last part of May.

KEY MILESTONES	STATUS	DUE DATE
Complete Installation of Stage III and Tension Support Structure	Open, ahead of schedule	February 21, 1995

**RA No. 9, Removal of Waste Inventories**

**Current Month:**

The volume of waste shipped off-site in April was 4,575 DEs for a total of 34,278 DEs shipped to the NTS in FY-94. This volume includes 6,696 drums of residues removed from inventory and shipped to-date.

A project team focused on legacy construction waste has characterized and approved for shipment 84 white metal boxes (WMB) (840 DEs). This project is tasked with the characterization of 10 WMBs per week.

DOE-NV approval of the revised FEMP Application to Ship Waste to the Nevada Test Site, Rev. 5.1, and approval of the final confirmatory sampling results for FEMP residues was received in March. The official application approval from DOE-NV which will release the AMCCOM metal for shipment to the Nevada Test Site is expected in May.

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**RA No. 9, Removal of Waste Inventories (continued)**

During April, shipping activities included the resumption of contaminated trash shipments.

**Planned Activities:**

- Awaiting DOE-NV approval of the FEMP waste application.
- Residue shipments to SEG to resume in May 1994.
- Initiation of AMCCOM and thorium shipments will resume in June 1994.

KEY MILESTONES	STATUS	DUE DATE
Submit Annual Work Procedures for 1994	Open, on schedule	June 30, 1994

**RA No. 12, Safe Shutdown**

**Current Month:**

Of the first three Implementation Plans for the removal of hold-up materials from equipment in Plant 4, the Potassium Hydroxide (KOH) system has been completed except for an area that contained frozen liquid, a Safety Assessment has been completed for the HF Recovery System, and the plan for clean-out of the H<sub>2</sub> off-gas system should be initiated in May.

The verification of process equipment located in Plant 5 and the Pilot Plant was completed. The verification of the production equipment in all process plants has been completed, except for Plant 2/3, Refinery. The red-lining of as-built floor plan drawings to agree with equipment verification is continuing.

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RA No. 12, Safe Shutdown (continued)

The following is the status of capital equipment: of an estimated 1,675 total number of items, 1,187 have been reported on AC-563 Forms to be excessed, and 488 have been identified as "In Use/Future Use" items. This information may vary from month-to-month due to change in status of equipment items and/or as a result of field verification.

Eight hundred seventeen (817) maintenance work orders to isolate and disconnect all utilities/energy sources from equipment not in use have been prepared. Of these, 443 have been completed. Field verification of the completed orders is ongoing. Completion of these work orders is a preliminary step for removal of hold-up material from the equipment in preparation for equipment removal and decontamination and decommissioning. These numbers may vary from month-to-month due to change in status of the equipment.

Three-hundred ninety-three (393) task orders to determine if hold-up material is present in equipment have been prepared; of these, 114 have been completed. Also, one hundred twenty-four (124) task orders to remove the hold-up material from equipment have been prepared.

Work continues with Westinghouse Hanford Company, DOE-Richland, and DOE Headquarters in finalizing the "Environmental Assessment (EA) for the Packaging/Repackaging, Loading, and Transportation Associated with the Sale of Uranium Materials Located at the Hanford Site, Richland, Washington, and the Fernald Site, Fernald, Ohio." Presently, the preparation of this NEPA document continues to be on hold awaiting details of the type of packaging to be used by COGEMA, the French Company which is purchasing a major portion of the material being sold.

In April, Manufacturing Sciences Corporation (MSC) in Oak Ridge, Tennessee, the company that purchased all of the depleted derbies, exercised their contractual option to cancel a month's shipment. This month's cancellation will not impact projected completion date of December 1996. We have shipped 302 derbies of 2,613 total, or 112,118 net pounds of 973,651 total.

British Nuclear Fuels was the successful bidder for 350,000 net pounds (120 metric tons uranium weight) of depleted UF<sub>6</sub>. On April 29, 1994, the Shipping/Receiving Plan was issued for this transfer. The customer had requested that the plan be finalized before the contract is signed. Completion of this plan will allow the process to go forward. However, actual transfer of the material is contingent upon completion of the EA in a timely manner.

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**RA No. 12, Safe Shutdown (continued)**

Removal of dust collector G5A-100 components for transfer to Martin Marietta Energy Systems (MMES), Oak Ridge, TN, began this month. The equipment will be used to provide air filtration for five (5) separate projects at the Y-12 plant. The FEMP acquisition cost was \$1.1 million and the scrap metal value of the equipment is approximately \$1,000. However, due to the strict radiological controls maintained on-site, this equipment may require burial, which would have cost approximately \$100,000 for packaging, transportation, and burial at the Nevada Test Site. The removal and transfer of equipment to MMES will result in an overall cost savings to the government of approximately \$1.5 million.

An additional four (4) dust collectors will be removed in May for transfer to MMES, with a similar cost savings.

**Planned Activities:**

- Continue preparation, with Hanford and the DOE, of the NEPA documentation for the sale of the excess uranium materials.
- Continue to issue work orders to disconnect utilities from process equipment and issue task orders to identify and/or remove hold-up materials from process equipment.
- Continue to expedite utility isolation, identify hold-up in equipment, and remove/drum hold-up from process equipment.
- Initiate verification of the equipment in Plant 2/3.
- Continue to prepare implementation packages and obtain appropriate approvals. Continue field inspections of implementation activities.
- Continue to follow the status of 4A metal removal to the Nevada Test Site.
- Continue shipping depleted derbies to MSC in Oak Ridge, Tennessee.
- Continue process of removing Plant 5 dust collectors for disposition to MMES, Oak Ridge, Tennessee.

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RA No. 12, Safe Shutdown (continued)

KEY MILESTONES	STATUS	DUE DATE
Submit Annual Work Procedures for 1994	Open, ahead of schedule	June 30, 1994

RA No. 13, Plant 1 Ore Silos

**Current Month:**

DOE-FN concurred with changes in the Work Plan for dismantling the tile silos and the U.S EPA has been notified. The new dismantling method involves knocking the tile inward, where they fall into a chute which directs them into a 7a box. The 90% design review for the new method was completed and the CFC drawings were received April 1. The remaining four concrete silos were dismantled (except for the cones) as of April 21, 1994. They are being stored on the west side of the tile silos. The tiles on the southwest silo have been repaired.

**Planned Activities:**

- Remove conveyors and deck from top of tall tile silos
- Dismantle concrete silos cones
- Install scaffold around tile silos

KEY MILESTONES	STATUS	DUE DATE
Complete Removal Action	Estimated completion date November 1994	December 19, 1994

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**RA No. 14, Contaminated Soils Adjacent to Sewage Treatment Plant Incinerator**

**Current Month:**

April activities included completion of verification soil sampling in and around Zones 1, 2, and 4. Once the verification soil sampling results are returned, it will be determined if all of the contamination has been removed to below the action levels.

**Planned Activities:**

- Receive and analyze verification sampling data. Further field activity will depend upon the results.
- Continue compiling maps and data charts for the final report. The first draft of the report is due in June 1994.

KEY MILESTONES	STATUS	DUE DATE
Phase V - Submittal of Final Report	Open	September 26, 1994

**RA No. 15, Scrap Metal Piles**

**Current Month:**

Phase I FERMCO analysis results of SEG slag and oxides was completed the week of April 8, and data validation was completed by April 28, 1994. SEG slag compaction and overpacking was initiated on April 26, 1994. Waste certification/DOE-NV audit was completed the week of April 25, 1994.

Phase II Technical Evaluation Cost Proposal was issued to Acquisitions on April 7, 1994. Draft of pre-award audit findings was issued to SEG on April 22, 1994. Phase II completion/beneficial reuse options were presented to DOE on April 29, 1994.

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**RA No. 15, Scrap Metal Piles (continued)**

**Planned Activities:**

- Phase I slag compaction and overpacking of about 100 slag boxes is in progress. DOE-NV surveillance report is to be issued within 30 days from April 28, 1994. SEG sampling and analysis of remaining slag/oxides in progress with completion expected by May 27, 1994. Equipment procured by SEG to treat mixed waste streams is scheduled to arrive on May 13, 1994.
- Awaiting responses by FERMCO to questions concerning Phase II completion/beneficial reuse options.

<b>KEY MILESTONES</b>	<b>STATUS</b>	<b>DUE DATE</b>
Complete Phase I	Completed	March 27, 1994
Phase I - Submit Final Report	Open, ahead of schedule	September 30, 1994
Phase IIB: Submittal of Subcontractor's Removal Action Plan	Open, behind Schedule	September 30, 1993
Phase IIB: Submittal of Final Report	Open, behind schedule	March 30, 1995

**RA No. 17, Improved Storage of Soil and Debris**

**Current Month:**

April activities included re-evaluation efforts involving the possibility of: (1) relocating the Central Storage Facility (CSF) near the OU5 RD/RA proposed facilities, and (2) deleting the Scrap Metal Pad (SMP) tent structure from the RA 17 Scope. The re-evaluation is due as a result of CRU Integration Strategic Planning efforts. Title II design for the regrading and placement of a vegetative cover over the existing soil and rubble pile north of Third Street began on April 1, 1994. Analysis of samples taken of residues/debris left from the scrap metal previously stored on the SMP is ongoing and the implementation plan for removing these debris/residues is being developed. Preparation of the bid package for the CFC "merged" design package for subsequent transmittal to qualified bidders is on hold due to the re-evaluation efforts for the CSF and SMP structures.

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

**Planned Activities:**

- Continue Title II design of the regrading and seeding plan for the existing Third Street soil and rubble pile with a 50% design presentation scheduled for May 11, 1994.
- Removal and containerization of the remaining debris/residue in the SMP area planned to commence in late May 1994.

**RA No. 19, Plant 7 Dismantling**

**Current Month:**

Interim removal work, removal of interior transite, and the application of encapsulant coating to the interior surface of the exterior transite, all of which began in March continued through the month of April. Additionally, all subcontractor submittals have been received, commented upon, returned, and revised.

**Planned Activities:**

- Review and approve remaining subcontractor submittal revisions.
- Continue with the interior removal work, removal of interior transite and batt insulation, and the application of encapsulant coating.

**RA No. 20, Stabilization of UNH Inventories**

**Current Month:**

Construction of the new UNH transfer pipe continued. The work package to prepare tank F1-2 to receive the UNH from tank F1-26 was completed. An additional tank, F3E-220, was found to contain approximately 2,000 gallons of UNH. This tank is located in the denitration area of Plant 2/3. This tank has been added to the UNH project thus raising the total number of tanks to 19.

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

**Planned Activities:**

- Review and update UNH project schedule.
- Continue lab analysis of UNH tank samples.
- Continuation of bench-scale testing of the UNH will be performed at the FERMCO laboratory facility to determine the process chemistry.

**RA No. 26, Asbestos Removals (Asbestos Program)**

**Current Month:**

FERMCO provided the annual submittal of updated work procedures for this removal action to DOE-FN on April 5, 1994. Ongoing abatements within the Asbestos Program to-date include, small-scale in-situ repairs, encasement, encapsulation, and removals, and the initiation of large-scale asbestos abatement within Plant 7.

**Planned Activities:**

- Continue design on several thermal system insulation (TSI) removal projects.
- Receive and resolve internal DOE comments on the work procedures submittal in support of the Consent Agreement Commitment to provide these procedures to the EPA by June 30, 1994.

**RA No. 28, Contamination at the Fire Training Facility**

**Current Month:**

Sediments and surface water sampling was conducted.

**Planned Activities:**

- Receive sampling results. The design will be finalized after the sampling results are in.
- Continue sediments and surface water sampling.
- Resolve issue concerning the suet on the inside of the building (i.e. hazardous or not).

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*Removal Actions*

RA No. 29, Erosion Control at Inactive Flyash Pile

**Current Month:**

The final report of RA No. 29 was reviewed with no comments. Additional copies of the report were requested and delivered.

**Planned Activities:**

None to report.

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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.

**Issues/Corrective Actions:**

None to report.

**1.2 Remedial Investigation**

**Status:**

Received conditional approval of OU 1 Remedial Investigation/Baseline Risk Assessment from U.S. EPA on April 4, 1994. Comment resolution for final document preparation and approval is in progress.

**Issues/Corrective Actions:**

None to report.

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*Remedial Investigations/Feasibility Studies*

**1.2 Remedial Investigation (continued)**

**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:**

Received acknowledgement of receipt from U.S. EPA on April 22, 1994. EPA acknowledged receipt of document on March 4, 1994, and specified EPA would exercise the Amended Consent Agreement provision allowing them (EPA) an additional 20 days to review and provide comments. These comments are anticipated on May 24, 1994.

A Change Proposal (CP) is being prepared to extend the milestone date an additional 20 days to May 24, 1994, based on the U.S. EPA decision to invoke the option of the additional 20 day review cycle.

**Issues/Corrective Actions:**

None to report.

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*Remedial Investigations/Feasibility Studies*

**1.3 Feasibility Study/Proposed Plan (continued)**

**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	05/24/94 C	06/03/94 C

C = Consent Agreement Date

A = Actual

**1.4 Treatability Studies**

The OU 1 treatability studies have evaluated several treatment process options identified in the OU 1 Initial Screening of Alternatives document, including cement stabilization, vitrification, thermal treatment, and agglomeration. The FEMP evaluated the technical feasibility of these technologies through a series of laboratory experiments.

Where appropriate, the FEMP investigated performance criteria, including formulation ranges, compressive strength, leachability, bulking factor, and permeability. Cement stabilization binding agents, including portland cement, flyash, blast furnace slag, and sodium silicate, were evaluated. Glass formers and modifiers considered for vitrification were flyash, soil, and sodium hydroxide.

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***Remedial Investigations/Feasibility Studies***

**1.4 Treatability Studies (continued)**

**Status:**

Remedy Screening/Remedy Selection Treatability Studies in support of the OU 1 Remedial Investigation/Feasibility Study are complete. OU 1 treatability studies to support remedy design will be developed as needed based on the Proposed Plan and Record of Decision.

**Issues/Corrective Actions:**

None to report.

**1.5 Record of Decision**

Draft OU 1 Record of Decision (ROD) was prepared and submitted to DOE-FN/HQ April 28, 1994, in accordance with the Amended Consent Agreement.

**1.6 Planned Activities for May 1994**

- Comment responses and change pages on the draft OU 1 Final Remedial Investigation (RI)/Baseline Risk Assessment are scheduled for transmittal on May 4, 1994, to the EPAs.
- Comments from the March 1, 1994, submittal of the OU 1 Feasibility Study/Proposed Plan are anticipated the month of May 1994. Schedule of response to be determined.
- The new milestone date will be incorporated upon DOE approval scheduled for May 27, 1994.

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***Remedial Investigations/Feasibility Studies***

**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**

DOE-FN submitted the Remedial Investigation Report for OU 2 to the U.S. EPA and Ohio EPA in October 1992. Based on December 17, 1992, review comments from the U.S. EPA and Ohio EPA on the RI Report and subsequent disapproval of the document, OU 2 required a second phase of Remedial Investigation sampling and analysis in order to meet the objectives of the March 1988 RI/FS Work Plan.

**Status:**

Complete.

**Issues/Corrective Actions:**

None to report.

**2.1.1 RI Field Investigation**

**Status:**

Analysis of Round Two sample collections of monitoring wells is expected to be complete by May 1, 1994.

**Issues/Corrective Actions:**

None to report.

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*Remedial Investigations/Feasibility Studies*

**2.2 Remedial Investigation**

**Status:**

Formal comments on the February submittal of the OU 2 Draft Remedial Investigation (RI) Report were received from the OEPA and U.S. EPA on April 19 and April 22, 1994, respectfully. Comments are being reviewed and responses are being incorporated into the document. The revised RI is due on May 21, 1994. Should a 20 day extension be requested, the due date would then be June 9, 1994.

**Issues/Corrective Actions:**

None to report.

**OPERABLE UNIT 2 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 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	04/15/94 C	06/15/94 C (due to extension)

C = Consent Agreement Date

**2.3 Feasibility Study/Proposed Plan**

**Status:**

DOE Comments to the Feasibility Study were incorporated and the revised draft was submitted to EPA on April 28, 1994.

**Issues/Corrective Actions:**

None to report.

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**2.3 Feasibility Study/Proposed Plan (Continued)**

**OPERABLE UNIT 2 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.	04/29/94 C	06/27/94 C	07/25/94 C

C = Consent Agreement Date

**2.4 Treatability Studies**

**Status:**

None to report.

**Issues/Corrective Actions:**

None to report.

**2.5 Planned Activities for May 1994**

- Complete analysis of geotechnical samples from the Solid Waste Landfill.
- Continue engineering support work for the Solid Waste Landfill including Conceptual Cost Estimate and documentation of Preliminary Safety Analysis Requirements.
- Awaiting comments from EPA on the Revised Draft FS Report, comments are due June 26, 1994.
- Complete Round Two sample collections of monitoring wells.
- Public Comment meeting scheduled on May 10, 1994 to present solid block modeling concept.

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***Remedial Investigations/Feasibility Studies***

**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:**

Fourteen Field Work Packages (FWPs) were completed, approved, and distributed in April 1994 with the sampling identified therein, encompassing a large extent of the samples anticipated to be taken in the next couple months of OU 3 RI/FS sampling.

**Issues/Corrective Actions:**

None to report.

**3.1.1 Field Investigations**

**Status:**

**Scope:**

The Operable Unit 3 Field Investigations Program gathers information necessary to perform a baseline risk assessment. The program also identifies the nature of contaminants in the operable unit, refines estimates of volume of contaminated materials, and supports initial screening of applicable alternatives.

**Status:**

Field screening for chemical and metals contamination continued throughout April 1994 using two field portable X-Ray fluorescence analyzers, a field portable gas chromatograph and photo-ionization detectors. Chemical screening was performed to support selection of intrusive media locations on the Plant 9 Electrical Station, Trailer Substation #1, Trailer Substation #2, Main Electrical Substation, Main Electrical Transformer, and Heavy Equipment Building.

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*Remedial Investigations/Feasibility Studies*

**3.1.1 Field Investigations (continued)**

In addition to the RI/FS Program, soil screening using the X-Ray Fluorescence Analyzer (XRF), was also performed in support of the MAWS and Removal Action 14, Contaminated Soils Adjacent to the Sewage Treatment Plant Incinerator.

Intrusive media sampling was initiated in the Old North Tank Farm, Combined Raffinate Tanks, Plant 8 North Pad, Plant 5 Ingot Storage Shelter, Refinery Sump, Refrigeration Building, Plant 1 Pad, Building 39A Pad, Plant 8 West Pad, Plant 8 East Pad, Plant 6 Covered Storage Area, Old Drum Washer, Plant 5 South Pad, Trickling Filters, Sludge Drying Beds, Salt Oil Heat Treatment Building, Railroad Scale House, Pilot Plant Warehouse, Waste Oil Decant Shelter, Refinery Sump, Plant 2 East Pad, Plant 2 West Pad, Storm Water Retention Basin, Plant 6 Electrostatic Precipitator North, and Electrical Panels/Transformers. Intrusive media sampling continued in the Digester Control Building, Refinery Maintenance Building, Pilot Plant Maintenance Building, and Incinerator Building. A total of 103 intrusive samples were collected in April 1994.

Intrusive media sampling was interrupted by the power outage on April 27, 1994. Two samples were compromised in the Sample Processing Laboratory (SPL) and will have to be resampled. Sampling was also postponed in observance of the Safety Awareness days.

The remaining samples for Task Order 2 against the Radioanalytical Laboratory Services Task Order Subcontract (all liquid) were shipped to Datachem Laboratories in April 1994. Some liquid samples for Task Order 3 remain to be shipped, and planned to be shipped in early May 1994. Task Order 4 was awarded to TMA/Eberline in April 1994, and shipment of the associated samples is expected to begin in early May 1994. Bids have been received on Task Order 5, but award is not expected until May 1994 due to the low bidder having not yet been SCQ-approved, with shipment of samples beginning in May 1994. Task Orders 7 and 8 have been sent to procurement, and award is expected in May 1994.

**Issues/Corrective Actions:**

As indicated above, bids have been received on Task Order 5 against the Radioanalytical Laboratory Services Task Order Subcontract. The low bidder, however, has not yet been SCQ-approved. It is anticipated that there should not be a problem in the getting the information from the laboratory and awarding the Task Order as planned.

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**3.2 Remedial Investigation**

**OPERABLE UNIT 3 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 3 study area. Estimates the volume of contaminated media and materials. Provides a baseline risk assessment and establishes remedial action objectives.	03/13/96 C	05/12/96 C	06/11/96 C

C = Consent Agreement Date

**Status:**

Formal development of the RI has begun in the form of report planning, RI Report layout, Baseline Risk Assessment Report layout, non-data dependent background information collection/integration, and Baseline Risk Assessment approach and scenario development. Data management procedures have been implemented to track and manipulate field characterization data. As of April 27, 1994, approximately 57% of the chemical field characterization analytical data and 1% of the radiological field characterization analytical data have been received from the laboratories. Approximately 38% of planned chemical data to be collected has been validated.

**Issues/Corrective Actions:**

None to report.

**3.3 Feasibility Study/Proposed Plan**

**Status:**

OU 3 has not begun formal activities on the Feasibility Study, although alternatives research, initial screening, and document layout planning have been initiated. Based upon a DOE proposal to EPA to eliminate the OU 3 Baseline Risk Assessment (BRA), the schedule for the FS is being evaluated for potential acceleration and cost savings. As a result of the development of a Proposed Plan for Interim Action, the Feasibility Study will not address initial decontamination or dismantling, but will focus on treatment and disposition issues, which remain the scope of the final action and final Record Of Decision.

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**3.3 Feasibility Study/Proposed Plan (continued)**

**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	08/07/96 C	11/05/96 C

C = Consent Agreement Date

**Issues/Corrective Actions:**

None to report.

**3.4 Treatability Studies**

**Status:**

The FEMP will conduct remedy screening treatability studies in parallel with the field investigation and alternatives development. OU 3 has developed a Treatability Study Work Plan (TSWP) to include initially-identified studies to be performed. Current actions involve planning the initial studies. The Work Plan was transmitted to U.S. EPA December 22, 1993, ahead of the scheduled January 15, 1994 due date. U.S. EPA approval was received April 13, 1994 for the TSWP. Additional tests will be planned and submitted as addenda to the Treatability Study Work Plan, once identified and detailed. Contracting activities are well underway for initially identified tests. Additional small-scale demonstration tests are also being planned.

**Issues/Corrective Actions:**

None to report.

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***Remedial Investigations/Feasibility Studies***

**3.5 Interim Action - Record of Decision**

**Status:**

The public comment period for the PP/EA closed February 8, 1994. Comments received indicated general support for the preferred alternative with several issues requiring either further explanation, future commitment, or modification to the selected remedy. The Proposed Draft IROD with a draft responsiveness summary were submitted to U.S. and Ohio EPA on April 8, 1994. Comments on the IROD are expected back from both EPAs on May 9, 1994.

**Issues/Corrective Actions:**

None to report.

**3.6 RD/RA Work Plan**

The Interim RD/RA Work Plan will detail how design activities will be performed to meet the scope of the interim remedial action for facility decontamination and dismantlement, and how this design will then be implemented through the remedial action program.

**Status:**

All comments were received April 11, 1994 on the March 14, 1994 draft of the RD/RA Work Plan. Several meetings were held between FERMCO, DOE-FN, and others to discuss the DOE comments and come to resolution. Based on these comments, and agreements reached through the comment resolution process, the Work Plan is being revised for submittal to DOE-HQ in May 1994.

**Issues/Corrective Actions:**

None to report.

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**3.7 Planned Activities for May 1994**

- Efforts will continue on resolving comments on the March 14, 1994 Draft of the RD/RA Work Plan, and revising the document for subsequent submittal to DOE-HQ in May 1994.
- Continue efforts to complete the shipment of samples under the third Task Order against the Radioanalytical Laboratory Services Task Order Subcontract. Begin shipment of samples under the fourth Task Order.
- Continue efforts to support the placement of the fifth, seventh, and eighth task orders in May 1994, with possible shipment of samples for radioanalytical analysis beginning in May 1994.
- Begin the process of preparing Task Orders 9 - 12, for potentially putting these Task Orders out for bid in May 1994.
- Continue writing Field Work Packages (FWPs). It is anticipated that about 15 -20 FWPs will be reviewed and approved in May 1994.
- Initiate Feasibility Study staffing and early initiation of key FS activities.
- Receive and respond to U.S. EPA and OEPA comments on the draft Proposed Interim Action Record of Decision.

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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.

**Issues/Corrective Actions:**

None to report.

**4.2 Remedial Investigation**

**Status:**

The OU 4 Remedial Investigation Final Report was transmitted to the U.S. EPA on October 29, 1993. Ohio EPA approved the document on November 23, 1993. DOE received comments on the Baseline Risk Assessment portion of this report from the U.S. EPA Region V. Revisions to the OU 4 Remedial Investigation Final Report were issued during February 1994.

**Issues/Corrective Actions:**

Three additional comments on the OU 4 Remedial Investigation Final Report were received from U.S. EPA on April 27, 1994. Responses and changed pages will be transmitted to U.S. EPA by May 27, 1994.

**4.3 Feasibility Study/Proposed Plan**

**Status:**

Ohio EPA comments on the Draft Final OU 4 Feasibility Study/Proposed Plan were received on January 25, 1994. U.S. EPA comments on the Draft Final OU 4 Feasibility Study Report were received on January 31, 1994. The report was revised to incorporate the comments and the Final Feasibility Study Report for OU 4 was submitted to U.S. and OEPAs on February 22, 1994.

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**4.3 Feasibility Study/Proposed Plan**

**Status (Continued):**

The formal public review period began on March 7, 1994 for the Operable Unit 4 Feasibility Study Report and Proposed Plan documents. The public comment period has been extended until May 20, 1994 at the request of the public. All comments received will be addressed in the responsiveness summary and attached to the Proposed Draft Record of Decision for Operable Unit 4.

**Issues/Corrective Actions:**

None to report.

**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

**4.4 Treatability Studies**

**4.4.1 Bench Scale Treatability Studies**

A Treatability Study Work Plan addresses the additional information that is required to support the FS and subsequent remedy selection for OU 4. There are two separate treatability studies to support the OU 4 FS. One study considers cement stabilization of Silos 1, 2, and 3 material and chemical extraction, leachate precipitation, and leachate stabilization of Silos 1 and 2 material. The second treatability study considers the vitrification of Silos 1, 2, and 3 material.

**Status:**

Complete.

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***Remedial Investigations/Feasibility Studies***

**4.4 Treatability Studies (continued)**

**4.4.2 Pilot Plant Treatability Studies**

A two phase Pilot Plant Treatability Study is being conducted to develop the design of facilities and equipment for the final remediation of Operable Unit 4. Phase I will utilize bentonite and surrogate materials, the pilot plant scale vitrification facility, and the empty Silo 4 as a test bed for demonstrating both vitrification and waste retrieval technologies. Phase II will utilize bentonite, actual K-65 and Silo 3 materials retrieved from the silos in addition to treating radon gas. A work plan will be developed for each phase.

**Status:**

Comments received on The Pilot Plant Phase I Work Plan from U.S. EPA have been responded to and the impacts have been incorporated into the Pilot Plant Phase II Work Plan.

The Pilot Plant Phase II Work Plan will be submitted to U.S. EPA on May 13, 1994.

The Preliminary Safety Analysis Report for Operable Unit 4 was submitted to DOE-HQ for review. Formal transmittal of comments is scheduled for May 5, 1994.

Construction of the Pilot Plant facility is expected to be started by June 16, 1994.

Pilot Plant Phase I Operations are projected to begin in March 1995.

**4.5 Record of Decision**

**Status:**

A proposed draft ROD for OU 4 was completed on December 14, 1993. This proposed draft ROD is based on the Final Feasibility Study and Proposed Plan issued to the U.S. EPA and Ohio EPA on February 22, 1994. The proposed draft ROD was revised to reflect the additional comments received on the FS/PP and submitted to the DOE for review on February 25, 1994.

DOE-HQ comments on the proposed draft Record of Decision (ROD) for OU 4 were received on March 29, 1994. The comment responses are being prepared and incorporated into the Proposed Draft Record of Decision for OU 4. The revised Proposed Draft Record of Decision for OU 4 was submitted to DOE-HQ on April 11, 1994. Final DOE-HQ comments are anticipated to be resubmitted by May 2, 1994.

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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 April 1 through April 30, 1994, and planned actions for the period May 1 through May 31, 1994.

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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 April 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 piezometers and extraction wells underneath Plants 2/3, 6, 8, and 9. Treat extracted water for volatile organic chemicals and uranium removal before discharge.	Treatment: Operational  Pumping has not resumed
2	Waste Pit Area Run-off Control	Collect and treat contaminated storm water run-off from the waste pit area.	Construction Completed: 6/15/92 Operational: 7/30/92
3	South Groundwater Contamination Plume	<p>Part 1 - Install new alternate water supply and transfer to industrial user.</p> <p>Part 2 - Pump and discharge groundwater from South Plume.</p> <p>Part 3 - Install and operate Interim Advanced Waste Water Treatment system to reduce uranium contaminant loading to the Great Miami River.</p> <p>Part 4 - Conduct groundwater monitoring and institutional controls by sampling private and existing RVFS wells in the South Plume area and installing homeowner treatment systems.</p> <p>Part 5 - Conduct groundwater modeling and geochemical investigating to define the extent of the groundwater plume contaminated with uranium</p> <p>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.</p>	<p>Operational: 12/7/92</p> <p>Transfer: Ongoing</p> <p>Ongoing</p> <p>Ongoing</p> <p>Ongoing</p> <p>Completed: 2/25/94</p> <p>Operational: 3/31/94</p>
4	Silos 1 & 2	Install bentonite cap to reduce and monitor radon emissions. Provide follow-on monitoring.	Cap Completed: 11/28/91  Monitoring: Ongoing
5	Decant Sump Tank	Periodically remove liquid from K-65 decant sump tank.	Ongoing
6	Waste Pit 6 Residues	Eliminate potential airborne contamination by re-submerging exposed pit material.	Completed: 12/19/90

Shading denotes completed actions

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**REMOVAL ACTION SUMMARY**

NO.	TITLE	SCOPE	STATUS
7	Plant 1 Pad Continuing Release	Stage I - Implement run-on/off control measures. Stage II - Install new pad. Stage III - Upgrade existing Plant 1 Storage Pad.	Completed: 1/17/92 Completed: 12/4/92 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. Phase II - Complete active flyash pile controls.	Completed: 6/29/92 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.	Project work resumed in March 1994
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.	Ongoing
15	Scrap Metal Piles	Phase I - Disposition LLW ferrous/non-ferrous scrap metal Phase II - IIA - Containerization of scrap copper IIB - Disposition of scrap copper	Ongoing Completed: 9/29/92 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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**REMOVAL ACTION SUMMARY**

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.	Final Report Approved by U.S. EPA 3/31/94 at TIE Meeting
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.	Final Report Approved by U.S. EPA 3/31/94 at TIE Meeting
23	Inactive Flyash Pile	Conduct field investigation to identify locations requiring material removal.	Final Report Submitted to U.S. EPA 6/30/92
24	Pilot Plant Sump	Remove liquid and sludge from the sump.	U.S. EPA Approved Final Report 1/14/94
25	Nitric Acid Tank Car and Surrounding Area	Remove residual contents from tank car and decontaminate and dispose of tank car.	U.S. EPA Approved Final Report 12/9/93
26	Asbestos Removals (Asbestos Program)	Mitigate the potential for contaminant release and migration of asbestos fibers.	Ongoing

Shading denotes completed actions

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**REMOVAL ACTION SUMMARY**

NO.	TITLE	SCOPE	STATUS
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

Shading denotes completed actions

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**RA No. 1, Contaminated Water Under FEMP Buildings**

**Current Month:**

The Plant 8 VOC Treatment System was restarted on April 18, 1994. The Plant 6 Motor Bay Sumps Perched Groundwater Collection System was placed in operation.

**Planned Activities:**

- Reestablish operation of the perched groundwater extraction wells.

**RA No. 3, South Groundwater Contamination Plume**

**Part 1 - Alternate Water Supply**

**Current Month:**

Activities to complete the transfer of ownership of the Alternate Water Supply System from DOE to Albright and Wilson Americas (A&W) is ongoing. In 1992, the U.S. EPA and Ohio EPA approved deleting Delta Steel from the current scope of the project, with agreement that they would be served by a planned Public Water Supply (PWS). Progress on the PWS continues with some delays being encountered to address archeological and historical items. Phase I of PWS from Bolton Plant to Hamilton/Butler County line is scheduled to bid in July 1994.

**Planned Activities:**

- Continue the transfer of ownership of the Alternate Water Supply to A&W.
- Continue to support Hamilton County on installation of the PWS.
- Finalize basis for DOE participation in construction costs for PWS.

**Part 2 - Pumping and Discharge System**

**Current Month:**

The capture zone evaluation for the well field continues to suggest that arsenic concentrations in the monitoring wells south of the recovery wells are returning to prepumping levels. Operation of the recovery well field continued at a total rate of 1500 gallons per minute (gpm) (300 gpm each well).

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

**Part 2 - Pumping and Discharge System (Continued)**

**Planned Activities:**

- Continue operating recovery well field at a rate of 1500 gpm.
- Data collected during the first quarter of the recovery well field operation will be compiled and submitted to the U.S. EPA and Ohio EPA in May 1994. The report was originally scheduled for submittal during April but has been delayed due to problems experienced with the Sitewide Environmental Database and Data Management System. This quarterly report will meet the first reporting requirement defined in the Design, Monitoring and Evaluation Program (DMEPP).

**Part 3 - Interim Advanced Waste Water Treatment (IAWWT)**

**IAWWT Storm Water Retention Basin Unit**

**Current Month:**

With installation of the multimedia filtration unit upstream of the ion exchange units, the operation of the IAWWT has been well maintained with infrequent bag and cartridge filter element replacement.

**Planned Activities:**

- Continue to operate IAWWT (SWRB) with little downtime due to improved filtration.

**IAWWT Bionitrification Effluent Treatment System Unit**

**Current Month:**

Operation of the IAWWT unit continues. Temporary repairs of the ion exchange vessels have kept the system operational with little downtime. The internal flow distribution piping system, made of PVC, has developed cracks at the joints. The piping will be replaced with stainless steel.

**Planned Activities:**

- Pursue permanent repair of ion exchange vessels.

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

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 two homeowner systems installed south of the FEMP continue to operate successfully. The FEMP is continuing to monitor the effectiveness of the ion exchange resins at these two residences. Trending analysis in collected data indicate the changeout of the resin in the lead columns will be required during 1994. A procedure for resin vessel changeout has been prepared for review and approval.

**Planned Activities:**

- Approve resin vessel changeout procedure in May and continue to monitor performance.

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

Step 1

**Current Month:**

The new IAWWT unit referred to as the South Plume Interim Treatment (SPIT) project was completed and placed in operation on March 31, 1994; satisfactory operation continues.

**Planned Activities:**

- Continue full operation of the system, treating 200 gpm of South Plume flow.

Step 2

**Current Month:**

Use off-peak capacity in Phase I of the Advanced Waste Water Treatment (AWWT) system for South Plume flow when no storm water requires treatment. The AWWT package, now under construction, contains piping and valving to transfer South Plume flow to the existing SWRB pumping station for subsequent transfer to Phase I.

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

**Step 2 (Continued)**

**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:**

Changes have been made to the AWWT project scope to eliminate scheduled improvements which would have specifically addressed the Sewage Treatment Plant and clean-side General Sump flows. Installation of the AWWT Phase III line began in April which will eventually serve a future AWWT system, Phase III. This will allow South Plume groundwater to be transferred to the AWWT Phase II system to meet this commitment.

**Planned Activities:**

- Continue installation of AWWT Phase III line. Step 3 will be available when Phase II of the AWWT becomes operational in January 1995.

**Step 4**

**Current Month:**

No action was taken in April to extend the planned operational life of the existing IAWWT SWRB unit by converting it from treating storm water to treating South Plume flow, and increasing capacity from 300 gpm to approximately 400 gpm.

**Planned Activities:**

- The conversion of the IAWWT SWRB unit will occur after currently treated waste stream is routed to AWWT Phase I in January 1995. Conversion will be accomplished by March 30, 1995.

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**RA No. 4, Silos 1 and 2**

**Current Month:**

The results of the video camera investigation of the Silo 2 bentonite cap (due to a slight upward trend in headspace radon concentration) were compared against baseline videos of the bentonite surface taken immediately following its installation. Overall, the bentonite cap integrity is in very good condition. The Removal Action No. 4 Final Report was issued to DOE-HQ on March 25, 1994. Comments from DOE-HQ on the Final Report were received on April 21, 1994 and a comment resolution meeting was conducted on April 28, 1994.

**Planned Activities:**

- The comment responses will be incorporated into the Removal Action Final Report and resubmitted by May 15, 1994.

**RA No. 5, K-65 Decant Sump Tank**

**Current Month:**

In an effort to reduce worker exposure to the Decant Sump Tank and to improve confidence in the liquid level measurements, DOE is proceeding to install a submersible pressure indicator/transmitter in the tank. The new water level indicator equipment will allow for accurate, continuous, and remote level readings from the tank.

**Planned Activities:**

- The action to install the new water level indicator is expected to be completed by the end of May 1994.

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**RA No. 7, Plant 1 Pad Continuing Release**

**Current Month:**

All concrete slab work, electrical light, and controls were completed for Phases C and D and Tension Support Structure (TSS) #6 in March 1994. Special coating operations on the Pad resumed in April 1994.

**Planned Activities:**

- Coating operation for TSS#6 is to be completed the week of May 2; Phase C is to be completed the week of May 9; and Phase D the week of May 16, 1994.
- In order for construction on Phase E to resume in June 1994, drum movements will occur during the last part of May.

KEY MILESTONES	STATUS	DUE DATE
Complete Installation of Stage III and Tension Support Structure	Open, ahead of schedule	February 21, 1995

**RA No. 9, Removal of Waste Inventories**

**Current Month:**

The volume of waste shipped off-site in April was 4,575 DEs for a total of 34,278 DEs shipped to the NTS in FY-94. This volume includes 6,696 drums of residues removed from inventory and shipped to-date.

A project team focused on legacy construction waste has characterized and approved for shipment 84 white metal boxes (WMB) (840 DEs). This project is tasked with the characterization of 10 WMBs per week.

DOE-NV approval of the revised FEMP Application to Ship Waste to the Nevada Test Site, Rev. 5.1, and approval of the final confirmatory sampling results for FEMP residues was received in March. The official application approval from DOE-NV which will release the AMCCOM metal for shipment to the Nevada Test Site is expected in May.

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**RA No. 9, Removal of Waste Inventories (continued)**

During April, shipping activities included the resumption of contaminated trash shipments.

**Planned Activities:**

- Awaiting DOE-NV approval of the FEMP waste application.
- Residue shipments to SEG to resume in May 1994.
- Initiation of AMCCOM and thorium shipments will resume in June 1994.

KEY MILESTONES	STATUS	DUE DATE
Submit Annual Work Procedures for 1994	Open, on schedule	June 30, 1994

**RA No. 12, Safe Shutdown**

**Current Month:**

Of the first three Implementation Plans for the removal of hold-up materials from equipment in Plant 4, the Potassium Hydroxide (KOH) system has been completed except for an area that contained frozen liquid, a Safety Assessment has been completed for the HF Recovery System, and the plan for clean-out of the H<sub>2</sub> off-gas system should be initiated in May.

The verification of process equipment located in Plant 5 and the Pilot Plant was completed. The verification of the production equipment in all process plants has been completed, except for Plant 2/3, Refinery. The red-lining of as-built floor plan drawings to agree with equipment verification is continuing.

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RA No. 12, Safe Shutdown (continued)

The following is the status of capital equipment: of an estimated 1,675 total number of items, 1,187 have been reported on AC-563 Forms to be excessed, and 488 have been identified as "In Use/Future Use" items. This information may vary from month-to-month due to change in status of equipment items and/or as a result of field verification.

Eight hundred seventeen (817) maintenance work orders to isolate and disconnect all utilities/energy sources from equipment not in use have been prepared. Of these, 443 have been completed. Field verification of the completed orders is ongoing. Completion of these work orders is a preliminary step for removal of hold-up material from the equipment in preparation for equipment removal and decontamination and decommissioning. These numbers may vary from month-to-month due to change in status of the equipment.

Three-hundred ninety-three (393) task orders to determine if hold-up material is present in equipment have been prepared; of these, 114 have been completed. Also, one hundred twenty-four (124) task orders to remove the hold-up material from equipment have been prepared.

Work continues with Westinghouse Hanford Company, DOE-Richland, and DOE Headquarters in finalizing the "Environmental Assessment (EA) for the Packaging/Repackaging, Loading, and Transportation Associated with the Sale of Uranium Materials Located at the Hanford Site, Richland, Washington, and the Fernald Site, Fernald, Ohio." Presently, the preparation of this NEPA document continues to be on hold awaiting details of the type of packaging to be used by COGEMA, the French Company which is purchasing a major portion of the material being sold.

In April, Manufacturing Sciences Corporation (MSC) in Oak Ridge, Tennessee, the company that purchased all of the depleted derbies, exercised their contractual option to cancel a month's shipment. This month's cancellation will not impact projected completion date of December 1996. We have shipped 302 derbies of 2,613 total, or 112,118 net pounds of 973,651 total.

British Nuclear Fuels was the successful bidder for 350,000 net pounds (120 metric tons uranium weight) of depleted UF<sub>6</sub>. On April 29, 1994, the Shipping/Receiving Plan was issued for this transfer. The customer had requested that the plan be finalized before the contract is signed. Completion of this plan will allow the process to go forward. However, actual transfer of the material is contingent upon completion of the EA in a timely manner.

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**RA No. 12, Safe Shutdown (continued)**

Removal of dust collector G5A-100 components for transfer to Martin Marietta Energy Systems (MMES), Oak Ridge, TN, began this month. The equipment will be used to provide air filtration for five (5) separate projects at the Y-12 plant. The FEMP acquisition cost was \$1.1 million and the scrap metal value of the equipment is approximately \$1,000. However, due to the strict radiological controls maintained on-site, this equipment may require burial, which would have cost approximately \$100,000 for packaging, transportation, and burial at the Nevada Test Site. The removal and transfer of equipment to MMES will result in an overall cost savings to the government of approximately \$1.5 million.

An additional four (4) dust collectors will be removed in May for transfer to MMES, with a similar cost savings.

**Planned Activities:**

- Continue preparation, with Hanford and the DOE, of the NEPA documentation for the sale of the excess uranium materials.
- Continue to issue work orders to disconnect utilities from process equipment and issue task orders to identify and/or remove hold-up materials from process equipment.
- Continue to expedite utility isolation, identify hold-up in equipment, and remove/drum hold-up from process equipment.
- Initiate verification of the equipment in Plant 2/3.
- Continue to prepare implementation packages and obtain appropriate approvals. Continue field inspections of implementation activities.
- Continue to follow the status of 4A metal removal to the Nevada Test Site.
- Continue shipping depleted derbies to MSC in Oak Ridge, Tennessee.
- Continue process of removing Plant 5 dust collectors for disposition to MMES, Oak Ridge, Tennessee.

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**RA No. 12, Safe Shutdown (continued)**

KEY MILESTONES	STATUS	DUE DATE
Submit Annual Work Procedures for 1994	Open, ahead of schedule	June 30, 1994

**RA No. 13, Plant 1 Ore Silos**

**Current Month:**

DOE-FN concurred with changes in the Work Plan for dismantling the tile silos and the U.S EPA has been notified. The new dismantling method involves knocking the tile inward, where they fall into a chute which directs them into a 7a box. The 90% design review for the new method was completed and the CFC drawings were received April 1. The remaining four concrete silos were dismantled (except for the cones) as of April 21, 1994. They are being stored on the west side of the tile silos. The tiles on the southwest silo have been repaired.

**Planned Activities:**

- Remove conveyors and deck from top of tall tile silos
- Dismantle concrete silos cones
- Install scaffold around tile silos

KEY MILESTONES	STATUS	DUE DATE
Complete Removal Action	Estimated completion date November 1994	December 19, 1994

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**RA No. 14, Contaminated Soils Adjacent to Sewage Treatment Plant Incinerator**

**Current Month:**

April activities included completion of verification soil sampling in and around Zones 1, 2, and 4. Once the verification soil sampling results are returned, it will be determined if all of the contamination has been removed to below the action levels.

**Planned Activities:**

- Receive and analyze verification sampling data. Further field activity will depend upon the results.
- Continue compiling maps and data charts for the final report. The first draft of the report is due in June 1994.

KEY MILESTONES	STATUS	DUE DATE
Phase V - Submittal of Final Report	Open	September 26, 1994

**RA No. 15, Scrap Metal Piles**

**Current Month:**

Phase I FERMCO analysis results of SEG slag and oxides was completed the week of April 8, and data validation was completed by April 28, 1994. SEG slag compaction and overpacking was initiated on April 26, 1994. Waste certification/DOE-NV audit was completed the week of April 25, 1994.

Phase II Technical Evaluation Cost Proposal was issued to Acquisitions on April 7, 1994. Draft of pre-award audit findings was issued to SEG on April 22, 1994. Phase II completion/beneficial reuse options were presented to DOE on April 29, 1994.

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**RA No. 15, Scrap Metal Piles (continued)**

**Planned Activities:**

- Phase I slag compaction and overpacking of about 100 slag boxes is in progress. DOE-NV surveillance report is to be issued within 30 days from April 28, 1994. SEG sampling and analysis of remaining slag/oxides in progress with completion expected by May 27, 1994. Equipment procured by SEG to treat mixed waste streams is scheduled to arrive on May 13, 1994.
- Awaiting responses by FERMCO to questions concerning Phase II completion/beneficial reuse options.

KEY MILESTONES	STATUS	DUE DATE
Complete Phase I	Completed	March 27, 1994
Phase I - Submit Final Report	Open, ahead of schedule	September 30, 1994
Phase IIB: Submittal of Subcontractor's Removal Action Plan	Open, behind Schedule	September 30, 1993
Phase IIB: Submittal of Final Report	Open, behind schedule	March 30, 1995

**RA No. 17, Improved Storage of Soil and Debris**

**Current Month:**

April activities included re-evaluation efforts involving the possibility of: (1) relocating the Central Storage Facility (CSF) near the OU5 RD/RA proposed facilities, and (2) deleting the Scrap Metal Pad (SMP) tent structure from the RA 17 Scope. The re-evaluation is due as a result of CRU Integration Strategic Planning efforts. Title II design for the regrading and placement of a vegetative cover over the existing soil and rubble pile north of Third Street began on April 1, 1994. Analysis of samples taken of residues/debris left from the scrap metal previously stored on the SMP is ongoing and the implementation plan for removing these debris/residues is being developed. Preparation of the bid package for the CFC "merged" design package for subsequent transmittal to qualified bidders is on hold due to the re-evaluation efforts for the CSF and SMP structures.

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

**Planned Activities:**

- Continue Title II design of the regrading and seeding plan for the existing Third Street soil and rubble pile with a 50% design presentation scheduled for May 11, 1994.
- Removal and containerization of the remaining debris/residue in the SMP area planned to commence in late May 1994.

**RA No. 19, Plant 7 Dismantling**

**Current Month:**

Interim removal work, removal of interior transite, and the application of encapsulant coating to the interior surface of the exterior transite, all of which began in March continued through the month of April. Additionally, all subcontractor submittals have been received, commented upon, returned, and revised.

**Planned Activities:**

- Review and approve remaining subcontractor submittal revisions.
- Continue with the interior removal work, removal of interior transite and batt insulation, and the application of encapsulant coating.

**RA No. 20, Stabilization of UNH Inventories**

**Current Month:**

Construction of the new UNH transfer pipe continued. The work package to prepare tank F1-2 to receive the UNH from tank F1-26 was completed. An additional tank, F3E-220, was found to contain approximately 2,000 gallons of UNH. This tank is located in the denitration area of Plant 2/3. This tank has been added to the UNH project thus raising the total number of tanks to 19.

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

**Planned Activities:**

- Review and update UNH project schedule.
- Continue lab analysis of UNH tank samples.
- Continuation of bench-scale testing of the UNH will be performed at the FERMCO laboratory facility to determine the process chemistry.

**RA No. 26, Asbestos Removals (Asbestos Program)**

**Current Month:**

FERMCO provided the annual submittal of updated work procedures for this removal action to DOE-FN on April 5, 1994. Ongoing abatements within the Asbestos Program to-date include, small-scale in-situ repairs, encasement, encapsulation, and removals, and the initiation of large-scale asbestos abatement within Plant 7.

**Planned Activities:**

- Continue design on several thermal system insulation (TSI) removal projects.
- Receive and resolve internal DOE comments on the work procedures submittal in support of the Consent Agreement Commitment to provide these procedures to the EPA by June 30, 1994.

**RA No. 28, Contamination at the Fire Training Facility**

**Current Month:**

Sediments and surface water sampling was conducted.

**Planned Activities:**

- Receive sampling results. The design will be finalized after the sampling results are in.
- Continue sediments and surface water sampling.
- Resolve issue concerning the suet on the inside of the building (i.e. hazardous or not).

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RA No. 29, Erosion Control at Inactive Flyash Pile

**Current Month:**

The final report of RA No. 29 was reviewed with no comments. Additional copies of the report were requested and delivered.

**Planned Activities:**

None to report.

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**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 R/FS Work Plan**

**Status:**

Complete.

**Issues/Corrective Actions:**

None to report.

**1.2 Remedial Investigation**

**Status:**

Received conditional approval of OU 1 Remedial Investigation/Baseline Risk Assessment from U.S. EPA on April 4, 1994. Comment resolution for final document preparation and approval is in progress.

**Issues/Corrective Actions:**

None to report.

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1.2 Remedial Investigation (continued)

OPERABLE UNIT 1 REMEDIAL INVESTIGATION REPORT PRIMARY MILESTONES

Table with 4 columns: SCOPE, SUBMIT TO EPA, RECEIVE FROM EPA, SUBMIT TO EPA FINAL. Row 1: Details the nature and extent of contaminants within the OU 1 study area... 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:

Received acknowledgement of receipt from U.S. EPA on April 22, 1994. EPA acknowledged receipt of document on March 4, 1994, and specified EPA would exercise the Amended Consent Agreement provision allowing them (EPA) an additional 20 days to review and provide comments. These comments are anticipated on May 24, 1994.

A Change Proposal (CP) is being prepared to extend the milestone date an additional 20 days to May 24, 1994, based on the U.S. EPA decision to invoke the option of the additional 20 day review cycle.

Issues/Corrective Actions:

None to report.

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**1.3 Feasibility Study/Proposed Plan (continued)**

**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	05/24/94 C	06/03/94 C

C = Consent Agreement Date

A = Actual

**1.4 Treatability Studies**

The OU 1 treatability studies have evaluated several treatment process options identified in the OU 1 Initial Screening of Alternatives document, including cement stabilization, vitrification, thermal treatment, and agglomeration. The FEMP evaluated the technical feasibility of these technologies through a series of laboratory experiments.

Where appropriate, the FEMP investigated performance criteria, including formulation ranges, compressive strength, leachability, bulking factor, and permeability. Cement stabilization binding agents, including portland cement, flyash, blast furnace slag, and sodium silicate, were evaluated. Glass formers and modifiers considered for vitrification were flyash, soil, and sodium hydroxide.

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**1.4 Treatability Studies (continued)**

**Status:**

Remedy Screening/Remedy Selection Treatability Studies in support of the OU 1 Remedial Investigation/Feasibility Study are complete. OU 1 treatability studies to support remedy design will be developed as needed based on the Proposed Plan and Record of Decision.

**Issues/Corrective Actions:**

None to report.

**1.5 Record of Decision**

Draft OU 1 Record of Decision (ROD) was prepared and submitted to DOE-FN/HQ April 28, 1994, in accordance with the Amended Consent Agreement.

**1.6 Planned Activities for May 1994**

- Comment responses and change pages on the draft OU 1 Final Remedial Investigation (RI)/Baseline Risk Assessment are scheduled for transmittal on May 4, 1994, to the EPAs.
- Comments from the March 1, 1994, submittal of the OU 1 Feasibility Study/Proposed Plan are anticipated the month of May 1994. Schedule of response to be determined.
- The new milestone date will be incorporated upon DOE approval scheduled for May 27, 1994.

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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**

DOE-FN submitted the Remedial Investigation Report for OU 2 to the U.S. EPA and Ohio EPA in October 1992. Based on December 17, 1992, review comments from the U.S. EPA and Ohio EPA on the RI Report and subsequent disapproval of the document, OU 2 required a second phase of Remedial Investigation sampling and analysis in order to meet the objectives of the March 1988 RI/FS Work Plan.

**Status:**

Complete.

**Issues/Corrective Actions:**

None to report.

**2.1.1 RI Field Investigation**

**Status:**

Analysis of Round Two sample collections of monitoring wells is expected to be complete by May 1, 1994.

**Issues/Corrective Actions:**

None to report.

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**2.2 Remedial Investigation**

**Status:**

Formal comments on the February submittal of the OU 2 Draft Remedial Investigation (RI) Report were received from the OEPA and U.S. EPA on April 19 and April 22, 1994, respectfully. Comments are being reviewed and responses are being incorporated into the document. The revised RI is due on May 21, 1994. Should a 20 day extension be requested, the due date would then be June 9, 1994.

**Issues/Corrective Actions:**

None to report.

**OPERABLE UNIT 2 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 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	04/15/94 C	06/15/94 C (due to extension)

C = Consent Agreement Date

**2.3 Feasibility Study/Proposed Plan**

**Status:**

DOE Comments to the Feasibility Study were incorporated and the revised draft was submitted to EPA on April 28, 1994.

**Issues/Corrective Actions:**

None to report.

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**2.3 Feasibility Study/Proposed Plan (Continued)**

**OPERABLE UNIT 2 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.	04/29/94 C	06/27/94 C	07/25/94 C

C = Consent Agreement Date

**2.4 Treatability Studies**

**Status:**

None to report.

**Issues/Corrective Actions:**

None to report.

**2.5 Planned Activities for May 1994**

- Complete analysis of geotechnical samples from the Solid Waste Landfill.
- Continue engineering support work for the Solid Waste Landfill including Conceptual Cost Estimate and documentation of Preliminary Safety Analysis Requirements.
- Awaiting comments from EPA on the Revised Draft FS Report, comments are due June 26, 1994.
- Complete Round Two sample collections of monitoring wells.
- Public Comment meeting scheduled on May 10, 1994 to present solid block modeling concept.

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***Remedial Investigations/Feasibility Studies***

**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:**

Fourteen Field Work Packages (FWPs) were completed, approved, and distributed in April 1994 with the sampling identified therein, encompassing a large extent of the samples anticipated to be taken in the next couple months of OU 3 RI/FS sampling.

**Issues/Corrective Actions:**

None to report.

**3.1.1 Field Investigations**

**Status:**

**Scope:**

The Operable Unit 3 Field Investigations Program gathers information necessary to perform a baseline risk assessment. The program also identifies the nature of contaminants in the operable unit, refines estimates of volume of contaminated materials, and supports initial screening of applicable alternatives.

**Status:**

Field screening for chemical and metals contamination continued throughout April 1994 using two field portable X-Ray fluorescence analyzers, a field portable gas chromatograph and photo-ionization detectors. Chemical screening was performed to support selection of intrusive media locations on the Plant 9 Electrical Station, Trailer Substation #1, Trailer Substation #2, Main Electrical Substation, Main Electrical Transformer, and Heavy Equipment Building.

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***Remedial Investigations/Feasibility Studies***

**3.1.1 Field Investigations (continued)**

In addition to the RI/FS Program, soil screening using the X-Ray Fluorescence Analyzer (XRF), was also performed in support of the MAWS and Removal Action 14, Contaminated Soils Adjacent to the Sewage Treatment Plant Incinerator.

Intrusive media sampling was initiated in the Old North Tank Farm, Combined Raffinate Tanks, Plant 8 North Pad, Plant 5 Ingot Storage Shelter, Refinery Sump, Refrigeration Building, Plant 1 Pad, Building 39A Pad, Plant 8 West Pad, Plant 8 East Pad, Plant 6 Covered Storage Area, Old Drum Washer, Plant 5 South Pad, Trickling Filters, Sludge Drying Beds, Salt Oil Heat Treatment Building, Railroad Scale House, Pilot Plant Warehouse, Waste Oil Decant Shelter, Refinery Sump, Plant 2 East Pad, Plant 2 West Pad, Storm Water Retention Basin, Plant 6 Electrostatic Precipitator North, and Electrical Panels/Transformers. Intrusive media sampling continued in the Digester Control Building, Refinery Maintenance Building, Pilot Plant Maintenance Building, and Incinerator Building. A total of 103 intrusive samples were collected in April 1994.

Intrusive media sampling was interrupted by the power outage on April 27, 1994. Two samples were compromised in the Sample Processing Laboratory (SPL) and will have to be resampled. Sampling was also postponed in observance of the Safety Awareness days.

The remaining samples for Task Order 2 against the Radioanalytical Laboratory Services Task Order Subcontract (all liquid) were shipped to Datachem Laboratories in April 1994. Some liquid samples for Task Order 3 remain to be shipped, and planned to be shipped in early May 1994. Task Order 4 was awarded to TMA/Eberline in April 1994, and shipment of the associated samples is expected to begin in early May 1994. Bids have been received on Task Order 5, but award is not expected until May 1994 due to the low bidder having not yet been SCQ-approved, with shipment of samples beginning in May 1994. Task Orders 7 and 8 have been sent to procurement, and award is expected in May 1994.

**Issues/Corrective Actions:**

As indicated above, bids have been received on Task Order 5 against the Radioanalytical Laboratory Services Task Order Subcontract. The low bidder, however, has not yet been SCQ-approved. It is anticipated that there should not be a problem in the getting the information from the laboratory and awarding the Task Order as planned.

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**3.2 Remedial Investigation**

**OPERABLE UNIT 3 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 3 study area. Estimates the volume of contaminated media and materials. Provides a baseline risk assessment and establishes remedial action objectives.	03/13/96 C	05/12/96 C	06/11/96 C

C = Consent Agreement Date

**Status:**

Formal development of the RI has begun in the form of report planning, RI Report layout, Baseline Risk Assessment Report layout, non-data dependent background information collection/integration, and Baseline Risk Assessment approach and scenario development. Data management procedures have been implemented to track and manipulate field characterization data. As of April 27, 1994, approximately 57% of the chemical field characterization analytical data and 1% of the radiological field characterization analytical data have been received from the laboratories. Approximately 38% of planned chemical data to be collected has been validated.

**Issues/Corrective Actions:**

None to report.

**3.3 Feasibility Study/Proposed Plan**

**Status:**

OU 3 has not begun formal activities on the Feasibility Study, although alternatives research, initial screening, and document layout planning have been initiated. Based upon a DOE proposal to EPA to eliminate the OU 3 Baseline Risk Assessment (BRA), the schedule for the FS is being evaluated for potential acceleration and cost savings. As a result of the development of a Proposed Plan for Interim Action, the Feasibility Study will not address initial decontamination or dismantling, but will focus on treatment and disposition issues, which remain the scope of the final action and final Record Of Decision.

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**3.3 Feasibility Study/Proposed Plan (continued)**

**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	08/07/96 C	11/05/96 C

C = Consent Agreement Date

**Issues/Corrective Actions:**

None to report.

**3.4 Treatability Studies**

**Status:**

The FEMP will conduct remedy screening treatability studies in parallel with the field investigation and alternatives development. OU 3 has developed a Treatability Study Work Plan (TSWP) to include initially-identified studies to be performed. Current actions involve planning the initial studies. The Work Plan was transmitted to U.S. EPA December 22, 1993, ahead of the scheduled January 15, 1994 due date. U.S. EPA approval was received April 13, 1994 for the TSWP. Additional tests will be planned and submitted as addenda to the Treatability Study Work Plan, once identified and detailed. Contracting activities are well underway for initially identified tests. Additional small-scale demonstration tests are also being planned.

**Issues/Corrective Actions:**

None to report.

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**3.5 Interim Action - Record of Decision**

**Status:**

The public comment period for the PP/EA closed February 8, 1994. Comments received indicated general support for the preferred alternative with several issues requiring either further explanation, future commitment, or modification to the selected remedy. The Proposed Draft IROD with a draft responsiveness summary were submitted to U.S. and Ohio EPA on April 8, 1994. Comments on the IROD are expected back from both EPAs on May 9, 1994.

**Issues/Corrective Actions:**

None to report.

**3.6 RD/RA Work Plan**

The Interim RD/RA Work Plan will detail how design activities will be performed to meet the scope of the interim remedial action for facility decontamination and dismantlement, and how this design will then be implemented through the remedial action program.

**Status:**

All comments were received April 11, 1994 on the March 14, 1994 draft of the RD/RA Work Plan. Several meetings were held between FERMCO, DOE-FN, and others to discuss the DOE comments and come to resolution. Based on these comments, and agreements reached through the comment resolution process, the Work Plan is being revised for submittal to DOE-HQ in May 1994.

**Issues/Corrective Actions:**

None to report.

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**3.7 Planned Activities for May 1994**

- Efforts will continue on resolving comments on the March 14, 1994 Draft of the RD/RA Work Plan, and revising the document for subsequent submittal to DOE-HQ in May 1994.
- Continue efforts to complete the shipment of samples under the third Task Order against the Radioanalytical Laboratory Services Task Order Subcontract. Begin shipment of samples under the fourth Task Order.
- Continue efforts to support the placement of the fifth, seventh, and eighth task orders in May 1994, with possible shipment of samples for radioanalytical analysis beginning in May 1994.
- Begin the process of preparing Task Orders 9 - 12, for potentially putting these Task Orders out for bid in May 1994.
- Continue writing Field Work Packages (FWPs). It is anticipated that about 15 -20 FWPs will be reviewed and approved in May 1994.
- Initiate Feasibility Study staffing and early initiation of key FS activities.
- Receive and respond to U.S. EPA and OEPA comments on the draft Proposed Interim Action Record of Decision.

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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.

**Issues/Corrective Actions:**

None to report.

**4.2 Remedial Investigation**

**Status:**

The OU 4 Remedial Investigation Final Report was transmitted to the U.S. EPA on October 29, 1993. Ohio EPA approved the document on November 23, 1993. DOE received comments on the Baseline Risk Assessment portion of this report from the U.S. EPA Region V. Revisions to the OU 4 Remedial Investigation Final Report were issued during February 1994.

**Issues/Corrective Actions:**

Three additional comments on the OU 4 Remedial Investigation Final Report were received from U.S. EPA on April 27, 1994. Responses and changed pages will be transmitted to U.S. EPA by May 27, 1994.

**4.3 Feasibility Study/Proposed Plan**

**Status:**

Ohio EPA comments on the Draft Final OU 4 Feasibility Study/Proposed Plan were received on January 25, 1994. U.S. EPA comments on the Draft Final OU 4 Feasibility Study Report were received on January 31, 1994. The report was revised to incorporate the comments and the Final Feasibility Study Report for OU 4 was submitted to U.S. and OEPAs on February 22, 1994.

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**4.3 Feasibility Study/Proposed Plan**

**Status (Continued):**

The formal public review period began on March 7, 1994 for the Operable Unit 4 Feasibility Study Report and Proposed Plan documents. The public comment period has been extended until May 20, 1994 at the request of the public. All comments received will be addressed in the responsiveness summary and attached to the Proposed Draft Record of Decision for Operable Unit 4.

**Issues/Corrective Actions:**

None to report.

**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

**4.4 Treatability Studies**

**4.4.1 Bench Scale Treatability Studies**

A Treatability Study Work Plan addresses the additional information that is required to support the FS and subsequent remedy selection for OU 4. There are two separate treatability studies to support the OU 4 FS. One study considers cement stabilization of Silos 1, 2, and 3 material and chemical extraction, leachate precipitation, and leachate stabilization of Silos 1 and 2 material. The second treatability study considers the vitrification of Silos 1, 2, and 3 material.

**Status:**

Complete.

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**4.4 Treatability Studies (continued)**

**4.4.2 Pilot Plant Treatability Studies**

A two phase Pilot Plant Treatability Study is being conducted to develop the design of facilities and equipment for the final remediation of Operable Unit 4. Phase I will utilize bentonite and surrogate materials, the pilot plant scale vitrification facility, and the empty Silo 4 as a test bed for demonstrating both vitrification and waste retrieval technologies. Phase II will utilize bentonite, actual K-65 and Silo 3 materials retrieved from the silos in addition to treating radon gas. A work plan will be developed for each phase.

**Status:**

Comments received on The Pilot Plant Phase I-Work Plan from U.S. EPA have been responded to and the impacts have been incorporated into the Pilot Plant Phase II Work Plan.

The Pilot Plant Phase II Work Plan will be submitted to U.S. EPA on May 13, 1994.

The Preliminary Safety Analysis Report for Operable Unit 4 was submitted to DOE-HQ for review. Formal transmittal of comments is scheduled for May 5, 1994.

Construction of the Pilot Plant facility is expected to be started by June 16, 1994.

Pilot Plant Phase I Operations are projected to begin in March 1995.

**4.5 Record of Decision**

**Status:**

A proposed draft ROD for OU 4 was completed on December 14, 1993. This proposed draft ROD is based on the Final Feasibility Study and Proposed Plan issued to the U.S. EPA and Ohio EPA on February 22, 1994. The proposed draft ROD was revised to reflect the additional comments received on the FS/PP and submitted to the DOE for review on February 25, 1994.

DOE-HQ comments on the proposed draft Record of Decision (ROD) for OU 4 were received on March 29, 1994. The comment responses are being prepared and incorporated into the Proposed Draft Record of Decision for OU 4. The revised Proposed Draft Record of Decision for OU 4 was submitted to DOE-HQ on April 11, 1994. Final DOE-HQ comments are anticipated to be resubmitted by May 2, 1994.