SPRING 2004

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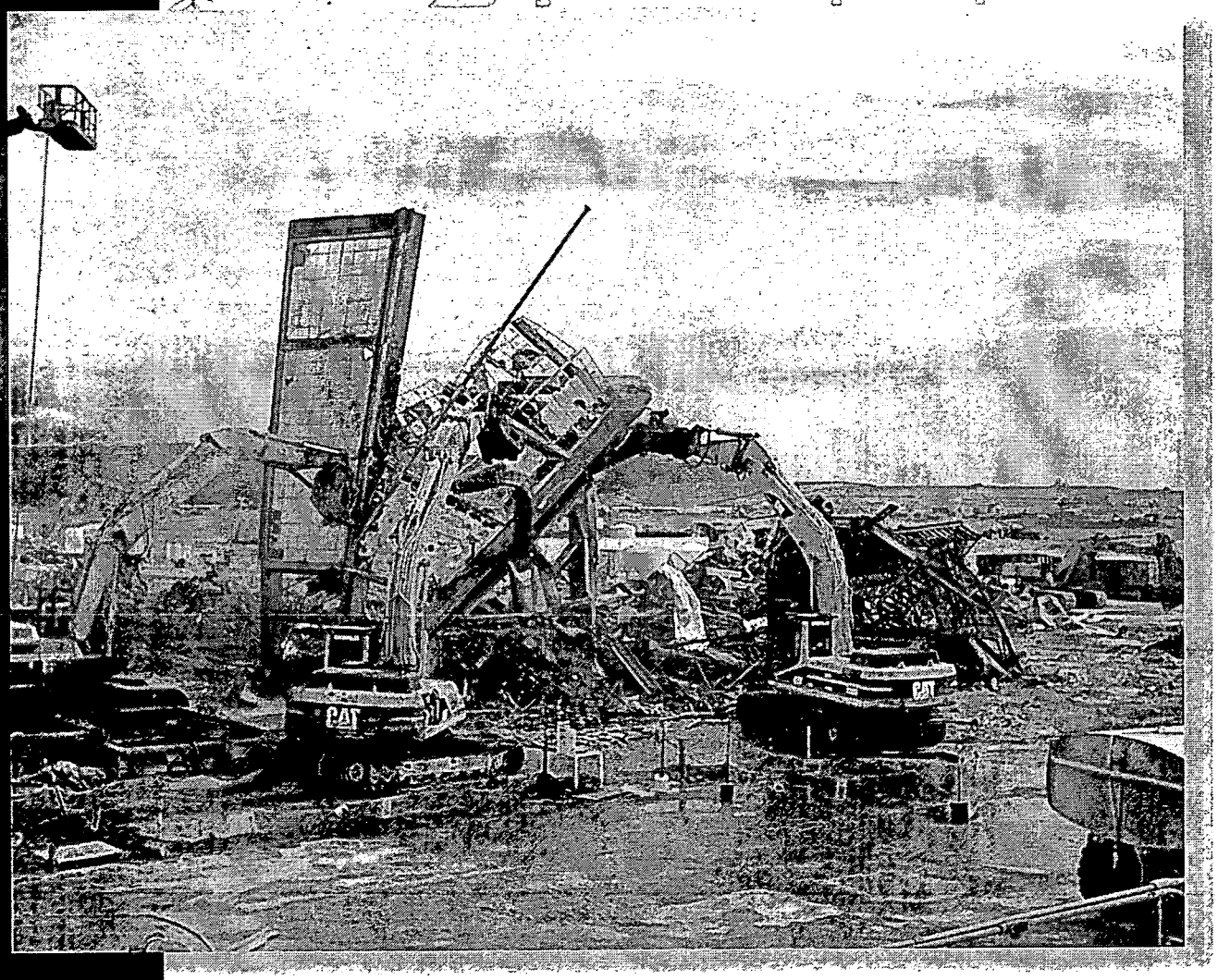
fernald Report

INSIDE

- Last Production Building Dismantled!
- Cleanup Review
- Restoration Progress



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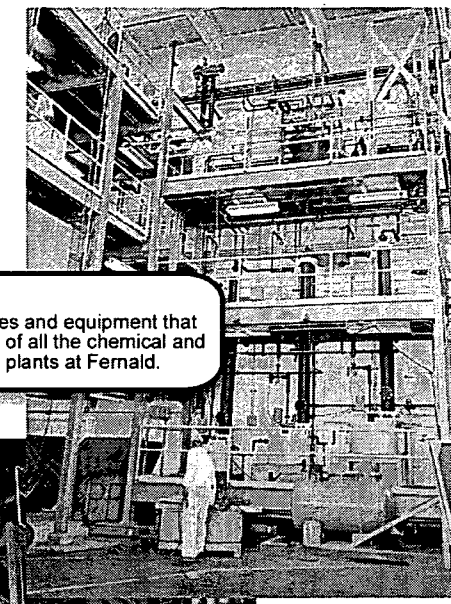
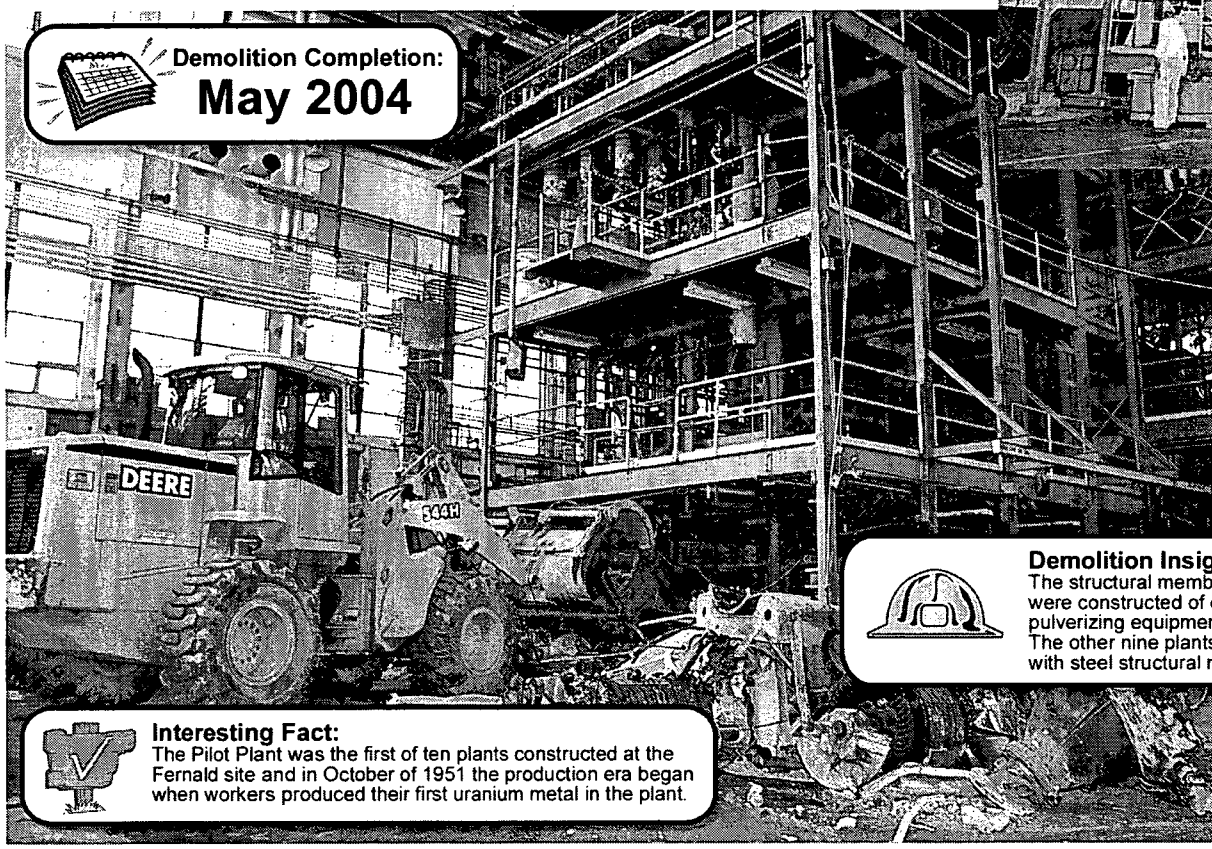
Last Production Building Dismantled

On Thursday, April 29 it took demolition crews a little over two hours to wrestle the remaining section of the Pilot Plant to the ground making it the last uranium production building dismantled and clearing a major hurdle in the Fernald cleanup. The razing of the Pilot Plant closes the final chapter on the last of 10 former uranium complexes that produced 100 million pounds of high purity uranium metal from 1951–1989. It also marks the end to a phase of the cleanup mission that began a decade ago with the implosion of Plant 7 in Sept. 1994.



Mission:
Contained pilot processes and equipment that were used in the design of all the chemical and metallurgical production plants at Fernald.



Demolition Completion:
May 2004

Demolition Insight:
The structural members of the Pilot Plant were constructed of concrete and required pulverizing equipment to demolish them. The other nine plants were constructed with steel structural members.

Interesting Fact:
The Pilot Plant was the first of ten plants constructed at the Fernald site and in October of 1951 the production era began when workers produced their first uranium metal in the plant.

The former production area at Fernald sits on 125 acres in the middle of the site's 1,050 acres. Uranium production plants once stretched over nine city blocks with buildings standing anywhere from one to seven stories tall. The mission of the facility was to take uranium ore and ore concentrates, remove the impurities and ultimately produce uranium metal for Defense Programs. Over the course of nearly 40 years of production the plants and the soil beneath the plants became contaminated. To reduce the spread of contamination during demolition, the Department of Energy and Fluor Fernald worked closely with Ohio and U.S. EPA to develop work processes that protected workers as well as the environment.

On the Cover:
Built in 1951, the Pilot Plant was the first to be constructed and the last production facility demolished on April 29, 2004.

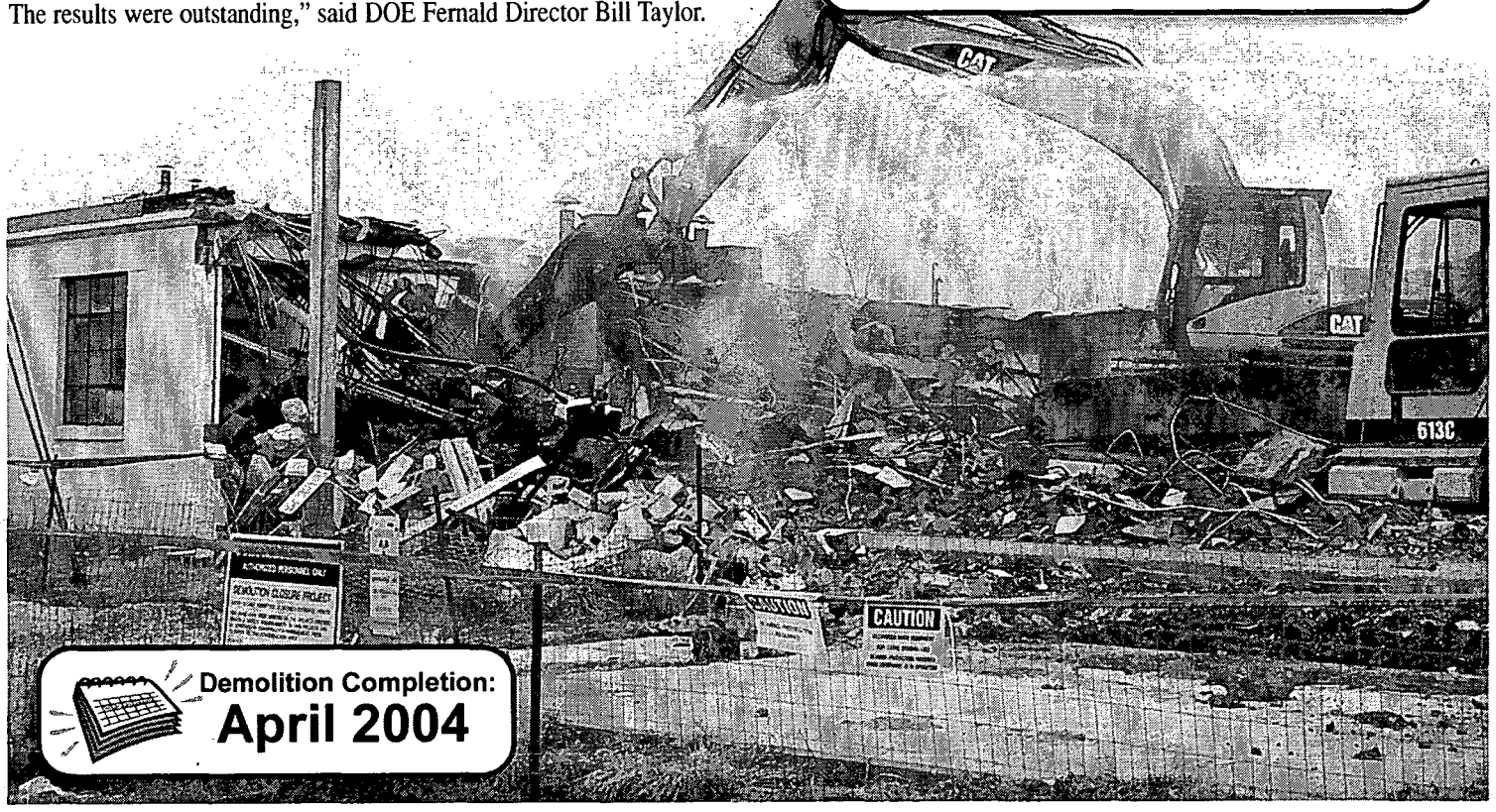
Building demolition is an extremely difficult job. In many cases workers using powered hand equipment had to cut systems out, before building demolition could begin. In all cases workers wore respirators, heavy anti-contamination clothing, radiological and sometimes air monitoring devices in addition to construction related equipment like hardhats, boots and gloves to complete their tasks. "There are only about three weeks in the year you'd want to wear that kind of equipment, " said Fluor Fernald Closure Project Director Jamie Jameson. "Other than that, it's stifling hot in the summer and cold in the winter."

Despite the difficult conditions, workers and safety personnel developed work plans and processes that fostered a safety record far superior to the national average. "Despite the challenges and all of the unknowns you face when taking down a 40 year old plant, the workers were committed to safety. They refused to accept that getting hurt was part of the job. The results were outstanding," said DOE Fernald Director Bill Taylor.

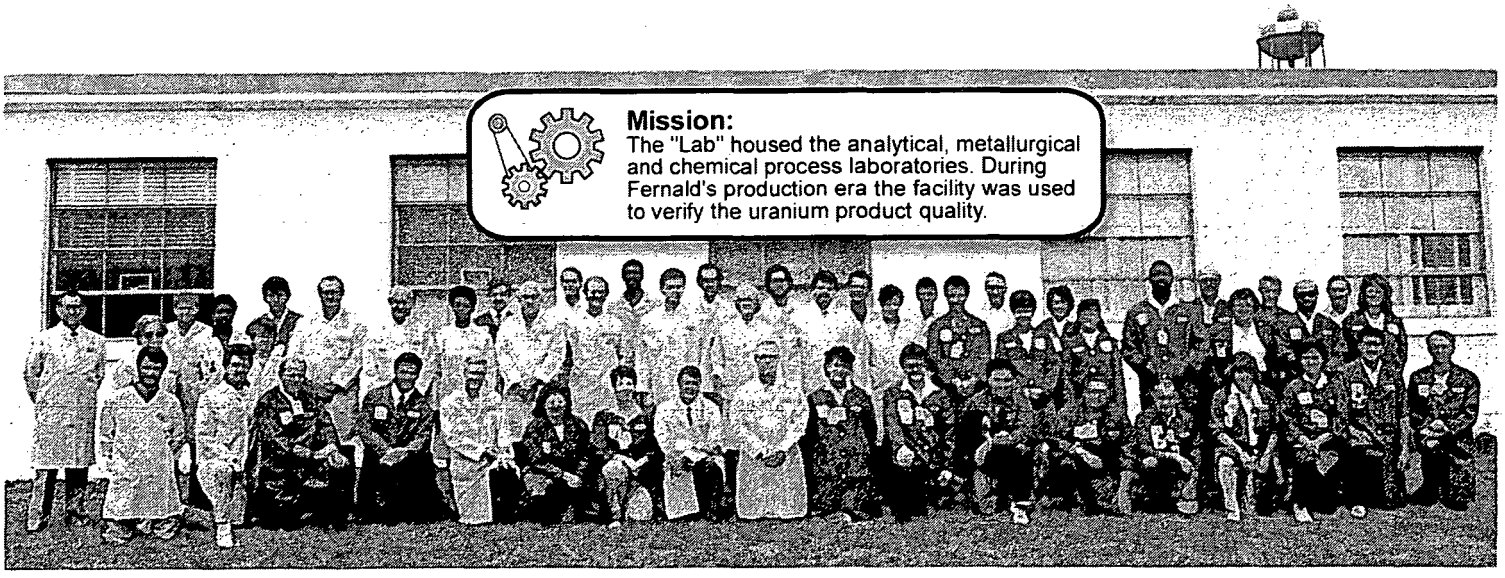
Since Fluor Fernald began self-performing demolition work in October 2003 workers did not have a single OSHA recordable accident. During this period work crews completed the demolition of Plant 8, the Laboratory and Pilot Plant.

With the demolition of the last production building soil excavation personnel will begin removing contaminated concrete and soil beneath the surface of the old plant. Some demolition workers will begin asbestos removal in several administrative buildings slated for demolition next year.

Demolition Insight:
D&D of the Lab consisted of asbestos abatement, size reduction of building material and loading for transfer to the On-Site Disposal Facility.



Demolition Completion:
April 2004



Mission:
The "Lab" housed the analytical, metallurgical and chemical process laboratories. During Fernald's production era the facility was used to verify the uranium product quality.

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Waste Pits Project

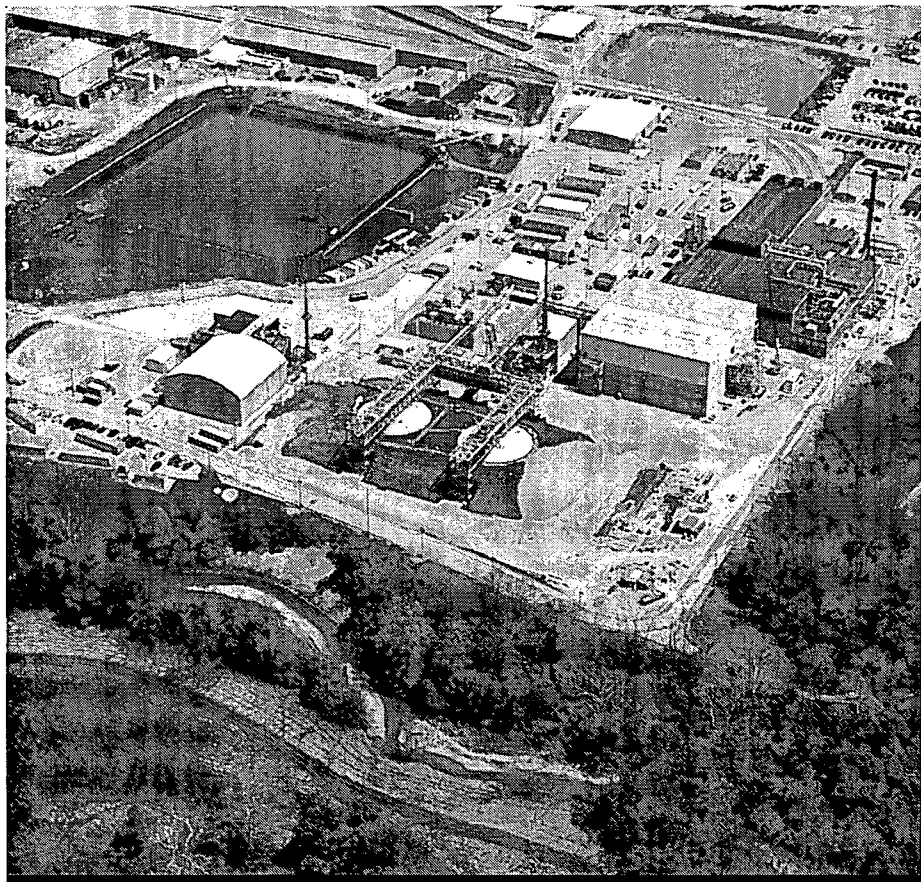
Workers at the Waste Pits Project have removed more than 730,000 tons of pit material and shipped the waste off site in 115 unit trains. 8070D-26

- As of May 1, 115 unit trains totaling 6,831 railcars have shipped 734,907 tons of waste to Envirocare of Utah for disposal
- 19 trains have been shipped in fiscal year 2004
- Excavations are ongoing in Pits 1, 3, 4 and 5, with Pits 1 and 4 nearing completion
- Shaw's contract has been modified to include the processing of additional containers from Waste Management- a total of 351 containers (including 331 drums and 20 metal boxes) have been delivered to date

Project status

- 88 percent complete

Silos Project



Silo 3 construction and equipment testing is complete. Workers are in the final phases of training and qualification activities. Construction at the Silos 1 and 2 project is 85 percent complete. 8070D-110

- Accelerated Waste Retrieval (AWR) of Silos 1 and 2 waste is on schedule to declare readiness in July
- AWR now performing Integrated Systems Operability tests – a simulation of the actual operation using uncontaminated surrogate
- Silos 1 and 2 - facility construction nearing completion, system turnovers in progress
- Silo 3 full plant training exercises continue in prepartion to declare readiness

Silos schedule

- Silo 1 and 2 waste retrieval – June 2004 to June 2005
- Waste treatment operation – Oct. 2004 to Oct. 2005
- Silo 3 waste retrieval – June 2004
- Waste shipping – July 2004

Project status

- AWR - construction 100 percent complete
- Startup activities 50 percent complete
- Silos 1 and 2 – construction 85 percent complete
- Silo 3 - 82 percent complete

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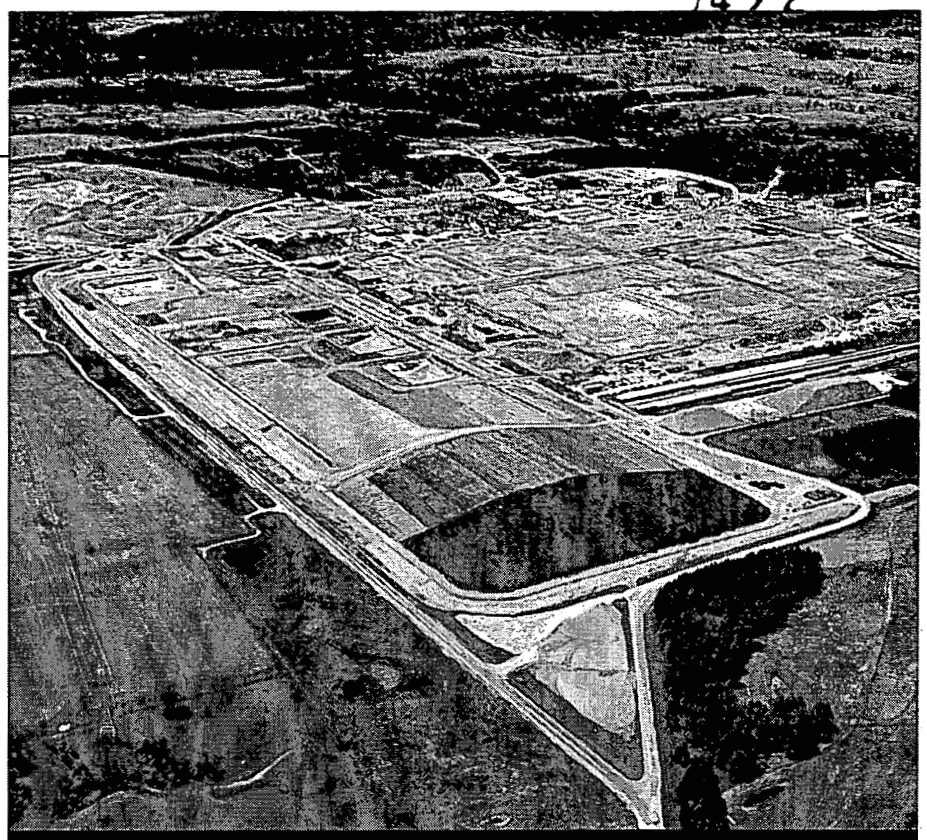
Soil and Disposal Facility Project

- Over 274,400 cubic yards of material was placed in the On-Site Disposal Facility in fiscal year 2004 bringing the cumulative total to 1.437 million cubic yards
- Waste placement in Cells 4, 5 and 6 continues – Cell 3 is at full capacity and Cells 7 and 8 are under construction
- Design plans for several restoration projects are now under review
- Excavation and concrete crushing in Areas 3A and 3B are complete, crews are now moving to other areas

Project Status

- 51 percent complete
- 57 percent of site certified clean



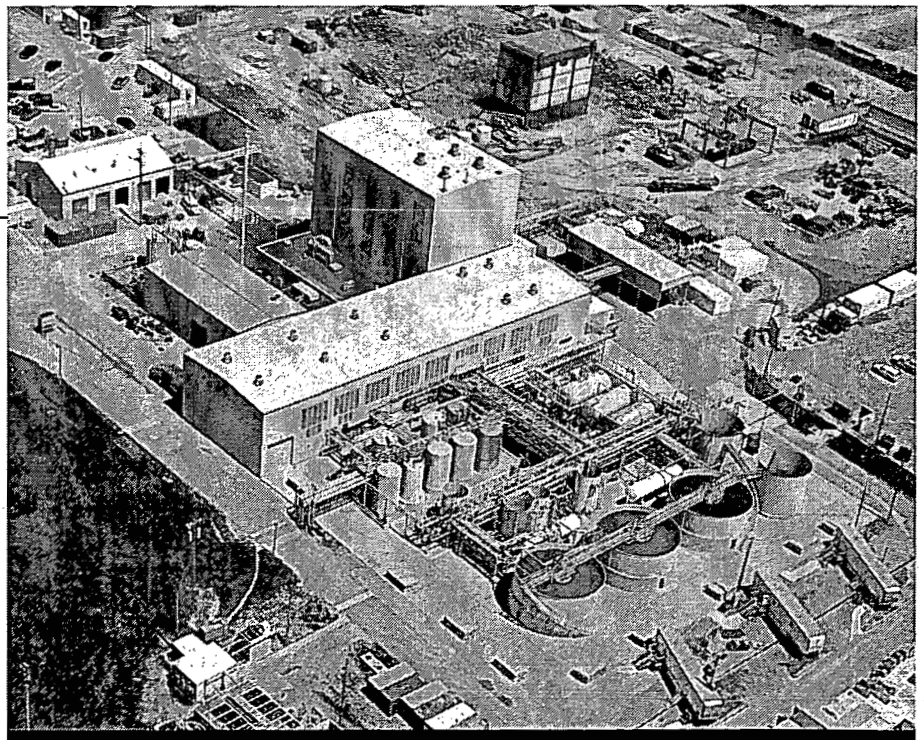
Cells 1 and 2 of the On-Site Disposal Facility are complete. Cell 3 is full with the final cover expected to be in place by the end of the 2004 construction season. 8070D-101

Aquifer Restoration/Waste Water Project

- Monthly average of uranium concentration in water discharged from the site to the Great Miami River for April was 22.5 ppb
- Extracted more than 14.9 billion gallons of water; treated 9.9 billion gallons of water; removed 6,023 pounds of uranium from aquifer since 1993
- There have been no storm water bypass days in fiscal year 2004
- The Advanced Wastewater Treatment Facility conversion is progressing. The site is working with the EPAs to establish a mutually agreeable path forward for the conversion and the associated implementation schedule

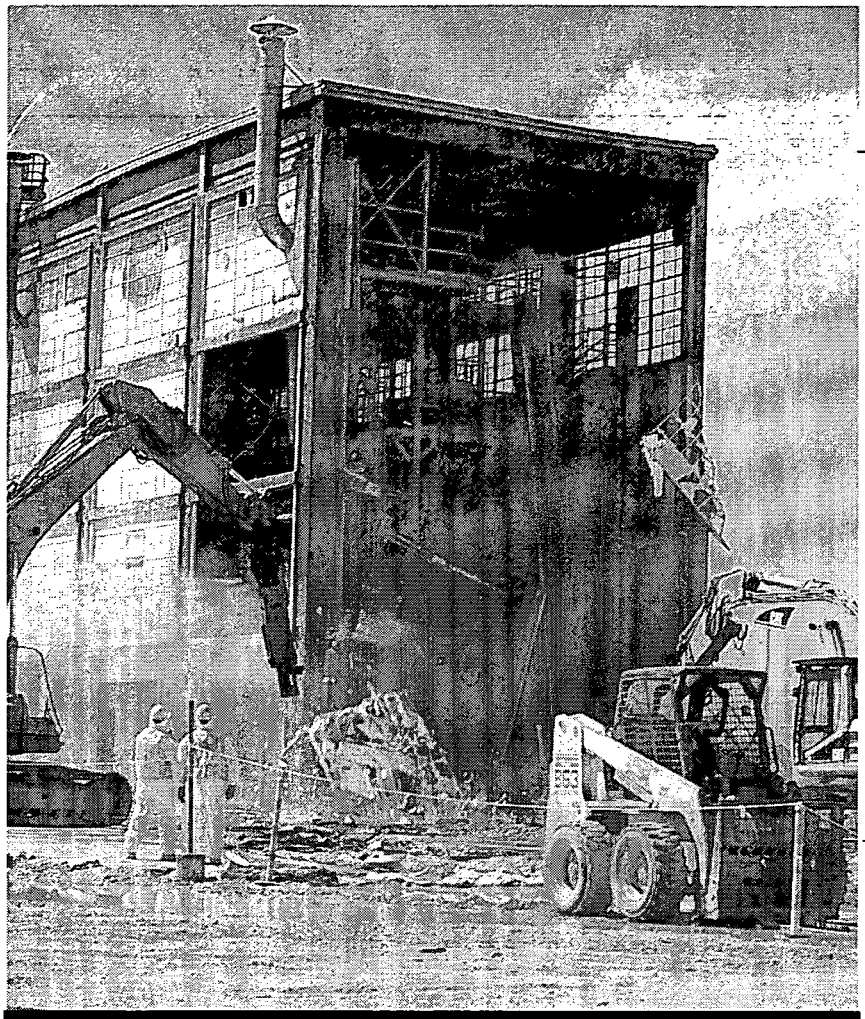
Project status

- 66 percent complete



The Advanced Wastewater Treatment Facility has removed 6,023 pounds of uranium from the aquifer since 1993. There have been no storm water bypass days in fiscal year 2004. 8070D-158

Project Update



A supervisor and a member of the Waste Acceptance Organization watch as operating engineers begin demolition of the final building in the Pilot Plant complex. 6254D-767

Decontamination & Demolition Project

- Demolition of the Laboratory complex was completed on March 16 with debris loadout completed on April 14
- Demolition of the Multi-Complex was completed on February 2 with debris loadout completed on April 22
- The Pilot Plant – the last of the former production buildings – came down on April 29 - debris loadout continues
- Sixteen structures have been dismantled since January 2004

Project status

- 63 percent complete

Waste Management Project

- In fiscal year 2004 a total of 19,641 cubic feet of low-level waste was shipped to the Nevada Test Site (NTS)
- Approximately 1,310 containers remain on site
- Project due to close out in 2004

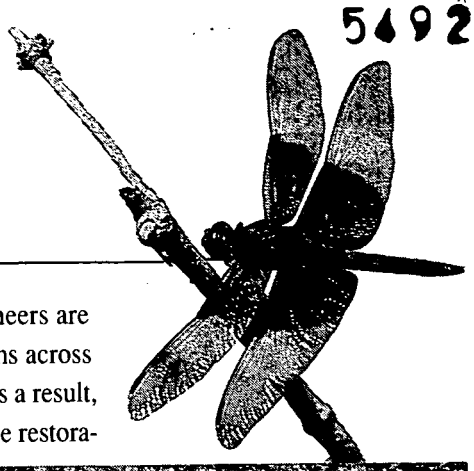
Project status

- 99 percent complete

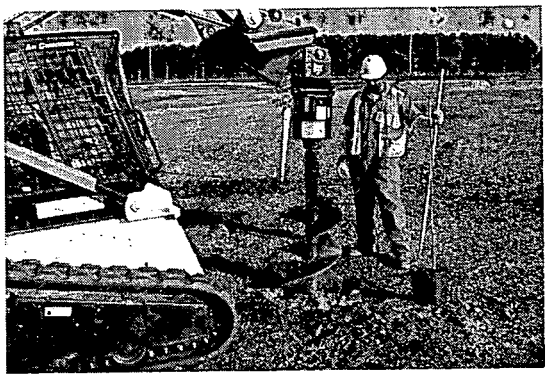
Fernald Shipments

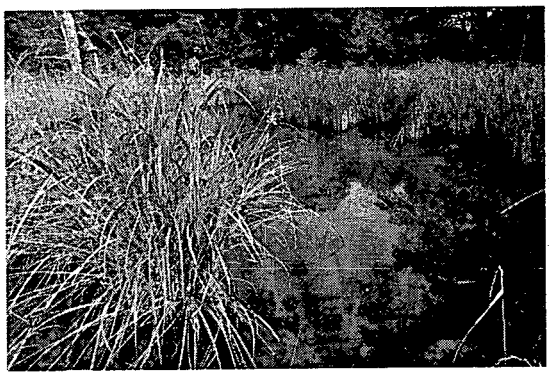
Contents	Shipment Mode	# of Shipments	01/04 thru 04/04 Current Period	FY04	Project Totals
Low-Level Waste:		109	3,941 cu. ft.	19,641 ft.	6.4 million cu. ft.
Mixed Waste:		8	1,045 cu. ft.	3,181 cu. ft.	27,092 cu. ft.
Liquid Mixed Waste		0	0 gal.	0 gal.	168,084 gal.
Nuclear product			**COMPLETE**		
Soil and Debris		N/A	101,088 in-place cubic yards	274,417 in-place cubic yards	1,437,002 in-place cubic yards
Waste Pits		10 unit trains (600 railcars)	64,445 tons	122,907 tons	734,907 tons

Restoration Progress

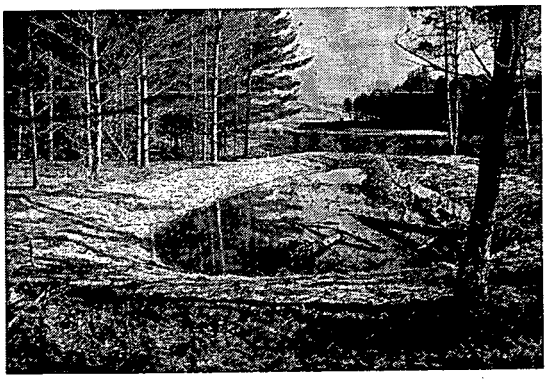


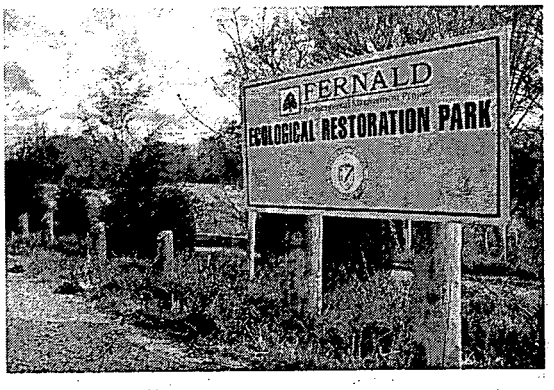
Along with cleanup workers excavating pits and tearing down buildings, site environmental engineers are creating thriving wetlands and developing the early stages of forest, prairie, and savanna ecosystems across the Fernald Closure Project. Natural resources have been affected by years of uranium production. As a result, DOE has worked with Ohio EPA and the U.S. Fish and Wildlife Service to develop a natural resource restoration plan. The goals of the program are to restore native vegetation and increase wildlife habitat. To do this, 12 different ecological restoration projects have been planned for the site. Once restoration is complete, over 900 acres of the site will be converted to wetlands and the early stages of forests and prairies. This fall, more than half of the site restoration projects will be either complete or in progress, including work in the former production area, the Borrow Area, the South Field, the Northern Woodlot and along Paddys Run Road.

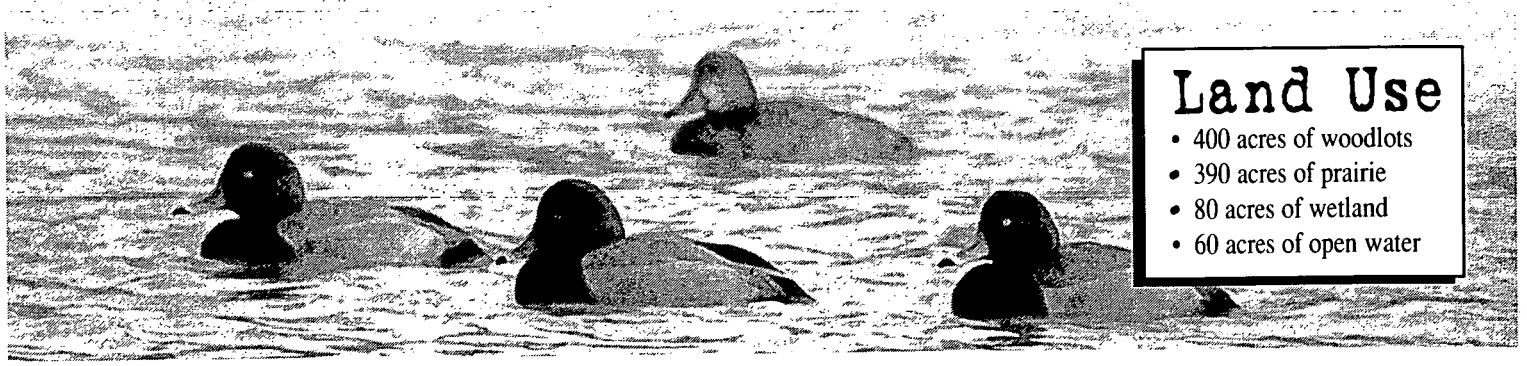




Monitoring of completed projects is showing that the goals of the restoration plan are being met. Wetlands created on site have demonstrated a 60 percent increase in the frequency of native vegetation compared to what was present prior to restoration. Wildlife use has increased as well, with 12 species of migratory and breeding waterfowl observed in site wetland restoration projects.







Land Use

- 400 acres of woodlots
- 390 acres of prairie
- 80 acres of wetland
- 60 acres of open water

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New documents added to the Public Environmental Information Center

Waste Pits Project

- OEPA Approval – Integrated Remedial Design Package for Area 6, Operable Unit 1, Stockpile Area

Soil and Disposal Facility Project

- USEPA Approval – Borrow Area Restoration
- DOE-Fernald Transmittal – Draft Certification Report for Area 1, Phase IV, Part 1
- USEPA Approval – Asbestos Contaminated Materials placement in OSDF
- DOE-Fernald Letter – Revised Placement of Asbestos Containing Material in Sealand Containers

Silos Projects

- OEPA Comments – Silo 3 Remedial Design/Remedial Action Package, Rev 2
- DOE Fernald Transmittal –Silo 3 Revised Transportation and Disposal Plan
- DOE Fernald Letter – Compliance of the Silo 3 Exhaust Stack Sampler with National Emission Standards for Hazardous Air Pollutants Sampler Location Requirements

Aquifer Restoration Project

- DOE Fernald Response to OEPA – Fourth Quarter 2003 Re-injection Operating Report
- OEPA Approval – 2003 Site Environmental Report
- DOE Fernald Letter – Path Forward for "Conversion" of the Advanced Wastewater Treatment Facility

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Fernald Report

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