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**Department of Energy**

**Ohio Field Office**
**Fernald Closure Project**
**175 Tri-County Parkway**
**Springdale, Ohio 45246**
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JUN 1 2006

Mr. James A. Saric, Remedial Project Manager
United States Environmental Protection Agency
Region V, SR-6J
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

DOE-0140-06

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

Dear Mr. Saric and Mr. Schneider:

**TRANSMITTAL OF THE OPERABLE UNIT 3 FACT SHEET - BENEFICIAL REUSE OF CLEAN BUILDINGS AND STRUCTURES AT THE UNITED STATES DEPARTMENT OF ENERGY - FERNALD CLOSURE PROJECT**

Reference: Letter, J. Saric to J. Reising, "Clean Concrete and Debris Beneficial Use", dated April 12, 2006

The Fernald Closure Project (FCP) requests your concurrence on the final version of the enclosed Operable Unit 3 Fact Sheet describing the beneficial reuse of clean buildings and structures at the FCP. The above referenced letter gave direction to the United States Department of Energy (USDOE) to submit the final version of the fact sheet. The Fact Sheet also includes an accompanying map identifying the planned configuration of the FCP at the onset of Legacy Management of the FCP as well as identifying key features discussed in the Fact Sheet.

As you know, members of the Fernald Citizens Advisory Board and the public have been briefed on the contents of this Fact Sheet and comments received have been favorable. This Fact Sheet has also been reviewed by the United States Environmental Protection Agency and the Ohio Environmental Protection Agency.

Upon your concurrence, this Fact Sheet will be issued for final distribution and placement in the administrative record.

If you have any questions or require additional information, please contact me at 513-648-3139.

Sincerely,

Johnny Reising

Johnny W. Reising
Director

Enclosure

cc w/ enclosure:

J. Desormeau, OH/FCP
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S. Helmer, ODH
B. Bilson, Fluor Fernald, Inc./MS1
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J. Homer, Stoller/MS12
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FERNALD
Closure Project

# FACT SHEET
# The Fernald Closure Project Identifies Clean Buildings and Structures for Beneficial Reuse Under Legacy Management

**May 2006**

## INTRODUCTION

The U.S. Department of Energy (DOE) is planning to achieve its Site Closure milestone for the Fernald Closure Project (FCP) in 2006 and, once site closure is formally achieved and approved, the site will be made available to the public for its official long-term use under DOE Legacy Management as an undeveloped park. During the winter of 2006, DOE worked with the U.S. Environmental Protection Agency (EPA) and the Ohio EPA to finalize the list of facilities and support structures that are needed to support the long-term use of the property as an undeveloped park, along with the institutional controls needed to ensure that the FCP's remedial actions conducted under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) remain protective over the long term, consistent with the final land use.

As part of this planning DOE, EPA, and Ohio EPA critically reviewed the FCP's remaining clean remediation support buildings and structures to identify economically feasible opportunities for reuse of the clean structures to satisfy the long-term needs of the site. This Fact Sheet identifies the specific buildings, infrastructure, and clean backfill materials available from the final dismantlement activities at the FCP that DOE, EPA, and Ohio EPA agree provide a meaningful opportunity to beneficially reuse existing items to enhance the FCP's ability to bring the site landscape into its final configuration for long-term use.

## BASIS FOR THE FACT SHEET DECISIONS

The approvals discussed in this Fact Sheet fall under Operable Unit 3 at the FCP. Operable Unit 3 is one of five CERCLA operable units and addresses the decontamination and dismantlement (D&D) of the site's historical uranium production facilities and newly constructed remediation facilities, and sets the requirements for the permanent disposal of the resultant demolition materials and waste inventories generated. The approvals permit selected clean remediation-related structures and buildings constructed as part of the FCP's CERCLA cleanup actions to remain at the site for beneficial use, as integral elements of the FCP's final land use configuration. They also permit the beneficial use of clean railroad ballast and clean concrete debris made available during the dismantlement of selected remediation-related structures, to be used as protective erosion-control backfill to enhance and stabilize new site drainage patterns and topographic contours in accordance with the site's Natural Resource Restoration Plan (NRRP).

*The Fernald Closure Project is in the final planning stages to achieve site closure in 2006, at which time the site will be made available for use as an undeveloped park.*

The specific buildings and structures addressed through these approvals are the Operable Unit 4 Silos Warehouse; the former Dissolved Oxygen Building (now a warehouse); the former Communications Building (now a warehouse); the Restoration Storage Shed; intact clean portions of the concrete pads beneath the Silos Treatment Facility; clean railroad ballast associated with the FCP's rail yard; and clean rubblized concrete debris generated during takedown of the above-grade portions of the Silos Treatment Facility. Based on their use during remediation, these particular items remained clean over their remediation life and are therefore candidates for beneficial use as part of the final land use plan.

Note that the clean buildings and structures covered under this approval were originally envisioned to be dismantled at the end of their one-time designated remediation use, as provided for in the 1994 Operable Unit 3 Record of Decision for Interim Remedial Actions at Operable Unit 3 (the IROD). The IROD set in motion the broadly encompassing dismantlement decisions for both the historical production-era uranium processing facilities at Fernald, and the forthcoming "to be constructed" remediation facilities needed to implement the FCP's approved remedial actions. As envisioned in the IROD (which addressed the D&D decisions) and the subsequent September 1996 Final Operable Unit 3 ROD (which addressed the disposal requirements for the D&D materials), all of the newly-constructed remediation support facilities that remained clean during the implementation phase were assumed to be "one time use" facilities that would be dismantled following use with the resultant clean debris disposed of in either the FCP's On-Site Disposal Facility (OSDF) or else a qualified commercial disposal facility that can accept the clean debris (e.g., the local Rumpke landfill).

It was not formally contemplated at the time of the RODs whether some of the newly-constructed remediation support structures that remained clean during operations could have a meaningful, economically viable long-term role as part of the final land use configuration, since the FCP's detailed land use, institutional controls, and accompanying natural resource restoration plans had not yet been developed or approved. The prevailing assumption therefore adopted in the 1994 and 1996 Operable Unit 3 RODs was that all newly constructed facilities, including those that remained clean, would be dismantled and disposed along with their contaminated counterparts.

However, now that the FCP's final land use infrastructure and institutional controls configurations are in their final stages of planning and design, it has become clear that the selected clean buildings and structures listed above have an economically viable role in achieving the final land use configuration. The following provision in the 1996 Final ROD permits a decision to beneficially reuse materials as an alternative to disposal, where economically feasible and environmentally appropriate:

> "Alternatives to Disposal: Permits the unrestricted/restricted release of materials, as economically feasible, for recycling, reuse, or disposal." (1996 Final ROD, p.30).

The purpose of this Fact Sheet is to therefore communicate the decisions to permit the beneficial use of selected clean structures and materials as part of the FCP's future long-term land use, consistent with the 1996 Final Operable Unit 3 ROD. Under CERCLA, there are three distinct categories of post-ROD changes, and EPA has determined that the approval to permit the long-term use of the clean structures and backfill materials rather than dispose of them as clean debris in the OSDF or other commercial facility is considered a *Non-Significant (or minor) Post-ROD Change*. As such, it requires a memorandum to EPA's post-ROD site file and, if the lead agency chooses, documentation of the non-significant changes for the public in a Fact Sheet. The approval to permit the beneficial use of the clean structures and backfill materials does not fundamentally alter the FCP's cleanup approach, which remains compliant with the statutory requirements of Section 121 of CERCLA.

This Fact Sheet will become part of the CERCLA Administrative Record for the FCP, which is available for viewing at the following locations:

Public Environmental Information Center
Fernald Closure Project Site
10995 Hamilton-Cleves Highway
Harrison, Ohio 45030

EPA Region V
EPA, SRF-5J
77 W. Jackson Blvd.
Chicago, IL 60604

## Site History

The FCP is a 1,050-acre government-owned former uranium processing facility located near Cincinnati, Ohio that is undergoing environmental restoration as a federally funded CERCLA National Priorities List (NPL) or Superfund site. The Atomic Energy Commission (AEC), a predecessor to DOE, established the uranium Feed Materials Production Center (FMPC) at the site in the early 1950s. In 1951, National Lead Company of Ohio contracted with the AEC to serve as the Management and Operations Contractor for the facility, a contractual relationship that lasted until January 1986. Westinghouse Materials Company of Ohio assumed the follow-on management responsibilities for the site in 1986. Production operations at the FMPC ceased in 1989, and the production mission of the facility formally ended in 1991 at which point mission efforts were redirected to facility shutdown and environmental cleanup.

In 1991 the site was renamed the Fernald Environmental Management Project (FEMP) to reflect the site's revised mission from production operations to cleanup. In December 1992, the Fernald Environmental Restoration Management Company (then FERMCO; now Fluor Fernald) assumed responsibility for the site as the Environmental Restoration Management Contractor for DOE. The FEMP was renamed the Fernald Closure Project (FCP) in January 2003.

The primary mission of the FMPC during its 37 years of operation was the processing of uranium feed materials to produce high purity uranium metal products that were used by other DOE or U.S. Department of Defense facilities as part of the nation's weapons program. Manufacture of the uranium metal products occurred in a concentrated 140-acre area of the site known as the Production Area, where 255 production, storage, support, and administrative buildings and structures were situated. During the 37 years of production operations, nearly 500 million pounds of uranium metal products were produced.

**Regulatory History and Cleanup Strategy.** The initial cleanup studies at the FCP began in 1986, in accordance with a Federal Facility Compliance Agreement (FFCA) between DOE and EPA to cover environmental impacts associated with ongoing site operations. The facility was formally placed on the Superfund NPL in 1989, when production operations

ceased. The FFCA was amended in April 1990 by a Consent Agreement that formalized the milestone dates for the cleanup studies and provided for implementation of removal actions. The Consent Agreement was amended in September 1991, which provided for the current operable unit concept whereby the FCP was divided into five operable units to promote a more structured and expeditious cleanup.

The five operable units are:

- *Operable Unit 1 – The Waste Pits.* Waste Pits 1 through 6, the clearwell, burn pit, berms, caps, liners, and affected soil residing within the operable unit boundary.
- *Operable Unit 2 – Other Waste Units.* The FCP's flyash piles, South Field disposal area, lime sludge ponds, Solid Waste Landfill, and affected soil residing within the operable unit boundary.
- *Operable Unit 3 – The Former Production Area.* The above-grade and at- and below-grade physical facilities and structures, containerized legacy waste inventories, remaining uranium products, and other equipment impacted during Fernald's former production activities. Operable Unit 3 also includes the new remediation facilities and structures to support the site-wide CERCLA remedial actions.
- *Operable Unit 4 – The Waste Silos.* Contents of Silos 1&2 and Silo 3 (Silo 4 has remained empty); the silos structures, berms, decant sump tank system, and affected soil residing within the operable unit boundary.
- *Operable Unit 5 – Environmental Media.* Affected groundwater, surface water, sediment, and all affected soil outside the boundaries of Operable Units 1, 2, and 4; also includes biota.

Over the period 1994 to 1996, DOE and EPA signed the RODs for the five operable units in cooperation with the Ohio EPA and the Fernald Citizen's Advisory Board. The remedies contained in the RODs are summarized as follows:

- The D&D and disposal of all of the above-grade and at- and below-grade Production Area facilities, equipment, and support structures, including the new remedial action facilities constructed to support cleanup.
- The on-site disposal of contaminated soils, D&D debris, and the Operable Unit 2 wastes that meet the FCP's on-site OSDF waste acceptance criteria.
- The off-site shipping and dispositioning of the contents of Silos 1&2, Silo 3, the waste pit materials, nuclear product inventories, containerized low-level and mixed waste inventories, and the quantities of soil, D&D debris, and Operable Unit 2 wastes that do not meet OSDF waste acceptance criteria.
- The extraction and treatment of contaminated groundwater to restore the contaminated portions of the Great Miami Aquifer to meet Safe Drinking Water Act requirements.
- Natural resource restoration of the on-property area and installation of required institutional controls to achieve the intended final land use as an undeveloped park following completion of the site wide remedial actions and achievement of final remediation levels (FRLs).

At completion of the ROD requirements for cleanup summarized above, approximately 975 acres of the 1,050-acre FCP property will be restored and available for use as an undeveloped park and approximately 75 acres will be dedicated to the final footprint of the closed and capped OSDF. The affected portions of the Great Miami Aquifer will be restored to drinking water standards at the completion of groundwater restoration.

**2006 Site Closure Milestone.** As the major step in the completion of cleanup actions summarized above, DOE is aiming to achieve "site closure" in calendar year 2006. Site closure is defined by DOE as completion of the all of the FCP's ROD-required cleanup actions, with the exception of Great Miami Aquifer restoration, which is expected to continue until approximately the year 2022, based on current computer modeling projections. Once DOE's site closure milestone is achieved and EPA agrees the appropriate CERCLA documentation requirements are met, the FCP property will be officially made available for use by the public under its intended long-term use.

## Beneficial Reuse Decisions

This section of the Fact Sheet summarizes the three approved reuse decisions to permit the beneficial reuse of existing clean structures and backfill materials as part of the FCP's final land use planning. As a pre-condition for this approval, DOE and EPA have agreed on the types of characterization and documentation activities (including physical sampling and analysis, as necessary) to verify and document that the individual structures and backfill materials have remained clean during their original use prior to their future incorporation into the final land use plan.

**Reuse Decision No. 1: Beneficial Conversion of Clean Buildings for Long-Term Use**

Under this decision, four existing clean remediation support buildings (see attached figure) will be left onsite for incorporation into the final land use configuration. The existing buildings and their intended future use as part of the Legacy Management infrastructure are:

- ***The former Silos Warehouse*** (Building 94K). This existing remediation support building remained clean during Silos Treatment Facility remediation operations and will be converted to the FCP's Multi-Use Educational Facility (MUEF) that has been agreed to between DOE and community stakeholders. The Silos Warehouse will be refurbished after completion of Site Closure to function as the MUEF supporting ongoing Legacy Management activities at the site. Utilities in, and adjacent to, the Silos Warehouse, will be preserved and enhanced in the future (as specified by the final facility design) to support refurbishment and operation of the MUEF. In an effort to make the MUEF more environmentally friendly, planned future enhancements may include construction of a functional wetland biofiltration system to treat sanitary wastewater generated from the MUEF.
- ***The former Dissolved Oxygen Building*** (Building 18P). This existing building remained clean during aquifer restoration operations and will be converted to a new warehouse to house equipment and supplies for care taking and maintenance of the FCP property under Legacy Management.
- ***The former Communications Building*** (Building 23B). This building was used for administrative support functions and remained clean during remediation of the FCP. The building will be converted to a new warehouse to house equipment and supplies for care taking and maintenance of the

FCP property under Legacy Management.

- ***The Restoration Storage Shed*** (Building 12G). This building was used to house care taking and maintenance equipment and supplies during natural resource restoration activities at the FCP, and will continue in that function under Legacy Management.

By utilizing these existing clean buildings for the above stated purposes, the FCP will not need to construct new facilities to achieve the same benefit.

**Reuse Decision No. 2: Beneficial Utilization of the Intact Concrete Pads Beneath the Silos Treatment Facility**

Under this decision, clean intact portions of the concrete pads beneath the Silos Treatment Facility and attendant Tank Transfer Area (TTA) Building will be converted and utilized as long-term parking areas to support public access to the MUEF and other reaches of the site over the long term. The portions of the concrete pads that will not be used as parking will be dismantled and the clean concrete will be utilized as part of the beneficial backfill material described under Reuse Decision No. 3 below.

The attached figure shows the location of the portions of the pads that will be utilized as parking areas. As mentioned previously, the pads will be characterized per the technical agreements between DOE and EPA to ensure that they are clean for their intended use. All portions of the pads that do not meet the clean beneficial use threshold will be dismantled and disposed of per the Operable Unit 3 final ROD disposal requirements for contaminated materials. The surface of the pads will be paved to support their permanent use under Legacy Management, and they will be aesthetically melded into the surrounding landscape consistent with their function of supporting access to the MUEF.

Leaving the pads in place will enhance the restored FCP by providing a valuable support area for the MUEF, whereby they can be used for outdoor educational displays, viewing areas for the restored areas on site, and a parking area for the MUEF.

**Reuse Decision No. 3: Beneficial Reuse of Clean Rubblized Concrete and Railroad Ballast as Clean Hard Fill**

Under this decision, the clean portions of the pads that are not utilized as parking areas, clean excess railroad ballast from the FCP's rail yard, and the clean concrete and/or reinforced concrete from the dismantlement of other above-grade portions of the Silos Treatment Facility and attendant TTA Building will be sized and beneficially reused as clean hard fill to provide engineered erosion control for restored area/ drainage topography constructed as part of the NRRP, and to enhance aquatic habitat at selected key areas of the site. This is allowed under the OAC Rule 3745-400-05(A).

The restoration of the Southern Waste Units (SWU) was completed in 2002. As collectively agreed upon by the Natural Resource Trustees and DOE during development of the NRRP, the SWU design plan called for leaving a large, eroded area on the northern portion of the project area unchanged during restoration (see attached figure). Although the NRRP does not contain a specific requirement to fill the area, further evaluation has identified an opportunity to stabilize the area and create ideal habitat for the endangered Cave Salamander and other amphibians and reptiles through the beneficial reuse of properly placed layers of clean concrete debris. Creation of the amphibian habitat at the SWU would require the use of all clean concrete debris that can be made available.

In addition, areas such as the excavated Solid Waste Landfill, Storm Water Management (SWM) Pond, and Fire Training Facility are within areas that provide additional opportunities for natural resource enhancement. While there is no specific requirement in the NRRP for new wetlands in the Solid Waste Landfill and the SWM Pond areas, a beneficial reuse of excess stone or ballast as backfill materials could allow for the conversion of the existing deep excavations to wetlands (see attached figure). This proposal would create additional wetlands not currently planned as part of the final restoration of the FCP. The remediation of the Solid Waste Landfill and the SWM Pond areas has left depressions too deep to support wetland hydrology. Excess soil to fill all of the depressions will not be available in sufficient quantity to convert the deep excavations to wetlands. However, excess stone, coupled with a clay liner, could be used to build up the bottom elevations of the depressions to create more wetland acreage.

## Next Steps

As part of the closure contract, DOE will prepare the buildings and structures for their beneficial reuse under the follow-on post-closure Legacy Management phase, and have all of the clean hard fill materials in place as necessary prerequisites for completion of the 2006 Site Closure milestone.

EPA and Ohio EPA will conduct oversight of the building preparation and clean hard fill placement activities to ensure that the reuse opportunities are conducted in accordance with the requirements of the appropriate design plans and regulatory approval documents.

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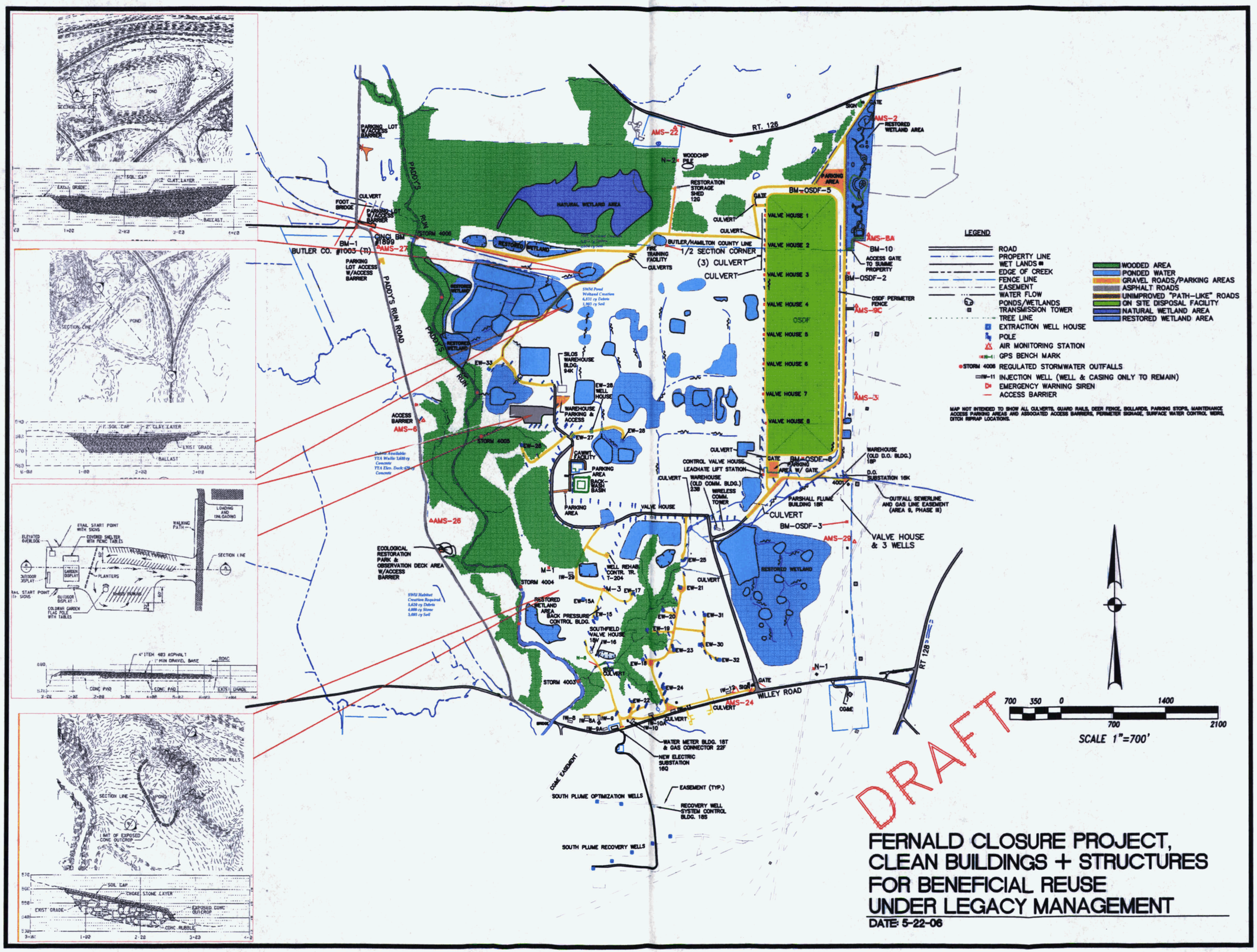
RT. 126
PADDY'S RUN ROAD
PADDY'S RUN
NATURAL WETLAND AREA
RESTORED WETLAND
PARKING LOT W/ACCESS BARRIER
FOOT BRIDGE
CULVERT
BM-1
BUTLER CO. #1003 (T1)
CINCI BM #1899
AMS-27
STORM 4005
STORM 4004
STORM 4003
AMS-22
N-2
WOODCHIP PILE
RESTORATION STORAGE SHED 12G
BUTLER/HAMILTON COUNTY LINE
1/2 SECTION CORNER
(3) CULVERT
CULVERT
FIRE TRAINING FACILITY
CULVERTS
SILOS WAREHOUSE BLDG. 94K
EW-33
EW-28 WELL HOUSE
WAREHOUSE PARKING & ACCESS
EW-27
EW-26
EW-28
CANWT FACILITY
PARKING AREA
BACK-WASH BASIN
ACCESS BARRIER
AMS-6
AAMS-26
ECOLOGICAL RESTORATION PARK & OBSERVATION DECK AREA W/ACCESS BARRIER
M-1
IW-29
M-3
EW-17
EW-15A
EW-15
RESTORED WETLAND AREA
BACK PRESSURE CONTROL BLDG.
SOUTHFIELD VALVE HOUSE 18V
IW-16
N-6
EW-18
EW-24
EW-22
IW-12
IW-8
IW-8A
IW-9
IW-9A
IW-10A
IW-10
WELL REHAB CONTR. TR. T-204
EW-25
EW-21
EW-20
EW-19
EW-23
EW-31
EW-30
EW-32
VALVE HOUSE
WIRELESS COMM. TOWER
CONTROL VALVE HOUSE
LEACHATE LIFT STATION
WAREHOUSE (OLD COMM. BLDG.) 23B
BM-OSDF-6
PARKING AREA W/ GATE
BM-OSDF-5
GATE
VALVE HOUSE 1
VALVE HOUSE 2
VALVE HOUSE 3
VALVE HOUSE 4
VALVE HOUSE 5
VALVE HOUSE 6
VALVE HOUSE 7
VALVE HOUSE 8
OSDF
PARKING AREA
AMS-2
RESTORED WETLAND AREA
AMS-8A
BM-10
ACCESS GATE TO SUMME PROPERTY
BM-OSDF-2
OSDF PERIMETER FENCE
AMS-9C
AMS-3
WAREHOUSE (OLD D.O. BLDG.) 18P
D.O. SUBSTATION 16K
OUTFALL SEWERLINE AND GAS LINE EASEMENT (AREA 8, PHASE III)
PARSHALL FLUME BUILDING 18R
BM-OSDF-3
AMS-29
VALVE HOUSE & 3 WELLS
RESTORED WETLAND
N-1
CG&E
RT 128
WILLEY ROAD
AMS-24
WATER METER BLDG. 18T & GAS CONNECTOR 22F
NEW ELECTRIC SUBSTATION 16Q
EASEMENT (TYP.)
RECOVERY WELL SYSTEM CONTROL BLDG. 18S
SOUTH PLUME OPTIMIZATION WELLS
SOUTH PLUME RECOVERY WELLS
CG&E EASEMENT
LEGEND
ROAD
PROPERTY LINE
WET LANDS
EDGE OF CREEK
FENCE LINE
EASEMENT
WATER FLOW
PONDS/WETLANDS
TRANSMISSION TOWER
TREE LINE
EXTRACTION WELL HOUSE
POLE
AIR MONITORING STATION
GPS BENCH MARK
STORM 4008 REGULATED STORMWATER OUTFALLS
IW-11 INJECTION WELL (WELL & CASING ONLY TO REMAIN)
EMERGENCY WARNING SIREN
ACCESS BARRIER
WOODED AREA
PONDED WATER
GRAVEL ROADS/PARKING AREAS
ASPHALT ROADS
UNIMPROVED "PATH-LIKE" ROADS
ON SITE DISPOSAL FACILITY
NATURAL WETLAND AREA
RESTORED WETLAND AREA
MAP NOT INTENDED TO SHOW ALL CULVERTS, GUARD RAILS, DEER FENCE, BOLLARDS, PARKING STOPS, MAINTENANCE ACCESS PARKING AREAS AND ASSOCIATED ACCESS BARRIERS, PERIMETER SIGNAGE, SURFACE WATER CONTROL WEIRS, DITCH RIPRAP LOCATIONS.
700 350 0 1400
700 2100
SCALE 1"=700'
DRAFT
FERNALD CLOSURE PROJECT,
CLEAN BUILDINGS + STRUCTURES
FOR BENEFICIAL REUSE
UNDER LEGACY MANAGEMENT
DATE: 5-22-06