

BORROW AREA RESTORATION PROJECT CONCEPTUAL RESTORATION PLAN

**FERNALD CLOSURE PROJECT
FERNALD, OHIO**



MARCH 2004

U.S. DEPARTMENT OF ENERGY

**20911-PL-0004
REVISION A
DRAFT**

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Figure 1 Borrow Area Restoration Project Conceptual Restoration Plan

ACRONYM LIST

A1PII	Area 1, Phase II Certification Area
BAR	Borrow Area Restoration
DOE	U.S. Department of Energy
FCP	Fernald Closure Project
LM	Legacy Management
NRRDP	Natural Resource Restoration Design Plan
NRT	Natural Resource Trustees
OSDF	On-Site Disposal Facility
PPDD	Pilot Plant Drainage Ditch
STP	Sewage Treatment Plant

1.0 PURPOSE OF CONCEPTUAL RESTORATION PLAN

The main objective of this Conceptual Restoration Plan is to provide a conceptual view of how the Borrow Area will be restored to native vegetative communities: predominantly wet prairie, marsh, and an upland prairie ecosystem with a surrounding buffer of upland savannas (DOE, 2002). This plan is intended to provide the Fernald Natural Resource Trustees (NRTs) and the Regulatory Agencies the opportunity to review and comment on DOE's restoration approach for the Borrow Area Restoration (BAR) Project. It is important that the NRTs and Agencies provide input to this plan before the development of the full Natural Resource Restoration Plan (NRRP). This Conceptual Restoration Plan will outline the general restoration activities planned for the project area and the schedule for implementation. Once reviewed by the Agencies and NRTs, input received on this conceptual plan will be used in the development of the NRRDP.

This conceptual plan will not be revised or reissued. This conceptual plan does not provide planting patch tables and seeding tables, although the same techniques and species used in previous restoration projects are planned for this project. Details such as the monitoring approach and planned maintenance activities are not included in this conceptual plan. The NRRDP will provide additional detail on grading, planting and monitoring and address the input received on this conceptual plan.

2.0 BORROW AREA RESTORATION PROJECT BOUNDARY

The BAR Project covers approximately 80 acres in the Southeastern portion of the Fernald Closure Project (FCP). The BAR Project area extends to the FCP property boundary to the South and the East. The project area extends west to the FCP South Access Road. To the North, the project is bounded by three inter-connected roads: the North Entrance Road (from the South Entrance Road to the Emergency Access Road), the east-west portion of the Emergency Access Road, and the northern portion of the Borrow Area Haul Road. The former Sewage Treatment Plant (STP) footprint, the existing trailer complex and associated parking area to the south of the STP footprint, and the existing gravel construction laydown area are not included in the scope of the BAR Project. The restoration of these areas will be addressed in the OSDF Perimeter Restoration Project.

Generally, the BAR Project covers a portion of the Area 1, Phase II Certification Area. Certification of Area 1, Phase II was completed in 2000 (DOE, 2000). There was some excavation of soil in the Area 1, Phase II due to lead contamination in the Former Trap Range. The removal of impacted material was not required in the remainder of the restoration project area. All ongoing borrow activities are being performed as clean work.

3.0 BORROW AREA RESTORATION SCHEDULE

The scheduled target date for submittal of the Final NRRP to the NRTs and Agencies will be May 28, 2004, assuming comments on the Conceptual Restoration Plan have been received from the NRTs and Agencies before April 30, 2004. This will allow adequate time for the resolution of NRT and Agency comments on this conceptual plan. Pre-design sampling will be conducted across the project area to the degree possible in the Spring 2004 to support development of the Final NRRDP.

Grading and seeding was completed in Subareas 1 and 2 and along the western perimeter of Borrow Area in 2003 (DOE, 2002). Further planting activities in the BAR Project are scheduled to start after October 1, 2004. Initial planting work will focus on the shrub patches to be installed in Subareas 1 and 2 (Figure 1). Planting of the Savanna Patch and Forest Patch on the Southern Portion of the Borrow Area outside Subareas 7 & 8 will also be initiated after October 1, 2004 (Figure 1). Planting activities, in Subareas 1 and 2 and the forest and savanna patches on the perimeter of the Borrow Area, are scheduled for completion in the Spring of 2005.

Borrow and stockpiling activities in Subareas 3, 4, and 8 are scheduled to be complete in the Fall of 2004. Grading, seeding and planting activities are planned from late Fall 2004 into the Spring of 2005 depending on borrow activity schedule completion. Planting in these areas will be completed in the Spring of 2005 to the extent possible. Planting activities not completed in the Spring of 2005 will be completed in the Fall of 2005.

Borrow and stockpiling activities in the Subareas 5, 6 and 7 will be ongoing until late calendar year 2005 into early 2006. Grading, seeding and planting activities will be complete as early as possible after borrow activities are complete. Attempts will be made to complete restoration activities (particularly planting of shrub patches) in all available areas in the Fall of 2005. Remaining areas will be graded and seeded in the Spring of 2006.

4.0 SCOPE OF RESTORATION WORK

4.1 FOOTPRINT OF BORROW AREA

The focus of this section will be the footprint of the borrow area, including Subareas 1 – 8, from which soil has been borrowed to support construction activities. The restoration of this area will include grading activities to create additional ponds and shallow pools to function as wetlands and vernal pools similar to those already created in Subarea 1 and 2 (Figure 1). The design for the ponds and pools in the NRRDP will include an extended shallow sloping shelf on at least one side to provide a greater proportion of shallow water to better support shorebirds and amphibians other than bullfrogs (U.S. F&WS 2002). Areas around the ponds and swales will be constructed with variation in the micro-topography to further enhance water retention. Further detail on the grading activities will be provided in the NRRDP (e.g., as built on existing features, pond locations, flows, plant patches).

Revegetation of this portion of the BAR Project will include seeding with native grasses, the installation of wetland plugs and the installation of shrub patches appropriate for the hydrologic conditions. A total of 1,300 shrubs will be installed throughout this portion of the BAR Project. Shrubs will be as evenly distributed as possible throughout the project. A complete listing of the shrubs and more information on the layout of shrub patches will be included in the Final NRRP.

4.2 PERIMETER OF BORROW AREA

The restoration of the Southern perimeter of the BAR Project will include the installation of additional trees and shrubs to expand and enhance the existing Aesthetic Barrier (Figure 1). A mowed buffer area will remain between the Aesthetic Barrier and Willey Road to maintain clearance under the power lines and a safe zone of visibility along Willey Road. Since mowing will occur on an ongoing basis along Willey Road, attempts will not be made to convert existing grasses to prairie grasses as part of restoration.

The area on the Eastern perimeter of the BAR Project will include the installation of a Savanna Patch over more than 6 acres of the project (Figure 1). The existing fuel oil pipeline easement will be seeded, but will not be disturbed by any planting or grading activities. The remaining area along the eastern perimeter of the FCP will be converted from the existing pasture grass to prairie grasses through repeated applications of herbicide and seeding. A mowed buffer strip of pasture grass will be maintained along the eastern fence line through ongoing mowing to serve as a buffer to the adjacent property and potential firebreak in the event future burning of the area occurs.

Portions of the haul road and the existing gravel road will be maintained throughout restoration for access and maintenance purposes. Prior to the closure date, the road will be graded to promote drainage; and the area will be seeded to upland prairie, if it is not required to support Legacy Management.

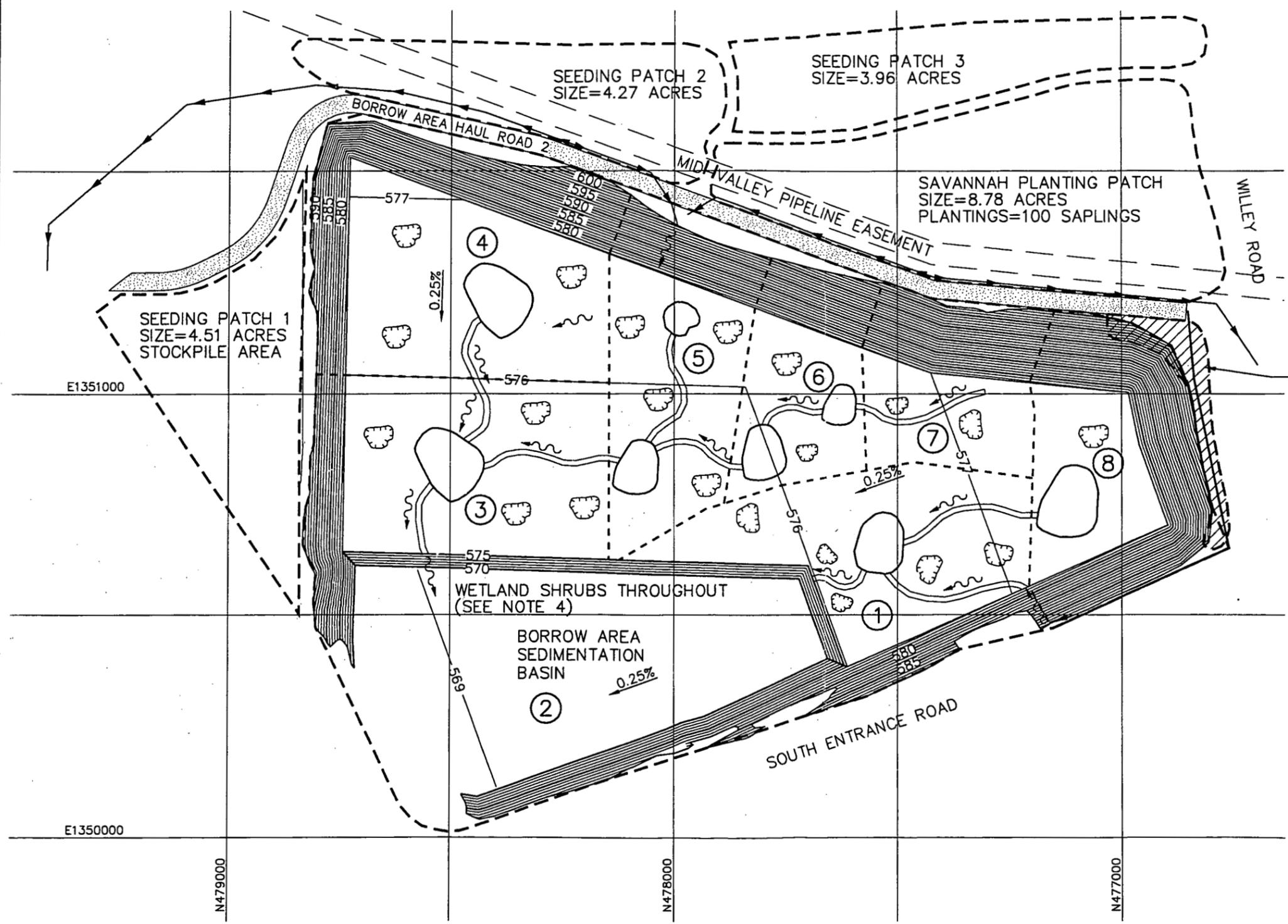
The topsoil stockpile area (Figure 1) on the northern perimeter of the BAR Project will be seeded to upland prairie following final grading of the area. Final elevations and topography will be dependent upon the amount of topsoil left on the site following Borrow Area operations.

BORROW AREA RESTORATION PROJECT CONCEPTUAL RESTORATION PLAN

0' 1/2' 1' 2' 3' 4' 5' 6'

N
5392
LEGEND

- 585 — FINISHED GRADE ELEVATION (FEET)
- - - - - PROPERTY BOUNDARY
- → → DRAINAGE CHANNEL
- ~ ~ ~ SWALE
- ☁ DEPRESSION
- SMALL POND
- FLOW DIRECTION
- ① BORROW AREA SUB-AREA



FOREST PATCH
SIZE=.79 ACRES
PLANTINGS=
65 SAPLINGS,
230 SCRUBS

- NOTES:
- ELEVATIONS ARE IN FEET ABOVE SEA LEVEL DATUM. (NOTE: "SEA LEVEL DATUM" REFERS TO NATIONAL GEODETIC VERTICAL DATUM (NGVD).)
 - SUBAREA BOUNDARIES ARE APPROXIMATE AND MAY BE ADJUSTED TO ENABLE EXCAVATION OF MATERIALS THAT CONFORM WITH THE SPECIFICATIONS.
 - THE LOCATION AND SIZE OF THE INTERIM RESTORATION FEATURES SHOWN ARE APPROXIMATE. FINAL LOCATION AND SIZE WILL BE ESTABLISHED IN THE FIELD BY THE CONSTRUCTION MANAGER BASED ON FIELD CONDITIONS AT THE TIME OF INTERIM RESTORATION.
 - WETLAND SHRUB PATCH SIZE = 46.12 ACRES, PLANTINGS = 1300 SHRUBS (DISTRIBUTED THROUGHOUT EACH SUBAREA).
 - FOREST PATCH WILL EXPAND AND ENHANCE EXISTING AESTHETIC BARRIER.
 - HAUL ROAD WILL BE RETAINED FOR MAINTENANCE ACCESS/POTENTIAL FUTURE TRAILS.

0 250
SCALE IN FEET

9

NO.	REVISIONS	DATED	BY	APPD.	NO.	REVISIONS	DATED	BY	APPD.	REF. DWG. NO.

NOTE:
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CONSTRUCTION MANAGEMENT CONTROL.
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APPROVALS	
CIVIL & STR.	SAFETY ENG.
ELECTRICAL	MAINTENANCE
ENGINEER	FIRE PROTECT.
INSTRUMENT	WASTE MANAGE
MECHANICAL	SECURITY
	PROJECTS
CHECKED	
APPROVED	

Fernald Closure Project
FLUOR FERNALD, INC.
U.S. DEPARTMENT OF ENERGY

**BORROW AREA
RESTORATION PROJECT**
CONCEPTUAL
RESTORATION DESIGN
FIGURE 1

REFERENCES

U.S. Department of Energy, 2002, "Natural Resource Restoration Plan," Final, Fernald Environmental Management Project, DOE, Fernald Area Office, Cincinnati, Ohio.

U.S. Department of Energy, 2000, "Certification Report for Area 1, Phase II – Part One," Final, Fernald Environmental Management Project, DOE, Fernald Area Office, Cincinnati, Ohio.

U.S. Department of Energy, 2002, "Grading Plan and Accelerated Restoration Plan of the On-Site Disposal Facility Borrow Area," Fernald Environmental Management Project, DOE, Fernald Area Office, Cincinnati, Ohio

Letter, Bill Kurey to J. Reising, 2002, "Comments on the Grading Plan and Accelerated Restoration Plan of the On-Site Disposal Facility Borrow Area," U.S. Fish and Wildlife Service, Reynoldsburg, Ohio (US F&WS, 2002).