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**REMEDIAL ACTION WORK PLAN FOR THE ON-SITE DISPOSAL FACILITY  
- 2502-WP-0019**

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WORK PLAN

# REMEDIAL ACTION WORK PLAN FOR THE ON-SITE DISPOSAL FACILITY

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT  
FERNALD, OHIO

**FOR  
INFORMATION  
ONLY**



OCTOBER 1996

U.S. DEPARTMENT OF ENERGY  
FERNALD AREA OFFICE

2502-WP-0019

FINAL

000001

**REMEDIAL ACTION WORK PLAN****D** ON-SITE DISPOSAL FACILITY

October 1996

**R** Revision G**United States Department of Energy****Fernald Environmental Management Project****A**  
**Fernald, Ohio***Prepared By:***F**

Fernald Environmental Restoration Management Corporation

Fernald, Ohio

*Prepared For:***T**

U.S. Department of Energy

Fernald Area Office

Under Contract DE-AC05-92OR21972

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- Permitting Plan and Substantive Requirements for the On-Site Disposal Facility
- Air Monitoring Plan
- Cultural Resource Unexpected Discovery Plan
- Borrow Area Management and Restoration Plan
- Surface Water Management and Erosion Control Plan
- Construction Quality Assurance Plan
- Impacted Material Placement Plan
- System Plan
- Groundwater Monitoring Plan
- Post-Closure Care and Inspection Plan

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## LIST OF ACRONYMS AND ABBREVIATIONS

A/E	Architect/Engineer
ACA	Amended Consent Agreement (1991)
AMS	air monitoring system
ARAR	Applicable or Relevant and Appropriate Requirement
CAT	Construction Acceptance Testing
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CM	Configuration Management
CCM	Construction Contracts Manager
CRP	Community Relations Plan
CQA	Construction Quality Assurance
CQC	Construction Quality Control
DOE	United States Department of Energy
DOE-FN	Department of Energy - Fernald Area Office
EMP	Environmental Monitoring Program
EPA	United States Environmental Protection Agency
FAR	Federal Acquisition Requirements
FEMP	Fernald Environmental Management Project
FERMCO	Fernald Environmental Restoration Management Company
FFCA	Federal Facility Compliance Agreement
FS	feasibility study
H&S	Health & Safety
IEMP	Integrated Environmental Monitoring Plan
IFB	Invitation for Bids
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NEPA	National Environmental Policy Act
NPDES	National Pollutant Discharge Elimination System
OEPA	Ohio Environmental Protection Agency
OU	Operable Unit (as specified by either OU1, OU2, OU3, OU4, OU5)
OSDF	On-Site Disposal Facility
OSWER	Office of Solid Waste and Emergency Response
PSHSRM	Project Specific Health & Safety Requirements Matrix
QA	Quality Assurance
QC	quality control
RA	remedial action
RAWP	Remedial Action Work Plan
RCRA	Resource Conservation and Recovery Act
RD	remedial design
RDWP	Remedial Design Work Plan
RD/RA	Remedial Design/Remedial Action

## LIST OF ACRONYMS AND ABBREVIATIONS (Continued)

RFP	Request for Proposals
RI	remedial investigation
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
SOW	statement of work
TBC	To Be Considered
WACs	waste acceptance criteria

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1.0 INTRODUCTION

1.1 Purpose and Scope

The purpose of this On-Site Disposal Facility (OSDF) Remedial Action Work Plan (RAWP) is to identify the implementation strategy and schedule for completion of construction of, and placement of impacted materials resulting from Fernald Environmental Management Project (FEMP) remediation into, the OSDF component of remedial action as set forth in the *Final Record of Decision for Operable Unit 2 (OU2 ROD)* [DOE, 1995b], and in the *Final Record of Decision for Operable Unit 5 (OU5 ROD)* [DOE, 1996a]. This OSDF RAWP includes the following activities: construction of, placement of impacted materials into, and long-term maintenance and monitoring of, the OSDF; a separate work plan has been developed for construction of the associated test pads [an activity previously defined in the *Final Remedial Design Work Plan for Remedial Actions at Operable Unit 2 (OU2 RDWP)* [DOE, 1995c] as being within the scope of the OSDF RAWP].

The overall goal of the OSDF remedial action project is to safely construct and operate the OSDF in a timely, efficient and cost-effective manner that ensures compliance with all associated applicable or relevant and appropriate requirements (ARARs) while being protective of human health and the environment. This RAWP has been developed in accordance with the requirements of the *Amended Consent Agreement (ACA)*, and is based on the *Superfund Remedial Design (RD) and Remedial Action (RA) Guidance (Office of Solid Waste and Emergency Response Directive [OSWER] Directive 9355.0-4A)*, and *Guidance on EPA Oversight of Remedial Designs and Remedial Actions Performed by Potentially Responsible Parties (OSWER Directive 9355.5-01)*, and *Guidance on Expediting Remedial Design and Remedial Action (OSWER Directive 9355.5-02)*. Furthermore, as the ACA is heavily oriented toward the remedial investigation (RI) and feasibility study (FS) phase of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) response activities and developed from the model RI/FS consent order, the *Revised Model RD/RA Consent Decree (60 FR 38817, July 28, 1995)* was also consulted during development of this RAWP.

Implementation of the OSDF remedial action project will involve a series of construction tasks and operations in accordance with the strategy set forth in this OSDF RAWP, the requirements of CERCLA as amended by the Superfund Amendments and Reauthorization Act of 1986 (hereinafter jointly referred to as "CERCLA"), the Resource Conservation and Recovery Act (RCRA) as amended, and the National Environmental Policy Act (NEPA). This OSDF remedial action project is being implemented by the Department of Energy (DOE), as the lead agency responsible for CERCLA activities at the FEMP.

Consistent with the *OU2 RDWP* [DOE, 1995c], a phased approach is being utilized to accomplish the remedial action activities. The elements of the selected remedy identified in the *OU2 ROD* [DOE, 1995b] will be implemented on an integrated sitewide basis. This integrated approach will

not adversely affect the overall OU2 remedial design and remedial action summary schedule shown in the *OU2 RDWP* [DOE, 1995c]. Note that the OSDF was identified as the major component of the selected remedy in both the *OU2 ROD* [DOE, 1995b] and *OU5 ROD* [DOE, 1996a]; on-site disposal of impacted material is also the selected remedial alternative for Operable Unit 3 (*Operable Unit 3 Record of Decision for Final Remedial Action (OU3 ROD)*) [DOE, 1996b]). In addition, the material sent to the OSDF by OU3 and OU5 may include contributions from Operable Unit 4 (OU4) and Operable Unit 1 (OU1), in accordance with their RODs (signed by EPA December 7, 1994 and March 1, 1995, respectively). The DOE intends to build only one on-site disposal facility; therefore, the disposal facility is being designed to accommodate all impacted material meeting the OSDF waste acceptance criteria (WACs) that results from remediation of all FEMP operable units.

## 1.2 Project Background

This section summarizes the background information relevant to this OSDF RAWP.

### 1.2.1 Project Description

Design, construction, and placement of impacted materials into the OSDF, as well as completion of remedial action activities to address contaminated soil/debris at the flyash piles, lime sludge ponds, south field, and the solid waste landfill, are part of an overall mission of OU2. The scope of this RAWP only discusses activities associated with the construction of, and placement of impacted materials into, the OSDF. As discussed in the *OU2 RDWP* [DOE, 1995c] (and the *OU5 ROD* [DOE, 1996a]), separate work plans (e.g., Waste Unit RAWP, Primary Waste Haul Road RAWP) will be prepared for the other activities; hence, activities such as impacted material excavation and impacted material transportation will not be discussed in this OSDF RAWP.

The OSDF will be located on the east side of FEMP and is expected to contain 2.5 million cubic yards of impacted material from Operable Units 2, 3, and 5. The OSDF will be approximately 3,700 feet by 800 feet with a maximum height of 64 feet (see Figure 1-1). A multi-layer cap and liner system with both natural and synthetic components will be utilized to protect the underlying Great Miami Aquifer. The cap and liner system will incorporate a leachate collection system and the liner will also have a leak detection system which will be located below the leachate collection system. These components are illustrated in Figure 1-2. Impacted material that is brought to the OSDF for disposal must meet the waste acceptance criteria (WAC) that have been established in the RODs. The WAC have been compiled in the *Impacted Material Placement Plan* (Table 1-1). The *Impacted Material Placement Plan* also describes the procedures for placement of impacted material/remediation waste into the OSDF and management of staging areas.

### 1.2.2 Site Status

In July 1986, the DOE and the Environmental Protection Agency (EPA) signed a Federal Facilities Compliance Agreement (FFCA), addressing impacts to the environment associated with the FEMP. The DOE agreed to conduct the FFCA investigation as a Remedial Investigation/Feasibility Study (RI/FS) in accordance with guidelines of CERCLA. In November 1989, the FEMP site was included on the National Priorities List of the EPA. The FFCA was later amended by the June 1990 Consent Agreement between DOE and EPA which was further modified by amendment in September 1991.

In accordance with the ACA (September 1991), EPA approved and signed the *Final Record of Decision for Remedial Actions at Operable Unit 2 (OU2 ROD)* [DOE, 1995b] on June 8, 1995; similarly, the *Final Record of Decision for Remedial Actions at Operable Unit 5 (OU5 ROD)* [DOE, 1996a] on January 31, 1996; and similarly, the *Operable Unit 3 Record of Decision for Final Remedial Action (OU3 ROD)* [DOE, 1996b] on September 24, 1996. The design approach for the OSDF is presented in the *OU2 RDWP* [DOE, 1995c], which was submitted to the EPA in August 1995 and subsequently approved in November 1995. The design of the OSDF, as currently developed, is presented in the *Final Design Package, On-Site Disposal Facility* [GeoSyntec, 1996a]. Ohio EPA (OEPA), which has been actively participating throughout the CERCLA response process, also has concurred with the documentation and decisions to date.

### 1.3 SUMMARY OF WORK PLAN APPROACH

This OSDF RAWP provides the overall framework for performing the OSDF component of remedial actions authorized under the approved *OU2 ROD* and *OU5 ROD*. Presented in this OSDF RAWP is the overall OSDF remedial action project strategy, including a discussion of the specific tasks in support of the remedial action. The general approach of this OSDF RAWP is as follows:

- Summarize the purpose and scope of this RAWP;
- Describe programmatic strategies and requirements for implementation of the OSDF remedial action project;
- Identify the permit requirements necessary for performing the OSDF remedial action project; and
- Develop a framework from which support plans will be initiated and completed.

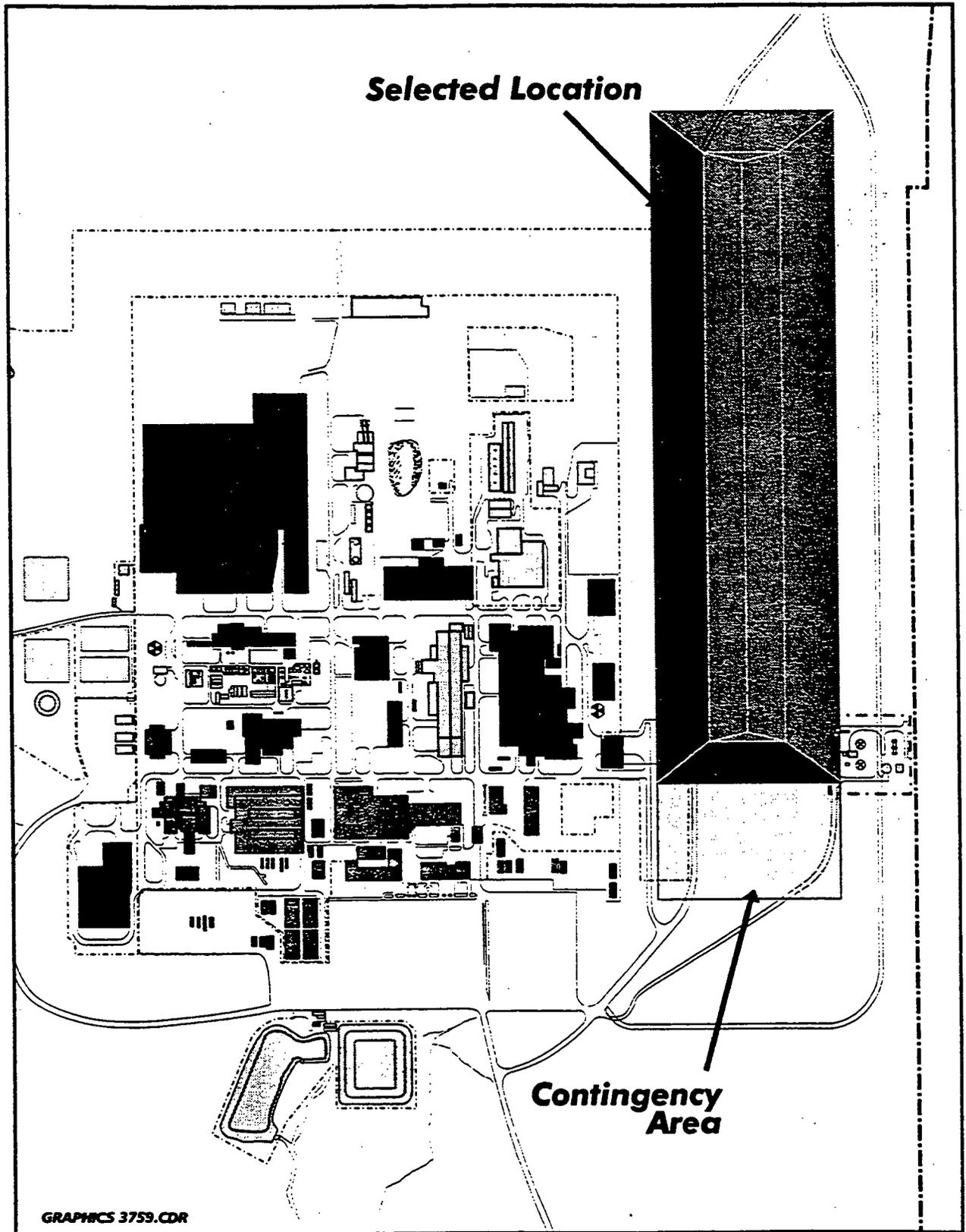
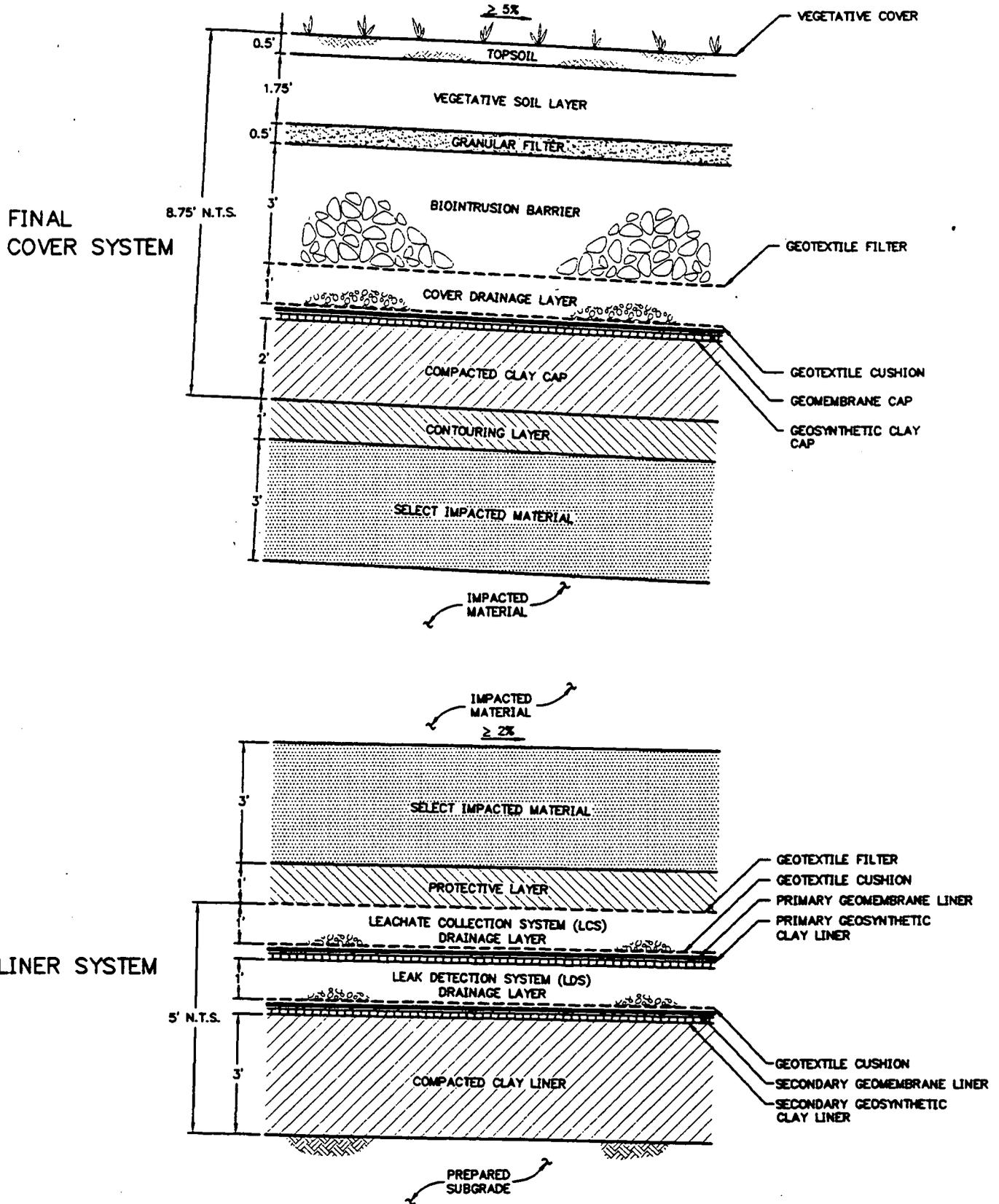


Figure 1-1 SELECTED LOCATION OF THE ON-SITE DISPOSAL FACILITY

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### LINER AND COVER SYSTEM DESIGN ON-SITE DISPOSAL FACILITY



**GEOSYNTEC CONSULTANTS**  
ATLANTA, GEORGIA

FIGURE NO.	1-2
PROJECT NO.	GE3900-6.1
DOCUMENT NO.	F9530007.CDG
FILE NO.	F95a001.DWG

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**Table 1-1  
ON-SITE DISPOSAL FACILITY  
WASTE ACCEPTANCE CRITERIA**

	Constituent of Concern	Soil <sup>a</sup>		Debris <sup>b</sup>
		OU2	OU5 <sup>d</sup>	OU3
	<b>Radionuclides:</b>			
1	Neptunium-237		3.12 x 10 <sup>9</sup> pCi/g	
2	Strontium-90		5.67x 10 <sup>10</sup> pCi/g	
3	Technetium-99		29.1 pCi/g	105 g
4	Uranium-238	<b>R</b>	346 pCi/g	
	Total Uranium		1,030 mg/kg	1,030 mg/kg
	<b>Inorganics:</b>			
5	Boron		1.04 x 10 <sup>3</sup> mg/kg	
6	Mercury <sup>c</sup>		5.66 x 10 <sup>4</sup> mg/kg	
	<b>Organics:</b>			
7	Bromodichloromethane		9.03 x 10 <sup>-1</sup> mg/kg	
8	Carbazole		7.27 x 10 <sup>4</sup> mg/kg	
9	Alpha-chlordane	<b>A</b>	2.89 mg/kg	
10	Bis(2-chlorisopropyl)ether		2.44 x 10 <sup>-2</sup> mg/kg	
11	Chloroethane		3.92 x 10 <sup>-2.5</sup> mg/kg	
12	1,1-Dichloroethene <sup>c</sup>		11 <sup>4</sup> mg/kg	
13	1,2-Dichloroethene <sup>c</sup>		11 <sup>4</sup> mg/kg	
14	4-Nitroaniline		4.42 x 10 <sup>-4.2</sup> mg/kg	
15	Tetrachloroethene <sup>c</sup>		128 mg/kg	
16	Toxaphene <sup>c</sup>		1.06 x 10 <sup>5</sup> mg/kg	
17	Trichloroethene <sup>c</sup>		128 mg/kg	
18	Vinyl chloride <sup>c</sup>		1.51 mg/kg	

**NOTES:**

- <sup>a</sup> maximum concentration
- <sup>b</sup> maximum total mass
- <sup>c</sup> RCRA-based constituent of concern
- <sup>d</sup> constituents which have established maximums which serve as Waste Acceptance Criteria; other compounds which will not exceed designated Great Miami Aquifer action levels within 1000-year performance period, regardless of starting concentration in the OSDF, are not listed.

**SOURCES:**

- OU2 ROD [DOE, 1995b]
- OU5 ROD [DOE, 1996a]
- OU3 ROD [DOE, 1996c]

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In accordance with the *ACA*, this RAWP identifies OSDF remedial action project specific milestones subject to enforceable deadlines by the EPA. The following identifies the format of this document:

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- The remainder of Section 1.0 discusses project organization.
- Section 2.0 discusses the remedial action implementation strategy.
- Section 3.0 discusses project permit requirements.
- Section 4.0 discusses **R**sampling, and analysis or field screening.
- Section 5.0 discusses OSDF systems monitoring.
- Section 6.0 discusses environmental monitoring.
- Section 7.0 discusses health and safety, and the contingency plan.
- Section 8.0 discusses public involvement. **A**

More information on each of these aspects may be found in the various OSDF remedial action project support plans, as presented in the following list (sequenced by permitting, pre-construction, construction, and post-closure):

- *Permitting Plan and Substantive Requirements for the On-Site Disposal Facility* [DOE, 1996c]: identifies the administrative and substantive requirements for the NPDES Permit, and the substantive requirements for all of the FEMP's operable units' on-site disposal needs for the Wetlands Nationwide Permit, the Ohio Solid Waste Permit to Install (PTI), and the Resource Conservation and Recovery Act (RCRA) Permit; additionally, discusses how the requirements relate to the OSDF, presents the plan for compliance with the requirements, and discusses additional applicable or relevant and appropriate requirements (ARARs) that are not related to the issuance of a specific permit. **T**
- *OSDF Air Monitoring (AM) Plan* [FERMCO, 1996a]: although the air monitoring program for the OSDF will be part of the site-wide environmental monitoring program for the FEMP and hence governed by the *Integrated Environmental Monitoring Plan (IEMP)*, this Air Monitoring Plan presents the technical basis for the OSDF component of the environmental air monitoring program.

- *Cultural Resource Unexpected Discovery (CRUD) Plan* [FERMCO, 1996b]:  
presents the method to be followed upon the discovery of a cultural resource or  
historic property when performing any ground disturbing activity at the FEMP.
- *Borrow Area Management and Restoration (BAMR) Plan* [GeoSyntec, 1996a]:  
provides procedures to strip, develop, maintain, and restore the OSDF borrow  
area.
- *OSDF Surface-Water Management and Erosion Control (SWMEC) Plan*  
[GeoSyntec, 1996d]: provides details of permanent erosion and sediment  
controls and surface-water controls for the OSDF, including maintenance  
requirements for channels and sediment controls.
- *OSDF Construction Quality Assurance (CQA) Plan* [GeoSyntec, 1996b]:  
contains procedures used to evaluate soils and other features of the OSDF liner  
and final cover system.
- *OSDF Impacted Materials Placement (IMP) Plan* [GeoSyntec, 1996c]: outlines  
waste acceptance criteria (WAC) for the OSDF, and contains procedures used  
to place the impacted materials into the OSDF.
- *OSDF Systems Plan* [GeoSyntec, 1996f]: contains procedures used to inspect  
and maintain the OSDF — including the leachate management system, cover  
system, and temporary facilities — during the active remediation phase of  
activities which includes construction, impacted material placement, and  
closure of individual cells or phases of the OSDF until closure of the final  
cell/phase of the OSDF.
- *OSDF Ground Water Monitoring Plan* [FERMCO, 1996d]: contains the  
approach to be used in monitoring the leachate collection system, leak detection  
system, till, and Great Miami Aquifer relative to detection potential releases  
from the OSDF.
- *Post-Closure Care and Inspection (PCCI) Plan* [FERMCO, 1996e]: contains  
procedures used to inspect and maintain the OSDF and its buffer area —  
including the leachate management system, final cover, and permanent  
drainage channels and erosion controls — during the post-closure period, after  
closure of the final cell/phase of the OSDF.

#### 1.4 ORGANIZATION AND RESPONSIBILITIES

The governing document for CERCLA response actions at the FEMP is the ACA between the DOE and the EPA Region V, signed in September 1991. As such, ultimate project management responsibility lies with these two agencies as defined by that agreement. As discussed in Section 1.1, the DOE is the lead agency responsible for CERCLA activities at the FEMP. The DOE Fernald Area Office (DOE-FN) is the ultimate authority for ensuring that the OSDF remedial action is performed in a manner that meets all project goals, standards, specifications, and requirements of the *OU2 ROD* [DOE, 1995b] and this work plan. In addition, the OEPA has been granted regulatory authority over certain RCRA activities. Each agency has engaged contractors to perform identified scopes of work related to their prime areas of responsibility for site remediation. Figure 1-1 shows this administrative relationship matrix, and Figure 1-2 identifies the lead project functions for the OSDF remedial action project.

Within each agency, various organizations and offices have been delegated specific program responsibilities. The DOE OU2 Team Leader will provide the overall programmatic direction for this OSDF remediation project. Although the DOE will perform direct oversight of the remedial action, it will also be represented and actively involved in all OSDF Project Team (see later discussions in this section regarding the OSDF Project Team activities during all stages of project planning and implementation). The Office of Safety Assessment of DOE-FN will assign an individual from the DOE Facilities Representatives Department that will perform independent field oversight for all remedial activities performed under this project.

DOE-FN will also conduct field oversight through technical leads responsible for construction, engineering, quality assurance and quality control, and health and safety. The DOE Facilities Representative and technical leads will immediately notify the DOE Program Manager of any issues or problems that arise in an effort to seek prompt resolution.

The Fernald Environmental Restoration Management Corporation (FERMCO) OSDF Project Manager will provide the overall project management and technical guidance to the OSDF Project Team. The OSDF Project Team will provide all of the necessary technical, regulatory, and administrative input required for the OSDF Remedial Action Project, under the direction of the OSDF Project Manager.

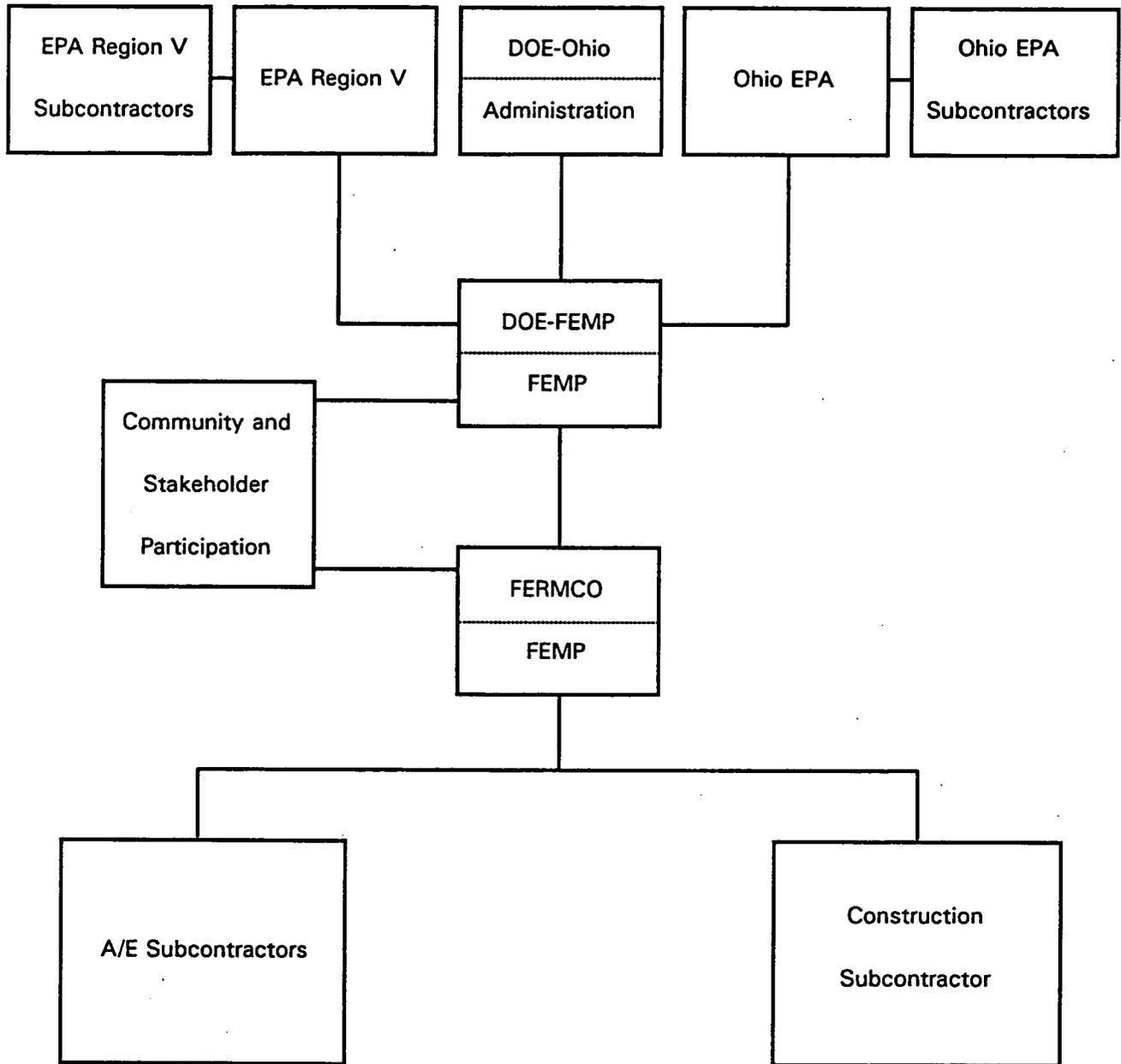


Figure 1-3 FEMP ADMINISTRATIVE RELATIONSHIP

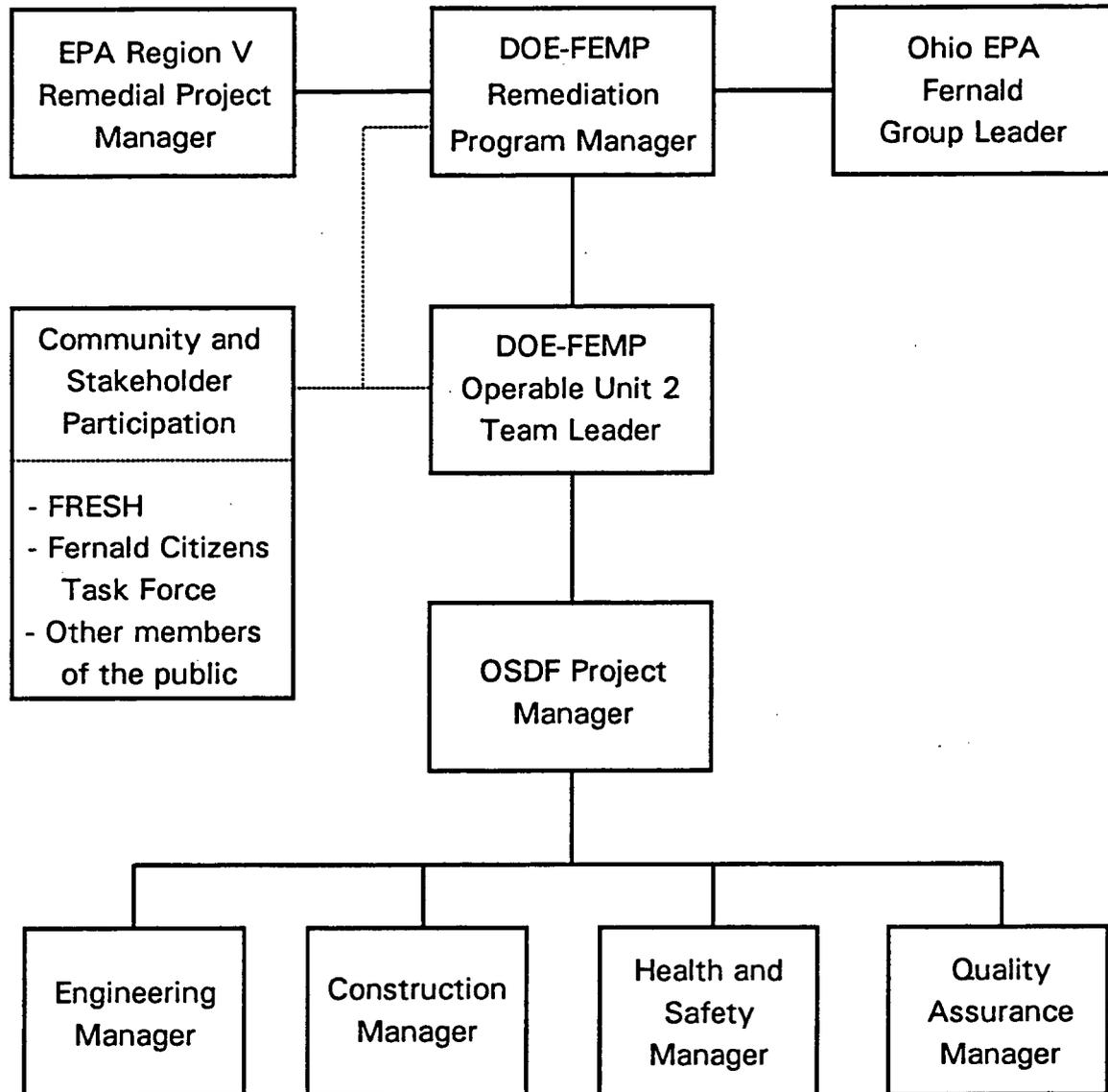


Figure 1-4 OSDF LEAD PROJECT PERSONNEL

The OSDF Project Team will include the following FERMCO positions:

- **D** Engineering Manager
- **Q** Quality Assurance Manager
- Health & Safety Manager
- Construction Manager

The Engineering Manager (EM) is the FERMCO representative responsible for coordinating all design requirements. The EM will review and concur with the Resident Engineer (see text below) on all design interpretation and/or modifications.

The Quality Assurance (QA) Manager is FERMCO's representative responsible for oversight of those activities pivotal during the construction of the OSDF. FERMCO's Quality Assurance representative(s) will report directly to and support the OSDF Project Manager in oversight of OSDF remediation activities. The QA Manager will have stop work authority through the OSDF Project Manager if quality concerns go unresolved.

The Health & Safety Manager is the FERMCO representative responsible for implementing the OSDF project health and safety program. The H&S Manager will ensure that the Subcontractor follows safe work practices. The H&S Manager will have stop work authority if unsafe work practices go uncorrected.

The Construction Manager (CM) is FERMCO's representative responsible for directing the daily activities for construction and filling of the OSDF. The primary organizations reporting to the CM and their responsibilities include:

- Subcontractor — construct and fill OSDF
- CQA Consultant — CQA testing and certification.
- Resident Engineer — review and approval of technical aspects of the OSDF

The Subcontractor and CQA Consultant will support the construction, filling and closure of the OSDF through direct subcontracts with FERMCO. These organizations will report contractually to the OSDF Project Manager. They will coordinate daily work activities with, and take technical direction within the scope of their contract from, the CM.

The Resident Engineer will provide support to the CM in managing problems, improvement opportunities, and changes to the OSDF project to assure that changing conditions or modifications are consistent with the OSDF design basis. The Resident Engineer will coordinate all technical requirements with the Engineering Manager. The Resident Engineer will report contractually to the OSDF Project Manager.

FERMCO will directly oversee the Architect/Engineer (A/E) firm responsible for the remedial design (Title I and II Design) and providing Title III (Construction Management) services during remedial action, as well as the Subcontractor performing remedial action activities.

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Stakeholder participation in the OSDF remedial action project process will be coordinated through the DOE in accordance with the FEMP's *Community Relations Plan* and any subsequent public involvement plans/strategies (refer to Section 8.0 of this RAWP).

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## 2.0 REMEDIAL ACTION IMPLEMENTATION STRATEGY

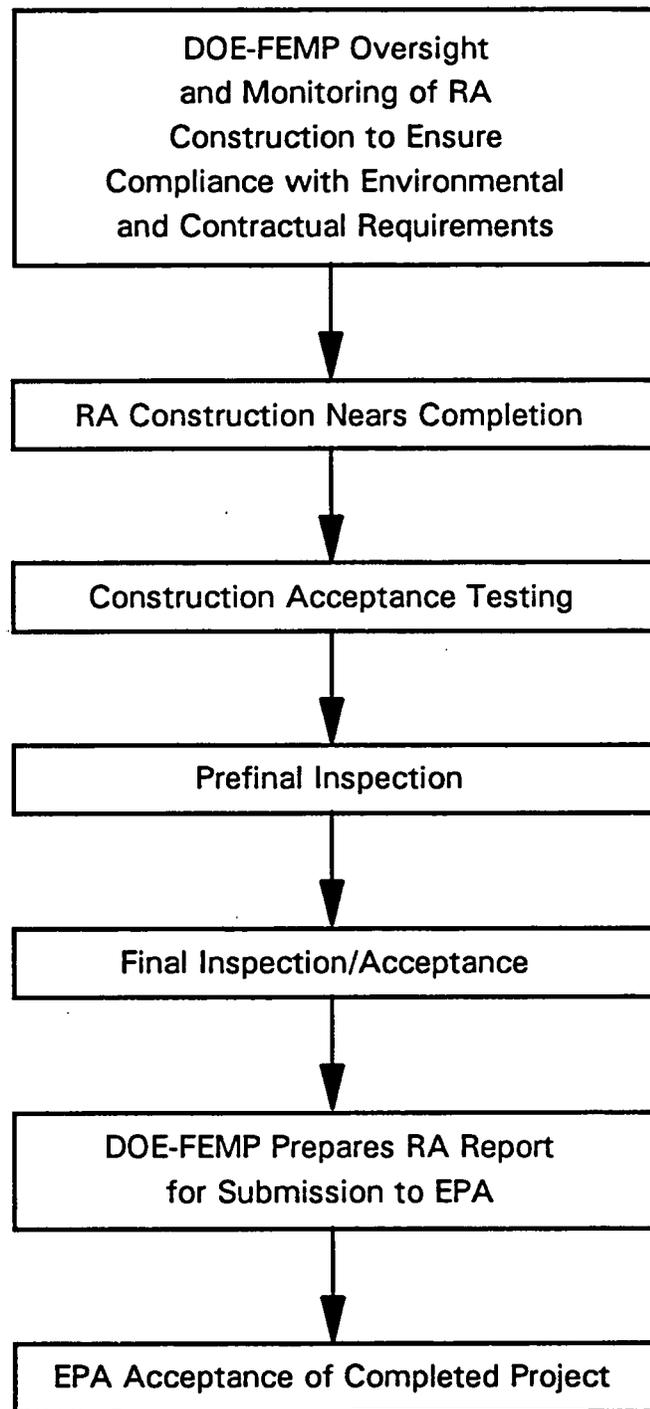
This section will discuss the implementation strategy for OSDF activities (Phase II activities as defined in the *OU2 RAWP* [DOE, 1995c]), which are the primary focus of this RAWP, relative to DOE project requirements and CERCLA guidance. During Phase II activities, various construction activities — Site Preparation, Leachate Detection and Collection System and Liner System Installation, Impacted Material Placement, Final Cover System Installation — will be implemented (refer to Section 2.6 for more detail). Details on the implementation strategy for Phase I (primary waste haul road construction) and Phase III (waste units excavation) activities will be provided in separate remedial action planning documents (e.g., RAWPs).

As the FEMP is a DOE facility being remediated under CERCLA, both DOE and EPA requirements must be met throughout the project. This section serves to merge the DOE requirements and CERCLA guidance to create a practical project implementation strategy which meets the intent of both sets of requirements. Refer to Figure 2-1, Responsible Party Lead RA Process (extracted from OSWER Directive 9355.0-4A and modified), which represents the overall OSDF remedial action project approach. This section will expand on the elements of this approach as follows:

- Sections 2.1 and 2.2 define project management controls with regards to specific design and construction;
- Section 2.3 will identify the construction subcontract and equipment/material procurement strategy;
- Section 2.4 will discuss construction acceptance; and
- Section 2.5 and 2.6 will define the OSDF remedial action project milestones and discuss the OSDF construction sequencing.

### 2.1 Configuration Management

Configuration Management will be implemented throughout this OSDF project. Configuration Management is the management process by which the technical baseline for projects are identified, graded, documented, tracked, and controlled. Configuration Management establishes consistency among the design requirements, physical configuration, and technical documentation, and will ensure this consistency is maintained throughout design, construction, and operation. Configuration Management also ensures the systematic evaluation, coordination, disposition, documentation, implementation, and verification of all changes, and their impact on cost, schedule, and technical



**Figure 2-1 RESPONSIBLE PARTY LEAD RA PROCESS**

baseline. The FEMP "Configuration Management Procedure" (CM-0001) and relevant supporting procedures will be used as the Configuration Management guideline throughout the OSDF project.

QA for the OSDF remedial action project will be in accordance with quality program elements identified in the FEMP "QA Program" (RM-0012). Construction quality assurance (CQA) for the OSDF remedial action project will be governed by the CQA Plan developed as part of this OSDF Remedial Action Project; the Construction Quality Control Consultant will develop and implement construction quality control (CQC) plan(s).

## 2.2 Construction Management

FERMCO, as contracted by the DOE at the FEMP, will directly oversee all Subcontractors performing the work and will be responsible for Construction Management during the work. Construction Management will include, but is not limited to, conducting construction status meetings, daily work surveillance and inspections, and daily safety tours and oversight of the project. The Construction Manager (CM) will ensure that safety concerns are brought to the attention of the FERMCO Project H&S Officer and the responsible Subcontractor who will correct these concerns. The CM's qualifications are discussed in the Construction Quality Assurance Plan. FERMCO will be responsible for implementing the OSDF remedial action project in accordance with DOE direction. The following sections expand on these activities.

### 2.2.1 Construction Status Meetings

Upon the award of each subcontract, the CM will conduct regularly scheduled construction status meetings. These meetings are for the purpose of ensuring orderly and expeditious completion of the work and to provide coordination and communication between all parties (OSDF Project Team Management) involved. Refer to discussions in Section 1.4 of this plan regarding the OSDF Project Team Management. Attendees will include the OSDF Project Manager, CM, H&S, and QA personnel; Resident Engineer; Project Engineer; Engineering Manager; Subcontractor; and others as warranted. These progress meetings will address action item status, project progress, planning, schedule status, safety items, quality, environmental protection, and problem resolutions.

In addition to the status meetings, the Subcontractor will be required to submit a daily report (or log, or diary). The Subcontractor's daily report covers the previous day's work status and identifies any safety or quality problems encountered and a description of work performed. In addition to the subcontractor-generated daily report, the FEMP construction division will also generate a Daily Report. Both reports will be maintained in the project file.

### 2.2.2 Surveillance and Inspections

The Subcontractor has first line responsibility to inspect its work and correct any deficiencies. In addition to the above and the review of daily reports throughout construction of the OSDF, inspection and surveillance of the Subcontractor work will be conducted by FERMC0 Construction Engineers and Construction QA personnel with support from the Resident Engineer. The surveillances and inspections will verify that the design and associated specifications are being properly implemented and contract requirements are being satisfied. QC inspection and testing will also occur in accordance with the *CQA Plan* and design requirements. If a deficiency(ies) is noted, the Subcontractor will be notified immediately so that the necessary corrective action(s) can be taken as soon as possible. Failure of the Subcontractor to satisfactorily correct a deficiency will constitute cause to either issue a cure order/notice or to stop work.

### 2.2.3 Health and Safety Oversight

FEMP H&S representatives will be assigned to the project. While all contract and subcontract personnel are responsible for following all safety requirements identified in the Project Specific Health and Safety Requirements Matrix(ces) (PSHSRM) and subsequent Subcontractors' detailed Safe Work Plans, as appropriate, the OSDF Project Team Management (including H&S) personnel will perform periodic surveillances during the OSDF remedial action project to ensure compliance; the H&S Manager will have stop-work authority (in the event of threat to worker and/or public safety) until the proper corrective action is taken. The H&S Manager assigned to the field project will be the single point of contact for all safety, industrial hygiene, fire protection, and radiological issues or concerns, and will direct those concerns to the CM. The CM will also do a weekly safety surveillance and inspection.

### 2.2.4 Radiological Monitoring/Oversight

Radiological Technicians will be assigned to the project. In conjunction with the H&S Manager assigned to the project, the Radiological Technician(s) will help to ensure radiological compliance throughout the project. The PSHSRM will be the basis for the required monitoring and will identify the action levels that will ensure personnel radiological, as well as the industrial/occupational, safety (as discussed earlier) by limiting exposure.

### 2.2.5 Resident Engineer Services During Construction

All activities for the OSDF remedial action project will be performed under the responsibility of the OSDF Project Manager. There will be occasion to utilize A/E firms responsible for detailed remedial design Title I and II services (design services, in contrast to Construction Management which is referred to as Title III services) to support and perform specific Title III tasks such as construction inspection and report, drawing, and calculation review. The Resident Engineer, who will be from the

A/E firm(s), will help to ensure that the project is constructed in accordance with the plans and specifications. Resident Engineer qualifications are discussed in the CQA. Other A/E office and field personnel will be assigned to the project as needed.

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**2.3 Subcontract Bid/Award and Procurement Strategy**

Procurement and subcontract awards for all activities to support and implement the OSDF remedial action project will generally be performed through fixed price or unit price subcontracts and/or will be supported/performed by the appropriate FERMCO division personnel (e.g., Construction). The acquisition system utilized at the FEMP generally follows requirements of the Federal Acquisition Requirements (FARs) and is designed to ensure adequate and effective competition among prospective proposers/bidders. The following sections describe the construction subcontract bid/award and equipment/material procurement strategy for the OSDF remedial action project.

**2.3.1 Construction Subcontractor Bid**

A pre-qualification process is conducted to evaluate potential bidders' initial qualifications against pre-established criteria at which time those bidders meeting the criteria are placed on the approved bidder's list. Construction subcontractors for the OSDF remedial action project will be solicited competitively via Invitation for Bids (IFB)/Request for Proposals (RFP). Sealed bids/proposals will be required to be submitted by potential OSDF Construction Subcontractors at a specified place, date, and time. The IFB/RFP solicitation(s) will be prepared during the design process by the FEMP Construction Engineering Planning and Bidding group with input from Engineering, H&S, QA, and Procurement personnel, and other applicable disciplines. The IFB/RFP solicitation package(s) is made up of several parts including technical specifications and drawings, the PSHSRM and training requirements, QA requirements, and the statement of work (SOW). Development of a clear and complete IFB/RFP solicitation package will be emphasized to avoid bid protests, to minimize change orders, and to establish the framework for compliance with construction quality acceptance requirements and H&S requirements, as well as ARAR compliance throughout the OSDF remedial action project. As such, much attention will be given to the IFB/RFP solicitation package development, and more specifically the SOW.

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**2.3.2 Statement of Work**

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The SOW for each IFB/RFP solicitation package will define the activities that the OSDF Construction Subcontractors will be required to perform. Initiation of SOW development planning will be at the conceptual stages of design for each design package and will be finalized following design approval.

The SOW will be adequately detailed in order for the bidder to define work methods and intended equipment to complete the defined work. This will assist in providing for a better understanding in project goals. Additionally, the level of detail needed to assess the possible hazards be included as an attachment (a safety matrix) to the SOW.

Each SOW will identify project specific information and requirements and will detail the following:

- General Scope of Work;
- Specific Description of Work;
- Special Conditions;
- Material, Equipment or Services Furnished by the FEMP;
- Interfaces and Restraints;
- Temporary Facilities and Utilities;
- Site Location, Access, Laydown Areas, and Limits of Construction Area;
- Work Hours;
- Performance Schedule and Sequence of Work;
- Pay Item Descriptions;
- Requirements for OSDF Construction Subcontractor's Schedule;
- Submittals; and
- Alignment and Kickoff Meetings.

### 2.3.3 Pre-Bid Meeting/Tour

Pre-bid meetings will be conducted as necessary to ensure a consistent understanding of the overall requirements and to solicit clarification requests prior to contract award. Prospective bidders for each IFB/RFP solicitation package will be provided the opportunity to attend a pre-bid meeting and work site tour. The pre-bid meeting is intended to allow an opportunity for all bidders to ask questions about the IFB/RFP solicitation package, site policy, and existing site conditions. Questions will be

answered in writing and will become an addendum to the bid package. Typical topics covered at the pre-bid meeting include: introductions, bid and award process, SOW and design, terms and conditions, project labor agreement, substance abuse program, PSHSRM, QA/QC requirements, training, regulatory compliance, site security, temporary utilities and facilities, schedule and milestones, reporting, and submittals.

### 2.3.4 Construction Subcontractor Award

The bids will be reviewed to ensure that the apparent low bidder is both responsive and responsible relative to the terms and conditions of the IFB/RFP. Determination of responsiveness is based on proper completion of bid forms, acknowledgement of amendments, submission of the bid bond, and any other submittal requirements specifically identified in the IFB/RFP solicitation package. Determination of responsibility is based on whether the bidder possesses the capability and experience as required in the solicitation to perform the work in a safe and timely manner at the bid price. If the apparent low bidder is determined to be either non-responsive or non-responsible, the next lowest bidder will be evaluated. Specifics on this process are covered in the pre-award portion of the IFB/RFP solicitation package.

Following the determination that the apparent low bidder is responsive and responsible, the contracts administrator will recommend and make the final award. The IFB/RFP solicitation package dictates how many days after award or Notice to Proceed that contractor performance begins and ends.

As the lead agency responsible for CERCLA activities at the FEMP, the DOE retains final approval authority for any procurement action which exceeds established dollar thresholds for each type of procurement action. Any OSDF actions over the established limits will be required to be approved by the DOE Contracting Officer prior to award.

### 2.3.5 Equipment and Material Procurement

The majority of the standard support equipment and materials (e.g., liner material) for the OSDF remedial action project will be procured by the OSDF Construction Subcontractors performing the construction. Procurement of equipment and material will be in accordance with design specifications requirements and other requirements included in each IFB/RFP solicitation package. Vendor data will be submitted by the OSDF Construction Subcontractor for applicable Project Team Management (Resident Engineer, CM) review to ensure design and specification requirements are achieved. Responsibility for procured equipment and material will lie with the OSDF Construction Subcontractors until final construction acceptance and turnover to FERMCO on behalf of the DOE.

## 2.4 Construction Acceptance

As each subcontracted construction phase nears completion, the Construction Acceptance process begins. Construction Acceptance of each construction phase will be in accordance with applicable FEMP site procedures. The procedures are intended to allow for an orderly transfer of the constructed facilities from construction management to the cognizant division. The following sections describe each step in more detail. Specific requirements will be conveyed to the OSDF Construction Subcontractor in the specifications.

### 2.4.1 Construction Acceptance Testing

Construction Acceptance Testing (CAT) is the performance of all necessary testing to demonstrate that OSDF Construction Subcontractor supplied or installed equipment and systems are installed satisfactorily and safely in accordance with the design drawings and specifications.

CAT criteria will be developed, specified in the contract specifications for the OSDF Construction Subcontractors, and will serve as the basis for CAT acceptance. The OSDF Construction Subcontractor is responsible for conducting CAT for its scope of work, in accordance with the acceptance criteria set forth, making corrective actions where necessary. CAT will be witnessed and recorded by OSDF Project Team Management (including FERMCO QA/QC personnel), and approved by the CM.

### 2.4.2 Pre-Final Inspection/Conditional Acceptance

At or near completion of CAT for each construction package, pre-final inspection will occur. Pre-final inspection is the survey of a facility or area of work to determine the status of its acceptability relative to the design drawings, specifications, and contract documents. The pre-final inspection will consist of a walk-through inspection at a minimum by the CM, Project Engineer, Resident Engineer, and QA. DOE as the lead agency will also be involved (as in every aspect of this remedial action); OSDF Project Team Management will support this effort as necessary. Pre-final inspection will usually result in the conditional acceptance of a facility or work area from the OSDF Construction Subcontractor with a documented list ("punchlist") of specific work remaining, including OSDF Construction Subcontractor submittals, and a schedule for completion of the remaining items. Status of punchlist items are provided by the OSDF Construction Subcontractor as completed or at the weekly construction status meetings.

### 2.4.3 Final Inspection/Acceptance

Upon completion of punchlist items, a final inspection walk-through will be performed. Participants will usually be the same as those during the pre-final inspection. EPA and OEPA, and their respective representatives, are invited to attend the final inspection. The punchlist will be used as

the inspection checklist whereby the acceptance of all listed items will be verified and documented. The signed-off checklist by OSDF Construction Subcontractor, construction, start-up/operations, and appropriate project personnel will serve as the final construction acceptance and certification document.

## 2.5 Project Milestones

This section will define and highlight the OSDF (Phase II activities as defined in the *OU2 RDWP* [DOE, 1995c]) remedial action project milestones. Construction sequencing for the OSDF remedial action project is discussed in Section 2.6 of this work plan. Remedial action planning documents covering the Phase I and III elements (as defined in the *OU2 RDWP*) will be submitted under separate cover. Any schedule revisions from the *OU2 RDWP* that arise would be indicated in a revised schedule as part of the Phase I and III RAWPs subject to EPA approval.

### 2.5.1 Initiation of Remedial Activities

In accordance with the *OU2 RDWP* [DOE, 1995c], the first remedial action construction subcontract will be awarded on or before September 8, 1996, with the award of the Primary Waste Haul Road (OU2 RD Phase I) package subcontract, this award will constitute meeting the 15-month CERCLA requirement for commencing substantial continuous physical on-site remedial action not later than 15 months after the signing of the *OU2 ROD* (*i.e.*, by September 8, 1996). This date is recognized by the DOE to be an enforceable EPA milestone in accordance with the *ACA*. Remediation of this area (which is inclusive of the OSDF and borrow area footprint) to ROD-selected cleanup levels is a pre-requisite for initiating OSDF construction. Note that these activities will be closely followed by the construction of the primary waste haul road. Prior to the completion of road construction, the construction of the OSDF will begin (see Section 2.6 for more detail).

### 2.5.2 Completion of Remedial Action Activities

Subsection 300.435 (f)(1) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) describes completion of a remedial action as the remedy achieving (in the determination of the EPA) the remedial action objectives and goals stated in the ROD. In accordance with the approved *OU2 ROD* [DOE, 1995b], the integrated sitewide OU2 remedial action approach and CERCLA guidance, remedial action completion for OU2 is defined as having achieved the following:

- Construction of the OSDF\* (the primary subject of this RAWP);
- Excavation of OU2 impacted material and cleanup confirmation sampling;
- Transportation of the OU2 impacted materials;

- Placement of the OU2 impacted materials into the OSDF\*;
- **D** Grading and restoration of the OU2 waste units and support areas; and
- Initiation of OSDF long-term monitoring and maintenance.\*

However, only the activities annotated with an asterisk (\*) — construction, placement, and initiation of long-term monitoring and maintenance of the OSDF — are discussed in this OSDF RAWP.

### 2.5.3 Milestone Dates

**R** This RAWP will be submitted to EPA in final form along with the pre-final design review package on June 28, 1996. During a meeting with EPA, the difficulties of committing to milestones was discussed. The dynamics of this type of construction - funding, weather conditions, variations in excavation quantities, and other subsurface unknowns - make it difficult to establish long term milestones. A prudent approach is to limit the construction sequence (and associated milestones) to a fiscal year. DOE proposes to update these interim construction milestones on an annual basis in order to take advantage of lessons learned. Table 2-1 identifies the OSDF remedial action project milestones through March 1998.



**Table 2-1**

**OSDF REMEDIAL ACTION PROJECT MILESTONES**

<u>ACTIVITY</u>		<u>DATE</u>
Issue Final Design Review Package to EPA	<b>F</b>	October 14, 1996
Issue Invitation to Bid for OSDF Construction		November 19, 1996
Start OSDF Construction		April 30, 1997
Place Seasonal Cover on OSDF		December, 1997
Begin Impacted Material Placement		March 27, 1998
Complete OSDF Remedial Action Project (i.e., final closure of OSDF) <sup>1</sup>		see footnote



<sup>1</sup>In accordance with the scope of this RAWP, completion of remedial action would constitute closure of the OSDF (not completion of the Operable Unit 2 selected remedy as a whole); however, final closure of the OSDF is dependent upon disposition of the impacted material from the remaining FEMP operable units. Long-term monitoring and maintenance (post-closure care and inspection) activities would commence at this time.

## 2.6 Construction Sequencing

Construction activities for the OSDF will be implemented in a sequence which provides for efficient, safe, and cost-effective operations. The OSDF construction can be categorized into four (4) major phases, presented and discussed below:

- (1) site preparation and excavation;
- (2) leak detection and leachate collection system and liner system installation;
- (3) impacted materials placement; and
- (4) final cover/closure system installation.

Initial site preparation activities may include the construction of a leachate transmission system for the transfer of leachate and collected storm water from the active portions of the OSDF. This system will include pipeline, pumps, and a flow meter.

The initial construction of the OSDF will include excavating the shallow surface (minimum of 6 inches in depth) soil, certifying that the remaining shallow surface soil is not contaminated, and preparing the excavated site (*i.e.*, compacted subgrade) for the placement of the multi-component liner system and construction of leak detection and leachate collection system. Clean soil will be used for the clay layer of the liner system and will be compacted to have a permeability no-greater-than  $10^{-7}$  cm/sec.

The subsequent construction of the OSDF will involve three main construction activities: liner, and leak detection and leachate collection system construction; impacted material placement; and final cover/closure system construction. The goal is to have the three main construction activities phased with the development of each individual cell of the OSDF such that the liner system construction of Cell 1 precedes the placement of impacted material within Cell 1, which in turn precedes the construction of the final cover/closure system for Cell 1. This sequence will be followed for the remaining eight cells and the contingent ninth cell.

During the construction of the OSDF cells, staging areas will be provided to serve as temporary holding areas for impacted demolition debris and soil. Laydown or stockpile areas will also be established for OSDF construction material and clean soil.

Other related construction facilities and activities include (but may not be limited to) a perimeter safety/security fencing, relocation/removal of existing utilities including underground pipelines, and an air monitoring system.

### 3.0 PROJECT PERMIT REQUIREMENTS

Under CERCLA, remedial actions must achieve standards or levels of control that are consistent with environmental laws or regulations, which are termed ARARs. A discussion of the ARARs and TBC criteria were identified in the *OU2 ROD* [DOE, 1995b] and the *OU2 RDWP* [DOE, 1995c] and the *OU5 ROD* [DOE, 1996a]. All activities undertaken as a result of the ROD must comply with the ARARs that pertain to the activity. Implementation of the OSDF remedial action project will be in compliance with the identified ARARs as identified in those documents.

CERCLA Section 121(e)(1) states that no Federal, State, or local permit shall be required for the portion of any removal or remedial action conducted entirely on site, where such action is selected and carried out in compliance with Section 121. While an on-site action is exempted from complying with the administrative requirements associated with a permit (e.g., administrative reviews, reporting and recordkeeping requirements), it is not exempt from complying with the substantive requirements that would have been imposed by each permit.

To determine if a permit is required for a remedial action, an evaluation must be made as to whether the action is "conducted entirely on site", as stated at Section 121(e)(1) of CERCLA. Discussions with the EPA and Ohio EPA have established a consensual strategy for permitting activities at the FEMP. EPA and Ohio EPA have determined that air releases, fill/dredging of wetlands, and construction and operation of the OSDF are considered "on-site activities" and not subject to the administrative requirements of a permit; further, that waste water and stormwater discharges to the Great Miami River and Paddys Run are considered "off-site" activities subject to both the administrative and substantive requirements of the National Pollutant Discharge Elimination System (NPDES) permit.

The substantive permitting requirements are identified in the *Permitting Plan and Substantive Requirements for the On-Site Disposal Facility* which is being submitted as a support plan for the OSDF remedial action. The Permitting Plan addresses the NPDES permit for stormwater discharges; Nationwide Permit for wetlands impacts; Resource, Conservation, and Recovery Act (RCRA) permit; and Ohio Solid Waste Permit to Install. Of these, the NPDES permit is the only permit necessary for the OSDF; DOE will comply with the substantive requirements of the other permits.

The substantive requirements for the Wetlands Nationwide Permit include consideration of mitigation and minimization of discharges of dredged or fill material into wetlands. In general, the substantive requirements of this permit will be met through the Sitewide Wetland Mitigation Plan.

The RCRA permit requires details on disposal facility and groundwater monitoring design. The substantive requirements of this permit will be met through the design of the OSDF and the *OSDF Ground Water Monitoring Plan*.

The Ohio Solid Waste Permit to Install requires detailed information on the design and location of the OSDF and the geology and hydrogeology underlying the OSDF. In general, these requirements are met through the OSDF design, the OSDF Predesign Investigation, and various OSDF support plans.

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Compliance with pertinent ARARs is also addressed in the *Permitting Plan*. The *Permitting Plan* is viewed as a living document that will be updated as the design and other support plans are finalized.

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4.0 SAMPLING AND ANALYSIS REQUIREMENTS

The documentation of whether FEMP remediation project impacted materials (soil or debris) meet the WACs established for the OSDF is the responsibility of the remediation project which will generate the material. Forthcoming FEMP remediation project work plans (e.g., soil excavation work plans) — to be approved by the agencies — will be the documents to discuss how the WACs will be met, as well as when and to what degree the necessary sampling and analysis or field screening will occur. Sampling, and analysis or field screening, shall only be performed when sufficient quality and quantity of data does not exist.

The scope of this OSDF RAWP embarks on activities after it has been determined that FEMP impacted materials meet the OSDF WACs (both radiological/chemical and physical). Conceptual discussions regarding material properties and geotechnical analysis have been included in OSDF support plans (i.e., *Impacted Materials Placement Plan, Construction Quality Assurance Plan*).

Certification sampling will be conducted in the OSDF and borrow area footprints to ensure that those areas are at or below the ROD-selected cleanup levels prior to construction of the OSDF. Details regarding this certification sampling for Area 1 Phase 1 have been defined in a separate FEMP work plan.

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**5.0 SYSTEM PLANNING REQUIREMENTS**

This section briefly addresses inspection and monitoring requirements for the OSDF, from two different timeframes: (1) active remediation, and (2) after placement of final cover on the last individual cell. These are discussed separately in the following paragraphs.

The first timeframe, the "active remediation" life of the OSDF, spans construction of the individual cells, placement of impacted materials into the cells, and after placement of final cover on individual cells. The *OSDF Systems Plan* (an OSDF support plan) has been developed to focus on this first timeframe. As discussed in Section 6.0 of this OSDF RAWP, environmental monitoring is addressed in separate plans. Thus, the *OSDF Systems Plan* does not address air or groundwater monitoring.

The second timeframe is after impacted material placement has been completed and the final cover has been established on the last cell of the OSDF. The *Post-Closure Care and Inspection Plan* focus on requirements appropriate to this later timeframe. This plan is included in the RAWP Appendix.

The following is the proposed schedule for finalizing this plan:

Table 5-1

**SCHEDULE FOR FINALIZING  
THE POST-CLOSURE CARE AND INSPECTION PLAN**

<b>ACTIVITY</b>	<b>DATE</b>
Submit Draft Post-Closure Care and Inspection Plan	June 28, 1996
Receive Comments from EPA	July 29, 1996
Submit Response to Comments to EPA	September 18, 1996
EPA Review and Comment	October 18, 1996
Response to Comments and Submit Final Post-Closure Care and Inspection Plan	November 18, 1996

## 6.0 ENVIRONMENTAL MONITORING

Two primary elements of environmental monitoring are associated with this OSDF remedial action project, namely air monitoring and groundwater monitoring. This section describes the focus and scope of the plans for monitoring these two environmental media.

### 6.1 AIR MONITORING

OSDF remedial action project dust and fugitive emissions control requirements have been identified in the *Borrow Area Management and Restoration Plan*, the *Impacted Materials Placement Plan*, the *Systems Plan*, and the appropriate technical specifications. Administrative and engineering controls are established in the plans for minimizing dust and fugitive emissions. Examples of administrative controls include: leaving topsoil and vegetative cover in the borrow area in place until the area becomes active; limiting active borrow area acreage; limiting vehicular traffic speeds on haul roads; and not placing impacted materials into the OSDF when wind speeds exceed certain levels. Examples of engineering controls include: covering loads of borrow soil or impacted materials; application of water to haul roads to limit dust generation; and use of crusting agents and temporary covers during seasonal shutdown of the OSDF.

Air monitoring for the OSDF remedial action project must be compatible with the FEMP site air monitoring programs to provide readily comparable information and data. Hence, the two existing site air emissions monitoring programs will support the OSDF remedial action project: the Occupational Air Monitoring Program and the Fernald sitewide Environmental Monitoring Program (EMP). The air emission monitoring program for the OSDF uses the air monitoring stations, equipment, procedures, and analytical methods from the *Fernald Site Environmental Monitoring Plan* [FERMCO, 1995] in order to provide data for annual 40 CFR Part 61 National Emissions Standards for Hazardous Air Pollutants (NESHAPs) Subpart H reporting and for other annual site environmental reporting. The *OSDF Air Monitoring Plan* (an OSDF support plan) presents the rationale for the use of this approach. Both the EMP and Occupational Air Monitoring Program will continue to be implemented throughout the OSDF remedial action project.

Radiological environmental monitoring will continue under the sitewide EMP for the frequency specified in the *FEMP Integrated Environmental Monitoring Plan (IEMP)*; the *IEMP* is a revision of the *Fernald Site Environmental Monitoring Plan* [FERMCO, 1995] discussed above and will be submitted to EPA for approval prior to the initiation of OSDF remedial activity. Data will be collected under that ongoing program during the implementation of the OSDF remedial action project from air monitoring stations located onsite (including four environmental air monitoring stations (AMS) in the vicinity of the OSDF — AMS-3, AMS-4, AMS-8 and AMS-9), near the fenceline, and at several locations in nearby communities. That monitoring program has been developed in response to DOE

Orders 5400.1 and 5400.5 and is currently presented in the *Fernald Site Environmental Monitoring Plan (PL-1002, Revision 2)*, which will be superseded by the forthcoming IEMP. Therefore, the OSDF air monitoring will be merged into the FEMP-wide air monitoring scheme to presented in the *IEMP*. The following is the proposed schedule for finalizing the OSDF Air Monitoring Plan.

Table 6-1

SCHEDULE FOR FINALIZING  
 THE AIR MONITORING PLAN

ACTIVITY	DATE
Submit Draft Final Air Monitoring Plan	August 28, 1996
Receive Comments from EPA	September 30, 1996
Submit Response to Comments to EPA	October 30, 1996
EPA Review and Comment	December 2, 1996
Response to Comments and Submit Final Air Monitoring Plan	January 2, 1997

**6.2 Groundwater Protection Monitoring**

Several groundwater monitoring programs are ongoing at the FEMP which focus on radiological and non-radiological constituents in private wells off site and in a comprehensive on- and off-site sampling program. A specific groundwater monitoring program for the OSDF is being developed to supplement the existing FEMP programs. The groundwater monitoring scheme for the OSDF will consider many factors, among which are:

- function of the leachate collection system and measurement of rate of leachate generation;
- function of the leak detection system and measurement of quantity/rate;
- site-specific hydrogeology — within the till and within the Great Miami Aquifer — under both current conditions as well as under projected conditions, especially in regards to the manipulations of gradients that will be associated with the groundwater remediation schemes;
- time of travel; and
- other principles of detection monitoring.

The proposed groundwater monitoring program includes the collection of groundwater data from the glacial till and the Great Miami Aquifer. Groundwater data will be integrated with leachate data collected from within the OSDF to evaluate performance of the OSDF.

Groundwater monitoring will be conducted in the glacial till beneath the OSDF liner system. To address geologic and hydrogeologic conditions, monitoring will be conducted directly under the sump of the eight to nine individual waste cells that will make up the OSDF. A monitoring well will be installed in the till for each waste unit during construction of the cell. Concentration data will be collected quarterly and trended at each monitoring point to document changes in water quality. It may not be possible to collect a water sample from the well, and a leak could follow a tortuous path and migrate past a well without being detected. However, wells are being positioned in locations that will maximize their success.

Groundwater monitoring will be conducted in the Great Miami Aquifer. Monitoring wells completed in the aquifer will be positioned around the perimeter of the OSDF facility. Each of the eight to nine individual waste cells in the OSDF will have an upgradient and downgradient aquifer monitoring well. During active remediation of the aquifer, water quality data will be collected quarterly and trended statistically at each well to document changes in water quality. Once remediation of the Great Miami Aquifer is complete, the monitoring program in the aquifer will be expanded to also include upgradient versus downgradient statistical comparisons of data.

Hence, OSDF groundwater monitoring will be merged into the FEMP-wide groundwater monitoring scheme presented in the FEMP IEMP. An draft *OSDF Groundwater Monitoring Plan* is contained in the Support Plan document. The following is the proposed schedule for finalizing this Plan.

Table 6-2

SCHEDULE FOR FINALIZING

THE DRAFT GROUNDWATER MONITORING PLAN

<b>ACTIVITY</b>	<b>DATE</b>
Submit Draft Groundwater Monitoring Plan	June 28, 1996
Receive Comments from EPA	August 8, 1996
Submit EPA Response to Comments	September 27, 1996
EPA Review and Comment	October 28, 1996
Submit Final Groundwater Monitoring Plan	November 28, 1996

## 7.0 HEALTH AND SAFETY/CONTINGENCY PLAN REQUIREMENTS

The focus of this section is OSDF construction and impacted material placement into the OSDF. Health and safety requirements, and procedures for emergencies during day to day activities, are discussed in this section. All Subcontractor activities conducted in support of this project are governed by the safety requirements found within the contract which addresses environmental, occupational, industrial, and construction health and safety.

All DOE and FERMCO employees, visitors, vendors, contractors, and subcontractors are required to abide by the provisions of applicable H&S matrices/Safe Work Plans/procedures. Management and supervisors have the responsibility for assuring that the requirements of the applicable H&S matrices/Safe Work Plans/procedures are met. All personnel have stop-work authority for imminent safety hazards resulting from noncompliance with the applicable H&S matrices/Safe Work Plans/procedures.

### 7.1 Project Specific Health and Safety Plans

In accordance with "Developing Project Specific H&S Plans" (FEMP SH-0001), a PSHSRM(s) will be developed for OSDF construction/impacted material placement activities. The applicable PSHSRM(s) will be included in the subcontract IFB/RFP solicitation package and will provide the Subcontractor with information related to the possible hazards and the safety requirements to execute each task from which the Subcontractor can develop their specific Safe Work Plans. The PSHSRM(s) may be revised after reviewing the Subcontractors' proposed Safe Work Plans, as tasks and/or associated hazards and mitigators are identified, added, or deleted. The DOE proposes to submit the PSHSRM(s) to the EPA for informational purposes only as specifically requested by the agency. The PSHSRM, as well as the detailed Safe Work Plans, will be maintained at the project site, with controlled copies in the project document control files.

### 7.2 Contingency Plan

The contingency plan for the OSDF remedial action project activities is covered by the existing FEMP Emergency Plan [FERMCO, 1996c]. That plan describes the emergency preparedness program that complements the engineered safety features of the FEMP facility, details the procedures to be followed at the FEMP in the event of an accident (spill) or emergency, and is the document which governs the spill response actions at the FEMP. Communications, site assessment, fire, medical, monitoring equipment, and all necessary emergency phone numbers are also provided in that plan. That plan is distributed to participating mutual aid organizations and other local organizations such as local fire departments, hospitals, etc., in the general vicinity of the FEMP.

The FEMP's established emergency organization is available 24 hours a day to respond to all emergencies and abnormal events. The emergency organization includes FEMP personnel and resources as well as those of the local community. This group of trained personnel can be quickly expanded and reinforced as necessary, through existing mutual aid agreements with local fire, ambulance, law enforcement, and medical services. Members of this extended emergency organization undergo a formal training program including participation in sitewide drills and exercises conducted under that plan. These drills and exercises present simulated emergency conditions formulated to allow this extended emergency organization to practice, maintain, test and refine the effectiveness of emergency plans, procedures, training, and response capabilities.

The Emergency Preparedness and Public Affairs groups at the FEMP maintain several ways to inform state and local groups about emergency preparedness and response. Meetings between the state, county, and local government agencies, emergency response personnel and FEMP personnel are held on a regular basis at Cooperative Planning and Training Committee meetings hosted by the FEMP Emergency Preparedness organization. These meetings provide a forum for these agencies to discuss issues related to response, communications, information sharing, available training, drills and exercises. An emergency planning brochure is distributed annually to the Emergency Planning Zone population on what to expect and what to do in the event of an emergency at the site.

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9.0 REFERENCES

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*FEMP Emergency Plan (PL-3020, Revision 2), Fernald Environmental Management Project, Fernald, Ohio, Fernald Environmental Restoration Management Corporation (FERMCO), Fernald, OH, March 1996c.*

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