5989

Department of Energy

Ohio Field Office
Fernald Closure Project
175 Tri-County Parkway
Springdale, Ohio 45246
(513) 648-3155

SEP 15 2005

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-0329-05

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

Dear Mr. Saric and Mr. Schneider:

TRANSMITTAL OF THE DRAFT PROJECT SPECIFIC PLAN FOR EXCAVATION CONTROL AND PRECERTIFICATION OF AREA 7 SUPPORT AND SILOS PROCESS AREA (SUPPLEMENT TO 20300-PSP-0011)

Enclosed for your review is the draft Project Specific Plan for the Excavation Control and Precertification of Area 7 Support and Silos Process Area (Supplement to 20300-PSP-0011).

If you have any questions or require additional information, please contact Johnny Reising at (513) 648-3139.

Sincerely,

Johnny Reising

William J. Taylor
Director

FCP:Reising

Enclosure

cc w/enclosure:
D. Pfister, OH/FCP
J. Reising, OH/FCP
T. Schneider, OEPA-Dayton (three copies of enclosure)
G. Jablonowski, USEPA-V, SR-6J
F. Bell, ATSDR
M. Cullerton, Tetra Tech
M. Shupe, HSI GeoTrans
R. Vandegrift, ODH
AR Coordinator, Fluor Fernald, Inc./MS78

cc w/o enclosures:
K. Alkema, Fluor Fernald, Inc./MS1
J. Chiou, Fluor Fernald, Inc./MS88
F. Johnston, Fluor Fernald, Inc./MS12
C. Murphy, Fluor Fernald, Inc./MS1
ECDC, Fluor Fernald, Inc./MS52-7

5989

PROJECT SPECIFIC PLAN FOR THE EXCAVATION CONTROL AND PRECERTIFICATION OF AREA 7 SUPPORT AND SILOS PROCESS AREA

(SUPPLEMENT TO 20300-PSP-0011)

ENVIRONMENTAL CLOSURE PROJECT

FERNALD CLOSURE PROJECT
FERNALD, OHIO

SEPTEMBER 2005

U.S. DEPARTMENT OF ENERGY
FERNALD AREA OFFICE

20500-PSP-0010
REVISION A
DRAFT

PROJECT SPECIFIC PLAN FOR THE EXCAVATION CONTROL AND PRECERTIFICATION OF AREA 7 SUPPORT AND SILOS PROCESS AREA
(SUPPLEMENT TO 20300-PSP-0011)

Document Number 20500-PSP-0010

Draft
Revision A

September 2005

APPROVAL:

Jyh-Dong Chiou, Project Manager — Date
Environmental Closure Project

Frank Miller, Characterization/Waste Management Manager — Date
Environmental Closure Project

Tom Buhrlage, Soil Sampling Manager — Date
Environmental Closure Project

Mike Frank, Real-Time Instrumentation Measurement Program Manager — Date
Environmental Closure Project

Linda Barlow, Waste Acceptance Organization — Date
Environmental Closure Project

Reinhard Friske, Quality Control — Date
Safety, Health and Quality Division

FERNALD CLOSURE PROJECT

Fluor Fernald, Inc.
P.O. Box 538704
Cincinnati, Ohio 45253-8704

TABLE OF CONTENTS

APPENDICES

LIST OF TABLES AND FIGURES

LIST OF ACRONYMS AND ABBREVIATIONS

5989

ASCOC	area-specific constituent of concern
ASL	analytical support level
CAWWT	Converted Advanced Waste Water Treatment (Facility)
COC	constituent of concern
DOE	U.S. Department of Energy
EMS	Excavation Monitoring System
FACTS	Fernald Analytical Computerized Tracking System
FCP	Fernald Closure Project
FRL	final remediation level
GC	gas chromatograph
HPGe	High-Purity Germanium (Detector)
ICP-AES/MS	inductively coupled plasma-atomic emission spectroscopy/mass spectroscopy
LCS	liquid scintillation counting
MDC	minimum detectable concentration
MDL	minimum detection level
mg/kg	milligrams per kilogram
NaI	sodium iodide
pCi/g	picoCuries per gram
PID	photoionization detector
ppm	parts per million
PSP	Project Specific Plan
PWID	Project Waste Identification and Disposition Report
QC	Quality Control
RSS	Radiation Scanning System
RTIMP	Real Time Instrumentation Measurement Program
RTRAK	Real-Time Radiation Tracking System
RWP	Radiation Work Permit
SED	Sitewide Environmental Database
SEP	Sitewide Excavation Plan
SWRB	Storm Water Retention Basin
TAL	Target Analyte List
V/FCN	Variance/Field Change Notice
WAC	Waste Acceptance Criteria
WAO	Waste Acceptance Organization

1.0 INTRODUCTION

This Project Specific Plan (PSP) describes the data collection activities necessary to support excavation control and precertification activities of Area 7 Support and Silos Process Area. This PSP only represents the specific information regarding Area 7 Support and Silos Process Area. The general information that is routinely addressed in a PSP can be found in 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation.* While this PSP has section headings similar to a full-length PSP, where the information in the section is identical to the information in the General PSP (20300-PSP-0011), a reference to this General PSP is made and the information is not repeated.

1.1 PURPOSE

The purpose of this PSP is to provide specific direction regarding the excavation control and precertification of Area 7 Support and Silos Process Area. This detailed information includes reason to sample and constituents of concern.

1.2 SCOPE

The area included within the scope of this PSP is Area 7 Support and Silos Process Area. See Figure 1-1 for areas included in excavation control and precertification of this PSP

The Area 7 Support and Silos Process Area includes the Silos Process Area, Converted Advanced Waste Water Treatment (CAWWT) Facility Area, Silo Truck Staging Area, area north of the Storm Water Retention Basins (SWRBs), and the area west of the Security Trailer Complex. Various utilities, slabs, footers, and foundations are also in the area. Portions of Area 7 (i.e., the Silos and General Area) not addressed in this document have been included in separate documentation.

The schedule for implementation of this PSP is expected to begin October 2005. Precertification of this area will begin following successful completion of the excavation control process and prior to certification.

This PSP is not considered a work authorization document (for implementation of fieldwork) per SH-0012, Work Permits. Work authorization documents directing the implementation of fieldwork, per SH-0012, may include applicable Environmental Services procedures, Fluor Fernald work permits, Radiation Work Permits (RWPs), penetration permits, and other applicable permits.

1.3 VARIANCE/FIELD CHANGE NOTICE (V/FCN) DOCUMENTATION

The Variance/Field Change Notice (V/FCN) process is utilized to document the occurrence of two situations. The first is to document a change in protocol occurring when a modification in the

characterization approach is required [e.g., a different decision process for defining the extent of contamination or for verifying that soil is below-waste acceptance criteria (WAC) or below-final remediation level (FRL) concentrations]. Factors that will be considered under special circumstances include safety of the workers, cost effectiveness, the need for a timely response, and impending weather conditions. This type of V/FCN requires agency approval prior to implementation.

The second situation requiring a V/FCN is to provide documentation of sampling and analytical activities and to provide variable information that is dependent upon field conditions and cannot be specified initially in this PSP. As part of the excavation control process, the collection of physical samples will be documented in applicable field logs and with V/FCNs. Additionally, the Data Group Form, FS-F-5157 will be generated per Procedure EW-1021, Preparation of the Project Waste Identification and Disposition (PWID) Report, following the generation of data from the analysis of physical samples. In this situation the use of this V/FCN form is not used to document a change in the protocol of this PSP, but is used to document sampling and analytical activities in order to demonstrate that these activities are compliant with the protocols of this PSP.

If a V/FCN is required, the Characterization Manager, or designee, will document the change and requirements through the V/FCN process in accordance with Section 7.5 of the *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation*, 20300-PSP-0011.

1.4 KEY PERSONNEL

Refer to Section 1.4 of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation* and Table 1-1.

TABLE 1-1
KEY PERSONNEL

Title	Primary	Alternate
Department of Energy (DOE) Contact	Johnny Reising	TBD
Environmental Closure Project Manager	Jyh-Dong Chiou	Rich Abitz
Characterization Manager	Frank Miller	Deborah Brennan
Area 7 Support and Silos Process Area Lead	Deborah Brennan	Denise Arico
RTIMP Manager	Mike Frank	Dale Seiller
Soil Sampling Manager	Tom Buhrlage	Jim Hey
Surveying Manager	Jim Schwing	Andy Clinton
WAO Contact	Linda Barlow	TBD
Construction Manager	Kevin Harbin	Tim Hastings
Engineering Lead	Tony Snider	Dave Russell
Laboratory Contact	Paul McSwigan	Amy Meyer
Data Validation Contact	Jim Chambers	Baohe Chen
Field Data Validation Contact	Dee Dee Edwards	Jim Chambers
Data Management Lead	Deborah Brennan	Denise Arico
Radiological Control Contact	Corey Fabricante	Jeff Denton
FACTS/SED Database Contact	Kym Lockard	Susan Marsh
Quality Control Contact	Reinhard Friske	Darren Wessel
Safety and Health Contact	Gregg Johnson	Pete Bolig

FACTS - Fernald Analytical Computerized Tracking System
RTIMP - Real Time Instrumentation Measurement Program
SED - Sitewide Environmental Database
WAO - Waste Acceptance Organization

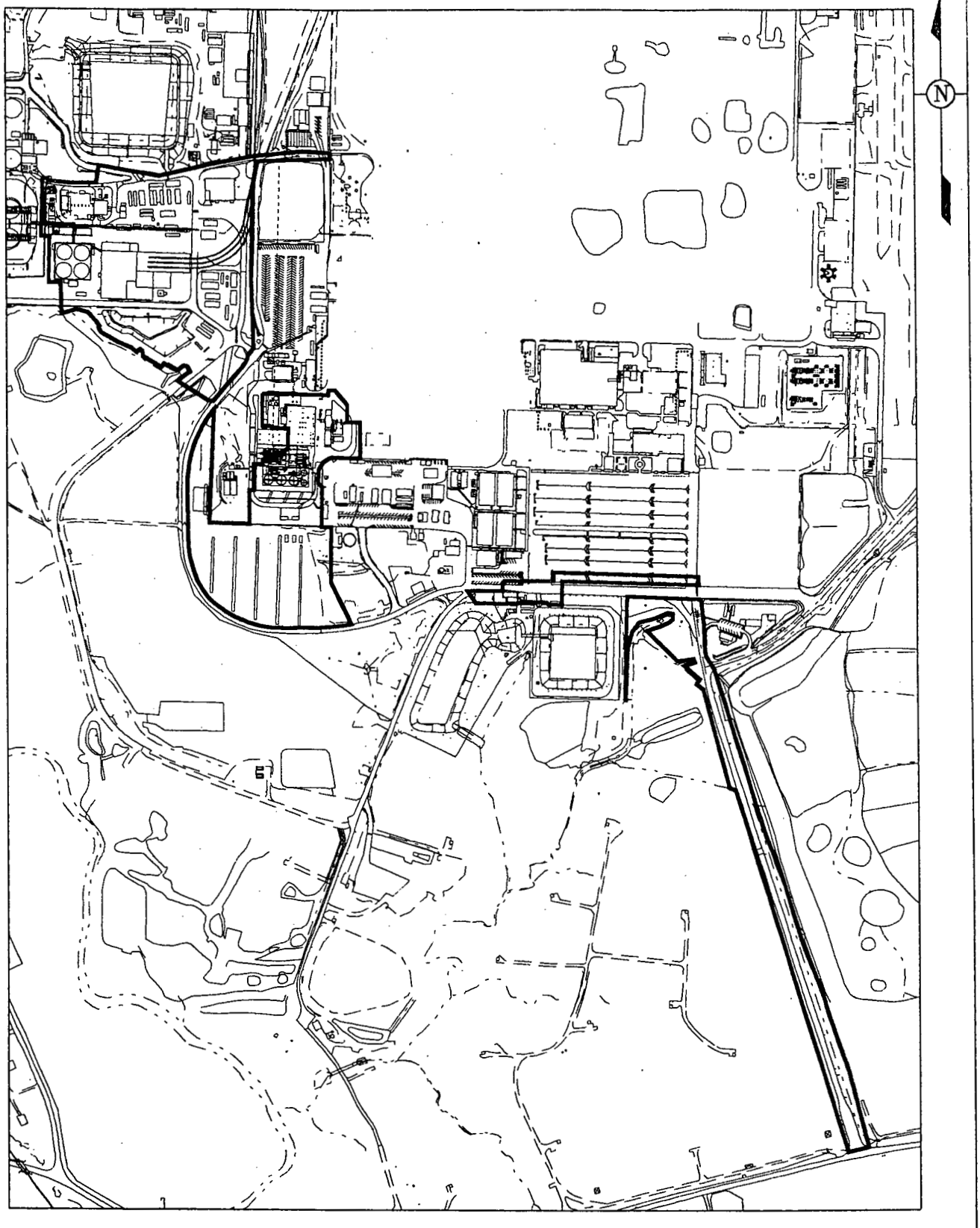


FIGURE 1-1. AREA 7 SUPPORT AND SILOS PROCESS AREA LOCATION MAP

2.0 AREA-SPECIFIC WORK REMAINING STATUS

2.1 AREA 7 SUPPORT AND SILOS PROCESS AREA

2.1.1 History

Area 7 constitutes 85 acres of the Fernald Closure Project (FCP). The majority of this area is located to the west and south of the Former Production Area, with a portion located south of the Main Parking Lot and just east of Area 5. Area 7 is bordered by Paddys Run on the west and Area 1 borders it to the east. Areas 1 and 2 comprise the southern border while the Waste Pits and Areas 4B and 3B are to the north. The Area 7 Support and Silos Process Area Excavation represent approximately 29.6 acres and includes the following:

- Silos Process Area
- CAWWT Area
- Silo Truck Staging Area
- Area North of the SWRBs
- Area West of the Security Trailer Complex

As stated in the Excavation Plan for Area 7 Support and Silos Process Area, at- and below-grade structures, roadways, and underground utilities not related to groundwater remediation are present throughout. Those utilities, etc. associated with ongoing site needs and/or groundwater remediation will not be addressed in this document. Rather they will be covered under separate documentation. The portion of Area 7 (i.e., the Silos and General Area) not addressed by this PSP will be presented in separate documentation.

2.1.2 Excavation Control

2.1.2.1 ASCOCs

The evaluation of the preliminary list of area-specific constituents of concern (ASCOCs) found in the Sitewide Excavation Plan (SEP) Table 2-7 for Remediation Area 7, data from the predesign investigation of the area, and historical information resulted in the following list of primary and secondary constituents of concern (COCs) for excavation control of Area 7. The list of primary COCs is unchanged and will be carried through to certification. The secondary COC list is reduced to beryllium and technetium-99 as they are the only secondary COCs driving any portion of the excavation.

Primary COCs

- Total Uranium
- Radium-226
- Radium-228
- Thorium-228
- Thorium-232

Secondary COCs

- Beryllium
- Technetium-99

The above list of COCs will be used to verify that the planned remedial excavation limits are sufficient to capture the above-FRL contamination during excavation. Note that the entire ASCOC list applicable to this area will be reevaluated during the certification design process to determine which of the ASCOCs will be carried into certification. As always, this evaluation as well as the justification for the retention or elimination of any COC will be presented in the CDL for agency review and approval.

2.1.2.2 Excavation Types

The types of excavation identified in Area 7 Support and Silos Process Area are those that are either above-WAC (driven by technetium-99) or above-FRL (driven by total uranium, radium-226, radium-228, thorium-228, thorium-232, beryllium and aroclor-1254). The only constituents controlling excavation in Area 7 Silos and General Area are technetium-99, total uranium, radium-226, radium-228, thorium-228, thorium-232, beryllium and aroclor-1254.

Real-time scanning for total uranium, radium-226, radium-228, thorium-228, and thorium-232 will be performed for above-FRL areas per 20300-PSP-0011, Section 5.1. Physical sampling for excavation control of above-WAC technetium-99 and above-FRL aroclor-1254 and beryllium contamination will be performed per 20300-PSP-0011, Section 5.2.

Table 2-1 lists the excavation control COCs and their limits. Tables 2-2 and 2-3 address the excavation monitoring and sampling requirements, as well as the physical sample volumes, preservation requirements, and analysis information. Appendix A lists the Target Analyte Lists (TALs).

2.1.3.3 Locations

The list of above-WAC areas (see Figure 2-1) and COCs are as follows:

Above-WAC Areas	COC
AWAC #1 - Area North of the K-65 Trench	Technetium-99
AWAC #2 - K-65 Trench[1]	Technetium-99

[1]Sediment within the concrete K-65 Trench has been identified as above-WAC. Prior to removal of the K-65 Trench, soil around it will be sampled to ensure it is below-WAC. Following removal of the K-65 Trench, soil underneath it will be sampled to ensure it is below-WAC.

The list of above-FRL areas (see Figures 2-1 and 2-2) and COCs are listed below.

Above-FRL Areas	COC
FRL #1 – Northwestern Silos Process Area	Radium-226
FRL #2 – Northeastern Silos Process Area	Radium-226
FRL #3 – Southeastern Silos Process Area	Radium-226
FRL #4 – Southwest of CAWWT	Beryllium
FRL #5 – Northeastern CAWWT Area	Total Uranium
FRL #6 – Southeastern CAWWT Area	Total Uranium
FRL #7 – Eastern Silos Process Area	Radium-226

2.1.3 Precertification

Precertification will be performed per 20300-PSP-0011, Section 3.0 and Section 6.0.

TABLE 2-1
LIMITS FOR AREA 7 EXCAVATION CONTROL COCS

Area 7 COCs	WAC	FRL	MDC
Primary			
Uranium	1030 mg/kg	82.0 mg/kg	8.2 mg/kg
Uranium (high leachability)	1030 mg/kg	20.0 mg/kg	2.0 mg/kg
Radium-226	NA	1.7 pCi/g	0.17 pCi/g
Secondary			
Technetium-99	29.1 pCi/g	30 pCi/g	2.91 pCi/g
Beryllium	NA	1.5 mg/kg	0.15 mg/kg

* Best achievable laboratory limits.

MDC - minimum detectable concentration
mg/kg - milligrams per kilogram
pCi/g - picoCuries per gram

TABLE 2-2
PHYSICAL SAMPLE ANALYTICAL REQUIREMENTS

TAL[1,2] (all ASL B)	Hold Time	Method	Sample Matrix	Preservative	Container	Minimum Sample Mass/Volume
TAL A Technetium-99	12 mos	LSC	Solid	None	Appropriate size plastic or glass	50 grams
TAL B Beryllium	6 months	ICP-AES/MS	Solid	Cool 4°C	Appropriate size plastic or glass with Teflon lid	50 grams

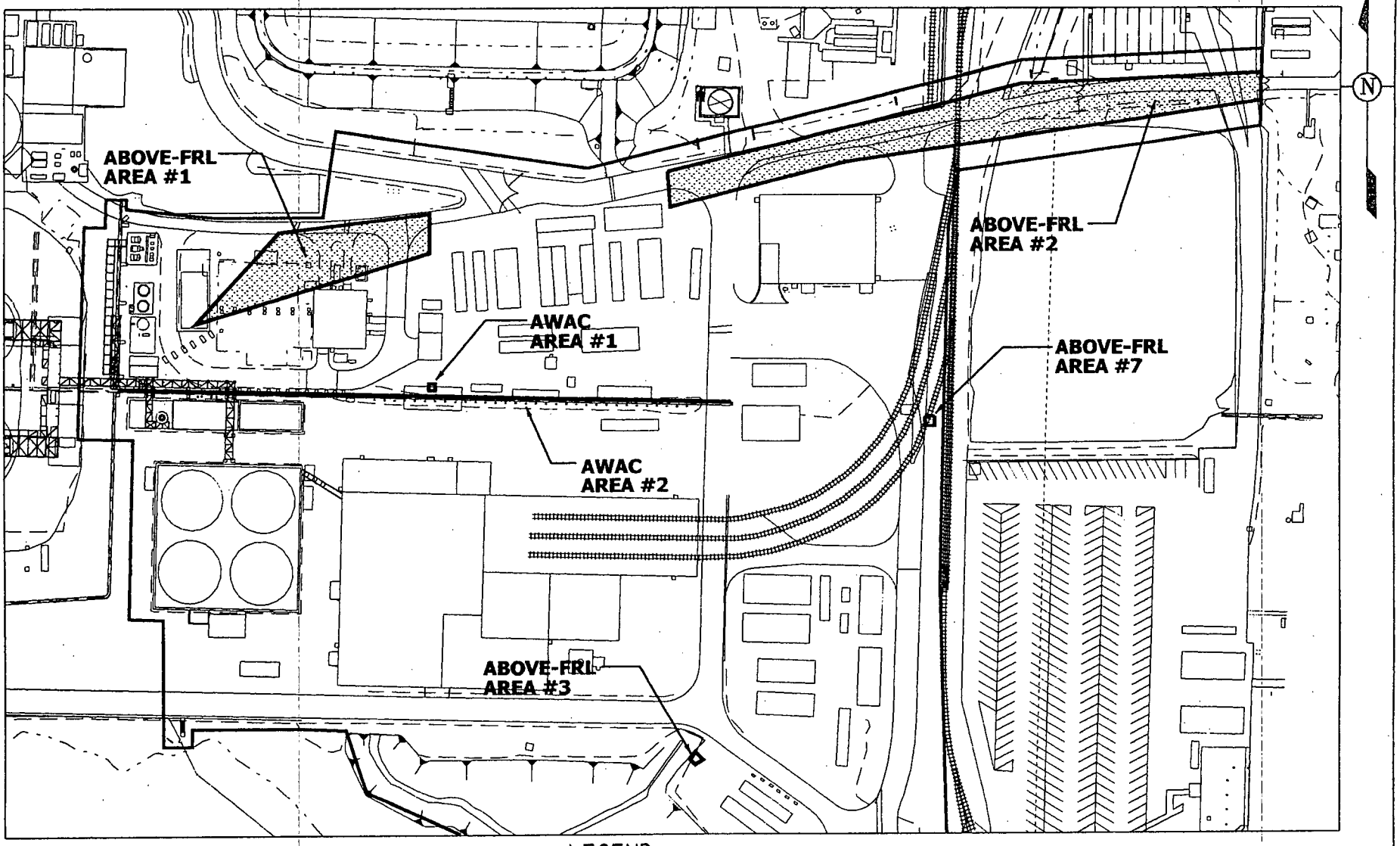
[1] One sample per release shipped to an off-site laboratory shall be identified on the Chain of Custody/Request for Analysis forms as "designated for laboratory Quality Control (QC)".
[2] All samples will be shipped off-site for analysis utilizing historical data.

ASL - analytical support level
ICP-AES/MS - inductively coupled plasma-atomic emission spectroscopy/mass spectroscopy
LSC - liquid scintillation counting

TABLE 2-3
EXCAVATION MONITORING/SAMPLING REQUIREMENTS

Type of Contamination Zone	Types of Samples/Measurements and Data Use		
	Sideslope of Each Excavation Lift	**Floor of Each Excavation Lift**	**Floor/Sideslope at Design Depth for Contamination Zone**
Above-FRL Uranium	• Real-time for Uranium (WAC)	• Real-time for Uranium (WAC)	• Real-time for Uranium (WAC/FRL)*
Above-FRL Radium-226	• Real-time for Uranium (WAC)	• Real-time for Uranium (WAC)	• Real-time for Radium-226/Uranium (WAC/FRL)*
Above-WAC Technetium-99	• Physical sample for Technetium-99 (WAC) • Real-time for Uranium (WAC)	• Real-time for Uranium (WAC)	• Physical sample for Technetium-99 (WAC) • Real-time for Uranium (FRL)*
Above-FRL Beryllium	• Physical sample for Beryllium (for FRL) • Real-time for Uranium (WAC)	• Real-time for Uranium (WAC)	• Physical sample for Beryllium (for FRL) • Real-time for Uranium (FRL)*

* During real-time uranium WAC/FRL scan, the data collected will be evaluated later for precertification purposes by reviewing concentrations of thorium-232 and radium-226, as well as thorium-228 and radium-228 based on equilibrium in comparison to their respective FRLs.

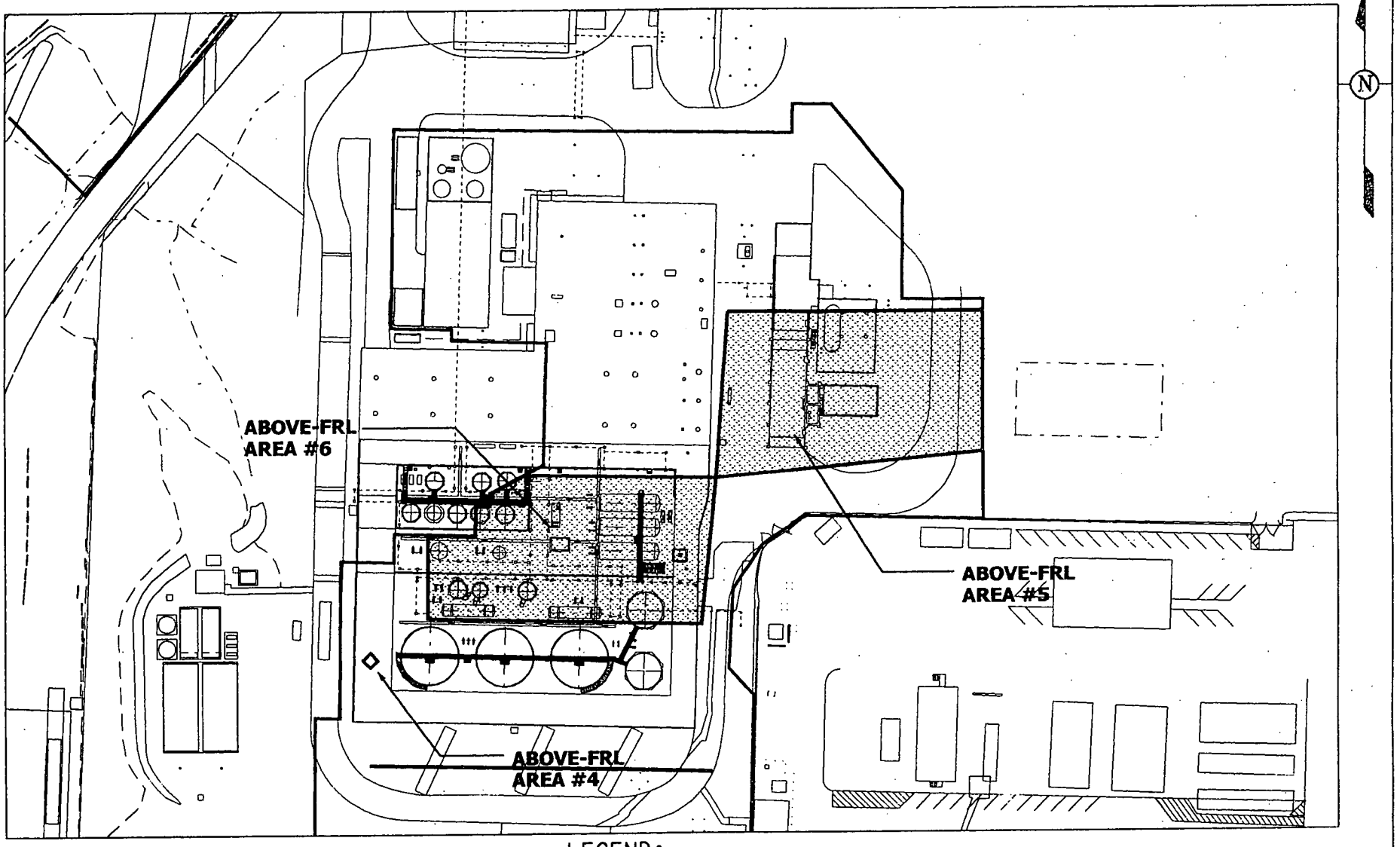


DRAFT

08-SEP-2005

v:\2fm12\dgn\a7_silos_frl.dgn
STATE PLANAR COORDINATE SYSTEM 1983

FIGURE 2-1. SILOS SUPPORT AREA ABOVE-WAC/ABOVE-FRL EXCAVATION AREAS



DRAFT

08-SEP-2005

v:#2fm12#dgn#a7_cawwt_frl.dgn
STATE PLANAR COORDINATE SYSTEM 1983

FIGURE 2-2. CAWWT ABOVE-FRL EXCAVATION AREAS

3.0 INSTRUMENTATION AND TECHNIQUES

Reference the corresponding section of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation* for each of the following sections:

3.1 MEASUREMENT INSTRUMENTATION AND TECHNIQUES

3.1.1 Real-Time

3.1.1.1 Sodium Iodide Data Acquisition (RTRAK, RSS, GATOR, EMS)

3.1.1.2 HPGe Data Acquisition

3.1.1.3 Excavation Monitoring System

3.1.1.4 Radon Monitor

3.1.2 Surface Moisture Measurements

3.2 REAL-TIME MEASUREMENT IDENTIFICATION

3.3 REAL-TIME DATA MAPPING

3.4 REAL-TIME SURVEYING

4.0 PREDESIGN

The predesign investigations of Area 7 were completed using the PSPs noted in the Excavation Plan Area 7 Support and Silos Process Areas.

5.0 EXCAVATION CONTROL MEASURES

Reference the corresponding section of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation* for each of the following sections:

5.1 EXCAVATION DESIGN CONTROL REQUIREMENTS
5.1.1 Contamination Zone
5.1.2 Floors, Roads and Foundations
5.1.3 Real-Time Lift Scans
5.1.4 Above-WAC Lift Scans
5.2 ORGANIC SCREENING AND PHYSICAL SAMPLING REQUIREMENTS
5.2.1 Above-WAC Photoionization Detector (PID)/Gas Chromatograph (GC) Screening
5.2.2 All Other Physical Sample Requirements

In addition to the information contained in the corresponding section of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation,* if discolored or stained soil is noted further investigation with the possibility of additional sampling may occur.

5.2.3 PID Screening and Physical Sampling Procedures
5.2.4 Physical Sample Identification

6.0 PRECERTIFICATION

Reference the corresponding section of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation* for each of the following sections:

6.1 INITIAL PRECERTIFICATION NaI SCAN AT BASE OF DESIGN GRADE
6.2 PRECERTIFICATION HPGE MEASUREMENTS IN 20 PPM FRL (URANIUM) AREAS
6.3 PRECERTIFICATION HPGE MEASUREMENTS IN 82 PPM FRL (URANIUM) AREAS
6.4 DELINEATING HOT SPOTS FOLLOWING PRECERTIFICATION HPGE MEASUREMENTS

7.0 QUALITY ASSURANCE/QUALITY CONTROL REQUIREMENTS

Reference the corresponding section of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation* for each of the following sections:

7.1 QUALITY CONTROL SAMPLES - REAL-TIME MEASUREMENTS AND PHYSICAL SAMPLES
7.2 DATA VALIDATION
7.2.1 Physical Sample Data Validation
7.2.2 Real-Time Data Verification/Validation
7.3 APPLICABLE DOCUMENTS, METHODS AND STANDARDS
7.4 SURVEILLANCES
7.5 IMPLEMENTATION AND DOCUMENTATION OF VARIANCE/ FIELD CHANGE NOTICES (V/FCN)

8.0 SAFETY AND HEALTH

Reference the corresponding section of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation* for this section.

9.0 EQUIPMENT DECONTAMINATION

Reference the corresponding section of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation* for this section.

10.0 DISPOSITION OF WASTES

Reference the corresponding section of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation* for this section.

11.0 DATA AND RECORDS MANAGEMENT

Reference the corresponding section of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation* for each of the following sections:

11.1 REAL-TIME
11.2 PHYSICAL SAMPLES

APPENDIX A

TARGET ANALYTE LISTS FOR EXCAVATION CONTROL AND PREDESIGN

APPENDIX A
TARGET ANALYTE LISTS FOR EXCAVATION CONTROL AND PRECERTIFICATION

TAL A

Analyte	FRL	MDL (soil)
Technetium-99	30 pCi/g	29.1 pCi/g

TAL B

Analyte	FRL	MDL (soil)
Beryllium	1.5 mg/kg	0.15 mg/kg

MDL - minimum detection level