



Department of Energy

Ohio Field Office
Fernald Closure Project
175 Tri-County Parkway
Springdale, Ohio 45246

006215



OCT 17 2006

Mr. James A. Saric, Remedial Project Manager
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Region V-SRF-5J
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

DOE-0013-07

Mr. Thomas Schneider, Project Manager
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Southwest District Office
401 East Fifth Street
Dayton, Ohio 45402-2911

Dear Mr. Saric and Mr. Schneider:

**TRANSMITTAL OF ADDENDUM 3 TO THE CERTIFICATION DESIGN LETTER
FOR AREA 1, PHASE II CERTIFIED FOR REUSE AREAS, TRAP RANGE,
SECTOR 2C AND SECTOR 3**

Reference: "Certification Design Letter for Area 1, Phase II Certified for Reuse Areas, Trap Range, Sector 2C and Sector 3," Document 20710-RP-0014, dated April 2000

Enclosed for your approval is Addendum 3 to the Certification Design Letter for Area 1, Phase II Certified for Reuse Areas, Trap Range, Sector 2C and Sector 3. This addendum includes coverage of the area surrounding the Dissolved Oxygen Facility as well as an area where a clay pipe was encountered while excavating/relocating the drainage ditch east of the On-Site Disposal Facility Cell 8.

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

Sincerely,

Johnny W. Reising
Director

Enclosure

Mr. James Saric
Mr. Thomas Schneider

-2-

DOE-0013-07

cc w/enclosure:

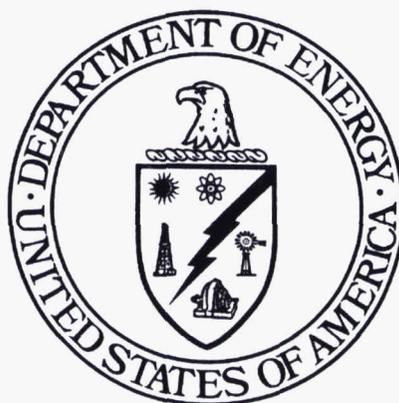
J. Desormeau, DOE-OH/FCP
T. Schneider, OEPA-Dayton (three copies of enclosure)
G. Jablonowski, USEPA-V, SRF-5J
M. Cullerton, Tetra Tech
M. Shupe, HSI GeoTrans
S. Helmer, ODH
AR Coordinator, Fluor Fernald, Inc./MS6

cc w/o enclosure:

R. Abitz, Fluor Fernald, Inc./MS88
J. Chiou, Fluor Fernald, Inc./MS88
F. Johnston, Fluor Fernald, Inc./MS12
C. Murphy, Fluor Fernald, Inc./MS1
T. Terry, Fluor Fernald, Inc./MS1

**ADDENDUM TO THE
CERTIFICATION DESIGN LETTER
FOR AREA 1, PHASE II,
CERTIFIED FOR REUSE AREAS,
TRAP RANGE, SECTOR 2C, AND SECTOR 3**

**FERNALD CLOSURE PROJECT
FERNALD, OHIO**



OCTOBER 2006

**U.S. DEPARTMENT OF ENERGY
FERNALD AREA OFFICE**

**20710-RP-0014
REVISION 0
ADDENDUM 3**

REVISION SUMMARY

<u>Revision</u>	<u>Date</u>	<u>Description of Revision</u>
Revision 0	2/11/00	Initial controlled issuance.
PCN 1	4/7/00	Revised Figure 1-6 to remove shading within CU boundaries for S2-OS-01 and S2-LL-02.
PCN 2	6/2/00	Revised the Executive Summary, Sections 1, 3, 4, and 5 and added Figures 1-7 and 1-8 to include additional information regarding re-certification of portions of CUs A1P2-S1TR-01 and A1P2-S1TR-03 for lead and arsenic as a separate CU.
Addendum 1	12/14/01	Created to include coverage of the Equipment Wash Facility, associated drain lines, and the immediate surrounding area.
Addendum 2	11/8/04	Created to include coverage of the Debris Haul Road, which is the area located north of the Equipment Wash Facility.
Addendum 3	10/11/06	Created to include coverage of the area surrounding the Dissolved Oxygen Facility, as well as an area where a clay pipe was encountered while excavating/relocating the drainage ditch east of Cell 8.

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LIST OF ACRONYMS AND ABBREVIATIONS

A1P11	Area 1, Phase II
ASCOC	area-specific constituent of concern
CDL	Certification Design Letter
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
COC	constituent of concern
CU	certification unit
DO	Dissolved Oxygen
DOE	U.S. Department of Energy
FCP	Fernald Closure Project
FRL	final remediation level
mg/kg	milligram per kilogram
OSDF	On-Site Disposal Facility
pCi/g	picoCuries per gram
PSP	Project Specific Plan
RCRA	Resource Conservation and Recovery Act
SEP	Sitewide Excavation Plan
V/FCN	Variance/Field Change Notice
WAC	waste acceptance criteria

EXECUTIVE SUMMARY

This addendum to the Certification Design Letter (CDL) for Area 1, Phase II Certified Areas for Reuse, Trap Range, Sector 2C and Sector 3 presents the certification approach for the area surrounding the Dissolved Oxygen (DO) Building, which is the non-certified area located on the east side the Fernald Closure Project. In addition to the area surrounding the DO Building, two samples have been added to Certification Unit A1P2-S3DP-02 following the removal of clay pipe that was discovered during the excavation/relocation of a drainage ditch located east of On-Site Disposal Facility Cell 8. The CDL addendum includes the following information:

- A definition of the boundary of the area to be certified under this addendum
- The area-specific constituents of concern (ASCOCs) pertinent to this area
- A presentation of the certification unit (CU) boundary
- The analytical requirements and the statistical methodology that will be employed
- The proposed schedule for certification activities.

The scope of this CDL addendum is limited to the DO Building as well as the new samples in CU A1P2-S3DP-02. While the two samples added to CU A1P2-S3DP-02 were collected under variance/field change notices (V/FCNs), the samples collected from the area surrounding the DO Building were completed under the Project Specific Plan (PSP) for Predesign of Area 1, Phase II - Dissolved Oxygen Building Area (Supplement to 20300-PSP-0011) (DOE 2005). The Predesign PSP was written to follow the general certification approach outlined in Section 3.4 of the Sitewide Excavation Plan (DOE 1998), including CU size, minimum distance between points, analytical support levels as well as validation of all analytical data.

The selection process for the ASCOCs was accomplished using constituent of concern (COC) lists in the Operable Unit 5 Record of Decision (DOE 1996), process knowledge, and surrounding certification unit ASCOCs. Total uranium, thorium-228, thorium-232, radium-228, radium-226 (the primary radiological COCs) are considered ASCOCs in each CU. Secondary ASCOCs have also been identified for each area.

1.0 INTRODUCTION

This addendum to the Certification Design Letter (CDL) for Area 1, Phase II (A1PII) Certified Areas for Reuse, Trap Range, Sector 2C and Sector 3 presents the certification approach for the area surrounding the Dissolved Oxygen (DO) Building that is located on the east side of the Fernald Closure Project (FCP). This addendum also includes an area where a clay pipe was encountered while excavating/relocating a drainage ditch east of the On-Site Disposal Facility (OSDF) Cell 8. The document describes the certification approach for demonstrating that soils associated with the area surrounding the DO Building certification unit (CU) as well as the area where the clay pipe was encountered meets the final remediation levels (FRLs) for all applicable area-specific constituents of concern (ASCOCs). Refer to the main document for a discussion of those A1PII CUs that have previously been addressed (DOE 2000).

1.1 OBJECTIVES

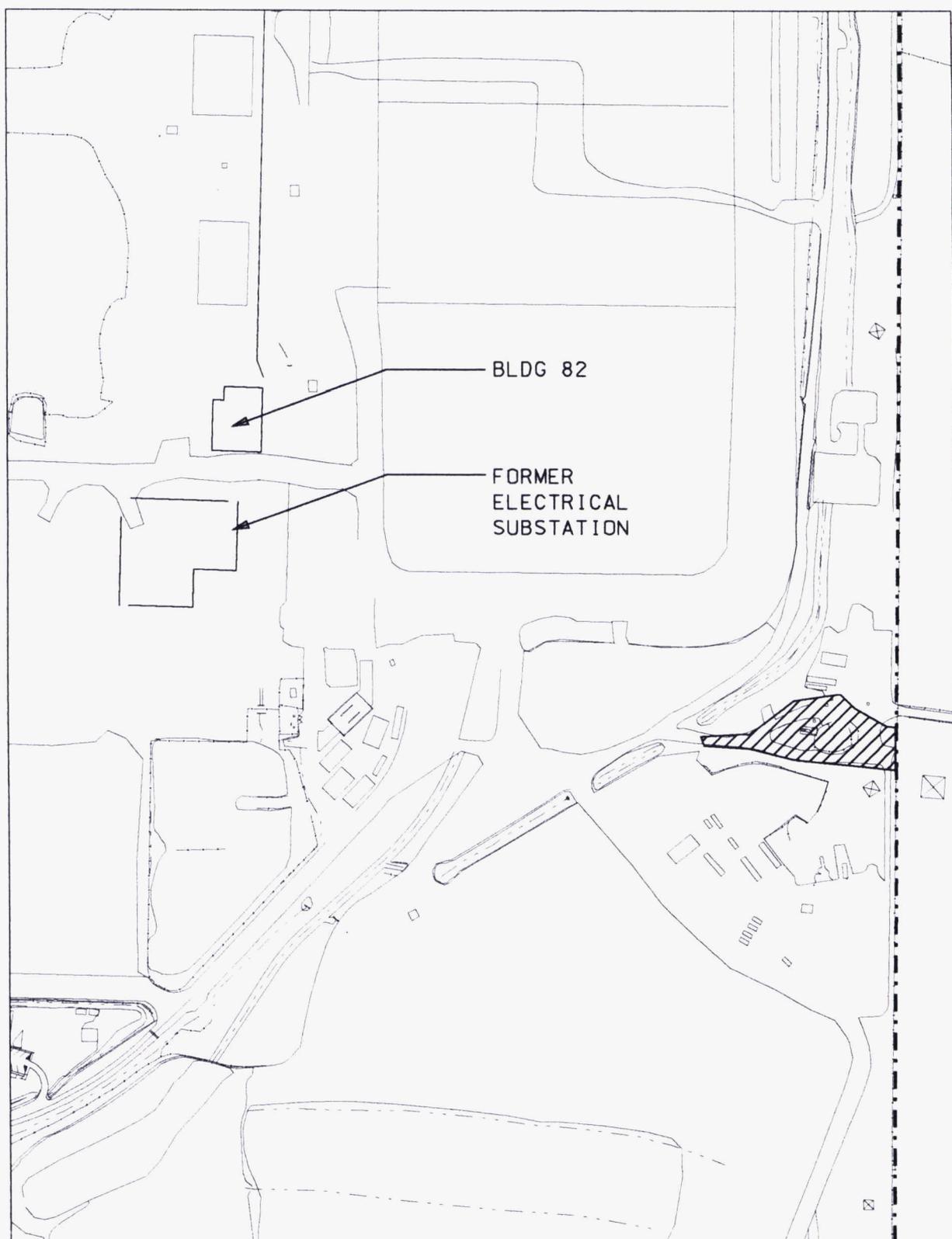
The primary objectives of this CDL addendum are as follows:

- Define the boundary of the area to be certified under this addendum;
- List the selected ASCOCs pertinent to the area;
- Present the CU boundary;
- Summarize the analytical requirements and the statistical methodology employed; and
- Present the proposed schedule for the certification activities.

1.2 SCOPE AND AREA DESCRIPTION

This CDL addendum documents the certification design and sampling for the area surrounding the DO Building. Shown on Figure 1-1, this area is approximately three-quarters of an acre in size and is on the east side of the site. Predesign samples were collected from this area under the Project Specific Plan (PSP) for Predesign of Area 1, Phase II - Dissolved Oxygen Building Area (Supplement to 20300-PSP-0011) (DOE 2005). Due to the results of predesign activities, remediation activities are not expected. This area will be referred to as CU A1P2-DO.

Also included in this addendum is the addition of two samples to previously certified CU A1P2-S3DP-02. Within this CU, a piece of clay pipe was encountered during the excavation/relocation of a drainage ditch east of Cell 8. Figure 1-2 shows the location of CU A1P2-S3DP-02.



LEGEND:

-  A1P11 DO BLDG AREA
-  FCP BOUNDARY

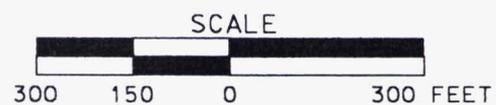
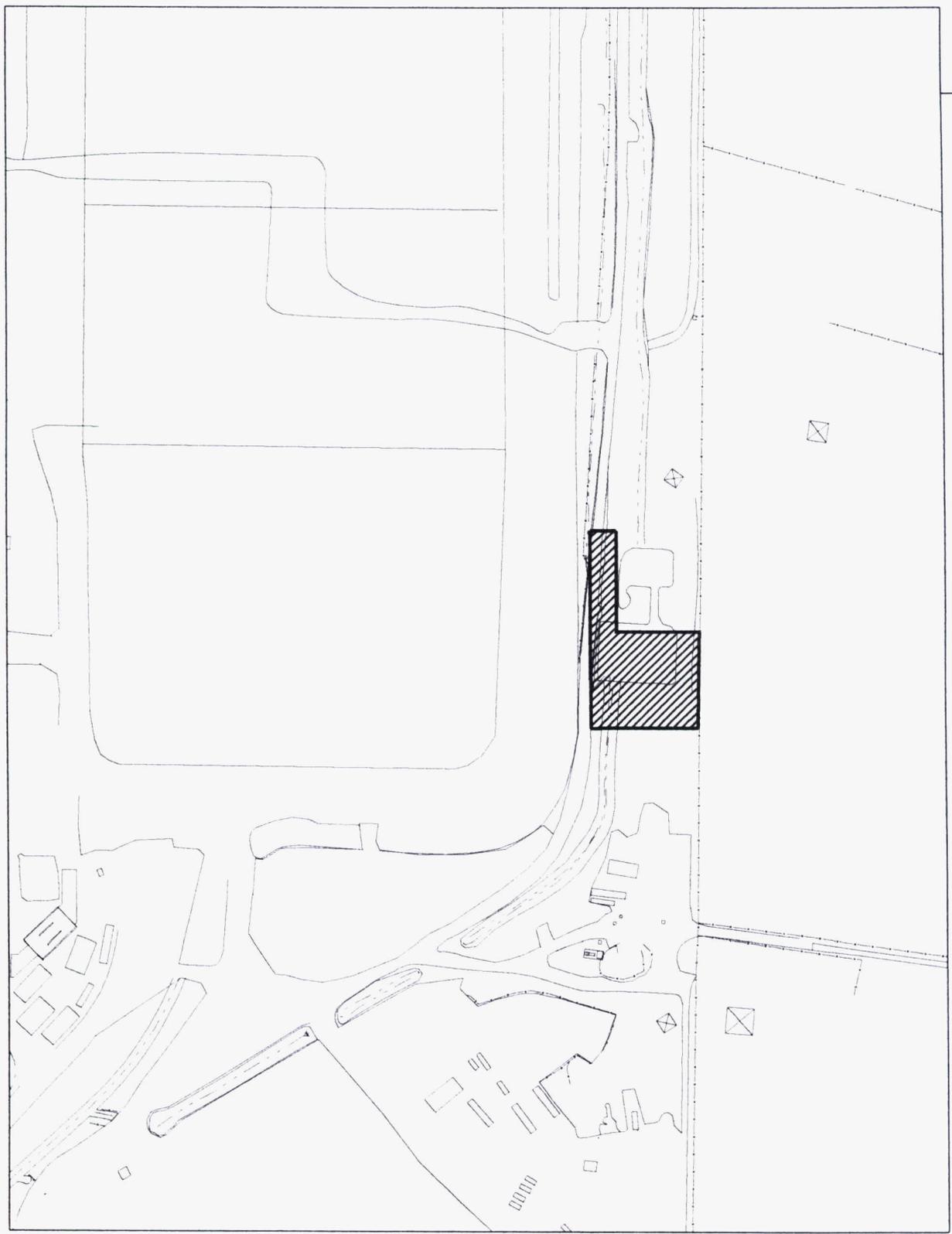


FIGURE 1-1. LOCATION OF THE AREA 1 PHASE II DISSOLVED OXYGEN BUILDING AREA AT THE FCP



LEGEND:



A1P2-S3DP-02

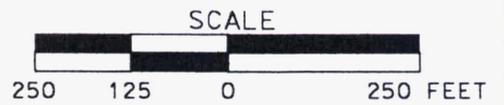


FIGURE 1-2. CU A1P2-S3DP-02 LOCATION MAP

2.0 HISTORICAL DATA

A detailed discussion of the historical data for Sectors 2 and 3 is provided in the main CDL; this addendum is limited to the area surrounding the DO Building. A review of the Sitewide Environmental Database for data from the area to be certified was completed.

Based on the results of the sampling and scanning activities summarized in Sections 2.1 and 2.2, it has been determined that no remedial actions are necessary to remove above-FRL or above-waste acceptance criteria (WAC) soil prior to certification.

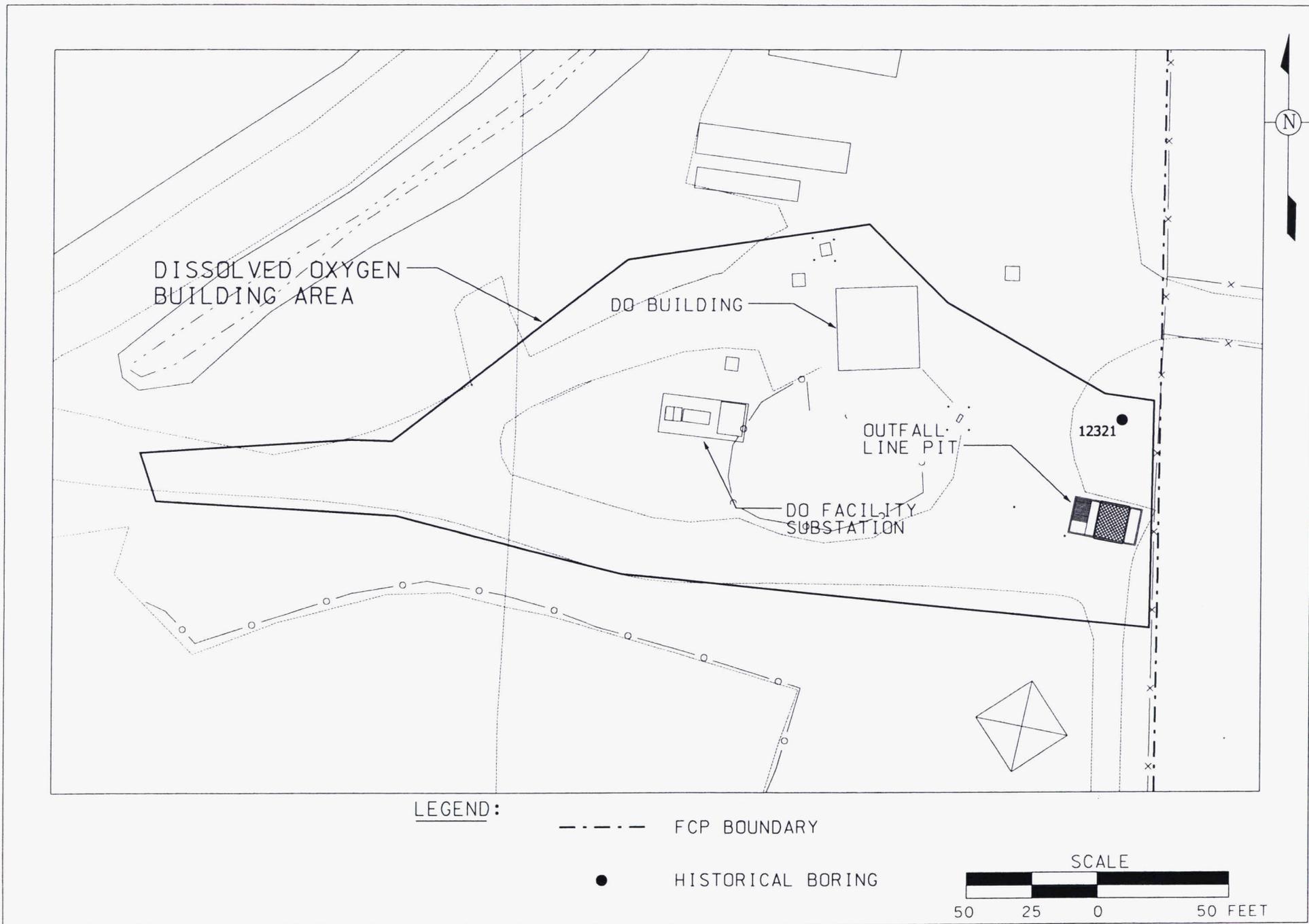
2.1 HISTORICAL DATA

One historical above-FRL result was obtained from the area surrounding the DO Building. Boring 12321 had an above-FRL beryllium result of 2.04 milligrams per kilogram (mg/kg) from the 4.5 to 5-foot interval. Figure 2-1 provides this historical above-FRL boring location. This above-FRL beryllium result is consistent with background conditions found in several adjacent areas. This approach is explained in the Addendum to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)/Resource Conservation and Recovery Act (RCRA) Background Soil Study (DOE 2001) (where results in the 12 to 36-inch interval ranged from below the FRL to 3.05 mg/kg for beryllium). No further investigation beryllium is planned.

2.2 PRECERTIFICATION REAL-TIME SCAN DATA

According to guidelines established in Section 3.3.3 of the Sitewide Excavation Plan (SEP, DOE 1998), precertification activities were conducted to evaluate residual radiological contamination patterns. Phase 1 and Phase 2 real-time scans were conducted in June 2005 in the area surrounding the DO Building. For the precertification real-time data collected, results show total uranium, radium-226, and thorium-232 to be below the target levels. The mapped results are provided in Appendix A.

Phase 1 and Phase 2 real-time scans were also completed in the area where clay pipe was discovered during the drainage ditch expansion in May 2006. A Phase 2 real-time scan was completed in July 2006 upon the discovery of a second piece of clay pipe. For the precertification real-time data collected, results are below the target levels, and the mapped results are provided in Appendix B.



LEGEND:

----- FCP BOUNDARY

● HISTORICAL BORING

SCALE

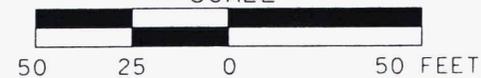


FIGURE 2-1. AREA 1 PHASE II - DO BUILDING AREA,
HISTORICAL BORING LOCATION

3.0 AREA-SPECIFIC CONSTITUENTS OF CONCERN

The ASCOC selection process is discussed in the main CDL, as well as the Predesign PSP for the DO Building. In addition to retaining the primary radiological constituents of concern (COCs), additional secondary ASCOCs were retained for samples collected from CU A1P2-DO and the additional samples collected in CU A1P2-S3DP-02. For ease of reference, the list of ASCOCs is provided below.

**TABLE 3-1
ASCOC LIST FOR CUs A1P2-DO AND A1P2-S3DP-02**

ASCOC	FRL	Reason Retained
Radium-226	1.7 pCi/g	Retained as a primary ASCOC sitewide
Radium-228	1.8 pCi/g	Retained as a primary ASCOC sitewide
Thorium-228	1.7 pCi/g	Retained as a primary ASCOC sitewide
Thorium-232	1.5 pCi/g	Retained as a primary ASCOC sitewide
Total Uranium	82 mg/kg	Retained as a primary ASCOC sitewide
Antimony	96 mg/kg	Remediation Area 1 Ecological ASCOC per SEP
Aroclor-1254	0.13 mg/kg	Remediation Area 1 Secondary ASCOC per SEP
Aroclor-1260	0.13 mg/kg	Remediation Area 1 Secondary ASCOC per SEP
Arsenic	12 mg/kg	Remediation Area 1 Secondary ASCOC per SEP
Beryllium	1.5 mg/kg	Remediation Area 1 Secondary ASCOC per SEP
Lead	400 mg/kg	Remediation Area 1 Ecological and Secondary ASCOC per SEP
Molybdenum	2900 mg/kg	Remediation Area 1 Ecological ASCOC per SEP
Technetium-99	30 pCi/g	Remediation Area 1 Secondary ASCOC per SEP
Tetrachloroethene	3.6 mg/kg	Retained as a secondary ASCOC due to process knowledge (found in Sewage Treatment Plant, which is adjacent to DO Building Area)

pCi/g - picoCuries per gram

4.0 CERTIFICATION APPROACH

4.1 CERTIFICATION DESIGN

The certification design for CU A1P2-DO follows the general approach outlined in Section 3.4 of the SEP. The CU design and the sample locations for the area CU A1P2-DO are shown on Figure 4-1.

The certification design for CU A1P2-S3DP-02 was completed under the CDL for A1PII Certified Areas for Reuse, Trap Range, Sector 2C and Sector 3.

4.2 SAMPLING

Certification sampling of CU A1P2-DO was completed under the PSP for Predesign of Area 1, Phase II - Dissolved Oxygen Building Area (Supplement to 20300-PSP-0011). While the samples were collected under a predesign PSP, the certification unit design followed the general approach outlined in Section 3.4 of the SEP, including CU size, minimum distance between points, analytical support levels as well as validation of all analytical data.

The sample locations were generated by dividing each CU into 16 approximately equal sub-CUs, then randomly selecting northing and easting coordinates within each sub-CU boundary. Samples were collected from 12 locations except the four sub-CUs designated as archive locations will not be submitted for sample analysis. One location also had a field duplicate sample collected. The samples were collected from the top 0 to 0.5-foot interval of soil.

Additional samples were also collected from CU A1P2-DO as a result of utility removal under Variance/Field Change Notice (V/FCN) 20710-PSP-0010-02. These sample locations (designated with a T) are shown on Figure 3-1. The Predesign PSP for the DO Building, as well as any V/FCNs to the PSP, are included in Appendix C.

In CU A1P2-S3DP-02, two additional samples were collected under V/FCNs 20710-PSP-0009-27 and 28 (DOE 1999) due to the discovery of clay pipe in the area. The sample locations (A1P2-S3DP-02-17 and A1P2-S3DP-02-18, respectively) are shown on Figure 4-2, and both V/FCNs are provided in Appendix D.

4.3 ANALYTICAL METHODOLOGY AND STATISTICAL ANALYSIS

Analysis and data validation was completed at Analytical Support Level D as described in Section 4 of the PSP. The analytical methodology and statistical approach are provided in Section 4.3 of the main CDL.

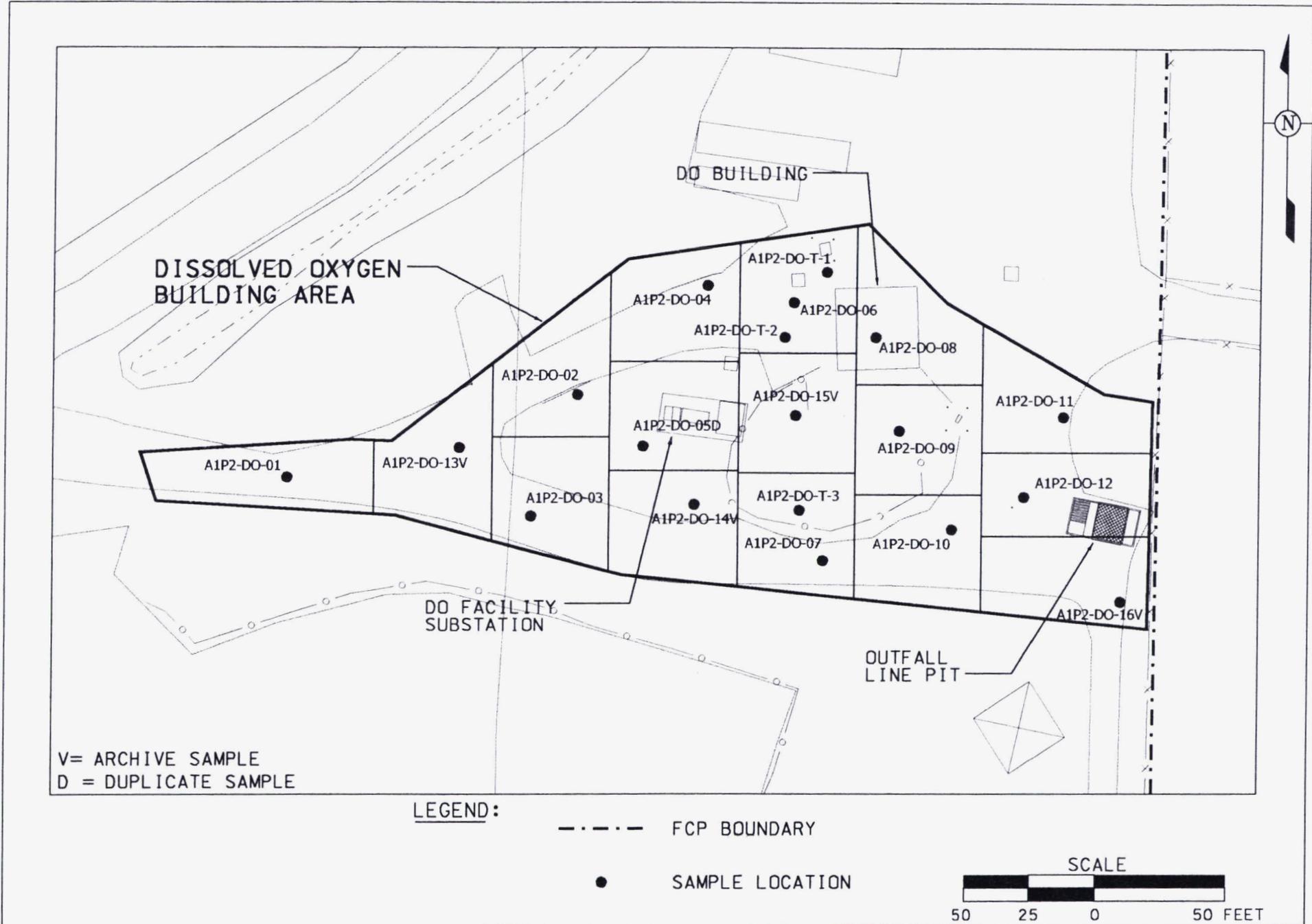
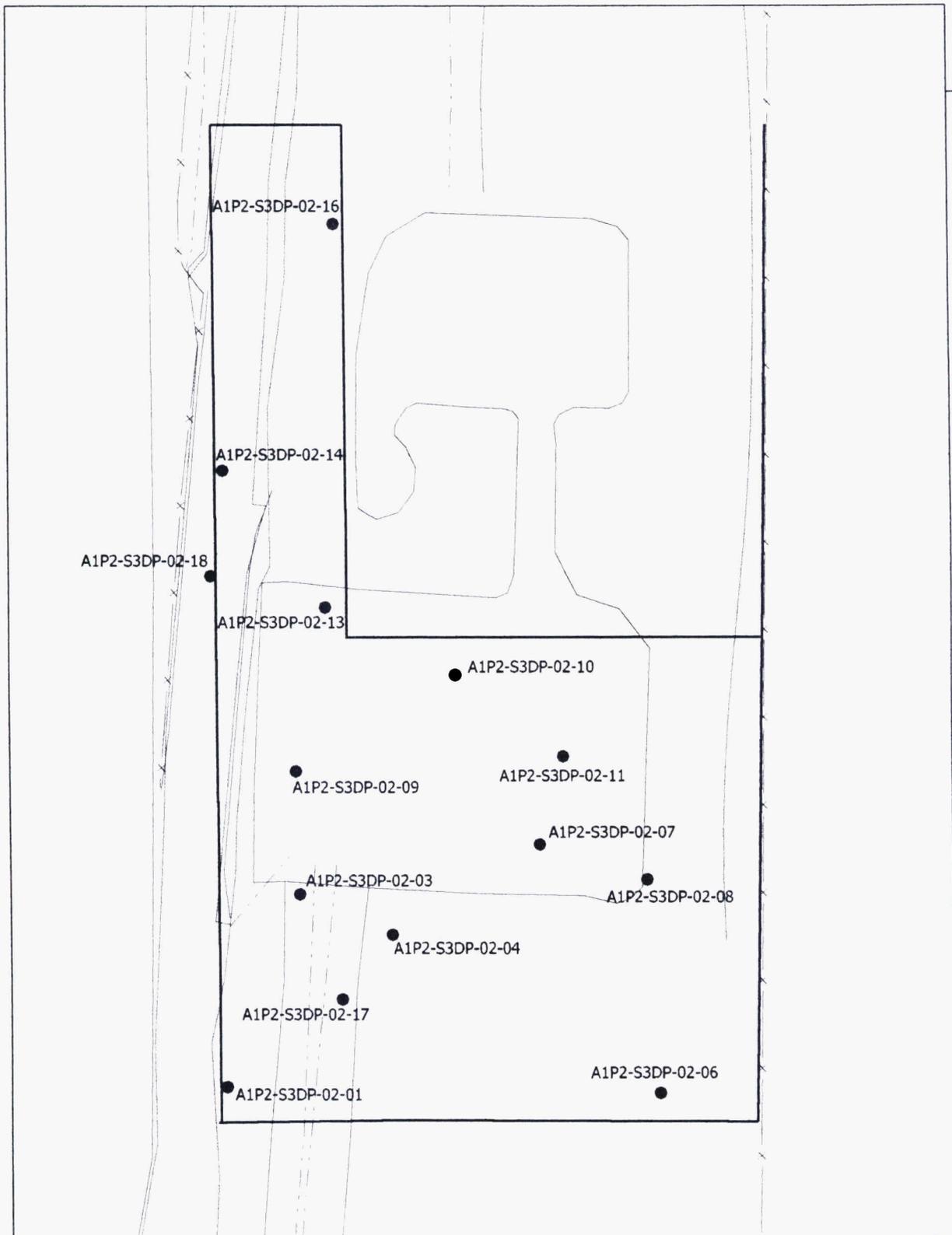


FIGURE 4-1. SAMPLE LOCATIONS FOR CU A1P2-DO

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LEGEND:

● SAMPLE LOCATION

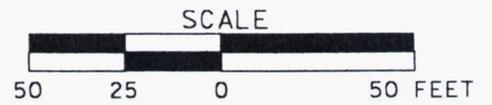


FIGURE 4-2. SAMPLE LOCATIONS FOR CU A1P2-S3DP-02

5.0 SCHEDULE

The following draft schedule shows key activities for the completion of the work within A1PII.

<u>ACTIVITY</u>	<u>TARGET DATE</u>
Submit CDL Addendum	October 12, 2006
Start of Field Work	Completed
Complete Field Work	Completed
Complete Analytical Work	Completed
Complete Data Validation and Statistical Analysis	Completed
Submit Certification Report Addendum	October 16, 2006

REFERENCES

U.S. Department of Energy, 1996, "Record of Decision for Remedial Actions at Operable Unit 5," Final, Fernald Environmental Management Project, DOE, Fernald Area Office, Cincinnati, Ohio.

U.S. Department of Energy, 1998, "Sitewide Excavation Plan," Final, Fernald Environmental Management Project, DOE, Fernald Area Office, Cincinnati, Ohio.

U.S. Department of Energy, 1999, "Project Specific Plan for Area 1, Phase II Certified for Reuse Areas, Trap Range, Sector 2C, and Sector 3," Revision 1, Fernald Environmental Management Project, DOE, Fernald Area Office, Cincinnati, Ohio.

U.S. Department of Energy, 2000, "Certification Design Letter for Area 1, Phase II Certified for Reuse Areas, Trap Range, Sector 2C and Sector 3," Revision 0, Fernald Environmental Management Project, DOE, Fernald Area Office, Cincinnati, Ohio.

U.S. Department of Energy, 2001, "CERCLA/RCRA Background Soil Study," Revision 1, Fernald Environmental Management Project, DOE, Fernald Area Office, Cincinnati, Ohio.

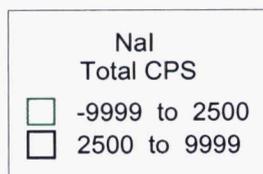
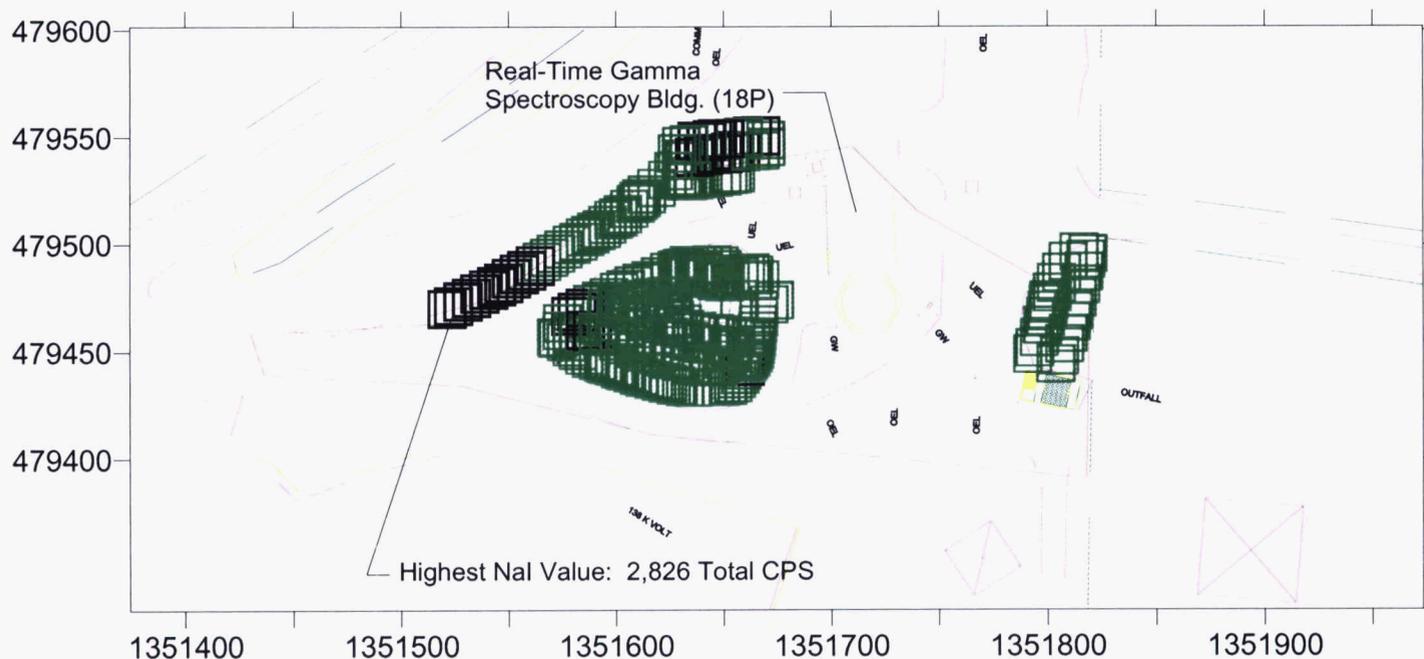
U.S. Department of Energy, 2005, "Project Specific Plan for Predesign of Area 1, Phase II - Dissolved Oxygen Building Area (Supplement to 20300-PSP-0001)," Revision 0, Fernald Closure Project, DOE, Fernald Area Office, Cincinnati, Ohio.

APPENDIX A

PRECERTIFICATION REAL-TIME SCAN MAPS OF CU A1P2-DO

Area 1, Phase 2 - Bldg. 18P Area Phase 1 Scan

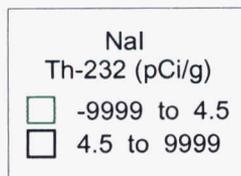
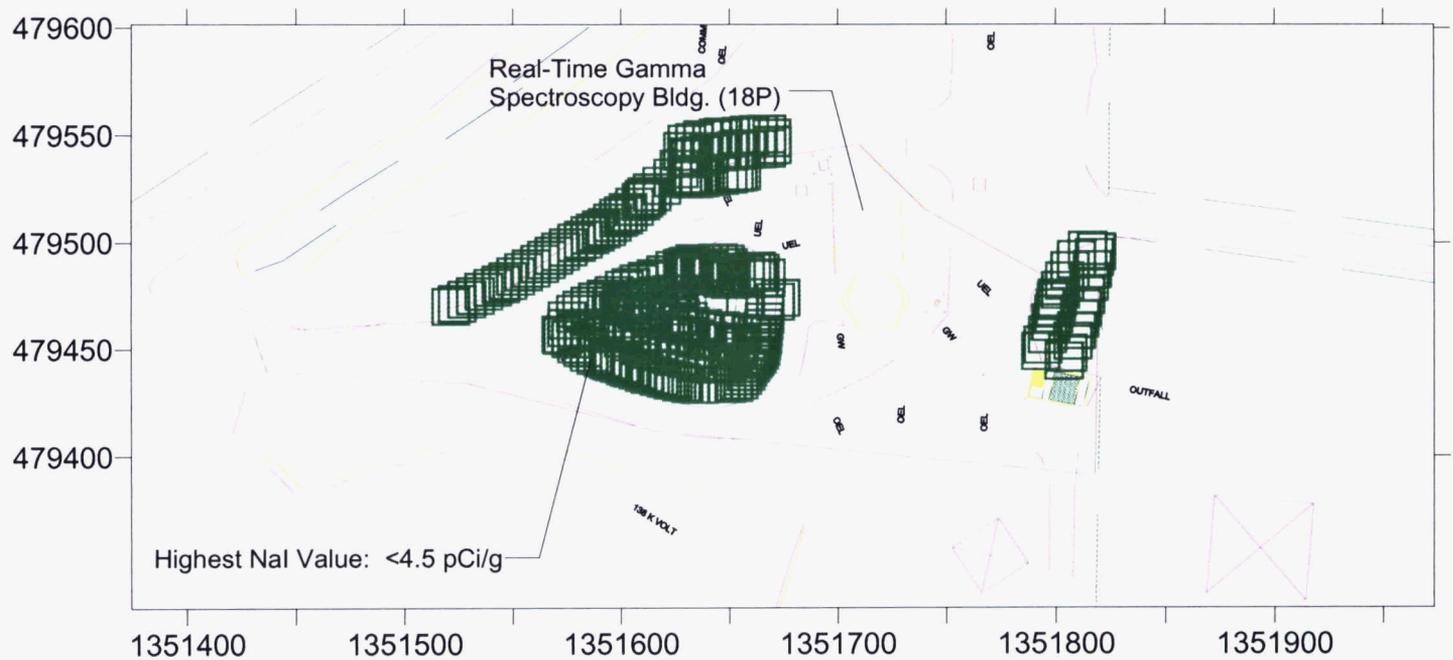
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Measurement Date: 06-08-2005



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Project #: 20300-PSP-0011
Prepared By: D.Seiller/8533
Date Prepared: 06/13/05
Support Data: A1P2_BLD18P_P1_NaI.xls

Area 1, Phase 2 - Bldg. 18P Area Phase 1 Scan

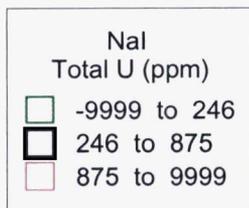
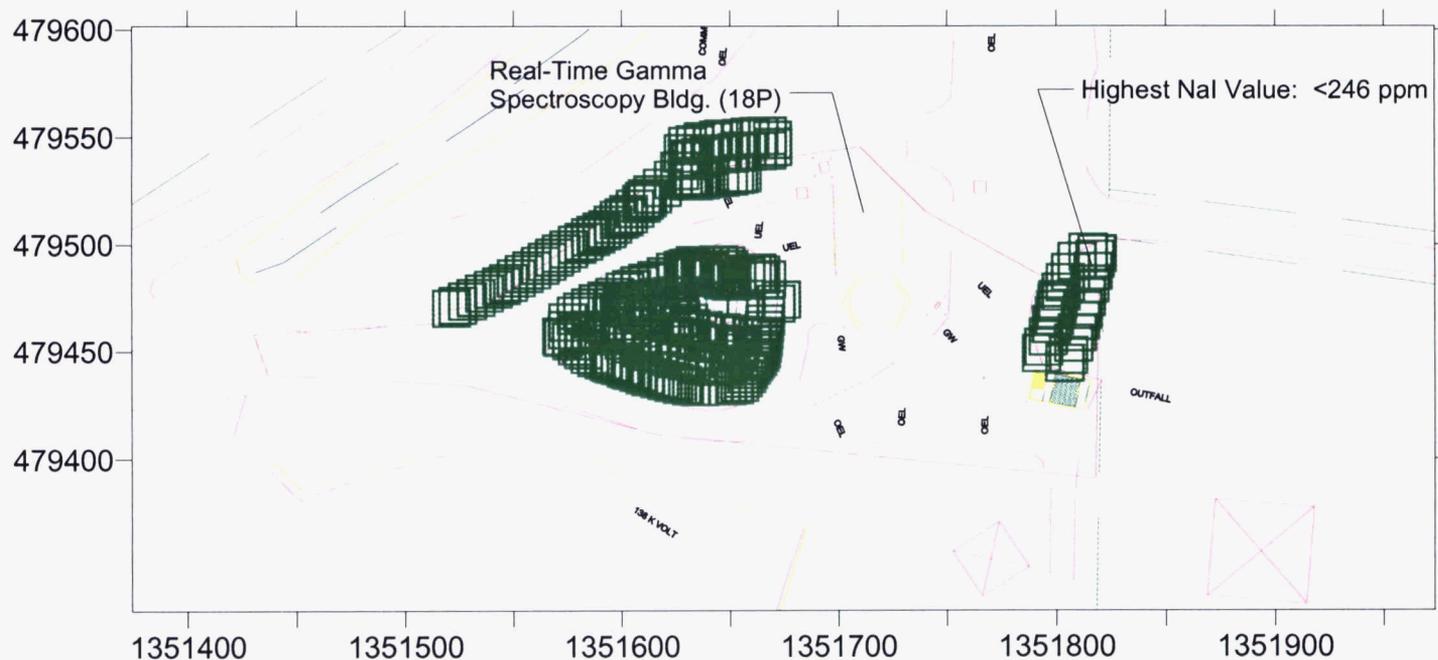
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Project #: 20300-PSP-0011
Prepared By: D.Seiller/8533
Date Prepared: 06/13/05
Support Data: A1P2_BLD18P_P1_NaI.xls

Area 1, Phase 2 - Bldg. 18P Area Phase 1 Scan

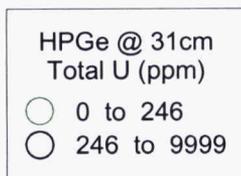
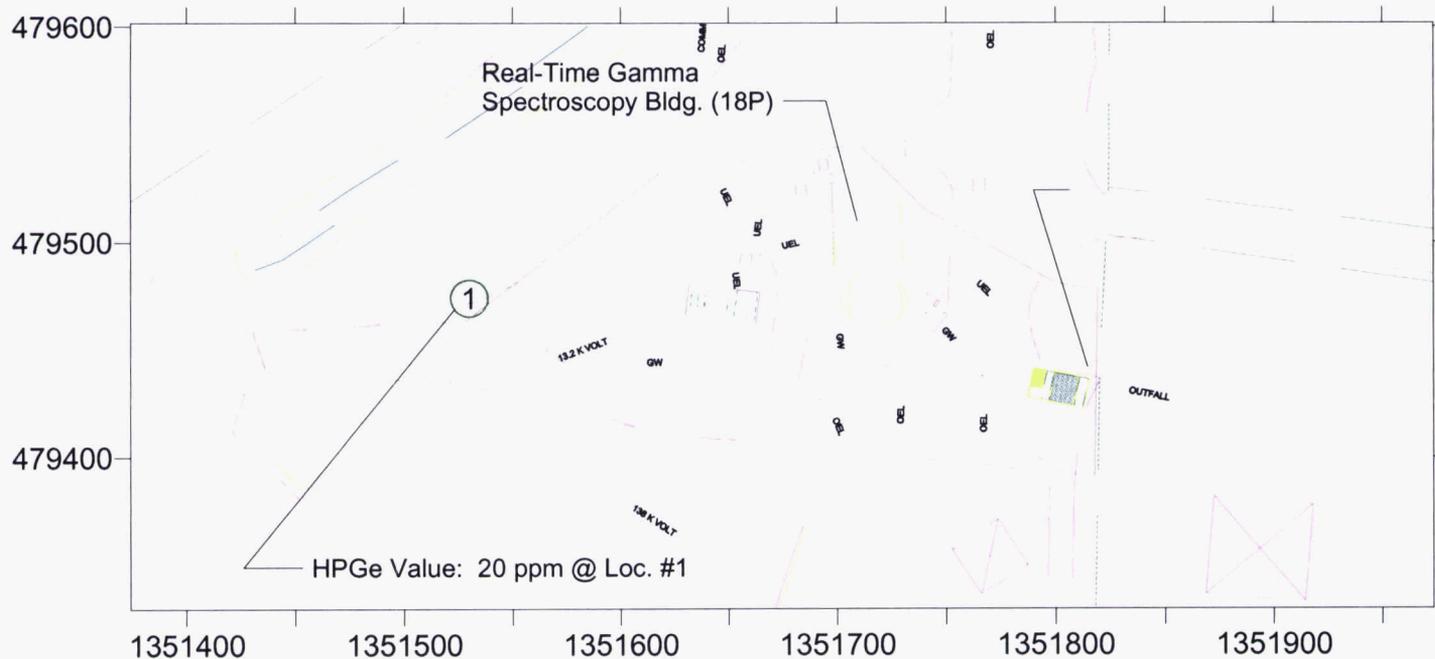
Moisture Corrected Total Uranium
 Data Group: RSS3_0866_06-08-2005
 Measurement Date: 06-08-2005



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 Project #: 20300-PSP-0011
 Prepared By: D.Seiller/8533
 Date Prepared: 06/13/05
 Support Data: A1P2_BLDG18P_P1_NaI.xls

Area 1, Phase 2 - Bldg. 18P Area Phase 2 Measurement

Moisture Corrected Total Uranium
Det. #: 40293_06-14-05



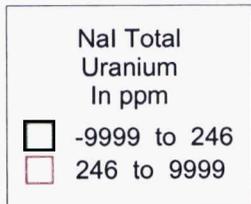
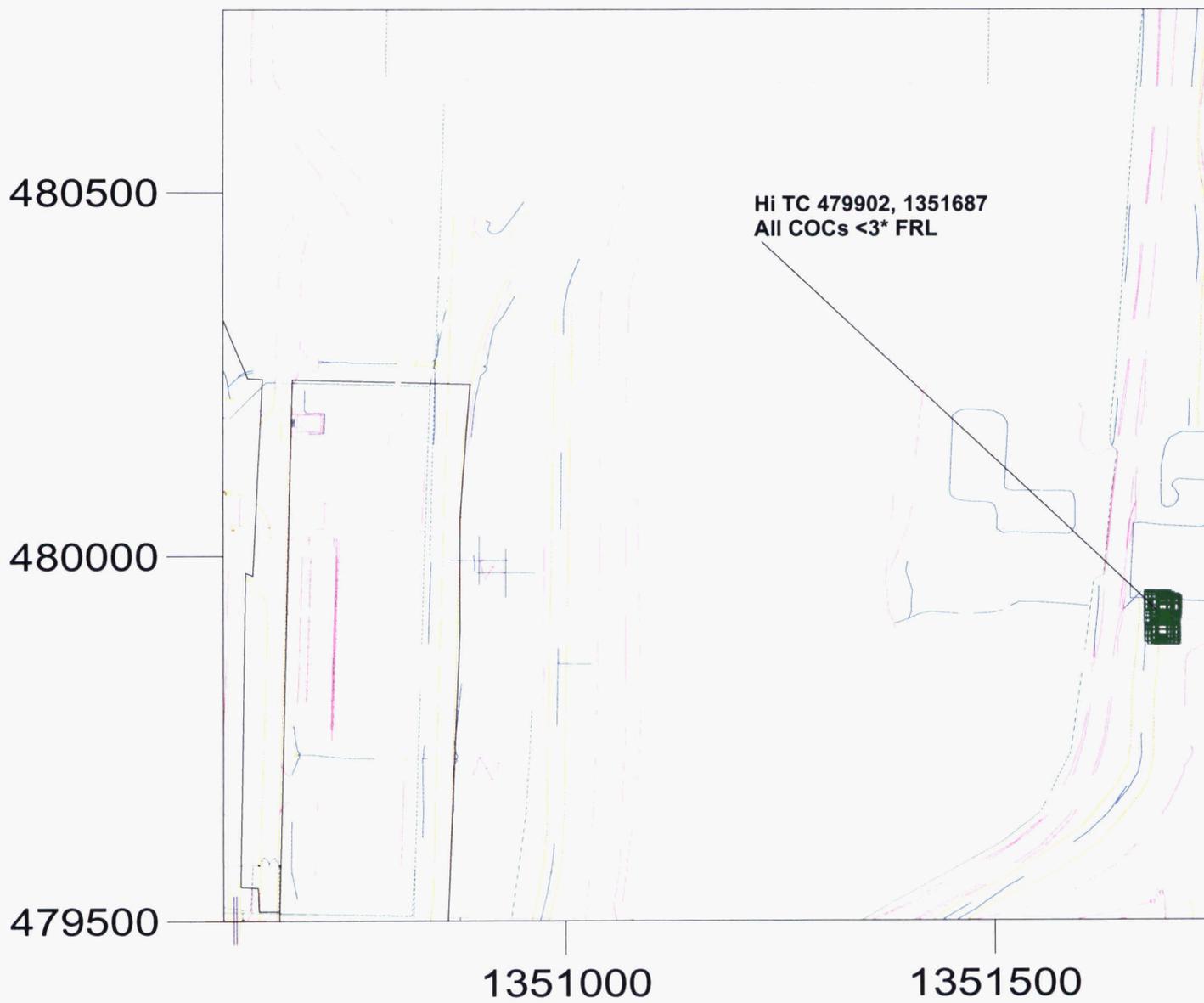
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 Project #: 20300-PSP-0011
 Prepared By: M. Frank/8591
 Date Prepared: 06/27/05
 Support Data: A1P2_BLD18P_P2_HPGe_31cm.xls

APPENDIX B

REAL-TIME SCAN MAPS OF CLAY PIPE EXCAVATION LOCATIONS

A1P2 - Certification Confirmation - Phase 1 Cell 8 Eastern Drainage Ditch - Total Uranium

Data Group: RSS3_1447_05-30-2006
Measurement Date: 05-30-2006



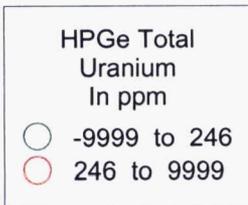
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Project ID: Gen Char for Site Remediation 20300-PSP-0011
Prepared: D. Seiller 06-01-2006; M. Frank 10-11-2006
Support Data: A1P2_CONF_P1_RSS3_1447_05-30-2006.xls

A1P2 - Certification Confirmation - Phase 2 Cell 8 Eastern Drainage Ditch - Total Uranium

Data Group: 30904_05-30-2006
Measurement Date: 05-30-2006



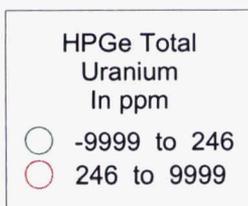
Phase 2 for RSS3_1447
All COCs <3* FRL



RTIMP DWG ID: A1P2_CONF_P2_TU_30904_05-30-2006.srf
Project ID: Gen Char for Site Remediation 20300-PSP-0011
Prepared: D. Seiller 06-01-2006; M. Frank 10-11-2006
Support Data: A1P2_CONF_P2_30904_05-30-2006.xls

A1P2 - Special Materials investigation Cell 8 Eastern Drainage Ditch - Total Uranium

Data Group: 40227_07-05-2006
Measurement Date: 07-05-2006



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Project ID: Gen Char for Site Remediation 20300-PSP-0011
Prepared: D. Seiller 10-11-2006; M. Frank 10-11-2006
Support Data: A1P2_SM_40227_07-05-2006.xls

APPENDIX C

**PSP FOR PREDESIGN OF AREA 1, PHASE II -
DISSOLVED OXYGEN BUILDING AREA
(SUPPLEMENT TO 20300-PSP-0011) AND SUPPORTING V/FCNs**

**VARIANCE/FIELD CHANGE NOTICE LOG FOR PROJECT SPECIFIC PLAN
FOR PREDESIGN OF AREA 1, PHASE II – DISSOLVED OXYGEN BUILDING
(SUPPLEMENT TO 20300-PSP-0011)**

Variance No.	Variance Date	Variance Description	Significant? (Y or N)	Date Signed	Date Distributed	EPA/OEPA Approval
20710-PSP-0010-1	5/25/05	Variance to amend Table 2-1 and Appendix A	N	5/27/05	6/1/05	N/A
20710-PSP-0010-2	6/1/06	Variance to document the collection of physical soil samples for precertification of soil beneath the bedding of excavated utilities located in the A1PII Dissolved Oxygen Building.	N	6/7/06	6/13/05	N/A

VARIANCE / FIELD CHANGE NOTICE

Significant?
(Yes or No): **NO**

V/F: 20710-PSP-0010-1

WBS NO.: PROJECT/DOCUMENT/ECDC # 20710-PSP-0010 Rev. 0

Page: 1 of ^{EMP}23

PROJECT TITLE: PSP for the Predesign of Area 1, Phase II – Dissolved Oxygen Building Area (Supplement to 20300-PSP-0011)

Date: 5/25/05

VARIANCE / FIELD CHANGE NOTICE (Include justification):

This V/FCN documents modifications to 20710-PSP-0010 Rev. 0, to amend Table 2-1 and Appendix A.

See Attached

Justification:

For documentation purposes only, since the analytes required for rinsates in TAL A are a subset of the analytes required for samples, it was expedient to separate the rinsates out into their own TALs (TAL C for metals, TAL D for radiological samples).

Requested by: DL Brennan

Date: 5/25/05

X IF REQD	VARIANCE/FCN APPROVAL	DATE	X IF REQD	VARIANCE/FCN APPROVAL	DATE
X	QUALITY ASSURANCE: <i>J. Friske</i> <i>[Signature]</i>	5/27/05	X	PROJECT MANAGER: J.D. Chou <i>[Signature]</i>	5/26/05
	DATA QUALITY MANAGEMENT		X	CHARACTERIZATION MANAGER: Frank Miller <i>[Signature]</i>	5/28/05
X	ANALYTICAL CUSTOMER SUPPORT: WAO <i>Heather McQuay</i>	5/31/05		RTIMP Manager <i>[Signature]</i>	
X	<i>5-26-05</i>		X	Sampling Manager: T. Airiage <i>[Signature]</i>	5/31/05
VARIANCE/FCN APPROVED [] YES [] NO			REVISION REQUIRED: [] YES [x] NO		
DISTRIBUTION					
PROJECT MANAGER:		DOCUMENT CONTROL:		OTHER:	
QUALITY ASSURANCE:		CHARACTERIZATION MANAGER: Frank Miller		OTHER:	
FIELD MANAGER:		OTHER:		OTHER:	

TABLE 2-1
PHYSICAL SAMPLE ANALYTICAL REQUIREMENTS

Analyte ^a	Method	Matrix	ASL	Preservative	Holding Time	Container ^b	Minimum Mass
Radiological (TAL A)	Gamma Spec, Alpha Spec, LSC, or GPC	Solid	D/E ^a	Cool, 4° C	12 months	Appropriate size glass with Teflon-lined lid	500 g (1500 g) ^c
Metals (TAL A)	ICP-AES or ICP/MS				6 months		
PCBs (TAL A)	GC				14 days		
Radiological (TAL D)	Gamma Spec, Alpha Spec, LSC, or GPC	Liquid (rinsate ^d)	D/E ^a	HNO ₃ pH<2	6 months	Polyethylene	4 liters
Metals (TAL C)	ICP-AES or ICP/MS	Liquid (rinsate ^d)	D/E ^a	HNO ₃ pH<2	6 months	Polyethylene	500 milliliter
VOCs (TAL B)	GC/MS	Solid	D/E ^a	Cool, 4° C	48 hours	3 x 1-Encore Sampler ^e or equivalent plus a 1 x 1-oz jar for % moisture ^e	Each full Encore Sampler will hold approx. 5 g of soil ^e
VOCs (TAL B)	GC/MS	Liquid (Trip blank)	D/E ^a	H ₂ SO ₄ pH<2 Cool, 4° C	14 days	3 x 40-mL glass with Teflon-lined septa	120 mL ^e (no headspace)

^a Samples will be analyzed according to ASL D requirements but the minimum detection level may cause some analyses to be considered ASL E.

^b Sample container types may be changed at the direction of the Field Sampling Lead, as long as the volume requirements, container compatibility requirements, and SCQ requirements are met.

^c At the direction of the Field Sampling Lead, triple the specified volume must be collected for all samples at one location per release in order for the contract laboratory to perform the required quality control analysis. The samples shall be identified on the Chain of Custody/Request for Analysis forms as "designated for laboratory QC".

^d If "push tubes" are used for sampling, the off-site laboratories will be sent container blanks. If an alternative sample method is used, a rinsate will be collected by the Field Technicians.

ICP-AES - inductively coupled plasma-atomic electron spectrometry

GC/MS - gas chromatography/mass spectroscopy

GPC - gas proportional counter

ICP/MS - inductively coupled plasma/mass spectroscopy

LSC - liquid scintillation counter

PCB - polychlorinated biphenyl

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006215

TAL C
20710-PSP-0010-C

<u>Analyte</u>	<u>FRL</u>	<u>MDL (water)</u>
Antimony	96 mg/kg	60.0 ug/L
Arsenic	12.0 mg/kg	20 ug/L
Beryllium	1.50 mg/kg	5.0 ug/L
Lead	400 mg/kg	10 ug/L
Molybdenum	2900 mg/kg	20 ug/L

TAL D
20710-PSP-0010-D

<u>Analyte</u>	<u>FRL</u>	<u>MDL (water)</u>
Radium-226	1.7 pCi/g	50.0 pCi/L
Radium-228	1.8 pCi/g	50.0 pCi/L
Thorium-228	1.7 pCi/g	50.0 pCi/L
Thorium-232	1.5 pCi/g	50.0 pCi/L
Total Uranium	82 mg/kg	300 ug/L
Technetium-99	30 pCi/g	10 pCi/L

VARIANCE / FIELD CHANGE NOTICE

Significant?
(Yes or No): **NO**

V/F: 20710-PSP-0010-2
006215

WBS NO.: PROJECT/DOCUMENT/ECDC # 20710-PSP-0010 Rev.0

Page: 1 of 3

PROJECT TITLE: PSP for the Predesign of Area 1, Phase II – Dissolved Oxygen
Building Area (Supplement to 20300-PSP-0011)

Date: ~~12/7/05~~ 6/1/06
REF

VARIANCE / FIELD CHANGE NOTICE (Include justification):

This Variance/Field Change Notice (V/FCN) documents the collection of physical soil samples for precertification of the soil beneath the bedding of excavated utilities located in Area 1, Phase II – Dissolved Oxygen Building. Construction will be excavating known utilities; however, the possibility exists that unknown utilities will be uncovered during excavation. All sampling locations will be field located approximately every fifty feet along the bottom of the excavation. All samples will be collected from the bottom of the excavation from the bucket of an excavator (if necessary) after the piping and bedding material has been removed or from patties created to represent the sample locations. The goal will be to collect samples from the top six inches of soil from the bottom of the excavation. Additionally, if there is evidence of leakage from the piping (e.g. broken, cracked, or disjointed piping, stained or discolored soil), then a biased sample location will be flagged and samples will be collected from the floor and both sidewalls approximately one foot from the floor of the excavation.

The Sampling and Analytical Requirements are listed on Attachment 1 and the TALs area listed on Attachment 2.

The estimated number of sample locations is 10. The sample identifiers from the first location shall be A1P2-DO-T-1^RMP and A1P2-DO-T-1^L each additional sample ID will be sequentially numbered. Additionally, trip blank samples will be collected for the VOC samples at a rate of 1 per 20 VOC samples collected, 1 per day, or 1 per cooler whichever is more frequent. The first sample identifier for the trip blanks shall be A1P2-DO-T-L-TB1 and each sample ID will be sequentially numbered.

Where:

- A1P2 = Area 1 Phase II
- DO = Dissolved Oxygen Building Area
- T = trench
- 1, 2, 3, etc. = Consecutive Sample Numbers (Locations)
- R = Radiological analysis; M=Metals; P=Pesticides/PCBs; and L = Volatile Organic Compounds
- TB = Trip Blank

Field Sketch Required: Yes

Surveying Required: Yes. Real-Time will provide the coordinates.

Field QC samples required: Yes, trip blank samples are required for the VOC samples (see above).

Justification:

Because the utilities in this area are so deep, it is necessary to backfill the trenches after the utilities have been removed in order to ensure the area is left in a safe condition. Therefore, samples will be collected from the bottom of the excavation prior to backfilling the trenches similarly to the sampling performed during the excavation of the Abandoned Outfall Line.

REQUESTED BY: Debbie Brennan / Krista Flaugh

Date: ~~12/6/05~~ 6/1/06 REF

X IF REQD	VARIANCE/FCN APPROVAL	DATE	X IF REQD	VARIANCE/FCN APPROVAL	DATE
X	QUALITY ASSURANCE: R. Friske <i>R. Friske</i>	6-6-06	X	PROJECT MANAGER: J.D. Chiou <i>J.D. Chiou</i>	6/1/06
	DATA QUALITY MANAGEMENT		X	CHARACTERIZATION MANAGER: R. Miller <i>R. Miller</i>	15 Jun 06
X	ANALYTICAL CUSTOMER SUPPORT: Paul S. McSwain <i>Paul S. McSwain</i>	6/5/06		RTIMP Manager	
	WAO		X	SAMPLING MANAGER: T. Buhlage <i>T. Buhlage</i>	6/7/06

VARIANCE/FCN APPROVED [X] YES [] NO

REVISION REQUIRED: [] YES [x] NO

DISTRIBUTION

PROJECT MANAGER:	DOCUMENT CONTROL: Jeannie Rosser	OTHER:
QUALITY ASSURANCE:	CHARACTERIZATION MANAGER: Frank Miller	OTHER:
FIELD MANAGER:	OTHER:	OTHER:

ATTACHMENT 1

SAMPLING AND ANALYTICAL REQUIREMENTS

TAL(s)	Method	Matrix	ASL	TAT	Preservative	Container ^a	Minimum Mass/Volume
Rads (A)	Gamma Spec, and LSC or GPC	Soil	D/E ^b	PEDD Gamma 10 days ^c Final Gamma 30 days Final Tc-99 10 days	Cool, 4° C	Glass with Teflon lined lid	600 g
Metals (A)	ICP or ICP/MS			10 days			
PCBs (A)	GC			10 days			
VOCs (B)	GC/MS	Soil	D	10 days	Cool, 4° C	3 x 1-Encore Sampler plus 1 x 2-oz jar for percent moisture	Each full Encore Sampler will hold approx. 5g
VOCs (B)	GC/MS	Liquid (trip blank only)	D	10 days	H ₂ SO ₄ PH<2 Cool, 4° C	3 x 40-ml glass with Teflon-lined septa	120 ml (no headspace)

^aSample container types may be changed at the direction of the Field Sampling Lead, as long as the mass/volume requirements, container compatibility requirements, and SCQ requirements are met.

^bSamples will be analyzed according to ASL D requirements, but the minimum detection level may cause some analyses to be considered ASL E.

^cThe preliminary gamma spec analysis can be ran according to ASL B requirements.

Instruction Sampling:

Field Sketch Required: Yes

Field QC samples required: Yes, trip blank samples are required for the VOC samples

Instructions (SPL/Lab):

Analytical Data Validation is required – VSL D.

Data Package Requirement – ASL D package

Historical Data for Shipping is 15 mg/kg total uranium from boring A1P2-DO-04

ATTACHMENT 2

TAL A
(10 Soil Analysis Specified in V/FCN)

Analyte (Rad)	WAC	FRL (BTV)	Requested MDL
Radium-226	NA	1.7 pCi/g	0.17 pCi/g
Radium-228	NA	1.8 pCi/g	0.18 pCi/g
Thorium-228	NA	1.7 pCi/g	0.17 pCi/g
Thorium-232	NA	1.5 pCi/g	0.15 pCi/g
Total Uranium	1030 mg/kg	82 mg/kg	8.2 mg/kg
Antimony ¹	NA	96 mg/kg (10 mg/kg)	9.6 mg/kg
Aroclor-1254	NA	0.13 mg/kg	0.013 mg/kg
Aroclor-1260	NA	0.13 mg/kg	0.013 mg/kg
Arsenic	NA	12.0 mg/kg	1.20 mg/kg
Beryllium	NA	1.50 mg/kg	0.150 mg/kg
Lead ¹	NA	400 mg/kg (200 mg/kg)	40 mg/kg
Molybdenum ¹	NA	2900 mg/kg (10 mg/kg)	290 mg/kg
Technetium-99 ²	29.1 pCi/g	30 pCi/g	2.91 pCi/g

¹ Ecological COC

² If the WAC is lower than the established FRL, the MDL will be set at 10 percent of the On-Site Disposal Facility WAC.

TAL B
(10 Soil Analysis Specified in V/FCN)

Analyte (Rad)	WAC	FRL	Requested MDL
Tetrachloroethene (PCE)	128 mg/kg	3.6 mg/kg	0.36 mg/kg

BTV - benchmark toxicity value

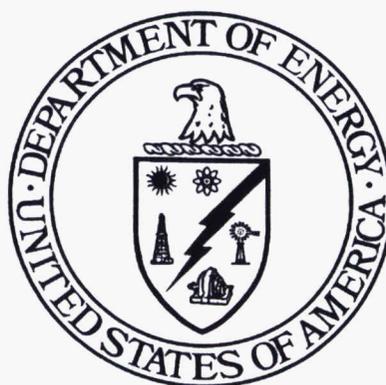
MDL - minimum detection level

pCi/g - picoCuries per gram

**PROJECT SPECIFIC PLAN FOR
PREDESIGN OF AREA 1, PHASE II -
DISSOLVED OXYGEN BUILDING AREA
(SUPPLEMENT TO 20300-PSP-0011)**

DEMOLITION, SOIL AND DISPOSAL PROJECT

**FERNALD CLOSURE PROJECT
FERNALD, OHIO**



MAY 2005

**U.S. DEPARTMENT OF ENERGY
FERNALD AREA OFFICE**

**20710-PSP-0010
REVISION 0**

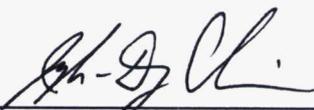
**PROJECT SPECIFIC PLAN FOR
PREDESIGN OF AREA 1 PHASE II – DISSOLVED OXYGEN
BUILDING AREA
(SUPPLEMENT TO 20300-PSP-0011)**

Document Number 20710-PSP-0010

Revision 0

FINAL

APPROVAL:

 5/19/05

Jyh-Dong Chiou, Project Manager
Demolition, Soil and Disposal Project Date

 5/20/05

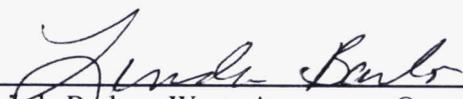
Frank Miller, Characterization/Waste Management Manager
Demolition, Soil and Disposal Project Date

 5/19/05

Tom Buhrlage, Soil Sampling Manager
Demolition, Soil and Disposal Project Date

 5/23/05

Mike Frank, Real-Time Instrumentation Measurement Program Manager
Demolition, Soil and Disposal Project Date

 5/20/05

Linda Barlow, Waste Acceptance Organization
Safety, Health and Quality Date

 5-19-05

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

FERNALD CLOSURE PROJECT

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

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APPENDICES

Appendix A	Target Analyte Lists for Predesign of A1PII - Dissolved Oxygen Building Area
Appendix B	Boring Table and Sample Identifiers for A1PII - Dissolved Oxygen Building Area Predesign

LIST OF TABLES AND FIGURES

Table 2-1	Physical Sample Analytical Requirements
Figure 1-1	Area 1 Phase II - Dissolved Oxygen Building Area
Figure 2-1	Area 1 Phase II - DO Building Area, Historical Boring Location
Figure 2-2	Area 1 Phase II - DO Building Area, Proposed Boring Locations

LIST OF ACRONYMS AND ABBREVIATIONS

A1P11	Area 1, Phase II
ASCOC	area-specific constituent of concern
ASL	analytical support level
BTV	benchmark toxicity level
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
COC	constituent of concern
DOE	U.S. Department of Energy
EMS	Excavation Monitoring System
FCP	Fernald Closure Project
FRL	final remediation level
GC/MS	gas chromatograph/mass spectroscopy
GPC	gas proportional counter
HPGe	high-purity germanium (detector)
ICP-AES	inductively coupled plasma-atomic emission spectrometry
ICP/MS	inductively coupled plasma/mass spectrometry
LSC	liquid scintillation counter
MDL	minimum detection level
mg/kg	milligrams per kilogram
MSL	mean sea level
NaI	sodium iodide
PCB	polychlorinated biphenyl
pCi/g	picoCuries per gram
PID	photoionization detector
ppm	parts per million
PSP	Project Specific Plan
QC	Quality Control
RCRA	Resource Conservation Recovery Act
RI/FS	Remedial Investigation/Feasibility Study
RSS	Radiation Scanning System
RTRAK	Real-Time Radiation Tracking System
RWP	Radiological Work Permit
SCQ	Sitewide CERCLA Quality Assurance Project Plan
SEP	Sitewide Excavation Plan
TAL	Target Analyte List
V/FCN	Variance/Field Change Notice
VOC	volatile organic compound
VSL	validation support level
WAC	waste acceptance criteria

1.0 INTRODUCTION

This Project Specific Plan (PSP) describes the data collection activities necessary to support predesign of the Dissolved Oxygen Building and surrounding area within Area 1, Phase II (A1PII). The format of this PSP differs from that of previously submitted PSPs as this PSP only presents the specific information regarding this 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 predesign sampling of the Dissolved Oxygen Building and surrounding area within A1PII. This detailed information includes reasons for sample collection, sample locations, number of borings, depth intervals, and constituents of concern.

1.2 SCOPE

Remediation Area 1, Phase II lies on the east side of the site. The Dissolved Oxygen Building and surrounding area includes the Dissolved Oxygen Building, the Dissolved Oxygen Facility Substation, the Outfall Line Pit, and the area surrounding these structures (see Figure 1-1). The schedule for implementation of this PSP is Summer 2005.

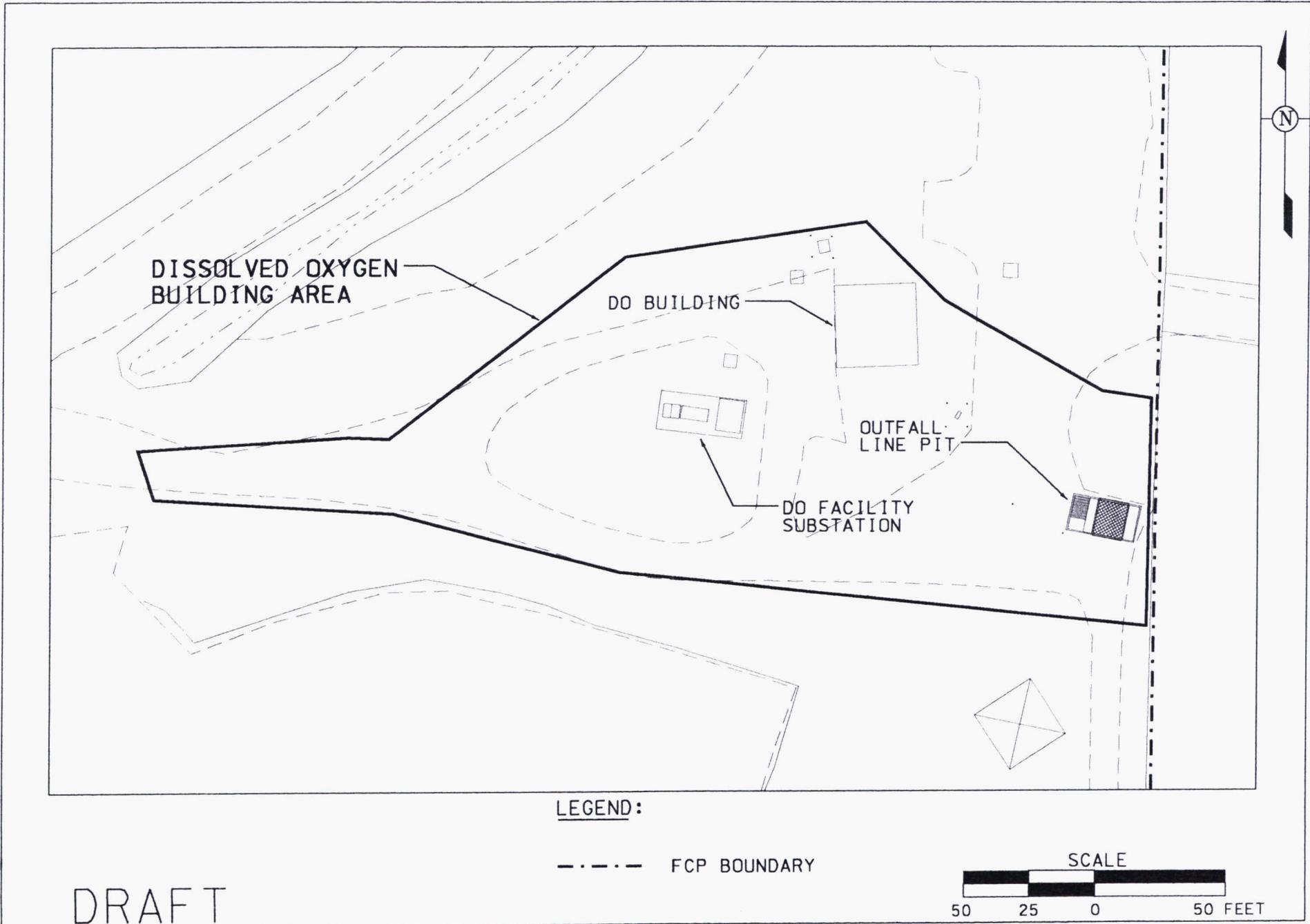
This PSP is not considered a work authorization document (for implementation of fieldwork) per SH-0021, Work Permits. Work authorization documents directing the implementation of fieldwork, per SH-0021, may include applicable Environmental Closure Project procedures, Fluor Fernald work permits, Radiological Work Permit (RWP), penetration permits, and other applicable permits.

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

Reference Section 7.5 of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation*.

1.4 KEY PERSONNEL

Reference Section 1.4 of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation*.



DRAFT

FIGURE 1-1. AREA 1 PHASE II - DISSOLVED OXYGEN BUILDING AREA

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2.0 AREA-SPECIFIC WORK

2.1 AREA 1, PHASE II DISSOLVED OXYGEN BUILDING AREA

2.1.1 History

The Dissolved Oxygen Area includes the Dissolved Oxygen Building, the Dissolved Oxygen Facility Substation, the Outfall Line Pit, also known as the Parshall Flume Building, and the area surrounding these structures. Blowers were installed within the Dissolved Oxygen Building to add oxygen to the site's treated wastewater effluent in the Dissolved Oxygen Tank prior to discharge to the Great Miami River via the Parshall Flume and Effluent Discharge Pipeline. However, the dissolved oxygen measurement in the water discharged from site through the Parshall Flume consistently fell within the site's permitted range without requiring the addition of oxygen. Therefore, the blowers were rarely used. The Dissolve Oxygen Tank was removed in 2004. Low-level uranium analysis for an EM-50 funded project was also performed in the Dissolved Oxygen Building.

2.1.2 Predesign

Predesign will be performed under the guidelines of Section 4.0 of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation*.

2.1.2.1 Scope

This PSP covers data collection activities associated with predesign in the Dissolved Oxygen Building and surrounding area within A1PII. This PSP supplements previous investigations for A1PII and does not cover excavation control.

2.1.2.2 Determination of FRL COCs and WAC COCs

Using the Remedial Investigation/Feasibility Study (RI/FS) data for the area, Table 2-7 of the Sitewide Excavation Plan (SEP), and the ecological constituents of concern (COCs) from adjoining areas, a list of final remediation level (FRL) COCs was determined. The FRL COCs for this PSP are listed in Section 2.1.2.2.2.

2.1.2.2.1 WAC COCs

No above-waste acceptance criteria (WAC) locations exist in this area, therefore, no above-WAC locations require investigation.

2.1.2.2.2 FRL COCs

Within the scope of this PSP, the analyte list of FRL area-specific constituent of concern (ASCOC) for A1PII Dissolved Oxygen Building Area is given below.

Primary COCs

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

Secondary COCs

- Antimony
- Aroclor-1254
- Aroclor-1260
- Arsenic
- Beryllium
- Lead
- Molybdenum
- Technetium-99
- Tetrachloroethene

2.1.2.3 Sampling Strategy

2.1.2.3.1 WAC Sampling Strategy

No known above-WAC locations exist in this area, therefore, no above-WAC locations require physical sampling.

2.1.2.3.2 FRL Sampling Strategy

One historical above-FRL result was obtained from this area. Boring 12321 had an above-FRL beryllium result of 2.04 milligrams per kilogram (mg/kg) from the 4.5 to 5-foot interval. Figure 2-1 provides this historical above-FRL boring location. This above-FRL beryllium result corresponds to depths displaying characteristics found in several adjacent areas. It is concluded that these levels are consistent with background conditions. This approach is more fully explained in Addendum to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)/Resource Conservation and Recovery Act (RCRA) Background Soil Study (where results in the 12 to 36-inch interval ranged from below the FRL to 3.05 mg/kg for beryllium). No further investigation for this COC, beryllium, is planned.

As shown in Figure 2-1, there is very little historical data available from within this area. Therefore, the majority of samples collected under this PSP will be for the purpose of filling this large data gap in support of the predesign investigation. A total of twelve sample locations were selected within this area. Eleven sample locations were randomly selected within this area and a bias sample location was placed within the existing Dissolved Oxygen Building. See Figure 2-2 for sample locations. See Appendix A for the Target Analyte Lists (TALs) and Appendix B for the boring table, which includes sample

identifiers and target sampling intervals. Table 2-1 addresses the physical sample volumes, preservation requirements, and analysis information.

Quality control (QC) sample requirements will include a duplicate field sample, a trip blank, and a container blank and/or rinsate, and will be collected per procedure SMPL-21, Collection of Field Quality Control Samples. All data collection activities will be consistent with the Sitewide CERCLA Quality Assurance Plan (SCQ) and Section 3.1 of the SEP. Per requirements of the SCQ, SEP, and Data Quality Objectives SL-052, Revision 3, the field quality control, analytical and data validation requirements are as follows:

- Field QC requirements include one field duplicate, as noted above and identified in Appendix B. For the duplicate field sample, twice the soil volume (a second core) will be collected at one location, and will not be homogenized with the original sample. The field duplicate sample will be analyzed for the same COCs as the other samples from which the field duplicate has been collected.

If "push tubes" are used for sample collection, one container blank will be collected before sample collection begins and one will be collected at the conclusion of sample collection for the entire area. The container blank sample will be analyzed for the same radiological and metals COCs as the other samples from which the container blank is being collected. If an alternate sample collection method is used, one rinsate will be collected at a minimum frequency of one per 20 pieces of equipment reused in the field.

A trip blank is required if volatile organic compound (VOC) samples are being collected. The frequency for a trip blank is one per day, or one per batch of 20 VOC samples collected, or one per cooler to be shipped, whichever is more frequent.

- All analyses will be performed at Analytical Support Level (ASL) D or E, where E meets the minimum detection level of 10 percent of the FRL and is above the SCQ ASL D detection level, but the analyses meet all other SCQ ASL D criteria. An ASL D data package will be provided for all of the data.
- All field data will be validated. One hundred (100) percent of the laboratory data will be validated to Validation Support Level (VSL) D. If any result is rejected during validation, the sample will be re-analyzed or an archive location will be sampled and analyzed in its place. If necessary, this change will be documented in a V/FCN.

2.1.3 Precertification

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

**TABLE 2-1
 PHYSICAL SAMPLE ANALYTICAL REQUIREMENTS**

Analyte ^a	Method	Matrix	ASL	Preservative	Holding Time	Container ^b	Minimum Mass
Radiological (TAL A)	Gamma Spec, Alpha Spec, LSC, or GPC	Solid	D/E ^a	Cool, 4° C	12 months	Appropriate size glass with Teflon-lined lid	500 g (1500 g) ^c
Metals (TAL A)	ICP-AES or ICP/MS				6 months		
PCBs (TAL A)	GC				14 days		
Radiological (TAL A)	Gamma Spec, Alpha Spec, LSC, or GPC	Liquid (rinsate ^d)	D/E ^a	HNO ₃ pH<2	6 months	Polyethylene	4 liters
Metals (TAL A)	ICP-AES or ICP/MS	Liquid (rinsate ^d)	D/E ^a	HNO ₃ pH<2	6 months	Polyethylene	500 milliliter
VOCs (TAL B)	GC/MS	Solid	D/E ^a	Cool, 4° C	48 hours	3 x 1-Encore Sampler ^c or equivalent plus a 1 x 1-oz jar for % moisture ^c	Each full Encore Sampler will hold approx. 5 g of soil ^c
VOCs (TAL B)	GC/MS	Liquid (Trip blank)	D/E ^a	H ₂ SO ₄ pH<2 Cool, 4° C	14 days	3 x 40-mL glass with Teflon-lined septa	120 mL ^c (no headspace)

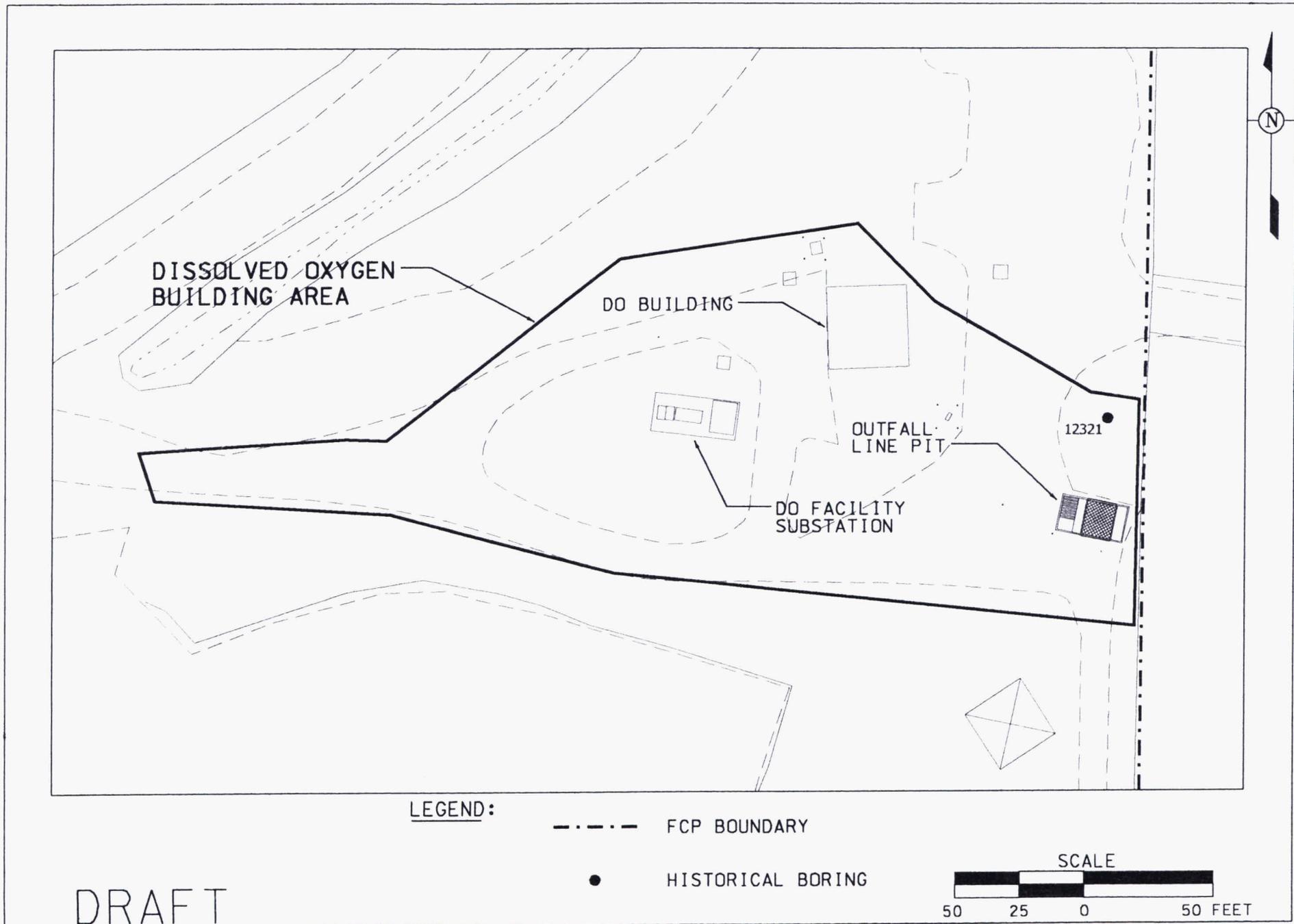
^a Samples will be analyzed according to ASL D requirements but the minimum detection level may cause some analyses to be considered ASL E.

^b Sample container types may be changed at the direction of the Field Sampling Lead, as long as the volume requirements, container compatibility requirements, and SCQ requirements are met.

^c At the direction of the Field Sampling Lead, triple the specified volume must be collected for all samples at one location per release in order for the contract laboratory to perform the required quality control analysis. The samples shall be identified on the Chain of Custody/Request for Analysis forms as "designated for laboratory QC".

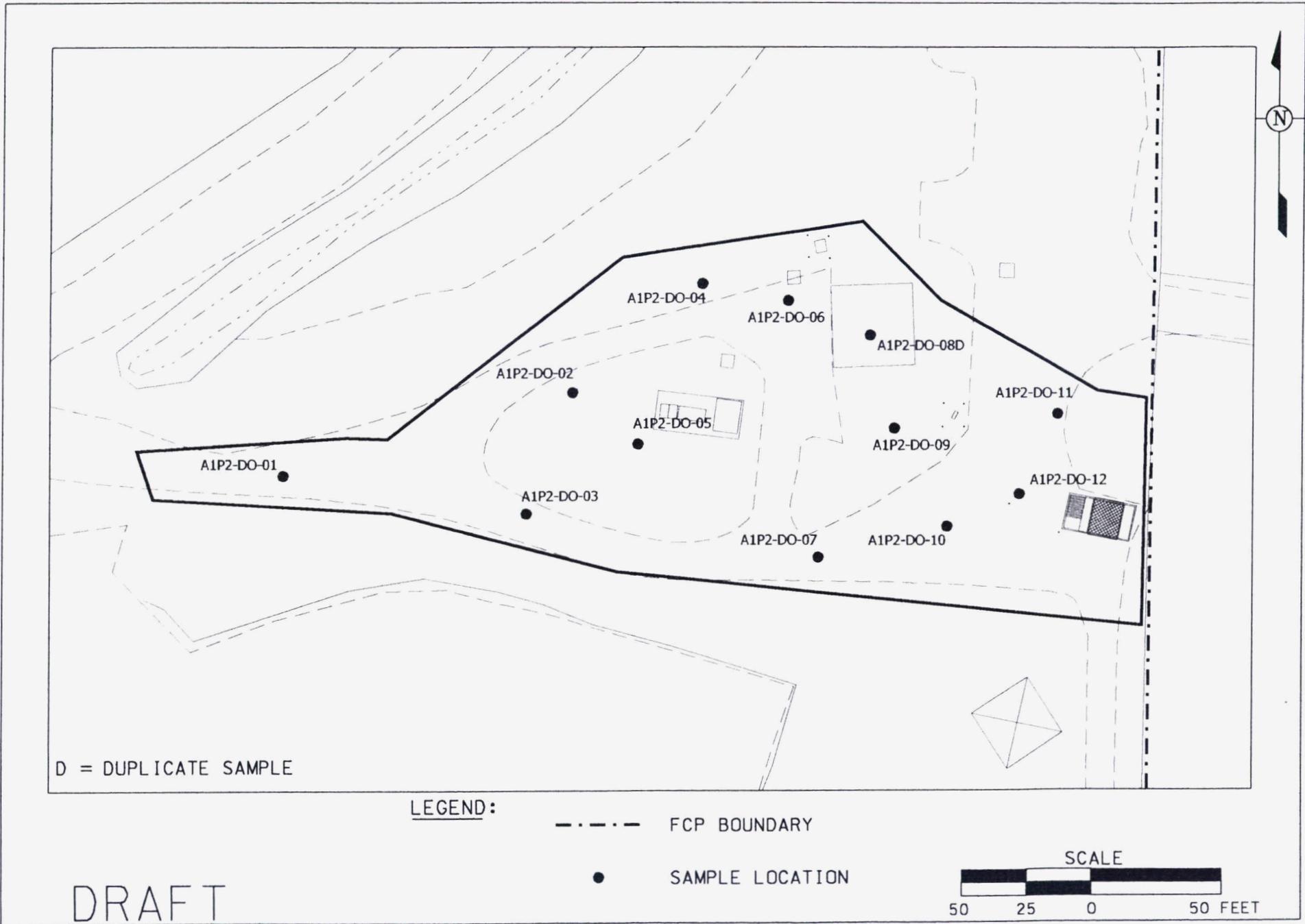
^d If "push tubes" are used for sampling, the off-site laboratories will be sent container blanks. If an alternative sample method is used, a rinsate will be collected by the Field Technicians.

ICP-AES - inductively coupled plasma-atomic electron spectrometry
 GC/MS - gas chromatography/mass spectroscopy
 GPC - gas proportional counter
 ICP/MS - inductively coupled plasma/mass spectroscopy
 LSC - liquid scintillation counter
 PCB - polychlorinated biphenyl



**FIGURE 2-1. AREA 1 PHASE II - DO BUILDING AREA,
HISTORICAL BORING LOCATION**

006-10



D = DUPLICATE SAMPLE

DRAFT

FIGURE 2-2. AREA 1 PHASE II - DO BUILDING
AREA PROPOSED BORING LOCATIONS

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

4.1 REAL-TIME ACTIVITIES

Refer to Section 4.1 of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation*.

4.2 SAMPLE COLLECTION METHODS

4.3 PHYSICAL SAMPLE IDENTIFICATION

4.4 BOREHOLE ABANDONMENT

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

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

See Section 2.1.2.3 within this PSP.

7.2.2 Real-Time Data Verification/Validation

7.3 APPLICABLE DOCUMENTS, METHODS AND STANDARDS

7.4 SURVEILLANCES

7.5 IMPLEMENTATION AND DOCUMENTATION OF V/FCNs

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 PREDESIGN OF
A1PII - DISSOLVED OXYGEN BUILDING AREA**

**APPENDIX A
TARGET ANALYTE LISTS FOR PREDESIGN
OF A1PII - DISSOLVED OXYGEN BUILDING**

**TAL A
Soil Analysis, Off-site, (ASL D/E)**

Analyte (Rad)	WAC	FRL (BTV)	Requested MDL
Radium-226	NA	1.7 pCi/g	0.17 pCi/g
Radium-228	NA	1.8 pCi/g	0.18 pCi/g
Thorium-228	NA	1.7 pCi/g	0.17 pCi/g
Thorium-232	NA	1.5 pCi/g	0.15 pCi/g
Total Uranium	1030 mg/kg	82 mg/kg	8.2 mg/kg
Antimony ¹	NA	96 mg/kg (10 mg/kg)	9.6 mg/kg
Aroclor-1254	NA	0.13 mg/kg	0.013 mg/kg
Aroclor-1260	NA	0.13 mg/kg	0.013 mg/kg
Arsenic	NA	12.0 mg/kg	1.20 mg/kg
Beryllium	NA	1.50 mg/kg	0.150 mg/kg
Lead ¹	NA	400 mg/kg (200 mg/kg)	40 mg/kg
Molybdenum ¹	NA	2900 mg/kg (10 mg/kg)	290 mg/kg
Technetium-99 ²	29.1 pCi/g	30 pCi/g	2.91 pCi/g

¹ Ecological COC

² If the WAC is lower than the established FRL, the MDL will be set at 10 percent of the On-Site Disposal Facility WAC.

**TAL B
Soil Analysis, Off-site, (ASL D/E)**

Analyte (Rad)	WAC	FRL	Requested MDL
Tetrachloroethene (PCE)	128 mg/kg	3.6 mg/kg	0.36 mg/kg

BTV - benchmark toxicity value

MDL - minimum detection level

pCi/g - picoCuries per gram

APPENDIX B

**BORING TABLE AND SAMPLE IDENTIFIERS FOR
PREDESIGN OF A1PII - DISSOLVED OXYGEN BUILDING AREA**

APPENDIX B
BORING TABLE AND SAMPLE IDENTIFIERS FOR
A1P11 - DISSOLVED OXYGEN BUILDING AREA PREDESIGN

Boring	Northing	Easting	Depth (feet)	Depth Identifier	Sample ID	TAL
A1P2-DO-01	479448.6	1351487.1	0-0.5	1	A1P2-DO-01^1-RMP	A
					A1P2-DO-01^1-L	B
A1P2-DO-02	479480.25	1351598.81	0-0.5	1	A1P2-DO-02^1-RMP	A
					A1P2-DO-02^1-L	B
A1P2-DO-03	479433.76	1351581.01	0-0.5	1	A1P2-DO-03^1-RMP	A
					A1P2-DO-03^1-L	B
A1P2-DO-04	479521.79	1351648.24	0-0.5	1	A1P2-DO-04^1-RMP	A
					A1P2-DO-04^1-L	B
A1P2-DO-05	479460.47	1351624.02	0-0.5	1	A1P2-DO-05^1-RMP	A
					A1P2-DO-05^1-L	B
A1P2-DO-06	479515.36	1351681.35	0-0.5	1	A1P2-DO-06^1-RMP	A
					A1P2-DO-06^1-L	B
A1P2-DO-07	479416.95	1351693.22	0-0.5	1	A1P2-DO-07^1-RMP	A
					A1P2-DO-07^1-L	B
A1P2-DO-08D	479502.01	1351712.99	0-0.5	1	A1P2-DO-08^1-RMP	A
					A1P2-DO-08^1-L	B
					A1P2-DO-08^1-RMP-D	A
					A1P2-DO-08^1-L-D	B
A1P2-DO-09	479466.4	1351722.38	0-0.5	1	A1P2-DO-09^1-RMP	A
					A1P2-DO-09^1-L	B
A1P2-DO-10	479428.82	1351742.65	0-0.5	1	A1P2-DO-10^1-RMP	A
					A1P2-DO-10^1-L	B
A1P2-DO-11	479471.84	1351785.15	0-0.5	1	A1P2-DO-11^1-RMP	A
					A1P2-DO-11^1-L	B
A1P2-DO-12	479441.18	1351770.32	0-0.5	1	A1P2-DO-12^1-RMP	A
					A1P2-DO-12^1-L	B

APPENDIX D

V/FCNs 20710-PSP-0009-27 AND 28

VARIANCE / FIELD CHANGE NOTICE

Significant?
(Yes or No): **YES**

V/F: 20710-PSP-0009-27

WBS NO.: PROJECT/DOCUMENT/ECDC #20710-PSP-0009 REV 2

Page: 1 of 4

006-15

PROJECT TITLE: PSP for Area 1 Phase II Certified for Reuse Areas, Trap Range, Sector 2C, and Sector 3 Certification Sampling

Date: 5/30/06

VARIANCE / FIELD CHANGE NOTICE (Include justification):

This Variance/Field Change Notice (V/FCN) documents the collection samples from one additional boring in Certification Unit (CU) S3-DP-02. During excavation of the eastern drainage ditch of the OSDF Cell 8 footprint, a one-foot section of four-inch diameter pipe was discovered within the certified area. The area was excavated, the pipe was removed, and a real-time scan (Figure 1, attached) was performed on the remaining footprint.

The location shall be field located and sampled (TAL A through TAL G) in the 0-0.5 feet interval. The Sampling and Analytical Requirements are listed in Attachment 1, and the target analyte lists are in Attachment 2.

The Sample IDs are identified as A1P2-S3DP-02-17^RMP and A1P2-S3DP-02-17^L. The trip blank shall be identified as A1P2-S3DP-02-TB.

Where:

- A1P2 = Area 1 Phase II
- S3 = Sector 3
- DP = deep excavation areas
- 02 = Certification unit from which sample was collected
- 17 = seventeenth sample location
- ^ = differentiates between the location identifier and the sample identifier
- RMP or L = Suite Identifier
 - "R" for radiological
 - "M" for metals
 - "P" for PCBs
 - "L" for VOCs

Surveying required: Yes. Surveying of sample locations will occur after samples have been collected.

Justification:

While excavating/relocating the drainage ditch east of OSDF Cell 8 footprint, a one-foot section of four-inch diameter clay pipe was discovered within the certified area. The area was excavated, the pipe was removed, and a real-time scan was performed on the remaining footprint. Sampling is necessary to confirm that the remaining soils (i.e. post-excavation) meet the certification requirements. Per Section 4.5 of the PSP, changes to the PSP will be documented with a V/FCN.

REQUESTED BY: Greg Lupton

Date: 5/30/06

X IF REQD	VARIANCE/FCN APPROVAL	DATE	X IF REQD	VARIANCE/FCN APPROVAL	DATE
X	QUALITY ASSURANCE: R. Friske <i>R. Friske</i>	6-6-06	X	PROJECT MANAGER: J.D. Chiou <i>J.D. Chiou</i>	5/30/06
	DATA QUALITY MANAGEMENT		X	CHARACTERIZATION MANAGER: R. Miller <i>R. Miller</i>	30 May 06
X	ANALYTICAL CUSTOMER SUPPORT: Paul S. McWhirgin <i>Paul S. McWhirgin</i>	5/30/06		RTIMP Manager	
	WAO		X	SAMPLING MANAGER: T. Buhriage <i>Tom Buhriage</i>	6/9/06
VARIANCE/FCN APPROVED [X] YES [] NO			REVISION REQUIRED: [] YES [x] NO		

DISTRIBUTION

PROJECT MANAGER:	DOCUMENT CONTROL: Jeannie Rosser	OTHER:
QUALITY ASSURANCE:	CHARACTERIZATION MANAGER: Frank Miller	OTHER:
FIELD MANAGER:	OTHER:	OTHER:

Attachment 1
Sampling and Analytical Requirements

TAL(s)	Method ^a	Matrix	Preservative	ASL	TAT	Container ^b	Minimum Mass/Volume
Radiological/Metals/PCBs TALs A, B, C, D, E, G	Gamma Spec	Solid	None	D/E	10 days PEDD	Glass with Teflon-lined lid	500 g (1500 g) ^c
	LSC				30 days final		
	ICP or ICP/MS				10 days		
	GC				10 days		
VOCs (TAL F)	GC/MS		Cool, 4 degrees C		10 days	3 x 1-Encore Sampler ^c plus 1 x 2 oz jar for % moisture	Each full Encore Sampler ^c will hold approx. 5 g
VOCs (TALs F)	GC/MS	Liquid (trip blank)	H ₂ SO ₄ pH<2 Cool, 4 degrees C		10 days	3 x 40-ml glass with teflon-lined septa	120 ml (no headspace)

^a Samples will be analyzed according to ASL D requirements but the minimum detection level may cause some analyses to be considered ASL E.

^b Sample container types may be changed at the direction of the Field Sampling Lead, as long as the volume requirements, container compatibility requirements, and SCQ requirements are met.

^c At the direction of the Field Sampling Lead, triple the specified volume must be collected for all samples at one location in the CU in order for the contract laboratory to perform the required quality control analysis. The samples shall be identified on the Chain of Custody/Request for Analysis forms as "designated for laboratory QC".

^d If "push tubes" are used for sampling, the off-site laboratories will be sent container blanks. If an alternative sample method is used, the Field Technicians will collect a rinsate.

Special Instructions:

Field QC (trip blank) will be collected under this V/FCN.

Analytical Data Validation is required (VSL D).

Highest total uranium result for the area is 12 mg/kg from location A1P2-S3DP-01-05

VARIANCE / FIELD CHANGE NOTICE

Significant?
(Yes or No): **YES**

V/F: 20710-PSP-0009-28

WBS NO.: PROJECT/DOCUMENT/ECDC #20710-PSP-0009 REV 2

Page: 1 of 4 **006215**

PROJECT TITLE: PSP for Area 1 Phase II Certified for Reuse Areas, Trap Range, Sector 2C, and Sector 3 Certification Sampling *located east*

Date: 7/05/06

VARIANCE / FIELD CHANGE NOTICE (Include justification):

This Variance/Field Change Notice (V/FCN) documents the collection of samples from one additional boring in Certification Unit (CU) S3-DP-02. During excavation of the eastern drainage ditch of the OSDF Cell 8 footprint, a four-foot section of four-inch diameter pipe was discovered within the certified area. The area was excavated, the pipe was removed, and a real-time scan (**Figure 1, attached**) was performed on the remaining footprint. *Coordinate with Frank Miller for the exact location area to be sampled. dma 7/7/06*

The location shall be field located and sampled (TAL A through TAL G) in the 0-0.5 feet interval. The Sampling and Analytical Requirements are listed in Attachment 1, and the target analyte lists are in Attachment 2.

The Sample IDs are identified as A1P2-S3DP-02-18^RMP and A1P2-S3DP-02-18^L. The trip blank shall be identified as A1P2-S3DP-02-TB1.

Where:

- A1P2 = Area 1 Phase II
- S3 = Sector 3
- DP = deep excavation areas
- 02 = Certification unit from which sample was collected
- 18 = seventeenth sample location
- ^ = differentiates between the location identifier and the sample identifier
- RMP or L = Suite Identifier
 - "R" for radiological
 - "M" for metals
 - "P" for PCBs
 - "L" for VOCs

Surveying required: Yes. Surveying of sample location will occur after samples have been collected.

Justification:

While excavating/relocating the drainage ditch east of OSDF Cell 8 footprint, a four-foot section of four-inch diameter clay pipe was discovered within the certified area. The area was excavated, the pipe was removed, and a real-time scan was performed on the remaining footprint. Sampling is necessary to confirm that the remaining soils (i.e. post-excavation) meet the certification requirements. Per Section 4.5 of the PSP, changes to the PSP will be documented with a V/FCN.

REQUESTED BY: Denise Arico

Date: 7/05/06

X IF REQD	VARIANCE/FCN APPROVAL	DATE	X IF REQD	VARIANCE/FCN APPROVAL	DATE
X	QUALITY ASSURANCE: R. Friske <i>R. Friske</i>	7-13-06	X	PROJECT MANAGER: J.D. Chiou <i>J.D. Chiou</i>	7/7/06
	DATA QUALITY MANAGEMENT		X	CHARACTERIZATION MANAGER: Frank Miller <i>Frank Miller</i>	6/30/06
X	ANALYTICAL CUSTOMER SUPPORT: WAO <i>Paul B. Richardson</i>	7/7/06		RTIME Manager	
			X	SAMPLING MANAGER: T. Buhrige <i>T. Buhrige</i>	7/7/06
VARIANCE/FCN APPROVED [X] YES [] NO			REVISION REQUIRED: [] YES [x] NO		
DISTRIBUTION					
PROJECT MANAGER:		DOCUMENT CONTROL: Jeannie Rosser		OTHER:	
QUALITY ASSURANCE:		CHARACTERIZATION MANAGER: Frank Miller		OTHER:	
FIELD MANAGER:		OTHER:		OTHER:	

**Attachment 1
Sampling and Analytical Requirements**

TAL(s)	Method ^a	Matrix	Preservative	ASL	TAT	Container ^b	Minimum Mass/Volume
Radiological/Metals/PCBs TALs A, B, C, D, E, G	ICP/MS (Total U) and Gamma Spec (Ra and Th Isotopes)	Solid	Cool, 4 deg C	D/E	48 hours (ICP/MS)	Glass with Teflon- lined lid	500 g (1500 g) ^c
	10 days PEDD (Gamma)						
	30 days final						
	48 hours						
VOCs (TAL F)	GC/MS	Solid	Cool, 4 deg C	D/E	10 days	3 x 1-Encore Sampler ^c plus 1 x 2 oz jar for % moisture	Each full Encore Sampler ^c will hold approx. 5 g
					10 days		
VOCs (TALs F)	GC/MS	Liquid (trip blank)	H ₂ SO ₄ pH<2 Cool, 4 deg C		4 days	3 x 40-ml glass with teflon-lined septa	120 ml (no headspace)

^a Samples will be analyzed according to ASL D requirements but the minimum detection level may cause some analyses to be considered ASL E.

^b Sample container types may be changed at the direction of the Field Sampling Lead, as long as the volume requirements, container compatibility requirements, and SCQ requirements are met.

^c At the direction of the Field Sampling Lead, triple the specified volume must be collected for all samples at one location in the CU in order for the contract laboratory to perform the required quality control analysis. The samples shall be identified on the Chain of Custody/Request for Analysis forms as "designated for laboratory QC".

^d If "push tubes" are used for sampling, the off-site laboratories will be sent container blanks. If an alternative sample method is used, the Field Technicians will collect a rinsate.

Special Instructions:

Field QC (trip blank) will be collected under this V/FCN.

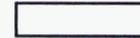
Analytical Data Validation is required (VSL D).

Highest total uranium result for the area is 12 mg/kg from location A1P2-S3DP-01-05

**Attachment 2
Target Analyte Lists**

**20710-PSP-0009-A, 1 sample
(Radiological - ASL D/E*)**

Analyte	On-Property FRL	MDL (soil)
Total Uranium	20 mg/kg	2.0 mg/kg
Radium-226	1.7 pCi/g	0.17 pCi/g
Radium-228	1.8 pCi/g	0.18 pCi/g
Thorium-228	1.7 pCi/g	0.17 pCi/g
Thorium-232	1.5 pCi/g	0.15 pCi/g



**20710-PSP-0009-B, 1 sample
(Radiological - ASL D/E*)**

Analyte	On-Property FRL	MDL
Technetium-99	30 pCi/g	3.0 pCi/g

**20710-PSP-0009-C, 1 sample
(Metals - ASL D/E*)**

Analyte	On-Property FRL	MDL
Arsenic	12 mg/kg	1.2 mg/kg
Lead	400 mg/kg	40 mg/kg

**20710-PSP-0009-D, 1 sample
(Metals - ASL D/E*)**

Analyte	On-Property FRL	MDL
Antimony	96 mg/kg / (10 mg/kg)	1.0 mg/kg
Beryllium	1.5 mg/kg	0.15 mg/kg

**20710-PSP-0009-E, 1 sample
(PCBs - ASL D/E*)**

Analyte	On-Property FRL	MDL
Aroclor-1254	0.13 mg/kg	0.013 mg/kg
Aroclor-1260	0.13 mg/kg	0.013 mg/kg

**20710-PSP-0009-F, 1 sample
(VOCs - ASL D/E*)**

Analyte	On-Property FRL	MDL (soil)	MDL (water)
Tetrachloroethene	3.6 mg/kg	0.36 mg/kg	10 µg/L

**20710-PSP-0009-G, 1 sample
(Metals - ASL D/E*)**

Analyte	On-Property FRL	MDL
Molybdenum	2900 mg/kg / (10 mg/kg)	1.0 mg/kg

Arico, Denise

From: Kienow, Bernard
Sent: Monday, July 10, 2006 2:27 PM
To: Arico, Denise
Subject: RE: V/FCN 20710-PSP-0009-28

Denise

The coordinates for the sample are

North = 480045.76

East = 1351643.59

Elev = 592.15

Bernie

~ 576' start

-----Original Message-----

From: Arico, Denise
Sent: Friday, July 07, 2006 2:45 PM
To: Kienow, Bernard; Clinton, Andy
Subject: FW: V/FCN 20710-PSP-0009-28
Importance: High

Did anyone happen to get the coords for this one????

-----Original Message-----

From: Arico, Denise
Sent: Wednesday, July 05, 2006 4:42 PM
To: Noble, Rebecca; Buhrlage, Thomas; Clinton, Andy; Hey, James; Kienow, Bernard; McSwigan, Paul; Meyer, Amy; Reynolds, Karen
Cc: Chambers, James; Chen, Baohe; Frank, Michael; Kirby, Pamela; Leslie, Kathy; Raines, Yvonne; Stephens, Lynn; Stroud, Lee
Subject: V/FCN 20710-PSP-0009-28
Importance: High

Jim,

Here is the v/fcn as we discussed a little while ago for the utility discovered east of Cell 8. (V/FCN 27 to this same PSP was sampled about 1 month ago for the same thing).

There are two tabs to the excel file.

The sample is to be field located and surveying will need to follow-up.

I will need the samples shipped out early tomorrow morning. There will be one Encore sample.

Call me if you have any questions.

Thanks,
Denise

7/26/2006

MEMO

TO: J.D. Chiou, Fluor Fernald

FROM: Donna Bohannon, Ohio EPA/OFFO

DATE: July 27, 2006

SUBJECT: **APPROVAL - V/FCN 20710-PSP-0009-28 *PSP for Area 1, Phase II - Certified for Reuse Areas, Trap Range, Sector 2C, and Sector 3 Certification Sampling***

This V/FCN requests the collection of one boring, in CU S3-DP-02 from A1PII - Certified for Reuse Areas, Trap Range, Sector 2C, and Sector 3 Certification Sampling, after discovering a four-foot section of a four-inch clay pipe in the certified area, while relocating/excavating the drainage ditch east of the OSDF Cell 8 footprint. The sampling will determine whether the post-excavation soils will meet the certification requirements. Ohio EPA approves of this variance.