

5677

**PROJECT SPECIFIC PLAN FOR
AREA 9, PHASE III OUTFALL DITCH
PREDESIGN INVESTIGATION
(SUPPLEMENT TO 20300-PSP-0011)**

DEMOLITION, SOIL AND DISPOSAL PROJECT

**FERNALD CLOSURE PROJECT
FERNALD, OHIO**



SEPTEMBER 2004

U.S. DEPARTMENT OF ENERGY

**21140-PSP-0002
Revision 1
FINAL**

REVISION SUMMARY

5677

<u>Revision</u>	<u>Date</u>	<u>Description of Revision</u>
Rev. 0	5-19-04	Initial controlled issuance
Rev. 1	9-3-04	Revised to include approved EPA and OEPA comment responses and Variance/Field Change Notices 21140-PSP-0002-01 through 21140-PSP-0002-16

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LIST OF ACRONYMS AND ABBREVIATIONS

A9PIII	Area 9, Phase III
ASCOC	area-specific constituent of concern
ASL	analytical support level
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
COC	constituent of concern
DOE	U.S. Department of Energy
DQO	Data Quality Objective
DSDP	Demolition, Soil and Disposal Project
EMS	Excavation Monitoring System
FACTS	Fernald Analytical Computerized Tracking System
FCP	Fernald Closure Project
FRL	final remediation level
HPGe	high-purity germanium (detector)
MH	manhole
OSDF	On-Site Disposal Facility
PID	photoionization detector
PPE	personal protective equipment
ppm	parts per million
PSP	Project Specific Plan
QA/QC	Quality Assurance/Quality Control
RSS	Radiation Scanning System
RTIMP	Real-Time Instrumentation Measurement Program
RTRAK	Real-Time Radiation Tracking System
SCQ	Sitewide CERCLA Quality Assurance Project Plan
SED	Sitewide Environmental Database
SEP	Sitewide Excavation Plan
SMMP	Soil and Miscellaneous Media Sampling
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 predesign of Area 9, Phase III (A9P3III), Outfall Ditch Investigation. The general information that is routinely addressed in this PSP can be found in 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation*. While this PSP (21140-PSP-0002) 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, analysis, and data management for A9P3III. Additionally, sampling under this PSP will be done to gain geotechnical information about the soil conditions immediately adjacent to the old outfall line. This information will be used to develop the excavation approach for removing the old outfall line. The detailed information for predesign includes reasons for sample collection, sample locations, number of borings, depth intervals, constituents of concern (COC), sample mass, and analytical methodologies.

1.2 SCOPE

The area included within the scope of this PSP is the offsite property between the eastern boundary of the Fernald Closure Project (FCP) and the Great Miami River in which both the old and new outfall lines pass through. See Figure 1-1 for the area included in the predesign sampling of this PSP. The schedule for implementation of this PSP is expected to begin in May 2004 and continue through the completion of the project.

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

Field conditions may arise that warrant a different decision process for defining the extent of contamination or for verifying that soil is 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. In the event that a change in the characterization approach is needed, the Characterization Manager or designee must prepare a V/FCN, FS-F-4162. The completed V/FCN must contain the signatures of all affected organizations, which at a minimum includes the Project Manager, Characterization Manager, Waste Acceptance Organization (WAO), and Quality Assurance/Quality Control (QA/QC) but may also include Soil Sampling and/or the Analytical Program Manager, as appropriate. A time-critical variance may be

obtained in cases where expedited approval is needed to avoid costly project delays. In the case of a time-critical variance, verbal or written approval (electronic mail is acceptable) must be received from the Characterization Manager and from QA/QC prior to implementing the variance. The completed approved V/FCN form must be completed within seven working days after the time-critical variance is approved. Additionally, V/FCNs that are considered to be significant will require approval from the regulatory agencies in accordance with Demolition Soil and Disposal Project (DSDP) agreements. Changes to the PSP will also be noted in the applicable Field Activity Logs.

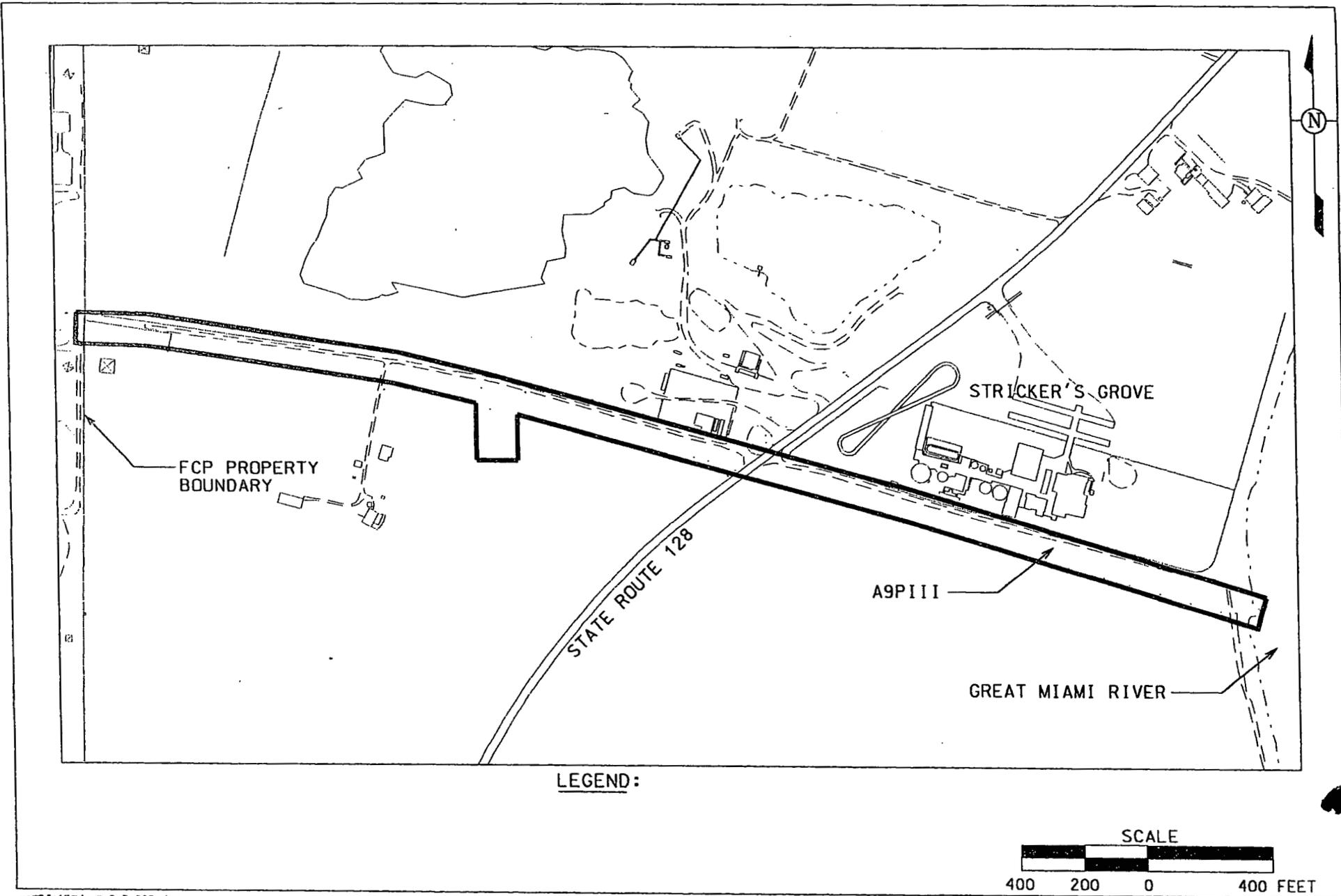
1.4 KEY PERSONNEL

The team members responsible for coordination of work in accordance with this PSP are listed in Table 1-1.

TABLE 1-1

KEY PERSONNEL

Title	Primary	Alternate
Department of Energy (DOE) Contact	Nina Akgunduz	Johnny Reising
DSDP Project Manager	Jyh-Dong Chiou	Rich Abitz
Characterization Manager	Frank Miller	Rich Abitz
Area 9, Phase III	Greg Lupton	Denise Arico
RTIMP Manager	Brian McDaniel	Dale Seiller
Soil Sampling Manager	Tom Buhrlage	Jim Hey
Surveying Manager	Jim Schwing	Andy Clinton
WAO Contact	Linda Barlow	TBD
Construction Manager	Warren Hooper	Charles Carney
Engineering Lead	Tony Snider	Dave Russell
Laboratory Contact	Heather Medley	Kathy Leslie
Data Validation Contact	Jim Chambers	Andy Sandfoss
Field Data Validation Contact	Dee Dee Edwards	Andy Sandfoss
Data Management Lead	Greg Lupton	Denise Arico
Radiological Control Contact	Corey Fabricante	Mike Schneider
FACTS/SED Database Contact	Kym Lockard	Susan Marsh
Quality Assurance Contact	Reinhard Friske	Darren Wessel
Safety and Health Contact	Gregg Johnson	Jeff Middaugh



LEGEND:

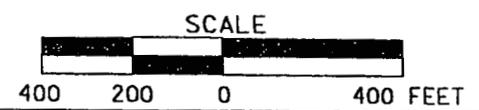


FIGURE 1-1. A9P111 PREDESIGN LOCATION MAP

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2.0 AREA-SPECIFIC WORK REMAINING STATUS

2.1 AREA 9, PHASE III

2.1.1 History

Area 9, Phase III is located offsite, stretching east from the eastern boundary of the Fernald Closure Project (FCP) to the Great Miami River. The area has been established to encompass the land that the old outfall line passes through. The old outfall line was designed and built in 1951. In 1965, the outfall line was damaged by severe flooding and reconstructed between 1965 and 1966. In April 1989, an overflow of the old outfall line occurred at manhole 180. The old outfall line was replaced with a new higher capacity outfall line in 1992.

After the overflow of the old outfall line at manhole 180, soil and water samples were collected. Results of these samples were reported to the Department of Energy (DOE) and the property owner. In May 1989, characterization soil samples were taken. The results of the characterization sampling revealed that the soil immediately to the east of manhole 180 exceeded the adopted criteria for soil removal for the site area at that time. The criteria identified for this removal action was 52 parts per million (ppm) total uranium and/or 46 ppm total thorium. These action levels were established and used prior to the development of the current Final Remediation Levels (FRL). The affected area was eight feet by eight feet by two feet deep and was excavated in June 1989. Following excavation, samples were collected and analyzed with results demonstrating that the soil concentration criteria were achieved, and the excavated area was backfilled.

In 1993, still prior to the establishment of FRLs, additional samples were collected along the Great Miami River bank near the point of the outfall line discharge. The samples were split between an off-site commercial laboratory and the on-site laboratory. The on-site sample results, which were above the FRL in four borings, appear to be questionably high in comparison to the off-site laboratory's analytical results. All of the results from the off-site laboratory were below FRL. Therefore, confirmatory samples will be collected from the borings whose results were above FRL.

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 all data collection activities associated with predesign in A9PIII. Fifty-five (55) boring locations have initially been selected within this investigation area to be submitted for analysis. Refer to Section 4.3 for a detailed description of physical sample identification.

All data collection activities will be consistent with the Sitewide CERCLA Quality Assurance Plan (SCQ) and Section 3.1 of the Sitewide Excavation Plan (SEP). Physical samples will be collected in accordance with Data Quality Objective (DQO) SL-048. The data will be utilized to assess whether COC concentrations in these areas are lower than the FRLs outlined in the OU5 Record of Decision. If necessary, the data collected under this plan will also be utilized to determine whether soil and soil-like material from the area meet the OSDF WAC, as defined in the SEP, the OSDF WAC Attainment Plan, and the Impacted Materials Placement Plan.

2.1.2.2 Determination of FRL ASCOCs and WAC ASCOCs

The FRL COCs for A9PIII are listed in Section 2.1.2.2.2 of this document. Although technetium-99 and uranium are WAC COCs, their presence is not anticipated to approach the OSDF WAC limit. Other than technetium-99 and uranium, there are no other WAC COC investigations planned for this area.

2.1.2.2.1 WAC ASCOCs

Historical data from the area were compared to the OSDF WAC to identify areas that exceed the OSDF WAC. This comparison confirmed that there are no known areas within the A9PIII that exceed the OSDF WAC. However, through predesign sampling and excavation control the possibility of finding above-WAC material still exists, but is highly unlikely.

2.1.2.2.2 FRL ASCOCs

The FRL ASCOCs listed below were selected for sampling based on the results of historical samples collected from this area. All of the constituents listed below were detected in the area, and all of the constituents with the exception of Radium-226 and Radium-228 were detected above the FRL, which was established years after the data were generated. The FRL ASCOCs for the A9PIII are as follows:

Primary Radiological ASCOCs:

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

Secondary ASCOCs:

- Cesium-137
- Technetium-99

2.1.2.3 Sampling Strategy

2.1.2.3.1 WAC Sampling Strategy

This section is not applicable. There are no known WAC areas defined in A9P3.

2.1.2.3.2 FRL Sampling Strategy

The physical sampling strategy is based upon historical data and has been broken out into three approaches: sampling around manholes, sampling near the Great Miami River bank, and discrete confirmatory sample locations. Unless otherwise specified, the majority of the sampling locations will be sampled at the soil surface (0-0.5 feet) for the entire list of FRL ASCOCs. The remaining sampling intervals were chosen to target the sample depths of historical FRL exceedances.

2.1.2.3.2.1 Manhole Soil Sampling Strategy

Sampling locations have been selected to provide adequate coverage of the area surrounding each of manholes along the outfall line. The sampling locations around the manholes were divided into three groupings as follows: Manholes (MH) 177, 178, and 179, MH 180, and MH 181. See Appendix A for the target analyte lists and Appendix B for the boring table, sample depths, and sample identifiers. Table 2-1 addresses the physical sample volumes, preservation requirements, and analysis information. Boring depths will vary depending on the historical depths of contamination.

2.1.2.3.2.1.1 Manholes 177, 178, and 179

Sampling locations were selected to adequately cover the area between MH 177 and MH 179 (See Figure 2-1). There was one historical FRL exceedance for total thorium at sampling location MH 177-5 that will be investigated by placing a biased boring location (A9P3-MH177-2) at this historical point.

2.1.2.3.2.1.2 Manhole 180

As discussed in Section 2.1.1, MH 180 overflowed in 1989. The overflow covered and contaminated an area south and east of MH 180. The area of the overflow was sampled and remediated in 1989. In order to assess potential residual contamination, an area covering all historical locations that exhibited above FRL results has been established. The locations in this area will have a sampling interval from soil surface to 1.5 feet below surface (0 – 1.5 feet) and will be analyzed for the entire list of FRL ASCOCs.

This sampling interval will be composited and analyzed by the laboratory. This sampling interval was chosen because it represents the depth interval for all of the FRL exceedances in this area. The source of these exceedances is presumed to be from the 1989 overflow event. Predesign borings have not been positioned at the historical locations that have FRL exceedances; however, sample locations have been selected to adequately cover the overflow area including the FRL exceedances (see Figure 2-3). There were FRL exceedances in the overflow area for the following constituents:

- Two exceedances for technetium-99 (Tc-99)
- Nine exceedances for total thorium
- Three exceedances for thorium-228 (Th-228)
- One exceedance for thorium-232 (Th-232)

2.1.2.3.2.1.3 Manhole 181

Sampling locations were selected to adequately cover the area surrounding MH 181 (see Figure 2-4). There were three FRL exceedances in the area surrounding MH 181, which will be investigated by biasing boring locations at each of these exceedances. There was one exceedance for cesium-137 (Cs-137) at historical boring 1530 that will be investigated by boring A9P3-MH181-1. Additionally, there were two exceedances for Tc-99, one at historical boring MH-181-4 and one at historical boring MH-181-6. Boring MH-181-4 will be investigated by boring A9P3-MH181-2, and boring MH-181-6 will be investigated by boring A9P3-MH181-17.

2.1.2.3.2.2 Great Miami River Bank Sampling Locations

There were FRL exceedances for total thorium and total uranium in four borings near the Great Miami River Bank by the outfall line discharge (see Figure 2-5). As stated in Section 2.1.1, conflicting data was received from an off-site and on-site laboratory. These locations are being sampled to determine whether or not these FRL exceedances were legitimate. Boring 11178 had FRL exceedances for total thorium and total uranium, and will be investigated by boring A9P3-GMRB-1. Boring 11172 had FRL exceedances for total thorium at varying depths and will be investigated by boring A9P3-GMRB-2. Boring 11180 had an FRL exceedance for total thorium and will be investigated by boring A9P3-GMRB-3. Finally, boring 11181 had an FRL exceedance for total uranium and will be investigated by boring A9P3-GMRB-4. See Appendix A for the target analyte lists and Appendix B for the boring table, sample depths, and sample identifiers. Table 2-1 addresses the physical sample volumes, preservation requirements, and analysis information. Boring depths will vary depending on the historical depths of contamination.

2.1.2.3.2.3 Discrete Sampling Location

One discrete sampling location has been identified that has a historical above-FRL result and falls outside of the areas covered by manhole sampling and Great Miami River Bank sampling. This historical location is boring 1532, which had a FRL exceedance for Cs-137, and will be investigated by boring A9P3-MH181-16 (see Figure 2-4). See Appendix A for the target analyte list and Appendix B for the boring table, sample depths, and sample identifiers. Table 2-1 addresses the physical sample volumes, preservation requirements, and analysis information.

2.1.2.3.3 Manhole Water Sampling Strategy

The five manholes (MH177, MH178, MH179, MH180, and MH181) along the offsite portion of the old outfall line will be opened and sampled. Any available water will be sampled, and if there is a sufficient volume of sediment available, then a separate sediment sample will be collected. The water will be analyzed by ICPMS for total uranium and total thorium (Th-232) as well as by GPC for Tc-99. The sediment, if available will be analyzed for the list found in target analyte list A. See Appendix A for the target analyte lists and Appendix B for the boring table and sample identifiers. Table 2-1 addresses the physical sample volumes, preservation requirements, and analysis information.

2.1.2.3.4 Geotechnical Sampling Strategy

Six borings were identified along the length of the outfall line as shown in Figures 2-2, 2-4, and 2-5. These locations were spaced to provide representative information about the physical properties of the soil along the length of the outfall line. A geologist will be present during all geotechnical sampling, and a boring log is required for each geotechnical boring. See Appendix A for the target analyte lists and Appendix B for the boring table and sample identifiers. Table 2-1 addresses the physical sample volumes, preservation requirements, and analysis information.

TABLE 2-1
SAMPLING AND ANALYTICAL REQUIREMENTS

Analyte	Method	Sample Matrix	ASL	Preserve	Hold Time	Turn Around Time	Container ^b	Minimum Sample Mass
Radiological (TAL A)	Gamma Spec, GPC, or LSC (Off-site)	Solid	D/E ^a	None	12 months	30 day	Plastic or stainless steel core liner or glass or polyethylene sample container	400 g (800 g) ^c
Radiological (TAL B)	Gamma Spec (Off-site)	Solid	D/E ^a	None	12 months	7 day	Plastic or stainless steel core liner or glass or polyethylene sample container	400 g (800 g) ^c
Radiological (TAL C)	Gamma Spec (Off-site)	Solid	D/E ^a	None	12 months	7 day	Plastic or stainless steel core liner or glass or polyethylene sample container	400 g (800 g) ^c
Radiological (TAL D)	Gamma Spec (Off-site)	Solid	D/E ^a	None	12 months	7 day	Plastic or stainless steel core liner or glass or polyethylene sample container	400 g (800 g) ^c
Radiological (TAL E)	GPC or LSC (Off-site)	Solid	D/E ^a	None	12 months	7 day	Plastic or stainless steel core liner or glass or polyethylene sample container	100 g
Radiological (TAL F)	Gamma Spec (Off-site)	Solid	D/E ^a	None	12 months	7 day	Plastic or stainless steel core liner or glass or polyethylene sample container	400 g (800 g) ^c
Radiological (TAL G)	Gamma Spec (Off-site)	Solid	D/E ^a	None	12 months	7 day	Plastic or stainless steel core liner or glass or polyethylene sample container	400 g (800 g) ^c
Radiological (TAL A, B, C, D, E, F, or G)	Gamma Spec, GPC, or LSC (Off-site)	Liquid (rinsate ^d)	D/E ^a	HNO ₃ pH<2	6 months	30 day	Glass or Polyethylene	4 liters
Radiological (TAL E & F)	GPC & ICP/MS (On-site)	Liquid	B	HNO ₃ pH<2	6 months	7 day	Glass or Polyethylene	1 liter
Geotechnical (TAL H)	ASTM D2216 (On-site)	Solid	A	None	1 year	30 day	Plastic or stainless steel core liner	500 g
Geotechnical (TAL I)	ASTM D422 (On-site)							
Geotechnical (TAL J)	ASTM D4318 (On-site)							
Geotechnical (TAL K)	ASTM (On-site)							

^aSamples will be analyzed according to Analytical Support Level (ASL) D requirements but the minimum detection level may cause some analyses to be considered ASL E.

^bSample 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.

^cAt the direction of the Field Sampling Lead, triple the specified volume must be collected for all samples at one location per day 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".

^dIf "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.

^eFor coarse-grained materials, perform Atterberg Limits tests only on those samples whose fines content (defined as the percent passing the No. 200 sieve) is at least 25%.

ASL - analytical support level

LSC - liquid scintillation counting

GPC - gas proportional counting

KPA - kinetic phosphorescence analyzer

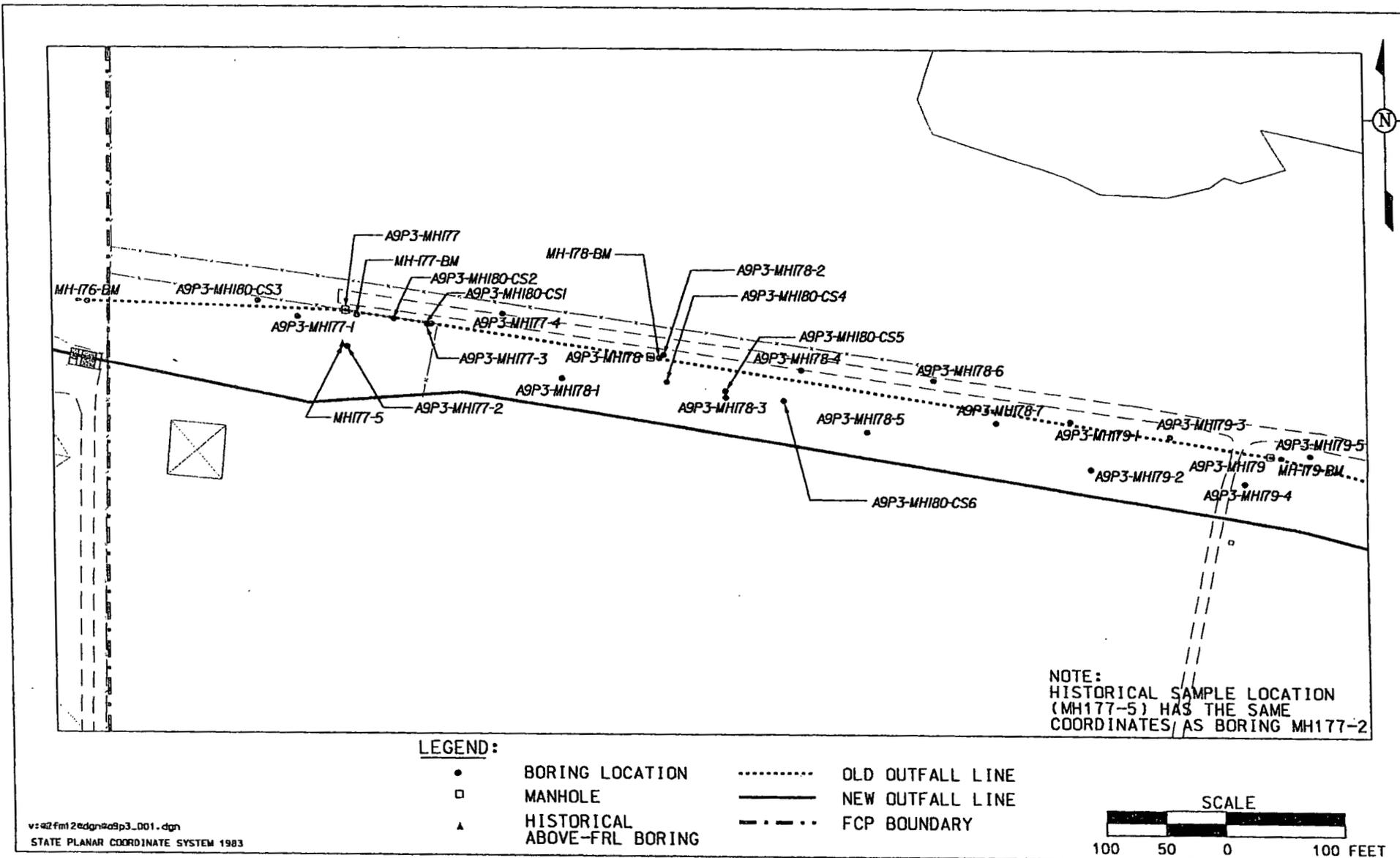


FIGURE 2-1. PREDESIGN SAMPLE LOCATIONS FOR MH 177, MH 178 AND MH 179 AREA

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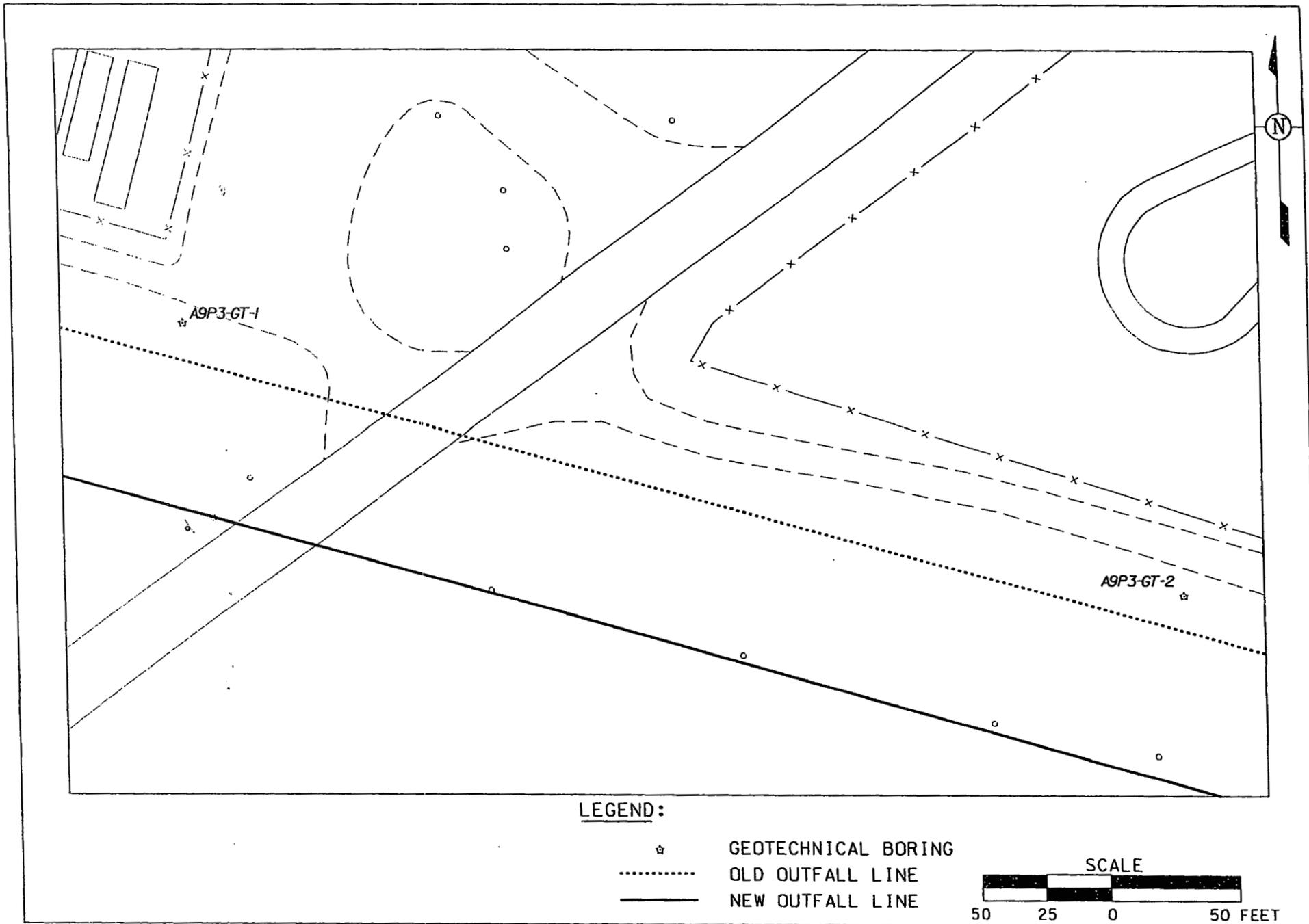


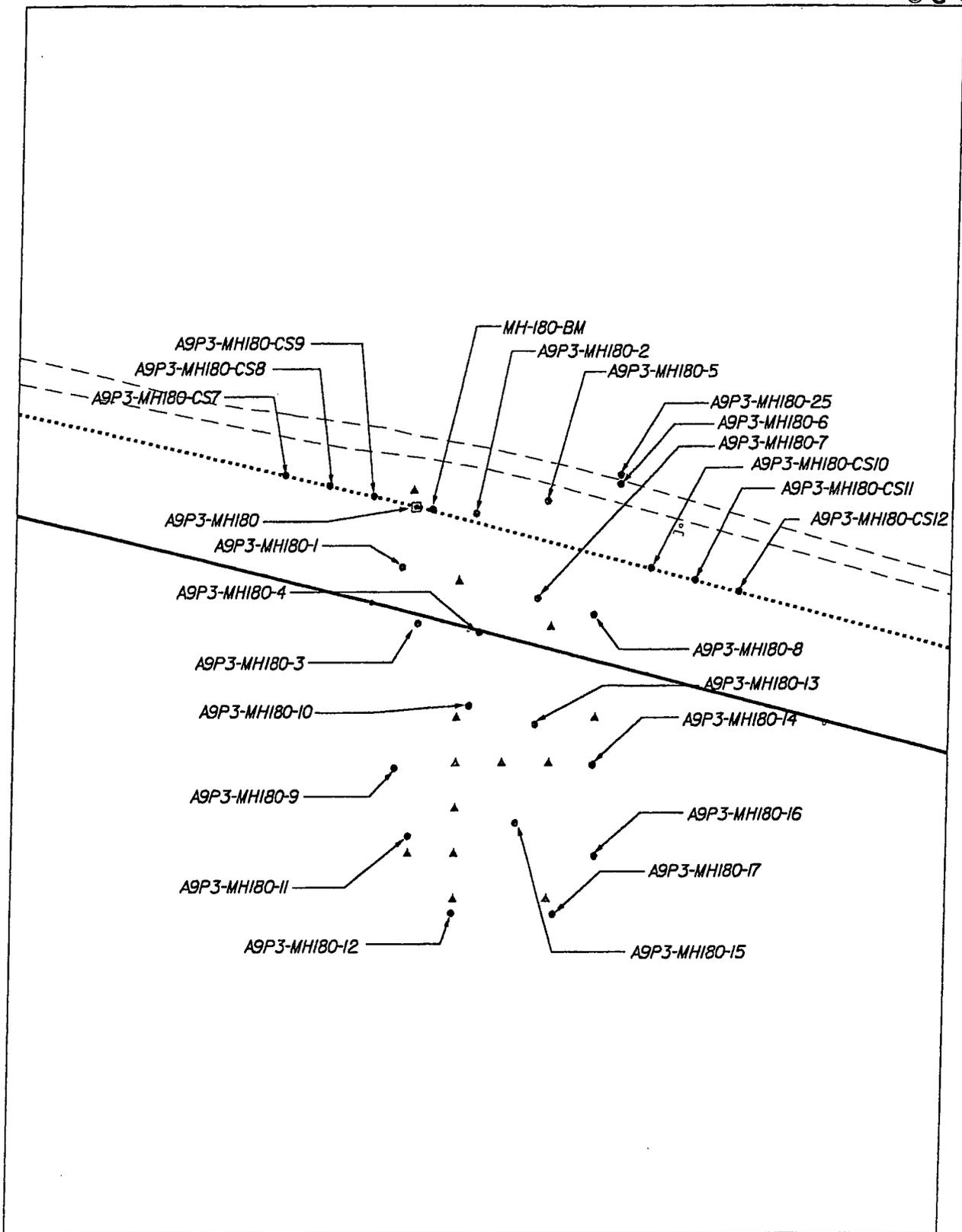
FIGURE 2-2. PREDESIGN SAMPLE LOCATIONS NEAR STATE ROUTE 128



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STATE PLANNAR COORDINATE SYSTEM 1983

21-SEP-2004



LEGEND:

- BORING LOCATION
- MANHOLE
- ▲ HISTORICAL ABOVE-FRL BORING
- OLD OUTFALL LINE
- NEW OUTFALL LINE

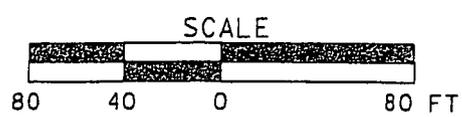
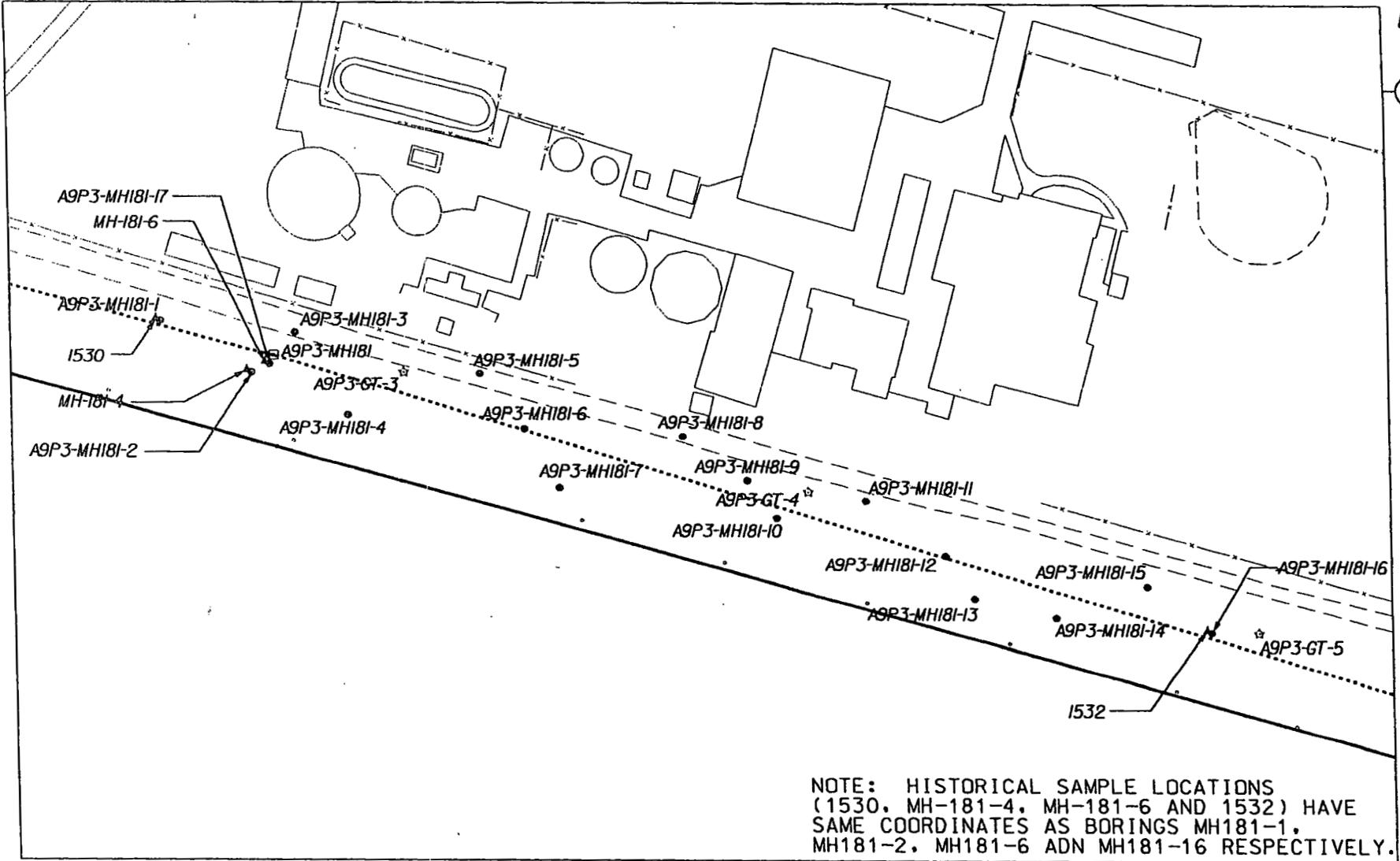


FIGURE 2-3. PREDESIGN SAMPLE LOCATIONS FOR MH 180 AREA

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NOTE: HISTORICAL SAMPLE LOCATIONS (1530, MH-181-4, MH-181-6 AND 1532) HAVE SAME COORDINATES AS BORINGS MH181-1, MH181-2, MH181-6 AND MH181-16 RESPECTIVELY.

LEGEND:

- BORING LOCATION
- MANHOLE
- ▲ HISTORICAL ABOVE-FRL BORING
- OLD OUTFALL LINE
- NEW OUTFALL LINE

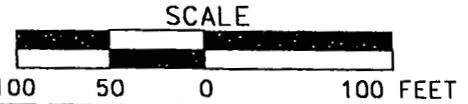
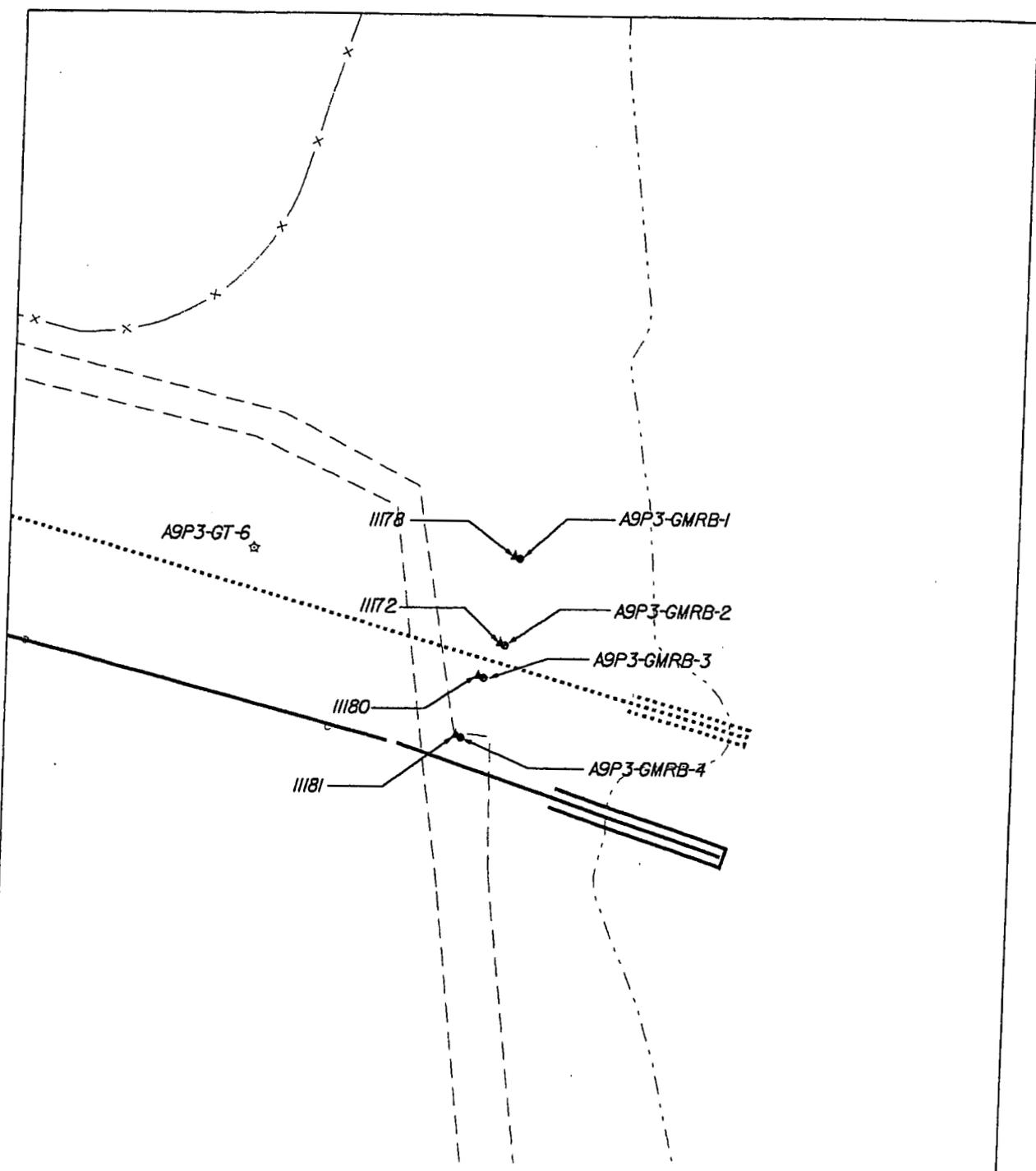


FIGURE 2-4. PREDESIGN SAMPLE LOCATIONS FOR THE MH 181 AREA

V:\22\m12\449\m12\449p3_004.dgn

STATE PLANNING COORDINATE SYSTEM 1983

21-SEP-2004



NOTE:
 HISTORICAL SAMPLE LOCATIONS
 (1178, 1172, 1180, 1181) HAVE THE SAME
 COORDINATES AS BORINGS GMRB-1, GMRB-2,
 GMRB-3 AND GMRB-4 RESPECTIVELY.

LEGEND:

- BORING LOCATION
- ☆ GEOTECHNICAL BORING
- ▲ HISTORICAL ABOVE-FRL BORING
- OLD OUTFALL LINE
- NEW OUTFALL LINE

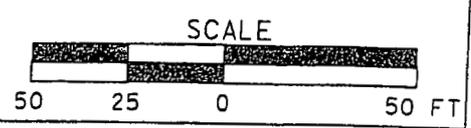


FIGURE 2-5. PREDESIGN SAMPLE LOCATIONS FOR THE GREAT MIAMI RIVER BANK AREA

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

Since samples collected for this activity are for confirmation purposes only, Real-Time activities are not necessary at this time.

4.2 SAMPLE COLLECTION METHODS

Refer to Section 4.2 of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation*.

4.3 PHYSICAL SAMPLE IDENTIFICATION

Refer to Section 4.3 of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation* for general physical sample identification guidelines. A detailed description for identifying physical samples specific to Area 9 Phase III is given below. Each soil predesign sample will be assigned a unique sample identification number as *A9P3-SpecificArea-Location^Depth-Analysis-QC*, where:

A9P3: Sample collected from Predesign A9P3

Specific Area:
MH177 = Manhole-177
MH178 = Manhole-178
MH179 = Manhole-179
MH180 = Manhole-180
MH181 = Manhole-181
GMRB = Great Miami River Bank
GT = Geotechnical

Location Designator: The Location Designator is a sequential boring number (e.g., 1, 2, etc) that follows the area designator (e.g., A9P3-MH177-1).

∧: The ^ is placed between the location designator and the depth interval. When used, the information to the left of this symbol identifies the boring number and allows the automatic assignment of the boring identification number to be transferred to the appropriate field/table in the Sitewide Environmental Database (SED). The ^ is not used if the sample does not have coordinates such as trip blanks, a “-“ is used instead.

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Depth Interval Designator: This number indicates the depth interval of the sample from the soil surface. For example, "1" = 0 to 6-inch interval (where the depth interval indicator equals two times the bottom depth for the respective interval and is measured in feet, i.e., "1" = 2 x 0.5', "2" = 2 x 1.0', "3" = 2 x 1.5', etc.).

Additionally, two samples may be collected from the bottom of the manholes. S = sediment, W = water

Analysis Type: R = radionuclides, G = geotechnical

Appendix A contains the Physical Sample Identifications and Coordinates for the Pre-design Sampling of A9P3. Using the above guidelines, the sample A9P3-MH177-1³-R is interpreted as sample #1 in the area of Manhole-177 in A9P3 taken at a bottom-depth of 1.5 feet, which will be analyzed for radionuclides, and the sample A9P3-MH180¹W-R is interpreted as a water sample collected from Manhole-180 in A9P3, which will be analyzed for radionuclides.

4.4 BOREHOLE ABANDONMENT

Refer to Section 4.4 of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation*.

5.0 EXCAVATION CONTROL MEASURES

Not Applicable

6.0. PRECERTIFICATION

Per Section 4.1 of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation*, predesign measurements may be used as precertification data depending on the measurement results (i.e. if no activity is above the action limits).

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

In addition to the requirements documented in Section 7.2.1 of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation*, 90 percent of the predesign analytical data shall be validated to validation support level (VSL) B. The remaining 10 percent of the predesign analytical data shall be validated to VSL D.

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. The only exception to the requirements specified in Section 8.0 of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation*, is that all off-site emergencies shall be reported immediately by using the local 911 system to get emergency assistance. As time permits, project management, AEDO and project safety should be contacted as to what event occurred and actions taken and reporting.

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

In addition to the requirements listed in Section 11.2 of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation*, the results of the geotechnical sampling will not be entered into the SED.

APPENDIX A

TARGET ANALYTE LISTS FOR PREDESIGN

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APPENDIX A
TARGET ANALYTE LISTS FOR PREDESIGN
TAL A

Analyte	FRL	MDL (soil)	MDL (water)
Cesium-137	0.82 pCi/g	0.082 pCi/g	2,100 pCi/L
Radium-226	1.5 pCi/g	0.15 pCi/g	2,550 pCi/L
Radium-228	1.4 pCi/g	0.14 pCi/g	2,700 pCi/L
Technetium-99	1.0 pCi/g	0.50 pCi/g	45,000 pCi/L
Thorium-228	1.5 pCi/g	0.15 pCi/g	2,550 pCi/L
Thorium-232	1.4 pCi/g	0.14 pCi/g	2,550 pCi/L
Total Uranium	50 mg/kg	5.0 mg/kg	3 mg/L

TAL B

Analyte	FRL	MDL (soil)	MDL (water)
Thorium-232	1.4 pCi/g	0.14 pCi/g	2,550 pCi/L

TAL C

Analyte	FRL	MDL (soil)	MDL (water)
Thorium-228	1.5 pCi/g	0.15 pCi/g	2,550 pCi/L

TAL D

Analyte	FRL	MDL (soil)	MDL (water)
Cesium-137	0.82 pCi/g	0.082 pCi/g	2,100 pCi/L

TAL E

Analyte	FRL	MDL* (soil)	MDL (water)
Technetium-99	1.0 pCi/g	0.50 pCi/g	45,000 pCi/L

TAL F

Analyte	FRL	MDL (soil)	MDL (water)
Thorium-232	1.4 pCi/g	0.14 pCi/g	2,550 pCi/L
Total Uranium	50 mg/kg	5.0 mg/kg	3 mg/L

TAL G

Analyte	FRL	MDL (soil)	MDL (water)
Total Uranium	50 mg/kg	5.0 mg/kg	3 mg/L

TAL H

Analyte
Particle Size

TAL I

Analyte
Moisture Content of Soil and Rock

TAL J

Analyte
Liquid Limit
Plastic Limit
Plasticity Index

TAL K

Analyte
Total Organic Content

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APPENDIX A
TARGET ANALYTE LISTS FOR PREDESIGN

* Laboratory is unable to achieve 10% of the FRL.

APPENDIX B

BORING TABLE AND SAMPLE IDENTIFIERS

**APPENDIX B
BORING TABLE AND SAMPLE IDENTIFIERS**

Boring ID	Northing	Easting	Depth Identifier	Depth Interval	Grab or Composite	Matrix	Sample ID	TAL
A9P3-GT-1	479096	1353854	12	4-6	Grab	Soil	A9P3-GT-1^12-G	H, I, J, K
			16	6-8	Grab	Soil	A9P3-GT-1^16-G	H, I, J
			20	8-10	Grab	Soil	A9P3-GT-1^20-G	H, I, J
			24	10-12	Grab	Soil	A9P3-GT-1^24-G	H, I, J
A9P3-GT-2	478992	1354239	12	4-6	Grab	Soil	A9P3-GT-2^12-G	H, I, J, K
			16	6-8	Grab	Soil	A9P3-GT-2^16-G	H, I, J
			20	8-10	Grab	Soil	A9P3-GT-2^20-G	H, I, J
			24	10-12	Grab	Soil	A9P3-GT-2^24-G	H, I, J
A9P3-GT-3	478913	1354529	12	4-6	Grab	Soil	A9P3-GT-3^12-G	H, I, J
			16	6-8	Grab	Soil	A9P3-GT-3^16-G	H, I, J
			20	8-10	Grab	Soil	A9P3-GT-3^20-G	H, I, J
			24	10-12	Grab	Soil	A9P3-GT-3^24-G	H, I, J
A9P3-GT-4	478834	1354801	12	4-6	Grab	Soil	A9P3-GT-4^12-G	H, I, J
			16	6-8	Grab	Soil	A9P3-GT-4^16-G	H, I, J
			20	8-10	Grab	Soil	A9P3-GT-4^20-G	H, I, J
			24	10-12	Grab	Soil	A9P3-GT-4^24-G	H, I, J
A9P3-GT-5	478741	1355104	12	4-6	Grab	Soil	A9P3-GT-5^12-G	H, I, J
			16	6-8	Grab	Soil	A9P3-GT-5^16-G	H, I, J
			20	8-10	Grab	Soil	A9P3-GT-5^20-G	H, I, J
			24	10-12	Grab	Soil	A9P3-GT-5^24-G	H, I, J
			28	12-14	Grab	Soil	A9P3-GT-5^28-G	H, I, J
A9P3-GT-6	478656	1355392	12	4-6	Grab	Soil	A9P3-GT-6^12-G	H, I, J, K
			16	6-8	Grab	Soil	A9P3-GT-6^16-G	H, I, J
			20	8-10	Grab	Soil	A9P3-GT-6^20-G	H, I, J
			24	10-12	Grab	Soil	A9P3-GT-6^24-G	H, I, J
			28	12-14	Grab	Soil	A9P3-GT-6^28-G	H, I, J
A9P3-MH177	1352020.16	479473.86	NA	NA	Grab	Water	A9P3-MH177^1W-R	E,F
						Sediment	A9P3-MH177^1S-R	A
A9P3-MH177-1	1351978.41	479468.62	1	0 - 0.5	Grab	Soil	A9P3-MH177-1^1-R	A
A9P3-MH177-2	1352019.74	479443.64	1	0 - 0.5	Grab	Soil	A9P3-MH177-2^1-R	A
							2	0.5 - 1
A9P3-MH177-3	1352090.18	479462.82	1	0 - 0.5	Grab	Soil	A9P3-MH177-3^1-R	A
A9P3-MH177-4	1352150.36	479471.54	1	0 - 0.5	Grab	Soil	A9P3-MH177-4^1-R	A
A9P3-MH178	1352276.32	479436.00	NA	NA	Grab	Water	A9P3-MH178^1W-R	E,F
						Sediment	A9P3-MH178^1S-R	A
A9P3-MH178-1	1352199.84	479418.10	1	0 - 0.5	Grab	Soil	A9P3-MH178-1^1-R	A
A9P3-MH178-2	1352285.90	479437.67	1	0 - 0.5	Grab	Soil	A9P3-MH178-2^1-R	A
A9P3-MH178-3	1352338.15	479402.71	1	0 - 0.5	Grab	Soil	A9P3-MH178-3^1-R	A
A9P3-MH178-4	1352402.24	479425.89	1	0 - 0.5	Grab	Soil	A9P3-MH178-4^1-R	A
A9P3-MH178-5	1352457.46	479374.59	1	0 - 0.5	Grab	Soil	A9P3-MH178-5^1-R	A
A9P3-MH178-6	1352514.42	479417.62	1	0 - 0.5	Grab	Soil	A9P3-MH178-6^1-R	A
A9P3-MH178-7	1352566.80	479382.46	1	0 - 0.5	Grab	Soil	A9P3-MH178-7^1-R	A

APPENDIX B
BORING TABLE AND SAMPLE IDENTIFIERS

Boring ID	Northing	Easting	Depth Identifier	Depth Interval	Grab or Composite	Matrix	Sample ID	TAL
A9P3-MH179	1352798.30	478356.59	NA	NA	Grab	Water	A9P3-MH179^1W-R	E,F
						Sediment	A9P3-MH179^1S-R	A
A9P3-MH179-1	1352629.42	479384.02	1	0 - 0.5	Grab	Soil	A9P3-MH179-1^1-R	A
A9P3-MH179-2	1352646.29	479344.37	1	0 - 0.5	Grab	Soil	A9P3-MH179-2^1-R	A
A9P3-MH179-3	1352712.88	479372.23	1	0 - 0.5	Grab	Soil	A9P3-MH179-3^1-R	A
A9P3-MH179-4	1352775.50	479333.16	1	0 - 0.5	Grab	Soil	A9P3-MH179-4^1-R	A
A9P3-MH179-5	1352830.31	479357.01	1	0 - 0.5	Grab	Soil	A9P3-MH179-5^1-R	A
A9P3-MH180	1353070.21	479291.07	NA	NA	Grab	Water	A9P3-MH180^1W-R	E,F
						Sediment	A9P3-MH180^1S-R	A
A9P3-MH180-1	1353062.00	479258.60	3	0 - 1.5	Composite*	Soil	A9P3-MH180-1^3-R	A
A9P3-MH180-2	1353101.50	479288.13	3	0 - 1.5	Composite*	Soil	A9P3-MH180-2^3-R	A
A9P3-MH180-3	1353070.98	479227.71	3	0 - 1.5	Composite*	Soil	A9P3-MH180-3^3-R	A
A9P3-MH180-4	1353104.33	479222.77	3	0 - 1.5	Composite*	Soil	A9P3-MH180-4^3-R	A
A9P3-MH180-5	1353139.84	479295.04	3	0 - 1.5	Composite*	Soil	A9P3-MH180-5^3-R	A
A9P3-MH180-6	1353179.10	479304.40	3	0 - 1.5	Composite*	Soil	A9P3-MH180-6^3-R	A
A9P3-MH180-7	1353135.33	479241.60	3	0 - 1.5	Composite*	Soil	A9P3-MH180-7^3-R	A
A9P3-MH180-8	1353166.22	479232.62	3	0 - 1.5	Composite*	Soil	A9P3-MH180-8^3-R	A
A9P3-MH180-9	1353059.48	479148.05	3	0 - 1.5	Composite*	Soil	A9P3-MH180-9^3-R	A
A9P3-MH180-10	1353099.14	479182.40	3	0 - 1.5	Composite*	Soil	A9P3-MH180-10^3-R	A
A9P3-MH180-11	1353067.61	479110.41	3	0 - 1.5	Composite*	Soil	A9P3-MH180-11^3-R	A
A9P3-MH180-12	1353091.86	479068.11	3	0 - 1.5	Composite*	Soil	A9P3-MH180-12^3-R	A
A9P3-MH180-13	1353134.93	479172.14	3	0 - 1.5	Composite*	Soil	A9P3-MH180-13^3-R	A
A9P3-MH180-14	1353166.80	479149.92	3	0 - 1.5	Composite*	Soil	A9P3-MH180-14^3-R	A
A9P3-MH180-15	1353125.34	479117.79	3	0 - 1.5	Composite*	Soil	A9P3-MH180-15^3-R	A
A9P3-MH180-16	1353168.69	479099.52	3	0 - 1.5	Composite*	Soil	A9P3-MH180-16^3-R	A
A9P3-MH180-17	1353146.48	479067.55	3	0 - 1.5	Composite*	Soil	A9P3-MH180-17^3-R	A
A9P3-MH181	1354442.34	478924.16	NA	NA	Grab	Water	A9P3-MH180^1W-R	E,F
						Sediment	A9P3-MH180^1S-R	A
A9P3-MH181-1	1354366.06	478947.03	1	0 - 0.5	Grab	Soil	A9P3-MH181-1^1-R	A
			14	6.5 - 7	Grab	Soil	A9P3-MH181-1^14-R	D
A9P3-MH181-2	1354425.76	478912.61	1	0 - 0.5	Grab	Soil	A9P3-MH181-2^1-R	A
			2	0.5 - 1	Grab	Soil	A9P3-MH181-2^2-R	E
A9P3-MH181-3	1354455.23	478939.53	1	0 - 0.5	Grab	Soil	A9P3-MH181-3^1-R	A
A9P3-MH181-4	1354489.82	478884.39	1	0 - 0.5	Grab	Soil	A9P3-MH181-4^1-R	A
A9P3-MH181-5	1354578.80	478912.06	1	0 - 0.5	Grab	Soil	A9P3-MH181-5^1-R	A
A9P3-MH181-6	1354608.30	478875.20	1	0 - 0.5	Grab	Soil	A9P3-MH181-6^1-R	A
A9P3-MH181-7	1354631.04	478836.15	1	0 - 0.5	Grab	Soil	A9P3-MH181-7^1-R	A
A9P3-MH181-8	1354715.14	478870.43	1	0 - 0.5	Grab	Soil	A9P3-MH181-8^1-R	A
A9P3-MH181-9	1354758.33	478841.41	1	0 - 0.5	Grab	Soil	A9P3-MH181-9^1-R	A
A9P3-MH181-10	1354777.83	478816.16	1	0 - 0.5	Grab	Soil	A9P3-MH181-10^1-R	A
A9P3-MH181-11	1354838.31	478827.82	1	0 - 0.5	Grab	Soil	A9P3-MH181-11^1-R	A
A9P3-MH181-12	1354891.64	478791.40	1	0 - 0.5	Grab	Soil	A9P3-MH181-12^1-R	A
A9P3-MH181-13	1354910.91	478763.04	1	0 - 0.5	Grab	Soil	A9P3-MH181-13^1-R	A
A9P3-MH181-14	1354965.83	478750.39	1	0 - 0.5	Grab	Soil	A9P3-MH181-14^1-R	A
A9P3-MH181-15	1355027.63	478771.90	1	0 - 0.5	Grab	Soil	A9P3-MH181-15^1-R	A
A9P3-MH181-16	1355070.42	478741.03	1	0 - 0.5	Grab	Soil	A9P3-MH181-16^1-R	A
			24	11.5 - 12	Grab	Soil	A9P3-MH181-16^24-R	D
A9P3-MH181-17	1354438.02	478918.11	1	0 - 0.5	Grab	Soil	A9P3-MH181-17^1-R	E

APPENDIX C**AREA 9, PHASE III PREDESIGN VARIANCES**

VARIANCE / FIELD CHANGE NOTICE

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

V/F: 21140-PSP-0002-01
6/26/04

/BS NO.: PROJECT/DOCUMENT/ECDC # 21140-PSP-0002 Rev.0

Page: 1 of 5

PROJECT TITLE: Project Specific Plan For Area 9, Phase III Predesign Investigation
ampling

Date: 6/14/04

VARIANCE / FIELD CHANGE NOTICE (Include justification):

SEE FIGURE 1

This Variance/Field Change Notice (V/FCN) documents the addition of MH-176 to the list of manholes to be sampled in Area 9, Phase III. Additionally, the original boring ID A9P3-MH180-17 and its associated location and sampling information listed in Appendix B, should be removed from the appendix. The original boring ID A9P3-MH180-18 and its associated sample ID will be changed to A9P3-MH180-17. These two changes are reflected in the revised Appendix B (attached).

Two container blanks shall be identified as A9P3-Y-1 and A9P3-Y-2, and the rinsate shall be identified as A9P3-X-1.

Where:

- A9P3 = Area 9, Phase III
- Y = container blank; X = rinsate
- 1 = Consecutive Sample Numbers

Justification:

MH-176 has been added to collect additional analytical data from within the abandoned outfall line. The original boring A9P3-MH180-17 was removed from the list of locations to be sampled because it is located on private property, which the FCP does not have an access agreement with.

Per Section 1.3 of the PSP, the collection of physical samples will be documented with a V/FCN.

REQUESTED BY: Greg Lupton

Date: 6/11/04

FUNCTIONAL QD	VARIANCE/FCN APPROVAL	DATE	X IF REQD	VARIANCE/FCN APPROVAL	DATE
QUALITY ASSURANCE: E. Frijoles	<i>[Signature]</i>	6/14/04	X	PROJECT MANAGER: <i>[Signature]</i>	6/14/04
DATA QUALITY MANAGEMENT			X	CHARACTERIZATION MANAGER: <i>[Signature]</i>	6/14/04
ANALYTICAL CUSTOMER SUPPORT:	<i>[Signature]</i>	6/15/04		RTIMP Manager	
WFO	<i>[Signature]</i>	6/14/04	X	SAMPLING MANAGER: T. <i>[Signature]</i>	6/14/04

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:

ORIGINAL

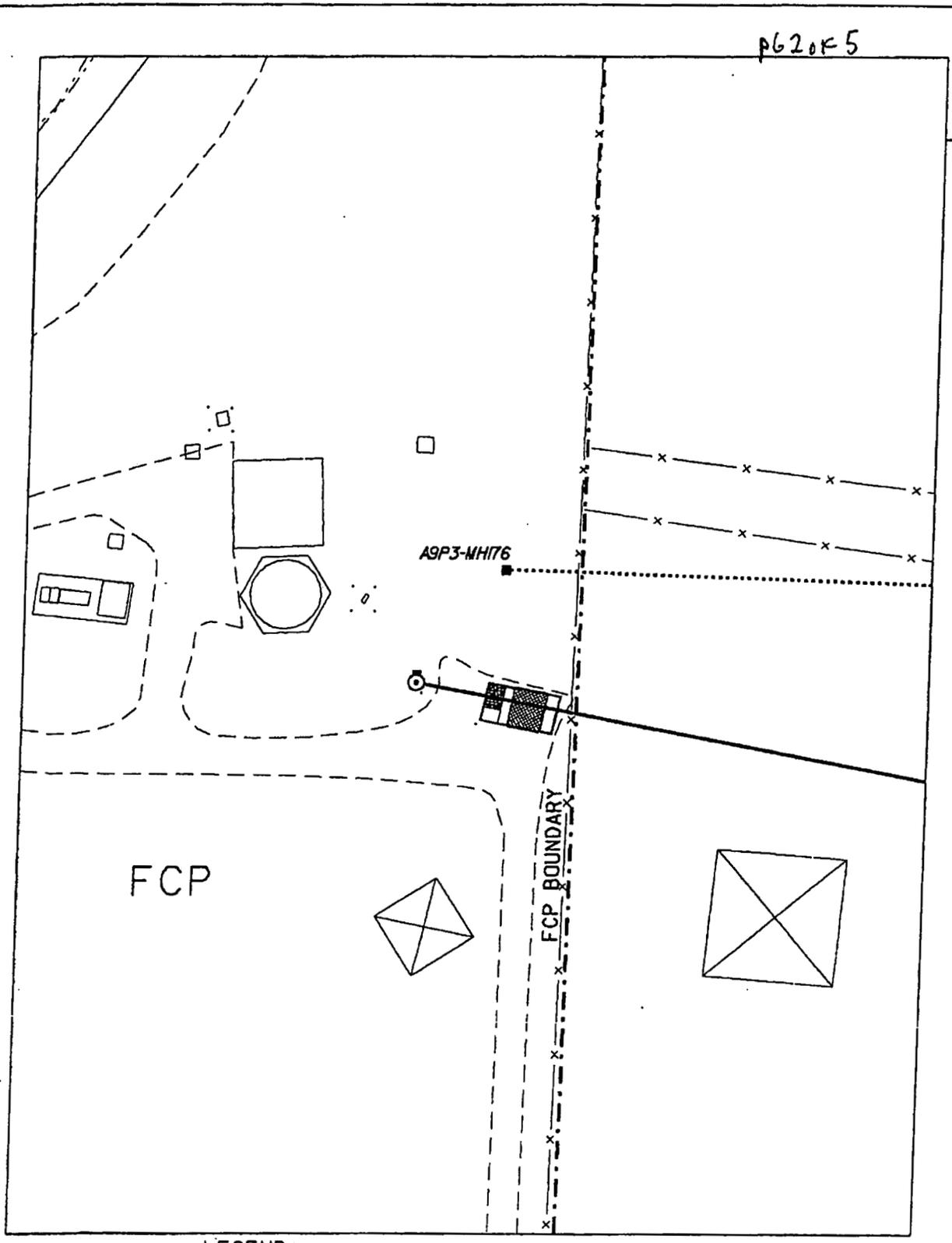
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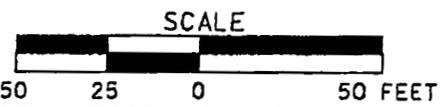
STATE PLANNING COORDINATE SYSTEM 1983

28-MAY-2004



LEGEND:

- MANHOLE
- OLD OUTFALL LINE
- NEW OUTFALL LINE



DRAFT

FIGURE 1. 21140-PSA-0002-01

Boring ID	Northing	Easting	Depth Identifier	Depth Interval	Grab or Composite	Matrix	Sample ID	TAL
A9P3-GT-1	479096	1353854	12	4-6	Grab	Soil	A9P3-GT-1^12-G	H, I, J, K
			16	6-8	Grab	Soil	A9P3-GT-1^16-G	H, I, J
			20	8-10	Grab	Soil	A9P3-GT-1^20-G	H, I, J
			24	10-12	Grab	Soil	A9P3-GT-1^24-G	H, I, J
A9P3-GT-2	478992	1354239	12	4-6	Grab	Soil	A9P3-GT-2^12-G	H, I, J, K
			16	6-8	Grab	Soil	A9P3-GT-2^16-G	H, I, J
			20	8-10	Grab	Soil	A9P3-GT-2^20-G	H, I, J
			24	10-12	Grab	Soil	A9P3-GT-2^24-G	H, I, J
A9P3-GT-3	478913	1354529	12	4-6	Grab	Soil	A9P3-GT-3^12-G	H, I, J
			16	6-8	Grab	Soil	A9P3-GT-3^16-G	H, I, J
			20	8-10	Grab	Soil	A9P3-GT-3^20-G	H, I, J
			24	10-12	Grab	Soil	A9P3-GT-3^24-G	H, I, J
A9P3-GT-4	478834	1354801	12	4-6	Grab	Soil	A9P3-GT-4^12-G	H, I, J
			16	6-8	Grab	Soil	A9P3-GT-4^16-G	H, I, J
			20	8-10	Grab	Soil	A9P3-GT-4^20-G	H, I, J
			24	10-12	Grab	Soil	A9P3-GT-4^24-G	H, I, J
A9P3-GT-5	478741	1355104	12	4-6	Grab	Soil	A9P3-GT-5^12-G	H, I, J
			16	6-8	Grab	Soil	A9P3-GT-5^16-G	H, I, J
			20	8-10	Grab	Soil	A9P3-GT-5^20-G	H, I, J
			24	10-12	Grab	Soil	A9P3-GT-5^24-G	H, I, J
			28	12-14	Grab	Soil	A9P3-GT-5^28-G	H, I, J
A9P3-GT-6	478656	1355392	12	4-6	Grab	Soil	A9P3-GT-6^12-G	H, I, J, K
			16	6-8	Grab	Soil	A9P3-GT-6^16-G	H, I, J
			20	8-10	Grab	Soil	A9P3-GT-6^20-G	H, I, J
			24	10-12	Grab	Soil	A9P3-GT-6^24-G	H, I, J
			28	12-14	Grab	Soil	A9P3-GT-6^28-G	H, I, J
A9P3-MH176	479481.68	1351794.84	NA	NA	Grab	Water Sediment	A9P3-MH176^1W-R A9P3-MH176^1S-R	E,F A
A9P3-MH177	1352020.16	479473.86	NA	NA	Grab	Water Sediment	A9P3-MH177^1W-R A9P3-MH177^1S-R	E,F A
A9P3-MH177-1	1351978.41	479468.62	1	0 - 0.5	Grab	Soil	A9P3-MH177-1^1-R	A
A9P3-MH177-2	1352019.74	479443.64	1	0 - 0.5	Grab	Soil	A9P3-MH177-2^1-R	A
			2	0.5 - 1			A9P3-MH177-2^2-R	B
A9P3-MH177-3	1352090.18	479462.82	1	0 - 0.5	Grab	Soil	A9P3-MH177-3^1-R	A
A9P3-MH177-4	1352150.36	479471.54	1	0 - 0.5	Grab	Soil	A9P3-MH177-4^1-R	A
A9P3-MH178	1352276.32	479436.00	NA	NA	Grab	Water	A9P3-MH178^1W-R	E,F
						Sediment	A9P3-MH178^1S-R	A
A9P3-MH178-1	1352199.84	479418.10	1	0 - 0.5	Grab	Soil	A9P3-MH178-1^1-R	A
A9P3-MH178-2	1352285.90	479437.67	1	0 - 0.5	Grab	Soil	A9P3-MH178-2^1-R	A
A9P3-MH178-3	1352338.15	479402.71	1	0 - 0.5	Grab	Soil	A9P3-MH178-3^1-R	A
A9P3-MH178-4	1352402.24	479425.89	1	0 - 0.5	Grab	Soil	A9P3-MH178-4^1-R	A
A9P3-MH178-5	1352457.46	479374.59	1	0 - 0.5	Grab	Soil	A9P3-MH178-5^1-R	A
A9P3-MH178-6	1352514.42	479417.62	1	0 - 0.5	Grab	Soil	A9P3-MH178-6^1-R	A
A9P3-MH178-7	1352566.80	479382.46	1	0 - 0.5	Grab	Soil	A9P3-MH178-7^1-R	A
A9P3-MH179	1352798.30	478356.59	NA	NA	Grab	Water	A9P3-MH179^1W-R	E,F
						Sediment	A9P3-MH179^1S-R	A
A9P3-MH179-1	1352629.42	479384.02	1	0 - 0.5	Grab	Soil	A9P3-MH179-1^1-R	A
A9P3-MH179-2	1352646.29	479344.37	1	0 - 0.5	Grab	Soil	A9P3-MH179-2^1-R	A
A9P3-MH179-3	1352712.88	479372.23	1	0 - 0.5	Grab	Soil	A9P3-MH179-3^1-R	A
A9P3-MH179-4	1352775.50	479333.16	1	0 - 0.5	Grab	Soil	A9P3-MH179-4^1-R	A
A9P3-MH179-5	1352830.31	479357.01	1	0 - 0.5	Grab	Soil	A9P3-MH179-5^1-R	A
A9P3-MH180	1353070.21	479291.07	NA	NA	Grab	Water	A9P3-MH180^1W-R	E,F
						Sediment	A9P3-MH180^1S-R	A

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Boring ID	Northing	Easting	Depth Identifier	Depth Interval	Grab or Composite	Matrix	Sample ID	TAL
A9P3-MH180-1	1353062.00	479258.60	3	0 - 1.5	Composite*	Soil	A9P3-MH180-1^3-R	A
A9P3-MH180-2	1353101.50	479288.13	3	0 - 1.5	Composite*	Soil	A9P3-MH180-2^3-R	A
A9P3-MH180-3	1353070.98	479227.71	3	0 - 1.5	Composite*	Soil	A9P3-MH180-3^3-R	A
A9P3-MH180-4	1353104.33	479222.77	3	0 - 1.5	Composite*	Soil	A9P3-MH180-4^3-R	A
A9P3-MH180-5	1353139.84	479295.04	3	0 - 1.5	Composite*	Soil	A9P3-MH180-5^3-R	A
A9P3-MH180-6	1353179.10	479304.40	3	0 - 1.5	Composite*	Soil	A9P3-MH180-6^3-R	A
A9P3-MH180-7	1353135.33	479241.60	3	0 - 1.5	Composite*	Soil	A9P3-MH180-7^3-R	A
A9P3-MH180-8	1353166.22	479232.62	3	0 - 1.5	Composite*	Soil	A9P3-MH180-8^3-R	A
A9P3-MH180-9	1353059.48	479148.05	3	0 - 1.5	Composite*	Soil	A9P3-MH180-9^3-R	A
A9P3-MH180-10	1353099.14	479182.40	3	0 - 1.5	Composite*	Soil	A9P3-MH180-10^3-R	A
A9P3-MH180-11	1353067.61	479110.41	3	0 - 1.5	Composite*	Soil	A9P3-MH180-11^3-R	A
A9P3-MH180-12	1353091.86	479068.11	3	0 - 1.5	Composite*	Soil	A9P3-MH180-12^3-R	A
A9P3-MH180-13	1353134.93	479172.14	3	0 - 1.5	Composite*	Soil	A9P3-MH180-13^3-R	A
A9P3-MH180-14	1353166.80	479149.92	3	0 - 1.5	Composite*	Soil	A9P3-MH180-14^3-R	A
A9P3-MH180-15	1353125.34	479117.79	3	0 - 1.5	Composite*	Soil	A9P3-MH180-15^3-R	A
A9P3-MH180-16	1353168.69	479099.52	3	0 - 1.5	Composite*	Soil	A9P3-MH180-16^3-R	A
A9P3-MH180-17	1353269.46	479300.96	3	0 - 0.5	Grab	Soil	A9P3-MH180-17^1-R	G
A9P3-MH180-17	1353146.48	479067.55	3	0 - 1.5	Composite*	Soil	A9P3-MH180-17^3-R	A
A9P3-MH181	1354442.34	478924.16	NA	NA	Grab	Water	A9P3-MH180^1W-R	E,F
						Sediment	A9P3-MH180^1S-R	A
A9P3-MH181-1	1354366.06	478947.03	1	0 - 0.5	Grab	Soil	A9P3-MH181-1^1-R	A
			14	6.5 - 7	Grab	Soil	A9P3-MH181-1^14-R	D
A9P3-MH181-2	1354425.76	478912.61	1	0 - 0.5	Grab	Soil	A9P3-MH181-2^1-R	A
			2	0.5 - 1	Grab	Soil	A9P3-MH181-2^2-R	E
A9P3-MH181-3	1354455.23	478939.53	1	0 - 0.5	Grab	Soil	A9P3-MH181-3^1-R	A
A9P3-MH181-4	1354489.82	478884.39	1	0 - 0.5	Grab	Soil	A9P3-MH181-4^1-R	A
A9P3-MH181-5	1354578.80	478912.06	1	0 - 0.5	Grab	Soil	A9P3-MH181-5^1-R	A
A9P3-MH181-6	1354608.30	478875.20	1	0 - 0.5	Grab	Soil	A9P3-MH181-6^1-R	A
A9P3-MH181-7	1354631.04	478836.15	1	0 - 0.5	Grab	Soil	A9P3-MH181-7^1-R	A
A9P3-MH181-8	1354715.14	478870.43	1	0 - 0.5	Grab	Soil	A9P3-MH181-8^1-R	A
A9P3-MH181-9	1354758.33	478841.41	1	0 - 0.5	Grab	Soil	A9P3-MH181-9^1-R	A
A9P3-MH181-10	1354777.83	478816.16	1	0 - 0.5	Grab	Soil	A9P3-MH181-10^1-R	A
A9P3-MH181-11	1354838.31	478827.82	1	0 - 0.5	Grab	Soil	A9P3-MH181-11^1-R	A
A9P3-MH181-12	1354891.64	478791.40	1	0 - 0.5	Grab	Soil	A9P3-MH181-12^1-R	A
A9P3-MH181-13	1354910.91	478763.04	1	0 - 0.5	Grab	Soil	A9P3-MH181-13^1-R	A
A9P3-MH181-14	1354965.83	478750.39	1	0 - 0.5	Grab	Soil	A9P3-MH181-14^1-R	A
A9P3-MH181-15	1355027.63	478771.90	1	0 - 0.5	Grab	Soil	A9P3-MH181-15^1-R	A
A9P3-MH181-16	1355070.42	478741.03	1	0 - 0.5	Grab	Soil	A9P3-MH181-16^1-R	A
			24	11.5 - 12	Grab	Soil	A9P3-MH181-16^24-R	D
A9P3-MH181-17	1354438.02	478918.11	1	0 - 0.5	Grab	Soil	A9P3-MH181-17^1-R	E
A9P3-GMRB-1	1355474.83	478653.34	1	0 - 0.5	Grab	Soil	A9P3-GMRB-1^1-R	A
			3	1 - 1.5	Grab	Soil	A9P3-GMRB-1^3-R	F
			6	2.5 - 3	Grab	Soil	A9P3-GMRB-1^6-R	F
A9P3-GMRB-2	1355471.02	478625.40	1	0 - 0.5	Grab	Soil	A9P3-GMRB-2^1-R	A
			3	1 - 1.5	Grab	Soil	A9P3-GMRB-2^3-R	B
			6	2.5 - 3	Grab	Soil	A9P3-GMRB-2^6-R	B
			9	4 - 4.5	Grab	Soil	A9P3-GMRB-2^9-R	B
			12	5.5 - 6	Grab	Soil	A9P3-GMRB-2^12-R	B
			15	7 - 7.5	Grab	Soil	A9P3-GMRB-2^15-R	B
			18	8.5 - 9	Grab	Soil	A9P3-GMRB-2^18-R	B
			21	10 - 10.5	Grab	Soil	A9P3-GMRB-2^21-R	B
			24	11.5 - 12	Grab	Soil	A9P3-GMRB-2^24-R	B
			26	12.5 - 13	Grab	Soil	A9P3-GMRB-2^26-R	B

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Boring ID	Northing	Easting	Depth Identifier	Depth Interval	Grab or Composite	Matrix	Sample ID	TAL
A9P3-GMRB-3	1355464.82	478614.88	1	0 - 0.5	Grab	Soil	A9P3-GMRB-3^1-R	A
			26	12.5 - 13	Grab	Soil	A9P3-GMRB-3^26-R	B
A9P3-GMRB-4	1355458.31	478595.66	1	0 - 0.5	Grab	Soil	A9P3-GMRB-4^1-R	A
			3	1 - 1.5	Grab	Soil	A9P3-GMRB-4^3-R	G

* The top 1.5 feet of soil shall be collected in a sampling tube. The ends of the tube shall be capped and the 1.5 foot core shall be sent to the designated off-site lab. The off-site lab shall composite and analyze the sample.

VARIANCE / FIELD CHANGE NOTICE

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

V/F: 21140-PSP-0002-02

WBS NO.: PROJECT/DOCUMENT/ECDC # 21140-PSP-0002 Rev.0

Page: 1 of 1

PROJECT TITLE: Project Specific Plan For Area 9, Phase III Predesign Investigation Sampling

Date: 6/17/04

VARIANCE / FIELD CHANGE NOTICE (Include justification):

This Variance/Field Change Notice (V/FCN) documents the elimination of the requirement to scan soil cores with a beta/gamma survey meter frisk with the exception of three locations. These three locations are A9P3-MH181-1, A9P3-MH181-16, and A9P3-GMRB-3. The cores from these three locations will be scanned since the sample depths are deeper, there are no intermediate sampling intervals between the top and bottom intervals, and all of the primary radiological constituents are not being collected.

Justification:

With the exception of the three locations listed above, it is unnecessary to scan the remaining locations because they have intermediate sampling intervals are being collected between the top and bottom intervals, and adequate analytical coverage exists for the samples being collected.

Per Section 1.3 of the PSP, the collection of physical samples will be documented with a V/FCN.

REQUESTED BY: Greg Lupton

Date: 6/17/04

REQD	VARIANCE/FCN APPROVAL	DATE	X IF REQD	VARIANCE/FCN APPROVAL	DATE
	QUALITY ASSURANCE: R. Friske <i>Rene Wess</i> for R. Friske	6-17-04	X	PROJECT MANAGER: J.D. Chou <i>J.D. Chou</i>	6/17/04
	DATA QUALITY MANAGEMENT		X	CHARACTERIZATION MANAGER: Frank Miller <i>Frank Miller</i>	6/17/04
	ANALYTICAL CUSTOMER SUPPORT:			RTIMP Manager	
	WAO		X	SAMPLING MANAGER: T. Burdick <i>Tom Burdick</i>	6/17/04
VARIANCE/FCN APPROVED [X] YES [] NO			REVISION REQUIRED: [] YES [x] NO		

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QUALITY ASSURANCE:	CHARACTERIZATION MANAGER: Frank Miller	OTHER:
FIELD MANAGER:	OTHER:	OTHER:

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VARIANCE / FIELD CHANGE NOTICE

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

V/F: 21140-PSP-0002-03

WBS NO.: PROJECT/DOCUMENT/ECDC # 21140-PSP-0002 Rev.0

Page: 1 of 3

PROJECT TITLE: Project Specific Plan For Area 9, Phase III Predesign Investigation Sampling

Date: 6/18/04

VARIANCE / FIELD CHANGE NOTICE (Include justification):

This Variance/Field Change Notice (V/FCN) documents the addition of constituents identified on the 1988 NPDES Permit Application that have an OSDF WAC or are RCRA characteristic and may be detected in the abandoned outfall line. These constituents will be collected from manholes MH-177, MH-178, MH-179, and MH-180. These constituents will not be collected from manholes MH-176 and MH-181 since they have already been sampled.

See Attachment 1 for the TAL and the Sampling and Analytical Requirements, which should be used in lieu of the PSP for these locations. The list of sampling locations and sample IDs is contained in Attachment 2. Two example sample IDs are A9P3-MH177^S-RM for a sediment sample and A9P3-MH177^W-R for a water sample.

Where:
A9P3 = Area 9, Phase III
MH177 = manhole 177
S = Sediment; W = Water
R = radionuclides; M = metals; L = volatile organics

If a trip blank is collected then the sample ID will be A9P3-MH177-L-TB1. The rinsate sample IDs shall be A9P3-MH177-L-X1, A9P3-MH177-R-X1, and A9P3-MH177-M-X1.

Where:
TB = trip blank; X = rinsate
1 = Consecutive Sample Numbers

Surveying required: No
Field QC samples required: Yes. Rinsate and Trip Blank
Field data validation: Yes
Analytical data validation: 10% VSL D; 90% VSL B
Off-site data package requirements (if applicable): ASL D/E
The highest alpha/beta result for the area is 268 pCi/g from manhole 181.

Justification:
Sampling of NPDES Permit Application constituents, which also have an OSDF WAC limit or are RCRA characteristic, is necessary to confirm that none of these constituents exist at levels that are above-WAC.

Per Section 1.3 of the PSP, the collection of physical samples will be documented with a V/FCN.

REQUESTED BY: Greg Lupton Date: 6/18/04

RFQD	VARIANCE/FCN APPROVAL	DATE	X IF REQD	VARIANCE/FCN APPROVAL	DATE
	QUALITY ASSURANCE: R. Priske <i>Dawn Wessel</i> DATA QUALITY MANAGEMENT	6-22-04	X	PROJECT MANAGER: J.D. Chisholm <i>J.D. Chisholm</i>	6/18/04
			X	CHARACTERIZATION MANAGER: F. Miller <i>Frank Miller</i>	6/18/04
	ANALYTICAL CUSTOMER SUPPORT: <i>Heather McOuey</i>	6/22/04		RTIMP Manager	6/18/04
	WAO <i>Jenna Banks</i>	6/29/04	X	SAMPLING MANAGER: T. Bittling <i>T. Bittling</i>	6/29/04
VARIANCE/FCN APPROVED [X] YES [] NO			REVISION REQUIRED: [] YES [x] NO		

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QUALITY ASSURANCE:	CHARACTERIZATION MANAGER: Frank Miller	OTHER:
FIELD MANAGER:	OTHER:	OTHER:

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TAL 20810-PSP-0006-A

Analyte	MDL (soil)	MDL (water)
Cesium-137	0.082 pCi/g	2,100 pCi/L
Radium-226	0.15 pCi/g	2,550 pCi/L
Radium-228	0.14 pCi/g	2,700 pCi/L
Technetium-99	0.50 pCi/g	45,000 pCi/L
Thorium-228	0.15 pCi/g	2,550 pCi/L
Thorium-232	0.14 pCi/g	2,550 pCi/L
Total Uranium	5.0 mg/kg	3 mg/L

TAL 20810-PSP-0006-E

Analyte	MDL (water)
Technetium-99	45,000 pCi/L

TAL 20810-PSP-0006-F

Analyte	MDL (water)
Thorium-232	2,550 pCi/L
Total Uranium	3 mg/L

TAL 20810-PSP-0006-L

Component	MDL (soil)	MDL (water)
Boron	104 mg/kg	0.03 mg/L
Cadmium	2.0 mg/kg	0.00035 mg/L
Chromium	10 mg/kg	0.001 mg/L
Silver	10 mg/kg	0.00013 mg/L

TAL 20810-PSP-0006-M

Component	MDL (soil)	MDL (water)
1,1-dichloroethene	1.14 mg/kg	1.5 ug/L
Tetrachloroethene	12.8 mg/kg	4.5 ug/L

SAMPLING AND ANALYTICAL REQUIREMENTS

Analyte	Sample Matrix	Lab	ASL	TAT	Preservative	Holding Time	Container ^a	Sample Volume/Mass ^a
TAL A	Solid	Offsite	D/E ^b	7 day	None	12 months	Glass or plastic	400 g
TAL A	Liquid (rinsate)	Offsite	D/E ^b	7 day	HNO ₃ , pH<2	6 months	Plastic	4 liter
TAL E & F	Liquid	Onsite	D/E ^b	7 day	HNO ₃ , pH<2	6 months	Glass or plastic	1 liter
TALL	Solid	Offsite	D	7 day	None	6 months	Glass or plastic	50 g
TALL	Liquid (rinsate)	Offsite	D	7 day	HNO ₃ , pH<2	6 months	Glass or plastic Teflon lined LIB 6/23/04	1 liter
TAL M	Solid	Offsite	D	7 day	Cool, 4° C	7 days	3 x 1-Encore Sampler plus a 60 ml jar for % moisture ^c	Each full Encore Sampler will hold app. 5 g of soil
TAL M	Liquid (rinsate/trip blank)	Offsite	D	7 day	Cool, 4° C H ₂ SO ₄ , pH<2	14 days	3-40 ml glass with Teflon-lined septa and no head space	120 mL

^aAt the direction of the Field Sampling Lead, triple the specified volume must be collected for all samples at one location 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".

^bSamples will be analyzed according to Analytical Support Level (ASL) D requirements but the minimum detection level may cause some analyses to be considered ASL E.

^cIf material is sludge, then 3 x 40 ml vials of the material shall be collected. Project lead shall be informed if Encore sampler is not used to collect samples.

ATTACHMENT 2

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Boring ID	Northing	Easting	Depth Identifier	Depth Interval	Grab or Composite	Matrix	Sample ID	TAL
A9P3-MH177	1352020.16	479473.86	NA	NA	Grab	Water	A9P3-MH177^W-R	E,F
						Sediment	A9P3-MH177^S-RM	A,L
							A9P3-MH177^S-L	M
A9P3-MH178	1352276.32	479436.00	NA	NA	Grab	Water	A9P3-MH178^W-R	E,F
						Sediment	A9P3-MH178^S-RM	A,L
							A9P3-MH178^S-L	M
A9P3-MH179	1352798.30	478356.59	NA	NA	Grab	Water	A9P3-MH179^W-R	E,F
						Sediment	A9P3-MH179^S-RM	A,L
							A9P3-MH179^S-L	M
A9P3-MH180	1353070.21	479291.07	NA	NA	Grab	Water	A9P3-MH180^W-R	E,F
						Sediment	A9P3-MH180^S-RM	A,L
							A9P3-MH180^S-L	M

VARIANCE / FIELD CHANGE NOTICE

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

V/F: 21140-PSP-0002-04

WBS NO.: PROJECT/DOCUMENT/ECDC # 21140-PSP-0002 Rev.0

Page: 1 of 1

PROJECT TITLE: Project Specific Plan For Area 9, Phase III Predesign Investigation Sampling

Date: 6/18/04

VARIANCE / FIELD CHANGE NOTICE (Include justification):

This Variance/Field Change Notice (V/FCN) documents the change in analytical method for analyzing radium-226 from Gamma Spec to Radon Emanation for the following samples: A9P3-MH176^1S-R, A9P3-MH177^1S-R, A9P3-MH178^1S-R, A9P3-MH179^1S-R, and A9P3-MH180^1S-R, and A9P3-MH181^1S-R. Additionally, the analytical turn around time for these samples shall be 7 days instead of the originally requested 30 days.

Justification:
The samples listed above were collected from the bottom of the manholes of the abandoned outfall line. Elevated levels of radium are expected to be found in these samples based on real-time results; therefore, these samples will be analyzed by Radon Emanation method instead of Gamma Spec in order to achieve a quicker analytical turn around time.

per Section 1.3 of the PSP, the collection of physical samples will be documented with a V/FCN.

REQUESTED BY: Greg Lupton

Date: 6/18/04

IF REQD	VARIANCE/FCN APPROVAL	DATE	X IF REQD	VARIANCE/FCN APPROVAL	DATE
	QUALITY ASSURANCE: R. Friske		X	PROJECT MANAGER: J.D. [Signature]	6/18/04
	DATA QUALITY MANAGEMENT		X	CHARACTERIZATION MANAGER: F. Miller [Signature]	6/18/04
	ANALYTICAL CUSTOMER SUPPORT: [Signature] WAO	6/22/04		RTIMP Manager	
				SAMPLING MANAGER: T. Buturlage	

VARIANCE/FCN APPROVED YES NO

REVISION REQUIRED: YES NO

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

ORIGINAL

VARIANCE / FIELD CHANGE NOTICE

Significant?
(Yes or No) NO

V/F: 21140-PSP-0002-05

WBS NO.: PROJECT/DOCUMENT/ECDC # 21140-PSP-0002 Rev.0

Page: 1 of 4

PROJECT TITLE: Project Specific Plan For Area 9, Phase III Predesign Investigation Sampling

Date: 6/21/04

VARIANCE / FIELD CHANGE NOTICE (Include justification):

This Variance/Field Change Notice (V/FCN) documents the addition of one Geoprobe sampling location beside each of the six manholes (MH-176, MH-177, MH-178, MH-179, MH-180, and MH-181). Each sampling location and depth has been selected to target the abandoned outfall line bedding material. The depth of each manhole shall be measured during manhole sampling; this measured depth will be used to determine the approximate depth of the bedding material from ground surface.

The center of the manhole cover is above the centerline of the abandoned outfall line; therefore, each sampling location shall be offset 8 feet east of the center of each manhole cover and 14 to 16 inches south of the centerline of the piping. The abandoned outfall line has a 16-inch inside diameter and the bedding material is estimated to be 36 inches wide. Eight feet is a sufficient distance to clear each manhole structure and 14 to 16 inches from the piping centerline should provide enough distance to hit the bedding material without contacting the piping. The target sample depth should be the measured depth of the associated manhole plus 6 inches (i.e. the top of the 6 inch sampling interval is the measured manhole depth).

The constituents of concern are those identified on the 1988 NPDES Permit Application that have an OSDF WAC or are RCRA characteristic, plus uranium and technetium-99. See Attachment 1 for the TAL and the Sampling and Analytical Requirements. The list of sampling locations and sample IDs is contained in Attachment 2. An example sample ID is A9P3-MH181-BM^18-RM.

- Where:
- A9P3 = Area 9, Phase III
 - MH181 = manhole 181
 - BM = bedding material
 - 18 = depth interval (2 x 9 feet [depth of manhole 181])
 - R = radionuclides; M = metals; L = volatile organics

If a trip blank is collected then the sample ID will be A9P3-MH181-L-TB1. The rinsate sample IDs shall be A9P3-MH181-L-X1, A9P3-MH181-R-X1, and A9P3-MH181-M-X1.

- Where:
- TB = trip blank; X = rinsate
 - 1 = Consecutive Sample Numbers

- Surveying required: Yes
- Field QC samples required: Yes. Rinsate and Trip Blank
- Field data validation: Yes
- Analytical data validation: VSL B
- Off-site data package requirements (if applicable): ASL B
- The highest alpha/beta result for the area is 268 pCi/g from manhole 181.

ORIGINAL

1-5877

VARIANCE / FIELD CHANGE NOTICE

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

V/F: 21140-PSP-0002-05

WBS NO.: PROJECT/DOCUMENT/ECDC # 21140-PSP-0002 Rev.0

Page: 2 of 4

PROJECT TITLE: Project Specific Plan For Area 9, Phase III Predesign Investigation Sampling

Date: 6/21/04

Justification:

Sampling of NPDES Permit Application constituents, which also have an OSDF WAC limit or are RCRA characteristic, is necessary to confirm that none of these constituents exist at levels that are above-WAC in the bedding material.

Per Section 1.3 of the PSP, the collection of physical samples will be documented with a V/FCN.

REQUESTED BY: Greg Lupton

Date: 6/21/04

X IF REQD	VARIANCE/FCN APPROVAL	DATE	X IF REQD	VARIANCE/FCN APPROVAL	DATE
X	QUALITY ASSURANCE: R. Friske <i>Dan Ward</i> <i>Go R. Friske</i> DATA QUALITY MANAGEMENT	6-22-04	X	PROJECT MANAGER: J.D. Chou <i>J.D. Chou</i>	6/23/04
			X	CHARACTERIZATION MANAGER: F. Miller <i>Frank Miller</i>	6/21/04
X	ANALYTICAL CUSTOMER SUPPORT: <i>Heather Medley</i>	6/22/04		RTIMP Manager	
X	WAC <i>Greg Lupton</i>	6/29/04	X	SAMPLING MANAGER: T. Suhrtage <i>Tom Suhrtage</i>	6/22/04
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:

ORIGINAL

TAL 20810-PSP-0006-A

Analyte	MDL (soil)	MDL (water)
Cesium-137	0.082 pCi/g	2,100 pCi/L
Radium-226	0.15 pCi/g	2,550 pCi/L
Radium-228	0.14 pCi/g	2,700 pCi/L
Technetium-99	0.50 pCi/g	45,000 pCi/L
Thorium-228	0.15 pCi/g	2,550 pCi/L
Thorium-232	0.14 pCi/g	2,550 pCi/L
Total Uranium	5.0 mg/kg	3 mg/L

TAL 20810-PSP-0006-E

Analyte	MDL (water)
Technetium-99	45,000 pCi/L

TAL 20810-PSP-0006-F

Analyte	MDL (water)
Thorium-232	2,550 pCi/L
Total Uranium	3 mg/L

TAL 20810-PSP-0006-L

Component	MDL (soil)	MDL (water)
Boron	104 mg/kg	0.03 mg/L
Cadmium	2.0 mg/kg	0.00035 mg/L
Chromium	10 mg/kg	0.001 mg/L
Silver	10 mg/kg	0.00013 mg/L

TAL 20810-PSP-0006-M

Component	MDL (soil)	MDL (water)
1,1-dichloroethene	1.14 mg/kg	1.5 ug/L
tetrachloroethene	12.8 mg/kg	4.5 ug/L

SAMPLING AND ANALYTICAL REQUIREMENTS

Analyte	Sample Matrix	Lab	ASL	TAT	Preservative	Holding Time	Container ^a	Sample Volume/Mass ^a
TAL A	Solid	Offsite	D/E ^b	7 day	None	12 months	Glass or plastic	400 g
TAL A	Liquid (rinsate)	Offsite	D/E ^b	7 day	HNO ₃ , pH<2	6 months	Plastic	4 liter
TAL E & F	Liquid	Onsite	D/E ^b	7 day	HNO ₃ , pH<2	6 months	Glass or plastic	1 liter
TAL L	Solid	Offsite	D	7 day	Cool, None pH	6 months	Glass or plastic	50 g
TAL L	Liquid (rinsate)	Offsite	D	7 day	Cool, pH 2	6 months	Glass or plastic w/PTFE LINED LID 6/23/04	1 liter
TAL M	Solid	Offsite	D	7 day	Cool, 4° C	7 days	3 x 1-Encore Sampler plus a 60 ml jar for % moisture	Each full Encore Sampler will hold app. 5 g of soil
TAL M	Liquid (rinsate/trip blank)	Offsite	D	7 day	Cool, 4° C H ₂ SO ₄ , pH<2	14 days	3-40 ml glass with Teflon-lined septa and no head space	120 mL

at the direction of the Field Sampling Lead, triple the specified volume must be collected for all samples at one location 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 designated for laboratory QC".

samples will be analyzed according to Analytical Support Level (ASL) D requirements but the minimum detection level may cause some analyses to be considered ASL E.

Boring ID	Northing	Easting	Depth Identifier*	Depth Interval*	Grab	Matrix	Sample ID	TAL
A9P3-MH176	TBD	TBD	a	TBD	Grab	Soil	A9P3-MH176-BM^a-RM	A,L
							A9P3-MH176-BM^a-L	M
A9P3-MH177	TBD	TBD	a	TBD	Grab	Soil	A9P3-MH177-BM^a-RM	A,L
							A9P3-MH177-BM^a-L	M
A9P3-MH178	TBD	TBD	a	TBD	Grab	Soil	A9P3-MH178-BM^a-RM	A,L
							A9P3-MH178-BM^a-L	M
A9P3-MH179	TBD	TBD	a	TBD	Grab	Soil	A9P3-MH179-BM^a-RM	A,L
							A9P3-MH179-BM^a-L	M
A9P3-MH180	TBD	TBD	a	TBD	Grab	Soil	A9P3-MH180-BM^a-RM	A,L
							A9P3-MH180-BM^a-L	M
A9P3-MH181	TBD	TBD	a	TBD	Grab	Soil	A9P3-MH181-BM^a-RM	A,L
							A9P3-MH181-BM^a-L	M

VARIANCE / FIELD CHANGE NOTICE

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

V/F: 21140-PSP-0002-06

WBS NO.: PROJECT/DOCUMENT/ECDC # 21140-PSP-0002 Rev.0

Page: 1 of 3

PROJECT TITLE: Project Specific Plan For Area 9, Phase III Predesign Investigation Sampling

Date: 6/25/04

VARIANCE / FIELD CHANGE NOTICE (Include justification):

This Variance/Field Change Notice (VFCN) documents the collection of one sample from the bottom of each of the 17 1.5-foot boring locations in the vicinity of manhole 180. Each sample will be analyzed onsite for total uranium and total thorium (TAL N).

See Attachment 1 for the TAL and the Sampling and Analytical Requirements. The list of sampling locations and sample IDs is contained in Attachment 2. An example sample ID is A9P3-MH180-1^3-UTH.

Where:

- A9P3 = Area 9, Phase III
- MH180 = manhole 180
- 1, 2, 3, etc. = consecutive Sample Numbers (Locations)
- 3 = depth interval (2 x 1.5 feet)
- U = uranium; TH = thorium

The highest alpha/beta result for the area is 268 pCi/g from manhole 181.

Justification:

Additional predesign data is needed in this area.

Per Section 1.3 of the PSP, the collection of physical samples will be documented with a VFCN.

REQUESTED BY: Greg Lupton

Date: 6/25/04

IF REQD	VARIANCE/FCN APPROVAL	DATE	X IF REQD	VARIANCE/FCN APPROVAL	DATE
	QUALITY ASSURANCE: R. Price <i>Sam Wessel</i> For R. Friske	6-30-04	X	PROJECT MANAGER: J.D. Riou <i>J.D. Riou</i>	6/28/04
	DATA QUALITY MANAGEMENT		X	CHARACTERIZATION MANAGER: F. Miller <i>Frank Miller</i>	6/28/04
	ANALYTICAL CUSTOMER SUPPORT: <i>Deborah Meckley</i>	6/29/04		RTIMP Manager	
	WAO <i>Sandra Benlon</i>	6/29/04	X	SAMPLING MANAGER: T. Battaglia <i>T. Battaglia</i>	6/29/04
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:

ORIGINAL

TAL-21140-PSP-0002-N

Analyte	MDL (soil)
Total Thorium	13.1 ppm
Total Uranium	5.0 mg/kg

SAMPLING AND ANALYTICAL REQUIREMENTS

Analyte	Sample Matrix	Lab	TAT*	Preservative	Holding Time	Container	Sample Volume/Mass
TAL N	Solid	Onsite	3 day	None	12 months	Appropriate Plastic or Glass	50 g

* This TAT signifies when the data is due back to the project. (Irrespective of data entry into the database.)
All subsequent batches are due in 1 day increments.

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Boring ID	Easting	Northing	Depth Identifier	Depth Interval	Grab or Composite*	Matrix	Sample ID	TAL
A9P3-MH180-1	1353062.00	479258.60	3	0 - 1.5	Composite*	Soil	A9P3-MH180-1^3-R	A
				1.5	Grab		A9P3-MH180-1^3-UTH	N
A9P3-MH180-2	1353101.50	479288.13	3	0 - 1.5	Composite*	Soil	A9P3-MH180-2^3-R	A
				1.5	Grab		A9P3-MH180-2^3-UTH	N
A9P3-MH180-3	1353070.98	479227.71	3	0 - 1.5	Composite*	Soil	A9P3-MH180-3^3-R	A
				1.5	Grab		A9P3-MH180-3^3-UTH	N
A9P3-MH180-4	1353104.33	479222.77	3	0 - 1.5	Composite*	Soil	A9P3-MH180-4^3-R	A
				1.5	Grab		A9P3-MH180-4^3-UTH	N
A9P3-MH180-5	1353139.84	479295.04	3	0 - 1.5	Composite*	Soil	A9P3-MH180-5^3-R	A
				1.5	Grab		A9P3-MH180-5^3-UTH	N
A9P3-MH180-6	1353179.10	479304.40	3	0 - 1.5	Composite*	Soil	A9P3-MH180-6^3-R	A
				1.5	Grab		A9P3-MH180-6^3-UTH	N
A9P3-MH180-7	1353135.33	479241.60	3	0 - 1.5	Composite*	Soil	A9P3-MH180-7^3-R	A
				1.5	Grab		A9P3-MH180-7^3-UTH	N
A9P3-MH180-8	1353166.22	479232.62	3	0 - 1.5	Composite*	Soil	A9P3-MH180-8^3-R	A
				1.5	Grab		A9P3-MH180-8^3-UTH	N
A9P3-MH180-9	1353059.48	479148.05	3	0 - 1.5	Composite*	Soil	A9P3-MH180-9^3-R	A
				1.5	Grab		A9P3-MH180-9^3-UTH	N
A9P3-MH180-10	1353099.14	479182.40	3	0 - 1.5	Composite*	Soil	A9P3-MH180-10^3-R	A
				1.5	Grab		A9P3-MH180-10^3-UTH	N
A9P3-MH180-11	1353067.61	479110.41	3	0 - 1.5	Composite*	Soil	A9P3-MH180-11^3-R	A
				1.5	Grab		A9P3-MH180-11^3-UTH	N
A9P3-MH180-12	1353091.86	479068.11	3	0 - 1.5	Composite*	Soil	A9P3-MH180-12^3-R	A
				1.5	Grab		A9P3-MH180-12^3-UTH	N
A9P3-MH180-13	1353134.93	479172.14	3	0 - 1.5	Composite*	Soil	A9P3-MH180-13^3-R	A
				1.5	Grab		A9P3-MH180-13^3-UTH	N
A9P3-MH180-14	1353166.80	479149.92	3	0 - 1.5	Composite*	Soil	A9P3-MH180-14^3-R	A
				1.5	Grab		A9P3-MH180-14^3-UTH	N
A9P3-MH180-15	1353125.34	479117.79	3	0 - 1.5	Composite*	Soil	A9P3-MH180-15^3-R	A
				1.5	Grab		A9P3-MH180-15^3-UTH	N
A9P3-MH180-16	1353168.69	479099.52	3	0 - 1.5	Composite*	Soil	A9P3-MH180-16^3-R	A
				1.5	Grab		A9P3-MH180-16^3-UTH	N
A9P3-MH180-17	1353146.48	479067.55	3	0 - 1.5	Composite*	Soil	A9P3-MH180-17^3-R	A
				1.5	Grab		A9P3-MH180-17^3-UTH	N

VARIANCE / FIELD CHANGE NOTICE	Significant? (Yes or No) NO	V/F: 21140-PSP-0002-07
WBS NO.: PROJECT/DOCUMENT/ECDC # 21140-PSP-0002 Rev.0		Page: 1 of 3
PROJECT TITLE: Project Specific Plan For Area 9, Phase III Predesign Investigation Sampling		Date: 6/25/04

VARIANCE / FIELD CHANGE NOTICE (Include justification):
 This Variance/Field Change Notice (V/FCN) documents the collection of 3 additional geotechnical borings. Each of these borings will be located 3 feet east of A9P3-GT-4, A9P3-GT-5, and A9P3-GT-6 respectively, and the new boring names shall be A9P3-GT-4a, A9P3-GT-5a, and A9P3-GT-6a.

The geotechnical samples will be collected using a dual tube sampler. A geologist will be present during all geotechnical sampling, and a boring log is required for each geotechnical boring. See Attachment 1 for the target analyte lists and the Sampling and Analytical Requirements, and Attachment 2 for the boring table and sample identifiers. An example sample ID is A9P3-GT-4a^12-G.

- Where:
- A9P3 = Area 9, Phase III
 - GT = geotechnical
 - 4a, 5a, and 6a = Location identifier
 - 12 = depth interval (2 x 6 feet)
 - G = geotechnical analysis

Justification:
 Additional geotechnical information is necessary near these original borings A9P3-GT-4, A9P3-GT-5, and A9P3-GT-6.

Per Section 1.3 of the PSP, the collection of physical samples will be documented with a V/FCN.
 REQUESTED BY: Greg Lupton Date: 6/28/04

IF REQD	VARIANCE/FCN APPROVAL	DATE	X IF REQD	VARIANCE/FCN APPROVAL	DATE
	QUANTITY ASSURANCE: <i>R. Friske</i> <i>R. Friske</i>	6-30-04	X	PROJECT MANAGER: <i>J. Chino</i> <i>J. Chino</i>	6/28/04
	DATA QUALITY MANAGEMENT		X	CHARACTERIZATION MANAGER: <i>F. Miller</i> <i>F. Miller</i>	6/28/04
	ANALYTICAL CUSTOMER SUPPORT:			RTIMP Manager	
X	WAO <i>Sandra Barb</i>	6/29/04	X	SAMPLING MANAGER: <i>T. Burt</i> <i>T. Burt</i>	6/29/04
VARIANCE/FCN APPROVED [X]YES []NO			REVISIONS REQUIRED: []YES [x]NO		

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

ORIGINAL

TAL H

Analyte
Particle Size

TAL I

Analyte
Moisture Content of Soil and Rock

TAL J

Analyte
Liquid Limit
Plastic Limit
Plasticity Index

TAL K

Analyte
Total Organic Content

Sampling and Analytical Requirements

Analyte	Method	Matrix	ASL	Preservative	Hold Time	TAT	Container	Mass
Geotechnical (TAL H)	ASTM D2216 (On-site)	Solid	A	None	1 year	30 day	Plastic or stainless steel core liner	500 g
Geotechnical (TAL I)	ASTM D422 (On-site)							
Geotechnical (TAL J ^a)	ASTM D4318 (On-site)							
Geotechnical (TAL K)	ASTM (On-site)							

^a For coarse-grained materials, perform Atterberg Limits tests only on those samples whose fines content (defined as the percent passing the No. 200 sieve) is at least 25%.

Boring ID	Easting	Northing	Depth Identifier	Depth Interval	Grab or Composite	Matrix	Sample ID	TAL
A9P3-GT-4a	1354804	478834	16	4-8	Grab	Soil	A9P3-GT-4a^16-G	H, I, J
			24	8-12	Grab	Soil	A9P3-GT-4a^24-G	H, I, J
A9P3-GT-5a	1355107	478741	12	2-6	Grab	Soil	A9P3-GT-5a^12-G	H, I, J
			20	6-10	Grab	Soil	A9P3-GT-5a^20-G	H, I, J
			28	10-14	Grab	Soil	A9P3-GT-5a^28-G	H, I, J
A9P3-GT-6a	1355395	478656	12	2-6	Grab	Soil	A9P3-GT-6a^12-G	H, I, J, K
			20	6-10	Grab	Soil	A9P3-GT-6a^20-G	H, I, J
			28	10-14	Grab	Soil	A9P3-GT-6a^28-G	H, I, J

VARIANCE / FIELD CHANGE NOTICE

Significant/
(Yes or No) NO

V/F: 21140-PSP-0002-08

WBS NO.: PROJECT/DOCUMENT/ECDC # 21140-PSP-0002 Rev.0

Page: / of 6

PROJECT TITLE: Project Specific Plan For Area 9, Phase III Predesign Investigation Sampling

Date: 6/30/04

VARIANCE / FIELD CHANGE NOTICE (Include justification):

This Variance/Field Change Notice (V/FCN) documents the addition of 8 Geoprobe sampling locations with two intervals each in the area of the Mid Valley crude oil pipeline. Each sampling location and depth has been selected to the abandoned outfall line bedding material as well as the soil beneath the bedding material.

The targeted sampling area falls between MH 177 and MH 178, so the field sampling lead will use the depths of these two manholes to best estimate the depth of the bedding material. Additionally, the field sampling lead may also use his/her best judgment to determine the depth of the bedding material based on the physical characteristics of the core. The abandoned outfall line has an 18-inch outside diameter and the bedding material is estimated to be 36 inches wide. Samples should be located 14 to 16 inches from the piping centerline. This distance should provide enough space to hit the bedding material without contacting the piping. The center of each manhole cover is above the centerline of the abandoned outfall line. Therefore, the straight-line distance between MH 177 and MH 178 shall be used to verify that the sample locations do not fall on top of the abandoned outfall line. Sampling locations that appear to be directly above the abandoned outfall line shall be moved approximately 14 to 16 inches from the piping centerline.

The target sample depths should be the 0-6 inch interval as well as the 12-18 inch interval below the estimated bottom of the abandoned outfall line for each location.

The constituents of concern are those identified on the 1988 NPDES Permit Application that have an FRL and/or have a RCRA characteristic limit or were on the list of area specific constituents of concern from adjacent areas, as well as technetium-99. See Attachment 1 for the TAL and the Sampling and Analytical Requirements. The list of sampling locations and sample IDs is contained in Attachment 2. An example sample ID is A9P3-MV-BM-1^18-RMP.

Where:

- A9P3 = Area 9, Phase III
- MV = Mid Valley oil line
- BM = bedding material
- 1, 2, 3, etc. = Consecutive Sample Numbers
- 18 = depth interval (2 x 9 feet [depth of sample interval])
- R = radionuclides; P = PCBs; M = metals; L = volatile organics

If a trip blank is collected then the sample ID will be A9P3-MV-L-TB1. The rinsate sample IDs shall be A9P3-MV-L-X, A9P3-MH181-M-X, A9P3-MV-P-X, and A9P3-MV-R-X.

Where:

TB = trip blank; X = rinsate

- Surveying required: Yes
- Field QC samples required: Yes. Rinsate and Trip Blank
- Field data validation: Yes
- Analytical data validation: VSL B
- Off-site data package requirements (if applicable): ASL D
- The highest alpha/beta result for the area is 268 pCi/g from manhole 181.

ORIGINAL

VARIANCE / FIELD CHANGE NOTICE

Significant?
(Yes or No) NO

V/F: 21140-PSP-0002-08

WBS NO.: PROJECT/DOCUMENT/ECDC # 21140-PSP-0002 Rev.0

Page: 2 of 6

PROJECT TITLE: Project Specific Plan For Area 9, Phase III Predesign Investigation Sampling

Date: 6/30/04

Justification:

Sampling of NPDES Permit Application constituents, which also have an OSDF WAC limit or have a RCRA characteristic limit, is necessary to confirm that none of these constituents exist at levels that are above-WAC in the bedding material.

Per Section 1.3 of the PSP, the collection of physical samples will be documented with a V/FCN.

REQUESTED BY: Greg Lupton

Date: 6/30/04

X IF REQD	VARIANCE/FCN APPROVAL	DATE	X IF REQD	VARIANCE/FCN APPROVAL	DATE
X	QUALITY ASSURANCE: R. Prisk <i>R. Prisk</i>	7-1-04	X	PROJECT MANAGER: J.D. Boy <i>J.D. Boy</i>	7/1/04
	DATA QUALITY MANAGEMENT		X	CHARACTERIZATION MANAGER: F. Miller <i>Frank Miller</i>	6/30/04
X	ANALYTICAL CUSTOMER SUPPORT: <i>Clayton Medley</i>	7/13/04		RTIMP Manager	
X	WAC <i>Janet Barton</i>		X	SAMPLING MANAGER: T. Buhago <i>Janet Barton for FEB</i>	7/1/04
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:

ORIGINAL

TAL 21130-PSP-0003-A (ASL D/E¹)

Analyte	Off-Property FRL	MDL
Total Uranium	50 mg/kg	5 mg/kg
Radium-226	1.5 pCi/g	0.15 pCi/g
Radium-228	1.4 pCi/g	0.14 pCi/g
Thorium-228	1.5 pCi/g	0.15 pCi/g
Thorium-232	1.4 pCi/g	0.14 pCi/g
Cesium-137	0.82 pCi/g	0.082 pCi/g
Technetium-99	1 pCi/g	0.5 pCi/g ²

TAL 21130-PSP-0003-B (ASL D/E¹)

Analyte	Off-Property FRL/ (BTV) ³	MDL
Antimony	0.61 mg/kg	0.2 mg/kg ²
Arsenic	9.6 mg/kg	0.96 mg/kg
Beryllium	0.62 mg/kg	0.062 mg/kg
Boron	4.0 mg/kg	0.4 mg/kg
Cadmium	0.91 mg/kg	0.091 mg/kg
Chromium	11 mg/kg (0.05 mg/kg)	Best achievable
Lead	400 mg/kg (200 mg/kg)	
Molybdenum	13 mg/kg (10 mg/kg)	1 mg/kg
Silver	1.0 mg/kg	0.1 mg/kg
Aroclor-1254	0.04 mg/kg	0.004 mg/kg
Aroclor-1260	0.04 mg/kg	0.004 mg/kg

TAL 21130-PSP-0003-C (ASL D/E¹)

Analyte	Off-Property FRL	MDL
1,1-dichloroethene	0.059 mg/kg	0.0059 mg/kg
1,1,1-trichloroethane	0.19 mg/kg ⁴	0.019 mg/kg
Tetrachloroethene	1 mg/kg	0.1 mg/kg

¹Analytical requirements will meet ASL D but the minimum detection level may cause some analyses to be considered ASL E

²10 percent of the FRL is not achievable for this analyte

³If the BTV is lower than the established FRL, the MDL shall be set at 10 percent of the BTV

⁴FRL is actually for 1,1,2-Trichloroethane since 1,1,1-Trichloroethane does not have a FRL.

BTV – Benchmark Toxicity Value

MDL – minimum detection level

mg/kg – milligrams per kilogram

pCi/g – picoCuries per gram

SAMPLING AND ANALYTICAL REQUIREMENTS

Analyte	Method	Sample Matrix	ASL	Preserve	Hold Time	Container ^b	Minimum Mass/Volume
Radiological (TAL A)	Gamma Spec, Alpha Spec, Liquid Scintillation or GPC	Solid	D/E ^a	Cool, 4° C	12 months	Glass with Teflon-lined lid	500 g (1500 g) ^c
Metals (TAL B)	ICP-AES or ICP/MS				6 months		
PCBs (TAL B)	GC				14 days		
VOCs (TAL C)	GC/MS	Solid	D/E ^a	Cool, 4° C	3/27/12/14 7 days 48 hrs	3 x 1-Encore Sampler ^c plus a 60 ml jar for % moisture	Each full Encore Sampler ^c will hold app. 5 g of soil
Metals (TAL B)	ICP or ICP-MS	Liquid (rinsate)	D/E ^a	Cool, 4° C H2SO4 pH<2	6 months	Plastic or Glass	1 L ^c
PCBs (TAL B)	GC	Liquid (rinsate)	D/E ^a	Cool, 4° C	7 days	Amber glass w/Teflon-lined lid	4 L ^c
VOCs (TAL C)	GC/MS	Liquid (trip blank/rinsate)	D/E ^a	Cool, 4° C H2SO4 pH<2	14 days	3 x 40-ml glass with lined-lined septa	120 ml ^c (no headspace)

RAD lfgw.

^aSamples will be analyzed according to Analytical Support Level (ASL) D requirements but the minimum detection level may cause some analyses to be considered ASL E.

^bSample 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.

^cAt the direction of the Field Sampling Lead, triple the specified volume must be collected for all samples at one location per 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".

ICP-AES – inductively coupled plasma atomic emission spectroscopy

ICP/MS – inductively coupled plasma mass spectroscopy

GC – gas chromatography

GC/MS – gas chromatography mass spectroscopy

GPC – gas proportional counting

Attachment 3

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Boring ID	Northing	Easting	Depth Identifier ¹	Depth below bottom of outfall line	Matrix	Sample ID	TAL
A9P3-MV-BM-1	479473.24	1352033.57	a	0 - 0.5	Soil	A9P3-MV-BM-1^a-RMP	A & B
						A9P3-MV-BM-1^a-L	C
			b	1 - 1.5		A9P3-MV-BM-1^b-RMP	A & B
						A9P3-MV-BM-1^b-L	C
A9P3-MV-BM-2	479469	1352044	a	0 - 0.5	Soil	A9P3-MV-BM-2^a-RMP	A & B
						A9P3-MV-BM-2^a-L	C
			b	1 - 1.5		A9P3-MV-BM-2^b-RMP	A & B
						A9P3-MV-BM-2^b-L	C
A9P3-MV-BM-3	479469.87	1352056.37	a	0 - 0.5	Soil	A9P3-MV-BM-3^a-RMP	A & B
						A9P3-MV-BM-3^a-L	C
			b	1 - 1.5		A9P3-MV-BM-3^b-RMP	A & B
						A9P3-MV-BM-3^b-L	C
A9P3-MV-BM-4	479466.44	1352061.36	a	0 - 0.5	Soil	A9P3-MV-BM-4^a-RMP	A & B
						A9P3-MV-BM-4^a-L	C
			b	1 - 1.5		A9P3-MV-BM-4^b-RMP	A & B
						A9P3-MV-BM-4^b-L	C
A9P3-MV-BM-5	479465.7	1352084.59	a	0 - 0.5	Soil	A9P3-MV-BM-5^a-RMP	A & B
						A9P3-MV-BM-5^a-L	C
			b	1 - 1.5		A9P3-MV-BM-5^b-RMP	A & B
						A9P3-MV-BM-5^b-L	C
A9P3-MV-BM-6	479462.24	1352089.72	a	0 - 0.5	Soil	A9P3-MV-BM-6^a-RMP	A & B
						A9P3-MV-BM-6^a-L	C
			b	1 - 1.5		A9P3-MV-BM-6^b-RMP	A & B
						A9P3-MV-BM-6^b-L	C
A9P3-MV-BM-7	479463.11	1352102.08	a	0 - 0.5	Soil	A9P3-MV-BM-7^a-RMP	A & B
						A9P3-MV-BM-7^a-L	C
			b	1 - 1.5		A9P3-MV-BM-7^b-RMP	A & B
						A9P3-MV-BM-7^b-L	C
A9P3-MV-BM-8	479458.87	1352112.53	a	0 - 0.5	Soil	A9P3-MV-BM-8^a-RMP	A & B
						A9P3-MV-BM-8^a-L	C
			b	1 - 1.5		A9P3-MV-BM-8^b-RMP	A & B
						A9P3-MV-BM-8^b-L	C

¹Depth Identifier "a" or "b", found within the sample ID, will be replaced with two times the bottom of the depth interval as measured from ground surface.

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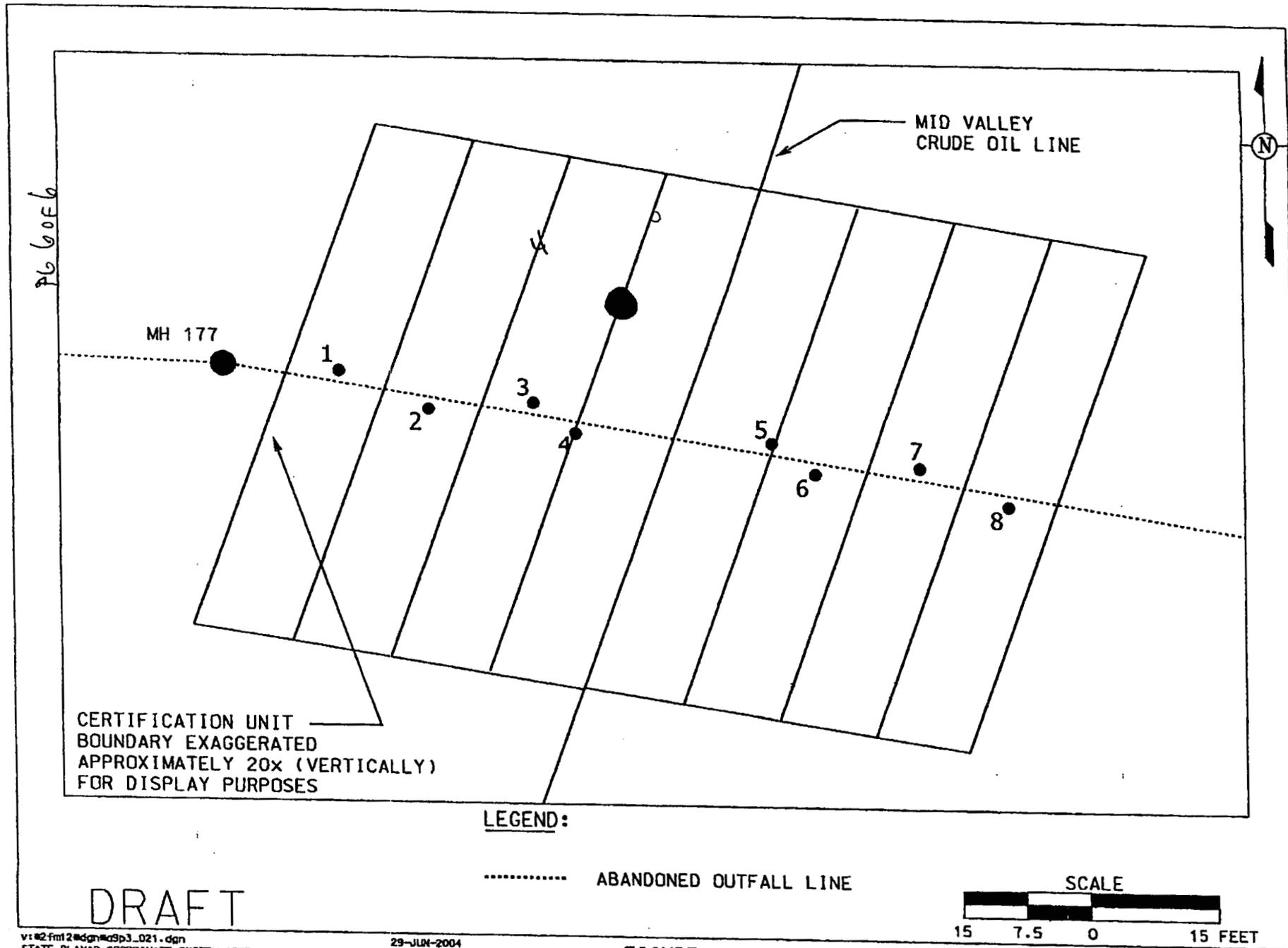


FIGURE 1.

VARIANCE / FIELD CHANGE NOTICE

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

V/F: 21140-PSP-0002-09

WBS NO.: PROJECT/DOCUMENT/ECDC # 21140-PSP-0002 Rev.0

Page: 1 of 4

PROJECT TITLE: Project Specific Plan For Area 9, Phase III Predesign Investigation Sampling

Date: 7/15/04

VARIANCE / FIELD CHANGE NOTICE (Include justification):

This Variance/Field Change Notice (V/FCN) documents the collection of additional samples from the 6 previously sampled locations in the area of MH180. The locations in this area will have a sampling interval from soil surface to 0.5 feet below surface and will be analyzed for the list of constituents found in Attachment 1.

The constituents of concern are those identified on the 1988 NPDES Permit Application that have an FRL and/or have a RCRA characteristic limit or are on the list of constituents of concern from Table 2-7 of the SEP. See Attachment 1 for the TAL and the Sampling and Analytical Requirements. The list of sampling locations and sample IDs is contained in Attachment 2. Example sample IDs are A9P3-MH180-1^1-MPFS and A9P3-MH180-1^1-L.

- Where:
- A9P3 = Area 9, Phase III
 - MH180 = manhole 180
 - 1, 2, 3, etc. = consecutive Sample Numbers (Locations)
 - 1 = depth interval (2 x 0.5 feet [depth of sample interval])
 - M = metals; P = PCBs/Pest; F = fluoride; S = semi-volatiles (PAHs); L = volatile organics

If a trip blank is collected then the sample ID will be A9P3-MH180-L-TB. The container blank sample IDs shall be A9P3-MH180-M-Y and A9P3-MH180-PFS-Y.

- Where:
- TB = trip blank; Y = container blank

- Surveying required: Yes. To be completed by Tecumsah prior to sampling.
- Field QC samples required: Yes. Container Blank and Trip Blank
- Field data validation: Yes *2/2 7/17/04*
- Analytical data validation: VSL *AB*
- Off-site data package requirements (if applicable): ASL D
- The highest alpha/beta result for the area is 268 pCi/g from manhole 181.

Justification:
Additional predesign data is needed in this area to determine if any site-specific constituents of concern are in this area.

Per Section 1.3 of the PSP, the collection of physical samples will be documented with a V/FCN.

REQUESTED BY: Greg Lupton

Date: 7/15/04

IF REQD	VARIANCE/FCN APPROVAL	DATE	X IF REQD	VARIANCE/FCN APPROVAL	DATE
	QUALITY ASSURANCE: <i>Priske</i> <i>Dahm/Heasel</i>	7-20-04	X	PROJECT MANAGER: <i>LD Child</i> <i>[Signature]</i>	7/15/04
	DATA QUALITY MANAGEMENT		X	CHARACTERIZATION MANAGER: <i>F. Miller</i> <i>[Signature]</i>	7/15/04
	ANALYTICAL CUSTOMER SUPPORT: <i>WAD</i> <i>Walter Medley</i>	7/20/04		RTIMP Manager	
	<i>[Signature]</i>	7/19/04	X	SAMPLING MANAGER: <i>T. Buhner</i> <i>[Signature]</i>	7/21/04
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:

ORIGINAL

TAL 21140-PSP-0002-09-O
(ASL D/E¹)

Analyte	Off-Property FRL/ (BTV) ³	Soil MDL	Water MDL
Antimony	0.61 mg/kg	0.2 mg/kg ²	0.3 ug/ml
Arsenic	9.6 mg/kg	0.96 mg/kg	1.44 ug/ml
Beryllium	0.62 mg/kg	0.062 mg/kg	0.093 ug/ml
Boron	4.0 mg/kg	0.4 mg/kg	0.6 ug/ml
Cadmium	0.91 mg/kg	0.091 mg/kg	0.1365 ug/ml
Chromium	11 mg/kg (0.05 mg/kg)	1.1 mg/kg ⁵	0.0075 ug/ml
Lead	400 mg/kg (200 mg/kg)	20 mg/kg	30 ug/ml
Molybdenum	13 mg/kg (10 mg/kg)	1 mg/kg	1.5 ug/ml
Silver	1.0 mg/kg	0.1 mg/kg	0.15 ug/ml
Aroclor-1254	0.04 mg/kg	0.004 mg/kg	0.003 ug/ml
Aroclor-1260	0.04 mg/kg	0.004 mg/kg	0.003 ug/ml
Benzo(a)pyrene	0.09 mg/kg	0.05 mg/kg ²	0.0135 ug/ml
Benzo(b)fluoranthene	0.16 mg/kg	0.05 mg/kg ²	0.024 ug/ml
Dibenzo(a,h)anthracene	0.0016 mg/kg	best achievable ⁶	0.00024 ug/ml
Dieldrin	0.0088 mg/kg	0.00088 mg/kg	0.00132 ug/ml
Fluoride	850 mg/kg	85 mg/kg	127.5 ug/ml
Indeno(1,2,3-cd)pyrene	0.016 mg/kg	best achievable ⁶	0.0024 ug/ml

TAL 21140-PSP-0002-09-P
(ASL D/E¹)

Analyte	Off-Property FRL/ (BTV) ³	Soil MDL	Water MDL
1,1-dichloroethene	0.059 mg/kg	0.0059 mg/kg	10 ug/L
1,1,1-trichloroethane	0.19 mg/kg ⁴	0.019 mg/kg	10 ug/L
Bromodichloromethane	0.18 mg/kg	0.018 mg/kg	10 ug/L
Trichloroethene	1.5 mg/kg	0.15 mg/kg	10 ug/L
Tetrachloroethene	1 mg/kg	0.1 mg/kg	10 ug/L

¹Analytical requirements will meet ASL D but the minimum detection level may cause some analyses to be considered ASL E

²10 percent of the FRL is not achievable for this analyte

³If the BTV is lower than the established FRL, the MDL shall be set at 10 percent of the BTV.

⁴FRL is actually for 1,1,2-Trichloroethane since 1,1,1-Trichloroethane does not have a FRL.

⁵10 percent of the BTV is not achievable for this analyte

⁶FRL is not achievable for these analytes

BTV – Benchmark Toxicity Value

MDL – minimum detection level

mg/kg – milligrams per kilogram

ug/ml – micrograms per milliliter

pCi/g – picoCuries per gram

ug/L – micrograms per liter

SAMPLING AND ANALYTICAL REQUIREMENTS

Analyte	Method ^b	Sample Matrix	ASL	Preserve	Hold Time	Container ^c	Minimum Mass/Volume
Metals (TAL O)	ICP-AES or ICP/MS	Solid	D/E ^b	Cool, 4° C	6 months	Glass with Teflon-lined lid	300 g ^a
Fluoride (TAL O)	Ion Selective Electrode				28 days		
PCB/PAHs/Pest. (TAL O)	GC				14 days		
VOCs (TAL P)	GC/MS	Solid	D/E ^b	Cool, 4° C	48 hours	3 x 1-Encore Sampler ^c plus a 60 ml jar for % moisture	Each full Encore Sampler ^d will hold app. 5 g of soil
Metals (TAL O)	ICP or ICP-MS	Container blank (liquid) ^e	D/E ^b	HNO ₃ pH<2	6 months	Plastic	500 ml
PCBs/PAHs/Pest (TAL O)	GC	Container blank (liquid) ^e	D/E ^b	Cool, 4° C	7 days	Amber glass w/Teflon-lined lid	4 L
Fluoride (TAL O)	Ion Selective Electrode				28 days		
VOCs (TAL P)	GC/MS	Trip blank (liquid)	D/E ^b	Cool, 4° C H ₂ SO ₄ pH<2	14 days	3 x 40-ml glass with lined-lined septa	120 ml (no headspace)

^aA second push is required at one location so that adequate sample material is obtained for the laboratory to perform contract specific QC analyses. This sample shall be identified on the Chain of Custody/Request for Analysis forms as "designated for laboratory QC".

^bSamples will be analyzed according to Analytical Support Level (ASL) D requirements but the minimum detection level may cause some analyses to be considered ASL E.

^cSample 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.

^dAt the direction of the Field Sampling Lead, triple the specified mass 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". It is not necessary to collect triple mass on the sample jar for % moisture.

^eOffsite lab to perform rinse on container.

ICP-AES – inductively coupled plasma atomic emission spectroscopy

ICP/MS – inductively coupled plasma mass spectroscopy

GC – gas chromatography

GC/MS – gas chromatography mass spectroscopy

GPC – gas proportional counting

Attachment 3

Boring ID	Easting	Northing	Depth Identifier	Depth Interval	Matrix	Sample ID	TAL
A9P3-MH180-1	1353062.00	479258.60	1	0 - 0.5	Soil	A9P3-MH180-1^1-MPFS	O
						A9P3-MH180-1^1-L	P
A9P3-MH180-2	1353101.50	479288.13	1	0 - 0.5	Soil	A9P3-MH180-2^1-MPFS	O
						A9P3-MH180-2^1-L	P
A9P3-MH180-5	1353139.84	479295.04	1	0 - 0.5	Soil	A9P3-MH180-5^1-MPFS	O
						A9P3-MH180-5^1-L	P
A9P3-MH180-6	1353179.10	479304.40	1	0 - 0.5	Soil	A9P3-MH180-6^1-MPFS	O
						A9P3-MH180-6^1-L	P
A9P3-MH180-7	1353135.33	479241.60	1	0 - 0.5	Soil	A9P3-MH180-7^1-MPFS	O
						A9P3-MH180-7^1-L	P
A9P3-MH180-8	1353166.22	479232.62	1	0 - 0.5	Soil	A9P3-MH180-8^1-MPFS	O
						A9P3-MH180-8^1-L	P

VARIANCE / FIELD CHANGE NOTICE

Significant?
(Yes or No) NO

V/F: 21140-PSP-0002-10

WBS NO.: PROJECT/DOCUMENT/ECDC # 21140-PSP-0002 Rev.0

Page: 1 of 4

PROJECT TITLE: Project Specific Plan For Area 9, Phase III Predesign Investigation Sampling

Date: 7/20/04

VARIANCE / FIELD CHANGE NOTICE (Include justification):

This Variance/Field Change Notice (V/FCN) documents the collection of additional samples from three locations to the west of MH180. The locations in this area will have a sampling interval from soil surface to 0.5 feet below surface and will be analyzed for boron and silver.

See Attachment 1 for the TAL and the Sampling and Analytical Requirements. The list of sampling locations and sample IDs is contained in Attachment 2. An example sample ID is A9P3-MH180-CS1^1-M.

Where:

- A9P3 = Area 9, Phase III
- MH180 = manhole 180
- CS = confirmation sample
- 1, 2, 3, etc. = consecutive Sample Numbers (Locations)
- 1 = depth interval (2 x 0.5 feet [depth of sample interval])
- M = metals

Surveying required: Yes.
 Field QC samples required: No
 Field data validation: Yes
 Analytical data validation: No
 Off-site data package requirements (if applicable): ASL B
 The highest alpha/beta result for the area is 268 pCi/g from manhole 181.

Justification:

Additional predesign data is needed in this area to determine if any site-specific constituents of concern are in this area. Elevated results or boron and silver were detected around the surface of MH 180. These three samples are being collected to determine if the source of these elevated results is from the overflow event at MH 180 or if it is consistent with area background.

Per Section 1.3 of the PSP, the collection of physical samples will be documented with a V/FCN.

REQUESTED BY: Greg Lupton

Date: 7/20/04

IF EQD	VARIANCE/FCN APPROVAL	DATE	X IF REQD	VARIANCE/FCN APPROVAL	DATE
	QUANTITY ASSURANCE: R. Fricke <i>Dawn Wessel</i>	7-21-04	X	PROJECT MANAGER: J.D. Chiles <i>[Signature]</i>	7/24/04
	DATA QUALITY MANAGEMENT		X	CHARACTERIZATION MANAGER: F. Miller <i>[Signature]</i>	7/21/04
	ANALYTICAL CUSTOMER SUPPORT: WAO <i>Heather Medley</i>	7/22/04		RTIMP Manager	
	<i>[Signature]</i>	7/21/04	X	SAMPLING MANAGER: T. Buhler <i>[Signature]</i>	7/21/04
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:

ORIGINAL

TAL 21140-PSP-0002-09-Q

(ASL B)

Analyte	Off-Property	Soil MDL
Boron	4.0 mg/kg	0.4 mg/kg
Silver	1.0 mg/kg	0.1 mg/kg

SAMPLING AND ANALYTICAL REQUIREMENTS

Analyte	Sample Matrix	Lab	TAT*	Preservative	Holding Time	Container	Sample Volume/Mass
TAL Q	Solid	Offsite	1 day	None	12 months	Appropriate Plastic or Glass w/ teflon-lined lid	50 g

* This TAT signifies when the data is due back to the project. (Irrespective of data entry into the database.)
All subsequent batches are due in 1 day increments.

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Boring ID	Easting	Northing	Depth Identifier	Depth Interval (ft)	Grab or Composite	Matrix	Sample ID	TAL
A9P3-MH180-CS1	TBD	TBD	1	0 - 0.5	Grab	Soil	A9P3-MH180-CS1^1-M	Q
A9P3-MH180-CS2	TBD	TBD	1	0 - 0.5	Grab	Soil	A9P3-MH180-CS2^1-M	Q
A9P3-MH180-CS3	TBD	TBD	1	0 - 0.5	Grab	Soil	A9P3-MH180-CS3^1-M	Q

1000

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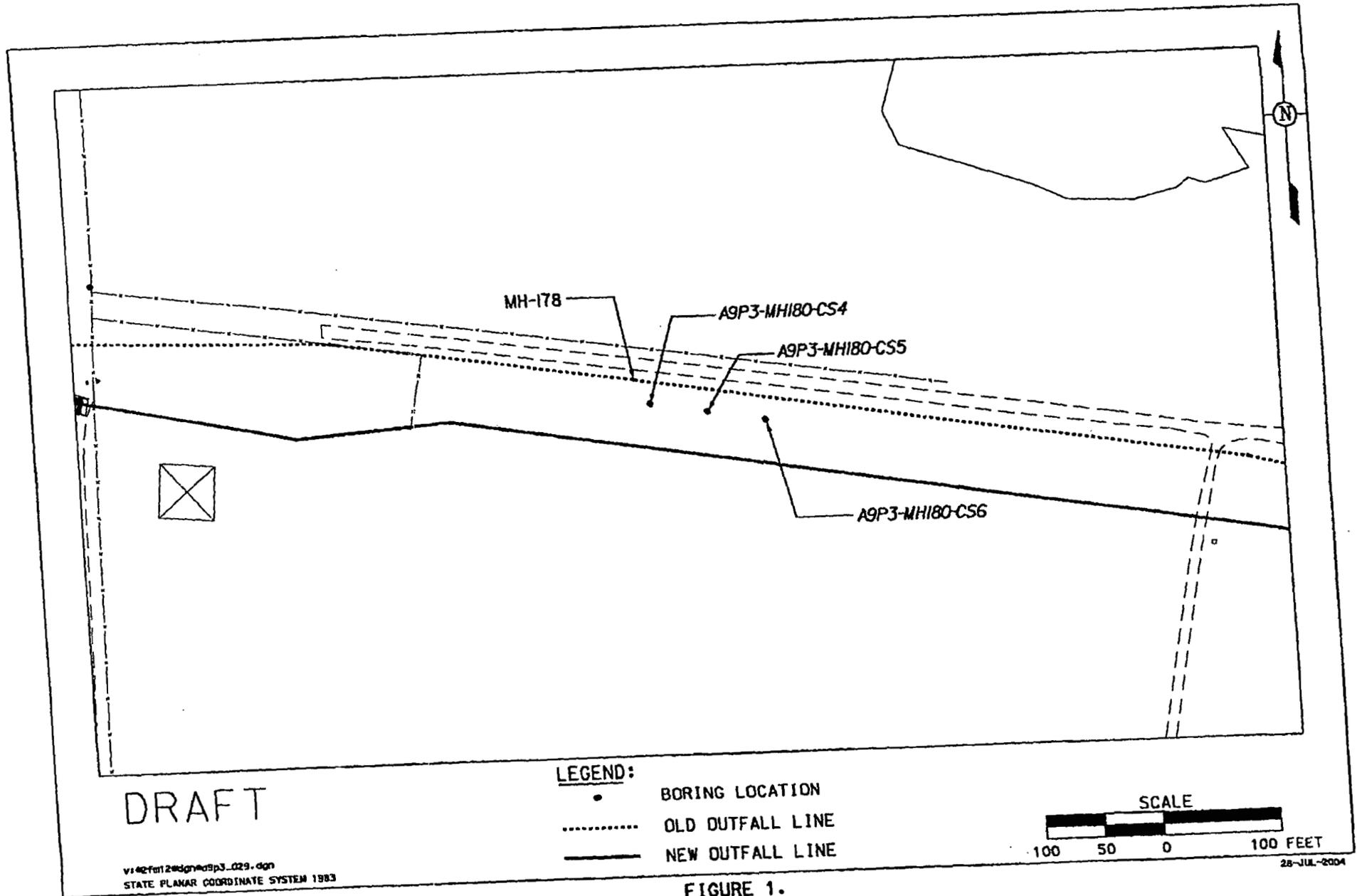


FIGURE 1.

VARIANCE / FIELD CHANGE NOTICE



V/F: 21140-PSP-0002-11

WBS NO.: PROJECT/DOCUMENT/ECDC # 21140-PSP-0002 Rev.0

Page: 1 of 5

PROJECT TITLE: Project Specific Plan For Area 9, Phase III Predesign Investigation Sampling

Date: 7/27/04

VARIANCE / FIELD CHANGE NOTICE (Include justification):

This Variance/Field Change Notice (V/FCN) documents the collection samples from nine additional locations near MH178 and MH 180. The locations should be placed as follows:

- Three of the locations will be field located by the field sampling lead and are to the east of MH178 along the southern fence line in the previously plowed area. There should be approximately 50 feet between each location. See Figure 1.
- Three locations (to be surveyed in) are to the west of MH180 and should have approximately 25 feet between locations. The first western location should be placed approximately 25 feet to the west of MH180 with the second and third continuing west. See Figure 2.
- The final three locations (to be surveyed in) are to the east of MH180. The first location should be placed approximately 125 feet to the east of MH180 and there should be 25 feet between each location. See Figure 2.

All of the locations will have a sampling interval from soil surface to 0.5 feet below surface and will be analyzed for boron, chromium, and silver (TAL R). See Attachment 1 for the TAL and the Sampling and Analytical Requirements. The list of sampling locations and sample IDs is contained in Attachment 2. An example sample ID is A9P3-MH180-CS4^1-M.

Where:

- A9P3 = Area 9, Phase III
- MH180 = manhole 180
- CS = confirmation sample
- 4, 5, 6, etc. = consecutive Sample Numbers (Locations)
- 1 = depth interval (2 x 0.5 feet [depth of sample interval])
- M = metals

- Surveying required: Yes
- Field QC samples required: No
- Field data validation: Yes
- Analytical data validation: No
- Off-site data package requirements (if applicable): ASL B
- The highest alpha/beta result for the area is 268 pCi/g from manhole 181.

Justification:

Additional predesign data is needed in this area to determine if any site-specific constituents of concern are in this area. Elevated results for boron, chromium, and silver were detected around the surface of MH 180. The first set of three samples are being collected to determine if the source of these elevated results is from the overflow event at MH 180 or if it is consistent with area background. The remaining six are east/west bounding locations if above-FRL is confirmed.

per Section 1.3 of the PSP, the collection of physical samples will be documented with a V/FCN.

REQUESTED BY: Greg Lupton

Date: 7/27/04

IF EQD	VARIANCE/FCN APPROVAL	DATE	X IF REQD	VARIANCE/FCN APPROVAL	DATE
	QUALITY ASSURANCE: R. Frisk <i>R. Frisk</i>	7-28-04	X	PROJECT MANAGER: M. Chou <i>M. Chou</i>	7/23/04
	DATA QUALITY MANAGEMENT		X	CHARACTERIZATION MANAGER: F. Miller <i>F. Miller</i>	7/27/04
	ANALYTICAL CUSTOMER SUPPORT: WAQ <i>Deanna Madrup</i>	7/27/04		RTIMP Manager	
	<i>Deanna Madrup</i>	8/3/04	X	SAMPLING MANAGER: T. Buhage <i>T. Buhage</i>	7/27/04
VARIANCE/FCN APPROVED [X] YES [] NO			REVISION REQUIRED: [] YES [x] NO		

DISTRIBUTION

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

ORIGINAL

TAL 21140-PSP-0002-09-R
(ASL B)

Analyte	Off-Property	Soil MDL
Boron	4.0 mg/kg	0.4 mg/kg
Chromium	11 mg/kg	1.1 mg/kg
Silver	1.0 mg/kg	0.1 mg/kg

SAMPLING AND ANALYTICAL REQUIREMENTS

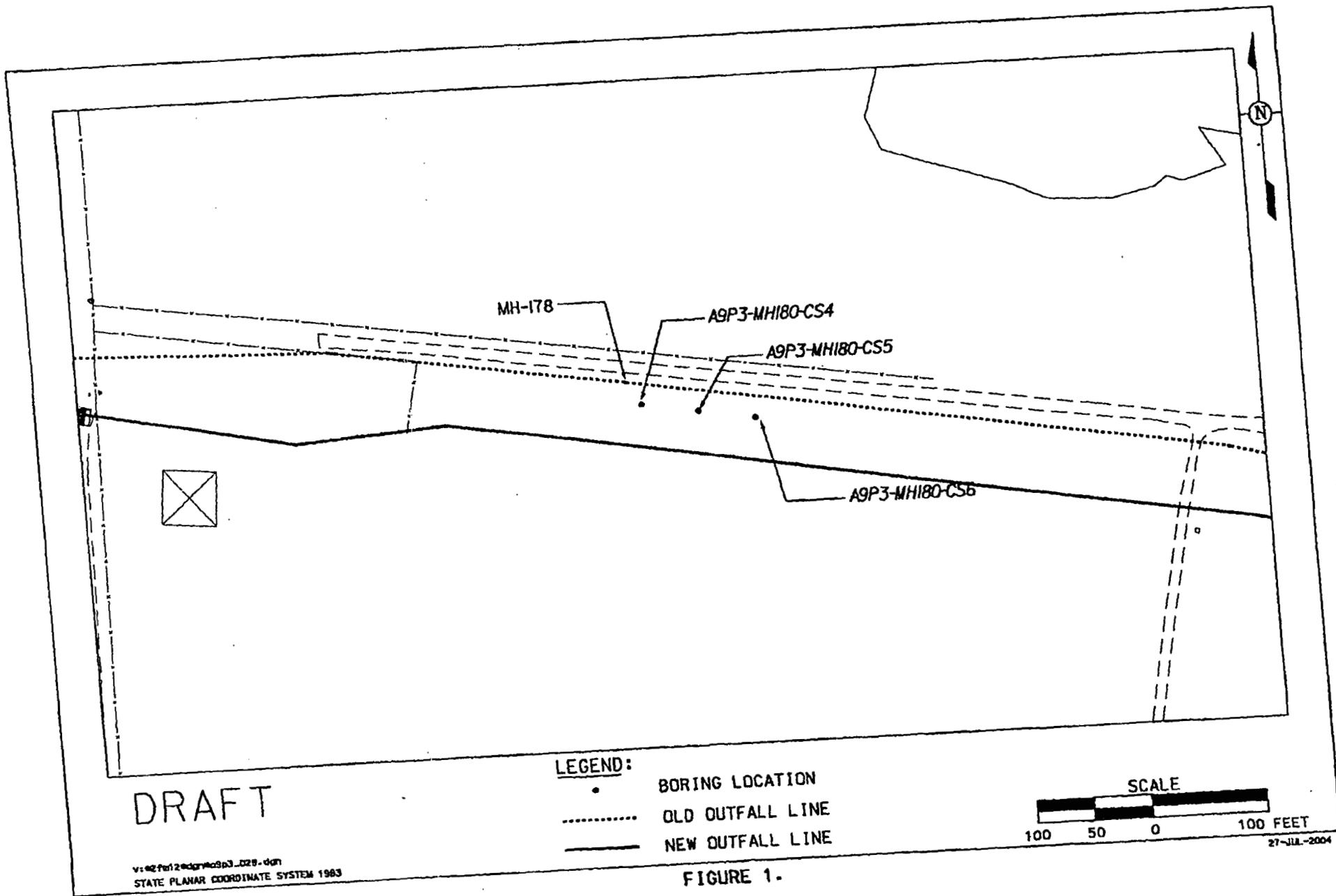
Analyte	Sample Matrix	Lab	TAT*	Preservative	Holding Time	Container	Sample Volume/Mass
TAL R	Solid	Offsite	1 day	None	12 months	Appropriate Plastic or Glass w/ teflon-lined lid	50 g

* This TAT signifies when the data is due back to the project. (Irrespective of data entry into the database.)
 All subsequent batches are due in 1 day increments.

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Boring ID	Easting	Northing	Depth Identifier	Depth Interval (ft)	Grab or Composite	Matrix	Sample ID	TAL
A9P3-MH180-CS4	TBD	TBD	1	0 - 0.5	Grab	Soil	A9P3-MH180-CS4^1-M	R
A9P3-MH180-CS5	TBD	TBD	1	0 - 0.5	Grab	Soil	A9P3-MH180-CS5^1-M	R
A9P3-MH180-CS6	TBD	TBD	1	0 - 0.5	Grab	Soil	A9P3-MH180-CS6^1-M	R
A9P3-MH180-CS7	479309.23	1352997.24	1	0 - 0.5	Grab	Soil	A9P3-MH180-CS7^1-M	R
A9P3-MH180-CS8	479303.44	1353021.56	1	0 - 0.5	Grab	Soil	A9P3-MH180-CS8^1-M	R
A9P3-MH180-CS9	479297.65	1353045.88	1	0 - 0.5	Grab	Soil	A9P3-MH180-CS9^1-M	R
A9P3-MH180-CS10	479258.15	1353196.20	1	0 - 0.5	Grab	Soil	A9P3-MH180-CS10^1-M	R
A9P3-MH180-CS11	479251.68	1353220.35	1	0 - 0.5	Grab	Soil	A9P3-MH180-CS11^1-M	R
A9P3-MH180-CS12	4792545.21	1353244.50	1	0 - 0.5	Grab	Soil	A9P3-MH180-CS12^1-M	R

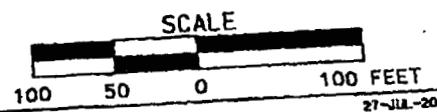
4-5477



DRAFT

LEGEND:

- BORING LOCATION
- OLD OUTFALL LINE
- NEW OUTFALL LINE



v:\e2\p12\edp\10293_028.dgn
STATE PLANAR COORDINATE SYSTEM 1983

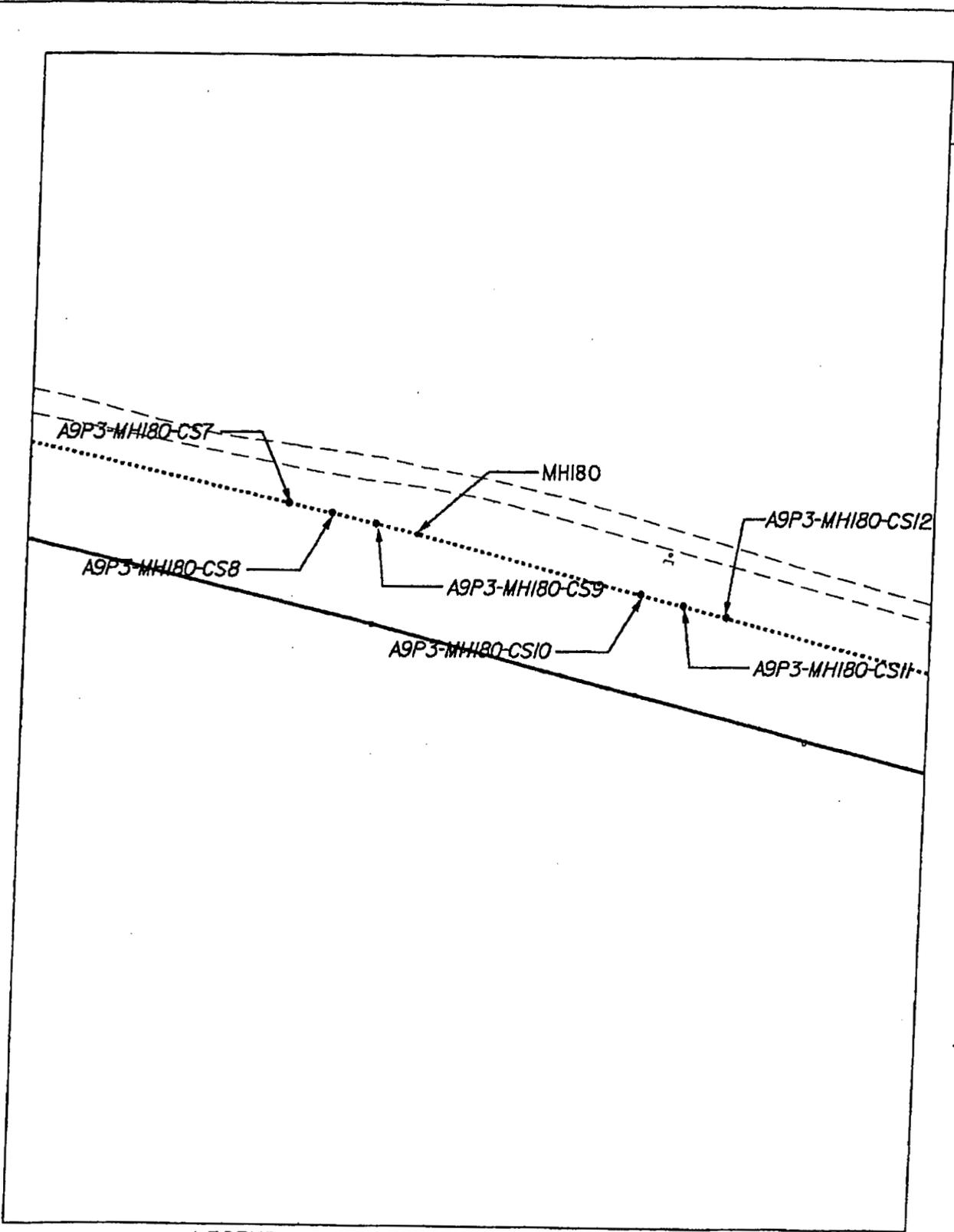
27-JUL-2004

FIGURE 1.

V:\067012\067012.dgn

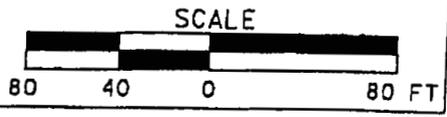
STATE PLANNING COORDINATE SYSTEM 1983

27-JUL-2004



LEGEND:

- BORING LOCATION
- OLD OUTFALL LINE
- NEW OUTFALL LINE



DRAFT

FIGURE 2.

5677

VARIANCE / FIELD CHANGE NOTICE

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

V/F: 21140-PSP-0002-12

WBS NO.: PROJECT/DOCUMENT/ECDC # 21140-PSP-0002 Rev.0

Page: 1 of 3

PROJECT TITLE: Project Specific Plan For Area 9, Phase III Predesign Investigation Sampling

Date: 8/05/04

VARIANCE / FIELD CHANGE NOTICE (Include justification):

This Variance/Field Change Notice (V/FCN) documents the collection of composite samples from seven additional locations south of MH 180.

All of the locations will have a sampling interval from soil surface to 1.5 feet below surface (0 - 1.5 feet) and will be analyzed for radium-226 (TAL S). This sampling interval will be composited and analyzed by the laboratory. See Attachment 1 for the TAL and the Sampling and Analytical Requirements. The list of sampling locations and sample IDs is contained in Attachment 2. An example sample ID is A9P3-MH180-18^3-M.

Where:

- A9P3 = Area 9, Phase III
- MH180 = manhole 180
- 18, 19, 20, etc. = consecutive Sample Numbers (Locations)
- 3 = depth interval (2 x 1.5 feet [depth of sample interval])
- M = metals

R = radiological *dma 8/10/2004*

Surveying required: Yes.
Field QC samples required: No
Field data validation: Yes
Analytical data validation: VSL B
Off-site data package requirements (if applicable): ASL D
The highest alpha/beta result for the area is 268 pCi/g from manhole 181.

Justification:

Additional predesign data is needed in this area to determine the extent of radium-226 contamination. Elevated results for radium-226 were detected to the south of MH 180. These samples are being collected to determine if the source of these elevated results is from the overflow event at MH 180 or if it is consistent with area background.

Per Section 1.3 of the PSP, the collection of physical samples will be documented with a V/FCN.

REQUESTED BY: Greg Lupton

Date: 8/05/04

CF REQD	VARIANCE/FCN APPROVAL	DATE	X IF REQD	VARIANCE/FCN APPROVAL	DATE
	QUALITY ASSURANCE: R. Friske <i>R. Friske</i>	8-10-04	X	PROJECT MANAGER: J.D. C... <i>J.D. C...</i>	8/10/04
	DATA QUALITY MANAGEMENT		X	CHARACTERIZATION MANAGER: F. Miller <i>F. Miller</i>	8/9/04
	ANALYTICAL CUSTOMER SUPPORT: WAO <i>WAO</i>	8-10-04		RTIMP Manager	
	<i>WAO</i>	8-10-04	X	SAMPLING MANAGER: T. Bullock <i>T. Bullock</i>	8/10/04
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:

ORIGINAL

Attachment 1

1582

TAL 21140-PSP-0006-S

Analyte	MDL (soil)	MDL (water)
Radium-226	0.15 pCi/g	2,550 pCi/L

SAMPLING AND ANALYTICAL REQUIREMENTS

Analyte	Sample Matrix	Lab	ASL	TAT	Preservative	Holding Time	Container ^a	Sample Volume/Mass ^a
TAL S	Solid	Offsite	D/E ^b	25 day	None	12 months	Glass or plastic	400 g

w/teflon lined lid

ama 8/10/2004

^aAt the direction of the Field Sampling Lead, triple the specified volume must be collected for all samples at one location 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".

SAMPLING LOCATIONS AND IDS

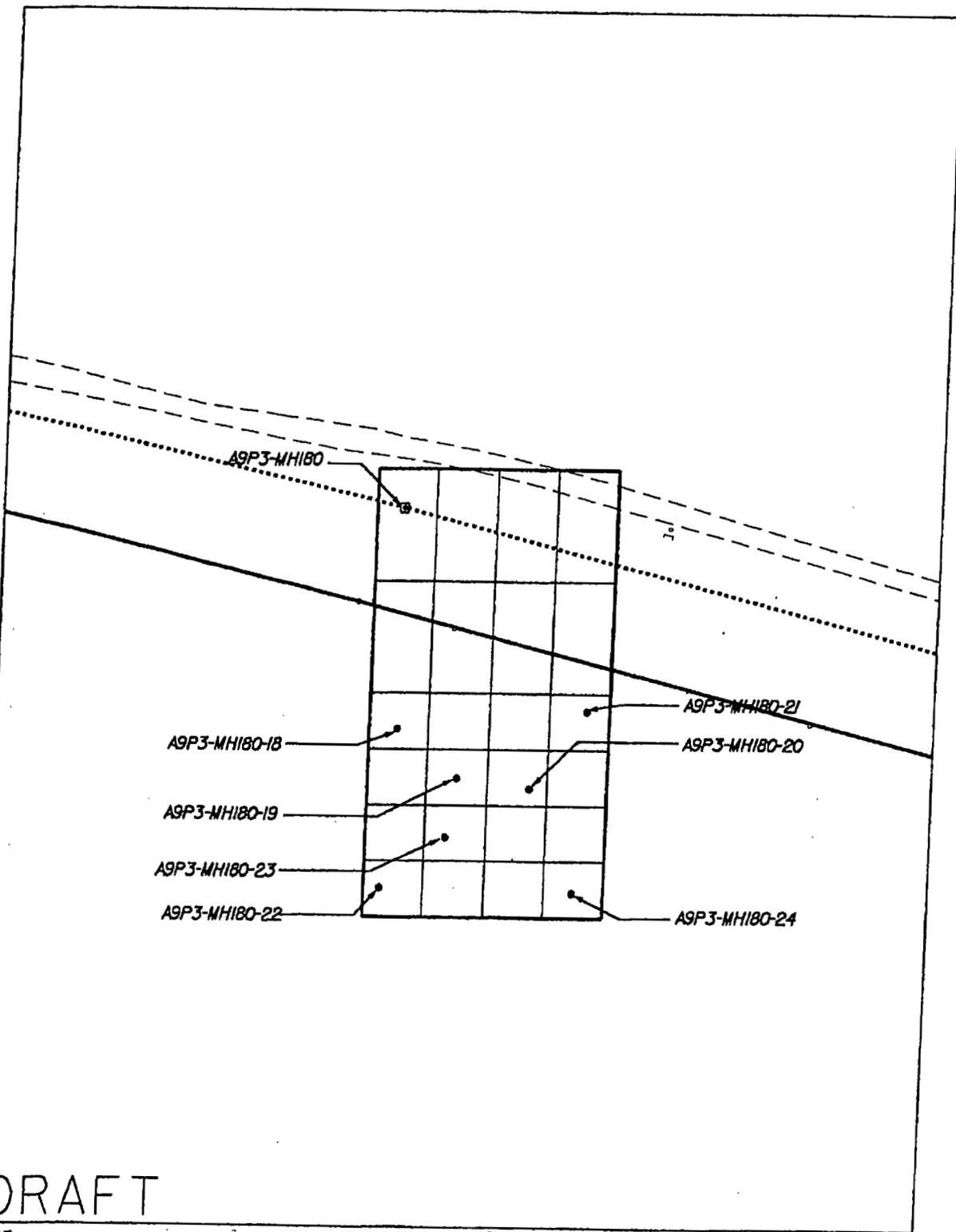
Boring ID	Easting	Northing	Depth Identifier	Depth Interval	Grab or Composite	Matrix	Sample ID	TAL
A9P3-MH180-18	1353069.31	479168.62	3	0 - 1.5	Composite*	Soil	A9P3-MH180-18^3-R	S
A9P3-MH180-19	1353102.80	479141.11	3	0 - 1.5	Composite*	Soil	A9P3-MH180-19^3-R	S
A9P3-MH180-20	1353141.93	479135.47	3	0 - 1.5	Composite*	Soil	A9P3-MH180-20^3-R	S
A9P3-MH180-21	1353171.54	479178.86	3	0 - 1.5	Composite*	Soil	A9P3-MH180-21^3-R	S
A9P3-MH180-22	1353062.61	479079.74	3	0 - 1.5	Composite*	Soil	A9P3-MH180-22^3-R	S
A9P3-MH180-23	1353097.51	479107.96	3	0 - 1.5	Composite*	Soil	A9P3-MH180-23^3-R	S
A9P3-MH180-24	1353166.96	479077.27	3	0 - 1.5	Composite*	Soil	A9P3-MH180-24^3-R	S

5177

V:\FCN 21140\p3\035.dgn

STATE PLANNING COORDINATE SYSTEM 1983

05-AUG-2004



DRAFT

LEGEND:

- SAMPLE LOCATION
- MANHOLE
- OLD OUTFALL LINE
- NEW OUTFALL LINE

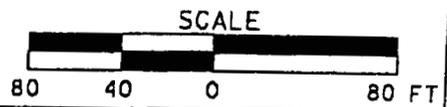


FIGURE 1. V/FCN 21140-PSP-0002-12

VARIANCE / FIELD CHANGE NOTICE

Significant?
(Yes or No) NO

V/F: 21140-PSP-0002-13

WBS NO.: PROJECT/DOCUMENT/ECDC # 21140-PSP-0002 Rev.0

Page: 1 of 1

PROJECT TITLE: Project Specific Plan For Area 9, Phase III Predesign Investigation Sampling

Date: 8/04/04

VARIANCE / FIELD CHANGE NOTICE (Include justification):

This Variance/Field Change Notice (V/FCN) documents the addition of the analysis of hexavalent chromium (TAL T) on three samples that were previously collected and analyzed for metals. The samples to be analyzed are A9P3-MH180-CS10^1-M, A9P3-MH180-CS11^1-M, and A9P3-MH180-CS12^1-M. The turn-around-time is the best available and the minimum detection limit is 1.1 mg/kg.

Surveying required: NA
 Field QC samples required: NA
 Field data validation: NA
 Analytical data validation: ~~VSL B~~ NO *at 8/5/04*
 Off-site data package requirements (if applicable): ASL B
 The highest alpha/beta result for the area is 268 pCi/g from manhole 181.

Justification:

These three samples had results that were above-FRL for total chromium; however, the FRL is based on hexavalent chromium. Since the above-FRL results are so close to the FRL, hexavalent chromium is being analyzed to determine if the samples results are actually above-FRL.

Per Section 1.3 of the PSP, the collection of physical samples will be documented with a V/FCN.

REQUESTED BY: Greg Lupton

Date: 8/04/04

IF REQD	VARIANCE/FCN APPROVAL	DATE	X IF REQD	VARIANCE/FCN APPROVAL	DATE
	QUALITY ASSURANCE: R. Friske <i>Damen Wenzel</i>	8-10-04	X	PROJECT MANAGER: J. P. CHEN <i>J. P. Chen</i>	8/5/04
	DATA QUALITY MANAGEMENT		X	CHARACTERIZATION MANAGER: F. MILLER <i>Frank Miller</i>	8/4/04
	ANALYTICAL CUSTOMER SUPPORT: WAO <i>Greg Lupton</i>	8-10-04		RTIMP Manager	
				SAMPLING MANAGER: T. Buhrlage	

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:

ORIGINAL

5677

VARIANCE / FIELD CHANGE NOTICE

Significant
Cases or No: NO

V/F: 21140-PSP-0002-14

WBS NO.: PROJECT/DOCUMENT/ECDC # 21140-PSP-0002 Rev.0

Page: 1 of 1

PROJECT TITLE: Project Specific Plan For Area 9, Phase III Predesign Investigation Sampling

Date: 8/05/04

VARIANCE / FIELD CHANGE NOTICE (Include justification):

This Variance/Field Change Notice (V/FCN) documents the addition of the analysis of chromium and silver (TAL U) on six samples that were previously collected and analyzed for uranium and thorium. The samples to be analyzed for TAL U are A9P3-MH180-1^3-UTH, A9P3-MH180-2^3-UTH, A9P3-MH180-5^3-UTH, A9P3-MH180-6^3-UTH, A9P3-MH180-7^3-UTH, and A9P3-MH180-8^3-UTH. The turn-around-time is the best available and the minimum detection limit is 1.1 mg/kg for chromium and 0.1 mg/kg for silver.

Surveying required: NA
 Field QC samples required: NA
 Field data validation: NA
 Analytical data validation: No
 Off-site data package requirements (if applicable): ASL B
 The highest alpha/beta result for the area is 268 pCi/g from manhole 181.

Justification:

These five samples were collected from the 1.5 to 2.0 feet interval and are being analyzed to attempt to vertically bound the above-FRL results that were detected in the 0 to 1.5 feet interval.

Per Section 1.3 of the PSP, the collection of physical samples will be documented with a V/FCN.

REQUESTED BY: Greg Lupton

Date: 8/05/04

IF REQD	VARIANCE/FCN APPROVAL	DATE	X IF REQD	VARIANCE/FCN APPROVAL	DATE
	QUALITY ASSURANCE: RJ Friske <i>James Weasel</i>	8-10-04	X	PROJECT MANAGER: J. O. <i>J. O.</i>	8/10/04
	DATA QUALITY MANAGEMENT		X	CHARACTERIZATION MANAGER: P. Miller <i>P. Miller</i>	8/5/04
	ANALYTICAL CUSTOMER SUPPORT: WAO <i>Amy Weasel</i>	8-10-04		RTIMP Manager	
				SAMPLING MANAGER: T. Buhrlage	

VARIANCE/FCN APPROVED YES NO REVISION REQUIRED: YES NO

DISTRIBUTION

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

ORIGINAL

VARIANCE / FIELD CHANGE NOTICE

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

V/F: 21140-PSP-0002-15

WBS NO.: PROJECT/DOCUMENT/ECDC # 21140-PSP-0002 Rev.0

Page: 1 of 2

PROJECT TITLE: Project Specific Plan For Area 9, Phase III Predesign Investigation Sampling

Date: 8/09/04

VARIANCE / FIELD CHANGE NOTICE (Include justification):

This Variance/Field Change Notice (V/FCN) documents the collection of additional samples from borings in A9P3 as well as sampling at one new location.

Samples should be collected from the following borings: A9P3-MH180-1, A9P3-MH180-2, A9P3-MH180-5, A9P3-MH180-6, A9P3-MH180-7, and A9P3-MH180-8. Each boring should be extended to a depth of 3.5 feet and samples are to be collected from the 2 - 2.5-foot and 3 - 3.5-foot intervals. The samples will be analyzed for total chromium (TAL V) and hexavalent chromium (TAL T). The turn-around-time for total chromium is 24-hours and best available for hexavalent chromium. See Attachment 1 for the TAL, Sampling and Analytical Requirements, and the Sample Locations and IDs.

+three dna 8/18/04

A new boring (A1P3-MH180-25) shall also be field located five feet north of boring A9P3-MH180-6. The boring will be sampled from soil surface to 1.5 feet below surface (0-1.5-foot interval) and will be analyzed for radium-226 (TAL S), total chromium and silver (TAL U), and hexavalent chromium (TAL T). The entire sample interval will be composited and analyzed by the laboratory. See Attachment 1 for the TAL, Sampling and Analytical Requirements, and the Sample Locations and IDs.

Approximate number of samples: 13
 Surveying required: Yes
 Field QC samples required: No
 Field data validation: Yes
 Analytical data validation: No
 Off-site data package requirements (if applicable): ASL B
 The highest alpha/beta result for the area is 268 pCi/g from manhole 181.

Justification:

Samples are being collected from the 2-2.5-foot and 3-3.5-foot intervals to vertically bound above-FRL chromium results that were detected in the 1.5-2-foot interval. A new boring is being located to the north of A9P3-MH-180-6 to provide horizontal bounding.

Per Section 1.3 of the PSP, the collection of physical samples will be documented with a V/FCN.

REQUESTED BY: Denise Arico

Date: 8/09/04

K IF REQD	VARIANCE/FCN APPROVAL	DATE	X IF REQD	VARIANCE/FCN APPROVAL	DATE
X	QUALITY ASSURANCE: R. Frisk <i>R. Frisk</i>	8-10-04	X	PROJECT MANAGER: J.D. Chioy <i>J.D. Chioy</i>	8/10/04
	DATA QUALITY MANAGEMENT		X	CHARACTERIZATION MANAGER: F. Miller <i>Frank Miller</i>	8/9/04
X	ANALYTICAL CUSTOMER SUPPORT: WAO <i>WAO</i>	8-10-04		RTIMP Manager	
X	<i>WAO</i>	8-10-04	X	SAMPLING MANAGER: T. B. Sullivan <i>T. B. Sullivan</i>	8/10/04
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:

ORIGINAL

TAL 21140-PSP-0002-S

Analyte	MDL (soil)
Radium-226	0.15 pCi/g

TAL 21140-PSP-0002-T

Analyte	MDL (soil)
Hexavalent Chromium	1.1 mg/kg

TAL 21140-PSP-0002-U

Analyte	MDL (soil)
Total Chromium	1.1 mg/kg
Silver	0.1 mg/kg

TAL 21140-PSP-0002-V

Analyte	MDL (soil)
Total Chromium	1.1 mg/kg

*with
teflon lined lid.
DMA
8/10/04*

SAMPLING AND ANALYTICAL REQUIREMENTS

Analyte	Sample Matrix	Lab	ASL	TAT	Preservative	Holding Time	Container*	Sample Volume/Mass*
TAL S, TAL T, and TAL U	Solid	Offsite	D/E	TAL U - 24 hrs TAL S - 25 day TAL T - best available	None	6 months	Glass or plastic	400g
TAL T and TAL V	Solid	Offsite	D/E	TAL V - 24 hrs TAL T - best available	None	6 months	Glass or plastic	100g

*At the direction of the Field Sampling Lead, triple the specified volume must be collected for all samples at one location 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".

SAMPLING LOCATIONS AND IDS

Boring ID	Easting	Northing	Depth Identifier	Depth Interval	Grab or Composite	Matrix	Sample ID	TAL
A9P3-MH180-1	1353062.00	479258.60	5	2 - 2.5	Grab	Soil	A9P3-MH180-1^5-M	TV
			7	3 - 3.5	Grab	Soil	A9P3-MH180-1^7-M	TV
A9P3-MH180-2	1353101.50	479288.13	5	2 - 2.5	Grab	Soil	A9P3-MH180-2^5-M	TV
			7	3 - 3.5	Grab	Soil	A9P3-MH180-2^7-M	TV
A9P3-MH180-5	1353139.84	479295.04	5	2 - 2.5	Grab	Soil	A9P3-MH180-5^5-M	TV
			7	3 - 3.5	Grab	Soil	A9P3-MH180-5^7-M	TV
A9P3-MH180-6	1353179.10	479304.40	5	2 - 2.5	Grab	Soil	A9P3-MH180-6^5-M	TV
			7	3 - 3.5	Grab	Soil	A9P3-MH180-6^7-M	TV
A9P3-MH180-7	1353135.33	479241.60	5	2 - 2.5	Grab	Soil	A9P3-MH180-7^5-M	TV
			7	3 - 3.5	Grab	Soil	A9P3-MH180-7^7-M	TV
A9P3-MH180-8	1353166.22	479232.62	5	2 - 2.5	Grab	Soil	A9P3-MH180-8^5-M	TV
			7	3 - 3.5	Grab	Soil	A9P3-MH180-8^7-M	TV
A9P3-MH180-25	TBD	TBD	3	0 - 1.5	Composite	Soil	A9P3-MH180-25^3-RM	STU

5877

VARIANCE / FIELD CHANGE NOTICE

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

V/F: 21140-PSP-0002-16

WBS NO.: PROJECT/DOCUMENT/ECDC # 21140-PSP-0002 Rev.0

Page: 1 of 1

PROJECT TITLE: Project Specific Plan For Area 9, Phase III Predesign Investigation Sampling

Date: 8/09/04

VARIANCE / FIELD CHANGE NOTICE (Include justification):

This Variance/Field Change Notice (V/FCN) documents the addition of the analysis of total chromium and silver (TAL U) and hexavalent chromium (TAL T) on two samples previously collected and submitted for analysis of various radiological constituents. The samples are A9P3-MH180-3^3-R and A9P3-MH180-4^3-R. The TAT is 24 hours for TAL U and best available TAT for TAL T. The minimum detection limit is 1.1 mg/kg for chromium (both total and hexavalent) and 0.1 mg/kg for silver.

Approximate number of samples: 2
 Surveying required: NA
 Field QC samples required: NA
 Field data validation: NA
 Analytical data validation: No
 Off-site data package requirements (if applicable): ASL B
 The highest alpha/beta result for the area is 268 pCi/g from manhole 181.

Justification:

Samples are being analyzed for silver and chromium to provide lateral bounding.

Per Section 1.3 of the PSP, the collection of physical samples will be documented with a V/FCN.

REQUESTED BY: Denise Arico

Date: 8/09/04

IF REQD	VARIANCE/FCN APPROVAL	DATE	X IF REQD	VARIANCE/FCN APPROVAL	DATE
	QUALITY ASSURANCE: R. Frike <i>Denise Arico</i>	8-10-04	X	PROJECT MANAGER: J.D. Chen <i>J.D. Chen</i>	8/10/04
	DATA QUALITY MANAGEMENT		X	CHARACTERIZATION MANAGER: Frank Miller <i>Frank Miller</i>	8/9/04
	ANALYTICAL CUSTOMER SUPPORT: WAO <i>Amy Meffe</i>	8-10-04		RTIMP Manager	
				SAMPLING MANAGER: T. Buhrlage	

VARIANCE/FCN APPROVED YES NO REVISION REQUIRED: YES NO

DISTRIBUTION

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

ORIGINAL