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TRANSMITAL OF CONTAMINATION AT THE FIRE TRAINING FACILITY REMOVAL ACTION NUMBER 28 FINAL REPORT

06/09/95

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FINAL REPORT

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Department of Energy
Fernald Environmental Management Project
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JUN 0 9 1995

DOE-0964-95

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Dear Mr. Saric and Mr. Schneider:

TRANSMITTAL OF CONTAMINATION AT THE FIRE TRAINING FACILITY REMOVAL ACTION NUMBER 28 FINAL REPORT

Enclosed is the final report for Removal Action Number 28, "Contamination at the Fire Training Facility." This report is specified as the last milestone in the Removal Action Work Plan (RAWP). Submittal of this document to the U.S. Environmental Protection Agency (U.S. EPA) completes Removal Action Number 28.

Field changes that were explained in my May 1, 1995, letter, DOE-0900-95, and approved by the U.S. EPA and Ohio Environmental Protection Agency (OEPA) have been incorporated into the Final Report.

If you or your staff have any questions or comments regarding this document, please contact Mr. Anand Shah at (513) 648-3132.

Sincerely,

Johnny Reising

for Jack R. Craig
Fernald Remedial Action
Project Manager

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Enclosure: As Stated

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FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

Contamination at the Fire Training Facility

Removal Action No. 28

FINAL REPORT

May 1995

U.S. DEPARTMENT OF ENERGY

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FINAL REPORT

CONTAMINATION AT THE FIRE TRAINING FACILITY

Removal Action No. 28

Fernald Environmental Management Project

May 1995

U.S. DEPARTMENT OF ENERGY

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ACRONYMS AND ABBREVIATIONS

AOC	Area of Contamination
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CPID	Closure Plan Information and Data
CRU5	CERCLA/RCRA Unit 5
D & D	Decontamination and Decommissioning
DOE	U. S. Department of Energy
FEMP	Fernald Environmental Management Project
FERMCO	Fernald Environmental Restoration Management Corporation
ft^3	cubic feet
FTF	Fire Training Facility
GAC	granular activated carbon
HSL	Hazardous Substances List
HWMU	Hazardous Waste Management Unit
LLR	Low Level Radioactive
MEF	Material Evaluation Form
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NTS	Nevada Test Site
OEPA	Ohio Environmental Protection Agency
OU3	Operable Unit 3
OU5	Operable Unit 5
P.E.	Professional Engineer
PCB	polychlorinated biphenyl
PID	photoionization detector
ppb	parts per billion
ppm	parts per million
PSAP	Project Specific Sampling and Analysis Plan
QA	quality assurance
QC	quality control
RAWP	Removal Action Work Plan
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision

ACRONYMS AND ABBREVIATIONS (continued)

RSE	Removal Site Evaluation
SAP	Sampling and Analysis Plan
SCQ	Sitewide CERCLA Quality Assurance Project Plan
SMS	Site Media Sampling
SOP	Standard Operating Procedure
SVOA	semivolatile organic analyses
TCLP	Toxicity Characteristic Leachate Procedure
TPH	total petroleum hydrocarbon
TSD	Treatment, Storage, and Disposal
TSS	Tension Support Structure
USEPA	United States Environmental Protection Agency
VOA	volatile organic analyses
VOC	volatile organic compound
WMB	White Metal Box
WWT	Wastewater Treatment System

EXECUTIVE SUMMARY

ES.1 BACKGROUND

The Fire Training Facility (FTF) is located in Operable Unit 3 (OU3) along the northern fence line of the former production area at the Fernald Environmental Management Project (FEMP). The FTF was constructed in 1966 as a training facility for the Fernald Site fire department and the surrounding community fire departments. It operated from 1966 to 1990. The FTF, shown in Figure ES-1, contained a block building, skid tank (including pond and sump), open top tank, horizontal pressure vessel, metal burn areas, and a former drum storage area. All of these components of the FTF were used to practice different methods of fire fighting. The FTF was estimated to have been used an average of 60 days per year by both the Fernald Site fire department and local community fire departments. The flammable and combustible substances used to start fires at the FTF were determined to have contained hazardous and radiological materials. As a result, the FTF site and components became contaminated with hazardous materials, low level radioactive (LLR) materials, and low levels of Polychlorinated Biphenyls (PCBs) (DOE 1993).

In August 1991, the FTF was declared a Hazardous Waste Management Unit (HWMU #1) in the Resource Conservation and Recovery Act (RCRA) compliance schedule submitted pursuant to the Consent Decree negotiated between the State of Ohio and the U.S. Department of Energy (DOE) (State of Ohio 1988). This declaration was based on 1) knowledge of past facility operations that led to releases of hazardous materials to the environment, and 2) on environmental sampling data collected at the site. The FTF was also identified as a removal action subject to the regulations associated with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The DOE submitted a combination Removal Action Work Plan/Closure Plan Information and Data (RAWP/CPID) for the FTF in September 1993 to both the Ohio Environmental Protection Agency (OEPA) and U. S. Environmental Protection Agency (U.S. EPA) entitled *Contamination at the Fire Training Facility Removal Action Work Plan and Closure Plan Information and Data Package* to satisfy both the CERCLA and RCRA requirements associated with this removal action (No. 28) (DOE 1993).

The combined objectives described in the RAWP/CPID were to: 1) minimize the need for further maintenance (or inspection) by decontaminating and removing portions of the FTF to achieve surface source control; 2) control, minimize, or eliminate, to the extent necessary to protect human health and the environment, the escape of hazardous waste or hazardous waste constituents; and 3) conduct closure actions in accordance with the provisions of approved RCRA Closure Plan Information and Data. Field actions at the FTF were initiated as summarized in Section ES.2 and detailed within this final report, to achieve these objectives. During the course of this action, negotiations with the OEPA have begun leading to the issuance of Director's Findings and Orders (DF&O) that allows final closure of HWMU's with contaminated environmental media, including the FTF, during the final remediation under CERCLA regulation and the OU5 ROD. Therefore, the objectives for action at the FTF were focused on the near-term Removal Action objectives of 1) decontamination and removal of contaminated components of the FTF to achieve surface source control, and 2) removal of contaminated surface soils to protect human health and the environment, and control, minimize, or eliminate the escape of hazardous waste or hazardous waste constituents.

ES.2 DESCRIPTION OF REMOVAL ACTION NO. 28

Removal Action No. 28 was initiated in July 1994 and concluded in April 1995. The removal action consisted of the following activities:

- Surveying and marking the boundaries of the unit;
- Conducting site preparations and equipment staging;
- Removing each structure in the FTF;
- Excavating each area of contamination in the FTF;
- Collecting pre-excavation/demolition samples of each structure/area;
- Collecting post-excavation samples of each area;
- Backfilling each excavation area;
- Containerizing and dispositioning of each waste;
- Performing groundwater sampling; and
- Seeding the excavation areas.

Prior to remediation, the boundaries of the FTF were surveyed and marked. After site preparation and equipment staging was completed, the removal action was conducted as summarized below. Pre-excavation/demolition sampling was performed for waste

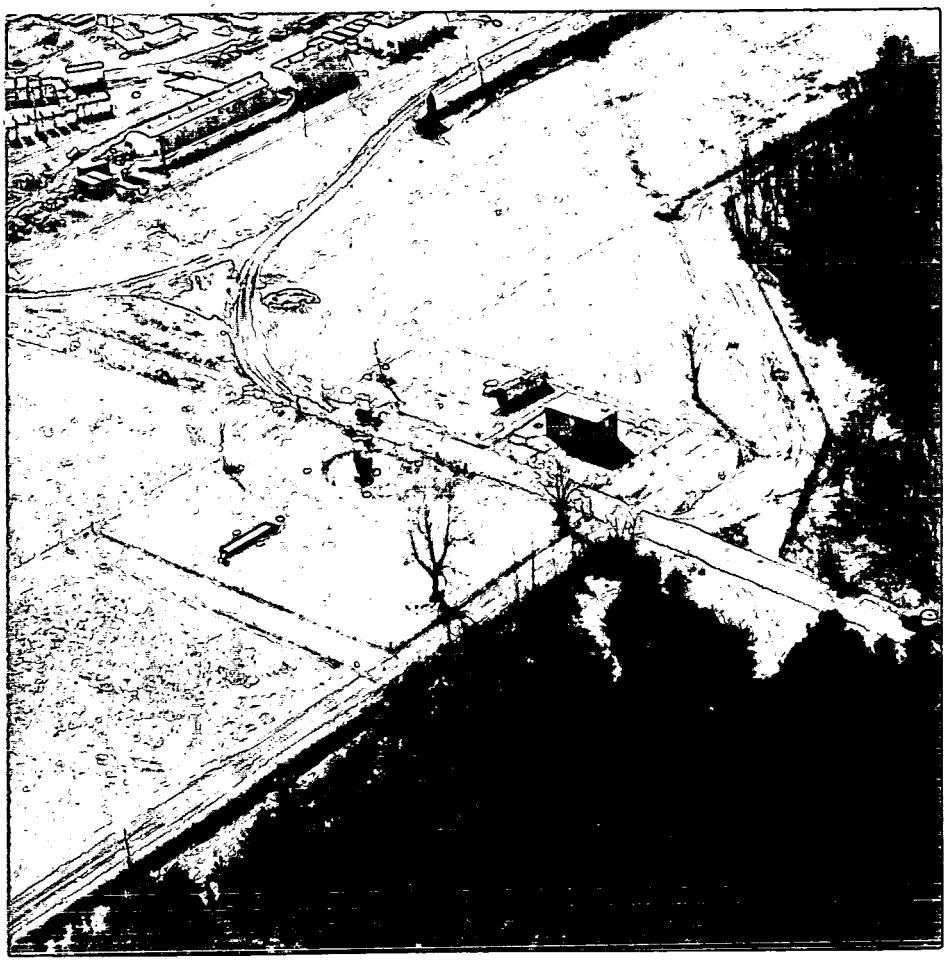

Figure ES-1. Aerial View of the Fire Training Facility Prior to Removal (looking to the southwest).

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characterization purposes. The results of these samples were used to determine the requirements for containerization and disposition of the waste.

The block building, open top tank, skid tank, and the horizontal pressure vessel were each dismantled and removed. All debris and contaminants were removed from inside the block building, and the building was demolished with a trackhoe. Contaminated liquids were removed from the open top tank. The open top tank was lifted from its location and transported to temporary storage within a bermed containment area along the east fence at the FTF. The skid tank was hoisted from its support pedestals within the skid tank pond and placed on a prepared laydown area to await size reduction. The horizontal pressure vessel was cut with a torch into three sections, moved to the FEMP decontamination and decommissioning facility, and size reduced.

The foundation of the block building and surrounding asphalt pad; the area under and around the open top tank; the skid tank pond, sump, and drain line; the magnesium burn area; and the radiologically contaminated east field area were each excavated to remove contaminated surface soil. A trackhoe was used for the larger excavations, while the smaller excavations were completed by hand. Excavation of contaminated soil in the area of the skid-tank pond was conducted to a depth of 5 feet below grade, just above the upper-surface of the perched water layer (average depth is 5.37 feet below grade). The removal of contaminated soil to this depth effectively satisfied the removal action objectives for surface source control and mitigation of potential near-term risks to human health and the environment. As stated in the RAWP, soil excavation into the perched water layer was not planned as an element of the removal action based on the significant risk that excavation activities would initiate/accelerate downward migration of contaminants to the aquifer as a result of penetrating the geologic features that cause the perched water table. The presence of perched water at the FTF indicate that conditions exist within the vadose zone that restrict or retard migration of contaminants present within the soil. The final remediation of residual subsurface contamination at the FTF will be addressed as necessary in the OU5 Record of Decision (ROD), Environmental Media, ensuring that any further necessary actions at the FTF will be based on risk-based cleanup criteria.

Post-excavation sampling of soils and generated wastes was conducted in accordance with the removal action work plan criteria. Characterization samples were collected

from the stockpiled soils, and verification samples were collected from the base and sides of each excavation.

Following excavation, backfill soil was obtained from the FEMP Removal Action No. 17 Class I stockpile. The soil in the Class I stockpile does not contain any RCRA constituents nor was it generated from a HWMU. Further, the soil does not contain total uranium concentrations greater than 100 picocuries per gram (pCi/g), total thorium concentrations greater than 50 pCi/g, or total radium concentrations greater than 5 pCi/g. A bulldozer was used to compact the backfilled soil in lifts of two feet or less. The excavations of the open top tank, skid tank pond, magnesium burn area, and east-field contaminated area were backfilled with a total of 549 cubic yards of Removal Action No. 17 Class I stockpiled soil.

Wastes generated during the course of demolition and excavation activities were containerized and dispositioned in accordance with Federal and State regulatory requirements. The block building demolition debris has been stockpiled. The debris from inside the building was placed into white metal boxes (WMBs) and stored in a permitted on-site storage facility. The floor scabbling wastes were managed as mixed waste, put into WMBs, and shipped for disposal to the Envirocare of Utah facility at Clive, Utah, a Treatment Storage and Disposal (TSD) facility that is permitted to receive mixed waste. Miscellaneous metal debris from the building were containerized in 55-gallon drums and stored in designated on-site storage areas. The asphalt pad was separated into low-level radioactive (LLR) waste and mixed waste. Both types of waste were placed in separate WMBs and stored in a designated on-site storage facility pending final disposition. The open top tank was size reduced and placed into WMBs, and stored in a designated on-site storage facility pending final disposition. The surface water removed from the open top tank was sent to the Plant 8 volatile organic compound (VOC) system. This system uses granular activated carbon (GAC) to remove organic contaminants from water. Treated waters are then processed through the Plant 8 Waste Water Treatment System (WWT) for uranium removal. The sludge removed from the open top tank was classified as PCB-contaminated mixed waste, containerized in 55-gallon drums, and stored in a designated on-site storage facility pending final disposition. The soil excavated from under and around the open top tank was placed into 55-gallon drums and stored in a designated on-site storage facility pending final disposition. The pressure vessel was transported to the site's Decontamination and Decommissioning facility where it was size reduced. The skid tank was size reduced,

placed in WMBs, and stored in a designated on-site storage facility pending final disposition. The skid tank pedestals were put in a WMB and shipped to Envirocare for disposal as mixed waste. The excavated soil from the skid tank pond, sump, and drain line was containerized in WMBs and stored in a designated on-site storage facility pending final disposition. The excavated soil from the magnesium burn area was stockpiled and managed under Removal Action No. 17. The radiologically contaminated soil excavated from the east field was also stockpiled and managed under Removal Action No. 17. Final disposition of wastes currently in storage will be accomplished through disposal at an appropriate on-site facility (proposed On Property Disposal Facility) or off-site disposal facility (NTS, Envirocare).

Existing monitoring wells and piezometers were sampled during Removal Action No. 28 to investigate groundwater in the perched water-bearing zone and the Great Miami Aquifer underlying the FTF. Analysis of these samples confirmed the presence of organic, inorganic, and radiological contaminants in the perched water, but did not reveal contaminants in the aquifer that could be attributed to the FTF.

ES.3 CONCLUSIONS

The objectives of Removal Action No. 28 were to 1) minimize the need for further maintenance (or inspection) by decontaminating and removing contaminated portions of the FTF to achieve surface source control; and 2) control, minimize, or eliminate, to the extent necessary to protect human health and the environment, the escape of hazardous waste or hazardous waste constituents (DOE 1993). The removal of contaminated structures and soil was conducted to meet the removal action soil excavation criteria. These criteria (listed below) are consistent with applicable Removal Action No. 17 management guidelines.

- Any material containing PCBs at concentrations that exceed 2 ppm will be excavated.

- Visually stained petroleum contaminated soil will be excavated.

- Any soil containing uranium over 100 pCi/g, thorium over 50 pCi/g, and/or radium over 5 pCi/g will be excavated.

Under EPA Superfund guidance, *A Guide on Remedial Actions at Superfund Sites with PCB Contamination* (USEPA 1990), soil which contains less than 50 ppm PCBs is not TSCA regulated waste because TSCA's anti-dilution rule does not apply at Superfund Sites. PCB contaminated soils are regulated based upon the concentration of PCBs found in the soils at the time remediation is conducted. Therefore, soils which contain less than 50 ppm PCBs do not have to be managed in accordance with Toxic Substances Control Act (TSCA). However, at this time it is not known how excavated soils containing greater than 2 ppm but less than 50 ppm PCBs will be disposed. Therefore, these soils will be managed as TSCA waste pending final disposition based on waste acceptance criteria for the selected disposal facility.

As detailed in this final report, the FTF removal action objectives were accomplished through 1) removing all structures from the FTF; 2) excavating hazardous, mixed, LLR, and PCB-contaminated surface soils from the FTF; and 3) backfilling the excavated areas with Removal Action No 17 Class I soil until final remediation addressed in the OU5 ROD can be performed. Sampling and analyses conducted during the course of these actions confirm that the removal action criteria have been met.

Consistent with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), Removal Action No. 28 contributed to the efficient performance of projected final remedial actions at the FEMP. The goals of the FEMP in conducting Removal Action No. 28 were to minimize the potential for releases of hazardous substances incidental to the removal action, and to conduct the action in a cost efficient and safe manner consistent with site Standard Operating Procedures (SOPs) and worker health and safety requirements. These goals were achieved.

Section 1.0

1.0 INTRODUCTION

Material presented in this section is summarized from the *Removal Action Work Plan / Closure Plan Information and Data (RAWP/CPID)* (DOE 1993). The Fire Training Facility (FTF) is located in Operable Unit 3 (OU 3) (Figure 1-1). A plan of the FTF is shown in Figure 1-2. The FTF was constructed and operated as a training facility for the Fernald Site fire department and surrounding fire departments from 1966 to 1990. The FTF was composed of the following structures and areas (as shown in Figure 1-2):

- Block building,
- Skid tank/pond/sump,
- Open top tank,
- Horizontal pressure vessel,
- Surface burn areas, and
- Former drum storage area.

These structures and areas are described below.

The block building was a two-story rectangular building constructed of concrete masonry units (blocks) and measured 18 feet, 8 inches wide by 35 feet, 4 inches long (shown in Figure 1-3). The building was surrounded by an asphalt pad. Combustible materials (straw, furniture, pallets) were placed in this building and ignited during exercises in fire fighting techniques. Flammable liquids reportedly were used to reignite wet combustible materials during training to create repeated fires. Water used in fire fighting drained from the building onto the asphalt pad (DOE 1993).

The skid tank was constructed of carbon steel and measured 5 feet, 4 inches in diameter by 9 feet long, as shown in Figure 1-4. The tank rested horizontally on two concrete pedestals spaced 9 feet apart. The skid tank was surrounded by a shallow pond (6 inches deep) that was approximately 15 feet in diameter. The pond was connected to an unlined sump located approximately 50 feet south of the pond. A 4-inch diameter pipe extended from the edge of the pond to the sump, and facility personnel indicated that while the sump did receive overflow from the pond, it was never pumped out (DOE 1993).

The open top tank (shown in Figure 1-5) was constructed of carbon steel, was rectangular in shape, and measured 7 feet, 8 inches wide by 27 feet long by 4 feet, 6 inches deep. During fire training exercises this open top tank was filled with waste oil or solvents and ignited during exercises in fire fighting techniques (DOE 1993).

The horizontal pressure vessel, as shown in Figure 1-6, was located 50 feet south of the block building. The vessel was constructed of 1.5-inch plate steel and measured 8 feet in diameter and approximately 50 feet long. No fires are known to have been started in the tank. However, the tank was filled with smoke so that personnel could practice confined space egress and ingress under smoke-filled conditions (DOE 1993).

Combustible solids and metals were reportedly burned in three burn areas within the FTF (see Figure 1-2). Two of the burn areas were located 20 feet south and 30 feet southeast of the horizontal pressure vessel, respectively. The third burn area was the skid tank pond sump located in the radiological contamination control zone on the east side of the FTF (DOE 1993).

A temporary drum storage area was located in the northwest corner of the radiological contamination control zone on the east side of the FTF (Figure 1-2). FTF operators reported that this area was used to stage and temporarily store drums of flammable liquids prior to their use in fire training exercises (DOE 1993).

The FTF was estimated to have been used an average of 60 days per year. During its use, various types of combustible substances were burned to practice fire fighting techniques. A list of some of the combustible substances thought to have been burned or stored at the FTF are as follows:

- Waste oil,
- Kerosene,
- Gasoline,
- Wooden pallets,
- Straw (from off-site source),
- Vehicle(s),
- Damaged office furniture,
- Unusable household furniture,
- Rubber tires,

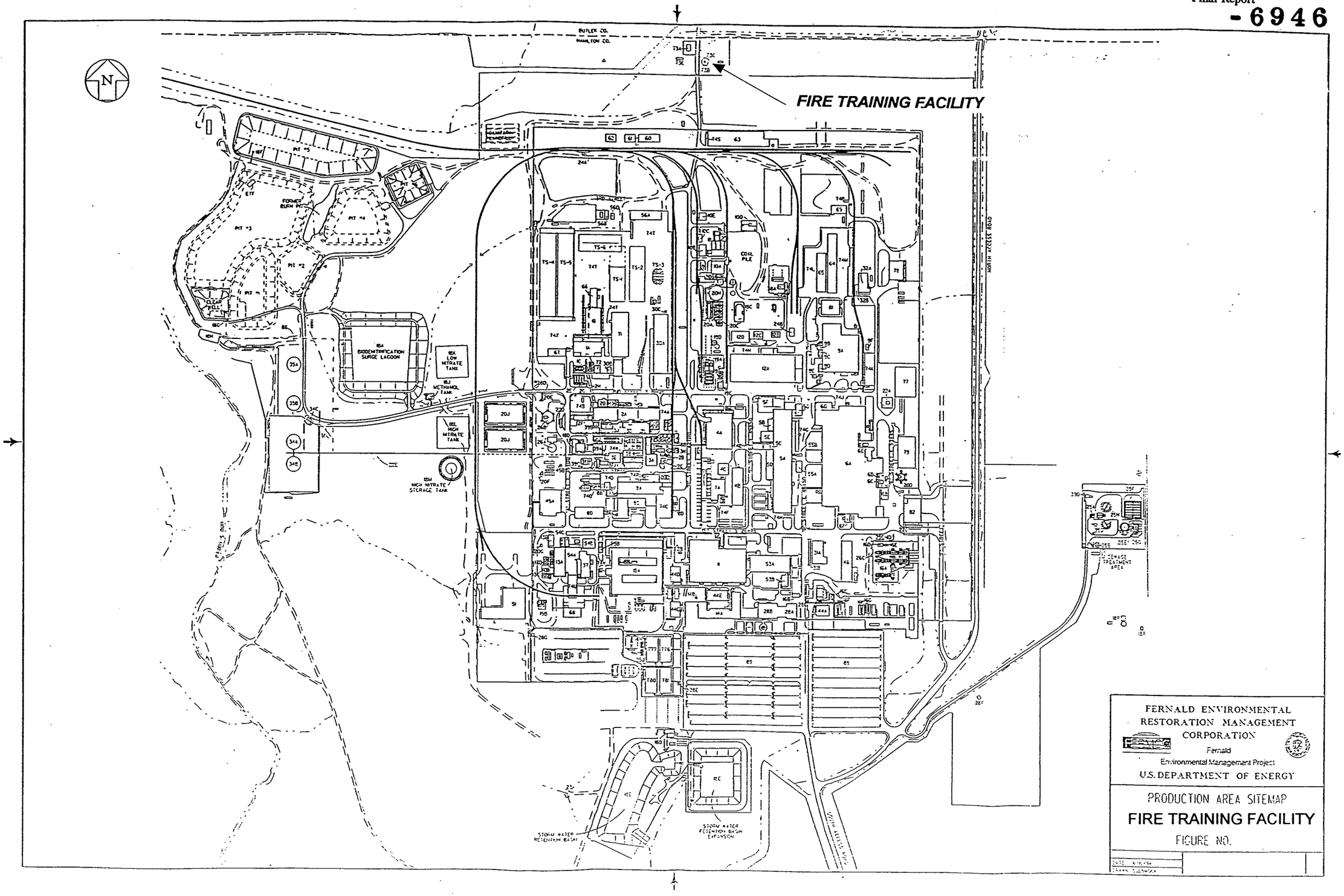

Figure 1-1. Master Grid Site Map Showing the FTF.

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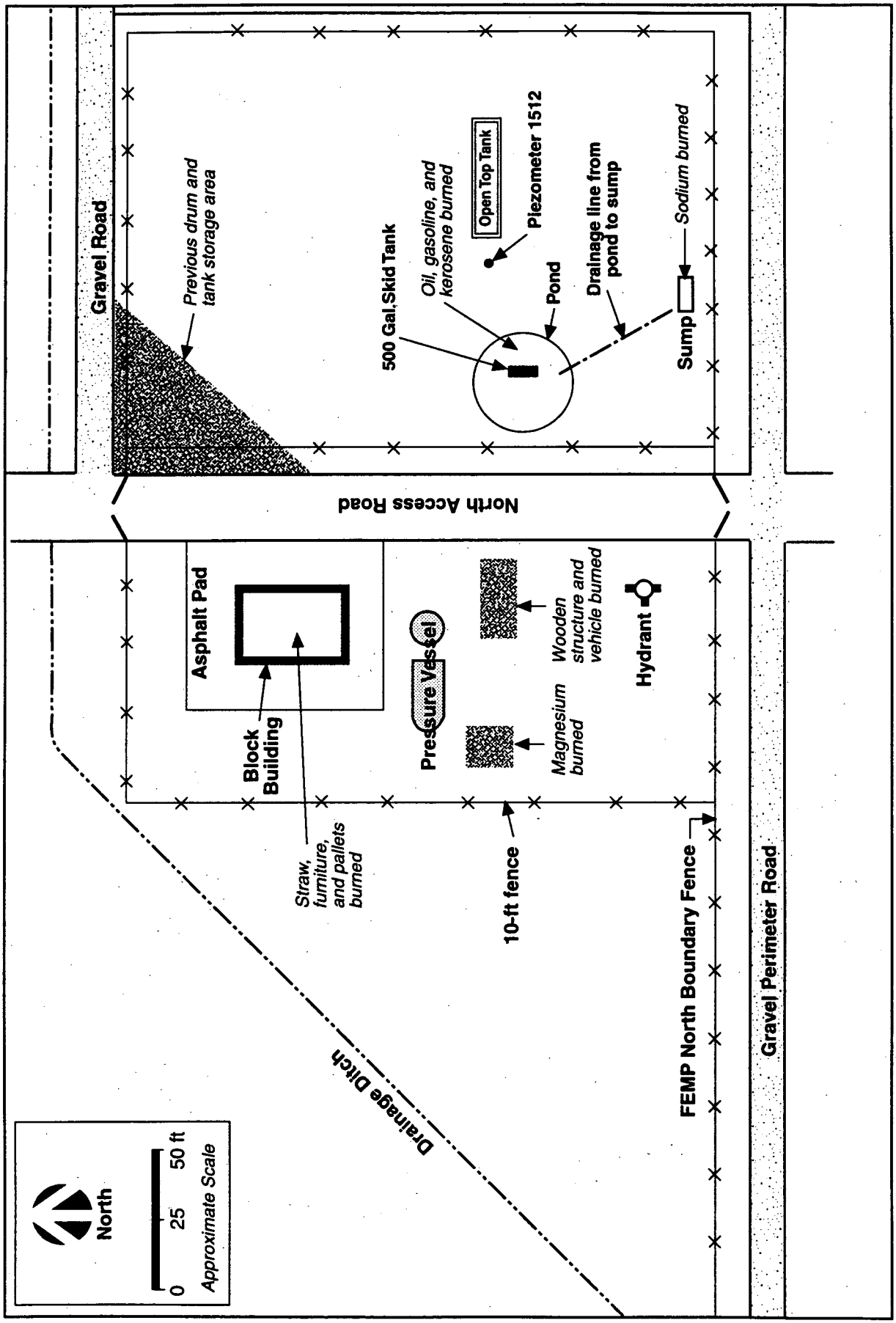

Figure 1-2. Plan of the Fire Training Facility.

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Figure 1-3. OU3 Fire Training Facility Concrete Block Building Prior to Demolition.

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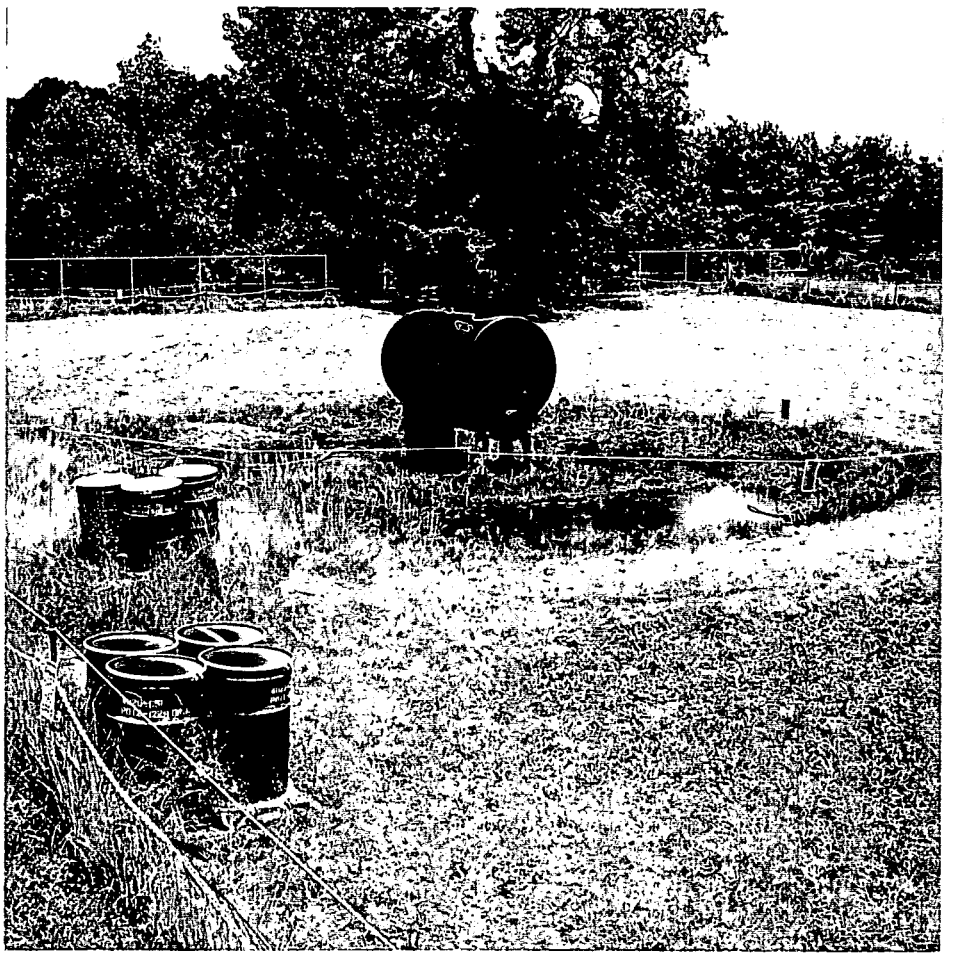

Figure 1-4. OU3 Fire Training Facility Skid Tank and Skid Tank Pond Prior to Removal. Drums in Foreground are CRU5 Investigation Derived Waste (well development, soil, and water).

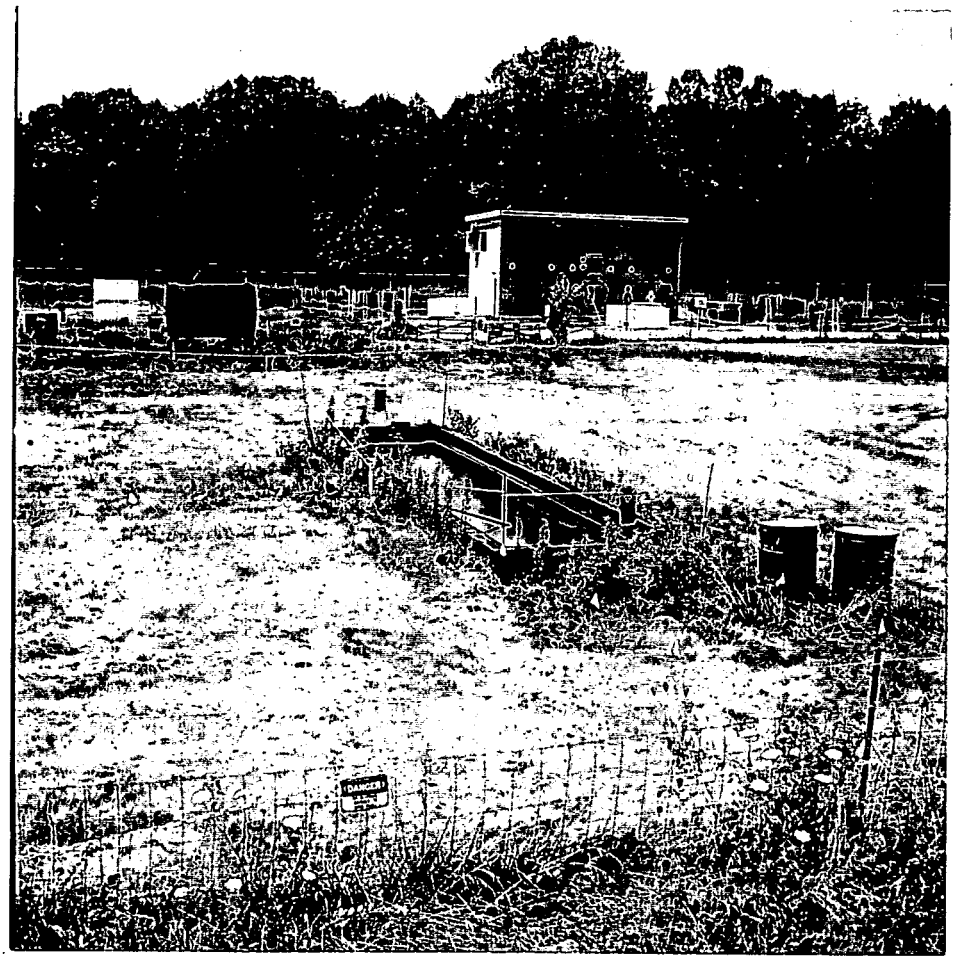

Figure 1-5. OU3 Fire Training Facility Open Top Tank Prior to Removal. Drums in Foreground are CRU5 Investigation Derived Waste (well development, soil, and water).

Figure 1-6. OU3 Fire Training Facility Horizontal Pressure Vessel (left) Prior to Removal.

- Metallic sodium,
- Magnesium, and
- Waste solvents.

Based on radiation surveys conducted in May 1989 and January 1993, some of the materials from on-site sources burned at the FTF were determined to be contaminated with radionuclides. Radiological surveys combined with soil borings indicate that radionuclides (primarily uranium based on the soil borings) were present in the surface soil at levels above background concentrations. In addition, soil borings indicated some organic compounds were also present, and shallow wells show that drinking water standards were exceeded by some organic contaminants in the shallow perched water directly beneath the site. The January 1993 radiological survey added to and completed the May 1989 radiological data survey necessary for the areas between the gravel road and the open top tank and inside of the block building and pressure vessel (DOE 1993).

Surface radiological measurements, soil samples, soil gas samples, and groundwater samples collected in and around the structures and areas of the FTF indicated the presence of elevated concentrations of radionuclides, as well as organic hazardous materials (DOE 1993).

The Fire Training Facility (FTF) was declared Hazardous Waste Management Unit (HWMU) #1 based on 1) knowledge of past facility operations that led to releases of hazardous materials to the environment, and 2) environmental sampling data. The FTF was included in the list of HWMUs in the Resource Conservation and Recovery Act (RCRA) Part A Permit Application submitted by DOE to the Ohio Environmental Protection Agency (OEPA) in June 1991 and RCRA Part B Permit Application submitted by DOE in October 1991 to OEPA. Lastly, in August 1991, the FTF was identified as an HWMU in the RCRA compliance schedule submitted pursuant to the Consent Decree negotiated between the State of Ohio and the U.S. Department of Energy (DOE) (State of Ohio 1988). The RCRA compliance schedule required that a Closure Plan Information and Data (CPID) package be submitted for all newly identified HWMUs. The CPID was intended to provide information necessary to ensure all requirements for RCRA closure were met (DOE 1993).

Because the FTF was also contaminated with radioactive materials, it was subject to the regulations associated with the Comprehensive Environmental Response, Compensation,

and Liability Act (CERCLA). On September 20, 1991, the Department of Energy and the U.S. Environmental Protection Agency (USEPA) jointly signed an Amended Consent Agreement establishing milestones for the implementation of CERCLA response actions at the FEMP. One such milestone provided that the DOE submit a Removal Action Work Plan (RAWP) to USEPA by September 1993 (DOE 1993).

To satisfy both the CERCLA and RCRA requirements, DOE submitted a combination RAWP/CPID for the FTF in September 1993 to both OEPA and USEPA entitled *Contamination at the Fire Training Facility Removal Action Work Plan and Closure Plan Information and Data Package*. The RAWP/CPID was approved by the USEPA, but OEPA has not yet responded to date with an official approval or disapproval. In July 1994, the removal of contaminated structures and soils at the FTF began.

The combined objectives described in the RAWP/CPID were to: 1) minimize the need for further maintenance (or inspection) by decontaminating and removing portions of the FTF to achieve surface source control; 2) control, minimize, or eliminate, to the extent necessary to protect human health and the environment, the escape of hazardous waste or hazardous waste constituents; and 3) conduct closure actions in accordance with the provisions of approved RCRA Closure Plan Information and Data. Field actions at the FTF were initiated as detailed in Section 2.0 to achieve these objectives. During the course of this action, DOE was negotiating with the OEPA findings and orders that would defer final closure of HWMUs with contaminated environmental media to the final remediation of OU5. Therefore, the objectives for action at the FTF were modified to reflect only the near-term Removal Action objectives of 1) decontamination and removal of contaminated components of the FTF to achieve surface source control, and 2) removal of contaminated surface soils to the extent necessary to protect human health and the environment, and control, minimize, or eliminate the escape of hazardous waste or hazardous waste constituents. In order to meet these objectives, the following removal action soil excavation criteria were adopted to be consistent with Removal Action No. 17 management guidelines:

- Any material that contains PCBs at concentrations that exceed 2 ppm will be excavated.

- Visually stained petroleum-contaminated soil will be excavated.

- Any soil that contained uranium over 100 pCi/g, thorium over 50 pCi/g, and/or radium over 5 pCi/g will be excavated.

Under EPA Superfund guidance, *A Guide on Remedial Actions at Superfund Sites with PCB Contamination* (USEPA 1990), soil which contains less than 50 ppm PCBs is not TSCA regulated waste because TSCA's anti-dilution rule does not apply at Superfund Sites. PCB contaminated soils are regulated based upon the concentration of PCBs found in the soils at the time remediation is conducted. Therefore, soils which contain less than 50 ppm PCBs do not have to be managed in accordance with TSCA. However, at this time it is not known how excavated soils containing greater than 2 ppm but less than 50 ppm PCBs will be disposed. Therefore, these soils will be managed as TSCA waste pending final disposition decision based on the waste acceptance criteria for the selected facility (projected to be the On Property Disposal Facility to be constructed under the OU2 ROD).

Removal Action No. 28 included the following activities:

- Surveying and marking the HWMU boundaries
- Site preparations and equipment staging
- Removal of the block building
- Removal of the asphalt pad
- Removal of the open top tank
- Removal of the pressure vessel
- Removal of the skid tank and skid tank pond
- Removal of surface waters
- Excavation of the magnesium burn area
- Excavation of contaminated soils in the east field
- Groundwater sampling

Section 2.0 describes these removal action activities and their associated sampling results. Section 3.0 presents conclusions and describes how the removal action objectives were accomplished. Section 4.0 contains references relevant to Removal Action No. 28.

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Section 2.0

2.0 DESCRIPTION OF THE REMOVAL ACTION

Table 2-1 presents the overall chronology of Removal Action No. 28. Sections 2.1 through 2.12 summarize the activities that have been completed and presents sampling results.

2.1 SURVEYING AND MARKING THE HWMU BOUNDARIES

The boundary of the FTF HWMU is shown on Figure 1-2. Because the response actions described in this plan are interim actions pending final remediation of OU5, the boundaries of the FTF HWMU were preserved until the final response actions are completed. The FTF HWMU boundaries were surveyed by an independent surveyor and marked with survey monuments.

2.2 SITE PREPARATION AND EQUIPMENT STAGING

Access to the area and working spaces were required for the following types of equipment:

- Trackhoe,
- Tank truck,
- Bulldozer,
- Backhoe,
- Rough terrain forklift
- Boom type forklift
- Truck,
- Welding machine/cutting torch,
- Air compressor and scabbling equipment,
- Portable generator,
- Portable centrifical pump,
- Manual tools, and
- Power tools.

Any existing access barriers deemed unnecessary were removed, other barriers were temporarily lowered or relocated, including fences, chains, support stanchions, and

Table 2-1. Removal Action No. 28 Chronology.

Project	Activity	Begin Date	End Date
Block Building	Rad Survey - Pre Scabbling	7-26-94	7-26-94
	Clean Out of Building	7-15-94	7-25-94
	Scabble Floors	8-3-94	9-1-94
	Rad Survey - Post Scabbling	9-1-94	9-2-94
	RCRA Sampling	7-12-94	7-12-94
	Demolition	9-7-94	9-13-94
	Foundation Removal	10-10-94	10-26-94
	Building Containerization	3-13-95	3-20-95
Asphalt Pad Removal and Containerization	Mixed Classification	10-18-94	11-3-94
	LLR Classification	11-3-94	4-3-95
Open Top Tank	Surface Water Removal	7-25-94	7-26-94
	Sludge Removal	8-9-94	9-12-94
	Tank Pull	9-20-94	9-20-94
	Size Reduction	June/July-95	June/July-95
	"Spill" Soils Excavation	10-4-94	10-7-94
	Characterization Sampling	10-4-94	10-4-94
	Verification Sampling	12-29-94	12-29-94
	"Spill Cleanup" Verification Sampling	12-29-94	12-29-94
	Backfill	12-30-94	12-30-94
Pressure Vessel	On-Site Decontamination/Sectioning	8-16-94	8-24-94
	Removal	8-24-94	8-25-94
	Size Reduction	10-94	10-94
Retention Basin	Skid Tank Removal	8-26-94	8-26-94
	Size Reduction and Containerization	8-26-94	8-27-94
	Retention Basin Excavation	9-13-94	10-4-94
	Sump and Line Excavation	10-5-94	10-7-94
	Characterization Sampling	11-28-94	11-29-94
	Verification Sampling	10-10-94	10-10-94
	Backfill	11-7-94	12-1-94
Magnesium Burn Area	Excavation	10-6-94	10-6-94
	Verification Sampling	10-25-94	10-25-94
	Backfill	11-15-94	11-15-94
	Stockpile Characterization Sampling	12-29-94	12-29-94
East Field (Potential mixed - LLR) Soils	Excavation	10-11-94	10-17-94
	Rad Survey	10-18-94	10-18-94
	Verification Sampling	11-2-94	11-2-94
	Stockpiled Soil Characterization	12-29-94	12-29-94
Fire Training Facility	Seed Removal Action Area	4-3-95	4-3-95

radioactive area warning signs. A radiological control area was established. Overhead clearances were adequate for the equipment and for hoisting the tanks. Vegetation that had grown on the walls of the block building was removed, and all other miscellaneous materials were removed from the asphalt pad.

A bermed area was prepared to receive stockpiled excavated soils. The berm was formed using 6" diameter PVC pipe beneath the outer edges of the groundcover (herculite) to prevent the spread of contamination by surface run-off. Temporary silt screens were installed on the west and south sides of the block building and pad to prevent surface water run-off from heavy precipitation events during the demolition of the building and pad. The need for additional run-off control was continuously evaluated during the course of the removal action. White Metal Boxes (WMBs) and 55-gallon drums for the FTF removal action derived wastes were obtained and staged prior to initiation of the field activities and as needed during the activities.

2.3 BLOCK BUILDING REMOVAL

Activities associated with removing the block building included conducting pre-scabbling radiation surveys, removing debris from the building, scabbling the building floor, conducting post-scabbling radiation surveys, performing RCRA sampling, building demolition, removing the building foundation, performing post-excavation verification sampling under the block building floor slab, and waste containerization and disposition. These activities are discussed in detail in this section.

2.3.1 Pre-Scabbling Radiation Survey

A pre-scabbling radiation survey performed on July 26, 1994 identified only two areas of radiological contamination (> 1,000 disintegrations per minute [dpm]) on the concrete floors. These two areas were located on the second floor concrete slab and each encompassed a total surface area of less than 2 square feet.

2.3.2 Building Debris Removal and Clean Out

All wooden materials, metal objects, and various other debris inside the building were collected and containerized. In addition, the first and second floors, as well as the top sill plate, were swept and vacuumed. Clean out of the building was performed to

prepare the building for demolition and reduce the radiological (removable) contamination in the building. Clean out was accomplished by removing the loose debris inside the building and then vacuuming the building using a HEPA vacuum. The debris was containerized in four WMBs. The containers were marked in accordance with the FEMP container identification system. This debris was managed as mixed waste and stored in a designated on-site storage facility pending final disposition.

2.3.3 Floor Scabbling

As described in Section 1.0, fire training activities at the FTF included placement of combustible materials (straw, furniture, wood pallets) in the block building where they were ignited during training exercises. To allow repeat training exercises, flammable liquids were added to the combustible materials to facilitate re-ignition. As a result, the concrete floors may have come into direct contact with flammable liquids that may have included spent solvents. Therefore, the concrete was considered to be potentially hazardous or mixed waste.

The building's two concrete floor slabs were treated in accordance with the Hazardous Debris Rule by mechanically removing (scabbling) a minimum of 0.6 centimeters (cm) from the top surfaces, or more if necessary, to achieve a clean debris surface. The scabbled floors were visually inspected and met the requirements of a "clean debris surface." The RCRA Hazardous Debris Rule defines a "clean debris surface" *as a treated surface, when viewed without magnification, that shall be free of all visible contaminated soil and hazardous waste except that residual staining from soil and waste consisting of light shadows, slight streaks, or minor discolorations, and soil and waste in cracks, crevices, and pits may be present provided that such staining and waste and soil in cracks, crevices, and pits shall be limited to no more than 5% of each square inch of surface area* (40 CFR 268.45).

The waste residue, scabbled material (removed concrete), was containerized in one WMB and managed as mixed waste while awaiting analytical results. This waste was sampled for the analytes listed in Table 2-2. The sample results are shown in Table A-1. Based upon these results, the scabbled concrete material was determined to be mixed waste due to the presence of radiological and F-listed constituents. The waste was then shipped to Envirocare, a designated mixed waste disposal facility, for disposal.

Table 2-2. Analyte List.

Radionuclides

Alpha
Beta
Cesium-137
Plutonium-238
Plutonium-239/240
Potassium-40
Radium-226
Radium-228
Strontium-90
Technetium-99
Thorium (total)
Thorium-227
Thorium-228
Thorium-230
Thorium-232
Uranium (total)
Uranium-234
Uranium-235/236
Uranium-238

Inorganics

Aluminum
Antimony
Arsenic
Barium
Beryllium
Cadmium
Calcium
Chromium
Cobalt
Copper
Cyanide
Iron
Lead
Magnesium
Manganese
Mercury
Nickel
Potassium
Selenium
Silver
Sodium
Sulfide
Thallium
Vanadium
Zinc

Volatile Organics

1,1-Dichloroethane
1,1-Dichloroethene
1,1,1-Trichlorethane
1,1,2-Trichloroethane
1,1,2,2-Tetrachloroethane
1,2-Dichloroethane
1,2-Dichloroethylene
2-Butanone (MEK)
2-Hexanone
4-Methyl-2-pentanone
Acetone
Benzene
Bromodichloromethane
Bromoform
Bromomethane
Carbon disulfide
Carbon tetrachloride
Chlorobenzene
Chloroethane
Chloroform
Chloromethane
cis-1,3-Dichloropropene
Dibromochloromethane
Ethylbenzene
Methylene chloride
Styrene
Tetrachloroethylene
Toluene
Xylenes (total)
trans-1,3-Dichloropropene
Tricholoroethylene
Vinyl chloride

Semi-Volatile Organics

1,2-Dichlorobenzene
1,2,4-Trichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
2-Chloronaphthalene
2-Chlorophenol
2-Methylnaphthalene
2-Methylphenol
2-Nitroaniline
2-Nitrophenol
2,4-Dichlorophenol
2,4-Dimethylphenol
2,4-Dinitrophenol
2,4-Dinitrotoluene
2,4,5-Trichlorophenol
2,4,6-Trichlorophenol
2,6-Dinitrotoluene
3-Nitroaniline
3,3-Dichlorobenzidine
4-Bromophenyl-phenyl ether
4-Chloro-3-methylphenol
4-Chloroaniline
4-Chlorophenol-phenyl ether
4-Methylphenol
4-Nitroaniline
4-Nitrophenol
4,6-Dinitro-2-methylphenol
Acenaphthene
Acenapthylene
Anthracene
Benzo(a)anthracene
Benzo(a)pyrene
Benzo(b)fluoranthene
Benzo(g,h,i)perylene
Benzo(k)fluoranthene
bis(2-Chloroethoxy) methane
bis(2-Chloroethyl)ether
bis(2-Chloroisopropyl) ether
bis(2-Ethylhexyl) phthalate
Butylbenzylphthalate
Carbazole
Chrysene

Table 2-2. Analyte List

Dibenzofuran
Dibenzo(a,h)anthracene
Diethylphthalate
Dimethylphthalate
Di-n-butyl phthalate
Di-n-octyl phthalate
Fluoranthene
Fluorene
Hexachlorobenzene
Hexachlorobutadiene
Hexachlorocyclo pentadiene
Hexachloroethane
Indeno(1,2,3-cd)pyrene
Isophorone
Naphthalene
Nitrobenzene
N-Nitroso-di-n-propylamine
N-Nitrosodiphenylamine
Pentachlorophenol
Phenanthrene
Phenol
Pyrene

PCBs/Pesticides/Dioxins

Aldrin
alpha-BHC
alpha-Chlordane
Aroclor-1016
Aroclor-1221
Aroclor-1232
Aroclor-1242
Aroclor-1248
Aroclor-1254
Aroclor-1260
beta-BHC
Chlordane
4,4'-DDD
4,4'-DDE
4,4'-DDT
delta-BHC
Dieldrin
Endosulfan I
Endosulfan sulfate
Endosulfan II
Endrin ketone
Endrin
Endrin aldehyde
gamma Chlordane
gamma-BHC (Lindane)
Heptachlor
Heptachlor expoxide
1,2,3,4,7,8-HxCCD
1,2,3,6,7,8-HxCCD
1,2,3,7,8,9-HxCCD
Total HxCDD
Methoxychlor
1,2,3,7,8-PECDD
Total PECDD
2,3,7,8-TCDD
Total TCDD
Toxaphene

000034

After verification of 0.6 cm of surface removal from the two scabbled floors (as shown in Table B-1), the floors were vacuumed (with brush agitation) to remove all residual material. The floors were then inspected by a licensed Professional Engineer (PE) to verify that the concrete floors were clean in accordance with the RCRA Hazardous Debris Rule. The PE's inspection verified that the floors were a "clean debris surface."

2.3.4 Post-Scabbling Radiation Survey

A radiation survey of the scabbled floors was performed after scabbling was complete. The survey showed that all radiological levels were below 250 dpm, with most below background. Therefore, the concrete floor was not considered radiologically contaminated.

2.3.5 Pre-Demolition RCRA Sampling

Four pre-demolition samples of the block building walls were collected for RCRA characterization of the debris. The four sample locations (Figure 2-1) were randomly selected locations on the first floor pursuant to the Project Specific Sampling and Analysis Plan (PSAP). These sampling results, as shown in Table A-2, indicated that all analytes (see Table 2-2) were either below detection limits or below removal action clean up levels. One of the five samples detected benzene (4 ppb) and toluene (3 ppb), but these detections were attributed to the use of internal combustion engines near the sampling activities and not related to waste activities. The debris was determined to be free of listed wastes and did not exhibit any hazardous characteristics, and is therefore not required to be managed under Subtitle C of RCRA.

2.3.6 Building Demolition

All decontamination, scabbling, and final radiological surveys of the building were completed in-place prior to demolition. After the final radiological survey was completed, the building was demolished as one unit using a track-hoe. The center two-thirds of the east and west walls on the second floor were collapsed onto the second floor slab. The roof was then broken at the center and allowed to fall into the center area. The second floor north and south walls were also dropped onto the second floor slab. The same process was repeated for the first floor walls, dropping the second floor (with roof and second floor wall rubble) onto the first floor slab. The rubble was

segregated, downsized (using a boom mounted air hammer), stockpiled and covered with a tarp.

2.3.7 Foundation Removal

After the building was demolished, the foundation and footings were excavated with the track-hoe. While excavating the foundations and footings of the building, a section of clay tile pipe was encountered. The pipe was beneath the northwest corner of the building and ran in a northeast to southwest direction. The footers had originally been poured directly on top of the tile line and concrete from the pour had filled the inside of the pipe. Therefore, removal of the footer sections in this area also required removing sections of the tile line.

After excavating footers and tile pipe, a field check of the immediate area using a photo-ionization detector (PID) indicated the presence of organic compounds at concentrations ranging from 12 to 35 ppm. As a result, soil samples were collected from the area to identify any organic compounds present. The area of the pipe was covered with plastic until samples could be collected. Analyses of the samples indicated no contaminants of concern and no soil excavation was required. On the basis of these results, neither the footers nor the soil around the clay tile were deemed to contain any RCRA regulated contaminants. The foundation and footer debris was segregated from the surrounding soil and stockpiled with the building debris.

2.3.8 Post-Excavation Verification Sampling

After the block building and its concrete slab foundation were removed, two post-excavation soil samples were collected to verify that all radiological and/or PCB-contaminated material was removed. These two soil samples were collected from the soil surface beneath the first floor foundation of the block building as shown on Figure 2-2. These samples were analyzed for the analytes listed in Table 2-2, and are summarized in Table A-3, which shows those analytical results that were above detection limits. There was one PCB detection with Aroclor 1254 at 39 ppb, well below the 2 ppm excavation criteria. Therefore, further excavation was not required.

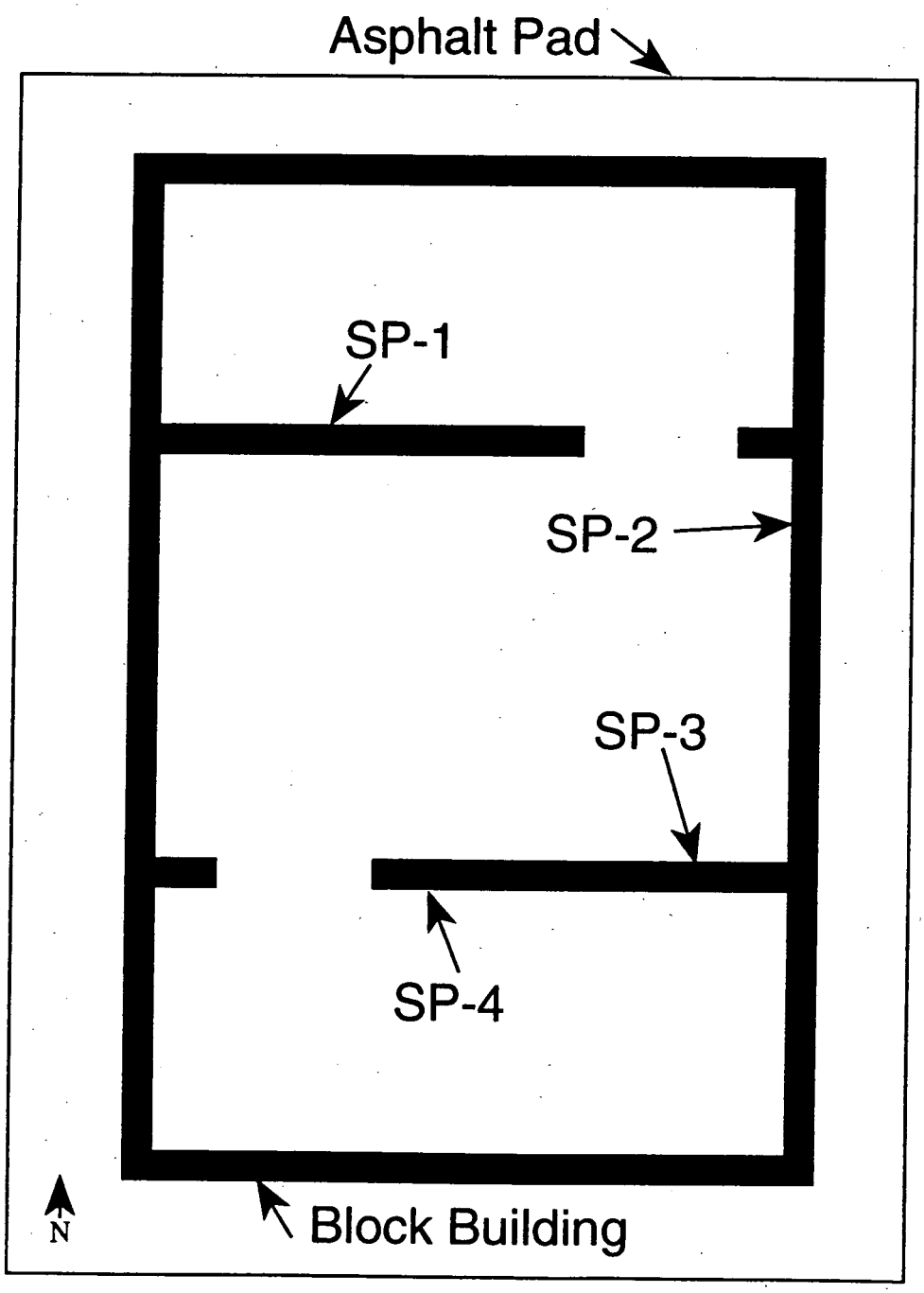

Figure 2-1. Pre-Demolition RCRA Characterization Sampling Locations for the Concrete Block Building.

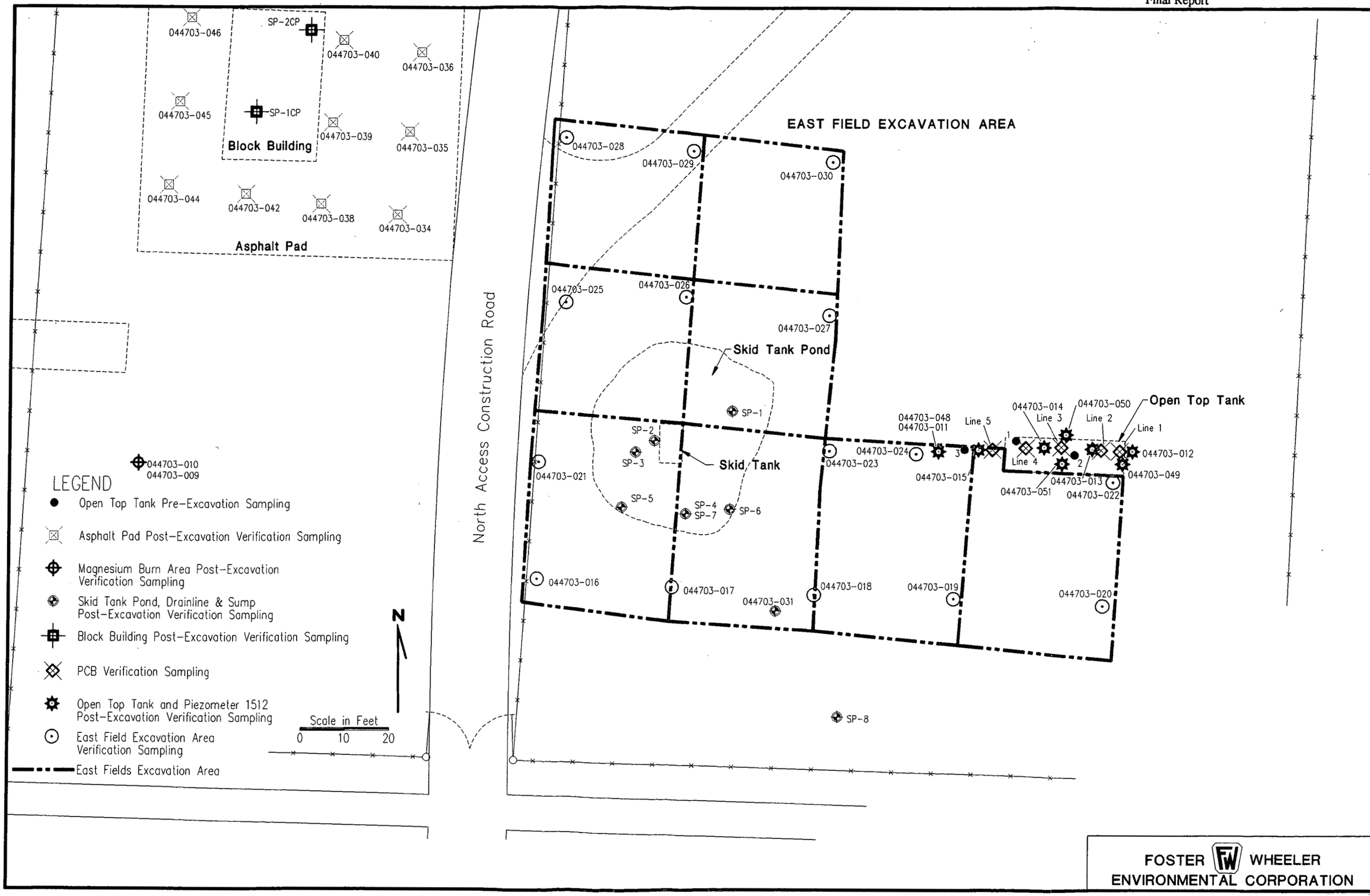

Figure 2-2. Location of FTF Sampling Activities.

2.3.9 Building Demolition Debris Disposition

Radiological survey results of the building demolition debris were all below unrestricted release levels (in accordance with DOE Order 5400.5) and the sampling discussed in Section 2.3.5 did not detect any contaminants above regulatory limits. Therefore, the building demolition debris is currently being stored in one tarped stockpile on-site pending approval for free release. The FTF site is inspected weekly. The sill plate, gutters, pipe, and any miscellaneous metals were separated from the rest of the building debris and considered low level radioactive (LLR) waste. These wastes were put into 55-gallon drums and stored in a designated on-site storage facility pending final disposition. The expansion joint around the first floor slab was separated and containerized as mixed waste.

2.4 ASPHALT PAD REMOVAL AND CONTAINERIZATION

The asphalt pad that surrounded the block building is shown in Figure 1-2. The pad was segregated into two waste categories: mixed waste and LLR waste. Because of the presence of the block building debris stockpiles located on the northern and western most sides of the asphalt pad, the pad was removed in two stages. The first stage included the majority of the southern and eastern most areas of the pad. This excavated material was containerized into 30 WMBs. The containerized asphalt material was sampled and analyzed for the analytes listed in Table 2-2. The entire asphalt pad was considered to be potentially radiologically contaminated. In addition, portions of asphalt pad were managed in accordance with RCRA due to the potential presence of F002 and F005 wastes. During fire fighting activities, waste residues, which may have contained F002 and F005 were washed out onto the asphalt pad with water spray. Under the mixture rule, the mixture of water and F002 and F005 residue became a hazardous waste. This waste may have contaminated portions of the asphalt pad causing these portions to become a hazardous waste under the mixture rule. Therefore, the waste was managed as a mixed waste pending sampling and analysis. The portions of the asphalt pad that did not come into contact with the contaminated water were determined by observing the slope of the pad and the locations of the weep holes on the first floor which allowed water to drain out of the building. This part of the pad was managed as LLR waste. Twenty-one (21) of the WMBs were managed as mixed waste, and ten (9) were classified and managed as LLR waste. The nine WMBs containing LLR waste and

the twenty-one WMBs containing mixed waste are stored in a designated on-site storage facility pending final disposition.

After the block building debris was moved off the remainder of the asphalt pad, the second stage of removing the northern and western sections of the pad was completed. The remainder of the asphalt pad was excavated, placed into WMBs, and sampled. The WMBs are stored in a designated on-site storage facility pending final disposition.

The suspected mixed waste contained in the WMBs was sampled for characterization purposes. These sample results are shown in Table A-4. These samples were analyzed for the analytes listed in Table 2-2. Table A-4 shows that tetrachloroethylene and toluene (F005) wastes were only detected in trace amounts. The highest level of tetrachloroethylene and toluene was 0.0025 mg/kg and 0.00092 mg/kg, respectively. The DOE requests, with approval of this report, that EPA determine under 40 CFR 261.3(f)(2) that due to the deminimus levels of F002 and F005 constituents found in the debris that it is no longer contaminated with hazardous waste. This waste will be managed as mixed waste until such a determination has been made.

After portions of the asphalt pad had been excavated, 10 surface soil samples were collected from the area around and beneath the former pad to verify that all radiological and/or PCB-contaminated material was removed (DOE 1994a). The locations and results of the samples are shown in Figure 2-2 and Table A-5, respectively. These samples were analyzed for the analytes listed in Table 2-2. All radiological and PCB sampling results were below detection limits. Therefore, further excavation was not required.

2.5 OPEN TOP TANK REMOVAL

Removal of the open top tank involved conducting pre-removal sampling, removing surface water from the tank, removing sludge from the tank, removing the tank, size reducing the tank, excavating the spill soils, performing post-excavation sampling, and backfilling the excavation areas. These activities are discussed in detail in this section.

2.5.1 Pre-Removal Sampling

Pre-excavation/demolition sampling of surface water and sludge was conducted during the open top tank removal process. Open top tank pre-excavation/demolition sampling results are presented in Table A-6.

Surface water samples were collected to characterize the water that had collected in the tank. A total of four surface water samples were collected and analyzed for the analytes listed in Table 2-2. The sample locations are shown in Figure 2-3. Based on these results, it was determined that the site VOC wastewater treatment system in Plant 8 would be sufficient for the treatment of this water. The OEPA was notified and approved the use of on-site treatment.

Four sludge samples were collected to characterize a layer of sludge present at the bottom of the tank. These sludge samples were sampled in the same locations and analyzed for the same analytes (see Table 2-2) as the surface water samples mentioned above. Total analyses, not TCLP, were performed and the results are presented in Table A-6. The determination for RCRA characteristics was made by dividing the total result by 20 for comparison to the regulatory limits. This comparison indicated that the sludge is characteristically hazardous for lead (D008), benzene (D018), carbon tetrachloride (D019), 1,2-dichloroethane (D028), and 1,1-dichloroethylene (D029). Materials burned in the open top tank have also been determined through process knowledge to contain spent solvents (F002, F003, and F005), making the sludge a RCRA listed hazardous waste (F002, F003, and F005) by virtue of the mixture rule. Sample results also detected PCBs in excess of 50 ppm. Two of the four sludge samples (samples 2 and 4) showed elevated levels of PCBs (66 and 53 ppm). Because the sludge in the open top tank was also determined to be radiologically contaminated, the sludge is containerized and managed as a TSCA mixed waste.

2.5.2 Surface Water Removal

The open top tank contained approximately 3,000 gallons of rusty water. The water contained black oily globules ranging in size from 0.5 inches to about 6 inches. Before the water was removed, impermeable heavy duty fire retardant ground coverings were spread around the open top tank, beneath the pump, and between these areas and the receiving tank over which the pump discharge lines were routed. These coverings were selected and deployed for spill control according to standard site management practices detailed in Removal Action No. 12. The water, managed as a mixed waste, was

pumped out of the open top tank using a "Super Sucker" - a vacuum operated pump on a tanker truck with a capacity of 2,800 gallons. The water was removed from the tank and transferred to the F1-512 holding tank located within the Plant 2/3 complex (90 day storage). Two trips to the holding tank were required to remove the 3,000 gallons of water from the open top tank.

2.5.3 Sludge Removal

The open top tank contained approximately 14 inches of heavy black oily/watery sludge beneath the water. The sludge, which was determined through sampling and analysis and process knowledge to be a PCB mixed waste (as described in Section 2.5.1), was pumped from the tank and containerized into 55 gallon (open top) drums. A total of 65 drums were used, all of which were handled and stored according to site protocols. The drums were overpacked into 85 gallon drums and are stored in a designated TSCA on-site storage facility pending final disposition.

2.5.4 Tank Removal

The open top tank was lifted from its original position with a forklift and relocated to be size reduced. Each end of the tank was lifted separately and railroad ties were placed under it to keep the tank off the ground. Once each end was lifted off the ground, the forklift positioned itself under the center of the tank, lifting and moving the tank to a position within a bermed containment area along the east fence. Squeegees and hand tools were used to remove any remaining small quantities of sludge.

2.5.5 Size Reduction of the Tank

After the open top tank was removed from its location, attempts to size reduce the tank with an acetylene cutting torch were abandoned because the presence of combustible oily films on the tank's inner surface presented a potential fire hazard. It was decided that shearing the tank apart with demolition shears mounted on a large trackhoe would be a much safer and effective method of size reducing the tank. The size reduction of this tank will be compleyed in June or July of 1995. It will be containerized in WMBs, managed as a mixed waste, and stored in a designated on-site storage facility pending final disposition. Prior to shearing, rainwater (approximately 800 gl) that has accumulated in the tank will be removed and treated at the Plant 8 VOC system.

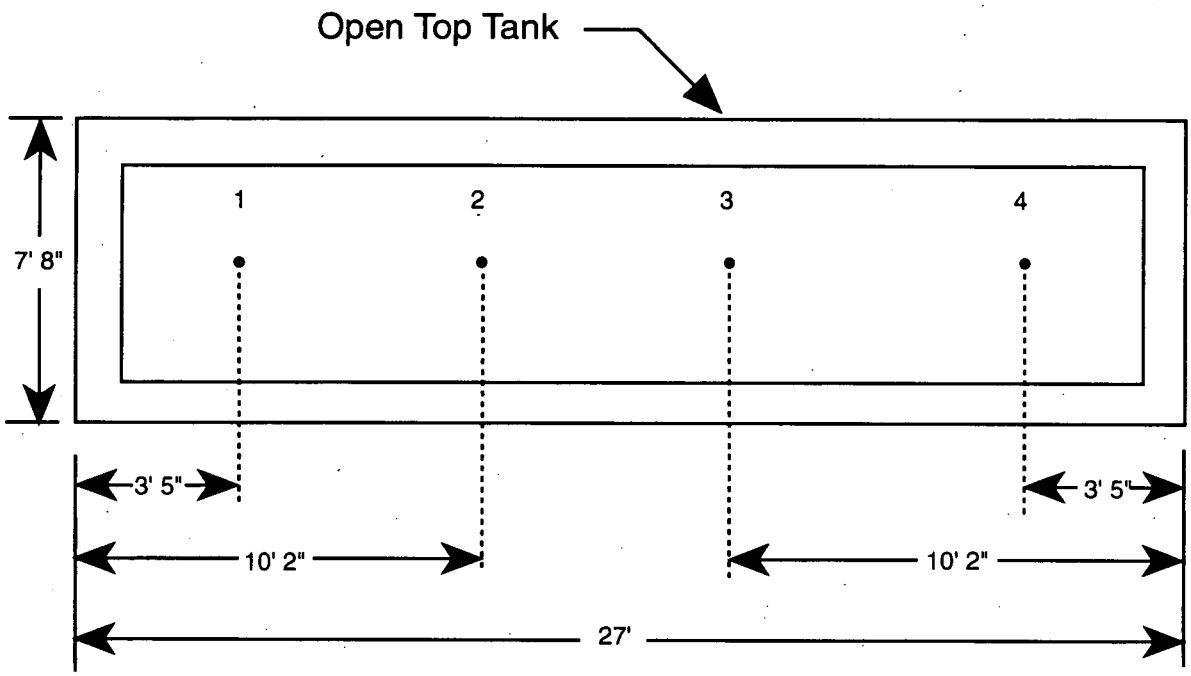

Figure 2-3. Open Top Tank Water and Sludge Sampling Locations.

2.5.6 Excavation of Stained Soils

Once the open top tank was removed, an area of significant staining, exhibiting a strong degraded petroleum and sulfur odor, was evident in the soil under the western two-thirds of the resulting tank pit. The residues and staining were assumed to originate from the contents of the open top tank spilling on the ground. One possible explanation for the spillage was that rain water mixed with residues in the tank and overflowed, causing the residues to spill on the ground below. This information along with the fact that the sludge (tank residues) was dispositioned as PCB contaminated, required the spill area to be excavated.

Before excavating the stained soil, three soil samples were collected from the most visibly stained areas for characterization purposes. A small backhoe was used to excavate the soils under and around the open top tank. As the stained soil was excavated, it was immediately placed into 55-gallon drums using the backhoe and a drum funnel, and managed as a PCB mixed waste pending characterization. Contaminated soil was removed to a radius of approximately one foot past the outer boundary of staining. A total of 128 drums of soil waste was produced. The drums were marked (coded) in accordance with the FEMP container identification system. The PCB-contaminated mixed waste is stored in a designated on-site storage facility pending final disposition. Equipment used for the excavation was decontaminated after use.

The locations of the three samples are shown on Figure 2-2, and the results of the analyses are summarized in Table A-7. These samples were analyzed for the analytes listed in Table 2-2. Analytical results in Table A-7 reveal that the soil is not characteristically hazardous and does not contain any listed hazardous waste. The soil contained PCBs up to 23 ppm, however, under EPA Superfund guidance, *A Guide on Remedial Actions at Superfund Sites with PCB contamination*, this soil is not a TSCA regulated waste because TSCA's anti-dilution rule does not apply at Superfund sites. PCB contaminated soils are regulated based upon the concentration of PCBs found in the soils at the time remediation is conducted. Since the PCBs in the soil near the open top tank are less than 50 ppm, the soils are not regulated under TSCA. The soils, which contained uranium above the Removal Action No. 17 action level for radiologically contaminated soils, was characterized as LLR waste. However, at this time it is not known how excavated soils containing greater than 2 ppm but less than 50 ppm PCBs will be disposed. Therefore, these soils will be managed as TSCA waste pending final disposition decision based on the waste acceptance criteria of the selected disposal facility.

After the excavation was completed, but before backfilling was completed, rainwater collected in the open excavation pit. A total of 3,000 gallons of accumulated rainwater was removed from the open top tank excavation and treated using the same removal and treatment processes described above in Section 2.5.2.

2.5.7 Post-Excavation Sampling

After completing excavation of the open top tank spill area soils, post-excavation sampling was performed to verify that the radiological and PCB-contaminated soil was excavated in accordance with the RAWP. These sampling results also provided characterization of the residual soils for final remediation under the OU5 ROD. A total of seven soil samples were collected from the open top tank excavation area, and two samples from the former location of Piezometer 1512. Three samples were collected from the three sidewalls of the excavation area, and four samples were collected from the floor of the excavation area. A composite sample from the sidewalls and a soil sample from the base of the Piezometer 1512 excavation area were also collected (DOE 1994). The locations of the samples are shown in Figures 2-2 and 2-4. The sampling results are summarized in Table A-8. These samples were analyzed for the analytes listed in Table 2-2. All radiological sampling results were below detection limits and no visual staining was present, but PCBs were detected in nine sample results to a maximum level of 6.8 ppm. Although the RAWP specified a soil excavation criteria of 2 ppm PCBs, the decision was made to discontinue excavation of these soils. The final remediation decision will be based on OU5's risk based remediation levels.

2.5.8 Backfilling

After the stained area under and around the open top tank was excavated, the resulting pit was backfilled. As presented previously in Section 2.5.7, the results of the post-excavation sampling indicated that sufficient soil had been removed. Therefore, the excavated area was backfilled with soil obtained from the FEMP Removal Action No. 17 Class I stockpile. The soil in the Class I stockpile does not contain any RCRA constituents nor was it generated from a HWMU. Further, the soil does not contain total uranium concentrations greater than 100 pCi/g, total thorium concentrations greater than 50 pCi/gm, or total radium concentrations greater than 5 pCi/g. A bulldozer repeatedly compacted the backfilled soil at no greater than 2-foot lifts. A total of 48 cubic yards of soil was used to backfill the open top tank excavation area.

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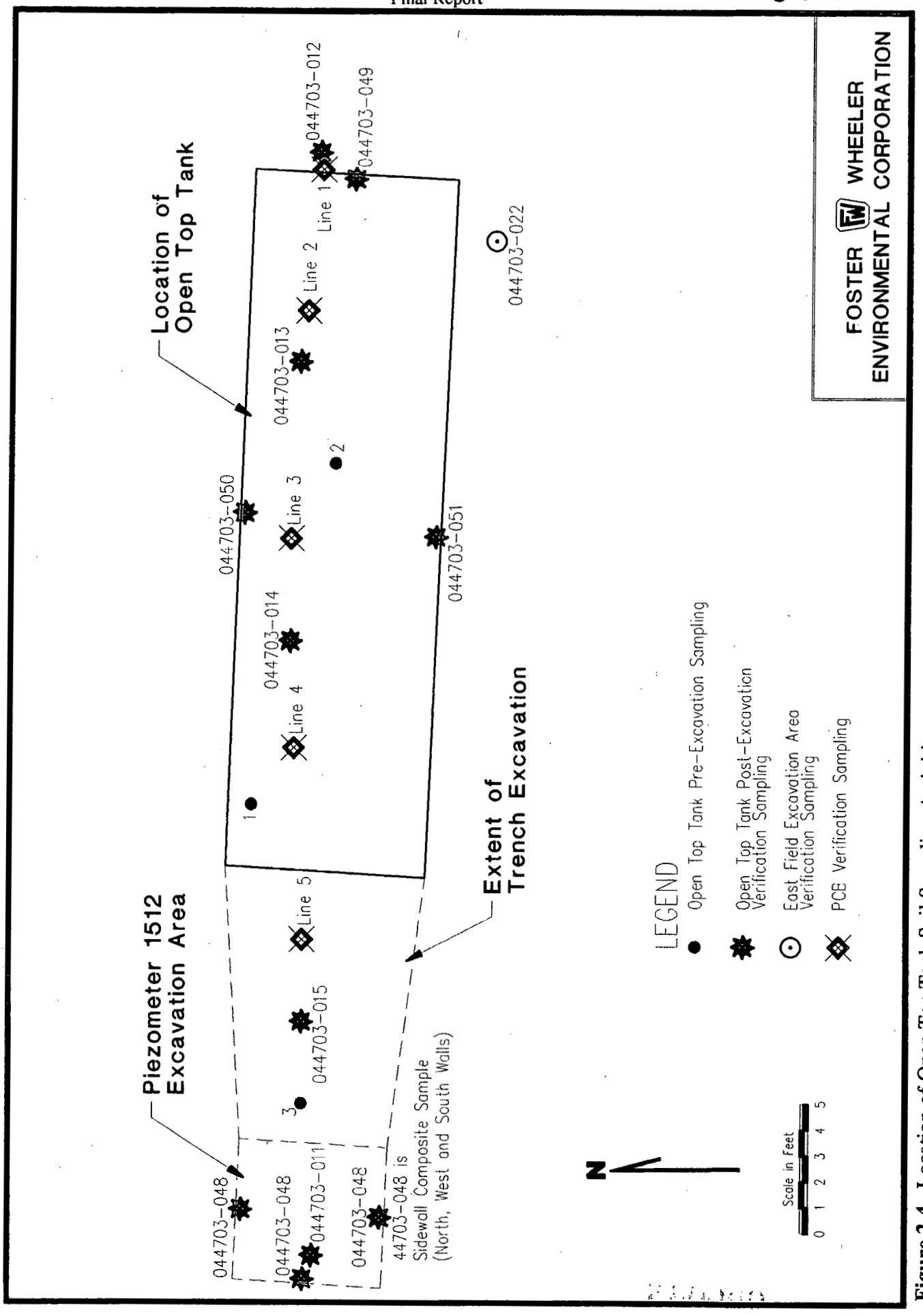

Figure 2-4. Location of Open Top Tank Soil Sampling Activities.

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2.6 PRESSURE VESSEL REMOVAL

Previous radiological surveys indicated that the pressure vessel contained only two small areas of radiological contamination. Prior to beginning the field work on the pressure vessel, it was resurveyed. The resurvey, which employed revised site survey procedures, identified a wider extent of radiological contamination on the vessel than was previously identified.

After obtaining the applicable cutting permits, the pressure vessel was cut into three sections using an acetylene torch. Each anticipated cut was marked, and all leaded paint was ground off to approximately two inches on either side of the proposed cut. The exact locations of the proposed cuts were guided by FEMP personnel to ensure that no radiological contamination was encountered throughout the grinding and cutting event. A herculite ground cover was placed on each side beneath the tank to catch the grinding fragments. These fragments were collected and put in the WMBs containing the block building clean out debris. Each section of the pressure vessel was wrapped in polypropylene (Figure 2-5). The three sections were transported via a large forklift, to the north end of the FEMP Decontamination and Decommissioning (D & D) facility for further size reduction. The size reduced metal was recycled under the FEMP Restricted Use Metals Program.

2.7 SKID TANK AND SKID TANK POND REMOVAL

Removal of the skid tank and skid tank pond included pre-excavation sampling, removing the skid tank, size reducing and containerizing the skid tank, removing and containerizing the skid tank pedestals, excavating the skid tank pond, excavating the sump and drain line, removing the surface water, performing post-excavation sampling, and backfilling the excavation areas. These activities are discussed in detail in the sections that follow.

2.7.1 Pre-Excavation Sampling

Pre-excavation water samples were collected from the skid tank pond to characterize the rain water that had collected in the pond. A total of four surface water samples were collected and submitted for analysis; however, when excavation operations began, the area of the pond was dry. Therefore, the pre-excavation water samples were no longer required and were not analyzed.

2.7.2 Tank Removal

The skid tank was cut from its pedestal mounts using an acetylene torch. The tank was hoisted from the contaminated basin with a trackhoe and placed on a prepared laydown area for size reduction.

2.7.3 Size Reduction and Containerization

The skid tank was cut into approximately 2 foot by 4 foot sections using an acetylene torch and placed into two WMBs. The WMBs were marked in accordance with the FEMP container identification system and are stored in a designated on-site storage facility pending final disposition.

2.7.4 Pedestal Removal and Containerization

The concrete pedestals supporting the skid tank were lifted, downsized, and placed into a WMB using the track hoe. The WMB was marked in accordance with the FEMP container identification system. All required permits were obtained and in place during the operation. Due to the extensive pond soil contamination, the pedestal material was managed as mixed waste. This mixed waste was shipped to Envirocare for disposal. During the skid tank pond excavation described below, the pedestal footers were removed after approximately 2 feet of soil had been excavated from the pond. These footers were handled and treated the same as the pedestals.

2.7.5 Skid Tank Pond Excavation

Upon removal of the skid tank pedestals, the skid tank pond was excavated in 1 foot increments to a depth of 2 feet. A degraded petroleum odor with sulfur was evident, as well as black stained soil, for the entire depth. After the first two feet were excavated, the pond was divided into two halves, eastern and western. The eastern half of the pond was excavated to a depth of 3 feet and no longer exhibited elevated PID readings or radiological screening above the action level of 750 cpm (as described in section 2.9).

Excavation of contaminated surface soil in the western area of the skid-tank pond was conducted to a depth of 5 feet below grade, just above the upper-surface of the perched water layer (average depth is 5.37 feet below grade). The removal of contaminated soil to this depth effectively satisfied the removal action objectives for surface source control and mitigation of potential near-term risks to human health and the environment. As stated in the RAWP, soil excavation into the perched water layer was not planned as an

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Figure 2-5. OU3 Fire Training Facility Wrapped Section of Pressure Vessel After Being Moved to the Site Decontamination Pad.

element of the removal action based on the significant risk that excavation activities would initiate/accelerate downward migration of contaminants to the aquifer as a result of penetrating the geologic features that cause the perched water layer. The persistence of perched water at the FTF is evidence that conditions currently exist within the vadose zone that restrict or retard downward migration of contaminants present within the soil. The final remediation of residual subsurface contamination at the FTF will be addressed as necessary in the ROD for OU5, Environmental Media. Deferring to OU5 ensures that any further actions determined to be necessary within the area of the FTF will be final actions based on risk-based cleanup criteria established for the FEMP.

Soil samples were collected from the excavated pond for analysis as described in Section 2.7.8. The excavation pit was covered with a tarp at all times when work was not being performed in this area to mitigate the possible infiltration of rainwater. Final remediation of contaminated soils in the skid tank pond will be addressed as appropriate within the OU5 ROD.

Approximately 324 cubic yards of soil removed from the skid tank pond excavations was placed in 108 WMBs and considered mixed waste as described in Section 2.7.8. An additional 5 WMBs contained the visibly stained petroleum contaminated sludge and soils from the surface of the pond bottom. The containers were marked in accordance with the FEMP container identification system. The WMBs are stored in a designated on-site storage facility pending final disposition.

2.7.6 Sump and Line Excavation

The skid tank pond sump area was excavated to a depth of approximately three feet with the track hoe. The surface soil of the sump area showed very little evidence of staining. A PID screening was performed on the excavated area, which concluded that the excavation was complete. The sump area soils were containerized in the 5 WMBs containing the visibly stained petroleum contaminated mixed waste sludge and soils removed from the surface of the skid tank pond bottom. These 5 WMBs are stored in a designated on-site storage facility (as well as the additional 108 WMBs from the pond excavation) pending final disposition.

The pipe connecting the skid tank pond and sump was also excavated by hand. The excavated material was managed as a mixed waste and was placed into the WMBs containing the soil excavated from the skid tank pond.

2.7.7 Surface Water Removal

The skid tank pond was dry when excavation started, but after excavation of the skid tank pond, sump, and line, approximately 7,000 gallons of rain water collected on the tarp covering the excavated area prior to backfilling the area. The rain water was removed via a portable pump from the excavation covering and stored in three portable 2,500 gallon poly tanks for treatment. With the concurrence of OEPA this water was treated in the Plant 8 VOC wastewater system.

2.7.8 Post-Excavation Sampling

After excavation, soil samples were collected from the skid tank pond, sump, and pipebed areas to verify that the radiological and PCB-contaminated soil was excavated in accordance with the RAWP. These sampling results also provided characterization data of the residual soils for final remediation under the OU5 ROD. Six surface soil samples were collected from the skid tank pond area, one sample was collected from the sump area, and one sample was collected from the pipebed area (DOE 1994). The locations of the samples are shown in Figures 2-2 and 2-6. The sampling results are summarized in Table A-9. These samples were analyzed for the analytes listed in Table 2-2. Although PCBs were detected in these samples, the results were all below the 2 ppm excavation criteria. Point SP-3 had total uranium at 171.8 pCi/g. All other radiological sampling results were either below detection levels or removal criteria.

As discussed above, the excavated soil was containerized in 113 WMBs. Twelve (10 percent) of these 113 WMBs were sampled for waste characterization purposes. These samples were analyzed for the analytes listed in Table 2-2 and the results of these analyses are shown in Table A-10. The analyses detected elevated levels of uranium. PCBs were detected in one sample at a concentration of 5.5 ppm and in another sample at a concentration of 1 ppm. Since EPA guidance does not require application of the anti-dilution rule to Superfund sites, the soils were determined to not require regulation under TSCA. However, at this time it is not known how excavated soils containing greater than 2 ppm but less than 50 ppm PCBs will be disposed. Therefore, these soils will be managed as TSCA waste pending final disposition decision based on the waste acceptance criteria of the waste disposal facility.

2.7.9 Backfilling

After the contaminated area around the skid tank pond and sump was excavated, the resulting pit was backfilled. The results of the post-excavation sampling and analysis, as

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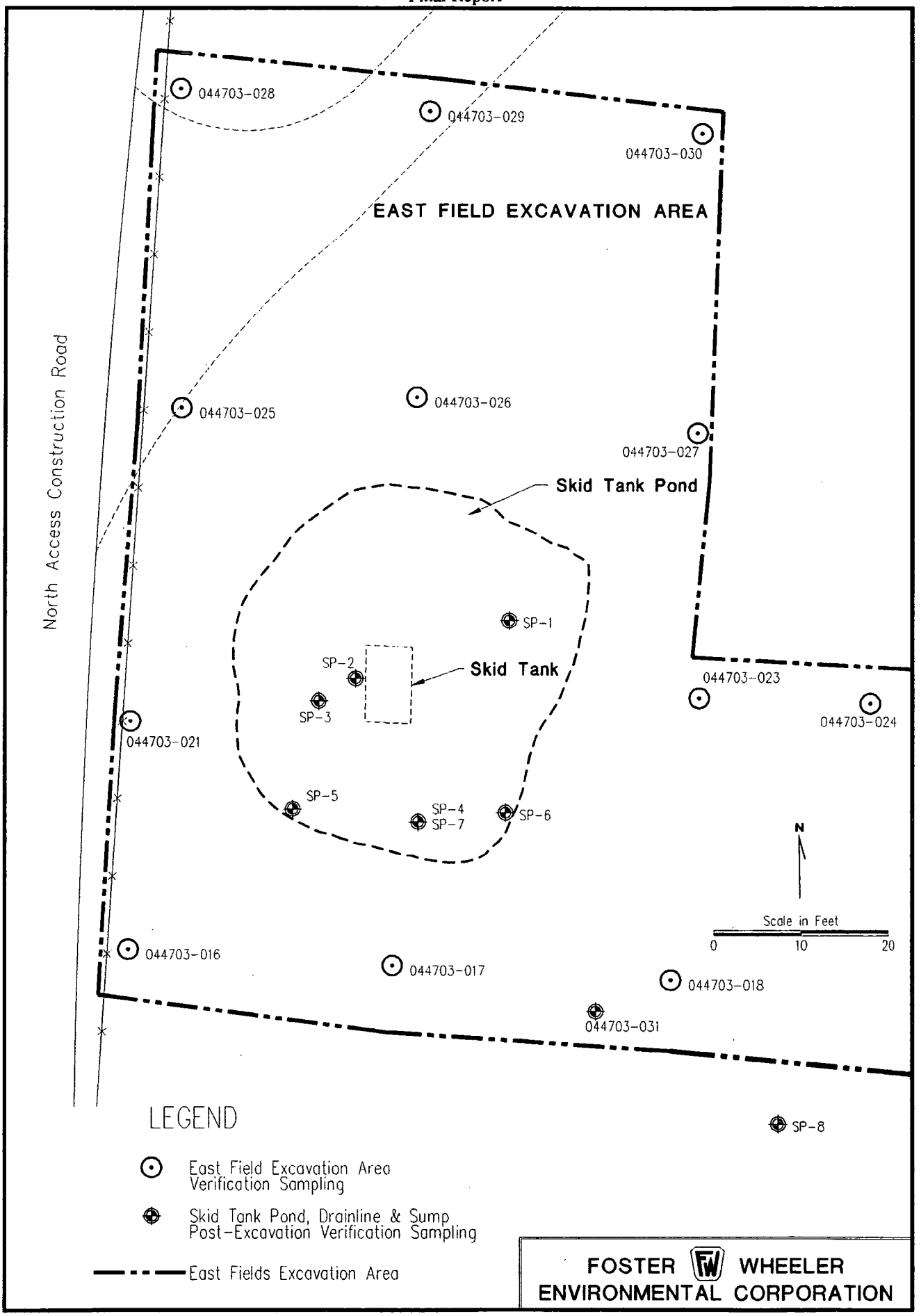

Figure 2-6. Location of Skid Tank Pond, Sump, and Drainline Soil Sampling Activities.

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described in Section 2.7.8 above, indicated that sufficient soil had been removed. Therefore, the excavated area was backfilled and compacted as described in Section 2.5.8. A total of 362 cubic yards of soil was used to backfill the skid tank pond and sump excavation areas.

2.8 MAGNESIUM BURN REMOVAL

The magnesium burn area soils were excavated and stockpiled. A total of 2.7 cubic yards of soil was excavated from the magnesium burn area. The soil was managed, stockpiled, and covered as specified in Removal Action No. 17. The stockpile was placed immediately to the north of the excavated area and managed under Removal Action No. 17 pending characterization and final disposition.

Two post-excavation soil samples were collected from the excavated magnesium burn area to verify that all the radiological and PCB-contaminated soil was removed. These sampling results also provided characterization data of the residual soils for final remediation under the OU5 ROD. The soil samples consisted of a composite from the sidewalls of the excavated area and a sample from the center of the excavation floor (DOE 1994). The locations of the samples are shown in Figure 2-2. The sampling results are summarized in Table A-11. These samples were analyzed for the analytes listed in Table 2-2. All radiological and PCB sampling results were below detection limits. Therefore, further excavation was not required.

The stockpiled soil was sampled for waste characterization purposes. Four samples were collected from the stockpiled soil excavated from the magnesium burn area. One sample was collected from the center of each quarter of the stockpile, as shown in Figures 2-7 and 2-8. The sampling results are summarized in Table A-12. These samples were analyzed for the analytes listed in Table 2-2. The soil did not contain any listed constituents and did not exceed any RCRA characteristic toxicity levels. No uranium, thorium, or radium was detected above Removal Action No. 17 guidelines. Therefore, the soil will be managed in accordance with Removal Action No. 17 guidelines.

After the magnesium burn area was excavated, the resulting pit was backfilled. Results of the sampling indicated that sufficient soils had been removed. Therefore, the excavated area was backfilled and compacted as described in Section 2.5.8. A total of 3 cubic yards of soil was used to backfill the excavated magnesium burn area.

2.9 EAST FIELD SOILS REMOVAL

The east field soils refers to the field across the street from (east of) the block building where areas of radiologically contaminated soil, identified during a radiological survey conducted with a NaI detector, was excavated. The term "east field" was used during the field activities to easily identify this area.

Radiological walkover surveys were performed at the FTF using a Sodium Iodide (NaI) detector, as described in the RAWP. The detector's correlation value for a uranium concentration of >100 pCi/g was 794 cpm. The design of the instrument allowed an alarm setting at either 750 cpm or 800 cpm. The 750 cpm setting (a more conservative setting than the 800 cpm setting) was selected and designated as the field action level. The radiological walkover survey identified the areas of soil above 794 cpm, as shown in Figure 2-9. These areas were marked and excavated. The initial excavation of this soil was performed to a depth of six inches rather than twelve inches as indicated in the Removal Action Work Plan (RAWP). The change from 12-inch to 6-inch lifts was made to minimize both the volume of excavated soil to be stockpiled and the volume of soil required for backfill. Additional remediation of the soils at the FTF will be accomplished in accordance with the Operable Unit 5 (OU5) Record of Decision. After the top six inches of soil was removed, a NaI radiological screening was performed and determined that the remaining soil was below the field action level (794 cpm). Also, a PID survey was performed on the remaining soil with no significant PID readings observed. Verification samples were collected from the excavation base. A total of 136 cubic yards of soil was excavated from the east field area and stockpiled in two covered soil piles.

The excavated soil was managed, stockpiled, and covered as specified in Removal Action No. 17 until final characterization sampling and analyses were performed. The stockpiled soil was sampled for waste characterization purposes. Four samples were collected from each of the two soil stockpiles excavated from the east field. One sample was collected from the center of each quarter of the stockpiles, as shown in Figures 2-7 and 2-8. The sampling results are summarized in Table A-13. These samples were analyzed for the analytes listed in Table 2-2. Analytical results in Table A-13 reveal that the soil is not a characteristically hazardous waste and does not contain any listed hazardous waste. Although tetrachloroethylene was found in the soil of one soil pile at a level of 0.002 ppb, there is no documentation that spent tetrachloroethylene was ever used or brought to the Fire Training Facility; thus, the soils do not contain any listed waste.

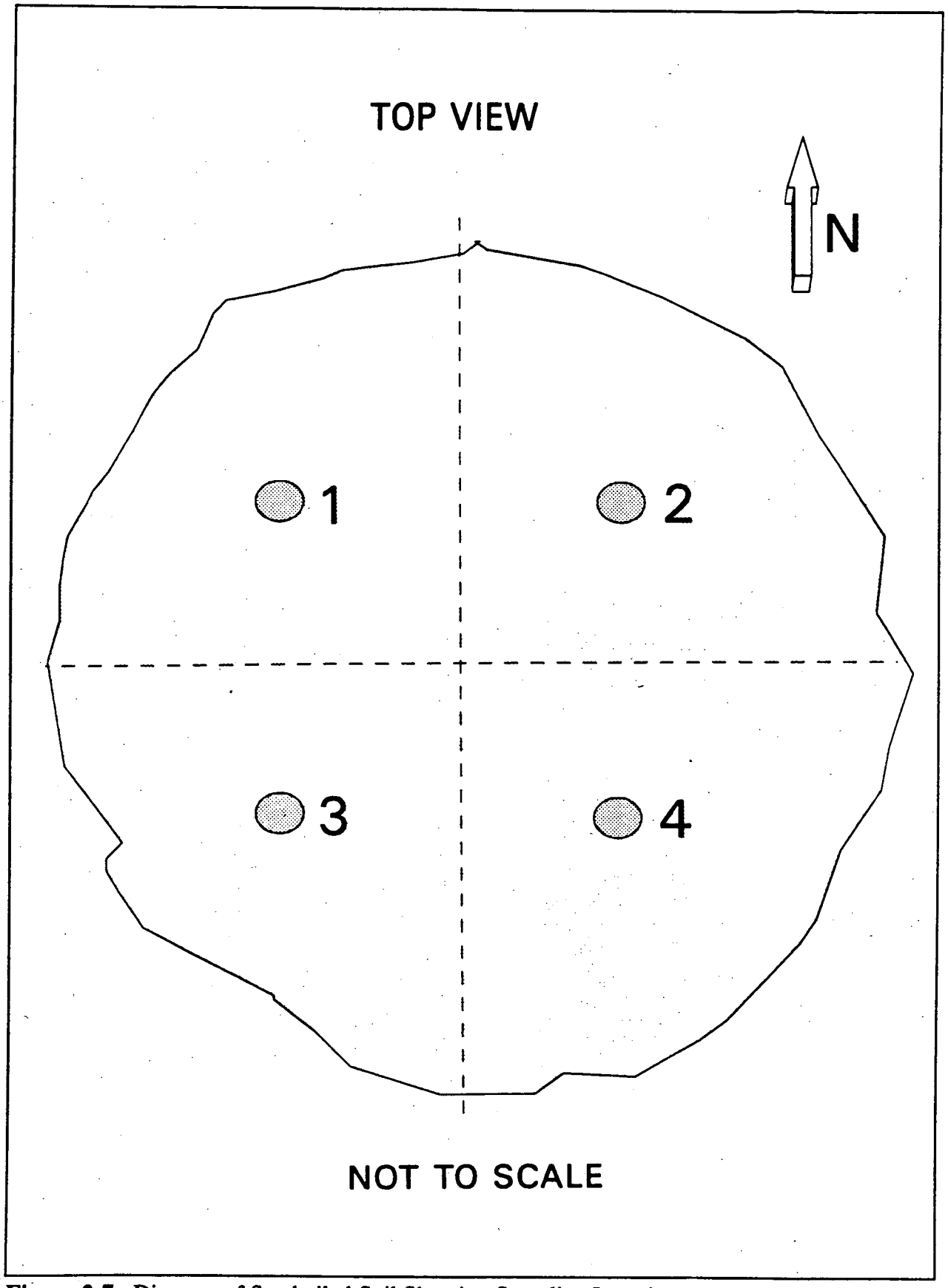

Figure 2-7. Diagram of Stockpiled Soil Showing Sampling Locations.

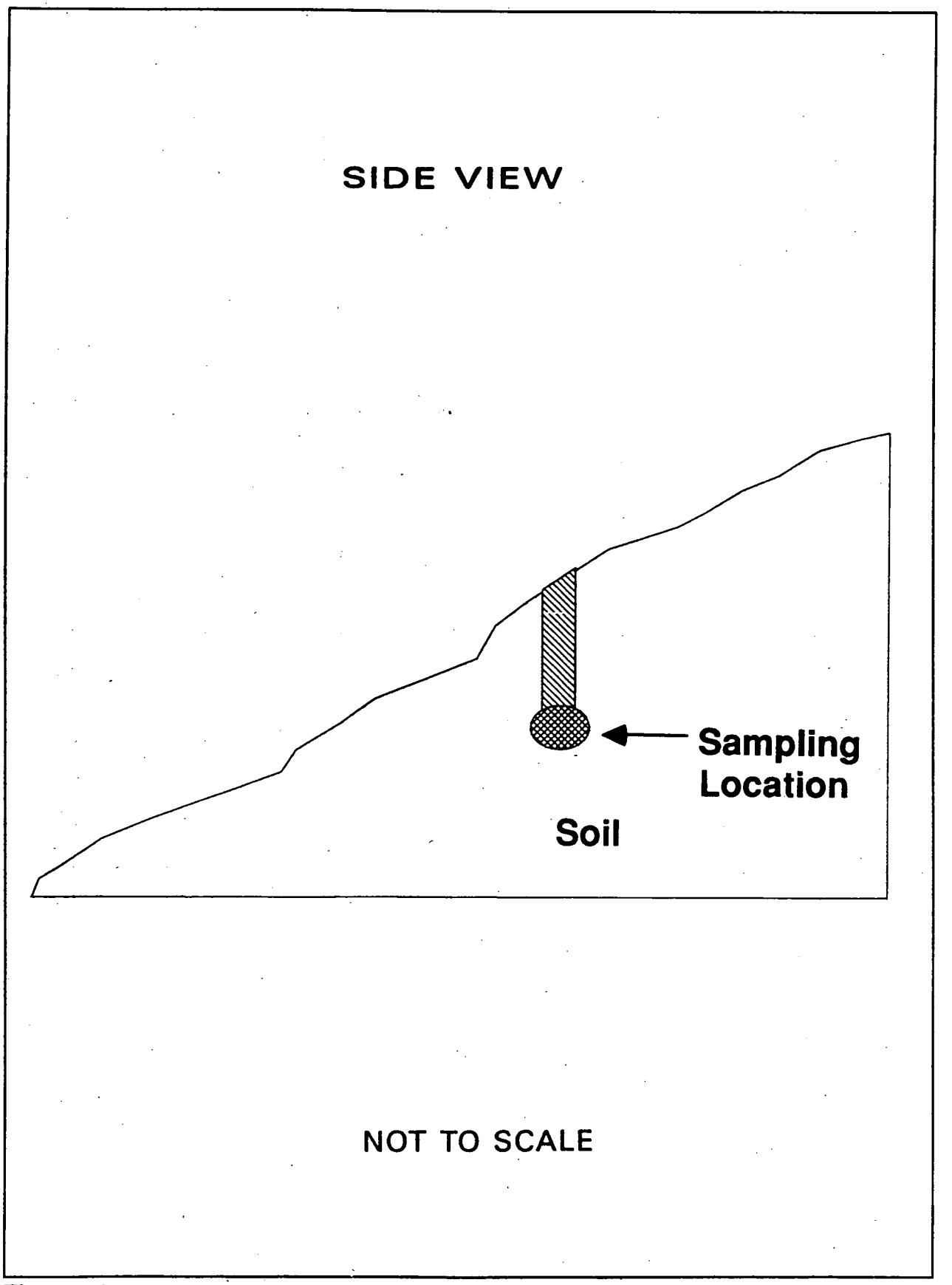

Figure 2-8. Diagram of a Quarter-Section of Soil Pile Showing Sampling Location.

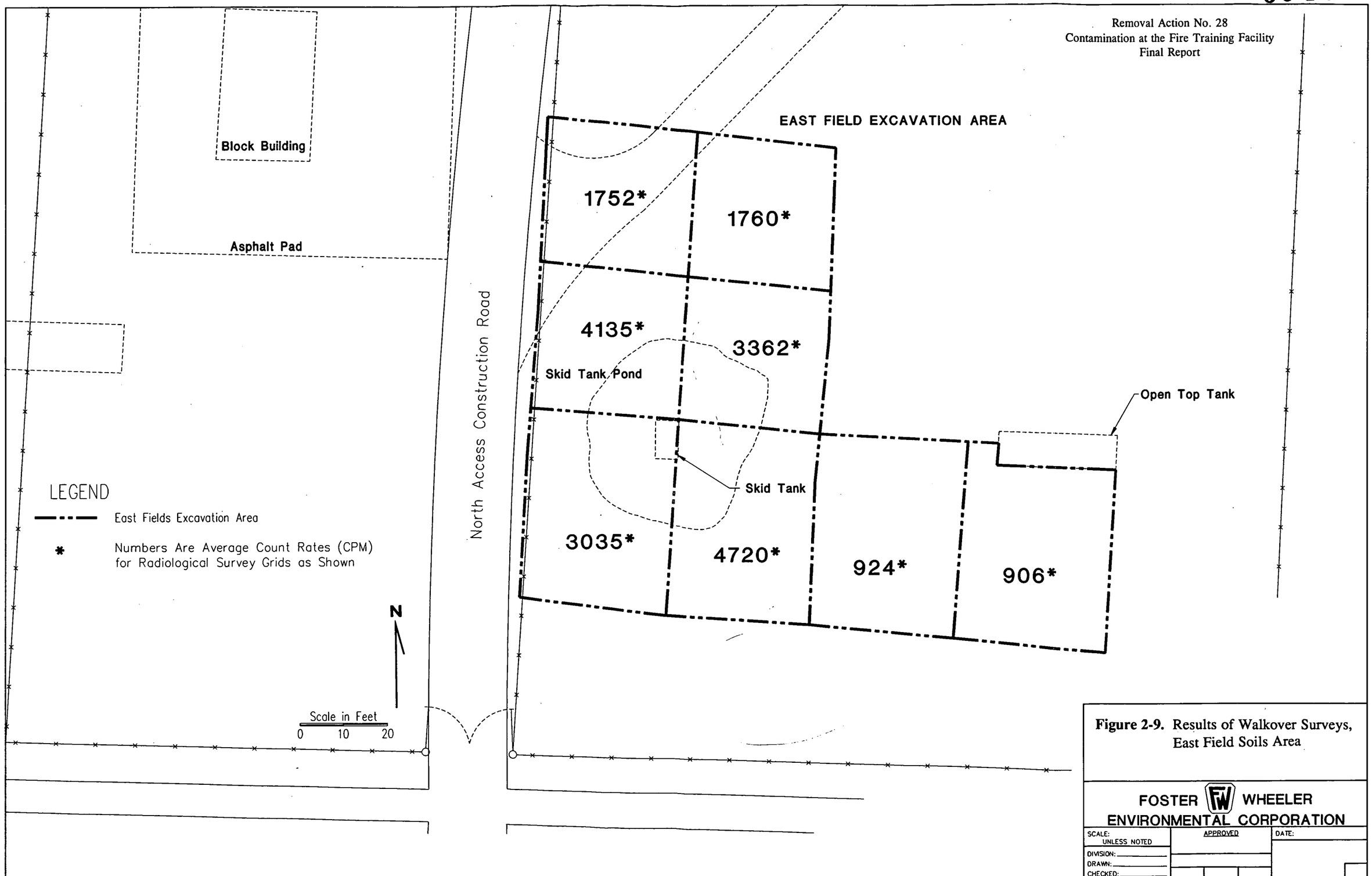

Figure 2-9. Results of Walkover Surveys, East Field Soils Area

The soil contains PCBs up to 4.2 ppm, however, under EPA Superfund guidance, this soil is not a TSCA regulated waste because TSCA's anti-dilution rule does not apply at Superfund sites. PCB contaminated soils are regulated based upon the concentration of PCBs found in the soils at the time remediation is conducted. Since the PCBs in the soils stockpiled at the East Field are less than 50 ppm, the soils are not regulated under TSCA. The soils are currently stored in accordance with Removal Action No. 17 (i.e., ground cover, bermed, covered with a tarp) in a designated area of contamination (AOC) at the Fire Training Facility. However at this time it is not known how these soils will be disposed. Therefore these soils will remain in the covered soil piles pending a final disposition decision based on the disposal facility waste acceptance criteria.

Sixteen post-excavation soil samples were collected from the excavated east field area to verify that all the radiological and PCB-contaminated soil was removed. These sampling results also provided characterization data of the residual soils for final remediation under the OU5 ROD. The soil samples were collected from the specific locations within the east field excavation area, as shown in Figure 2-2 (DOE 1994). The sampling results are summarized in Table A-14. These samples were analyzed for the analytes listed in Table 2-2. All radiological sampling results were below detection limits. PCBs were detected in the samples to a concentration of 1.7 ppm. The sampling results indicated PCB concentrations below 2 ppm, and therefore, further excavation was not required.

After the east field area was excavated, the resulting pit was backfilled. Results of the sampling indicated that sufficient soil had been removed. Therefore, the excavated area was ready to be backfilled. During the backfilling process, two loads of radiologically contaminated soils were inadvertently used as fill. Although this soil was non RCRA, it did exceed the established Removal Action No. 17 guidelines for radiological contaminants. This mix up was quickly discovered through the controls in place during the backfill activity, and the soil was immediately removed and taken back to its original location. The excavated area was then resurveyed for radioactive contamination. This radiological survey found no residual contamination remaining after the soils had been removed. Therefore, the area was backfilled with Class I soil and compacted as described in Section 2.5.8. A total of 136 cubic yards of soil was used to backfill the east field soils area.

2.10 GROUNDWATER SAMPLING

Existing monitoring wells and piezometers were sampled during Removal Action No. 28 to investigate groundwater in the perched water-bearing zone and the Great Miami

aquifer underlying the FTF. Analysis of these samples confirmed the presence of organic, inorganic, and radiological contaminants in the perched water, but did not reveal contaminants in the aquifer that could be attributed to the FTF. These results are shown in Table A-15.

2.11 FORMER DRUM STORAGE AREA

The temporary drum storage area, shown in Figure 1-2 and discussed in Section 1.0, did not require any remedial activities. This area did not exhibit any visual staining or radiological survey results corresponding to a uranium soil concentration greater than 100 pCi/g, nor was there any evidence of past drum spillage/leakage in this area. Additionally, the soil gas survey of the FTF performed in 1993 did not detect any volatile organic compounds in the soil.

2.12 SOIL BORINGS

The RAWP had stated that four source area borings and three shallow borings would be installed to characterize contaminants at depth. The OU5 has completed its Feasibility Study and since there is no need for additional data no more borings have been installed. Final remediation of the FTF area will be performed according to the cleanup levels established in the OU5 Record of Decision (ROD). Given that the intent of the removal action has been met, we believe that remedial action would be a more appropriate mechanism to address any remaining contamination. If further investigation of the FTF area is required, appropriate characterization would be performed at that time.

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Section 3.0

3.0 CONCLUSIONS

The objectives of Removal Action No. 28 were to 1) minimize the need for further maintenance (or inspection) by decontaminating and removing contaminated portions of the FTF to achieve surface source control; and 2) control, minimize, or eliminate, to the extent necessary to protect human health and the environment, the escape of hazardous waste or hazardous waste constituents (DOE 1993). The removal of contaminated structures and soil was conducted to meet the removal action soil excavation criteria. These criteria (listed below) are consistent with applicable Removal Action No. 17 management guidelines.

- Any material containing PCBs at concentrations that exceed 20 ppm will be excavated.
- Visually stained petroleum contaminated soil will be excavated.
- Any soil containing uranium over 100 pCi/g, thorium over 50 pCi/g, and/or radium over 5 pCi/g will be excavated.

Under EPA Superfund guidance, *A Guide on Remedial Actions at Superfund Sites with PCB Contamination*, soil which contains less than 50 ppm PCBs is not TSCA regulated waste because TSCA's anti-dilution rule does not apply at Superfund Sites. PCB contaminated soils are regulated based upon the concentration of PCBs found in the soils at the time remediation is conducted. Therefore, soils which contain less than 50 ppm PCBs do not have to be managed in accordance with TSCA. However, at this time it is anticipated that excavated soils containing greater than 2 ppm but less than 50 ppm PCBs will be disposed as TSCA waste. Therefore, these soils will be managed as TSCA waste pending final disposition.

As detailed in this final report, these removal action objectives were accomplished through 1) removing all structures from the FTF; 2) excavating hazardous, mixed, LLR, and PCB-contaminated surface soils from the FTF; and 3) backfilling the excavated areas with Class I soils until final remediation addressed in the OU5 ROD can be performed. Sampling and analyses conducted during the course of these actions confirm that the removal action criteria have been met.

Consistent with the NCP, Removal Action No. 28 contributed to the efficient performance of projected final remedial actions at the FEMP. The goals of the FEMP

in conducting Removal Action No. 28 were to minimize the potential for releases of hazardous substances incidental to removal field operations, and to conduct the action in a cost efficient and safe manner consistent with site SOPs and worker health and safety requirements. These goals were achieved, and the removal action was completed in April 1995.

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Section 4.0

4.0 REFERENCES

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DOE, 1993, *Contamination at the Fire Training Facility Removal Action Work Plan and Closure Plan Information and Data Package*, Fernald Environmental Management Project, Fernald, Ohio.

DOE, 1994, *Field Implementation Plan, Fire Training Facility—Verification* (Hazardous Waste Management Unit No. 1), RI/FS WBS 04.47.03, Revision 2, Fernald, Ohio.

State of Ohio, 1988, *Consent Decree, Civil Action C-1-86-0217 and Current Proposed Amended Consent Decree Draft 6*, December.

USEPA (United States Environmental Protection Agency), 1990, *A Guide on Remedial Actions at Superfund Sites with PCB Contamination*, August.

Appendix A

APPENDIX A

SAMPLING RESULTS

TABLES

A-1 Results of Characterization Sampling of Concrete Block Building Scabbling Waste A-1
A-2 Pre-Demolition RCRA Characterization Sampling Results for the Concrete Block Building A-2
A-3 Block Building Post-Excavation Verification Soil Sampling Results A-4
A-4 Sampling Results from WMBs Containing the Asphalt Pad Mixed Waste Material A-6
A-5 Asphalt Pad Post-Excavation Verification Soil Sampling Results A-8
A-6 Open Top Tank Water and Sludge Pre-Excavation/Demolition Sampling Results A-14
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A-10 White Metal Box Characterization Sampling Results A-47
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A-12 Magnesium Burn Area Soil Stockpile Sampling Results A-57
A-13 East Field Soil Stockpile Sampling Results A-61
A-14 East Field Post-Excavation Soil Sampling Results A-69
A-15 Monitoring Well Sampling Results A-78

Table A-1. Results of Characterization Sampling of Concrete Block Building Scabbling Waste.

Sample Location/I.D.	Contaminant	Concentration	Units
94-821-1 BOX #	**Inorganics**		
200086223	Barium (TCLP)	0.336	mg/L
200086223	Chromium (TCLP)	0.0563	mg/L
200086228	Evolved Cyanide	1	mg/kg
200086261	Evolved Sulfide	10	mg/kg
200086229	Evolved Sulfide	10	mg/kg
	Radionuclides		
200086231	K-40	5.2	pCi/g
200086235	K-40	6.1	pCi/g
200086231	Ra-226	1.1	pCi/g
200086235	Ra-226	1.4	pCi/g
200086231	Th-232	0.34	pCi/g
200086235	Th-232	0.41	pCi/g
200086233	U (total)	5	mg/kg
200086237	U (total)	5	mg/kg
200086231	U-238	1.9	pCi/g
200086235	U-238	0.67	pCi/g
	Volatile Organics		
200086226	Acetone	0.0049	mg/kg
200086226	Methyl Ethyl Ketone	0.00075	mg/kg
200086226	Methylene Chloride	0.00067	mg/kg
94-821-2 BOX #	**Inorganics**		
200086135	Barium (TCLP)	0.318	mg/L
200086135	Chromium (TCLP)	0.0635	mg/L
200086140	Evolved Cyanide	1	mg/kg
200086461	Evolved Sulfide	10	mg/kg
200086135	Mercury (TCLP)	0.00013	mg/L
	Radionuclides		
200086142	K-40	4.1	pCi/g
200086142	Ra-226	0.72	pCi/g
200086142	Th-232	0.82	pCi/g
200086144	U (total)	5	mg/kg
200086142	U-238	0.97	pCi/g
	Volatile Organics		
200086138	Acetone	0.008	mg/kg
200086138	Methyl Ethyl Ketone	0.0011	mg/kg
200086138	Methylene Chloride	0.00066	mg/kg
200086138	Tetrachloroethylene	0.0015	mg/kg

Only detectable sampling results are listed in the Table.

Table A-2. Pre-Demolition RCRA Characterization Sampling Results for the Concrete Block Building.

Sample Location/I.D.	Contaminant	Concentration	Units
SP-1	**Inorganics**		
200074555	Calcium	860	mg/L
200074555	Manganese	0.63	mg/L
	Radionuclides		
200074558	Ra-226	0.42	pCi/g
200074558	Ra-228	4.2	pCi/g
	Semivolatile Organics		
200108788	Di-n-Butyl Phthalate	0.034	mg/kg
200108788	Fluoranthene	0.140	mg/kg
200108788	Phenanthrene	0.150	mg/kg
200108788	Pyrene	0.098	mg/kg
SP-2	**Inorganics**		
200074560	Calcium	830	mg/L
200074560	Manganese	0.59	mg/L
	Radionuclides		
200076056	Ra-226	0.44	pCi/g
200076056	Ra-228	4.6	pCi/g
	Semivolatile Organics		
200108789	Fluoranthene	0.047	mg/kg
SP-3	**Inorganics**		
200074564	Calcium	800	mg/L
200074564	Magnesium	68	mg/L
200074564	Manganese	0.38	mg/L
	Radionuclides		
200076057	Ra-226	0.38	pCi/g
200076057	Ra-228	1.6	pCi/g
	Volatile Organics		
200074563	Benzene	0.004	mg/kg
200074563	Toluene	0.003	mg/kg
	Semivolatile Organics		
200108790	Phenanthrene	0.052	mg/kg
	Dioxins		
200108785	Total TCDD	0.00000032	mg/kg
SP-4	**Inorganics**		
200074568	Calcium	910	mg/L
200074568	Manganese	0.67	mg/L

Table A-2. Pre-Demolition RCRA Characterization Sampling Results for the Concrete Block Building.

Sample Location/I.D.	Contaminant	Concentration	Units
SP-4	**Radionuclides**		
200076058	Ra-226	1.0	pCi/g
200076058	Ra-228	0.73	pCi/g
	Semivolatile Organics		
200108791	Fluoranthene	0.042	mg/kg
200108791	Isophorone	0.051	mg/kg
200108791	Phenanthrene	0.037	mg/kg
200108791	Pyrene	0.054	mg/kg
	Dioxins		
200108786	Total HxCDD	0.00000083	mg/kg
***SP-5**	**Inorganics**		
200076052	Calcium	900	mg/L
200076052	Manganese	0.45	mg/L
	Radionuclides		
200076059	Ra-226	0.41	pCi/g
200076059	Ra-228	2.7	pCi/g
	Semivolatile Organics		
200108792	Fluoranthene	0.079	mg/kg
200108792	Phenanthrene	0.057	mg/kg
200108792	Pyrene	0.096	mg/kg

* indicates SP-5 is a duplicate sample of SP-4
Only detectable sampling results are listed in the Table.

Table A-3. Block Building Post-Excavation Verification Soil Sampling Results.

Sample Location/I.D.	Contaminant	Concentration	Units
SP-1CP	**Inorganics**		
200095058	Aluminum	2,970	mg/kg
200095058	Arsenic	2.6	mg/kg
200095058	Barium	43.1	mg/kg
200095058	Beryllium	0.11	mg/kg
200095058	Calcium	181,000	mg/kg
200095058	Iron	5,850	mg/kg
200095058	Lead	5.8	mg/kg
200095058	Magnesium	80,900	mg/kg
200095058	Manganese	616	mg/kg
200095058	Mercury	0.58	mg/kg
200095058	Potassium	721	mg/kg
200095058	Vanadium	25.3	mg/kg
	Radionuclides		
200095064	Ra-226	0.4	pCi/g
200095065	Ra-228	0.2	pCi/g
200095067	Th-228	0.3	pCi/g
200095067	Th-230	0.7	pCi/g
200095067	Th-232	0.2	pCi/g
200095059	U (total)	2.3	mg/kg
200095061	U-234	0.9	pCi/g
200095061	U-235/236	0.2	pCi/g
200095061	U-238	0.9	pCi/g
	Volatile Organics		
200095057	Methylene Chloride	0.002	mg/kg
	Semivolatile Organics		
200095063	3,3-Dichlorobenzidine	0.340	mg/kg
200095063	Acenaphthylene	0.062	mg/kg
200095063	Benzo(a)anthracene	0.730	mg/kg
200095063	Benzo(a)pyrene	0.820	mg/kg
200095063	Benzo(b)fluoranthene	0.950	mg/kg
200095063	Benzo(g,h,i)perylene	0.700	mg/kg
200095063	Benzo(k)fluoranthene	0.460	mg/kg
200095063	Di-n-Octyl Phthalate	0.340	mg/kg
200095063	Dibenz(a,h)anthracene	0.067	mg/kg
200095063	Fluoranthene	0.650	mg/kg
200095063	Indeno(1,2,3-cd)pyrene	0.650	mg/kg
200095063	Phenanthrene	0.049	mg/kg
	PCBs		
200095062	Aroclor 1254	0.039	mg/kg
SP-2CP	**Inorganics**		
200095069	Aluminum	5,960	mg/kg
200095069	Arsenic	5.2	mg/kg

Table A-3. Block Building Post-Excavation Verification Soil Sampling Results.

Sample Location/I.D.	Contaminant	Concentration	Units
SP-2CP	**Inorganics (cont'd)**		
200095069	Barium	48.9	mg/kg
200095069	Beryllium	0.36	mg/kg
200095069	Calcium	184,000	mg/kg
200095069	Iron	13,800	mg/kg
200095069	Lead	31	mg/kg
200095069	Magnesium	43,700	mg/kg
200095069	Manganese	619	mg/kg
200095069	Nickel	7.0	mg/kg
200095069	Potassium	1,090	mg/kg
200095069	Vanadium	33.7	mg/kg
	Radionuclides		
200095076	Ra-226	0.5	pCi/g
200095077	Ra-228	0.4	pCi/g
200095073	Th-228	0.7	pCi/g
200095073	Th-230	1.0	pCi/g
200095073	Th-232	0.3	pCi/g
200095070	U (total)	4.3	mg/kg
200095072	U-234	1.7	pCi/g
200095072	U-235/236	0.3	pCi/g
200095072	U-238	1.9	pCi/g
	Volatile Organics		
200095068	Methylene Chloride	0.006	mg/kg
	Semivolatile Organics		
200095075	Anthracene	0.052	mg/kg
200095075	Benzo(a)anthracene	0.550	mg/kg
200095075	Benzo(a)pyrene	0.570	mg/kg
200095075	Benzo(b)fluoranthene	0.770	mg/kg
200095075	Benzo(g,h,i)perylene	0.400	mg/kg
200095075	Benzo(k)fluoranthene	0.170	mg/kg
200095075	Chrysene	0.510	mg/kg
200095075	Di-n-Octyl Phthalate	0.360	mg/kg
200095075	Dibenz(a,h)anthracene	0.041	mg/kg
200095075	Fluoranthene	0.950	mg/kg
200095075	Indeno(1,2,3-cd)pyrene	0.400	mg/kg
200095075	Phenanthrene	0.280	mg/kg
200095075	Pyrene	0.780	mg/kg

Only detectable sampling results are listed in the Table.

Table A-4. Sampling Results from WMBs Containing the Asphalt Pad Mixed Waste Material.

Sample Location/I.D.	Contaminant	Concentration	Units
WO654027; GRD#	**Inorganics**		
200122069	Barium (TCLP)	0.1103	mg/L
200122079	pH	7.6	-
	Radionuclides		
200122080	K-40	4.6	pCi/g
200122080	Ra-226	0.45	pCi/g
200122080	Th-232	0.18	pCi/g
200122082	U (total)	8	mg/kg
200122080	U-235	0.14	pCi/g
200122080	U-238	0.50	pCi/g
	Volatile Organics		
200122074	Methylene Chloride	0.0036	mg/kg
200122073	Tetrachloroethylene	0.0012	mg/L
	Semivolatile Organics		
200122071	m-Cresol (TCLP)	0.013	mg/L
WO654094; GRD#	**Inorganics**		
200122037	Barium (TCLP)	0.1037	mg/L
200122053	Barium (TCLP)	0.1064	mg/L
200122047	pH	7.7	-
200122063	pH	7.6	-
	Radionuclides		
200122048	K-40	6.9	pCi/g
200122064	K-40	5.0	pCi/g
200122048	Ra-226	0.36	pCi/g
200122064	Ra-226	0.27	pCi/g
200122048	Th-232	0.24	pCi/g
200122064	Th-232	0.17	pCi/g
200122050	U (total)	4	mg/kg
200122066	U (total)	5	mg/kg
200122048	U-235	0.12	pCi/g
200122064	U-235	0.11	pCi/g
200122048	U-238	0.88	pCi/g
200122064	U-238	1.7	pCi/g
	Volatile Organics		
200122042	Methylene Chloride	0.0034	mg/kg
200122058	Methylene Chloride	0.0037	mg/kg
200122041	Tetrachloroethylene	0.0011	mg/L
200122057	Tetrachloroethylene	0.0025	mg/L

Table A-4. Sampling Results from WMBs Containing the Asphalt Pad Mixed Waste Material.

Sample Location/I.D.	Contaminant	Concentration	Units
W0654094; GRD#	**Semivolatile Organics**		
200122039	m-Cresol (TCLP)	0.013	mg/L
200122055	m-Cresol (TCLP)	0.013	mg/L
WO739055; GRD#	**Inorganics**		
200122085	Barium (TCLP)	0.1437	mg/L
200122095	pH	7.7	-
	Radionuclides		
200122096	K-40	5.0	pCi/g
200122096	Ra-226	0.33	pCi/g
200122096	Th-232	0.20	pCi/g
200122098	U (total)	7	mg/kg
200122096	U-235	0.074	pCi/g
200122096	U-238	0.80	pCi/g
	Volatile Organics		
200122090	Methylene Chloride	0.0038	mg/kg
200122090	Toluene	0.00092	mg/kg
	Semivolatile Organics		
200122087	m-Cresol (TCLP)	0.013	mg/L
WO739087; GRD#	**Inorganics**		
200122101	Barium (TCLP)	0.1149	mg/L
200122111	pH	7.9	-
	Radionuclides		
200122112	K-40	4.9	pCi/g
200122112	Ra-226	0.53	pCi/g
200122113	Tc-99	4.9	pCi/g
200122114	U (total)	5	mg/kg
	Volatile Organics		
200122106	Methylene Chloride	0.0038	mg/kg
200122106	Toluene	0.0017	mg/kg
200122105	Trichloroethylene	0.00083	mg/L

Only detectable sampling results are listed in the Table.

Table A-5. Asphalt Pad Post-Excavation Verification Soil Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
044703-034	**Inorganics**		
200105768	Aluminum	10,200	mg/kg
200105768	Arsenic	4.8	mg/kg
200105768	Barium	90.0	mg/kg
200105768	Calcium	19,500	mg/kg
200105768	Chromium	8.9	mg/kg
200105768	Cobalt	13.0	mg/kg
200105768	Copper	15.4	mg/kg
200105768	Iron	20,000	mg/kg
200105768	Lead	17.5	mg/kg
200105768	Magnesium	3,920	mg/kg
200105768	Manganese	682	mg/kg
200105768	Nickel	20.9	mg/kg
200105768	Potassium	1,620	mg/kg
200105768	Vanadium	23.0	mg/kg
200105768	Zinc	48.6	mg/kg
	Volatile Organics		
200105767	Acetone	0.099	mg/kg
	Semivolatile Organics		
200105775	Fluoranthene	0.045	mg/kg
044703-035	**Inorganics**		
200105780	Aluminum	10,200	mg/kg
200105780	Arsenic	5.8	mg/kg
200105780	Barium	87.6	mg/kg
200105780	Calcium	21,200	mg/kg
200105780	Chromium	8.6	mg/kg
200105780	Cobalt	13.2	mg/kg
200105780	Copper	16.9	mg/kg
200105780	Iron	20,400	mg/kg
200105780	Lead	18.5	mg/kg
200105780	Magnesium	3,430	mg/kg
200105780	Manganese	975	mg/kg
200105780	Nickel	22.7	mg/kg
200105780	Potassium	1,670	mg/kg
200105780	Vanadium	21.2	mg/kg
200105780	Zinc	51.6	mg/kg
	Volatile Organics		
200105779	Acetone	0.190	mg/kg

Table A-5. Asphalt Pad Post-Excavation Verification Soil Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
044703-036	**Inorganics**		
200105792	Aluminum	9,150	mg/kg
200105792	Arsenic	5.8	mg/kg
200105792	Barium	102	mg/kg
200105792	Calcium	9,100	mg/kg
200105792	Chromium	7.5	mg/kg
200105792	Cobalt	12.0	mg/kg
200105792	Copper	20.4	mg/kg
200105792	Iron	20,700	mg/kg
200105792	Lead	18.9	mg/kg
200105792	Magnesium	3,260	mg/kg
200105792	Manganese	1,930	mg/kg
200105792	Nickel	26.1	mg/kg
200105792	Potassium	1,350	mg/kg
200105792	Vanadium	20.5	mg/kg
200105792	Zinc	59.1	mg/kg
	Dioxins		
200105797	Total HxCDD	0.00000064	mg/kg
044703-038	**Inorganics**		
200105816	Aluminum	12,200	mg/kg
200105816	Arsenic	4.9	mg/kg
200105816	Barium	99.6	mg/kg
200105816	Calcium	8,010	mg/kg
200105816	Chromium	11.5	mg/kg
200105816	Cobalt	9.9	mg/kg
200105816	Copper	19.1	mg/kg
200105816	Iron	22,200	mg/kg
200105816	Lead	17.2	mg/kg
200105816	Magnesium	4,140	mg/kg
200105816	Manganese	609	mg/kg
200105816	Nickel	21.6	mg/kg
200105816	Potassium	1,800	mg/kg
200105816	Vanadium	23.1	mg/kg
200105816	Zinc	64.2	mg/kg
	Volatile Organics		
200105815	Acetone	0.110	mg/kg
	Dioxins		
200105821	Total HxCDD	0.00000071	mg/kg
200105821	Total TCDD	0.00000025	mg/kg

Table A-5. Asphalt Pad Post-Excavation Verification Soil Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
044703-039	**Inorganics**		
200105828	Aluminum	12,300	mg/kg
200105828	Arsenic	3.8	mg/kg
200105828	Barium	94.9	mg/kg
200105828	Calcium	11,800	mg/kg
200105828	Chromium	11.9	mg/kg
200105828	Cobalt	9.5	mg/kg
200105828	Copper	18.8	mg/kg
200105828	Iron	22,300	mg/kg
200105828	Lead	17.9	mg/kg
200105828	Magnesium	4,450	mg/kg
200105828	Manganese	707	mg/kg
200105828	Nickel	22.0	mg/kg
200105828	Potassium	2,260	mg/kg
200105828	Vanadium	26.7	mg/kg
200105828	Zinc	65.6	mg/kg
	Volatile Organics		
200105827	Acetone	0.440	mg/kg
	Semivolatile Organics		
200105835	Fluoranthene	0.049	mg/kg
200105835	Pyrene	0.040	mg/kg
044703-040	**Inorganics**		
200105840	Aluminum	10,700	mg/kg
200105840	Arsenic	4.5	mg/kg
200105840	Barium	83.0	mg/kg
200105840	Calcium	24,600	mg/kg
200105840	Chromium	9.7	mg/kg
200105840	Cobalt	9.0	mg/kg
200105840	Copper	15.5	mg/kg
200105840	Iron	17,700	mg/kg
200105840	Lead	15.9	mg/kg
200105840	Magnesium	9,710	mg/kg
200105840	Manganese	481	mg/kg
200105840	Nickel	20.7	mg/kg
200105840	Potassium	1,930	mg/kg
200105840	Vanadium	24.0	mg/kg
200105840	Zinc	53.3	mg/kg
	Radionuclides		
200105850	Alpha	6.6	pCi/g

Table A-5. Asphalt Pad Post-Excavation Verification Soil Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
044703-040	**Volatile Organics**		
200105839	Acetone	0.110	mg/kg
044703-040	**Semivolatile Organics**		
200105847	Benzo(a)anthracene	0.075	mg/kg
200105847	Benzo(a)pyrene	0.077	mg/kg
200105847	Benzo(b)fluoranthene	0.120	mg/kg
200105847	Chrysene	0.082	mg/kg
200105847	Fluoranthene	0.120	mg/kg
200105847	Indeno(1,2,3-cd)pyrene	0.044	mg/kg
200105847	Pyrene	0.100	mg/kg
044703-042	**Inorganics**		
200105864	Aluminum	9,820	mg/kg
200105864	Arsenic	3.7	mg/kg
200105864	Barium	90.1	mg/kg
200105864	Calcium	7,560	mg/kg
200105864	Chromium	9.3	mg/kg
200105864	Cobalt	10.1	mg/kg
200105864	Copper	20.4	mg/kg
200105864	Iron	20,600	mg/kg
200105864	Lead	17.8	mg/kg
200105864	Magnesium	3,080	mg/kg
200105864	Manganese	629	mg/kg
200105864	Nickel	24.2	mg/kg
200105864	Potassium	1,280	mg/kg
200105864	Vanadium	20.3	mg/kg
200105864	Zinc	65.9	mg/kg
	Volatile Organics		
200105863	2-Butanone (MEK)	0.041	mg/kg
200105863	Acetone	0.290	mg/kg
	Semivolatile Organics		
200105871	Benzo(a)Pyrene	0.100	mg/kg
044703-044	**Inorganics**		
200105888	Aluminum	9,860	mg/kg
200105888	Arsenic	4.5	mg/kg
200105888	Barium	106	mg/kg
200105888	Calcium	5,230	mg/kg
200105888	Chromium	9.8	mg/kg
200105888	Cobalt	10.3	mg/kg
200105888	Copper	20.2	mg/kg
200105888	Iron	19,400	mg/kg
200105888	Lead	15.4	mg/kg

Sample Location/I.D.	Contaminant	Concentration	Units
044703-044	**Inorganics (cont'd)**		
200105888	Magnesium	2,940	mg/kg
200105888	Manganese	485	mg/kg
200105888	Nickel	18.1	mg/kg
200105888	Potassium	1,320	mg/kg
200105888	Vanadium	15.1	mg/kg
200105888	Zinc	65.4	mg/kg
044703-045	**Inorganics**		
200105900	Aluminum	12,000	mg/kg
200105912	Aluminum	14,300	mg/kg
200105900	Arsenic	4.6	mg/kg
200105912	Arsenic	5.5	mg/kg
200105900	Barium	94.0	mg/kg
200105912	Barium	95.7	mg/kg
200105900	Calcium	25,000	mg/kg
200105912	Calcium	8,090	mg/kg
200105900	Chromium	11.2	mg/kg
200105912	Chromium	14.7	mg/kg
200105900	Cobalt	10.5	mg/kg
200105912	Cobalt	10.7	mg/kg
200105900	Copper	25.9	mg/kg
200105912	Copper	20.7	mg/kg
200105900	Iron	21,700	mg/kg
200105912	Iron	18,400	mg/kg
200105900	Lead	13.9	mg/kg
200105912	Lead	16.1	mg/kg
200105900	Magnesium	8,370	mg/kg
200105912	Magnesium	4,500	mg/kg
200105900	Manganese	430	mg/kg
200105912	Manganese	247	mg/kg
200105900	Nickel	20.3	mg/kg
200105912	Nickel	18.8	mg/kg
200105900	Potassium	1,490	mg/kg
200105912	Potassium	2,400	mg/kg
200105900	Vanadium	17.8	mg/kg
200105912	Vanadium	20.4	mg/kg
200105900	Zinc	76.2	mg/kg
200105912	Zinc	66.5	mg/kg
	Semivolatile Organics		
200105907	Benzo(a)pyrene	0.051	mg/kg
200105907	Benzo(b)fluoranthene	0.062	mg/kg
200105907	Fluoranthene	0.049	mg/kg
200105907	Pyrene	0.053	mg/kg

Table A-5. Asphalt Pad Post-Excavation Verification Soil Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
044703-046	**Inorganics**		
200105924	Aluminum	9,900	mg/kg
200105924	Arsenic	4.0	mg/kg
200105924	Barium	88.9	mg/kg
200105924	Calcium	66,600	mg/kg
200105924	Chromium	10.1	mg/kg
200105924	Cobalt	7.4	mg/kg
200105924	Copper	16.8	mg/kg
200105924	Iron	16,400	mg/kg
200105924	Lead	13.8	mg/kg
200105924	Magnesium	15,300	mg/kg
200105924	Manganese	384	mg/kg
200105924	Nickel	16.2	mg/kg
200105924	Potassium	1,460	mg/kg
200105924	Vanadium	17.1	mg/kg
200105924	Zinc	51.7	mg/kg
	Semivolatile Organics		
200105931	Benzo(a)anthracene	0.049	mg/L
200105931	Benzo(a)pyrene	0.061	mg/L
200105931	Benzo(b)fluoranthene	0.087	mg/L
200105931	Benzo(g,h,i)perylene	0.047	mg/L
200105931	Chrysene	0.052	mg/L
200105931	Fluoranthene	0.072	mg/L
200105931	Indeno(1,2,3-cd)pyrene	0.043	mg/L
200105931	Pyrene	0.071	mg/L

Only detectable sampling results are listed in the Table.

Table A-6. Open Top Tank Water and Sludge Pre-Excavation/ Demolition Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
Water Samples			
#1	**Inorganics**		
200052054	Barium	0.0274	mg/L
200052054	Calcium	22.1	mg/L
200052054	Iron	18	mg/L
200052054	Magnesium	5.34	mg/L
200052054	Manganese	1.42	mg/L
200052054	Nickel	0.0354	mg/L
200052054	Potassium	2.43	mg/L
200052054	Sodium	13.9	mg/L
	Radionuclides		
200052056	U-234	0.531	pCi/L
200052056	U-235/236	0.127	pCi/L
200052056	U-238	0.515	pCi/L
	Volatile Organics		
200052053	1,1,1-Trichloroethane	0.098	mg/L
200052053	1,1-Dichloroethane	0.110	mg/L
200052053	1,2-Dichloroethane	0.014	mg/L
200052053	Acetone	0.030	mg/L
200052053	Chloroethane	0.049	mg/L
200052053	Tetrachloroethylene	0.005	mg/L
200052053	Toluene	0.018	mg/L
200052053	Xylenes (total)	0.004	mg/L
	Semivolatile Organics		
200052055	2-Methylphenol	0.002	mg/L
200052055	bis(2-ethylheyl)phthalate	0.004	mg/L
200052055	bis(2-ethylheyl)phthalate	0.017	mg/L
200052055	Di-n-Butyl Phthalate	0.003	mg/L
	Petroleum Hydrocarbons		
200052059	Total Petroleum	0.604	mg/L
Water Samples			
#2	**Inorganics**		
200053062	Barium	0.0297	mg/L
200052062	Beryllium	0.0016	mg/L
200052062	Cadmium	0.0022	mg/L
200052062	Calcium	24.1	mg/L
200052062	Iron	19.5	mg/L
200052062	Magnesium	5.76	mg/L

Table A-6. Open Top Tank Water and Sludge Pre-Excavation/ Demolition Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
Water Samples			
#2	**Inorganics (cont'd)**		
200052062	Manganese	1.54	mg/L
200052062	Nickel	0.0419	mg/L
200052062	Potassium	2.6	mg/L
200052062	Sodium	15	mg/L
200052062	Zinc	0.0126	mg/L
	Radionuclides		
200052066	Ra- 226	0.172	pCi/L
200052065	Th-230	0.678	pCi/L
200052065	Th-232	0.219	pCi/L
200052064	U-234	0.48	pCi/L
200052064	U-238	0.389	pCi/L
	Volatile Organics		
200052061	1,1,-Dichloroethane	0.098	mg/L
200052061	1,1,1,-Trichloroethane	0.095	mg/L
200052061	1,2,-Dichloroethane	0.012	mg/L
200052061	Acetone	0.030	mg/L
200052061	Chloroethane	0.043	mg/L
200052061	Tetrachlorethylene	0.007	mg/L
200052061	Toluene	0.015	mg/L
200052061	Xylenes (Total)	0.003	mg/L
	Semivolatile Organics		
200052063	2-Methylphenol	0.003	mg/L
200052063	4-Methylphenol	0.001	mg/L
	Petroleum Hydrocarbons		
200052067	Total Petroleum	0.521	mg/L
Water Samples			
#3	**Inorganics**		
200052069	Barium	0.0278	mg/L
200052069	Calcium	22.7	mg/L
200052069	Iron	18.4	mg/L
200052069	Magnesium	5.51	mg/L
200052069	Manganese	1.45	mg/L
200052069	Nickel	0.0502	mg/L
200052069	Potassium	2.51	mg/L
200052069	Sodium	14.2	mg/L
200052069	Zinc	0.0099	mg/L

Table A-6. Open Top Tank Water and Sludge Pre-Excavation/ Demolition Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
Water Samples			
#3	**Radionuclides**		
200052072	Th-230	0.256	pCi/L
200052072	Th-232	0.097	pCi/L
200052071	U-234	0.427	pCi/L
200052071	U-238	0.366	pCi/L
	Volatile Organics		
200052068	1,1,1-Trichloroethane	0.086	mg/L
200052068	1,1-Dichloroethane	0.088	mg/L
200052068	1,2-Dichloroethane	0.009	mg/L
200052068	Acetone	0.023	mg/L
200052068	Chloroethane	0.036	mg/L
200052068	Tetrachloroethylene	0.005	mg/L
200052068	Toluene	0.013	mg/L
200052068	Xylenes (total)	0.002	mg/L
	Semivolatile Organics		
200052070	2-Methylphenol	0.003	mg/L
200052070	4-Methylphenol	0.001	mg/L
200052070	bis(2-ethylheyl)phthalate	0.004	mg/L
	Petroleum Hydrocarbons		
200052074	Total Petroleum	0.527	mg/L
Water Samples			
#4	**Inorganics**		
200052076	Barium	0.0278	mg/L
200052076	Beryllium	0.0011	mg/L
200052076	Cadmium	0.0034	mg/L
200052076	Calcium	22.4	mg/L
200052076	Iron	18.2	mg/L
200052076	Magnesium	5.45	mg/L
200052076	Manganese	1.44	mg/L
200052076	Nickel	0.0774	mg/L
200052076	Potassium	2.47	mg/L
200052076	Sodium	14.1	mg/L
200052076	Zinc	0.006	mg/L
	Radionuclides		
200052079	Th-230	0.62	pCi/L
200052079	Th-232	0.202	pCi/L
200052078	U-234	0.664	pCi/L
200052078	U-235/236	0.182	pCi/L
200052078	U-238	0.648	pCi/L

Table A-6. Open Top Tank Water and Sludge Pre-Excavation/ Demolition Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
Water Samples			
#4	**Volatile Organics**		
200052075	1,1,1-Trichloroethane	0.083	mg/L
200052075	1,1-Dichloroethane	0.087	mg/L
200052075	1,2-Dichloroethane	0.008	mg/L
200052075	Acetone	0.025	mg/L
200052075	Chloroethane	0.039	mg/L
200052075	Tetrachloroethylene	0.005	mg/L
200052075	Toluene	0.010	mg/L
	Semivolatile Organics		
200052077	2-Methylphenol	0.002	mg/L
200052077	bis(2-ethylheyl)phthalate	0.005	mg/L
	Petroleum Hydrocarbons		
200052081	Total Petroleum	0.617	mg/L
Sludge Samples			
#1	**Inorganics**		
200052083	Aluminum	48.0	mg/kg
200052083	Antimony	34.6	mg/kg
200052083	Barium	89.8	mg/kg
200052083	Beryllium	1.8	mg/kg
200052083	Cadmium	2.5	mg/kg
200052083	Calcium	1,670	mg/kg
200052083	Chromium	12.3	mg/kg
200052083	Copper	41.7	mg/kg
200052083	Iron	1,280	mg/kg
200052083	Lead	837	mg/kg
200052083	Magnesium	252	mg/kg
200052083	Manganese	7.2	mg/kg
200052083	Mercury	0.31	mg/kg
200052083	Potassium	59.2	mg/kg
200052083	Sodium	293	mg/kg
	Radionuclides		
200052085	Ra- 228	1	pCi/g
200052085	Th-228	1.09	pCi/g
200052085	Th-230	2.59	pCi/g
200052085	Th-232	0.629	pCi/g
200052085	U-234	927	pCi/g
200052085	U-235/236	209	pCi/g
200052085	U-238	971	pCi/g

Table A-6. Open Top Tank Water and Sludge Pre-Excavation/ Demolition Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
Sludge Samples			
#1	**Volatile Organics**		
200052082	1,1,1-Trichloroethane	850	mg/kg
200052082	1,1,1-Trichloroethane	22,000	mg/kg
200052082	1,1-Dichloroethylene	1,300	mg/kg
200052082	1,1-Dichloroethylene	3,200	mg/kg
200052082	1,1-Dichloroethylene	86	mg/kg
200052082	1,2-Dichloroethane	180	mg/kg
200052082	Benzene	32	mg/kg
200052082	Chloroethane	64	mg/kg
200052082	Ethyl Benzene	7,300	mg/kg
200052082	Tetrachloroethylene	34,000	mg/kg
200052082	Toluene	45,000	mg/kg
200052082	Trichloroethylene	32	mg/kg
200052082	Xylenes (Total)	33,000	mg/kg
	Semivolatile Organics		
200052084	2-Methylnaphthalene	300	mg/kg
200052084	2-Methylnaphthalene	140	mg/kg
200052084	4-Methylphenol	55	mg/kg
200052084	4-Methylphenol	25	mg/kg
200052084	Acenaphthene	4.1	mg/kg
200052084	Benzo(a)anthracene	8.5	mg/kg
200052084	Benzo(a)anthracene	4.2	mg/kg
200052084	bis(2-ethylheyl)phthalate	4.6	mg/kg
200052084	Butyl Benzyl Phthalate	120	mg/kg
200052084	Butyl Benzyl Phthalate	49	mg/kg
200052084	Chrysene	18	mg/kg
200052084	Chrysene	7	mg/kg
200052084	Di-n-Butyl Phthalate	6.3	mg/kg
200052084	Fluoranthene	16	mg/kg
200052084	Fluoranthene	6.5	mg/kg
200052084	Fluorene	13	mg/kg
200052084	Naphthalene	200	mg/kg
200052084	Naphthalene	95	mg/kg
200052084	Phenanthrene	54	mg/kg
200052084	Phenanthrene	25	mg/kg
200052084	Phenol	210	mg/kg
200052084	Phenol	84	mg/kg
200052084	Pyrene	26	mg/kg
200052084	Pyrene	11	mg/kg

Table A-6. Open Top Tank Water and Sludge Pre-Excavation/ Demolition Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
Sludge Samples			
#1	**PCBs**		
200052084	Aroclor 1260	36	mg/kg
	Petroleum Hydrocarbons		
200052086	Total Petroleum	736	mg/kg
Sludge Samples			
#2	**Inorganics**		
200052089	Aluminum	46.8	mg/kg
200052089	Antimony	5.9	mg/kg
200052089	Barium	91.4	mg/kg
200052089	Beryllium	0.37	mg/kg
200052089	Calcium	1,120	mg/kg
200052089	Chromium	10.1	mg/kg
200052089	Copper	34.0	mg/kg
200052089	Iron	1,230	mg/kg
200052089	Lead	709	mg/kg
200052089	Magnesium	131	mg/kg
200052089	Manganese	6.1	mg/kg
200052089	Mercury	0.13	mg/kg
200052089	Nickel	4.8	mg/kg
200052089	Potassium	46.6	mg/kg
200052089	Sodium	184	mg/kg
200052089	Vanadium	4.1	mg/kg
200052089	Zinc	113	mg/kg
	Radionuclides		
200052091	Ra- 226	0.056	pCi/g
200052091	Th-228	1.02	pCi/g
200052091	Th-230	2.32	pCi/g
200052091	Th-232	0.625	pCi/g
200052091	U-234	726	pCi/g
200052091	U-235/236	726	pCi/g
200052091	U-238	728	pCi/g
	Volatile Organics		
200052088	1,1,1-Trichloroethane	41,000	mg/kg
200052088	1,1-Dichloroethylene	4,700	mg/kg
200052088	Benzene	13	mg/kg
200052088	Ethyl Benzene	6,800	mg/kg
200052088	Tetrachloroethylene	250	mg/kg
200052088	Tetrachloroethylene	160,000	mg/kg

Table A-6. Open Top Tank Water and Sludge Pre-Excavation/ Demolition Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
Sludge Samples			
#2	**Volatile Organics (cont'd)**		
200052088	Toluene	140	mg/kg
200052088	Toluene	52,000	mg/kg
200052088	Trichlorethylene	45	mg/kg
200052088	Trichlorethylene	2,400	mg/kg
200052088	Xylenes (Total)	98	mg/kg
200052088	Xylenes (Total)	31,000	mg/kg
	Semivolatile Organics		
200052090	2-Methylnaphthalene	360	mg/kg
200052090	2-Methylnaphthalene	380	mg/kg
200052090	4-Methylphenol	34	mg/kg
200052090	4-Methylphenol	22	mg/kg
200052090	Acenaphthene	8	mg/kg
200052090	Acenaphthene	12	mg/kg
200052090	Benzo(g,h,i)perylene	22	mg/kg
200052090	Butyl Benzyl Phthalate	140	mg/kg
200052090	Butyl Benzyl Phthalate	130	mg/kg
200052090	Di-n-Butyl Phthalate	14	mg/kg
200052090	Fluoranthene	18	mg/kg
200052090	Fluoranthene	16	mg/kg
200052090	Fluorene	29	mg/kg
200052090	Fluorene	34	mg/kg
200052090	Naphthalene	190	mg/kg
200052090	Naphthalene	210	mg/kg
200052090	Phenanthrene	130	mg/kg
200052090	Phenanthrene	140	mg/kg
200052090	Phenol	51	mg/kg
200052090	Phenol	43	mg/kg
200052090	Pyrene	29	mg/kg
200052090	Pyrene	29	mg/kg
	PCBs		
200052090	Aroclor 1260	53	mg/kg
	Petroleum Hydrocarbons		
200052092	Total Petroleum	732	mg/kg

Table A-6. Open Top Tank Water and Sludge Pre-Excavation/ Demolition Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
Sludge Samples			
#3	**Inorganics**		
200052095	Aluminum	127	mg/kg
200052095	Antimony	11.2	mg/kg
200052095	Barium	221	mg/kg
200052095	Beryllium	1.3	mg/kg
200052095	Calcium	2,470	mg/kg
200052095	Chromium	28.9	mg/kg
200052095	Copper	82.6	mg/kg
200052095	Iron	3,230	mg/kg
200052095	Lead	1,870	mg/kg
200052095	Magnesium	248	mg/kg
200052095	Manganese	14.4	mg/kg
200052095	Mercury	0.28	mg/kg
200052095	Potassium	89.8	mg/kg
200052095	Sodium	380	mg/kg
200052095	Vanadium	17.6	mg/kg
200052095	Zinc	219	mg/kg
	Radionuclides		
200052097	Ra- 226	0.074	pCi/g
200052097	Ra- 228	0.235	pCi/g
200052097	Th-228	1.58	pCi/g
200052097	Th-230	4.58	pCi/g
200052097	Th-232	0.995	pCi/g
200052097	U-234	1,410	pCi/g
200052097	U-235/236	170	pCi/g
200052097	U-238	1,380	pCi/g
	Volatile Organics		
200052094	1,1,1-Trichloroethane	56,000	mg/kg
200052094	1,1-Dichloroethylene	1,300	mg/kg
200052094	1,1-Dichloroethylene	2,800	mg/kg
200052094	1,1-Dichloroethylene	16	mg/kg
200052094	1,2-Dichloroethane	98	mg/kg
200052094	Chloroethane	99	mg/kg
200052094	Ethyl Benzene	2,700	mg/kg
200052094	Tetrachloroethylene	39,000	mg/kg
200052094	Toluene	20,000	mg/kg
200052094	Vinyl Chloride	1.4	mg/kg
200052094	Xylenes (Total)	11,000	mg/kg
	Semivolatile Organics		
200052096	2-Methylnaphthalene	180	mg/kg

Table A-6. Open Top Tank Water and Sludge Pre-Excavation/ Demolition Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
Sludge Samples			
#3	**Semivolatile Organics (cont'd)**		
200052096	2-Methylnaphthalene	190	mg/kg
200052096	4-Methylphenol	27	mg/kg
200052096	4-Methylphenol	28	mg/kg
200052096	Acenaphthene	5.5	mg/kg
200052096	Benzo(a)anthracene	4.3	mg/kg
200052096	Butyl Benzyl Phthalate	66	mg/kg
200052096	Butyl Benzyl Phthalate	56	mg/kg
200052096	Chrysene	10	mg/kg
200052096	Di-n-Butyl Phthalate	6.6	mg/kg
200052096	Diethyl Phthalate	3.5	mg/kg
200052096	Diethyl Phthalate	3.6	mg/kg
200052096	Fluoranthene	9.5	mg/kg
200052096	Fluoranthene	8.8	mg/kg
200052096	Fluorene	7.8	mg/kg
200052096	Fluorene	10	mg/kg
200052096	Naphthalene	95	mg/kg
200052096	Naphthalene	100	mg/kg
200052096	Phenanthrene	36	mg/kg
200052096	Phenanthrene	40	mg/kg
200052096	Phenol	17	mg/kg
200052096	Phenol	16	mg/kg
200052096	Pyrene	14	mg/kg
200052096	Pyrene	15	mg/kg
	PCBs		
200052096	Aroclor 1260	27	mg/kg
	Petroleum Hydrocarbons		
200052098	Total Petroleum	860,000	mg/kg
Sludge Samples			
#4	**Inorganics**		
200052101	Aluminum	385	mg/kg
200052101	Barium	729	mg/kg
200052101	Cadmium	1.4	mg/kg
200052101	Calcium	8,760	mg/kg
200052101	Chromium	80.1	mg/kg
200052101	Copper	299	mg/kg
200052101	Iron	6,940	mg/kg
200052101	Lead	2,970	mg/kg
200052101	Magnesium	949	mg/kg

Table A-6. Open Top Tank Water and Sludge Pre-Excavation/ Demolition Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
Sludge Samples			
#4	**Inorganics (cont'd)**		
200052101	Manganese	48.9	mg/kg
200052101	Mercury	1.4	mg/kg
200052101	Nickel	11.4	mg/kg
200052101	Potassium	181	mg/kg
200052101	Silver	2.6	mg/kg
200052101	Sodium	766	mg/kg
200052101	Vanadium	8.4	mg/kg
200052101	Zinc	254	mg/kg
	Radionuclides		
200052103	Ra- 226	0.061	pCi/g
200052103	Ra- 228	0.658	pCi/g
200052103	Th-228	1.38	pCi/g
200052103	Th-230	2.62	pCi/g
200052103	Th-232	0.671	pCi/g
200052103	U-234	1,730	pCi/g
200052103	U-235/236	374	pCi/g
200052103	U-238	1,850	pCi/g
	Volatile Organics		
200052100	1,1,1-Trichloroethane	440	mg/kg
200052100	1,1,1-Trichloroethane	11,000	mg/kg
200052100	1,1-Dichloroethylene	370	mg/kg
200052100	1,1-Dichloroethylene	1,300	mg/kg
200052100	1,1-Dichloroethylene	3.7	mg/kg
200052100	1,2-Dichloroethane	20	mg/kg
200052100	Acetone	170	mg/kg
200052100	Benzene	4.2	mg/kg
200052100	Bromodichlorome	0.37	mg/kg
200052100	Carbon Tetrachloride	10	mg/kg
200052100	Chloroethane	13	mg/kg
200052100	Ethyl Benzene	340	mg/kg
200052100	Ethyl Benzene	1,600	mg/kg
200052100	Tetrachloroethylene	1,100	mg/kg
200052100	Tetrachloroethylene	24,000	mg/kg
200052100	Toluene	450	mg/kg
200052100	Toluene	12,000	mg/kg
200052100	Trichloroethylene	2.3	mg/kg
200052100	Xylenes (Total)	790	mg/kg
200052100	Xylenes (Total)	6,800	mg/kg

Table A-6. Open Top Tank Water and Sludge Pre-Excavation/ Demolition Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
Sludge Samples			
#4	**Semivolatile Organics**		
200052102	2-Methylnaphthalene	400	mg/kg
200052102	4-Methylphenol	20	mg/kg
200052102	Acenaphthene	5.4	mg/kg
200052102	Benzo(a)anthracene	5.8	mg/kg
200052102	Butyl Benzyl Phthalate	10	mg/kg
200052102	Chrysene	14	mg/kg
200052102	Di-n-Butyl Phthalate	10	mg/kg
200052102	Fluoranthene	14	mg/kg
200052102	Fluorene	16	mg/kg
200052102	Naphthalene	200	mg/kg
200052102	Phenanthrene	65	mg/kg
200052102	Phenol	16	mg/kg
200052102	Pyrene	20	mg/kg
	PCBs		
200052102	Aroclor 1260	66	mg/kg
	Petroleum Hydrocarbons		
200052104	Total Petroleum	492	mg/kg

Only detectable sampling results are listed in the Table.

Table A-7. Open Top Tank Pre-Excavation Characterization Soil Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
1	**Inorganics**		
200100697	Barium	117	mg/kg
200100705	Barium (TCLP)	1.03	mg/L
200100697	Chromium	17.7	mg/kg
200100697	Lead	13.6	mg/kg
	Radionuclides		
200100635	Alpha	140	pCi/g
200100635	Beta	190	pCi/g
200100750	K-40	19	pCi/g
200100744	Ra-226	0.71	pCi/g
200100750	Ra-226	1.2	pCi/g
200100741	Th-228	0.46	pCi/g
200100741	Th-230	0.58	pCi/g
200100741	Th-232	0.46	pCi/g
200100750	Th-232	0.97	pCi/g
200100732	U (total)	309.6	mg/kg
200100738	U-234	127.8	pCi/g
200100738	U-235	5.35	pCi/g
200100750	U-235	4.9	pCi/g
200100738	U-236	4.37	pCi/g
200100738	U-238	103.2	pCi/g
200100750	U-238	82	pCi/g
	Semivolatile Organics		
200100719	m&p-Cresol	0.430	mg/kg
	PCBs/Pesticides		
200100700	Aroclor 1260	3.1	mg/kg
200100722	Toxaphene	250	mg/kg
2	**Inorganics**		
200100698	Arsenic	40.7	mg/kg
200100698	Barium	20.4	mg/kg
200100708	Barium (TCLP)	0.927	mg/L
200100698	Chromium	5.89	mg/kg
	Radionuclides		
200100655	Alpha	170	pCi/g
200100655	Beta	170	pCi/g
200100745	Ra-226	0.48	pCi/g
200100742	Th-228	0.48	pCi/g

Table A-7. Open Top Tank Pre-Excavation Characterization Soil Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
2	**Radionuclides (cont'd)**		
200100742	Th-230	0.55	pCi/g
200100742	Th-232	0.48	pCi/g
200100733	U (total)	52.3	mg/kg
200100739	U-234	16.6	pCi/g
200100739	U-235	0.73	pCi/g
200100739	U-236	0.55	pCi/g
200100739	U-238	17.5	pCi/g
	Semivolatile Organics		
200100701	2,4-Dichlorophenol	0.0185	mg/kg
200100720	m&p-Cresol	0.33	mg/kg
	PCBs/Pesticides/Herbicides		
200100701	2,4,5-Tp (Silvex)	0.0123	mg/kg
200100701	Aroclor 1260	2.8	mg/kg
200100701	Endrin	0.0044	mg/kg
200100723	Toxaphene	150	mg/kg
3	**Inorganics**		
200100699	Arsenic	31.4	mg/kg
200100699	Barium	37.3	mg/kg
200100699	Chromium	9.18	mg/kg
200100699	Lead	52.9	mg/kg
	Radionuclides		
200100656	Alpha	27	pCi/g
200100656	Beta	74	pCi/g
200100752	Cs-137	0.61	pCi/g
200100752	K-40	12	pCi/g
200100751	K-40	12	pCi/g
200100746	Ra-226	0.36	pCi/g
200100752	Ra-226	0.52	pCi/g
200100751	Ra-226	0.53	pCi/g
200100743	Th-228	0.70	pCi/g
200100743	Th-230	1.3	pCi/g
200100743	Th-232	0.62	pCi/g
200100751	Th-232	0.48	pCi/g
200100752	Th-232	0.92	pCi/g
200100734	U (total)	256.0	mg/kg
200100740	U-234	83.0	pCi/g
200100740	U-235	3.69	pCi/g
200100752	U-235	4.6	pCi/g

Table A-7. Open Top Tank Pre-Excavation Characterization Soil Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
3	**Radionuclides (cont'd)**		
200100751	U-235	1.1	pCi/g
200100740	U-236	1.94	pCi/g
200100740	U-238	85.5	pCi/g
200100752	U-238	76	pCi/g
200100751	U-238	15	pCi/g
	PCBs/Pesticides		
200100702	Aroclor 1260	23	mg/kg
200100724	Toxaphene	140	mg/kg

Only detectable sampling results are listed in the Table.

Table A-8. Open Top Tank Post-Excavation Characterization Soil Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
044703-011	**Inorganics**		
200105468	Aluminum	14,900	mg/kg
200105480	Aluminum	18,200	mg/kg
200105468	Arsenic	8.0	mg/kg
200105480	Arsenic	8.6	mg/kg
200105468	Barium	121	mg/kg
200105480	Barium	122	mg/kg
200105468	Calcium	26,500	mg/kg
200105480	Calcium	15,200	mg/kg
200105468	Chromium	12.6	mg/kg
200105480	Chromium	16.7	mg/kg
200105468	Cobalt	13.6	mg/kg
200105480	Cobalt	15.4	mg/kg
200105468	Copper	17.5	mg/kg
200105480	Copper	34.9	mg/kg
200105468	Iron	24,600	mg/kg
200105480	Iron	33,600	mg/kg
200105468	Lead	19.5	mg/kg
200105480	Lead	15.7	mg/kg
200105468	Magnesium	8,880	mg/kg
200105480	Magnesium	8,660	mg/kg
200105468	Manganese	981	mg/kg
200105480	Manganese	483	mg/kg
200105468	Nickel	28.4	mg/kg
200105480	Nickel	38.1	mg/kg
200105468	Potassium	1,070	mg/kg
200105480	Potassium	1,740	mg/kg
200105468	Vanadium	19.9	mg/kg
200105480	Vanadium	19.4	mg/kg
200105468	Zinc	91.9	mg/kg
200105480	Zinc	85.7	mg/kg
	Volatile Organics		
200105467	Methylene Chloride	0.001	mg/kg
	Semivolatile Organics		
200105487	Benzo(g,h,i)perylene	0.200	mg/kg
	PCBs/Pesticides/Dioxins		
200105486	4,4-DDE	0.0044	mg/kg
200105474	Aroclor 1260	3.80	mg/kg
200105474	Aroclor 1260	3.20	mg/kg

Table A-8. Open Top Tank Post-Excavation Characterization Soil Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
044703-011	**PCBs/Pesticides/Dioxins (cont'd)**		
200105486	Aroclor 1260	6.80	mg/kg
200105486	Aroclor 1260	6.10	mg/kg
200105485	Total HxCDD	0.0000037	mg/kg
044703-012	**Inorganics**		
200105492	Aluminum	1,900	mg/kg
200105492	Arsenic	5.6	mg/kg
200105492	Barium	25.2	mg/kg
200105492	Beryllium	1.3	mg/kg
200105492	Calcium	122,000	mg/kg
200105492	Chromium	2.4	mg/kg
200105492	Cobalt	6.9	mg/kg
200105492	Copper	11.9	mg/kg
200105492	Iron	10,400	mg/kg
200105492	Magnesium	56,700	mg/kg
200105492	Manganese	516	mg/kg
200105492	Potassium	316	mg/kg
200105492	Sodium	110	mg/kg
200105492	Vanadium	10.1	mg/kg
200105492	Zinc	23.4	mg/kg
	Radionuclides		
200105502	Beta	15	pCi/g
	Semivolatile Organics		
200105499	Benzo(g,h,i)perylene	0.17	mg/kg
200105499	Diethyl Phthalate	0.011	mg/kg
	PCBs/Dioxins		
200105498	Aroclor 1260	0.220	mg/kg
200105497	Total HxCDD	0.0000048	mg/kg
044703-013	**Inorganics**		
200105504	Aluminum	11,600	mg/kg
200105504	Arsenic	7.3	mg/kg
200105504	Barium	128	mg/kg
200105504	Beryllium	1.6	mg/kg
200105504	Calcium	16,700	mg/kg
200105504	Chromium	11.5	mg/kg
200105504	Cobalt	11.3	mg/kg
200105504	Copper	21.2	mg/kg
200105504	Iron	23,900	mg/kg

Table A-8. Open Top Tank Post-Excavation Characterization Soil Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
044703-013	**Inorganics (cont'd)**		
200105504	Magnesium	5,720	mg/kg
200105504	Manganese	679	mg/kg
200105504	Potassium	593	mg/kg
200105504	Sodium	114	mg/kg
200105504	Vanadium	24.0	mg/kg
200105504	Zinc	58.5	mg/kg
	Radionuclides		
200105514	Alpha	11	pCi/g
200105514	Beta	24	pCi/g
	Semivolatile Organics		
200105511	Benzo(a)anthracene	0.170	mg/kg
200105511	Benzo(a)pyrene	0.230	mg/kg
200105511	Benzo(b)fluoranthene	0.330	mg/kg
200105511	Benzo(g,h,i)perylene	0.170	mg/kg
200105511	Benzo(k)fluoranthene	0.120	mg/kg
200105511	Chrysene	0.170	mg/kg
200105511	Fluoranthene	0.160	mg/kg
200105511	Pyrene	0.200	mg/kg
	PCBs/Dioxins		
200105509	1,2,3,6,7,8-HxCDD	0.0000069	mg/kg
200105510	Aroclor 1260	0.810	mg/kg
200105509	Total HxCDD	0.000033	mg/kg
044703-014	**Inorganics**		
200105516	Aluminum	14,100	mg/kg
200105516	Arsenic	10.5	mg/kg
200105516	Barium	118	mg/kg
200105516	Calcium	21,500	mg/kg
200105516	Chromium	13.4	mg/kg
200105516	Cobalt	15.1	mg/kg
200105516	Copper	25.8	mg/kg
200105516	Iron	32,800	mg/kg
200105516	Magnesium	9,600	mg/kg
200105516	Manganese	450	mg/kg
200105516	Nickel	31.5	mg/kg
200105516	Potassium	886	mg/kg

Table A-8. Open Top Tank Post-Excavation Characterization Soil Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
044703-014	**Inorganics (cont'd)**		
200105516	Sodium	134	mg/kg
200105516	Vanadium	27.5	mg/kg
200105516	Zinc	72.1	mg/kg
	Semivolatile Organics		
200105523	4-Nitroaniline	0.053	mg/kg
200105523	Pyrene	0.046	mg/kg
	PCBs/Dioxins		
200105521	1,2,3,6,7,8-HxCDD	0.0000065	mg/kg
200105522	Aroclor 1260	1.1	mg/kg
200105521	Total HxCDD	0.000029	mg/kg
044703-015	**Inorganics**		
200105528	Aluminum	14,500	mg/kg
200105528	Arsenic	7.0	mg/kg
200105528	Barium	139	mg/kg
200105528	Beryllium	1.2	mg/kg
200105528	Calcium	6,940	mg/kg
200105528	Chromium	13.1	mg/kg
200105528	Cobalt	14.4	mg/kg
200105528	Copper	18.3	mg/kg
200105528	Iron	25,700	mg/kg
200105528	Magnesium	4,390	mg/kg
200105528	Manganese	731	mg/kg
200105528	Potassium	806	mg/kg
200105528	Sodium	84.5	mg/kg
200105528	Vanadium	27.3	mg/kg
200105528	Zinc	58.4	mg/kg
	Radionuclides		
200105538	Alpha	14	pCi/g
200105538	Beta	33	pCi/g
	Semivolatile Organics		
200105535	2,4-Dimethylphenol	0.075	mg/kg
200105535	2,4-Dimethylphenol	0.085	mg/kg
200105535	4-Methylphenol	0.160	mg/kg
200105535	4-Methylphenol	0.200	mg/kg

Table A-8. Open Top Tank Post-Excavation Characterization Soil Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
044703-015	**PCBs/Pesticides/Dioxins**		
200105533	1,2,3,6,7,8-HxCDD	0.000031	mg/kg
200105534	Aroclor 1260	0.260	mg/kg
200105534	g-Chlordane	0.0032	mg/kg
200105533	Total HxCDD	0.00018	mg/kg
044703-048	**Inorganics**		
200105456	Aluminum	12,500	mg/kg
200105456	Arsenic	6.6	mg/kg
200105456	Barium	100	mg/kg
200105456	Calcium	5,660	mg/kg
200105456	Chromium	11.3	mg/kg
200105456	Cobalt	6.2	mg/kg
200105456	Copper	15.9	mg/kg
200105456	Iron	21,000	mg/kg
200105456	Lead	12.9	mg/kg
200105456	Magnesium	3,400	mg/kg
200105456	Manganese	416	mg/kg
200105456	Nickel	20.4	mg/kg
200105456	Potassium	648	mg/kg
200105456	Vanadium	10.8	mg/kg
	Radionuclides		
200105466	Alpha	10	pCi/g
200105467	Beta	19	pCi/g
	Volatile Organics		
200105455	Methylene Chloride	0.003	mg/kg
	Semivolatile Organics		
200105463	Di-n-butyl phthalate	0.057	mg/kg
	PCBs/Dioxins		
200105461	1,2,3,6,7,8-HxCDD	0.0000053	mg/kg
200105462	Aroclor 1260	0.800	mg/kg
200105461	Total HxCDD	0.000025	mg/kg
200105461	Total HxCDD	0.000014	mg/kg

Table A-8. Open Top Tank Post-Excavation Characterization Soil Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
044703-049	**Inorganics**		
200106136	Aluminum	9,550	mg/kg
200106136	Arsenic	5.6	mg/kg
200106136	Barium	83.3	mg/kg
200106136	Beryllium	1.5	mg/kg
200106136	Calcium	95,100	mg/kg
200106136	Chromium	8.5	mg/kg
200106136	Cobalt	8.4	mg/kg
200106136	Copper	15.9	mg/kg
200106136	Iron	20,900	mg/kg
200106136	Magnesium	18,000	mg/kg
200106136	Manganese	778	mg/kg
200106136	Potassium	765	mg/kg
200106136	Sodium	114	mg/kg
200106136	Vanadium	22.7	mg/kg
200106136	Zinc	37.8	mg/kg
	Radionuclides		
200106146	Alpha	15	pCi/g
200106146	Beta	19	pCi/g
	Semivolatile Organics		
200106143	Benzo(a)anthracene	0.18	mg/kg
200106143	Benzo(a)pyrene	0.32	mg/kg
200106143	Benzo(b)fluoranthene	0.41	mg/kg
200106143	Benzo(g,h,i)perylene	0.21	mg/kg
200106143	Benzo(k)fluoranthene	0.11	mg/kg
200106143	Chrysene	0.18	mg/kg
200106143	Fluoranthene	0.16	mg/kg
200106143	Indeno(1,2,3-cd)pyrene	0.24	mg/kg
200106143	Pyrene	0.21	mg/kg
	PCBs/Dioxins		
200106141	1,2,3,6,7,8-HxCDD	0.0000023	mg/kg
200106141	1,2,3,7,8,9-HxCDD	0.0000014	mg/kg
200106142	Aroclor 1260	0.140	mg/kg
200106141	Total HxCDD	0.000018	mg/kg

Table A-8. Open Top Tank Post-Excavation Characterization Soil Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
044703-050	**Inorganics**		
200106160	Aluminum	9,230	mg/kg
200106160	Arsenic	5.9	mg/kg
200106160	Barium	84.0	mg/kg
200106160	Beryllium	1.1	mg/kg
200106160	Calcium	82,700	mg/kg
200106160	Chromium	9.3	mg/kg
200106160	Cobalt	7.5	mg/kg
200106160	Copper	13.7	mg/kg
200106160	Iron	17,000	mg/kg
200106160	Magnesium	45,800	mg/kg
200106160	Manganese	489	mg/kg
200106160	Potassium	662	mg/kg
200106160	Sodium	127	mg/kg
200106160	Vanadium	20.6	mg/kg
200106160	Zinc	37.9	mg/kg
	Radionuclides		
200106170	Alpha	13	pCi/g
	PCBs/Dioxins		
200106165	1,2,3,6,7,8-HxCDD	0.0000058	mg/kg
200106165	1,2,3,7,8,9-HxCDD	0.0000045	mg/kg
200106166	Aroclor 1260	0.630	mg/kg
200106165	Total HxCDD	0.000021	mg/kg
044703-051	**Inorganics**		
200106172	Aluminum	11,400	mg/kg
200106172	Arsenic	5.7	mg/kg
200106172	Barium	90.1	mg/kg
200106172	Beryllium	1.2	mg/kg
200106172	Calcium	39,400	mg/kg
200106172	Chromium	10.7	mg/kg
200106172	Cobalt	10.8	mg/kg
200106172	Copper	14.3	mg/kg
200106172	Iron	18,700	mg/kg
200106172	Magnesium	16,200	mg/kg
200106172	Manganese	422	mg/kg
200106172	Potassium	991	mg/kg
200106172	Sodium	96.0	mg/kg
200106172	Vanadium	26.0	mg/kg
200106172	Zinc	44.6	mg/kg

Table A-8. Open Top Tank Post-Excavation Characterization Soil Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
044703-051	**Radionuclides**		
200106182	Alpha	25	pCi/g
200106182	Beta	35	pCi/g
	PCBs/Dioxins		
200106177	1,2,3,6,7,8-HxCDD	0.000017	mg/kg
200106177	1,2,3,7,8,9-HxCDD	0.000011	mg/kg
200106178	Aroclor 1260	3.50	mg/kg
200106178	Aroclor 1260	3.50	mg/kg
200106177	Total HxCDD	0.000028	mg/kg
Line 1	**Radionuclides**		
200115258	Alpha	10	pCi/g
200115258	Beta	17	pCi/g
	PCBs		
200115257	Aroclor 1260	0.260	mg/kg
Line 2	**Radionuclides**		
200115260	Alpha	20	pCi/g
200115262	Alpha	13	pCi/g
200115260	Beta	29	pCi/g
200115262	Beta	28	pCi/g
	PCBs		
200115259	Aroclor 1260	1.00	mg/kg
200115261	Aroclor 1260	0.740	mg/kg
Line 3	**Radionuclides**		
200115264	Alpha	7.7	pCi/g
200115264	Beta	32	pCi/g
	PCBs		
200115263	Aroclor 1260	2.00	mg/kg

Table A-8. Open Top Tank Post-Excavation Characterization Soil Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
Line 4	**Radionuclides**		
200115266	Alpha	19	pCi/g
200115266	Beta	17	pCi/g
	PCBs		
200115265	Aroclor 1260	3.90	mg/kg
Line 5	**Radionuclides**		
200115268	Alpha	25	pCi/g
200115268	Beta	20	pCi/g
	PCBs		
200115267	Aroclor 1260	4.60	mg/kg

Only detectable sampling results are listed in the Table.

Table A-9. Post-Excavation Skid Tank and Skid Tank Pond Verification Soil Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
Retention Basin			
***SP-7**	**Radionuclides**		
200101465	Ra-226	1.0	pCi/g
200101466	Ra-228	0.8	pCi/g
200101462	Th-228	0.8	pCi/g
200101462	Th-230	1.0	pCi/g
200101462	Th-232	0.6	pCi/g
200101459	U (total)	14	mg/kg
200101461	U-234	5.8	pCi/g
200101461	U-235/236	1.3	pCi/g
200101461	U-238	6.3	pCi/g
	Volatile Organics		
200101457	1,1,1-Trichloroethane	0.11	mg/kg
200101457	1,1-Dichloroethane	0.014	mg/kg
200101457	1,1-Dichloroethane	0.001	mg/kg
200101457	1,2-Dichloroethane	0.048	mg/kg
	Dioxins		
200101463	1,2,3,6,7,8-HxCDD	0.000022	mg/kg
200101463	1,2,3,7,8,9-HxCDD	0.0000083	mg/kg
Retention Basin			
SP-1	**Inorganics**		
200101369	Aluminum	12,700	mg/kg
200101369	Arsenic	11.3	mg/kg
200101369	Barium	112	mg/kg
200101369	Calcium	9,110	mg/kg
200101369	Chromium	13.5	mg/kg
200101369	Cobalt	14.5	mg/kg
200101369	Copper	23.1	mg/kg
200101369	Iron	29,000	mg/kg
200101369	Lead	14.9	mg/kg
200101369	Magnesium	4,810	mg/kg
200101369	Manganese	814	mg/kg
200101369	Nickel	38.6	mg/kg
200101369	Potassium	1,150	mg/kg
200101369	Vanadium	25	mg/kg
	Radionuclides		
200101377	Alpha	17	pCi/g
200101375	Ra-226	1.6	pCi/g
200101376	Ra-228	1.0	pCi/g

Table A-9. Post-Excavation Skid Tank and Skid Tank Pond Verification Soil Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
SP-1	**Radionuclides (cont'd)**		
200101373	Th-228	1.2	pCi/g
200101378	Th-230	1.6	pCi/g
200101378	Th-232	1.2	pCi/g
200101370	U (total)	20	mg/kg
200101372	U-234	8.8	pCi/g
200101372	U-235/236	0.8	pCi/g
200101372	U-238	8.3	pCi/g
	Volatile Organics		
200101368	1,1,1-Trichloroethane	0.013	mg/kg
200101368	Tetrachloroethylene	0.053	mg/kg
	Semivolatile Organics		
200101374	4-Methylphenol	0.06	mg/kg
200101374	Chrysene	0.059	mg/kg
200101374	Di-n-Octyl Phthalate	0.043	mg/kg
200101374	Fluoranthene	0.056	mg/kg
200101374	Pyrene	0.062	mg/kg
	PCBs/Pesticides/Dioxins		
200101373	1,2,3,6,7,8-HxCDD	0.000049	mg/kg
200101373	1,2,3,7,8,9-HxCDD	0.000019	mg/kg
200101373	Aroclor 1260	0.14	mg/kg
200101373	Endosulfan II	0.0045	mg/kg
200101373	Total HxCDD	0.000068	mg/kg
Retention Basin			
SP-2	**Inorganics**		
200101380	Aluminum	15,100	mg/kg
200101380	Antimony	0.58	mg/kg
200101380	Arsenic	12.5	mg/kg
200101380	Barium	98.8	mg/kg
200101380	Calcium	25,500	mg/kg
200101380	Chromium	14.7	mg/kg
200101380	Cobalt	17.7	mg/kg
200101380	Copper	26.7	mg/kg
200101380	Iron	36,200	mg/kg
200101380	Lead	19.4	mg/kg
200101380	Magnesium	8,880	mg/kg
200101380	Manganese	709	mg/kg
200101380	Nickel	41.6	mg/kg

Table A-9. Post-Excavation Skid Tank and Skid Tank Pond Verification Soil Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
SP-2	**Inorganics (cont'd)**		
200101380	Potassium	2,170	mg/kg
200101380	Vanadium	28.5	mg/kg
200101380	Zinc	74.2	mg/kg
	Radionuclides		
200101387	Ra-226	1.0	pCi/g
200101388	Ra-228	1.0	pCi/g
200101384	Th-228	1.2	pCi/g
200101384	Th-230	1.6	pCi/g
200101384	Th-232	1.2	pCi/g
200101381	U (total)	100	mg/kg
200101383	U-234	36	pCi/g
200101383	U-235/236	2.4	pCi/g
200101383	U-238	35	pCi/g
	Volatile Organics		
200101379	1,1-Dichloroethane	0.001	mg/kg
200101379	Tetrachloroethylene	0.005	mg/kg
200101379	Xylenes (Total)	0.011	mg/kg
	Semivolatile Organics		
200101386	2,4-Dimethylphenol	0.13	mg/kg
200101386	2-Methylnaphthalate	0.055	mg/kg
200101386	4-Methylphenol	0.099	mg/kg
200101386	Benzo(a)anthracene	0.068	mg/kg
200101386	Chrysene	0.06	mg/kg
200101386	Naphthalene	0.056	mg/kg
200101386	Phenanthrene	0.27	mg/kg
	PCBs/Pesticides/Dioxins		
200101385	1,2,3,6,7,8-HxCDD	0.000046	mg/kg
200101385	1,2,3,7,8,9-HxCDD	0.000018	mg/kg
200101385	4,4-DDE	0.0047	mg/kg
200101385	A-Chlordane	0.00.9	mg/kg
200101385	Aroclor 1254	0.12	mg/kg
200101385	Total HxCDD	0.00028	mg/kg
Retention Basin			
SP-3	**Inorganics**		
200101423	Aluminum	9,420	mg/kg
200101414	Arsenic	5.3	mg/kg
200101414	Barium	62.0	mg/kg

Table A-9. Post-Excavation Skid Tank and Skid Tank Pond Verification Soil Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
SP-3	**Inorganics (cont'd)**		
200101414	Calcium	118,000	mg/kg
200101414	Chromium	9.9	mg/kg
200101414	Cobalt	9.3	mg/kg
200101414	Copper	17.2	mg/kg
200101414	Iron	20,800	mg/kg
200101414	Lead	10.5	mg/kg
200101414	Magnesium	16,200	mg/kg
200101414	Manganese	720	mg/kg
200101414	Potassium	1,430	mg/kg
200101414	Vanadium	18.2	mg/kg
	Radionuclides		
200101423	Alpha	110	pCi/g
200101421	Ra-226	1.2	pCi/g
200101422	Ra-228	1.1	pCi/g
200101418	Th-228	0.9	pCi/g
200101418	Th-230	1.1	pCi/g
200101418	Th-232	0.8	pCi/g
200101415	U (total)	310	mg/kg
200101417	U-234	84	pCi/g
200101417	U-235/236	5.8	pCi/g
200101417	U-238	82	pCi/g
	Volatile Organics		
200101413	Ethyl Benzene	3.8	mg/kg
200101413	Tetrachloroethylene	86	mg/kg
200101413	Xylenes (Total)	24	mg/kg
	Semivolatile Organics		
200101420	Naphthalene	1.4	mg/kg
	PCBs/Pesticides/Dioxins		
200101419	Aroclor 1260	0.34	mg/kg
200101419	4,4-DDE	0.0074	mg/kg
200101419	A-Chlordane	0.0052	mg/kg
200101419	Endosulfan II	0.014	mg/kg
200101419	Endrin	0.0048	mg/kg
200101419	Heptachlor Epoxide	0.015	mg/kg
200101419	1,2,3,6,7,8-HxCDD	0.000061	mg/kg
200101419	1,2,3,7,8,9-HxCDD	0.000016	mg/kg
200101419	Total HxCDD	0.000077	mg/kg

Table A-9. Post-Excavation Skid Tank and Skid Tank Pond Verification Soil Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
Retention Basin			
SP-4	**Inorganics**		
200101425	Aluminum	8,610	mg/kg
200101425	Arsenic	6.4	mg/kg
200101425	Barium	59.4	mg/kg
200101425	Calcium	105,000	mg/kg
200101425	Chromium	9.6	mg/kg
200101425	Cobalt	12.2	mg/kg
200101425	Copper	16.5	mg/kg
200101425	Iron	23,100	mg/kg
200101425	Lead	8.3	mg/kg
200101425	Magnesium	21,300	mg/kg
200101425	Manganese	667	mg/kg
200101425	Potassium	1,050	mg/kg
200101425	Vanadium	21.5	mg/kg
	Radionuclides		
200101434	Alpha	16	pCi/g
200101432	Ra-226	1.0	pCi/g
200101433	Ra-228	0.8	pCi/g
200101429	Th-228	0.8	pCi/g
200101429	Th-230	1.2	pCi/g
200101429	Th-232	0.9	pCi/g
200101428	U (total)	14	mg/kg
200101428	U-234	6.7	pCi/g
200101428	U-235/236	0.6	pCi/g
200101428	U-238	6.1	pCi/g
	Volatile Organics		
200101424	1,1,1-Trichloroethane	0.008	mg/kg
200101424	Chlorobenzene	0.012	mg/kg
200101424	Ethyl Benzene	0.001	mg/kg
200101424	Tetrachloroethylene	0.043	mg/kg
200101424	Xylenes (Total)	0.008	mg/kg
	Dioxins		
200101430	1,2,3,6,7,8-HxCDD	0.0000057	mg/kg
200101430	Total HxCDD	0.00003	mg/kg

Table A-9. Post-Excavation Skid Tank and Skid Tank Pond Verification Soil Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
Retention Basin			
SP-5	**Inorganics**		
200101436	Aluminum	8,750	mg/kg
200101436	Arsenic	8.3	mg/kg
200101436	Barium	89.8	mg/kg
200101436	Calcium	64,200	mg/kg
200101436	Chromium	9.4	mg/kg
200101436	Cobalt	11.5	mg/kg
200101436	Copper	18.5	mg/kg
200101436	Iron	21,900	mg/kg
200101436	Magnesium	23,100	mg/kg
200101436	Manganese	653	mg/kg
200101436	Potassium	912	mg/kg
200101436	Vanadium	22.1	mg/kg
	Radionuclides		
200101445	Alpha	29	pCi/g
200101445	Beta	25	pCi/g
200101443	Ra-226	1.1	pCi/g
200101444	Ra-228	0.9	pCi/g
200101440	Th-228	0.9	pCi/g
200101440	Th-230	1.7	pCi/g
200101440	Th-232	1.1	pCi/g
200101437	U (total)	60	mg/kg
200101439	U-234	19	pCi/g
200101439	U-235/236	1.4	pCi/g
200101439	U-238	20	pCi/g
	Volatile Organics		
200101435	1,1,1-Trichloroethane	0.009	mg/kg
200101435	Chlorobenzene	0.003	mg/kg
200101435	Tetrachloroethylene	0.052	mg/kg
	Semivolatile Organics		
200101442	Benzo(g,h,i)perylene	0.05	mg/kg
200101442	Di-n-Octyl Phthalate	0.041	mg/kg
200101442	Pyrene	0.049	mg/kg
	PCBs/Dioxins		
200101441	1,2,3,6,7,8-HxCDD	0.000027	mg/kg
200101441	1,2,3,7,8,9-HxCDD	0.000012	mg/kg
200101441	Aroclor 1260	1.9	mg/kg
200101441	Total HxCDD	0.000039	mg/kg

Table A-9. Post-Excavation Skid Tank and Skid Tank Pond Verification Soil Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
Retention Basin			
SP-6	**Inorganics**		
200101447	Aluminum	12,200	mg/kg
200101447	Arsenic	6.8	mg/kg
200101447	Barium	135	mg/kg
200101447	Calcium	8,330	mg/kg
200101447	Chromium	11.2	mg/kg
200101447	Cobalt	12.2	mg/kg
200101447	Copper	16.0	mg/kg
200101447	Iron	23,300	mg/kg
200101447	Lead	18.0	mg/kg
200101447	Magnesium	3,440	mg/kg
200101447	Manganese	1,020	mg/kg
200101447	Potassium	1,240	mg/kg
200101447	Vanadium	28.6	mg/kg
	Radionuclides		
200101454	Ra-226	1.7	pCi/g
200101455	Ra-228	1.3	pCi/g
200101451	Th-228	1.1	pCi/g
200101451	Th-230	1.3	pCi/g
200101451	Th-232	1.1	pCi/g
200101448	U (total)	22	mg/kg
200101450	U-234	7.7	pCi/g
200101450	U-235/236	0.7	pCi/g
200101450	U-238	7.7	pCi/g
	Volatile Organics		
200101447	Tetrachloroethylene	0.015	mg/kg
	Semivolatile Organics		
200101453	2,4-Dimethylphenol	0.14	mg/kg
200101447	Naphthalene	0.056	mg/kg
	PCBs/Dioxins		
200101452	Aroclor 1254	0.14	mg/kg
200101452	1,2,3,6,7,8-HxCDD	0.00000097	mg/kg
200101452	Total HxCDD	0.0000063	mg/kg
200101452	Total TCDD	0.00000061	mg/kg

Table A-9. Post-Excavation Skid Tank and Skid Tank Pond Verification Soil Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
Drainline			
044703-031 400	**Inorganics**		
200105732	Aluminum	9,470	mg/kg
200105732	Arsenic	7.5	mg/kg
200105732	Barium	102	mg/kg
200105732	Calcium	37,300	mg/kg
200105732	Chromium	10.5	mg/kg
200105732	Cobalt	6.8	mg/kg
200105732	Copper	16.0	mg/kg
200105732	Iron	19,200	mg/kg
200105732	Lead	22.2	mg/kg
200105732	Magnesium	13,700	mg/kg
200105732	Manganese	616	mg/kg
200105732	Potassium	970	mg/kg
200105732	Vanadium	21.5	mg/kg
200105732	Zinc	47.1	mg/kg
	Radionuclides		
200105742	Alpha	13	pCi/g
200105742	Beta	17	pCi/g
200105740	Ra-226	1.0	pCi/g
200105741	Ra-228	1.2	pCi/g
200105736	Th-228	1.1	pCi/g
200105736	Th-230	1.5	pCi/g
200105736	Th-232	0.9	pCi/g
200105733	U (total)	25	mg/kg
200105733	U-234	9.7	pCi/g
200105735	U-235/236	0.8	pCi/g
200105735	U-238	11.0	pCi/g
	Semivolatile Organics		
200105739	Benzo(a)anthracene	0.086	mg/kg
200105739	Benzo(a)pyrene	0.110	mg/kg
200105739	Benzo(b)fluoranthene	0.170	mg/kg
200105739	Chrysene	0.082	mg/kg
200105739	Fluoranthene	0.11	mg/kg
200105739	Pyrene	0.12	mg/kg
	PCBs/Pesticides/Dioxins		
200105737	1,2,3,6,7,8-HxCDD	0.0000022	mg/kg
200105737	2,3,7,8-TCDD	0.00000026	mg/kg
200105738	Aldrin	0.0052	mg/kg
200105738	Aroclor 1248	0.140	mg/kg
200105737	Total HxCDD	0.0000076	mg/kg

Table A-9. Post-Excavation Skid Tank and Skid Tank Pond Verification Soil Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
044703-031 400	**PCBs/Pesticides/Dioxins (cont'd)**		
200105737	Total HxCDD	0.000013	mg/kg
200105737	Total TCDD	0.000061	mg/kg
Sump			
SP-8	**Inorganics**		
200101469	Aluminum	12,700	mg/kg
200101469	Antimony	0.70	mg/kg
200101469	Arsenic	13.3	mg/kg
200101469	Barium	123	mg/kg
200101469	Calcium	8,240	mg/kg
200101469	Chromium	15.3	mg/kg
200101469	Cobalt	12.2	mg/kg
200101469	Copper	23.7	mg/kg
200101469	Iron	28,400	mg/kg
200101469	Magnesium	5,230	mg/kg
200101469	Manganese	507	mg/kg
200101469	Potassium	970	mg/kg
200101469	Vanadium	29.9	mg/kg
	Radionuclides		
200101478	Alpha	19	pCi/g
200101478	Beta	29	pCi/g
200101476	Ra-226	1.4	pCi/g
200101477	Ra-228	1.0	pCi/g
200101473	Th-228	1.3	pCi/g
200101473	Th-230	1.7	pCi/g
200101473	Th-232	1.2	pCi/g
200101470	U (total)	26	mg/kg
200101472	U-234	10	pCi/g
200101472	U-235/236	0.6	pCi/g
200101472	U-238	9.9	pCi/g
	Volatile Organics		
200101468	1,2-Dichloroethane	0.003	mg/kg
200101468	Ethyl Benzene	0.002	mg/kg
200101468	Tetrachloroethylene	0.007	mg/kg
200101468	Xylenes (Total)	0.009	mg/kg

Table A-9. Post-Excavation Skid Tank and Skid Tank Pond Verification Soil Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
SP-8	**PCBs/Dioxins**		
200101474	Aroclor 1260	0.61	mg/kg
200101474	Total HxCDD	0.000014	mg/kg
200101474	Total HxCDD	0.000026	mg/kg

* indicates SP-7 is a duplicate sample of SP-4
Only detectable sampling results are listed in the Table.

Table A-10. White Metal Box Characterization Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
Box 651638 GRI	**Inorganics**		
200108923	Barium (TCLP)	0.76	mg/L
200108930	Evolved Sulfide	10	mg/kg
200108931	pH	7.1	-
200108930	Sulfide	50	mg/kg
	Radionuclides		
200108938	Alpha	160	pCi/g
200108938	Beta	210	pCi/g
200108933	K-40	13	pCi/g
200108933	Ra-226	0.79	pCi/g
200108934	Tc-99	41	pCi/g
200108933	Th-232	0.92	pCi/g
200108935	U (total)	250	mg/kg
200108933	U-235	4.1	pCi/g
200108933	U-238	80	pCi/g
	Volatile Organics		
200108927	Trichloroethylene	0.042	mg/L
	PCBs		
200108924	Aroclor 1260	5.5	mg/kg
Box 651651 GRI	**Inorganics**		
200108891	Barium (TCLP)	0.76	mg/L
200108898	Evolved Sulfide	10	mg/kg
200108899	pH	6.8	-
200108898	Sulfide	30	mg/kg
	Radionuclides		
200108906	Alpha	560	pCi/g
200108906	Beta	480	pCi/g
200108901	K-40	13	pCi/g
200108901	Ra-226	0.82	pCi/g
200108902	Tc-99	23	pCi/g
200108901	Th-232	0.76	pCi/g
200108903	U (total0	189	mg/kg
200108901	U-235	2.6	pCi/g
200108901	U-238	55	pCi/g
	PCBs		
200108892	Aroclor 1260	0.58	mg/kg

Sample Location/I.D.	Contaminant	Concentration	Units
Box 651687 GRI	**Inorganics**		
200108955	Barium (TCLP)	0.55	mg/L
200108963	pH	7.5	-
200108962	Sulfide	30	mg/kg
	Radionuclides		
200108970	Alpha	14	pCi/g
200108970	Beta	21	pCi/g
200108965	K-40	14	pCi/g
200108965	Ra-226	0.78	pCi/g
200108966	Tc-99	5.2	pCi/g
200108965	Th-232	1.0	pCi/g
200108967	U (total)	17	mg/kg
200108965	U-235	0.55	pCi/g
200108965	U-238	8.7	pCi/g
	PCBs		
200108956	Aroclor 1254	0.157	mg/kg
Box 654057 GRI	**Inorganics**		
200109221	Barium (TCLP)	0.68	mg/L
200109228	Evolved Sulfide	10	mg/kg
200109228	Sulfide	50	mg/kg
	Radionuclides		
200109236	Alpha	21	pCi/g
200109236	Beta	27	pCi/g
200109231	K-40	17	pCi/g
200109231	Ra-226	0.73	pCi/g
200109232	Tc-99	7.5	pCi/g
200109231	Th-232	0.71	pCi/g
200109233	U (total)	9	mg/kg
200109231	U-235	0.54	pCi/g
200109231	U-238	8.7	pCi/g
	PCBs		
200109222	Aroclor 1260	0.550	mg/kg

Table A-10. White Metal Box Characterization Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
Box 654083 GRI	**Inorganics**		
200109083	Barium (TCLP)	0.62	mg/L
200109091	pH	7.5	-
200109090	Sulfide	40	mg/kg
	Radionuclides		
200109098	Alpha	37	pCi/g
200109098	Beta	60	pCi/g
200109093	K-40	15	pCi/g
200109093	Ra-226	0.70	pCi/g
200109094	Tc-99	8.1	pCi/g
200109093	Th-232	0.85	pCi/g
200109095	U (total)	55	mg/kg
200109093	U-235	1.3	pCi/g
200109093	U-238	24	pCi/g
	PCBs		
200109084	Aroclor 1260	0.56	mg/kg
Box 654208 GRI	**Inorganics**		
200108987	Barium (TCLP)	0.60	mg/L
200108994	Evolved Sulfide	30	mg/kg
200108995	pH	7.1	-
200108994	Sulfide	20	mg/kg
	Radionuclides		
200109002	Alpha	85	pCi/g
200109002	Beta	97	pCi/g
200108997	K-40	14	pCi/g
200108997	Ra-226	0.75	pCi/g
200108997	Th-232	0.87	pCi/g
200108999	U (total)	26	mg/kg
200108997	U-235	2.0	pCi/g
200108997	U-238	41	pCi/g
	PCBs		
200108988	Aroclor 1260	0.3	mg/kg

Sample Location/I.D.	Contaminant	Concentration	Units
Box 654281 GRI	**Inorganics**		
200109115	Barium (TCLP)	0.83	mg/L
200109121	Cyanide	0.3	mg/kg
200109122	Evolved Sulfide	20	mg/kg
200109123	pH	7.4	-
200109122	Sulfide	40	mg/kg
	Radionuclides		
200109130	Alpha	63	pCi/g
200109130	Beta	70	pCi/g
200109125	K-40	18	pCi/g
200109125	Ra-226	0.76	pCi/g
200109126	Tc-99	25	pCi/g
200109125	Th-232	0.97	pCi/g
200109127	U (total)	78	mg/kg
200109125	U-235	1.6	pCi/g
200109125	U-238	28	pCi/g
	PCBs		
200109116	Aroclor 1260	0.070	mg/kg
Box 739043 GRI	**Inorganics**		
200109147	Barium (TCLP)	0.72	mg/L
200109154	Evolved Sulfide	30	mg/kg
200109155	pH	7.8	-
200109154	Sulfide	20	mg/kg
	Radionuclides		
200109162	Alpha	43	pCi/g
200109162	Beta	40	pCi/g
200109157	K-40	16	pCi/g
200109157	Ra-226	0.89	pCi/g
200109157	Th-232	0.95	pCi/g
200109159	U (total)	25	mg/kg
200109157	U-235	1.1	pCi/g
200109157	U-238	19	pCi/g
	PCBs		
200109148	Aroclor 1260	0.620	mg/kg

Table A-10. White Metal Box Characterization Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
Box 739047 GRI	**Inorganics**		
200109019	Barium (TCLP)	0.63	mg/L
200109026	Evolved Sulfide	10	mg/kg
200109027	pH	7.1	-
200109026	Sulfide	20	mg/kg
	Radionuclides		
200109034	Alpha	50	pCi/g
200109034	Beta	58	pCi/g
200109029	K-40	13.	pCi/g
200109029	Ra-226	0.76	pCi/g
200109030	Tc-99	25	pCi/g
200109032	Th (total)	5.0	mg/kg
200109029	Th-232	0.74	pCi/g
200109031	U (total)	5	mg/kg
200109029	U-235	3.7	pCi/g
200109029	U-238	69	pCi/g
	PCBs		
200109020	Aroclor 1260	0.330	mg/kg
Box 739069 GRI	**Inorganics**		
200109051	Barium (TCLP)	0.53	mg/L
200109308	Barium (TCLP)	0.64	mg/L
200109314	Cyanide	0.2	mg/kg
200109315	Evolved Sulfide	20	mg/kg
200109058	Evolved Sulfide	20	mg/kg
200109059	pH	7.5	-
200109059	pH	7.1	-
200109058	Sulfide	20	mg/kg
200109319	Sulfide	40	mg/kg
	Radionuclides		
200109323	Alpha	21	pCi/g
200109066	Alpha	38	pCi/g
200109066	Beta	31	pCi/g
200109061	K-40	15	pCi/g
200109318	K-40	14	pCi/g
200109061	Ra-226	0.75	pCi/g
200109318	Ra-226	0.83	pCi/g
200109062	Tc-99	6.8	pCi/g
200109319	Tc-99	4.8	pCi/g
200109061	Th-232	1.0	pCi/g
200109318	Th-232	0.86	pCi/g
200109063	U (total)	48	mg/kg
200109320	U (total)	12	mg/kg

Sample Location/I.D.	Contaminant	Concentration	Units
Box 739069 GRI	**Radionuclides (cont'd)**		
200109061	U-235	1.1	pCi/g
200109318	U-235	3.0	pCi/g
200109061	U-238	23	pCi/g
200109318	U-238	56	pCi/g
	PCBs		
200109052	Aroclor 1260	0.300	mg/kg
200109309	Aroclor 1260	0.430	mg/kg
Box 739127 GRI	**Inorganics**		
200109189	Barium (TCLP)	0.71	mg/L
200109196	Evolved Sulfide	10	mg/kg
200109197	pH	7.5	-
200109196	Sulfide	40	pCi/g
	Radionuclides		
200109204	Alpha	16	pCi/g
200109204	Beta	25	pCi/g
200109199	K-40	17	pCi/g
200109199	Ra-226	0.80	pCi/g
200109200	Tc-99	12	pCi/g
200109199	Th-232	0.87	pCi/g
200109201	U (total)	24	mg/kg
200109199	U-235	0.54	pCi/g
200109199	U-238	10	pCi/g
	PCBs		
200109190	Aroclor 1260	1.0	mg/kg
Box 739129 GRI	**Inorganics**		
200109253	Barium (TCLP)	0.59	mg/L
200109259	Cyanide	0.3	mg/kg
200109260	Evolved Sulfide	20	mg/kg
200109261	pH	7.4	-
200109260	Sulfide	40	mg/kg
	Radionuclides		
200109268	Alpha	17	pCi/g
200109268	Beta	47	pCi/g
200109263	Cs-137	0.17	pCi/g
200109263	K-40	13	pCi/g
200109263	Ra-226	0.66	pCi/g

Table A-10. White Metal Box Characterization Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
Box 739129 GRI	**Radionuclides (cont'd)**		
200109264	Tc-99	5.6	pCi/g
200109263	Th-232	0.62	pCi/g
200109265	U (total)	34	mg/kg
200109263	U-235	0.63	pCi/g
200109263	U-238	12	pCi/g
	PCBs		
200109254	Aroclor 1260	0.460	mg/kg

Only detectable sampling results are listed in the Table.

Table A-11. Magnesium Burn Area Post-Excavation Verification Soil Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
044703-009	**Inorganics**		
200105420	Aluminum	9,360	mg/kg
200105420	Arsenic	7.2	mg/kg
200105420	Barium	92.9	mg/kg
200105420	Calcium	28,800	mg/kg
200105420	Chromium	9.2	mg/kg
200105420	Cobalt	6.4	mg/kg
200105420	Copper	18.5	mg/kg
200105420	Iron	19,600	mg/kg
200105420	Lead	14.9	mg/kg
200105420	Magnesium	6,950	mg/kg
200105420	Manganese	652	mg/kg
200105420	Potassium	1,290	mg/kg
200105420	Vanadium	21.9	mg/kg
200105420	Zinc	53.4	mg/kg
	Radionuclides		
200105430	Alpha	9.1	pCi/g
200105430	Beta	12	pCi/g
200105428	Ra-226	23	pCi/g
200105429	Ra-228	0.8	pCi/g
200105423	Th-228	1.3	pCi/g
200105424	Th-230	5.9	pCi/g
200105424	Th-232	1.0	pCi/g
200105421	U (total)	12	mg/kg
200105423	U-234	1.5	pCi/g
200105423	U-235/236	0.1	pCi/g
200105423	U-238	1.8	pCi/g
	Semivolatile Organics		
200105427	Benzo(a)anthracene	0.069	mg/kg
200105427	Benzo(a)pyrene	0.064	mg/kg
200105427	Benzo(b)fluoranthene	0.081	mg/kg
200105427	Chrysene	0.065	mg/kg
200105427	Fluoranthene	0.13	mg/kg
200105427	Pyrene	0.12	mg/kg
	Dioxins		
200105425	Total TCDD	0.00000044	mg/kg
044703-010	**Inorganics**		
200105432	Aluminum	10,700	mg/kg
200105444	Aluminum	11,500	mg/kg
200105432	Arsenic	7.3	mg/kg

Table A-11. Magnesium Burn Area Post-Excavation Verification Soil Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
044703-010	**Inorganics (cont'd)**		
200105444	Arsenic	10.0	mg/kg
200105432	Barium	93.9	mg/kg
200105444	Barium	105	mg/kg
200105445	Beryllium	1.1	mg/kg
200105432	Cadmium	0.50	mg/kg
200105444	Cadmium	0.50	mg/kg
200105432	Calcium	6,570	mg/kg
200105444	Calcium	6,550	mg/kg
200105432	Chromium	10.6	mg/kg
200105444	Chromium	10.6	mg/kg
200105432	Cobalt	7.1	mg/kg
200105444	Cobalt	13.2	mg/kg
200105432	Copper	21.4	mg/kg
200105444	Copper	23.6	mg/kg
200105432	Iron	22,600	mg/kg
200105444	Iron	26,300	mg/kg
200105432	Lead	14.2	mg/kg
200105444	Lead	16.5	mg/kg
200105432	Magnesium	3,840	mg/kg
200105444	Magnesium	3,950	mg/kg
200105432	Manganese	291	mg/kg
200105444	Manganese	562	mg/kg
200105432	Potassium	1,000	mg/kg
200105444	Potassium	1,300	mg/kg
200105432	Vanadium	23.4	mg/kg
200105444	Vanadium	28.9	mg/kg
200105432	Zinc	63.0	mg/kg
200105444	Zinc	65.3	mg/kg
	Radionuclides		
200105440	Ra-226	1.2	pCi/g
200105452	Ra-226	1.6	pCi/g
200105441	Ra-228	1.1	pCi/g
200105453	Ra-228	1.2	pCi/g
200105436	Th-228	1.4	pCi/g
200105448	Th-228	1.2	pCi/g
200105436	Th-230	1.8	pCi/g
200105448	Th-230	1.6	pCi/g
200105436	Th-232	1.2	pCi/g
200105448	Th-232	0.9	pCi/g
200105433	U (total)	2.4	mg/kg
200105445	U (total)	2.3	mg/kg
200105435	U-234	1.0	pCi/g
200105447	U-234	1.0	pCi/g

Table A-11. Magnesium Burn Area Post-Excavation Verification Soil Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
044703-010	**Radionuclides (cont'd)**		
200105435	U-235/236	0.1	pCi/g
200105447	U-235/236	0.1	pCi/g
200105435	U-238	1.1	pCi/g
200105447	U-238	1.4	pCi/g
	Semivolatile Organics		
200105439	Diethyl Phthalate	0.043	mg/kg
200105451	Diethyl Phthalate	0.046	mg/kg

Only detectable sampling results are listed in the Table.

Table A-12. Magnesium Burn Area Soil Stockpile Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
1st Quarter of Pile	**Inorganics**		
200116147	Aluminum	10,600	mg/kg
200116147	Arsenic	5.5	mg/kg
200116147	Barium	88.6	mg/kg
200116147	Beryllium	0.62	mg/kg
200116147	Calcium	64,900	mg/kg
200116147	Chromium	13.9	mg/kg
200116147	Cobalt	8.1	mg/kg
200116147	Copper	16.4	mg/kg
200116147	Iron	20,500	mg/kg
200116147	Lead	14.3	mg/kg
200116147	Magnesium	13,400	mg/kg
200116147	Manganese	505	mg/kg
200116147	Nickel	17.0	mg/kg
200116147	Potassium	1,180	mg/kg
200116148	Silver	0.0114	mg/L
200116147	Sodium	196	mg/kg
200116147	Vanadium	21.9	mg/kg
	Radionuclides		
200116153	Alpha	8.7	pCi/g
	Semivolatile Organics		
200116152	Benzo(a)anthracene	0.099	mg/kg
200116152	Benzo(a)pyrene	0.096	mg/kg
200116152	Benzo(b)fluoranthene	0.11	mg/kg
200116152	Benzo(g,h,i)perylene	0.061	mg/kg
200116152	Benzo(k)fluoranthene	0.077	mg/kg
200116152	Chrysene	0.096	mg/kg
200116152	Fluoranthene	0.14	mg/kg
200116152	Indeno(1,2,3-cd)pyrene	0.069	mg/kg
200116152	Pyrene	0.16	mg/kg
	Dioxins		
200116151	1,2,3,6,7,8-HxCDD	0.0000016	mg/kg
200116151	1,2,3,7,8-PECDD	0.0000036	mg/kg
200116151	2,3,7,8-TCDD	0.0000014	mg/kg
200116151	Total HxCDD	0.0000023	mg/kg
200116151	Total PECDD	0.0000036	mg/kg
200116151	Total TCDD	0.0000014	mg/kg

Table A-12. Magnesium Burn Area Soil Stockpile Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
2nd Quarter of Pile	**Inorganics**		
200116156	Aluminum	6,750	mg/kg
200116156	Arsenic	4.8	mg/kg
200116156	Barium	66.5	mg/kg
200116156	Beryllium	0.49	mg/kg
200116156	Calcium	78,100	mg/kg
200116156	Chromium	9.5	mg/kg
200116156	Cobalt	6.1	mg/kg
200116156	Copper	13.4	mg/kg
200116156	Iron	14,500	mg/kg
200116156	Lead	13.5	mg/kg
200116156	Magnesium	20,100	mg/kg
200116156	Manganese	404	mg/kg
200116158	Nickel	12.7	mg/kg
200116156	Potassium	768	mg/kg
200116156	Sodium	145	mg/kg
200116156	Vanadium	14.7	mg/kg
200116156	Zinc	45.6	mg/kg
	Semivolatile Organics		
200116161	Benzo(a)anthracene	0.14	mg/kg
200116161	Benzo(a)pyrene	0.16	mg/kg
200116161	Benzo(b)fluoranthene	0.16	mg/kg
200116161	Benzo(g,h,i)perylene	0.11	mg/kg
200116161	Benzo(k)fluoranthene	0.13	mg/kg
200116161	Chrysene	0.13	mg/kg
200116161	Fluoranthene	0.21	mg/kg
200116161	Indeno(1,2,3-cd)pyrene	0.12	mg/kg
200116161	Naphthalene	0.052	mg/kg
200116161	Phenanthrene	0.083	mg/kg
200116161	Pyrene	0.21	mg/kg
3rd Quarter of Pile	**Inorganics**		
200116165	Aluminum	12,900	mg/kg
200116174	Aluminum	10,100	mg/kg
200116165	Antimony	1.0	mg/kg
200116174	Antimony	1.6	mg/kg
200116165	Arsenic	5.2	mg/kg
200116174	Arsenic	5.8	mg/kg
200116165	Barium	101	mg/kg
200116174	Barium	98.6	mg/kg
200116165	Beryllium	0.85	mg/kg
200116174	Beryllium	0.77	mg/kg
200116165	Calcium	12,200	mg/kg
200116174	Calcium	7,870	mg/kg
200116165	Chromium	17.0	mg/kg

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Table A-12. Magnesium Burn Area Soil Stockpile Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
200116174	Chromium	14.1	mg/kg
3rd Quarter of Pile	**Inorganics (cont'd)**		
200116165	Cobalt	8.4	mg/kg
200116174	Cobalt	8.9	mg/kg
200116165	Copper	17.8	mg/kg
200116174	Copper	17.4	mg/kg
200116165	Iron	22,500	mg/kg
200116174	Iron	21,200	mg/kg
200116165	Lead	15.6	mg/kg
200116174	Lead	15.2	mg/kg
200116165	Magnesium	6,390	mg/kg
200116174	Magnesium	5,820	mg/kg
200116165	Manganese	473	mg/kg
200116174	Manganese	545	mg/kg
200116165	Nickel	18.9	mg/kg
200116174	Nickel	18.3	mg/kg
200116165	Potassium	1,510	mg/kg
200116174	Potassium	1,080	mg/kg
200116165	Selenium	1.3	mg/kg
200116165	Vanadium	24.6	mg/kg
200116174	Vanadium	21.8	mg/kg
200116165	Zinc	134	mg/kg
	Radionuclides		
200116180	Alpha	11	pCi/g
	Semivolatile Organics		
200116170	bis(2-ethylhexyl)phthalate	0.042	mg/kg
200116170	Fluoranthene	0.059	mg/kg
200116179	Fluoranthene	0.049	mg/kg
200116170	Naphthalene	0.049	mg/kg
200116179	Naphthalene	0.045	mg/kg
200116170	Pyrene	0.06	mg/kg
200116179	Pyrene	0.048	mg/kg
	Dioxins		
200116169	Total HxCDD	0.00000048	mg/kg
200116178	Total HxCDD	0.0000004	mg/kg
4th Quarter of Pile	**Inorganics**		
200116183	Aluminum	9,560	mg/kg
200116183	Antimony	0.83	mg/kg
200116183	Arsenic	5.9	mg/kg
200116183	Barium	87.7	mg/kg
200116183	Beryllium	0.72	mg/kg
200116183	Calcium	10,800	mg/kg
200116183	Chromium	13.4	mg/kg

Table A-12. Magnesium Burn Area Soil Stockpile Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
4th Quarter of Pile	**Inorganics (cont'd)**		
200116183	Cobalt	7.9	mg/kg
200116183	Copper	16.1	mg/kg
200116183	Iron	19,400	mg/kg
200116183	Lead	14.3	mg/kg
200116183	Magnesium	10,400	mg/kg
200116183	Manganese	465	mg/kg
200116183	Nickel	16.8	mg/kg
200116183	Potassium	1,080	mg/kg
200116183	Vanadium	19.7	mg/kg
	Semivolatile Organics		
200116188	Benzo(a)anthracene	0.1	mg/kg
200116188	Benzo(a)pyrene	0.099	mg/kg
200116188	Benzo(b)fluoranthene	0.14	mg/kg
200116188	Benzo(g,h,i)perylene	0.058	mg/kg
200116188	Benzo(k)fluoranthene	0.048	mg/kg
200116188	Chrysene	0.092	mg/kg
200116188	Fluoranthene	0.15	mg/kg
200116188	Indeno(1,2,3-cd)pyrene	0.068	mg/kg
200116188	Phenanthrene	0.051	mg/kg
200116188	Pyrene	0.15	mg/kg
	Dioxins		
200116187	1,2,3,6,7,8-HxCDD	0.00000082	mg/kg
200116187	1,2,3,7,8-PECDD	0.0000023	mg/kg
200116187	2,3,7,8-TCDD	0.0000024	mg/kg
200116187	Total HxCDD	0.0000014	mg/kg
200116187	Total PECDD	0.0000023	mg/kg
200116187	Total TCDD	0.0000024	mg/kg

Only detectable sampling results are listed in the Table.

Table A-13. East Field Stockpile Results

Sample Location/I.D.	Contaminant	Concentration	Units
1st Quarter of Pile 1	**Inorganics**		
200116192	Aluminum	2,330	mg/kg
200116192	Arsenic	4.1	mg/kg
200116192	Barium	33.2	mg/kg
200116192	Beryllium	0.17	mg/kg
200116192	Calcium	156,000	mg/kg
200116192	Chromium	4.9	mg/kg
200116192	Cobalt	3.4	mg/kg
200116192	Copper	8.1	mg/kg
200116192	Iron	7,500	mg/kg
200116192	Lead	129	mg/kg
200116192	Magnesium	49,900	mg/kg
200116192	Manganese	382	mg/kg
200116192	Nickel	7.9	mg/kg
200116192	Potassium	317	mg/kg
200116192	Sodium	569	mg/kg
200116192	Vanadium	7.0	mg/kg
200116192	Zinc	26.5	mg/kg
	Radionuclides		
200116198	Alpha	22	pCi/g
200116198	Beta	20	pCi/g
	Semivolatile Organics		
200116197	Benzo(a)anthracene	0.065	mg/kg
200116197	Benzo(a)pyrene	0.081	mg/kg
200116197	Benzo(b)fluoranthene	0.11	mg/kg
200116197	Benzo(g,h,i)perylene	0.065	mg/kg
200116197	Benzo(k)fluoranthene	0.054	mg/kg
200116197	Chrysene	0.08	mg/kg
200116197	Fluoranthene	0.12	mg/kg
200116197	Indeno(1,2,3-cd)pyrene	0.07	mg/kg
200116197	Naphthalene	0.037	mg/kg
200116197	Phenanthrene	0.041	mg/kg
200116197	Pyrene	0.11	mg/kg
	PCBs/Dioxins		
200116192	Aroclor 1260	1.5	mg/kg
200116196	1,2,3,6,7,8-HxCDD	0.000017	mg/kg
200116196	Total HxCDD	0.000017	mg/kg
2nd Quarter of Pile 1	**Inorganics**		
200116201	Aluminum	3,580	mg/kg
200116201	Arsenic	4.2	mg/kg
200116201	Barium	40.7	mg/kg
200116201	Beryllium	0.25	mg/kg

Sample Location/I.D.	Contaminant	Concentration	Units
2nd Quarter of Pile 1	**Inorganics (cont'd)**		
200116201	Calcium	133,000	mg/kg
200116201	Chromium	7.8	mg/kg
200116201	Cobalt	4.1	mg/kg
200116201	Copper	8.7	mg/kg
200116201	Iron	10,400	mg/kg
200116201	Lead	48.4	mg/kg
200116201	Magnesium	47,500	mg/kg
200116201	Manganese	414	mg/kg
200116201	Nickel	9.1	mg/kg
200116201	Potassium	567	mg/kg
200116201	Sodium	425	mg/kg
200116201	Vanadium	9.8	mg/kg
	Radionuclides		
200116207	Alpha	20	pCi/g
200116207	Beta	24	pCi/g
	Semivolatile Organics		
200116206	Benzo(a)anthracene	0.059	mg/kg
200116206	Benzo(a)pyrene	0.079	mg/kg
200116206	Benzo(b)fluoranthene	0.098	mg/kg
200116206	Benzo(g,h,i)perylene	0.062	mg/kg
200116206	Benzo(k)fluoranthene	0.047	mg/kg
200116201	Chrysene	0.066	mg/kg
200116206	Fluroranthene	0.11	mg/kg
200116206	Indeno(1,2,3-cd)pyrene	0.061	mg/kg
200116206	Phenanthrene	0.043	mg/kg
200116206	Pyrene	0.11	mg/kg
	PCBs/Dioxins		
200116203	Aroclor 1260	0.880	mg/kg
200116205	1,2,3,6,7,8-HxCDD	0.00003	mg/kg
200116205	1,2,3,6,7,8-HxCDD	0.000012	mg/kg
200116205	Total HxCDD	0.00018	mg/kg
3rd Quarter of Pile 1	**Inorganics**		
200116210	Aluminum	3,520	mg/kg
200116210	Arsenic	5.1	mg/kg
200116210	Barium	41.0	mg/kg
200116210	Beryllium	0.20	mg/kg
200116210	Calcium	173,000	mg/kg
200116210	Chromium	6.4	mg/kg
200116210	Cobalt	3.9	mg/kg
200116210	Copper	7.2	mg/kg
200116210	Iron	9,270	mg/kg

Table A-13. East Field Stockpile Results

Sample Location/I.D.	Contaminant	Concentration	Units
3rd Quarter of Pile 1	**Inorganics (cont'd)**		
200116210	Lead	25.3	mg/kg
200116210	Magnesium	24,900	mg/kg
200116210	Manganese	479	mg/kg
200116210	Nickel	7.9	mg/kg
200116210	Potassium	759	mg/kg
200116210	Sodium	515	mg/kg
200116210	Vanadium	9.5	mg/kg
	Radionuclides		
200116216	Alpha	20	pCi/g
200116216	Beta	38	pCi/g
	Semivolatile Organics		
200116215	Fluoranthene	0.066	mg/kg
200116215	Naphthalene	0.045	mg/kg
200116215	Phenanthrene	0.038	mg/kg
200116215	Pyrene	0.066	mg/kg
	PCBs/Dioxins		
200116212	Aroclor 1260	4.20	mg/kg
200116212	Aroclor 1260	4.00	mg/kg
200116214	1,2,3,4,7,8-HxCDD	0.0000049	mg/kg
200116214	1,2,3,6,7,8-HxCDD	0.000037	mg/kg
200116214	1,2,3,7,8,9-HxCDD	0.000015	mg/kg
200116214	Total HxCDD	0.000057	mg/kg
4th Quarter of Pile 1	**Inorganics**		
200116219	Aluminum	3,950	mg/kg
200116219	Arsenic	4.3	mg/kg
200116219	Barium	42.2	mg/kg
200116219	Beryllium	0.24	mg/kg
200116219	Calcium	143,000	mg/kg
200116219	Chromium	7.4	mg/kg
200116219	Cobalt	4.5	mg/kg
200116219	Copper	8.7	mg/kg
200116219	Iron	10,200	mg/kg
200116219	Lead	40.2	mg/kg
200116219	Magnesium	32,300	mg/kg
200116219	Manganese	476	mg/kg
200116219	Nickel	9.7	mg/kg
200116219	Potassium	689	mg/kg
200116219	Sodium	482	mg/kg
200116219	Vanadium	10.2	mg/kg

Sample Location/I.D.	Contaminant	Concentration	Units
4th Quarter of Pile 1	**Radionuclides**		
200116225	Alpha	40	pCi/g
200116225	Beta	46	pCi/g
	Semivolatile Organics		
200116224	Acenaphthene	0.043	mg/kg
200116224	Anthracene	0.075	mg/kg
200116224	Benzo(a)anthracene	0.19	mg/kg
200116224	Benzo(a)pyrene	0.14	mg/kg
200116224	Benzo(b)fluoranthene	0.21	mg/kg
200116224	Benzo(g,h,i)perylene	0.074	mg/kg
200116224	Benzo(k)fluoranthene	0.082	mg/kg
200116224	Carbazole	0.042	mg/kg
200116224	Chrysene	0.18	mg/kg
200116224	Fluoranthene	0.46	mg/kg
200116224	Fluorene	0.04	mg/kg
200116224	Indeno(1,2,3-cd)pyrene	0.09	mg/kg
200116224	Naphthalene	0.036	mg/kg
200116224	Phenanthrene	0.35	mg/kg
200116224	Pyrene	0.39	mg/kg
	PCBs/Pesticides/Dioxins		
200116221	Aroclor 1260	4.20	mg/kg
200116221	Aroclor 1260	4.10	mg/kg
200116221	4,4-DDE	0.0042	mg/kg
200116223	1,2,3,4,7,8-HxCDD	0.0046	mg/kg
200116223	1,2,3,6,7,8-HxCDD	0.000029	mg/kg
200116223	1,2,3,7,8,9-HxCDD	0.000013	mg/kg
200116223	Total HxCDD	0.000047	mg/kg
1st Quarter of Pile 2	**Inorganics**		
200116228	Aluminum	3,550	mg/kg
200116228	Antimony	0.84	mg/kg
200116228	Arsenic	3.5	mg/kg
200116228	Barium	37.2	mg/kg
200116228	Beryllium	0.17	mg/kg
200116228	Calcium	169,000	mg/kg
200116228	Chromium	6.2	mg/kg
200116228	Cobalt	3.8	mg/kg
200116228	Copper	8.3	mg/kg
200116228	Iron	8,520	mg/kg
200116228	Lead	14.0	mg/kg
200116228	Magnesium	67,800	mg/kg
200116228	Manganese	353	mg/kg
200116228	Nickel	8.4	mg/kg
200116228	Potassium	640	mg/kg

Table A-13. East Field Stockpile Results

Sample Location/I.D.	Contaminant	Concentration	Units
1st Quarter of Pile 2	**Inorganics (cont'd)**		
200116228	Sodium	560	mg/kg
200116228	Vanadium	9.3	mg/kg
	Radionuclides		
200116234	Alpha	16	pCi/g
200116234	Beta	28	pCi/g
	Semivolatile Organics		
200116233	Benzo(a)anthracene	0.075	mg/kg
200116233	Benzo(a)pyrene	0.14	mg/kg
200116233	Benzo(b)fluoranthene	0.17	mg/kg
200116233	Benzo(g,h,i)perylene	0.14	mg/kg
200116233	Benzo(k)fluoranthene	0.056	mg/kg
200116233	Chrysene	0.069	mg/kg
200116233	Fluoranthene	0.11	mg/kg
200116233	Indeno(1,2,3-cd)pyrene	0.13	mg/kg
200116233	Pyrene	0.10	mg/kg
	PCBs/Dioxins		
200116230	Aroclor 1260	0.160	mg/kg
200116232	1,2,3,4,7,8-HxCDD	0.0000043	mg/kg
200116232	1,2,3,6,7,8-HxCDD	0.00003	mg/kg
200116232	1,2,3,7,8,9-HxCDD	0.0000098	mg/kg
200116232	2,3,7,8-TCDD	0.00000078	mg/kg
200116232	Total HxCDD	0.00023	mg/kg
200116232	Total TCDD	0.00000078	mg/kg
2nd Quarter of Pile 2	**Inorganics**		
200116237	Aluminum	4,860	mg/kg
200116237	Arsenic	4.6	mg/kg
200116237	Barium	60.9	mg/kg
200116237	Beryllium	0.30	mg/kg
200116237	Calcium	125,000	mg/kg
200116237	Chromium	7.9	mg/kg
200116237	Cobalt	5.3	mg/kg
200116237	Copper	9.2	mg/kg
200116237	Iron	11,100	mg/kg
200116237	Lead	52.0	mg/kg
200116237	Magnesium	28,600	mg/kg
200116237	Manganese	585	mg/kg
200116237	Nickel	10.6	mg/kg
200116237	Potassium	835	mg/kg
200116237	Sodium	444	mg/kg
200116237	Vanadium	12.2	mg/kg

Sample Location/I.D.	Contaminant	Concentration	Units
2nd Quarter of Pile 2	**Radionuclides**		
200116243	Alpha	29	pCi/g
200116243	Beta	46	pCi/g
	Semivolatile Organics		
200116242	Benzo(a)anthracene	0.082	mg/kg
200116242	Benzo(a)pyrene	0.095	mg/kg
200116242	Benzo(b)fluoranthene	0.14	mg/kg
200116242	Benzo(g,h,i)perylene	0.09	mg/kg
200116242	Benzo(k)fluoranthene	0.067	mg/kg
200116242	Chrysene	0.095	mg/kg
200116242	Fluoranthene	0.16	mg/kg
200116242	Indeno(1,2,3-cd)pyrene	0.092	mg/kg
200116242	Naphthalene	0.043	mg/kg
200116242	Phenanthrene	0.075	mg/kg
200116242	Pyrene	0.16	mg/kg
	PCBs/Pesticides/Dioxins		
200116239	Aroclor 1260	0.490	mg/kg
200116239	a-Chlordane	0.0063	mg/kg
200116239	g-Chlordane	0.0054	mg/kg
200116241	1,2,3,4,7,8-HxCDD	0.0000039	mg/kg
200116241	1,2,3,6,7,8-HxCDD	0.000017	mg/kg
200116241	1,2,3,7,8,9-HxCDD	0.000008.6	mg/kg
200116241	Total HxCDD	0.00011	mg/kg
3rd Quarter of Pile 2	**Inorganics**		
200116246	Aluminum	6,260	mg/kg
200116246	Antimony	0.83	mg/kg
200116246	Arsenic	5.9	mg/kg
200116246	Barium	91.0	mg/kg
200116246	Beryllium	0.43	mg/kg
200116246	Calcium	87,500	mg/kg
200116246	Chromium	11.0	mg/kg
200116246	Cobalt	7.1	mg/kg
200116246	Copper	15.4	mg/kg
200116246	Iron	15,400	mg/kg
200116246	Lead	37.5	mg/kg
200116246	Magnesium	29,700	mg/kg
200116246	Manganese	528	mg/kg
200116246	Nickel	15.8	mg/kg
200116246	Potassium	1,160	mg/kg
200116246	Sodium	381	mg/kg
200116246	Vanadium	14.2	mg/kg

Table A-13. East Field Stockpile Results

Sample Location/I.D.	Contaminant	Concentration	Units
3rd Quarter of Pile 2	**Radionuclides**		
200116252	Alpha	33	pCi/g
200116252	Beta	38	pCi/g
	Volatile Organics		
200116245	Tetrachloroethylene	0.002	mg/kg
	Semivolatile Organics		
200116251	Benzo(a)anthracene	0.1	mg/kg
200116251	Benzo(a)pyrene	0.15	mg/kg
200116251	Benzo(b)fluoranthene	0.23	mg/kg
200116251	Benzo(g,h,i)perylene	0.13	mg/kg
200116251	Benzo(k)fluoranthene	0.065	mg/kg
200116251	Chrysene	0.12	mg/kg
200116251	Fluoranthene	0.2	mg/kg
200116251	Indeno(1,2,3-cd)pyrene	0.14	mg/kg
200116251	Naphthalene	0.048	mg/kg
200116251	Phenanthrene	0.064	mg/kg
200116251	Pyrene	0.2	mg/kg
	PCBs/Pesticides/Dioxins		
200116248	Aroclor 1260	1.30	mg/kg
200116248	d-BHC	0.0022	mg/kg
200116250	1,2,3,6,7,8-HxCDD	0.000027	mg/kg
200116250	Total HxCDD	0.000027	mg/kg
4th Quarter of Pile 2	**Inorganics**		
200116255	Aluminum	4,350	mg/kg
200116255	Arsenic	4.1	mg/kg
200116255	Barium	43.6	mg/kg
200116255	Beryllium	0.25	mg/kg
200116255	Calcium	184,000	mg/kg
200116255	Chromium	7.1	mg/kg
200116255	Cobalt	4.0	mg/kg
200116255	Copper	9.3	mg/kg
200116255	Iron	10,200	mg/kg
200116255	Lead	17.3	mg/kg
200116255	Magnesium	44,900	mg/kg
200116255	Manganese	422	mg/kg
200116255	Nickel	9.5	mg/kg
200116255	Potassium	753	mg/kg
200116255	Sodium	471	mg/kg
200116255	Vanadium	9.7	mg/kg

Table A-13. East Field Stockpile Results

Sample Location/I.D.	Contaminant	Concentration	Units
4th Quarter of Pile 2	**Radionuclides**		
200116261	Alpha	12	pCi/g
200116261	Beta	27	pCi/g
	Semivolatile Organics		
200116260	Benzo(a)anthracene	0.073	mg/kg
200116260	Benzo(a)pyrene	0.11	mg/kg
200116260	Benzo(b)fluoranthene	0.16	mg/kg
200116260	Benzo(g,h,i)perylene	0.096	mg/kg
200116260	Benzo(k)fluoranthene	0.048	mg/kg
200116260	Chrysene	0.079	mg/kg
200116260	Fluoranthene	0.12	mg/kg
200116260	Indeno(1,2,3-cd)pyrene	0.11	mg/kg
200116260	Phenanthrene	0.04	mg/kg
200116260	Pyrene	0.12	mg/kg
	PCBs/Dioxins		
200116257	Aroclor 1260	1.60	mg/kg
200116259	1,2,3,6,7,8-HxCDD	0.000022	mg/kg
200116259	1,2,3,7,8,9-HxCDD	0.000008.6	mg/kg
200116259	Total HxCDD	0.00016	mg/kg

Only detectable sampling results are listed in the table.

Table A-14. East Field Post-Excavation Soil Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
044703-016	**Inorganics**		
200105540	Aluminum	5,060	mg/kg
200105540	Barium	51.4	mg/kg
200105540	Beryllium	1.4	mg/kg
200105540	Cadmium	2.2	mg/kg
200105540	Calcium	126,000	mg/kg
200105540	Chromium	7.0	mg/kg
200105540	Copper	9.3	mg/kg
200105540	Iron	9,350	mg/kg
200105540	Lead	17.8	mg/kg
200105540	Magnesium	36,500	mg/kg
200105540	Manganese	628	mg/kg
200105540	Nickel	930	mg/kg
200105540	Potassium	719	mg/kg
200105540	Sodium	197	mg/kg
200105540	Vanadium	11.6	mg/kg
200105540	Zinc	30.7	mg/kg
	Radionuclides		
200105550	Alpha	21	pCi/g
200105550	Beta	26	pCi/g
200105548	Ra-226	1.2	pCi/g
200105549	Ra-228	0.7	pCi/g
200105544	Th-228	1.0	pCi/g
200105544	Th-230	3.4	pCi/g
200105544	Th-232	1.1	pCi/g
200105541	U (total)	25	mg/kg
200105543	U-234	11	pCi/g
200105543	U-235/236	1.6	pCi/g
200105543	U-238	14	pCi/g
	Semivolatile Organics		
200105547	Acenaphthylene	0.29	mg/kg
200105547	Anthracene	0.092	mg/kg
200105547	Benzo(a)pyrene	1.9	mg/kg
200105547	Benzo(b)fluoranthene	2.0	mg/kg
200105547	Benzo(g,h,i)perylene	2.0	mg/kg
200105547	Benzo(k)fluoranthene	0.95	mg/kg
200105547	bis(2-ethylhexyl)phthalate	0.13	mg/kg
200105547	Butyl Benzyl Phthalate	0.04	mg/kg
200105547	Carbazole	0.06	mg/kg
200105547	Chrysene	0.8	mg/kg
200105547	Dibenz(a,h)anthracene	0.14	mg/kg
200105547	Fluoranthene	1.2	mg/kg
200105547	Fluorene	0.043	mg/kg
200105547	Indeno(1,2,3-cd)pyrene	1.5	mg/kg

Sample Location/I.D.	Contaminant	Concentration	Units
044703-016	**Semivolatile Organics (cont'd)**		
200105547	Phenanthrene	0.31	mg/kg
200105547	Pyrene	2.0	mg/kg
044703-017	**Inorganics**		
200105552	Aluminum	2,740	mg/kg
200105552	Arsenic	2.9	mg/kg
200105552	Barium	69.1	mg/kg
200105552	Beryllium	1.5	mg/kg
200105552	Cadmium	1.1	mg/kg
200105552	Calcium	172,000	mg/kg
200105552	Chromium	6.2	mg/kg
200105552	Cobalt	4.2	mg/kg
200105552	Copper	8.7	mg/kg
200105552	Iron	5,910	mg/kg
200105552	Lead	23.0	mg/kg
200105552	Magnesium	68,400	mg/kg
200105552	Manganese	363	mg/kg
200105552	Nickel	7.6	mg/kg
200105552	Potassium	367	mg/kg
200105552	Sodium	111	mg/kg
200105552	Vanadium	7.1	mg/kg
200105552	Zinc	26.0	mg/kg
	Radionuclides		
200105562	Alpha	12	pCi/g
200105562	Beta	21	pCi/g
200105560	Ra-226	0.4	pCi/g
200105561	Ra-228	0.3	pCi/g
200105556	Th-228	0.3	pCi/g
200105556	Th-230	1.0	pCi/g
200105556	Th-232	0.3	pCi/g
200105553	U (total)	20.0	mg/kg
200105553	U-234	8.9	pCi/g
200105555	U-235/236	1.0	pCi/g
200105555	U-238	8.8	pCi/g
	Volatile Organics		
200105551	Acetone	0.013	mg/kg
200105551	Methylene Chloride	0.002	mg/kg
200105552	Tetrachloroethylene	0.002	mg/kg
044703-018	**Inorganics**		
200105564	Aluminum	4,290	mg/kg
200105564	Arsenic	4.4	mg/kg
200105564	Barium	47.1	mg/kg

Table A-14. East Field Post-Excavation Soil Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
044703-018	**Inorganics (cont'd)**		
200105564	Beryllium	1.9	mg/kg
200105564	Cadmium	0.54	mg/kg
200105564	Calcium	187,000	mg/kg
200105564	Chromium	7.1	mg/kg
200105564	Copper	9.6	mg/kg
200105564	Iron	8,560	mg/kg
200105564	Lead	12.8	mg/kg
200105564	Magnesium	48,100	mg/kg
200105564	Manganese	769	mg/kg
200105564	Nickel	7.9	mg/kg
200105564	Potassium	478	mg/kg
200105564	Sodium	201	mg/kg
200105564	Zinc	24.3	mg/kg
	Radionuclides		
200105574	Alpha	11	pCi/g
200105572	Ra-226	0.4	pCi/g
200105573	Ra-228	0.5	pCi/g
200105568	Th-228	0.5	pCi/g
200105568	Th-230	1.2	pCi/g
200105568	Th-232	0.5	pCi/g
200105565	U (total)	18	mg/kg
200105567	U-234	5.6	pCi/g
200105567	U-235/236	0.4	pCi/g
200105567	U-238	5.9	pCi/g
	Semivolatile Organics		
200105571	Benzo(a)anthracene	0.04	mg/kg
200105571	Benzo(a)pyrene	0.056	mg/kg
200105571	Benzo(b)fluoranthene	0.086	mg/kg
200105571	Chrysene	0.043	mg/kg
200105571	Di-n-Butyl Phthalate	0.044	mg/kg
200105571	Fluoranthene	0.068	mg/kg
200105571	Indeno(1,2,3-cd)pyrene	0.042	mg/kg
200105571	Pyrene	0.067	mg/kg
	PCBs		
200105570	Aroclor 1254	0.18	mg/kg
044703-019	**Inorganics**		
200105576	Aluminum	7,130	mg/kg
200105576	Arsenic	4.9	mg/kg
200105576	Barium	88.7	mg/kg
200105576	Cadmium	0.89	mg/kg
200105576	Calcium	11,300	mg/kg

Sample Location/I.D.	Contaminant	Concentration	Units
044703-019	**Inorganics (cont'd)**		
200105576	Chromium	7.3	mg/kg
200105576	Cobalt	9.3	mg/kg
200105576	Copper	10.7	mg/kg
200105576	Iron	14,700	mg/kg
200105576	Lead	17.5	mg/kg
200105576	Magnesium	3,620	mg/kg
200105576	Manganese	523	mg/kg
200105576	Nickel	11.9	mg/kg
200105576	Potassium	573	mg/kg
200105576	Sodium	99.8	mg/kg
200105576	Vanadium	11.3	mg/kg
200105576	Zinc	38.3	mg/kg
	Radionuclides		
200105586	Alpha	30	pCi/g
200105586	Beta	27	pCi/g
	Semivolatile Organics		
200105583	Benzo(b)fluoranthene	0.058	mg/kg
200105583	Fluoranthene	0.096	mg/kg
200105583	Phenanthrene	0.042	mg/kg
200105583	Pyrene	0.07	mg/kg
200105582	Aroclor 1260	0.22	mg/kg
044703-020	**Inorganics**		
200105588	Aluminum	2,420	mg/kg
200105588	Arsenic	4.6	mg/kg
200105588	Barium	20.9	mg/kg
200105588	Beryllium	1.6	mg/kg
200105588	Calcium	202,000	mg/kg
200105588	Chromium	5.0	mg/kg
200105588	Cobalt	4.4	mg/kg
200105588	Copper	6.4	mg/kg
200105588	Iron	7,910	mg/kg
200105588	Lead	8.5	mg/kg
200105588	Magnesium	32,600	mg/kg
200105588	Manganese	477	mg/kg
200105588	Mercury	0.38	mg/kg
200105588	Nickel	6.2	mg/kg
200105588	Potassium	354	mg/kg
200105588	Sodium	88.5	mg/kg
200105588	Vanadium	12.0	mg/kg
200105588	Zinc	22.8	mg/kg

Table A-14. East Field Post-Excavation Soil Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
044703-020	**Radionuclides**		
200105596	Ra-226	0.7	pCi/g
200105597	Ra-228	0.3	pCi/g
200105592	Th-228	0.3	pCi/g
200105592	Th-230	0.8	pCi/g
200105592	Th-232	0.2	pCi/g
200105589	U (total)	6.3	mg/kg
200105591	U-234	2.5	pCi/g
200105591	U-235/236	0.2	pCi/g
200105591	U-238	2.6	pCi/g
	Semivolatile Organics		
200105595	4-Methylphenol	0.35	mg/kg
200105595	Anthracene	0.27	mg/kg
200105595	Benzo(a)anthracene	1.3	mg/kg
200105595	Benzo(a)pyrene	0.92	mg/kg
200105595	Benzo(b)fluoranthene	1.2	mg/kg
200105595	Benzo(g,h,i)perylene	0.32	mg/kg
200105595	Benzo(k)fluoranthene	0.44	mg/kg
200105595	Chrysene	0.99	mg/kg
200105595	Fluoranthene	2.7	mg/kg
200105595	Fluorene	0.051	mg/kg
200105595	Indeno(1,2,3-cd)pyrene	0.4	mg/kg
200105595	Phenanthrene	0.96	mg/kg
200105595	Pyrene	2.2	mg/kg
	PCBs		
200105594	Aroclor 1260	0.13	mg/kg
044703-021	**Inorganics**		
200105600	Aluminum	10,200	mg/kg
200105600	Arsenic	7.7	mg/kg
200105600	Barium	72.0	mg/kg
200105600	Cadmium	0.67	mg/kg
200105600	Calcium	55,300	mg/kg
200105600	Chromium	11.7	mg/kg
200105600	Cobalt	10.1	mg/kg
200105600	Copper	18.1	mg/kg
200105600	Iron	20,400	mg/kg
200105600	Lead	19	mg/kg
200105600	Magnesium	18,000	mg/kg
200105600	Manganese	527	mg/kg
200105600	Nickel	20.8	mg/kg
200105600	Potassium	1,050	mg/kg
200105600	Sodium	132	mg/kg

Sample Location/I.D.	Contaminant	Concentration	Units
044703-021	**Inorganics (cont'd)**		
200105600	Vanadium	14.1	mg/kg
200105600	Zinc	82.4	mg/kg
	Radionuclides		
200105610	Alpha	10	pCi/g
200105608	Ra-226	1.1	pCi/g
200105609	Ra-228	0.7	pCi/g
200105604	Th-228	0.7	pCi/g
200105604	Th-230	2.3	pCi/g
200105604	Th-232	0.7	pCi/g
200105601	U (total)	27	mg/kg
200105603	U-234	9.6	pCi/g
200105603	U-235/236	0.9	pCi/g
200105603	U-238	11.0	pCi/g
	Semivolatile Organics		
200105607	Acenaphthylene	0.23	mg/kg
200105607	Anthracene	0.05	mg/kg
200105607	Benzo(a)anthracene	0.55	mg/kg
200105607	Benzo(a)pyrene	1.8	mg/kg
200105607	Benzo(b)fluoranthene	1.8	mg/kg
200105607	Benzo(g,h,i)perylene	2.0	mg/kg
200105607	Benzo(k)fluoranthene	0.61	mg/kg
200105607	Bis(2-ethylhexyl)phthalate	0.043	mg/kg
200105607	Chrysene	0.59	mg/kg
200105607	Fluoranthene	0.76	mg/kg
200105607	Indeno(1,2,3-cd)pyrene	1.7	mg/kg
200105607	Phenanthrene	0.18	mg/kg
200105607	Pyrene	1.3	mg/kg
044703-022	**Inorganics**		
200105612	Aluminum	3,880	mg/kg
200105612	Arsenic	5.2	mg/kg
200105612	Barium	50.4	mg/kg
200105612	Calcium	65,300	mg/kg
200105612	Chromium	4.9	mg/kg
200105612	Cobalt	5.4	mg/kg
200105612	Copper	7.3	mg/kg
200105612	Iron	10,200	mg/kg
200105612	Lead	11.0	mg/kg
200105612	Magnesium	11,100	mg/kg
200105612	Manganese	540	mg/kg
200105612	Nickel	4.9	mg/kg
200105612	Potassium	288	mg/kg
200105612	Sodium	110	mg/kg

Table A-14. East Field Post-Excavation Soil Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
044703-022	**Inorganics (cont'd)**		
200105612	Vanadium	8.1	mg/kg
200105612	Zinc	20.7	mg/kg
	Semivolatile Organics		
200105619	Di-n-Butyl Phthalate	0.052	mg/kg
044703-023	**Inorganics**		
200105624	Aluminum	2,100	mg/kg
200105624	Arsenic	3.2	mg/kg
200105624	Barium	33.8	mg/kg
200105624	Beryllium	1.1	mg/kg
200105624	Calcium	167,000	mg/kg
200105624	Chromium	3.4	mg/kg
200105624	Copper	6.2	mg/kg
200105624	Iron	6,260	mg/kg
200105624	Lead	55.3	mg/kg
200105624	Magnesium	83,700	mg/kg
200105624	Manganese	387	mg/kg
200105624	Nickel	5.4	mg/kg
200105624	Potassium	277	mg/kg
200105624	Sodium	122	mg/kg
200105624	Vanadium	7.5	mg/kg
200105624	Zinc	19.9	mg/kg
	Radionuclides		
200105634	Alpha	9.4	pCi/g
200105634	Beta	17	pCi/g
	Semivolatile Organics		
200105631	Benzo(k)fluoranthene	0.037	mg/kg
200105631	Di-n-Butyl Phthalate	0.045	mg/kg
200105631	Di-n-Octyl Phthalate	0.056	mg/kg
200105631	Fluoranthene	0.051	mg/kg
200105631	Pyrene	0.048	mg/kg
044703-024	**Radionuclides**		
200105646	Alpha	11	pCi/g
200105658	Alpha	15	pCi/g
200105656	Ra-226	1.2	pCi/g
200105657	Ra-228	0.9	pCi/g
200105652	Th-228	1.3	pCi/g
200105652	Th-230	1.7	pCi/g
200105652	Th-232	1.2	pCi/g
200105649	U (total)	17	mg/kg
200105651	U-234	6.1	pCi/g

Sample Location/I.D.	Contaminant	Concentration	Units
044703-024	**Radionuclides (cont'd)**		
200105651	U-235/236	0.8	pCi/g
200105651	U-238	5.9	pCi/g
	Semivolatile Organics		
200105655	Benzo(g,h,i)perylene	0.15	mg/kg
200105643	Di-n-Butyl Phthalate	0.055	mg/kg
	PCBs		
200105642	Aroclor 1260	0.074	mg/kg
044703-025	**Radionuclides**		
200105670	Alpha	9.5	pCi/g
	Semivolatile Organics		
200105667	Anthracene	0.045	mg/kg
200105667	Benzo(a)anthracene	0.15	mg/kg
200105667	Benzo(a)pyrene	0.22	mg/kg
200105667	Benzo(b)fluoranthene	0.27	mg/kg
200105667	Benzo(g,h,i)perylene	0.22	mg/kg
200105667	Benzo(k)flouranthene	0.12	mg/kg
200105667	Chrysene	0.15	mg/kg
200105667	Fluoranthene	0.33	mg/kg
200105667	Indeno(1,2,3-cd)pyrene	0.16	mg/kg
200105667	Phenanthrene	0.17	mg/kg
200105667	Pyrene	0.40	mg/kg
	PCBs		
200105666	Aroclor 1260	1.7	mg/kg
044703-026	**Radionuclides**		
200105682	Alpha	21	pCi/g
200105682	Beta	29	pCi/g
	Semivolatile Organics		
200105679	Benzo(b)flouranthene	0.047	mg/kg
200105679	Fluoranthene	0.04	mg/kg
	PCBs/Pesticides		
200105678	Aroclor 1260	0.56	mg/kg
200105678	Endrin Aldehyde	0.012	mg/kg
044703-027	**Radionuclides**		
200105694	Alpha	7.4	pCi/g

Table A-14. East Field Post-Excavation Soil Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
044703-027	**PCBs**		
200105690	Aroclor 1260	0.099	mg/kg
044703-028	**Semivolatile Organics**		
200105703	Benzo(a)anthracene	0.09	mg/kg
200105703	Benzo(a)pyrene	0.15	mg/kg
200105703	Benzo(b)flouranthene	0.19	mg/kg
200105703	Benzo(g,h,i)perylene	0.10	mg/kg
200105703	Benzo(k)flouranthene	0.076	mg/kg
200105703	Chrysene	0.094	mg/kg
200105703	Di-n-Butyl Phthalate	0.072	mg/kg
200105703	Fluoranthene	0.14	mg/kg
200105703	Indeno(1,2,3-cd)pyrene	0.11	mg/kg
200105703	Pyrene	0.13	mg/kg
044703-029	**Semivolatile Organics**		
200105715	Benzo(a)anthracene	0.075	mg/kg
200105715	Benzo(a)pyrene	0.095	mg/kg
200105715	Benzo(b)flouranthene	0.13	mg/kg
200105715	Benzo(k)fluoranthene	0.054	mg/kg
200105715	Chrysene	0.077	mg/kg
200105715	Flouranthene	0.11	mg/kg
200105715	Indeno(1,2,3-cd)pyrene	0.067	mg/kg
200105715	Pyrene	0.11	mg/kg
044703-030	**Radionuclides**		
200105730	Alpha	11	pCi/g
200105730	Beta	17	pCi/g
	Semivolatile Organics		
200105727	Benzo(a)anthracene	0.039	mg/kg
200105727	Benzo(a)pyrene	0.044	mg/kg
200105727	Benzo(b)flouranthene	0.066	mg/kg
200105727	bis(2-ethylhexyl)phthalate	0.047	mg/kg
200105727	Fluoranthene	0.059	mg/kg
200105727	Pyrene	0.053	mg/kg

Only detectable sampling results are listed in the Table.

Sample Location/I.D.	Contaminant	Concentration	Units
MW 1508	**Inorganics**		
200051914	Aluminum	2,210	ug/L
200051914	Arsenic	4.7	ug/L
200051914	Barium	339	ug/L
200051914	Beryllium	3.2	ug/L
200051914	Calcium	317,000	ug/L
200051914	Cobalt	11.6	ug/L
200051914	Iron	8,630	ug/L
200051914	Lead	10.4	ug/L
200051914	Magnesium	74,500	ug/L
200051914	Manganese	2,070	ug/L
200051914	Nickel	15.2	ug/L
200051914	Potassium	1,310	ug/L
200051914	Sodium	9,560	ug/L
200117690	Thallium	4.6	ug/L
	Volatile Organics		
200051911	1,1-Dichloroethane	5	ug/L
MW 1510	**Inorganics**		
200051920	Aluminum	1,680	ug/L
200051920	Barium	79.3	ug/L
200051920	Cadmium	2	ug/L
200051920	Calcium	140,000	ug/L
200051920	Iron	2,970	ug/L
200051920	Magnesium	33,000	ug/L
200051920	Manganese	989	ug/L
200051920	Potassium	840	ug/L
200051932	Sodium	42,100	ug/L
200051944	Zinc	84.8	ug/L
MW 1511	**Inorganics**		
200051926	Aluminum	2,650	ug/L
200051926	Barium	192	ug/L
200051926	Calcium	308,000	ug/L
200051926	Iron	12,200	ug/L
200051926	Magnesium	70,000	ug/L
200051926	Manganese	1,440	ug/L
200051926	Potassium	890	ug/L
200051920	Sodium	10,600	ug/L
	Volatile Organics		
200051923	1,1-Dichloroethane	1	ug/L

Table A-15. Monitoring Well Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
MW 1512	**Inorganics**		
200051932	Aluminum	1,760	ug/L
200051932	Barium	143	ug/L
200051932	Calcium	153,000	ug/L
200051932	Iron	1,290	ug/L
200051932	Magnesium	51,700	ug/L
200051932	Manganese	1,060	ug/L
200051932	Potassium	1,850	ug/L
200051926	Sodium	6,950	ug/L
MW 1513	**Inorganics**		
200051938	Aluminum	49.0	ug/L
200055335	Aluminum	27,200	ug/L
200051938	Arsenic	8.2	ug/L
200055335	Barium	581	ug/L
200055335	Beryllium	8.2	ug/L
200055335	Cadmium	4.0	ug/L
200051938	Calcium	10,600	ug/L
200055335	Calcium	784,000	ug/L
200055335	Chromium	22.3	ug/L
200055335	Cobalt	25.7	ug/L
200051938	Iron	37,300	ug/L
200055335	Iron	353,000	ug/L
200051938	Lead	13.2	ug/L
200051938	Magnesium	10,800	ug/L
200055335	Magnesium	146,000	ug/L
200055335	Manganese	2,810	ug/L
200055335	Nickel	39.3	ug/L
200051938	Potassium	16,900	ug/L
200055335	Potassium	4,970	ug/L
200051938	Sodium	10,600	ug/L
200055335	Sodium	25,600	ug/L
200051938	Thallium	1.0	ug/L
200055335	Vanadium	52.6	ug/L
200051914	Zinc	53.1	ug/L
200055335	Zinc	105	ug/L
MW 1515	**Inorganics**		
200051944	Aluminum	20,200	ug/L
200051944	Arsenic	4.8	ug/L
200051944	Barium	227	ug/L
200051944	Cadmium	2.3	ug/L
200051944	Calcium	170,000	ug/L
200051944	Chromium	15.7	ug/L
200051944	Cobalt	12.6	ug/L
200051944	Iron	6,230	ug/L

Sample Location/I.D.	Contaminant	Concentration	Units
MW 1515	**Inorganics (cont'd)**		
200051944	Lead	12.8	ug/L
200051944	Magnesium	55,100	ug/L
200051944	Manganese	790	ug/L
200051944	Nickel	36.5	ug/L
200051944	Potassium	5,540	ug/L
200051944	Sodium	34,000	ug/L
200051944	Vanadium	31.4	ug/L
200051938	Zinc	11.8	ug/L
MW 1887	**Radionuclides**		
200117668	Radium 226	6.76	pCi/L
200117668	Radium 228	5.99	pCi/L
	Inorganics		
200117666	Aluminum	77,700	ug/L
200089010	Aluminum	1,920	ug/L
200117666	Arsenic	38.0	ug/L
200117666	Barium	713	ug/L
200089010	Barium	74.9	ug/L
200089010	Cadmium	9.5	ug/L
200117666	Calcium	621,000	ug/L
200089010	Calcium	104,000	ug/L
200117666	Chromium	81.9	ug/L
200089010	Chromium	8.7	ug/L
200117666	Cobalt	43.2	ug/L
200117666	Copper	98.9	ug/L
200117666	Iron	110,000	ug/L
200089010	Iron	1430	ug/L
200117666	Lead	51.1	ug/L
200117666	Magnesium	157,000	ug/L
200089010	Magnesium	36,000	ug/L
200117666	Manganese	2,700	ug/L
200117666	Nickel	124	ug/L
200117666	Potassium	18,500	ug/L
200089010	Potassium	2,560	ug/L
200117666	Silver	84.8	ug/L
200117666	Sodium	21,700	ug/L
200089010	Sodium	21,200	ug/L
200117666	Vanadium	133	ug/L
200117684	Zinc	95.4	ug/L
200117666	Zinc	311	ug/L
	Volatile Organics		
200117663	1,1,1-Trichloroethane	12	ug/L
200089007	1,1,1-Trichloroethane	44	ug/L

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Table A-15. Monitoring Well Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
200117663	1,1-Dichloroethane	19	ug/L
200089007	1,1-Dichloroethane	51	ug/L
200117663	1,2-Dichloroethane	5	ug/L
200089007	1,2-Dichloroethane	16	ug/L
MW 1890	**Radionuclides**		
200097441	Radium 226	0.378	pCi/L
200122033	Radium 226	1.22	pCi/L
200097441	Radium 228	3.17	pCi/L
	Inorganics		
200089016	Aluminum	13,500	ug/L
200122031	Aluminum	17,400	ug/L
200089016	Arsenic	6.2	ug/L
200122031	Arsenic	8.8	ug/L
200089016	Barium	182	ug/L
200122031	Barium	148	ug/L
200089016	Calcium	181,000	ug/L
200122031	Calcium	157,000	ug/L
200122031	Chromium	75.2	ug/L
200089016	Cobalt	13.0	ug/L
200122031	Copper	55.4	ug/L
200089016	Iron	16,400	ug/L
200122031	Iron	27,500	ug/L
200089016	Lead	10.9	ug/L
200122031	Lead	14.2	ug/L
200089016	Magnesium	43,200	ug/L
200122031	Magnesium	40,300	ug/L
200089016	Manganese	1,740	ug/L
200122031	Manganese	1,190	ug/L
200122031	Nickel	75.8	ug/L
200089016	Potassium	8,480	ug/L
200122031	Potassium	8,180	ug/L
200089016	Sodium	12,000	ug/L
200122031	Sodium	10,400	ug/L
200089010	Thallium	5.0	ug/L
200089016	Vanadium	18.0	ug/L
200122031	Vanadium	38.6	ug/L
200089016	Zinc	59.0	ug/L
200089028	Zinc	78.2	ug/L
200122031	Zinc	85.4	ug/L
	Volatile Organics		
200051917	1,1-Dichloroethane	1	ug/L
200122028	1,1-Dichloroethane	4	ug/L
200122028	Acetone	18	ug/L

Sample Location/I.D.	Contaminant	Concentration	Units
	Semivolatile Organics		
200122029	bis-(2-Ethylhexyl)-Phthalate	5	ug/L
	Dioxins		
200122032	Total HxCDD	0.0040	ng/L
MW 2052	**Radionuclides**		
200089024	Radium 226	0.304	pCi/L
200117860	Radium 226	0.205	pCi/L
200089024	Radium 228	3.38	pCi/L
	Inorganics		
200117678	Barium	55.0	ug/L
200089022	Barium	43.3	ug/L
MW 2052	**Inorganics (cont'd)**		
200117690	Barium	57.1	ug/L
200117678	Calcium	155,000	ug/L
200089022	Calcium	204,000	ug/L
200117690	Calcium	157,000	ug/L
200117678	Iron	5,660	ug/L
200089022	Iron	7,060	ug/L
200117690	Iron	5,530	ug/L
200117678	Magnesium	29,200	ug/L
200089022	Magnesium	33,000	ug/L
200117690	Magnesium	29,600	ug/L
200117678	Manganese	521	ug/L
200089022	Manganese	1,170	ug/L
200117690	Manganese	508	ug/L
200117678	Potassium	1,460	ug/L
200089022	Potassium	1,450	ug/L
200117690	Potassium	1,510	ug/L
200117678	Selenium	3.0	ug/L
200117678	Sodium	13,500	ug/L
200089022	Sodium	13,000	ug/L
200117690	Sodium	13,700	ug/L
	Semivolatile Organics		
200097439	bis-(2-Ethylhexyl)-Phthalate	69	ug/L
MW 2436	**Radionuclides**		
200089030	Radium 226	1.58	pCi/L
200117686	Radium 226	0.901	pCi/L
	Inorganics		
200089028	Aluminum	8,510	ug/L
200117684	Aluminum	9,470	ug/L

Table A-15. Monitoring Well Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
200117684	Arsenic	20.0	ug/L
200089028	Barium	141	ug/L
200117684	Barium	232	ug/L
200089028	Cadmium	3.0	ug/L
200089028	Calcium	334,000	ug/L
200117684	Calcium	352,000	ug/L
200089028	Chromium	11.2	ug/L
200117684	Copper	56.9	ug/L
200089028	Iron	31,300	ug/L
200117684	Iron	59,400	ug/L
200089028	Lead	26.7	ug/L
200117684	Lead	32.5	ug/L
200089028	Magnesium	99,400	ug/L
200117684	Magnesium	114,000	ug/L
200089028	Manganese	931	ug/L
200117684	Manganese	962	ug/L
200117684	Nickel	40.2	ug/L
200089028	Potassium	7,490	ug/L
MW 2436	**Inorganics (cont'd)**		
200117684	Potassium	4,320	ug/L
200089028	Sodium	16,400	ug/L
200117684	Sodium	15,500	ug/L
200089022	Thallium	5.4	ug/L
200117684	Vanadium	26.9	ug/L
200117684	Zinc	95.4	ug/L
	Semivolatile Organics		
200117664	bis-(2-Ethylhexyl)-Phthalate	3	ug/L
MW 11229	**Inorganics**		
200051950	Aluminum	1,770	ug/L
200051950	Arsenic	3.8	ug/L
200051950	Barium	188	ug/L
200051950	Beryllium	2.6	ug/L
200051950	Calcium	351,000	ug/L
200051950	Cobalt	11.7	ug/L
200051950	Iron	42,100	ug/L
200051950	Lead	14.1	ug/L
200051950	Magnesium	93,200	ug/L
200051950	Manganese	1,720	ug/L
200051950	Nickel	44.1	ug/L
200051950	Potassium	2,880	ug/L
200051950	Sodium	10,600	ug/L
	Volatile Organics		
200089013	1,1-Dichloroethane	16	ug/L

Table A-15. Monitoring Well Sampling Results

Sample Location/I.D.	Contaminant	Concentration	Units
200051947	1,1-Dichloroethane	77	ug/L
200051947	1,2-Dichloroethane	20	ug/L
200051947	Chloroethane	5	ug/L

Only detectable sampling results are listed in the Table.

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APPENDIX B

CONCRETE BLOCK BUILDING STADIA READINGS

Table B-1. Concrete Block Building Stadia Readings.

Stadia Readings - First Floor Scabbling				
Grid	Surface Reading	Scabbled Reading	Depth	Depth (cm)
North Room				
aa0	4.77	4.79	0.020	0.610
aa1	4.8	4.82	0.020	0.610
aa2	4.8	4.82	0.020	0.610
bb0	4.78	4.8	0.020	0.610
bb1	4.8	4.83	0.030	0.914
bb2	4.79	4.82	0.030	0.914
cc0	4.785	4.815	0.030	0.914
cc1	4.78	4.8	0.020	0.610
cc2	4.76	4.8	0.040	1.219
dd0	4.76	4.79	0.030	0.914
dd1	4.785	4,81	0.025	0.762
dd2	4.76	4.8	0.040	1.219
ee0	4.745	4.77	0.025	0.762
ee1	4.76	4.78	0.020	0.610
ee2	4.76	4.79	0.030	0.914
Middle Room				
aa3	4.76	4.78	0.020	0.610
aa4	4.76	4.79	0.030	0.914
aa5	4.75	4.78	0.030	0.914
bb3	4.76	4.79	0.030	0.914
bb4	4.76	4.78	0.020	0.610
bb5	4.74	4.765	0.025	0.762
cc3	4.74	4.76	0.020	0.610
cc4	4.715	4.74	0.026	0.762
cc5	4.715	4.74	0.025	0.762
dd3	4.745	4.78	0.035	1.067
dd4	4.725	4.745	0.020	0.610
dd5	4.725	4.75	0.025	0.762
ee3	4.74	4.76	0.020	0.610
ee4	4.75	4.77	0.020	0.610
ee5	4.755	4.78	0.025	0.762

Table B-1. Concrete Block Building Stadia Readings.

Stadia Readings - First Floor Scabbling				
Grid	Surface Reading	Scabbled Reading	Depth	Depth (cm)
South Room				
aa6	4.845	4.885	0.040	1.219
aa7	4.83	4.86	0.030	0.914
aa8	4.815	4.845	0.030	0.914
bb6	4.825	4.85	0.025	0.762
bb7	4.815	4.84	0.025	0.762
bb8	4.805	4.825	0.020	0.610
cc6	4.795	4.82	0.025	0.762
cc7	4.835	4.86	0.025	0.762
cc8	4.835	4.86	0.025	0.762
dd6	4.82	4.86	0.040	1.219
dd7	4.855	4.88	0.025	0.762
dd8	4.85	4.87	0.020	0.610
ee6	4.855	4.89	0.035	1.067
ee7	4.855	4.9	0.045	1.372
ee8	4.835	4.87	0.035	1.067

Stadia Readings - Second Floor Scabbling				
Grid	Surface Reading	Scabbled Reading	Depth	Depth (cm)
a0	4.83	4.855	0.025	0.762
a1	4.83	4.86	0.030	0.914
a2	4.825	4.86	0.035	1.067
a3	4.84	4.885	0.045	1.372
a4	4.855	4.885	0.030	0.914
a5	4.85	4.87	0.020	0.610
a6	4.855	4.885	0.030	0.914
a7	4.85	4.88	0.030	0.914
a8	4.81	4.845	0.035	1.067
b0	4.815	4.87	0.055	1.676
b1	4.83	4.885	0.055	1.676
b2	4.84	4.865	0.025	0.762
b3	4.84	4.89	0.050	1.524

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Table B-1. Concrete Block Building Stadia Readings.

Stadia Readings - Second Floor Scabbling				
Grid	Surface Reading	Scabbled Reading	Depth	Depth (cm)
b4	4.87	4.89	0.020	0.610
b5	4.86	4.88	0.020	0.610
b6	4.86	4.89	0.030	0.914
b7	4.845	4.88	0.035	1.067
b8	4.81	4.87	0.060	1.829
c0	4.81	4.85	0.040	1.219
c1	4.82	4.87	0.050	1.524
c2	4.83	4.87	0.040	1.219
c3	4.84	4.865	0.025	0.762
c4	4.845	4.865	0.020	0.610
c5	4.845	4.87	0.025	0.762
c6	4.845	4.865	0.020	0.610
c7	4.84	4.865	0.025	0.762
c8	4.83	4.85	0.020	0.610
d0	4.81	4.86	0.050	1.524
d1	4.83	4.87	0.040	1.219
d2	4.84	4.88	0.040	1.219
d3	4.825	4.845	0.020	0.610
d4	4.82	4.845	0.025	0.762
d5	4.825	4.85	0.025	0.762
d6	4.815	4.86	0.045	1.372
d7	4.82	4.845	0.025	0.762
d8	4.81	4.835	0.025	0.762
e0	4.83	4.855	0.025	0.762
e1	4.83	4.855	0.025	0.762
e2	4.815	4.84	0.025	0.762
e3	4.81	4.845	0.035	1.067
e4	4.805	4.83	0.025	0.762
e5	4.815	4.835	0.020	0.610
e6	4.815	4.85	0.035	1.067
e7	4.79	4.81	0.020	0.610
e8	4.81	4.835	0.025	0.762