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LMS/MND/S07963

Five-Year Review Report

Third Five-Year Review for the Mound, Ohio, Site Miamisburg, Ohio

September 2011

U.S. DEPARTMENT OF ENERGY | Legacy Management

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Third Five-Year Review for the Mound, Ohio, Site Miamisburg, Ohio

September 2011

Approved by:

Jane Powell

Jane Powell
Site Manager

Date:

9/15/11

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Abbreviations

ARAR	applicable or relevant and appropriate requirement
ATD	Authorization to Discharge
BVA	Buried Valley Aquifer
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	*Code of Federal Regulations*
COC	contaminant of concern
Cr	chromium
DCE	dichloroethylene
DOE	U.S. Department of Energy
EPA	U.S. Environmental Protection Agency
FFA	Federal Facility Agreement
ft	feet
gpm	gallon per minute
GPS	global positioning system
HEAST	Health Effects Assessment Summary Tables
IC	institutional control
IRIS	Integrated Risk Information System
JGMS	J.G. Management Systems, Inc.
LM	Office of Legacy Management
LOC	level of concern
LTS&M	Long-Term Surveillance and Maintenance
MCL	maximum contaminant level
MDC	Mound Development Corporation (formerly MMCIC)
MDL	method detection limit
µg/L	micrograms per liter
µg/L/year	micrograms per liter per year
mg/L	milligrams per liter
MMCIC	Miamisburg Mound Community Improvement Corporation (see MDC)
MNA	monitored natural attenuation
mV	millivolts
nCi/L	nanocurie per liter
NCP	National Oil and Hazardous Substance Pollution Contingency Plan

NFA	No Further Action
Ni	nickel
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
O&M	Operations and Maintenance
ODH	Ohio Department of Health
ODNR	Ohio Department of Natural Resources
OEPA	Ohio Environmental Protection Agency
OU	Operable Unit
P&T	pump and treatment
PCE	perchloroethene
pCi/L	picocuries per liter
pCi/L/yr	picocuries per liter per year
PRS	potential release site
Ra	radium
RAO	remedial action objective
RBGV	risk-based guideline value
ROD	Record of Decision
RRE	residual risk evaluation
RREM	residual risk evaluation methodology
SARA	Superfund Amendments and Reauthorization Act
Sr	strontium
SSTP	site sanitary treatment package
Stoller	S.M. Stoller Corporation
SVE	soil vapor extraction
TCE	trichloroethylene
VC	vinyl chloride
VOC	volatile organic compound

Executive Summary

The Mound Site in Miamisburg, Ohio, was remediated by the U.S. Department of Energy (DOE) in accordance with the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986.

This third five-year review includes the operable units and parcels that were part of the remedial action at the Mound Site. These include:

- Operable Unit 1 (Former Waste Disposal Sites)
- Operable Unit 4 (Miami-Erie Canal; no action or restrictions required)
- Release Block D
- Release Block H
- Phase I (Areas A, B, and C)
- Parcel 3 (GP-1 and GH)
- Parcel 4 (South Property)
- Parcels 6, 7, and 8

The CERCLA five-year review is required by statute. CERCLA Section 121(c) requires that remedial actions resulting in any hazardous substances, pollutants, or contaminants remaining at a site above levels that allow for unlimited use and unrestricted exposure be reviewed every 5 years to ensure protection of human health and the environment.

This is the third five-year review conducted for the Mound Site. Since the second five-year review, soil remediation at the Mound Site was completed in 2009. Institutional controls (ICs) have been implemented for Parcels 6, 7, and 8, and a monitored natural attenuation (MNA) remedy has been implemented for trichloroethylene (TCE) and tritium contaminated groundwater in Parcels 6, 7, and 8. Operation of the pump and treatment system, which controls the migration of TCE-contaminated groundwater in the Operable Unit 1 (OU-1) area, was stopped in June 2011 to support a rebound study. The ownership of one land parcel has been transferred to the Mound Development Corporation (MDC), which was formerly known as Miamisburg Mound Community Involvement Corporation. Additional soil removal work was completed in the OU-1 area to support economic redevelopment. The OU-1 Record of Decision (ROD) is being amended to expand the area and document the changes resulting from the excavation of the landfill. This expanded area is designated as Parcel 9.

A no-action ROD has been approved for the Miami-Erie Canal, and the canal was not evaluated under this review. The ROD found that the soil was remediated to risk levels acceptable for unrestricted residential use.

The ICs implemented at the Mound Site are protective of human health and the environment because they are functioning as intended. The groundwater remedies for Phase I and Parcels 6, 7, and 8 are expected to be protective of human health and the environment upon attainment of cleanup goals. In the interim, exposure pathways are being controlled through ICs. The remedy

for OU-1 is protective of human health and the environment as exposure pathways are being controlled through plume containment and Federal ownership of the land. Controlled access to the landfill is no longer necessary since excavation was completed; however, for the remedy to be protective in the long-term, ICs to restrict soil removal and groundwater use need to be implemented.

This is the third statutory five-year review for this site. The next five-year review will be conducted in 2016.

Five-Year Review Summary Form

SITE IDENTIFICATION		
Site name *(from WasteLAN)*: Mound Plant (DOE)		
EPA ID *(from WasteLAN)*: OH6890008984		
Region: 5	**State: OH**	**City/County: Miamisburg / Montgomery**
SITE STATUS		
NPL status: [X] Final [ ] Deleted [ ] Other (specify)		
Remediation status (choose all that apply): [ ] Under Construction [X] Operating [X] Complete		
Multiple OUs?* [X] YES [ ] NO	**Construction completion date:** Not Applicable	
Has site been put into reuse? [X] YES [ ] NO		
REVIEW STATUS		
Lead agency: [ ] EPA [ ] State [ ] Tribe [X] Other Federal Agency -- U.S. Department of Energy		
Author name: Jane Powell		
Author title: Site Manager	**Author affiliation: DOE**	
Review period:** 09 / 29 / 2006 to 09 / 28 / 2011		
Date(s) of site inspection: 04 / 12 / 2011		
Type of review: [X] Post-SARA [ ] Pre-SARA [ ] NPL-Removal only [ ] Non-NPL Remedial Action Site [ ] NPL State/Tribe-lead [ ] Regional Discretion		
Review number: [ ] 1 (first) [ ] 2 (second) [X] 3 (third) [ ] Other (specify) _____		
Triggering action: [ ] Actual RA Onsite Construction at OU #____ [ ] Actual RA Start at OU#____ [ ] Construction Completion [X] Previous Five-Year Review Report [ ] Other (specify)		
Triggering action date *(from WasteLAN)*: 09 / 28 / 2006		
Due date *(five years after triggering action date)*: 09 / 28 / 2011		

* ["OU" refers to operable unit.]
** [Review period should correspond to the actual start and end dates of the five-year review in WasteLAN.]

Five-Year Review Summary Form (continued)

Issues:
No issues were identified from this review.

Recommendations and Follow-up Actions:
The following three recommendations were identified as the result of this five-year review and associated actions are outlined in Table 44.

- Verify that the quitclaim deed for Parcels 6, 7, and 8 is appropriately recorded and is free and clear of all liens and encumbrances.
- Finalize the sitewide IC Management/Land Use Control Plan (with CERCLA Summary).
- Finalize the sitewide O&M Plan for groundwater remedies.

Protectiveness Statement(s):

Institutional Controls: The remedy for Parcels D, H, 3, and 4 and ICs associated with Phase I and Parcels 6, 7, and 8 are protective of human health and the environment because controls are functioning as intended.

Operable Unit 1: The remedy at OU-1 currently protects human health and the environment because containment of the plume is functioning as intended. Exposure pathways that could result in unacceptable risks are being controlled through containment of the plume and Federal ownership of the land. However, in order for the remedy to be protective in the long-term, ICs to restrict soil removal and groundwater use need to be implemented. The OU-1 ROD is being amended to expand the area and document the changes resulting from the excavation of the landfill. This expanded area is designated as Parcel 9. As stated in the OU-1 ROD, the ICs for OU-1 would be developed prior to transfer and therefore, will be outlined in future documentation for Parcel 9.

Phase I Groundwater (MNA) Remedy: The remedy for Phase I is expected to be protective of human health and the environment upon attainment of groundwater cleanup goals through MNA. In the interim, exposure pathways that could result in unacceptable risks are being controlled through ICs that prevent the groundwater from being used in the restricted area.

Parcels 6, 7, and 8 Groundwater (MNA) Remedy: The remedy for Parcels 6, 7, and 8 is expected to be protective of human health and the environment upon attainment of groundwater cleanup goals through MNA. In the interim, exposure pathways that could result in unacceptable risks are being controlled through ICs that prevent the groundwater from being used in the restricted area.

Other Comments:
There are no other comments to make at this time.

1.0 Introduction

The U.S. Department of Energy (DOE) has conducted a third five-year review of the remedial actions implemented at the Mound Site in Miamisburg, Ohio. The review was conducted from December 2010 through September 2011 in accordance with the *Comprehensive Five-year Review Guidance* (EPA 2001). This report documents the results of the review.

This third five-year review is a statutory review to ensure that the remedial actions established in the records of decision (RODs) have been followed. The RODs cover the following areas:

- Operable Unit 1 (Former Waste Disposal Sites)—(DOE 1995)
- Parcel (formerly Release Block) D—(DOE 1999a)
- Parcel (formerly Release Block) H—(DOE1999b)
- Parcel 3 (GP-1 and GH)—(DOE 2001a)
- Parcel 4 (South Property)—(DOE 2001b)
- Phase I (Areas A, B, and C)—(DOE 2003a)
- Operable Unit 4 (Miami-Erie Canal; no action or review required)—(DOE 2004a)
- Parcels 6, 7, and 8—(DOE 2009a)

Parcels 6, 7, and 8 is included in this review even though the remedial actions have not been in place for 5 years. The U.S. Environmental Protection Agency (EPA) guidance states that "five-year reviews should address all operable units and remedial actions that have been initiated at the time of the review."

1.1 Purpose

A five-year review determines whether the remedies at a site are protective of human health and the environment by evaluating the implementation and performance of the selected remedies. It does not reconsider past remedy decisions. A five-year review report documents the review methods, findings, and conclusions; identifies deficiencies found during the review; and recommends actions to address them.

The review was conducted in accordance with the *Comprehensive Five-year Review Guidance* (EPA 2001), which states that Section 121 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), "requires that remedial actions which result in any hazardous substances, pollutants, or contaminants remaining at the site be subject to a five-year review. The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) further provides that remedial actions which result in any hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure be reviewed every five years to ensure protection of human health and the environment."

Five-year reviews are required by statute. Their implementation must be consistent with CERCLA and NCP. CERCLA Section 121(c), as amended, states:

"If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the site, the President shall review such remedial action no less often than five years after the initiation of such remedial action to ensure that human health and the environment are being protected by the remedial action being implemented."

Title 40, *Code of Federal Regulations* (CFR), Part 300, NCP, states:

"If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such action no less often than every five years after the initiation of the selected remedial action" [40 CFR 300.430(f)(4)(ii)].

1.2 Site Status

As of August 2006, DOE had completed all soil and building remediation at the Mound Site, except for potential release sites (PRSs) 7 and 441, and had transferred five land parcels to the Miamisburg Mound Community Improvement Corporation (MMCIC), which is now called the Mound Development Corporation (MDC). PRS 441, which was the staging area for loading waste into rail cars, was remediated and verified to meet the clean-up objectives and closed on December 1, 2009 (DOE 2009b). PRS 7 conveyed treated sanitary effluent from the site's western boundary to the Great Miami River. The PRS was removed and verified to meet the clean-up objectives, and the PRS was closed on March 1, 2010. (DOE 2010a) The completion of these two PRSs completed the CERCLA remediation at Mound Site.

DOE transferred Phase I (Areas A, B, and C) to MDC on February 19, 2009. Parcels 6, 7, and 8 have completed the CERCLA process and were offered to MDC in 2010, but they have not been transferred.

DOE received additional funding from Congress to perform two non-CERCLA removal actions at OU-1 to excavate the site sanitary landfill. The overflow pond adjacent to the landfill was removed, and underground storm water drainage systems were installed north and south of the landfill. This work occurred intermittently from 2006 through 2010 (DOE 2009b and DOE 2010b).

OU-1 is undergoing a ROD amendment to expand the area to include PRS 441 and to document the changes resulting from the excavation of the landfill. This expanded area is designated as Parcel 9.

Operation of the pump and treatment system, which controls the migration of trichloroethylene (TCE) contaminated groundwater in the Operable Unit 1 (OU-1) area, was stopped in June 2011 to support a rebound study.

Since the last five-year review, the site sanitary sewer lines were connected to the Miamisburg Publicly Owned Treatment Works. After the tie-in was completed on July 16, 2009, the site sanitary treatment package (SSTP) plant was drained, cleaned, and free-released for complete reuse and recycle. All of the SSTP plant removal work was completed by March 5, 2010.

On November 1, 2007, the Ohio Environmental Protection Agency (OEPA) granted a request from DOE to redesignate the National Pollutant Discharge Elimination System (NPDES) 1IO00005001 discharge from the sanitary package sewage treatment plant to the 1IO00005002 discharge point, which goes to the same body of water, the Great Miami River. This was done so that the pipe that contained the discharge (PRS 7) could be removed as required under CERCLA. On November 4, 2009, OEPA granted DOE's request to terminate NPDES Permit number 1IO00005*JD. This permit covers two outfalls at the U.S. DOE Mound Closure Project. Outfall 001 was the former sanitary effluent and outfall 002 was the storm water discharge. The final reporting period for these two outfalls was November 2009.

The DOE Office of Legacy Management (LM) follows several Operations and Maintenance (O&M) Plans (DOE 2004b, DOE 2004c, and DOE 2006b) and the Long-Term Surveillance and Maintenance (LTS&M) Plan (DOE 2005), and will maintain the necessary facilities and administrative procedures to implement the selected CERCLA remedies. These remedies include the following:

- The OU-1 pump and treatment (P&T) system, including three extraction wells, a treatment plant, and a discharge point will remain after completion of site activities. A groundwater monitoring system has been designated for monitoring in order to evaluate the capture of contaminated groundwater in this area.
- Sampling associated with the Phase I and Parcels 6, 7, and 8 groundwater remedies.
- Institutional controls (ICs) associated with (1) Parcels D, H, 3; (2) Parcels 4, 6, 7, and 8; and (3) Phase I. These ICs are documented in the appropriate ROD and the quitclaim deed for each parcel. Parcels 6, 7, and 8 have not been transferred to MDC, but the remedial actions have been completed and a ROD has been finalized.

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2.0 Site Chronology

1946: Construction of the Mound facility was started to support the early atomic weapons programs. The original footprint of the facility was 182 acres.

1948–1995: The plant grew into an integrated research, development, and production facility performing work in support of the nation's weapons and energy programs, with emphasis on explosives and nuclear technology.

1981: DOE purchased an additional 124 acres of land south of the original property. The property remained undeveloped.

1984: DOE established the Environmental Restoration Program at the Mound Site to collect and assess environmental data in order to evaluate both the nature and extent of contamination and to identify potential exposure pathways and potential human and environmental receptors. This was done to develop a conceptual site model.

1989: EPA placed the Mound Site on the National Priorities List (NPL) in November because of chemical contamination present in the site groundwater and the site's proximity to a sole source aquifer.

1990: DOE and EPA signed a Federal Facility Agreement (FFA) in October.

1993: OEPA added to FFA making it a tripartite agreement.

1995:

- Regulators approved the *Operable Unit 1 Record of Decision*. The selected remedy of controlling contamination from the soils and groundwater is (1) collection, treatment, and disposal of groundwater and (2) ICs.
- DOE and its regulators developed an approach to making decisions about the environmental restoration of the Mound Site and its facilities. This approach is known as the Mound 2000 Process, which meets the requirements of CERCLA Section 120(h), "Property Transferred by Federal Agencies." DOE and its regulators used the Mound 2000 Process to address the environmental issues associated with the restoration of the site, completion of work at the site, and deletion of the site from the NPL.

1997: Operation of the OU-1 P&T system.

1998:

- The Miami-Erie Canal included in OU-4 underwent a soil cleanup, primarily for plutonium. The canal, lying outside the Mound property boundary, was included on the NPL due to the impacts of operational and accidental releases from the facility.
- DOE and MDC signed a sales contract establishing how DOE would convey the entire Mound Site by discrete parcels, subject to the CERCLA Section 120(h), *"Property Transferred by Federal Agencies."*

1999:

- Regulators approved the *Record of Decision for Release Block D*. The selected remedy for Release Block D is ICs.
- Regulators approved the *Record of Decision for Release Block H*. The selected remedy for Release Block H is ICs.
- The deed for Release Block H was filed with Montgomery County, Ohio, on August 8.
- The deed for Release Block D was filed with Montgomery County, Ohio, on November 19.

2001:

- Regulators approved the *Parcel 4 Record of Decision*. The selected remedy for Parcel 4 is ICs.
- EPA deleted Release Blocks D and H from the NPL on April 16.
- The deed for Parcel 4 was filed with Montgomery County, Ohio on April 19.
- Regulators approved the *Parcel 3 Record of Decision*. The selected remedy for Parcel 3 is ICs.

2002:

- The deed for Parcel 3 was filed with Montgomery County, Ohio, on August 2.
- EPA deleted Parcel 4 from the NPL on December 2.

2003: Regulators approved the Phase I Record of Decision. The selected remedy for TCE contamination in Phase I is monitored natural attenuation (MNA) with ICs.

2004: Regulators approved the no-action ROD for OU-4 regarding the soil/sediment in the Miami-Erie Canal.

2006:

- Site contractor completed the CERCLA remediation (except for PRSs 7 and 441) in July.
- Congressional funding obtained to remove priority areas of OU-1. This was referred to as the first phase of OU-1 excavation.

2008:

- DOE and MDC updated the site sales contract, "SALES CONTRACT by and between the UNITED STATES DEPARTMENT OF ENERGY and the MIAMISBURG MOUND COMMUNITY IMPROVEMENT CORPORATION," on August 28.

2009:

- Competed removal of PRS 7.
- Competed removal of PRS 441.
- Completed Phase I of non-CERCLA excavation of OU-1.

2010:

- Regulators approved the Record of Decision for Parcels 6, 7, and 8.
- Completed Phase II final non-CERCLA excavation of OU-1.

2011:

- Rebound study was started for the OU-1 P&T system.

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3.0 Background

3.1 Site Description

The Mound Site is located in Miamisburg, Ohio, approximately 10 miles southwest of Dayton (Figure 1). In 1995, the DOE Mound Plant, named after the Miamisburg Indian Mound that is adjacent to the site, was comprised of 120 buildings on 306 acres. The Great Miami River located west of the site flows from northeast to southwest through Miamisburg and dominates the geography of the region surrounding the Mound Site.

The Mound Site sits atop an elevated area overlooking the city of Miamisburg, the Great Miami River, and the river plain area to the west. To the west of the plant is an abandoned section of the Miami-Erie Canal that parallels the river. An intermittent stream runs through the plant valley and drains to the river.

Site elevations vary from 700 feet (ft) to 900 ft above sea level; most of the site is above 800 ft. No building in which radioactive material was processed was located below an elevation of 790 ft. The typical non-flood stage of the Great Miami River is 682 ft. The highest floodwater levels that can be reasonably postulated for the Great Miami River basin (100-year storm event) would result in flooding to 700 ft. Parcels H and 4 of the Mound Site lie within the 100-year floodplain of the Great Miami River.

3.2 Land and Resource Use

The river valley is highly industrialized, while the rest of the region is a mix of farmland, residential area, small communities, and light industry. Many city and township residences, five schools, the Miamisburg downtown area, and six of the city's 17 parks are located within 1 mile of the Mound Site.

Population information extracted from the 2010 Census shows that within a 10-mile radius of the Mound Site there are 336,956 residents, and within a 50-mile radius of the site there are 3,183,953 residents. The primary agricultural activity in the area is raising field crops such as corn and soybeans. Approximately 10 percent of the agricultural land is devoted to livestock.

3.3 Site History and Enforcement Activities

3.3.1 History

The Mound Site was established by the U.S. Atomic Energy Commission, a predecessor to DOE, as an integrated research, development, and production facility that supported the nation's weapons and energy programs. To reconfigure and consolidate the nuclear complex, DOE decided to phase out the defense mission at the Mound Site. As a result, the Mound Site was designated an environmental management site and the plant is in the process of being transferred and converted into a research and industrial/commercial site.

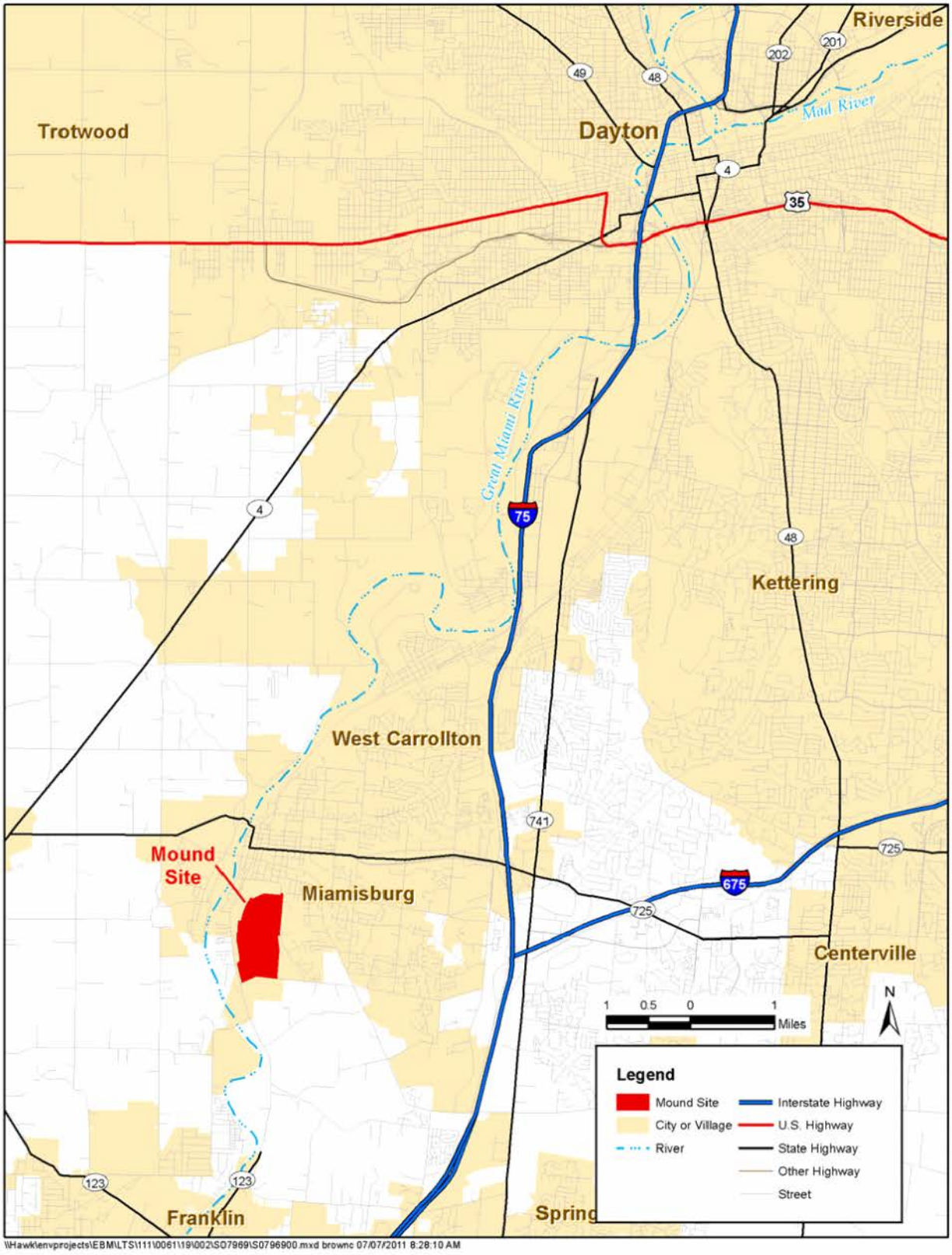

Figure 1. Mound, Ohio, Site Location Map

Early programs at the Mound Site investigated the chemical and metallurgical properties of polonium-210 and its applications; particularly, the fabrication of neutron and alpha sources for weapon and non-weapon use. Investigations involving uranium, protactinium-231, and plutonium-239 were performed from 1950 to 1963 as part of the national civilian power reactor program. In 1954, Mound began the separation of stable isotopes.

In the mid-1950s, Mound initiated efforts to develop a large-scale process for the recovery of thorium from a variety of thorium-bearing ores. Even though this project was canceled prior to full-scale operation, approximately 1,650 tons of thorium-containing sludge was received at the Mound Site. Due to its corrosivity, the thorium sludge was continually repackaged and relocated. This resulted in a number of thorium-contaminated areas around the site.

Plutonium-238 research and development activity began at the Mound Site in the mid-1950s. From the early 1960s to the late 1970s, the Mound facility processed plutonium-238 for use in heat sources within radioisotopic thermal generators. The fabrication of heat sources from plutonium metal was terminated in the mid-1960s. Plutonium oxide processes continued into the late 1970s. After early 1979, Mound did not handle un-encapsulated plutonium-238.

As a result of discovery of volatile organic compounds (VOCs) in groundwater, the Mound Site was placed on the NPL on November 21, 1989. DOE signed a CERCLA Section 120 FFA with EPA, effective in October 1990. In 1993, this agreement was modified and expanded to include OEPA.

3.3.2 Enforcement and Agreements—Mound 2000 Process

DOE, EPA, and OEPA had originally planned to address the environmental restoration issues under a set of OUs, each of which would include a number of PRSs. For each OU, the site would follow the traditional CERCLA process: a remedial investigation/feasibility study followed by a ROD, followed by remedial design/remedial action. After initiating remedial investigations for several OUs, DOE and its regulators concluded during a strategic review in 1995 that the OU approach was inefficient for Mound. DOE and its regulators agreed that it would be more appropriate to evaluate each PRS or building separately, use removal action authority to remediate them as needed, and establish a goal for no additional remediation other than ICs for the final remedy documented in the ROD. To evaluate any residual risk after all removals have been completed, a residual risk evaluation (RRE) was to be conducted to ensure the conditions would not pose an unacceptable risk to human health when the parcel is used for industrial/commercial purposes. This process was named the Mound 2000 Process. DOE and its regulators pursued this approach with the understanding that (1) EPA and OEPA reserve all rights to enforce all provisions of the FFA and (2) participation in the Mound 2000 Process does not constitute a waiver of EPA and OEPA rights to enforce the FFA.

The Mound 2000 Process established a Mound Core Team consisting of representatives of the DOE Miamisburg Closure Project, EPA, and OEPA. The Mound Core Team evaluated each of the PRSs and recommended the appropriate response. The Mound Core Team used process knowledge, site visits, and existing data to determine whether or not any action was warranted concerning each PRS. The PRSs at Mound were identified based on knowledge of historical land use that was considered potentially detrimental and/or an actual sampling result showing elevated concentrations of contaminants. If a decision could not be made, the Mound Core Team

identified specific information needed to make a decision (e.g., data collection, investigations). The Mound Core Team also received input from technical experts as well as the general public and/or public interest groups. Thus, all stakeholders had the opportunity to express their opinions or suggestions involving each PRS. The details of this process are explained in the *Work Plan for Environmental Restoration at the Mound Plant, The Mound 2000 Approach* (DOE 1999c).

Originally, the Mound property was divided into nineteen "release blocks," which were contiguous tracts of property designated for transfer of ownership. Release Blocks D and H were transferred to MDC in 1999. The remaining release blocks were reconfigured and renamed parcels. Parcel 4 was transferred to MDC in 2001. Parcel 3 was transferred to MDC in 2002.

The *Mound 2000 Residual Risk Evaluation Methodology* (RREM) (DOE 1997a) was developed as a framework for evaluating human health risks associated with residual levels of contamination. The RREM was applied to a parcel after remediation, and the remaining PRSs or buildings in the parcel were designated as No Further Action (NFA). An RRE was performed after the identified environmental concerns were adequately addressed by the Mound Core Team. The RRE documented that the parcel was acceptable for industrial/commercial redevelopment.

The ROD for a given parcel documented the most appropriate remedy that met statutory requirements and ensured protection of human health and the environment.

After the ROD for a given parcel was final, DOE submitted documentation to EPA and OEPA that showed the property met CERCLA 120(h)(3) requirements. After concurrence was obtained, the title of the property was formally transferred. Prior to acceptance of the deed for any discrete parcel, the Buyer acknowledged that it had reviewed the Mound environmental reports provided by DOE. Acceptance of the deed thereby acknowledged and committed the Buyer to abiding by ICs specified in the ROD.

3.4 Geology and Hydrogeology

The geologic record preserved in the rocks underlying the site indicates that the area has been relatively stable since the beginning of the Paleozoic era more than 500 million years ago. There is no evidence indicating subsurface structural folding, significant stratigraphic thinning, or subsurface faulting in the underlying bedrock. Limestone, which is interbedded with shale layers, is the uppermost bedrock units at the site. No evidence of solution cavities or cavern development has been observed in any borings or outcrops in the Miamisburg area.

The aquifer system at the Mound Site consists of two different hydrogeologic environments: groundwater flow through the bedrock beneath the hills, and groundwater flow within the unconsolidated glacial deposits and alluvium associated within the Buried Valley Aquifer (BVA) in the Great Miami River valley. The bedrock flow system is dominated by fracture flow and is not considered a highly productive aquifer. The Buried Valley Aquifer is dominated by porous flow with interbedded gravel deposits providing the major pathway for water movement. The unconsolidated deposits are Quaternary Age sediments consisting of both glacial and fluvial deposits. The BVA is a highly productive aquifer capable of yielding a significant quantity of water and is designated a sole-source aquifer.

4.0 Remedial Actions

DOE remediated the former DOE Mound Site Property (Figure 2) to EPA's risk-based standards for industrial/commercial use only. Mound Site remedial actions consist of groundwater remedies and ICs to control land and groundwater use. An additional IC for the OU-1 area controls site access. The Phase I and Parcels 6, 7, and 8 remedies include monitored natural attenuation for those contaminants that exceed maximum contaminant levels (MCLs). OU-1 contains a P&T system to control groundwater contamination and to minimize exposure to potential receptors by minimizing migration of contaminated groundwater.
The primary remedial action objective (RAO) for residual contaminated soil at the site is to ensure that exposures to soil do not result in an aggregate excess cancer risk of greater than the upper end of EPA's acceptable risk range of 1×10^{-4} to 1×10^{-6} or a hazard index greater than 1. This is accomplished primarily through the use of ICs at the site which:

- Limit land use to industrial/commercial only.
- Prohibit the removal of soil from the property boundaries unless prior written approval from OEPA and the Ohio Department of Health (ODH) is obtained;

The long-term RAO for groundwater is to meet MCLs through MNA in the Phase I and Parcels 6, 7, and 8 areas or through hydraulic containment in the OU-1 area. Until these goals are achieved, the near-term RAO is to prohibit the extraction and use of groundwater underlying the premises unless prior written approval is obtained from OEPA and ODH.

The following sections contain general information about remedial actions at the Mound Site and specific remedies for OU-1, Phase I, and Parcels 6, 7, and 8, which have additional groundwater monitoring requirements. The overall O&M costs are presented for the Mound Site as a whole and are discussed at the end of this section.

4.1 Regulatory Actions at Mound Site

The following RODs apply to the Mound Site:

- *Operable Unit 1 Record of Decision* (DOE 1995)—(currently being amended into the Parcel 9 ROD)
- *Record of Decision, Release Block D* (DOE 1999a)
- *Record of Decision, Release Block H* (DOE 1999b)
- *Parcel 3 Record of Decision* (DOE 2001a)
- *Parcel 4 Record of Decision* (DOE 2001b)
- *OU-4 Canal Record of Decision* (DOE 2004a)—(no action or restrictions required)
- *Parcels 6, 7, and 8 Record of Decision* (DOE 2009a)

The OU-1 ROD is being amended to expand the area and document the changes resulting from the excavation of the landfill. This expanded area is designated as Parcel 9.

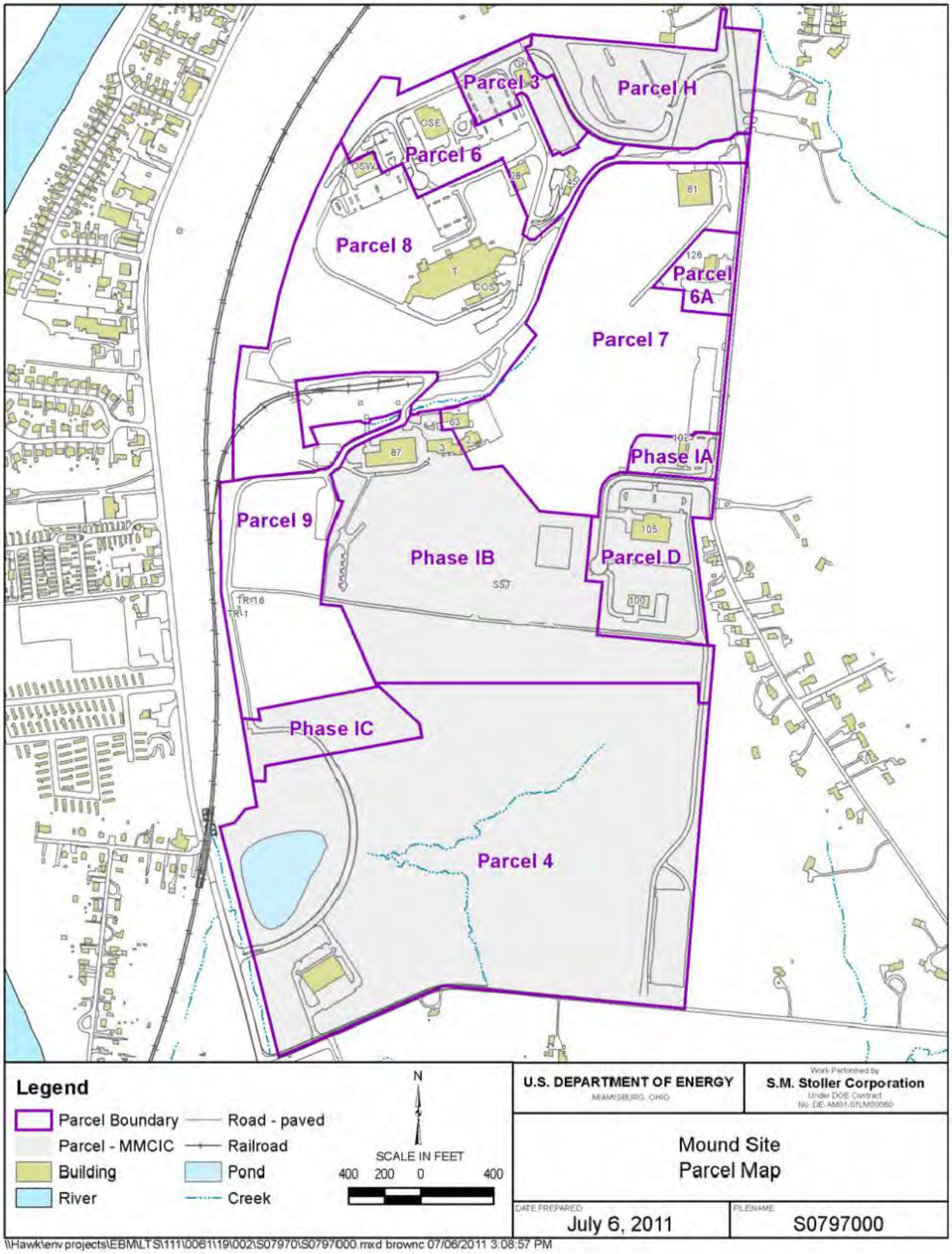

Figure 2. Land Parcels at the Mound Plant Site

4.1.1 Remedy Selection at Mound Site

The primary remediation objective was to ensure that any residual risk associated with each parcel was acceptable based on the agreed-upon industrial/commercial end-use as the only use. Remedies for each parcel were developed in accordance with that agreement. Evaluation of residual soil and groundwater contaminants within each land parcel determined that future users of the land will not be exposed to contaminant levels that would pose unacceptable risks as long as compliance with the deed restrictions is maintained. The soil within each land parcel was not evaluated for any use other than on-site industrial and/or commercial use. Any off-site disposition of the soil from a land parcel without proper handling, sampling, and management could create an unacceptable risk to off-site receptors. Additional groundwater monitoring was imposed for OU-1, Phase I, and Parcels 6, 7, and 8, where groundwater contamination had not reached acceptable levels. The selected remedy for each parcel (except OU-1) includes the ICs described in Section 4.1.3. DOE is amending the OU-1 ROD into Parcel 9 and will add the ICs not currently included.

4.1.2 Remedy Implementation at Mound Site

The sales contract between DOE and MDC, dated January 23, 1998, and revised in 2008, establishes that DOE will convey the entire Mound Site by discrete parcels, subject to the CERCLA Section 120(h), "Property Transferred by Federal Agencies." After regulatory approval is received via approval of the Environmental Summary, each parcel of land is transferred via a quitclaim deed. The quitclaim deed contained or referred to restrictions required under CERCLA to ensure that the parcel being transferred is protective of human health and the environment (i.e., as stipulated in the ROD). Copies of the recorded deeds for Parcels D, H, 3, 4, and Phase I are included in Appendix D. However, in the future, ICs will be implemented through environmental covenants in accordance with Ohio Revised Code. This method will be used to establish the ICs for Parcel 9 (OU-1 ROD Amendment).

The preparation of the quitclaim deed and environmental covenant requires input from the CERCLA process. A copy of the Environmental Summary is also recorded with the deed. The quitclaim deed transfers ownership of the land and establishes that MDC will take the land "as is" and "where is." Although the deed does not contain a warranty for the land, DOE maintains responsibility for cleanup if contamination resulting from previous DOE activities (that pose a risk to human health and the environment) is discovered in the future (DOE 2008a).

DOE, the regulators, and MDC agreed that the future land used for the site is industrial. The risk assessments evaluated two scenarios: commercial worker and construction worker. At closure, the deed restrictions described in Section 4.4 will apply to the entire site.

4.1.3 Institutional Controls at the Mound Site

ICs were selected as part of each remedy to protect future occupants or workers and were imposed through deed restrictions on future land use. DOE or its successors, as the lead agency for the RODs, has the responsibility to monitor, maintain, and enforce ICs.

ICs are non-engineered instruments, such as administrative and legal controls, that help minimize the potential for human exposure to contamination and/or protect the integrity of the remedy. The Mound Site ICs are in the form of deed restrictions that were developed with input from the public, the City of Miamisburg, the regulators, and MDC. ICs are implemented through deed

restrictions on future land use as outlined in the RODs for Parcels D, H, 3, 4, 6, 7, and 8, and Phase I. However, ICs for Parcel 9 (OU-1) will be implemented through environmental covenants in accordance with Ohio Revised Code.

When ICs are part of the remedy, the ROD contains (1) the deed-restriction language to be embedded in the quitclaim deed or environmental covenant and (2) the summary notice of hazardous substances (i.e., the CERCLA Summary Notice) required by CERCLA 120(h) for the parcel it covers. The quitclaim deed and the CERCLA Summary Notice are recorded with Montgomery County, Ohio, so that all future property owners will know about the deed restrictions. Copies of the quitclaim deeds are included in Appendix D.

The following deed restriction or environmental covenant language is a summary only. The RODs contain the parcel-specific restriction language and a summary of the ICs for each parcel is presented in Table 1. RODs and other CERCLA administrative record documents are available in the CERCLA Public Reading Room and electronically on the LM Mound website: http://www.lm.doe.gov/mound/Sites.aspx.

The restrictions are designed to:

- Prohibit the removal of soil from the original DOE Mound Site property boundaries, unless prior written approval from OEPA and ODH has been obtained.
- Prohibit the extraction or consumption of, exposure to, or the use in any way of the groundwater underlying the premises, unless prior written approval from EPA and OEPA has been obtained.
- Limit land use to industrial/commercial only. Each parcel ROD identifies land uses that will not be permitted, but the list is not all-inclusive. Parcels may not be used for any residential or farming activities, or any activities that could result in the chronic exposure of children less than 18 years of age to soil or groundwater from the premises. Restricted uses include:
  - Single or multi-family dwellings or rental units.
  - Daycare facilities.
  - Schools or other educational facilities for children under 18 years of age.
  - Community centers, playgrounds, or other recreational or religious facilities for children less than 18 years of age.
- Prohibit the removal of concrete floor material in specified rooms of T Building to off-site locations without prior approval from EPA, OEPA, and ODH.
- Prohibit the penetration of concrete floors in specified rooms of T Building without prior approval from EPA, OEPA, and ODH.
- Allow site access for federal and state agencies for sampling and monitoring.

Table 1. Mound Site IC Summary

Parcel	Former ID or other names	ROD Date	Remedy	Objectives of ICs	Instrument
D	Release Block D	1999	ICs	Prohibit the removal of soil. Prohibit the use of groundwater. Restrict land-use to industrial only.	Quitclaim deed for Parcel D Appendix D
H	Release Block H	1999	ICs	Prohibit the removal of soil. Prohibit the use of groundwater. Restrict land-use to industrial only.	Quitclaim deed for Parcel H Appendix D
3	None	2001	ICs	Prohibit the removal of soil. Prohibit the use of groundwater. Restrict land-use to industrial only.	Quitclaim deed for Parcel 3 Appendix D
4	South property	2001	ICs	Prohibit the removal of soil. Prohibit the use of groundwater. Restrict land-use to industrial only.	Quitclaim deed for Parcel 4 Appendix D
Phase I	A	2003	MNA ICs	Prohibit the removal of soil. Prohibit the use of groundwater. Restrict land-use to industrial only.	Quitclaim deed for Phase I (A, B, and C) Appendix D
	B				
	C				
6	Parcels 6, 7, and 8	2010	MNA ICs	Prohibit the removal of soil. Prohibit the use of groundwater. Restrict land-use to industrial only. Prohibit the removal of concrete floor material in specified rooms of T building. Prohibit the penetration of concrete floor material in specified rooms of T building.	Draft Quitclaim deed for Parcels 6, 7, and 8 Appendix D Property still controlled by DOE
7					
8					
9	OU-1	1995	Hydraulic containment ICs Surface water controls Long-term GW monitoring	OU-1 existing ROD. Limit site access. Parcel 9 ROD amendment in progress. Prohibit the removal of soil. Prohibit the use of groundwater. Restrict land-use to industrial only.	Property still controlled by DOE
6A	Within Parcel 7	2010	ICs	Prohibit the removal of soil Prohibit the use of groundwater Restrict land-use to industrial only	Draft Quitclaim deed for Parcels 6, 7, and 8 Appendix D Property still controlled by DOE
OU-4	Miami Erie Canal	2004	No action	None	None

4.1.3.1 Prohibit Removal of Soils

The first restriction applied to land parcels transferred to date pertains to the removal of soil from the Mound Site without prior written approval from EPA, OEPA, and ODH. The protocol for obtaining approval is contained in the *Operation and Maintenance Plan for the Implementation of Institutional Controls at the 1998 Mound Plant Property* (2004b) As OEPA is structured today, the decision authority for removal of soil from the Mound Site resides with the Southwest District Office, located in Dayton, Ohio. Information outlined in Attachment 7 should be provided in writing to OEPA and ODH/Bureau of Radiation Protection for each instance of proposed soil volume transport. Information about the cleanup process, background levels, and

toxicology data is contained in or referenced in the *Mound 2000 Residual Risk Evaluation Methodology* (DOE 1997a).

4.1.3.2 Prohibit Use of Groundwater

The second restriction prohibits the extraction, consumption, exposure, or use in any way of the groundwater underlying the premises, without prior written approval. The protocol for obtaining approval to install a groundwater well is contained in the *Operation and Maintenance Plan for the Implementation of Institutional Controls at the 1998 Mound Plant Property*. The protocol was developed to assist and inform the public, and future property owners, of the actions needed to request the permission from DOE to use groundwater on the Mound Site. Permission will be based upon a written request to EPA and OEPA.

4.1.3.3 Restrict Land Use to Industrial Only

The third restriction prohibits the land use to be anything other than industrial and/or commercial. The Proposed Plan and ROD for each land parcel state that land use will be for industrial and/or commercial use only. The RODs further detail specific land uses that will not be permitted onsite, but the list in the ROD is not meant to be all inclusive. Land parcels may not be used for any residential or farming activities, or for any other activities that could result in the chronic exposure of children under 18 years of age to soil or groundwater from the Mound Site.

To date, restricted land uses listed in the RODs include, but are not limited to:

- Single- or multi-family dwellings or rental units
- Day care facilities
- Schools or other educational facilities for children under 18 years of age
- Community centers, playgrounds, or other recreational or religious facilities for children less than 18 years of age

4.1.3.4 Special ICs for T Building

Two additional ICs were added to the Parcels 6, 7, and 8 ROD that prohibit the removal of concrete floor material in specified rooms of T Building (Figure 3) to off-site locations and prohibit the penetration of concrete floors in specified rooms of T Building without prior approval from EPA, OEPA, and ODH.

The protocol for obtaining approval to remove or penetrate flooring in certain rooms in T Building is contained in the *T Building Special ICs Core Team Agreement and Position Paper June 29, 2009*, which will be added to the *Operation and Maintenance Plan for the Implementation of Institutional Controls at the 1998 Mound Plan Property*. The protocol was developed to assist future property owners of the actions needed to request the permission to remove or penetrate flooring in certain rooms of T Building on the Mound Site. Permission will be based upon a written request to EPA and OEPA.

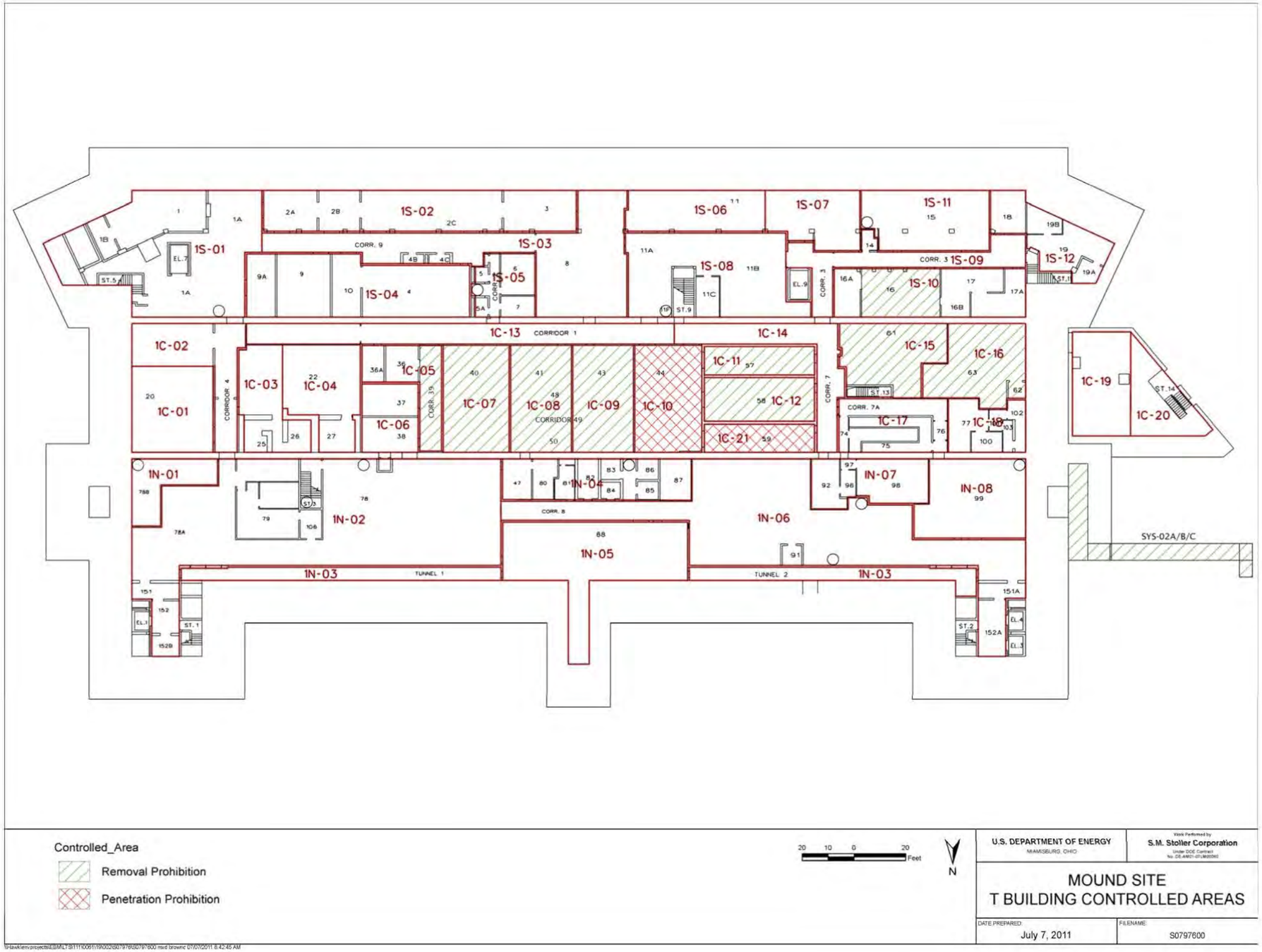

Figure 3. Mound Site T Building Controlled Areas

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4.1.3.5 Operations and Maintenance

ICs comprise all, or part of, the remedy for land parcels at the Mound Site that have completed the CERCLA Section 120(h) process for property transfer. In general, DOE will assess the effectiveness of ICs applied to the Mound Site on an annual basis. DOE may also, at any time, conduct a review of ICs if there is reason to believe a degradation of any control has occurred. However, the RODs for each parcel state that DOE can petition the regulators to decrease the assessment frequency (e.g., to every 5 years). DOE presents the annual assessment of ICs in an annual report.

The assessment of ICs includes a visual inspection of the site supported with review of any recent aerial photography. A complete description of the assessment of ICs, including a checklist, is contained in the *Operation and Maintenance Plan for the Implementation of Institutional Controls at the 1998 Mound Plant Property*. This document was prepared in 1998 and was updated in 2004 to include Phase I. A new document titled the "Site-Wide IC Management/Land Use Control Plan (with CERCLA Summary)" is being prepared as a stand alone manual for implementing and maintaining the ICs and land use controls at the DOE Mound site in the future.

4.2 Operable Unit 1

In June 1995, DOE finalized the *Operable Unit 1 Record of Decision* (DOE 1995) to address contaminated groundwater in this discrete portion of the Mound Plant Site. OU-1 is located in the southwestern portion of the Mound Site (Figure 4). It encompasses a historical waste disposal area (landfill) and the plant production wells. The OU-1 remedial action was designed to control groundwater contamination (primarily low-level volatile organic compounds) to prevent migration of contamination toward the plant production wells, and to minimize exposure to potential receptors. The pathway of concern consists of leaching of contaminants from site soils or disposed wastes; entrainment in the groundwater flow; and withdrawal by the Mound Plant production wells or by other future wells. The plant production wells were abandoned in October 2005, when the facility was connected to the municipal water supply. The OU-1 landfill was excavated in two phases from 2007 through 2010 to support future redevelopment of the property by MDC.

4.2.1 Remedy Selection

The selected remedy for controlling contamination from the soils and groundwater at OU-1 is the collection, treatment, and disposal of groundwater. Surface water controls, ICs to limit site access, and long-term groundwater monitoring are also part of the remedy (DOE 1995). This action is being implemented through the collection and treatment of contaminated groundwater and discharge of the treated water. The chemical properties and hydraulic behavior of the groundwater system are monitored to verify the adequacy of the remedy. The major components of this remedy include:

- Extraction of groundwater using three conventional wells
- Treatment of the extracted groundwater to remove the VOCs using air stripping
- Discharge of the treated groundwater to the Great Miami River
- Monitoring of the chemical properties of the groundwater system

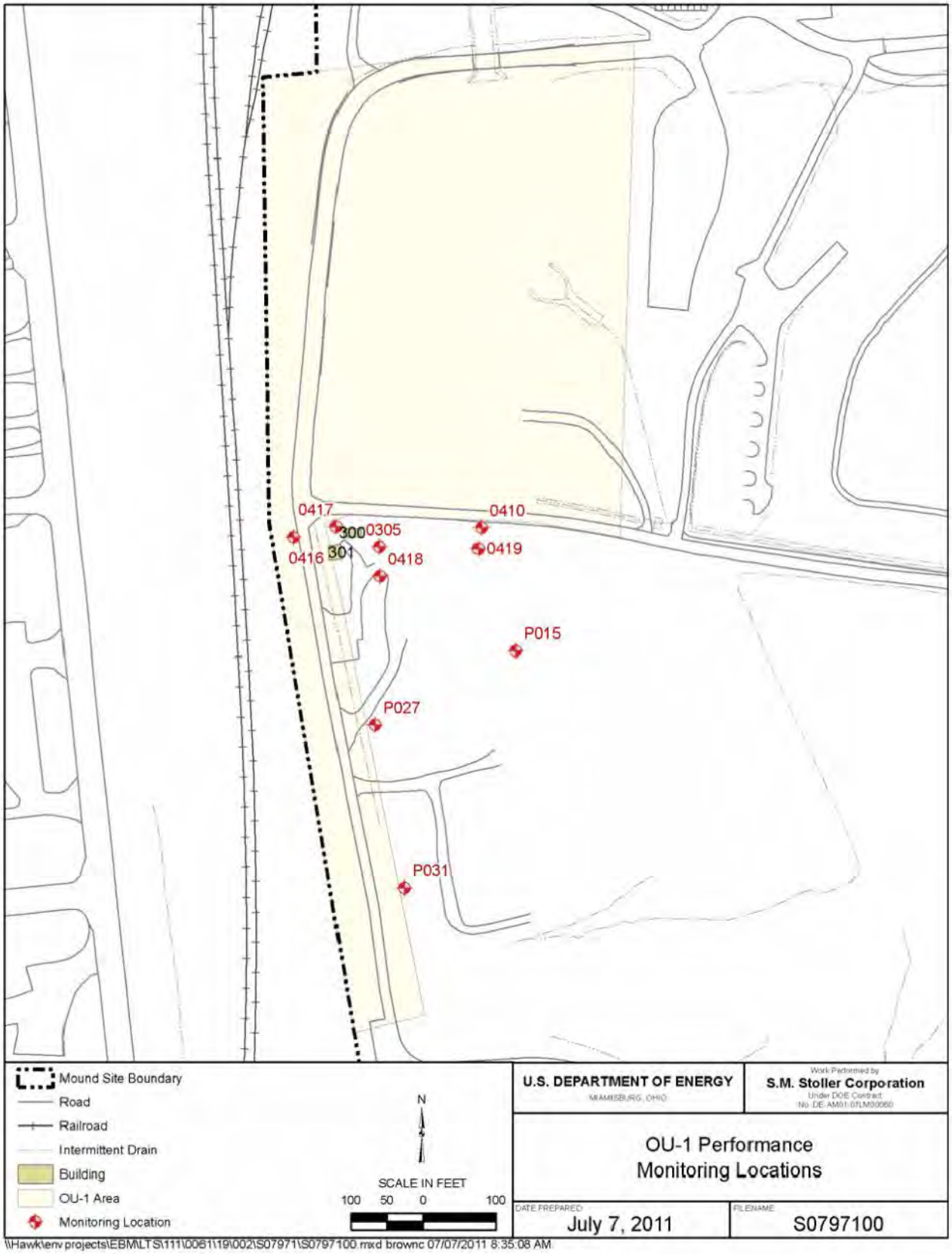

Figure 4. Operable Unit 1 Site Map

- Monitoring of the hydraulic behavior of the groundwater system
- Monitoring of the discharge effluent
- Periodic testing of the OU-1 extraction system (rebound testing)

The remedy also included surface water controls, the implementation of ICs to limit access to the site, and long-term groundwater monitoring. Surface water controls were installed to manage the surface water run-on and run-off and to reduce infiltration into the wastes in the landfill. Access restrictions and fencing were implemented to minimize contact with the soils until such time as the property is transferred.

In 2007, the three original extraction wells were removed to allow for excavation of the OU-1 landfill. Two extraction wells were installed south of the landfill to provide hydraulic containment of the impacted groundwater. A more frequent groundwater monitoring program has been implemented since 2007. Surface water controls were modified during that time to direct water away from the excavation area. Also, the pond on the north end of the OU-1 landfill area was removed to allow for excavation below the footprint of the pond. The OU-1 landfill, including the pond area, was backfilled to allow for future reuse. Since the landfill has been removed, access restriction and fencing have been removed. ICs will be implemented that control land and groundwater use, and those ICs will be incorporated into deed restrictions developed when ownership of OU-1 is transferred.

A rebound test was performed in 2003 and the system was restarted by increases in TCE above trigger levels in downgradient wells. The 2003 test was performed prior to the removal of the landfill; therefore, materials will still present that could provide a VOC source to groundwater. Starting in June 2011, another rebound test was initiated after the completion of the landfill excavation. It is expected that study will continue for 18 to 24 months. After that period, a passive groundwater remedy will be proposed, if supported by data from the rebound study.

4.2.2 Remedy Implementation

The components of the remedy that have been ongoing since the first five-year review (DOE 2001a) are groundwater extraction, treatment, and discharge; groundwater monitoring for chemical and hydraulic behavior; and monitoring of the discharge effluent.

During 2006, sampling of selected groundwater monitoring wells for volatile organic compounds was performed quarterly as specified in Section 8 of the *OU-1 Pump and Treatment Operation and Maintenance Plan* (DOE 2000). The monitoring network is summarized in Table 2. Data were analyzed to determine sustained downward trends as proof of successful capture of the plume. In accordance with the *OU-1 Pump and Treatment Operation and Maintenance Plan*, OEPA was notified prior to collection of groundwater samples and measuring water levels in the selected well.

Table 2. Groundwater and Hydraulic Monitoring for OU-1 During 2006

Location	VOC Analysis	Groundwater Hydraulic Measurement	Location	VOC Analysis	Groundwater Hydraulic Measurement
0305	X	X	0422		X
0410	X	X	0423		X
0416	X		P003		X
0417	X	X	P015	X	
0418	X		P027	X	
0419	X		P031	X	

In support of the OU-1 landfill excavation project (which was performed to support future reuse of the OU-1 area), a more frequent monitoring program was implemented. Starting in January 2007, sampling was performed in wells downgradient of the landfill to assess the groundwater quality in the BVA and the distribution of TCE closer to the landfill area and extraction wells. Sampling was performed according to the requirements in the *Work Plan for the Replacement of the OU-1 Extraction Wells*, which was developed to address the removal of the remaining two extraction wells (0413 and 0414) to accommodate additional source removal (i.e., the excavation of contaminated soil and debris from the landfill area). The sampling program changed over time to address changing conditions as excavation activities progressed. The most recent sampling program is presented in Table 3.

Table 3. Sampling Frequencies for OU-1 Wells in 2010

Well ID	Sampling Frequency
0305	Monthly
0410	
0416	
0417	
0418	
0419	
0449 – extraction well	
0450 – extraction well	
P053	
P054	
P056	
0424	Bimonthly
0425	
P015	
P027	
0422	Quarterly
0423	
P031	

Closely related to the operation of the system is the measurement of groundwater elevations in the OU-1 area, which are used to verify the satisfactory function of the pumping system. Water level measurements were made within the treatment area as specified in Section 8 of the *OU-1 Pump and Treatment Operation and Maintenance Plan* (DOE 2000). Section 8 describes how head measurements are made using a network of 16 wells. It was later determined that hydraulic capture could be determined through the use of a small network of wells located on the compliance boundaries (Table 2). Starting in 2008, a new set of wells along the southern side of the OU-1 landfill were selected to determine the inward gradients maintained by the new

extraction wells 0449 and 0450; (several of the wells used previously were removed during excavation activities).

4.2.3 Operations and Maintenance

O&M requirements are documented in the *OU-1 Pump and Treatment Operational and Maintenance Plan* (DOE 2000). In January 2007, excavation of the OU-1 landfill was started to support future reuse of the property. Operation of the P&T system was modified to address the changing conditions as excavation activities progressed. Focus was placed on maintaining hydraulic capture and assessing downgradient groundwater quality. Sampling was performed according to the requirements in the *Work Plan for the Replacement of the OU-1 Extraction Wells*. Starting in June 2011, monitoring in OU-1 has been modified to support a rebound study. The monitoring requirements will be incorporated into a site-wide groundwater monitoring plan that will be developed to compile all of the O&M monitoring requirements into one document.

4.3 Phase I Groundwater (MNA) Remedy

The *Phase I Record of Decision* (DOE 2003a) was finalized in July 2003 to address groundwater contaminated with TCE in this discrete area through MNA and ICs. Phase I is an approximately 52-acre area. It lies on the southern border of the plant and is made up of three distinct sections of the site property (Figure 5). This area contains monitoring wells that are screened in both the BVA and the bedrock aquifer system. MNA is being utilized as a remedy for a small section of the bedrock groundwater system contaminated with TCE to ensure the concentration of TCE within the bedrock groundwater is decreasing to levels below the MCL and does not impact the downgradient BVA.

Several wells in this area also exhibit levels of barium, radium (Ra), chromium, and/or nickel that exceed MCLs established under the Safe Drinking Water Act. The elevated levels of barium and radium were evaluated and determined to be naturally occurring with the local bedrock matrix serving as the mineral source. The elevated chromium and nickel were determined to be the result of corrosion of the stainless steel well casings. DOE committed to monitor select wells to confirm the results of the previous investigations where these conclusions were reached.

ICs associated with Phase I are discussed in Section 4.1.3.

4.3.1 Remedy Selection

Groundwater in Phase I is monitored for TCE and its degradation products to verify that the concentration of TCE is decreasing due to natural attenuation and is not impacting the BVA. A groundwater monitoring program was established to ensure that the BVA is not negatively impacted by TCE-contaminated groundwater within the Phase I bedrock aquifer system. The objective of this monitoring is to protect the BVA by verifying that the concentration of TCE in the vicinity of well 0411, well 0443, and seep 0617 are decreasing and that TCE is not impacting the BVA. This program may be decreased or terminated with the TCE concentrations observed in well 0411, well 0443, and seep 0617 meet the MCL for four consecutive sampling events.

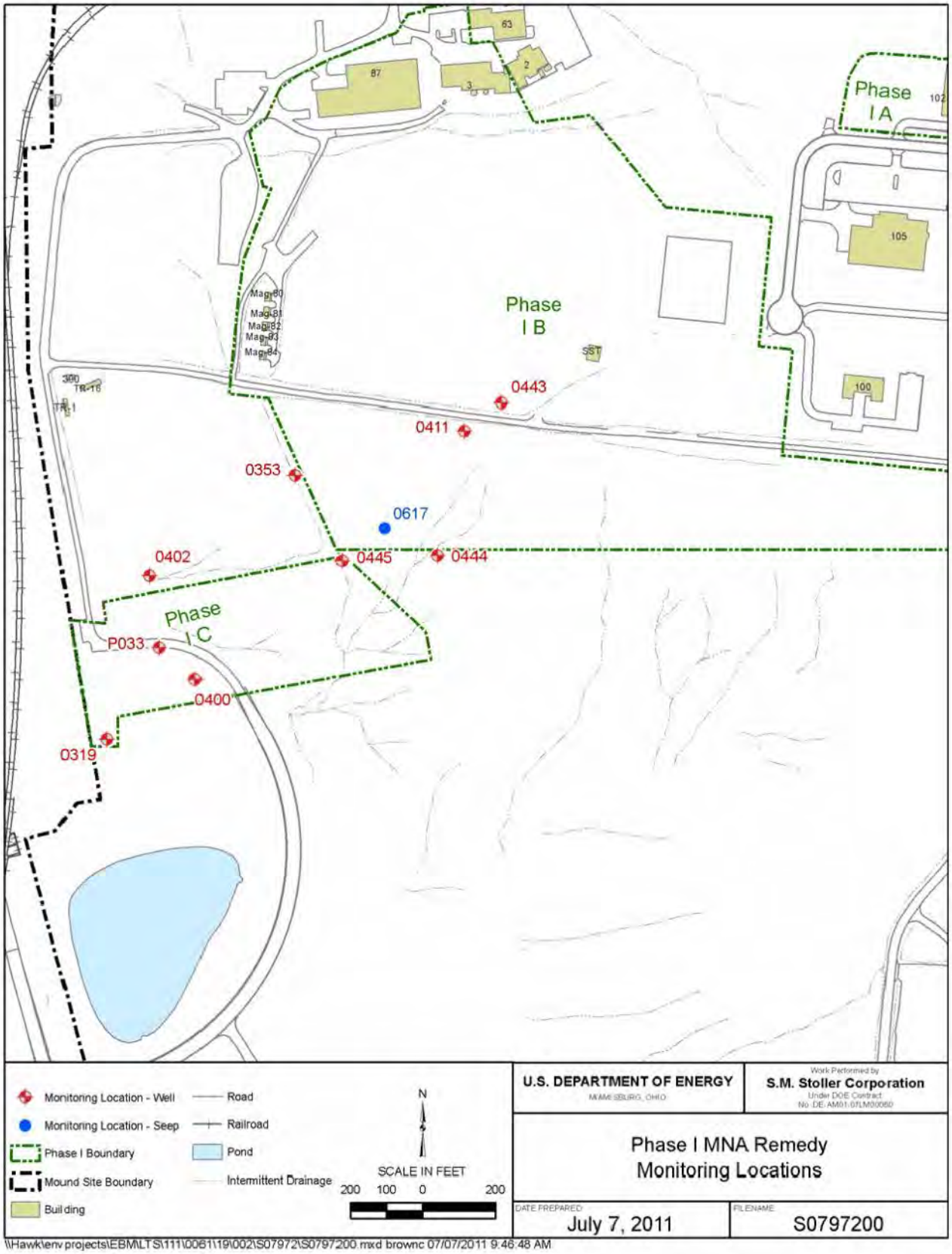

Figure 5. Monitoring Network for Phase I Groundwater (MNA) Remedy

Although not part of the selected remedy, monitoring was performed to evaluate barium, radium, chromium, and nickel impact in the Phase I groundwater. Based on investigations, none of these parameters were considered to be a contaminant of concern in Phase I.

Monitoring of groundwater for barium, Ra-226, and Ra-228 continues to provide assurance that the understanding of the barium and radium in groundwater is correct. If monitoring indicates that the concentrations are not decreasing below the MCL within a reasonable timeframe, the need for an active remediation for these contaminants or additional characterization will be considered. It was concluded from investigations in this area that a salt source located on the surface leached into the bedrock formation dissolving naturally occurring barium and radium in a low flow area of the bedrock aquifer. The salt storage shed was taken out of use.

Nickel and chromium concentrations observed in wells 0319, 0399, 0400, and 0411 are the result of corrosion of the stainless steel well casings and not the result of plant operations. Monitoring was performed to obtain a more comprehensive set of data to support this conclusion. Monitoring for nickel and chromium was discontinued in 2010.

4.3.2 Remedy Implementation

Under the MNA monitoring program, samples are collected from selected wells and seeps and analyzed as outlined in Section 4.3 of the *Phase I Groundwater Monitoring Plan* (DOE 2004b). In 2007, the sampling frequency for the MNA program was reduced to semiannually with the approval of the Mound Core Team. The present monitoring program is presented Table 4.

Table 4. Remedy (MNA) Monitoring for Phase I

Monitoring Location	Area	Parameters
Well 0411	Well 0411 Area	Trichloroethylene (TCE) Dichloroethylene (DCE) Vinyl Chloride (VC)
Well 0443		
Well 0353	Downgradient Bedrock Monitoring	
Well 0444		
Well 0445		
Seep 0617		
Well 0400	Downgradient Buried Valley Aquifer Monitoring	
Well 0402		
Well P033		

The confirmatory sampling program was modified with approval from the Mound Core Team in 2007 and 2009 (DOE 2008c and DOE 2010d). The confirmatory monitoring program is summarized in Table 5.

Table 5. Confirmatory Monitoring for Phase I

Location	Chromium	Nickel	Ra-226/228	Barium	Sodium	Chloride	Notes
Well 0319	X	X					Chromium/nickel (Cr/Ni) sampling discontinued in 2007.
Well 0400	X	X	X	X	X	X	Cr/Ni sampling discontinued in 2007. Sampling frequency reduced to semiannual in 2007.
Well 0402			X	X	X	X	Sampling frequency reduced to semiannual in 2007.
Well 0442	X	X					Cr/Ni sampling discontinued in 2007.
Well 0443	X	X					Cr/Ni sampling discontinued in 2009.
Well 0445			X	X	X	X	Sampling frequency reduced to semiannual in 2007.
Well P033			X	X	X	X	Sampling frequency reduced to semiannual in 2007.

The contaminant data is evaluated against previous data collected at each location to determine if MNA is adequately addressing groundwater impact and to monitor the geochemical conditions in the aquifer. Trigger levels and response actions have been established for each contaminant as presented in the *Phase I Remedy (Monitored Natural Attenuation) Groundwater Monitoring Plan*. The objective of the trigger level is to provide a threshold level that is indicative of a definitive change in the groundwater quality that would result in a response action. The levels of concern are designed to indicate that a change has occurred in the current bedrock groundwater system relative to the elevated barium and radium levels and could indicate the potential for increased mobility and mass transfer away from the source area (well 0445). The triggers and levels of concern are summarized in Table 6.

Table 6. Trigger Levels and Levels of Concern for Phase I MNA Remedy

Location	Trigger Levels			Levels of Concern			
	TCE (µg/L)	DCE (µg/L)	VC (µg/L)	Ra-226/228 (pCi/L)	Barium (mg/L)	Chromium (µg/L)	Nickel (µg/L)
0319	---	---	---	---	---	100	100
0353	5	70	2	---	---		
0400	5	70	2	5	1	100	100
0402	5	70	2	5	1	---	---
0411	30	70	2	---	---	---	---
0442	---	---	---	---	---	100	100
0443	30	70	2	---	---	100	100
0444	5	70	2	---	---	---	---
0445	5	70	2	75	---	---	---
P033	5	70	2	5	1	---	---
0617 (seep)	16	70	2	---	---	---	---

EPA and OEPA must be notified if these trigger levels or levels of concern are exceeded. After notification, the Mound Core Team (EPA, OEPA, and DOE) will determine an appropriate course of action.

4.3.3 Operations and Maintenance

The program to support MNA for the groundwater in Phase I is documented in the *Phase I Remedy (Monitored Natural Attenuation) Groundwater Monitoring Plan* (DOE 2004b). ICs are evaluated in accordance with the *Operation and Maintenance Plan for the Implementation of Institutional Controls at the 1998 Mound Plant Property* (DOE 2004b). A new document titled the "Site-Wide IC Management/Land Use Control Plan (with CERCLA Summary)" is being prepared as a stand alone manual for implementing and maintaining the ICs and land use controls at the DOE Mound site in the future. The groundwater and seep monitoring requirements will be incorporated into a site-wide groundwater monitoring plan that will be developed to compile all of the O&M monitoring requirements into one document.

4.4 Parcels 6, 7, and 8 Groundwater (MNA) Remedy

The *Parcels 6, 7, and 8 Record of Decision* (DOE 2009a) was finalized in September 2010 to address groundwater and seeps associated with the Main Hill contaminated with TCE and its breakdown products, tritium, and radionuclides through MNA and ICs. Parcels 6, 7, and 8 occupy approximately 101 acres of the northern portion of the Mound Plant site. The main production facilities were located within Parcels 6 and 8, and this area is called the Main Hill area (Figure 6).This area contains monitoring wells that are screened in the BVA and seeps. Groundwater within the fractured bedrock beneath the Main Hill area flows along horizontal bedding planes and fractures and ultimately discharges to seeps or to the downgradient BVA.

MNA is being utilized as a remedy for the bedrock groundwater system and BVA contaminated with TCE and its breakdown products, tritium, and radionuclides to ensure the concentrations of these constituents within the groundwater are decreasing to levels below the MCL and do not impact the downgradient BVA off-site.

ICs associated with Parcels 6, 7, and 8 are discussed in Section 4.1.3.

4.4.1 Remedy Selection

Groundwater in the Parcels 6, 7, and 8 area is monitored for TCE and its degradation products to verify that the downgradient BVA is not affected and that concentrations are decreasing. In addition, groundwater discharging from seeps is monitored for TCE and its degradation products, tritium, and radioisotopes (strontium-90 [Sr-90], Ra-226, and Ra-228) to verify that source removal will result in decreasing concentrations over time.

The sampling is separated into two programs that relate to the areas of impact. These areas are:

- **Wells 0315/0347 Area:** Wells at the edge of the BVA on the southwestern corner of Parcel 8 that have elevated concentrations of VOCs. The program consists of wells that have TCE greater than the MCL and downgradient wells to the west.
- **Main Hill Seeps:** Seeps on the northern and southern sides of the Main Hill that have elevated concentrations of VOCs and tritium. The program consists of seeps and downgradient wells to the west.

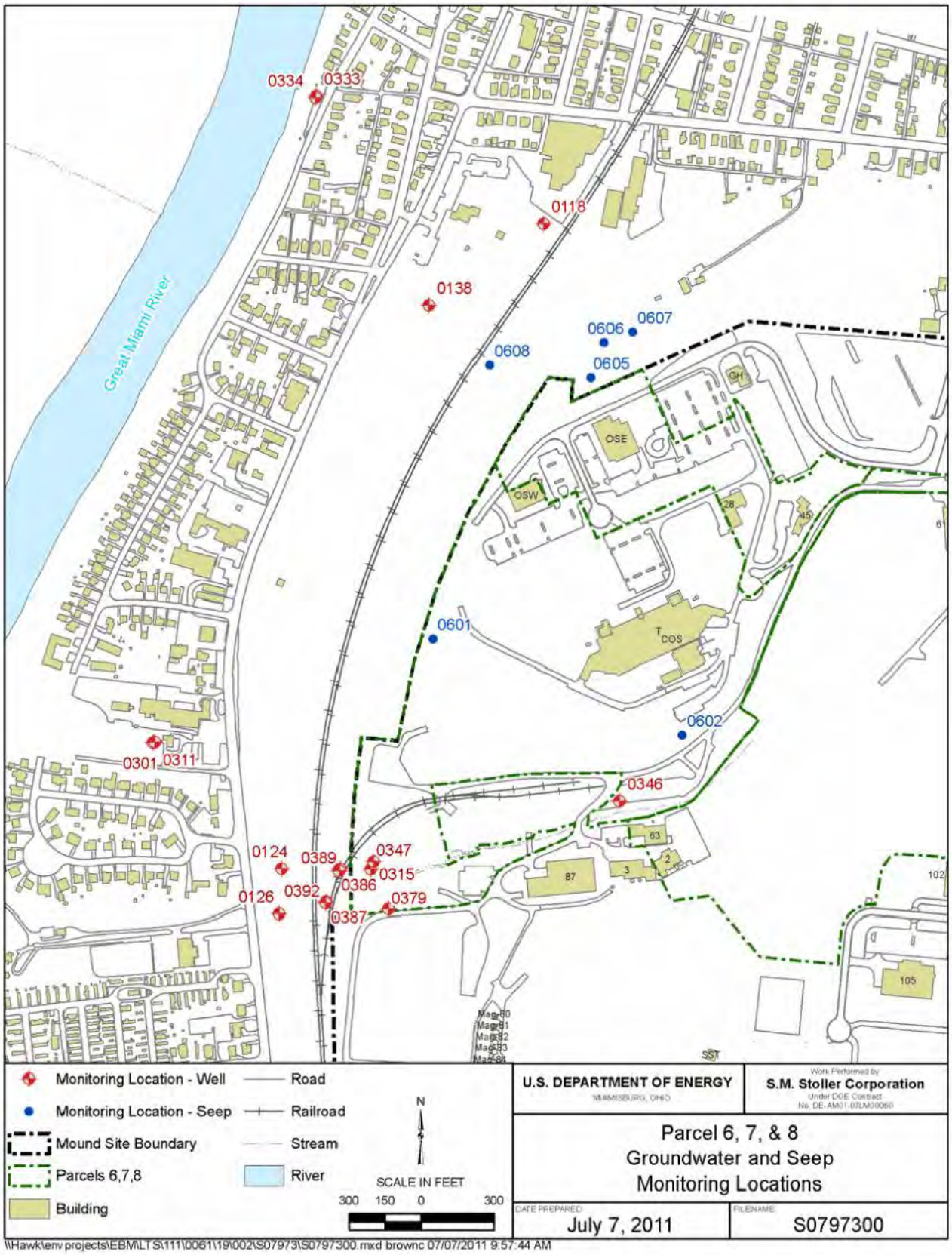

Figure 6. Parcels 6, 7, and 8 Groundwater and Seep Monitoring Locations

4.4.2 Remedy Implementation

Under the Parcels 6, 7, and 8 MNA monitoring program, samples are collected quarterly for selected wells and seeps (Figure 6) and analyzed as outlined in Sections 4.1 and 4.2 of the *Parcel 6, 7, and 8 Remedy (Monitored Natural Attenuation) Groundwater Monitoring Plan* (Final Draft) (DOE 2006).

The two source wells and other selected downgradient BVA wells are monitored for VOCs—namely, tetrachloroethylene (PCE), dichloroethylene (DCE), TCE, and vinyl chloride (VC). A summary of the monitoring locations is provided in Table 7.

Table 7. Monitoring for the Wells 0315/0347 Area

Monitoring Location	Area	VOC
Well 0315	Source Wells	TCE PCE DCE Vinyl Chloride
Well 0347		
Well 0124	Downgradient BVA Monitoring	
Well 0126		
Well 0386		
Well 0387		
Well 0389		
Well 0392		

Water from seeps 0601, 0602, 0605, 0606, 0607, and 0608 is collected and analyzed for VOCs and the radiological constituents shown in Table 8. Wells within the BVA that are downgradient of the bedrock groundwater discharge area of the Main Hill will also be sampled to monitor the levels of tritium and VOC contamination.

Table 8. Monitoring for the Main Hill Seeps and Groundwater

Monitoring Location	Area	Parameters
Seep 0601	Main Hill Seeps	TCE PCE DCE Vinyl Chloride Ra-226 and Ra-228 Tritium Sr-90
Seep 0602		TCE PCE DCE Vinyl Chloride Tritium
Seep 0605		
Seep 0606		
Seep 0607		
Seep 0608		
Well 0118	Downgradient BVA Monitoring Wells	TCE PCE DCE Vinyl Chloride Tritium
Well 0138		
Well 0301		
Well 0346		
Well 0379		

The contaminant data are evaluated against previous data collected at each location to determine if downward trends are occurring. Trigger levels and response actions have been established for each contaminant as presented in the *Parcel 6, 7, and 8 Remedy (Monitored Natural Attenuation) Groundwater Monitoring Plan* (Draft Final) (DOE 2006). The objective of the trigger level is to provide a threshold level that is indicative of a definitive change in the groundwater quality that would result in a response action. The triggers are summarized in Table 9.

EPA and OEPA must be notified if these trigger levels are exceeded. After notification, the Mound Core Team (EPA, OEPA, and DOE) will determine an appropriate course of action.

Table 9. Trigger Levels for Parcels 6, 7, and 8 Monitoring Locations

Location	TCE (µg/L)	PCE (µg/L)	Tritium (nCi/L)	Ra-226/228 (pCi/L)	Sr-90 (pCi/L)
0315	30				
0347	30				
0124	5				
0126	5				
0386	5				
0387	5				
0389	5				
0392	5				
0601 (seep)		75	1,500	20	20
0605 (seep)	150				

nCi/L = nanocuries per liter

4.4.3 Operations and Maintenance

The program to support MNA for the groundwater in Parcels 6, 7, and 8 is documented in the *Parcel 6, 7, and 8 Remedy (Monitored Natural Attenuation) Groundwater Monitoring Plan* (Draft Final) (DOE 2006b). ICs are evaluated in accordance with the *Operations and Maintenance Plan for the Implementation of Institutional Controls at the 1998 Mound Plant Property* (DOE 2004b). A new document titled the "Sitewide IC Management/Land Use Control Plan (with CERCLA Summary)" is being prepared as a stand alone manual for implementing and maintaining the ICs and land use controls at the DOE Mound site in the future. The groundwater and seep monitoring requirements will be incorporated into a site-wide groundwater monitoring plan that will be developed to compile all of the O&M monitoring requirements into one document.

4.5 O&M Costs for the Mound Site

Costs associated for each remedy are not tracked separately. The total O&M costs for groundwater monitoring, sample analysis, data management, reporting, and operation of the OU-1 P&T system are included in the costs shown in Table 10.

Table 10. General O&M Costs for the Mound Site

Year	O&M Cost
2006	$ 563,529
2007	$ 1,148,190
2008	$ 1,180,741
2009	$ 708,363
2010	$ 566,411
Total	$ 4,167,234

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5.0 Progress Since Last Review

5.1 Institutional Controls

Since the last five-year review, the Parcels 6, 7, and 8 ROD was signed in 2010 and contained two additional ICs relating to T Building. These are:

- Prohibit the removal of concrete floor material in specified rooms of T Building to off-site locations without prior approval from EPA, OEPA, and ODH.
- Prohibit the penetration of concrete floors in specified rooms of T Building without prior approval from EPA, OEPA, and ODH.

The OU-1 ROD is being amended to expand the area and document the changes resulting from the excavation of the landfill. This expanded area is designated as Parcel 9. As stated in the OU-1 ROD, the ICs for this area would be developed prior to transfer and therefore, will be outlined in future documentation for Parcel 9.

5.1.1 Protectiveness Statement from Last Review

The remedy for parcels D, H, 3, and 4 and the ICs associated with Phase I are protective of human health and the environmental because controls are functioning as intended. However, in order to ensure the long-term protectiveness of the remedy, adequate signage should be installed to inform visitors that fishing, swimming, and wading is prohibited in the Parcel 4 retention basin.

5.1.2 Status of Recommendations from Last Review

Recommendations regarding ICs from the last review were:

- Ineffective signage at the Parcel 4 retention basin has resulted in violation of the ICs in the past (land-use inconsistent with industrial/commercial land-use).

After reconsidering the exposure assumptions that were used to develop the industrial/ commercial cleanup standards for the Mound Site, DOE, EPA, and OEPA reached the conclusion that occasional visits to the retention pond by area residents will not result in an unacceptable risk to the visitors. Even so, DOE and MDC will continue to monitor and discourage these unauthorized uses of the Parcel 4 retention basin area. No further action is required to assure protectiveness of human health or the environment.

5.1.3 Status of Other Prior Issues

No other issues related to the ICs have been identified.

5.2 Operable Unit 1

Since the last five-year review, the OU-1 landfill was excavated in two phases under a Congressionally funded non-CERCLA activity during period from 2007 to 2010. As a result of this excavation, access to the former landfill area is not longer required and the source materials

for groundwater impact have been removed. In addition to the removal of the site sanitary landfill the Soil Vapor Extraction (SVE) was removed.
The OU-1 Record of Decision is being amended to expand the area and document the changes resulting from the excavation of the landfill. This expanded area is designated as Parcel 9. This amendment will include removal of ICs specifying fencing controls around the OU-1 landfill area and access controls to minimize contact with those soils. The ICs will be adjusted to match those for the rest of the site as described in Section 4.1.3.

Operation of the P&T system, which controls the migration of TCE-contaminated groundwater in the OU-1 area, was stopped in June 2011 to support a rebound study. Since the source has been removed, the feasibility of moving away from containment to a more passive remedy, namely monitored natural attenuation (MNA), is being considered.

5.2.1 Protectiveness Statement from Last Review

The remedy for OU-1 is protective of human health and the environment and, in the interim, exposure pathways that could result in unacceptable risks are being controlled through containment of the plume and control of access to the landfill. However, in order to ensure the long-term protectiveness of the remedy, adequate documentation and interpretation of the operational and monitoring data associated with the P&T system should be maintained. Also, long-term monitoring locations should be adequately maintained to ensure that representative samples are obtained and to prevent possible impact to the aquifer via surface water infiltration.

5.2.2 Status of Recommendations from Last Review

Recommendations regarding OU-1 from the last review were:

- Excessive vegetation is present around the OU-1 facility and structures and on the landfill surface.
- Inadequate storm water control is maintained on the southwestern corner of the landfill.
- Inadequate documentation and interpretation of operational and monitoring data for the OU-1 remedy is maintained. Permanent ID markers are not installed on all long-term groundwater monitoring wells.
- Protective casings of the long-term groundwater monitoring locations are in general disrepair.
- Adequate protection from vehicular traffic is not present for long-term groundwater monitoring wells.
- Excessive vegetation is present around the long-term groundwater monitoring locations.

A routine maintenance program to address vegetation and general housekeeping needed to be established for the OU-1 area. During the inspection, excessive vegetation was noted around the treatment buildings, extraction wells, SVE wells, fence line, and drainage areas. Routine cutting of the vegetation would facilitate periodic inspection of the facility and appurtenances, reduce degradation of the concrete drainage channels, facilitate flow in the drainage channels, and reduce the likelihood of vermin in the buildings.

A corrective action needed to be developed to address the inadequate storm water controls on the southwestern corner of the OU-1 landfill. Ponding of water should be prevented in order to reduce the infiltration of water into the landfill that will ultimately lead to migration of contaminants from the soil into the groundwater.

An annual report summarizing the hydraulic gradient determinations, groundwater monitoring data, and performance evaluations of the OU-1 P&T and SVE systems should be prepared. Previous reporting was accomplished using the monthly reports prepared by the environmental restoration contractor. While monthly summaries of the data are beneficial, an annual summary would aid in the interpretation of the performance of the system and provide valuable information for future five-year reviews.

A routine maintenance program needs to be established for the long-term groundwater monitoring locations at the Mound Site. This program should include periodic inspections of the integrity of the wells and the condition of the protective casing and surface pad as well as the surrounding area and access. Neglect of these wells could lead to failure of the surface seals, which could lead to migration of contamination from surface sources into the subsurface. Also, protection of these locations should be maintained as construction activities increase in the transitioned parcels. In the long-term this could impact the monitoring results that are used to evaluate the effectiveness of the remedies.

These deficiencies were addressed during 2007 (DOE 2007a). Issues regarding the general condition of the OU-1 landfill (i.e., housekeeping, surface water ponding) were no longer an issue as excavation of the landfill was started in January 2007. It was decided that monthly documentation of the performance of the OU-1 P&T system was adequate; however, the data was made more readily available and additional information was included in the reports.

A well rehabilitation program was initiated in 2007 that included repainting of all the long-term wells and bollards and installing permanent well identification markers. Broken surface pads were repaired and vegetation was removed. Protection from vehicular traffic was installed for those wells that were determined to be at greater risk. The monitoring network is inspected during each sampling event to ensure the integrity of the monitoring well network is maintained. Vegetation around the wells and seeps is removed at least once a year, and access is better maintained. The wells are repainted as necessary.

5.2.3 Status of Other Prior Issues

No other issues related to the remedy for OU-1 have been identified.

5.3 Phase I Groundwater (MNA) Remedy

Since the previous five-year review, monitoring has been ongoing. The sampling frequency for the Phase I MNA remedy has been reduced from quarterly to semiannually. No changes were made to the monitoring network.

5.3.1 Protectiveness Statement from Last Review

The remedy for Phase I is expected to be protective of human health and the environment upon attainment of groundwater cleanup goals through MNA. In the interim, exposure pathways that

could result in unacceptable risks are being controlled through ICs that prevent the groundwater from being used in the restricted area. However, in order to ensure the long-term protectiveness of the remedy, long-term monitoring locations should be adequately maintained to ensure that representative samples are obtained and to prevent possible impact to the aquifer via surface water infiltration.

5.3.2 Status of Recommendations from Last Review

Recommendations regarding Phase I from the last review were:

- Permanent ID markers are not installed on all long-term groundwater monitoring wells.
- Protective casings of the long-term groundwater monitoring locations are in general disrepair.
- Adequate protection from vehicular traffic is not present for long-term groundwater monitoring wells.
- Excessive vegetation is present around the long-term groundwater monitoring locations.

A routine maintenance program needed to be established for the long-term groundwater monitoring locations at the Mound Site. This program should include periodic inspections of the integrity of the wells and the condition of the protective casing and surface pad as well as the surrounding area and access. Neglect of these wells could lead to failure of the surface seals and lead to the potential for migration of contamination from surface sources into the subsurface. Also, protection of these locations should be maintained as construction activities increase in the transitioned parcels. In the long-term this could impact the monitoring results that are used to evaluate the effectiveness of the remedies.

This issue was resolved in 2007 (DOE 2007a). A well rehabilitation program was initiated in 2007 that included repainting of all the long-term wells and bollards and installing permanent well identification markers. Broken surface pads were repaired and vegetation was removed. Protection from vehicular traffic was installed for those wells that were determined to be at greater risk. The monitoring network is inspected during each sampling event to ensure the integrity of the monitoring well network is maintained. Vegetation around the wells and seeps is removed at least once a year and access is better maintained. The wells are repainted as necessary.

5.3.3 Status of Other Prior Issues

No other issues related to the Phase I MNA remedy have been identified.

5.4 Parcels 6, 7, and 8 Groundwater (MNA) Remedy

The remedy for groundwater in Parcels 6, 7, and 8 was approved in 2010. Groundwater monitoring in support of the remedy has been performed since 2006.

This is the first five-year review of the Parcels 6, 7, and 8 Remedy. Annual reports have been prepared since 2006 summarizing the data for the MNA remedy. These reports were reviewed as part of this five-year review.

5.5 Operable Unit 4—Miami-Erie Canal

A no action ROD was approved for the soil in the Miami-Erie Canal in 2004. The Miami-Erie Canal was never owned by DOE; however, the canal was included on the NPL due to impact from operational and accidental releases from the facility. Remediation of the canal soil attained risk levels that were acceptable for residential use. No property transfer was necessary. As this was a no-action ROD, further evaluation of the canal was not performed for this five-year review report.

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6.0 Five-Year Review Process

6.1 Administrative Components of the 2011 Five-Year Review

LM began the Mound Site five-year review process in December 2010 and continued it through August. This included notifying regulatory agencies, the community, and other interested parties; establishing the review team in consultation with EPA and OEPA; reviewing relevant documents and data; conducting site inspections; analyzing monitoring data; and developing and reviewing this third five-year review report.

LM discussed the five-year review process with the EPA and OEPA at the FFA and Mound Core Team meeting on December 14, 2010. During the February 15, 2011, FFA meeting, the regulators agreed to combine the physical walkarounds for the annual IC assessment and the five-year review.

The annual IC assessment walkaround with the regulators and stakeholders occurred on April 12, 2011. The physical inspection for the CERCLA five-year review was held concurrently. Art Kleinrath, LM Mound Site Manager, began the walkaround with a presentation that defined the scope of the annual assessment, reviewed the 2010 assessment recommendations, and presented the results of the 2011 preliminary inspections. Participants were given a safety briefing, a copy of the presentation, and the IC checklist for the walkaround.

The annual walkaround consisted of a driving tour of the site and a walkaround inside T Building. Participants in the annual walkaround included:

- Frank Bullock, MDC
- Becky Cato, S.M. Stoller Corporation (Stoller)
- Joe Crombie, ODH
- Tim Fisher, EPA
- Chuck Friedman, Stoller
- Ken Karp, Stoller
- Art Kleinrath, LM
- Joyce Massie, J.G. Management Systems, Inc. (JGMS)
- Anthony Campbell, OEPA
- Jane Powell, LM
- Bob Ransbottom, Stoller
- Karen Reed, LM
- Jeff Smith, OEPA
- Ellen Stanifer, City of Miamisburg
- Gary Weidenbach, Stoller

The CERCLA five-year review team included: Art Kleinrath, LM; Rebecca Cato, Laura Cummins, Chuck Friedman, and Bob Ransbottom, Stoller; Joyce Massie, JGMS; Tim Fischer, EPA-Region 5; and Brian Nickel, OEPA.

6.2 Community Notification and Involvement

LM placed public notices of the five-year review in the *Dayton Daily News* and Miamisburg West Carrollton newspapers. The notices described the review process including the ICs. DOE also created a CERCLA five-year review page, including a survey form for the public, on the LM Mound website. LM also e-mailed many local stakeholders, directing them to the website and inviting them to complete the survey. As of the end of the review period, no surveys were submitted via the website. Copies of the public notices and survey are contained in Appendix C.

Representatives of the City of Miamisburg and MDC accompanied the review team during every annual physical inspection for the assessment of ICs at the Mound Site, including the inspection performed on April 12, 2011. Also, personnel from both organizations were interviewed during the records review portion of the IC assessment during each annual review.

6.3 Interviews and Record Review

During each annual assessment of ICs at the Mound Site, DOE conducted interviews with representatives of the City of Miamisburg Engineering and Planning Departments. Review of permits with these departments indicated that all work performed by MDC or other parties during the reporting period appeared to be covered by permits submitted to the City.

In general, the City of Miamisburg permit review process maintains an adequate record-keeping system. The City queried the electronic permit database and provided a printout to LM. All reported work performed by MDC or other parties on the Mound Site during each 12-month reporting period was covered by permits submitted to the City.

Interviews were also conducted with O&M managers from both DOE and its oversight contractor, S.M. Stoller Corporation. These interviews are included with the Site Inspection Checklist (Appendix B).

6.4 Site Inspections

The annual IC assessments include a physical walkover inspection, discussions with property owners, and a review of records maintained by DOE, the property owner, and the City of Miamisburg Engineering and Planning Departments. During the visual inspection, DOE determines if new facilities have been constructed, if obvious improvements have been made to the property, and/or if property usage has changed. These visual inspections are typically performed by a group comprised of representatives of DOE, EPA, OEPA, the City of Miamisburg, and MDC.

Discussions with local government offices and records review will include, at a minimum, contacting the City of Miamisburg Engineering and Planning Departments to obtain information regarding construction or building permits, or exemptions from zoning ordinances, issued for the former DOE Mound Site. The following is a general discussion of each annual inspection. A more detailed discussion can be found in the appropriate report submitted for each inspection.

6.4.1 2007 Annual IC Assessment

The 2007 annual IC assessment covered Parcels 3, 4, D, and H, and Phase I (Areas A, B, and C). There were no observations of noncompliance. MDC owned all of these parcels except Phase I.

Wells that were present in each parcel were also inspected to document their condition. All of the monitoring wells were in operable condition. The annual assessment report documented the effectiveness of the ICs' remedy applied to the Parcels D, H, 4, 3 and the Phase I land parcel. This did not include a determination of the effectiveness of the various groundwater remedies, including the MNA remedy associated with the Phase I land parcel.

The 2007 report recommended adding the City Planning Commission requests to the list of documents examined for annual assessments to capture work not covered by the permit process such as parking lot installations. It also recommended adding the Ohio Department of Natural Resources (ODNR) well logs to the list of documents examined for annual assessments.

It was concluded in the *Annual Assessment of the Effectiveness of Institutional Controls Applied to the Former Mound Site Property, June 2007* (DOE 2007a) that ICs for Parcels 3, 4, D, H, and Phase I (Areas A, B, and C) continued to function as designed, adequate oversight mechanisms appeared to be in place to identify possible violations of ICs, and adequate resources were available to correct or mitigate any problems if a violation were to have occurred.

6.4.2 2008 Annual IC Assessment

The 2008 annual IC assessment covered Parcels 3, 4, D, H, and Phase I (Areas A, B, and C). There were no observations of noncompliance. MDC owned all of these parcels except Phase I.

Wells that were present in each parcel were also inspected to document their condition. All of the monitoring wells shown were in operable condition. The annual assessment report documented the effectiveness of the ICs' remedy applied to the Parcels D, H, 4, 3 and the Phase I land parcel. This did not include a determination of the effectiveness of the various groundwater remedies, including the MNA remedy associated with the Phase I land parcel.

The 2008 report recommended that the landowner or management organization must notify LM when address or street names change on site, since building permits are filed by street address. It also recommended adding the landowner or management organization contracts and easement documents to those reviewed for the annual IC assessment.

It was concluded in the *Annual Assessment of the Effectiveness of Institutional Controls Applied to the Former Mound Site Property, June 2008* (DOE 2008b) that ICs for Parcels D, H, 3, and 4 continued to function as designed, adequate oversight mechanisms appeared to be in place to identify possible violations of ICs, and adequate resources were available to correct or mitigate any problems if a violation were to have occurred.

6.4.3 2009 Annual IC Assessment

The 2009 annual IC assessment covered Parcels 3, 4, D, H, and Phase I (Areas A, B, and C). There were no observations of noncompliance. MDC owned all of these parcels.

Monitoring wells were also inspected to document their condition, and all were in operable condition. The annual assessment report documented the effectiveness of the ICs' remedy applied to the Parcels D, H, 4, 3 and the Phase I land parcel. This did not include a determination of the effectiveness of the various groundwater remedies, including the MNA remedy associated with the Phase I land parcel.

The 2009 report recommended confirming that a well was correctly abandoned and removed from the ODNR website, and improving drainage around well 0353.

It was concluded in the *Annual Assessment of the Effectiveness of Institutional Controls Applied to the Former Mound Site Property, July 2009* (DOE 2009c) that ICs for Parcels D, H, 3, and 4 and Phase I continued to function as designed, adequate oversight mechanisms appeared to be in place to identify possible violations of ICs, and adequate resources were available to correct or mitigate any problems if a violation were to have occurred.

6.4.4 2010 Annual Inspection

This annual assessment covered Parcels D, H, 3, 4, 6, 7, and 8 and the Phase I (Areas A, B, and C) parcel of the Mound Site. MDC owned all of these parcels except Parcels 6, 7, and 8.

There were no observations of noncompliance with the ICs. In particular, there was no evidence of unauthorized well installation or soil removal within the original boundaries of the DOE Mound Site property.

Although not an IC, groundwater monitoring is required by CERCLA remedies for some parcels. The inspection included the physical conditions of wells and seeps associated with these remedies.

The 2010 annual assessment recommended improving the marking labels at seeps; removing the water sampling station, fencing over seep 0607, and returning the area to its original condition; ensuring that the signs by the pond in Parcel 4 are present at all times; and painting well 0124 in the old canal area.

It was concluded in the *Annual Assessment of the Effectiveness of Institutional Controls Applied to the Former Mound Site Property, July 2010* (DOE 2010c) that the ICs for Parcels D, H, 3, 4, 6, 7, and 8 and the Phase I land parcel continued to function as designed. Adequate oversight mechanisms appeared to be in place to identify possible violations of ICs, and adequate resources were available to correct or mitigate any problems if a violation were to have occurred.

6.4.5 2011 Inspections—Annual IC and Five-Year Review

The 2011 physical inspections, which combined the annual IC inspection and the CERCLA five-year review inspection, are summarized in the following sections. The five-year review Site Inspection Checklist is contained in Appendix B. Photographs from the walkaround performed for this review are contained in Appendix A.

6.4.5.1 Institutional Controls Inspection

The annual assessment of the effectiveness of the institutional controls for the Mound Site, in accordance with the *Operations and Maintenance (O&M) Plan for the Implementation of Institutional Controls at the 1998 Mound Plant Property,* was conducted in March and April of 2011. This assessment covered the entire Mound Site.

The physical walkaround was held on April 12, with representatives of EPA, OEPA, MDC, and the City of Miamisburg participating in the inspection. This inspection also served as part of the five-year review inspection to support the CERCLA five-year review report. The physical inspection included the areas within T Building to which special ICs—which prohibit the penetration of concrete in some areas, and the removal of concrete in others, without prior approval—apply.

The solar array was installed west of COS Building. This work was covered by City of Miamisburg permits and was overseen by MDC.

The recommendations from the 2010 annual IC assessment report were corrected. One issue that was noted during each annual inspection was wording on signs at the MDC retention basin near the bike path in Parcel 4. The second five-year review for the Mound Site recommended that the issue of adequate signage around the Parcel 4 retention basin be addressed by DOE, EPA, and OEPA. Signs placed around the basin to inform area visitors that recreational use around the basin is prohibited have been damaged and removed on several occasions by members of the public.

After reconsidering the exposure assumptions that were used to develop the industrial/ commercial cleanup standards for the Mound Site, DOE, EPA, and OEPA have reached the conclusion that occasional visits to the retention pond by area residents will not result in an unacceptable risk to the visitors. Even so, DOE and the MDC will continue to monitor and discourage these unauthorized uses of the Parcel 4 retention basin area. No further action is required to assure protectiveness of human health or the environment.

No recommendations significant to the protectiveness of the remedies were made as a result of this 2011 inspection.

It was concluded in the *Annual Assessment of the Effectiveness of Institutional Controls Applied to the Former Mound Site Property, June 2011* (DOE 2011a) that there were no observations of noncompliance with the ICs. In particular, there was no evidence of unauthorized well installation, soil removal, or site activities inconsistent with industrial/commercial use. The ICs continue to function as designed. Adequate oversight mechanisms appear to be in place to

identify possible violations of ICs, and adequate resources are available to correct or mitigate any problems if violations occur.

6.4.5.2 Phase I and Parcels 6, 7, 8 Groundwater Monitoring Wells and Seeps

Because the groundwater monitoring is not an IC, the annual IC assessment only verifies the conditions of the wells and seeps, and it does not determine the effectiveness of the MNA remedies.

All Phase I wells were locked, had permanent markers, and were in good condition. One outstanding recommendation from the 2009 annual assessment was to improve the drainage around well 0353. Drainage was corrected after the excavation at OU-1 was completed in 2010.

All of the Parcels 6, 7, and 8 wells were locked and in good condition, with the exception of well 0124. Well 0124, which was rusty and needed painting, was painted in 2011.

The 2010 inspection report recommended that the seeps be marked with sturdier markers. However, it was decided that adding more visible markers would call unwanted attention to the seep locations. Since the samplers use the global positioning system (GPS) locations and sample the seeps often, it was decided that no further marking would be added at this time.

It was observed in 2010 that the old tritium sampler over seep 0607 was no longer required or functional. This sampler and the surrounding fence were removed, and the area was returned to its original state before the 2011 inspection.

6.4.5.3 OU-1 Landfill

The site sanitary landfill has been removed, and the pond immediately adjacent to its northern edge has been filled. The land area has been graded and contoured to direct the storm flow to the northwest corner of the former pond where a catch basin has been installed. The northern edge of the former pond area has been graded and contoured to promote storm water flow to the catch basin in the northeast corner of the former pond.

This walkaround consisted of a visual survey of the physical aspects of the OU-1 remedy and included the landfill area, storm water controls, and the OU-1 P&T system.

The general condition of the OU-1 area is adequate. Access roads are in minor disrepair, but they provide adequate access for inspection of the OU-1 area and operation of the treatment system and storm water controls.

ICs associated with OU-1 consisted of land-use controls to restrict access to the area to minimize contact with soils. Fencing around the landfill proper was removed during the excavation of OU-1 and was not replaced.

Storm water from this area was monitored in accordance with NPDES permit 1IO00005*ID. On November 1, 2007, OEPA granted DOE's request to redesignate the NPDES 1IO00005001 discharge from the sanitary package sewage treatment plant to the 1IO00005002 discharge point, which goes to the same body of water, the Great Miami River. This was done so that the pipe

that contained the discharge at that time could be removed as required under CERCLA. On November 4, 2009, OEPA granted DOE's request to terminate NPDES Permit number 1IO00005*JD. This permit covers the two outfalls at the U.S. DOE Mound Closure Project. Outfall 001 was the former sanitary effluent and outfall 002 was the storm water discharge. The final reporting period for these two outfalls was November 2009.

During the walkover of the OU-1 area, the groundwater monitoring wells that are included in the *OU-1 Pump and Treatment Operations and Maintenance Plan* were also inspected. The wells were locked and in good condition.

6.4.5.4 OU-1 Pump and Treatment System

The OU-1 P&T system is composed of two extraction wells (0449 and 0450) located along the southern edge of the former landfill area. These create a hydraulic barrier to prevent the migration of VOC-impacted groundwater. Water extracted from the two extraction wells is directed to Building 300, where VOC contamination is removed. The effluent from this system is monitored and discharged in accordance with the CERCLA Authorization to Discharge (ATD) under NPDES (Authorization Number 1 IN90010*BD). Visual inspection of the components of the treatment system indicated that the building and system is in good condition.

The original extraction wells (0412, 0412, and 0414) were removed in 2007 during the excavation of the landfill. In addition to the removal of the site sanitary landfill, the SVE system was removed.

6.5 Document Review

The following sections use categories to list the documents that were reviewed as part of this five-year review.

6.5.1 Basis for Response Action

The documents listed in Table 11 identify the background and goals of the remedies and any changes in laws and regulations that could affect the response action. These documents also (1) address community concerns and preferences and (2) provide background information on the remedial actions, basis for action, cleanup levels, and applicable or relevant and appropriate requirements (ARARs).

Table 11. Documents Supporting Basis for Response Action at the Mound Site

Document	Purpose	Use for Review
Operable Unit 1 Record of Decision, Mound Plant, Miamisburg, Ohio, June 1995	Record selected remedial decision	Remediation Goals Background Basis for Action Community Concerns Cleanup Levels Operational Criteria ICs ARARs
Record of Decision for Release Block D, Mound Plant, Miamisburg, Ohio, February 1999	Record selected remedial decision	Remediation Goals Background Basis for Action Community Concerns ICs ARARs
Record of Decision for Release Block H, Mound Plant, Miamisburg, Ohio, June 1999	Record selected remedial decision	Remediation Goals Background Basis for Action Community Concerns ICs ARARs
Parcel 4 Record of Decision, Mound Plant, Miamisburg, Ohio, February 2001	Record selected remedial decision	Remediation Goals Background Basis for Action Community Concerns ICs ARARs
Parcel 3 Record of Decision, Mound Plant, Miamisburg, Ohio, August 2001	Record selected remedial decision	Remediation Goals Background Basis for Action Community Concerns ICs ARARs
Phase I Record of Decision, Miamisburg Closure Project, July 2003	Record selected remedial decision	Remediation Goals Background Basis for Action Community Concerns Cleanup Levels ICs ARARs
Miami-Erie Canal Record of Decision, Miamisburg Closure Project, September 2004	Record selected remedial decision	Background Basis for Action Community Concerns ARARs
Parcels 6, 7, 8 Record of Decision, Mound Plant, Miamisburg, Ohio, September 2009	Record selected remedial decision	Remediation Goals Background Basis for Action Community Concerns ICs ARARs

Table 12. Documents Supporting Implementation of the Response at the Mound Site

Document	Purpose	Use for Review
Final Report on the Implementation of Operable Unit 1 Record of Decision	Documents the approach used to evaluate hydraulic capture for OU-1 pump and treatment	Data evaluation

6.5.2 Operations and Maintenance

O&M documents listed in Table 13 describe the ongoing measures at the Mound Site to ensure the remedy remains protective. They provide the structure for O&M at the site and confirm that O&M is proceeding as planned.

Table 13. Documents Supporting Operations and Maintenance at the Mound Site

Document	Purpose	Use for Review
OU-1 Pump and Treatment Operation and Maintenance Plan, March 2000	Provides the general guidelines for effective operation of the P&T system.	O&M Requirements Monitoring Requirements Reporting
Operation and Maintenance (O&M) Plan for the Implementation of Institutional Controls at the 1998 Mound Plant Property, 2004	Provides details about the implementation of ICs for all parcels/phases at the Mound Site and the process for evaluation of the effectiveness of ICs.	O&M Requirements Reporting
Phase I Remedy (Monitored Natural Attenuation) Groundwater Monitoring Plan, September 2004	Provides the groundwater monitoring approach for the MNA remedy in Phase I.	Monitoring Requirements Reporting
Long-Term Surveillance and Maintenance Plan for the U.S. Department of Energy Miamisburg Closure Project, Mound Site, Miamisburg, Ohio, Vol. 1 (Draft), September 2005	Provides a summary of activities and operations that are required to maintain the selected CERCLA remedial actions and ensure the effectiveness of the remedies.	O&M Requirements Commitments Reporting
Parcel 6, 7, and 8 Remedy (Monitored Natural Attenuation) Groundwater Monitoring Plan, December 2006	Describes the groundwater monitoring approach for the MNA remedy in Parcels 6, 7, and 8.	Monitoring Requirements Reporting

6.5.3 Remedy Performance

Monitoring data, progress reports, and performance evaluation reports listed in Table 14 provide information that can be used to determine whether the remedial actions continue to operate and function as designed and have achieved, or are expected to achieve, cleanup levels.

Table 14. Documents Supporting Remedy Performance at the Mound Site

Document	Purpose	Use for Review
CERCLA Five-Year Review Report for the Operable Unit 1 Remedy at the U.S. Department of Energy Miamisburg Environmental management Project, September 2001	Records status and protectiveness of remedy.	History Update Status
Second Five-Year Review for the Mound, Ohio, Site, Miamisburg, Ohio, September 2006	Records status and protectiveness of remedy.	History Update Status
Annual Assessment of the Effectiveness of Site-Wide Institutional Controls Applied to the Former Mound Site Property, multiple annual documents, June 2007–June 2011	Documents results of annual inspection and IC status.	IC status
Phase I Groundwater Monitoring Report, multiple annual documents, 2006–2010	Documents sampling results and conclusions regarding the effectiveness of the MNA remedy.	Site status Monitoring results
Parcel 6, 7, and 8 Groundwater Monitoring Report, multiple annual documents, 2007–2010	Documents sampling results and conclusions regarding the effectiveness of the MNA remedy.	Site status Monitoring results
OU-1 Monthly Summaries, entries in the ER Monthly report, October 2006–June 2011	Documents the monthly operation and performance of the OU-1 system.	System Performance
OU-1 Pump and Treatment System Performance Evaluation, March 2010	Documents the groundwater capture of the OU-1 P&T system.	System Performance
OU-1 Pump and Treatment System—Groundwater Capture Demonstration Using Rhodamine WT Dye, Mound, Ohio, February 2011	Documents the groundwater capture of the OU-1 P&T system.	System Performance

6.5.4 Legal Standard Regarding Remedial Action

The legal documentation listed in Table 15 includes information about specified responsibilities for conducting remedial action, implementing institutional and access controls, and O&M activities at the Mound Site.

6.6 Risk Information Review

A risk information review was conducted to determine if the site residual contamination could present unacceptable risks. The documents surveyed included residual risk evaluation documentation (general and parcel-specific), groundwater monitoring reports, and ICs monitoring reports, among others. Toxicity information sources (e.g., Integrated Risk Information System [IRIS], Health Effects Assessment Summary Tables [HEAST]) were consulted for main site constituents to determine whether there have been significant changes in the understanding of health-related effects since the last five-year review. The review of site-specific risk information included an evaluation of ARARs, exposure assumptions, and RAOs used at the time of remedy selection.

Table 15. Documents Supporting Legal Standards Regarding Remedial Action at the Mound Site

Document	Purpose	Use for Review
FFA under CERCLA Section 120; In the Matter of the U.S. DOE's Mound Plant (1993)	Documents the commitments and agreements regarding the implementation and operation of remedies. Also documents the responsibilities of other agencies.	Required Actions Roles of Other Agencies
Work Plan for Environmental Restoration of the DOE Mound Site, The Mound 2000 Approach, 1999	Documents the process for evaluating PRSs.	Site conditions
Mound 2000 Residual Risk Evaluation Methodology, Mound Plant, 1997	Documents the methodology for evaluating the residual risk remaining for each parcel.	Site conditions
Site Sales Agreement (updated 2008)	Documents (1) how DOE will convey the Mound Plant Property to MMCIC by discrete parcels, subject to CERCLA Section 120(h) and (2) the condition the property will be left in upon completion of remedial actions.	Required Actions

6.6.1 Applicable or Relevant and Appropriate Requirements

The chemical-specific ARARs identified in the RODs at the site are maximum contaminant levels specified in the Safe Drinking Water Act and MCLs identified in State of Ohio regulations (OAC-3745-81-11, -12, -13, -15, and -16). Numerical standards for the primary constituents of concern at the site are listed in Table 16. There have been no changes in these numerical values for the constituents that are the main drivers for remediation at the site since the time of the RODs that would call into question the protectiveness of the remedies selected for groundwater at the Mound Site.

Table 16. Applicable Groundwater Standards for the Mound Site

Constituent	Standard	ARAR
Tritium	20,000 pCi/L 4 mrem/yr	OAC-3745-81-16 40 CFR 141
Radium 226 + 228	5 pCi/L	OAC-3745-81-15 40 CFR 141
PCE	5 μg/L	OAC-3745-81-12 40 CFR 141
TCE	5 μg/L	OAC-3745-81-12 40 CFR 141
cis-1,2,-DCE	70 μg/L	OAC-3745-81-12 40 CFR 141
trans-1,2-DCE	100 μg/L	OAC-3745-81-12 40 CFR 141
Vinyl chloride (VC)	2 μg/L	OAC-3745-81-12 40 CFR 141

6.6.2 Exposure Pathways

The first ROD for the site was completed for OU-1. The risk assessment completed in support of that ROD considered a variety of exposure pathways and assumed exposures to both contaminated soils and groundwater. Risks were largely dominated by the use of groundwater as a source of drinking water.

As discussed in Section 3.3.2 the "traditional" CERCLA remediation approach was replaced with the Mound 2000 Process (DOE 1999c), which includes the preparation of an RRE to support a ROD for a given parcel. The site conceptual model for Mound was defined in the *Residual Risk Evaluation Methodology* (DOE 1997a) and includes assumptions regarding relevant exposure pathways at the Mound Site. A commercial/industrial land-use scenario was assumed with future construction workers and office workers as the primary receptors. Exposure pathways for both types of receptors included ingestion and inhalation of fugitive dust and external radiation from surface soil and ingestion of groundwater. Additionally, the construction worker was also assumed to experience inhalation of vapors from groundwater during showering with water from a well on the property. A RRE is completed for a parcel to demonstrate that remedial action goals are met and that a parcel is suitable for industrial/commercial purposes.

Total risks calculated in some RREs (e.g., Release Blocks D and H, Parcels 3 and 4) exceeded the acceptable risk range; as with OU-1, these were due primarily to the inclusion of the groundwater ingestion pathway. Subsequently, production wells were removed and prohibitions were placed on groundwater use. As a result, the more recent RRE prepared for Parcels 6, 7, and 8 (DOE 2007b) did not include the groundwater pathway. For purposes of this five-year review, the groundwater pathway is currently considered incomplete across the site. The other exposure pathways for construction and office workers from the original RRE methodology are still considered valid.

The original RRE methodology did not include the dermal pathway for soils. This pathway was subsequently added in the Parcels 6, 7, and 8 RRE. Results of this analysis indicate that risks associated with dermal exposure are typically less than those associated with ingestion, though in some instances they are roughly equivalent to ingestion risks. Therefore it appears that the inclusion of dermal exposures can increase total risks in some cases, though oral and external exposure pathways tend to dominate. Exclusion of the dermal pathway in the assessment of residual risks for some portions of the Mound Site may have slightly underestimated potential risks for site construction workers. However, the use of conservative exposure assumptions reduces the likelihood that real risks are significant.

The Parcels 6, 7, and 8 RRE did not address exposure to seep water because it was considered insignificant; however, because there are no controls on access to seeps it does constitute a complete exposure pathway and is considered briefly in this five-year review for the sake of completeness. Tritium and TCE are the most consistently elevated constituents in the seeps. Tritium concentrations have been observed as high as an order of magnitude above the MCL of 20,000 picocuries per liter (pCi/L); the majority of data, however range from half to five times the standard. Most data for TCE range from just below to four times the drinking water standard, with occasional values up to an order of magnitude above the drinking water standard. Based on these only slightly elevated levels (compared to drinking water standards), risks associated with infrequent incidental contact with contaminated seep water are expected to be negligible.

6.6.3 Toxicity Values

Five-year reviews require an assessment of toxicity data to determine if there have been any changes that would alter the protectiveness of the remedy. The RRE methodology (DOE 1997b) uses risk-based guideline values (RBGVs) as a screening tool for identifying constituents of concern to continue assessing under the residual risk evaluation of a given parcel. The RBGVs are based, in part, on toxicity values. These values have been adjusted over time as new toxicity data have become available. However, the RRE methodology calls for using a value of 1/10 the RBGV as an initial screen for inclusion of constituents for further evaluation. Because of this conservative approach it is highly unlikely that any constituents were screened out in the past that would warrant inclusion based on current toxicity values.

Table 17 shows toxicity values that were used to calculate the original RGBVs (DOE 1997b) for the main risk drivers in soil. Shortly after the development of the RGBVs, EPA completed an update of radionuclide slope factors in the HEAST based on Federal Guidance Report No. 13 (EPA 1999). A comparison of risks calculated using the original RBGVs and updated data from HEAST was included as part of the Parcel 3 RRE (DOE 2001c), which was completed shortly after the HEAST update. This comparison indicated that the new toxicity data had little effect on the calculated risks (some risk estimates were slightly higher, some lower). Since that time there have been no further changes in relevant HEAST values. It is unlikely that total risks estimated for portions of the site using older toxicity values for radionuclides would be significantly different than total risks estimated with current values.

Table 17 also contains several of the chemical constituents that were the main risk drivers in site soils, including arsenic and several polynuclear aromatic hydrocarbon compounds. Toxicity values for these selected constituents have not changed since the original RBGVs were developed. While a review was not conducted for every toxicity value used in past assessments at the site, there have been no recent changes in the understanding of the major site-related constituents in soils that would call into question the protectiveness of the remedy.

6.6.4 Remedial Action Objectives

The primary RAO for residual contaminated soil at the site is to ensure that exposures to soil do not result in an aggregate excess cancer risk of greater than the upper end of EPA's acceptable risk range of 1×10^{-4} to 1×10^{-6} or a hazard index greater than 1. This is accomplished primarily through the use of ICs at the site that:

- Limit land use to industrial/commercial usage only
- Prohibit the removal of soil from the property unless prior written approval from OEPA and ODH is obtained

The long-term RAO for groundwater is to meet MCLs (1) through MNA in the Phase I and Parcels 6, 7, and 8 areas (2) through hydraulic containment in the OU-1 area. Until these goals are achieved, the near-term RAO is to prohibit the extraction and use of groundwater underlying the premises unless prior written approval is obtained from OEPA and ODH.

Table 17. Evaluation of Toxicity Values for Soil at the Mound Site

Constituent	Exposure Pathway	Type	Toxicity Value RBGV Report (1997)	Current Toxicity Values (source)	Change
Benzo*(a)*pyrene	oral/dermal	C	7.3[a]	7.3[a] (I)	None
Benz*(a)*anthracene	oral	C	7.3E-01[a]	7.3E-01[a] (E)	None
Dibenz*(a,h)*anthracene	oral/dermal	C	7.3[a]	7.3[a] (E)	None
Plutonium 238	oral	C	3.0E-10[b]	2.72E-10[b] (H)	Decrease
Radium 226(+D)	external	C	6.7E-06[c]	8.49E-06[c] (H)	Increase
Radium 228(+D)	external	C	4.53E-06[c,e]	4.53E-06[c] (H)	None
Uranium 233/234	external	C	3.5E-11[c,f]	9.82E-10[c,f] (H)	Increase
Uranium 233/234	oral	C	4.5E-11[b,f]	1.6E-10[f] (H)	Increase
Arsenic[d]	oral	N	3.0E-04[d]	3.0E-04 (I)	None

Notes:
[a] Oral slope factor $(mg/kg/day)^{-1}$; these same slope factors are adjusted to calculate risks for dermal exposure
[b] Oral slope factor (risk/pCi)
[c] External slope factor (risk/yr per pCi/g soil)
[d] Oral reference dose (mg/kg/day)
[e] Value from RRE for Parcels 6,7,8 (DOE 2007)
[f] Higher of U-233 or U-234

Abbreviations:
C = carcinogenic
E = EPA Environmental Criteria and Assessment Office
H = HEAST
I = IRIS
N = non-carcinogenic

6.6.5 Changes in Risk Assumptions Since Last Five-Year Review

There have been no changes in risk assumptions since the last five-year review.

6.7 Data Review

Data from calendar years 2006 through 2010 is discussed below for each of the three remedies (i.e., Phase I groundwater; Parcels 6, 7, and 8 groundwater; and the OU-1 P&T system). Annual reports have been prepared for the Phase I MNA Groundwater Remedy since 2004 and for the Parcels 6, 7, and 8 MNA Groundwater Remedy since 2006. Data for the OU-1 P&T system has been reported in monthly project reports. Historical water quality and water level data for existing wells can be found on the LM website: http://gems.lm.doe.gov/. Photographs, maps, and physical features can also be viewed on this website.

The monitoring programs at the Mound Site include sampling and analysis of water collected from on-site and off-site wells and on-site seeps. The monitoring programs are formally defined in the following three documents:

- *Phase I Remedy (Monitored Natural Attenuation) Groundwater Monitoring Plan* (DOE 2004c)
- *Parcel 6, 7, and 8 Remedy (Monitored Natural Attenuation) Groundwater Monitoring Plan* (Draft Final) (DOE 2006b)
- *OU-1 Pump and Treatment Operation and Maintenance Plan* (DOE 2000)

6.7.1 Phase I Groundwater

Groundwater in Phase I is monitored for TCE and its degradation products to verify that the concentration of TCE is decreasing by natural attenuation to concentrations less than the MCL. This groundwater monitoring program was established to ensure that the BVA is not negatively affected by TCE-contaminated groundwater within the Phase I bedrock aquifer system. The objective of this monitoring is to protect the BVA by verifying that (1) the concentration of TCE in the vicinity of well 0411, well 0443, and seep 0617 is decreasing and (2) TCE is not adversely affecting the BVA. This program may be decreased or terminated when TCE concentrations in well 0411, well 0443, and seep 0617 meet the conditions outlined in the monitoring plan, such as reaching the MCL for four consecutive sampling events.

Although not part of the selected remedy, monitoring was performed to evaluate the impact of barium, radium, chromium, and nickel on the Phase I groundwater. On the basis of investigations, none of these parameters were considered to be contaminants of concern in Phase I.

Monitoring for barium and radium is performed to provide assurance that the understanding of the barium and radium in groundwater is correct. If monitoring indicates that the concentrations are not decreasing below the MCL within a reasonable timeframe, the need for an active remediation for these contaminants or additional characterization will be considered. Investigations in this area confirmed that an upgradient salt source located on the surface had been infiltrating into the bedrock formation and mobilizing naturally occurring barium and radium in a low-flow area of the bedrock aquifer. Use of the salt storage shed was discontinued in 2003.

Nickel and chromium concentrations in BVA wells 0319 and 0400 and bedrock wells 0399 and 0411 are likely the result of corrosion of the stainless steel well casings and not the result of plant operations (DOE 2002). Monitoring was performed to obtain a more comprehensive set of data to support this conclusion.

In the 2007 Groundwater Monitoring Report, modifications to the monitoring program were recommended on the basis of the data collected through 2007. These modifications included reducing sampling frequencies and removing sampling locations for the MNA and confirmatory sampling programs. Minor changes to the program recommended in the 2007 Groundwater Monitoring Report (DOE 2008c) were made based on comments from the regulators.

The 2009 Groundwater Monitoring Report (DOE 2010d) recommended discontinuing confirmatory sampling at well 0443. Results collected through 2009 supported the conclusion that the elevated concentrations of metal in well 0411 did not represent the overall groundwater quality in the bedrock groundwater system.

6.7.1.1 Contaminants of Interest

During the remedial investigation program for the project, VOC contamination was identified in the Phase I area. Concentrations of TCE greater than the MCL of 5 milligrams per liter (mg/L) were identified in well 0411 and seep 0617. Soil and groundwater data from the wells in the vicinity of well 0411 suggest that the TCE contamination is most likely limited to the area

adjacent to the well. There is no known continuing source of TCE contamination in the soil in Phase I; however, TCE was widely used in plant operation.

Groundwater data collected for both routine monitoring and to support parcel transfer yielded unusual and unexpected results. Relatively high concentrations of radium and barium were observed in low-yielding bedrock wells that are located in two different areas of the Mound Site. Neither of the subject areas is located in the central part of the site that involved production or materials handling. An investigation is described in the *Geochemical Evaluation of Elevated Ba and Ra in Bedrock at the Miamisburg Closure Project* (DOE 2006c). The investigation's hypothesis for the presence of the elevated parameters is that the brines in wells 0335 and 0445 originate from dissolution of salt stored at the ground surface. The dense brine infiltrated into an area of the bedrock that is relatively isolated from the main groundwater system. Interactions of this brine with the bedrock released radium and barium to the groundwater.

Field investigations indicated elevated nickel and chromium concentrations occur in wells constructed of stainless steel (DOE 2006d). Fieldwork showed that elevated chromium and nickel in the wells was highly localized and not widespread. Crevice corrosion of the wire slotted stainless steel well casing was the suspected mechanism for releasing the chromium and nickel from the casing to the groundwater adjacent to the well. This condition is more evident in samples collected using low-flow sampling techniques. The elevated levels observed in wells 0319, 0399, 0400, and 0411 are the likely result of corrosion of the well casing and not the result of plant operation.

6.7.1.2 Monitoring Program

Under the Phase I MNA monitoring program, samples were collected quarterly from selected wells and a seep (Figure 7) and analyzed as outlined in Section 4.3 of the Phase I Groundwater Monitoring Plan (DOE 2004c) and in Table 18. In 2007, the sampling frequency was reduced to semiannually with the approval of the Mound Core Team. Sampling is performed in the first and third quarters of each calendar year.

Table 18. Remedy (MNA) Monitoring for Phase I

Monitoring Location	Area	Parameters
Well 0411	Well 0411 area	Trichloroethylene (TCE) Dichloroethylene (DCE) Vinyl chloride (VC)
Well 0443		
Well 0353	Downgradient bedrock monitoring	
Well 0444		
Well 0445		
Seep 0617		
Well 0400	Downgradient BVA monitoring	
Well 0402		
Well P033		

Sampling frequency was reduced from quarterly to semiannually in 2007.

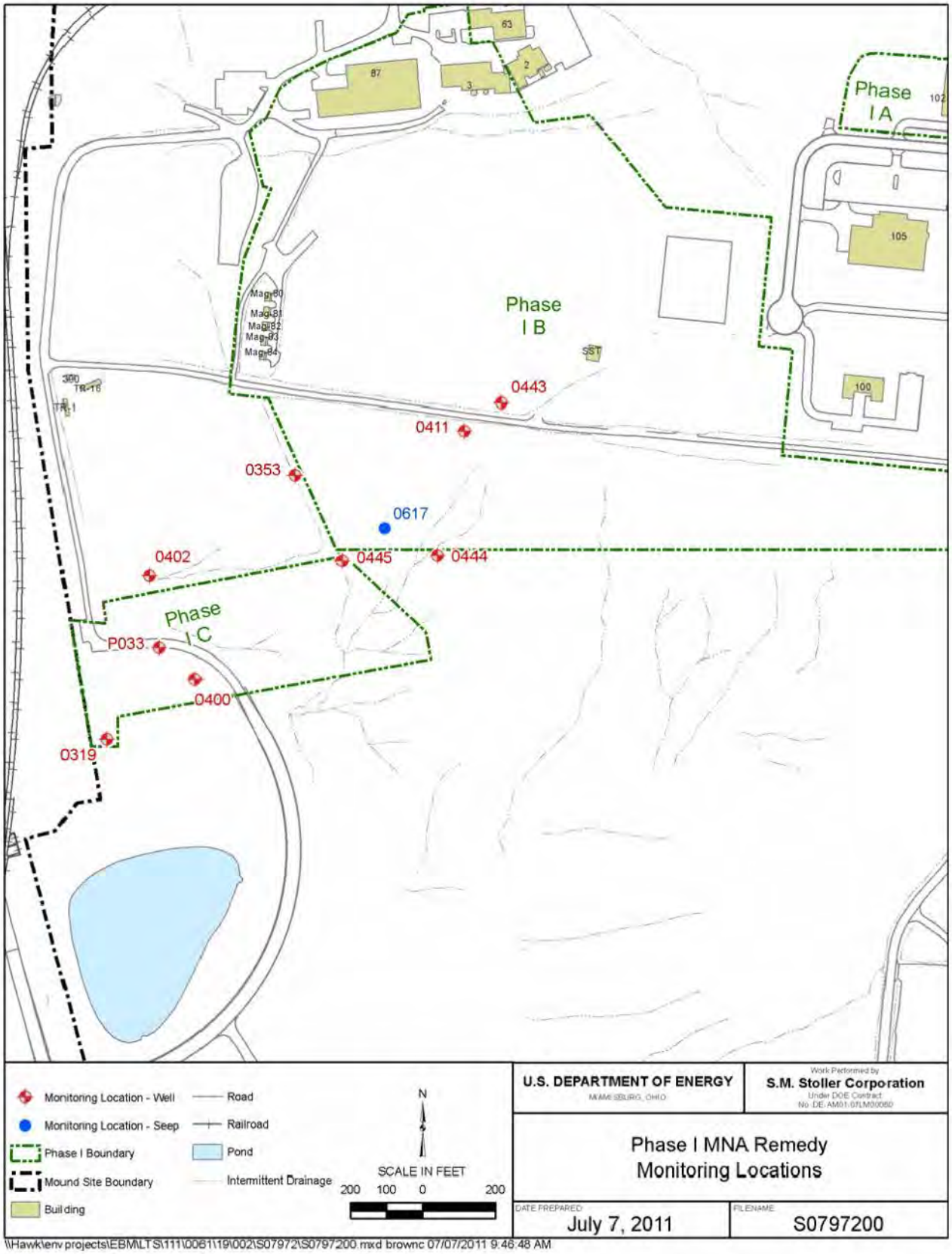

Figure 7. Phase I MNA Remedy Monitoring Locations

The confirmatory sampling program was modified with approval from the Mound Core Team in 2007 and 2009. Presently, confirmatory samples to evaluate the presence of elevated barium and combined radium 226/228 (Ra-226/228) are collected semiannually for selected wells, as outlined in Table 19. Sodium and chloride are also analyzed in these wells, as salt is considered the mechanism that has mobilized naturally occurring radium and barium in the bedrock groundwater. Confirmatory samples to evaluate the presence of elevated chromium and nickel in select stainless-steel wells was modified in 2007 and discontinued in 2009.

Table 19. Confirmatory Monitoring for Phase I

Location	Chromium	Nickel	Ra-226/228	Barium	Sodium	Chloride	Notes
Well 0319	X	X					Cr/Ni sampling discontinued in 2007.
Well 0400	X	X	X	X	X	X	Cr/Ni sampling discontinued in 2007. Sampling frequency reduced to semiannual in 2007.
Well 0402			X	X	X	X	Sampling frequency reduced to semiannual in 2007.
Well 0442	X	X					Cr/Ni sampling discontinued in 2007.
Well 0443	X	X					Cr/Ni sampling discontinued in 2009.
Well 0445			X	X	X	X	Sampling frequency reduced to semiannual in 2007.
Well P033			X	X	X	X	Sampling frequency reduced to semiannual in 2007.

The contaminant data are evaluated against previous data collected at each location to determine if MNA is adequately addressing groundwater impact and to monitor the geochemical conditions in the aquifer. Trigger levels and response actions have been established for each contaminant as presented in the *Phase I Remedy (Monitored Natural Attenuation) Groundwater Monitoring Plan* (DOE 2004c). The triggers are summarized in Table 20.

EPA and OEPA are notified if trigger levels are exceeded. After notification, the Mound Core Team (EPA, OEPA, and DOE) will determine an appropriate course of action.

Table 20. Trigger Levels for Phase I MNA Remedy and Confirmatory Monitoring Programs

Location	TCE (µg/L)	DCE (µg/L)	VC (µg/L)	Chromium (µg/L)	Nickel (µg/L)	Ra-226/228 (pCi/L)	Barium (mg/L)
0319				100	100		
0353	5	70	2				
0400	5	70	2	100	100	5	1
0402	5	70	2			5	1
0411	30	70	2				
0442				100	100		
0443	30	70	2	100	100		
0444	5	70	2				
0445	5	70	2			75	15
P033	5	70	2			5	1
0617 (seep)	16	70	2				

µg/L = micrograms per liter
pCi/L = picocuries per liter
mg/L = milligrams per liter

6.7.1.3 MNA Remedy Monitoring

Monitoring results (Table 21) indicate low-level TCE and *cis*-1,2-dichloroethylene (DCE) detections in wells 0411 and 0443 and in seep 0617. All VOC concentrations were below the applicable trigger levels. Concentrations of TCE in wells 0411 and 0443 and seep 0617 continue to exceed the MCL of 5 micrograms per liter (μg/L). Estimated detects less than 1 μg/L of *trans*-1,2-DCE were reported at these three locations in 2008. No detectable concentrations of vinyl chloride were reported at any of the monitoring locations during the review period.

No detectable concentrations of TCE, *cis*-1,2-DCE, *trans*-1,2-DCE, or VC were reported in the remainder of the downgradient BVA wells, except in well 0402. Estimated detects less than 1 μg/L were reported in well 0402 and were determined not to be attributable to the TCE-impacted groundwater in the upgradient bedrock, but rather to OU-1.

Table 21. Summary of VOC Monitoring Results in Phase I—2006 through 2010

Well ID	Location	Parameter	2006	2007	2008	2009	2010
Source Area Wells							
0411	0411 Area	TCE (μg/L)	**11.7**	**13.1**	**13.2**	**12.0**	**9.9**
		cis-1,2-DCE (μg/L)	2.8	2.2	1.8	3.1	3.3
		trans-1,2-DCE (μg/L)	ND (< 1)	ND (< 5)	0.14 (J)	ND (< 1)	ND (< 1)
		VC (μg/L)	ND (< 1)	ND (< 5)	ND (< 1)	ND (< 1)	ND (< 1)
0443	0411 Area	TCE (μg/L)	**7.7**	**9.8**	**11.1**	**6.2**	**6.4**
		cis-1,2-DCE (μg/L)	0.92 (J)	1.9	0.99 (J)	0.54 (J)	0.37 (J)
		trans-1,2-DCE (μg/L)	ND (< 1)	ND (< 5)	0.22 (J)	ND (< 1)	ND (< 1)
		VC (μg/L)	ND (< 1)	ND (< 5)	ND (< 1)	ND (< 1)	ND (< 1)
0617	Seep/ Bedrock	TCE (μg/L)	**6.9**	**6.9**	**8.4**	**6.3**	**5.5**
		cis-1,2-DCE (μg/L)	2.0	2.0	2.3	1.7	1.4
		trans-1,2-DCE (μg/L)	ND (< 1)	ND (< 5)		ND (< 1)	ND (< 1)
		VC (μg/L)	ND (< 1)	ND (< 5)	ND (< 1)	ND (< 1)	ND (< 1)
Downgradient Wells							
0353	Bedrock	TCE (μg/L)	ND (< 1)	ND (< 5)	ND (< 1)	ND (< 1)	ND (< 1)
		cis-1,2-DCE (μg/L)	ND (< 1)	ND (< 5)	ND (< 1)	ND (< 1)	ND (< 1)
		VC (μg/L)	ND (< 1)	ND (< 5)	ND (< 1)	ND (< 1)	ND (< 1)
0444	Bedrock	TCE (μg/L)	ND (< 1)	ND (< 5)	ND (< 1)	ND (< 1)	ND (< 1)
		cis-1,2-DCE (μg/L)	ND (< 1)	ND (< 5)	ND (< 1)	ND (< 1)	ND (< 1)
		VC (μg/L)	ND (< 1)	ND (< 5)	ND (< 1)	ND (< 1)	ND (< 1)
0445	Bedrock	TCE (μg/L)	ND (< 1)	ND (< 5)	ND (< 1)	ND (< 1)	ND (< 1)
		cis-1,2-DCE (μg/L)	ND (< 1)	ND (< 5)	ND (< 1)	ND (< 1)	ND (< 1)
		VC (μg/L)	ND (< 1)	ND (< 5)	ND (< 1)	ND (< 1)	ND (< 1)
0400	BVA	TCE (μg/L)	ND (< 1)	ND (< 5)	ND (< 1)	ND (< 1)	ND (< 1)
		cis-1,2-DCE (μg/L)	ND (< 1)	ND (< 5)	ND (< 1)	ND (< 1)	ND (< 1)
		VC (μg/L)	ND (< 1)	ND (< 5)	ND (< 1)	ND (< 1)	ND (< 1)
0402	BVA	TCE (μg/L)	ND (< 1)	1.8 (J)	ND (< 1)	0.71 (J)	ND (< 1)
		cis-1,2-DCE (μg/L)	ND (< 1)	ND (< 5)	ND (< 1)	ND (< 1)	ND (< 1)
		VC (μg/L)	ND (< 1)	ND (< 1)	ND (< 1)	ND (< 1)	ND (< 1)
P033	BVA	TCE (μg/L)	ND (< 1)	ND (< 5)	ND (< 1)	ND (< 1)	ND (< 1)
		cis-1,2-DCE (μg/L)	ND (< 1)	ND (< 5)	ND (< 1)	ND (< 1)	ND (< 1)
		VC (μg/L)	ND (< 1)	ND (< 5)	ND (< 1)	ND (< 1)	ND (< 1)

Values in **bold** exceed the MCL of 5 μg/L for TCE.
J = Estimated value less than the reporting limit

TCE concentrations in well 0411 (Figure 8) have decreased since monitoring began in 1999; however, concentrations appear to have remained between 9 and 15 micrograms per liter (µg/L) during the review period. The time-concentration plots for well 0443 and seep 0617 show concentrations that are variable and typically less than those in well 0411.

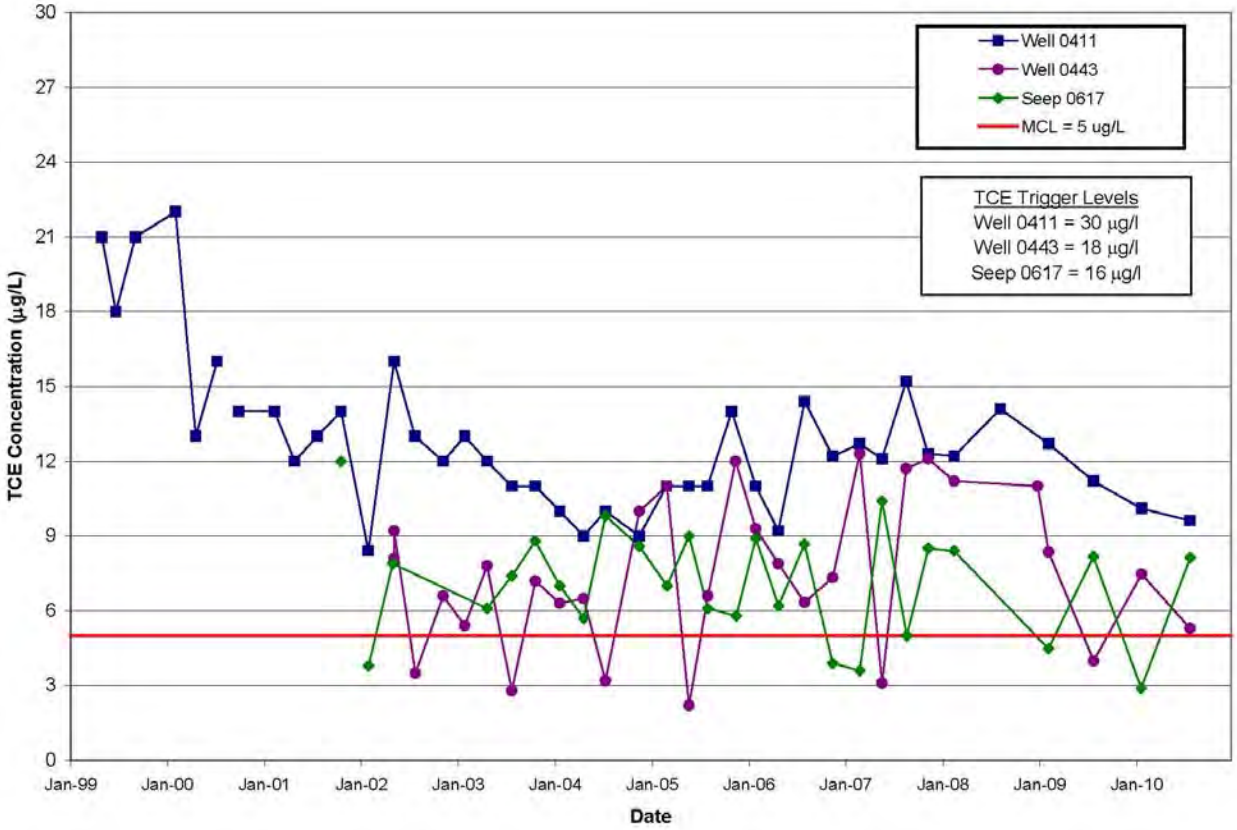

Figure 8. TCE Concentrations in Wells 0411 and 0443 and Seep 0617 (1999–2010)

The concentrations of *cis*-1,2-DCE in groundwater (Figure 9) are low and less variable than TCE. Concentrations in well 0411 and seep 0617 are within the same range of concentrations. Concentrations in well 0443 are generally lower than those measured in well 0411 and seep 0617. None of the locations exceeded the MCL of 70 µg/L for *cis*-1,2-DCE.

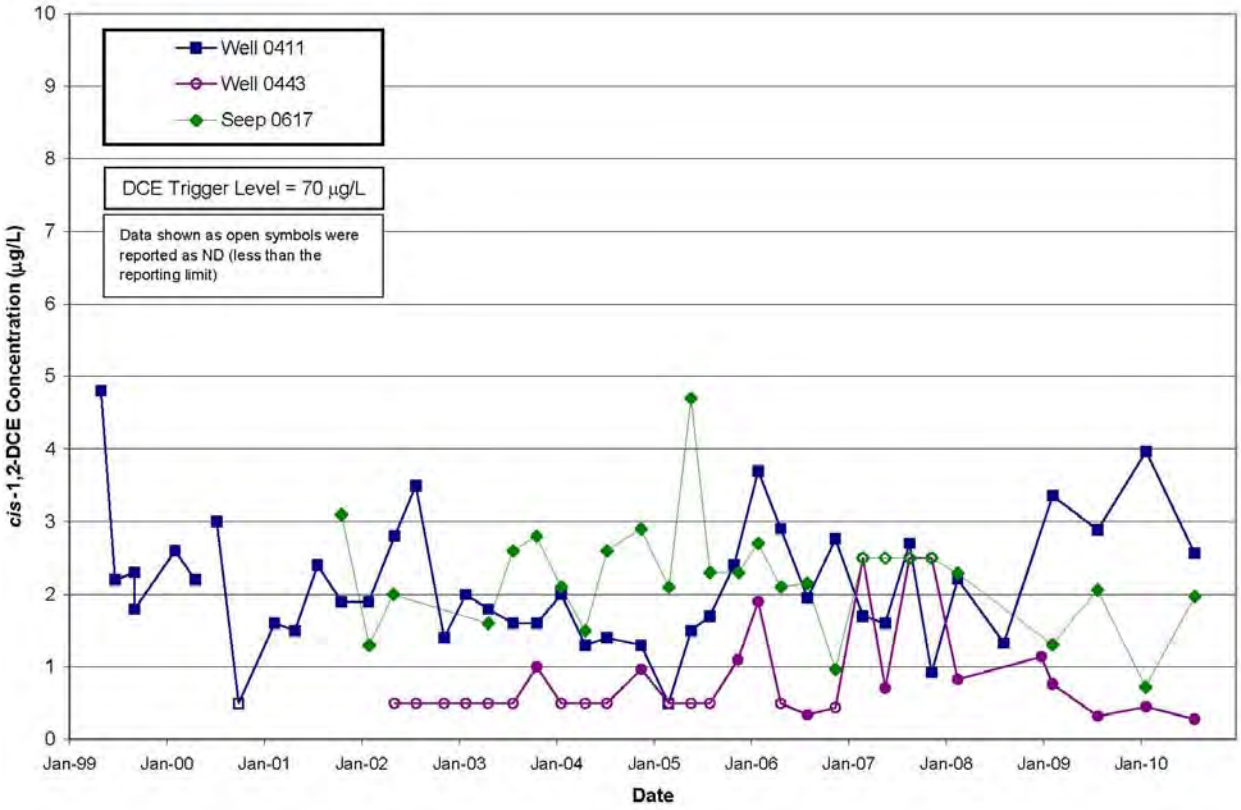

Figure 9. cis-*1,2-DCE Concentrations (1999–2010)*

Trend analysis was performed on TCE and *cis*-1,2-DCE data using the non-parametric Mann-Kendall test (DOE 2011b). This test is used for temporal trend identification, because it does not require the data to conform to a particular distribution (such as a normal or log-normal distribution). This type of long-term trend analysis can be used to confirm trends in contaminant concentrations over time.

Trend analysis for TCE data collected from 2006 through 2010 continues to indicate decreasing TCE concentrations in well 0411 and seep 0617, as indicated by negative slopes (Table 22). Concentrations in well 0443 are increasing slightly, as indicated by a positive slope. A statistical downward trend was calculated for TCE in well 0411. No trends were determined for TCE in well 0443 and seep 0617.

Decreasing *cis*-1,2-DCE concentrations, although small, are present in seep 0617, as indicated by a negative slope. No trends, either upward or downward, were calculated from the *cis*-1,2-DCE data in the wells and seep.

Table 22. Summary of Trend Analysis Results for TCE in Phase I, 2006–2010

Location	Analyte	No. of Samples	Trend	Slope (μg/L/year)	Confidence Interval (μg/L/yr)	
					Lower	Upper
0411	TCE	41	**Down**	-0.40	-0.75	-0.12
0443		29	None	0.33	-0.23	0.92
0617		28	None	-0.17	-0.53	0.12
0411	*cis*-1,2-DCE	41	None	0	-0.08	0.11
0443		29	None	0	-0.01	0.06
0617		27	None	-0.06	-0.16	0.06

μg/L/year = micrograms per liter per year

Evaluation of the slope of the TCE concentrations in well 0411 may give an indication on the timeframe when concentrations may approach the MCL of 5 μg/L. The non-parametric slope calculated for the trend analysis suggests that the MCL might be reached by 2022. The exponential curve fit to the data estimates that the MCL might be reached by 2030. The non-parametric analysis and the exponential curve fit typically represent the decrease of contaminants in groundwater over time and provide good estimates of cleanup timeframes.

6.7.1.4 Confirmatory Monitoring for Barium and Radium

Monitoring results 2006 through 2010 (Table 23) show combined Ra-226/228 levels greater than the MCL of 5 pCi/L and greater than the level of concern (LOC) of 75 pCi/L in well 0445 (Table 23). The concentrations of barium in 0445 exceeded the MCL of 2,000 μg/L but were less than the LOC of 15 mg/L. Combined Ra-226/228 and barium levels remain low in the downgradient BVA wells.

Table 23. Summary of Confirmatory Monitoring Results for Barium and Radium, 2006–2010

Well ID	Location	Parameter	2006	2007	2008	2009	2010
Source Area Well							
0445	0445 Area	Ra-226 (pCi/L)	**40.3**	**26.9**	**48.4**	**55.0**	**70.9**
		Ra-228 (pCi/L)	**40.2**	**23.6**	**12.0**	**24.7**	**50.2**
		Barium (μg/L)	**7,000**	**3,200**	**8,100**	**11,740**	**12,400**
Downgradient Wells							
0400	BVA	Ra-226 (pCi/L)	0.39	0.96	0.73	0.67	1.7
		Ra-228 (pCi/L)	ND (< 0.66)	0.59	ND (< 0.66)	ND (< 1.1)	ND (< 0.77)
		Barium (μg/L)	79.9	76.4	88.8	113	117
0402	BVA	Ra-226 (pCi/L)	0.43	0.55	0.41	0.35	1.3
		Ra-228 (pCi/L)	ND (< 0.66)	0.57	ND (< 0.86)	0.79	0.66
		Barium (μg/L)	50.4	59.9	68.3	72.2	64.6
P033	BVA	Ra-226 (pCi/L)	0.21	0.75	ND (< 0.50)	0.90	0.88
		Ra-228 (pCi/L)	0.59	0.64	ND (< 0.70)	0.99	0.47
		Barium (μg/L)	82.2	88.8	102	97.6	101

Combined Ra-226/228 reported as "<" when both isotopes were reported as less than method detection limit.
Values in **bold** exceed the MCL (2,000 mg/L for barium and 5 pCi/L for combined Ra-226/228.
J = one of the isotopes was reported as an estimated value less than the reporting limit

Barium concentrations vary in well 0445 (Figure 10), which is screened within the bedrock. The concentrations of barium in this well indicate a general decline starting in 2004; however, starting in 2009, concentrations were higher than previous years. This general decrease coincides with removal of the salt from the storage area (SST building on Figure 7) in 2003. A dramatic decrease was indicated in early 2007; however, it is likely that the anomalously low data reported in 2007 were not representative of groundwater quality as these concentrations have not been replicated in subsequent sampling events. The higher concentrations reported since the end of 2008 may be the result of changing sampling methods. Until the second half of 2008, well 0445 was typically bailed or pumped dry and then sampled the next day. During 2008, dedicated bladder pumps capable of sampling low flows (100 mL per minute) were installed in the Phase I monitoring wells. The samples collected since the second half of 2008 have been sampled using the low-flow method instead of being pumped dry, allowed to recharge, and sampled at a later time.

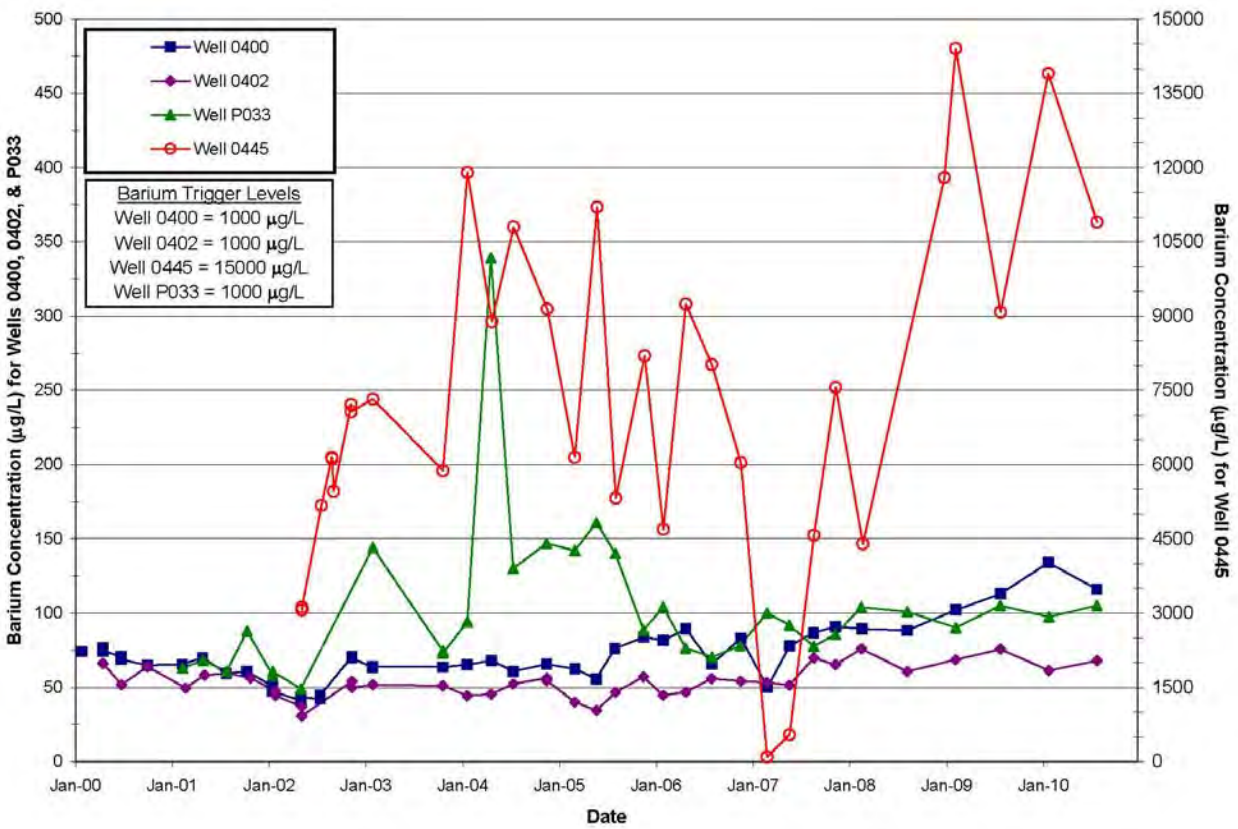

Figure 10. Barium Concentrations (2000–2010)

Barium concentrations in well P033 (BVA well) were variable and exhibited similar fluctuations in concentrations as those observed in well 0445. However, barium concentrations have been relatively stable in downgradient BVA wells 0400, 0402, and P033 since 2006. The levels of barium in these three wells are similar to background (310 µg/L). Background values were obtained from the *Phase I Residual Risk Evaluation* (DOE 2003b).

Radium levels vary over time in all of the wells (Figure 11), but the largest fluctuations occur in well 0445. The levels of combined Ra-226/228 at this location consistently exceed the MCL of

5 pCi/L and have exceeded the 75 pCi/L LOC numerous times. Data from 2007 showed a dramatic decrease; however, these anomalously low data likely do not represent groundwater quality and have not been replicated in subsequent sampling events. Levels measured in 2010 are generally higher than those reported in previous years.

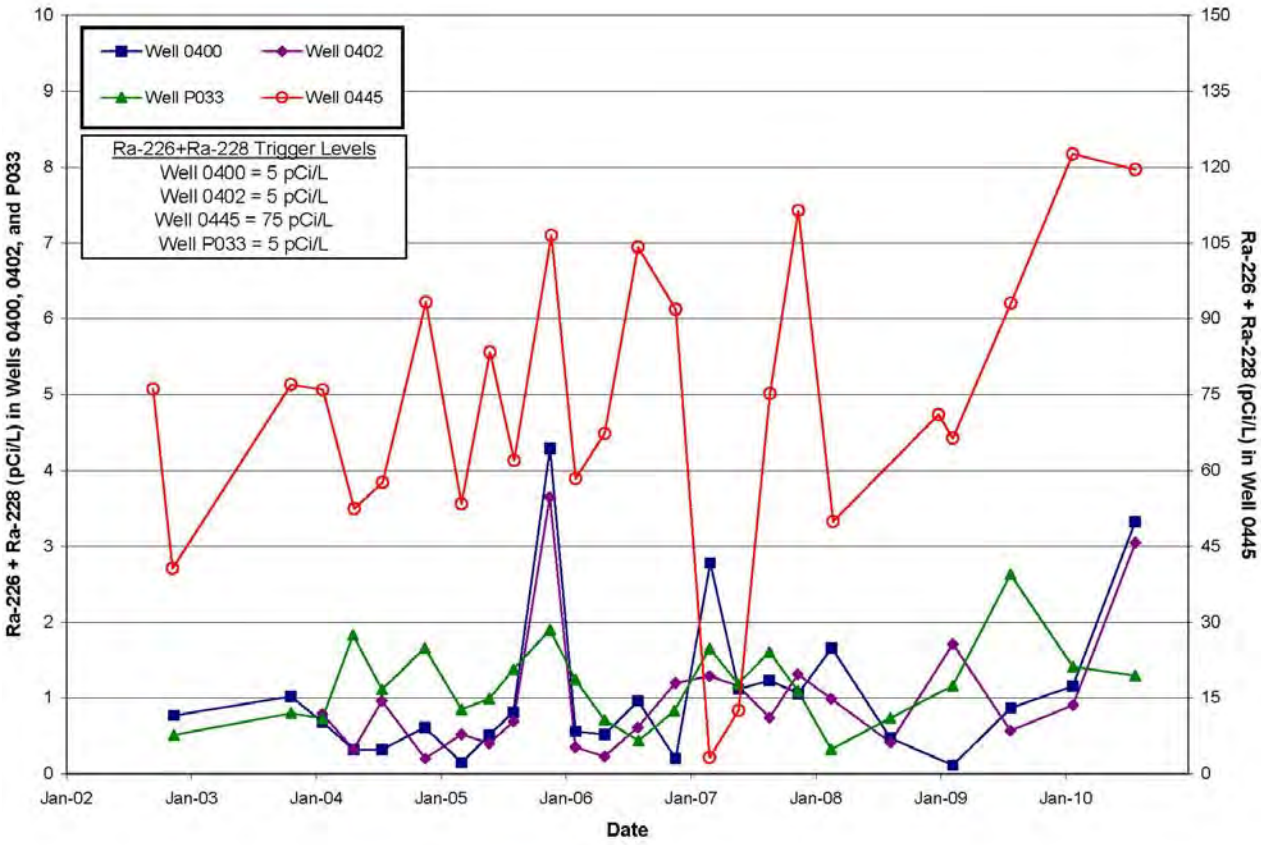

Figure 11. Ra-226/228 Levels (2002–2010)

Radium levels have been less variable over time in wells 0400, 0402, and P033, which are BVA wells downgradient of well 0445. Well P033 had slightly higher radium levels than the other two BVA wells and exhibited a similar pattern in variability when compared to well 0445. However, data from 2010 indicate that levels in wells 0400 and 0402 have increased and are greater than those reported in P033. The levels of Ra-226 in the BVA wells (0400 and 0402) are similar to background (0.996 pCi/L for Ra-226). Background values were obtained from the *Phase I Residual Risk Evaluation* (DOE 2003b). No background values were provided for Ra-228.

Sodium and chloride are monitored in conjunction with radium and barium, because salt is considered the mechanism that has caused elevated radium and barium levels in the bedrock groundwater system. Salt was no longer stored in the SST building after 2003. Sodium and chloride monitoring results (Table 24) indicate that the highest concentrations occur in well 0445, which is where elevated radium and barium levels occur.

Table 24. Summary of Confirmatory Monitoring Results for Sodium and Chloride, 2006–2010

Well ID	Location	Parameter	2006	2007	2008	2009	2010
Source Area Well							
0445	0445 Area	Chloride (mg/L)	9,360	5,700	7,340	12,800	10,800
		Sodium (mg/L)	4,220	2,370	4,270	5,700	5,380
Downgradient Wells							
0400	BVA	Chloride (mg/L)	101	66.0	68.4	96.0	108
		Sodium (mg/L)	49.8	41.4	43.4	52.1	61.6
0402	BVA	Chloride (mg/L)	90.1	82.7	83.2	111	81.2
		Sodium (mg/L)	53.8	55.0	50.5	73.4	56.8
P033	BVA	Chloride (mg/L)	228	162	191	138	126
		Sodium (mg/L)	167	102	114	83.5	80.8

mg/L = milligrams per liter

Extremely high concentrations of sodium and chloride have been reported in well 0445 (Figure 12 and Figure 13), which also has had increased radium and barium levels; however, levels show substantial variation over time. Downgradient BVA well P033 had elevated concentrations of sodium and chloride, which vary in a similar pattern to those observed in well 0445. Substantial decreases in sodium and chloride concentrations were reported in BVA well P033 starting in 2004 and are similar to the changes observed in barium and radium levels at this location. Sodium and chloride concentrations have been stable in BVA wells 0400 and 0402, but are slightly higher than in previous years.

Review of the sodium and chloride data indicates that well P033 showed a delayed and lower concentration response to the elevated levels observed in well 0445; however, this response is not as obvious as in previous years. This observation was illustrated more prominently in the sodium data than the chloride data. The decrease in response indicates there is less salt entering into the groundwater system and being detected in the downgradient wells. It is apparent that groundwater affected by salt is stored in the lower permeable bedrock near well 0445, resulting in greater contact time with the shale, which is the source of barium and radium. Naturally occurring barium and radium are leached from the bedrock, put into solution in this discrete portion of the saturated bedrock, and slowly released through the bedrock groundwater system into the downgradient BVA.

Trend analysis was performed on barium, radium, sodium, and chloride data using the non-parametric Mann-Kendall test (DOE 2011b). This test is used for temporal trend identification, because it does not require the data to conform to a particular distribution (such as a normal or log-normal distribution). This type of long-term trend analysis can be used to confirm trends in contaminant concentrations over time. Trending was performed using data from 2004 through 2010, as this set of data reflects possible influence from the removal of salt from the SST building. However, the two anomalously low data points reported in well 0445 on 2007 were not included in the data set as they likely do not represent actual groundwater quality.

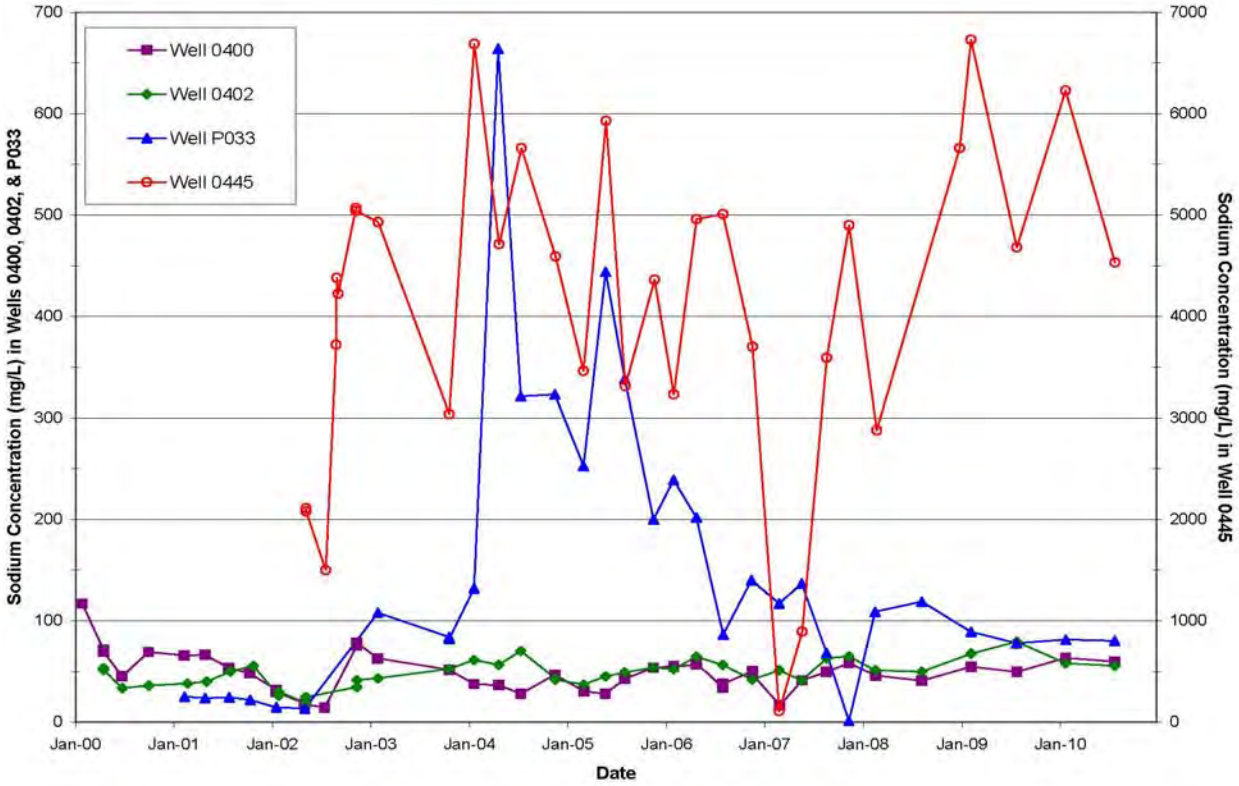

Figure 12. Sodium Concentrations (2000–2010)

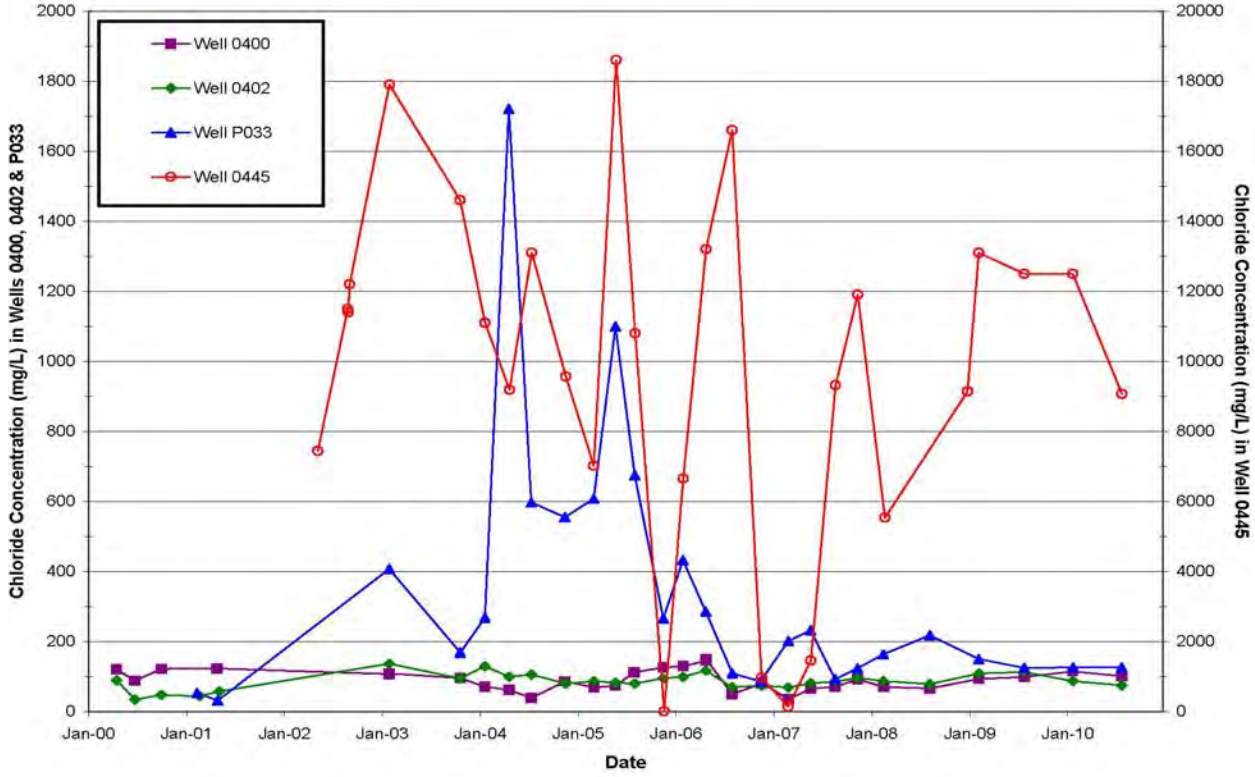

Figure 13. Chloride Concentrations (2000–2010)

Trend analysis indicates increased levels of barium and combined Ra-226/228 in wells 0400, 0402, and 0445, as indicated by positive slopes. Barium concentrations decreased in well P033, as indicated by a negative slope. Statistically upward trends were calculated for both barium and Ra-226/228 in wells 0400 and 0402 (Table 25).

Table 25. Summary of Trend Analysis Results for Barium and Combined Radium in Phase I for 2010

Location	Analyte	No. of Samples	Trend	Slope (mg/L/yr)	Confidence Interval (mg/L/yr)	
					Lower	Upper
0400	Barium	22	**Up**	0.008	0.006	0.011
0402		22	**Up**	0.005	0.003	0.007
0445		20	None	0.002	-1.1	0.95
P033		22	None	-0.006	-0.014	0.002
Location	**Analyte**	**No. of Samples**	**Trend**	**Slope (pCi/L/yr)**	**Confidence Interval (pCi/L/yr)**	
					Lower	**Upper**
0400	Ra-226/228	22	**Up**	0.15	0.02	0.32
0402		22	**Up**	0.12	0	0.31
0445		20	None	5.6	-0.08	11.2
P033		22	None	0	-0.17	0.15

pCi/L/yr = picocuries per liter per year

Trend analysis indicates decreased chloride in wells 0402, 0445, and P033 and decreased sodium in wells 0445 and P033, as indicated by negative slopes (Table 26). Statistically downward trends were calculated for both chloride and sodium in well P033. Increasing chloride concentrations were indicated in well 0400, was indicated by a positive slope. Sodium also increased in wells 0400 and 0402. A statistically upward trend in sodium was calculated for well 0400.

Table 26. Summary of Trend Analysis Results for Sodium and Chloride in Phase I for 2010

Location	Analyte	No. of Samples	Trend	Slope (mg/L/yr)	Confidence Interval (mg/L/yr)	
					Lower	Upper
0400	Chloride	22	None	5.3	-2.0	11.1
0402		22	None	-1.6	-5.8	2.5
0445		22	None	-19.1	-1362	1006
P033		22	**Down**	-90.2	-152	-31.0
0400	Sodium	22	**Up**	3.5	1.1	5.8
0402		22	None	1.8	-1.4	4.6
0445		22	None	-75.0	-450	292
P033		22	**Down**	-49.5	-78.9	-24.6

6.7.1.5 Confirmatory Monitoring for Chromium and Nickel

Nickel and chromium MCL exceedences were measured in BVA wells 0319 and 0400 and in bedrock wells 0399 and 0411. Studies have indicated that these exceedences were likely related to corrosion of the stainless steel well casings and are not the result of plant operations. Data were collected in the BVA wells using high-flow sampling methods to determine the ambient chromium and nickel concentrations in wells 0319 and 0400. Wells 0442 and 0443 (both

constructed from PVC) are monitored as “mirror” wells to wells 0399 and 0411 for the same purpose.

Monitoring results (Table 27) indicate elevated levels of chromium and nickel in BVA wells 0319 and 0400 under low-flow sampling conditions (Figure 14 and Figure 15). Both nickel and chromium concentrations in the low-flow samples from wells 0319 and 0400 have exceeded the 100 µg/L LOC. Concentrations from samples collected using a high-flow sampling method have not exceeded the LOC and are lower than those measured using low-flow methods. These wells are sampled under both low-flow and high-flow conditions to evaluate the source of chromium at these locations.

Table 27. Summary of Confirmatory Monitoring Results for Chromium and Nickel, 2006–2009

Well ID	Location	Parameter	Average Concentration (µg/L)			
			2006	2007	2008	2009
0319	BVA	Chromium – Low	75.0	53.3	NS	NS
		Chromium – High	12.3	5.7	NS	NS
		Nickel – Low	**347**	**284**	NS	NS
		Nickel – High	49.0	39.8	NS	NS
0400	BVA	Chromium – Low	26.1	92.7	NS	NS
		Chromium – High	19.3	22.9	NS	NS
		Nickel – Low	54.2	35.8	NS	NS
		Nickel – High	23.4	15.3	NS	NS
0442	Bedrock	Chromium	3.4	1.0	NS	NS
		Nickel	6.5	1.2	NS	NS
0443	Bedrock	Chromium	3.6	20.3	1.7	1.6
		Nickel	6.7	11.7	1.1	4.3

“High” and “Low” denotes sampling flow conditions.
Concentrations in bold exceeded the applicable LOC.
Chromium LOC = 100 µg/L
Nickel LOC = 100 µg/L
J = Estimated value less than the reporting limit

Review of the data indicates that levels of chromium and nickel in low-flow samples from wells 0319 and 0400 are consistently higher than those collected under high-flow conditions. This has been consistent since sampling using the two methods began in 2004. It has been considered that the high-flow samples better represent the groundwater quality in this area. Data from 2007 indicated that the turbidity of the low-flow samples is generally higher than that measured in the high-flow samples. Data from the low-flow samples likely reflect nickel and chromium that have leached from the well casing and have adhered to colloids in the aquifer matrix. When the samples are preserved, these metals are leached into solution and result in elevated concentrations of chromium and nickel. These values do not represent the actual groundwater quality of the aquifer in this area.

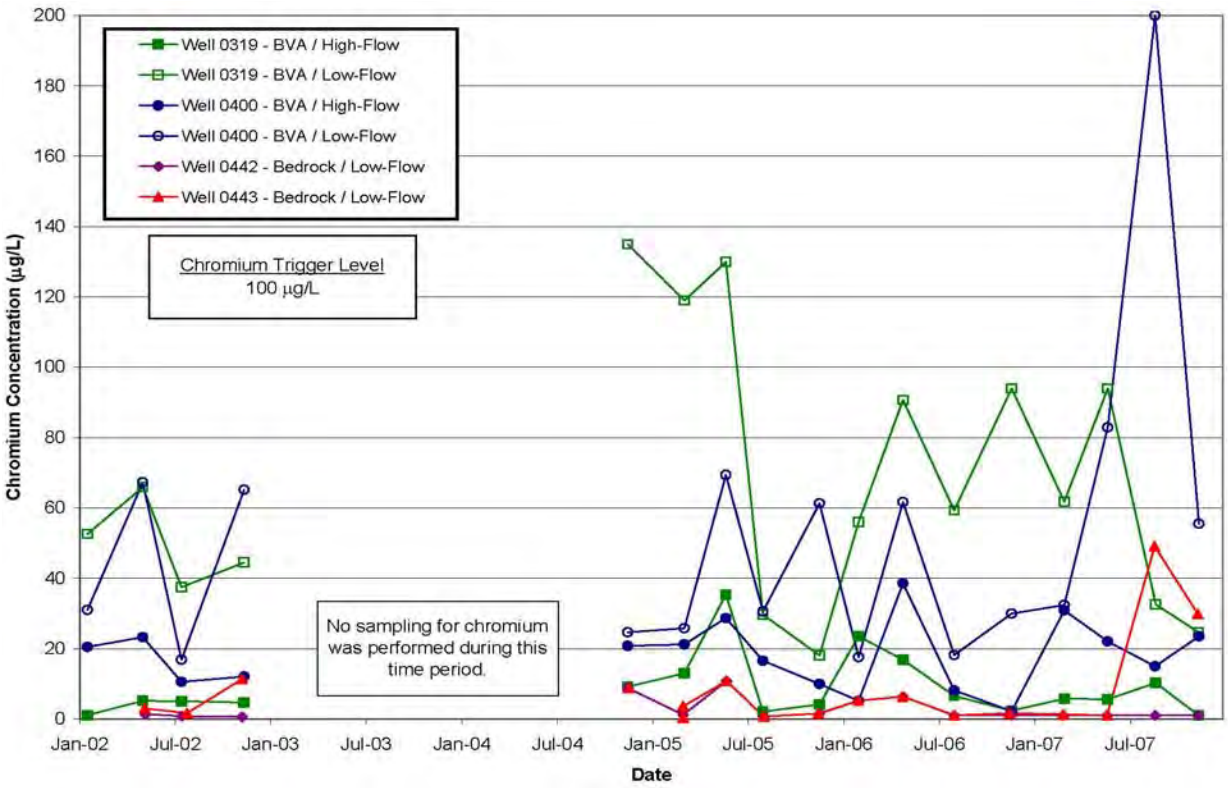

Figure 14. Chromium Concentrations Over Time (2002–2007)

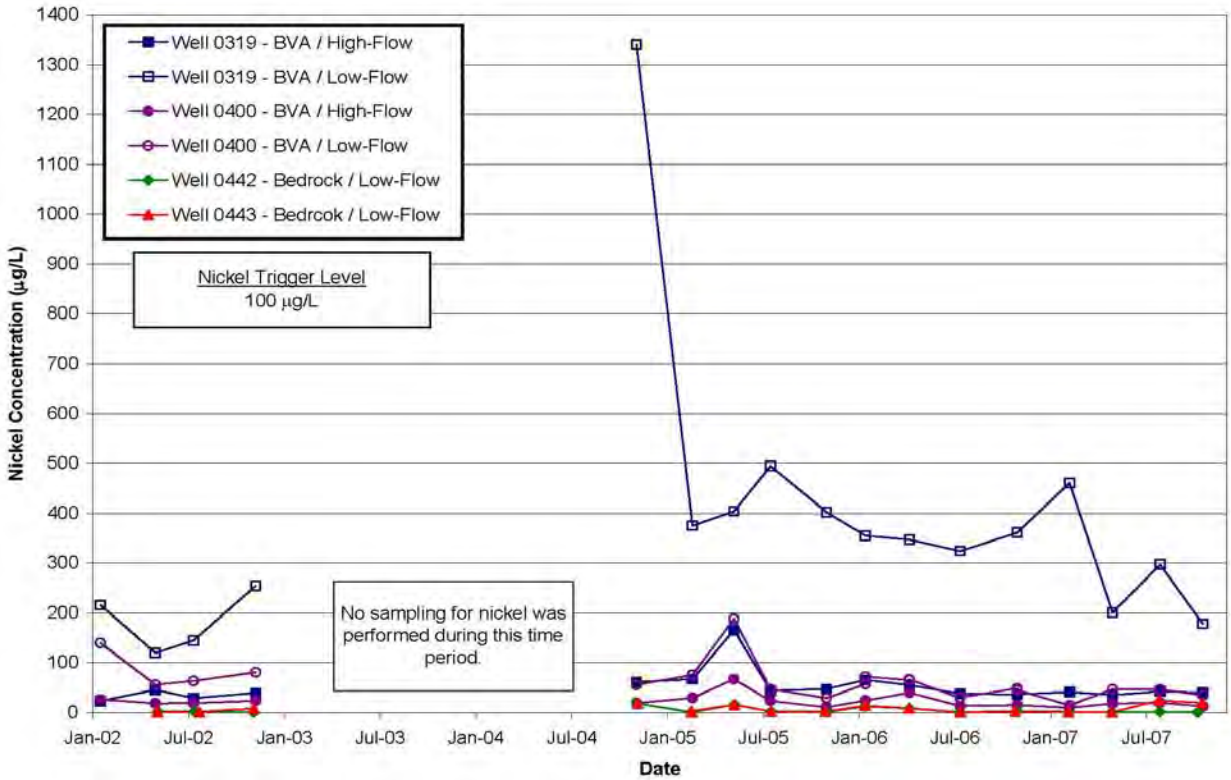

Figure 15. Nickel Concentrations Over Time (2002–2007)

Chromium and nickel concentrations in bedrock wells 0442 and 0443 (Table 27) were typically low and similar to background (chromium = 1.93 μg/L and nickel = 7.73 μg/L). Background values were obtained from the *OU9 Hydrogeologic Investigation—Groundwater Sweeps Report* (DOE 1996). These wells were installed to "mirror" stainless steel wells 0399 and 0411. During the third and fourth quarters of 2007, elevated concentrations of chromium were reported in well 0443; however, subsequent samples were similar to background.

The chromium and nickel concentrations in the bedrock wells 0442 and 0443 showed that the concentrations of these two metals in the bedrock groundwater were low and similar to background concentrations. This was expected, as these two wells were installed in close proximity to wells 0399 and 0411 (stainless steel wells that had anomalously high concentrations of chromium and nickel) to determine the groundwater quality in these two discrete areas. A cause for the increase in well 0443 during 2007 was not identified.

It is likely that the geochemistry of the aquifer in the vicinity of these wells has resulted in leaching of these metals from the stainless steel casings. This can be a common occurrence in aquifers that have fine-grained reducing environments (oxidation-reduction potential averages: - 20 millivolts [mV] in 0319 and 52 mV in 0400). The results for the high-flow sampling indicate much lower concentrations. Sampling at wells 0442 and 0443 did not duplicate the elevated concentrations measured at wells 0399 and 0411. Chromium impact is limited to a discrete area around the stainless steel monitoring wells.

6.7.2 Parcels 6, 7, and 8 Groundwater

Groundwater in Parcels 6, 7, and 8 is monitored for PCE, TCE and its degradation products, and tritium to verify that the levels are decreasing by natural attenuation to levels less than the MCLs. This groundwater monitoring program was established to ensure that the BVA is not negatively affected by contaminated groundwater originating from the Main Hill. The objective of this monitoring is to protect the BVA by verifying that the concentration of TCE and levels of tritium are decreasing and these constituents are not adversely affecting the BVA. This program may be decreased or terminated when TCE concentrations in wells and tritium levels in seeps meet conditions outlined in the monitoring plan, such as reaching the MCL for four consecutive sampling events.

6.7.2.1 Contaminants of Interest

Two monitoring wells in the BVA indicate VOC impact, primarily TCE that exceeds the MCLs established in the Safe Drinking Water Act. MNA was selected as the remedy for the VOCs in the groundwater associated with the Main Hill (DOE 2009a). Sampling is being performed to assess the contaminant concentrations and to ensure that the downgradient BVA is not being affected.

Also associated with this area are seeps located along the Main Hill of the plant property. Two seeps are within the plant property boundary, and the remaining five seeps are off site to the north. Several seeps in this area have elevated levels of tritium and VOCs. One seep also has elevated levels of radium (Ra-226, Ra-228) and strontium (Sr-90). These seeps and several downgradient wells are being monitored to verify that source removal (buildings and soil) on the Main Hill will result in decreasing concentrations over time.

6.7.2.2 Monitoring Program

The sampling is separated into two programs that relate to the areas of impact. These areas are:

- **Wells 0315/0347 Area:**Wells at the edge of the BVA on the southwestern corner of Parcel 8 that have elevated concentrations of VOCs. The program consists of (1) wells that have TCE greater than the MCL and (2) downgradient BVA wells to the south and west.
- **Main Hill Seeps:** Seeps on the northern and southern sides of the Main Hill that have elevated concentrations of VOCs and tritium. The program consists of seeps and downgradient wells to the west.

Under the Parcels 6, 7, and 8 MNA monitoring program, samples are collected quarterly for selected wells and seeps (Figure 16) and analyzed as outlined in Sections 4.1 and 4.2 of the *Parcel 6, 7, and 8 Remedy (Monitored Natural Attenuation) Groundwater Monitoring Plan* (Final Draft) (DOE 2006b).

The two source wells and other selected downgradient BVA wells are monitored for VOCs—namely, PCE, DCE, TCE, and VC. A summary of the monitoring locations is provided in Table 28.

Table 28. Monitoring for the Wells 0315/0347 Area

Monitoring Location	Area	VOC
Well 0315	Source Wells	TCE PCE DCE Vinyl Chloride
Well 0347		
Well 0124	Downgradient BVA Monitoring	
Well 0126		
Well 0386		
Well 0387		
Well 0389		
Well 0392		

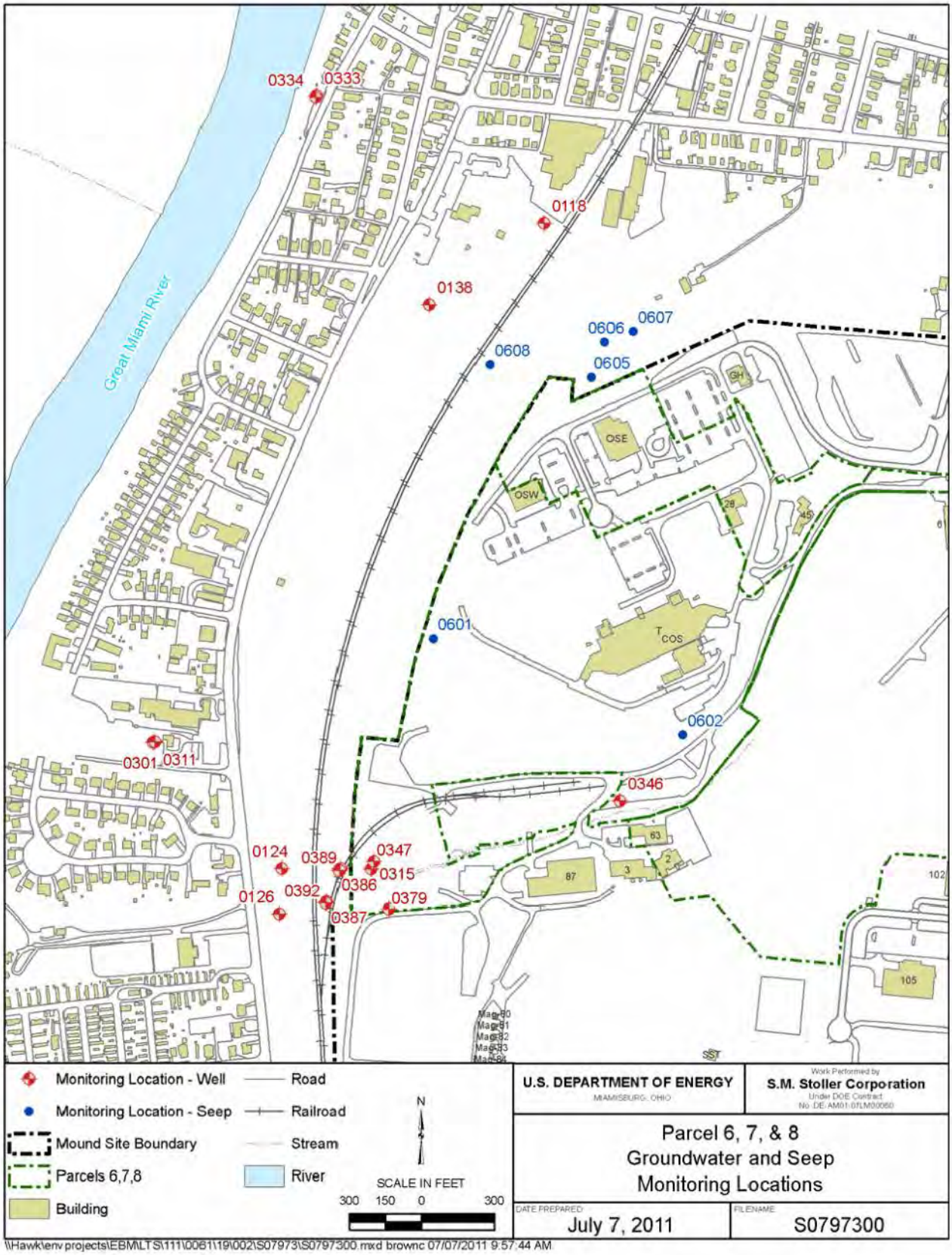

Figure 16. Parcels 6, 7, and 8 Groundwater and Seep Monitoring Locations

Water from seeps 0601, 0602, 0605, 0606, 0607, and 0608 is collected and analyzed for VOCs and the radiological constituents shown in Table 29. Wells within the BVA that are downgradient of the bedrock groundwater discharge area of the Main Hill are also sampled to monitor the levels of tritium and VOC contamination.

Table 29. Monitoring for the Main Hill Seeps and Groundwater

Monitoring Location	Area	Parameters
Seep 0601	Main Hill Seeps	TCE PCE DCE Vinyl Chloride Ra-226 and Ra-228 Tritium Sr-90
Seep 0602		TCE PCE DCE Vinyl Chloride Tritium
Seep 0605		
Seep 0606		
Seep 0607		
Seep 0608		
Well 0118	Downgradient BVA Monitoring Wells	TCE PCE DCE Vinyl Chloride Tritium
Well 0138		
Well 0301		
Well 0346		
Well 0379		

The contaminant data are evaluated against previous data collected at each location to determine if downward trends are occurring. Trigger levels and response actions have been established for each contaminant as presented in the *Parcel 6, 7, and 8 Remedy (Monitored Natural Attenuation) Groundwater Monitoring Plan* (Draft Final) (DOE 2006b). The triggers are summarized in Table 30.

Table 30. Trigger Levels for Parcels 6, 7, and 8 Monitoring Locations

Location	TCE (µg/L)	PCE (µg/L)	Tritium (nCi/L)	Ra-226/228 (pCi/L)	Sr-90 (pCi/L)
0315	30				
0347	30				
0124	5				
0126	5				
0386	5				
0387	5				
0389	5				
0392	5				
0601 (seep)		75	1,500	20	20
0605 (seep)	150				

EPA and OEPA must be notified if these trigger levels are exceeded. After notification, the Mound Core Team (EPA, OEPA, and DOE) will determine an appropriate course of action.

6.7.2.3 Wells 0315/0347 Area Monitoring Results

Monitoring results from 2006 through 2010 (Table 31) continued to show detection of TCE in wells 0315, 0347, 0386, and 0389; the highest concentrations were detected in wells 0315 and 0347 (source wells), where concentrations also exceeded the MCL. Estimated detections of TCE were reported in wells 0387 and 0392. No detectable concentrations of TCE were measured in the remainder of the wells. TCE concentrations were below applicable trigger levels, except in well 0347 (Figure 17).

Table 31. Summary of VOC Results in the 0315 and 0347 Area—2006 through 2010

Well ID	VOC	Average Concentrations (µg/L)				
		2006	2007	2008	2009	2010
Source Wells						
0315	TCE	**5.6**	**13.4**	**11.9**	**12.5**	**11.9**
	PCE	0.31 (J)	ND (< 5)	ND (< 1)	ND (< 1)	ND (< 1)
0347	TCE	**24.3**	**14.4**	**19.5**	**26.5**	**26.5**
	PCE	ND (< 1)	ND (< 5)	ND (< 1)	ND (< 1)	ND (< 1)
Downgradient BVA Wells						
0124	TCE	ND (< 1)	ND (< 5)	0.39 (J)	ND (< 1)	ND (< 1)
	PCE	ND (< 1)	ND (< 5)	ND (< 1)	ND (< 1)	ND (< 1)
0126	TCE	ND (< 1)	ND (< 5)	ND (< 1)	ND (< 1)	ND (< 1)
	PCE	0.93 (J)	1.1 (J)	0.98 (J)	0.98 (J)	1.0
0386	TCE	3.5	2.4	2.2	1.7	1.5
	PCE	0.15 (J)	ND (< 5)	0.15 (J)	ND (< 1)	ND (< 1)
0387	TCE	ND (< 1)	ND (< 5)	0.39 (J)	0.13 (J)	0.12 (J)
	PCE	0.14 (J)	ND (< 5)	0.18 (J)	0.21 (J)	0.20 (J)
0389	TCE	1.0	1.1	0.63 (J)	0.78 (J)	0.95 (J)
	PCE	0.69 (J)	0.52 (J)	0.30 (J)	0.30 (J)	0.33 (J)
0392	TCE	ND (< 1)	ND (< 5)	ND (< 1)	0.12 (J)	0.13 (J)
	PCE	0.42 (J)	0.33 (J)	0.27 (J)	0.33 (J)	0.33 (J)

TCE trigger level for wells 0315 and 0347 = 30 µg/L
TCE trigger level for other wells = 5 µg/L
ND = Not detected
J = Estimated value that is less than the reporting limit

The concentration of TCE reported in well 0347 during the fourth quarter of 2006 and first quarter of 2010was greater than the trigger level of 30 µg/L for the source area wells (Figure 17). The first exceedence was discussed in the 2006 annual report (DOE 2007c). EPA and OEPA were notified on March 10, 2010, regarding the second trigger exceedence (DOE 2010d).

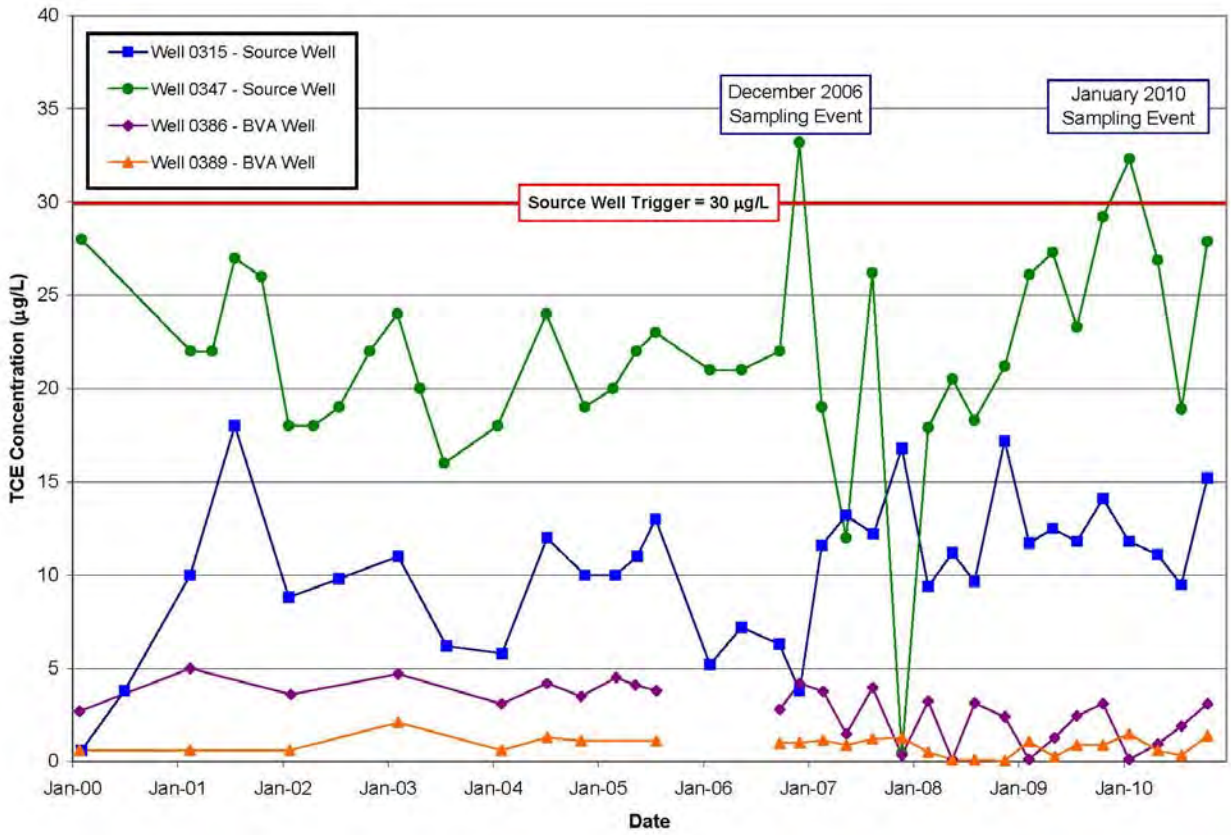

Figure 17. TCE Concentrations in Wells 0315/0347 Area (2000–2010)

TCE concentrations in wells 0315 and 0347 have been variable (Figure 17). Changes in concentrations in these two wells were similar until the end of 2006, when a substantial increase was identified in well 0347 while TCE concentrations decreased in 0315. Data was highly variable in well 0347 and starting in 2008 TCE concentrations increased in this well. TCE concentrations were lower in well 0315 during 2006 and then rebounded and remained steady. Site improvements began in late 2006 on the Main Hill, and the changes in TCE concentrations may be due to surface water infiltration into exposed tritium capture pits near the location of the SW building. These pits extend into the bedrock and surface water was infiltrating into the subsurface. The access into the pits was covered in October 2009. Starting in 2000, the concentrations in the two downgradient BVA wells (0386 and 0389) decreased below the MCL.

Low levels of PCE (typically less than 1 µg/L) were reported in wells 0386, 0387, 0389, and 0392 during the review period (Table 31). No trigger levels are established for PCE. No *cis*-1,2-DCE, *trans*-1,2-DCE, or VC was detected in any of these wells during the review period.

Trend analysis was performed on TCE data using the non-parametric Mann-Kendall test (DOE 2011c). This test is used for temporal trend identification, because it does not require the data to conform to a particular distribution (such as a normal or log-normal distribution). This type of long-term trend analysis can be used to confirm trends in contaminant concentrations over time. Trending was performed using data from 2005 through 2010, as this set of data reflects possible influence from the building and soil removal that was completed on the Main Hill in 2005.

Statistical analysis of the TCE data collected since 2005 from wells 0315, 0347, 0386, and 0389 indicates increasing concentrations of TCE in source wells 0315 and 0347, as indicated by positive slopes (Table 32). No statistical trends, upward or downward, were identified in these two wells. Decreasing TCE concentrations are indicated for wells 0386 and 0389, as indicated by negative slopes. A downward trend was calculated for well 0386. Trend analysis was not performed on data from the remainder of the wells because results consistently showed nondetects or sporadic estimated detections.

Table 32. Summary of Trend Analysis Results for TCE in the Source Area and Downgradient Wells (2005−2010)

Location	Number of Samples	Trend	Slope (μg/L/year)	Confidence Interval (μg/L/year)	
				Lower	Upper
0315	23	None	0.68	-0.12	1.74
0347	23	None	1.26	-0.27	2.48
0386	21	**Down**	- 0.43	-0.83	-0.17
0389	19	None	-0.04	-0.23	0.12

6.7.2.4 Main Hill Seeps Monitoring Results

Although TCE concentrations in some Main Hill seeps continued to exceed the MCL during the review period (Table 33), no locations had concentrations that exceeded the trigger level of 150 μg/L (established for seep 0605). The highest concentrations in 2010 were in seep 0602, which is on site. This seep was dry during the third and fourth quarters of 2010. PCE concentrations continued to exceed the MCL of 5 μg/L in seep 0601; however, PCE concentrations at this location did not exceed the trigger level of 75 μg/L. Estimated detections of PCE were reported in seeps 0602 and 0605. Detectable concentrations of *cis*-1,2-DCE were observed in seeps 0602, 0605, 0607, and 0608; seep 0602 had the highest concentrations. Estimated detections of *cis*-1,2-DCE (less than 1 μg/L) were reported in seeps 0601 and 0606. Estimated detections of *trans*-1,2-DCE (less than 1 μg/L) were reported in seeps 0602 and 0605. No vinyl chloride was detected in the seeps.

Monitoring results (Table 33) showed low concentrations of TCE in well 0379 downgradient of the Main Hill seeps. Elevated concentrations of TCE are reported in well 0347 (discussed in Section 3.0). Estimated detections of PCE were reported in wells 0311 and 0379. No trigger levels have been set for these locations. Only the concentrations of TCE in well 0347 exceeded the MCL of 5 μg/L. Neither DCE nor VC was detected in the downgradient wells.

Table 33. Summary of VOC Results in the Main Hill Area (2006–2010)

Location	Area	VOC	Average Concentrations (µg/L)				
			2006	2007	2008	2009	2010
Seeps							
0601	On site	TCE	**5.7**	**5.9**	4.4	**5.1**	4.2
		PCE	**14.9**	**17.6**	**12.9**	**17.2**	**6.0**
		cis-1,2-DCE	1.2	0.96 (J)	0.65 (J)	0.73 (J)	0.50 (J)
		trans-1,2-DCE	0.88	ND (< 5)	0.35	ND (< 1)	ND (< 1)
0602	On site	TCE	**19.6**	**26.9**	**58.5**	**41.5**	**38.9**
		PCE	ND (< 1)	ND (< 5)	0.24	0.26	0.21
		cis-1,2-DCE	18.4	20.6	24.9	18.3	23.4
		trans-1,2-DCE	0.69	ND (< 5)	0.38	0.31	0.39
0605	Off site	TCE	**15.4**	**15.8**	**14.1**	**13.1**	**12.9**
		PCE	0.32	ND (< 5)	ND (< 1)	0.21 (J)	0.21 (J)
		cis-1,2-DCE	12.2	23.5	6.9	7.0	4.3
		trans-1,2-DCE	0.63	0.47	0.33	0.30	0.25
0606	Off site	TCE	3.8	NS	NS	NS	2.9
		PCE	ND (< 1)	NS	NS	NS	ND (< 1)
		cis-1,2-DCE	1.0	NS	NS	NS	0.47
		trans-1,2-DCE	1.0	NS	NS	NS	ND (< 1)
0607	Off site	TCE	**6.7**	**8.6**	**6.1**	**7.1**	**5.6**
		PCE	0.34	3.8 (J)	0.39 (J)	0.23 (J)	ND (< 1)
		cis-1,2-DCE	1.9	2.4	1.0	1.9	1.2
		trans-1,2-DCE	0.88	ND (< 5)	0.35	ND (< 1)	ND (< 1)
0608	Off site	TCE	0.91	0.54	1.1	1.1	1.1
		PCE	ND (< 1)	ND (< 5)	ND (< 1)	ND (< 1)	ND (< 1)
		cis-1,2-DCE	0.65 (J)	ND (< 5)	0.39 (J)	0.17 (J)	0.18 (J)
		trans-1,2-DCE	0.88	ND (< 5)	ND (< 1)	ND (< 1)	ND (< 1)
Downgradient Wells							
0118	Off site	TCE	ND (< 1)	ND (< 5)	ND (< 1)	ND (< 1)	ND (< 1)
		PCE	ND (< 1)	ND (< 5)	ND (< 1)	ND (< 1)	ND (< 1)
0138	Off site	TCE	ND (< 1)	ND (< 5)	ND (< 1)	ND (< 1)	ND (< 1)
		PCE	ND (< 1)	ND (< 5)	ND (< 1)	ND (< 1)	ND (< 1)
0301	Off site	TCE	ND (< 1)	ND (< 5)	ND (< 1)	ND (< 1)	ND (< 1)
		PCE	ND (< 1)	ND (< 5)	ND (< 1)	ND (< 1)	ND (< 1)
0311	Off site	TCE	ND (< 1)	ND (< 5)	ND (< 1)	ND (< 1)	ND (< 1)
		PCE	0.28 (J)	3.8 (J)	0.20 (J)	0.22 (J)	0.22 (J)
0333	Off site	TCE	0.29 (J)	3.8 (J)	0.40 (J)	0.20 (J)	NS
		PCE	ND (< 1)	ND (< 5)	ND (< 1)	ND (< 1)	NS
0334	Off site	TCE	ND (< 1)	ND (< 5)	ND (< 1)	ND (< 1)	NS
		PCE	ND (< 1)	ND (< 5)	ND (< 1)	ND (< 1)	NS
0346	On site	TCE	ND (< 1)	ND (< 5)	ND (< 1)	ND (< 1)	ND (< 1)
		PCE	ND (< 1)	ND (< 5)	ND (< 1)	ND (< 1)	ND (< 1)
0347	On site	TCE	**24.3**	**14.4**	**19.5**	**26.5**	**26.5**
		PCE	ND (< 1)	ND (< 5)	ND (< 1)	ND (< 1)	ND (< 1)
0379	On site	TCE	2.0	2.2 (J)	2.0	1.7	1.9
		PCE	0.42 (J)	0.37 (J)	0.45 (J)	0.53 (J)	0.45 (J)

ND = Not detected
NS = Not sampled
J = Estimated value that is less than the reporting limit
PCE trigger level at 0601 = 75 µg/L
TCE trigger level at the seeps = 150 µg/L
Values in **bold** exceed the MCL

A graph of TCE concentrations in the seeps since 2005 (Figure 18) shows that concentrations in seep 0602 have increased since the end of the remediation of contaminated buildings and soil on the Main Hill (mid-2006). The concentrations measured in the fourth quarter of 2009 and the second quarter of 2010 were lower than previous values. A possible cause for the sudden changes and subsequent increases may be surface water infiltration upgradient of the seeps resulting in flushing of residual VOCs. Site improvements started in 2006 on the Main Hill and a new parking lot was constructed where the SW building was located. It was discovered in late 2009 that grading in the area had exposed two manholes over a large tritium capture pit that was located along the western side of the building. These test pits extend into the weathered bedrock. Surface water had been infiltrating into these uncovered access ports and was lost to the subsurface. The access points were covered in October 2009.

In seep 0601, PCE concentrations (Figure 19) were slightly higher than TCE concentrations. The concentrations of PCE have ranged between 10 and 20 µg/L but showed a general decrease in 2010 and are similar to those measured prior to remediation on the Main Hill. Estimated detections of PCE (less than 1 µg/L) were reported in seeps 0602 and 0605.

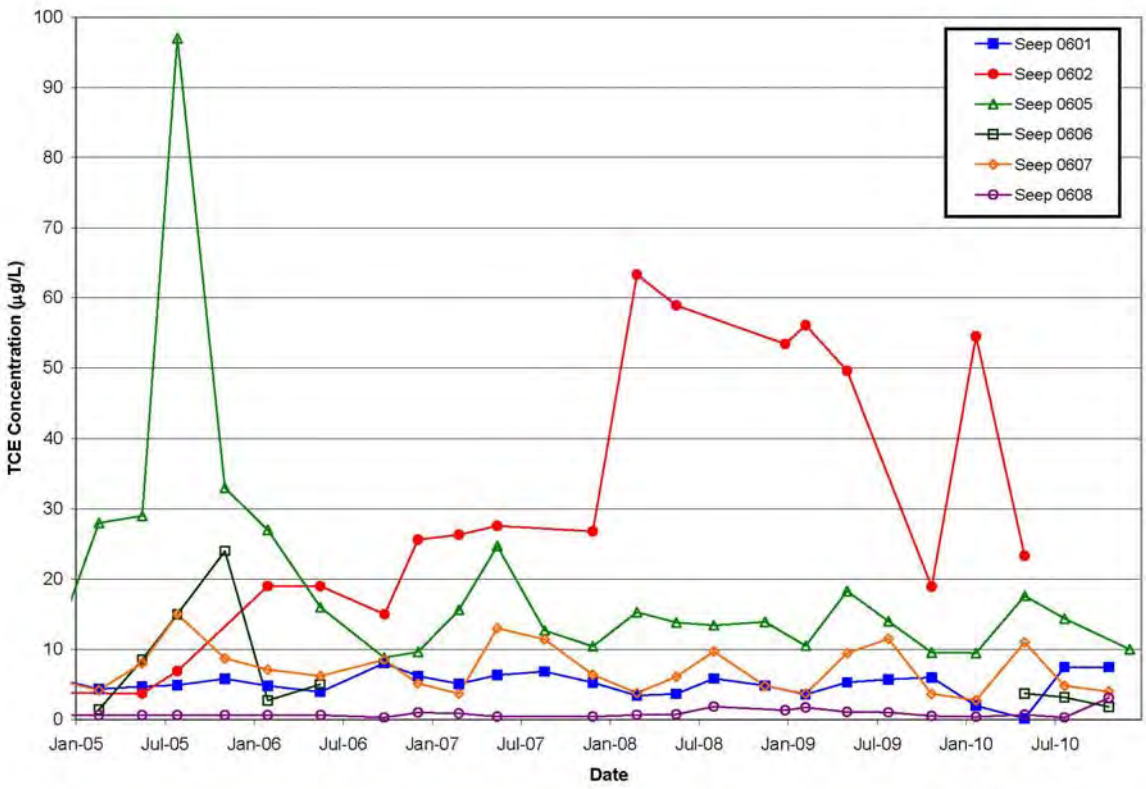

Figure 18. TCE Concentrations in the Main Hill Seeps (2005–2010)

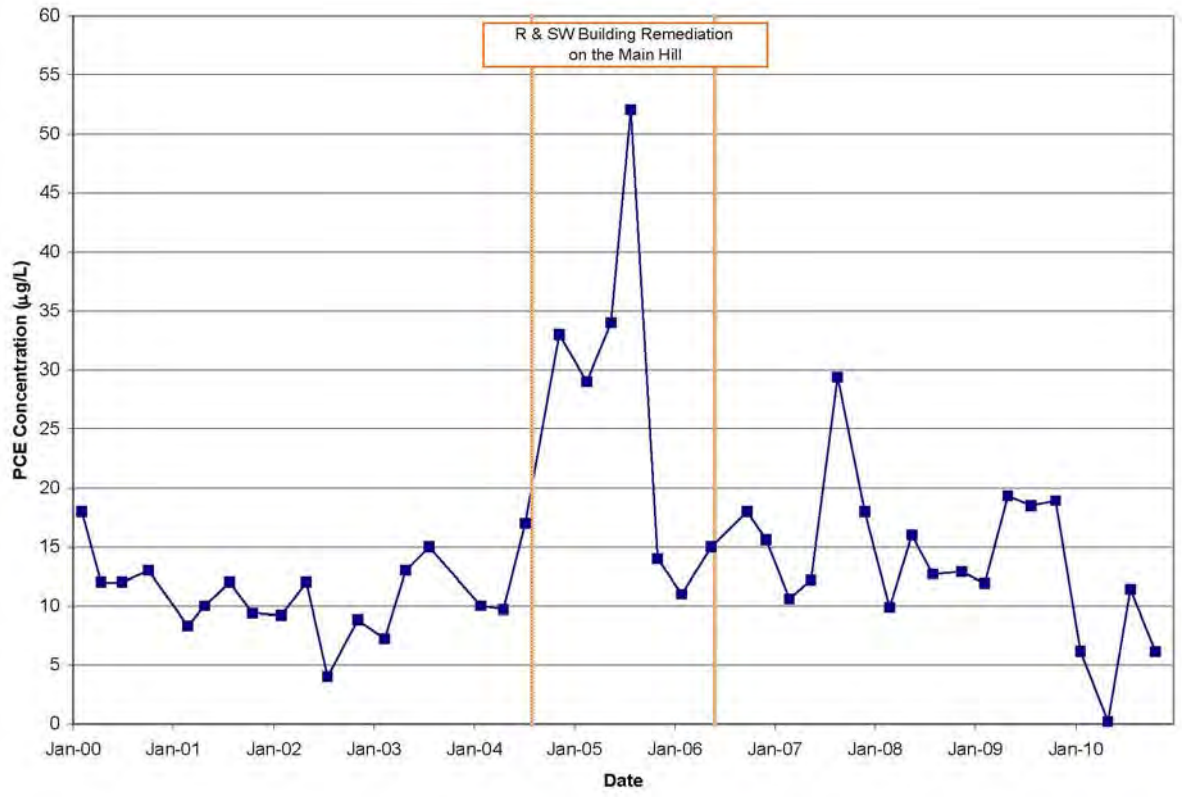

Figure 19. PCE Concentrations in Seep 0601 (2000–2010)

Concentrations of *cis*-1,2-DCE were reported in all of the seeps. The highest concentrations were reported in seeps 0602 and 0605. A comparison of TCE and *cis*-1,2-DCE concentrations (Figure 20) in these two seeps indicates that the concentration changes in the two contaminants generally behaved similarly. Although an increase in *cis*-1,2-DCE concentrations is an expected indicator of TCE degradation, in this instance, it is likely the result of flushing of residual DCE from the system. When degradation occurs, TCE concentrations typically decrease as *cis*-1,2-DCE concentrations increase. Subsequent data will continue to be evaluated for evidence of TCE degradation.

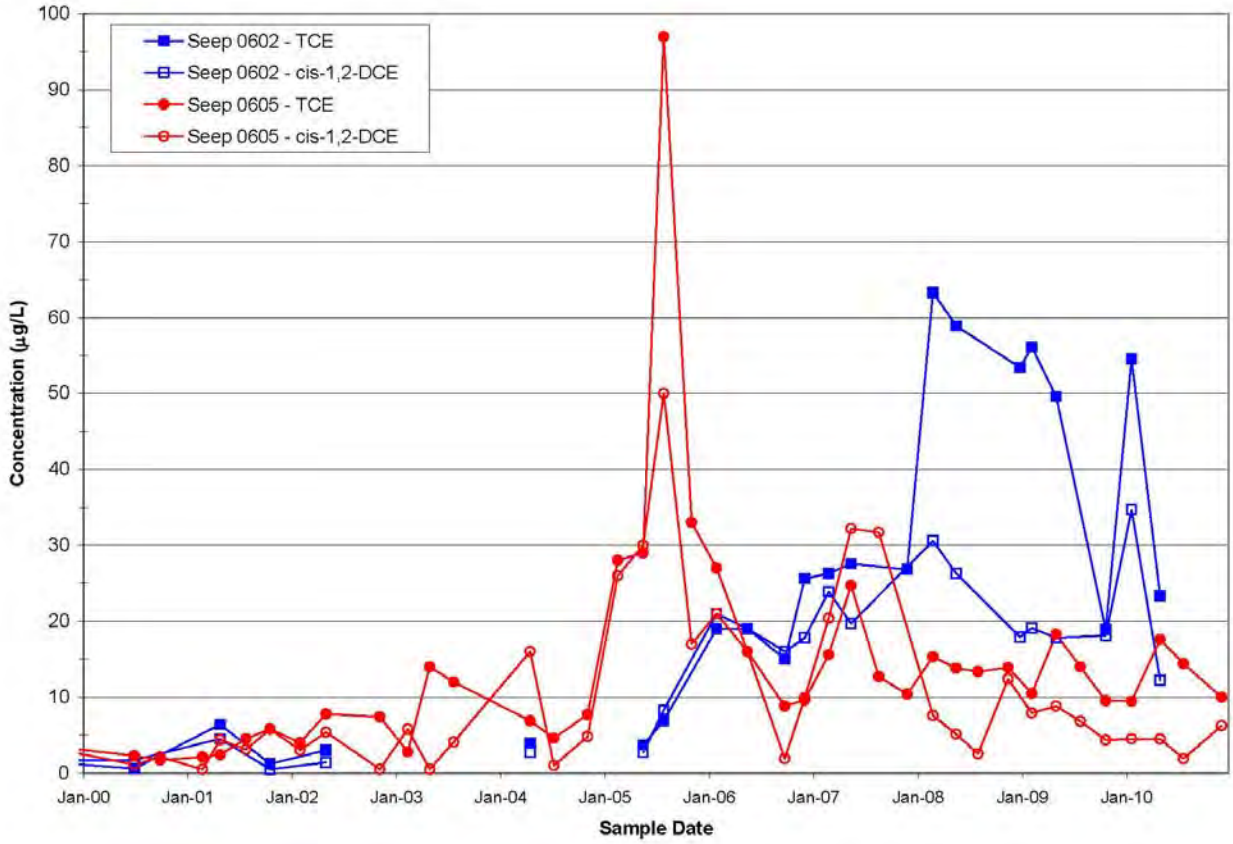

Figure 20. TCE and cis-*1,2-DCE Concentrations in Seeps 0602 and 0605 (2000–2010)*

Trend analysis was performed on TCE data using the non-parametric Mann-Kendall test (DOE 2011c). This test is used for temporal trend identification, because it does not require the data to conform to a particular distribution (such as a normal or log-normal distribution). This type of long-term trend analysis can be used to confirm trends in contaminant concentrations over time. Trending was performed using data from 2005 through 2010, as this set of data reflects possible influence from the building and soil removal that was completed on the Main Hill in 2005.

Trend analysis for TCE data collected since 2005 indicates increasing TCE concentrations in seeps 0601, 0602, and 0608, as indicated by positive slopes (Table 34). An upward trend was calculated for TCE in seep 0602. TCE concentrations are decreasing in seeps 0605, 0606, and 0607, as indicated by negative slopes. A downward trend was calculated for seep 0605. No trend was indicated in the TCE data from seep 0601.

Data from the downgradient wells were not trended. TCE concentrations have been sporadic in these wells, with the exception of well 0347, which was previously discussed.

Table 34. Summary of Trend Analysis Results for TCE in the Main Hill Seeps (2005–2010)

Location	Number of Samples	Trend	Slope (µg/L/year)	Confidence Interval (µg/L/year)	
				Lower	Upper
0601	24	None	0.11	-0.45	0.38
0602	17	**Up**	9.6	2.4	13.6
0605	24	**Down**	-2.4	-4.4	-0.44
0606	9	None	-0.85	-4.4	2.0
0607	24	None	-0.59	-1.3	0.34
0608	23	None	0.02	-0.03	0.19

Tritium levels in the Main Hill seeps continued to be elevated in 2010 and were higher than those in the downgradient groundwater wells (Table 35). The highest tritium activity was observed in seep 0601, which is located on site. Seep 0601 is the only location that exceeded the MCL of 20 nanocuries per liter (nCi/L) during 2010. None of the seeps had tritium levels that exceeded the trigger level of 1,500 nCi/L.

Table 35. Summary of Tritium Results in the Main Hill Area (2006–2010)

Location	Average Tritium Activity (nCi/L)				
	2006	2007	2008	2009	2010
Seeps					
0601	**151**	128	**86.3**	**70.5**	**47.9**
0602	**40.5**	**37.5**	**22.6**	17.2	13.3
0605	**64.4**	**26.9**	**20.7**	19.9	15.9
0606	**25.6**	NS	NS	NS	13.7
0607	**21.1**	12.1	9.4	7.2	5.6
0608	**40.9**	**30.2**	**20.9**	17.7	12.6
Downgradient Wells					
0118	< 0.60	0.26 (J)	0.21 (J)	< 0.33	< 0.36
0138	9.6	5.0	2.6	1.6	1.4
0301	< 0.60	0.15 (J)	< 0.35	< 0.33	< 0.36
0311	1.2	1.0	1.2	1.4	0.81
0333	< 0.60	< 0.34	< 0.35	< 0.33	NS
0334	0.45	0.37	0.24	0.16 (J)	NS
0346	3.2	2.1	1.8	1.9	1.6
0347	12.7	10.0	6.8	6.1	5.8
0379	1.7	1.9	1.8	1.6	1.4

NS = Not sampled
Tritium trigger level at the seeps = 1,500 nCi/L
Values in **bold** exceed the MCL of 20 nCi/L

Five wells downgradient of the Main Hill area continued to show detectable levels of tritium in 2010 (Table 35). The highest levels were observed in well 0347, downgradient of seeps 0601 and 0602. The four remaining wells had tritium levels similar to background (1.5 nCi/L). None of the groundwater wells had tritium levels that exceeded the MCL of 20 nCi/L.

Tritium levels in the seeps were highest during remediation activities on the Main Hill (2004−2006). Tritium data collected after building demolition and soil removal indicate decreasing levels in all of the seeps (Figure 21). The decreasing tritium levels from post-remediation data suggest that the majority of the source was removed from the Main Hill area

and that, with continued flushing, levels should continue to decline. Changes in tritium levels in seep 0601 indicate a seasonal effect as levels typically increase in the fall due to more precipitation and flushing. Variation in tritium levels in seep 0602 may also follow a similar seasonal pattern, but is less pronounced. Comparisons of tritium concentrations in the seeps with those measured in downgradient monitoring wells indicates that the seeps responded more quickly than the wells because they are direct discharge points for groundwater originating beneath the Main Hill.

A graph of tritium levels in downgradient wells (Figure 22) illustrates that groundwater impact lagged behind that of the seeps. Groundwater impact increased near the end of remediation activities on the Main Hill, and impact in the seeps occurred as remediation activities were being performed and began to decrease as activities were completed. Wells 0138 and 0347 had the highest levels of tritium and responded rapidly to remediation activities. Tritium levels in wells 0138, 0346, and 0379 have leveled off and are similar to background.

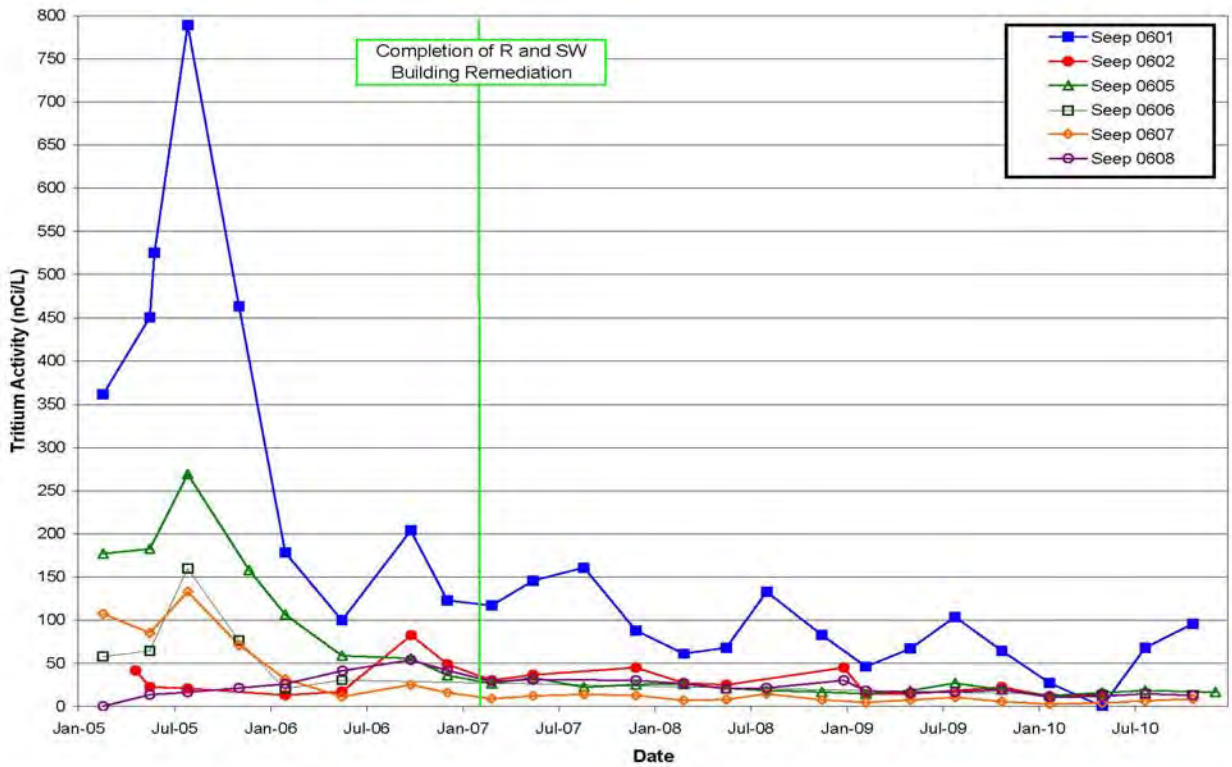

Figure 21. Tritium Activity in Seeps (2005−2010)

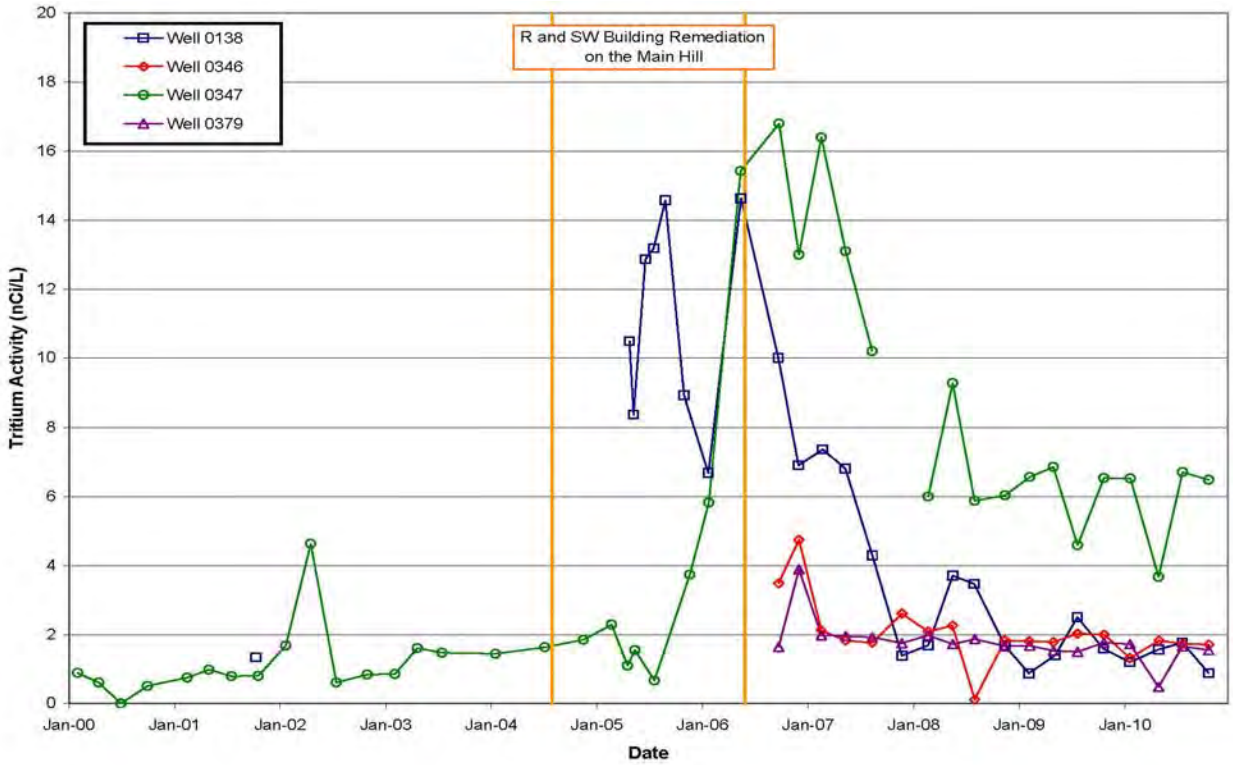

Figure 22. Tritium Activity in Wells 0138, 0346, 0347, and 0379 (2000–2010)

Trend analysis for tritium data collected since 2005 indicates decreasing tritium levels in all of the seeps and the four wells with detectable tritium levels, as indicated by negative slopes. Downward trends in tritium were calculated in seeps 0601, 0605, 0606, and 0607 and in wells 0138, 0346, 0347, and 0379 (Table 36).

Table 36. Summary of Trend Analysis Results for Tritium in the Main Hill Seeps and Downgradient Wells (2005−2010)

Location	Number of Samples	Trend	Slope (µg/L/year)	Confidence Interval (nCi/L/year)	
				Lower	Upper
0601	25	**Down**	-47.8	-83.5	-28.0
0602	18	None	-3.0	-9.2	0.61
0605	24	**Down**	-12.4	-30.1	-6.8
0606	9	**Down**	-9.0	-32.0	-0.80
0607	24	**Down**	-5.5	-12.7	-2.6
0608	23	None	-3.0	-6.1	0.09
0138	26	**Down**	-2.0	-2.7	-1.5
0346	18	**Down**	-0.10	-0.17	-0.03
0347	25	**Down**	-0.12	-0.14	-0.09
0379	18	**Down**	-0.22	-0.49	-0.04

Ra-226, Ra-228, and Sr-90 continued to be present in seep 0601 (Table 37). The activities observed at this location did not exceed the trigger level of 20 pCi/L for Sr-90 or combined Ra-226/228. Graphs of the concentrations over time (Figure 23 and Figure 24) indicate that levels have decreased since 2004. An increase in combined Ra-226/228 was observed at the end of 2009; however, levels decreased in 2010. Data from unimpacted seeps in Parcel 4 were used to estimate background levels for these isotopes in the bedrock aquifer. The maximum Ra-226 level measured in the Parcel 4 seeps was 0.81 pCi/L and the maximum Sr-90 level was 2.8 pCi/L. The levels of Sr-90 in seep 0601 are similar to those measured in Parcel 4 seeps. Levels of Ra-226 are slightly greater than those measured in Parcel 4 seeps.

Table 37. Summary of Radionuclides in Seep 0601 (2006–2010)

Location	Radionuclide	Average Activity (pCi/L)				
		2006	2007	2008	2009	2010
0601	Ra-226	0.45 (J)	0.86 (J)	0.67 (J)	0.80	1.0
	Ra-228	1.7	0.43 (J)	0.61 (J)	0.71 (J)	0.75 (J)
	Sr-90	3.5	2.4	1.6	1.6	1.4

J = Estimated value that is less than the reporting limit
Ra-226/228 trigger level at seep 0601 = 20 pCi/L
Sr-90 trigger level at seep 0601 = 20 pCi/L

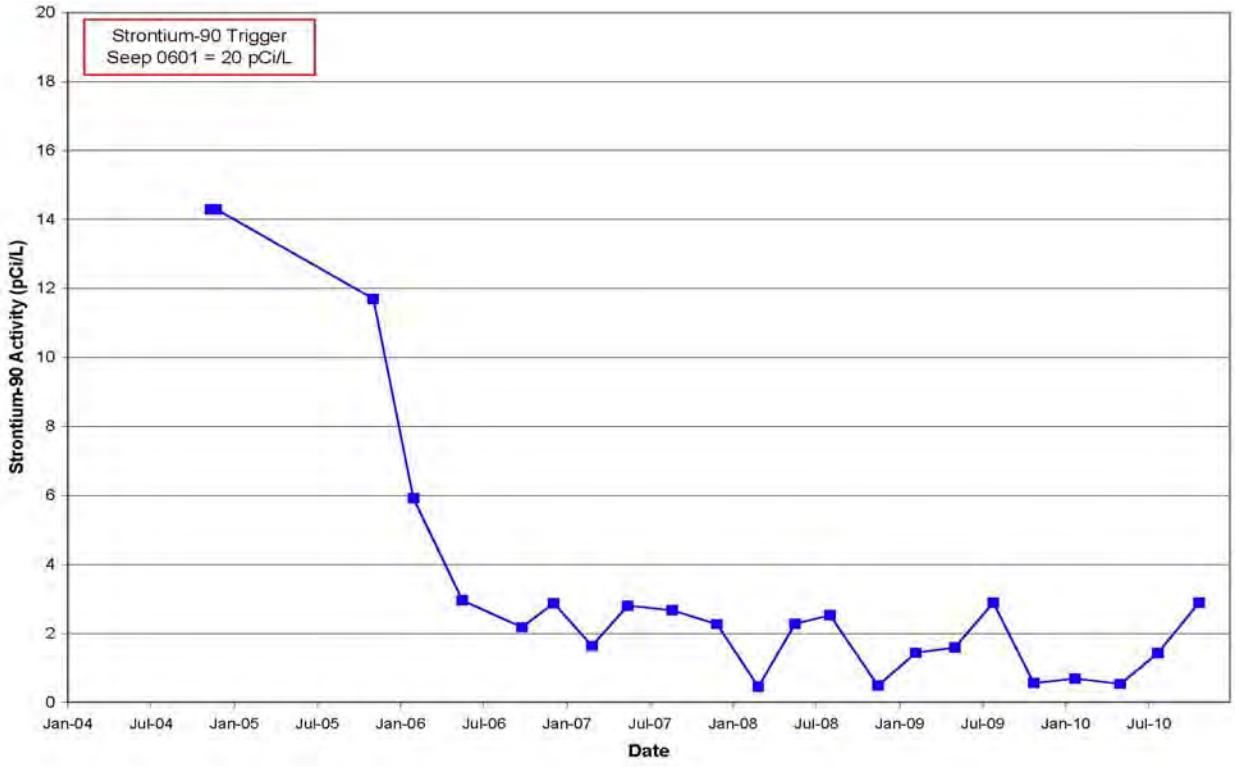

Figure 23. Sr-90 Activity Over Time in Seep 0601 (2004–2010)

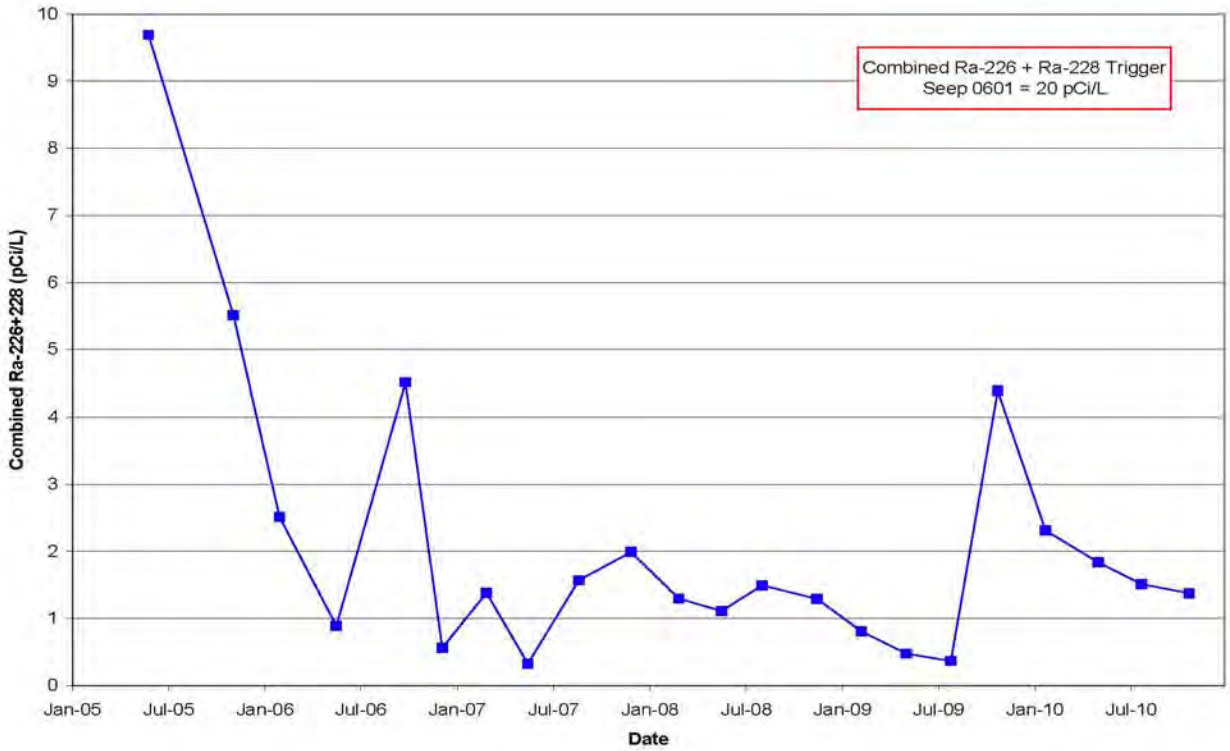

Figure 24. Combined Ra-226/228 Activity Over Time in Seep 0601 (2005–2010)

Trend analysis for Sr-90 and combined Ra-226/228 from seep 0601 (Table 38) indicates decreasing levels in both constituents, as indicated by negative slopes. A downward trend in Sr-90 was calculated for this location. No trend was reported in the combined radium levels.

Table 38. Summary of Trend Analysis Results for Other Radionuclides in Seep 0601 (2005−2010)

Radionuclide	Number of Samples	Trend	Slope (µg/L/year)	Confidence Interval (nCi/L/year)	
				Lower	Upper
Ra-226/228	12	None	-0.22	-0.89	0.14
Sr-90	10	**Down**	-0.56	-0.98	-0.15

6.7.3 Operable Unit 1

Necessary data to assess the performance of the OU-1 P&T system are outlined in the *OU-1 Pump and Treatment Operation and Maintenance Plan* (DOE 2000). The performance of the P&T system was assessed by three different metrics:

- VOC mass removal and mass removal rate
- System uptime verses downtime
- Hydraulic containment of the contaminant plume/area

When these three factors were maximized, then the system was operating in an acceptable manner. A large amount of data was collected for the OU-1 P&T system to monitor the

performance of the system. This data included water level measurements, groundwater samples, effluent samples, influent samples, and volumes treated.

In January 2007, excavation of the OU-1 landfill was started to support future reuse of the property. Operation of the P&T system was modified to address the changing conditions as excavation activities progressed. Focus was placed on maintaining hydraulic capture and assessing downgradient groundwater quality.

Starting in January 2007, sampling was performed in wells downgradient of the landfill to assess the groundwater quality in the BVA and the distribution of TCE closer to the landfill area and extraction wells. Sampling was performed according to the requirements in the *Work Plan for the Replacement of the OU-1 Extraction Wells*, which was developed to address the removal of the remaining two extraction wells (0413 and 0414) to accommodate additional source removal (i.e., the excavation of contaminated soil and debris from the landfill area). The sampling program changed over time to address changing conditions as excavation activities progressed.

6.7.3.1 System Performance

The P&T system is designed to operate continuously, or as near to as continuous as practicable, as it is the primary system that contains the contaminant plume. The P&T system has generally run more than 90 percent of the time each month. Downtime is typically for general maintenance activities. Exceptions are the result of mechanical failures or power outages, which resulted in shorter percentages of operation.

The VOC contaminants of concern were monitored monthly in both the influent and effluent. Historically, the influent concentrations were used to determine the mass of contaminants removed; however, in 2003 determination of the mass removed was discontinued because it was deemed minimal. Data continued to show that the P&T system was being effective in the removal of the contaminants of concern (COCs) from the groundwater by the rate of which the mass of the contaminants present in the influent is decreasing. The influent concentrations in the three extraction wells remained steady or decreased (Figure 25), indicating that the concentrations within the area of groundwater impact are also decreasing. The effluent data demonstrates the effectiveness of the air stripper in removing the COCs from the water being treated. The concentrations of VOCs in the effluent are generally nondetectable.

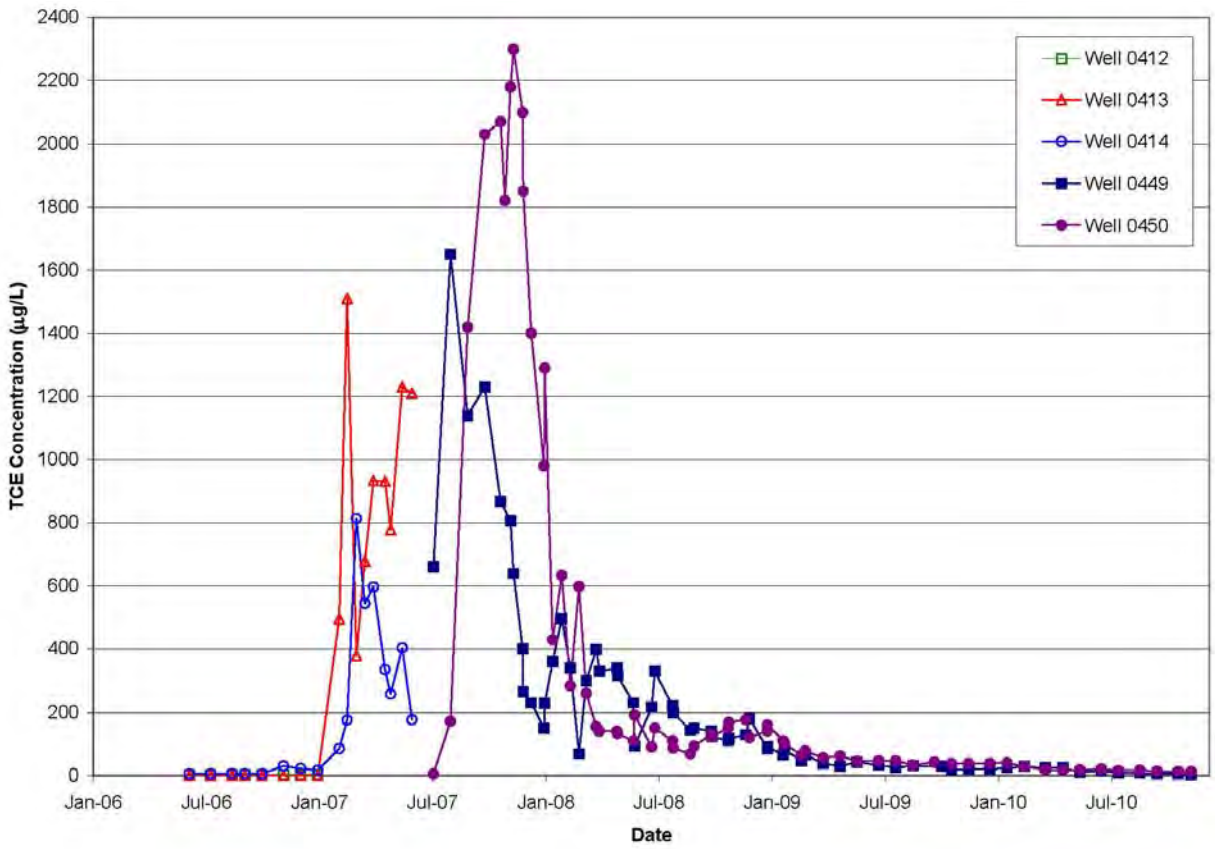

Figure 25. VOC Concentrations in OU-1 P&T System Extraction Wells

During excavation activities in the OU-1 area, the extraction wells were sampled bimonthly and later monthly to assess the VOC concentrations. Concentrations increased significantly in the wells during excavation activities in the landfill area. Concentrations began to decline in 2008 after the bulk of the VOC impacted soil had been excavated and the area backfilled. Concentrations continued to decline through 2010.

The following is a summary of the operation and removal of extraction wells 0412, 0413, and 0414 and the installation and operation of extraction wells 0449 and 0450 since January 2007:

- Extraction well 0412 was removed from service on January 31, 2007, and wells 0413 and 0414 were removed from service on June 11, 2007. These wells were removed to accommodate the excavation of soil contaminated with VOCs.
- Extraction wells 0449 and 0450 were installed and developed on July 10 and 11, 2007, and were put into operation on July 13, 2007. The extraction rates after initial optimization were 3.8 gallons per minute (gpm) for well 0449 and 1.1 gpm for well 0450. These rates were considerably lower than the 30 gpm rate maintained by the original extraction wells.
- Extraction wells 0449 and 0450 were redeveloped in August 2007 due to continued low production rates from the wells. The recovery tests performed before and after development indicated that redevelopment significantly improved the extraction rates.

- In an effort to increase the extraction rates in the wells, new pumps were installed in the wells on September 6, 2007. By the end of December 2007, the pumps operated at rates of 10.8 gpm (well 0449) and 11.7 gpm (well 0450).
- A program to incrementally increase the extraction rates in each well, while maintaining 1 ft of water over the pump, was started on January 14, 2008. This program was started after a review of extraction rates from previous months indicated that rates had been increasing slightly since redevelopment but had remained constant during December 2007. By January 15, 2008, the extraction rates were 20 gpm in well 0449 and 16 gpm in well 0450. By the end of February 2008, the extraction rates were maintained at 21 gpm in well 0449 and 10.5 gpm in well 0450.
- During April and May 2008, the extraction rate in well 0450 decreased to 7 gpm, while the rate in 0449 remained at 20.5 gpm. A review of the groundwater elevations in extraction well 0450 did not indicate a significant lowering in the water levels, which would indicate dewatering. The loss of production capacity was investigated in May 2008. A walkdown of the system revealed that the flow meter for well 0450 was not functioning properly.
- A short duration step test was conducted in May 2008 in response to lower than anticipated pumping rates (5 to 8 gpm) in well 0450. The results indicated that well 0450 could sustain an extraction rate of 10 to 11 gpm. It was speculated that the faulty flow meter on well 0450 was resulting in incorrectly low readings.
- During October 2008, digital flow meters and pressure transducers were installed in the extraction wells, allowing for remote access to the water elevations and flow rates.
- During November and December 2008, the pumping rates in the two extraction wells decreased substantially as a result of the lower water table in the OU-1 area that had been prevalent since August 2008.
- In response to higher groundwater levels, the extraction rates in both wells increased substantially in January 2009. Since then, the extraction rate in well 0449 has been approximately 18.5 gpm, the maximum rate that the present pump can attain. The extraction rate in well 0450 has varied and is affected by the water levels in the OU-1 area.
- Since July 2009, the flow in well 0449 has averaged 18.5 gpm. The pumping rate in well 0450 has decreased slowly due to the declining water table in the OU-1 area. The pump in well 0450 began cycling on September 22, 2009, resulting in lower than typical pumping rates at the end of the month.
- Extraction well 0450 was redeveloped on October 22, 2009, in response to declining extraction rates. The extraction rate increased from less than 4 gpm to approximately 9 gpm, and this rate was maintained through December 2009.
- The extraction rate in well 0450 declined from 9 gpm in December 2009 to 6 gpm in April 2010 despite increased water levels in the OU-1 area.
- Extraction well 0450 was redeveloped on May 6, 2010, in response to declining pumping rates even during periods when groundwater elevations were higher than typical. Redevelopment increased the pumping rate from 5 gpm to 16 gpm.
- The extraction rate in well 0450 has averaged above 17 gpm since redevelopment of the well in May 2010. Prior to redevelopment, the operation of the wells was dependent on water levels. Since redevelopment, this has not been the case.

6.7.3.2 Hydraulic Capture

During 2006, local hydraulic gradients were determined by conducting three-point evaluations using monitoring wells that straddle the compliance boundaries. Two sets of monitoring wells were utilized to determine if hydraulic containment is achieved. Wells 0305, 0410, and 0417 were used to verify containment at the southern boundary, and wells 0422, 0423, and P003 were used to verify containment at the western boundary. The compliance boundaries are the west and south access roads located adjacent to the landfill area. The groundwater gradients were calculated to determine whether groundwater flow direction has been reversed and flow was coming inward across the compliance boundaries. It was assumed from a groundwater model that complete hydraulic control could be assumed if a 0.002 ft/ft average inward gradient was maintained across at least a 25-ft wide border centered on the compliance boundary. A summary of the data collected in 2006 and early 2007 is presented in Table 39. Although the 0.002 ft/ft gradient was not continuously maintained across the compliance boundary, the results show that the system captured the contaminated groundwater by maintaining a positive gradient across the compliance boundaries. The negative gradient calculated in November 2006 was the result of groundwater elevations on the west side of the OU-1 landfill increasing in response to a high river stage. This was a discrete short-term event and the inward flow quickly resumed.

Table 39. Summary of Hydraulic Gradients for the OU-1 P&T System in 2006 and 2007

Date	Hydraulic Gradient (ft/ft)	
	0422 / 0423 / P003	**0305 / 0410 / 0417**
1/4/2006	0.0027	0.0021
2/2/2006	0.0026	0.0027
3/2/2006	0.0023	0.0030
3/30/2006	0.0024	0.0017
4/26/2006	0.0025	0.0025
6/1/2006	0.0024	0.0027
7/5/2006	0.0020	0.0026
8/1/2006	0.0025	0.0029
9/5/2005	0.0023	0.0025
10/2/2006	0.0023	0.0026
11/1/2006	0.0077	-0.0030
11/16/2006	0.0024	0.0030
12/4/2006	0.0032	0.0035
1/2/2007	0.0026	0.0021
2/1/2007	0.0014	0.0028
3/5/2007	0.0024	0.0028
4/2/2007	0.0018	0.0014
5/1/2007	0.0020	0.0036
6/4/2007	Well P003 removed	0.0026
6/11/2007		0.0034

Positive gradients indicate inward flow

Starting in 2008, a new set of wells along the southern side of the OU-1 landfill were selected to determine the inward gradients maintained by the new extraction wells 0449 and 0450. Initially water levels were measured in wells 0305, 0419, and P043 to determine groundwater elevations. In late 2009, it was determined that well 0410 would replace well 0419 as it provided more representative data for the water table in the OU-1 area.

As before, the groundwater gradients were calculated to determine whether groundwater flow direction was reversed and flow was coming inward toward the extraction wells. Although the 0.002 ft/ft average inward gradient was not consistently maintained, the results show that the system captured the contaminated groundwater by maintaining a positive inward gradient. A summary of the data collected from 2008 through 2010 is presented in Table 40.

Table 40. Summary of Hydraulic Gradients for the OU-1 P&T System in 2008 and 2010

Date	Hydraulic Gradient (ft/ft)	Date	Hydraulic Gradient (ft/ft)
1/29/2008	0.0029	7/21/2009	0.0020
2/25/2008	0.0026	8/24/2009	0.0015
3/24/2008	0.0040	9/30/2009	0.0012
4/28/2008	0.0032	10/26/2009	0.0008
5/27/2008	0.0016	11/2/2009	0.0021
6/30/2008	0.0012	11/16/2009	0.0037
7/28/2008	0.0016	12/14/2009	0.0031
8/25/2008	0.0028	1/19/2010	0.0031
9/22/2008	0.0018	2/22/2010	0.0034
10/21/2008	0.0020	3/31/2010	0.0034
11/17/2008	0.0017	4/19/2010	0.0027
12/15/2008	0.0011	5/19/2010	0.0059
1/20/2009	0.0018	6/21/2010	0.0053
2/21/2009	0.0012	7/26/2010	0.0057
3/16/2009	0.0016	8/30/2010	0.0065
4/20/2009	0.0023	9/27/2010	0.0058
5/11/2009	0.0037	10/25/2010	0.0063
6/17/2009	0.0012	11/22/1020	0.0056
7/6/2009	0.0016	12/29/2010	0.0051

In 2010, an assessment of the performance of the OU-1 P&T System was performed to address concerns of continued TCE concentrations in some downgradient wells and the lower extraction rates maintained by the extraction wells installed after excavation activities began. The *OU-1 Pump and Treatment System Performance Evaluation* (DOE 2010e) documented an analysis of the capture zone using methods outlined in *A Systematic Approach for Evaluation of Capture Zones at Pump and Treat Systems* (EPA 2008), an evaluation of the water table under unstressed conditions, and the results of a drawdown test. It was concluded that containment of TCE-impacted groundwater has been maintained with the present pumping configuration of the wells operating at a combined rate between 20 to 28 gpm. A determination of the area of influence and capture zone for the extraction wells was made from field data and hydraulic calculations. These numbers are in general agreement with each other. Capture can be attained in approximately 400 minutes after startup of the extraction wells.

6.7.3.3 Groundwater Monitoring

Prior to excavation of the landfill in 2007, the measurement of contaminant concentrations in groundwater in the vicinity of the OU-1 P&T system was performed in accordance with the OU-1 O&M Plan. The measurements provided the definite long-term feedback on the operation of the system. Wells on the western and southern compliance boundaries exhibited concentrations less than the MCL (Table 41). Downgradient wells exhibited concentrations of TCE and PCE less than the detection limit of 5 μg/L. These low concentrations were maintained due to hydraulic containment created by the operation of the P&T system.

Table 41. Average VOC Concentrations for OU-1 in 2006

Well ID	Location	TCE (μg/L)	PCE (μg/L)
0305	Compliance Boundary	2.0	1.4
0410		< 5	1.3
0417		< 5	2.1
0418		2.5	1.9
0419		2.4	4.5
P015		Not sampled	
P027	Downgradient	< 5	< 5
P031		< 5	< 5

Excavation of the OU-1 landfill was started in early 2007. This work resulted in removal of the original extraction wells, as they were installed within the footprint. A sampling program was started in January 2007 to monitor groundwater quality in the OU-1 area during the excavation activities. Because of the removal of the original extraction wells, increased TCE levels in groundwater during excavation, and the continued presence of elevated TCE levels in wells immediately downgradient of the new extraction wells, sampling frequencies have changed periodically in order to better assess changes in contaminant distribution.

Sampling was performed in downgradient wells to assess the groundwater quality in the BVA and the distribution of TCE closer to the landfill area and extraction wells (Table 42). Sampling was performed according to the requirements in the *Work Plan for the Replacement of the OU-1 Extraction Wells*, which was developed and approved by the Mound Core Team to address the removal of the remaining two extraction wells (0413 and 0414) to accommodate additional source removal (i.e., the excavation of contaminated soil and debris from the landfill area). The sampling program's locations and sampling frequencies changed over time to address changes in activities and groundwater quality.

Concentrations of TCE increased significantly in wells downgradient of the compliance boundary in response to the extraction wells being removed in early 2007 (Figure 26). New extraction wells were installed and began operating in July 2007. However, the extraction rates for the wells were significantly lower than the original wells and were not as effective in reversing the gradient and drawing the TCE-impacted water back. After operation of the extraction wells was optimized in late 2007, the TCE concentrations in the downgradient wells decreased dramatically.

During 2007, when TCE concentrations were the highest in the wells downgradient of the landfill, the TCE concentrations in wells P027 and P031, which are located further downgradient increased slightly. However, the concentrations of TCE or PCE did not exceed the MCL.

Through continued operation and optimization of the extraction well system, the concentrations of TCE have continued to decrease, indicating capture of the TCE-impacted water that initially was released during 2007. Concentrations of TCE in well 0418 are depicted in Figure 27 to illustrate this capture.

Table 42. Sampling Frequencies for OU-1 Wells During Excavation Activities

Well ID	Sampling Frequency
0305	Monthly
0410	
0416	
0417	
0418	
0419	
0449 – extraction well	
0450 – extraction well	
P053	
P054	
P056	
0424	Bimonthly
0425	
P015	
P027	
0422	Quarterly
0423	
P031	

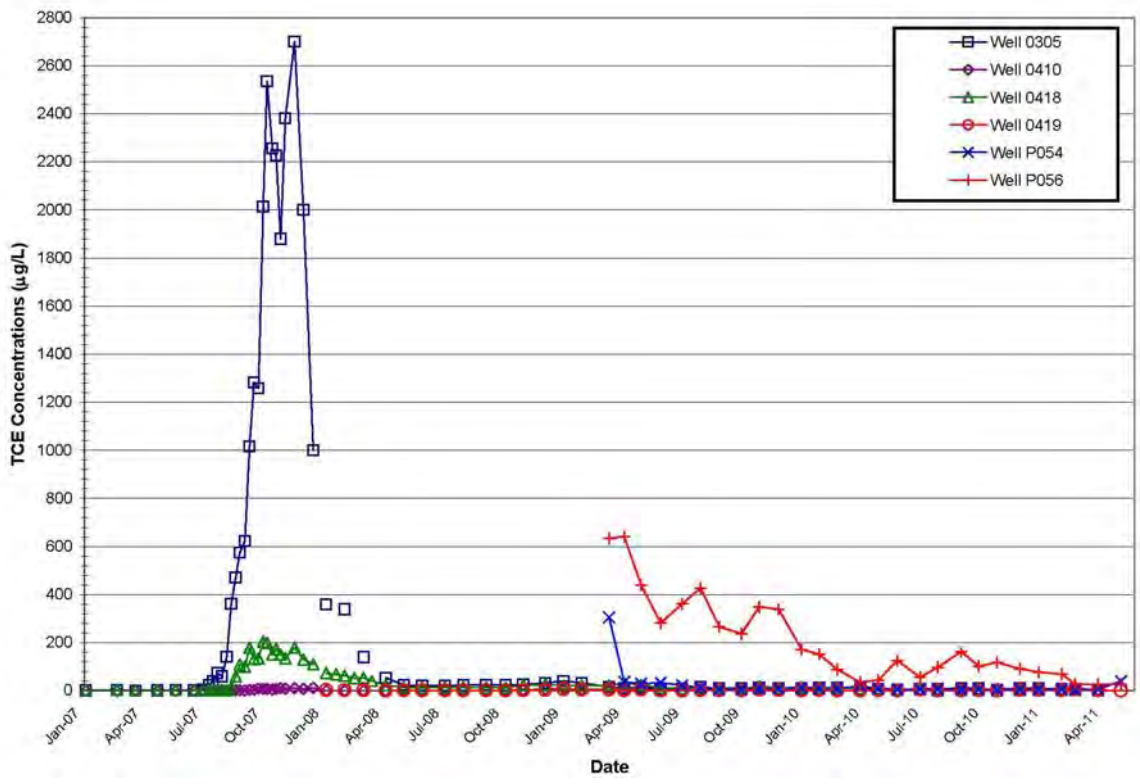

Figure 26. TCE Concentrations in Downgradient Wells (2007–2010)

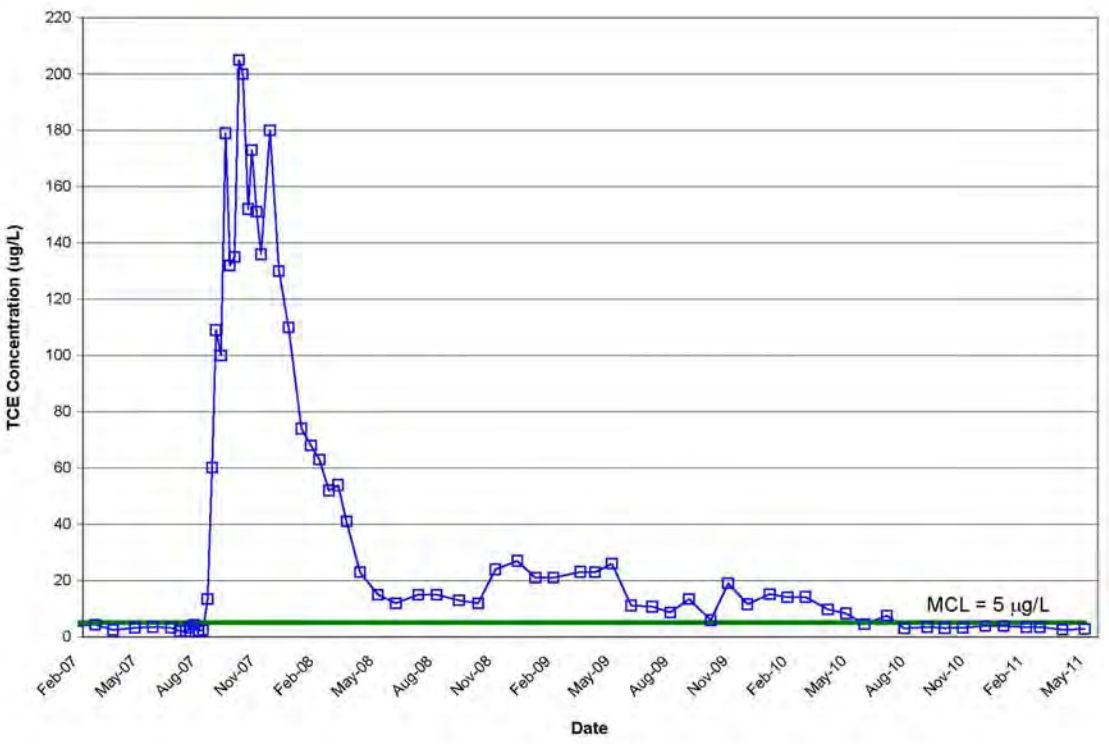

Figure 27. TCE Concentrations in Well 0418 (2007–2011)

6.7.3.4 Compliance Monitoring

The effluent from the P&T system is monitored and discharged in accordance with the CERCLA authorization to discharge under NPDES (Authorization Number 1IN90010*BD) (Table 43). The samples are designated as outfall 003. These data are reported monthly to OEPA. The VOC data from the effluent is typically nondetectable, indicating that system is effective at removing the organic compounds from the groundwater.

The 16 constituents sampled for outfall 003 are collected daily, weekly, or monthly. There have not been any exceedences of these parameters at outfall 003. Twice per year (April and October) samples are collected to perform acute and chronic toxicity testing of the effluent on Ceriodaphnia dubia. There are no limits stated in the ATD; however, any values above the method detection limit (MDL) require further evaluation. From 2007 through 2010 there were six occasions when the chronic toxicity value was greater than the MDL. In all cases discussions were held with OEPA about these slightly elevated values. In all but one of the cases, the conclusion was that the value reported was a statistical artifact and did not require further evaluation. For one event, it was determined that the samples should not have been taken because a flock of geese were nesting in the outfall and the geese droppings were harmful to the species being tested.

Table 43. Monitoring Requirements for Outfall 003

Parameter	Discharge Limits			Sample Type	Frequency
	Maximum	Minimum	Monthly		
Flow Rate – MGD	---	---	---	24-hr total	daily
pH – S.U.	9.0	6.5	---	grab	weekly
Dissolved oxygen – mg/L	---	---	---	grab	monthly
Copper, total recoverable – μg/L	---	---	---	24-hr composite	monthly
Mercury, total (low level) – ng/L	2200	---	23	grab	monthly
CBOD, 5 day – mg/L	---	---	---	24-hr composite	monthly
Carbon tetrachloride - μg/L	10	---	5	grab	monthly
Chloroform - μg/L	10	---	5	grab	monthly
Methylene chloride - μg/L	10	---	5	grab	monthly
Tetrachloroethylene - μg/L	10	---	5	grab	monthly
Trichlorofluoromethane - μg/L	10	---	5	grab	monthly
1,1,1-Trichloroethane - μg/L	10	---	5	grab	monthly
1,2-*trans*-Dichloroethylene - μg/L	10	---	5	grab	monthly
Vinyl chloride - μg/L	10	---	5	grab	monthly
Trichloroethylene - μg/L	10	---	5	grab	monthly
cis-1,2-Dichloroethylene - μg/L	10	---	5	grab	monthly
Chronic toxicity	---	---	---	grab	semiannually
Acute toxicity	---	---	---	grab	semiannually

MGD = million gallons per day
S.U. = standard units
CBOD = carbonaceous biological oxygen demand

7.0 Technical Assessment

7.1 Institutional Controls

Question A: Is the remedy functioning as intended by the decision documents?

Answer A: Yes, the remedy is functioning as intended by the decision documents.

7.1.1 Remedial Action Performance

The review of documents and the results of the annual and five-year review inspections indicate that the remedies for Parcels D, H, 3, 4, 6, 7, and 8 and for Phase I are functioning as intended. The remedies consist of ICs on land and groundwater use, soil removal, and use of areas of T building.

ICs have been implemented in the form of deed restrictions on future land use. A summary is prepared and included with the parcel deed that fulfills the requirements of CERCLA Section 120(h). The summary includes a discussion of the contamination that was present, the remedial actions that have taken place, and the residual risk that remains. The ICs for Parcel 9 will be in the form of an environmental covenant and will be developed at a later date.

The current land owner has implemented several measures to ensure that ICs are not violated. For example, language about the prohibition against removing excavated soil from the site is included in the technical requirements of all Requests for Proposal and Work Orders for work being performed on transferred parcels.

7.1.2 Operations and Maintenance

O&M activities are performed as outlined in the *Operation and Maintenance (O&M) Plan for the Implementation of Institutional Controls at the 1998 Mound Plant Property*. DOE has performed annual walkovers and records reviews with respect to ICs and has found that portion of the remedy to be functioning as intended, thus far.

7.1.3 Opportunities for Optimization

None have been identified based on this five-year review.

7.1.4 Early Indicators of Potential Issues

There are no early indicators of potential issues that could affect the protectiveness of the remedy.

Question B: Are the exposure assumption, toxicity data, cleanup levels, and remedial action objectives used at the time of the remedy selection still valid?

Answer: Yes, the exposure assumptions, toxicity data, cleanup levels, and remedial objectives used at the time of the remedy are still valid.

No changes in ARARs were identified that would call into question the protectiveness of the remedy. Early risk evaluations assumed that groundwater was a current exposure pathway because production wells existed at the site; this resulted in unacceptable risk levels. Since that time production wells were removed and ICs were put in place to prohibit unauthorized access to groundwater in the near term. The near-term RAO for groundwater is to prevent groundwater use; this objective is still valid. The groundwater pathway is currently incomplete. Long-term RAOs for groundwater are drinking water standards. RAOs remain valid.

The RAO for soils is to ensure that exposures do not exceed an excess cancer risk of 10^{-4} or a hazard index of 1 through use of the site for occupational exposures (e.g., office worker and construction worker). Site use continues to be industrial/commercial and this RAO remains protective. RBGVs used to evaluate site conditions have changed slightly over time due to changes in toxicity values for various constituents (some increases, some decreases). However, these changes have not affected contaminant identification at the site and do not significantly change estimates of site risks. A comparison of risks calculated using older and revised toxicity values for radionuclides was conducted for Parcel 3 (DOE 2001c). This comparison indicated changes in risk estimates of less than an order of magnitude. Risk evaluations conducted for some parcels did not include a dermal exposure pathway for soils and could slightly underestimate total site risks. However, exposures through the oral and external pathways make up the bulk of site risks and these have been accounted for in all risk analyses. Results of the risk information review do not suggest that there is a need to update any of the risk calculations that have already been completed.

Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

Answer C: No other information has come to light that could call into question the protectiveness of the remedy.

7.2 OU-1 Remedy

Question A: Is the remedy functioning as intended by the decision documents?

Answer A: Yes, the remedy is functioning as intended by the decision documents.

7.2.1 Remedial Action Performance

The review of documents and environmental monitoring data and the results of the five-year review inspection indicate that the remedy for OU-1, which consists of controlling contaminant migration through the use of a P&T system, is functioning as intended. Hydraulic and groundwater data indicate that the migration of the plume has been controlled by the use of the extraction wells. The performance monitoring indicates that VOC contamination is being extracted by the wells and treated to levels typically less than the detectable limit through the air stripper. Based on groundwater monitoring, potential receptors have not been exposed to VOC contamination from the landfill.

7.2.2 Operations and Maintenance

O&M activities are performed as outlined in the *OU-1 Pump and Treatment Operational and Maintenance Plan*. DOE also performs annual inspections on long-term remedies as called out in this plan and other O&M Plans. DOE has performed groundwater monitoring, effluent monitoring, and system monitoring and has found this remedy to be functioning as intended, thus far.

Groundwater level measurements and groundwater contaminant information have been collected as prescribed. These data indicate that the plume has been contained and unacceptable migration has not occurred.

Influent and effluent data from the P&T system indicate that VOC contaminated groundwater is being extracted and the mass removed over time has decreased. Effluent data supports the assertion that the air stripper system is effective in removing VOC contamination from the groundwater.

7.2.3 Opportunities for Optimization

A rebound study is being performed to assess whether a passive groundwater remedy can be implemented to address the OU-1 groundwater following completion of the landfill excavation in 2010. This study was started in June 2011 and is expected to continue for a period of 18 to 24 months. Data from this study will be used to create an exit strategy for the OU-1 groundwater.

7.2.4 Early Indicators of Potential Issues

There are no early indicators of potential issues that could affect the protectiveness of the remedy.

Question B: Are the exposure assumption, toxicity data, cleanup levels, and remedial action objectives used at the time of the remedy selection still valid?

Answer: Yes, the exposure assumptions, toxicity data, clean-up levels, and remedial objectives used at the time of the remedy are still valid.

No changes in ARARs were identified that would call into question the protectiveness of the remedy. Early risk evaluations assumed that groundwater was a current exposure pathway because production wells existed at the site; this resulted in unacceptable risk levels. Since that time, production wells were removed and ICs were put in place to prohibit unauthorized access to groundwater in the near term. The near-term RAO for groundwater is to prevent groundwater use; this objective is still valid. The groundwater pathway is currently incomplete. Long-term RAOs for groundwater are drinking water standards. RAOs remain valid.

Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

Answer C: No other information has come to light that could call into question the protectiveness of the remedy.

7.3 Phase I Groundwater (MNA) Remedy

Question A: Is the remedy functioning as intended by the decision documents?

Answer A: Yes, the remedy is functioning as intended by the decision documents.

7.3.1 Remedial Action Performance

The review of documents and environmental monitoring data and the results of the annual and five-year review inspections indicate that the remedy for Phase I, which consists of MNA to address groundwater impact and ICs on land and groundwater use, is functioning as intended.

7.3.2 Operations and Maintenance

O&M activities are performed as outlined in the *Operations and Maintenance (O&M) Plan for the Implementation of Institutional Controls at the 1998 Mound Plant Property* and the *Phase I Remedy (Monitored Natural Attenuation) Groundwater Monitoring Plan*. DOE has performed annual walkovers and records reviews with respect to ICs and has found that portion of the remedy to be functioning as intended. DOE has also performed groundwater monitoring and has found the groundwater remedy to be functioning as intended, thus far.

Groundwater monitoring has been performed as prescribed in the *Phase I Remedy (Monitored Natural Attenuation) Groundwater Monitoring Plan*. Results from this monitoring indicate that concentrations do not exceed target levels. Decreasing TCE concentrations are occurring in one of the source area wells and the downgradient seep. Monitoring in the downgradient BVA wells continue to indicate no adverse impact from TCE source area. Confirmatory sampling for radium and barium is ongoing. Although the data support the source of these constituents are naturally occurring, increasing levels have been observed in the downgradient BVA. Confirmatory sampling for chromium and nickel were discontinued during the review period as data supported the source of these two contaminants were the stainless steel casing these wells were constructed from.

7.3.3 Opportunities for Optimization

None have been identified based on this five-year review.

7.3.4 Early Indicators of Potential Issues

There are no early indicators of potential issues that could affect the protectiveness of the remedy.

> ***Question B: Are the exposure assumption, toxicity data, cleanup levels, and remedial action objectives used at the time of the remedy selection still valid?***
>
> **Answer B: Yes, the exposure assumptions, toxicity data, clean-up levels, and remedial objectives used at the time of the remedy are still valid.**

No changes in ARARs were identified that would call into question the protectiveness of the remedy. Early risk evaluations assumed that groundwater was a current exposure pathway because production wells existed at the site; this resulted in unacceptable risk levels. Since that time, production wells were removed and ICs were put in place to prohibit unauthorized access to groundwater in the near term. The near-term RAO for groundwater is to prevent groundwater use; this objective is still valid. The groundwater pathway is currently incomplete. Long-term RAOs for groundwater are drinking water standards. RAOs remain valid.

> ***Question C: Has any other information come to light that could call into question the protectiveness of the remedy?***
>
> **Answer C: No other information has come to light that could call into question the protectiveness of the remedy.**

7.4 Parcels 6, 7, and 8 Groundwater (MNA) Remedy

> ***Question A: Is the remedy functioning as intended by the decision documents?***
>
> **Answer A: Yes, the remedy is functioning as intended by the decision documents.**

7.4.1 Remedial Action Performance

The review of documents and environmental monitoring data and the results of the annual and five-year review inspections indicate that the remedy for Parcels 6, 7, and 8, which consists of MNA to address groundwater impact and ICs on land and groundwater use, is functioning as intended. The quitclaim deed for Parcels 6, 7, and 8 have been designated; however, they have not been recorded as of the date of this review. It is recommended that verification of the quitclaim deed being recorded prior to transfer of the property.

7.4.2 Operations and Maintenance

O&M activities are performed as outlined in the *Operation and Maintenance (O&M) Plan for the Implementation of Institutional Controls at the 1998 Mound Plant Property* and the *Parcel 6, 7, and 8 Remedy (Monitored Natural Attenuation) Groundwater Monitoring Plan*. DOE has performed annual walkovers and records reviews with respect to ICs and has found that portion of the remedy to be functioning as intended, thus far. DOE has also performed groundwater monitoring and has found the groundwater remedy to be functioning as intended, thus far.

Groundwater monitoring has been performed as prescribed in the *Parcel 6, 7, and 8 Remedy (Monitored Natural Attenuation) Groundwater Monitoring Plan*. Results from this monitoring indicate that variability in the data, which is consistent with data collected after recent source removal. Concentrations in one onsite well have exceeded target level for TCE on two occasions and increases in TCE have been reported in one onsite seep. Tritium levels show decreases in several onsite wells and seeps. Monitoring in the downgradient BVA wells continue to indicate no adverse impact from TCE or tritium from the Main Hill.

7.4.3 Opportunities for Optimization

None have been identified based on this five-year review.

7.4.4 Early Indicators of Potential Issues

There are no early indicators of potential issues that could affect the protectiveness of the remedy.

Question B: Are the exposure assumption, toxicity data, cleanup levels, and remedial action objectives used at the time of the remedy selection still valid?

Answer B: Yes, the exposure assumptions, toxicity data, clean-up levels, and remedial objectives used at the time of the remedy are still valid.

No changes in ARARs were identified that would call into question the protectiveness of the remedy. Early risk evaluations assumed that groundwater was a current exposure pathway because production wells existed at the site; this resulted in unacceptable risk levels. Since that time, production wells were removed and ICs were put in place to prohibit unauthorized access to groundwater in the near term. The near-term RAO for groundwater is to prevent groundwater use; this objective is still valid. The groundwater pathway is currently incomplete. Long-term RAOs for groundwater are drinking water standards. RAOs remain valid.

Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

Answer C: No other information has come to light that could call into question the protectiveness of the remedy.

8.0 Issues

No issues were identified as the result of this five-year review. It has been determined that remedies are functioning as designed. Adequate oversight mechanisms appear to be in place to identify possible deficiencies, and adequate resources are available to correct or mitigate any problems, if they were to occur.

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9.0 Recommendations and Follow-Up Actions

The following three recommendations were identified as the result of this five-year review and associated actions are outlined in Table 44.

1. Verify that the quitclaim deed for Parcels 6, 7, and 8 is appropriately recorded and is free and clear of all liens and encumbrances.

2. Finalize the sitewide IC Management/Land Use Control Plan (with CERCLA Summary).

3. Finalize the sitewide O&M Plan for groundwater remedies.

Table 44. Recommendations and Follow-up Actions

Issue	Recommendations and Follow-up Actions	Party Responsible	Oversight Agency	Milestone Date	Affects Protectiveness (Y/N)	
					Current	Future
1	Verify recording of Parcels 6, 7, and 8 quitclaim deed	DOE	DOE	Within 6 months	N	N
2	Finalize Sitewide IC Management/Land Use Control Plan (with CERCLA Summary)	DOE	DOE	Within 6 months	N	N
3	Finalize the sitewide O&M Plan for groundwater remedies	DOE	DOE	Within 12 months	N	N

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10.0 Protectiveness Statements

10.1 Institutional Controls

The remedy for Parcels D, H, 3, and 4 and the ICs associated with Phase I and Parcels 6, 7, and 8 are protective of human health and the environment because controls are functioning as intended.

10.2 Operable Unit 1

The remedy at OU-1 currently protects human health and the environment because containment of the plume is functioning as intended. Exposure pathways that could result in unacceptable risks are being controlled through containment of the plume and Federal ownership of the land. However, in order for the remedy to be protective in the long-term, ICs to restrict soil removal and groundwater use need to be implemented. The OU-1 ROD is being amended to expand the area and document the changes resulting from the excavation of the landfill. This expanded area is designated as Parcel 9. As stated in the OU-1 ROD, the ICs for OU-1 would be developed prior to transfer and therefore, will be outlined in future documentation for Parcel 9.

10.3 Phase I Groundwater (MNA) Remedy

The remedy for Phase I is expected to be protective of human health and the environment upon attainment of groundwater cleanup goals through MNA. In the interim, exposure pathways that could result in unacceptable risks are being controlled through ICs that prevent usage of the groundwater in the restricted area.

10.4 Parcels 6, 7, and 8 Groundwater (MNA) Remedy

The remedy for Parcels 6, 7, and 8 is expected to be protective of human health and the environment upon attainment of groundwater cleanup goals, through MNA. In the interim, exposure pathways that could result in unacceptable risks are being controlled through ICs that prevent usage of the groundwater in the restricted area.

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11.0 Next Review

This is the third statutory five-year review for this site. The next five-year review will be conducted in 2016.

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Appendix A

Site Inspection Photographs

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1.0 Parcel 6, 7, and 8 Remedy Wells and Seeps

Table A–1 and Figure A–1 show the Parcel 6, 7, and 8 groundwater monitoring wells and seep locations. Table A–2 contains photos of all wells and seeps. All of the Parcel 6, 7, and 8 wells were locked and in good condition.

Because the groundwater monitoring is not an IC, the annual IC assessment only verifies the conditions of the wells and seeps, and it does not determine the effectiveness of the MNA remedy. The remedy for the Parcels 6, 7, and 8 includes ICs for the land and MNA which includes groundwater monitoring requirements described in the *Parcel 6, 7, and 8 Remedy (Monitored Natural Attenuation) Groundwater Monitoring Plan, Final* (DOE 2006b). The *Parcel 6, 7, and 8 Groundwater Monitoring Report Calendar Year 2010* (DOE 2010) includes an analysis of the groundwater monitoring. Both of these documents are available on the LM website at http://www.lm.doe.gov/mound/Sites.aspx.

Table A–1. Parcel 6, 7, and 8 Monitoring Wells and Seeps

Well/Seep ID	Located in Parcel 8	Off-site
0118		X
0124		X
0126		X
0138		X
0301		X
0311		X
0315	X	
0333		X inactive
0334		X inactive
0346	X	
0347	X	
0379	X	
0386		X
0387		X
0389		X
0392		X
Seep 0601	X	
Seep 0602	X	
Seep 0605		X
Seep 0606		X
Seep 0607		X
Seep 0608		X

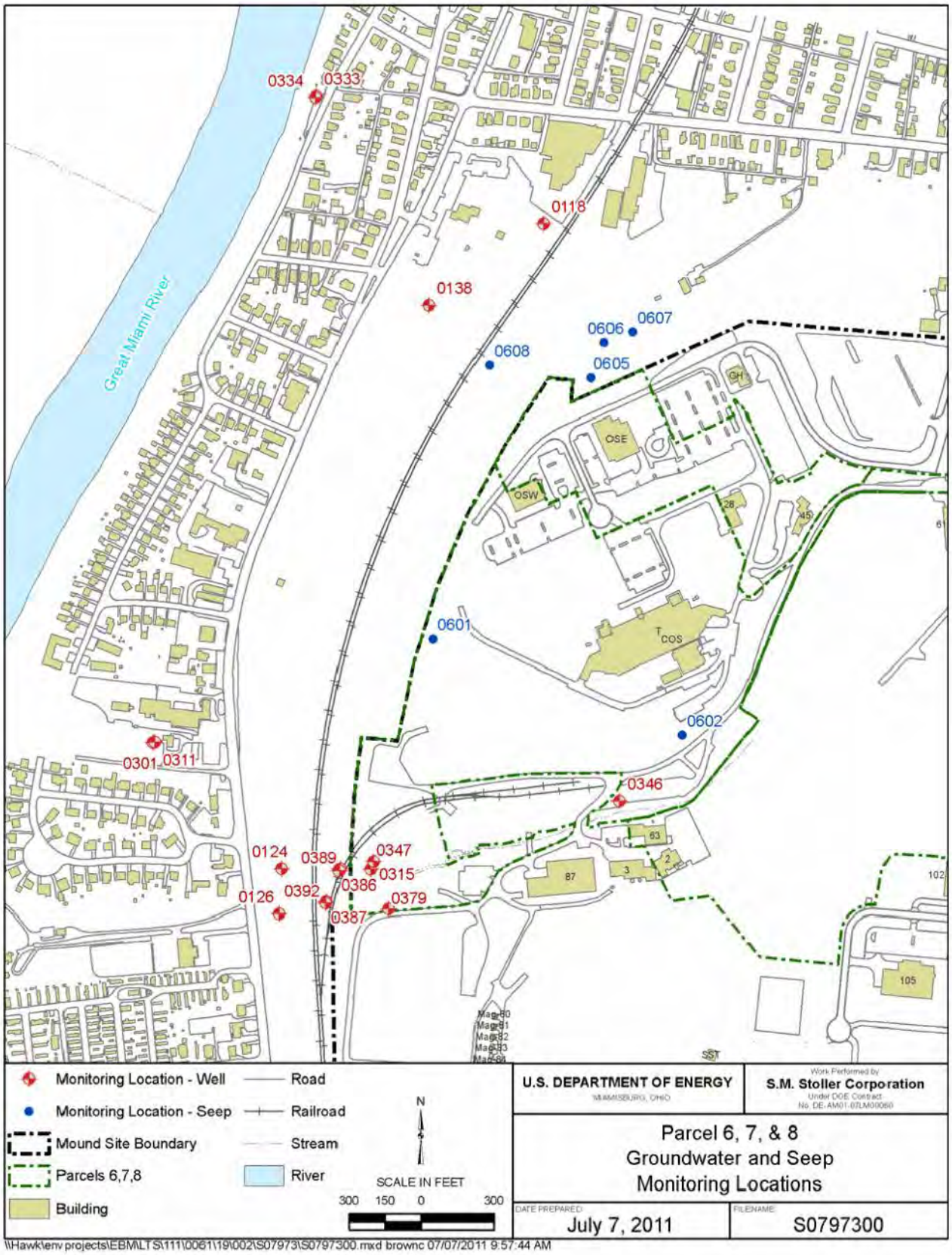

Figure A–1. Parcel 6, 7, and 8 Groundwater and Seep Monitoring Locations

Table A–2. Photos of Parcel 6, 7, and 8 Wells and Seeps

Well 0118, Off Site

Well 0124, Off Site

Well 0126, Off Site

Well 0138, Off Site

Wells 0301 and 0311, Off Site

Wells 0333 and 0334, Off Site (removed from active monitoring program in 2009)

Wells 0386 and 0389, Off Site

Wells 0387 and 0392, Off Site

Well 0315

Well 0346

Well 0347

Well 0379

Seep 0601, On Site

Seep 0602, On Site

Seep 0605 Off-Site

Seep 0606 Off-Site

Seep 0607, Off Site

Seep 0608, Off Site, On Hillside

2.0 OU-1 (Parcel 9) Wells

Table A–3 and Figure A–2 list and show the locations of the OU-1 monitoring wells. Table A-4 contains photos of all wells. All wells were locked and in good condition.

Because the groundwater monitoring is not an IC, the annual IC assessment only verifies the conditions of the wells and seeps, and it does not determine the effectiveness of the remedy. The ER Monthly Report provides data on the OU-1 pump and treat system and the results of groundwater monitoring. Historical water quality and water level data for existing wells can be found on the U.S. Department of Energy Office of Legacy Management website: http://gems.lm.doe.gov/imf/ext/gems/jsp/launch.jsp?default_site=MND. Photographs, maps, and physical features can also be viewed on this website.

Table A–3. OU-1 Wells

Well ID
P015
P027
P031
P053
P054
P056
0305
0410
0416
0417
0418
0419
0422
0423
0424
0425
0449 – extraction well
0450 – extraction well

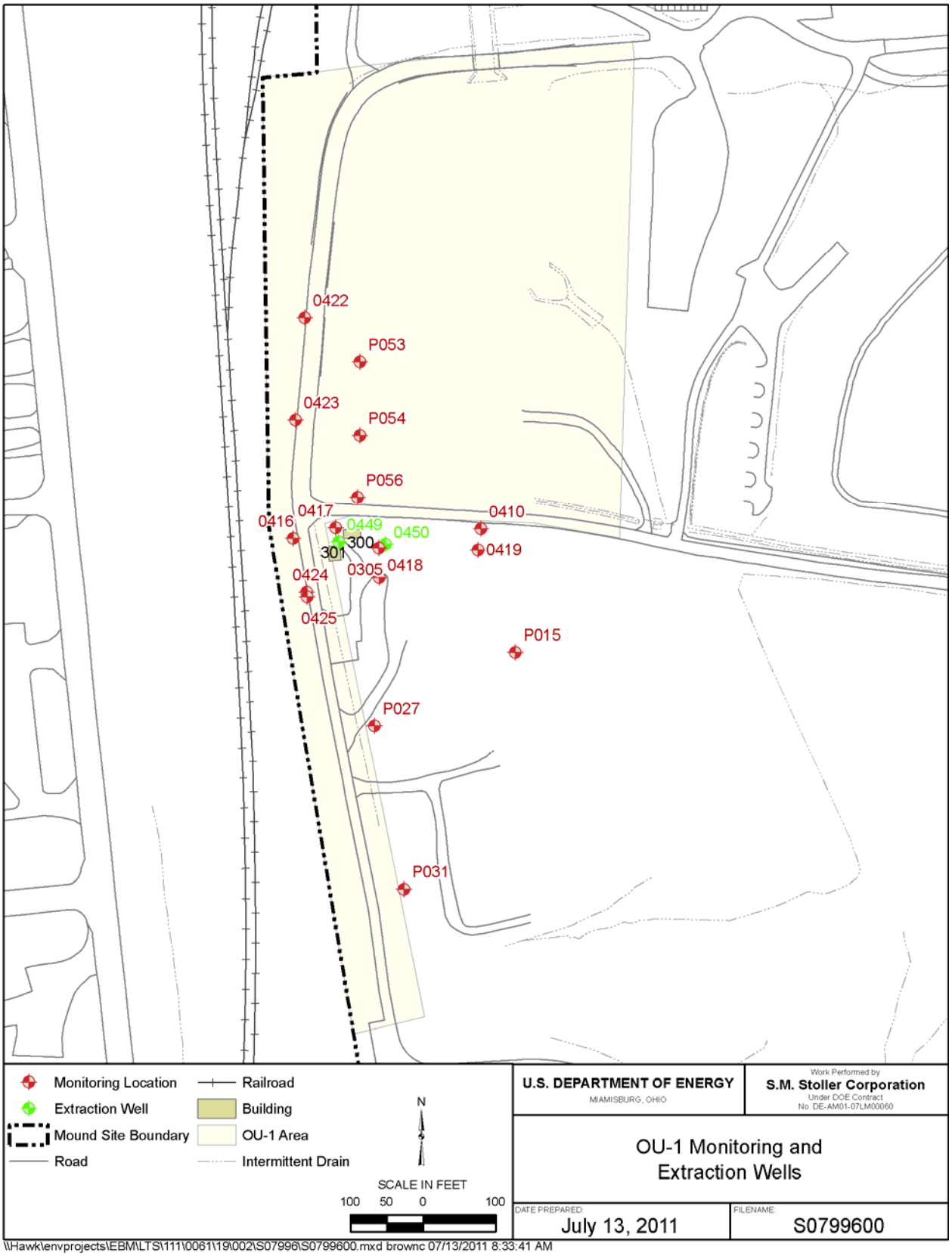

Figure A–2. OU-1 Monitoring and Extraction Wells

Table A–4. Photos of OU-1 Wells

Well P015

Well P027

Well P031

Wells P053, P054, P056

Well 0305

Well 0410

Well 0416

Well 0417

Well 0418

Well 0419

Well 0422

Well 0423

Wells 0424 and 0425

Extraction Well 0449

Extraction Well 0550

3.0 OU-1 Photographs

Table A–5. Photos of OU-1 Area

OU-1 area in 2006 before excavations

OU-1 area in 2010 after excavations

OU 1 area looking south from roadway

OU-1 area looking south toward trailer 16 and Building 300

OU-1 area looking slightly southeast from roadway

OU-1 area looking east from roadway.

OU 1 office trailer 16 and Building 300 in 2011

Building 300 which houses the pump and treatment equipment

4.0 Phase I Remedy Wells and Seeps

The Phase I remedy includes ICs and MNA which includes groundwater monitoring requirements.

Table A–6 and Figure A–3 give the locations of the 10 wells and one seep monitored for the Phase I parcel. The *Phase I Remedy (Monitored Natural Attenuation) Groundwater Monitoring Plan, Final* (DOE 2004b) can be found on the Mound website at http://www.lm.doe.gov/mound/Sites.aspx.

Because the groundwater monitoring is not an IC, the annual IC assessment only verifies the conditions of the wells and seeps, and it does not determine the effectiveness of the MNA remedy. The Phase I remedy includes ICs and MNA which includes groundwater monitoring requirements describe in the *Phase I Remedy (Monitored Natural Attenuation) Groundwater Monitoring Plan, Final* (DOE 2004b) The *Phase I Groundwater Monitoring Report Calendar Year 2010* (2010) includes an analysis of the groundwater monitoring. Both of these documents are available on the LM website at http://www.lm.doe.gov/mound/Sites.aspx.

Table A–6. Monitoring Wells and Seeps Included in Phase I Remedy

Well/Seep #	Located in Parcel				
	4	IA	IB	IC	9
Well P033				X	
Well 0319				X inactive	
Well 0353					X
Well 0400				X	
Well 0402					X
Well 0411			X		
Well 0442			X inactive		
Well 0443			X		
Well 0444	X				
Well 0445				X	
Seep 0617			X		

All wells were locked, had permanent markers, and were in good condition.

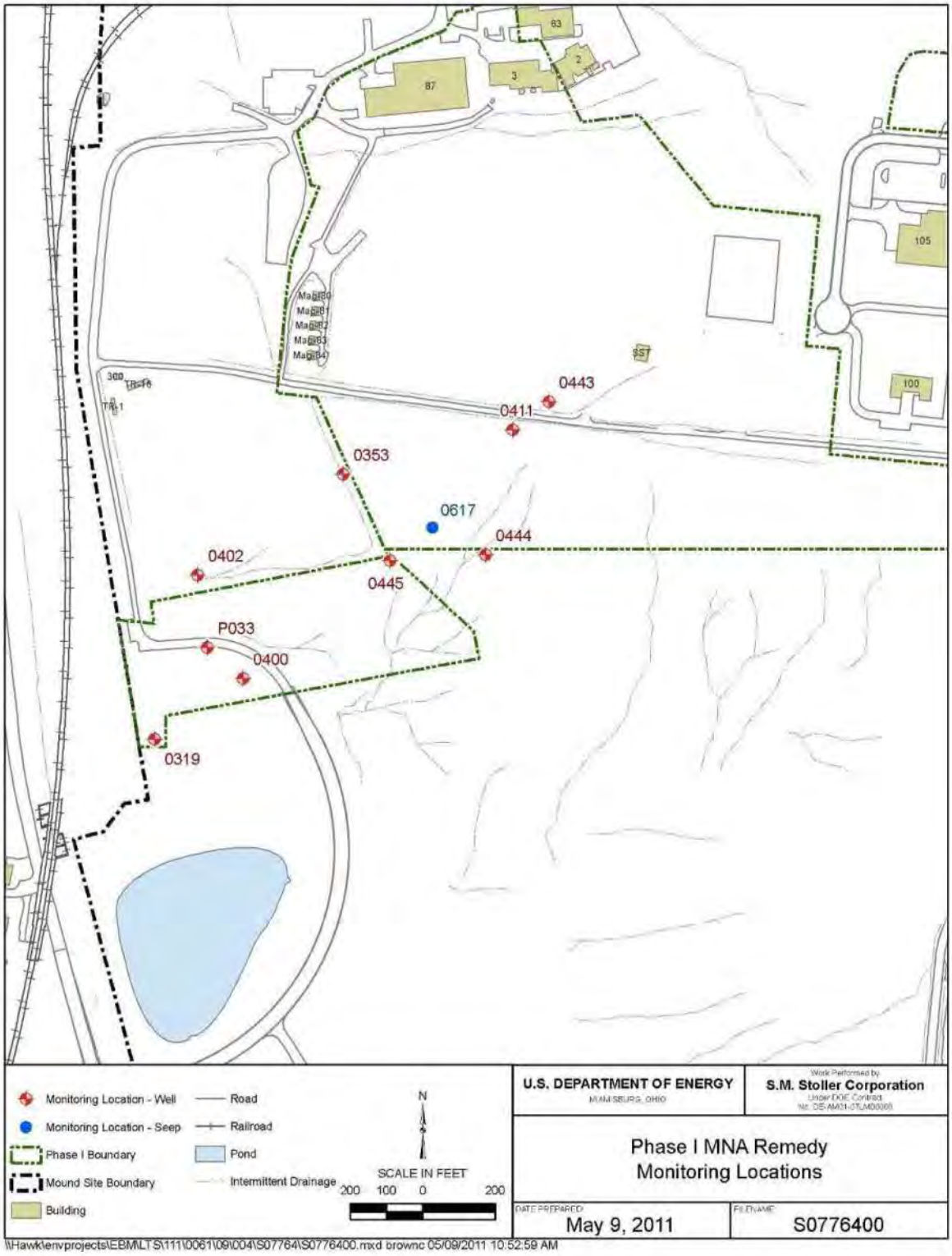

Figure A–3. Phase I MNA Remedy Monitoring Well Location

Table A–7. Photos of Phase I Parcel Wells and Seeps

Well P033

Well 0319 (inactive)

Well 0353

Well 0400

Well 0402

Well 0411

Well 0442 (inactive)

Well 0443

Seep 0617

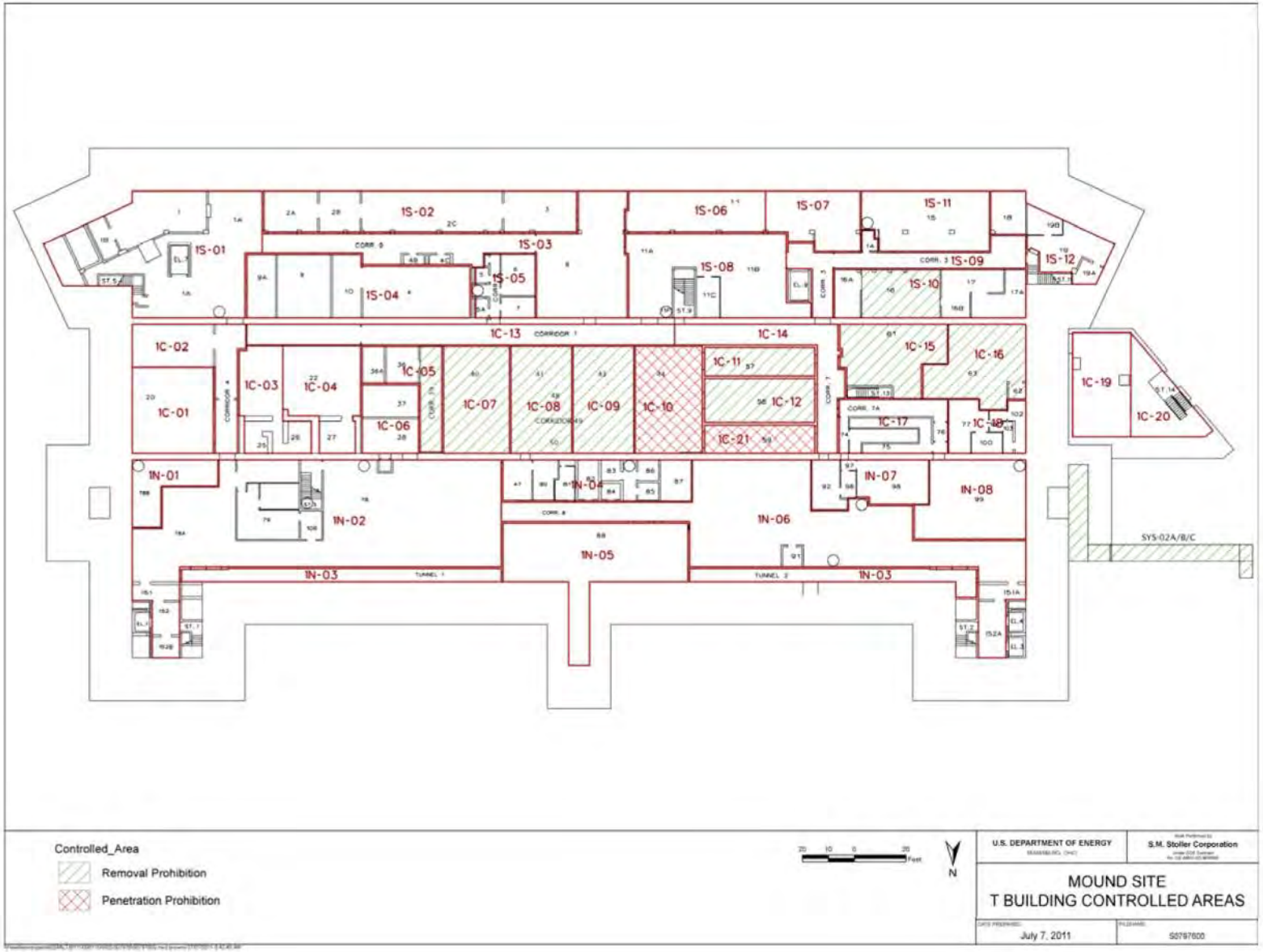

Figure A–4. T Building Areas with Special ICs

5.0 Other Site Inspection Photos—T Building Inspection

Art Kleinrath (LM) and Anthony Campbell (OEPA) examining red concrete cap in T Building during the physical inspection on April 12, 2011.	Tim Fisher,(EPA), Jane Powell and Jane Powell (LM), Ken Karp (Stoller), Anthony Campbell (OEPA), Jeff Smith (OEPA), and Frank Bullock (MDC) standing on red concrete cap in T Building during the physical inspection on April 12, 2011.

6.0 Aerial Photos

The following photos taken for the 2011 five year review show the Mound site after DOE completed all environmental cleanup activities.

Figure A–5. Aerial Photo Mound Site March 2011 with Parcel Boundaries

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Figure A–6. Mound Site Viewed from South

Figure A–7. Mound Site Viewed from Southwest

Figure A–8. Mound Site Viewed from West

Figure A–9. Mound Site Viewed from Northwest

Figure A–10. Mound Site Viewed from North

Figure A–11. Mound Site View from North Showing Buildings Remaining on Former Main Hill and Test Fire Areas

Figure A–12. Mound Site Northern Area from the East

Figure A–13. Mound Site Southern Area from the East

Figure A–14. Mound Site Viewed from Southeast

Figure A–15. Mound Site viewed from Southeast Showing Buildings

Figure A–16. Mound Site from South Showing Buildings Remaining in Former SM/PP Hill Area

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Appendix B

Site Inspection Checklist

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Site Inspection Checklist

I. SITE INFORMATION	
Site name: Mound Plant Site	**Date of inspection:** April 12, 2011
Location and Region: Miamisburg, OH (Region 5)	**EPA ID:** OH6890008984
Agency, office, or company leading the Five-Year Review: US Department of Energy	**Weather/temperature:** Partly Cloudy – 50's

Remedy Includes: (Check all that apply)

- □ Landfill cover/containment
- □ Access controls
- X Institutional controls
- □ Groundwater pump and treatment
- □ Surface water collection and treatment
- □ Other_____
- □ Monitored natural attenuation
- □ Groundwater containment
- □ Vertical barrier walls

Attachments: x Inspection team roster attached x Site map attached

II. INTERVIEWS (Check all that apply)

1. **O&M site manager** Robert Ransbottom (Name) Mound Site Lead (Title) July 12, 2011 (Date)
   Interviewed X at site □ at office □ by phone Phone no. _____
   Problems, suggestions; X Report attached _____
   Interview covers all remedies at the Mound Site

2. **O&M staff** Roy Mowen (Name) Mound Site H&S Lead (Title) July 12, 2011 (Date)
   Interviewed X at site □ at office □ by phone Phone no. _____
   Problems, suggestions; X Report attached _____
   Interview covers all remedies at the Mound Site

3. **Local regulatory authorities and response agencies** (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.

Agency – City of Miamisburg – Engineering Department
Contact - Leslie Karacia _____ April 2011 937-847-6531
Name Title Date Phone no.
Problems; suggestions; □ Report attached _____
Provided information regarding permits obtained for reuse at Mound Site

Agency - City of Miamisburg – Engineering Department
Contact – Jayne A Hansel _____ April 2011 937-847-6531
Name Title Date Phone no.
Problems; suggestions; □ Report attached _____
Provided information regarding permits obtained for reuse at Mound Site

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; □ Report attached _____
_____

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; □ Report attached _____
_____

4. **Other interviews** (optional) □ Report attached.

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)

1. **O&M Documents**

x O&M manual	x Readily available	x Up to date	□ N/A
□ As-built drawings	□ Readily available	□ Up to date	x N/A
□ Maintenance logs	x Readily available	□ Up to date	□ N/A

Remarks: Annual reports prepared outlining IC performance

2. **Site-Specific Health and Safety Plan** □ Readily available □ Up to date x N/A
□ Contingency plan/emergency response plan □ Readily available □ Up to date x N/A
Remarks_____
_____

3. **O&M and OSHA Training Records** □ Readily available □ Up to date x N/A
Remarks_____
_____

4.	**Permits and Service Agreements**			
	□ Air discharge permit	□ Readily available	□ Up to date	x N/A
	□ Effluent discharge	□ Readily available	□ Up to date	x N/A
	□ Waste disposal, POTW	□ Readily available	□ Up to date	x N/A
	□ Other permits_____	□ Readily available	□ Up to date	x N/A
	Remarks_____			
5.	**Gas Generation Records**	□ Readily available	□ Up to date	x N/A
	Remarks_____			
6.	**Settlement Monument Records**	□ Readily available	□ Up to date	x N/A
	Remarks_____			
7.	**Groundwater Monitoring Records**	□ Readily available	□ Up to date	x N/A
	Remarks_____			
8.	**Leachate Extraction Records**	□ Readily available	□ Up to date	x N/A
	Remarks_____			
9.	**Discharge Compliance Records**			
	G Air	□ Readily available	□ Up to date	x N/A
	G Water (effluent)	□ Readily available	□ Up to date	x N/A
	Remarks_____			
10.	**Daily Access/Security Logs**	□ Readily available	□ Up to date	x N/A
	Remarks_____			

IV. O&M COSTS

1. **O&M Organization**
   □ State in-house □ Contractor for State
   □ PRP in-house □ Contractor for PRP
   □ Federal Facility in-house [x] Contractor for Federal Facility
   □ Other_____

2. **O&M Cost Records**
   □ Readily available □ Up to date
   □ Funding mechanism/agreement in place
   Original O&M cost estimate_____ □ Breakdown attached

   Costs associated with each remedy are not tracked separately. The costs below are for GW monitoring, sample analysis, data management, reporting, inspections, and OU-1 P&T.

   Total annual cost by year for review period if available

   From__1/2006__ To__12/2006 _ ___$ 563,529_____ □ Breakdown attached
   Date Date Total cost
   From__1/2007__ To__12/2007__ __$ 1,148,190 _____ □ Breakdown attached
   Date Date Total cost
   From__1/2008__ To__12/2008__ __$ 1,180,741_____ □ Breakdown attached
   Date Date Total cost
   From__1/2009__ To__12/2009__ ___$ 708,363_____ □ Breakdown attached
   Date Date Total cost
   From__1-2010__ To__12/2010__ ___$ 566,411_____ □ Breakdown attached
   Date Date Total cost

3. **Unanticipated or Unusually High O&M Costs During Review Period**
   Describe costs and reasons: _____

V. ACCESS AND INSTITUTIONAL CONTROLS [x] Applicable □ N/A

A. Fencing

1. **Fencing damaged** □ Location shown on site map □ Gates secured [x] N/A
   Remarks_____

B. Other Access Restrictions

1. **Signs and other security measures** □ Location shown on site map [x] N/A
   Remarks_____

C. Institutional Controls (ICs)

1. **Implementation and enforcement**

Site conditions imply ICs not properly implemented □ Yes [x] No □ N/A
Site conditions imply ICs not being fully enforced □ Yes [x] No □ N/A

Type of monitoring (*e.g.*, self-reporting, drive by) Self-reporting and walk-over surveys
Frequency Annual
Responsible party/agency US. Department of Energy
Contact Art Kleinrath (Name) Project Manager (Title) 2010 (Date) (970) 248-6034 (Phone no.)

Reporting is up-to-date [x] Yes □ No □ N/A
Reports are verified by the lead agency [x] Yes □ No □ N/A

Specific requirements in deed or decision documents have been met [x] Yes □ No □ N/A
Violations have been reported [x] Yes □ No □ N/A
Other problems or suggestions: □ Report attached

2. **Adequacy** [x] ICs are adequate □ ICs are inadequate □ N/A

Remarks Review of annual reports and results from Five-Year inspection indicates that ICs are functioning as intended

D. General

1. **Vandalism/trespassing** □ Location shown on site map [x] No vandalism evident

Remarks

2. **Land use changes on site** [x] N/A

Remarks

3. **Land use changes off site** [x] N/A

Remarks

VI. GENERAL SITE CONDITIONS

A. Roads □ Applicable [x] N/A

1. **Roads damaged** □ Location shown on site map □ Roads adequate □ N/A

Remarks

B. Other Site Conditions

Remarks _____

VII. LANDFILL COVERS □ Applicable ☒ N/A

~~**A. Landfill Surface**~~

~~1. **Settlement** (Low spots) □ Location shown on site map □ Settlement not evident~~
~~Areal extent_____ Depth_____~~
~~Remarks_____~~

~~2. **Cracks** □ Location shown on site map □ Cracking not evident~~
~~Lengths_____ Widths_____ Depths_____~~
~~Remarks_____~~

~~3. **Erosion** □ Location shown on site map □ Erosion not evident~~
~~Areal extent_____ Depth_____~~
~~Remarks_____~~

~~4. **Holes** □ Location shown on site map □ Holes not evident~~
~~Areal extent_____ Depth_____~~
~~Remarks_____~~

~~5. **Vegetative Cover** □ Grass □ Cover properly established □ No signs of stress~~
~~G Trees/Shrubs (indicate size and locations on a diagram)~~
~~Remarks_____~~

~~6. **Alternative Cover (armored rock, concrete, etc.)** □ N/A~~
~~Remarks_____~~

~~7. **Bulges** □ Location shown on site map □ Bulges not evident~~
~~Areal extent_____ Height_____~~
~~Remarks_____~~

~~8. **Wet Areas/Water Damage** □ Wet areas/water damage not evident~~
~~□ Wet areas □ Location shown on site map Areal extent_____~~
~~□ Ponding □ Location shown on site map Areal extent_____~~
~~□ Seeps □ Location shown on site map Areal extent_____~~
~~□ Soft subgrade □ Location shown on site map Areal extent_____~~
~~Remarks_____~~

~~9. **Slope Instability** ☐ Slides ☐ Location shown on site map ☐ No evidence of slope instability~~
~~Areal extent_____~~
~~Remarks_____~~

~~**B. Benches** ☐ Applicable ☐ N/A~~
~~(Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)~~

~~1. **Flows Bypass Bench** ☐ Location shown on site map ☐ N/A or okay~~
~~Remarks_____~~

~~2. **Bench Breached** ☐ Location shown on site map ☐ N/A or okay~~
~~Remarks_____~~

~~3. **Bench Overtopped** ☐ Location shown on site map ☐ N/A or okay~~
~~Remarks_____~~

~~**C. Letdown Channels** ☐ Applicable ☐ N/A~~
~~(Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)~~

~~1. **Settlement** ☐ Location shown on site map ☐ No evidence of settlement~~
~~Areal extent_____ Depth_____~~
~~Remarks_____~~

~~2. **Material Degradation** ☐ Location shown on site map ☐ No evidence of degradation~~
~~Material type_____ Areal extent_____~~
~~Remarks_____~~

~~3. **Erosion** ☐ Location shown on site map ☐ No evidence of erosion~~
~~Areal extent_____ Depth_____~~
~~Remarks_____~~

4. **Undercutting** ☐ Location shown on site map ☐ No evidence of undercutting
Areal extent_____ Depth_____
Remarks_____

5. **Obstructions** Type_____ ☐ No obstructions
☐ Location shown on site map Areal extent_____
Size_____
Remarks_____

6. **Excessive Vegetative Growth** Type_____
☐ No evidence of excessive growth
☐ Vegetation in channels does not obstruct flow
☐ Location shown on site map Areal extent_____
Remarks_____

D. Cover Penetrations ☐ Applicable ☐ N/A

1. **Gas Vents** ☐ Active ☐ Passive
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance
☐ N/A
Remarks_____

2. **Gas Monitoring Probes**
☐ Properly secured/locked G Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks_____

3. **Monitoring Wells** (within surface area of landfill)
☐ Properly secured/locked G Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks_____

4. **Leachate Extraction Wells**
☐ Properly secured/locked G Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks_____

5. **Settlement Monuments** ☐ Located ☐ Routinely surveyed ☐ N/A
Remarks_____

~~**E. Gas Collection and Treatment**~~ ~~□ Applicable~~ ~~□ N/A~~
~~1. **Gas Treatment Facilities**~~ ~~□ Flaring~~ ~~□ Thermal destruction~~ ~~□ Collection for reuse~~ ~~□ Good condition~~ ~~□ Needs Maintenance~~ ~~Remarks~~
~~2. **Gas Collection Wells, Manifolds and Piping**~~ ~~□ Good condition~~ ~~□ Needs Maintenance~~ ~~Remarks~~
~~3. **Gas Monitoring Facilities** (e.g., gas monitoring of adjacent homes or buildings)~~ ~~□ Good condition~~ ~~□ Needs Maintenance~~ ~~□ N/A~~ ~~Remarks~~
~~**F. Cover Drainage Layer**~~ ~~□ Applicable~~ ~~□ N/A~~
~~1. **Outlet Pipes Inspected**~~ ~~□ Functioning~~ ~~□ N/A~~ ~~Remarks~~
~~2. **Outlet Rock Inspected**~~ ~~□ Functioning~~ ~~□ N/A~~ ~~Remarks~~
~~**G. Detention/Sedimentation Ponds**~~ ~~□ Applicable~~ ~~□ N/A~~
~~1. **Siltation**~~ ~~Areal extent~~ ~~Depth~~ ~~□ N/A~~ ~~□ Siltation not evident~~ ~~Remarks~~
~~2. **Erosion**~~ ~~Areal extent~~ ~~Depth~~ ~~□ Erosion not evident~~ ~~Remarks~~
~~3. **Outlet Works**~~ ~~□ Functioning~~ ~~□ N/A~~ ~~Remarks~~
~~4. **Dam**~~ ~~□ Functioning~~ ~~□ N/A~~ ~~Remarks~~

~~**H. Retaining Walls** □ Applicable □ N/A~~

~~1. **Deformations** □ Location shown on site map □ Deformation not evident~~
~~Horizontal displacement_____ Vertical displacement_____~~
~~Rotational displacement_____~~
~~Remarks_____~~

~~2. **Degradation** □ Location shown on site map □ Degradation not evident~~
~~Remarks_____~~

~~**I. Perimeter Ditches/Off-Site Discharge** □ Applicable □ N/A~~

~~1. **Siltation** □ Location shown on site map □ Siltation not evident~~
~~Areal extent_____ Depth_____~~
~~Remarks_____~~

~~2. **Vegetative Growth** □ Location shown on site map □ N/A~~
~~□ Vegetation does not impede flow~~
~~Areal extent_____ Type_____~~
~~Remarks_____~~

~~3. **Erosion** □ Location shown on site map □ Erosion not evident~~
~~Areal extent_____ Depth_____~~
~~Remarks_____~~

~~4. **Discharge Structure** □ Functioning □ N/A~~
~~Remarks_____~~

~~**VIII. VERTICAL BARRIER WALLS** G Applicable G N/A~~

~~1. **Settlement** □ Location shown on site map □ Settlement not evident~~
~~Areal extent_____ Depth_____~~
~~Remarks_____~~

~~2. **Performance Monitoring** Type of monitoring_____~~
~~□ Performance not monitored~~
~~Frequency_____ □ Evidence of breaching~~
~~Head differential_____~~
~~Remarks_____~~

~~**C. Treatment System**~~ ~~□ Applicable~~ ~~□ N/A~~
~~1.~~ ~~**Treatment Train** (Check components that apply)~~ ~~□ Metals removal~~ ~~□ Oil/water separation~~ ~~□ Bioremediation~~ ~~□ Air stripping~~ ~~□ Carbon adsorbers~~ ~~□ Filters~~_____ ~~□ Additive (e.g., chelation agent, flocculent)~~_____ ~~□ Others~~_____ ~~□ Good condition~~ ~~□ Needs Maintenance~~ ~~□ Sampling ports properly marked and functional~~ ~~□ Sampling/maintenance log displayed and up to date~~ ~~□ Equipment properly identified~~ ~~□ Quantity of groundwater treated annually~~_____ ~~□ Quantity of surface water treated annually~~_____ ~~Remarks~~_____
~~2.~~ ~~**Electrical Enclosures and Panels** (properly rated and functional)~~ ~~□ N/A~~ ~~□ Good condition~~ ~~G Needs Maintenance~~ ~~Remarks~~_____
~~3.~~ ~~**Tanks, Vaults, Storage Vessels**~~ ~~□ N/A~~ ~~□ Good condition~~ ~~G Proper secondary containment~~ ~~□ Needs Maintenance~~ ~~Remarks~~_____
~~4.~~ ~~**Discharge Structure and Appurtenances**~~ ~~□ N/A~~ ~~□ Good condition~~ ~~G Needs Maintenance~~ ~~Remarks~~_____
~~5.~~ ~~**Treatment Building(s)**~~ ~~□ N/A~~ ~~□ Good condition (esp. roof and doorways)~~ ~~□ Needs repair~~ ~~□ Chemicals and equipment properly stored~~ ~~Remarks~~_____
~~6.~~ ~~**Monitoring Wells** (pump and treatment remedy)~~ ~~□ Properly secured/locked~~ ~~□ Functioning~~ ~~□ Routinely sampled~~ ~~□ Good condition~~ ~~□ All required wells located~~ ~~□ Needs Maintenance~~ ~~□ N/A~~ ~~Remarks~~_____
~~**D. Monitoring Data**~~
~~1.~~ ~~Monitoring Data~~ ~~□ Is routinely submitted on time~~ ~~□ Is of acceptable quality~~
~~2.~~ ~~Monitoring data suggests:~~ ~~□ Groundwater plume is effectively contained~~ ~~□ Contaminant concentrations are declining~~

D. Monitored Natural Attenuation

1. **Monitoring Wells** (natural attenuation remedy)
□ Properly secured/locked □ Functioning □ Routinely sampled □ Good condition
□ All required wells located □ Needs Maintenance [x] N/A
Remarks_____

X. OTHER REMEDIES

If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.

XI. OVERALL OBSERVATIONS

A. Implementation of the Remedy

Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).

The primary remediation objective was to ensure that any residual risk associated with each parcel was acceptable based on the agreed-upon industrial/commercial end-use as the only use. In general , the restrictions required under CERCLA to ensure that the parcel being transferred is protective of human health and the environment are:

- Limit land use to industrial/commercial only
- Prohibit the removal of soil from the property boundaries
- Prohibit extraction or consumption of groundwater
- Prohibit the removal or penetration of concrete floor material in specific rooms of T building
- Allow site access for sampling and monitoring

Institutional controls have been implemented in the form of deed restrictions on future land use as outlined in the RODs for Parcels D, H, 3, and 4 and Phase I. Institutional controls for Parcel 6, 7, and 8 and OU-1 will be in the form of an environmental covenant in accordance with Ohio Revised Code. A environmental summary is prepared and included with the parcel deed that fulfills the requirements of CERCLA Section 120(h). The summary includes a discussion of the contamination that was present, the remedial actions that have taken place, and the residual risk that remains.

The current land owner has implemented several measures to ensure that ICs are not violated. These include including language into the technical requirements of all Requests for Proposal and Work Orders for work being performed on transferred parcels that excavated soil is not be removed from the site.

B.	**Adequacy of O&M**
	Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. Operation and maintenance activities are performed as outlined in the *Operations and Maintenance (O&M) Plan for the Implementation of Institutional Controls at the 1998 Mound Plant Property*. DOE has performed annual walk-overs and records reviews with respect to ICs and has found that portion of the remedy to be functioning as intended, thus far. Future inspections will be performed as outlined in the O&M Plan, which will be modified (if necessary) when the RODs for additional parcels are completed.
C.	**Early Indicators of Potential Remedy Problems**
	Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs that suggest that the protectiveness of the remedy may be compromised in the future. Recurring use of the retention basin in Parcel 4 for fishing indicated there was a potential violation of ICs. This issue was addressed by DOE, EPA, and OEPA in conjunction with the property owner, MDC in 2011.After reconsidering the exposure assumptions that were used to develop the industrial/commercial cleanup standards for the Mound site, DOE, EPA, and OEPA reached the conclusion that occasional visits to the retention pond by area residents will not result in an unacceptable risk. Even so, DOE and the MDC will continue to monitor and discourage these unauthorized uses of the Parcel 4 retention basin area. No further action is required to assure protectiveness of human health or the environment. No issues regarding cost or scope have been identified.
D.	**Opportunities for Optimization**
	Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy. None have been identified from this review.

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Site Inspection Checklist

I. SITE INFORMATION	
Site name: Mound Plant Site	**Date of inspection:** April 4-7 and 12, 2011
Location and Region: Miamisburg, OH (Region 5)	**EPA ID:** OH6890008984
Agency, office, or company leading the Five-Year Review: US Department of Energy	**Weather/temperature:** Partly Cloudy – 50's

Remedy Includes: (Check all that apply)

- [x] Landfill cover/containment
- [x] Access controls
- [x] Institutional controls
- [x] Groundwater pump and treatment
- □ Surface water collection and treatment
- [x] Other_ OU-1 landfill was excavated in 2 phased between 2007 and 2010. Area was remediated in accordance with the Mound 2000 process and backfilled with clean fill.
- □ Monitored natural attenuation
- [x] Groundwater containment
- □ Vertical barrier walls

Attachments: [x] Inspection team roster attached [x] Site map attached

II. INTERVIEWS (Check all that apply)

1. **O&M site manager** _____ _____ _____
Name Title Date
Interviewed □ at site □ at office □ by phone Phone no. _____
Problems, suggestions; □ Report attached _____
_____

2. **O&M staff** _____ _____ _____
Name Title Date
Interviewed □ at site □ at office □ by phone Phone no. _____
Problems, suggestions; □ Report attached _____
_____

3. **Local regulatory authorities and response agencies** (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; G Report attached _____
_____

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; G Report attached _____
_____

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; G Report attached _____
_____

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; G Report attached _____
_____

4. **Other interviews** (optional) □ Report attached.

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)

1. **O&M Documents**

x O&M manual	x Readily available	x Up to date	□ N/A
□ As-built drawings	x Readily available	□ Up to date	□ N/A
x Maintenance logs	x Readily available	x Up to date	□ N/A

Remarks__ _____
_____

2. **Site-Specific Health and Safety Plan** x Readily available x Up to date □ N/A
x Contingency plan/emergency response plan x Readily available x Up to date □ N/A
Remarks_____
_____

3. **O&M and OSHA Training Records** x Readily available x Up to date □ N/A
Remarks _Contractor complies with all necessary OSHA standards in accordance with O&M contract.__ _____

4.	**Permits and Service Agreements**			
	□ Air discharge permit	□ Readily available	□ Up to date	x N/A
	x Effluent discharge	□ Readily available	□ Up to date	□ N/A
	□ Waste disposal, POTW	□ Readily available	□ Up to date	x N/A
	□ Other permits_____	□ Readily available	□ Up to date	x N/A
	Remarks__Effluent monitored under CERCLA ATD under NPDES (Authorization Number 1IN90010*BD)_			
5.	**Gas Generation Records**	□ Readily available	□ Up to date	x N/A
	Remarks_____			
6.	**Settlement Monument Records**	□ Readily available	□ Up to date	x N/A
	Remarks_____			
7.	**Groundwater Monitoring Records**	x Readily available	x Up to date	□ N/A
	Remarks__ _____			
8.	**Leachate Extraction Records**	□ Readily available	□ Up to date	x N/A
	Remarks_____			
9.	**Discharge Compliance Records**			
	□ Air	□ Readily available	□ Up to date	□ N/A
	x Water (effluent)	x Readily available	x Up to date	□ N/A
	Remarks_ _Data reported in monthly DMR reports to OEPA__ _____			
10.	**Daily Access/Security Logs**	□ Readily available	□ Up to date	x N/A
	Remarks_____			

IV. O&M COSTS

1. **O&M Organization**
   □ State in-house □ Contractor for State
   □ PRP in-house □ Contractor for PRP
   □ Federal Facility in-house [x] Contractor for Federal Facility
   □ Other_____

2. **O&M Cost Records - COSTS ADDRESSED UNDER CHECKLIST FOR ICs**
   □ Readily available □ Up to date
   □ Funding mechanism/agreement in place
   Original O&M cost estimate_____ □ Breakdown attached

   Total annual cost by year for review period if available

   From_____ To_____ _____ □ Breakdown attached
   Date Date Total cost
   From_____ To_____ _____ □ Breakdown attached
   Date Date Total cost
   From_____ To_____ _____ □ Breakdown attached
   Date Date Total cost
   From_____ To_____ _____ □ Breakdown attached
   Date Date Total cost
   From_____ To_____ _____ □ Breakdown attached
   Date Date Total cost

3. **Unanticipated or Unusually High O&M Costs During Review Period**
   Describe costs and reasons: _____

V. ACCESS AND INSTITUTIONAL CONTROLS [x] Applicable □ N/A

A. Fencing

1. **Fencing damaged** □ Location shown on site map □ Gates secured [x] N/A
   Remarks – Fencing was removed during landfill excavation in 2007

B. Other Access Restrictions

1. **Signs and other security measures** □ Location shown on site map [x] N/A
   Remarks – Signage was removed during landfill excavation in 2007

C. Institutional Controls (ICs)

1. **Implementation and enforcement**

Site conditions imply ICs not properly implemented □ Yes [x] No □ N/A
Site conditions imply ICs not being fully enforced □ Yes [x] No □ N/A

Type of monitoring (*e.g.*, self-reporting, drive by) Self-reporting, drive by
Frequency ___Weekly
Responsible party/agency S.M. Stoller
Contact Roy Mowen Mound Site H&S Lead 2011 (937) 847-8350
Name Title Date Phone no.

Reporting is up-to-date [x] Yes □ No □ N/A
Reports are verified by the lead agency □ Yes □ No [x] N/A

Specific requirements in deed or decision documents have been met [x] Yes □ No □ N/A
Violations have been reported [x] Yes □ No □ N/A
Other problems or suggestions: □ Report attached
ICs included access restriction and fencing

2. **Adequacy** [x] ICs are adequate □ ICs are inadequate □ N/A
Remarks

D. General

1. **Vandalism/trespassing** □ Location shown on site map [x] No vandalism evident
Remarks

2. **Land use changes on site** [x] N/A
Remarks

3. **Land use changes off site** [x] N/A
Remarks

VI. GENERAL SITE CONDITIONS

A. Roads □ Applicable [x] N/A

1. **Roads damaged** □ Location shown on site map □ Roads adequate □ N/A
Remarks___Road not managed by DOE

B. Other Site Conditions

Remarks _____
OU-1 landfill area has been backfilled and regarded after excavation activites performed from 2007 to 2010. _____

VII. LANDFILL COVERS □ Applicable [x] N/A

A. Landfill Surface – OU-1 landfill was excavated in 2 phased between 2007 and 2010. Area was remediated in accordance with the Mound 2000 process and backfilled with clean fill.

~~1. **Settlement** (Low spots) □ Location shown on site map □ Settlement not evident~~
~~Areal extent_____ Depth_____~~
~~Remarks_____~~

~~2. **Cracks** □ Location shown on site map □ Cracking not evident~~
~~Lengths_____ Widths_____ Depths_____~~
~~Remarks_____~~

~~3. **Erosion** □ Location shown on site map □ Erosion not evident~~
~~Areal extent_____ Depth_____~~
~~Remarks_____~~

~~4. **Holes** □ Location shown on site map □ Holes not evident~~
~~Areal extent_____ Depth_____~~
~~Remarks_____~~

~~5. **Vegetative Cover** □ Grass □ Cover properly established □ No signs of stress~~
~~□ Trees/Shrubs (indicate size and locations on a diagram)~~
~~Remarks_____~~

~~6. **Alternative Cover (armored rock, concrete, etc.)** □ N/A~~
~~Remarks_____~~

~~7. **Bulges** □ Location shown on site map □ Bulges not evident~~
~~Areal extent_____ Height_____~~
~~Remarks_____~~

~~8. **Wet Areas/Water Damage** □ Wet areas/water damage not evident~~
~~□ Wet areas □ Location shown on site map Areal extent_____~~
~~□ Ponding □ Location shown on site map Areal extent_____~~
~~□ Seeps □ Location shown on site map Areal extent_____~~
~~□ Soft subgrade □ Location shown on site map Areal extent_____~~
~~Remarks_____~~

~~9.~~	~~**Slope Instability** ☐ Slides ☐ Location shown on site map ☐ No evidence of slope instability~~ ~~Areal extent_____~~ ~~Remarks_____~~
~~**B. Benches** ☐ Applicable ☐ N/A~~ ~~(Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)~~	
~~1.~~	~~**Flows Bypass Bench** ☐ Location shown on site map ☐ N/A or okay~~ ~~Remarks_____~~
~~2.~~	~~**Bench Breached** ☐ Location shown on site map ☐ N/A or okay~~ ~~Remarks_____~~
~~3.~~	~~**Bench Overtopped** ☐ Location shown on site map ☐ N/A or okay~~ ~~Remarks_____~~
~~**C. Letdown Channels** ☐ Applicable ☐ N/A~~ ~~(Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)~~	
~~1.~~	~~**Settlement** ☐ Location shown on site map ☐ No evidence of settlement~~ ~~Areal extent_____ Depth_____~~ ~~Remarks_____~~
~~2.~~	~~**Material Degradation** ☐ Location shown on site map ☐ No evidence of degradation~~ ~~Material type_____ Areal extent_____~~ ~~Remarks_____~~
~~3.~~	~~**Erosion** ☐ Location shown on site map ☐ No evidence of erosion~~ ~~Areal extent_____ Depth_____~~ ~~Remarks_____~~

~~4.~~	~~**Undercutting**~~ ~~□ Location shown on site map~~ ~~□ No evidence of undercutting~~ ~~Areal extent~~_____ ~~Depth~~_____ ~~Remarks~~_____
~~5.~~	~~**Obstructions**~~ ~~Type~~_____ ~~v No obstructions~~ ~~□ Location shown on site map~~ ~~Areal extent~~_____ ~~Size~~_____ ~~Remarks~~_____
~~6.~~	~~**Excessive Vegetative Growth**~~ ~~Type~~_____ ~~□ No evidence of excessive growth~~ ~~□ Vegetation in channels does not obstruct flow~~ ~~□ Location shown on site map~~ ~~Areal extent~~_____ ~~Remarks~~_____
D. Cover Penetrations	□ Applicable □ N/A
~~1.~~	~~**Gas Vents**~~ ~~□ Active~~ ~~□ Passive~~ ~~□ Properly secured/locked~~ ~~□ Functioning~~ ~~□ Routinely sampled~~ ~~□ Good condition~~ ~~□ Evidence of leakage at penetration~~ ~~□ Needs Maintenance~~ ~~□ N/A~~ ~~Remarks~~_____
~~2.~~	~~**Gas Monitoring Probes**~~ ~~□ Properly secured/locked~~ ~~G Functioning~~ ~~□ Routinely sampled~~ ~~□ Good condition~~ ~~□ Evidence of leakage at penetration~~ ~~□ Needs Maintenance~~ ~~□ N/A~~ ~~Remarks~~_____
~~3.~~	~~**Monitoring Wells** (within surface area of landfill)~~ ~~□ Properly secured/locked~~ ~~G Functioning~~ ~~□ Routinely sampled~~ ~~□ Good condition~~ ~~□ Evidence of leakage at penetration~~ ~~□ Needs Maintenance~~ ~~□ N/A~~ ~~Remarks~~_____
~~4.~~	~~**Leachate Extraction Wells**~~ ~~□ Properly secured/locked~~ ~~G Functioning~~ ~~□ Routinely sampled~~ ~~□ Good condition~~ ~~□ Evidence of leakage at penetration~~ ~~□ Needs Maintenance~~ ~~□ N/A~~ ~~Remarks~~_____
~~5.~~	~~**Settlement Monuments**~~ ~~□ Located~~ ~~□ Routinely surveyed~~ ~~□ N/A~~ ~~Remarks~~_____

E. Gas Collection and Treatment □ Applicable □ N/A

1. ~~**Gas Treatment Facilities**~~
~~□ Flaring □ Thermal destruction □ Collection for reuse~~
~~□ Good condition □ Needs Maintenance~~
~~Remarks~~_____

2. ~~**Gas Collection Wells, Manifolds and Piping**~~
~~□ Good condition □ Needs Maintenance~~
~~Remarks~~_____

3. ~~**Gas Monitoring Facilities** (*e.g.*, gas monitoring of adjacent homes or buildings)~~
~~□ Good condition □ Needs Maintenance □ N/A~~
~~Remarks~~_____

F. Cover Drainage Layer □ Applicable □ N/A

1. ~~**Outlet Pipes Inspected** □ Functioning □ N/A~~
~~Remarks~~_____

2. ~~**Outlet Rock Inspected** □ Functioning □ N/A~~
~~Remarks~~_____

G. Detention/Sedimentation Ponds □ Applicable □ N/A

1. ~~**Siltation** Areal extent_____ Depth_____ □ N/A~~
~~□ Siltation not evident~~
~~Remarks~~_____

2. ~~**Erosion** Areal extent_____ Depth_____~~
~~□ Erosion not evident~~
~~Remarks~~_____

3. ~~**Outlet Works** □ Functioning □ N/A~~
~~Remarks~~_____

4. ~~**Dam** □ Functioning □ N/A~~
~~Remarks~~_____

H. Retaining Walls □ Applicable □ N/A

1. **Deformations** □ Location shown on site map □ Deformation not evident
Horizontal displacement_____ Vertical displacement_____
Rotational displacement_____
Remarks_____

2. **Degradation** □ Location shown on site map □ Degradation not evident
Remarks_____

I. Perimeter Ditches/Off-Site Discharge □ Applicable □ N/A

1. **Siltation** □ Location shown on site map □ Siltation not evident
Areal extent_____ Depth_____
Remarks_____

2. **Vegetative Growth** □ Location shown on site map □ N/A
□ Vegetation does not impede flow
Areal extent_____ Type_____
Remarks_____

3. **Erosion** □ Location shown on site map □ Erosion not evident
Areal extent_____ Depth_____
Remarks_____

4. **Discharge Structure** □ Functioning □ N/A
Remarks_____

VIII. VERTICAL BARRIER WALLS □ Applicable [x] N/A

1. **Settlement** □ Location shown on site map □ Settlement not evident
Areal extent_____ Depth_____
Remarks_____

2. **Performance Monitoring** Type of monitoring_____
□ Performance not monitored
Frequency_____ □ Evidence of breaching
Head differential_____
Remarks_____

C. Treatment System [x] Applicable □ N/A

1. **Treatment Train** (Check components that apply)
□ Metals removal □ Oil/water separation □ Bioremediation
[x] Air stripping □ Carbon adsorbers
□ Filters_____
□ Additive (*e.g.*, chelation agent, flocculent)__Drewsperse_____
[x] Others__SVE system – removed in 2007_____
[x] Good condition □ Needs Maintenance
[x] Sampling ports properly marked and functional
[x] Sampling/maintenance log displayed and up to date
[x] Equipment properly identified
[x] Quantity of groundwater (gallons) treated annually_2006-35473952; 2007-23718696; 2008-13149066; 2009-12766900; 2010-16428200_____
□ Quantity of surface water treated annually_____
Remarks _Quantities decreased in 2007 and later years due using 2 extraction wells rather than 3 extraction wells. Also extraction rate was decreased with installation of two new wells in 2007.__
_____

2. **Electrical Enclosures and Panels** (properly rated and functional)
□ N/A [x] Good condition □ Needs Maintenance
Remarks_____
_____

3. **Tanks, Vaults, Storage Vessels**
□ N/A [x] Good condition □ Proper secondary containment □ Needs Maintenance
Remarks_____
_____

4. **Discharge Structure and Appurtenances**
□ N/A [x] Good condition □ Needs Maintenance
Remarks_____

5. **Treatment Building(s)**
□ N/A [x] Good condition (esp. roof and doorways) □ Needs repair
[x] Chemicals and equipment properly stored
Remarks_____

6. **Monitoring Wells** (pump and treatment remedy)
[x] Properly secured/locked [x] Functioning [x] Routinely sampled [x] Good condition
[x] All required wells located □ Needs Maintenance □ N/A
Remarks__Wells are inspected upon each sampling event and repair as necessary____

D. Monitoring Data

1. Monitoring Data
[x] Is routinely submitted on time [x] Is of acceptable quality

2. Monitoring data suggests:
[x] Groundwater plume is effectively contained [x] Contaminant concentrations are declining

D. Monitored Natural Attenuation

1. **Monitoring Wells** (natural attenuation remedy)
□ Properly secured/locked □ Functioning □ Routinely sampled □ Good condition
□ All required wells located □ Needs Maintenance [x] N/A
Remarks_____

X. OTHER REMEDIES

If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.

XI. OVERALL OBSERVATIONS

A. Implementation of the Remedy

Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).

The OU-1 remedial action was designed to control groundwater contamination (primarily low-level volatile organic compounds) to prevent migration of contamination toward the plant production wells, and to minimize exposure to potential receptors. The pathway of concern consists of leaching of contaminants from site soils or disposed wastes; entrainment in the groundwater flow; and withdrawal by the Mound Plant production wells or by other future wells. The plant production wells were abandoned in October 2005, when the facility was connected to the municipal water supply. The OU-1 landfill was excavated in two phases from 2007 through 2010 to support future redevelopment of the property by MDC.

The selected remedy for controlling contamination from the soils and groundwater at OU-1 is the collection, treatment, and disposal of groundwater. This action is being implemented through the collection and treatment of contaminated groundwater and discharge of the treated water. The chemical properties and hydraulic behavior of the groundwater system are monitored to verify the adequacy of the remedy.

The review of documents and environmental monitoring data and the results of the Five-Year Review inspection indicate that the remedy for the OU-1, which consists of controlling contaminant migration through the use of a pump and treatment system, is functioning as intended. Hydraulic and groundwater data indicate that the migration of the plume has been controlled by the use of the extraction wells. The performance monitoring indicates that VOC contamination is being extracted by the wells and treated to levels typically less than the detectable limit through the air stripper. Based on groundwater monitoring, potential receptors have not been exposed to VOC contamination from the landfill.

Groundwater level measurements and groundwater contaminant information have been collected as prescribed. These results from these data indicate that the plume has been contained and unacceptable migration has not occurred.

Influent and effluent data from the pump and treatment system indicate that VOC contaminated groundwater is being extracted and the mass removed over time has decreased. Effluent data supports that the air stripper system is effective in removing VOC contamination from the groundwater.

The fencing installed to prevent access to the landfill and the surface water controls were removed during excavation of the landfill starting in 2007 and upon completion of the excavation these components were considered unnecessary. Institutional controls that restrict land use and groundwater use will be implemented at a later date as outlined in the Record of Decision. Presently, the OU-1 ROD is being amended and will be included in Parcel 9. ICs will be will e in the form of an environmental covenant in accordance with Ohio Revised Code.

B. Adequacy of O&M

Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.

Operation and maintenance activities are performed as outlined in the *OU-1 Pump and Treatment Operational and Maintenance Plan*. The DOE also performs annual inspections on long-term remedies as called out in this plan and other O&M Plans. DOE has performed groundwater monitoring, effluent monitoring and system monitoring and has found this remedy to be functioning as intended.

C. Early Indicators of Potential Remedy Problems

Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs that suggest that the protectiveness of the remedy may be compromised in the future.

There are no early indicators of potential issues that could affect the protectiveness of the remedy.

D. Opportunities for Optimization

Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.

The optimization suggestions presented in the second Five-Year review checksheet were not implemented as plans for excavation of the landfill were underway in later 2006.

A rebound study was started in June 2011 to evaluate the possibility of addressing groundwater impact in OU-1 through MNA. It is expected that this study will be ongoing for 18 to 24 months. The P&T system was placed in standby in the event TCE concentrations in downgradient wells exceed the MCL. This would result in the system being restarted.

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Site Inspection Checklist

I. SITE INFORMATION	
Site name: Mound Plant Site	**Date of inspection:** April 4-7, 2010
Location and Region: Miamisburg, OH (Region 5)	**EPA ID:** OH6890008984
Agency, office, or company leading the Five-Year Review: US Department of Energy	**Weather/temperature:** N/A

Remedy Includes: (Check all that apply)

- □ Landfill cover/containment
- □ Access controls
- [x] Institutional controls
- □ Groundwater pump and treatment
- □ Surface water collection and treatment
- [x] Monitored natural attenuation
- □ Groundwater containment
- □ Vertical barrier walls
- [x] Other_ICs handled under Site Inspection Checklist for ICs._____

Attachments: [x] Inspection team roster attached [x] Site map attached

II. INTERVIEWS (Check all that apply)

1. **O&M site manager** _____ _____ _____
   Name Title Date
   Interviewed □ at site □ at office □ by phone Phone no. _____
   Problems, suggestions; □ Report attached _____

2. **O&M staff** _____ _____ _____
   Name Title Date
   Interviewed □ at site □ at office □ by phone Phone no. _____
   Problems, suggestions; □ Report attached _____

3. **Local regulatory authorities and response agencies** (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; G Report attached _____
_____

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; G Report attached _____
_____

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; G Report attached _____
_____

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; G Report attached _____
_____

4. **Other interviews** (optional) □ Report attached.

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)

1. **O&M Documents**

[x] O&M manual	[x] Readily available	[x] Up to date	□ N/A
□ As-built drawings	[x] Readily available	□ Up to date	□ N/A
□ Maintenance logs	□ Readily available	□ Up to date	[x] N/A

Remarks__As builts considered well logs._____
_____

2. **Site-Specific Health and Safety Plan** □ Readily available □ Up to date [x] N/A
□ Contingency plan/emergency response plan □ Readily available □ Up to date [x] N/A
Remarks_____
Actions resulting for the exceedence of triggers at wells and seeps deferred to the Mound Core Team

3. **O&M and OSHA Training Records** □ Readily available □ Up to date [x] N/A
Remarks_____
_____

4.	**Permits and Service Agreements**			
	□ Air discharge permit	□ Readily available	□ Up to date	x N/A
	□ Effluent discharge	□ Readily available	□ Up to date	x N/A
	□ Waste disposal, POTW	□ Readily available	□ Up to date	x N/A
	□ Other permits_____	□ Readily available	□ Up to date	x N/A
	Remarks_____			
5.	**Gas Generation Records**	□ Readily available	□ Up to date	x N/A
	Remarks_____			
6.	**Settlement Monument Records**	□ Readily available	□ Up to date	x N/A
	Remarks_____			
7.	**Groundwater Monitoring Records**	x Readily available	x Up to date	□ N/A
	Remarks___Annual reports and electronic database._____			
8.	**Leachate Extraction Records**	□ Readily available	□ Up to date	x N/A
	Remarks_____			
9.	**Discharge Compliance Records**			
	□ Air	□ Readily available	□ Up to date	x N/A
	□ Water (effluent)	□ Readily available	□ Up to date	x N/A
	Remarks_____			
10.	**Daily Access/Security Logs**	□ Readily available	□ Up to date	x N/A
	Remarks_____			

IV. O&M COSTS

1. **O&M Organization**

□ State in-house □ Contractor for State
□ PRP in-house □ Contractor for PRP
□ Federal Facility in-house [x] Contractor for Federal Facility
□ Other_____

2. **O&M Cost Records - COSTS ADDRESSED UNDER CHECKLIST FOR ICs**

□ Readily available □ Up to date
□ Funding mechanism/agreement in place
Original O&M cost estimate_____ □ Breakdown attached

Total annual cost by year for review period if available

From_____ To_____ _____ □ Breakdown attached
Date Date Total cost
From_____ To_____ _____ □ Breakdown attached
Date Date Total cost
From_____ To_____ _____ □ Breakdown attached
Date Date Total cost
From_____ To_____ _____ □ Breakdown attached
Date Date Total cost
From_____ To_____ _____ □ Breakdown attached
Date Date Total cost

3. **Unanticipated or Unusually High O&M Costs During Review Period**

Describe costs and reasons: _____

V. ACCESS AND INSTITUTIONAL CONTROLS [x] Applicable □ N/A

Refer to the Site Inspection Checksheet for ICs

~~**A. Fencing**~~

~~1. **Fencing damaged** □ Location shown on site map □ Gates secured □ N/A~~
~~Remarks_____~~

~~**B. Other Access Restrictions**~~

~~1. **Signs and other security measures** □ Location shown on site map □ N/A~~
~~Remarks_____~~

~~**C. Institutional Controls (ICs)**~~

~~1. **Implementation and enforcement**~~

~~Site conditions imply ICs not properly implemented ☐ Yes ☐ No ☐ N/A~~
~~Site conditions imply ICs not being fully enforced ☐ Yes ☐ No ☐ N/A~~

~~Type of monitoring (e.g., self-reporting, drive by) _____~~
~~Frequency _____~~
~~Responsible party/agency _____~~
~~Contact _____~~
~~Name Title Date Phone no.~~

~~Reporting is up-to-date ☐ Yes ☐ No ☐ N/A~~
~~Reports are verified by the lead agency ☐ Yes ☐ No ☐ N/A~~

~~Specific requirements in deed or decision documents have been met ☐ Yes ☐ No ☐ N/A~~
~~Violations have been reported ☐ Yes ☐ No ☐ N/A~~
~~Other problems or suggestions: ☐ Report attached~~

~~2. **Adequacy** ☐ ICs are adequate ☐ ICs are inadequate ☐ N/A~~
~~Remarks_____~~

~~**D. General**~~

~~1. **Vandalism/trespassing** ☐ Location shown on site map ☐ No vandalism evident~~
~~Remarks_____~~

~~2. **Land use changes on site** ☐ N/A~~
~~Remarks_____~~

~~3. **Land use changes off site** ☐ N/A~~
~~Remarks_____~~

VI. GENERAL SITE CONDITIONS

A. Roads ☐ Applicable ☒ N/A

~~1. **Roads damaged** ☐ Location shown on site map ☐ Roads adequate ☐ N/A~~
~~Remarks_____~~

~~B. Other Site Conditions~~

~~Remarks~~ _____

VII. LANDFILL COVERS □ Applicable [x] N/A

~~A. Landfill Surface~~

~~1. **Settlement** (Low spots) □ Location shown on site map □ Settlement not evident~~
~~Areal extent~~ _____ ~~Depth~~ _____
~~Remarks~~ _____

~~2. **Cracks** □ Location shown on site map □ Cracking not evident~~
~~Lengths~~ _____ ~~Widths~~ _____ ~~Depths~~ _____
~~Remarks~~ _____

~~3. **Erosion** □ Location shown on site map □ Erosion not evident~~
~~Areal extent~~ _____ ~~Depth~~ _____
~~Remarks~~ _____

~~4. **Holes** □ Location shown on site map □ Holes not evident~~
~~Areal extent~~ _____ ~~Depth~~ _____
~~Remarks~~ _____

~~5. **Vegetative Cover** □ Grass □ Cover properly established □ No signs of stress~~
~~G Trees/Shrubs (indicate size and locations on a diagram)~~
~~Remarks~~ _____

~~6. **Alternative Cover (armored rock, concrete, etc.)** □ N/A~~
~~Remarks~~ _____

~~7. **Bulges** □ Location shown on site map □ Bulges not evident~~
~~Areal extent~~ _____ ~~Height~~ _____
~~Remarks~~ _____

~~8. **Wet Areas/Water Damage** □ Wet areas/water damage not evident~~
~~□ Wet areas □ Location shown on site map Areal extent~~ _____
~~□ Ponding □ Location shown on site map Areal extent~~ _____
~~□ Seeps □ Location shown on site map Areal extent~~ _____
~~□ Soft subgrade □ Location shown on site map Areal extent~~ _____
~~Remarks~~ _____

~~9.~~	~~**Slope Instability** ☐ Slides ☐ Location shown on site map ☐ No evidence of slope instability~~ ~~Areal extent_____~~ ~~Remarks_____~~
~~**B. Benches** ☐ Applicable ☐ N/A~~ ~~(Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)~~	
~~1.~~	~~**Flows Bypass Bench** ☐ Location shown on site map ☐ N/A or okay~~ ~~Remarks_____~~
~~2.~~	~~**Bench Breached** ☐ Location shown on site map ☐ N/A or okay~~ ~~Remarks_____~~
~~3.~~	~~**Bench Overtopped** ☐ Location shown on site map ☐ N/A or okay~~ ~~Remarks_____~~
~~**C. Letdown Channels** ☐ Applicable ☐ N/A~~ ~~(Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)~~	
~~1.~~	~~**Settlement** ☐ Location shown on site map ☐ No evidence of settlement~~ ~~Areal extent_____ Depth_____~~ ~~Remarks_____~~
~~2.~~	~~**Material Degradation** ☐ Location shown on site map ☐ No evidence of degradation~~ ~~Material type_____ Areal extent_____~~ ~~Remarks_____~~
~~3.~~	~~**Erosion** ☐ Location shown on site map ☐ No evidence of erosion~~ ~~Areal extent_____ Depth_____~~ ~~Remarks_____~~

4. **Undercutting** ☐ Location shown on site map ☐ No evidence of undercutting
Areal extent_____ Depth_____
Remarks_____

5. **Obstructions** Type_____ ☐ No obstructions
☐ Location shown on site map Areal extent_____
Size_____
Remarks_____

6. **Excessive Vegetative Growth** Type_____
☐ No evidence of excessive growth
☐ Vegetation in channels does not obstruct flow
☐ Location shown on site map Areal extent_____
Remarks_____

D. Cover Penetrations ☐ Applicable ☐ N/A

1. **Gas Vents** ☐ Active ☐ Passive
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance
☐ N/A
Remarks_____

2. **Gas Monitoring Probes**
☐ Properly secured/locked G Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks_____

3. **Monitoring Wells** (within surface area of landfill)
☐ Properly secured/locked G Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks_____

4. **Leachate Extraction Wells**
☐ Properly secured/locked G Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks_____

5. **Settlement Monuments** ☐ Located ☐ Routinely surveyed ☐ N/A
Remarks_____

~~**E. Gas Collection and Treatment**~~ ~~□ Applicable~~ ~~□ N/A~~
~~1.~~ ~~**Gas Treatment Facilities**~~ ~~□ Flaring~~ ~~□ Thermal destruction~~ ~~□ Collection for reuse~~ ~~□ Good condition~~ ~~□ Needs Maintenance~~ ~~Remarks~~_____
~~2.~~ ~~**Gas Collection Wells, Manifolds and Piping**~~ ~~□ Good condition~~ ~~□ Needs Maintenance~~ ~~Remarks~~_____
~~3.~~ ~~**Gas Monitoring Facilities**~~ ~~(*e.g.*, gas monitoring of adjacent homes or buildings)~~ ~~□ Good condition~~ ~~□ Needs Maintenance~~ ~~□ N/A~~ ~~Remarks~~_____
~~**F. Cover Drainage Layer**~~ ~~□ Applicable~~ ~~□ N/A~~
~~1.~~ ~~**Outlet Pipes Inspected**~~ ~~□ Functioning~~ ~~□ N/A~~ ~~Remarks~~_____
~~2.~~ ~~**Outlet Rock Inspected**~~ ~~□ Functioning~~ ~~□ N/A~~ ~~Remarks~~_____
~~**G. Detention/Sedimentation Ponds**~~ ~~□ Applicable~~ ~~□ N/A~~
~~1.~~ ~~**Siltation**~~ ~~Areal extent~~_____ ~~Depth~~_____ ~~□ N/A~~ ~~□ Siltation not evident~~ ~~Remarks~~_____
~~2.~~ ~~**Erosion**~~ ~~Areal extent~~_____ ~~Depth~~_____ ~~□ Erosion not evident~~ ~~Remarks~~_____
~~3.~~ ~~**Outlet Works**~~ ~~□ Functioning~~ ~~□ N/A~~ ~~Remarks~~_____
~~4.~~ ~~**Dam**~~ ~~□ Functioning~~ ~~□ N/A~~ ~~Remarks~~_____

~~**H. Retaining Walls** □ Applicable □ N/A~~

~~1. **Deformations** □ Location shown on site map □ Deformation not evident~~
~~Horizontal displacement_____ Vertical displacement_____~~
~~Rotational displacement_____~~
~~Remarks_____~~

~~2. **Degradation** □ Location shown on site map □ Degradation not evident~~
~~Remarks_____~~

~~**I. Perimeter Ditches/Off-Site Discharge** □ Applicable □ N/A~~

~~1. **Siltation** □ Location shown on site map □ Siltation not evident~~
~~Areal extent_____ Depth_____~~
~~Remarks_____~~

~~2. **Vegetative Growth** □ Location shown on site map □ N/A~~
~~□ Vegetation does not impede flow~~
~~Areal extent_____ Type_____~~
~~Remarks_____~~

~~3. **Erosion** □ Location shown on site map □ Erosion not evident~~
~~Areal extent_____ Depth_____~~
~~Remarks_____~~

~~4. **Discharge Structure** □ Functioning □ N/A~~
~~Remarks_____~~

VIII. VERTICAL BARRIER WALLS □ Applicable [x] N/A

~~1. **Settlement** □ Location shown on site map □ Settlement not evident~~
~~Areal extent_____ Depth_____~~
~~Remarks_____~~

~~2. **Performance Monitoring** Type of monitoring_____~~
~~□ Performance not monitored~~
~~Frequency_____ □ Evidence of breaching~~
~~Head differential_____~~
~~Remarks_____~~

~~**C. Treatment System** □ Applicable □ N/A~~

~~1. **Treatment Train** (Check components that apply)~~
~~□ Metals removal □ Oil/water separation □ Bioremediation~~
~~□ Air stripping □ Carbon adsorbers~~
~~□ Filters~~
~~□ Additive (*e.g.*, chelation agent, flocculent)~~
~~□ Others~~
~~□ Good condition □ Needs Maintenance~~
~~□ Sampling ports properly marked and functional~~
~~□ Sampling/maintenance log displayed and up to date~~
~~□ Equipment properly identified~~
~~□ Quantity of groundwater treated annually~~
~~□ Quantity of surface water treated annually~~
~~Remarks~~

~~2. **Electrical Enclosures and Panels** (properly rated and functional)~~
~~□ N/A □ Good condition G Needs Maintenance~~
~~Remarks~~

~~3. **Tanks, Vaults, Storage Vessels**~~
~~□ N/A □ Good condition G Proper secondary containment □ Needs Maintenance~~
~~Remarks~~

~~4. **Discharge Structure and Appurtenances**~~
~~□ N/A □ Good condition G Needs Maintenance~~
~~Remarks~~

~~5. **Treatment Building(s)**~~
~~□ N/A □ Good condition (esp. roof and doorways) □ Needs repair~~
~~□ Chemicals and equipment properly stored~~
~~Remarks~~

~~6. **Monitoring Wells** (pump and treatment remedy)~~
~~□ Properly secured/locked □ Functioning □ Routinely sampled □ Good condition~~
~~□ All required wells located □ Needs Maintenance □ N/A~~
~~Remarks~~

D. Monitoring Data

1. Monitoring Data
[x] Is routinely submitted on time [x] Is of acceptable quality

2. Monitoring data suggests:
□ Groundwater plume is effectively contained [x] Contaminant concentrations are declining

D. Monitored Natural Attenuation

1. **Monitoring Wells** (natural attenuation remedy)

[x] Properly secured/locked [x] Functioning [x] Routinely sampled [x] Good condition
[x] All required wells located □ Needs Maintenance □ N/A

Remarks Wells are inspected during each sampling event and repaired as required.

X. OTHER REMEDIES

If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.

XI. OVERALL OBSERVATIONS

A. Implementation of the Remedy

Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).

Groundwater in Phase I is monitored for TCE and its degradation products to verify that the concentration of TCE is decreasing due to natural attenuation and is not impacting the BVA. A groundwater monitoring program was established to ensure that the BVA is not negatively impacted by TCE contaminated groundwater within the Phase I bedrock aquifer system. The objective of this monitoring is to protect the BVA by verifying that the concentration of TCE in the vicinity of well 0411, well 0443, and seep 0617 are decreasing and that TCE is not impacting the BVA.

Although not part of the selected remedy, monitoring was performed to evaluate barium, radium, chromium, and nickel impact in the Phase I groundwater. Based on investigations, none of these parameters were considered to be a contaminant of concern in Phase I.

Groundwater monitoring has been performed as prescribed in the *Phase I Remedy (Monitored Natural Attenuation) Groundwater Monitoring Plan*. Results from this monitoring indicate that concentrations do not exceed target levels and concentrations of TCE in the source wells have been declining or remaining stable. On the basis of declining TCE concentrations, the sampling frequency for the MNA program was reduced to semiannually in 2007 with the approval of the Mound Core Team.

The confirmatory sampling program was modified with approval from the Mound Core Team in 2007 and 2009.Confirmatory sampling for radium and barium are collected semiannually due. The confirmatory sampling for chromium and nickel were discontinued in 2010.

B. Adequacy of O&M

Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.

Operation and maintenance activities are performed as outlined in the *Operations and Maintenance (O&M) Plan for the Implementation of Institutional Controls at the 1998 Mound Plant Property* and the *Phase I Remedy (Monitored Natural Attenuation) Groundwater Monitoring Plan*. DOE has performed annual walk-overs and records reviews with respect to ICs and has found that portion of the remedy to be functioning as intended, thus far. DOE has also performed groundwater monitoring and has found the groundwater remedy to be functioning as intended.

C.	Early Indicators of Potential Remedy Problems
	Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs that suggest that the protectiveness of the remedy may be compromised in the future. None

D.	Opportunities for Optimization
	Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy. Sampling frequencies were decreased from quarterly to semiannually in 2007 on the basis of declining TCE concentrations in the source wells and indicates on no impact to the downgradient BVA. Confirmatory sampling for Ni and Cr were discontinued as results supported the stainless steel casings as the source of metals impact in groundwater in the vicinity of the wells.

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Site Inspection Checklist

I. SITE INFORMATION	
Site name: Mound Plant Site	**Date of inspection:** April 4-7, 2010
Location and Region: Miamisburg, OH (Region 5)	**EPA ID:** OH6890008984
Agency, office, or company leading the Five-Year Review: US Department of Energy	**Weather/temperature:** N/A

Remedy Includes: (Check all that apply)

- □ Landfill cover/containment
- □ Access controls
- [x] Institutional controls
- □ Groundwater pump and treatment
- □ Surface water collection and treatment
- [x] Other_ICs handled under Site Inspection Checklist for ICs._____
- [x] Monitored natural attenuation
- □ Groundwater containment
- □ Vertical barrier walls

Attachments: [x] Inspection team roster attached [x] Site map attached

II. INTERVIEWS (Check all that apply)

1. **O&M site manager** _____ _____ _____
   Name Title Date
   Interviewed □ at site □ at office □ by phone Phone no. _____
   Problems, suggestions; □ Report attached _____

2. **O&M staff** _____ _____ _____
   Name Title Date
   Interviewed □ at site □ at office □ by phone Phone no. _____
   Problems, suggestions; □ Report attached _____

3. **Local regulatory authorities and response agencies** (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; G Report attached _____
_____

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; G Report attached _____
_____

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; G Report attached _____
_____

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; G Report attached _____
_____

4. **Other interviews** (optional) □ Report attached.

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)

1. **O&M Documents**

x O&M manual	x Readily available	x Up to date	□ N/A
□ As-built drawings	x Readily available	□ Up to date	□ N/A
□ Maintenance logs	□ Readily available	□ Up to date	x N/A

Remarks__As builts considered well logs._____
_____

2. **Site-Specific Health and Safety Plan** □ Readily available □ Up to date x N/A
□ Contingency plan/emergency response plan □ Readily available □ Up to date x N/A
Remarks_____
_____

3. **O&M and OSHA Training Records** □ Readily available □ Up to date x N/A
Remarks_____
_____

4.	**Permits and Service Agreements**			
	□ Air discharge permit	□ Readily available	□ Up to date	x N/A
	□ Effluent discharge	□ Readily available	□ Up to date	x N/A
	□ Waste disposal, POTW	□ Readily available	□ Up to date	x N/A
	□ Other permits_____	□ Readily available	□ Up to date	x N/A
	Remarks_____			
5.	**Gas Generation Records**	□ Readily available	□ Up to date	x N/A
	Remarks_____			
6.	**Settlement Monument Records**	□ Readily available	□ Up to date	x N/A
	Remarks_____			
7.	**Groundwater Monitoring Records**	x Readily available	x Up to date	□ N/A
	Remarks___Annual reports and electronic database._____			
8.	**Leachate Extraction Records**	□ Readily available	□ Up to date	x N/A
	Remarks_____			
9.	**Discharge Compliance Records**			
	□ Air	□ Readily available	□ Up to date	x N/A
	□ Water (effluent)	□ Readily available	□ Up to date	x N/A
	Remarks_____			
10.	**Daily Access/Security Logs**	□ Readily available	□ Up to date	x N/A
	Remarks_____			

IV. O&M COSTS

1. **O&M Organization**

□ State in-house □ Contractor for State
□ PRP in-house □ Contractor for PRP
□ Federal Facility in-house [x] Contractor for Federal Facility
□ Other_____

2. **O&M Cost Records - COSTS ADDRESSED UNDER CHECKLIST FOR ICs**

□ Readily available □ Up to date
□ Funding mechanism/agreement in place
Original O&M cost estimate_____ □ Breakdown attached

Total annual cost by year for review period if available

From_____ To_____ _____ □ Breakdown attached
Date Date Total cost
From_____ To_____ _____ □ Breakdown attached
Date Date Total cost
From_____ To_____ _____ □ Breakdown attached
Date Date Total cost
From_____ To_____ _____ □ Breakdown attached
Date Date Total cost
From_____ To_____ _____ □ Breakdown attached
Date Date Total cost

3. **Unanticipated or Unusually High O&M Costs During Review Period**

Describe costs and reasons: _____

V. ACCESS AND INSTITUTIONAL CONTROLS [x] Applicable □ N/A

Refer to the Site Inspection Checksheet for ICs

~~**A. Fencing**~~

~~1. **Fencing damaged** □ Location shown on site map □ Gates secured □ N/A~~
~~Remarks_____~~

~~**B. Other Access Restrictions**~~

~~1. **Signs and other security measures** □ Location shown on site map □ N/A~~
~~Remarks_____~~

~~**C. Institutional Controls (ICs)**~~

~~1. **Implementation and enforcement**~~

~~Site conditions imply ICs not properly implemented ☐ Yes ☐ No ☐ N/A~~
~~Site conditions imply ICs not being fully enforced ☐ Yes ☐ No ☐ N/A~~

~~Type of monitoring (e.g., self-reporting, drive by) _____~~
~~Frequency _____~~
~~Responsible party/agency _____~~
~~Contact _____ _____ _____ _____~~
~~Name Title Date Phone no.~~

~~Reporting is up-to-date ☐ Yes ☐ No ☐ N/A~~
~~Reports are verified by the lead agency ☐ Yes ☐ No ☐ N/A~~

~~Specific requirements in deed or decision documents have been met ☐ Yes ☐ No ☐ N/A~~
~~Violations have been reported ☐ Yes ☐ No ☐ N/A~~
~~Other problems or suggestions: ☐ Report attached~~

~~2. **Adequacy** ☐ ICs are adequate ☐ ICs are inadequate ☐ N/A~~
~~Remarks _____~~

~~**D. General**~~

~~1. **Vandalism/trespassing** ☐ Location shown on site map ☐ No vandalism evident~~
~~Remarks _____~~

~~2. **Land use changes on site** ☐ N/A~~
~~Remarks _____~~

~~3. **Land use changes off site** ☐ N/A~~
~~Remarks _____~~

VI. GENERAL SITE CONDITIONS

A. Roads ☐ Applicable ☒ N/A

~~1. **Roads damaged** ☐ Location shown on site map ☐ Roads adequate ☐ N/A~~
~~Remarks _____~~

~~B. Other Site Conditions~~

~~Remarks~~ _____

VII. LANDFILL COVERS □ Applicable [x] N/A

~~A. Landfill Surface~~

~~1. **Settlement** (Low spots) □ Location shown on site map □ Settlement not evident~~
~~Areal extent~~ _____ ~~Depth~~ _____
~~Remarks~~ _____

~~2. **Cracks** □ Location shown on site map □ Cracking not evident~~
~~Lengths~~ _____ ~~Widths~~ _____ ~~Depths~~ _____
~~Remarks~~ _____

~~3. **Erosion** □ Location shown on site map □ Erosion not evident~~
~~Areal extent~~ _____ ~~Depth~~ _____
~~Remarks~~ _____

~~4. **Holes** □ Location shown on site map □ Holes not evident~~
~~Areal extent~~ _____ ~~Depth~~ _____
~~Remarks~~ _____

~~5. **Vegetative Cover** □ Grass □ Cover properly established □ No signs of stress~~
~~G Trees/Shrubs (indicate size and locations on a diagram)~~
~~Remarks~~ _____

~~6. **Alternative Cover (armored rock, concrete, etc.)** □ N/A~~
~~Remarks~~ _____

~~7. **Bulges** □ Location shown on site map □ Bulges not evident~~
~~Areal extent~~ _____ ~~Height~~ _____
~~Remarks~~ _____

~~8. **Wet Areas/Water Damage** □ Wet areas/water damage not evident~~
~~□ Wet areas □ Location shown on site map Areal extent~~ _____
~~□ Ponding □ Location shown on site map Areal extent~~ _____
~~□ Seeps □ Location shown on site map Areal extent~~ _____
~~□ Soft subgrade □ Location shown on site map Areal extent~~ _____
~~Remarks~~ _____

~~9.~~	~~**Slope Instability** ☐ Slides ☐ Location shown on site map ☐ No evidence of slope instability~~ ~~Areal extent_____~~ ~~Remarks_____~~
~~**B. Benches** ☐ Applicable ☐ N/A~~ ~~(Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)~~	
~~1.~~	~~**Flows Bypass Bench** ☐ Location shown on site map ☐ N/A or okay~~ ~~Remarks_____~~
~~2.~~	~~**Bench Breached** ☐ Location shown on site map ☐ N/A or okay~~ ~~Remarks_____~~
~~3.~~	~~**Bench Overtopped** ☐ Location shown on site map ☐ N/A or okay~~ ~~Remarks_____~~
~~**C. Letdown Channels** ☐ Applicable ☐ N/A~~ ~~(Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)~~	
~~1.~~	~~**Settlement** ☐ Location shown on site map ☐ No evidence of settlement~~ ~~Areal extent_____ Depth_____~~ ~~Remarks_____~~
~~2.~~	~~**Material Degradation** ☐ Location shown on site map ☐ No evidence of degradation~~ ~~Material type_____ Areal extent_____~~ ~~Remarks_____~~
~~3.~~	~~**Erosion** ☐ Location shown on site map ☐ No evidence of erosion~~ ~~Areal extent_____ Depth_____~~ ~~Remarks_____~~

4. **Undercutting** ☐ Location shown on site map ☐ No evidence of undercutting
Areal extent_____ Depth_____
Remarks_____

5. **Obstructions** Type_____ ☐ No obstructions
☐ Location shown on site map Areal extent_____
Size_____
Remarks_____

6. **Excessive Vegetative Growth** Type_____
☐ No evidence of excessive growth
☐ Vegetation in channels does not obstruct flow
☐ Location shown on site map Areal extent_____
Remarks_____

D. Cover Penetrations ☐ Applicable ☐ N/A

1. **Gas Vents** ☐ Active ☐ Passive
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance
☐ N/A
Remarks_____

2. **Gas Monitoring Probes**
☐ Properly secured/locked G Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks_____

3. **Monitoring Wells** (within surface area of landfill)
☐ Properly secured/locked G Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks_____

4. **Leachate Extraction Wells**
☐ Properly secured/locked G Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks_____

5. **Settlement Monuments** ☐ Located ☐ Routinely surveyed ☐ N/A
Remarks_____

~~**E. Gas Collection and Treatment**~~	~~□ Applicable □ N/A~~
~~1.~~	~~**Gas Treatment Facilities**~~ ~~□ Flaring □ Thermal destruction □ Collection for reuse~~ ~~□ Good condition □ Needs Maintenance~~ ~~Remarks~~
~~2.~~	~~**Gas Collection Wells, Manifolds and Piping**~~ ~~□ Good condition □ Needs Maintenance~~ ~~Remarks~~
~~3.~~	~~**Gas Monitoring Facilities** (*e.g.*, gas monitoring of adjacent homes or buildings)~~ ~~□ Good condition □ Needs Maintenance □ N/A~~ ~~Remarks~~
~~**F. Cover Drainage Layer**~~	~~□ Applicable □ N/A~~
~~1.~~	~~**Outlet Pipes Inspected** □ Functioning □ N/A~~ ~~Remarks~~
~~2.~~	~~**Outlet Rock Inspected** □ Functioning □ N/A~~ ~~Remarks~~
~~**G. Detention/Sedimentation Ponds**~~	~~□ Applicable □ N/A~~
~~1.~~	~~**Siltation** Areal extent_____ Depth_____ □ N/A~~ ~~□ Siltation not evident~~ ~~Remarks~~
~~2.~~	~~**Erosion** Areal extent_____ Depth_____~~ ~~□ Erosion not evident~~ ~~Remarks~~
~~3.~~	~~**Outlet Works** □ Functioning □ N/A~~ ~~Remarks~~
~~4.~~	~~**Dam** □ Functioning □ N/A~~ ~~Remarks~~

~~**H. Retaining Walls** □ Applicable □ N/A~~

~~1. **Deformations** □ Location shown on site map □ Deformation not evident~~
~~Horizontal displacement_____ Vertical displacement_____~~
~~Rotational displacement_____~~
~~Remarks_____~~

~~2. **Degradation** □ Location shown on site map □ Degradation not evident~~
~~Remarks_____~~

~~**I. Perimeter Ditches/Off-Site Discharge** □ Applicable □ N/A~~

~~1. **Siltation** □ Location shown on site map □ Siltation not evident~~
~~Areal extent_____ Depth_____~~
~~Remarks_____~~

~~2. **Vegetative Growth** □ Location shown on site map □ N/A~~
~~□ Vegetation does not impede flow~~
~~Areal extent_____ Type_____~~
~~Remarks_____~~

~~3. **Erosion** □ Location shown on site map □ Erosion not evident~~
~~Areal extent_____ Depth_____~~
~~Remarks_____~~

~~4. **Discharge Structure** □ Functioning □ N/A~~
~~Remarks_____~~

VIII. VERTICAL BARRIER WALLS □ Applicable [x] N/A

~~1. **Settlement** □ Location shown on site map □ Settlement not evident~~
~~Areal extent_____ Depth_____~~
~~Remarks_____~~

~~2. **Performance Monitoring** Type of monitoring_____~~
~~□ Performance not monitored~~
~~Frequency_____ □ Evidence of breaching~~
~~Head differential_____~~
~~Remarks_____~~

~~**C. Treatment System** □ Applicable □ N/A~~

~~1. **Treatment Train** (Check components that apply)~~
~~□ Metals removal □ Oil/water separation □ Bioremediation~~
~~□ Air stripping □ Carbon adsorbers~~
~~□ Filters~~
~~□ Additive (*e.g.*, chelation agent, flocculent)~~
~~□ Others~~
~~□ Good condition □ Needs Maintenance~~
~~□ Sampling ports properly marked and functional~~
~~□ Sampling/maintenance log displayed and up to date~~
~~□ Equipment properly identified~~
~~□ Quantity of groundwater treated annually~~
~~□ Quantity of surface water treated annually~~
~~Remarks~~

~~2. **Electrical Enclosures and Panels** (properly rated and functional)~~
~~□ N/A □ Good condition G Needs Maintenance~~
~~Remarks~~

~~3. **Tanks, Vaults, Storage Vessels**~~
~~□ N/A □ Good condition G Proper secondary containment □ Needs Maintenance~~
~~Remarks~~

~~4. **Discharge Structure and Appurtenances**~~
~~□ N/A □ Good condition G Needs Maintenance~~
~~Remarks~~

~~5. **Treatment Building(s)**~~
~~□ N/A □ Good condition (esp. roof and doorways) □ Needs repair~~
~~□ Chemicals and equipment properly stored~~
~~Remarks~~

~~6. **Monitoring Wells** (pump and treatment remedy)~~
~~□ Properly secured/locked □ Functioning □ Routinely sampled □ Good condition~~
~~□ All required wells located □ Needs Maintenance □ N/A~~
~~Remarks~~

D. Monitoring Data

1. Monitoring Data
[x] Is routinely submitted on time [x] Is of acceptable quality

2. Monitoring data suggests:
□ Groundwater plume is effectively contained [x] Contaminant concentrations are declining

D. Monitored Natural Attenuation

1. **Monitoring Wells** (natural attenuation remedy)

[x] Properly secured/locked [x] Functioning [x] Routinely sampled [x] Good condition
[x] All required wells located □ Needs Maintenance □ N/A
Remarks Wells are inspected during each sampling event and repaired as required.

X. OTHER REMEDIES

If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.

XI. OVERALL OBSERVATIONS

A. Implementation of the Remedy

Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).

Groundwater in the Parcel 6, 7, and 8 area is monitored for TCE and its degradation products to verify that the downgradient BVA is not affected and that concentrations are decreasing. In addition, groundwater discharging from seeps is monitored for TCE and its degradation products, tritium, and radioisotopes (strontium-90 [Sr-90], Ra-226, and Ra-228) to verify that source removal will result in decreasing concentrations over time.

Groundwater monitoring has been performed as prescribed in the *Parcel 6, 7 and 8Remedy (Monitored Natural Attenuation) Groundwater Monitoring Plan*. Results from this monitoring indicate that concentrations are variable and target level for TCE has been periodically exceeded. However, this remedy has not been implemented long since source removal was completed. Insufficient data is available to determine a trend in contaminant concentrations.

B. Adequacy of O&M

Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.

Operation and maintenance activities are performed as outlined in the *Operations and Maintenance (O&M) Plan for the Implementation of Institutional Controls at the 1998 Mound Plant Property* and the *Parcel 6, 7, and 8 Remedy (Monitored Natural Attenuation) Groundwater Monitoring Plan*. DOE has performed annual walk-overs and records reviews with respect to ICs and has found that portion of the remedy to be functioning as intended, thus far. DOE has also performed groundwater monitoring and has found the groundwater remedy to be functioning as intended.

C.	Early Indicators of Potential Remedy Problems
	Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs that suggest that the protectiveness of the remedy may be compromised in the future. None

D.	Opportunities for Optimization
	Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy. None

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The CERCLA five-year review team included:

- Becky Cato, S.M. Stoller Corporation (Stoller)
- Laura Cummins, Stoller
- Chuck Friedman, Stoller
- Art Kleinrath, U.S. Department of Energy, Office of Legacy Management (LM)
- Joyce Massie, J.G. Management Systems, Inc. (JGMS)
- Bob Ransbottom, Stoller

Participants in the annual walkaround performed on April 12, 2011, included:

- Frank Bullock, MDC
- Becky Cato, Stoller
- Joe Crombie, ODH
- Tim Fisher, EPA
- Chuck Friedman, Stoller
- Ken Karp, Stoller
- Art Kleinrath, LM
- Joyce Massie, JGMS
- Anthony Campbell, OEPA
- Jane Powell, LM
- Bob Ransbottom, Stoller
- Karen Reed, LM
- Jeff Smith, OEPA
- Ellen Stanifer, City of Miamisburg
- Gary Weidenbach, Stoller

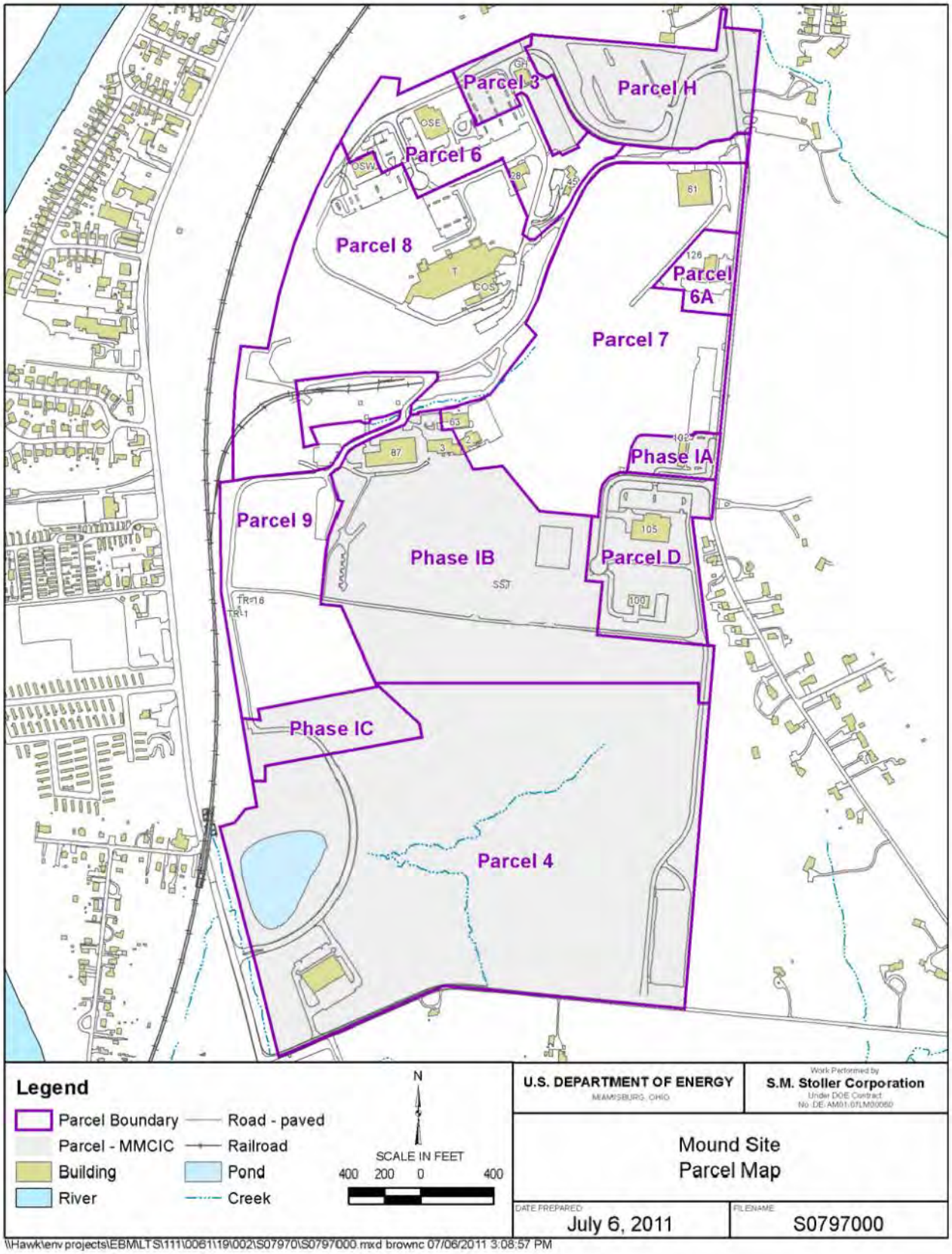

Figure B-1 Mound Site Parcel Map

Interview

Name:Robert C. Ransbottom
Title: Stoller Mound Site Manager
Company: S.M. Stoller Corporation.
Location: Mound Site – Miamisburg, OH
Date: July 11, 2011

1. What is your overall impression of the project? (general sentiment)
I feel we have done a great job meeting our regulatory requirements for monitoring and reporting of groundwater contamination levels at Mound. The institutional controls (ICs) are monitored by on-site personnel and during the Annual IC inspection.

2. Is the remedy functioning as expected? How well is the remedy performing?
The remedy is performing very well. Groundwater contamination has not spread and has been greatly reduced in the OU-1 area since the OU-1 remediation has been completed. The ICs of not taking soil off-site and not drilling for groundwater to be used for human consumption have been communicated to the Mound Development Corporation, to which the site is being transferred. On-site DOE and contractor personnel are also aware of them and note any unusual activity. The ICs are also checked during the annual IC inspection.

3. What does the monitoring data show? Are there any trends that show contaminant levels are decreasing?
The Phase I and Parcel 6, 7, and 8 remedies are Monitored Natural Attenuation (MNA). The Phase I groundwater contamination levels are fairly stable. The Parcel 6, 7, and 8 levels fluctuate somewhat with the seasons and with rain events, but this is to be expected with remdiation of these areas only being completed in 2006. The OU-1 remedy includes a Pump and Treat system to prevent the spread of groundwater contamination. The groundwater contamination levels in the area of OU-1 have been greatly reduced due to the OU-1 remediation, which concluded in 2010.

4. Is there a continuous on-site O&M presence? If so, please describe staff and activities. If there is not a continuous on-site presence, describe staff and frequency of site inspections and activities.
There was a continuous on-site O&M presence at the site over the five years covered by this report. This presence is expected to be greatly reduced with the consolidation of the Fernald and Mound site offices in September 2011. However,there will continue to be monthly and quarterly groundwater monitoring and the annual Institutional Controls site inspection.

5. Have there been any significant changes in the O&M requirements, maintenance schedules, or sampling routines since start-up or in the last five years? If so, do they affect the protectiveness or effectiveness of the remedy? Please describe changes and impacts.
The main changes involved increasing monitoring requirements at OU-1 during the remediation. Groundwater sampling at the OU-1 area wells was increased to monthly during the remediation.

6. Have there been unexpected O&M difficulties or costs at the site since start-up or in the last five years? If so, please give details.
The main difficulty was maintaining normal operations and interfacing with the contractor during the OU-1 remediation, which lasted from January 2007 to July 2010. However, all regulatory requirements were met and the remediation greatly reduced the OU-1 groundwater contamination levels.

7. Have there been opportunities to optimize O&M, or sampling efforts? Please describe changes and resultant or desired cost savings or improved efficiency.
The main change was to bring groundwater monitoring in-house. Groundwater was being performed by a subcontractor, but for the most part is now being performed by the Fernald groundwater samplers. This resulted in an approximately $60,000 a year cost savings. The well monitoring network is being re-evaluated during the finalization of the OU-1 regulatory paperwork and through the development of a comprehensive site-wide O&M plan.

8. Do you have any comments, suggestions, or recommendations regarding the project?
I would recommend that unused groundwater monitoring wells be removed when the final monitoring network is finalized.

Interview

Name:Row L. Mowen
Title: Stoller Health and Safety Lead
Company: S.M. Stoller Corporation.
Location: Mound Site – Miamisburg, OH
Date: July 11, 2011

1. What is your overall impression of the project? (general sentiment)
I feel Stoller has done a very good job meeting our regulatory requirements for groundwater contamination monitoring and reporting in a timely manner.

2. Is the remedy functioning as expected? How well is the remedy performing?
Mound's groundwater remedy is performing very well. Contamination has not spread and since the OU-1 remediation levels have been greatly reduced.

3. What does the monitoring data show? Are there any trends that show contaminant levels are decreasing?
Monitoring data show that the levels do fluctuate somewhat with the seasons and rain events but are generally the same. The OU-1 remediation greatly reduced its area levels. Some fluctuation in levels for parcels 6-7-8 occur since the cleanup was only recently completed.

4. Is there a continuous on-site O&M presence? If so, please describe staff and activities. If there is not a continuous on-site presence, describe staff and frequency of site inspections and activities.
Stoller has provided a continuous on-site O&M presence via in-house daily sampling and subcontractor personnel generally doing the Monthly and Quarterly sampling. During the five year reporting period Stoller has also assumed the monthly and quarterly sampling in-house with significant cost savings. Stoller presence is expected to decrease with the Fernald consolidation in September 2011. There will continue to be Monthly and Quarterly groundwater monitoring and annual Institutional Controls site inspections.

5. Have there been any significant changes in the O&M requirements, maintenance schedules, or sampling routines since start-up or in the last five years? If so, do they affect the protectiveness or effectiveness of the remedy? Please describe changes and impacts.
The five year period actually included increased monitoring requirements due to the OU-1 remediation. Sampling at OU-1 increased to monthly sampling during and after remediation. There was also a short rebound test conducted to gather more information in the OU-1 area. The overall effectiveness remains good.

6. Have there been unexpected O&M difficulties or costs at the site since start-up or in the last five years? If so, please give details.
Stoller worked closely with the OU-1 contractors during the 2007 thru July 2010 remediation. All regulatory requirements continued to be met in a timely manner during the remediation work.

7. Have there been opportunities to optimize O&M, or sampling efforts? Please describe changes and resultant or desired cost savings or improved efficiency.
The decision to bring the monthly and quarterly groundwater sampling to in-house sampling was the biggest cost savings. The monitoring well system is being re-evaluated during the finalization of the OU-1 regulatory agreement and a comprehensive site-wide O&M plan.

8. Do you have any comments, suggestions, or recommendations regarding the project?
Stoller personnel have been actively working with the city of Miamisburg during the proposed spine road development plan to protect and maintain the groundwater monitoring well system to continue to collect and analyze representative locations. Existing but unused monitoring wells should be properly removed/abandoned after finalizing the monitoring network plan.

Appendix C

Community Notification and Involvement

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LEGAL NOTICE for Mound Site 2011 CERCLA Five-Year Review

The U.S. Department of Energy (DOE) Office of Legacy Management (LM) is conducting the third Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Five-Year Review of the Mound Site in Miamisburg, Ohio. The Five-Year Review process ensures that the selected CERCLA remedies remain protective of human health and the environment.

After the Mound Plant Site was placed on the CERCLA National Priority List in 1989, DOE signed a CERCLA Section 120 Federal Facility Agreement with the U.S. Environmental Protection Agency (EPA) in October 1990 and a tripartite agreement among the DOE, EPA, and Ohio EPA (OEPA) in 1993. The site was divided into sections and remediated to EPA's risk-based standards for industrial use only. The entire site is being transferred to the Mound Development Corporation (MDC) for reuse as a scientific technology and business park.

The selected CERCLA remedies for the Mound Site are:

- Collection and treatment of volatile organic compound (VOC)-contaminated groundwater and disposal of treated water with the pump and treat system, which controls the migration of contaminated groundwater in the Operable Unit 1 (OU-1) area.
- Control of surface water in OU-1 area and long-term groundwater monitoring are part of the OU-1 remedy.
- Monitored natural attenuation (MNA) for trichloroethylene (TCE) in Phase 1 parcel and for TCE and tritium in the main hill bedrock groundwater system commonly known as the Main Hill Seeps.
- Institutional controls (ICs).

DOE monitors the groundwater to verify that contamination is not impacting the Buried Valley Aquifer and that contaminant concentrations are decreasing to levels below the Maximum Contaminant Level due to natural mechanisms. Groundwater monitoring plans for each remedy are approved by the regulators.

ICs are legal and administrative tools incorporated into deed restrictions on future land and groundwater use for protecting human health and the environment. The Mound Site ICs are designed to:

1. Prohibit the removal of soil from the original DOE Mound Plant Property boundaries, unless prior written approval from OEPA and Ohio Department of Health (ODH) has been obtained.
2. Prohibit the extraction or consumption of, exposure to, or the use in any way of the groundwater underlying the premises, unless prior written approval from EPA and OEPA has been obtained.
3. Limit land use to industrial/commercial use only. Each parcel Record of Decision identifies land uses that will not be permitted, but the list is not all-inclusive. Parcels may not be used for any residential or farming activities, or any activities that could result in the chronic exposure of children less than 18 years of age to soil or groundwater from the premises. Restricted uses include, but are not limited to:
    - Single or multi-family dwellings or rental units.
    - Daycare facilities.
    - Schools or other educational facilities for children less than 18 years of age.
    - Community centers, playgrounds, or other recreational or religious facilities for children less than 18 years of age.
4. Prohibit the removal of concrete floor material in specified rooms of T Building to off-site locations without prior approval from EPA, OEPA, and ODH.

5. Prohibit the penetration of concrete floors in specified rooms of T Building without prior approval from EPA, OEPA, and ODH.

6. Allow site access to federal and state agencies for sampling and monitoring.

Between March and August 2011, DOE will review relevant documents and data; conduct site inspections with regulators, MDC, and the City of Miamisburg; interview local stakeholders; and develop a report detailing the results. DOE will post a public notice when the report is available in the CERCLA Public Reading Room, 955 Mound Road, Miamisburg, Ohio 45342, and on the LM website (http://www.lm.doe.gov/CERCLA/SiteSelector.aspx). Previous five-year reports can be viewed and downloaded at http://www.lm.doe.gov/Mound/Sites.aspx.

DOE invites the public to learn more about the review process and contribute information by completing the survey on the website at (http://www.lm.doe.gov/Mound/Sites.aspx). Information on the CERCLA Five-Year Review process is also available at the U.S. Environmental Protection Agency website (http://www.epa.gov/superfund/cleanup/postconstruction/5yr.htm) or by contacting

Art Kleinrath
Mound Site Manager
U. S. Department of Energy
Office of Legacy Management
art.kleinrath@lm.doe.gov
(937) 247-2237

LM Home > LM Sites > Ohio > Mound > CERCLA Five-Year Review

(Link from main Mound Site page)

CERCLA Five-Year Review

The U.S. Department of Energy (DOE) is currently conducting the third five-year review at the Mound, Ohio, Site, as required by Section 121 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA). This act requires that remedial actions which result in any hazardous substances, pollutants, or contaminants remaining on site at levels that do not allow for unlimited use and unrestricted exposure be subject to a five-year review.

The purpose of the five-year review is to ensure that the remedies that were implemented to clean up the site continue to be protective of human health and the environment.

Community input and feedback is integral to the document development process. DOE invites the public to respond to the survey linked below.

- Five-Year Review Report, Second Five-Year Review for the Mound, Ohio, Site Miamisburg, Ohio September 2006 **link to pdf. This is already on the "site documents"**
- Public Notice of Mound Site Five-Year Review **link to the text version (next page)**
- Survey **link to survey**

LEGAL NOTICE for Mound Site 2011 CERCLA Five-Year Review

The U.S. Department of Energy (DOE) Office of Legacy Management (LM) is conducting the third Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Five-Year Review of the Mound Site in Miamisburg, Ohio. The Five-Year Review process ensures that the selected CERCLA remedies remain protective of human health and the environment.

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- Control of surface water in OU-1 area and long-term groundwater monitoring are part of the OU-1 remedy.
- Monitored natural attenuation (MNA) for trichloroethylene (TCE) in Phase 1 parcel and for TCE and tritium in the main hill bedrock groundwater system commonly known as the Main Hill Seeps.
- Institutional controls (ICs).

DOE monitors the groundwater to verify that contamination is not impacting the Buried Valley Aquifer and that contaminant concentrations are decreasing to levels below the Maximum Contaminant Level due to natural mechanisms. Groundwater monitoring plans for each remedy are approved by the regulators.

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    - Single or multi-family dwellings or rental units.
    - Daycare facilities.
    - Schools or other educational facilities for children less than 18 years of age.
    - Community centers, playgrounds, or other recreational or religious facilities for children less than 18 years of age.
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6. Allow site access to federal and state agencies for sampling and monitoring.

Between March and August 2011, DOE will review relevant documents and data; conduct site inspections with regulators, MDC, and the City of Miamisburg; interview local stakeholders; and develop a report detailing the results. DOE will post a public notice when the report is available in the CERCLA Public Reading Room, 955 Mound Road, Miamisburg, Ohio 45342, and on the LM website (http://www.lm.doe.gov/CERCLA/SiteSelector.aspx). Previous five-year reports can be viewed and downloaded at http://www.lm.doe.gov/Mound/Sites.aspx.

DOE invites the public to learn more about the review process and contribute information by completing the survey on the website at (http://www.lm.doe.gov/Mound/Sites.aspx). Information on the CERCLA Five-Year Review process is also available at the U.S. Environmental Protection Agency website (http://www.epa.gov/superfund/cleanup/postconstruction/5yr.htm) or by contacting

Art Kleinrath
Mound Site Manager
U. S. Department of Energy
Office of Legacy Management
art.kleinrath@lm.doe.gov
(937) 247-2237

Mound Site Five-Year Review Survey

Section 121 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), requires that remedial actions which result in any hazardous substances, pollutants, or contaminants remaining at the site be subject to a five-year review.

The U.S. Department of Energy (DOE) is currently conducting the third five-year review at the Mound, Ohio, Site. The purpose of a five-year review is to ensure that the remedies that were implemented at the site continue to protect human health and the environment.

Community involvement is an integral part of the Mound Site and the CERCLA five-year review process. DOE invites your input or comments about the Mound Site and the cleanup as part of the third five-year review.

Please complete the survey below. You may answer as many or as few questions as you feel comfortable answering. Having enough detail for us to follow up by contacting you or so we can specifically understand the issue will help improve operations in the future. Comments will be accepted through June 30, 2011.

Affiliation with the project, if Are you affiliated with any group (e.g., former worker, neighbor, former citizen group member, regulator, etc.)? -- OPTIONAL

How close to the project do you live? -- OPTIONAL

(Select)

Have you ever visited the site?

(Select)

What is your overall impression of the Mound Site cleanup project (general sentiment)?

What effects have the completion of the site cleanup project had on the surrounding community? What was the strongest positive effect? What was strongest negative effect?

Are you aware of any community concerns regarding the site or its operation and administration? If so, please provide details so we can follow up and address the concern.

How did you learn about the site?

How informed do you feel about the site's activities and progress?

If you do not feel well informed, how would you suggest the site keep the community adequately informed?

Do you have any comments, suggestions, or recommendations regarding the site's management?

Do you have any other comments or suggestions?

I would like to have you contact me. My contact information (name, address, phone, e-mail) is:

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Appendix D

Quitclaim Deeds for Parcels D, H, 3, 4, and Phase I
Draft Quitclaim Deed for Parcels 6, 7, and 8

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Appendix D
Parcels D, H, 3, 4, Phase I, and Parcels 6, 7, 8 Quitclaim Deeds

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Parcel D

Montgomery County
DEED-99-141460 0006
Joy Clark, Recorder
$30.00 12/21/99 07:59:27

$150.00 11/22/02 11:26:45
DEED-02-146503 0036
Montgomery County
Judy Dodge Recorder

DN/2,9

QUITCLAIM DEED

K46-51-11

The UNITED STATES OF AMERICA, acting by and through the Secretary of the Department of Energy (hereinafter sometimes called "Grantor"), under and pursuant to the authority of the Atomic Energy Act of 1954, Section 161 (g) (42 U.S.C. §2201(g)), in consideration of the covenants contained herein, and other good and valuable consideration, duly paid by the Miamisburg Mound Community Improvement Corporation, a non-profit corporation subsisting under the laws of Ohio and recognized by the Secretary of Energy as the agent for the community wherein the former Mound Facility is located (hereinafter sometimes called "Grantee"), the receipt of which is hereby acknowledged, hereby QUITCLAIMS unto Grantee its successors and assigns, subject to the reservations, covenants, and conditions hereinafter set forth, all of its right, title and interest, together with all improvements thereon and appurtenances thereto, in the following described real property (hereinafter the "Premises), commonly known as Parcel D:

Situate in the State of Ohio, County of Montgomery, City of Miamisburg and being part of Section 30, Fractional Town 2, Range 5 Miami Rivers Survey (M.R.S.), and being part of City of Miamisburg Lot No. 2259 and being part of tract of land conveyed to the United States of America as described in deed book 1214, page 12-14 and, being more fully described in Exhibit A attached hereto and incorporated herein.

0023296 $.00

RESERVING UNTO Grantor, the United States Environmental Protection Agency (USEPA) and the State of Ohio, acting by and through the Director of the Ohio Environmental Protection Agency (OEPA) or the Ohio Department of Health (ODH), their successors and assigns, an easement to, upon or across the Premises in conjunction with the covenants of Grantor and/or Grantee in paragraphs numbered 1.1-1.3, 3.2 and 3.3 of this Deed and as otherwise needed for purposes of any response action as defined under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended, including but not limited to, environmental investigation or remedial action on the Premises or on property in the vicinity thereof, including the right of access to, and use of, to the extent permitted by applicable law, utilities at reasonable cost to Grantor. Grantee understands that any such response action will be conducted in a manner so as to attempt to minimize interfering with the ordinary and reasonable use of the Premises.

TRANSFERRED
99 DEC 20 AM 9:18
A.J. WAGNER
AUDITOR

DEED 99-0852 B05

Note:
Deed is being re-recorded to add Exhibit B.

20048.3

This Deed and conveyance is made and accepted without warranty of any kind, either express or implied, except for the warranty in paragraph 3.3 of this Deed, and is expressly made under and subject to all reservations, restrictions, rights, covenants, easements, licenses, and permits, whether or not of public record, to the extent that the same affect the Premises.

1. The parties hereto intend the following restrictions and covenants to run with the land and to be binding upon the Grantee and its successors, transferees, and assigns or any other person acquiring an interest in the Premises, for the benefit of Grantor, USEPA and the State of Ohio, acting by and through the Director of OEPA or ODH, their successors and assigns.

   1.1 Excepting those soils in an area approximately 40 feet wide and 218.17 feet long, bounded on the east by the centerline of Mound Road as described above, Grantee covenants that any soil from the Premises shall not be placed on any property outside the boundaries of that described in instruments recorded at Deed Book 1214, pages 10, 12, 15, 17 and 248; Deed Book 1215, page 347; Deed Book 1246, page 45; Deed Book 1258, pages 56 and 74; Deed Book 1215, page 347; Deed Book 1246, page 45; Deed Book 1258, pages 56 and 74; Deed Book 1256, page 179; Micro-Fiche 81-376A01; and Micro-Fiche 81-323A11 of the Deed Records of Montgomery County, Ohio (and as illustrated in the CERCLA 120(h) Summary, Notices of Hazardous Substances Release Block D, Mound Plant, Miamisburg, Ohio dated January, 1999) without prior written approval from the Ohio Department of Health (ODH), or a successor agency.

   1.2 Grantee covenants not to use, or allow the use of, the Premises for any residential or farming activities, or any other activities which could result in the chronic exposure of children under eighteen years of age to soil or groundwater from the Premises. Restricted uses shall include, but not be limited to:

   (1) single or multifamily dwellings or rental units;
   (2) day care facilities;
   (3) schools or other educational facilities for children under eighteen years of age; and
   (4) community centers, playgrounds, or other recreational or religious facilities for children under eighteen years of age.

   Grantor shall be contacted to resolve any questions which may arise as to whether a particular activity would be considered a restricted use.

1.3 Grantee covenants not to extract, consume, expose, or use in any way the groundwater underlying the premises without the prior written approval of the United States Environmental Protection Agency (Region V) and the OEPA.

2. The Grantor hereby grants to the State of Ohio and reserves and retains for itself, its successors and assigns an irrevocable, permanent, and continuing right to enforce the covenants of this Quitclaim Deed through proceedings at law or in equity, including resort to an action for specific performance, as against and at the expense of Grantee, its successors and assigns, including reasonable legal fees, and to prevent a violation of, or recover damages from a breach of, these covenants, or both. Any delay or forbearance in enforcement of said restrictions and covenants shall not be deemed to be a waiver thereof.

3. Pursuant to Section 120(h)(3) of the Comprehensive Environmental Response, Compensation and Liability Act of 1930, as amended (42 U.S.C. §9620(h)(3)), the following is notice of hazardous substances, the description of any remedial action taken, and a covenant concerning the Premises.

3.1 **Notice of Hazardous Substance:** Grantor has made a complete search of its files and records concerning the Premises. Those records indicate that the hazardous substances listed in Exhibit "B," attached hereto and made a part hereof, have been stored for one year or more or disposed of on the Premises and the dates that such storage/disposal took place.

3.2 **Description of Remedial Action Taken:**
Institutional Controls are established. The Institutional Controls are set forth as covenants in Sections 1.1, 1.2, and 1.3 of this Deed.

3.3 **Covenant:** Grantor covenants and warrants that all remedial action necessary for the protection of human health and the environment with respect to any hazardous substances remaining on the property has been taken, and any additional remedial action found to be necessary after the date of this Deed regarding hazardous substances existing prior to the date of this Deed shall be conducted by Grantor, provided, however, that the foregoing covenant shall not apply in any case in which the presence of hazardous substances on the property is due to the activities of Grantee, its successors, assigns, employees, invitees, or any other person subject to Grantee's control or direction.

4. Unless otherwise specified, all the covenants, conditions, and restrictions to this Deed shall be binding upon, and shall inure to the benefit of the assigns of Grantor and the successors and assigns of Grantee.

IN WITNESS WHEREOF, the United States of America, acting by and through its Secretary of the Department of Energy, has caused these presents to be executed this 19 day of November, 1999.

UNITED STATES OF AMERICA

Susan A Brechbill

WITNESSETH:

Linda Geisler
Linda Geisler

Lorinda LeDuc
Lorinda LeDuc

State of Ohio)
County of Montgomery) SS.

Before me, a Notary Public in and for said State and County, appeared this 19 day of November, 1999, Susan Brechbill, who acknowledged that she is the Manager of the Ohio Field Office for the United States Department of Energy, with full authority to execute the foregoing on behalf of the United States of America, and who acknowledged the above to be her signature and her free act and deed.

NOTARIAL SEAL STATE OF OHIO

Randolph Torney
Notary Public
RANDOLPH T. TORNEY, Attorney-at-Law
Notary Public, State of Ohio
My Commission has no expiration date.
Section 147.03 O. R. C.

This document was prepared by the U.S. Department of Energy.

NO PLAT REQUIRED
(SEC 711.131 ORC)
MIAMISBURG CITY PLANNING COMMISSION
Susanne G Baker
Secretary

DESCRIPTION OF

12.429 Acres

located in

Section 30, Fractional Town 2, Range 5 MRS

part of

City of Miamisburg Lot No. 2259

DIV/2,9

K46-5-1-11

December 09, 1999

Situate in the State of Ohio, County of Montgomery, City of Miamisburg and being part of Section 30, Fractional Town 2, Range 5 M.R.S. and being part of City of Miamisburg Lot No. 2259 and being part of a tract of land conveyed to The United States of America as described in Deed Book 1214, Page 12-14 and being more particularly described as follows:

COMMENCING at a Concrete Monument Found (top broken off) at the Northwest Corner of Section 30, ***THENCE*** with the north line of said Section 30 and the northerly line of Fractional Township 2, Range 6 MRS, ***South 84° 00'12" East for a distance of 1249.75 feet*** to the Northwest corner of the Roads End Plat as recorded in Plat Book DD, Page 75 and the centerline of Mound Road extended north, (witness a 5/8" Rebar Found bearing South 63° 34'50" East at a distance of 0.30 feet from the Northwest corner of said Plat);

THENCE with said Centerline of Mound Road, ***South 05° 32'42" West for a distance of 2490.95 to a Mag Nail Set at the TRUE POINT OF BEGINNNG*** of the herein described tract;

THENCE continuing with said centerline, ***South 05° 32' 42" West for a distance of 218.17 feet to a Railroad Spike Found*** by common report at the Northeast corner of a 0.78 Acre tract of land conveyed to Randall & Rita Hilgefort as described in Deed MF 97-0746-A08;

THENCE with said 0.78 Acre Hilgeforts North line, ***North 85° 28'23" West for a distance of 111.00 feet to a 5/8" Rebar Set*** at said 0.78 Acre Hilgeforts Northwest corner, (passing a 5/8" Rebar Set at 30.00 feet);

THENCE with said 0.78 Acre Hilgeforts West line and the West line of a 0.26 Acre tract conveyed to Betty J. Eckhart as described in Deed MF 98-0834-C09 and the West line of a 0.7 Acre tract conveyed to Melissa A. Wilson as described in Deed MF 89-0125-D01 and the West Line of the Miami Mound Plat as recorded in Plat Book 94, Page 34, ***South 07° 06'56" East for a distance of 714.44 feet to a IP in Concrete Found*** at the Southwest corner of said Miami Mound Plat;

DEED 99-0852 B09

THENCE with the Southerly line of said City of Miamisburg Lot No. 2259, ***North 84° 32'54" West for a distance of 613.34 feet to a 5/8" Rebar Set;***

THENCE on a new division line, ***North 05° 34'05" East for a distance of 291.47 feet to a 5/8" Rebar Set;***

THENCE continuing on a new division line, ***North 84° 25' 51" West for a distance of 93.50 feet to a 5/8" Rebar Set;***

THENCE continuing on a new division line, ***North 05° 34'05" East for a distance of 360.00 feet to a 5/8" Rebar Set;***

THENCE continuing on a new division line, ***South 84° 26'02"East for a distance of 35.50 feet to a 5/8" Rebar Set;***

THENCE continuing on a new division line, ***North 05° 34'05"East for a distance of 131.23 feet to a 5/8" Rebar Set;***

THENCE continuing on a new division line on a ***TANGENT CURVE to the RIGHT with a RADIUS of 130.00 feet, a DELTA ANGLE of 89° 20'20", a ARC LENGTH of 202.72 feet with a CHORD BEARING of North 50° 14'15" East for a CHORD DISTANCE of 182.80 feet to a 5/8" Rebar Set;***

THENCE continuing on a new division line, ***South 85° 05'35" East for a distance of 496.88 feet BACK TO THE TRUE POINT OF BEGINNING***, (passing a 5/8" Rebar set at 466.88 feet).

Described tract contains 12.429 Acres more or less. North based on State Plane Coordinates, South Zone State of Ohio as taken from a drawing prepared by Lockwood, Jones and Beals dated 6-01-82, Project No. 2149. This Description is based on an actual Field Survey performed by HLS Surveyors and Engineers under the direct supervision of William C. LeRoy P.S. Ohio License Number 7664. Subject to all Easements, Highways, Covenants and Restrictions of Public Record.

William C. LeRoy P.S.
Ohio License No. 7664
12-9-99

STATE OF OHIO
WILLIAM C. LEROY 7664
REGISTERED PROFESSIONAL SURVEYOR

JOSEPH LITVIN P.E., P.S.
COUNTY ENGINEER
MONTGOMERY COUNTY DAYTON, OHIO
DESCRIPTION CHECKED AND APPROVED
BY EAM DATE 12/16/99

A.J. WAGNER
MONTGOMERY COUNTY AUDITOR
DIVISION

PARCEL D MOUND 99152PD

DEED 99-0852 B10

Exhibit B

CERCLA 120(h) SUMMARY
NOTICE OF HAZARDOUS SUBSTANCES
Release Block D,
Mound Plant, Miamisburg, Ohio

February, 1999

FINAL

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

MAR 1 8 1999

REPLY TO THE ATTENTION OF:

SRF-6J

Mr. Richard B. Provencher
Director
U.S. Department of Energy
Miamisburg Environmental Management Project
P.O. Box 3020
Miamisburg, OH 45343-3020

RE: U.S. DOE Mound Plant
Release Block D
Request for Concurrence to Transfer

Dear Mr. Provencher:

Thank you for your letter dated February 25, 1999, requesting concurrence to transfer Release Block D at the United States Department of Energy (U.S. DOE) Mound Plant in Miamisburg, Ohio.

The United States Environmental Protection Agency (US EPA) has reviewed the *Record of Decision for Release Block D, Mound Plant, Miamisburg, Ohio, Final, March 1999*, which has now been signed by U.S. DOE, U.S. EPA, and the Ohio Environmental Protection Agency, and the *Environmental Summary - Notice of Hazardous Substances for Release Block D, Mound Plant, Miamisburg, Ohio, Final, February 1999*. Based upon this information, U.S. EPA concurs that all remedial action necessary to protect public health and the environment with respect to any substance remaining in Release Block D has been taken, and that transfer of Release Block D may take place.

It is understood that any additional remedial action found to be necessary in the future shall be conducted by U.S. DOE to the extent necessary to protect human health and the environment.

Recycled/Recyclable • Printed with Vegetable Oil Based Inks on 50% Recycled Paper (20% Postconsumer)

The U.S. EPA fully supports redevelopment and reuse of the structures and other property available at the Mound Plant. However, assurances must be provided that all property and building leases and transfers will be protective of public health and the environment. If you have any questions or concerns about this or future economic development issues at the site, please contact Timothy Fischer, of my staff, at (312) 886-5787.

Sincerely yours,

William E. Muno, Director
Superfund Division
U.S. EPA, Region 5

cc: Gary Schafer, SRF-5J
Tim Thurlow, ORC
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ACRONYMS

BDP	Building Data Package
BIO	Basis of Interim Operation
BVA	Buried Valley Aquifer
CAS	Chemical Abstracts Service
CERCLA	Comprehensive Environmental Response Compensation & Liability Act
DOE	Department of Energy
EA	Environmental Assessment
FONSI	Finding of No Significant Impact
IDM	Investigative Derived Material
MMCIC	Miamisburg Mound Community Improvement Corporation
MOA	Memorandum of Agreement
NCP	National Contingency Plan
NEPA	National Environmental Policy Act
NFA	No Further Assessment
NPL	National Priority List
ODH	Ohio Department of Health
OEPA	Ohio Environmental Protection Agency
OSC	On-Scene Coordinator
pCi	picocurie
PAH	Polynuclear aromatic hydrocarbon
PCB	Polycholrinated biphenyl
PRS	Potential Release Site
RB	Release Block
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision
RRE	Residual Risk Evaluation
US DOE	United States Department of Energy
US EPA	United States Environmental Protection Agency
UST	Underground Storage Tank

CERCLA 120(h) SUMMARY
NOTICE OF HAZARDOUS SUBSTANCES
RELEASE BLOCK D
MOUND PLANT, MIAMISBURG, OHIO

I. PURPOSE

The information contained in this notice is required under the authority of regulations promulgated under Section 120 (h) of the Comprehensive Environmental Resource Compensation and Liability Act (CERCLA). This summary is intended to support the transfer by deed to new ownership for economic development by documenting that the U.S. Department of Energy's (US DOE) Mound Plant has met the requirements of CERCLA 120 (h) for Release Block D (RB D). A copy shall be provided to all future owners.

II. PROPERTY DESCRIPTION

A. Description of Property Suitable for Transfer:

Situate in the State of Ohio, County of Montgomery, being in the City of Miamisburg, being part of Section 30, Range 5, Township 2, lying in the Miami Rivers Survey (M.R.S.), and being part of city lots numbered 2259 within the Corporation Limits of the City of Miamisburg, and being more particularly bounded and described with bearings referenced to the Ohio State Coordinate System, South Zone, as follows:

Beginning at a iron spike, being the North East corner of Section 35 and the South East corner of Section 36, said point being the center of Benner Road (40 feet R/W) and being referenced North 84° 27' 09" West 3102.92 feet from spike (0.5' deep) at the intersection of the center line of Mound Road (60 feet R/W) with the centerline of said Benner Road in said City of Miamisburg, and being the point of beginning for the land herein described, thence S 84° 28' 03" E 1333.66 feet along the center line of Benner Road to a railroad spike (0.2' deep) located in the center of Benner Road, thence N 4° 44' 28" E 2010.06 feet to a concrete monument, thence N 83° 57' 37" W 34.19 feet to a concrete monument being the TRUE POINT OF BEGINNING; thence N 84° 31' 10" E 613.33 feet to a point, thence N 5° 35' 49" E 291.47 feet to a point, thence N 84° 24' 07" W 93.5 feet to a point, thence N 5° 35' 49" E 360.00 feet to a point, thence S 84° 24' 18" E 35.50 feet to a point, thence N 5° 35' 48" E 131.13 feet to a point, thence along the arc of a curve to the right having a radius of 130 feet for a distance of 203.83 feet to a point, thence S 85° 04' 40" E 495.72 feet to a point located in the center of Mound Road, thence along the centerline of Mound Road S 5° 33' 37" W 218.17 feet to an railroad spike, thence N 85° 26' 39" W 111.00 feet to and iron pipe, thence S 7° 05' 12" E 71f4.44 feet to the true point of beginning containing 12.43 acres more or less, and subject to all legal highways and easements of record.

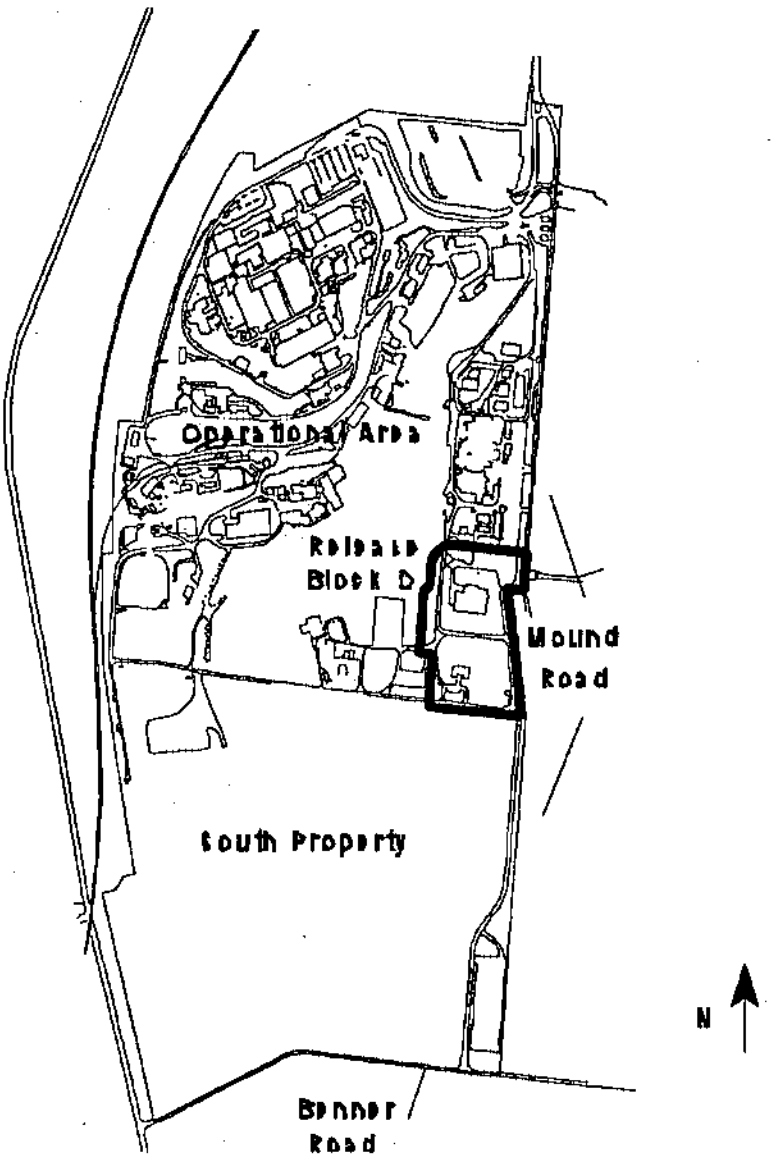
Release Block D (Figure II.1) is located in the southeast corner of the

developed area of the plant. RB D is generally bounded to the south by the "South Property" (the undeveloped portion of the Mound Plant), to the east by offsite residences, to the north by a parking lot and group of small buildings (numbered 39, 77, 78, 97, 95, 101 and 102), and to the west by a fenced area for storage of Investigative Derived Material (IDM) (just west of Building 100). There are two (2) main structures in RB D, Building 100 and Building 105.

B. **Regional Context of Mound Plant and Transferred Property:**
The Mound Plant occupies approximately a 306 acre site in Montgomery County within the City of Miamisburg, Ohio. The northern boundary of the plant is approximately 0.13 miles south of Mound Avenue in Miamisburg. Benner Road forms the southern boundary of the plant, and the Conrail Railroad roughly parallels the western boundary at a distance of 50-200 feet. The Mound Plant consists of the Operational Area and the New Property (also referred to as the South Property). Approximately 130 buildings with a total of 1.4 million square feet of floor space existed at one time at the Mound Plant (although the number of buildings is constantly diminishing as buildings are decommissioned and demolished), all of which were located in the Operational area.

C. **Historical Uses of Property**
Two main structures in Release Block D include Building 105, which was built in 1990 as a machine shop. The other is Building 100, which was a Guard Force Precinct bunker. Both buildings are currently leased for industrial purposes. Portions of Release Block D were previously used for storage of trailers, roll-off boxes, small above-ground tanks and other assorted containers, as well as ground disposal of soils and construction spoils. Also located on the block was a large sewer manway/dump station. No other uses of the area of the Mound facility referred to as Release Block D are known.

FIGURE II.1 Location of Release Block D



III. ENVIRONMENTAL FINDINGS

A. Methodology:

In accordance with Section 120 (h)(3) of CERCLA, to the extent that information is available based on a complete search of DOE files, the following shall be placed in deeds: (1) a notice of the type and quantity of hazardous substances stored, disposed of, or released; (2) a notice of the time at which such storage, disposal, or release took place; and (3) a description of any remedial action taken. Information sources reviewed to obtain the information include:

- Federal Government records
- Recorded chain of title documents
- Reasonably obtainable aerial photographs
- Visual inspection of the property and adjacent properties
- Reasonably obtainable records of releases on adjacent properties
- Interviews with current or former employees
- Sampling, if appropriate under the circumstances

RB D includes a collection of individual areas called Potential Release Sites or PRSs that have undergone previous investigations. The PRSs in RB D were identified on the basis of potential radiological and chemical (non-radioactive) contamination using knowledge of historical land use or on actual measurements of contaminants. Before transfer of a release block can be completed, all buildings and PRSs must be evaluated for protectiveness or remediated to be protective. Any residual risks associated with remaining contamination in RB D have been evaluated.

A Core Team with representatives from the US Department of Energy (DOE), US Environmental Protection Agency (US EPA), and Ohio EPA (OEPA) perform a joint agency evaluation of each of the potential contamination problems and recommend the appropriate response. The Core Team uses process knowledge, site visits, and existing data to determine whether or not any action is warranted concerning the possible problem area.

This summary is a result of a thorough Core Team analysis of information contained in the following reference documents:

1. Building Data Packages (BDP) for Buildings Located within Release Block D. The locations of these buildings are shown on Figure III.1. The rationale for designation is outlined in Table III.1.
Provides notice for buildings of the type and quantity of hazardous substances stored, disposed of, or released and a notice of the time at which such storage, disposal, or release took place, if known as a result of the review of the seven sources of information listed in Section A.

   a. Mound Plant, Building Data Package, Building 100 Located within Release Block D, Final, November 4, 1997.

   b. Mound Plant, Building Data Package, Building 105 Located within Release Block D, Final, November 4, 1997.

2. Potential Release Site (PRS) Data Packages for PRSs located within Release Block D. The locations of these PRSs are shown on Figure III.1. The rationale for designation of RB D PRSs is outlined in Table III.1.
Provides notice for soil and groundwater of the type and quantity of hazardous substances stored, disposed of, or released and a notice of the time at which such storage, disposal, or release took place, if known, as a result of the review of the seven sources of information listed above.

   Potential Release Sites (PRSs) in RB D were identified on the basis of potential radiological and chemical (non-radioactive) contamination using knowledge of historical land use or on actual measurements of contaminants. The primary sources of potential radioactive contamination in RB D resulted from wastewater treatment, storage of radioactive materials, and ground disposal of soils and construction spoils.

a. Mound Plant, Potential Release Site Package, PRS # 279, Final, Revision 2, November 19, 1996.

b. Mound Plant, Potential Release Site Package, PRS # 304/313, Final, Revision 1, July 28, 1997.

c. Mound Plant, Potential Release Site Package, PRS # 310, Final, Revision 4, February 26, 1997.

d. Mound Plant, Potential Release Site Package, PRS # 312, Final, Revision 3, December 5, 1996.

e. Mound Plant, Potential Release Site Package, PRS # 372/374, Final, Revision 2, November 19, 1996.

f. Mound Plant, Potential Release Site Package, PRS # 375/377/378, Final, Revision 2, November 19, 1996.

g. Mound Plant, Potential Release Site Package, PRS # 376, Final, Revision 1, November 27, 1996.

h. Mound Plant, Potential Release Site Package, PRS # 379, Final, Revision 2, November 19, 1996.

i. Mound Plant, Potential Release Site Package, PRS # 380/381, Final, Revision 4, February 26, 1997.

j. Mound Plant, Potential Release Site Package, PRS # 382, Final, Revision 4, February 26, 1997.

FIGURE III.1 PRSs and Buildings Within Release Block D

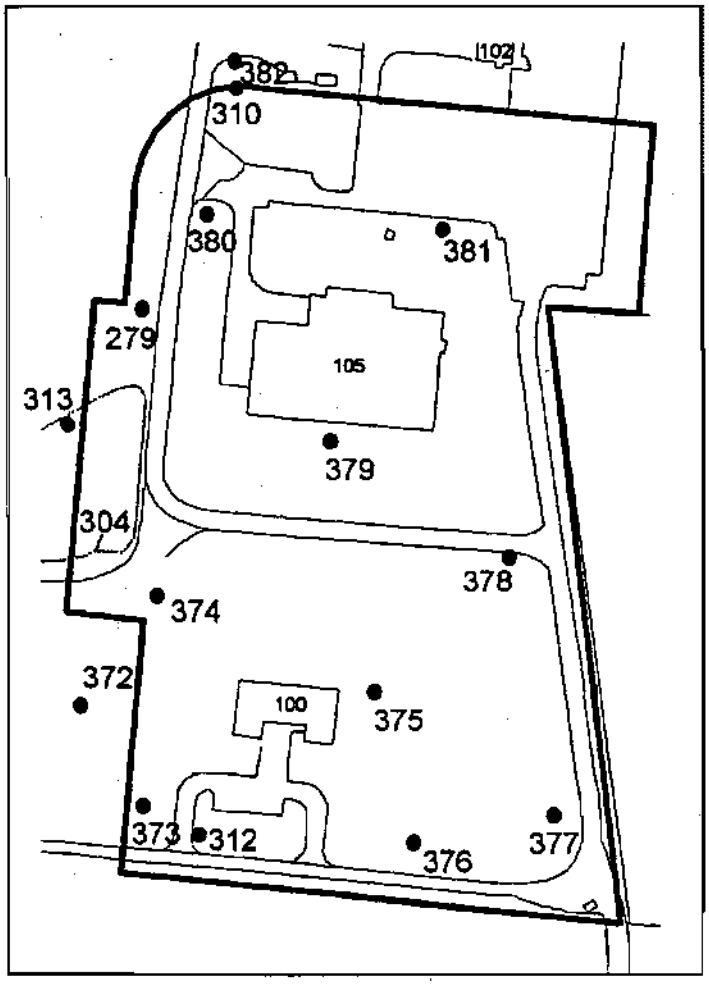


TABLE III.1 Release Block D PRSs/Buildings and Conclusions

PRS / Bldg	Reason for Identification	Joint Agency Decision (DOE & EPAs)	Close Out of PRS / BDP
279	Location of the Old Firing Range Drum Storage Area	No Further Assessment	Recommendation for NFA signed on 10/18/95
304	Past use as a soil disposal area - thorium contamination.	Removal Action conducted in October 1998.	OSC Report signed on 12/17/98.
310	Elevated cesium-137 sample location	No Further Assessment	Recommendation for NFA signed on 1/14/97
312	Elevated thorium sample location	No Further Assessment	Recommendation for NFA signed on 10/18/95
313	Elevated thorium sample location	No Further Assessment	Recommendation for NFA signed on 2/19/97
372/374	Elevated qualitative soil gas detections	No Further Assessment	Recommendation for NFA signed on 5/8/96
373	Elevated plutonium sample location	No Further Assessment	Recommendation for NFA signed on 10/18/95
375/377/378	Elevated qualitative soil gas detections	No Further Assessment	Recommendation for NFA signed on 5/8/96
376	Elevated plutonium sample location	No Further Assessment	Recommendation for NFA signed on 10/3/96
379	Elevated plutonium sample location	No Further Assessment	Recommendation for NFA signed on 10/18/95
380/381	Elevated qualitative soil gas detections	No Further Assessment	Recommendation for NFA signed on 5/8/96
382	Elevated qualitative soil gas detections	No Further Assessment	Recommendation for NFA signed on 1/14/97
Bldg. 100	Building used as machine shop	No Further Assessment	Recommendation for NFA signed on 8/5/97
Bldg. 105	Building used as guard force precinct	No Further Assessment	Recommendation for NFA signed on 8/5/97

3. Residual Risk Evaluation, Release Block D, Final, December 1996. *Provides the evaluation of human health risks associated with any residual contamination that may remain in the block after all remedies within a parcel have been completed. The evaluation ensures that future users of the land will not be exposed to contamination levels that would pose unacceptable health risks. This document should be used in conjunction with Items 6 & 7 below.*

4. On Scene Coordinator (OSC) Report for PRS 304, Mound Plant, December, 1998. *Summary report prepared to record the threat, describe the chronology of action(s) taken, and discuss effectiveness of remedial action.*

5. Proposed Plan for Release Block D, Mound Plant, Miamisburg, Ohio, Final, December, 1998. *Identifies the preferred option for addressing the contamination at the Mound Site, Release Block D to the public by briefly summarizing the alternatives studied and highlighting the key factors that led to identifying the preferred alternative.*

6. Technical Position Report In Support of the Release Block D Residual Risk Evaluation, Final, Revision 0, January 1999.
Supplemental review of key risk data for soil and groundwater related pathways. This document should be used in conjunction with Items 1 & 7.

7. Residual Risk Evaluation (RRE) - Release Block D Revision Summary, Mound Plant, Miamisburg, Ohio, Final, January 1999.
Supplemental prepared for Item 3 above as a result of additional information obtained from a recent radiological survey and sampling event conducted in the fall of 1998. This document contains the final risk evaluation for RB D and should be used in conjunction with Items 1 & 6 above.

8. Record of Decision (ROD) for Release Block D, Mound Plant, Miamisburg, Ohio, Final, March, 1999.
Documents the remedial action plan for a site and serves the following three functions: (1) certifies the remedy selection process was carried out in accordance with CERCLA, (2) describes the technical parameters of the remedy, specifying the treatment, engineering, and institutional components as well as clean up levels, and (3) provides the public with a consolidated summary of information about the site and the chosen remedy, including the rationale behind the selection.

Results Summary:

1. **Building Data Analysis:**

A joint agency decision between DOE, the US EPA, and OEPA has determined no contamination within Buildings 100 and 105 warrants a remedial action and no environmental concerns are associated with Buildings 100 or 105. Lease or sale of Building 100 and 105 for commercial/industrial use is protective of human health and the environment. A brief summary follows. For a more detailed description of each, refer to the building data packages as identified in Section III.A.1 of this report.

a. **Asbestos**

Asbestos material in buildings can be found in five forms: sprayed or troweled on ceilings and walls (surfacing materials); insulation around pipes, ducts, boilers and tanks (pipe and boiler insulation); transite (in ground piping); roofing materials (roofing felts); and other products such as ceiling and floor tiles and wall boards (miscellaneous materials). A Building 105 facility review conducted in June, 1994 indicated no asbestos in the building. Additionally, both buildings were constructed after 1983 when the EPA's ban went into effect for friable asbestos containing materials.

b. **Lead Paint**

Lead based paint was used almost exclusively in the U.S. prior to the 1970's. Congress established maximum lead concentrations in residential paint in 1978. Due to the age of the buildings (100 was constructed 1988 and 105 constructed in 1986), no lead based paint was believed to have been used within the buildings.

c. **Radon**

The results of a 1989-1990 Mound indoor radon study indicated an average radon concentration of 0.5 picocuries/liter in Building 105 and 1.0 picocuries/liter in Building 100 as compared to the EPA recommended

standard for radon of 4.0 picocuries/liter.

d. **Radiological Surveys**

There is no history of radiological processes performed in or around Buildings 100 or 105. Radiation surveys were conducted in both buildings during safe shutdown activities prior to lease. No direct or removable contamination was found on the building floors, corridors or stairways.

e. **Polychlorinated Biphenyls (PCB's)**

Fluorescent lighting fixtures were used in Buildings 100 and 105. Fluorescent lamp ballasts contain a small capacitor that may contain PCBs. All lamp ballasts manufactured before 1979 should be regarded as containing PCBs. These buildings were constructed after 1983, therefore assumed not to contain PCBs in the lamp ballasts. No wet type transformers were utilized.

2. **Results of Potential Release Site Soil Data Analysis:**

The US DOE, US EPA and OEPA have jointly decided that no additional remedial action of PRSs in RB D is necessary with the placement of Institutional Controls in the form of deed restrictions on future land use for RB D upon transfer.

Risks are quantified for both carcinogenic and non-carcinogenic contaminants. The risk associated with the intake of a known or suspected carcinogen is reported in terms of the incremental lifetime cancer risk presented by that COC, as estimated using the appropriate slope factor and the amount of material ingested. Residual levels of contamination that remain on RB D for carcinogens indicate a probability or likelihood of one chance in 10,000 to one chance in 1,000,000 of an individual developing cancer based on industrial use scenario. This probability or likelihood is consistent with the US EPA target risk range.

Potential human health hazards from exposure to non-carcinogenic contaminants are evaluated by using a Hazard Quotient (HQ). The HQ is determined by the ratio of the intake of a COC to a reference dose or concentration for the COC that is believed to represent a no-observable effect level. The COC-specific HQs are then summed to provide an overall Hazard Index (HI). US EPA guidance sets a limit of 1.0 for the Comprehensive HI. The HIs for the future groundwater scenarios, however, are near or above the 1.0-limit. This is based on the bedrock groundwater contaminants flowing directly to the BVA that supplies drinking water for the plant. As a result, the selected remedy prohibits the use of bedrock groundwater. This institutional control, in the form of a deed restriction, will ensure that the residual risks associated with RB D remain acceptable.

Evaluation of residual contaminants within RB D have resulted in a determination that future users of the land will not be exposed to contaminant levels that would pose unacceptable risks as long as compliance with the deed restrictions described in the RB D Record of Decision are maintained. Remediation activities are nearing completion for adjacent property to the west. Remediation activities and additional assessment activities are scheduled in the future for adjacent properties to the north. The Mound site has experience with environmental remediation of both soils and buildings. Each removal action will be designed with containment methods to prevent migration via air pathways, surface water pathways and groundwater pathways. Stormwater management and sediment erosion control will be outlined in each of the decontamination and/or demolition project work plans. DOE believes that no additional contamination of RB D is likely from adjacent activities.

A brief summary of the history of the RB D PRSs and measurements follows. For a more detailed description of each, refer to the PRS data packages as identified in Section III.A.2 of this report:

a. At PRS 310, elevated cesium-137 was found in a surface soil sample in 1987, and was remediated immediately upon its detection. In December 1991, soil samples were again collected from this area. Of the 28 samples collected, two had cesium-137 concentrations above the detection limit. At the same location, 25 samples were analyzed for radium-226. All samples contained detectable concentrations of radium-226. In 1995, additional soil samples collected in this area did not indicate the presence of cesium-137 or any other contaminant.

b. At PRS 373, PRS 376 and PRS 379, plutonium-238 was detected in surface samples in 1994, 1995 and 1996, respectively, and found (as measured by the Mound Soil Screening Laboratory) at or slightly above the method detection limit. The surface samples with detectable plutonium-238 concentrations were shown (by surrounding samples) to be isolated to the PRS locations only.

c. At PRS 312, a surface sample collected in 1993 indicated an elevated thorium-232 concentration of 5.02 pCi/g. Nearby samples did not indicate elevated levels, suggesting the elevated result was an isolated event.

d. PRS 279 was identified based on photographs that showed drum storage at this location. Plutonium-238, cobalt-60, radium-226, and thorium-228 were measured in this area. This drum storage area had been incorrectly referred to as the Old Firing Range Storage Site which was believed to be used between 1970 and 1974. Subsequent reviews indicated the Old Firing Range was actually located at PRS 277.

There were no elevated soil gas measurements detected at this location. A deep (3 to 5 feet) soil sample near PRS 279 had detectable polynuclear aromatic hydrocarbons (PAHs) at an elevated concentration of approximately 59 mg/kg. This sample was a composite of four samples collected at the corners of a 30 foot x 30

foot square. A second composite prepared similarly from about 100 feet away found similar contaminants at 1 to 3 mg/kg. Other nearby sample locations nearby did not detect any of the contaminants. These chemicals are commonly associated with asphalt, which is present in the area.

A February 1996 soil sample in the vicinity of PRS 279 contained low levels of organic and inorganic compounds, plutonium-238, radium-226, and thorium-228.

e. PRS 313, which neighbors PRS 304, was a soil segregation area that contained the overburden soils excavated from the decommission and decontamination of a waste transfer line (PRS 300) and from Area 12 (PRS 273). PRS 313 was identified due to an elevated thorium result. Sampling in 1995 in the area of PRS 313 indicated no contaminants in excess of guideline criteria.

f. PRS 304 was identified as a former soil disposal area. PRSs 304/313 were originally binned NFA on February 19, 1997, based on data existing at that time. However, a recent radiological survey and sampling event conducted in the fall of 1998 identified two small "hot spots" which were subsequently removed. The results from the 1998 removal actions are available in the "On Scene Coordinator (OSC) Report for PRS 304 Removal Action, December 1998."

C. Summary of All Soil and Groundwater Contaminants Detected

Table III.2 and Table III.3 presents a summary of all soil and groundwater contaminants above the detection limit. The American Chemical Society's Chemical Abstracts Service Registry Number (which is a numeric designation and uniquely identifies a specific chemical compound) is provided where available. Background levels are also provided where available.

Table III.2 Summary Table of All Soil Contaminants Detected in Release Block D					
Soil contaminants above detection limit	CAS Registry Number	Maximum concentration at Any Depth	Maximum concentration Shallow only	Soil Background	Detected / Analyses
ORGANICS (mg/kg)					
Acenaphthene	83-32-9	6.4	3.80		10/55
Acenaphthylene	208-96-8	0.22	0.029		4/53
Acetone	67-64-1	0.23	0.210		21/47
Alpha Chlordane	5103-71-9	0.086	—		2/74
Anthracene	120-12-7	11.65	4.8		16/60
Aroclor-1248	12672-29-6	0.059	0.059		1/60
Aroclor-1254	11097-69-1	0.3025	0.3025		1/60
Benzene	71-43-2	0.001	—		1/63
Benzo(a)anthracene	56-55-3	41.5	6.8		24/61
Benzo(a)pyrene	50-32-8	33.5	7.5		25/60
Benzo(b)fluoranthene	205-99-2	53	12		24/60
Benzo(g,h,i) perylene	191-24-2	3.9	3.9		15/60
Benzo(k)fluoranthene	207-08-9	1.3	1.3		13/61
Benzoic Acid	65-85-0	0.750	0.750		6/52
Beta-BHC	319-85-7	0.360	0.360		5/78
Bis(2-ethylhexyl)phthalate	117-81-7	4.2	3.650		43/60
Bromoform	75-25-2	0.002	0.001		3/63
2-Butanone	78-93-3	0.028	0.010		4/24
Carbazole	86-74-8	0.165	0.165		2/13
Carbon Disulfide	75-15-0	0.004	0.004		1/48
2-Chlorophenol	95-57-8	0.1	0.1		1/60
Chrysene	218-01-9	51.5	5.4		24/60
2,4-Dinitrophenol	51-28-5	0.970	0.970		4/72
Di-n-butyl phthalate	84-74-2	0.140	—		1/48
Di-n-octyl phthalate	117-84-0	0.089	0.089		1/48
Dibenz(a,h)anthracene	53-70-3	1.3	1.3		10/60
Dibenzofuran	132-64-9	3.8	3.0		12/60
Dibromochloromethane	124-48-1	0.001	0.001		2/63
Ethylbenzene	110-54-3	0.003	0.001		8/48
Fluoranthene	206-44-0	65	5.3		34/60
Fluorene	86-73-7	6.3	3.3		16/60
Indeno(1,2,3-cd)pyrene	193-39-5	20.5	4.7		17/60
2-Hexanone	591-78-6	0.011	0.008		2/63
Methoxychlor	72-43-5	0.0055	0.0055	30	1/61
2-Methylnaphthalene	91-57-6	1.4	1.4		12/59
4-Methyl-2-pentanone	108-10-1	0.002	—		1/24
Methylene Chloride	74-87-3	0.066	0.056		53/62

Table III.2 Summary Table of All Soil Contaminants Detected in Release Block D

Soil contaminants above detection limit	CAS Registry Number	Maximum concentration Any Depth	Maximum concentration Shallow only	Soil background	Detects / Analyses
Naphthalene	91-20-3	1.9	1.9		14/60
N-Nitrosodiphenylamine	86-30-6	0.083	—		1/60
Pentachlorophenol	87-86-5	0.97	0.97		2/60
Phenanthrene	129-00-0	49.5	13		24/60
Phenol	108-95-2	0.120	0.120		1/60
Pyrene	129-00-0	62	3.4		35/61
Styrene	100-42-5	0.001	—		1/63
Toluene	108-88-3	0.016	0.004		31/51
1,1,1-Trichloroethane	71-55-6	0.0025	0.002		6/48
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.003	0.003		2/4
Tetrachloroethene	127-18-4	0.0295	0.027		30/63
Trichloroethene	79-01-6	0.00175	0.001		3/63
Xylenes, total	1330-20-7	0.019	0.005		17/48
INORGANICS (mg/kg)					
Aluminum	7429-90-5	24300	24300	18000	61/61
Antimony	7440-36-0	39.2	39.2		41/60
Arsenic (total)	7440-38-2	15.8	12.35	8.6	56/60
Barium (total)	7440-39-3	185	185	180	61/61
Beryllium	7440-41-7	1.8	1.8	1.3	47/49
Bismuth	7440-69-9	5.7	5.7		2/13
Cadmium (total)	7440-43-9	10.2	10.2	2.1	21/61
Calcium (total)	7440-70-2	276000	232000	310000	61/61
Chloride	16887-00-6	59	—	107	3/6
Chromium (total)	7440-47-3	29.6	28	20	61/61
Cobalt (total)	10198-40-0	15	15	19	59/61
Copper (total)	7440-50-8	33.1	30.5	26	61/61
Cyanide	57-12-5	1.0	1.0		33/54
Fluoride	16984-48-8	6.38	2.2	6.7	6/6
Iron (total)	7439-89-6	43600	38900	35000	61/61
Lead (total)	7439-92-1	35.8	35.8	48	61/61
Lithium	7439-93-2	25.3	25.3	26	9/10
Magnesium (total)	7439-95-4	64500	64500	40000	61/61
Manganese (total)	7439-96-5	757	746	1400	61/61
Mercury (total)	7439-97-6	1.6	0.71		25/60
Molybdenum	7439-98-7	14.5	2.3	27	9/11
Nickel (total)	7440-02-0	52.05	36.0	32	49/61
Nitrate	7697-37-2	2.07	—	26	1/1
Nitrate/Nitrite		3.7	3.7		10/13

Table III.2 Summary Table of All Soil Contaminants Detected in Release Block D					
Soil contaminants above detection limit	CAS Registry Number	Maximum concentration Any Depth	Maximum concentration Shallow Only	Soil Background	Detects / Analyses
Organic Carbon		10189.1	—		1/1
Potassium (total)	7440-09-7	2580	2580	1900	59/61
Silicon (total)	7440-21-3	1100	—		1/1
Silver (total)	007440-02-0	18.6	17.6	1.7	40/61
Sodium (total)	7440-23-5	2490	2490	240	57/60
Sulfate	14808-79-8	129	—	150	2/6
Thallium	7440-28-0	0.23	—	0.46	2/60
Tin	7440-31-5	1.7	1.7	20	7/9
Vanadium	7440-62-2	41	41	25	60/61
Zinc (total)	607440-66-6	754	238	140	61/61
RADIONUCLIDES (pCi/g)					
Actinium-227	14952-40-0	0.38	0.38		17/17
Americium-241	14596-10-2	0.05	0.05		17/24
Cesium-137	10045-97-3	1.7	1.7	0.42	43/79
Cobalt-60	10198-40-0	0.055	0.055		17/24
Lead-210	14255-04-0	2.91	2.91		17/17
Plutonium-238	13981-16-3	60	60	0.13	332/394
Plutonium-239/240	15117-48-3/ 14119-33-6	0.0196	0.0196	0.18	10/21
Potassium-40	13966-00-2	34.9	26.9	37	46/46
Radium-224	13233-32-4	12.2	12.2		25/25
Radium-226	13982-63-3	3.055	2.3	2	28/28
Radium-228	15262-20-1	1.92	1.25		25/25
Strontium-90	10098-97-2	0.854	—	0.72	1/5
Thorium-228	14274-82-9	3.57	3.57	1.5	18/18
Thorium-230	14269-63-7	5.75	5.75	1.9	34/39
Thorium-232	7440-29-1	7	7	1.4	221/393
Thorium-234	15065-10-8	1.48	1.17	1.2	25/25
Tritium	10028-17-8	0.58	0.58	1.6	5/14
Uranium-234	13966-29-5	1.14	1.14	1.1	19/19
Uranium-235	15117-96-1	0.1195	0.1195	0.11	18/19
Uranium-238	7440-61-1	1.14	1.14	1.2	19/24

NOTE:

Contaminants with no background available were left blank.

— No shallow data available.

Table III.3. Summary Table of All Current Groundwater Contaminants Detected in BVA Production Wells

Groundwater contaminant (above detection limit)	CAS Registry Number	Maximum concentration	BVA background
ORGANICS (mg/L)			
Acetone	67-64-1	0.012	
Bromodichloromethane	75-27-4	0.0037	
2-Butanone	78-93-3	0.041	
Chloroform	67-66-3	0.0022	0.0005
1,1-Dichloroethane	75-34-3	0.0035	
1,1-Dichloroethene	75-35-4	0.0017	
1,2-Dichloroethene	540-59-0	0.0047	
1,2-cis-Dichloroethene	156-59-2	0.0021	0.0010
1,2-trans-Dichloroethene	156-60-5	0.003	
Dichloromethane - Methylene Chloride	75-09-2	0.0098	
Isophorone	78-59-1	0.010	
Tetrachloroethene	127-18-4	0.002	
1,1,1-Trichloroethane	71-55-6	0.0018	0.0007
Trichloroethene	79-01-6	0.0046	
Trichlorofluoromethane	75-69-4	0.0025	
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.0087	
INORGANICS (mg/L)			
Alkalinity		335	
Aluminum	7429-90-5	0.0737	0.0375
Ammonia	7664-41-7	0.58	0.162
Barium	7440-39-3	0.0884	0.3102
Cadmium	7440-43-9	0.0077	
Calcium	7440-70-2	126	111
Chloride	16887-00-6	133	106
Chromium	7440-47-3	0.0249	0.0061
Copper	7440-50-8	0.593	0.0012
Dissolved Solids		719	603
Fluoride	16984-48-8	0.18	0.419
Iron	7439-89-6	0.780	4.065

Table III.3. Summary Table of All Current Groundwater Contaminants Detected in BVA Production Wells (cont.)			
Group by all contaminants above detection limit	CAS #	Maximum concentration	BVA background
Manganese	7439-96-5	0.0248	0.2298
Nitrate/Nitrite		4.9	5.349
Nitrate	7697-37-2	2.55	
Nitrite	14797-65-0	0.066	
Nitrogen	7727-37-9	0.62	0.324
Organic Carbon		1.1	1.987
Phosphate	14265-44-2	0.22	0.231
Potassium	7440-09-7	3.8	4.461
Silver	7440-22-4	0.0242	
Sodium	7440-23-5	82.4	62.43
Sulfate	14808-79-8	83.0	142.7
Suspended Solids		8.0	26.44
Vanadium	7440-62-2	0.0244	0.0171
Zinc	7440-66-6	0.0577	0.1198
RADIONUCLIDES (pCi/L)			
Actinium-227	14952-40-0	0.335	
Bismuth-210	13982-38-2	0.39	
Plutonium-239/240	13981-16-3 / 15117-48-3	2.0	0.125
Radium-226	13982-63-3	0.4	0.996
Strontium-85	13967-73-2	25	
Strontium-90	10098-97-2	0.3	0.975
Thorium-228	14274-82-9	2.17	0.779
Thorium-230	14269-63-7	1.99	0.289
Thorium-232	7440-29-1	0.1	
Tritium	10028-17-8	7200	1485
Uranium-234	13966-29-5	8.14	0.792
Uranium-238	7440-61-1	8.25	0.688

3. **Other Factors Considered:**

DOE developed a generic checklist of the issues to be considered in evaluating property to be transferred. The list was developed using the Cross-Cut Guidance on Environmental Requirements for DOE Real Property Transfers and checklists used by the Department of Defense in releasing property. The list includes environmental problems from Mound Plant that are likely to concern a potential purchaser as well as items relating to the operational concerns from ongoing and future remedial actions. Table III.4 contains a brief summary and references for all factors considered. Results of only those factors with a recommendation for disclosure relating to RB D are presented as follows:

a. **Drinking Water**

Mound Plant has exceeded the action levels for lead and copper due to the corrosiveness of the water distribution system. When the action level for lead is exceeded, EPA regulations require corrosion control and public education programs. These programs are in place at Mound. Information on the steps being taken to reduce lead concentrations in the Mound Plant water system, and on the hazards associated with ingesting lead, will be made available to all Mound drinking water users.

b. **Monitoring Equipment**

An easement will be executed between the US DOE and MMCIC prior to transfer of RB D to maintain access for continued monitoring and maintenance on the following. Questions regarding terms and conditions should be directed to the DOE Realty Officer, Ohio Field Office.

1. One monitoring well in bedrock (Well # 0351), exists to the west of the gravel road next to Building 100.

2. One air sampling station (#216) is located within the boundary of Release Block D.

TABLE III.4 Summary of Other Factors Considered for Release Block D, Mound Plant				
FACTOR CONSIDERED	RB D DISCLOSURE? YES	NO	RECOMMENDATION/CONCLUSION	REFERENCE
Cultural Resources		✔	There are no historic or cultural resources within RB D that would fall under a Memoranda of Agreement (MOA) or require deed restrictions to be put in place prior to transfer to limit alterations to the structures.	Correspondence From Mark J.Epstein, Department Head, Resource Protection and Review, Ohio Historic Preservation Office dated July 31, 1998.
Drinking Water Quality	✔		Mound Plant has exceeded the action levels for lead and copper due to the corrosiveness of the water distribution system. When the action level for lead is exceeded, EPA regulations require corrosion control and public education programs. These programs are in place at Mound. Information on the steps being taken to reduce lead concentrations in the Mound Plant water system, and on the hazards associated with ingesting lead, will be made available to all Mound drinking water users.	Miamisburg Environmental Management Project, Annual Site Environmental Report for Calendar Year 1997, September 1998.
Endangered Species		✔	Two state protected species were found, the dark-eyed junco (Junxo hyemalis) and the inland rush (Juncus interior). Because only one individual inland rush was located, it is not considered a viable breeding population at the Mound facility. The dark-eyed junco is not known to breed in southwestern Ohio. It has also been determined that the plant site is in the habitat range of the federally endangered species of Indiana Bat (Myotis sodalis), however, the Mound site does not provide a suitable habitat for the Indiana Bat. Neither the solitary sitings of the rush and the junco, nor the potential habitat for the Indiana bat, are expected to affect ongoing or future activities at the site.	Operable Unit 9 Hydrogeologic Investigation: Wetlands Determination Report, Technical Memorandum, Revision 1, January 1994.

TABLE III.4 Summary of Other Factors Considered for Release Block D, Mound Plant				
FACTOR CONSIDERED	RB D DISCLOSURE?		RECOMMENDATION/CONCLUSION	REFERENCE
	YES	NO		
Monitoring Equipment	✔		An easement will be executed between the US DOE and MMCIC prior to transfer of RB D to maintain access for continued monitoring and maintenance on the following. Questions regarding terms and conditions should be directed to the DOE Realty Officer, Ohio Field Office.	Groundwater Monitoring Program and Groundwater Protection Management Program Plan, April 1997, Revision 1. Mound Plant Environmental Monitoring Plan dated July 1997.
National Environmental Policy Act (NEPA)		✔	A Finding of No Significant Impact (FONSI) was issued on October 27, 1994 for Commercialization activities at the Mound Plant. Documented the rationale supporting the Categorical Exclusion for the proposed sale of Mound Plant under 10 CFR 1021, Appendix A to Subpart D, Section A.7 ("use unchanged").	The Mound Plant EA for Commercialization of the Mound Plant, DOE/EA-1001 dated October, 1994 FONSI for the Commercialization of the Mound Plant EA dated October 27, 1994. December 8, 1995 memorandum from Nat Brown, Assistant Manager Compliance and Support, Ohio Field Office to George R. Gartrell, Director, Miamisburg Area Office.
Resource Conservation and Recovery Act (RCRA)		✔	DOE has found no RCRA regulated units within Release Block D warranting a RCRA closure action. It has been determined that the closest facility boundary from Buildings 23 and 72 will not change with the sale of release block D. Therefore, the risk assessment information in the RCRA Part B Permit will not change.	RCRA Part B Permit Application, Volume I, Section A, September 1995 (as amended) Responses to Information Requested by the Ohio HWFB Technical Staff transmitted to Bob Brown of the State of Ohio Hazardous Waste Facility Board dated March 12, 1996.

TABLE III.4 Summary of Other Factors Considered for Release Block D, Mound Plant

FACTOR CONSIDERED	RB D DISCLOSURE?		RECOMMENDATION/CONCLUSION	REFERENCE
	YES	NO		
Safety Basis Risk		✔	DOE Order 5480.23, "Nuclear Safety Analysis Reports", requires preparation of safety analysis to demonstrate adequate protection of health and safety of workers and the public. Accident scenarios have been identified which have the potential to impact the health and safety of the public. Changing the site boundaries, by transferring Release Blocks D decreases the fence line distance used in calculations of potential dose consequences for accidents having ground level releases. The Building 22 Basis for Interim Operation (BIO) was modified to account for the decreased buffer zone. The DOE approved BIO was implemented on 2/01/98.	Correspondence from J. Kreuger, Waste Management Manager, Babcock and Wilcox of Ohio, Inc. to R. Provencher, Director, Miamisburg Environmental Management Project, 12/04/98.
Wetlands		✔	Three characteristics must be present to be classified as jurisdictional wetlands: (1) hydrophytic vegetation, (2) hydric soils, and (3) wetlands hydrology. Absence of any one of these characteristics removes an area from consideration. None of the sites examined within Release Block D constitute jurisdictional wetlands.	Operable Unit 9 Hydrogeologic Investigation: Wetlands Determination Report, Technical Memorandum, Revision 1, January 1994. Correspondence, T. Ballieul, Director, Columbus Environmental Management Project to S. Smiley dated 08/27/98.
Wild and Scenic Rivers		✔	Section 8(a) of the statute withdrews all public land within Wild and Scenic Rivers Act designated areas from sale or other disposition except for leasing. There are no wild and scenic rivers located within RB D.	Correspondence, S. Lewis, Ohio Department of Natural Resources to M. Gillat, EG&G Mound Applied Technologies, Miamisburg, Ohio dated July 14, 1992.

IV. FINDING OF SUITABILITY TO TRANSFER

In accordance with provisions of CERCLA Section 120 (h), contaminated property can only be transferred if one of the following applies:

(1) a remedial action has been taken that protects human health and the environment and EPA deems this conditions to be satisfied if a remedy has been constructed and is operating successfully,

(2) a decision has been made that no remedial action is necessary.

This future industrial use of the Mound Plant has been determined based upon agreement among US DOE, US EPA and OEPA, and interested stakeholders. This land use is reflected in the Mound Comprehensive Reuse Plan of the Miamisburg Mound Community Improvement Corporation (MMCIC) and is currently codified in the City of Miamisburg Zoning Ordinance for industrial use.

A joint agency decision among the US DOE, US EPA and OEPA has been made that a remedial action has been taken that protects human health and the environment. EPA deems this condition to be satisfied if the Institutional Controls are implemented and operating successfully. Institutional controls in the form of deed restrictions on future land use will be placed on RB D upon transfer as part of the remedy. The objective of these institutional controls is to prevent an unacceptable risk to human health and the environment by restricting the use of RB D, including RB D soils, to that which is consistent with assumptions in the RB D RRE. DOE or its successors will retain the right and responsibility to monitor, maintain, and enforce these institutional controls. The following property deed restrictions and requirements will be imposed on the property to maintain protection of human health and the environment in the future:

A. Ensure that industrial land use is maintained;
B. Prohibit the use of bedrock ground water;
C. Provide site access for Federal and State agencies for the purpose of sampling and monitoring; and
D. Soils from RB D shall not be removed from the Mound Facility boundary without approval from the Ohio Department of Health (ODH).

V. ENVIRONMENTAL COVENANTS:

DOE is committed to include a covenant in accordance with Section 120 (h)(3) of CERCLA in the deed for the sale or transfer of the property that warrants that:

A. All remedial action necessary to protect human health and the environment has been taken.

B. Any additional response action or corrective action found to be necessary after the date of sale or transfer shall be conducted by the United States [Section 120(h)(4)(D)(i)]. The requirements of the covenant shall not apply in any case in which the person or entity to whom the property is transferred is a potentially responsible party with respect to the property.

C. A clause granting the United States access to the property in any case in which a response action or corrective action is found to be necessary or such access is necessary to carry out a response action or corrective action on the adjoining property [Section 120 (h)(4)(D)(ii)]

VI. NOTIFICATION/PUBLIC PARTICIPATION

The community has been an active participant in this process to date. Comments from the public on the PRS and building disposition recommendations have been incorporated as part of the remedy evaluation. DOE believes all comments have been resolved with the commentor and the documents, comments, and responses have been placed in the CERCLA Public Reading Room.

Table VI.1 lists all RB D PRS packages, Building Data Packages, and the RB D RRE, along with the dates they were made available for public comment.

Table VI.1 Release Block D Documents and Public Comment Periods

DOCUMENT (PRS/BUILDING)	COMMENT PERIOD (BEGIN)	COMMENT PERIOD (END)
279	02/15/96	02/29/96
304/313	05/08/97	06/16/97
PRS 304 Action Memo	10/01/98	10/31/98
310	01/15/97	02/15/97
312	10/24/95	02/15/96
372/374	05/15/96	06/17/96
373	02/15/96	02/29/96
375/377/378	05/15/96	06/17/96
376	10/15/96	11/15/96
379	02/15/96	02/29/96
380/381	05/15/96	06/17/96
382	01/15/97	02/15/97
Building 100	09/04/97	10/20/97
Building 105	09/04/97	10/20/97
RB D Residual Risk Evaluation	08/21/96	09/20/96
Supplemental RB D Residual Risk Evaluation	12/22/98	01/21/99
Proposed Plan for RB D	12/22/98	01/21/98

Deed

Montgomery County
DEED-99-141468 0006
Joy Clark, Recorder
$30.00 12/21/99 07:59:27

DN/2,9

QUITCLAIM DEED

K46. 5-1-11

The UNITED STATES OF AMERICA, acting by and through the Secretary of the Department of Energy (hereinafter sometimes called "Grantor"), under and pursuant to the authority of the Atomic Energy Act of 1954, Section 161 (g) (42 U.S.C. §2201(g)), in consideration of the covenants contained herein, and other good and valuable consideration, duly paid by the Miamisburg Mound Community Improvement Corporation, a non-profit corporation subsisting under the laws of Ohio and recognized by the Secretary of Energy as the agent for the community wherein the former Mound Facility is located (hereinafter sometimes called "Grantee"), the receipt of which is hereby acknowledged, hereby QUITCLAIMS unto Grantee its successors and assigns, subject to the reservations, covenants, and conditions hereinafter set forth, all of its right, title and interest, together with all improvements thereon and appurtenances thereto, in the following described real property (hereinafter the "Premises), commonly known as Parcel D:

Situate in the State of Ohio, County of Montgomery, City of Miamisburg and being part of Section 30, Fractional Town 2, Range 5 Miami Rivers Survey (M.R.S.), and being part of City of Miamisburg Lot No. 2259 and being part of tract of land conveyed to the United States of America as described in deed book 1214, page 12-14 and, being more fully described in Exhibit A attached hereto and incorporated herein.

0023296 $.00

RESERVING UNTO Grantor, the United States Environmental Protection Agency (USEPA) and the State of Ohio, acting by and through the Director of the Ohio Environmental Protection Agency (OEPA) or the Ohio Department of Health (ODH), their successors and assigns, an easement to, upon or across the Premises in conjunction with the covenants of Grantor and/or Grantee in paragraphs numbered 1.1-1.3, 3.2 and 3.3 of this Deed and as otherwise needed for purposes of any response action as defined under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended, including but not limited to, environmental investigation or remedial action on the Premises or on property in the vicinity thereof, including the right of access to, and use of, to the extent permitted by applicable law, utilities at reasonable cost to Grantor. Grantee understands that any such response action will be conducted in a manner so as to attempt to minimize interfering with the ordinary and reasonable use of the Premises.

TRANSFERRED
99 DEC 20 AM 9:18
A.J. WAGNER
AUDITOR

DEED 99-0852 B05

This Deed and conveyance is made and accepted without warranty of any kind, either express or implied, except for the warranty in paragraph 3.3 of this Deed, and is expressly made under and subject to all reservations, restrictions, rights, covenants, easements, licenses, and permits, whether or not of public record, to the extent that the same affect the Premises.

1. The parties hereto intend the following restrictions and covenants to run with the land and to be binding upon the Grantee and its successors, transferees, and assigns or any other person acquiring an interest in the Premises, for the benefit of Grantor, USEPA and the State of Ohio, acting by and through the Director of OEPA or ODH, their successors and assigns.

   1.1 Excepting those soils in an area approximately 40 feet wide and 218.17 feet long, bounded on the east by the centerline of Mound Road as described above, Grantee covenants that any soil from the Premises shall not be placed on any property outside the boundaries of that described in instruments recorded at Deed Book 1214, pages 10, 12, 15, 17 and 248; Deed Book 1215, page 347; Deed Book 1246, page 45; Deed Book 1258, pages 56 and 74; Deed Book 1215, page 347; Deed Book 1246, page 45; Deed Book 1258, pages 56 and 74; Deed Book 1256, page 179; Micro-Fiche 81-376A01; and Micro-Fiche 81-323A11 of the Deed Records of Montgomery County, Ohio (and as illustrated in the CERCLA 120(h) Summary, Notices of Hazardous Substances Release Block D, Mound Plant, Miamisburg, Ohio dated January, 1999) without prior written approval from the Ohio Department of Health (ODH), or a successor agency.

   1.2 Grantee covenants not to use, or allow the use of, the Premises for any residential or farming activities, or any other activities which could result in the chronic exposure of children under eighteen years of age to soil or groundwater from the Premises. Restricted uses shall include, but not be limited to:

   (1) single or multifamily dwellings or rental units;
   (2) day care facilities;
   (3) schools or other educational facilities for children under eighteen years of age; and
   (4) community centers, playgrounds, or other recreational or religious facilities for children under eighteen years of age.

   Grantor shall be contacted to resolve any questions which may arise as to whether a particular activity would be considered a restricted use.

1.3 Grantee covenants not to extract, consume, expose, or use in any way the groundwater underlying the premises without the prior written approval of the United States Environmental Protection Agency (Region V) and the OEPA.

2. The Grantor hereby grants to the State of Ohio and reserves and retains for itself, its successors and assigns an irrevocable, permanent, and continuing right to enforce the covenants of this Quitclaim Deed through proceedings at law or in equity, including resort to an action for specific performance, as against and at the expense of Grantee, its successors and assigns, including reasonable legal fees, and to prevent a violation of, or recover damages from a breach of, these covenants, or both. Any delay or forbearance in enforcement of said restrictions and covenants shall not be deemed to be a waiver thereof.

3. Pursuant to Section 120(h)(3) of the Comprehensive Environmental Response, Compensation and Liability Act of 1930, as amended (42 U.S.C. §9620(h)(3)), the following is notice of hazardous substances, the description of any remedial action taken, and a covenant concerning the Premises.

3.1 **Notice of Hazardous Substance:** Grantor has made a complete search of its files and records concerning the Premises. Those records indicate that the hazardous substances listed in Exhibit "B," attached hereto and made a part hereof, have been stored for one year or more or disposed of on the Premises and the dates that such storage/disposal took place.

3.2 **Description of Remedial Action Taken:**
Institutional Controls are established. The Institutional Controls are set forth as covenants in Sections 1.1, 1.2, and 1.3 of this Deed.

3.3 **Covenant:** Grantor covenants and warrants that all remedial action necessary for the protection of human health and the environment with respect to any hazardous substances remaining on the property has been taken, and any additional remedial action found to be necessary after the date of this Deed regarding hazardous substances existing prior to the date of this Deed shall be conducted by Grantor, provided, however, that the foregoing covenant shall not apply in any case in which the presence of hazardous substances on the property is due to the activities of Grantee, its successors, assigns, employees, invitees, or any other person subject to Grantee's control or direction.

4. Unless otherwise specified, all the covenants, conditions, and restrictions to this Deed shall be binding upon, and shall inure to the benefit of the assigns of Grantor and the successors and assigns of Grantee.

IN WITNESS WHEREOF, the United States of America, acting by and through its Secretary of the Department of Energy, has caused these presents to be executed this 19 day of November, 1999.

UNITED STATES OF AMERICA

Susan Brechbill

WITNESSETH:

Linda Geisler
Linda Geisler

Lorinda LeDuc
Lorinda LeDuc

State of Ohio)
County of Montgomery) SS.

Before me, a Notary Public in and for said State and County, appeared this 19 day of November, 1999, Susan Brechbill, who acknowledged that she is the Manager of the Ohio Field Office for the United States Department of Energy, with full authority to execute the foregoing on behalf of the United States of America, and who acknowledged the above to be her signature and her free act and deed.

NOTARIAL SEAL STATE OF OHIO

Randolph Tormey
Notary Public
RANDOLPH T. TORMEY, Attorney-at-Law
Notary Public, State of Ohio
My Commission has no expiration date.
Section 147.03 O. R. C.

This document was prepared by the U.S. Department of Energy.

NO PLAT REQUIRED
(SEC 711.131 ORC)
MIAMISBURG CITY PLANNING COMMISSION
Susanne J. Baker
Secretary

DESCRIPTION OF

12.429 Acres

located in

Section 30, Fractional Town 2, Range 5 MRS

part of

City of Miamisburg Lot No. 2259

DIV/2.9

K46-5-1-11

December 09, 1999

Situate in the State of Ohio, County of Montgomery, City of Miamisburg and being part of Section 30, Fractional Town 2, Range 5 M.R.S. and being part of City of Miamisburg Lot No. 2259 and being part of a tract of land conveyed to The United States of America as described in Deed Book 1214, Page 12-14 and being more particularly described as follows:

COMMENCING at a Concrete Monument Found (top broken off) at the Northwest Corner of Section 30, ***THENCE*** with the north line of said Section 30 and the northerly line of Fractional Township 2, Range 6 MRS, ***South 84° 00'12" East for a distance of 1249.75 feet*** to the Northwest corner of the Roads End Plat as recorded in Plat Book DD, Page 75 and the centerline of Mound Road extended north, (witness a 5/8" Rebar Found bearing South 63° 34'50" East at a distance of 0.30 feet from the Northwest corner of said Plat);

THENCE with said Centerline of Mound Road, ***South 05° 32'42" West for a distance of 2490.95 to a Mag Nail Set at the TRUE POINT OF BEGINNNG*** of the herein described tract;

THENCE continuing with said centerline, ***South 05° 32' 42" West for a distance of 218.17 feet to a Railroad Spike Found*** by common report at the Northeast corner of a 0.78 Acre tract of land conveyed to Randall & Rita Hilgefort as described in Deed MF 97-0746-A08;

THENCE with said 0.78 Acre Hilgeforts North line, ***North 85° 28'23" West for a distance of 111.00 feet to a 5/8" Rebar Set*** at said 0.78 Acre Hilgeforts Northwest corner, (passing a 5/8" Rebar Set at 30.00 feet);

THENCE with said 0.78 Acre Hilgeforts West line and the West line of a 0.26 Acre tract conveyed to Betty J. Eckhart as described in Deed MF 98-0834-C09 and the West line of a 0.7 Acre tract conveyed to Melissa A. Wilson as described in Deed MF 89-0125-D01 and the West Line of the Miami Mound Plat as recorded in Plat Book 94, Page 34, ***South 07° 06'56" East for a distance of 714.44 feet to a IP in Concrete Found*** at the Southwest corner of said Miami Mound Plat;

DEED 99-0852 B09

THENCE with the Southerly line of said City of Miamisburg Lot No. 2259, ***North 84° 32'54" West for a distance of 613.34 feet to a 5/8" Rebar Set;***

THENCE on a new division line, ***North 05° 34'05" East for a distance of 291.47 feet to a 5/8" Rebar Set;***

THENCE continuing on a new division line, ***North 84° 25' 51" West for a distance of 93.50 feet to a 5/8" Rebar Set;***

THENCE continuing on a new division line, ***North 05° 34'05" East for a distance of 360.00 feet to a 5/8" Rebar Set;***

THENCE continuing on a new division line, ***South 84° 26'02"East for a distance of 35.50 feet to a 5/8" Rebar Set;***

THENCE continuing on a new division line, ***North 05° 34'05"East for a distance of 131.23 feet to a 5/8" Rebar Set;***

THENCE continuing on a new division line on a ***TANGENT CURVE to the RIGHT with a RADIUS of 130.00 feet, a DELTA ANGLE of 89° 20'20", a ARC LENGTH of 202.72 feet with a CHORD BEARING of North 50° 14'15" East for a CHORD DISTANCE of 182.80 feet to a 5/8" Rebar Set;***

THENCE continuing on a new division line, ***South 85° 05'35" East for a distance of 496.88 feet BACK TO THE TRUE POINT OF BEGINNING***, (passing a 5/8" Rebar set at 466.88 feet).

Described tract contains 12.429 Acres more or less. North based on State Plane Coordinates, South Zone State of Ohio as taken from a drawing prepared by Lockwood, Jones and Beals dated 6-01-82, Project No. 2149. This Description is based on an actual Field Survey performed by HLS Surveyors and Engineers under the direct supervision of William C. LeRoy P.S. Ohio License Number 7664. Subject to all Easements, Highways, Covenants and Restrictions of Public Record.

William C. LeRoy P.S.
Ohio License No. 7664
12-9-99

STATE OF OHIO
WILLIAM C. LEROY 7664
REGISTERED PROFESSIONAL SURVEYOR

JOSEPH LITVIN P.E., P.S.
COUNTY ENGINEER
MONTGOMERY COUNTY DAYTON, OHIO
DESCRIPTION CHECKED AND APPROVED
BY EAM DATE 12/16/99

A.J. WAGNER
MONTGOMERY COUNTY AUDITOR
DIVISION

PARCEL D MOUND 99152PD

DEED 99-0852 B10

Does contain access clause

Appendix A

Quitclaim Deed for RB D

QUITCLAIM DEED

The UNITED STATES OF AMERICA, acting by and through the Secretary of the Department of Energy (hereinafter sometimes called "Grantor"), under and pursuant to the authority of the Atomic Energy Act of 1954, Section 161 (g) (42 U.S.C. §2201(g) for the sum of Ten Dollars ($10.00), the covenants contained herein, and other good and valuable consideration, duly paid by the Miamisburg Mound Community Improvement Corporation, a non-profit corporation subsisting under the laws of Ohio and recognized by the Secretary of Energy as the agent for the community wherein the former Mound Facility is located (hereinafter sometimes called "Grantee"), the receipt of which is hereby acknowledged, hereby QUITCLAIMS unto Grantee its successors and assigns, subject to the reservations, covenants, and conditions hereinafter set forth, all of its right, title and interest, together with all improvements thereon and appurtenances thereto, in the following described premises, commonly known as Parcel D:

Situate in the State of Ohio, County of Montgomery, being in the City of Miamisburg, being part of Section 30, Range 5, Township 2, lying in the Miami Rivers Survey (M.R.S.), and being part of city lots numbered 2259 within the Corporation Limits of the City of Miamisburg, and being more particularly bounded and described with bearings referenced to the Ohio State Coordinate System, South Zone, as follows:

Beginning at a iron spike, being the North East corner of Section 35 and the South East corner of Section 36, said point being the center of Benner Road (40 feet R/W) and being referenced North 84° 27' 09" West 3102.92 feet from spike (0.5' deep) at the intersection of the center line of Mound Road (60 feet R/W) with the centerline of said Benner Road in said City of Miamisburg, and being the point of beginning for the land herein described, thence S 84° 28' 03" E 1333.66 feet along the center line of Benner Road to a railroad spike (0.2' deep) located in the center of Benner Road, thence N 4° 44' 28" E 2010.06 feet to a concrete monument, thence N 83° 57' 37" W 34.19 feet to a concrete monument being the TRUE POINT OF BEGINNING; thence N 84° 31' 10" W 613.33 feet to a point, thence N 5° 35' 49" E 291.47 feet to a point, thence N 84° 24' 07" W 93.5 feet to a point, thence N 5° 35' 49" E 360.00 feet to a point, thence S 84° 24' 18" E 35.50 feet to a point, thence N 5° 35' 48" E 131.13 feet to a point, thence along the arc of a curve to the right having a radius of 130 feet for a distance of 203.83 feet to a point, thence S 85° 04' 40" E 495.72 feet to a point located in the center of Mound Road, thence along the centerline of Mound Road S 5° 33' 37" W 218.17 feet to an railroad spike, thence N 85° 26' 39" W 111.00 feet to and iron pipe, thence S 7° 05' 12" E 714.44 feet to the true point of beginning containing 12.43 acres more or less, and subject to all legal highways and easements of record. Prior Deed Reference: Deed Book 1214, Page 8.

RESERVING UNTO Grantor, the United States Environmental Protection Agency (USEPA) and the State of Ohio, acting by and through the Director of the Ohio Environmental Protection Agency (Ohio EPA) or the Ohio Department of Health (ODH), their successors and assigns, an easement to, upon or across the Premises in conjunction with the covenants of Grantor and/or Grantee in paragraphs numbered 1.1-1.3, 3.2 and 3.3 of this Deed and as otherwise needed for purposes of any response action as defined under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended, including but not limited to, environmental investigation or remedial action on the Premises or on property in the vicinity thereof, including the right of access to, and use of, to the extent permitted by applicable law, utilities at reasonable cost to Grantor. Grantee understands that any such response action will be conducted in a manner so as to attempt to minimize interfering with the ordinary and reasonable use of the Premises.

This Deed and conveyance is made and accepted without warranty of any kind, either express or implied, except for the warranty in paragraph 3.3 of this Deed, and is expressly made under and subject to all reservations, restrictions, rights, covenants, easements, licenses, and permits, whether or not of public record, to the extent that the same affect the Premises.

1. The parties hereto intend the following restrictions and covenants to run with the land and to be binding upon the Grantee and its successors, transferees, and assigns or any other person acquiring an interest in the Premises, for the benefit of Grantor, USEPA and the State of Ohio, acting by and through the Director of the Ohio EPA or ODH, their successors and assigns.

   1.1 Excepting those soils in an area approximately 40 feet wide and 218.17 feet long, bounded on the east by the centerline of Mound Road as described above, Grantee covenants that any soil from the Premises shall not be placed on any property outside the boundaries of that described in instruments recorded at Deed Book 1214, pages 10, 12, 15, 17 and 248; Deed Book 1215, page 347; Deed Book 1246, page 45; Deed Book 1258, pages 56 and 74; Deed Book 1256, page 179; Micro-Fiche 81-376A01; and Micro-Fiche 81-323A11 of the Deed Records of Montgomery County, Ohio (and as illustrated in the CERCLA 120(h) Summary, Notices of Hazardous Substances Release Block D, Mound Plant, Miamisburg, Ohio dated January, 1999) without prior written approval from the Ohio Department of Health (ODH), or a successor agency.

1.2 Grantee covenants not to use, or allow the use of, the Premises for any residential or farming activities, or any other activities which could result in the chronic exposure of children under eighteen years of age to soil or groundwater from the Premises. Restricted uses shall include, but not be limited to:

(1) single or multifamily dwellings or rental units;
(2) day care facilities;
(3) schools or other educational facilities for children under eighteen years of age; and
(4) community centers, playgrounds, or other recreational or religious facilities for children under eighteen years of age.

Grantor shall be contacted to resolve any questions which may arise as to whether a particular activity would be considered a restricted use.

1.3 Grantee covenants not to extract, consume, expose, or use in any way the groundwater underlying the premises without the prior written approval of the United States Environmental Protection Agency (Region V) and the Ohio Environmental Protection Agency.

2. The Grantor hereby grants to the State of Ohio and reserves and retains for itself, its successors and assigns an irrevocable, permanent, and continuing right to enforce the covenants of this Quitclaim Deed through proceedings at law or in equity, including resort to an action for specific performance, as against and at the expense of Grantee, its successors and assigns, including reasonable legal fees, and to prevent a violation of, or recover damages from a breach of, these covenants, or both. Any delay or forbearance in enforcement of said restrictions and covenants shall not be deemed to be a waiver thereof.

3. Pursuant to Section 120(h)(3) of the Comprehensive Environmental Response, Compensation and Liability Act of 1930, as amended (42 U.S.C. §9620(h)(3)), the following is notice of hazardous substances, the description of any remedial action taken, and a covenant concerning the Premises.

3.1 **Notice of Hazardous Substance**: Grantor has made a complete search of its files and records concerning the Premises. Those records indicate that the hazardous substances listed in Exhibit "B," attached hereto and made a part hereof, have been stored for one year or more or disposed of on the Premises and the dates that such storage/disposal took place.

3.2 **Description of Remedial Action Taken**:
A soil removal action was performed and Institutional Controls are established. The Institutional Controls are set forth as covenants in Sections 1.1, 1.2, and 1.3 of this Deed.

3.3 **Covenant:** Grantor covenants and warrants that all remedial action necessary for the protection of human health and the environment with respect to any hazardous substances remaining on the property has been taken, and any additional remedial action found to be necessary after the date of this Deed regarding hazardous substances existing prior to the date of this Deed shall be conducted by Grantor, provided, however, that the foregoing covenant shall not apply in any case in which the presence of hazardous substances on the property is due to the activities of Grantee, its successors, assigns, employees, invitees, or any other person subject to Grantee's control or direction.

4. Unless otherwise specified, all the covenants, conditions, and restrictions to this Deed shall be binding upon, and shall inure to the benefit of the assigns of Grantor and the successors and assigns of Grantee.

IN WITNESS WHEREOF, the United States of America, acting by and through its Secretary of the Department of Energy, has caused these presents to be executed this _____day of _____ , 1999.

UNITED STATES OF AMERICA

_____

WITNESSETH:

_____

_____

State of Ohio)
County of Montgomery) SS.

Before me, a Notary Public in and for said State and County, appeared this _____day of _____, 1999, G. Leah Dever, who acknowledged that she is the Manager of the Ohio Field Office for the United States Department of Energy, with full authority to execute the foregoing on behalf of the United States of America, and who acknowledged the above to be her signature and her free act and deed.

SEAL_____

_____Notary Public

This instrument was prepared by: Randolph T. Tormey, Attorney at Law
PO Box 3020
Miamisburg, OH 45343
937.865.3025

Appendix B

Legal Description of RB D

Situate in the State of Ohio, County of Montgomery, being in the City of Miamisburg, being part of Section 30, Range 5, Township 2, lying in the Miami Rivers Survey (M.R.S.), and being part of city lots numbered 2259 within the Corporation Limits of the City of Miamisburg, and being more particularly bounded and described with bearings referenced to the Ohio State Coordinate System, South Zone, as follows:

Beginning at a iron spike, being the North East corner of Section 35 and the South East corner of Section 36, said point being the center of Benner Road (40 feet R/W) and being referenced North 84° 27' 09" West 3102.92 feet from spike (0.5' deep) at the intersection of the center line of Mound Road (60 feet R/W) with the centerline of said Benner Road in said City of Miamisburg, and being the point of beginning for the land herein described, thence S 84° 28' 03" E 1333.66 feet along the center line of Benner Road to a railroad spike (0.2' deep) located in the center of Benner Road, thence N 4° 44' 28" E 2010.06 feet to a concrete monument, thence N 83° 57' 37" W 34.19 feet to a concrete monument being the TRUE POINT OF BEGINNING; thence N 84° 31' 10" W 613.33 feet to a point, thence N 5° 35' 49" E 291.47 feet to a point, thence N 84° 24' 07" W 93.5 feet to a point, thence N 5° 35' 49" E 360.00 feet to a point, thence S 84° 24' 18" E 35.50 feet to a point, thence N 5° 35' 48" E 131.13 feet to a point, thence along the arc of a curve to the right having a radius of 130 feet for a distance of 203.83 feet to a point, thence S 85° 04' 40" E 495.72 feet to a point located in the center of Mound Road, thence along the centerline of Mound Road S 5° 33' 37" W 218.17 feet to an railroad spike, thence N 85° 26' 39" W 111.00 feet to and iron pipe, thence S 7° 05' 12" E 714.44 feet to the true point of beginning containing 12.43 acres more or less, and subject to all legal highways and easements of record.

2.10 Selected Remedy

2.10.1 Description

The selected remedy for RB D is institutional controls in the form of deed restrictions on future land use. The specific restrictions to be adopted are provided in the deed attached to this ROD as Appendix A. The objective of these restrictions is to:

this statement is not in deed

- Ensure that industrial land use is maintained;
- Prohibit the use of bedrock ground water;
- Provide site access for federal and state agencies for the purpose of taking response actions, including sampling and monitoring; and
- Prohibit removal of RB D soils from the Mound NPL Facility boundary without approval from the Ohio Department of Health.

DOE or its successors, as the lead agency for this ROD, has the responsibility to monitor, maintain and enforce these institutional controls. This responsibility includes the duty to conduct annual assessments of compliance with the deed restrictions and the duty to enforce the deed restrictions if any noncompliance is detected. The assessment and enforcement processes are outlined in Appendix C, which is intended to serve as a framework for discussion of operation and maintenance activities for the selected remedy. Within ninety (90) days of the date this ROD is signed, DOE shall submit to USEPA and Ohio EPA for their approval a formal proposal regarding operation and maintenance of the institutional controls. This proposal and the annual compliance assessments shall be considered primary documents under the Federal Facility Agreement. If the DOE, USEPA and OEPA agree, the frequency of the compliance assessments can be changed at any time.

The soils within RB D have not been evaluated for any use other than on-site industrial use. Any off-site disposition of the RB D soil without proper handling, sampling, and management could create an unacceptable risk to off-site receptors. An objective of the preferred alternative is to prevent residential exposure to soils from RB D.

2.10.2 Estimated Costs

The initial costs associated with these deed restrictions are those associated with the writing and recording of the restrictions with the deed. The costs associated with monitoring and enforcing the land use and property deed restrictions are estimated to be $5,000 per year.

EXHIBIT "A"
UTILITY EASEMENT
0.0713 ACRES

Situate in Section 30, Town 2, Range 5, M.Rs., City of Miamisburg, County of Montgomery, in the State of Ohio, being part of a 12.459 acre tract of land out of Lot 2259 of the consecutive numbered lots of the City of Miamisburg, Ohio as conveyed to the Miamisburg Mound Community Improvement by deed recorded in Microfiche No. 99-852B05 of the Deed Records of Montgomery County, Ohio and being an utility easement, said easement being more particularly described as follows:

COMMENCING at a found iron pin at the southwest corner of said 12.459 acre tract of land and on the south line of said Lot 2259;

thence South 84°32'05" East along the south line of said 12.459 acre tract and Lot 2259 a distance of 78.73 feet to a point;

thence North 05°34'54" East leaving the south line of said 12.459 acre tract and Lot 2259 along the west line of an existing 10 feet wide utility easement as recorded in Microfiche No. 02-077423D of the Deed Records of Montgomery County, Ohio a distance of 189.84 feet to the **TRUE POINT OF BEGINNING;**

thence North 84°25'06" West leaving the west line of said existing 10 feet wide utility easement a distance of 14.57 feet to a point;

thence North 03°21'22" East a distance of 161.61 feet to a point;

thence North 19°52'10" West a distance of 27.20 feet to a point of curvature, said point also being on the east line of an existing utility easement as recorded in Microfiche No. 99-702D09 of the Deed Records of Montgomery County, Ohio;

thence along the east line of said existing utility easement in a northwesterly direction on a curve to the left with a central angle of 55°22'10", a radius of 75.50 feet, an arc distance of 72.96 feet, the chord of which bears North 19°17'34" West a distance of 70.15 feet to a point of reverse curvature;

thence continuing along the east line of said existing utility easement in a northwesterly direction on a curve to the right with a central angle of 52°34'27", a radius of 15.00 feet, an arc distance of 13.76 feet, the chord of which bears North 20°41'26" West a distance of 13.29 feet to a point;

thence North 05°35'48" East continuing along the east line of said existing utility easement a distance of 22.06 feet to a point;

thence South 19°52'10" East leaving the east line of said existing utility easement a distance of 33.02 feet to a point;

thence South 85°28'11" East a distance of 59.17 feet to a point;

thence South 04°31'49" West a distance of 10.00 feet to a point;

thence North 85°28'11" West a distance of 54.64 feet to a point;

thence South 19°52'10" East a distance of 88.60 feet to a point;

thence South 03°21'22" West a distance of 139.04 feet to a point;

thence South 84°25'06" East a distance of 5.53 feet to a point, said point also being on the west line of the aforesaid existing 10 feet wide utility easement;

Utility Easement
0.0713 Acres
(Continued)

thence South 05°34'54" West along the west line of said existing 10 feet wide utility easement a distance of 25.00 feet to the **TRUE POINT OF BEGINNING.** Containing 0.0713 acres more or less and subject to all legal highways, easements, and agreements of record.

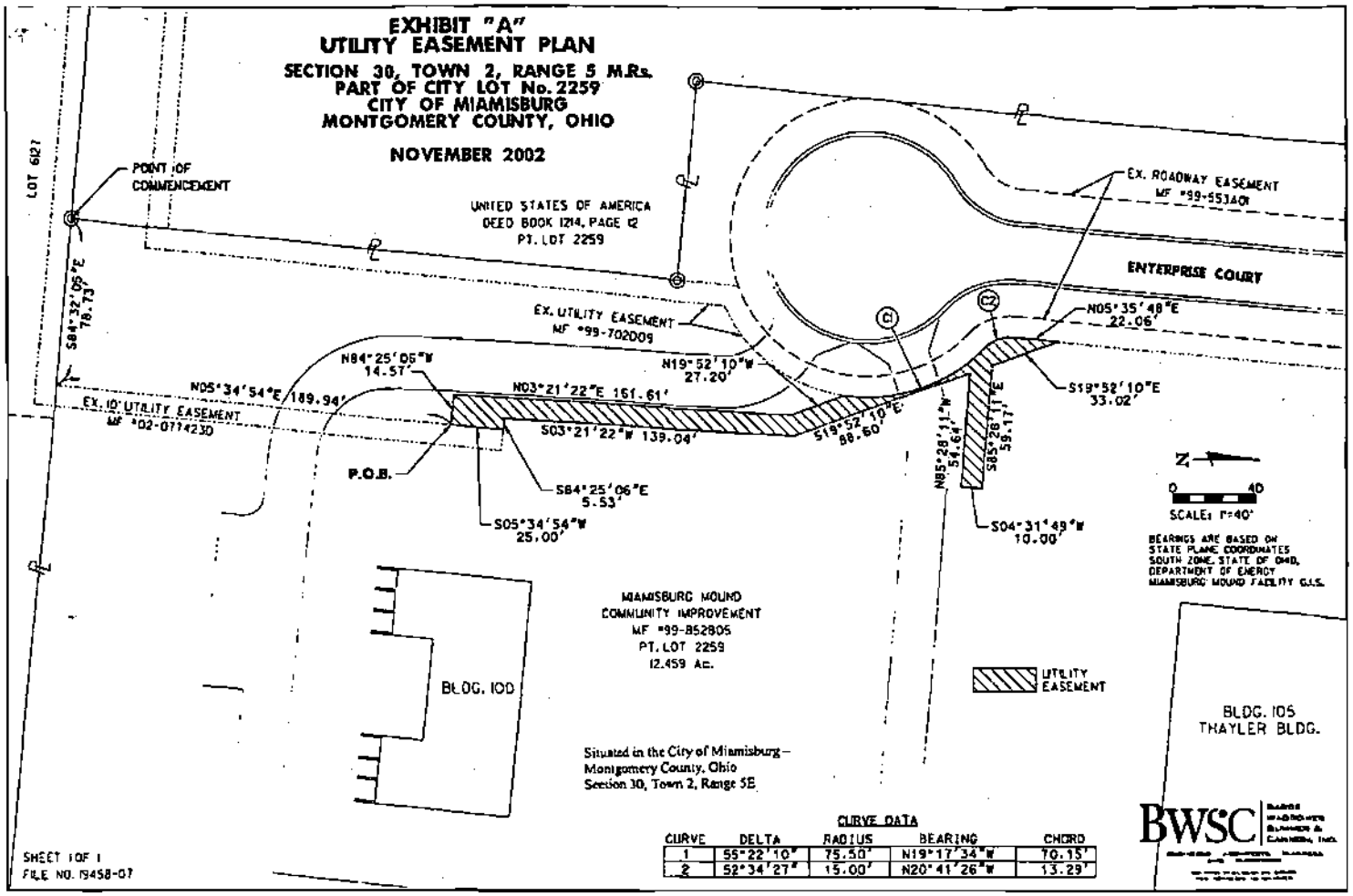
Bearings are based on State Plane Coordinates South Zone, State of Ohio, Department of Energy, Miamisburg Mound Facility G.I.S.

Prior Deed Reference, Microfiche No. 99-852B05

EXHIBIT "A"
UTILITY EASEMENT PLAN

SECTION 30, TOWN 2, RANGE 5 M.Rs.
PART OF CITY LOT No. 2259
CITY OF MIAMISBURG
MONTGOMERY COUNTY, OHIO

NOVEMBER 2002



CURVE DATA

CURVE	DELTA	RADIUS	BEARING	CHORD
1	55°22'10"	75.50'	N19°17'34"W	70.15'
2	52°34'27"	15.00'	N20°41'26"W	13.29'

SHEET 1 OF 1
FILE NO. 19458-07

$70.00 03/20/03 08:10:44
EASE-03-039148 0016
Montgomery County
Judy Dodge Recorder

NO TRANSFER
08:03am MARCH 20, 2003
KARL L. KEITH, COUNTY AUDITOR

DECLARATION OF EASEMENT

THIS DECLARATION OF EASEMENT ("Declaration") is made on this 18th day of March, 2003, by MIAMISBURG MOUND COMMUNITY IMPROVEMENT CORPORATION, an Ohio non-profit corporation ("Declarant"), under the terms and conditions set forth below.

RECITALS:

A. By virtue of a Deed dated November 19, 1999, and recorded at Microfiche No. 99-852B05 of the Montgomery County, Ohio Recorder's office, The United States of America, acting by and through the Department of Energy ("DOE"), conveyed to Declarant the real property described on Exhibit A, attached hereto and incorporated herein by reference ("Declarant's Property").

B. Declarant desires to create, on the terms and conditions set forth herein, a permanent, non-exclusive easement for utility purposes, together with the right to construct, install, operate, maintain, repair, replace and/or remove any lines and all related equipment and appurtenances thereto that are necessary for the supply of gas, water, electrical power, sewage and waste disposal, drainage, telephone and communication utilities on, over and across a portion of the Declarant's Property, as identified herein.

NOW, THEREFORE, in consideration of the recitals set forth above and the terms and conditions set forth below, Declarant hereby declares as follows:

1. PROVISIONS OF EASEMENT GRANTED – Declarant hereby grants to utility providers, their successors and assigns, a permanent, non-exclusive easement upon, over and under the area of the Declarant's Property described in Exhibit B, attached hereto and incorporated herein (the "Easement Area"), for the purpose of constructing, installing, maintaining, operating, repairing, and/or replacing utility lines and all related equipment and appurtenances thereto that are necessary for the supply of gas, water, electrical power, sewage and waste disposal, drainage, telephone and communication utilities (such lines, equipment and appurtenances are collectively referred to as the "Equipment"). Declarant further grants to such utility providers, their successors and assigns, a permanent, non-exclusive ingress and egress easement over the Easement Area and such other portions of the Declarant's Property as reasonably necessary for the purpose of constructing, installing, maintaining, operating, repairing and/or replacing their Equipment. Notwithstanding anything to the contrary provided in this Declaration or in the exhibits attached hereto, in no event shall the grant of this easement include any area that includes or is bounded by any perimeter security fence on the Declarant's Property as it exists as of the date of this Declaration. In addition, the use of this easement shall not preclude the use by other utility providers of the area included within the Easement Area. All utility providers making use of the Easement Area shall be deemed to have agreed to be bound by the terms and conditions of this Declaration.

2. INSTALLATION OF EQUIPMENT – All utility providers making use of the Easement Area shall undertake, at their sole expense, the construction, installation, maintenance, operation, repair and/or replacement of their Equipment, and such work shall be accomplished in such a manner so as not to conflict with Declarant's rights or obligations, endanger Declarant's

personnel or property or the personnel or property of other occupants of the Declarant's Property, or disturb or interfere with the Equipment of other utility providers or any perimeter security fence on or around the Declarant's Property.

3. PROTECTION OF PROPERTY – Any and all construction, installation, repair, maintenance or other activity undertaken by or at the direction of utility providers on or to the Equipment and/or the Easement Area shall be conducted in a manner that reasonably minimizes the impact on the Declarant's Property and the Equipment of other utility providers. Utility providers shall undertake all actions reasonably necessary to restore the affected areas to the same condition as existed prior to such activities, including without limitation, sowing grass seed, covering affected areas with straw and returning affected areas to their prior levels as nearly as possible.

4. COMPLIANCE WITH RESTRICTIONS – All utility providers making use of the Easement Area shall have reviewed the restrictions and covenants set forth in the Deed by which DOE conveyed to Declarant the Declarant's Property prior to the construction or installation of any of their Equipment. Each utility provider agrees that, as set forth in the Deed, its use of the Easement Area is subject to the terms thereof, and further agrees to be bound to comply with the restrictions and covenants set forth therein, including without limitation, the following:

4.1 Excepting those soils in an area approximately 40 feet wide and 218.17 feet long, bounded on the east by the centerline of Mound Road as described above, Grantee covenants that any soil from the Premises shall not be placed on any property outside the boundaries of that described in instruments recorded at Deed Book 1214, pages 10, 12, 15, 17 and 248; Deed Book 1215, page 347; Deed Book 1246, page 45; Deed Book 1258, pages 56 and 74; Deed; Deed Book 1256, page 179; Micro-Fiche 81-376A01; and Micro-Fiche 81-323A11 of the Deed Records of Montgomery County, Ohio (and as illustrated in the CERCLA 120(h) Summary, Notices of Hazardous Substances Release Block D, Mound Plant, Miamisburg, Ohio dated January, 1999) without prior written approval from the Ohio Department of Health (ODH), or a successor agency. Each utility provider warrants that it will make its officers, agents, contractors, employees, and others for whom it is responsible aware of the restriction on soil removal and contractually obligate agents and contractors to abide by this restriction.

4.2 Each utility provider covenants not to use, or allow the use of, the Declarant's Property for any residential or farming activities, or any other activities that could result in the chronic exposure of children under eighteen years of age to soil or groundwater from the Declarant's Property. Restricted uses shall include, but not be limited to:

(1) single or multifamily dwellings or rental units;
(2) day care facilities;
(3) schools or other educational facilities for children under eighteen years of age; and
(4) community centers, playgrounds, or other recreational religious facilities for children under eighteen years of age.

Declarant shall be contacted to resolve any questions that may arise as to whether a particular activity would be considered a restricted use.

4.3 Each utility provider covenants not to extract, consume, expose, or use in any way the groundwater underlying the Declarant's Property without the prior written approval of the United States Environmental Protection Agency (Region V) and the OEPA.

If there is any conflict between the terms of the Deed and this Declaration, the terms of the Deed shall control.

5. ENVIRONMENT – In constructing, installing, maintaining, operating, using, repairing and/or replacing the Equipment, utility providers shall not unlawfully pollute the air, soil or water or create a public nuisance and shall use all reasonable means available to protect the environment and natural resources from damage arising from this easement or activities incident to it and, where damage nonetheless occurs, utility providers shall be liable to restore the environment and damaged natural resources. Utility providers shall promptly comply, at their sole expense, with present and future federal, state, and local laws, ordinances, regulations, or instructions controlling the quality of the environment; provided, however, that the foregoing does not affect the provider's right to contest their validity or enjoin their applicability. If a utility provider discovers contamination on Declarant's Property, it shall immediately cease all activities on the Declarant's Property and notify Declarant.

6. LAWS, ORDINANCES, REGULATIONS – All utility providers making use of the Easement Area shall comply with all applicable federal, state and local laws, statutes, ordinances, regulations, orders and directives with regard to the construction, installation, operation, maintenance, repair and replacement of the Equipment, and obtain all licenses or permits required in connection therewith. Such providers shall also comply with such rules and regulations regarding security, ingress, egress, safety, and other matters as may be prescribed from time to time by the Declarant.

7. DECLARANT'S RESERVATIONS – Declarant reserves to itself, its successors and assigns forever, the right to use the Easement Area in any manner not inconsistent with the rights granted in this Declaration, including without limitation, the right to use any portion of the Declarant's Property situated on, over and/or under the Easement Area for the construction, installation, operation, maintenance, repair and/or replacement of electric transmission lines, water lines, utility lines, sewer lines, and other facilities.

8. THIRD-PARTY RESERVATIONS – This easement is granted subject to such other rights that may be outstanding in third parties in, on, over and/or across the Easement Area, including without limitation, the rights of third parties as set forth in the Deed by which DOE conveyed to Declarant the Declarant's Property.

9. INDEMNITY – Declarant shall not be responsible for damages to property or injuries to persons which may arise from or be incident to the construction, installation, operation, maintenance, use, repair and/or replacement of the Equipment, including without limitation, damages to the property of utility providers making use of this easement, or for damages to the property or injuries to the persons of such providers' officers, agents, servants, employees, or others who may be on the Declarant's Property at their invitation or the invitation of any one of them. All utility providers making use of the Easement Area shall indemnify and hold harmless Declarant, its successors and assigns forever, from and against any and all actions, causes of action, lawsuits, judgments or other damages or liabilities, losses, costs or expenses resulting

from or arising in connection with, either directly or indirectly, the construction, installation, maintenance, operation, use, repair, or replacement or other activity undertaken by such providers on or to their respective Equipment and/or the Easement Area.

10. BOUNDARY OR SURVEY MONUMENTATION – Utility providers shall not disturb, obliterate or destroy any land boundary or survey monument on the Declarant's Property without Declarant's prior written approval.

11. PLANS AND SPECIFICATIONS – All utility providers desiring to make use of the Easement Area shall submit plans and specifications of proposed construction and installation of Equipment to the Declarant and obtain Declarant's written approval prior to ordering of materials or commencement of construction or installation.

12. REMOVAL/RELOCATION OF EQUIPMENT – If all or any portion of the Easement Area shall be needed by Declarant, utility providers shall remove their respective Equipment and appurtenant improvements, upon notice to do so, to such other location(s) as mutually agreed upon by the provider and Declarant. Declarant will pay any relocation costs.

13. UTILITY PROVIDER PERFORMANCE – The failure of the Declarant to insist in any one or more instances upon strict performance of any of the terms, covenants, or conditions of this Declaration shall not be construed as a waiver or relinquishment of the Declarant's right to the future performance of any such terms, covenants, or conditions, and a utility provider's obligation with respect to any such future performance shall continue in full force and effect.

14. DECLARANT'S LIMITATIONS TO GRANT – All utility providers acknowledge and understand that this instrument is effective only insofar as the rights of the Declarant in Declarant's Property are concerned and that each provider shall obtain such permission as may be necessary on account of any other existing rights, including without limitation, the rights of third parties as set forth in the Deed by which DOE conveyed to Declarant the Declarant's Property.

15. PROVISIONS BINDING – The conditions of this Declaration shall extend to and be binding upon and shall inure to the heirs, representatives, successors, and assigns of the utility provider.

16. RUNS WITH THE LAND - The easement, restrictions and covenants contained in this Declaration shall run with the land and shall be binding upon the parties and their respective successors and assigns.

17. AMENDMENT - No modification or amendment hereto shall be valid unless in writing and signed by the Declarant.

IN WITNESS WHEREOF, the undersigned has executed this Declaration on behalf of Declarant as of the day and year first set forth above.

DECLARANT:

MIAMISBURG MOUND COMMUNITY IMPROVEMENT CORPORATION,
an Ohio non-profit corporation

By: Michael J. Grauwelman

Printed Name: Michael J. Grauwelman

Title: President

STATE OF Ohio, COUNTY OF Montgomery, SS:

The foregoing instrument was acknowledged before me this 18th day of March, 2003, by Michael J. Grauwelman the President of Miamisburg Mound Community Improvement Corporation, an Ohio non-profit corporation, on behalf of said corporation.

Joan Wysong
Notary Public

Joan Wysong, Notary Public
In and for the State of Ohio
My Commission Expires June 28, 2004

This instrument prepared by:
Shannon L. Costello, Esq.
Coolidge, Wall, Womsley & Lombard Co., L.P.A.
33 West First St., Suite 600
Dayton, OH 45402

Parcel H

38 DEED

Montgomery County
DEED-99-141469 0008
Joy Clark, Recorder
$38.00 12/21/99 07:59:38

DIV/2.9

K46-5-1-10

$158.00 11/22/02 11:26:59
DEED-02-146504 0038
Montgomery County
Judy Dodge Recorder

QUITCLAIM DEED

The UNITED STATES OF AMERICA, acting by and through the Secretary of the Department of Energy (hereinafter sometimes called "Grantor"), under and pursuant to the authority of the Atomic Energy Act of 1954, Section 161 (g) (42 U.S.C. §2201(g)), in consideration of the covenants contained herein, and other good and valuable consideration, duly paid by the Miamisburg Mound Community Improvement Corporation, a non-profit corporation subsisting under the laws of Ohio and recognized by the Secretary of Energy as the agent for the community wherein the former Mound Facility is located (hereinafter sometimes called "Grantee"), the receipt of which is hereby acknowledged, hereby QUITCLAIMS unto Grantee its successors and assigns, subject to the reservations, covenants, and conditions hereinafter set forth, all of its right, title and interest, together with all improvements thereon and appurtenances thereto, in the following described real property (hereinafter the "Premises), commonly known as Parcel H:

Situated in the State of Ohio, County of Montgomery, and in the City of Miamisburg, being part of Section 30, Range 5, Township 2, lying in the Miami Rivers Survey (M.R.S.), and containing 14.29 acres, more or less, and being more fully described in Exhibit A attached hereto and incorporated herein.

0023295 $.00

RESERVING UNTO Grantor, the United States Environmental Protection Agency (USEPA) and the State of Ohio, acting by and through the Director of the Ohio Environmental Protection Agency (OEPA) or the Ohio Department of Health (ODH), their successors and assigns, an easement to, upon or across the Premises in conjunction with the covenants of Grantor and/or Grantee in paragraphs numbered 1.1-1.3, 3.2 and 3.3 of this Deed and as otherwise needed for purposes of any response action as defined under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended, including but not limited to, environmental investigation or remedial action on the Premises or on property in the vicinity thereof, including the right of access to, and use of, to the extent permitted by applicable law, utilities at reasonable cost to Grantor. Grantee understands that any such response action will be conducted in a manner so as to attempt to minimize interfering with the ordinary and reasonable use of the Premises.

TRANSFERRED
99 DEC 20 AM 9:13
A.J. WAGNER
AUDITOR

This Deed and conveyance is made and accepted without warranty of any kind, either express or implied, except for the warranty in paragraph 3.3 of this Deed, and is expressly made under and subject to all reservations, restrictions, rights, covenants, easements, licenses, and permits, whether or not of public record, to the extent that the same affect the Premises.

1. The parties hereto intend the following restrictions and covenants to run with the land and to be binding upon the Grantee and its successors, transferees, and assigns or any other person acquiring an interest in the Premises, for the benefit of Grantor, USEPA and the State of Ohio, acting by and through the Director of OEPA or ODH, their successors and assigns.

~~DEED 99-0852 B11~~

Note:
Deed is being re-recorded to add Exhibit B.

200481
Closed
200407

1.1 Excepting those soils **contained within an area bounded as follows: Commencing** at an iron pin found on the southerly projection of the centerline of Mound Road, said point also being the northeast corner of a 164.13 Acre tract of land as described in Deed Book 1246, Page 45 of the Deed Records of Montgomery County and being the **TRUE POIN T OF BEGINNING,** thence South 06° 38' 48" West, 100.00 feet to an iron pin found; thence South 84° 42' 56" East, 193.40 feet to an iron pin found; thence South 05° 33' 53" West, 571.98 feet to a point on the centerline of Mound Road; thence due West, 72.93 feet to a point; thence South 51° 28' 10" West, 9.97 feet to a point on the proposed westerly right-of-way of Mound Road; thence along the proposed westerly right-of-way of Mound Road, North 06° 34' 20" West, 299.85 feet to a point; thence North 04° 05' 41" West, 185.03 feet to a point; thence along the proposed westerly right-of-way of Mound Road, North 06° 34' 20" West, 75.76 feet to a point; thence along the proposed westerly right-of-way of Mound Road, on a curve to the right for a distance of 130.93 feet with a radius of 923.62 feet and a central angle of 08° 07' 19" and a chord distance of 130.82 feet and a chord bearing of North 02° 30' 42" West to a point; thence along the existing westerly right-of-way of Mound Road, on a non-tangent curve to the right for a distance of 6.10 feet with a radius of 360.00 feet and a central angle of 00° 58' 18" and a chord distance of 6.10 feet and a chord bearing of North 12° 20' 00" West to a point; thence South 89° 52' 28" East, 18.27 feet to the **POINT OF BEGINNING,** containing 6.604 acres more or less. Grantee covenants that any soil from the Premises shall not be placed on any property outside the boundaries of that described in instruments recorded at Deed Book **(1214, pages 10, 12, 15, 17 and 248; Deed Book 1215, page 347; Deed Book 1246, page 45; Deed Book 1258, pages 56 and 74; Deed Book 1256, page 179; Micro-Fiche 81-376A01; and Micro-Fiche 81-323A11)** of the Deed Records of Montgomery County, Ohio (and as illustrated in the CERCLA 120(h) Summary, Notices of Hazardous Substances Release Block H, Mound Plant, Miamisburg, Ohio dated July 26, 1999 without prior written approval from ODH and OEPA, or successor agencies.

1.2 Grantee covenants not to use, or allow the use of, the Premises for any residential or farming activities, or any other activities which could result in the chronic exposure of children under eighteen years of age to soil or groundwater from the Premises. Restricted uses shall include, but not be limited to:

(1) single or multifamily dwellings or rental units;
(2) day care facilities;
(3) schools or other educational facilities for children under eighteen years of age; and
(4) community centers, playgrounds, or other recreational or religious facilities for children under eighteen years of age.

Grantor shall be contacted to resolve any questions which may arise as to whether a particular activity would be considered a restricted use.

1.3 Grantee covenants not to extract, consume, expose, or use in any way the groundwater underlying the premises without the prior written approval of the United States Environmental Protection Agency (Region V) and the OEPA.

2. The Grantor hereby grants to the State of Ohio and reserves and retains for itself, its successors and assigns an irrevocable, permanent, and continuing right to enforce the covenants of this Quitclaim Deed through proceedings at law or in equity, including resort to an action for specific performance, as against and at the expense of Grantee, its successors and assigns, including reasonable legal fees, and to prevent a violation of, or recover damages from a breach of, these covenants, or both. Any delay or forbearance in enforcement of said restrictions and covenants shall not be deemed to be a waiver thereof.

3. Pursuant to Section 120(h)(3) of the Comprehensive Environmental Response, Compensation and Liability Act of 1930, as amended (42 U.S.C. §9620(h)(3)), the following is notice of hazardous substances, the description of any remedial action taken, and a covenant concerning the Premises.

3.1 **Notice of Hazardous Substance**: Grantor has made a complete search of its files and records concerning the Premises. Those records indicate that the hazardous substances listed in Exhibit "B," attached hereto and made a part hereof, have been stored for one year or more or disposed of on the Premises and the dates that such storage/disposal took place.

3.2 **Description of Remedial Action Taken**:
Institutional Controls are established. The Institutional Controls are set forth as covenants in Sections 1.1, 1.2, and 1.3 of this Deed.

3.3 **Covenant:** Grantor covenants and warrants that all remedial action necessary for the protection of human health and the environment with respect to any hazardous substances remaining on the property has been taken, and any additional remedial action found to be necessary after the date of this Deed regarding hazardous substances existing prior to the date of this Deed shall be conducted by Grantor, provided, however, that the foregoing covenant shall not apply in any case in which the presence of hazardous substances on the property is due to the activities of Grantee, its successors, assigns, employees, invitees, or any other person subject to Grantee's control or direction.

4. Unless otherwise specified, all the covenants, conditions, and restrictions to this Deed shall be binding upon, and shall inure to the benefit of the assigns of Grantor and the successors and assigns of Grantee.

DEED 99-0852 C01

IN WITNESS WHEREOF, the United States of America, acting by and through its Secretary of the Department of Energy, has caused these presents to be executed this 4th day of August, 1999.

UNITED STATES OF AMERICA

Susan R. Brechbill

WITNESSETH:

Otto Vincent

Frank Schmaltz

Frank Schmaltz

State of Ohio)
County of Montgomery) SS.

Before me, a Notary Public in and for said State and County, appeared this 4TH day of AUGUST, 1999, SUSAN R. BRECHBILL, who acknowledged that she is the Manager of the Ohio Field Office for the United States Department of Energy, with full authority to execute the foregoing on behalf of the United States of America, and who acknowledged the above to be her signature and her free act and deed.

SEAL

Notary Public

DERRICK J. C. FRANKLIN, Notary Public
In and for the State of Ohio
My Commission Expires Dec. 25, 2000

This document was prepared by the U.S. Department of Energy.

NO PLAT REQUIRED
(SEC 711.131 ORC)
MIAMISBURG CITY PLANNING COMMISSION

Secretary

DESCRIPTION OF

14.288 Acres

located in

Section 30&36, Fractional Town 2, Range 5 MRS

Section 25, Fractional Town 1, Range 6 MRS

part of

City of Miamisburg Lot No. 2259

DN/2,9

K46-5-1-10

December 09, 1999

Situate in the State of Ohio, County of Montgomery, City of Miamisburg and being part of Section 30 & 36, Fractional Town 2, Range 5 M.R.S. also part of Section 25, Fractional Town 1, Range 6 MRS and being part of City of Miamisburg Lot No. 2259 and being part of a tract of land conveyed to The United States of America as described in Deed Book 1214, Page 12-14, also part of a tract of land conveyed to the United States of America as described in Deed Book 1246, Page 49 and being more particularly described as follows:

COMMENCING at a Concrete Monument Found (top broken off) at the Northwest Corner of Section 30, ***THENCE*** with the west line of said Section 30, ***South 05° 45'57" West for a distance of 130.89 feet to a 1" Pinch Top Pipe Found*** at the Southwest corner of a 2.90 acre tract conveyed to Robert P. Heist as described in Deed MF 74-526-C09 and at the ***TRUE POINT OF BEGINNNG*** of the herein described tract;

THENCE with the south line of said 2.90 Acre Heist Lands, ***South 85° 04' 57" East for a distance of 1023.91 feet to a Concrete Monument with brass disc Found*** at the Southeast corner of said 2.90 Acre Heist Lands;

THENCE with the east line of said 2.90 Acre Heist Lands and the west right of way line of Mound Street extended, ***North 06° 53' 16" East for a distance of 231.00 feet to a Concrete Monument with brass disc Found***, (passing a 5/8" Rebar Set at 100.99 feet, also passing a 5/8" Rebar Set on the North line of Section 30 at 129.56 feet);

THENCE leaving said right of way line, ***South84° 38'35" East for a distance of 30.00 feet to a 5/8" Rebar Capped Found (LJB)*** on the centerline of said Mound Street;

THENCE with the centerline of said Mound Street, ***South 06° 53'16" West for a distance of 100.00 feet to a 5/8" Rebar Capped Found (LJB);***

THENCE continuing with said centerline of said Mound Street, ***South 84° 38'08" East for a distance of 193.41 feet*** to the Northwest Corner of the Roads End Plat as recorded in Plat Book DD, Page 75, (witness a 5/8" Rebar Found bearing South 63° 34'50" East at a distance of 0.30 feet from the Northwest corner of said plat);

DEED 99-0852 C03

THENCE continuing with said centerline of said Mound Street, ***South 05° 32'42" West for a distance of 571.99 feet to a Mag Nail Set;***

THENCE on a new division line, ***South 89° 58' 18" West for a distance of 72.86 feet to a 5/8" Rebar Set;***

THENCE continuing on a new division line, ***South 51° 26'20" West for a distance of 48.51 feet to a 5/8" Rebar Set;***

THENCE continuing on a new division line, ***South 83° 30'22" West for a distance of 97.29 feet to a 5/8" Rebar Set;***

THENCE continuing on a new division line, ***South 63°47'11" West for a distance of 98.67 feet to a 5/8" Rebar Set;***

THENCE continuing on a new division line, ***North 89° 57'40" West for a distance of 173.02 feet to a 5/8" Rebar Set;***

THENCE continuing on a new division line, ***North 83° 51'21"West for a distance of 247.27 feet to a 5/8" Rebar Set;***

THENCE continuing on a new division line on a ***TANGENT CURVE to the RIGHT with a RADIUS of 360.67 feet, a DELTA ANGLE of 58° 46'33", a ARC LENGTH of 369.99 feet with a CHORD BEARING of North 54° 28'04" West for a CHORD DISTANCE of 353.98 feet to a 5/8" Rebar Set;***

THENCE continuing on a new division line, ***North 25° 04'47" West for a distance of 194.43 feet to a 5/8" Rebar Set;***

THENCE continuing on a new division line, ***South 64° 01'25" West for a distance of 37.94 feet to a 5/8" Rebar Set;***

THENCE continuing on a new division line, ***North 64° 37' 16" West for a distance of 56.61 feet to a 5/8" Rebar Set;***

THENCE continuing on a new division line, ***North 25° 44'48" West for a distance of 160.76 feet to a 5/8" Rebar Set***, (passing a 5/8" Rebar Set at 99.15 feet on the west line of said Section 30)***;***

THENCE continuing on a new division line through Section 36, ***North 65° 31'15" East for a distance of 35.05 feet to a 5/8" Rebar Set*** on the East line of said Section 36***;***

THENCE with the East line of said Section 36, ***North 05° 29'16" East for a distance of 57.67 feet BACK TO THE TRUE POINT OF BEGINNING.***

Described tract contains 14.288 Acres more or less. North based on State Plane Coordinates, South Zone State of Ohio as taken from a drawing prepared by Lockwood, Jones and Beals dated 6-01-82, Project No. 2149. This Description is based on an actual Field Survey performed by HLS Surveyors and Engineers under the direct supervision of William C. LeRoy P.S. Ohio License Number 7664. Subject to all Easements, Highways, Covenants and Restrictions of Public Record.

Also subject to a Soil Exclusion Easement being more particularly described as follows:

COMMENCING at a Concrete Monument Found (top broken off) at the Northwest Corner of Section 30, ***THENCE*** with the west line of said Section 30, ***South 05° 45'57" West for a distance of 130.89 feet to a 1" Pinch Top Pipe Found*** at the Southwest corner of a 2.90 acre tract conveyed to Robert P. Heist as described in Deed MF 74-526-09;

THENCE with the south line of said 2.90 Acre Heist Lands, ***South 85° 04' 57" East for a distance of 1023.91 feet to a Concrete Monument with brass disc Found*** at the Southeast corner of said 2.90 Acre Heist Lands;

THENCE with the east line of said 2.90 Acre Heist Lands and the west right of way line of Mound Street extended, ***North 06° 53' 16" East for a distance of 231.00 feet to a Concrete Monument with brass disc Found***, (passing a 5/8" Rebar Set at 100.99 feet, also passing a 5/8" Rebar Set on the North line of Section 30 at 129.56 feet) and the ***TRUE POINT OF BEGINNING*** of the herein described tract;

THENCE leaving said right of way line, ***South84° 38'35" East for a distance of 30.00 feet to a 5/8" Rebar Capped Found (LJB)*** on the centerline of said Mound Street;

THENCE with the centerline of said Mound Street, ***South 06° 53'16" West for a distance of 100.00 feet to a 5/8" Rebar Capped Found (LJB);***

THENCE continuing with said centerline of said Mound Street, ***South 84° 38'08" East for a distance of 193.41 feet*** to the Northwest Corner of the Roads End Plat as recorded in Plat Book DD, Page 75, (witness a 5/8" Rebar Found bearing South 63° 34'50" East at a distance of 0.30 feet from the Northwest corner of said plat);

THENCE continuing with said centerline of said Mound Street, ***South 05° 32'42" West for a distance of 571.99 feet to a Mag Nail Set;***

THENCE with a new division line, ***South 89° 58' 18" West for a distance of 72.86 feet to a 5/8" Rebar Set;***

THENCE North 06° 48'23" West for a distance of 694.41 feet BACK TO THE TRUE POINT OF BEGINNING.

Said Easement contains 1.840 Acres more or less.

William C. LeRoy P.S.
Ohio License No. 7664
12-9-99

STATE OF OHIO
WILLIAM C. LEROY 7664
REGISTERED PROFESSIONAL SURVEYOR

JOSEPH LITVIN P.E., P.S.
COUNTY ENGINEER
MONTGOMERY COUNTY DAYTON, OHIO
DESCRIPTION CHECKED AND APPROVED
BY EAM DATE 12/16/99

A.J. WAGNER
MONTGOMERY COUNTY AUDITOR
DIVISION

PARCEL H MOUND 99152ph.dwg

DEED 99-0852 C06

Exhibit B

CERCLA 120(h) SUMMARY
NOTICE OF HAZARDOUS SUBSTANCES
Release Block H,
Mound Plant, Miamisburg, Ohio

July, 1999

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

JUL 26 1999

REPLY TO THE ATTENTION OF:

SRF-6J

Mr. Richard B. Provencher
Director
U.S. Department of Energy
Miamisburg Environmental Management Project
P.O. Box 3020
Miamisburg, OH 45343-3020

RE: U.S. DOE Mound Plant
Release Block H
Request for Concurrence to Transfer

Dear Mr. Provencher:

Thank you for your letter dated July 22, 1999, requesting concurrence to transfer Release Block H at the United States Department of Energy (U.S. DOE) Mound Plant in Miamisburg, Ohio.

The United States Environmental Protection Agency (US EPA) has reviewed the *Record of Decision for Release Block H, Mound Plant, Miamisburg, Ohio, Final, July 1999*, which has now been signed by U.S. DOE, U.S. EPA, and the Ohio Environmental Protection Agency, and the *Environmental Summary - Notice of Hazardous Substances for Release Block H, Mound Plant, Miamisburg, Ohio, Final, July 1999*. Based upon this information, U.S. EPA concurs that all remedial action necessary to protect public health and the environment with respect to any substance remaining in Release Block H has been taken, and that transfer of Release Block H may take place.

It is understood that any additional remedial action found to be necessary in the future shall be conducted by U.S. DOE to the extent necessary to protect human health and the environment.

Recycled/Recyclable - Printed with Vegetable Oil Based Inks on 50% Recycled Paper (20% Postconsumer)

The U.S. EPA fully supports redevelopment and reuse of the structures and other property available at the Mound Plant. However, assurances must be provided that all property and building leases and transfers will be protective of public health and the environment. If you have any questions or concerns about this or future economic development issues at the site, please contact Timothy Fischer, of my staff, at (312) 886-5787.

Sincerely yours,

William E. Muno, Director
Superfund Division
U.S. EPA, Region 5

cc: Ken Tindall, SRF-5J
Tim Thurlow, ORC
Graham Mitchell, Ohio EPA
Brian Nickel, Ohio EPA
Ruth Vandegrift, ODH
Art Kleinrath, US DOE-MEMP
Frank Schmalz, US DOE-MEMP

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ACRONYMS

AOC	Area of Concern
ARAR	Applicable or Relevant and Appropriate Requirement
BDP	Building Data Package
BVA	Buried Valley Aquifer
BWO	Babcock and Wilcox of Ohio
CERCLA	Comprehensive Environmental Response, Compensation & Liability Act
COC	Contaminant of Concern
FFA	Federal Facilities Agreement
FOD	Frequency of Detection
GV	Guideline Value
HI	Hazard Index
IDM	Investigative Derived Material
MEMP	Miamisburg Environmental Management Project
MMCIC	Miamisburg Mound Community Improvement Corporation
NCP	National Contingency Plan
NFA	No Further Assessment
NPL	National Priorities List
OEPA	Ohio Environmental Protection Agency
OSC	On-Scene Coordinator
OU	Operable Unit
pCi	picocurie
PAH	Polynuclear aromatic hydrocarbon
PETREX	(trade name for a type of soil sampling)
PRS	Potential Release Site
RB	Release Block
RD/RA	Remedial Design/Remedial Action
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision

ACRONYMS (continued)

RRE	Residual Risk Evaluation
RREM	Residual Risk Evaluation Methodology
SM/PP	Special Metallurgical/Plutonium Processing
SOF	Statement of Finding
TPR	Technical Position Report in Support of Release Block H Residual Risk Evaluation
US DOE	United States Department of Energy
US EPA	United States Environmental Protection Agency
UTL	Upper Tolerance Limit

CERCLA 120(h) SUMMARY
FINDING OF SUITABILITY TO TRANSFER
RELEASE BLOCK H
MOUND PLANT, MIAMISBURG, OHIO

I. PURPOSE

The information contained in this notice is required under the authority of regulations promulgated under section 120 (h) of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA). This summary is intended to support a transfer by deed to new ownership for economic development by documenting that the U.S. Department of Energy's (US DOE) Mound Plant has met the requirements of CERCLA 120 (h) for Release Block H (RB H). A copy shall be provided to all future owners.

II. PROPERTY DESCRIPTION

A. Description of Property Suitable for Transfer

Situated in the State of Ohio, County of Montgomery, being in the City of Miamisburg, being part of Section 30, and Section 36, Range 5, Township 2, lying in the Miami Rivers Survey (M.R.S.), and being part of city lots numbered 2258 and 2259 within the Corporation Limits of the City of Miamisburg, and being more particularly bounded and described with bearings referenced to the Ohio State Coordinate System, South Zone, as follows:

Beginning at a concrete monument, being the North East corner of Section 36 and the North West corner of Section 30, and being the point of beginning for the land herein described, thence S 5° 47' 45" W 130.89 feet to an iron pin being the TRUE POINT OF BEGINNING; thence S 85° 03' 12" E 1023.90 feet to a concrete monument, thence N 6° 54' 59" E 231.00 feet to a concrete monument, thence S 84° 36' 50" E 30.00 feet to a iron pin, thence S 6° 54' 54" W 100.00 feet to a iron pin, thence S 84° 36' 37" E 193.40 feet to a concrete monument, thence S 5° 34' 19" W 571.986 feet along the center line of Mound Road to a point, thence S 90° 0' 0" W 72.86 feet to a point, thence S 51° 28' 1.6" W 48.51 feet to a point, thence S 83° 32' 4" W 97.29 feet

to a point, thence S 63° 48' 53" W 98.67 feet to a point, thence N 89° 55' 58" W 173.02 feet to a point, thence N 83° 49' 39" W 244.21 feet to a point, thence along the arc of a curve to the right having a radius of 360.67 feet for a distance of 353.12 feet to a point, thence N 25° 03' 02" W 214.48 feet to a point, thence S 64° 03' 10" W 37.94 feet to a point, thence N 64° 35' 31" W 56.61 feet to a point, thence N 25° 43' 03" 160.76 feet to a point, thence N 65° 33' 00" E 35.05 feet to a point, thence N 5° 31' 01" E 57.67 feet to a iron pin being the true point of beginning containing 14.29 acres more or less, and subject to all legal highways and easements of record.

B. Regional Context of Mound Plant and Transferred Property

The Mound Plant occupies an approximately 306 acre site in Montgomery County within the City of Miamisburg, Ohio. The northern boundary of the plant is approximately 0.13 miles south of Mound Avenue in Miamisburg. Benner Road forms the southern boundary of the plant, and the Conrail Railroad roughly parallels the western boundary at a distance of 50-200 feet. The Mound Plant consists of the Operational Area and the New Property (also referred to as the South Property). Approximately 130 buildings with a total of 1.4 million square feet of floor space existed at one time at the Mound Plant (although the number of buildings is constantly diminishing as buildings are decommissioned and demolished); all of which were located in the Operational Area.

C. Historical Uses of Release Block H

The primary use of most of the area making up Block H, has been as a parking area for Mound employee vehicles. Occasional uses have included recent use as a staging area for empty trailers and staging for dismantled modular office structures. Release Block H, through the early 1950's, included office structures that housed the construction related crews involved in construction of the plant. No other uses of the area of the Mound facility referred to as Release Block H are known.

III. ENVIRONMENTAL FINDINGS

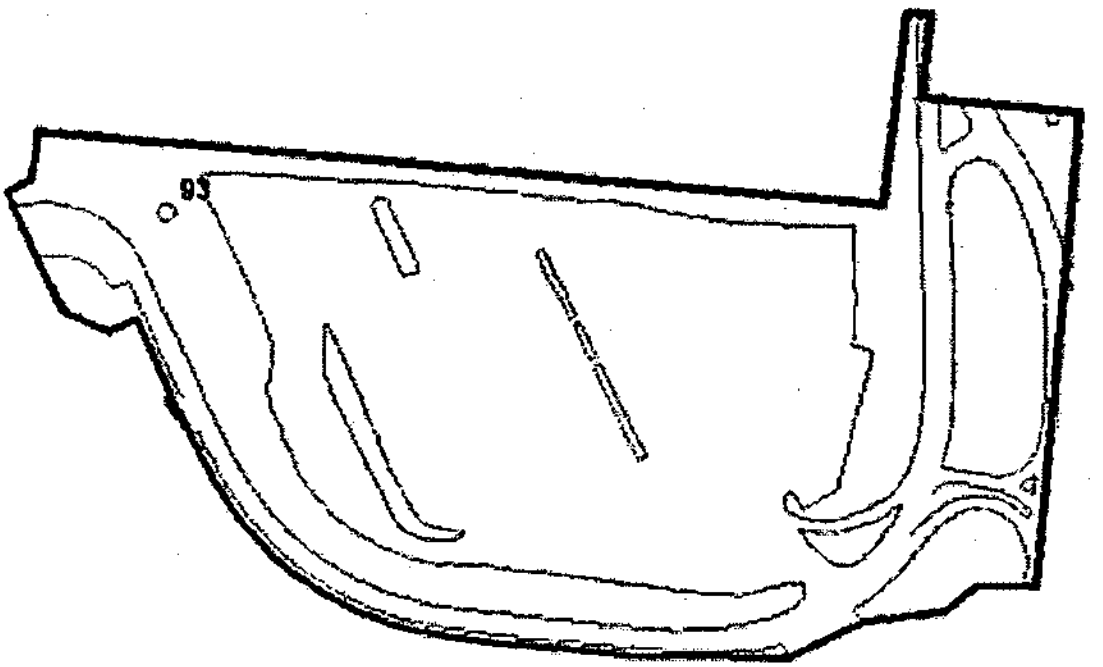
A. Methodology

In accordance with Section 120 (h)(3) of CERCLA, to the extent that information is available based on a complete search of DOE files, the following shall be placed in deeds: (1) a notice of the type and quantity of hazardous substances stored, disposed of, or released; (2) a notice of the time at which such storage, disposal, or release took place; and (3) a description of any remedial action taken. Information sources reviewed to obtain the information include:

- Federal Government records
- Recorded chain of title documents
- Reasonably obtainable aerial photographs
- Visual inspection of the property and adjacent properties
- Reasonably obtainable records of releases on adjacent properties
- Interviews with current or former employees
- Sampling, if appropriate under the circumstances.

RB H includes one Potential Release Site or PRS that has undergone previous investigations. This PRS was identified on the basis of potential radiological and chemical (non-radioactive) contamination using knowledge of historical land use or on actual measurements of contaminants. Before transfer of a release block can be completed, all buildings and PRSs must be evaluated for protectiveness or remediated to be protective. Any residual risks associated with remaining contamination in RB H have been evaluated.

FIGURE 3-1 PRS Within Release Block H



A Core Team with representatives from the US DOE, US Environmental Protection Agency (US EPA), and Ohio EPA (OEPA) performs a joint agency evaluation of each of the potential contamination problems and recommends the appropriate response. The Core Team uses process knowledge, site visits, and existing data to determine whether or not any action is warranted concerning the possible problem area.

This summary is a result of a thorough analysis of information contained in the following reference documents:

1. The Potential Release Site (PRS) Data Package for the PRS located within Release Block H. The location of the PRS in RB H is shown on Figure 3-1. The rationale for designation of this PRS is outlined in Table 3-1.

   This PRS was identified on the basis of potential radiological and chemical (non-radioactive) contamination using knowledge of historical land use or on actual measurements of contaminants.

TABLE 3-1 Release Block H PRSs/Buildings and Conclusions

PRS	TITLE	DATE
93	Main Hill Seep Number 0503 - radiological/non-radiological.	Recommendation for NFA with continued monitoring signed by Core Team on 03/04/96.

2. Residual Risk Evaluation, Release Block H, Final, August 7 1997. *Provides the evaluation of human health risks associated with any residual contamination that may remain in the block after all remedies within a parcel have been completed. The evaluation ensures that future users of the land will not be exposed to contamination levels that would pose unacceptable health risks. This document should be used in conjunction with item 4.*

3. Proposed Plan for Release Block H, Mound Plant, Miamisburg, Ohio, Public Review Draft, Revision 0, May, 1999. *Identifies the preferred option for addressing the contamination at the Mound Site, Release Block H, to the public by briefly summarizing the*

alternatives studied and highlighting the key factors that led to identifying the preferred alternative.

4. Technical Position Report In Support of the Release Block H Residual Risk Evaluation, Final, Revision 0, July, 1999. *This report is a review of key risk data for soil and groundwater related pathways. This document should be used in conjunction with Item 2.*

5. Record of Decision (ROD) for Release Block H, Mound Plant, Miamisburg, Ohio, Final, July, 1999. *Documents the remedial action plan for a site and serves the following three functions: (1) certifies the remedy selection process was carried out in accordance with CERCLA, (2) describes the technical parameters of the remedy, specifying the treatment, engineering, and institutional components as well as clean up levels, and (3) provides the public with a consolidated summary of information about the site and the chosen remedy, including the rationale behind the selection.*

B. Results Summary

1. Results of Building Data Analysis

There are no DOE owned buildings within this release block. Consequently, there is no building related contamination warranting remedial action or environmental concern. Lease or sale of RB H for commercial/industrial use is protective of human health and the environment.

a. Asbestos

Asbestos material in buildings can be found in five forms: sprayed or troweled on ceilings and walls (surfacing materials); insulation around pipes, ducts, boilers and tanks (pipe and boiler insulation); transite (in ground piping); and in roofing materials (roofing felts); other products such as ceiling and floor tiles and wall boards (miscellaneous materials).

There are no DOE owned structures within Release Block

H, therefore, there are no areas requiring repair prior to transfer.

b. Lead Paint

Lead based paint was used almost exclusively in the U.S. prior to the 1970's. Congress established maximum lead concentrations in residential paint in 1978.

There are no DOE owned structures within Release Block H, therefore, there are no areas requiring repair prior to transfer.

c. Radon

Radon studies are presented in a 1989-90 Mound Indoor Radon study for buildings. There are no DOE owned structures within Release Block H, therefore, there are no areas requiring abatement prior to transfer.

d. Radiological Surveys

There were no radiological processes performed in the Release Block H Area.

e. Polychlorinated Biphenyls

There are no areas within Release Block H requiring Polychlorinated Biphenyls (PCB) cleanup.

2. Results of Potential Release Site Soil Data Analysis

The US DOE, US EPA and OEPA have jointly decided that no additional remedial action for PRS 93 is necessary with the placement of Institutional Controls in the form of deed restrictions on future land use for RB H upon transfer. Monitoring of PRS 93 groundwater seep will continue.

Risks are quantified for both carcinogenic and non-carcinogenic contaminants. The risk associated with the intake of a known or suspected carcinogen is reported in terms of the incremental

lifetime cancer risk presented by that contaminant of concern (COC), as estimated using the appropriate slope factor and the amount of material ingested. Residual levels of contamination that remain on RB H for carcinogens indicate a probability or likelihood of one chance in 10,000 to one chance in 1,000,000 of an individual developing cancer based on an industrial use scenario. This probability or likelihood is consistent with the US EPA target risk range.

Potential human health hazards from exposure to non-carcinogenic contaminants are evaluated by using a Hazard Quotient (HQ). The HQ is the ratio of the intake of a COC to a reference dose or concentration for the COC that is believed to represent a no-observable effect level. The COC-specific HQs are then summed to provide an overall Hazard Index (HI). US EPA guidance sets a limit of 1.0 for the Comprehensive HI. The HIs for the future groundwater scenarios, however, are near or above the 1.0-limit. This is based on the bedrock groundwater contaminants flowing directly to the BVA that supplies drinking water for the plant. As a result, the selected remedy prohibits the use of bedrock groundwater. This institutional control, in the form of a deed restriction, will ensure that the residual risks associated with RB H remain acceptable.

Evaluation of residual contaminants within RB H have resulted in a determination that future users of the land will not be exposed to contaminant levels that would pose unacceptable risks as long as compliance with the deed restrictions described in the RB H Record of Decision are maintained. Remediation activities and additional assessment activities are nearing completion for adjacent property to the west. Remediation activities and additional assessment activities are scheduled in the future for adjacent properties to the south. Each removal action will be designed with containment methods to prevent migration via air pathways, surface water pathways and groundwater pathways. Stormwater management and sediment erosion control will be outlined in each of the decontamination and/or demolition project work plans. DOE believes that no additional contamination of RB H is likely from adjacent activities.

A brief summary of the history of PRS 93 and its measurements follows. For a more detailed description of PRS 93, refer to the

PRS data package as identified in Section III.A.1 of this report:

PRSs at Mound were identified based on either knowledge of historical land use that was considered potentially detrimental, or an actual sampling result showing elevated concentrations of contaminants. The location of PRS 93 is shown in Figure 3.1.

The rationale for designation of PRS 93 is outlined as follows:

Potential Release Site (PRS) 93 was historically identified as seep 603 and is located on-site, adjacent to the large parking lot. The investigation for seeps on the Main Hill was initiated in the spring of 1986. The investigation stemmed from the discovery of a groundwater seep on the western hillside below SW Building. Water from the seep was sampled and a laboratory analysis showed elevated tritium detected at low concentrations, i.e., in the range of 1,000 to 3,000 pCi/L. Flow was intermittent in the past and continues to be even recently. The latest data seem to indicate an increase in tritium concentrations but is most likely related to much diminished flow.

Soil was sampled at seep 603 as part of OU9, Regional Soils Investigation (OU9 Regional Soils Investigation Report, Rev 2, August, 1995). All radionuclide concentrations for seep 603 were at background. All other contaminants at seep 603 were in the range of background. Radiological Site Survey data from the vicinity of seep 603 shows a maximum concentration of Pu-238 of 3.46 pCi/g, which is less than Mound's ALARA guideline of 25 pCi/g. Thorium concentrations were all below the detection limit of 2 pCi/g.

C. Summary of All Soil and Groundwater Contaminants Detected

The COCs for RB H were identified by reviewing all of the sampling data for the release block. Based on that review, contaminants were eliminated for further evaluation based on criteria established in the Residual Risk Evaluation Methodology (RREM) (Residual Risk Evaluation Methodology, 1/6/97, Final, Rev 0). Specifically, only contaminants exceeding (1) background, (2) a base level of potential health concern, and (3) certain frequency of detection (FOD) criteria were carried through the Residual Risk Evaluation (RRE) (Residual Risk Evaluation - Release

Block H, Final, Rev 0, August, 1997 and Technical Position Report In Support of the Release Block H Residual Risk Evaluation, Final, Rev 0, July, 1999). The COCs established for RB H are listed in Tables 3-2, 3-3, and 3-4.

Exposures to the specific concentrations of COCs were evaluated assuming intake rates for soil and groundwater. Once the intakes were estimated, the human health implications of those intakes were evaluated by reviewing toxicological data for the COCs. For the special case of groundwater, the possible exposures to current and future COCs are evaluated. This approach ensures that the cumulative and long-term impacts of the COCs are adequately characterized. The risks to a theoretical site worker and to a theoretical site construction worker in RB H are listed in Table 3-5. Pursuant to the RREM, the risks were quantified for both carcinogenic and non-carcinogenic contaminants. The risks to a theoretical site worker and to a theoretical site construction worker in RB H are listed in Table 3-5. The overall risk values are in the acceptable range of 10^{-4} to 10^{-6}. The HIs for the future groundwater scenarios, however, are near or above the 1.0-limit. This is based on the bedrock groundwater contaminants flowing directly to the BVA that supplies drinking water for the plant. As a result, the selected remedy prohibits the use of bedrock groundwater. This institutional control, in the form of a deed restriction, will ensure that the residual risks associated with RB H remain acceptable.

Because the scope of the RRE was limited to industrial use, the soils within RB H have not been evaluated for unrestricted release (e.g., residential use). Disposition of RB H soils without proper handling, sampling and management could create an unacceptable risk to human health and the environment.

Table 3-2. Soil Contaminants of Concern for RB H

Soil Constituent	CAS Numbers	Maximum Concentration Any Depth	Maximum concentration Shallow (<2' deep)	Screening Concentration (either Bkgd or G.V.)[1]
ORGANICS (mg/kg)				
Acenaphtene	83329	0.18	0.18	
Acenaphthylene	208968	0.7	0.7	
Aldrin	309002	0.0031	0.0031	
Benzo(a)pyrene	50328	1.115	1.115	0.41[2]
Benzo(g,h,i) perylene	191242	1.0625	1.0625	
delta-BHC	319868	0.00025	0.00025	
Carbazole	N/A	0.5875	0.5875	
alpha Chlordane	57749	0.01	0.01	
gamma Chlordane	57749	0.0074	0.0074	
4-chloro-3-methyl phenol	59507	0.047	0.047	
Dibenzo(a,h)anthracene	53703	0.78	0.78	0.41[2]
Dibenzofuran	132-64-9	1.035	1.035	
Fluorene	86737	1.45	1.45	
Heptachlor epoxide	1024573	0.0022	0.0022	
2-Methylnaphthalene	91576	0.92	0.92	
Naphthalene	91203	2.625	2.625	
Phenanthrene	3.75	3.75	3.75	

Soil Constituent	CAS Numbers	Maximum Concentration Any Depth	Maximum concentration Shallow (<2' deep)	Screening Concentration (either Bkgd or G.V.)[1]
1,1,2-Trichloro-1,2,2-trifluoroethane	N/A	0.002	0.002	
INORGANICS (mg/kg)				
Arsenic (total)	7440382	10.9	10.9	8.6[3]
Bismuth	7440-69-9	58.6	58.6	
Copper (total)	7440508	26.4	22.1	26[3]
Lead (total)	7439921	163	163	48[3]
Lithium	7439-69-9	40.2	19	26[3]
RADIONUCLIDES (pCi/g)				
Cesium-137	N/A	1.9	1.9	0.42[4]
Plutonium-238	N/A	56	56	0.13[3]
Plutonium-242	N/A	0.0143	0.0143	
Potassium-40	N/A	45.4	21	37[3]
Radium-226	N/A	3.15	3.15	0.13[4]

Note: Blanks indicate background or Guideline Value not available. The more restrictive GV was used to determine which contaminants were carried through the RRE.

[1] - Guideline values (GVs) are decision-making tools for the Core Team. GVs help the Core Team determine if contaminants are present at levels that warrant evaluation.

[2] - GV corresponds to a total risk of 10^{-6} for the ingestion pathway.

[3] - Background Value. When adequate numbers of measurements are available, background values are based on the 95% upper tolerance limit.

[4] - GV corresponds to a total risk 10^{-6} for the ingestion, inhalation and external pathways.

Reference: "Technical Position Report in Support of the Release Block H Residual Risk Evaluation", Public Review Draft Rev 2, April, 1999.

Table 3-3. Current Mound Plant Groundwater Contaminants of Concern Based on the Plant Water Supply

Groundwater Constituent	Maximum concentration	Screening Concentration (either background or GV)[1]
ORGANICS (mg/L)		
1,1-Dichloroethene	0.0017	—
1,1,1-Trichloroethane	0.0018	0.0007[4]
1,1,2-Trichloro-1,2,2-trifluoroethane	0.0087	—
INORGANICS (mg/L)		
Cadmium	0.0077	0.051[2]
Copper	0.593	0.0012[4]
Lead	0.040	0.0101[4]
RADIONUCLIDES (pCi/L)		
Actinium-227	0.335	0.26[3]
Bismuth-210	0.39	—
Plutonium-239/240	2.0	0.125[4]
Thorium-228	2.17	0.69[3]
Tritium	7200	1485[4]
Uranium-234	8.14	0.792[4]
Uranium-238	8.25	0.688[4]

[1] - Guideline values (GVs) are decision-making tools for the Core Team. GVs help the Core Team determine if contaminants are present at levels that warrant evaluation.
[2] - Hazard Quotient for ingestion, dermal and inhalation. Decision made on 0.1xGV.
[3] - GV corresponds to a total risk of 10^{-4} for ingestion only.
[4] - Background value. When adequate numbers of measurements are available, background values are based on the 95th% upper tolerance limit.

Table 3-4. Future Mound Plant Groundwater Contaminants of Concern

Groundwater Constituent	Estimated Maximum concentration	Screening Concentration (either background or G.V.)[1]
ORGANICS (mg/L)		
1,1-Dichloroethene	0.0017	---
1,1,1-Trichloroethane	0.0065	0.0007[4]
1,1,2-Trichloro-1,2,2-trifluoroethane	0.0087	---
INORGANICS (mg/L)		
Beryllium	0.0001	0.000066[5]
Bismuth	0.0016	---
Cadmium	0.0077	0.051[2]
Chromium	0.4961	0.0061[4]
Cobalt	0.0039	---
Copper	0.5964	0.0012[4]
Lead	0.040	0.010[4]
Molybdenum	0.0096	0.0056[4]
RADIONUCLIDES (pCi/L)		
Actinium-227	0.355	0.26[3]
Bismuth-210	0.39	---
Plutonium-239/240	2.02	0.125[4]
Thorium-228	2.17	0.69[3]
Tritium	10427	1485[4]
Uranium-234	8.14	0.792[4]
Uranium-238	8.25	0.688[4]

[1] - Guideline values (GVs) are decision-making tools for the Core Team. GVs help the Core Team determine if contaminants are present at levels that warrant evaluation.
[2] - Hazard Quotient for ingestion, dermal and inhalation. Decision made on 0.1xGV.
[3] - GV corresponds to a total risk of 10^{-6} for ingestion only.
[4] - Background value. When adequate numbers of measurements are available, background values are based on the 95th% upper tolerance limit.
[5] - Total Risk 10^{-6} for ingestion, dermal and inhalation

Reference: "Technical Position Report in Support of the Release Block H Residual Risk Evaluation", Public Review Draft Rev 2, April, 1999.

Table 3-5. Current and Future Residual Risks for Release Block H

	Construction Worker					
	Soil	Air	Groundwater Current	Groundwater Future	Sum of Soil, Air and Groundwater Current	Sum of Soil, Air and Groundwater Future
Non-carcinogenic Hazard Index for Organics & Inorganics	4.0E-02	N/A	3.7E-02	1.6E+00	HI = 7.7E-02	HI = 1.7E+00
Carcinogenic Risks for Organics & Inorganics	4.7E-06	N/A	N/A	N/A	Risk = 4.7E-06	Risk = 4.7E-06
Carcinogenic Risks for Radionuclides	1.7E-05	2.0E-07	2.5E-06	2.9E-06	Risk = 2.0E-05	Risk = 2.3E-05
			Construction Worker Overall HI =		7.7E-02	1.7E+00
			Overall Risk =		2.5E-05	2.8E-05

	Site Employee					
	Soil	Air	Groundwater Current	Groundwater Future	Sum of Soil, Air and Groundwater Current	Sum of Soil, Air and Groundwater Future
Non-carcinogenic Hazard Index for Organics & Inorganics	4.0E-03	N/A	3.7E-02	1.6E+00	HI = 4.1E-02	HI = 1.6E+00
Carcinogenic Risks for Organics & Inorganics	2.0E-06	N/A	N/A	N/A	Risk = 2.0E-06	Risk = 2.0E-06
Carcinogenic Risks for Radionuclides	1.8E-05	9.9E-07	1.3E-05	1.4E-05	Risk = 3.2E-05	Risk = 4.6E-05
			Site Employee Overall HI =		4.1E-02	1.6E+00
			Overall Risk =		3.4E-05	4.8E-05

D. Other Factors Considered

DOE developed a generic checklist of the issues to be considered in evaluating property to be transferred. The list was modified from those used by the Department of Defense in releasing property for sale. The list includes environmental problems from Mound Plant that are likely to concern a potential purchaser as well as items relating to the operational concerns from ongoing and future remedial actions. Table 3.6 contains a brief summary and references for all factors considered. Results of only those factors which affect RB H are presented as follows:

1. Drinking Water

Mound Plant has exceeded the action levels for lead and copper due to the corrosiveness of the water distribution system. When the action level for lead is exceeded, EPA regulations require corrosion control and public education programs. These programs are in place at Mound. Information on the steps being taken to reduce lead concentrations in the Mound Plant water system, and on the hazards associated with ingesting lead are available to all Mound drinking water users.

2. Monitoring Equipment

An easement will be executed between the US DOE and MMCIC prior to transfer of RB H to maintain access for continued monitoring and maintenance on one air monitoring station (Air Station 212) and at Seep 603 (PRS 93). Questions regarding terms and conditions should be directed to the DOE Realty Officer, Ohio Field Office. Ohio EPA will have access for continued monitoring and maintenance of its air monitors and Seep 603.

3. Floodplain

A small portion of the northeast corner of RB H lies within the 100-year floodplain, i.e., the area is subject to a 1% chance per year of inundation from a tributary of the Great Miami River. In accordance with 10 CFR 1022.5(d), DOE has identified those

uses that are restricted under Federal, state, and local floodplain regulations. Via this environmental summary, DOE is fulfilling its obligation to inform future owners of the applicability of those regulations to RB H.

The restrictions are listed in the Floodplain Assessment for the Transfer of Parcel H, December 21, 1998. A Notice of Floodplain Involvement was published in the Federal Register on January 12, 1999 (Volume 64, Number 7, pp. 1797 - 1798). The Statement of Findings (SOF) for the proposed action appeared in the Federal Register on April 26, 1999. The SOF indicated that the transfer of RB H conforms to floodplain protection standards in so much as any future land owner will be subject to the applicable codes governing development activities on property that lies within a floodplain.

TABLE 3.8 Summary of Other Factors Considered for Release Block D, Mound Plant

FACTOR CONSIDERED	AFFECTS RB H? YES	AFFECTS RB H? NO	RECOMMENDATION/CONCLUSION	REFERENCE
Cultural Resources		✔	There are no historic or cultural resources within RB H. None of the areas within this Release Block would fall under a Memorandum of Agreement (MOA) or require deed restrictions to be put in place prior to transfer to limit alterations to the structures.	Correspondence From Mark J. Epstein, Department Head, Resource Protection and Review, Ohio Historic Preservation Office dated July 31, 1998.
Drinking Water Quality		✔	Mound Plant has exceeded the action levels for lead and copper due to the corrosiveness of the water distribution system. When the action level for lead is exceeded, EPA regulations require corrosion control and public education programs. These programs are in place at Mound. Information on the steps being taken to reduce lead concentrations in the Mound Plant water system, and on the hazards associated with ingesting lead will be made available to all Mound drinking water users.	Miamisburg Environmental Management Project, Annual Site Environmental Report for Calendar Year 1997, September 1998.
Endangered Species		✔	Two state protected species were found, the dark-eyed junco (Junxo hyemalis) and the inland rush (Juncus interior). Because only one individual inland rush was located, it is not considered a viable breeding population at the Mound facility. The dark-eyed junco is not known to breed in southwestern Ohio. It has also been determined that the plant site is in the habitat range of the federally endangered species of Indiana Bat (Myotis sodalis), however, the Mound site does not provide a suitable habitat for the Indiana Bat. Neither the solitary sitings of the rush and the junco, nor the potential habitat for the Indiana bat, are expected to affect ongoing or future activities at the site.	Operable Unit 9 Hydrogeologic Investigation: Wetlands Determination Report, Technical Memorandum, Revision 1, January 1994.
Fragment Arcs		✔	No fragment arcs and clearance zones due to explosive hazards at onsite operations exist in Release Block H.	Drawing FSD 970058, "Clearance Zones and Fragment Arcs" Building 100 Technical Review, Appendix 7.3 - Lease Agreement for Building (Extract)

FACTOR CONSIDERED	AFFECTS RB H YES	AFFECTS RB H NO	RECOMMENDATION/CONCLUSION	REFERENCE
Monitoring Equipment	✔		An easement has been executed between the US DOE and MMCIC to maintain access for continued monitoring of air sampling station 212 and at seep 603 (PRS 93).	Groundwater Monitoring Program and Groundwater Protection Management Program Plan, April 1997, Revision 1. Mound Plant Environmental Monitoring Plan dated July 1997.
National Environmental Policy Act (NEPA)	✔		A Finding of No Significant Impact (FONSI) was issued on October 27, 1994 for the commercialization of the Mound Plant.	The Mound Plant EA for Commercialization of the Mound Plant, DOE/EA-1001 dated October, 1994 and FONSI for the Commercialization of the Mound Plant EA dated October 27, 1994.
Resource Conservation and Recovery Act (RCRA)		✔	DOE has found no RCRA regulated units within Release Block H warranting a RCRA closure action. It has been determined that the closest facility boundary from Buildings 23 and 72 will not change with the sale of Release Block H. Therefore, the risk assessment information in the RCRA Part B Permit will not change.	RCRA Part B Permit Application, Volume I, Section A, September 1995 (as amended) Responses to Information Requested by the Ohio HWFB Technical Staff transmitted to Bob Brown of the State of Ohio Hazardous Waste Facility Board dated March 12, 1996.

FACTOR CONSIDERED	AFFECTS RB H YES	AFFECTS RB H NO	RECOMMENDATION/CONCLUSION	REFERENCE
Underground Storage Tanks (USTs)		✔	There are no USTs located within RB H.	EG&G Mound Applied Technologies, Active Underground Storage Tank Plan, November 1994.
Wetlands		✔	Three characteristics must be present to be classified as jurisdictional wetlands: (1) hydrophytic vegetation, (2) hydric soils, and (3) wetlands hydrology. Absence of any one of these characteristics removes an area from consideration. None of the sites examined within Release Block H constitute jurisdictional wetlands	Operable Unit 9 Hydrogeologic Investigation: Wetlands Determination Report, Technical Memorandum, Revision 1, January 1994.
Floodplains	✔		A small portion of the northeast corner of Release Block H lies within the 100-year floodplain. Consistent with 10 CFR 1022, the applicability of floodplain regulations to the property must be disclosed to the new owner.	SOF for the Floodplain Assessment for the Transfer of Parcel H, April 26, 1999.

III. FINDING OF SUITABILITY TO TRANSFER

In accordance with the provisions of CERCLA Section 120 (h), contaminated property can only be transferred if one of the following applies:

(1) a remedial action has been taken that protects human health and the environment and EPA deems this condition to be satisfied if a remedy has been constructed and is operating successfully,

(2) a decision has been made that no remedial action is necessary.

This future industrial use of the Mound Plant has been determined based upon agreement among US DOE, US EPA and OEPA, and interested stakeholders. This land use is reflected in the Mound Comprehensive Reuse Plan of the Miamisburg Mound Community Improvement Corporation (MMCIC) and is currently codified in the City of Miamisburg Zoning Ordinance for industrial use.

A joint agency decision among the US DOE, US EPA and OEPA has been made that a remedial action has been taken that protects human health and the environment. EPA deems this condition to be satisfied if the Institutional Controls are implemented and operating successfully. Institutional controls in the form of deed restrictions on future land use will be placed on RB H upon transfer as part of the remedy. The objective of these institutional controls is to prevent an unacceptable risk to human health and the environment by restricting the use of RB H, including RB H soils, to that which is consistent with assumptions in the RB H RRE. DOE or its successors will retain the right and responsibility to monitor, maintain, and enforce these institutional controls. The following property deed restrictions and requirements will be imposed on the property to maintain protection of human health and the environment in the future:

1. Ensure that industrial land use is maintained;
2. Prohibit the use of bedrock ground water;
3. Provide site access for federal and state agencies for the purpose of taking response actions, including sampling and monitoring; and
4. Prohibit removal of RB H soils from the DOE Mound property (as owned in 1998) boundary without approval from ODH and OEPA, or their successor agencies.

V. ENVIRONMENTAL COVENANTS

DOE is committed to include a covenant in accordance with Section 120 (h)(3) of CERCLA in the deed for the sale or transfer of the property that warrants that:

A. All remedial action necessary to protect human health and the environment has been taken as long as the deed restrictions limiting land and ground water use are in effect and enforced.

B. Any additional response action or corrective action found to be necessary after the date of sale or transfer shall be conducted by the United States [Section 120(h)(4)(D)(i)]. The requirements of the covenant shall not apply in any case in which the person or entity to whom the property is transferred is a potentially responsible party with respect to the property.

C. A clause granting the United States access to the property in any case in which a response action or corrective action is found to be necessary or such access is necessary to carry out a response action or corrective action on the adjoining property [Section 120 (h)(4)(D)(ii)]

VI. NOTIFICATION/PUBLIC PARTICIPATION

The community has been an active participant in this process to date. Comments from the public on the PRS recommendation have been incorporated as part of the remedy evaluation. DOE believes all comments have been resolved with the commentor and the documents, comments, and responses have been placed in the CERCLA Public Reading Room.

Table 6.1 lists the RB H PRS package, RB H RRE, and RB H Proposed Plan along with the dates they were made available for public comment.

Table 6.1 Release Block H Documents and Public Comment Periods

DOCUMENT/PRS	COMMENT PERIOD (BEGIN)	COMMENT PERIOD (END)
PRS 93	March 18, 1996	April 1, 1996
RB H Residual Risk Evaluation	April 30, 1997	June 16, 1997
Technical Position Report in Support of Release Block H Residual Risk Evaluation	May 5, 1999	June 5, 1999
Proposed Plan for RB H	May 5, 1999	June 5, 1999

Montgomery County
DEED-99-141469 0008
Joy Clark, Recorder
$38.00 12/21/99 07:59:38

Parcel H

DIV/2.9

QUITCLAIM DEED

K46-5-1-10

The UNITED STATES OF AMERICA, acting by and through the Secretary of the Department of Energy (hereinafter sometimes called "Grantor"), under and pursuant to the authority of the Atomic Energy Act of 1954, Section 161 (g) (42 U.S.C. §2201(g)), in consideration of the covenants contained herein, and other good and valuable consideration, duly paid by the Miamisburg Mound Community Improvement Corporation, a non-profit corporation subsisting under the laws of Ohio and recognized by the Secretary of Energy as the agent for the community wherein the former Mound Facility is located (hereinafter sometimes called "Grantee"), the receipt of which is hereby acknowledged, hereby QUITCLAIMS unto Grantee its successors and assigns, subject to the reservations, covenants, and conditions hereinafter set forth, all of its right, title and interest, together with all improvements thereon and appurtenances thereto, in the following described real property (hereinafter the "Premises), commonly known as Parcel H:

Situated in the State of Ohio, County of Montgomery, and in the City of Miamisburg, being part of Section 30, Range 5, Township 2, lying in the Miami Rivers Survey (M.R.S.), and containing 14.29 acres, more or less, and being more fully described in Exhibit A attached hereto and incorporated herein.

0023295 $.00

RESERVING UNTO Grantor, the United States Environmental Protection Agency (USEPA) and the State of Ohio, acting by and through the Director of the Ohio Environmental Protection Agency (OEPA) or the Ohio Department of Health (ODH), their successors and assigns, an easement to, upon or across the Premises in conjunction with the covenants of Grantor and/or Grantee in paragraphs numbered 1.1-1.3, 3.2 and 3.3 of this Deed and as otherwise needed for purposes of any response action as defined under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended, including but not limited to, environmental investigation or remedial action on the Premises or on property in the vicinity thereof, including the right of access to, and use of, to the extent permitted by applicable law, utilities at reasonable cost to Grantor. Grantee understands that any such response action will be conducted in a manner so as to attempt to minimize interfering with the ordinary and reasonable use of the Premises.

TRANSFERRED
99 DEC 20 AM 9:13
R.C. WAGNER
AUDITOR

This Deed and conveyance is made and accepted without warranty of any kind, either express or implied, except for the warranty in paragraph 3.3 of this Deed, and is expressly made under and subject to all reservations, restrictions, rights, covenants, easements, licenses, and permits, whether or not of public record, to the extent that the same affect the Premises.

1. The parties hereto intend the following restrictions and covenants to run with the land and to be binding upon the Grantee and its successors, transferees, and assigns or any other person acquiring an interest in the Premises, for the benefit of Grantor, USEPA and the State of Ohio, acting by and through the Director of OEPA or ODH, their successors and assigns.

DEED 99-0852 B11

200481
Closed
200407

1.1 Excepting those soils **contained within an area bounded as follows: Commencing** at an iron pin found on the southerly projection of the centerline of Mound Road, said point also being the northeast corner of a 164.13 Acre tract of land as described in Deed Book 1246, Page 45 of the Deed Records of Montgomery County and being the **TRUE POIN T OF BEGINNING**, thence South 06° 38' 48" West, 100.00 feet to an iron pin found; thence South 84° 42' 56" East, 193.40 feet to an iron pin found; thence South 05° 33' 53" West, 571.98 feet to a point on the centerline of Mound Road; thence due West, 72.93 feet to a point; thence South 51° 28' 10" West, 9.97 feet to a point on the proposed westerly right-of-way of Mound Road; thence along the proposed westerly right-of-way of Mound Road, North 06° 34' 20" West, 299.85 feet to a point; thence North 04° 05' 41" West, 185.03 feet to a point; thence along the proposed westerly right-of-way of Mound Road, North 06° 34' 20" West, 75.76 feet to a point; thence along the proposed westerly right-of-way of Mound Road, on a curve to the right for a distance of 130.93 feet with a radius of 923.62 feet and a central angle of 08° 07' 19" and a chord distance of 130.82 feet and a chord bearing of North 02° 30' 42" West to a point; thence along the existing westerly right-of-way of Mound Road, on a non-tangent curve to the right for a distance of 6.10 feet with a radius of 360.00 feet and a central angle of 00° 58' 18" and a chord distance of 6.10 feet and a chord bearing of North 12° 20' 00" West to a point; thence South 89° 52' 28" East, 18.27 feet to the **POINT OF BEGINNING,** containing 6.604 acres more or less. Grantee covenants that any soil from the Premises shall not be placed on any property outside the boundaries of that described in instruments recorded at Deed Book **(1214, pages 10, 12, 15, 17 and 248; Deed Book 1215, page 347; Deed Book 1246, page 45; Deed Book 1258, pages 56 and 74; Deed Book 1256, page 179; Micro-Fiche 81-376A01; and Micro-Fiche 81-323A11)** of the Deed Records of Montgomery County, Ohio (and as illustrated in the CERCLA 120(h) Summary, Notices of Hazardous Substances Release Block H, Mound Plant, Miamisburg, Ohio dated July 26, 1999 without prior written approval from ODH and OEPA, or successor agencies.

1.2 Grantee covenants not to use, or allow the use of, the Premises for any residential or farming activities, or any other activities which could result in the chronic exposure of children under eighteen years of age to soil or groundwater from the Premises. Restricted uses shall include, but not be limited to:

(1) single or multifamily dwellings or rental units;
(2) day care facilities;
(3) schools or other educational facilities for children under eighteen years of age; and
(4) community centers, playgrounds, or other recreational or religious facilities for children under eighteen years of age.

Grantor shall be contacted to resolve any questions which may arise as to whether a particular activity would be considered a restricted use.

1.3 Grantee covenants not to extract, consume, expose, or use in any way the groundwater underlying the premises without the prior written approval of the United States Environmental Protection Agency (Region V) and the OEPA.

2. The Grantor hereby grants to the State of Ohio and reserves and retains for itself, its successors and assigns an irrevocable, permanent, and continuing right to enforce the covenants of this Quitclaim Deed through proceedings at law or in equity, including resort to an action for specific performance, as against and at the expense of Grantee, its successors and assigns, including reasonable legal fees, and to prevent a violation of, or recover damages from a breach of, these covenants, or both. Any delay or forbearance in enforcement of said restrictions and covenants shall not be deemed to be a waiver thereof.

3. Pursuant to Section 120(h)(3) of the Comprehensive Environmental Response, Compensation and Liability Act of 1930, as amended (42 U.S.C. §9620(h)(3)), the following is notice of hazardous substances, the description of any remedial action taken, and a covenant concerning the Premises.

3.1 **Notice of Hazardous Substance**: Grantor has made a complete search of its files and records concerning the Premises. Those records indicate that the hazardous substances listed in Exhibit "B," attached hereto and made a part hereof, have been stored for one year or more or disposed of on the Premises and the dates that such storage/disposal took place.

3.2 **Description of Remedial Action Taken**:
Institutional Controls are established. The Institutional Controls are set forth as covenants in Sections 1.1, 1.2, and 1.3 of this Deed.

3.3 **Covenant:** Grantor covenants and warrants that all remedial action necessary for the protection of human health and the environment with respect to any hazardous substances remaining on the property has been taken, and any additional remedial action found to be necessary after the date of this Deed regarding hazardous substances existing prior to the date of this Deed shall be conducted by Grantor, provided, however, that the foregoing covenant shall not apply in any case in which the presence of hazardous substances on the property is due to the activities of Grantee, its successors, assigns, employees, invitees, or any other person subject to Grantee's control or direction.

4. Unless otherwise specified, all the covenants, conditions, and restrictions to this Deed shall be binding upon, and shall inure to the benefit of the assigns of Grantor and the successors and assigns of Grantee.

IN WITNESS WHEREOF, the United States of America, acting by and through its Secretary of the Department of Energy, has caused these presents to be executed this 4th day of August, 1999.

UNITED STATES OF AMERICA

Susan R. Brechbill

WITNESSETH:

John Vincent

Frank Schmaltz

Frank Schmaltz

State of Ohio)
County of Montgomery) SS.

Before me, a Notary Public in and for said State and County, appeared this 4TH day of AUGUST, 1999, SUSAN R. BRECHBILL, who acknowledged that she is the Manager of the Ohio Field Office for the United States Department of Energy, with full authority to execute the foregoing on behalf of the United States of America, and who acknowledged the above to be her signature and her free act and deed.

SEAL

Notary Public

DERRICK J. C. FRANKLIN, Notary Public
In and for the State of Ohio
My Commission Expires Dec. 25, 2000

This document was prepared by the U.S. Department of Energy.

NO PLAT REQUIRED
(SEC 711.131 ORC)
MIAMISBURG CITY PLANNING COMMISSION

Suzanne J. Baker
Secretary

DEED 99-0852 C02

DESCRIPTION OF

14.288 Acres

located in

Section 30&36, Fractional Town 2, Range 5 MRS

Section 25, Fractional Town 1, Range 6 MRS

part of

City of Miamisburg Lot No. 2259

DN|2,9

K46-5-1-10

December 09, 1999

Situate in the State of Ohio, County of Montgomery, City of Miamisburg and being part of Section 30 & 36, Fractional Town 2, Range 5 M.R.S. also part of Section 25, Fractional Town 1, Range 6 MRS and being part of City of Miamisburg Lot No. 2259 and being part of a tract of land conveyed to The United States of America as described in Deed Book 1214, Page 12-14, also part of a tract of land conveyed to the United States of America as described in Deed Book 1246, Page 49 and being more particularly described as follows:

COMMENCING at a Concrete Monument Found (top broken off) at the Northwest Corner of Section 30, ***THENCE*** with the west line of said Section 30, ***South 05° 45'57" West for a distance of 130.89 feet to a 1" Pinch Top Pipe Found*** at the Southwest corner of a 2.90 acre tract conveyed to Robert P. Heist as described in Deed MF 74-526-C09 and at the ***TRUE POINT OF BEGINNNG*** of the herein described tract;

THENCE with the south line of said 2.90 Acre Heist Lands, ***South 85° 04' 57" East for a distance of 1023.91 feet to a Concrete Monument with brass disc Found*** at the Southeast corner of said 2.90 Acre Heist Lands;

THENCE with the east line of said 2.90 Acre Heist Lands and the west right of way line of Mound Street extended, ***North 06° 53' 16" East for a distance of 231.00 feet to a Concrete Monument with brass disc Found,*** (passing a 5/8" Rebar Set at 100.99 feet, also passing a 5/8" Rebar Set on the North line of Section 30 at 129.56 feet);

THENCE leaving said right of way line, ***South84° 38'35" East for a distance of 30.00 feet to a 5/8" Rebar Capped Found (LJB)*** on the centerline of said Mound Street;

THENCE with the centerline of said Mound Street, ***South 06° 53'16" West for a distance of 100.00 feet to a 5/8" Rebar Capped Found (LJB);***

THENCE continuing with said centerline of said Mound Street, ***South 84° 38'08" East for a distance of 193.41 feet*** to the Northwest Corner of the Roads End Plat as recorded in Plat Book DD, Page 75, (witness a 5/8" Rebar Found bearing South 63° 34'50" East at a distance of 0.30 feet from the Northwest corner of said plat);

DEED 99-0852 C03

THENCE continuing with said centerline of said Mound Street, ***South 05° 32'42" West for a distance of 571.99 feet to a Mag Nail Set;***

THENCE on a new division line, ***South 89° 58' 18" West for a distance of 72.86 feet to a 5/8" Rebar Set;***

THENCE continuing on a new division line, ***South 51° 26'20" West for a distance of 48.51 feet to a 5/8" Rebar Set;***

THENCE continuing on a new division line, ***South 83° 30'22" West for a distance of 97.29 feet to a 5/8" Rebar Set;***

THENCE continuing on a new division line, ***South 63°47'11" West for a distance of 98.67 feet to a 5/8" Rebar Set;***

THENCE continuing on a new division line, ***North 89° 57'40" West for a distance of 173.02 feet to a 5/8" Rebar Set;***

THENCE continuing on a new division line, ***North 83° 51'21"West for a distance of 247.27 feet to a 5/8" Rebar Set;***

THENCE continuing on a new division line on a ***TANGENT CURVE to the RIGHT with a RADIUS of 360.67 feet, a DELTA ANGLE of 58° 46'33", a ARC LENGTH of 369.99 feet with a CHORD BEARING of North 54° 28'04" West for a CHORD DISTANCE of 353.98 feet to a 5/8" Rebar Set;***

THENCE continuing on a new division line, ***North 25° 04'47" West for a distance of 194.43 feet to a 5/8" Rebar Set;***

THENCE continuing on a new division line, ***South 64° 01'25" West for a distance of 37.94 feet to a 5/8" Rebar Set;***

THENCE continuing on a new division line, ***North 64° 37' 16" West for a distance of 56.61 feet to a 5/8" Rebar Set;***

THENCE continuing on a new division line, ***North 25° 44'48" West for a distance of 160.76 feet to a 5/8" Rebar Set***, (passing a 5/8" Rebar Set at 99.15 feet on the west line of said Section 30);

THENCE continuing on a new division line through Section 36, ***North 65° 31'15" East for a distance of 35.05 feet to a 5/8" Rebar Set*** on the East line of said Section 36;

THENCE with the East line of said Section 36, ***North 05° 29'16" East for a distance of 57.67 feet BACK TO THE TRUE POINT OF BEGINNING.***

Described tract contains 14.288 Acres more or less. North based on State Plane Coordinates, South Zone State of Ohio as taken from a drawing prepared by Lockwood, Jones and Beals dated 6-01-82, Project No. 2149. This Description is based on an actual Field Survey performed by HLS Surveyors and Engineers under the direct supervision of William C. LeRoy P.S. Ohio License Number 7664. Subject to all Easements, Highways, Covenants and Restrictions of Public Record.

Also subject to a Soil Exclusion Easement being more particularly described as follows:

COMMENCING at a Concrete Monument Found (top broken off) at the Northwest Corner of Section 30, ***THENCE*** with the west line of said Section 30, ***South 05° 45'57" West for a distance of 130.89 feet to a 1" Pinch Top Pipe Found*** at the Southwest corner of a 2.90 acre tract conveyed to Robert P. Heist as described in Deed MF 74-526-09;

THENCE with the south line of said 2.90 Acre Heist Lands, ***South 85° 04' 57" East for a distance of 1023.91 feet to a Concrete Monument with brass disc Found*** at the Southeast corner of said 2.90 Acre Heist Lands;

THENCE with the east line of said 2.90 Acre Heist Lands and the west right of way line of Mound Street extended, ***North 06° 53' 16" East for a distance of 231.00 feet to a Concrete Monument with brass disc Found,*** (passing a 5/8" Rebar Set at 100.99 feet, also passing a 5/8" Rebar Set on the North line of Section 30 at 129.56 feet) and the ***TRUE POINT OF BEGINNING*** of the herein described tract;

THENCE leaving said right of way line, ***South84° 38'35" East for a distance of 30.00 feet to a 5/8" Rebar Capped Found (LJB)*** on the centerline of said Mound Street;

THENCE with the centerline of said Mound Street, ***South 06° 53'16" West for a distance of 100.00 feet to a 5/8" Rebar Capped Found (LJB);***

THENCE continuing with said centerline of said Mound Street, ***South 84° 38'08" East for a distance of 193.41 feet*** to the Northwest Corner of the Roads End Plat as recorded in Plat Book DD, Page 75, (witness a 5/8" Rebar Found bearing South 63° 34'50" East at a distance of 0.30 feet from the Northwest corner of said plat)***;***

THENCE continuing with said centerline of said Mound Street, ***South 05° 32'42" West for a distance of 571.99 feet to a Mag Nail Set;***

THENCE with a new division line, ***South 89° 58' 18" West for a distance of 72.86 feet to a 5/8" Rebar Set;***

THENCE North 06° 48'23" West for a distance of 694.41 feet BACK TO THE TRUE POINT OF BEGINNING.

Said Easement contains 1.840 Acres more or less.

STATE OF OHIO
WILLIAM C. LEROY 7664
REGISTERED PROFESSIONAL SURVEYOR

William C. LeRoy P.S.
Ohio License No. 7664
12-9-99

JOSEPH LITVIN P.E., P.S.
COUNTY ENGINEER
MONTGOMERY COUNTY DAYTON, OHIO
DESCRIPTION CHECKED AND APPROVED
BY EAM DATE 12/16/99

A.J. WAGNER
MONTGOMERY COUNTY AUDITOR
DIVISION

PARCEL H MOUND 99152ph.dwg

Does contain access clause

Appendix A

Quitclaim Deed for RB-H

QUITCLAIM DEED

The UNITED STATES OF AMERICA, acting by and through the Secretary of the Department of Energy (hereinafter sometimes called "Grantor"), under and pursuant to the authority of the Atomic Energy Act of 1954, Section 161 (g) (42 U.S.C. §2201(g), the covenants contained herein, and other good and valuable consideration, duly paid by the Miamisburg Mound Community Improvement Corporation, a non-profit corporation subsisting under the laws of Ohio and recognized by the Secretary of Energy as the agent for the community wherein the former Mound Facility is located (hereinafter sometimes called "Grantee"), the receipt of which is hereby acknowledged, hereby QUITCLAIMS unto Grantee its successors and assigns, subject to the reservations, covenants, and conditions hereinafter set forth, all of its right, title and interest, together with all improvements thereon and appurtenances thereto, in the following described premises, commonly known as Parcel H:

Situate in the State of Ohio, County of Montgomery, being in the City of Miamisburg, being part of Section 30, Range 5, Township 2, lying in the Miami Rivers Survey (M.R.S.), and being part of city lots numbered 2259 within the Corporation Limits of the City of Miamisburg, and being more particularly bounded and described with bearings referenced to the Ohio State Coordinate System, South Zone, as follows:

Beginning at a concrete monument, being the North East corner of Section 36 and the North West corner of Section 30, and being the point of beginning for the land herein described, thence S 5° 47' 45" W 130.89 feet to an iron pin being the TRUE POINT OF BEGINNING; thence S 85° 03' 12" E 1023.90 feet to a concrete monument, thence N 6° 54' 59" E 231.00 feet to a concrete monument, thence S 84° 36' 50" E 30.00 feet to a iron pin, thence S 6° 54' 54" W 100.00 feet to a iron pin, thence S 84° 36' 37" E 193.40 feet to a concrete monument, thence S 5° 34' 19" W 571.986 feet along the center line of Mound Road to a point, thence S 90° 0' 0" W 72.86 feet to a point, thence S 51° 28' 1.6" W 48.51 feet to a point, thence S 83° 32' 4" W 97.29 feet to a point, thence S 63° 48' 53" W 98.67 feet to a point, thence N 89° 55' 58" W 173.02 feet to a point, thence N 83° 49' 39" W 244.21 feet to a point, thence along the arc of a curve to the right having a radius of 360.67 feet for a distance of 353.12 feet to a point, thence N 25° 03' 02" W 214.48 feet to a point, thence S 64° 03' 10" W 37.94 feet to a point, thence N 64° 35' 31" W 56.61 feet to a point, thence N 25° 43' 03" W 160.76 feet to a point, thence N 65° 33' 00" E 35.05 feet to a point, thence N 5° 31' 01" E 57.67 feet to a iron pin being the true point of beginning containing 14.29 acres more or less, and subject to all legal highways and easements of record. Prior Deed Reference: Deed Book _____, Page __.

RESERVING UNTO Grantor, the United States Environmental Protection Agency (USEPA) and the State of Ohio, acting by and through the Director of the Ohio Environmental Protection Agency (OEPA) or the Ohio Department of Health (ODH), their successors and assigns, an easement to, upon or across the Premises in conjunction with the covenants of

Grantor and/or Grantee in paragraphs numbered 1.1-1.3, 3.2 and 3.3 of this Deed and as otherwise needed for purposes of any response action as defined under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended, including but not limited to, environmental investigation or remedial action on the Premises or on property in the vicinity thereof, including the right of access to, and use of, to the extent permitted by applicable law, utilities at reasonable cost to Grantor. Grantee understands that any such response action will be conducted in a manner so as to attempt to minimize interfering with the ordinary and reasonable use of the Premises.

This Deed and conveyance is made and accepted without warranty of any kind, either express or implied, except for the warranty in paragraph 3.3 of this Deed, and is expressly made under and subject to all reservations, restrictions, rights, covenants, easements, licenses, and permits, whether or not of public record, to the extent that the same affect the Premises.

1. The parties hereto intend the following restrictions and covenants to run with the land and to be binding upon the Grantee and its successors, transferees, and assigns or any other person acquiring an interest in the Premises, for the benefit of Grantor, USEPA and the State of Ohio, acting by and through the Director of OEPA or ODH, their successors and assigns.

1.1 Excepting those soils **Commencing** at an iron pin found on the southerly projection of the centerline of Mound Road, said point also being the northeast corner of a 164.13 Acre tract of land as described in Deed Book 1246, Page 45 of the Deed Records of Montgomery County and being the **TRUE POINT OF BEGINNING**, thence South 06° 38' 48" West, 100.00 feet to an iron pin found; thence South 84° 42' 56" East, 193.40 feet to an iron pin found; thence South 05° 33' 53" West, 571.98 feet to a point on the centerline of Mound Road; thence due West, 72.93 feet to a point; thence South 51° 28' 10" West, 9.97 feet to a point on the proposed westerly right-of-way of Mound Road; thence along the proposed westerly right-of-way of Mound Road, North 06° 34' 20" West, 299.85 feet to a point; thence North 04° 05' 41" West, 185.03 feet to a point; thence along the proposed westerly right-of-way of Mound Road, North 06° 34' 20" West, 75.76 feet to a point; thence along the proposed westerly right-of-way of Mound Road, on a curve to the right for a distance of 130.93 feet with a radius of 923.62 feet and a central angle of 08° 07' 19" and a chord distance of 130.82 feet and a chord bearing of North 02° 30' 42" West to a point; thence along the existing westerly right-of-way of Mound Road, on a non-tangent curve to the right for a distance of 6.10 feet with a radius of 360.00 feet and a central angle of 00° 58' 18" and a chord distance of 6.10 feet and a chord bearing of North 12° 20' 00" West to a point; thence South 89° 52' 28" East, 18.27 feet to the **POINT OF BEGINNING**.

Containing 287,684.98 square feet, 6.604 acres more or less, and subject to all legal highways, easements, and agreements of record. Grantee covenants that any soil from the Premises shall not be placed on any property outside the boundaries of that described in instruments recorded at Deed Book (**1214, pages 10, 12, 15, 17 and 248; Deed Book 1215, page 347; Deed Book 1246, page 45; Deed Book 1258, pages 56 and 74; Deed Book 1256, page 179; Micro-Fiche 81-376A01; and Micro-Fiche**

81-323A11) of the Deed Records of Montgomery County, Ohio (and as illustrated in the CERCLA 120(h) Summary, Notices of Hazardous Substances Release Block H, Mound Plant, Miamisburg, Ohio dated _____, 1999) without prior written approval from ODH and OEPA, or successor agencies.

1.2 Grantee covenants not to use, or allow the use of, the Premises for any residential or farming activities, or any other activities which could result in the chronic exposure of children under eighteen years of age to soil or groundwater from the Premises. Restricted uses shall include, but not be limited to:

(1) single or multifamily dwellings or rental units;
(2) day care facilities;
(3) schools or other educational facilities for children under eighteen years of age; and
(4) community centers, playgrounds, or other recreational or religious facilities for children under eighteen years of age.

Grantor shall be contacted to resolve any questions which may arise as to whether a particular activity would be considered a restricted use.

1.3 Grantee covenants not to extract, consume, expose, or use in any way the groundwater underlying the premises without the prior written approval of the United States Environmental Protection Agency (Region V) and the OEPA.

2. The Grantor hereby grants to the State of Ohio and reserves and retains for itself, its successors and assigns an irrevocable, permanent, and continuing right to enforce the covenants of this Quitclaim Deed through proceedings at law or in equity, including resort to an action for specific performance, as against and at the expense of Grantee, its successors and assigns, including reasonable legal fees, and to prevent a violation of, or recover damages from a breach of, these covenants, or both. Any delay or forbearance in enforcement of said restrictions and covenants shall not be deemed to be a waiver thereof.

3. Pursuant to Section 120(h)(3) of the Comprehensive Environmental Response, Compensation and Liability Act of 1930, as amended (42 U.S.C. §9620(h)(3)), the following is notice of hazardous substances, the description of any remedial action taken, and a covenant concerning the Premises.

3.1 **Notice of Hazardous Substance**: Grantor has made a complete search of its files and records concerning the Premises. Those records indicate that the hazardous substances listed in Exhibit "B," attached hereto and made a part hereof, have been stored for one year or more or disposed of on the Premises and the dates that such storage/disposal took place.

3.2 **Description of Remedial Action Taken**:
Institutional Controls are established. The Institutional Controls are set forth as covenants in Sections 1.1, 1.2, and 1.3 of this Deed.

3.3 **Covenant:** Grantor covenants and warrants that all remedial action necessary for the protection of human health and the environment with respect to any hazardous substances remaining on the property has been taken, and any additional remedial action found to be necessary after the date of this Deed regarding hazardous substances existing prior to the date of this Deed shall be conducted by Grantor, provided, however, that the foregoing covenant shall not apply in any case in which the presence of hazardous substances on the property is due to the activities of Grantee, its successors, assigns, employees, invitees, or any other person subject to Grantee's control or direction.

4. Unless otherwise specified, all the covenants, conditions, and restrictions to this Deed shall be binding upon, and shall inure to the benefit of the assigns of Grantor and the successors and assigns of Grantee.

IN WITNESS WHEREOF, the United States of America, acting by and through its Secretary of the Department of Energy, has caused these presents to be executed this _____day of _____ , 1999.

UNITED STATES OF AMERICA

_____

WITNESSETH:

_____

_____

State of Ohio)
County of Montgomery) SS.

Before me, a Notary Public in and for said State and County, appeared this _____ day of _____, 1999, _____, who acknowledged that she is the Manager of the Ohio Field Office for the United States Department of Energy, with full authority to execute the foregoing on behalf of the United States of America, and who acknowledged the above to be her signature and her free act and deed.

SEAL

_____

_____Notary Public

Appendix B

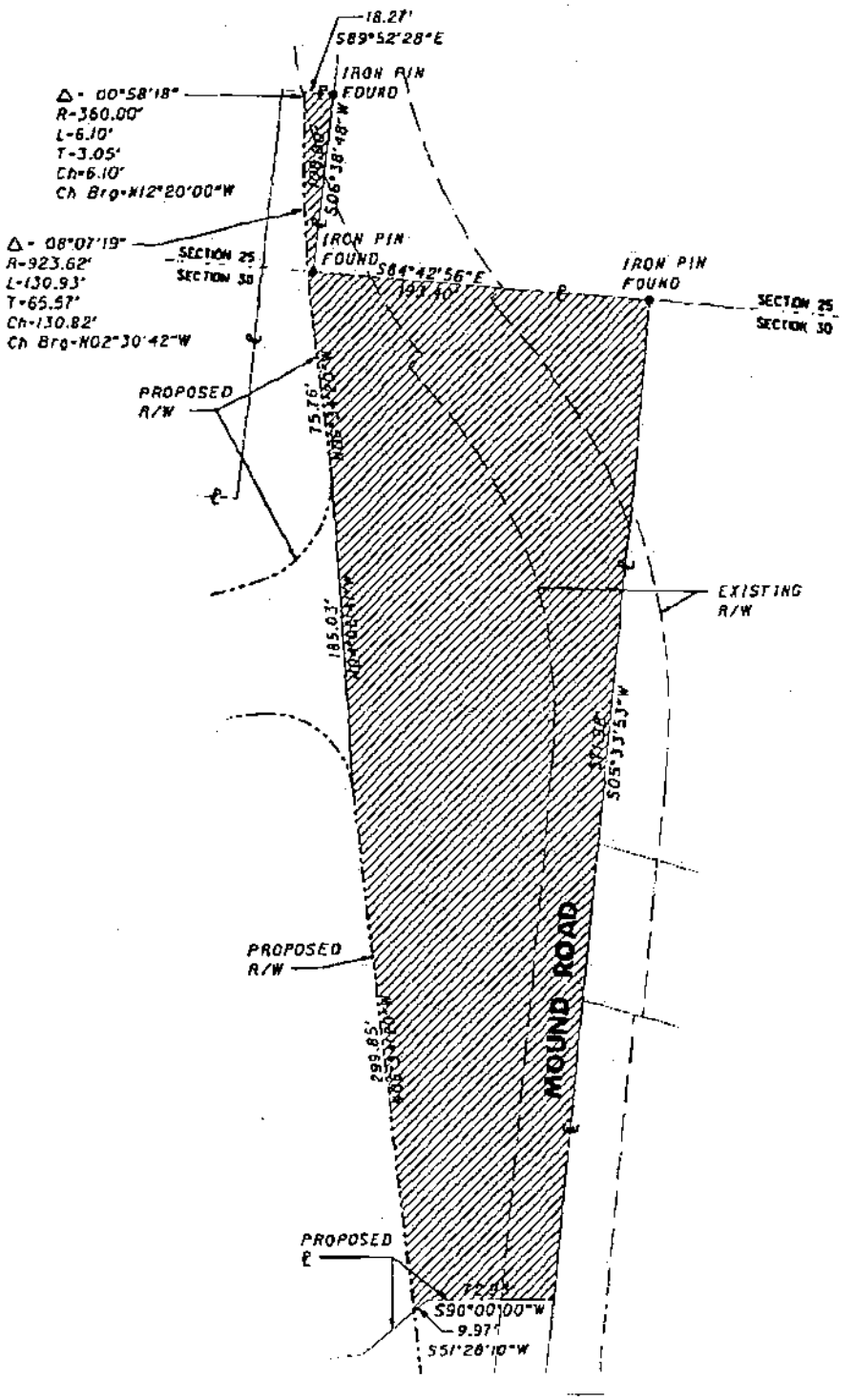
Legal Description of RB H

H "Wedge"

Situate in the County of Montgomery, in the State of Ohio and in the City of Miamisburg, part of Section 25, Town 1, Range 6 MRs and part of Section 30, Town 2, Range 5 MRs and being more particularly described as follows: **Commencing** at an iron pin found on the southerly projection of the centerline of Mound Road, said point also being the northeast corner of a 164.13 Acre tract of land as described in Deed Book 1246, Page 45 of the Deed Records of Montgomery County and being the **TRUE POINT OF BEGINNING**,

thence South 06° 38' 48" West, 100.00 feet to an iron pin found; thence South 84° 42' 56" East, 193.40 feet to an iron pin found; thence South 05° 33' 53" West, 571.98 feet to a point on the centerline of Mound Road; thence due West, 72.93 feet to a point; thence South 51° 28' 10" West, 9.97 feet to a point on the proposed westerly right-of-way of Mound Road; thence along the proposed westerly right-of-way of Mound Road, North 06° 34' 20" West, 299.85 feet to a point; thence North 04° 05' 41" West, 185.03 feet to a point; thence along the proposed westerly right-of-way of Mound Road, North 06° 34' 20" West, 75.76 feet to a point; thence along the proposed westerly right-of-way of Mound Road, on a curve to the right for a distance of 130.93 feet with a radius of 923.62 feet and a central angle of 08° 07' 19" and a chord distance of 130.82 feet and a chord bearing of North 02° 30' 42" West to a point; thence along the existing westerly right-of-way of Mound Road, on a non-tangent curve to the right for a distance of 6.10 feet with a radius of 360.00 feet and a central angle of 00° 58' 18" and a chord distance of 6.10 feet and a chord bearing of North 12° 20' 00" West to a point; thence South 89° 52' 28" East, 18.27 feet to the **POINT OF BEGINNING.**

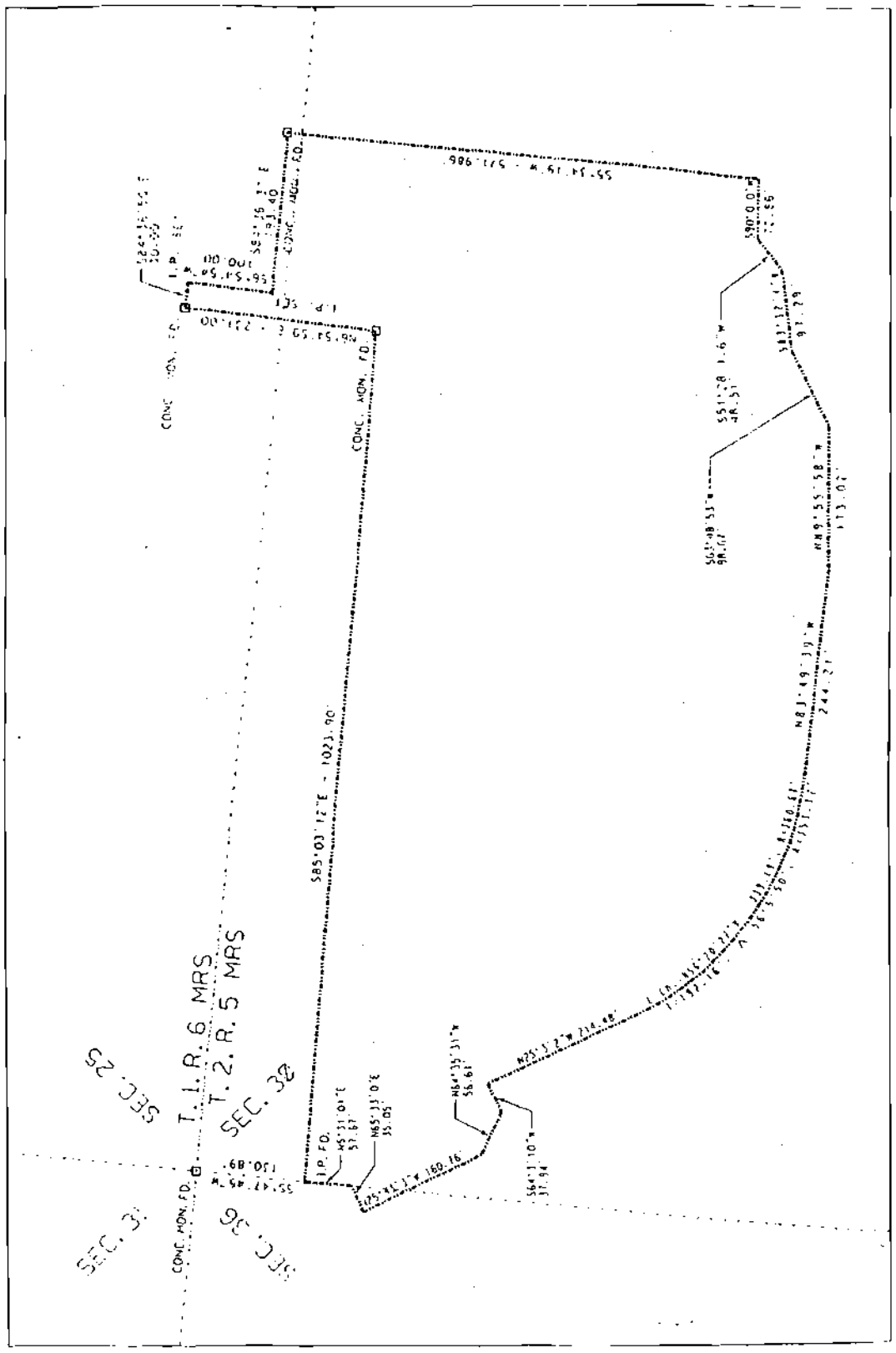
Containing 82,149.70 square feet, 1.886 acres more or less, and subject to all legal highways, easements, and agreements of record.


18.27'
S89°52'28"E
IRON PIN FOUND
Δ = 00°58'18"
R=360.00'
L=6.10'
T=3.05'
Ch=6.10'
Ch Brg=N12°20'00"W
S06°38'48"W
Δ = 08°07'19"
R=923.62'
L=130.93'
T=65.57'
Ch=130.82'
Ch Brg=N02°30'42"W
SECTION 25
SECTION 30
IRON PIN FOUND
S84°42'56"E
IRON PIN FOUND
SECTION 25
SECTION 30
PROPOSED R/W
75.76'
EXISTING R/W
185.03'
S05°33'53"W
MOUND ROAD
PROPOSED R/W
299.85'
PROPOSED ℄
S90°00'00"W
9.97'
S51°28'10"W

Release Block H

Situate in the State of Ohio, County of Montgomery, being in the City of Miamisburg, being part of Section 30, and Section 36, Range 5, Township 2, lying in the Miami Rivers Survey (M.R.S.), and being part of city lots numbered 2258 and 2259 within the Corporation Limits of the City of Miamisburg, and being more particularly bounded and described with bearings referenced to the Ohio State Coordinate System, South Zone, as follows:

Beginning at a concrete monument, being the North East corner of Section 36 and the North West corner of Section 30, and being the point of beginning for the land herein described, thence S 5° 47′ 45″ W 130.89 feet to an iron pin being the TRUE POINT OF BEGINNING; thence S 85° 03′ 12″ E 1023.90 feet to a concrete monument, thence N 6° 54′ 59″ E 231.00 feet to a concrete monument, thence S 84° 36′ 50″ E 30.00 feet to a iron pin, thence S 6° 54′ 54″ W 100.00 feet to a iron pin, thence S 84° 36′ 37″ E 193.40 feet to a concrete monument, thence S 5° 34′ 19″ W 571.986 feet along the center line of Mound Road to a point, thence S 90° 0′ 0″ W 72.86 feet to a point, thence S 51° 28′ 1.6″ W 48.51 feet to a point, thence S 83° 32′ 4″ W 97.29 feet to a point, thence S 63° 48′ 53″ W 98.67 feet to a point, thence N 89° 55′ 58″ W 173.02 feet to a point, thence N 83° 49′ 39″ W 244.21 feet to a point, thence along the arc of a curve to the right having a radius of 360.67 feet for a distance of 353.12 feet to a point, thence N 25° 03′ 02″ W 214.48 feet to a point, thence S 64° 03′ 10″ W 37.94 feet to a point, thence N 64° 35′ 31″ W 56.61 feet to a point, thence N 25° 43′ 03″ W 160.76 feet to a point, thence N 65° 33′ 00″ E 35.05 feet to a point, thence N 5° 31′ 01″ E 57.67 feet to a iron pin being the true point of beginning containing 14.29 acres more or less, and subject to all legal highways and easements of record.


T. 1. R. 6 MRS.
T. 2. R. 5 MRS
SEC. 25
SEC. 36
SEC. 36
SEC. 36
CONC. MON. F.D.
CONC. MON. F.D.
CONC. MON. F.D.
I.P. F.D.
S85°03'12"E - 1023.90'
N89°55'58"W
113.01'
N81°49'39"W
244.21'
S90°00'00"W
S64°11'10"W
31.94'
N85°33'0"E
35.05'
N85°31'0"E
57.67'
N64°35'31"W
56.61'

1.3 Site Assessment

As documented in the Residual Risk Evaluation (RRE) for RB H and the Technical Position Report in Support of the RB H RRE, the risks from carcinogens and non-carcinogens to current and future occupants of RB H were evaluated. In those analyses, the type of occupant was limited to an industrial use scenario and was represented by a construction worker and a site employee (office employee). Based on the RRE, the risks for current industrial use are within the acceptable range. However, in order to ensure that future use of the site conforms to the RRE assumptions, it was necessary to consider a remedy that would prevent the site from being used for non-industrial purposes.

As described below, the remedy will protect future occupants of RB H from the threat of contaminants in the groundwater, and will ensure that RB H soils are appropriately evaluated prior to any removal of RB H soils from the Mound Plant National Priority List (NPL) facility boundary.

1.4 Description of Selected Remedy

The selected remedy for RB H is institutional controls in the form of deed restrictions on future land use. DOE or its successors, as the lead agency for this ROD, has the responsibility to monitor, maintain and enforce these institutional controls. In order to maintain protection of human health and the environment at RB H in the future, the Institutional controls to be adopted will:

- Ensure that industrial land use is maintained;
- Prohibit the use of bedrock ground water;
- Provide site access for federal and state agencies for the purpose of taking response actions, including sampling and monitoring; and
- Prohibit removal of RB H soils from the DOE Mound property (as owned in 1998) boundary without approval from the Ohio Department of Health (ODH) and the Ohio Environmental Protection Agency (OEPA), or their successor agencies.

A copy of the deed is attached in Appendix A.

1.5 Statutory Determinations

The selected remedy for RB H is protective of human health and the environment,

Parcel 3

43 p93
$178.0

Div 110 K46-5-1-12
Div 13 K46-5-3-28

TRANSFER OCTOBER 17, 2002
02:17pm KARL L. KEITH, COUNTY AUDITOR
Conv/Tran #: 20488 $.00

QUIT CLAIM DEED

The UNITED STATES OF AMERICA, acting by and through the Secretary of the Department of Energy (hereinafter sometimes called "Grantor"), under and pursuant to the authority of the Atomic energy Act of 1954, Section 161 (g) (42U.S.C. §2201(g)), in consideration of the covenants contained herein, and other good and valuable consideration, duly paid by the Miamisburg Mound Community Improvement Corporation, a non-profit corporation subsisting under the laws of Ohio and recognized by the Secretary of Energy as the agent for the community wherein the former Mound Facility is located (hereinafter sometimes called "Grantee"), the receipt of which is hereby acknowledged, hereby QUIT CLAIMS unto Grantee its successors and assigns, subject to the reservations, covenants, and conditions hereinafter set forth, all of its right, title and interest, together with all improvements thereon and appurtenances thereto, in the following described real property (hereinafter the "Premises), commonly known as Parcel 3:

Situated in the State of Ohio, County of Montgomery and being parts of City of Miamisburg Lot Number 2259 and 2290, also being part of Sections 30, Fractional Town 2, Range 5 East M.R.S. and Fractional Section 36, Fractional Town 2, Range 5 East M.R.S. and being a portion previously conveyed to USA as described in Deed Book 1246, Page 45 and also being a portion previously conveyed to USA as described in Deed Book 1214, Page 12 and also being a portion previously conveyed to USA as described in Deed Book 1256, Page 179 containing 4.805 acres, more or less, and being more fully described in Exhibit A attached hereto and incorporated herein.

RESERVING UNTO Grantor, the United States Environmental Protection Agency (USEPA) and the State of Ohio, acting by and through the Director of the Ohio Environmental Protection Agency (OEPA) or the Ohio Department of Health (ODH), their successors and assigns, an easement to, upon or across the Premises in conjunction with the covenants of Grantor and, or Grantee in paragraphs numbered 1.1-1.3, 3.2 and 3.3 of this Deed and as otherwise needed for purposes of any response action as defined under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended, including but not limited to, environmental investigation or remedial action on the Premises or on property in the vicinity thereof, including the right of access to, and use of, to the extent permitted by applicable law, utilities at reasonable cost to Grantor. Grantee understands that any such response action will be conducted in a manner so as to attempt to minimize interfering with the ordinary and reasonable use of the Premises.

This Deed and conveyance is made and accepted without warranty of any kind, either expressed or implied, except for the warranty in paragraph 3.3 of this Deed, and is expressly made under and subject to all reservations, restrictions, rights, covenants, easements, licenses, and permits, whether or not of public record, to the extent that the same affect the Premises.

1. The parties hereto intend the following restrictions and covenants to run with the land and to be binding upon the Grantee and its successors, transferees, and assigns or any other person acquiring an interest in the Premises, for the benefit of Grantor, USEPA and the State of Ohio, acting by and through the Director of OEPA or ODH, their successors and assigns.

Prepared	
Considered	
Plotted	
Coded	
Entered	
Verified	
Imaged	

$178.00 10/18/02 07:53:19
DEED-02-128206 0043
Montgomery County
Judy Dodge Recorder

D20466

1.1 Grantee covenants that any soil from the Premises shall not be placed on any property outside the boundaries of that described in instruments recorded at Deed Book (1214, pages 10, 12, 15, 17 and 248; Deed Book 1215, page 347; Deed Book 1246, page 45; Deed Book 1258, pages 56 and 74; Deed Book 1256, page 179; Micro-Fiche 81-376A01; and Micro-Fiche 81-323A11) of the Deed Records of Montgomery County, Ohio (and as illustrated in the Parcel 3 Environmental Summary, Notices of Hazardous Substances, Mound Plant, Miamisburg, Ohio dated_____ without prior written permission approval from ODH and OEPA, or successor agencies.

1.2 Grantee covenants not to use, or allow the use of the Premises for any residential or farming activities, or any other activities which could result in the chronic exposure of children under eighteen years of age to soil or groundwater from the Premises. Restricted uses shall include, but not be limited to:

(1) single or multi family dwellings or rental units;
(2) day care facilities;
(3) schools or other educational facilities for children under eighteen years of age; and
(4) community centers, playgrounds, or other recreational or religious facilities for children under eighteen years of age.

Grantor shall be contacted to resolve any questions which may arise as to whether a particular activity would be considered a restricted use.

1.3 Grantee covenants not to extract, consume, expose, or use in any way the groundwater underlying the premises without the prior written approval of the United States Environmental Protection Agency (Region V) and the OEPA.

2. The Grantor hereby grants to the State of Ohio and reserves and retains for itself, its successors and assigns an irrevocable, permanent, and continuing right to enforce the covenants of this Quitclaim Deed through proceedings at law or in equity, including resort to an action for specific performance, as against and at the expense of Grantee, its successors and assigns, including reasonable legal fees, and to prevent a violation of, or recover damages from a breach of, these covenants, or both. Any delay or forbearance in enforcement of said restrictions and covenants shall not be deemed to be a waiver thereof.

3. Pursuant to Section 120(h)(3) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended (42 U.S.C. §9620(h)(3)), the following is notice of hazardous substances, the description of any remedial action taken, and a covenant concerning the Premises.

3.1 **Notice of Hazardous Substance:** Grantor has made a complete search of its files and records concerning the Premises. Those records indicate that the hazardous substances listed in Exhibit "B," attached hereto and made a part hereof, have been stored for one year or more or disposed of on the Premises and the dates that such storage/disposal took place.

3.2 **Description of Remedial Action Taken:** Institutional Controls are established. The Institutional Controls are set forth as covenants in Sections 1.1, 1.2, and 1.3 of this Deed.

3.3 **Covenant:** Grantor covenants and warrants that all remedial action necessary for the protection of human health and the environment with respect to any hazardous substances remaining on the property has been taken, and any additional remedial action found to be necessary after the date of this Deed regarding hazardous substances existing prior to the date of this Deed shall be conducted by Grantor, provided, however, that the foregoing covenant shall not apply in any case in which the presence of hazardous substances on the property is due to the activities of Grantee, its successors, assigns, employees, invitees, or any other person subject to Grantee's control or direction.

4. Unless otherwise specified, all the covenants, conditions, and restrictions to this Deed shall be binding upon, and shall inure to the benefit of the assigns of Grantor and the successors and assigns of Grantee.

IN WITNESS WHEREOF, the United States of America, acting by and through its Secretary of the Department of Energy, has caused these presents to be executed this 8th day of August, 2002.

UNITED STATES OF AMERICA

WITNESSETH:

NO PLAT REQUIRED
(SEC 711.131 ORC)
MIAMISBURG CITY PLANNING COMMISSION
Secretary

State of Ohio)
County of Montgomery) SS.

Before me, a Notary Public in and for said State and County, appeared this 8th day of August, 2002, JACK R. CRAIG, who acknowledged that she is the Manager of the Ohio Field Office for the Unites States Department of Energy, with full authority to execute the foregoing on behalf of the Unites States of America, and who acknowledged the above to be her signature and her free act and deed.

SEAL

Notary Public

Joan Wysong, Notary Public
In and for the State of Ohio
My Commission Expires June 28, 2004

Exhibit "A"
DESCRIPTION OF
4.805 Acres
located in
Northwest Quarter Section 30
Northeast Quarter Fractional Section 36 DIV/10
Town 2, Range 5, M.Rs.
City of Miamisburg, Montgomery County, Ohio K46-5-1-12
DIV/13 K46-5-3-28

Situate in the Northwest Quarter of Section 30 and the Northeast Quarter of Fractional Section 36, Town 2, Range 5, M.Rs., City of Miamisburg, County of Montgomery, State of Ohio, ***being part of a remainder tract of 7.35 acres as conveyed to the United States of America, as recorded in Deed Book Volume 1246, Page 45, known as Tract No. A-109, of the Deed Records of Montgomery County, Ohio, said 7.35 acre tract also being part of Lot Numbered 2259 of the City of Miamisburg, Ohio, being part of a 1.61 acre tract conveyed to the United States of America, as recorded in Deed Book Volume 1256, Page 179, known as Tract No. A-110,*** of the Deed Records of Montgomery County, Ohio, ***being part of a 87.28 acre tract conveyed to the United States of America, as recorded in Deed Book Volume 1214, Page 12*** of the Deed Records of Montgomery County, Ohio, said 87.28 acre tract also being known as part of Lot Numbered 2259 and part of Lot Numbered 2290 of the City of Miamisburg, Ohio, said 1.61 acre tract also being part of Lots Numbered 6 and 7 of the Philip Gebhart plat as recorded in Record Plat Book Volume "A", Page 126 of the Plat Records of Montgomery County, Ohio, said 87.28 acre tract also being part of Lots Numbered 6, 7 and 14 of said Philip Gebhart plat, being a new division from said remainder 7.35 acre tract, 1.61 acre tract and 87.28 acre tract and being more fully bounded and described as follows:

Commencing at a Broken Concrete Monument found, said monument being the northwest corner of the Northwest Quarter of Section 30 and the northeast corner of the Northeast Quarter of Fractional Section 36, said monument also being the northwest corner of a 9.443 acre tract conveyed to Robert P. Heist, as recorded in Deed Microfiche No. 74-0526C09 of the Deed Records of Montgomery County, Ohio, said 9.443 acre tract being known as Lot Numbered 2258 of the City of Miamisburg, Ohio; thence with the west line of said Heist 9.443 acre tract, South 05° 45' 57" West, a distance of 130.89 feet to a 1" pinched top pipe found, said pipe being the northwest corner of said United States of America 7.35 acre remainder tract, also the northwest corner of Lot Numbered 2259 of the City of Miamisburg, Ohio, said iron pipe also being the northwest corner of a 14.288 acre tract conveyed to the Miamisburg Mound Community Improvement Corporation, as recorded in Deed Microfiche No. 99-0852B11 of the Deed Records of Montgomery County, Ohio, said iron pipe being the **True Point of Beginning** of the hereinafter described 4.805 acre tract;

Thence with the west line of said Miamisburg Mound Community Improvement Corporation 14.288 acre tract, **South 05° 29' 16" West**, a distance of **57.67 feet to a 5/8" iron pin reset**, said iron pin found bent, pulled and reset new iron pin;

Thence with a northwesterly line of said Miamisburg Mound Community Improvement Corporation 14.288 acre tract, **South 65°31' 15" West**, a distance of **35.05 feet to a 5/8" iron pin set**;

Thence with a southwesterly line of said Miamisburg Mound Community Improvement Corporation 14.288 acre tract, **South 25° 44' 48" East,** passing a point in the southeasterly line of said United States of America 1.61 acre tract and the north line of said United State of America 87.28 acre tract at 37.08 feet, also passing a point in the west line of the Northwest Quarter of Section 30 and the east line of the Northeast Quarter of Fractional Section 36 at 61.61 feet, in all a distance of **160.76 feet to a 2" mag nail set;**

Thence with a southerly line of said Miamisburg Mound Community Improvement Corporation 14.288 acre tract, **South 64° 37' 16" East,** passing a point on a southerly line of said United States of America 7.35 acre remainder tract and a northerly line of said United State of America 87.28 acre tract at 52.82 feet, in all a distance of **56.61 feet to a 5/8" iron pin set;**

Thence with a southeasterly line of said Miamisburg Mound Community Improvement Corporation 14.288 acre tract, **North 64° 01' 25" East,** passing a point on a southeasterly line of said United States of America 7.35 acre remainder tract and a northwesterly line of said United State of America 87.28 acre tract at 2.58 feet, in all a distance of **37.94 feet to a 5/8" iron pin found with an identification cap marked "LeRoy, 7664";**

Thence with a southwesterly line of said Miamisburg Mound Community Improvement Corporation 14.288 acre tract, **South 25° 04' 47" East**, passing a point on the south line of said United States of America 7.35 acre remainder tract and the north line of said United State of America 87.28 acre tract at 20.96 feet, in all a distance of **194.43 feet to a 5/8" iron pin found with an identification cap marked "LeRoy, 7664"**, said iron pin being a point of curvature for a curve to the left;

Thence with a southwesterly line of said Miamisburg Mound Community Improvement Corporation 14.288 acre tract on a curve to the left, having **a delta angle of 28° 31' 32", a radius of 360.67 feet, an arc length of 179.57 feet and a chord bearing and distance of South 39° 20' 33" East, 177.72 feet to a 5/8" iron pin set**, said iron pin being the easterly corner of the herein described 4.805 acre tract;

Thence with new division line on the following thirteen (13) courses,

1) **South 40° 10' 30" West**, a distance of **91.47 feet to a 5/8" iron pin set;**
2) **Thence, South 23° 05' 31" East**, a distance of **17.73 feet to a 5/8" iron pin set;**
3) **Thence, South 64° 44' 27" West**, a distance of **98.64 feet to a 5/8" iron pin set;**
4) **Thence, North 50° 06' 58" West**, a distance of **22.74 feet to a railroad spike set;**
5) **Thence, South 66° 03' 34" West**, a distance of **39.97 feet to a railroad spike set;**
6) **Thence, North 23° 47' 05" West**, a distance of **359.64 feet to a railroad spike set;**
7) **Thence, North 59° 41' 15" West**, passing a point in the west line of the Northwest Quarter of Section 30 and the east line of the Northeast Quarter of Fractional Section 36 at 2.89 feet, in all a distance of **32.00 feet to a railroad spike set;**
8) **Thence, South 65° 05' 15" West**, a distance of **34.64 feet to a railroad spike set;**
9) **Thence, South 24° 54' 45" East**, a distance of **59.55 feet to a cross notch set in concrete;**
10) **Thence, South 65° 11' 32" West**, a distance of **268.32 feet to a 5/8" iron pin set;**
11) **Thence, North 24° 26' 30" West**, a distance of **24.31 feet to a railroad spike set;**
12) **Thence, North 65° 33' 30" East**, a distance of **7.67 feet to a 2" mag nail set;**

13) **Thence, North 24° 26' 30" West**, passing a point in the on the south line of said United States of America 1.61 acre remainder tract and the north line of said United State of America 87.28 acre tract at 221.39 feet, a distance of **308.52 feet to a 5/8" iron pin set**, said iron pin lying in the north line of said United States of America 1.61 acre tract;

Thence with the north line of said United States of America 1.61 acre tract, **North 65° 36' 29" East**, a distance of **478.50 feet to the *True Point of Beginning***, containing **4.805 acres**, more or less, of ***which 1.952 acres being in the Northwest Quarter of Section 30 and 2.853 acres being in the Northeast Quarter of Fractional Section 36***, subject to all easements and right of ways of record.

Bearing basis established per previous survey by HLS Surveyors & Engineers dated December 9, 1999 and recorded in Records of Land Survey Volume 1999, Page 0325 of the Montgomery County Engineer's Record of Land Surveys and Deed Microfiche No. 99-0852B11 of the Deed Records of Montgomery County, Ohio, along the north line of Parcel "H" as noted on said referenced survey plat, bearing of South 85° 04' 57" East.

This description prepared from an actual field survey performed under my direct supervision, Timothy W. Schram, Sr., Registered Professional Surveyor number 7299 of the State of Ohio, and that all monuments referenced herein and placed on the ground represents the boundaries of the herein described tract.

Timothy W. Schram, Sr.

Timothy W. Schram, Sr., Regist. Prof. Surveyor No. 7299 of the State of Ohio, March 10, 2002.

STATE OF OHIO
TIMOTHY W. SCHRAM, SR.
S-7299
REGISTERED
PROFESSIONAL SURVEYOR

JOSEPH LITVIN P.E., P.S.
COUNTY ENGINEER
MONTGOMERY COUNTY DAYTON, OHIO
DESCRIPTION CHECKED AND APPROVED
BY SEB DATE 5/01/02
#2002-0140

KARL L. KEITH
MONTGOMERY COUNTY AUDITOR
DIVISION

F: 2000/00051/00051a.des

Does ~~Deed~~ + have Access clause

APPENDIX A

Quit Claim Deed for Parcel 3

QUIT CLAIM DEED

The UNITED STATES OF AMERICA, acting by and through the Secretary of the Department of Energy (hereinafter sometimes called "Grantor"), under and pursuant to the authority of the Atomic energy Act of 1954, Section 161 (g) (42U.S.C. §2201(g)), in consideration of the covenants contained herein, and other good and valuable consideration, duly paid by the Miamisburg Mound Community Improvement Corporation, a non-profit corporation subsisting under the laws of Ohio and recognized by the Secretary of Energy as the agent for the community wherein the former Mound Facility is located (hereinafter sometimes called "Grantee"), the receipt of which is hereby acknowledged, hereby QUIT CLAIMS unto Grantee its successors and assigns, subject to the reservations, covenants, and conditions hereinafter set forth, all of its right, title and interest, together with all improvements thereon and appurtenances thereto, in the following described real property (hereinafter the "Premises), commonly known as Parcel 3:

Situated in the State of Ohio, County of Montgomery and being parts of City of Miamisburg Lot Number 2259 and 2290, also being part of Sections 30, Fractional Town 2, Range 5 East M.R.S. and Fractional Section 36, Fractional Town 2, Range 5 East M.R.S. and being a portion previously conveyed to USA as described in Deed Book 1246, Page 45 and also being a portion previously conveyed to USA as described in Deed Book 1214, Page 12 and also being a portion previously conveyed to USA as described in Deed Book 1256, Page 179 containing 5.581 acres, more or less, and being more fully described in Exhibit A attached hereto and incorporated herein.

RESERVING UNTO Grantor, the United States Environmental Protection Agency (USEPA) and the State of Ohio, acting by and through the Director of the Ohio Environmental Protection Agency (OEPA) or the Ohio Department of Health (ODH), their successors and assigns, an easement to, upon or across the Premises in conjunction with the covenants of Grantor and, or Grantee in paragraphs numbered 1.1-1.3, 3.2 and 3.3 of this Deed and as otherwise needed for purposes of any response action as defined under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended, including but not limited to, environmental investigation or remedial action on the Premises or on property in the vicinity thereof, including the right of access to, and use of, to the extent permitted by applicable law, utilities at reasonable cost to Grantor. Grantee understands that any such response action will be conducted in a manner so as to attempt to minimize interfering with the ordinary and reasonable use of the Premises.

This Deed and conveyance is made and accepted without warranty of any kind, either expressed or implied, except for the warranty in paragraph 3.3 of this Deed, and is expressly made under and subject to all reservations, restrictions, rights, covenants, easements, licenses, and permits, whether or not of public record, to the extent that the same affect the Premises.

1. The parties hereto intend the following restrictions and covenants to run with the land and to be binding upon the Grantee and its successors, transferees, and assigns or any other person acquiring an interest in the Premises, for the benefit of Grantor, USEPA and the State of Ohio, acting by and through the Director of OEPA or ODH, their successors and assigns.

1.1 Grantee covenants that any soil from the Premises shall not be placed on any property outside the boundaries of that described in instruments recorded at Deed Book (1214, pages 10, 12, 15, 17 and 248; Deed Book 1215, page 347; Deed Book 1246, page 45; Deed Book 1258, pages 56 and 74; Deed Book 1256, page 179; Micro-Fiche 81-376A01; and Micro-Fiche 81-323A11) of the Deed Records of Montgomery County, Ohio (and as illustrated in the Parcel 3 Environmental Summary, Notices of Hazardous Substances, Mound Plant, Miamisburg, Ohio dated_____ without prior written permission approval from ODH and OEPA, or successor agencies.

1.2 Grantee covenants not to use, or allow the use of the Premises for any residential or farming activities, or any other activities which could result in the chronic exposure of children under eighteen years of age to soil or groundwater from the Premises. Restricted uses shall include, but not be limited to:

(1) single or multi family dwellings or rental units;
(2) day care facilities;
(3) schools or other educational facilities for children under eighteen years of age; and
(4) community centers, playgrounds, or other recreational or religious facilities for children under eighteen years of age.

Grantor shall be contacted to resolve any questions which may arise as to whether a particular activity would be considered a restricted use.

1.3 Grantee covenants not to extract, consume, expose, or use in any way the groundwater underlying the premises without the prior written approval of the United States Environmental Protection Agency (Region V) and the OEPA.

2. The Grantor hereby grants to the State of Ohio and reserves and retains for itself, its successors and assigns an irrevocable, permanent, and continuing right to enforce the covenants of this Quitclaim Deed through proceedings at law or in equity, including resort to an action for specific performance, as against and at the expense of Grantee, its successors and assigns, including reasonable legal fees, and to prevent a violation of, or recover damages from a breach of, these covenants, or both. Any delay or forbearance in enforcement of said restrictions and covenants shall not be deemed to be a waiver thereof.

3. Pursuant to Section 120(h)(3) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended (42 U.S.C. §9620(h)(3)), the following is notice of hazardous substances, the description of any remedial action taken, and a covenant concerning the Premises.

3.1 **Notice of Hazardous Substance:** Grantor has made a complete search of its files and records concerning the Premises. Those records indicate that the hazardous substances listed in Exhibit "B," attached hereto and made a part hereof, have been stored for one year or more or disposed of on the Premises and the dates that such storage/disposal took place.

3.2 **Description of Remedial Action Taken:** Institutional Controls are established. The Institutional Controls are set forth as covenants in Sections 1.1, 1.2, and 1.3 of this Deed.

3.3 **Covenant:** Grantor covenants and warrants that all remedial action necessary for the protection of human health and the environment with respect to any hazardous substances remaining on the property has been taken, and any additional remedial action found to be necessary after the date of this Deed regarding hazardous substances existing prior to the date of this Deed shall be conducted by Grantor, provided, however, that the foregoing covenant shall not apply in any case in which the presence of hazardous substances on the property is due to the activities of Grantee, its successors, assigns, employees, invitees, or any other person subject to Grantee's control or direction.

4. Unless otherwise specified, all the covenants, conditions, and restrictions to this Deed shall be binding upon, and shall inure to the benefit of the assigns of Grantor and the successors and assigns of Grantee.

IN WITNESS WHEREOF, the United States of America, acting by and through its Secretary of the Department of Energy, has caused these presents to be executed this _____day of _____, 2001.

UNITED STATES OF AMERICA

_____

WITNESSETH:

_____

_____

State of Ohio)
County of Montgomery) SS.

Before me, a Notary Public in and for said State and County, appeared this _____day of _____, 2001, _____, who acknowledged that she is the Manager of the Ohio Field Office for the Unites States Department of Energy, with full authority to execute the foregoing on behalf of the Unites States of America, and who acknowledged the above to be her signature and her free act and deed.

SEAL

_____
Notary Public

APPENDIX A, Exhibit A

Legal Description of Parcel 3

Exhibit "A"
for
Mound Parcel Three
containing
5.581 Acres

May 4, 2000

Situate in the State of Ohio, County of Montgomery and being parts of City of Miamisburg Lot Numbered 2259 and 2290, also being part of Sections 30, Fractional Town 2, Range 5 East M.R.S. and Fractional Section 36, Fractional Town 2, Range 5 East M.R.S. and being a portion previously conveyed to USA as described in Deed Book 1246, Page 45 and also being a portion previously conveyed to USA as described in Deed Book 1214, Page 12 and also being a portion previously conveyed to USA as described in Deed Book 1256, Page 179 and being more particularly described as follows:

COMMENCING at a Concrete Monument Found (Top Broken Off) at the Northwest corner of the Northwest Quarter of Section 30 said Monument also being the Northeast corner of a 2.90 Acre tract of land conveyed to Robert P. Heist as described in Deed MF 74-0526-C09, ***THENCE*** with the West line of said Heist Lands, ***South 05° 45' 57" West for a distance of 130.89 feet to a 1" Iron Pipe Found Pinched*** at the Southwest corner of said Heist Lands and the Northwest corner of a 14.288 Acre tract conveyed to the Miamisburg Community Corporation as described in Deed MF 99-852-E11 and the ***TRUE POINT OF BEGINNING*** of the herein described tract;

THENCE with the West line of said Miamisburg Community Corporation lands the next seven calls:

> ***1) THENCE, South 05° 29' 16" West for a distance of 57.67 feet to a 5/8" Rebar Found with cap (LeRoy);***
>
> ***2) THENCE, South 65° 31' 15" West for a distance of 35.05 feet to a 5/8" Rebar Found with cap (LeRoy);***
>
> ***3) THENCE, South 25° 44' 48" East for a distance of 160.76 feet to a 5/8" Rebar Found with cap (LeRoy);***
>
> ***4) THENCE, South 64° 37' 16" East for a distance of 56.61 feet to a 5/8" Rebar Found with cap (LeRoy);***

5) THENCE, North 64° 01' 25" East for a distance of 37.94 feet to a 5/8" Rebar Found with cap (LeRoy);

6) THENCE, South 25° 04'47" East for a distance of 194.43 feet to a 5/8" Rebar Found with cap (LeRoy);

7) THENCE on a Curve to the Left with a Radius of 360.67 feet, a Arc Length of 180.89 feet, a Delta Angle of 28° 44' 12", with a Chord Bearing of South 39° 26' 53" East and a Chord Distance of 179.00 feet to a 5/8" Rebar Set;

THENCE on a new division line through said USA lands, ***South 40° 10' 27" West for a distance of 91.34 feet to a Cross Notch Set;***

THENCE continuing on a new division line through said USA lands, ***South 23° 57' 22" East for a distance of 17.73 feet to a 3 inch Existing Steel Fence Corner Found;***

THENCE continuing on a new division line through said USA lands, ***South 64° 21' 58" West for a distance of 99.96 feet to a Mag Nail Set;***

THENCE continuing on a new division line through said USA lands, ***North 50° 48' 40" West for a distance of 23.44 feet to a Mag Nail Set;***

THENCE continuing on a new division line through said USA lands, ***South 65° 58' 19" West for a distance of 39.91 feet to Cross Notch Set;***

THENCE continuing on a new division line through said USA lands, ***North 24° 24' 48" West for a distance of 308.00 feet to a 6 inch Existing Steel Fence Corner Found;***

THENCE continuing on a new division line through said USA lands, ***North 59° 05' 44" East for a distance of 2.80 feet to a 6 inch Existing Steel Fence Corner Found;***

THENCE continuing on a new division line through said USA lands, ***North 20° 40' 57" West for a distance of 10.55 feet to a Cross Notch Set;***

THENCE continuing on a new division line through said USA lands, ***South 67° 51' 08" West for a distance of 3.37 feet to a Cross Notch Set;***

THENCE continuing on a new division line through said USA lands, ***North 24° 33' 12" West for a distance of 30.35 feet to a 6 inch Existing Steel Fence Corner Found;***

THENCE continuing on a new division line through said USA lands, ***North 50° 32' 22" West for a distance of 26.56 feet to a Mag Nail Set,*** passing a RR Spike Set at 8.09 feet on the West line of said Section 30;

THENCE continuing on a new division line through said USA lands, ***North 31° 01' 18" West for a distance of 13.93 feet to a Mag Nail Set;***

THENCE continuing on a new division line through said USA lands, ***South 65° 08' 57" West for a distance of 7.98 feet to a Mag Nail Set;***
THENCE continuing on a new division line through said USA lands, ***South 23° 06' 46" East for a distance of 13.85 feet to a 4 inch Existing Steel Fence Corner Found;***

THENCE continuing on a new division line through said USA lands, ***South 63° 53' 40" West for a distance of 26.73 feet to a Cross Notch Set;***

THENCE continuing on a new division line through said USA lands, ***South 24° 54' 44" East for a distance of 45.10 feet to a Cross Notch Set*** on the Easterly extension of the Southerly line of an existing one story brick building named GS1;

THENCE continuing on a new division line through said USA lands and with the Southerly line of said GS1 building, ***South 65° 11' 32" West for a distance of 268.32 feet to a 5/8" Rebar Set***, passing the Southeasterly corner of said GS1 building at 62.6 feet and the Southwesterly corner of said GS1 building at 263.43 feet;

THENCE continuing on a new division line through said USA lands, ***North 24° 25' 19" West for a distance of 229.01 feet to a Mag Nail Set;***

THENCE continuing on a new division line through said USA lands and with an existing fenceline, ***South 65° 33' 23" West for a distance of 284.61 feet to a Mini RR Spike Set in a 4 foot wide Concrete Walk at the Joint;***

THENCE continuing on a new division line through said USA lands, ***North 24° 23'31" West for a distance of 104.08 feet to a5/8" Rebar Set*** on the South line of lands conveyed to the City of Miamisburg as described in Deed Book 594, Page 410, witness a Concrete Monument Found Bearing South 65° 36' 29" East at a distance of 38.74 feet;

THENCE with the South line of said City of Miamisburg lands, ***North 65° 36' 29" East for a distance of 770.61 feet BACK TO THE TRUE POINT OF BEGINNING.***

Said property contains 5.581 Acres more or less with 1.992 Acres more or less in Section 30 and 3.589 Acres more or less in Fractional Section 36. North based on State Plane Coordinates, Ohio South Zone taken from a survey performed by Lockwood, Jones and Beals dated 06-01-82 and referenced to Deed MF 99-852-E11: Note bearing South 25° 04' 47" East with a distance of 194.43 feet. This description is based on an actual field survey performed by HLS Surveyors and Engineers under the direct supervision of William C. LeRoy PS, Ohio Lic. No. 7664 and dated May, 2000. Subject to all Easements, Highways, Covenants and Restrictions.

STATE OF OHIO
WILLIAM C. LEROY 7664
REGISTERED PROFESSIONAL SURVEYOR

6-05-00

William C. LeRoy PS
Ohio Lic. No. 7664
KY. Lic. No. 3516

JOSEPH LITVIN P.E., P.S.
COUNTY ENGINEER
MONTGOMERY COUNTY DAYTON, OHIO
DESCRIPTION CHECKED AND APPROVED
BY EAN DATE 6/6/00

Mound Parcel 3.doc

FRAC. TOWN 2, RANGE 5 M.R.S.
MIAMISBURG, MONTGOMERY CO., OHIO
PART OF CITY OF MIAMISBURG LOT NUMBER 2259
&
PART OF CITY OF MIAMISBURG LOT NUMBER 2290

LEGEND:

CURVE TABLE

NUMBER	LENGTH	DELTA ANGLE	RADIUS	CHORD	DIRECTION	CHORD LENGTH
C	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

LINE TABLE

NUMBER	DIRECTION	DISTANCE
L1	[illegible]	[illegible]
L2	[illegible]	[illegible]
L3	[illegible]	[illegible]
L4	[illegible]	[illegible]
L5	[illegible]	[illegible]
L6	[illegible]	[illegible]
L7	[illegible]	[illegible]
L8	[illegible]	[illegible]
L9	[illegible]	[illegible]
L10	[illegible]	[illegible]
L11	[illegible]	[illegible]

Surveyors Note

5.581 ACRES
PLAT OF SURVEY
FOR
"MOUND PARCEL 3"

SECTIONS 30 [illegible] Ac. & FRAC. 36 (0.581 Ac.)
FRAC. TOWN 2, RANGE 5 M.R.S.
CITY OF MIAMISBURG
MONTGOMERY COUNTY, OHIO
PART CITY OF MIAMISBURG LOT No. 2259
&
PART CITY OF MIAMISBURG LOT No. 2290

Reference Documents

MIAMISBURG COMMUNITY CORPORATION

U.S.A.
PART CITY OF MIAMISBURG
LOT No. 2290

U.S.A.
PART CITY OF MIAMISBURG
LOT No. 2290

U.S.A.
PART CITY OF MIAMISBURG
LOT No. 2290

MIAMISBURG COMMUNITY CORPORATION

[illegible]

- Site access for federal and state agencies for the purpose of sampling and monitoring; and
- Prohibition against removal of Parcel 3 soils from the DOE Mound property (as owned in 1998) boundary without approval from ODH and OEPA.

2.10 SELECTED REMEDY

2.10.1 Description

The selected remedy for Parcel 3 is institutional controls in the form of deed restrictions on future land use. The specific restrictions to be adopted are provided in the deed attached to this ROD as Appendix A. The deed restrictions include:

- Maintenance of industrial/commercial land use;
- Prohibition against residential use;
- Prohibition against the use of groundwater;
- Site access for federal and state agencies for the purpose of sampling and monitoring; and
- Prohibition against removal of Parcel 3 soils from the DOE Mound property (as owned in 1998) boundary without approval from ODH and OEPA.

DOE or its successors, as the lead agency for this ROD, have the responsibility to monitor, maintain and enforce these institutional controls. This responsibility includes the duty to conduct annual assessments of compliance with the deed restrictions and the duty to enforce the deed restrictions if any non-compliance is detected. The assessment and enforcement processes is part of the Operations and Maintenance (O&M) Plan and is outlined in Appendix B, which is intended to serve as a framework for implementation of operation and maintenance activities for the selected remedy. Within 90 days of the date on which this ROD is signed, DOE shall submit to US EPA and OEPA for their approval a formal proposal regarding operation and maintenance of the institutional controls. This proposal and the annual compliance assessments shall be considered primary documents under the Federal Facilities Agreement. If DOE, US EPA, and OEPA agree, the frequency of the compliance assessments can be changed at any time.

The soils within Parcel 3 have not been evaluated for any use other than on-site industrial/commercial use. Any off-site disposition of the Parcel 3 soil without proper handling, sampling, and management could create an unacceptable risk to off-site receptors. An objective of the preferred alternative is to prevent residual exposure to soils from Parcel 3.

A copy of the deed is attached in Appendix A; this represents the remedy for Parcel 3. DOE will develop an O&M Plan for the remedy. US EPA and OEPA have approval authority for this plan.

22090602-0205100001

Parcel 3

Environmental Summary

CERCLA 120(h) SUMMARY
NOTICE OF HAZARDOUS SUBSTANCES

Mound Plant
Miamisburg, Ohio

Final

SEPTEMBER 2001

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:

SRF-5J

September 7, 2001

Mr. Richard B. Provencher
U.S. Department of Energy
Mound Environmental Management Project
P.O. Box 66
Miamisburg, OH 45343-0066

RE: US DOE Mound Plant
Parcel 3
Request for Concurrence to Transfer

Dear Mr. Provencher,

Thank you for your letter dated September 6, 2001, requesting concurrence to transfer Parcel 3 at the United States Department of Energy (U.S. DOE) Mound Plant in Miamisburg, Ohio.

The United States Environmental Protection Agency (U.S. EPA) has reviewed the Record of Decision for Parcel 3, Mound Plant, Miamisburg, Ohio, Final, September 2001, which has now been signed by U.S. DOE, U.S. EPA, and the Ohio Environmental Protection Agency, and the Environmental Summary - Notice of Hazardous Substances for Parcel 3, Mound Plant, Miamisburg, Ohio, Final, September 2001. Based upon this information, U.S. EPA concurs that all remedial action necessary to protect public health and the environment with respect to any substance remaining in Parcel 3 has been taken, and that transfer of Parcel 3 may take place.

It is understood that any additional remedial action found to be necessary in the future shall be conducted by U.S. DOE to the extent necessary to protect human health and the environment.

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The U.S. EPA fully supports redevelopment and reuse of the structures and other property available at the Mound Plant. However, assurances must be provided that all property and building leases and transfers will be protective of public health and the environment. If you have any questions or concerns about this or future economic development issues at the site, please contact Timothy Fischer, of my staff, at (312) 886-5787.

Sincerely,

William E. Muno, Director
Superfund Division

cc: Brian Nickel, Ohio EPA
Robert Rothman, US DOE-MEMP

Parcel 3

Environmental Summary

CERCLA 120(h) SUMMARY
NOTICE OF HAZARDOUS SUBSTANCES

Mound Plant
Miamisburg, Ohio

Final

SEPTEMBER 2001

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(continued)

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Appendix A Legal Description of Parcel 3

Appendix B RRE Summary Tables (Tables 3 through 9)

ACRONYMS

CERCLA	Comprehensive Environmental Response, Compensation & Liability Act
COPC	Constituent of Potential Concern
DOE	Department of Energy
EPA	Environmental Protection Agency
FONSI	Finding of No Significant Impact
HI	Hazard Index
HQ	Hazard Quotient
HWFB	Hazardous Waste Facility Board
MMCIC	Miamisburg Mound Community Improvement Corporation
NCP	National Contingency Plan
NFA	No Further Assessment
NHPA	National Historic Preservation Act
ODH	Ohio Department of Health
OEPA	Ohio Environmental Protection Agency
OHPO	Ohio Historic Preservation Office
OU	Operable Unit
OSC	On-Scene Coordinator
PCB	polychlorinated biphenyl
ppb	parts per billion
PRS	Potential Release Site
ROD	Record of Decision
RRE	Residual Risk Evaluation
RREM	Residual Risk Evaluation Methodology
SM/PP	Special Metallurgical/Plutonium Processing
TCE	trichloroethene(ethylene)
US DOE	United States Department of Energy
US EPA	United States Environmental Protection Agency

I. PURPOSE

The information contained in this notice is required under the authority of regulations promulgated under section 120 (h) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). This summary is intended to support a transfer by deed to new ownership for economic development by documenting that the U.S. Department of Energy's (US DOE) Mound Plant has met the requirements of CERCLA 120 (h) for Parcel 3. A copy shall be provided to all future owners.

II. PROPERTY DESCRIPTION

A. Description of Property Suitable for Transfer

This Environmental Summary addresses Parcel 3, which is located on the northern border of the Mound Plant (hereinafter "Plant") as shown in Figure 1. Parcel 3 is generally bounded to the south and west by the plant proper, to the north by offsite residences, and to the east by the parking lot (Release Block H) transferred to the Miamisburg Mound Community Improvement Corporation (MMCIC).

The legal description of Parcel 3, as recorded in the Parcel 3 Record of Decision (Draft, May 2001) is included as Appendix A of this Environmental Summary.

B. Regional Context of Mound Plant and Transferred Property

The Mound Plant is in Montgomery County within the City of Miamisburg, Ohio as shown in Figure 2. At one time, the Mound Plant occupied an approximately 306 acre site. Since 1999, approximately 122 acres have been transferred to MMCIC.

Benner Road forms the southern boundary of the plant, and the Norfolk Southern Railroad roughly parallels the western boundary at a distance of 50-200 feet. At one time, the Mound Plant consisted of approximately 130 buildings with a total of 1.4 million square feet of floor space (although the number of buildings is constantly diminishing as buildings are decommissioned and demolished).

C. Historical Uses of Parcel 3

The primary use of most of the area making up Parcel 3 has been as a parking area for Mound employee vehicles. Much of the parking lot is built on fill material from the plant site. The fill included excess materials and soil from the plant site. There are two buildings in Parcel 3; GH and GP-1. GH Building is a one story, brick office building. Its primary use was a visitor control center. Building GP-1 was for many years the guard force headquarters. It housed offices, an exercise room, a communications center, and a firing range. At other times, Parcel 3 included trailers for uncleared employees, a guard island

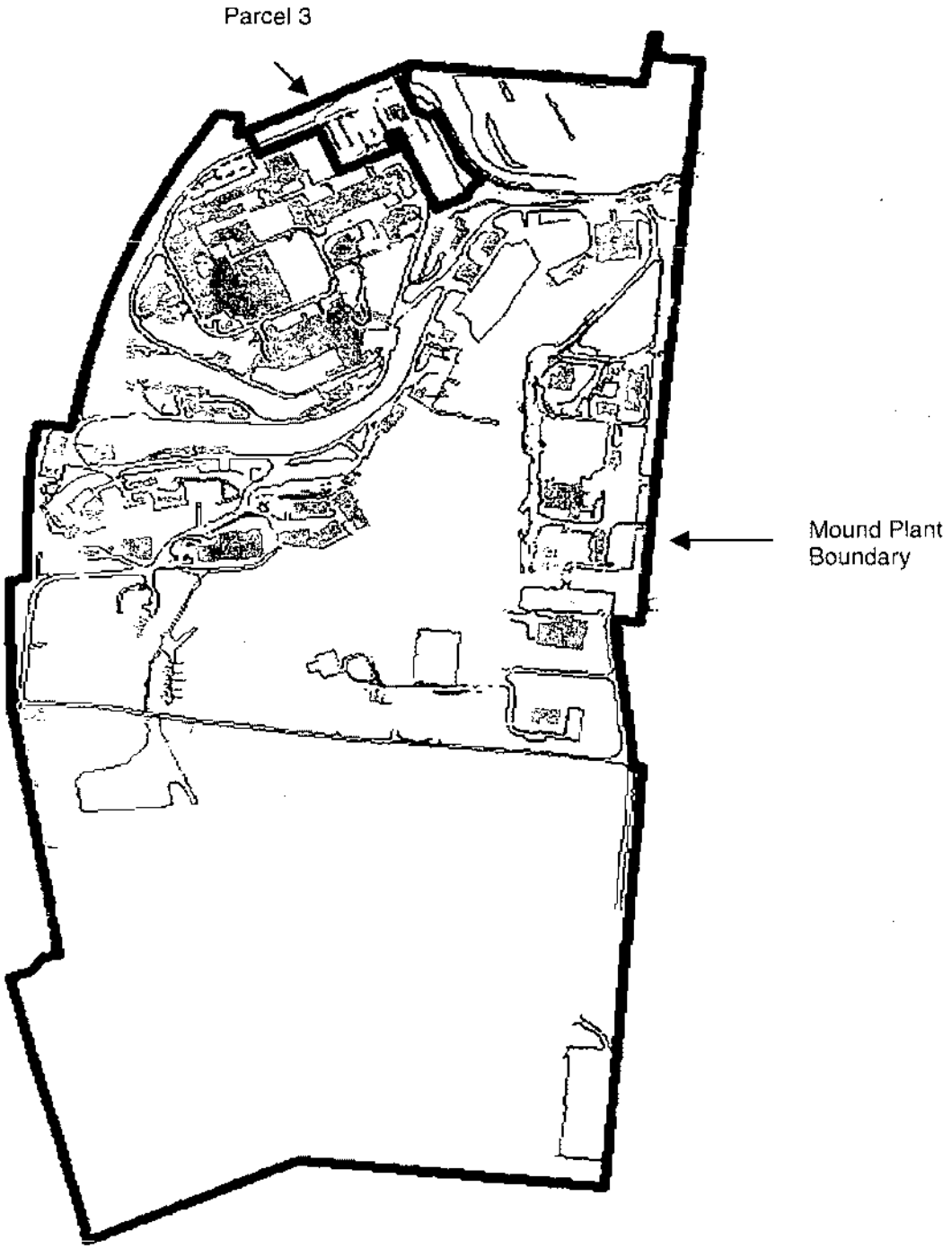


Figure 1: Location of Parcel 3

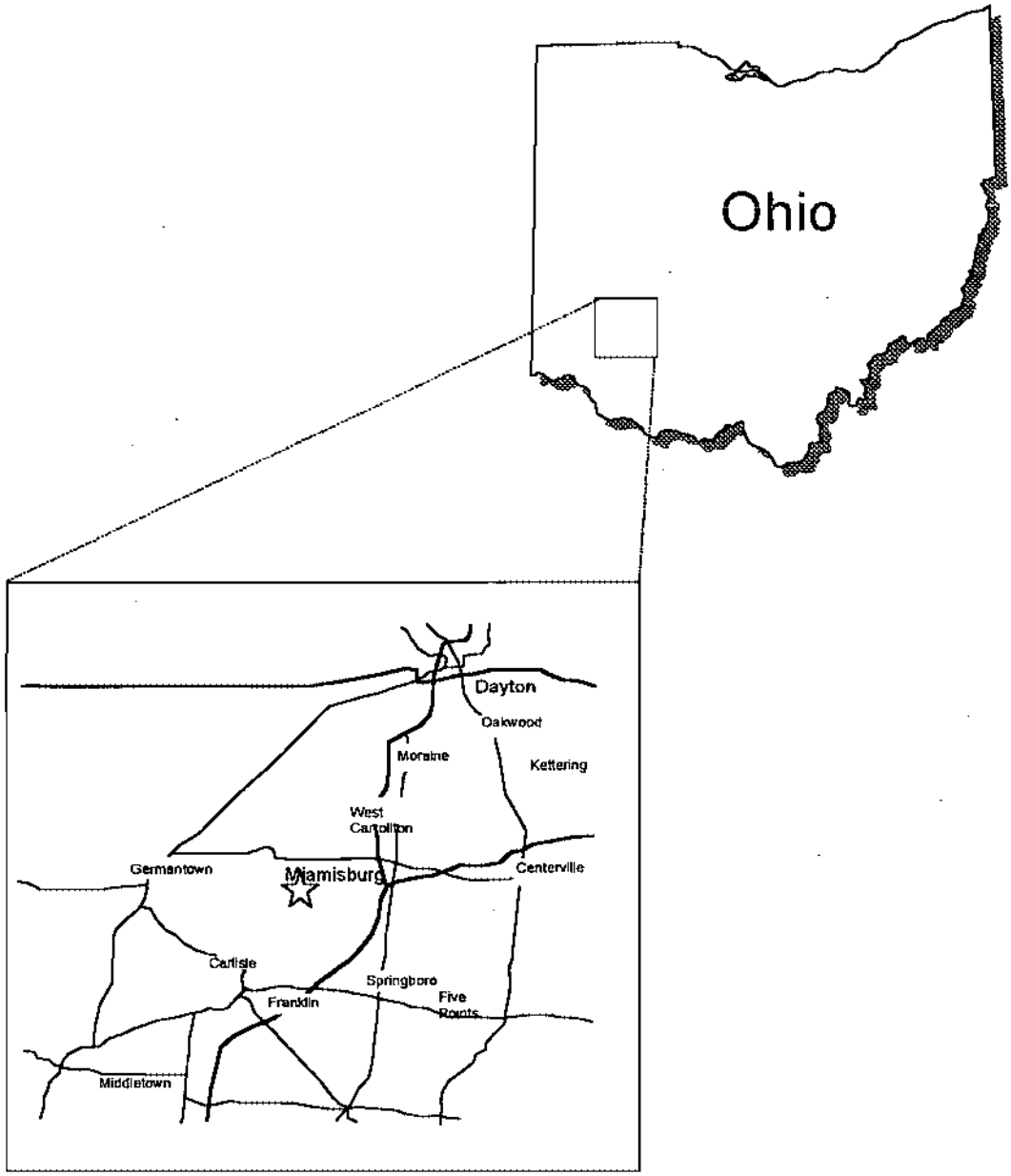


Figure 2: Regional Context of the Mound Plant

(GIS), and a modular building (OSE X-ray) used for security check and baggage examinations. No other uses of the area of the Mound facility referred to as Parcel 3 were identified.

III. ENVIRONMENTAL FINDINGS

A. Methodology

In accordance with Section 120 (h)(3) of CERCLA, to the extent that information is available based on a complete search of DOE files, the following shall be placed in deeds: (1) a notice of the type and quantity of hazardous substances stored, disposed of, or released; (2) a notice of the time at which such storage, disposal, or release took place; and (3) a description of any remedial action taken. Information sources reviewed to obtain the information include:

- Federal Government records,
- Recorded chain of title documents,
- Reasonably obtainable aerial photographs,
- Visual inspection of the property and adjacent properties,
- Reasonably obtainable records of releases on adjacent properties,
- Interviews with current or former employees, and
- Sampling, if appropriate under the circumstances.

Parcel 3 includes three Potential Release Sites or PRSs that have undergone previous investigations. These PRSs were identified on the basis of potential radiological and/or chemical (non-radioactive) contamination, knowledge of historical land use, or on actual sample data. The locations of PRSs in Parcel 3 are shown in Figure 3. Before transfer of a parcel can be completed, all buildings and PRSs must be evaluated for protectiveness or remediated to a protective level. Residual risks associated with remaining contamination in Parcel 3 have been evaluated.

A Core Team with representatives from the US DOE, US Environmental Protection Agency (US EPA), and Ohio EPA (OEPA) performs a joint agency evaluation of each PRS. The Core Team uses process knowledge, site visits, and existing data to determine whether or not any action is warranted concerning the PRS and recommends the appropriate response(s).

Information in the following documents was used to support this Environmental Summary.

1. **PRS and Building Data Packages** for the PRSs and buildings located within Parcel 3. *PRS and Building Data Packages provide a summary of information sufficient for the Core Team to make recommendations or change the status of the PRS or building.* The locations of the PRSs and buildings in Parcel 3 are shown on Figure 3. The rationale for designation of these PRSs is outlined in Table 1. These PRSs were identified on the basis of potential radiological and/or chemical (non-radioactive) contamination using knowledge of historical land use or on actual sample data. The rationale for designation of these buildings is outlined in Table 2.

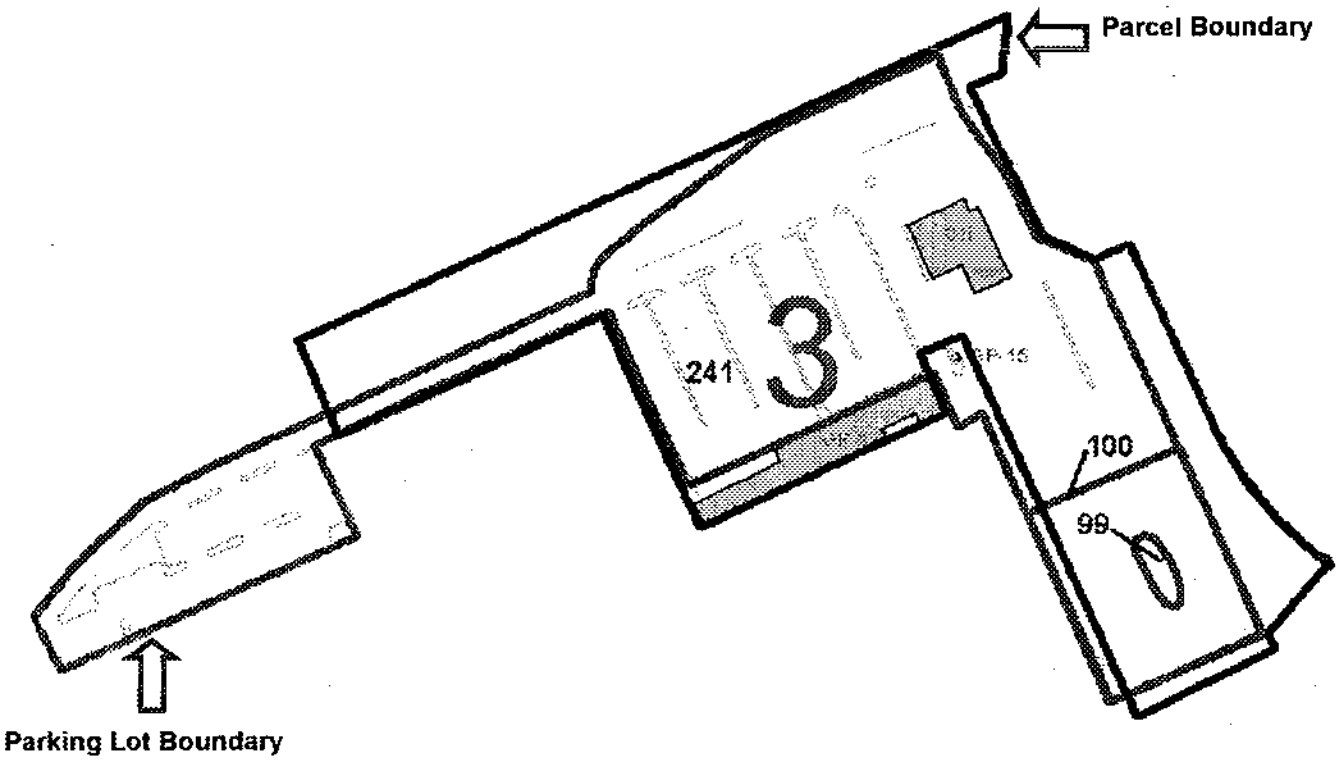


Figure 3: PRSs and Buildings within Parcel 3

Table 1: Parcel 3 PRSs and Core Team Conclusions

PRS	Reason for Identification	Core Team Decision	Close Out of PRS
99	Reported disposal of drums containing sand contaminated with polonium-210, cobalt-60, and cesium-137	Removal Action conducted in August, 1999	On-Scene Coordinator (OSC) Report signed by Core Team on 7/12/00.
100	Reported disposal of neutralized chromium plating bath solution and process tank	Binned No Further Assessment (NFA)	Recommendation for NFA signed by Core Team on 8/16/00.
241	Several positive soil gas detections during Mound Plant Soil Gas and Geophysical Investigation (Reconnaissance Sampling Report - Soil Gas and Geophysical Investigations Mound Plant and SM/PP Hill, February 1993)	Binned NFA	Recommendation for NFA signed by Core Team on 5/13/97.

Table 2: Parcel 3 Buildings and Core Team Conclusions

Building	Description	Core Team Decision	Close Out of Building Data Package
GH	Office	Binned NFA	Recommendation for NFA signed by Core Team on 2/9/99.
GP-1	Guard force headquarters	Binned NFA	Recommendation for NFA signed by Core Team on 2/9/99.

2. **Residual Risk Evaluation**, Parcel 3, Final, September 2001. *Provides the evaluation of human health risks associated with any residual contamination that may remain in the parcel after all remedies within a parcel have been addressed. The evaluation, used in conjunction with the Proposed Plan, ensures that future users of the land will not be exposed to contamination levels that would pose unacceptable health risks.*

3. **Proposed Plan** for Parcel 3, Mound Plant, Miamisburg, Ohio, Public Review Draft, Revision 0, April 2001. *Identifies to the public the preferred option for addressing residual contamination at the Mound Plant, Parcel 3, by briefly summarizing the alternatives studied and highlighting the key factors that led to identifying the preferred alternative.*

4. **Record of Decision** (ROD) for Parcel 3, Mound Plant, Miamisburg, Ohio, Final, September 2001. *Documents the remedial action plan for the parcel and serves the following three functions: (1) certifies the remedy selection process was carried out in accordance with CERCLA, (2) describes the technical parameters of the remedy, specifying the treatment, engineering, and institutional components as well as cleanup levels, and (3) provides the public with a consolidated summary of information about the parcel and the chosen remedy, including the rationale behind the selection.*

B. Building Analysis Summary

There are two DOE-owned buildings within Parcel 3. Both buildings were evaluated by the Core Team and determined to warrant No Further Assessment (NFA). Consequently, there is no building-related contamination warranting remedial action or environmental concern.

1. Asbestos

Asbestos material in buildings can be found in five forms: sprayed or troweled on ceilings and walls (surfacing materials); insulation around pipes, ducts, boilers, and tanks (pipe and boiler insulation); transite (in-ground piping and siding material); and in roofing materials (roofing felts); other products such as ceiling and floor tiles and wall boards (miscellaneous materials).

There are no areas in GH or GP-1 requiring asbestos abatement prior to transfer.

2. Lead

Lead-based paint was used almost exclusively in the U.S. prior to the 1970s. It is likely that lead-based paint was used in GP-1 and GH. Congress established maximum allowable lead concentrations in residential paint in 1978.

GP-1 included a firing range. Lead dust and metal were removed from the building in the Fall of 1998. The process for removing the lead is described in Section 4.2.2.7 of the GP-1 Building Data Package, Final, July 1999. The lead sampling results for the interior are listed in Appendix J of the same document. Additional samples were taken in November 1999 (Memo, Vicarel to Bird, December 6, 1999). The results indicated lead in the dust

from inside the air handler at the west end of GP-1 at 64,900 mg/kg. Lead was observed in the fine grain roofing material at the west end of GP-1 at 41,000 mg/kg. In response (Letter, Provencher to Grauwelman, April 19, 2000), MEMP offered to remove ductwork and coat part of the roof "to close out any questions that future responsibility for clean up is the MMCIC's if and when GP-1 is razed."

There are no areas in GH or GP-1 requiring lead abatement prior to transfer.

3. Radon

Radon studies are presented in a 1989-90 Mound Indoor Radon study for buildings. There are no areas in GH or GP-1 requiring radon abatement prior to transfer.

4. Radiological Surveys

Fixed radiological contamination was found on the main door threshold of GH Building and on a manhole cover located near the building. The threshold was scabbled to remove the contamination and the manhole cover was replaced. The final radiological survey met all surface contamination guidelines. The results of this survey are provided in Section 4.2.2.1 and Appendix G of the GH Building Data Package, Final, July 1999.

5. Polychlorinated Biphenyls

There are no areas within Parcel 3 requiring polychlorinated biphenyl (PCB) cleanup.

C. Potential Release Site (PRS) Summary

The US DOE, US EPA, and OEPA have jointly decided that no additional remedial action for the PRSs in Parcel 3 is necessary with the placement of Institutional Controls in the form of deed restrictions on future land use for Parcel 3 upon transfer.

A brief summary of the history of the PRSs in Parcel 3 and their contaminants follows. For a more detailed description of these PRSs, refer to the PRS data packages as identified in Section III.A.1 of this Environmental Summary.

PRSs at Mound were identified based on either knowledge of historical land use that was considered potentially detrimental, or an actual sampling result showing elevated concentrations of contaminants. The locations of the PRSs in Parcel 3 are shown in Figure 3.

The rationale for designation of PRS 99, 100, and 241 is outlined as follows:

PRS 99, also known as Area 6 or WD Building Filter Cleaning Waste, is a former trench in the parking lot south of GH Building. It was believed to contain drums of polonium-210 contaminated sand resulting from the sandblast cleaning of the WD Building sand filters. It was thought that the sand may also be contaminated with cobalt-60 and cesium-137. In February 1999, 137 samples were collected from 46 borings in the parking lot south of GH

Building to include PRS 99. One sample displayed an elevated concentration of plutonium-238 (120 pCi/g onsite gamma spectrometry, 294 pCi/g offsite isotopic analysis). A trenching investigation yielded evidence of greater contamination (up to 839 pCi/g of plutonium-238). A removal action was performed which resulted in residual plutonium-238 concentrations below the 55 pCi/g Risk-Based Guideline Value (On-Scene Coordinator (OSC) Report, *PRS 99 Removal Action*, Final (August 2000)).

PRS 100, also known as Area F or Chromium Trench, is located south of GH Building. PRS 100 was designated a Potential Release Site because of the reported disposal of "neutralized" chromium plating bath solution in a trench. At least one of the plating shop process tanks was reportedly disposed of in the same area as the chromium solution. The February 1999 sampling at PRS 99 included PRS 100. As noted above, one sample at PRS 99 exceeded a Risk-Based Guideline Value for a contaminant of concern. All other samples showed no sign of contamination or visual indication of waste. There were no elevated detections or visual indications of debris associated with any of the PRS 100 samples. In August 2000, the Core Team changed the status of PRS 100 to NFA.

PRS 241 is the result of several soil gas detections by the Soil Gas Survey and Geophysical Investigation (*Reconnaissance Sampling Report; Soil Gas Survey and Geophysical Investigations; Mound Plant Main Hill and SM/PP Hill;* Final, Revision 2, (February 1993)). PRS 241 includes the northwest parking lots, including the parking lots east of OSE Building, south of GH Building and the parking lot north of A Building. No operations are known to have been performed in the parking lots. The items reportedly included in the fill material on which the parking lot south of GH Building is located prompted the identification of PRS 99 and 100. The Radiological Site Survey Project (*OU-9 Site Scoping Report, Vol. 3 - Radiological Site Survey*, Final, (June 1993)) observed plutonium-238, thorium, tritium, cesium-137, and radium-226 below Risk-Based Guideline Values. The reconnaissance soil gas sampling detected trichloroethene (TCE) at 8 ppb (parts per billion or 1 in 1,000,000,000) and toluene at 255 ppb. Both are below Risk-Based Guideline Values. In May 1997, the Core Team recommended PRS 241 required No Further Assessment.

D. Residual Risk Evaluation (RRE) Summary

Pursuant to the Residual risk Evaluation Methodology (RREM) (Final, Rev. 0, January 6, 1997), risks are quantified for both carcinogenic (cancer-causing) and non-carcinogenic (non-cancer-causing) contaminants. All analytes (carcinogenic and non-carcinogenic) detected at least once in soil and/or groundwater in Parcel 3 were identified as constituents of potential concern (COPCs). The maximum concentration of each COPC for soil and groundwater was compared to and screened against criteria established in the RREM and presented in the *Parcel 3 Residual Risk Evaluation* (Final, September 2001). COPC tables for both groundwater and soil are presented in Appendix B. COPCs that were carried through the RRE process are identified in the tables. The risk associated with the intake of a known or suspected carcinogen is reported in terms of the incremental lifetime cancer risk presented by that COPC, as estimated using the appropriate slope factor and the amount of material available for uptake. The acceptable risk range as defined by CERCLA and the National Contingency Plan (NCP) is 10^{-4} to 10^{-6} (one human in ten-

thousand to one human in one-million incremental cancer incidence). Potential human health hazards from exposure to non-carcinogenic contaminants are evaluated by using a Hazard Quotient (HQ). The HQ is determined by the ratio of the intake of a COPC to a reference dose or concentration for the contaminant of concern that is believed to represent a no-observable effect level. The contaminant of concern-specific HQs are then summed to provide an overall Hazard Index (HI). US EPA guidance sets a limit of 1.0 for the Comprehensive HI. The incremental carcinogenic risks and hazards associated with residual concentrations of COPCs in Parcel 3 are also shown in Appendix B.

Evaluation of residual soil and groundwater contaminants within Parcel 3 has resulted in a determination that future users of the land will not be exposed to contaminant levels that would pose unacceptable risks as long as compliance with the deed restrictions described in the Parcel 3 Record of Decision are maintained. The soils within Parcel 3 have not been evaluated for any use other than onsite industrial/commercial use. Any offsite disposition of the Parcel 3 soil without proper handling, sampling, and management could create an unacceptable risk to offsite receptors.

E. Other Factors Considered

DOE developed a generic checklist of the issues to be considered in evaluating property to be transferred. The checklist was modified from that used by the Department of Defense in releasing property for sale. The checklist includes environmental problems from Mound Plant that are likely to concern a potential purchaser as well as items relating to the operational concerns from ongoing and future remedial actions. Table 10 contains a brief summary and references for all factors considered. Results of only those factors which affect Parcel 3 are presented as follows:

1. Cultural Resources

There are cultural resources in Parcel 3. GH Building was determined to be a historic building in July 1998. To mitigate the potential adverse impact of transferring ownership of this building, DOE prepared a documentation package listing the building's historic uses. The package also includes current and historic photographs. This document was completed in March 1999 and was provided to the Ohio Historic Preservation Office (OHPO).

2. Drinking Water

Mound Plant drinking water has exceeded the action levels for lead and copper due to the corrosive action of the water on the materials used in the distribution system. When the action level for lead is exceeded, EPA regulations require corrosion control and public education programs. These programs are in place at Mound. Information on the steps being taken to reduce lead concentrations in the Mound Plant water system, and on the hazards associated with ingesting lead are available to all Mound drinking water users.

Table 10: Summary of Other Factors Considered for Parcel 3

FACTOR CONSIDERED	AFFECTS Parcel 3? YES	AFFECTS Parcel 3? NO	RECOMMENDATION/CONCLUSION	REFERENCE
Cultural Resources	✔		There are historic or cultural resources within Parcel 3. GH Building has been determined to be a historic building under Section 106 of the National Historic Preservation Act (NHPA) in July 1998. Under a Memorandum of Agreement negotiated by the OHPO and the DOE, DOE prepared a documentation package illustrating the building's historic uses and major structural modifications. This package also included current and historic photographs. The required package was completed in March 1999 and provided to OHPO.	Correspondence From Mark J. Epstein, Department Head, Resource Protection and Review, Ohio Historic Preservation Office dated July 31, 1998.
Drinking Water Quality	✔		Mound Plant drinking water has exceeded the action levels for lead and copper due to the corrosive action of the water on the materials used in the water distribution system. When the action level for lead is exceeded, EPA regulations require corrosion control and public education programs. These programs are in place at Mound. Information on the steps being taken to reduce lead concentrations in the Mound Plant water system, and on the hazards associated with ingesting lead will be made available to all Mound drinking water users.	Miamisburg Environmental Management Project, Annual Site Environmental Report for Calendar Year 1999, September 2000.
Endangered Species		✔	Two state protected species were found, the dark-eyed junco (Junxo hyemalis) and the inland rush (Juncus interior). Because only one individual inland rush was located, it is not considered a viable breeding population at the Mound facility. The dark-eyed junco is not known to breed in southwestern Ohio. It has also been determined that the plant site is in the habitat range of the federally endangered species of Indiana Bat (Myotis sodalis), however, the Mound site does not provide a suitable habitat for the Indiana Bat. Neither the solitary sitings of the rush and the junco, nor the potential habitat for the Indiana bat, are expected to affect ongoing or future activities at the site.	Operable Unit 9 Hydrogeologic Investigation: Wetlands Determination Report, Technical Memorandum, Revision 1, January 1994. Operable Unit 9 Ecological Characterization Report, Final, March 1994.

Table 10: Summary of Other Factors Considered for Parcel 3 (continued)

FACTOR CONSIDERED	AFFECTS Parcel 3 YES	AFFECTS Parcel 3 NO	RECOMMENDATION/CONCLUSION	REFERENCE
Fragment Arcs		✔	No fragment arcs and clearance zones due to explosive hazards at onsite operations exist in Parcel 3.	Drawing FSD 970058, "Clearance Zones and Fragment Arcs" Building 100 Technical Review, Appendix 7.3 - Lease Agreement for Building (Excerpt)
Monitoring Equipment	✔		There is no monitoring equipment located in Parcel 3. There is a ground water capture pit in Parcel 3. (Capture Pit ID 0712, Historic Designation P012.) In addition, a stair and sidewalk provide access to Seep 0607.	Groundwater Monitoring Program and Groundwater Protection Management Program Plan, April 1997, Revision 1. Mound Plant Environmental Monitoring Plan dated July 1997.
National Environmental Policy Act (NEPA)	✔		A Finding of No Significant Impact (FONSI) was issued on October 27, 1994 for the commercialization of the Mound Plant.	The Mound Plant EA for Commercialization of the Mound Plant, DOE/EA-1001 dated October, 1994 and FONSI for the Commercialization of the Mound Plant EA dated October 27, 1994.
Resource Conservation and Recovery Act (RCRA)		✔	DOE has found no RCRA regulated units within Parcel 3 warranting a RCRA closure action. It has been determined that the closest facility boundary from Buildings 23 and 72 will not change with the sale of Parcel 3. Therefore, the risk assessment information prepared in conjunction with the RCRA Part B Permit and submitted to the Ohio Hazardous Waste Facility Board (HWFB) will not change.	RCRA Part B Permit Application, Volume I, Section A, September 1995 (as amended) Responses to Information Requested by the Ohio HWFB Technical Staff transmitted to Bob Brown of the State of Ohio Hazardous Waste Facility Board dated March 12, 1996.

Table 10: Summary of Other Factors Considered for Parcel 3 (continued)

FACTOR CONSIDERED	AFFECTS Parcel 3 YES	AFFECTS Parcel 3 NO	RECOMMENDATION/CONCLUSION	REFERENCE
Underground Storage Tanks (USTs)		✔	There are no USTs located within Parcel 3.	EG&G Mound Applied Technologies, Active Underground Storage Tank Plan, November 1994.
Wetlands		✔	Three characteristics must be present to be classified as jurisdictional wetlands: (1) hydrophytic vegetation, (2) hydric soils, and (3) wetlands hydrology. Absence of any one of these characteristics removes an area from consideration. None of the sites examined within Parcel 3 constitute jurisdictional wetlands	Operable Unit 9 Hydrogeologic Investigation: Wetlands Determination Report, Technical Memorandum, Revision 1, January 1994. Delineation of Federal Wetlands and Other Waters of the US, Final, August 1999.
Floodplains		✔	No portion of Parcel 3 lies within the 100-year floodplain. Consistent with 10 CFR 1022, the applicability of floodplain regulations to the property must be disclosed to the new owner.	South Property Floodplain Assessment and Notice of Floodplain Involvement issued in Environmental Assessment Disposition of Mound Plant's South Property, June 1999.
Clean Air Act	✔		OEPA placed the roads and parking lots on permanent registration status with air permit F001.	Air permit F001

3. Monitoring Equipment

In Parcel 3, there is a capture pit (Capture Pit ID 0712, Historic Designation P012) that is used to monitor ground water. Although exceedances of the MCL for Nitrate/Nitrite have been observed at this location, the most recent results do not exceed the MCL. In addition, a stair and sidewalk provide access to Seep 0607. DOE will continue to have access to these areas via easements.

4. National Environmental Policy Act

Parcel 3 lies within the boundaries of the Mound Plant described in the Environmental Assessment for Commercialization of the Mound Plant (October, 1994) and the resulting Finding of No Significant Impact (FONSI) issued on October 27, 1994. The land use described in the EA is consistent with the institutional controls in the ROD for Parcel 3.

5. Clean Air Act

OEPA placed the roads and parking lots at Mound on permanent registration status with air permit F001. The roads and parking lots in Parcel 3 are included under that permit.

IV. FINDINGS OF SUITABILITY TO TRANSFER

In accordance with the provisions of CERCLA Section 120 (h), contaminated property can only be transferred if one of the following applies:

(1) a decision has been made that no remedial action is necessary ,

(2) all remedial action necessary to protect human health and the environment with respect to any such substance remaining on the property has been taken before the date of transfer, or

(3) Early Transfer Authority, which allows for transfer before all necessary action is complete, has been granted by US EPA with concurrence from the Governor of the State of Ohio pursuant to CERCLA Section 120(h)(3)(C).

The future industrial use of the Mound Plant has been determined based upon agreement among US DOE, US EPA, and OEPA, and interested stakeholders. This land use is reflected in the MMCIC Mound Comprehensive Reuse Plan and is currently codified in the City of Miamisburg Zoning Ordinance for industrial/commercial use.

A joint agency decision among the US DOE, US EPA, and OEPA has been made that a remedial action has been taken that protects human health and the environment. EPA deems this condition to be satisfied if the institutional controls are implemented and operating successfully. Institutional controls in the form of deed restrictions on future land use will be placed on Parcel 3 upon transfer as part of the remedy. The objective of these institutional controls is to prevent an unacceptable risk to human health and the environment by restricting the use of Parcel 3, including Parcel 3 soils and groundwater,

to that which is consistent with assumptions in the Parcel 3 RRE. DOE or its successors will retain the right and responsibility to monitor, maintain, and enforce these institutional controls. The following property deed restrictions and requirements will be imposed on the property to maintain protection of human health and the environment in the future:

- Maintenance of industrial/commercial land use;
- Prohibition against residential use;
- Prohibition against the use of groundwater;
- Site access for federal and state agencies for the purpose sampling and monitoring; and,
- Prohibition against removal of Parcel 3 soils from the DOE Mound property (as owned in 1998) boundary without approval from the Ohio Department of Health (ODH) and OEPA.

V. ENVIRONMENTAL COVENANTS

DOE is committed to include a covenant in accordance with Section 120 (h)(3) of CERCLA in the deed for the sale or transfer of the property that warrants that:

A. All remedial action necessary to protect human health and the environment has been taken as long as the deed restrictions limiting land and groundwater use are in effect and enforced.

B. Any additional response action or corrective action found to be necessary after the date of sale or transfer shall be conducted by the United States [Section 120(h)(4)(D)(i)]. The requirements of the covenant shall not apply in any case in which the person or entity to whom the property is transferred is a potentially responsible party with respect to the property.

C. A clause granting the United States access to the property in any case in which a response action or corrective action is found to be necessary or such access is necessary to carry out a response action or corrective action on the adjoining property [Section 120 (h)(4)(D)(ii)].

VI. NOTIFICATION / PUBLIC PARTICIPATION

The community has been an active participant in this process to date. Comments from the public on the PRS recommendation have been incorporated as part of the remedy evaluation. DOE believes all comments have been resolved with the commentor and the documents, comments, and responses have been placed in the CERCLA Public Reading Room.

Table 11 lists the Parcel 3 PRS packages, Parcel 3 RRE, and Parcel 3 Proposed Plan along with the dates they were made available for public comment.

Table 11: Parcel 3 Documents and Public Comment Periods

DOCUMENT	COMMENT PERIOD (BEGIN)	COMMENT PERIOD (END)
PRS 99 Action Memo	5/3/00	6/3/00
PRS 100 Data Package	8/23/00	9/25/00
PRS 241 Data Package	6/17/97	7/18/97
GH Building Data Package	3/17/99	4/17/99
GP-1 Building Data Package	3/17/99	4/17/99
Parcel 3 Residual Risk Evaluation	4/24/01	5/24/01
Parcel 3 Proposed Plan	4/24/01	5/24/01

APPENDIX A

Legal Description of Parcel 3

Exhibit "A"
for
Mound Parcel Three
containing
5.581 Acres

May 4, 2000

Situate in the State of Ohio, County of Montgomery and being parts of City of Miamisburg Lot Numbered 2259 and 2290, also being part of Sections 30, Fractional Town 2, Range 5 East M.R.S. and Fractional Section 36, Fractional Town 2, Range 5 East M.R.S. and being a portion previously conveyed to USA as described in Deed Book 1246, Page 45 and also being a portion previously conveyed to USA as described in Deed Book 1214, Page 12 and also being a portion previously conveyed to USA as described in Deed Book 1256, Page 179 and being more particularly described as follows:

COMMENCING at a Concrete Monument Found (Top Broken Off) at the Northwest corner of the Northwest Quarter of Section 30 said Monument also being the Northeast corner of a 2.90 Acre tract of land conveyed to Robert P. Heist as described in Deed MF 74-0526-C09, *THENCE* with the West line of said Heist Lands, ***South 05° 45' 57" West for a distance of 130.89 feet to a 1" Iron Pipe Found Pinched*** at the Southwest corner of said Heist Lands and the Northwest corner of a 14.288 Acre tract conveyed to the Miamisburg Community Corporation as described in Deed MF 99-852-E11 and the ***TRUE POINT OF BEGINNING*** of the herein described tract;

THENCE with the West line of said Miamisburg Community Corporation lands the next seven calls:

> ***1) THENCE, South 05° 29' 16" West for a distance of 57.67 feet to a 5/8" Rebar Found with cap (LeRoy);***
>
> ***2) THENCE, South 65° 31' 15" West for a distance of 35.05 feet to a 5/8" Rebar Found with cap (LeRoy);***
>
> ***3) THENCE, South 25° 44' 48" East for a distance of 160.76 feet to a 5/8" Rebar Found with cap (LeRoy);***
>
> ***4) THENCE, South 64° 37' 16" East for a distance of 56.61 feet to a 5/8" Rebar Found with cap (LeRoy);***

5) THENCE, North 64° 01' 25" East for a distance of 37.94 feet to a 5/8" Rebar Found with cap (LeRoy);

6) THENCE, South 25° 04'47" East for a distance of 194.43 feet to a 5/8" Rebar Found with cap (LeRoy);

7) THENCE on a Curve to the Left with a Radius of 360.67 feet, a Arc Length of 180.89 feet, a Delta Angle of 28° 44' 12", with a Chord Bearing of South 39° 26' 53" East and a Chord Distance of 179.00 feet to a 5/8" Rebar Set;

THENCE on a new division line through said USA lands, ***South 40° 10' 27" West for a distance of 91.34 feet to a Cross Notch Set;***

THENCE continuing on a new division line through said USA lands, ***South 23° 57' 22" East for a distance of 17.73 feet to a 3 inch Existing Steel Fence Corner Found;***

THENCE continuing on a new division line through said USA lands, ***South 64° 21' 58" West for a distance of 99.96 feet to a Mag Nail Set;***

THENCE continuing on a new division line through said USA lands, ***North 50° 48' 40" West for a distance of 23.44 feet to a Mag Nail Set;***

THENCE continuing on a new division line through said USA lands, ***South 65° 58' 19" West for a distance of 39.91 feet to Cross Notch Set;***

THENCE continuing on a new division line through said USA lands, ***North 24° 24' 48" West for a distance of 308.00 feet to a 6 inch Existing Steel Fence Corner Found;***

THENCE continuing on a new division line through said USA lands, ***North 59° 05' 44" East for a distance of 2.80 feet to a 6 inch Existing Steel Fence Corner Found;***

THENCE continuing on a new division line through said USA lands, ***North 20° 40' 57" West for a distance of 10.55 feet to a Cross Notch Set;***

THENCE continuing on a new division line through said USA lands, ***South 67° 51' 08" West for a distance of 3.37 feet to a Cross Notch Set;***

THENCE continuing on a new division line through said USA lands, ***North 24° 33' 12" West for a distance of 30.35 feet to a 6 inch Existing Steel Fence Corner Found;***

THENCE continuing on a new division line through said USA lands, ***North 50° 32' 22" West for a distance of 26.56 feet to a Mag Nail Set,*** passing a RR Spike Set at 8.09 feet on the West line of said Section 30;

THENCE continuing on a new division line through said USA lands, ***North 31° 01' 18" West for a distance of 13.93 feet to a Mag Nail Set;***

THENCE continuing on a new division line through said USA lands, ***South 65° 08' 57" West for a distance of 7.98 feet to a Mag Nail Set;***
THENCE continuing on a new division line through said USA lands, ***South 23° 06' 46" East for a distance of 13.85 feet to a 4 inch Existing Steel Fence Corner Found;***

THENCE continuing on a new division line through said USA lands, ***South 63° 53' 40" West for a distance of 26.73 feet to a Cross Notch Set;***

THENCE continuing on a new division line through said USA lands, ***South 24° 54' 44" East for a distance of 45.10 feet to a Cross Notch Set*** on the Easterly extension of the Southerly line of an existing one story brick building named GS1;

THENCE continuing on a new division line through said USA lands and with the Southerly line of said GS1 building, ***South 65° 11' 32" West for a distance of 268.32 feet to a 5/8" Rebar Set***, passing the Southeasterly corner of said GS1 building at 62.6 feet and the Southwesterly corner of said GS1 building at 263.43 feet;

THENCE continuing on a new division line through said USA lands, ***North 24° 25' 19" West for a distance of 229.01 feet to a Mag Nail Set;***

THENCE continuing on a new division line through said USA lands and with an existing fenceline, ***South 65° 33' 23" West for a distance of 284.61 feet to a Mini RR Spike Set in a 4 foot wide Concrete Walk at the Joint;***

THENCE continuing on a new division line through said USA lands, ***North 24° 23'31" West for a distance of 104.08 feet to a5/8" Rebar Set*** on the South line of lands conveyed to the City of Miamisburg as described in Deed Book 594, Page 410, witness a Concrete Monument Found Bearing South 65° 36' 29" East at a distance of 38.74 feet;

THENCE with the South line of said City of Miamisburg lands, ***North 65° 36' 29" East for a distance of 770.61 feet BACK TO THE TRUE POINT OF BEGINNING.***

Said property contains 5.581 Acres more or less with 1.992 Acres more or less in Section 30 and 3.589 Acres more or less in Fractional Section 36. North based on State Plane Coordinates, Ohio South Zone taken from a survey performed by Lockwood, Jones and Beals dated 06-01-82 and referenced to Deed MF 99-852-E11; Note bearing South 25° 04' 47" East with a distance of 194.43 feet. This description is based on an actual field survey performed by HLS Surveyors and Engineers under the direct supervision of William C. LeRoy PS, Ohio Lic. No. 7664 and dated May, 2000. Subject to all Easements, Highways, Covenants and Restrictions.

STATE OF OHIO
WILLIAM
C.
LEROY
7664
REGISTERED
PROFESSIONAL SURVEYOR

6-05-00

William C. LeRoy PS
Ohio Lic. No. 7664
KY. Lic. No. 3516

JOSEPH LITVIN P.E., P.S.
COUNTY ENGINEER
MONTGOMERY COUNTY DAYTON, OHIO
DESCRIPTION CHECKED AND APPROVED
BY EAN DATE 6/6/00

Mound Parcel 3.doc

SECTION 30 & 36, FRAC. TOWN 2, RANGE 5 M.R.S.
MIAMISBURG, MONTGOMERY CO., OHIO
PART OF CITY OF MIAMISBURG LOT NUMBER 2259
&
PART OF CITY OF MIAMISBURG LOT NUMBER 2290

LEGEND

CURVE TABLE

NUMBER	LENGTH	DELTA ANGLE	TANGENT	CHORD	BEARING	RADIUS	LENGTH
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

LINE TABLE

NUMBER	DIRECTION	DISTANCE
L1	[illegible]	[illegible]
L2	[illegible]	[illegible]
L3	[illegible]	[illegible]
L4	[illegible]	[illegible]
L5	[illegible]	[illegible]
L6	[illegible]	[illegible]
L7	[illegible]	[illegible]
L8	[illegible]	[illegible]
L9	[illegible]	[illegible]
L10	[illegible]	[illegible]
L11	[illegible]	[illegible]

Surveyors Note

5.581 ACRES
PLAT OF SURVEY
FOR
"MOUND PARCEL 3"
LOCATED IN
SECTIONS 30 (5.581 AC.) & FRAC. 36 (0.369 AC.)
FRAC. TOWN 2, RANGE 5 M.R.S.
CITY OF MIAMISBURG
MONTGOMERY COUNTY, OHIO
PART CITY OF MIAMISBURG LOT No. 2259
&
PART CITY OF MIAMISBURG LOT No. 2290

Reference Documents

B&B
Surveyors & Engineers
[illegible]

APPENDIX B

RRE Summary Tables (Tables 3 through 9)

Table 3	Identification of Soil Constituents of Potential Concern for the Construction Worker Scenario in Parcel 3
Table 4	Identification of Soil Constituents of Potential Concern for the Site Employee Scenario in Parcel 3
Table 5	Identification of Current Groundwater Constituents of Potential Concern for the Construction Worker Scenario in Parcel 3
Table 6	Identification of Current Groundwater Constituents of Potential Concern for the Site Employee Scenario in Parcel 3
Table 7	Identification of Future Groundwater Constituents of Potential Concern for the Construction Worker Scenario in Parcel 3
Table 8	Identification of Future Groundwater Constituents of Potential Concern for the Site Employee Scenario in Parcel 3
Table 9	Current and Future Incremental Residual Risks for Parcel 3

Table 3**: Identification of Soil Constituents of Potential Concern for the Construction Worker Scenario in Parcel 3

(Exposure Point Concentration Compared to Background Values)

CAS Number	Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration (depth in ft)	Detection Frequency	95 Percent UCL	Concentration Used for Screening	Background Value	COPC for RRE
Radionuclides										
10045-97-3	Cesium-137+D	0.02	0.50	pCi/g	S011 (0)	54-165	0.07	0.07	0.42	NO
14255-04-0	Lead-210+D*	0.47	2.99	pCi/g	4459 (0)	70-145	0.85	0.85	1.2	NO
13981-16-3	Plutonium-238	0.02	34.80	pCi/g	602 (0)	36-177	67.20	34.80	0.13	YES
13982-63-3	Radium-226+D	0.40	3.53	pCi/g	4444 (0)	142-164	1.48	1.48	2	NO
14269-63-7	Thorium-230	0.40	10.10	pCi/g	X5 (8)	145-156	1.27	1.27	1.9	NO
7440-29-1	Thorium-232+D	0.17	4.47	pCi/g	C0004 (3)	155-175	0.75	0.75	1.4	NO

CAS = Chemical Abstract Service
COPC = Constituent of Potential Concern
NO < Background
RRE = Residual Risk Evaluation
UCL = Upper Confidence Limit
* Lead-210 background value is based upon its parent Uranium-238 background value.
** Originally published as Table 2 of the Parcel 3 RRE

Table 4**: Identification of Soil Constituents of Potential Concern for the Site Employee Scenario in Parcel 3

(Exposure Point Concentration Compared to Background Values)

CAS Number	Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration (depth in ft)	Detection Frequency	95 Percent UCL	Concentration Used for Screening (EPC)	Background Value	COPC for RRE
Radionuclides										
10045-97-3	Cesium-137+D	0.02	0.50	pCi/g	S011 (0)	53-142	0.05	0.05	0.42	NO
13981-16-3	Plutonium-238	0.02	34.80	pCi/g	602 (0)	28-160	28.20	28.20	0.13	YES
13982-63-3	Radium-226+D	0.40	3.53	pCi/g	4444 (0)	119-141	1.48	1.48	2	NO
14269-63-7	Thorium-230	0.40	6.09	pCi/g	4442 (0)	131-142	1.27	1.27	1.9	NO
7440-29-1	Thorium-232+D	0.17	2.71	pCi/g	PRS99/100	139-158	0.73	0.73	1.4	NO

CAS - Chemical Abstract Service
COPC - Constituent of Potential Concern
EPC - Exposure Point Concentration
NO <Background Value
UCL - Upper Confidence Limit
RRE - Residual Risk Evaluation
** Originally published as Table 4 of the Parcel 3 RRE

Table 5**: Identification of Current Groundwater Constituents of Potential Concern for the Construction Worker Scenario in Parcel 3

(Exposure Point Concentration Compared to Background Values)

Chemical	Minimum Concentration	Maximum Concentration	Units	Detection Frequency	95 Percent UCL	Concentration Used for Screening EPC	Background Value	COPC for RRE
Inorganics								
Antimony	2.8	40.20	ug/L	5-29	80.30	40.20	0.578	YES
Cadmium	4.6	7.70	ug/L	6-32	5.25	5.25		YES
Copper	1.6	593.00	ug/L	22-32	22.70	22.70	1.167	YES
Lead	3.4	40.00	ug/L	5-32	7.28	7.28	10.05	NO
Radionuclides								
Thorium-230	0.01	1.99	pCi/L	11-32	1.25	1.25		YES
Uranium-238+D	0.13	8.25	pCi/L	41-48	0.47	0.47	0.688	NO

COPC= Constituent of Potential Concern

EPC= Exposure Point Concentration, minimum of 95% UCL or maximum detected concentration

NO <Background Value

RRE= Residual Risk Evaluation

UCL= Upper Confidence Limit

** Originally published as Table 6 of the Parcel 3 RRE

Table 6**: Identification of Current Groundwater Constituents of Potential Concern for the Site Employee Scenario in Parcel 3

(Exposure Point Concentration Compared to Background Values)

Chemical	Minimum Concentration	Maximum Concentration	Units	Detection Frequency	95 Percent UCL	Concentration Used for Screening and EPC	Background Value	COPC for RRE
Inorganics								
Antimony	2.8	40.20	ug/L	5-29	80.30	40.20	0.578	YES
Cadmium	4.6	7.70	ug/L	6-32	5.25	5.25		YES
Copper	1.6	593.00	ug/L	22-32	22.70	22.70	1.167	YES
Lead	3.4	40.00	ug/L	5-32	7.28	7.28	10.05	NO
Radionuclides								
Actinium-227+D	0.50	0.50	pCi/L	1-10	NC	0.50		YES
Plutonium-239/240	0.00	2.00	pCi/L	6-20	8.87	2.00	0.125	YES
Thorium-228+D	0.01	2.17	pCi/L	14-35	105.00	2.17	0.779	YES
Thorium-230	0.01	1.99	pCi/L	11-32	1.25	1.25		YES
Tritium	110.00	7200.00	pCi/L	112-128	861.00	861.00	1485.47	NO
Uranium-234	0.20	8.14	pCi/L	14-19	NC	8.14	0.792	YES
Uranium-238+D	0.13	8.25	pCi/L	41-48	0.47	0.47	0.688	NO

COPC= Constituent of Potential Concern

EPC= minimum of 95% UCL or maximum detected concentration

NC= Not calculated, fewer than 20 samples in the data set

NO <Background Value

RRE= Residual Risk Evaluation

UCL= Upper Confidence Limit

** Originally published as Table 8 of the Parcel 3 RRE

Table 7***: Identification of Future Groundwater Constituents of Potential Concern for the Construction Worker Scenario In Parcel 3

(Bedrock 95% UCL or Maximum Detected Concentration Compared to Background Values)

Chemical	Minimum Concentration In Bedrock Wells	Maximum Concentration In Bedrock Wells	Units	Detection Frequency In Bedrock Wells	95 Percent UCL	Concentration Used for Screening	Background Value	COPC?
Inorganics								
Aluminum	20.1	31500.00	ug/L	107/ 115	6840.00	6840.00	37.523	YES
Antimony	0.35	41.60	ug/L	21/ 122	2.82	2.82	0.578	YES
Arsenic**	0.3	933.00	ug/L	26/ 114	11.80	11.80	32.997	NO
Beryllium**	0.03	2.30	ug/L	41/ 115	0.47	0.47		YES
Bismuth**	0.9	264.00	ug/L	23/ 103	23.20	23.20		YES
Cadmium	0.14	13.10	ug/L	11/ 124	0.75	0.75		YES
Chromium*	0.27	44800.00	ug/L	78/ 120	5010.00	5010.00	6.076	YES
Copper	0.38	514.00	ug/L	81/ 117	26.80	26.80	1.167	YES
Lead**	0.4	32.00	ug/L	55/ 125	4.90	4.90	10.05	NO
Lithium	8.8	4280.00	ug/L	87/ 102	123.00	123.00	55.7	YES
Manganese	0.037	3030.00	ug/L	155/ 165	737.00	737.00	229.568	NO 1
Molybdenum	0.79	474.00	ug/L	51/ 98	32.50	32.50	5.597	YES
Nickel	1.2	11600.00	ug/L	82/ 120	749.00	749.00	34.957	YES
Thallium	3.1	6.90	ug/L	6/ 107	4.44	4.44		YES
Vanadium	0.15	277.00	ug/L	65/ 115	33.00	33.00	17.1	YES
Organic Compounds								
1,1-Dichloroethane**	2.00	2.00	ug/L	1/ 238	0.75	0.75		NO 1
1,2-Dichloroethene**	1.00	35.00	ug/L	13/ 38	6.61	6.61		YES
Dichloromethane	1.00	610.00	ug/L	41/ 239	3.28	3.28		YES
Tetrachloroethene**	0.30	25.00	ug/L	55/ 247	3.37	3.37		YES
Trichloroethene	0.44	46.00	ug/L	152/ 273	5.12	5.12		YES
Radionuclides								
Radium-226+D	0.1260	39.47	pCi/L	43/ 59	2.34	2.34	0.996	YES
Strontium-90	0.74	42.40	pCi/L	7/ 57	2.22	2.22	0.975	YES
Thorium-228 + D	0.02	8.50	pCi/L	39/ 54	90.70	8.50	0.779	YES
Thorium-230	0.0044	4.07	pCi/L	43/ 56	0.57	0.57		YES
Thorium-232 + D	0.0005	2.11	pCi/L	31/ 63	0.78	0.78	0.314	NO 1
Tritium	2.95	2816310.00	pCi/L	4440/4455	206000.00	206000.00	1485.47	YES
Uranium-234	0.03	59.10	pCi/L	60/ 69	2.12	2.12	0.792	YES
Uranium-238 + D	0.03	1.34	pCi/L	57/ 75	0.51	0.51	0.688	NO

NO 1 = Flow tube modeled manganese (179.2 ug/L) and thorium-232 (0.1747pCi/L) concentrations were below background values and are screened out of the RRE

COPC= Constituent of Potential Concern

UCL= Upper Confidence Limit

* = Chromium conservatively assumed to be present in the hexavalent state

** = Constituent detected in bedrock well, but not in production well

** = Constituent detected in production well, not in bedrock wells; reported frequency of detection based on production wells analyses

*** Originally published as Table 10 of the Parcel 3 RRE

Table 8***: Identification of Future Groundwater Constituents of Potential Concern for the Site Employee Scenario in Parcel 3

(Bedrock 95% UCL or Maximum Detected Concentration Compared to Background Values)

Chemical	Minimum Concentration In Bedrock Wells	Maximum Concentration In Bedrock Wells	Units	Detection Frequency In Bedrock Wells	95 Percent UCL	Concentration Used for Screening	Background Value	COPC
Inorganics								
Aluminum	20.1	31500.00	ug/L	107/ 115	6840.00	6840.00	37.523	YES
Antimony	0.35	41.60	ug/L	21/ 122	2.82	2.82	0.578	YES
Arsenic**	0.3	933.00	ug/L	26/ 114	11.80	11.80	32.997	NO
Beryllium**	0.03	2.30	ug/L	41/ 115	0.47	0.47		YES
Bismuth**	0.9	264.00	ug/L	23/ 103	23.20	23.20		YES
Cadmium	0.14	13.10	ug/L	11/ 124	0.75	0.75		YES
Chromium*	0.27	44800.00	ug/L	78/ 120	5010.00	5010.00	6.076	YES
Copper	0.38	514.00	ug/L	81/ 117	26.80	26.80	1.167	YES
Lead**	0.4	32.00	ug/L	55/ 125	4.90	4.90	10.05	NO
Lithium	8.8	4280.00	ug/L	87/ 102	123.00	123.00	55.7	YES
Manganese	0.037	3030.00	ug/L	155/ 165	737.00	737.00	229.568	NO:1
Molybdenum	0.79	474.00	ug/L	51/ 98	32.50	32.50	5.597	YES
Nickel	1.2	11600.00	ug/L	82/ 120	749.00	749.00	34.957	YES
Thallium	3.1	6.90	ug/L	6/ 107	4.44	4.44		YES
Vanadium	0.15	277.00	ug/L	65/ 115	33.00	33.00	17.1	YES
Organic Compounds								
1,2-Dichloroethene**	1.00	35.00	ug/L	13/ 38	6.61	6.61		YES
Dichloromethane	1.00	610.00	ug/L	41/ 239	3.28	3.28		YES
Trichloroethene	0.44	46.00	ug/L	152/ 273	5.12	5.12		YES
Radionuclides								
Actinium-227+D**	0.500	0.500	pCi/L	1/10	NA	0.50		YES
Plutonium-238	0.012	1.870	pCi/L	8/ 60	0.15	0.15	0.087	YES
Plutonium-239/240	0.003	0.18	pCi/L	12/ 51	0.42	0.18	0.125	YES:2
Radium-226+D	0.1260	39.47	pCi/L	43/ 59	2.34	2.34	0.996	YES
Radium-228**	1.50	1.50	pCi/L	1/ 1	NC	1.50		YES
Strontium-90	0.74	42.40	pCi/L	7/ 57	2.22	2.22	0.975	YES
Thorium-228 + D	0.02	8.50	pCi/L	39/ 54	90.70	8.50	0.779	YES
Thorium-230	0.0044	4.07	pCi/L	43/ 56	0.57	0.57		YES
Thorium-232 + D	0.0005	2.11	pCi/L	31/ 63	0.78	0.78	0.314	NO:1
Tritium	2.95	2816310.00	pCi/L	4440/4455	206000.00	206000.00	1485.47	YES
Uranium-234	0.03	59.10	pCi/L	60/ 69	2.12	2.12	0.792	YES
Uranium-238 + D	0.03	1.34	pCi/L	57/ 75	0.51	0.51	0.688	NO

COPC= Constituent of Potential Concern

NC= 95% UCL not calculated, less than 20 samples in the data set.

UCL = Upper confidence Limit

NO:1 = Future groundwater concentrations *(modeled bedrock plus current concentrations) for manganese (179.2 ug/L) and thorium-232 (0.1747 pCi/L) are below background values* and are screened out of the RRE.

* = Chromium conservatively assumed to be present in the hexavalent state

** = Constituent detected in bedrock well, but not in production well

** = Constituent detected in production well, not in bedrock wells, reported frequency of detection based on production wells analyses

YES:2 = Current groundwater COPC, therefore, future groundwater COPC

*** Originally published as Table 12 of the Parcel 3 RRE

Table 9**: Current and Future Incremental Residual Risks for Parcel 3

Scenario and Receptor	Media	Constituents	Pathway	Total Noncancer HI	Total Cancer Risk
Construction Worker Scenario	Soil (all sample depths) (Current/Future)	Chemical and Radiological	Ingestion	NA	**6.1E-06**
			Inhalation of Dust	NA	5.5E-09
			Inhalation of VOCs	NA	NA
			External	NA	6.9E-10
		Soil Total Risk		NA	**6.1E-06**
	Groundwater (Current)	Chemical and Radiological	Ingestion	**1.1E+00**	**2.1E-06**
			Dermal Contact	1.9E-01	NA
			Inhalation While Showering	NA	NA
		Current Groundwater Total Risk		**1.3E+00**	**2.1E-06**
	Groundwater (Future)	Chemical and Radiological	Ingestion	**4.9E+00**	**9.6E-06**
			Dermal Contact	4.6E-01	**2.8E-04**
			Inhalation While Showering	4.8E-04	7.6E-08
		Future Groundwater Total Risk		**5.3E+00**	**2.9E-04**
	Air*	Radiological	Inhalation	NA	2.0E-07
		Air Total Risk		NA	2.0E-07
	Cumulative Incremental Current Risk			**1.3E+00**	**8.4E-06**
	Cumulative Incremental Future Risk			**5.3E+00**	**3.0E-04**
Site Employee Scenario	Soil (0-2 ft bls) (Current/Future)	Chemical and Radiological	Ingestion	NA	**2.6E-06**
			Inhalation of Dust	NA	2.2E-08
			Inhalation of VOCs	NA	NA
			External	NA	6.2E-10
		Soil Total Risk		NA	**2.6E-06**
	Groundwater (Current)	Chemical and Radiological	Ingestion	1.1E+00	**2.0E-05**
		Current Groundwater Total Risk		**1.1E+00**	**2.0E-05**
	Groundwater (Future)	Chemical and Radiological	Ingestion	**4.9E+00**	**5.4E-05**
		Future Groundwater Total Risk		**4.9E+00**	**5.4E-05**
	Air*	Radiological	Inhalation	NA	9.9E-07
		Air Total Risk		NA	9.9E-07
	Cumulative Incremental Current Risk			**1.1E+00**	**2.4E-05**
	Cumulative Incremental Future Risk			**4.9E+00**	**5.8E-05**

NA - Not applicable

*RRE values for air were brought forward from the Technical Position Report for Release Blocks D and H. (DOE 1999)

Numbers written as 1.0E-03 equal 1×10^{-3}

bolded values exceed cancer risk of 10^{-6} or non cancer HI greater than 1

bls - below land surface

** Originally published as Table 35 of the Parcel 3 RRE

Parcel 4

APPENDIX A

Quit Claim Deed for Parcel 4

DIV 1&2 2&1

K46-15-7-21,22

K46-11-9-7,8

TRANSFER OCTOBER 17, 2002
02:05pm KARL L. KEITH, COUNTY AUDITOR
Cnv Tax # 0485 $.00

QUIT CLAIM DEED

The UNITED STATES OF AMERICA, acting by and through the Secretary of the Department of Energy (hereinafter sometimes called "Grantor"), under and pursuant to the authority of the Atomic Energy Act of 1954, Section 161 (g) (42 U.S.C §2201(g)), in consideration of the covenants contained herein, and other good and valuable consideration, duly paid by the Miamisburg Mound Community Improvement Corporation, a non-profit corporation subsisting under the laws of Ohio and recognized by the Secretary of Energy as the agent for the community wherein the former Mound Facility is located (hereinafter sometimes called "Grantee"), the receipt of which is hereby acknowledged, hereby QUITCLAIMS unto Grantee its successors and assigns, subject to the reservations, covenants, and conditions hereinafter set forth, all of its right, title and interest, together with all improvements thereon and appurtenances thereto, in the following described real property (hereinafter the "Premises), commonly known as Parcel 4:

Situated in the Southwest Quarter of Section 30, Town 2, Range 5, MRs, the Southeast Quarter of Section 36, Town 2 Range 5, MRs, Northeast Quarter Section 36, Town 2, Range 5, MRs., City of Miamisburg, County of Montgomery, State of Ohio, being part of a 79.74 acre tract conveyed to the United States of America, as recorded in Microfiche No. 81-376A01 of the Deed Records of Montgomery County, Ohio, said 79.74 acre tract being comprised of a 24.197 acre tract and known as Lot Numbered 6128 of the consecutive numbered lots of the City of Miamisburg, also a 35.50 acre tract known as Lot Numbered 6127 of the consecutive numbered lots of the City of Miamisburg, and a 24.24 acre tract known as Lot Numbered 4777 of the consecutive numbered lots of the City of Miamisburg, also being part of a 42.56 acre tract conveyed to the United States of America, as recorded in Microfiche No. 81-323A11 of the Deed Records of Montgomery County, Ohio, said 42.56 acre tract being comprised of a 46.313 acre tract known as Lot Numbered 4778 of the consecutive numbered lots of the City of Miamisburg, said 42.56 acre tract being all the remainder of an 80 acre tract as conveyed from Ray C. Dunaway and Thelma Mae Dunaway to Oak Knoll Development and Investment Co., Inc., as recorded in Microfiche No. 71-513B06 of the Deed Records of Montgomery County, Ohio, being a new division of 94.838 acres from said 79.74 acre and 42.56 acre tracts and being more fully described in Exhibit A attached hereto and incorporated herein.

RESERVING UNTO Grantor, the United States Environmental Protection Agency (USEPA) and the State of Ohio, acting by and through the Director of the Ohio Environmental Protection Agency (OEPA) or the Ohio Department of Health (ODH), their successors and assigns, an easement to, upon or across the Premises in conjunction with the covenants of Grantor and/or Grantee in paragraphs numbered 1.1-1.3, 3.2 and 3.3 of this Deed and as otherwise needed for purposes of any response action as defined under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended, including but not limited to, environmental investigation or remedial action on the Premises or on property in the vicinity thereof, including the right to access to, and use of, to the extent permitted by applicable law, utilities at reasonable cost to Grantor. Grantee understands that any such response action will be conducted in a manner so as to attempt to minimize interfering with the ordinary and reasonable use of the Premises.

Prepared	
Cashiered	
Fixbed	
Coded	
Entered	
Verified	

DEED-02-12800. J040
Montgomery County
Judy Dodge Recorder

This Deed and conveyance is made and accepted without warranty of any kind, either express or implied, except for the warranty in paragraph 3.3 of this Deed, and is expressly made under and subject to all reservations, restrictions, rights, covenants, easements, licenses, and permits, whether or not of public record, to the extent that the same affect the Premises.

1. The parties hereto intend the following restrictions and covenants to run with the land and to be binding upon the Grantee and its successors, transferees, and assigns or any other person acquiring an interest in the Premises, for the benefit of Grantor, USEPA and the State of Ohio, acting by and through the Director of OEPA or ODH, their successors and assigns.

   1.1 Excepting those soils in the area 35 feet wide and 2,354.38 feet long bounded on the south by the centerline of Benner Road as described above, Grantee covenants that any soil from the Premises shall not be placed on any property outside the boundaries of that described in instruments recorded at Deed Book 1214, pages 10, 12, 15, 17 and 248; Deed Book 1215, page 347; Deed Book 1246, page 45; Deed Book 1258, pages 56 and 74; Deed Book 1215, page 347; Deed Book 1246, page 45; Deed Book 1258, pages 56 and 74; Deed Book 1256, page 179; Micro-Fiche 81-376A01; and Micro-Fiche 81-323A11 of the Deed Records of Montgomery County, Ohio (and as illustrated in the CERCLA 120(h) Summary, Notices of Hazardous Substances Release Parcel 4, Mound Plant, Miamisburg, Ohio dated March 21, 2001) without prior written approval from the Ohio Department of Health (ODH), or a successor agency.

   1.2 Grantee covenants not to use, or allow the use of, the Premises for any residential or farming activities, or any other activities which could result in the chronic exposure of children under eighteen years of age to soil or groundwater from the Premises. Restricted uses shall include, but not be limited to:

   (1) single or multifamily dwellings or rental units;
   (2) day care facilities;
   (3) schools or other educational facilities for children under eighteen years of age; and
   (4) community centers, playgrounds, or other recreational religious facilities for children under eighteen years of age.

   Grantor shall be contacted to resolve any questions which may arise as to whether a particular activity would be considered a restricted use.

   1.3 Grantee covenants not to extract, consume, expose, or use in any way the groundwater underlying the premises without the prior written approval of the United States Environmental Protection Agency (Region V) and the OEPA.

2. The Grantor hereby grants to the State of Ohio and reserves and retains for itself, its successors and assigns an irrevocable, permanent, and continuing right to enforce the covenants of this Quitclaim Deed through proceedings at law or in equity, including resort to an action for specific performance, as against and at the expense of Grantee, its successors and assigns, including reasonable legal fees, and to prevent a violation of, or recover damages from a breach of, these covenants, or both. Any delay or forbearance in

enforcement of said restrictions and covenants shall not be deemed to be a waiver thereof.

3. Pursuant to Section 120(h)(3) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended (42U.S.C. §9620(h)(3)), the following is notice of hazardous substances, the description of any remedial action taken, and a covenant concerning the Premises.

   3.1 **Notice of Hazardous Substance**: Grantor has made a complete search of its files and records concerning the Premises. Those records indicate that the hazardous substances listed in Exhibit "B", attached hereto and made a part hereof, have been stored for one year or more or disposed of on the Premises and the dates that such storage/disposal took place.

   3.2 **Description of Remedial Action Taken:** Institutional Controls are established. The Institutional Controls are set forth as covenants in Sections 1.1, 1.2, and 1.3 of this Deed.

   3.3 **Covenant:** Grantor covenants and warrants that all remedial action necessary for the protection of human health and the environment with respect to any hazardous substances remaining on the property has been taken, and any additional remedial action found to be necessary after the date of this Deed regarding hazardous substances existing prior to the date of this Deed shall be conducted by Grantor, provided, however, that the foregoing covenant shall not apply in any case in which the presence of hazardous substances on the property I is due to the activities of Grantee, its successors, assigns, employees, invitees, or any other person subject to Grantee's control or direction.

4. Unless otherwise specified, all the covenants, conditions, and restrictions to this Deed shall be binding upon, and shall inure to the benefit of the assigns of Grantor and the successors and assigns of Grantee.

IN WITNESS WHEREOF, the United States of America, acting by and through its Secretary of the Department of Energy, has caused these presents to be executed this 19th day of April, 2001.

UNITED STATES OF AMERICA

WITNESSETH:

NO PLAT REQUIRED
(SEC 711.131 ORC)
MIAMISBURG CITY PLANNING COMMISSION
Secretary

State of Ohio)
County of Montgomery) SS.

Before me, a Notary Public in and for said State and County, appeared this 19 day of April, 2001, Jack Craig, who acknowledged that he is the Deputy Manager of the Ohio Field Office for the United States Department of Energy, with full authority to execute the foregoing on behalf of the United States of America, and who acknowledged the above to be her signature and her free act and deed.

NOTARIAL SEAL STATE OF OHIO

Notary Public
RANDOLPH T. TORMEY, Attorney-at-Law
Notary Public, State of Ohio
My Commission has no expiration date.
Section 147.03 O. R. C.

APPENDIX A, Exhibit A

Legal Description of Parcel 4

Exhibit "A"
DESCRIPTION OF
94.838 Acres
located in
Section 30, 35 and 36, Town 2, Range 5, MRs.
City of Miamisburg, Montgomery County, Ohio

DIV/1,2 K46-15-7-21,22
2,1 K46-11-9-7,8

Situate in the Southwest Quarter of Section 30, Town 2, Range 5, MRs., the Southeast Quarter of Section 36, Town 2, Range 5, MRs., Northeast Quarter Section 36, Town 2, Range 5, MRs., City of Miamisburg, County of Montgomery, State of Ohio, ***being part of a 79.74 acre tract conveyed to the United States of America, as recorded in Microfiche No. 81-376A01*** of the Deed Records of Montgomery County, Ohio, said 79.74 acre tract being comprised of a 24.197 acre tract and known as Lot Numbered 6128 of the consecutive numbered lots of the City of Miamisburg, also a 35.50 acre tract known as Lot Numbered 6127 of the consecutive numbered lots of the City of Miamisburg, and a 24.24 acre tract known as Lot Numbered 4777 of the consecutive numbered lots of the City of Miamisburg, ***also being part of a 42.56 acre tract conveyed to the United States of America, as recorded in Microfiche No. 81-323A11*** of the Deed Records of Montgomery County, Ohio, said 42.56 acre tract being comprised of a 46.313 acre tract known as Lot Numbered 4778 of the consecutive numbered lots of the City of Miamisburg, said 42.56 acre tract being all the remainder of an 80 acre tract as conveyed from Ray C. Dunaway and Thelma Mae Dunaway to Oak Knoll Development and Investment Co., Inc., as recorded in Microfiche No. 71-513B06 of the Deed Records of Montgomery County, Ohio, ***being a new division of 94.838 acres from said 79.74 acre and 42.56 acre tracts*** and being more fully bounded and described as follows:

Commencing at a railroad spike found in concrete, said spike being the southwest corner of Section 30, the southeast corner of Section 36 and the northeast corner of Section 35, said spike lying in the center line of Benner Road at an angle point in said road, said spike also being the southwest corner of said United States of America 79.74 acre tract and the southeast corner of said United States of America 42.56 acre tract, also being the northeast corner of a 0.47 acre tract conveyed to Danny and Judith Hall, as recorded in Microfiche No. 88-598D12 of the Deed Records of Montgomery County, Ohio, said spike having a scale coordinate value of North 594,365.34, East 1,496,165.88 of the Ohio Plane Coordinate System, South Zone, said spike being the **True Point of Beginning** of the hereinafter described 95.146 acre tract;

Thence with the center line of Benner Road and the northwesterly line of said Hall 0.47 acre tract, also the northwesterly line of a 0.764 acre tract conveyed to the City of Miamisburg, Ohio, as recorded in Microfiche No. 00-356C07 of the Deed Records of Montgomery County, Ohio, **South 66° 32' 34" West**, a distance of **958.76 feet to a Mag nail set**, said Mag nail being an angle point in the center line of Benner Road;

Thence continuing with the center line of Benner Road and the northwesterly line of said City of Miamisburg, Ohio 0.764 acre tract, **South 73° 18' 03" West**, a distance of **31.01 feet to a Mag nail set**, said Mag nail being the southwest corner of said United States of America 42.56 acre tract, said Mag nail also lying in the northeasterly line of the abandoned Miami & Erie canal lands, said lands being a 1.448 acre tract conveyed to the Miami Conservancy District, as recorded in Deed Book Volume 2450, Page 190 of the Deed Records of Montgomery County, Ohio, said Miami Conservancy

District 1.448 acre tract also being known as Lot Numbered 4782 of the consecutive numbered lots of the City of Miamisburg, Ohio;

Thence with the southwesterly line of said United States of America 42.56 acre tract and the northeasterly line of said Miami Conservancy District 1.448 acre tract on the following three (3) courses,

1) **North 14° 05' 40" West**, a distance of **62.17 feet to an axle found**, said axle being an angle point in said line;
2) **Thence, North 14° 12' 04" West**, a distance of **440.84 feet to an axle found**, said axle lying in the north line of the Northeast Quarter of Section 35 and the south line of the Southeast Quarter of Section 36, said axle also being an angle point in said line;
3) **Thence, North 14° 47' 54" West**, a distance of **259.69 feet to an axle found**, said axle being the northeasterly corner of said Miami Conservancy District 1.448 acre tract, said axle also being the southeasterly corner of lands conveyed to the Miami Conservancy District, as recorded in Deed Book Volume 2450, Page 194 of the Deed Records of Montgomery County, Ohio, said lands also being known as Lot Numbered 4781 of the consecutive numbered lots of the City of Miamisburg, Ohio;

Thence with the southwesterly line of said United States of America 42.56 acre tract and the northeasterly line of said Miami Conservancy District lands, **North 14° 45' 30" West**, a distance of **546.20 feet to a 5/8" iron pin set**, said iron pin being the southwesterly corner of a 5.481 acre tract conveyed to the Consolidated Railroad Corporation, as recorded in Microfiche No. 78-502A01 of the Deed Records of Montgomery County, Ohio, said Consolidated Railroad Corporation 5.481 acre tract also known as Lot Numbered 4780 of the consecutive numbered lots of the City of Miamisburg, Ohio;

Thence with the southerly line of said Consolidated Railroad Corporation 5.481 acre tract on the following three (3) courses,

1) **North 74° 56' 41" East**, a distance of **85.24 feet to a 1" iron pipe found**, said pipe being an angle point in said line;
2) **Thence, North 37° 22' 23" East**, a distance of **96.59 feet to a 5/8" iron pin found**, said iron pin being an angle point in said line;
3) **Thence, North 80° 25' 45" East**, a distance of **65.98 feet to a 1" iron pipe found**, said iron pipe being the southeasterly corner of said Consolidated Railroad Corporation 5.481 acre tract;

Thence with the northeasterly line of said Consolidated Railroad Corporation 5.481 acre tract, **North 09° 33' 38" West**, a distance of **147.88 feet to a 5/8" iron pin set**, said iron pin being the northwesterly corner of the herein described new division of 95.146 acres;

Thence with a new division line on the following nine (9) courses,

1) **Due East**, a distance of **72.92 feet to a 5/8" iron pin set**;
2) **Thence, Due North**, a distance of **82.40 feet to a 5/8" iron pin set**;
3) **Thence, North 79° 34' 35" East**, a distance of **878.75 feet to a 5/8" iron pin set**;
4) **Thence, North 10° 55' 31" West**, a distance of **75.93 feet to a 5/8" iron pin set**;
5) **Thence, North 47° 17' 05" West**, a distance of **318.93 feet to a 5/8" iron pin set**;
6) **Thence, North 23° 53' 27" East**, a distance of **12.17 feet to a 5/8" iron pin set**;

7) **Thence, North 89° 59' 52" East,** passing a point at 517.95 feet, said point lying in the east line of the Southeast Quarter of Section 36 and the west line of the Southwest Quarter of Section 30, reference a broken concrete monument found, North 05° 16' 42" East, 3724.34 feet, said concrete monument being the northeast corner of Section 36 and the northwest corner of Section 30 by common report, in all a distance of **1767.43 feet to a 5/8" iron pin set;**

8) **Thence, Due South,** a distance of **111.18 feet to a 5/8" iron pin set;**

9) **Thence, Due East,** a distance of **62.54 feet to a 5/8" iron pin set,** said iron pin lying in the east line of said United States of America 79.74 acre tract, said iron lying in the west line of a 7.502 acre tract conveyed to Daniel R. Shell, as recorded in Microfiche No. 85-443D02 of the Deed Records of Montgomery County, Ohio, said Shell 7.502 acre tract also being known as Lot Numbered 6130 of the consecutive numbered lots of the City of Miamisburg, Ohio, witness a concrete Department of Defense monument found, North 04° 42' 45" East, 311.82 feet, said monument being the northeast corner of said United States of America 79.74 acre tract;

Thence with the east line of said United States of America 79.74 acre tract and the west line of said Shell 7.502 acre tract, also the west line of a 8.850 acre tract conveyed to Frank C. Dickinson, as recorded in Microfiche No. 93-516A05 of the Deed Records of Montgomery County, Ohio, **South 04° 42' 45" West,** passing a 1" pinched top pipe found at 737.06 feet, said pipe lying 1.49 feet east of the line, said pipe being the common corner of said Shell 7.502 acre tract and Dickinson 8.850 acre tract, in all a distance of **1698.01 feet to a railroad spike in concrete found,** said spike lying in the south line of the Southwest Quarter of Section 30, said spike being the southeast corner of said United States of America 79.74 acre tract, said spike lying in the center line of Benner Road;

Thence with the south line of the Southwest Quarter of Section 30 and the center line of Benner Road, **North 84° 29' 45" West,** a distance of **1333.45 feet to the True Point of Beginning,** containing **94.838 acres,** more or less, of which ***52.932 acres lying in the Southwest Quarter of Section 30, 36.224 acres lying in the Southeast Quarter of Section 36 and 5.682 acres lying in the Northeast Quarter of Section 35*** and being subject to all easements, highways and right of ways of record..

Bearing basis established on State Plane Coordinates South Zone, State of Ohio, per prior survey by Lockwood, Jones and Beals, dated; June 1st, 1982, said survey filed in the Montgomery County Engineer's Record of Land Surveys as survey reference number SUR-83-88.

This description prepared from an actual field survey performed under my direct supervision, Timothy W. Schram, Sr., Registered Professional Surveyor number 7299 of the State of Ohio, and that all monuments referenced herein and placed on the ground represents the boundaries of the herein described tract, and based on a Plat of Survey as recorded in the Montgomery County Engineer's Record of Land Surveys in Record Volume number _____ _____ .

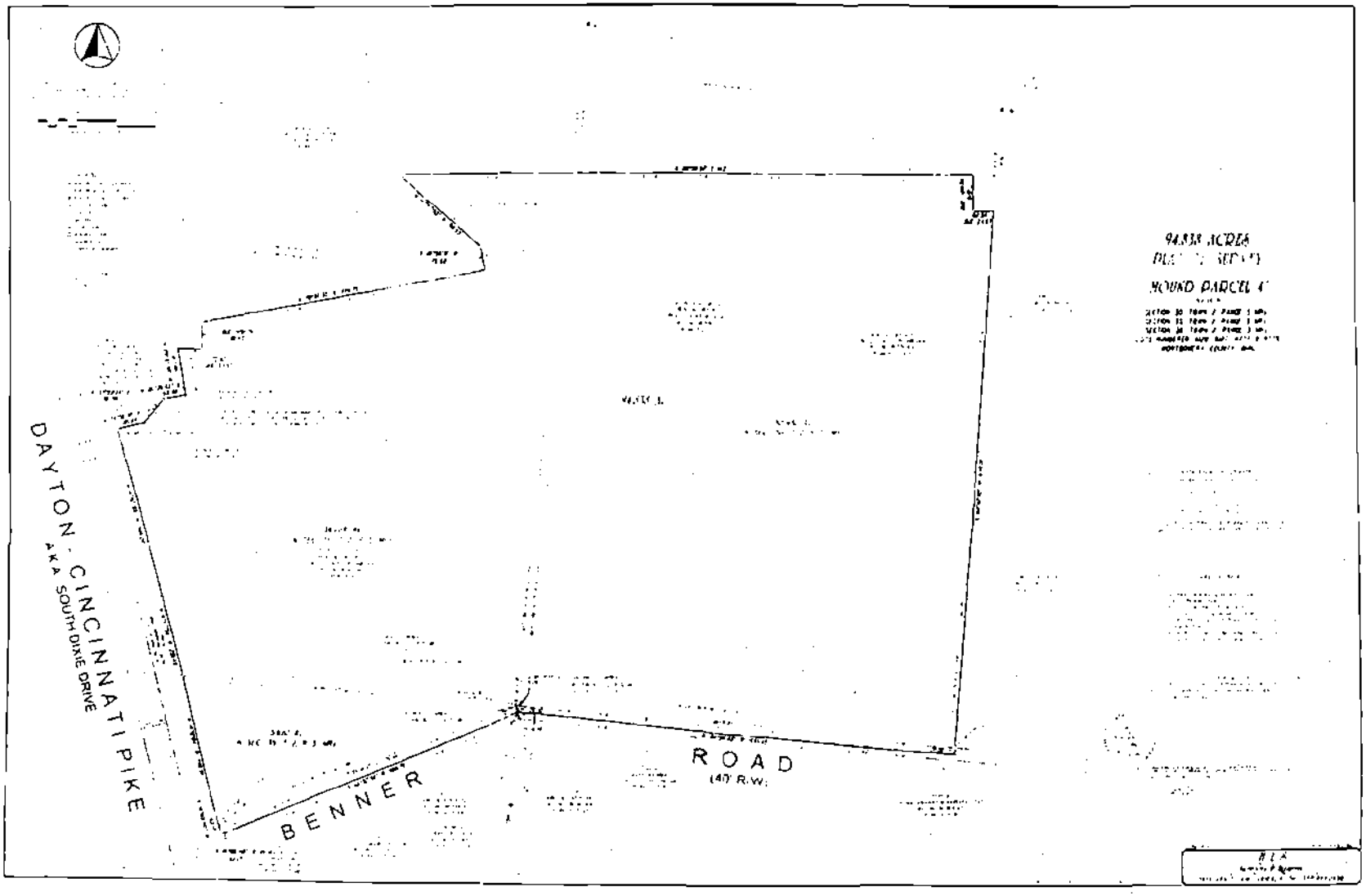
KARL KEITH
COUNTY AUDITOR
MONTGOMERY COUNTY DAYTON, OHIO
DESCRIPTION APPROVED FOR
STRAIGHT TRANSFER CLOSURE
NOT CHECKED.
DATE 10/16/02
MAP DEPARTMENT

STATE OF OHIO
TIMOTHY W. SCHRAM, SR.
S-7299
REGISTERED PROFESSIONAL SURVEYOR

Timothy W. Schram, Sr.

Timothy W. Schram, Sr., Regist. Prof. Surveyor No. 7299 of the State of Ohio, August 21, 2000.
F: 2001/01018/01018a.des

KARL L. KEITH
MONTGOMERY COUNTY AUDITOR
DIVISION


DAYTON - CINCINNATI PIKE
AKA SOUTH DIXIE DRIVE
BENNER
ROAD
(40' R.W.)

$86.00 03/20/03 08:11:20
EASE-03-039149 0020
Montgomery County
Judy Dodge Recorder

NO TRANSFER
08:03am MARCH 20, 2003
KARL L. KEITH, COUNTY AUDITOR

DECLARATION OF EASEMENT

THIS DECLARATION OF EASEMENT ("Declaration") is made on this 18th day of March, 2003, by MIAMISBURG MOUND COMMUNITY IMPROVEMENT CORPORATION, an Ohio non-profit corporation ("Declarant"), under the terms and conditions set forth below.

RECITALS:

A. By virtue of a Deed dated April 19, 2001, and recorded at Instrument No. 02-128007 of the Montgomery County, Ohio Recorder's office, The United States of America, acting by and through the Department of Energy ("DOE"), conveyed to Declarant the real property described on Exhibit A, attached hereto and incorporated herein by reference ("Declarant's Property").

B. Declarant desires to create, on the terms and conditions set forth herein, a permanent, non-exclusive easement for utility purposes, together with the right to construct, install, operate, maintain, repair, replace and/or remove any lines and all related equipment and appurtenances thereto that are necessary for the supply of gas, water, electrical power, sewage and waste disposal, drainage, telephone and communication utilities on, over and across a portion of the Declarant's Property, as identified herein.

NOW, THEREFORE, in consideration of the recitals set forth above and the terms and conditions set forth below, Declarant hereby declares as follows:

1. PROVISIONS OF EASEMENT GRANTED – Declarant hereby grants to utility providers, their successors and assigns, a permanent, non-exclusive easement upon, over and under the area of the Declarant's Property described in Exhibit B, attached hereto and incorporated herein (the "Easement Area"), for the purpose of constructing, installing, maintaining, operating, repairing, and/or replacing utility lines and all related equipment and appurtenances thereto that are necessary for the supply of gas, water, electrical power, sewage and waste disposal, drainage, telephone and communication utilities (such lines, equipment and appurtenances are collectively referred to as the "Equipment"). Declarant further grants to such utility providers, their successors and assigns, a permanent, non-exclusive ingress and egress easement over the Easement Area and such other portions of the Declarant's Property as reasonably necessary for the purpose of constructing, installing, maintaining, operating, repairing and/or replacing their Equipment. Notwithstanding anything to the contrary provided in this Declaration or in the exhibits attached hereto, in no event shall the grant of this easement include any area that includes or is bounded by any perimeter security fence on the Declarant's Property as it exists as of the date of this Declaration. In addition, the use of this easement shall not preclude the use by other utility providers of the area included within the Easement Area. All utility providers making use of the Easement Area shall be deemed to have agreed to be bound by the terms and conditions of this Declaration.

2. INSTALLATION OF EQUIPMENT – All utility providers making use of the Easement Area shall undertake, at their sole expense, the construction, installation, maintenance, operation, repair and/or replacement of their Equipment, and such work shall be accomplished in such a manner so as not to conflict with Declarant's rights or obligations, endanger Declarant's personnel or property or the personnel or property of other occupants of the Declarant's

Property, or disturb or interfere with the Equipment of other utility providers or any perimeter security fence on or around the Declarant's Property.

3. PROTECTION OF PROPERTY – Any and all construction, installation, repair, maintenance or other activity undertaken by or at the direction of utility providers on or to the Equipment and/or the Easement Area shall be conducted in a manner that reasonably minimizes the impact on the Declarant's Property and the Equipment of other utility providers. Utility providers shall undertake all actions reasonably necessary to restore the affected areas to the same condition as existed prior to such activities, including without limitation, sowing grass seed, covering affected areas with straw and returning affected areas to their prior levels as nearly as possible.

4. COMPLIANCE WITH RESTRICTIONS – All utility providers making use of the Easement Area shall have reviewed the restrictions and covenants set forth in the Deed by which DOE conveyed to Declarant the Declarant's Property prior to the construction or installation of any of their Equipment. Each utility provider agrees that, as set forth in the Deed, its use of the Easement Area is subject to the terms thereof, and further agrees to be bound to comply with the restrictions and covenants set forth therein, including without limitation, the following:

4.1 Excepting those soils in the area 35 feet wide and 2,354.38 feet long bounded on the south by the centerline of Benner Road as described above, each utility provider covenants that any soil from the Declarant's Property shall not be placed on any property outside the boundaries of that described in instruments recorded at Deed Book 1214, pages 10, 12, 15, 17 and 248; Deed Book 1215, page 347; Deed Book 1246, page 45; Deed Book 1258, pages 56 and 74; Deed Book 1256, page 179; Micro-Fiche 81-376A01; and Micro-Fiche 81-323A11 of the Deed Records of Montgomery County, Ohio (and as illustrated in the CERCLA 120(h) Summary, Notices of Hazardous Substances Release Parcel 4, Mound Plant, Miamisburg, Ohio dated March 21, 2001) without prior written approval from the Ohio Department of Health (ODH), or a successor agency. Each utility provider warrants that it will make its officers, agents, contractors, employees, and others for whom it is responsible aware of the restriction on soil removal and contractually obligate agents and contractors to abide by this restriction.

4.2 Each utility provider covenants not to use, or allow the use of, the Declarant's Property for any residential or farming activities, or any other activities that could result in the chronic exposure of children under eighteen years of age to soil or groundwater from the Declarant's Property. Restricted uses shall include, but not be limited to:

(1) single or multifamily dwellings or rental units;
(2) day care facilities;
(3) schools or other educational facilities for children under eighteen years of age; and
(4) community centers, playgrounds, or other recreational religious facilities for children under eighteen years of age.

Declarant shall be contacted to resolve any questions that may arise as to whether a particular activity would be considered a restricted use.

4.3 Each utility provider covenants not to extract, consume, expose, or use in any way the groundwater underlying the Declarant's Property without the prior written approval of the United States Environmental Protection Agency (Region V) and the OEPA.

If there is any conflict between the terms of the Deed and this Declaration, the terms of the Deed shall control.

5. ENVIRONMENT – In constructing, installing, maintaining, operating, using, repairing and/or replacing the Equipment, utility providers shall not unlawfully pollute the air, soil or water or create a public nuisance and shall use all reasonable means available to protect the environment and natural resources from damage arising from this easement or activities incident to it and, where damage nonetheless occurs, utility providers shall be liable to restore the environment and damaged natural resources. Utility providers shall promptly comply, at their sole expense, with present and future federal, state, and local laws, ordinances, regulations, or instructions controlling the quality of the environment; provided, however, that the foregoing does not affect the provider's right to contest their validity or enjoin their applicability. If a utility provider discovers contamination on Declarant's Property, it shall immediately cease all activities on the Declarant's Property and notify Declarant.

6. LAWS, ORDINANCES, REGULATIONS – All utility providers making use of the Easement Area shall comply with all applicable federal, state and local laws, statutes, ordinances, regulations, orders and directives with regard to the construction, installation, operation, maintenance, repair and replacement of the Equipment, and obtain all licenses or permits required in connection therewith. Such providers shall also comply with such rules and regulations regarding security, ingress, egress, safety, and other matters as may be prescribed from time to time by the Declarant.

7. DECLARANT'S RESERVATIONS – Declarant reserves to itself, its successors and assigns forever, the right to use the Easement Area in any manner not inconsistent with the rights granted in this Declaration, including without limitation, the right to use any portion of the Declarant's Property situated on, over and/or under the Easement Area for the construction, installation, operation, maintenance, repair and/or replacement of electric transmission lines, water lines, utility lines, sewer lines, and other facilities.

8. THIRD-PARTY RESERVATIONS – This easement is granted subject to such other rights that may be outstanding in third parties in, on, over and/or across the Easement Area, including without limitation, the rights of third parties as set forth in the Deed by which DOE conveyed to Declarant the Declarant's Property.

9. INDEMNITY – Declarant shall not be responsible for damages to property or injuries to persons which may arise from or be incident to the construction, installation, operation, maintenance, use, repair and/or replacement of the Equipment, including without limitation, damages to the property of utility providers making use of this easement, or for damages to the property or injuries to the persons of such providers' officers, agents, servants, employees, or others who may be on the Declarant's Property at their invitation or the invitation of any one of them. All utility providers making use of the Easement Area shall indemnify and hold harmless Declarant, its successors and assigns forever, from and against any and all actions, causes of action, lawsuits, judgments or other damages or liabilities, losses, costs or expenses resulting

from or arising in connection with, either directly or indirectly, the construction, installation, maintenance, operation, use, repair, or replacement or other activity undertaken by such providers on or to their respective Equipment and/or the Easement Area.

10. BOUNDARY OR SURVEY MONUMENTATION – Utility providers shall not disturb, obliterate or destroy any land boundary or survey monument on the Declarant's Property without Declarant's prior written approval.

11. PLANS AND SPECIFICATIONS – All utility providers desiring to make use of the Easement Area shall submit plans and specifications of proposed construction and installation of Equipment to the Declarant and obtain Declarant's written approval prior to ordering of materials or commencement of construction or installation.

12. REMOVAL/RELOCATION OF EQUIPMENT – If all or any portion of the Easement Area shall be needed by Declarant, utility providers shall remove their respective Equipment and appurtenant improvements, upon notice to do so, to such other location(s) as mutually agreed upon by the provider and Declarant. Declarant will pay any relocation costs.

13. UTILITY PROVIDER PERFORMANCE – The failure of the Declarant to insist in any one or more instances upon strict performance of any of the terms, covenants, or conditions of this Declaration shall not be construed as a waiver or relinquishment of the Declarant's right to the future performance of any such terms, covenants, or conditions, and a utility provider's obligation with respect to any such future performance shall continue in full force and effect.

14. DECLARANT'S LIMITATIONS TO GRANT – All utility providers acknowledge and understand that this instrument is effective only insofar as the rights of the Declarant in Declarant's Property are concerned and that each provider shall obtain such permission as may be necessary on account of any other existing rights, including without limitation, the rights of third parties as set forth in the Deed by which DOE conveyed to Declarant the Declarant's Property.

15. PROVISIONS BINDING – The conditions of this Declaration shall extend to and be binding upon and shall inure to the heirs, representatives, successors, and assigns of the utility provider.

16. RUNS WITH THE LAND - The easement, restrictions and covenants contained in this Declaration shall run with the land and shall be binding upon the parties and their respective successors and assigns.

17. AMENDMENT - No modification or amendment hereto shall be valid unless in writing and signed by the Declarant.

IN WITNESS WHEREOF, the undersigned has executed this Declaration on behalf of Declarant as of the day and year first set forth above.

DECLARANT:

MIAMISBURG MOUND COMMUNITY IMPROVEMENT CORPORATION,
an Ohio non-profit corporation

By: Michael J. Grauwelman

Printed Name: Michael J. Grauwelman

Title: President

STATE OF Ohio, COUNTY OF Montgomery, SS:

The foregoing instrument was acknowledged before me this 18th day of March, 2003, by Michael J Grauwelman the President of Miamisburg Mound Community Improvement Corporation, an Ohio non-profit corporation, on behalf of said corporation.

Joan Wysong
Notary Public

Joan Wysong, Notary Public
In and for the State of Ohio
My Commission Expires June 28, 2004

This instrument prepared by:
Shannon L. Costello, Esq.
Coolidge, Wall, Womsley & Lombard Co., L.P.A.
33 West First St., Suite 600
Dayton, OH 45402

EXHIBIT A

Legal Description of the "Declarant's Property"

EXHIBIT "A"
10' WIDE UTILITY EASEMENT
0.6207 ACRES

Situate in Section 30, Town 2, Range 5, M.Rs., Fractional Section 35, Town 2, Range 5, M.Rs., Fractional Section 36, Town 2, Range 5, M.Rs., City of Miamisburg, County of Montgomery, in the State of Ohio, being part of Lots 4778, 6127 and 6128 of the consecutive numbered lots of the City of Miamisburg, Ohio as conveyed to Miamisburg Mound Community Improvement Corporation by deed recorded in Instrument ID No. DEED-02-128007 of the Deed Records of Montgomery County, Ohio and being a 10 feet wide utility easement, said easement being more particularly described as follows:

COMMENCING at a found spike being the southwest corner of Section 30, the northeast corner of Fractional Section 35 and the southeast corner of Fractional Section 36, said spike also being the southeasterly corner of said Lot 4778 and the southwest corner of said Lot 6127, said spike also being at an angle point in the centerline of Benner Road (40' R/W);

thence South 84°28'52" East along the south line of said Section 30 and the centerline of said Benner Road a distance of 1,333.45 feet to a spike found at the southeast corner of said Lot 6128 and the southwest corner of Lot 6134 of the consecutive numbered lots of the City of Miamisburg, Ohio as conveyed to Frank Dickinson by deed recorded in Microfiche No. 93-516A05 of the Deed Records of Montgomery County, Ohio;

thence North 04°43'38" East along the east line of said Lot 6128 and the west line of said Lot 6134 a distance of 35.00 feet to the **TRUE POINT OF BEGINNING;**

thence North 84°28'52" West along a new division line 35 feet north of and parallel to the south line of said Section 30 and the centerline of said Benner Road a distance of 1,227.28 feet to a point of curvature;

thence continuing along a new division line in a southwesterly direction on a curve to the left with a central angle of 28°57'30", a radius of 444.26 feet, an arc distance of 224.54 feet, the chord of which bears South 81°02'23" West a distance of 222.16 feet to a point;

thence South 66°33'38" West continuing along a new division line 35 feet northwest of and parallel to the centerline of said Benner Road a distance of 733.88 feet to an angle point;

thence North 52°06'35" West continuing along a new division line a distance of 71.74 feet to a point;

thence North 28°53'38" West continuing along a new division line a distance of 157.34 feet to a point of curvature;

thence continuing along a new division line in a northwesterly direction on a curve to the right with a central angle of 36°25'26", a radius of 200.00 feet, an arc distance of 127.14 feet, the chord of which bears North 10°40'55" West a distance of 125.01 feet to a point of reverse curvature;

thence continuing along a new division line in a northwesterly direction on a curve to the left with a central angle of 23°22'22", a radius of 320.00 feet, an arc distance of 130.54 feet, the chord of which bears North 04°09'23" West a distance of 129.63 feet to a point;

10' Wide Utility Easement
0.6207 Acres
(Continued)

thence North 15°50'34" West continuing along a new division line a distance of 37.83 feet to a point of curvature, said point also being on the south line of a new 10 feet wide utility easement;

thence in a northeasterly direction on a curve to the left with a central angle of 00°48'46", a radius of 705.00 feet, an arc distance of 10.00 feet, the chord of which bears North 73°16'18" East a distance of 10.00 feet to an angle point;

thence South 15°50'34" East along a new division line a distance of 37.98 feet to a point of curvature;

thence continuing along a new division line in a southeasterly direction on a curve to the right with a central angle of 23°22'22", a radius of 330.00 feet, an arc distance of 134.62 feet, the chord of which bears South 04°09'23" East a distance of 133.69 feet to a point of reverse curvature;

thence continuing along a new division line in a southeasterly direction on a curve to the left with a central angle of 36°25'26", a radius of 190.00 feet, an arc distance of 118.76 feet, the chord of which bears South 10°40'55" East a distance of 118.76 feet to a point;

thence South 28°53'38" East continuing along a new division line a distance of 155.29 feet to a point;

thence South 52°06'35" East continuing along a new division line a distance of 63.76 feet to an angle point;

thence North 66°33'38" East continuing along a new division line 45 feet northwest of and parallel to the centerline of said Benner Road a distance of 727.95 feet to a point of curvature;

thence continuing along a new division line in a northeasterly direction on a curve to the right with a central angle of 28°57'30", a radius of 454.26 feet, an arc distance of 229.59 feet, the chord of which bears North 81°02'23" East a distance of 227.16 feet to a point;

thence South 84°28'52" East continuing along a new division line 45 feet north of and parallel to the south line of said Section 30 and the centerline of said Benner Road a distance of 1,227.14 feet to a point on the east line of said Lot 6128 and the west line of said Lot 6134;

thence South 04°43'38" West along the east line of said Lot 6128 and the west line of said Lot 6134 a distance of 10.00 feet to the **TRUE POINT OF BEGINNING**. Containing 0.6207 acres more or less and subject to all legal highways, easements, and agreements of record.

Bearings are based on State Plane Coordinates South Zone, State of Ohio, Department of Energy, Miamisburg Mound Facility G.I.S.

Prior Deed Reference, Instrument ID No. DEED-02-128007

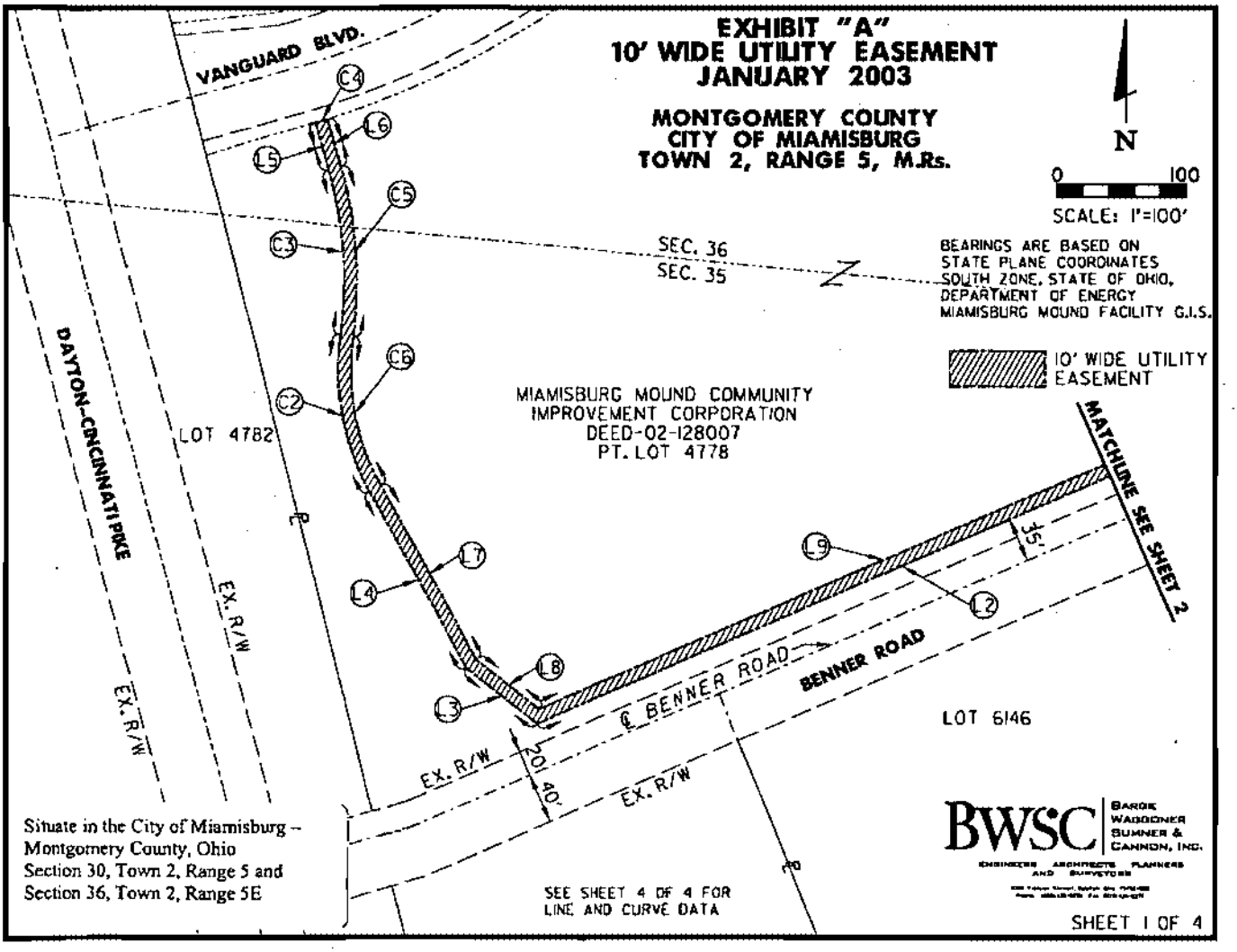
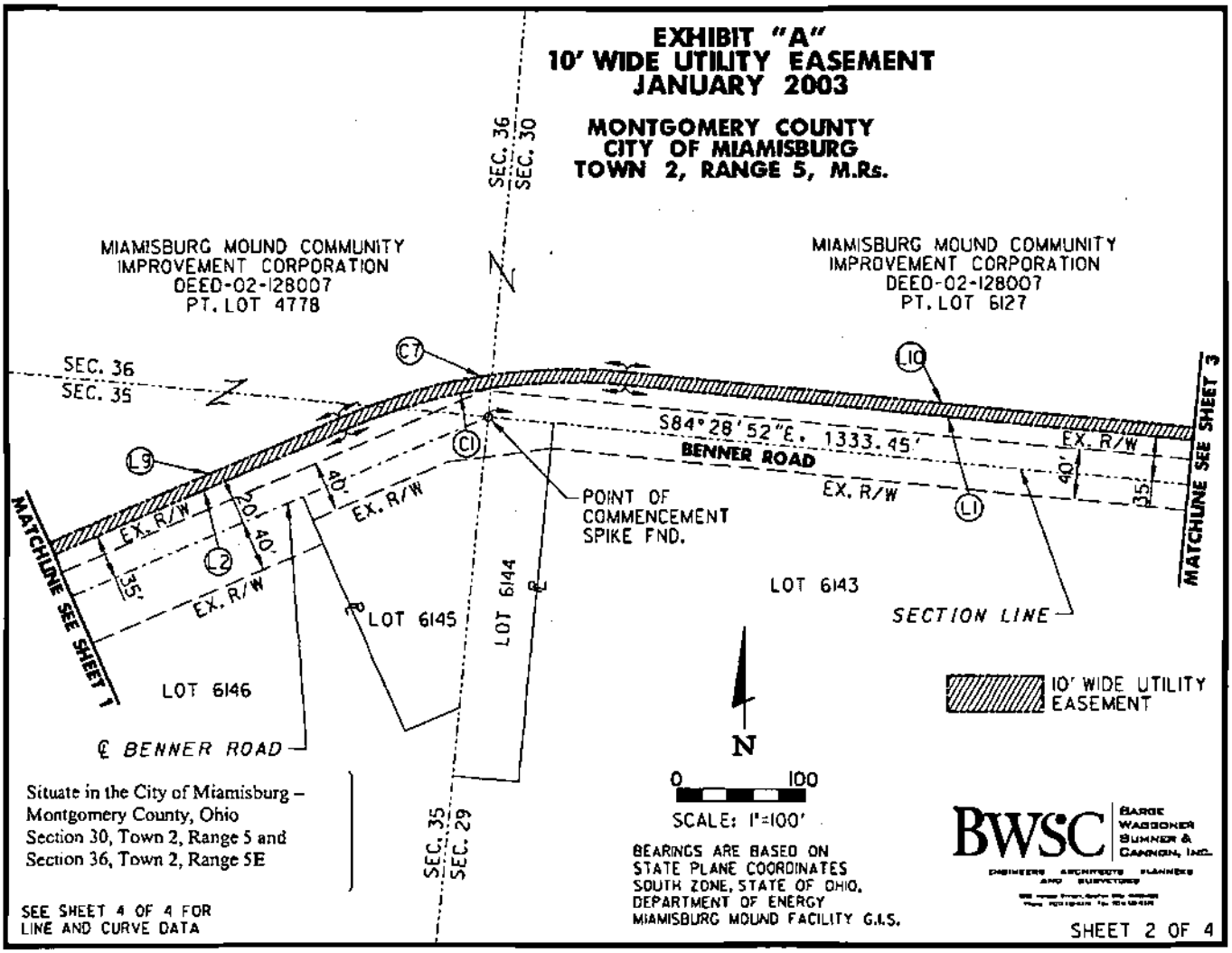


EXHIBIT "A"
10' WIDE UTILITY EASEMENT
JANUARY 2003
MONTGOMERY COUNTY
CITY OF MIAMISBURG
TOWN 2, RANGE 5, M.Rs.
N
0
100
SCALE: 1"=100'
BEARINGS ARE BASED ON STATE PLANE COORDINATES SOUTH ZONE, STATE OF OHIO, DEPARTMENT OF ENERGY MIAMISBURG MOUND FACILITY G.I.S.
10' WIDE UTILITY EASEMENT
VANGUARD BLVD.
DAYTON-CINCINNATI PIKE
SEC. 36
SEC. 35
LOT 4782
MIAMISBURG MOUND COMMUNITY IMPROVEMENT CORPORATION DEED-02-128007 PT. LOT 4778
MATCHLINE SEE SHEET 2
35'
EX. R/W
EX. R/W
EX. R/W
EX. R/W
℄ BENNER ROAD
BENNER ROAD
LOT 6146
20'
40'
C2
C3
C4
C5
C6
L2
L3
L4
L5
L6
L7
L8
L9
Situate in the City of Miamisburg – Montgomery County, Ohio
Section 30, Town 2, Range 5 and
Section 36, Town 2, Range 5E
SEE SHEET 4 OF 4 FOR LINE AND CURVE DATA
BWSC
BARGE WAGGONER SUMNER & CANNON, INC.
ENGINEERS ARCHITECTS PLANNERS AND SURVEYORS
SHEET 1 OF 4

EXHIBIT "A"
10' WIDE UTILITY EASEMENT
JANUARY 2003

MONTGOMERY COUNTY
CITY OF MIAMISBURG
TOWN 2, RANGE 5, M.Rs.



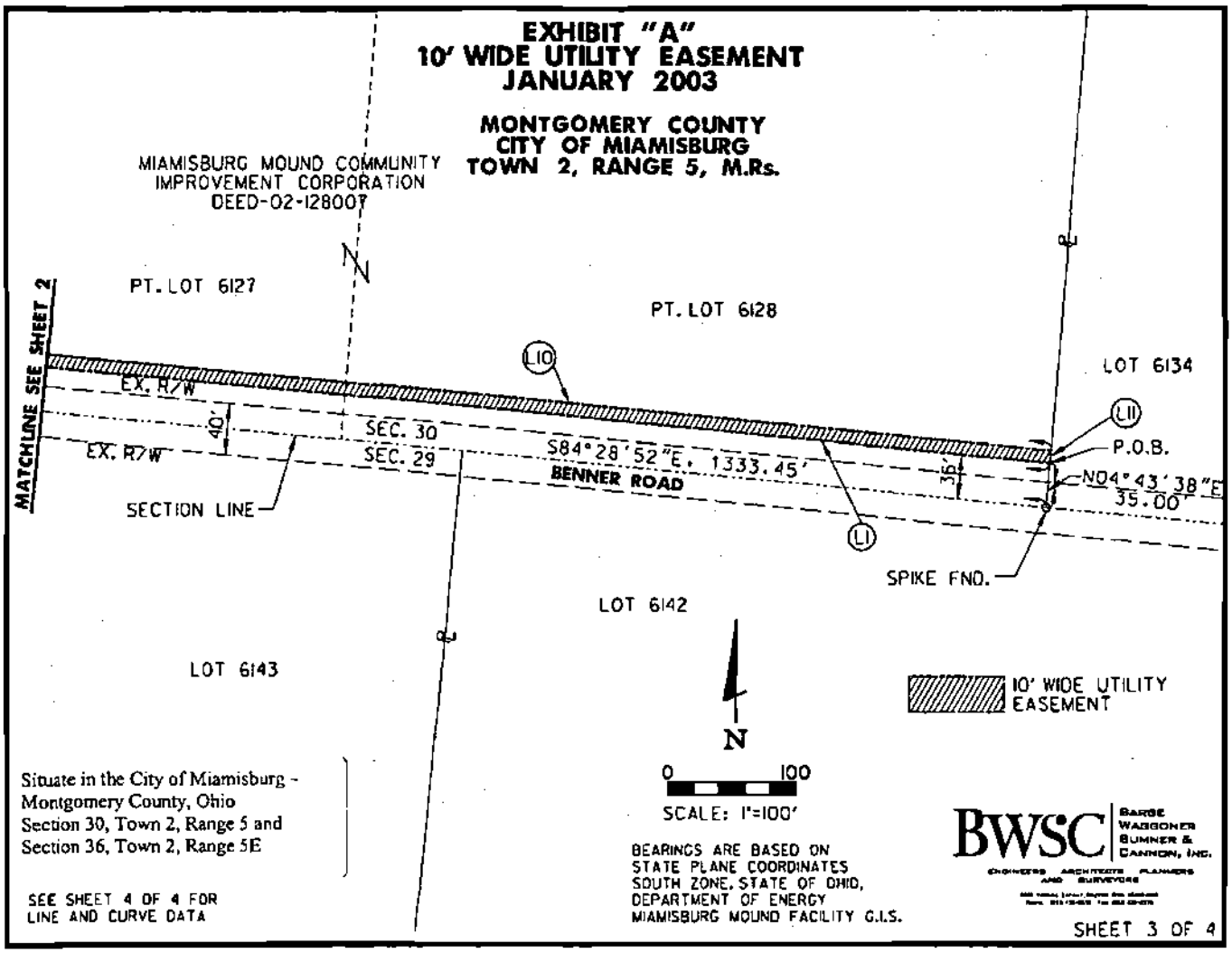
Situate in the City of Miamisburg – Montgomery County, Ohio
Section 30, Town 2, Range 5 and
Section 36, Town 2, Range 5E

SEE SHEET 4 OF 4 FOR
LINE AND CURVE DATA

SHEET 2 OF 4

EXHIBIT "A"
10' WIDE UTILITY EASEMENT
JANUARY 2003

MONTGOMERY COUNTY
CITY OF MIAMISBURG
TOWN 2, RANGE 5, M.Rs.



Situate in the City of Miamisburg - Montgomery County, Ohio
Section 30, Town 2, Range 5 and
Section 36, Town 2, Range 5E

SEE SHEET 4 OF 4 FOR LINE AND CURVE DATA

BEARINGS ARE BASED ON STATE PLANE COORDINATES SOUTH ZONE, STATE OF OHIO, DEPARTMENT OF ENERGY MIAMISBURG MOUND FACILITY G.I.S.

BWSC BARGE WAGGONER SUMNER & CANNON, INC.
ENGINEERS ARCHITECTS PLANNERS AND SURVEYORS

SHEET 3 OF 4

EXHIBIT "A"
10' WIDE UTILITY EASEMENT
JANUARY 2003

LINE AND CURVE DATA

LINE DATA

LINE	DIRECTION	DISTANCE
1	N84°28'52"W	1227.28'
2	S66°33'38"W	733.88'
3	N52°06'35"W	71.74'
4	N28°53'38"W	157.34'
5	N15°50'34"W	37.83'
6	S15°50'34"E	37.98'
7	S28°53'38"E	155.29'
8	S52°06'35"E	63.76'
9	N66°33'38"E	727.95'
10	S84°28'52"E	1227.14'
11	S04°43'38"W	10.00'

CURVE DATA

CURVE	DELTA	RADIUS	BEARING	CHORD
1	28°57'30"	444.26'	S81°02'23"W	222.16'
2	36°25'26"	200.00'	N10°40'55"W	125.01'
3	23°22'22"	320.00'	N04°09'23"W	129.63'
4	00°48'46"	705.00'	N73°16'18"E	10.00'
5	23°22'22"	330.00'	S04°09'23"E	133.69'
6	36°25'26"	190.00'	S10°40'55"E	118.76'
7	28°57'30"	454.26'	N81°02'23"E	227.16'

BWSC Barge Waggoner Sumner & Cannon, Inc.
Engineers Architects Planners and Surveyors

Situate in the City of Miamisburg,
Montgomery County, Ohio
Section 30, Town 2, Range 5 and
Section 36, Town 2, Range 5E

3001-0102050003

Parcel 4

Environmental Summary

CERCLA 120(h) SUMMARY
NOTICE OF HAZARDOUS SUBSTANCES

Mound Plant
Miamisburg, Ohio

FINAL

MARCH 2001

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

MAR 21 2001

REPLY TO THE ATTENTION OF

SRF-6J

Mr. Richard B. Provencher
Director
U.S. Department of Energy
Miamisburg Environmental Management Project
P.O. Box 66
Miamisburg, OH 45343-0066

RE: U.S. DOE Mound Plant
Parcel 4
Request for Concurrence to Transfer

Dear Mr. Provencher:

Thank you for your letter dated February 28, 2001, requesting concurrence to transfer Parcel 4 at the United States Department of Energy (U.S. DOE) Mound Plant in Miamisburg, Ohio.

The United States Environmental Protection Agency (US EPA) has reviewed the *Record of Decision for Parcel 4, Mound Plant, Miamisburg, Ohio, Final, March 2001*, which, as of March 12, 2001, has been signed by U.S. DOE, U.S. EPA, and the Ohio Environmental Protection Agency, and the *Environmental Summary - Notice of Hazardous Substances for Parcel 4, Mound Plant, Miamisburg, Ohio, Final, February 2001*. Based upon this information, U.S. EPA concurs that all remedial action necessary to protect public health and the environment with respect to any substance remaining in Parcel 4 has been taken, and that the transfer of Parcel 4 may take place.

It is understood that any additional remedial action found to be necessary in the future shall be conducted by U.S. DOE to the extent necessary to protect human health and the environment.

Recycled/Recyclable - Printed with Vegetable Oil Based Inks on 50% Recycled Paper (20% Postconsumer)

The U.S. EPA fully supports redevelopment and reuse of the structures and other property available at the Mound Plant. However, assurances must be provided that all property and building leases and transfers will be protective of public health and the environment. If you have any questions or concerns about this or future economic development issues at the site, please contact Timothy Fischer, of my staff, at (312) 886-5787.

Sincerely yours,

William E. Muno, Director
Superfund Division
U.S. EPA, Region 5

cc: Ken Tindall, SRF-5J
Tim Thurlow, ORC
Graham Mitchell, Ohio EPA
Brian Nickel, Ohio EPA
Catherine Stroop, Ohio EPA - Columbus
Celeste Lipp, ODH
Rob Rothman, US DOE-MEMP
Dave Rakel, BWXTO

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ACRONYMS

As	arsenic
CERCLA	Comprehensive Environmental Response, Compensation & Liability Act
COPC	Constituent of Potential Concern
Cr	chromium
DOE	Department of Energy
EPA	Environmental Protection Agency
FONSI	Finding of No Significant Impact
HI	Hazard Index
HQ	Hazard Quotient
MCL	Maximum Contaminant Level
MMCIC	Miamisburg Mound Community Improvement Corporation
Mn	manganese
NCP	National Contingency Plan
NEPA	National Environmental Policy Act
NFA	No Further Assessment
Ni	nickel
NPDES	National Pollutant Discharge Elimination System
ODH	Ohio Department of Health
OEPA	Ohio Environmental Protection Agency
OU	Operable Unit
ppb	parts per billion
PRS	Potential Release Site
RRE	Residual Risk Evaluation
RREM	Residual Risk Evaluation Methodology
SM/PP	Special Metallurgical/Plutonium Processing
TCE	trichloroethene(ethylene)
US DOE	United States Department of Energy
US EPA	United States Environmental Protection Agency

CERCLA 120 (h) Summary of Finding of Suitability to Transfer

I. PURPOSE

The information contained in this notice is required under the authority of regulations promulgated under section 120 (h) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). This CERCLA 120 (h) Summary (hereinafter "Environmental Summary") is intended to support a transfer by deed to new ownership for economic development, by documenting that the U.S. Department of Energy's (US DOE, hereinafter "DOE") Mound Plant has met the requirements of CERCLA 120 (h) for Parcel 4. A copy of this Environmental Summary shall be provided to all future owners.

II. PROPERTY DESCRIPTION

A. Description of Property Suitable for Transfer

This Environmental Summary addresses Parcel 4, which is located on the southern border of the Mound Plant (hereinafter "Plant") as shown on Figure 1. Parcel 4 is generally bounded to the north by the plant, to the east by off-site residences, to the south by Benner Road, and to the west by the Miami-Erie Canal. There are currently no structures on Parcel 4.

The legal description of Parcel 4, as recorded in the Parcel 4 Record of Decision (Draft Proposed Final, January 2001) is included as Appendix A of this Environmental Summary.

B. Regional Context of Mound Plant and Transferred Property

The Mound Plant occupies an approximately 306-acre site in Montgomery County within the City of Miamisburg, Ohio as shown on Figure 2.

Benner Road forms the southern boundary of the Plant, and the Norfolk Southern Railroad roughly parallels the western boundary at a distance of 50-200 feet. At one time, the Mound Plant consisted of approximately 130 buildings with a total of 1.4 million square feet of floor space (although the number of buildings is constantly diminishing as buildings are decommissioned and demolished); none of which are located on Parcel 4.

C. Historical Uses of Parcel 4

On August 26, 1981, DOE purchased 124 acres of land (the New Property) contiguous with and south of the original 182 acres at Mound Plant. Parcel 4 was part of that purchase and consists of approximately 95 acres, the remainder of which is included in other parcel(s). Prior to DOE's purchase, Parcel 4 had been used for agricultural purposes and is gently rolling in all areas except the northern portion of the parcel that is steeply sloped. DOE razed a two-story brick house, a barn, a frame tool shed, and an outhouse, and

Figure 1: Location of Parcel 4

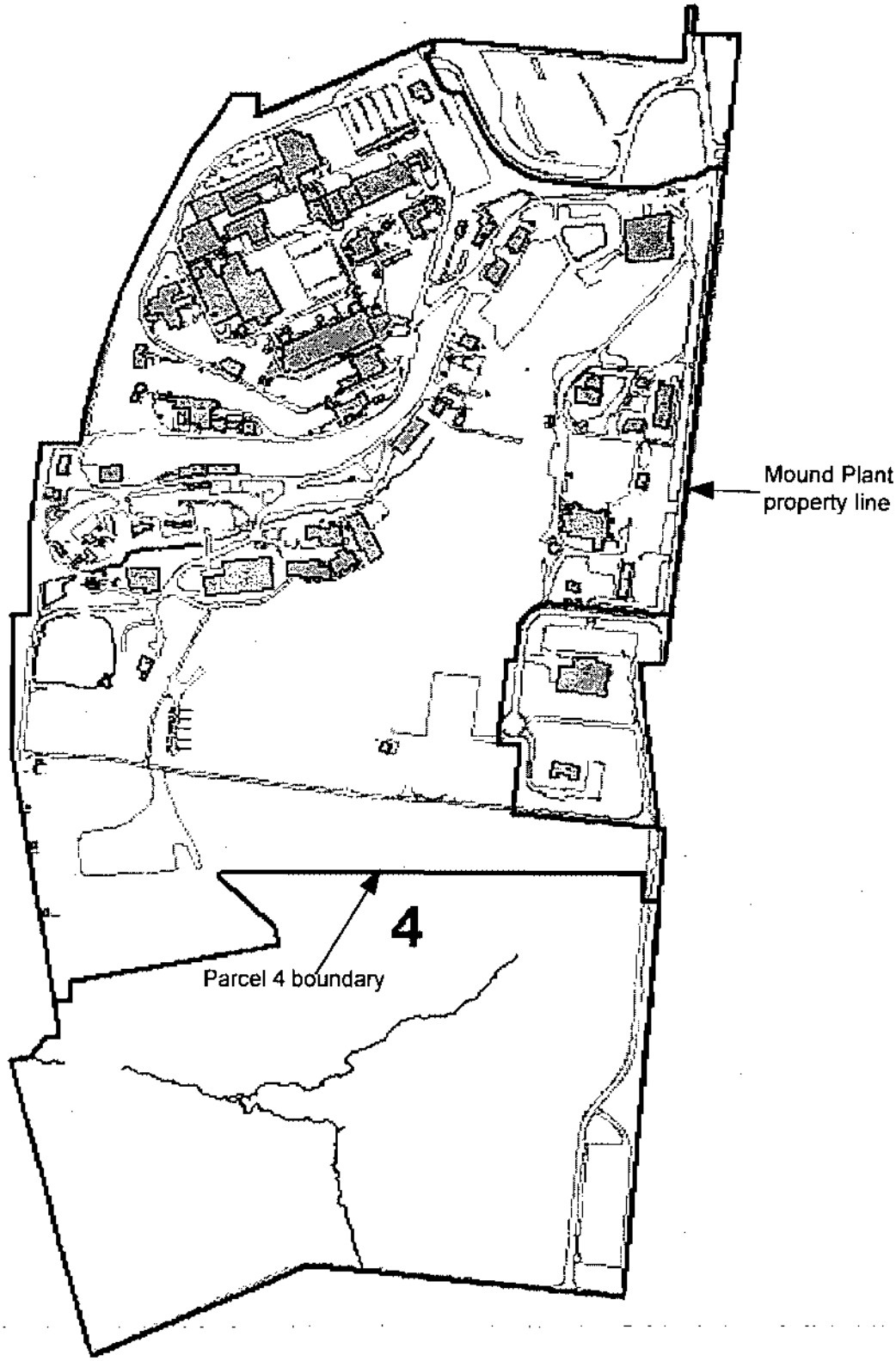
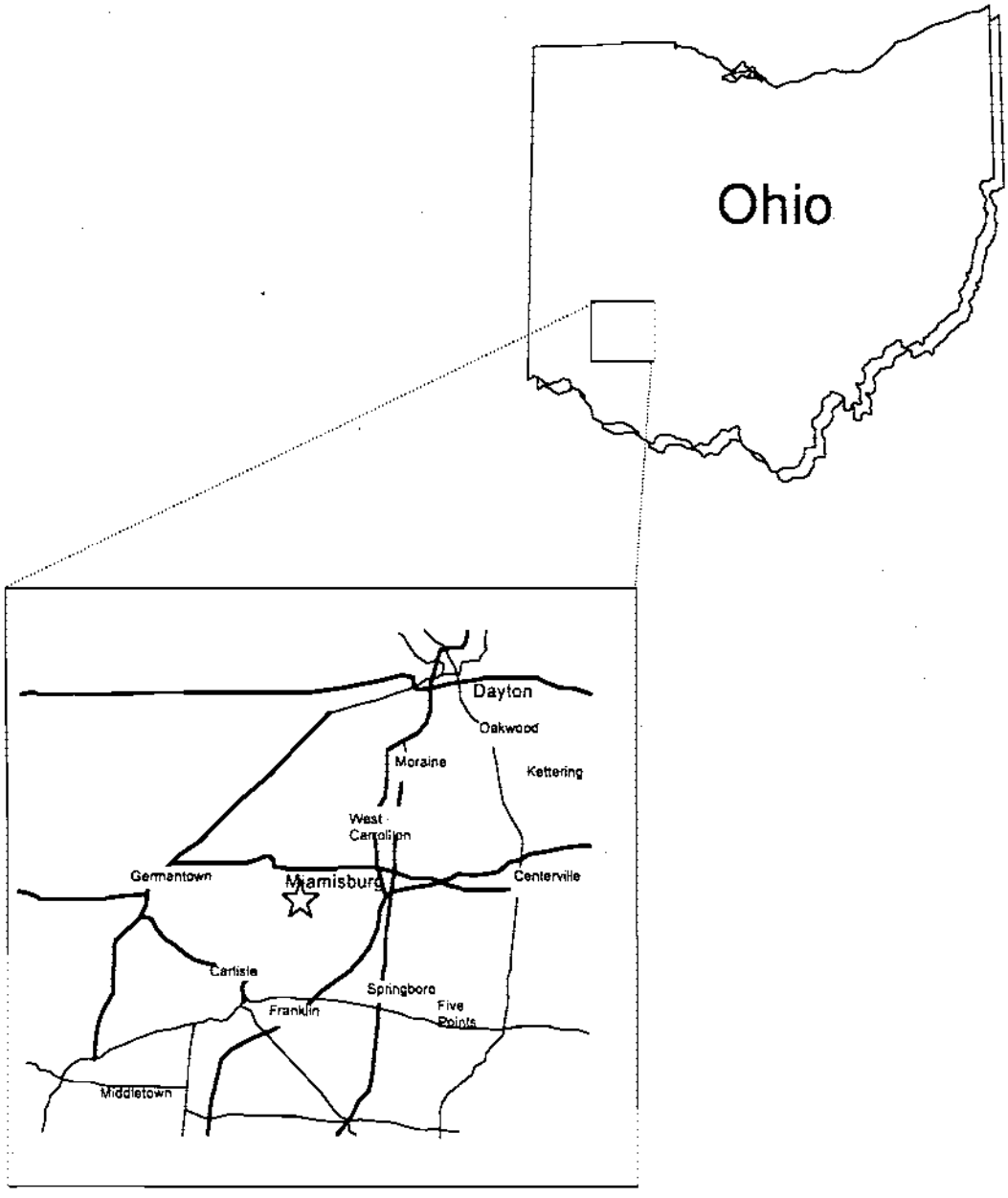


Figure 2: Regional Context of the Mound Plant



discarded appliances and some old implements that were left by the former owner. A farm fence was put up around the perimeter of the purchased property. There are natural drainage channels and some groundwater seeps present year-round, but no surface water bodies such as ponds or streams on the land. In order to monitor Plant runoff, Mound set up a flow activated water sampler in Parcel 4 to obtain runoff water during rain events. An archaeological survey was conducted in 1987. Although two relevant sites were discovered, neither was regarded "as having eligibility for the National Register, and no further work is recommended at either location" (*An Archaeological Survey of Portions of the Mound Facility, Montgomery County, Ohio,* December 1987). Other than a construction gate, parking area, contractor storage area, an access road that extends from Benner Road to the Plant, and an above ground power line running approximately north-south through the center of the property, the property remains undeveloped.

III. ENVIRONMENTAL FINDINGS

A. Methodology

In accordance with Section 120 (h)(3) of CERCLA, to the extent that information is available based on a complete search of DOE files, the following shall be placed in deeds: (1) a notice of the type and quantity of hazardous substances stored, disposed of, or released; (2) a notice of the time at which such storage, disposal, or release took place; and, (3) a description of any remedial action taken.

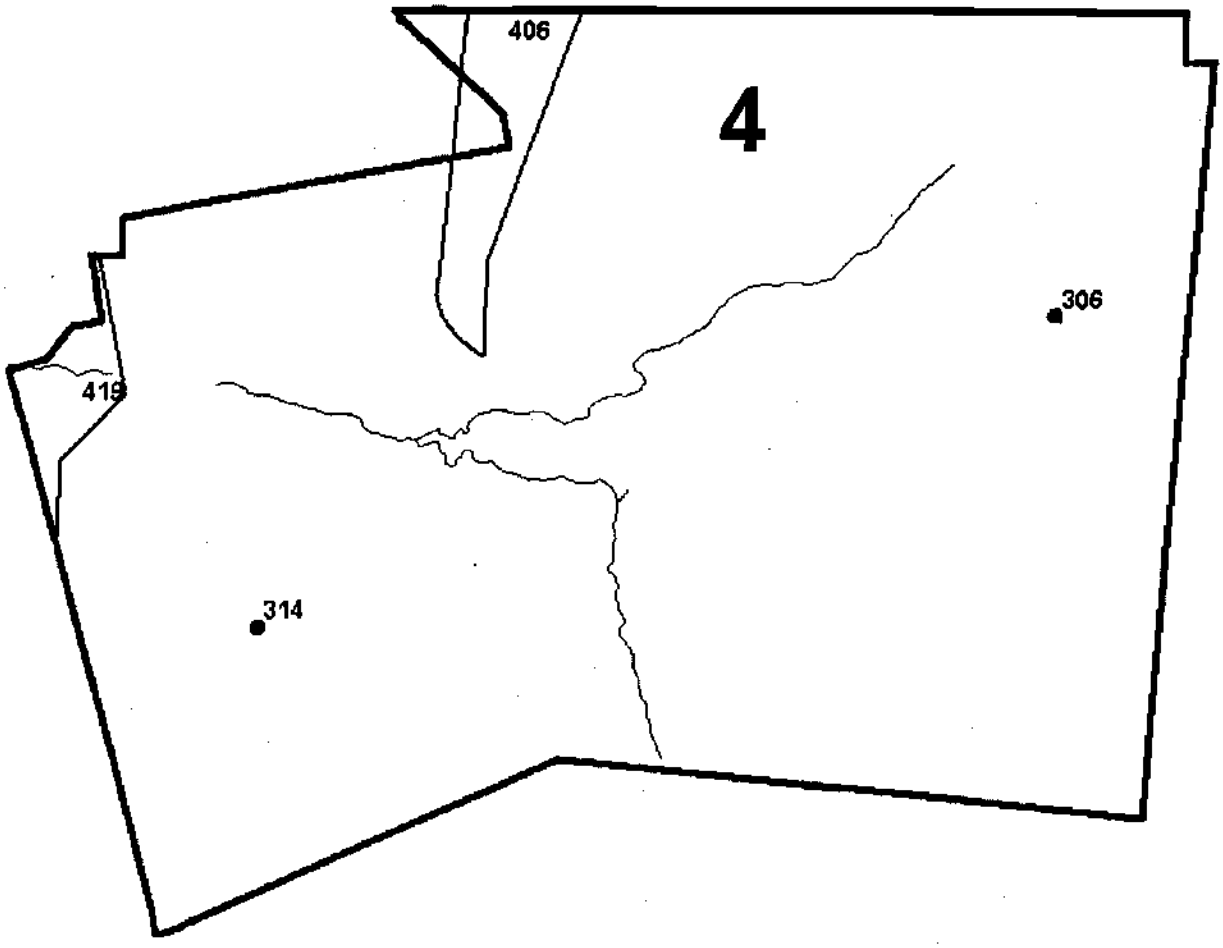
Information sources required to be reviewed include:

- Federal Government records,
- Recorded chain of title documents,
- Reasonably obtainable aerial photographs,
- Visual inspection of the property and adjacent properties,
- Reasonably obtainable records of releases on adjacent properties,
- Interviews with current or former employees, and
- Sampling, if appropriate under the circumstances.

Parcel 4 includes four Potential Release Sites (PRSs) that have undergone previous investigations. These PRSs were identified on the basis of potential radiological and/or chemical (non-radioactive) contamination based on knowledge of historical land use or on the basis of actual sample data. The locations of the PRSs in Parcel 4 are shown in Figure 3. Before transfer of a parcel can be completed, all buildings and PRSs must be evaluated for protectiveness or remediated to a protective level. Residual risks associated with remaining contamination in Parcel 4 have been evaluated.

A Core Team with representatives from the US DOE, US Environmental Protection Agency (US EPA), and Ohio Environmental Protection Agency (OEPA) performs a joint agency evaluation of each PRS. The Core Team uses process knowledge, site visits, and existing data to determine whether or not any action is warranted concerning the PRS and recommends the appropriate response(s).

Figure 3: PRSs within Parcel 4



Information in the following documents was used to support this Environmental Summary:

1. PRS Data Packages for the PRSs located within Parcel 4. *PRS Packages provide a summary of information sufficient for the Core Team to make recommendations or change the status of the PRS.* The locations of the PRSs in Parcel 4 are shown on Figure 3. The rationale for designation of these PRSs is outlined in Table 1. These PRSs were identified on the basis of potential radiological and/or chemical (non-radioactive) contamination using knowledge of historical land use or on actual sample data.

TABLE 1: Parcel 4 PRSs and Conclusions

PRS	Reason for Identification	Core Team Decision	Core Team Conclusion
306	SM/PP Hill Seep 0609	Binned NFA	Recommendation for NFA signed by Core Team on 3/14/96
314	Farm Trash Area	Binned NFA	Recommendation for NFA signed by Core Team on 3/14/96
406	Southern Portion of PRS 283	Binned NFA	Recommendation for NFA signed by Core Team on 3/14/96
419	Drainage Outflow Reroute	Binned NFA	Recommendation for NFA signed by Core Team on 11/17/99

NFA: No Further Assessment

2. Residual Risk Evaluation, Parcel 4, Final, February 2001. *Provides the evaluation of human health risks associated with residual contamination that may remain in the parcel after all PRSs and buildings within the parcel have been addressed. The evaluation, used in conjunction with the Proposed Plan, ensures that future users of the land will not be exposed to contamination levels that would pose unacceptable health risks.*

3. Screening Level Ecological Risk Assessment, Parcel 4, Final, February 2001. *Provides the evaluation of ecological risks associated with residual contamination that may remain in the parcel after all PRSs and buildings within a parcel have been addressed. The evaluation, used in conjunction with the Proposed Plan, ensures that future ecological receptors on the land will not be exposed to contamination levels that would pose unacceptable risks.*

4. Proposed Plan for Parcel 4, Mound Plant, Miamisburg, Ohio, Public Review Draft, Revision 0, December 2000. *Identifies to the public the preferred option for addressing residual contamination at the Mound Plant, Parcel 4 by briefly summarizing the alternatives studied and highlighting the key factors that led to identifying the preferred alternative.*

5. Parcel 4 Record of Decision, Mound Plant, Miamisburg, Ohio, Final, February 2001.

Documents the remedial action plan for a parcel and serves the following three functions: (1) certifies the remedy selection process was carried out in accordance with CERCLA, (2) describes the technical parameters of the remedy, specifying the treatment, engineering, and institutional components as well as clean up levels; and, (3) provides the public with a consolidated summary of information about the site and the chosen remedy, including the rationale behind the selection.

B. Building Analysis Summary

There are no DOE-owned buildings within Parcel 4. Consequently, there is no building-related contamination warranting remedial action or environmental concern.

C. Potential Release Site (PRS) Summary

The US DOE, US EPA, and OEPA have jointly decided that no removal actions for the PRSs in Parcel 4 are necessary with the placement of Institutional Controls in the form of deed restrictions on future land use for Parcel 4 upon transfer.

A brief summary of the history of the PRSs in Parcel 4 and their contaminants follows. For a more detailed description of these PRSs, refer to the PRS data packages as previously referenced.

There are two PRSs (PRS 306 and 314) located entirely within Parcel 4, and there are two PRSs (PRS 406 and 419) partially located within Parcel 4. The PRSs at Mound were identified based on either knowledge of historical land use that was considered potentially detrimental, or on an actual sampling result showing elevated concentrations of contaminants. The locations of these PRSs are shown in Figure 3.

The rationale for designation of PRS 306, 314, 406, and 419 is outlined as follows:

PRS 306 is a groundwater seep (seep 0609/0610). This seep is not suspected to be a source of contamination to the groundwater. The seep is a surface expression of groundwater and could be an exposure point to possible contaminated groundwater if contamination exists. At the time that PRS 306 was identified, it was the only documented seep on Parcel 4, and the water quality at the seep was unknown. For this reason, it was retained as a PRS until the groundwater quality could be analyzed.

PRS 314, the Farm Trash Area, was identified as a PRS because historical information suggested that waste oil from farm operations may have contaminated this area prior to DOE's purchase of the property.

PRS 406 (previously known as the southern portion of PRS 283) became a PRS due to potential thorium from thorium sludge re-drumming. PRS 406 is located on the southern end of the Mound Plant at the northern end and directly north of Parcel 4. Radiological surveys conducted in 1983 indicated potential radiological contamination.

PRS 306, 314, and 406 were evaluated by the Core Team using information from the *OU-5 New Property Remedial Investigation Report, Final, Rev. 0* (February 1996). All radiological concentrations reported in the vicinity of these PRSs were below guideline criteria. Twenty

groundwater samples were collected from four monitoring wells, two borings, and eight seeps in the vicinity of these PRSs. Sample results detected trichloroethene/ethylene (TCE) from well 411 and seep 617 (both located immediately north of Parcel 4) at 8 parts per billion (ppb) (the maximum contaminant level (MCL) for trichloroethene is 5 ppb). Only infrequent and scattered occurrences of arsenic (As), manganese (Mn), nickel (Ni) and chromium (Cr) are above background criteria; these metals do not appear to be the result of current or past activities conducted in Parcel 4. No plumes of contaminated groundwater were identified. The Core Team decided that PRSs 306, 314, and 406 required No Further Assessment.

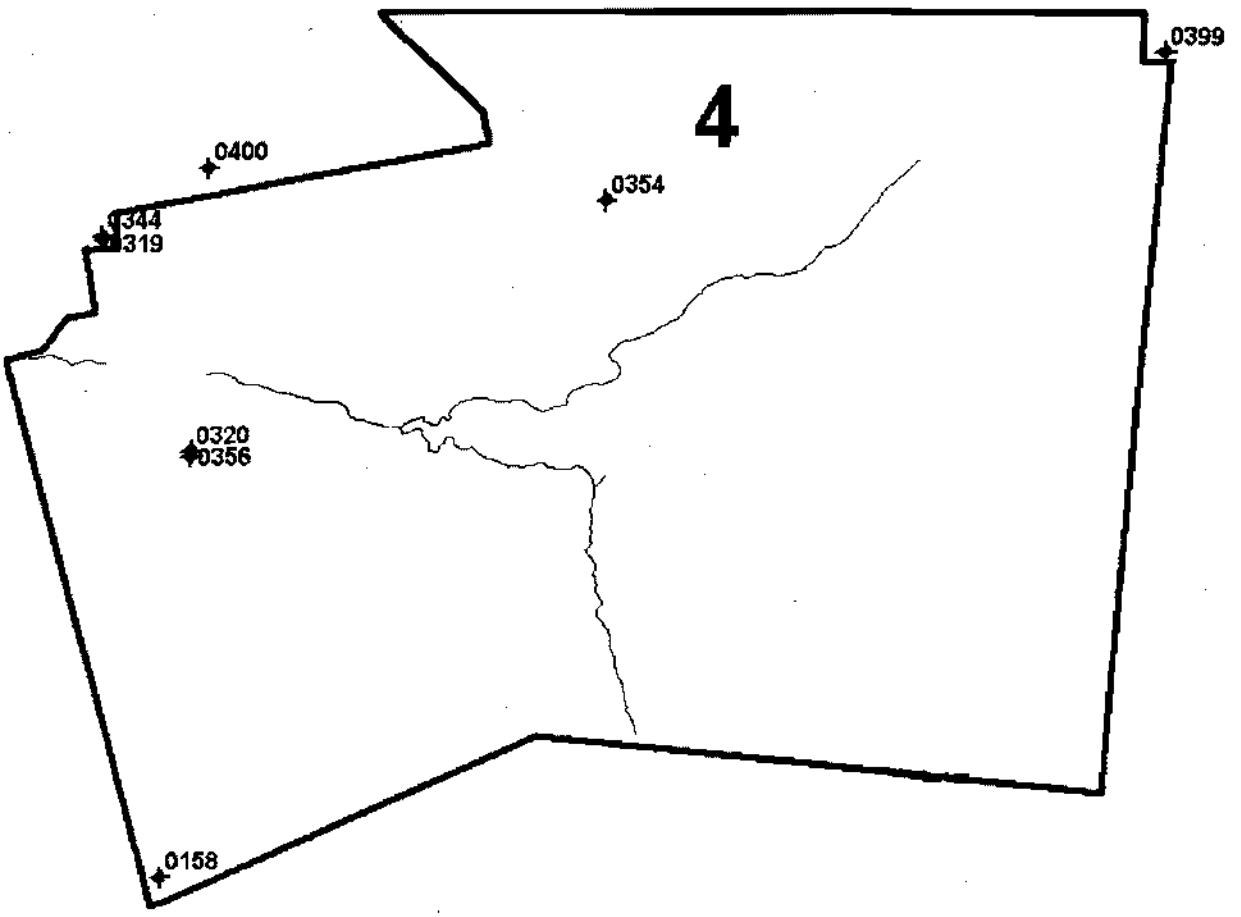
More recently, monitoring wells have been sampled. Monitoring wells in Parcel 4 are shown on Figure 4. Monitoring wells 400 and 319 (both located just north of the Parcel 4 boundary) show elevated levels of nickel. Additional site-wide investigations of elevated nickel are underway and monitoring is continuing.

PRS 419 is the Mound Plant Drainage Outflow Reroute. It was constructed in 1996 as part of the Miami-Erie Canal Remediation Project. It conveys the Mound Plant's non-process and stormwater to the Great Miami River. The effluent is monitored for a variety of chemicals and properties to demonstrate compliance with the Mound Plant's National Pollutant Discharge Elimination System (NPDES) Permit. The effluent is also monitored for a variety of radioactive constituents to demonstrate compliance with DOE Order 5400.1. In November 1999, the Core Team decided that PRS 419 required No Further Assessment.

D. Residual Risk Evaluation (RRE) Summary

Pursuant to the *Residual Risk Evaluation Methodology* (RREM) (Final, Rev. 0, January 6, 1997), risks are quantified for both carcinogenic (cancer-causing) and non-carcinogenic (non cancer-causing) contaminants. All analytes (carcinogenic and non-carcinogenic) detected at least once in soil and/or groundwater in Parcel 4 were identified as constituents of potential concern (COPCs). The maximum concentration of each COPC for soil and groundwater were compared to and screened against criteria established in the RREM and presented in the *Residual Risk Evaluation* (Final, February 2001). COPC tables for both groundwater and soil are presented in Appendix B. COPCs shaded in the tables were carried through the RRE process, unshaded COPCs were screened out. The risk associated with the intake of a known or suspected carcinogen is reported in terms of the incremental lifetime cancer risk presented by that COPC, as estimated using the appropriate slope factor and the amount of material available for uptake. The acceptable risk range as defined by CERCLA and the National Contingency Plan (NCP) is 10^{-4} to 10^{-6} (one human in ten-thousand to one human in one-million incremental cancer incidence). Potential human health hazards from exposure to non-carcinogenic contaminants are evaluated by using a Hazard Quotient (HQ). The HQ is determined by the ratio of the intake of a COPC to a reference dose or concentration for the contaminant of concern that is believed to represent a no-observable effect level. The contaminant of concern-specific HQs are then summed to provide an overall Hazard Index (HI). US EPA guidance sets a limit of 1.0 for the Comprehensive HI. The incremental carcinogenic risks and hazards associated with residual concentrations of COPCs in Parcel 4 are also shown in Appendix B.

Figure 4: Monitoring Wells within Parcel 4



Evaluation of residual soil and groundwater contaminants within Parcel 4 has resulted in a determination that future users of the land will not be exposed to contaminant levels that would pose unacceptable risks as long as compliance with the deed restrictions described in the Parcel 4 Record of Decision are maintained. The soils within Parcel 4 have not been evaluated for any use other than on-site industrial/commercial use. Any off-site disposition of the Parcel 4 soil without proper handling, sampling, and management could create an unacceptable risk to off-site receptors.

E. Other Factors Considered

DOE developed a generic checklist of the issues to be considered in evaluating property to be transferred. The checklist was modified from that used by the Department of Defense when releasing property for sale. The checklist includes environmental issues at the Mound Plant that are likely to concern a potential purchaser as well as items relating to the operational concerns from ongoing and future remedial actions. Table 9 contains a brief summary and references for all factors considered. Results of only those factors that affect Parcel 4 are presented as follows:

1. Drinking Water

Mound Plant drinking water has exceeded the action levels for lead and copper due to the corrosiveness of the water distribution system. When the action level for lead is exceeded, EPA regulations require corrosion control and public education programs. These programs are in place at Mound. Information on the steps being taken to reduce lead concentrations in the Mound Plant water system, and on the hazards associated with ingesting lead are available to all Mound drinking water users.

2. Monitoring Equipment

There is an air monitoring station (217) located in Parcel 4. Monitoring wells 158, 320, 356, and 354, are located in Parcel 4. DOE will maintain continuing access to this air monitoring station and these wells via the site access institutional control.

3. National Environmental Policy Act (NEPA)

A Finding of No Significant Impact (FONSI) was issued on June 18, 1999 for the sale of the Mound Plant's South Property. Parcel 4 lies entirely within the South Property.

4. Floodplain

A small portion of Parcel 4 lies within the 100-year floodplain. This means that most of Parcel 4 is not subject to a 1% chance per year of inundation from a tributary of the Great Miami River.

IV. FINDINGS OF SUITABILITY TO TRANSFER

In accordance with the provisions of CERCLA Section 120 (h)(3), contaminated property

TABLE 9: Summary of Other Factors Considered for Parcel 4

FACTOR CONSIDERED	AFFECTS Parcel 4? YES	AFFECTS Parcel 4? NO	RECOMMENDATION / CONCLUSION	REFERENCE
Cultural Resources		✔	There are no historic or cultural resources within Parcel 4.	Correspondence From Mark J. Epstein, Department Head, Resource Protection and Review, Ohio Historic Preservation Office dated July 31, 1998.
Drinking Water Quality	✔		Mound Plant drinking water has exceeded the action levels for lead and copper due to the corrosiveness of the water distribution system. When the action level for lead is exceeded, EPA regulations require corrosion control and public education programs. These programs are in place at Mound. Information on the steps being taken to reduce lead concentrations in the Mound Plant water system, and on the hazards associated with ingesting lead will be made available to all Mound drinking water users.	Miamisburg Environmental Management Project, Annual Site Environmental Report for Calendar Year 1999, September 2000.
Endangered Species		✔	Two state protected species were found, the dark-eyed junco (Junxo hyemalis) and the inland rush (Juncus interior). Because only one individual inland rush was located, it is not considered a viable breeding population at the Mound facility. The dark-eyed junco is not known to breed in southwestern Ohio. It has also been determined that the plant site is in the habitat range of the federally endangered species of Indiana Bat (Myotis sodalis), however, the Mound site does not provide a suitable habitat for the Indiana Bat. Neither the solitary sitings of the rush and the junco, nor the potential habitat for the Indiana bat, are expected to affect ongoing or future activities at the site. Parcel 4 lies within the range of the eastern massasauga; a docile rattlesnake that is currently listed as endangered by the State of Ohio. Surveys for reptiles and amphibians during the ecological characterization did not find the eastern massasauga in Parcel 4. Potential habitat is very limited and the species is considered not to occur on or in the vicinity of Parcel 4.	Operable Unit 9 Ecological Characterization Report, Mound Plant, Final, March 1994. Screening Level Ecological Risk Assessment, Parcel 4, Public Review Draft, December 2000.

TABLE 9: Summary of Other Factors Considered for Parcel 4

FACTOR CONSIDERED	AFFECTS Parcel 4 YES	AFFECTS Parcel 4 NO	RECOMMENDATION/CONCLUSION	REFERENCE
Monitoring Equipment	✔		There is an air monitoring station located in Parcel 4. Monitoring Wells 158, 320, 356, and 354 are located in Parcel 4.	Mound Plant Environmental Monitoring Plan dated September 2000.
National Environmental Policy Act (NEPA)	✔		A Finding of No Significant Impact (FONSI) was issued on June 18, 1999 for the sale of Mound Plant's South Property.	The Mound Plant EA for Disposition of Mound Plant's South Property DOE/EA-1239 and FONSI dated June 18, 1999.
Resource Conservation and Recovery Act (RCRA)		✔	DOE has found no RCRA regulated units within Parcel 4 warranting a RCRA closure action. It has been determined that the closest facility boundary from Buildings 23 and 72 will not change with the sale of Parcel 4. Therefore, the risk assessment information in the RCRA Part B Permit will not change.	RCRA Part B Permit Application, Volume I, Section A, September 1995 (as amended) Responses to Information Requested by the Ohio HWFB Technical Staff transmitted to Bob Brown of the State of Ohio Hazardous Waste Facility Board dated March 12, 1996.
Underground Storage Tanks (USTs)		✔	There are no USTs located within Parcel 4.	EG&G Mound Applied Technologies, Active Underground Storage Tank Plan, November 1994.
Wetlands		✔	Three characteristics must be present to be classified as jurisdictional wetlands: (1) hydrophytic vegetation, (2) hydric soils, and (3) wetlands hydrology. Absence of any one of these characteristics removes an area from consideration. None of the sites examined within Parcel 4 constitute jurisdictional wetlands.	Operable Unit 9 Hydrogeologic Investigation: Wetlands Determination Report, Technical Memorandum, Revision 1, January 1994. Delineation of Federal Wetland and Other Waters of the U.S., August 1999
Floodplains	✔		A small portion of Parcel 4 lies within the 100-year floodplain. Consistent with 10 CFR 1022, the applicability of floodplain regulations to the property must be disclosed to the new owner.	South Property Flood Plan Assessment and Notice of Flood Plain Involvement issued in Environmental Assessment Disposition of Mound Plant's South Property June, 1999.

can only be transferred if one of the following applies:

(1) a decision has been made that no remedial action is necessary,

(2) all remedial action necessary to protect human health and the environment with respect to any such substance remaining on the property has been taken before the date of transfer, or

(3) Early Transfer Authority, which allows for transfer before all necessary action is complete, has been granted by US EPA with concurrence from the Governor of the State of Ohio pursuant to CERCLA Section 120(h)(3)(C).

The future industrial/commercial use of the Mound Plant has been determined based upon agreement among US DOE, US EPA, and OEPA, and interested stakeholders. This land use is reflected in the Mound Comprehensive Reuse Plan of the Miamisburg Mound Community Improvement Corporation (MMCIC) and is currently codified in the City of Miamisburg Zoning Ordinance for industrial/commercial use.

A joint agency decision among the US DOE, US EPA, and OEPA has been made that a remedial action has been taken that protects human health and the environment. EPA deems this condition to be satisfied if the Institutional Controls are implemented and operating successfully. Institutional controls in the form of deed restrictions on future land use will be placed on Parcel 4 upon transfer, as part of the remedy. The objective of these institutional controls is to prevent an unacceptable risk to human health and the environment by restricting the use of Parcel 4, including Parcel 4 soils and groundwater, to that which is consistent with assumptions in the Parcel 4 RRE. DOE or its successors will retain the right and responsibility to monitor, maintain, and enforce these institutional controls. The following property deed restrictions and requirements will be imposed on the property to maintain protection of human health and the environment in the future:

- Maintenance of industrial/commercial land use;
- Prohibition against residential use;
- Prohibition against the use of groundwater;
- Site access for federal and state agencies for the purpose of sampling and monitoring; and,
- Prohibition against removal of Parcel 4 soils from the DOE Mound property (as owned in 1998) boundary without approval from the Ohio Department of Health (ODH) and OEPA.

V. ENVIRONMENTAL COVENANTS

DOE is committed to include a covenant in accordance with Section 120 (h)(3) of CERCLA in the deed for the sale or transfer of the property that warrants that:

A. All remedial action necessary to protect human health and the environment has been taken as long as the deed restrictions limiting land and ground water use are in effect and enforced.

B. Any additional response action or corrective action found to be necessary after the date of sale or transfer shall be conducted by the United States [Section 120(h)(4)(D)(i)]. The requirements of the covenant shall not apply in any case in which the person or entity to whom the property is transferred is a potentially responsible party with respect to the property.

C. A clause granting the United States access to the property in any case in which a response action or corrective action is found to be necessary or such access is necessary to carry out a response action or corrective action on the adjoining property [Section 120 (h)(4)(D)(ii)].

VI. NOTIFICATION/PUBLIC PARTICIPATION

The community has been an active participant in this process to date. Comments from the public on the PRS recommendations have been incorporated as part of the remedy evaluation. DOE believes all comments have been resolved with the commentor and the documents, comments, and responses have been placed in the CERCLA Public Reading Room.

Table 10 lists the Parcel 4 documents made public for review and the dates they were made available for public comment.

Table 10: Public Comment Periods for Parcel 4 Documents

DOCUMENT	COMMENT PERIOD (BEGIN)	COMMENT PERIOD (END)
PRS 306 Data Package	3/18/96	4/01/96
PRS 314 Data Package	3/18/96	4/14/96
PRS 406 Data Package	3/18/96	4/01/96
PRS 419 Data Package	1/19/00	2/17/00
Parcel 4 Residual Risk Evaluation	12/18/00	1/16/01
Parcel 4 Screening Level Environmental Risk Assessment	12/18/00	1/16/01
Parcel 4 Proposed Plan	12/18/00	1/16/01

APPENDIX A

Legal Description of Parcel 4

Exhibit "A"
DESCRIPTION OF
94.838 Acres
located in
Section 30, 35 and 36, Town 2, Range 5, MRs.
City of Miamisburg, Montgomery County, Ohio

Situate in the Southwest Quarter of Section 30, Town 2, Range 5, MRs., the Southeast Quarter of Section 36, Town 2, Range 5, MRs., Northeast Quarter Section 36, Town 2, Range 5, MRs., City of Miamisburg, County of Montgomery, State of Ohio, ***being part of a 79.74 acre tract conveyed to the United States of America, as recorded in Microfiche No. 81-376A01*** of the Deed Records of Montgomery County, Ohio, said 79.74 acre tract being comprised of a 24.197 acre tract and known as Lot Numbered 6128 of the consecutive numbered lots of the City of Miamisburg, also a 35.50 acre tract known as Lot Numbered 6127 of the consecutive numbered lots of the City of Miamisburg, and a 24.24 acre tract known as Lot Numbered 4777 of the consecutive numbered lots of the City of Miamisburg, ***also being part of a 42.56 acre tract conveyed to the United States of America, as recorded in Microfiche No. 81-323A11*** of the Deed Records of Montgomery County, Ohio, said 42.56 acre tract being comprised of a 46.313 acre tract known as Lot Numbered 4778 of the consecutive numbered lots of the City of Miamisburg, said 42.56 acre tract being all the remainder of an 80 acre tract as conveyed from Ray C. Dunaway and Thelma Mae Dunaway to Oak Knoll Development and Investment Co., Inc., as recorded in Microfiche No. 71-513B06 of the Deed Records of Montgomery County, Ohio, ***being a new division of 94.838 acres from said 79.74 acre and 42.56 acre tracts*** and being more fully bounded and described as follows:

Commencing at a railroad spike found in concrete, said spike being the southwest corner of Section 30, the southeast corner of Section 36 and the northeast corner of Section 35, said spike lying in the center line of Benner Road at an angle point in said road, said spike also being the southwest corner of said United States of America 79.74 acre tract and the southeast corner of said United States of America 42.56 acre tract, also being the northeast corner of a 0.47 acre tract conveyed to Danny and Judith Hall, as recorded in Microfiche No. 88-598D12 of the Deed Records of Montgomery County, Ohio, said spike having a scale coordinate value of North 594,365.34, East 1,496,165.88 of the Ohio Plane Coordinate System, South Zone, said spike being the **True Point of Beginning** of the hereinafter described 95.146 acre tract;

Thence with the center line of Benner Road and the northwesterly line of said Hall 0.47 acre tract, also the northwesterly line of a 0.764 acre tract conveyed to the City of Miamisburg, Ohio, as recorded in Microfiche No. 00-356C07 of the Deed Records of Montgomery County, Ohio, **South 66° 32' 34" West**, a distance of **958.76 feet to a Mag nail set**, said Mag nail being an angle point in the center line of Benner Road;

Thence continuing with the center line of Benner Road and the northwesterly line of said City of Miamisburg, Ohio 0.764 acre tract, **South 73° 18' 03" West**, a distance of **31.01 feet to a Mag nail set**, said Mag nail being the southwest corner of said United States of America 42.56 acre tract, said Mag nail also lying in the northeasterly line of the abandoned Miami & Erie canal lands, said lands being a 1.448 acre tract conveyed to the Miami Conservancy District, as recorded in Deed Book Volume 2450, Page 190 of the Deed Records of Montgomery County, Ohio, said Miami Conservancy

District 1.448 acre tract also being known as Lot Numbered 4782 of the consecutive numbered lots of the City of Miamisburg, Ohio;

Thence with the southwesterly line of said United States of America 42.56 acre tract and the northeasterly line of said Miami Conservancy District 1.448 acre tract on the following three (3) courses,

1) **North 14° 05' 40" West**, a distance of **62.17 feet to an axle found**, said axle being an angle point in said line;
2) **Thence, North 14° 12' 04" West**, a distance of **440.84 feet to an axle found**, said axle lying in the north line of the Northeast Quarter of Section 35 and the south line of the Southeast Quarter of Section 36, said axle also being an angle point in said line;
3) **Thence, North 14° 47' 54" West**, a distance of **259.69 feet to an axle found**, said axle being the northeasterly corner of said Miami Conservancy District 1.448 acre tract, said axle also being the southeasterly corner of lands conveyed to the Miami Conservancy District, as recorded in Deed Book Volume 2450, Page 194 of the Deed Records of Montgomery County, Ohio, said lands also being known as Lot Numbered 4781 of the consecutive numbered lots of the City of Miamisburg, Ohio;

Thence with the southwesterly line of said United States of America 42.56 acre tract and the northeasterly line of said Miami Conservancy District lands, **North 14° 45' 30" West**, a distance of **546.20 feet to a 5/8" iron pin set**, said iron pin being the southwesterly corner of a 5.481 acre tract conveyed to the Consolidated Railroad Corporation, as recorded in Microfiche No. 78-502A01 of the Deed Records of Montgomery County, Ohio, said Consolidated Railroad Corporation 5.481 acre tract also known as Lot Numbered 4780 of the consecutive numbered lots of the City of Miamisburg, Ohio;

Thence with the southerly line of said Consolidated Railroad Corporation 5.481 acre tract on the following three (3) courses,

1) **North 74° 56' 41" East**, a distance of **85.24 feet to a 1" iron pipe found**, said pipe being an angle point in said line;
2) **Thence, North 37° 22' 23" East**, a distance of **96.59 feet to a 5/8" iron pin found**, said iron pin being an angle point in said line;
3) **Thence, North 80° 25' 45" East**, a distance of **65.98 feet to a 1" iron pipe found**, said iron pipe being the southeasterly corner of said Consolidated Railroad Corporation 5.481 acre tract;

Thence with the northeasterly line of said Consolidated Railroad Corporation 5.481 acre tract, **North 09° 33' 38" West**, a distance of **147.88 feet to a 5/8" iron pin set**, said iron pin being the northwesterly corner of the herein described new division of 95.146 acres;

Thence with a new division line on the following nine (9) courses,

1) **Due East**, a distance of **72.92 feet to a 5/8" iron pin set**;
2) **Thence, Due North**, a distance of **82.40 feet to a 5/8" iron pin set**;
3) **Thence, North 79° 34' 35" East**, a distance of **878.75 feet to a 5/8" iron pin set**;
4) **Thence, North 10° 55' 31" West**, a distance of **75.93 feet to a 5/8" iron pin set**;
5) **Thence, North 47° 17' 05" West**, a distance of **318.93 feet to a 5/8" iron pin set**;
6) **Thence, North 23° 53' 27" East**, a distance of **12.17 feet to a 5/8" iron pin set**;

7) **Thence, North 89° 59' 52" East**, passing a point at 517.95 feet, said point lying in the east line of the Southeast Quarter of Section 36 and the west line of the Southwest Quarter of Section 30, reference a broken concrete monument found, North 05° 16' 42" East, 3724.34 feet, said concrete monument being the northeast corner of Section 36 and the northwest corner of Section 30 by common report, in all a distance of **1767.43 feet to a 5/8" iron pin set**;

8) **Thence, Due South**, a distance of **111.18 feet to a 5/8" iron pin set**;

9) **Thence, Due East**, a distance of **62.54 feet to a 5/8" iron pin set**, said iron pin lying in the east line of said United States of America 79.74 acre tract, said iron lying in the west line of a 7.502 acre tract conveyed to Daniel R. Shell, as recorded in Microfiche No. 85-443D02 of the Deed Records of Montgomery County, Ohio, said Shell 7.502 acre tract also being known as Lot Numbered 6130 of the consecutive numbered lots of the City of Miamisburg, Ohio, witness a concrete Department of Defense monument found, North 04° 42' 45" East, 311.82 feet, said monument being the northeast corner of said United States of America 79.74 acre tract;

Thence with the east line of said United States of America 79.74 acre tract and the west line of said Shell 7.502 acre tract, also the west line of a 8.850 acre tract conveyed to Frank C. Dickinson, as recorded in Microfiche No. 93-516A05 of the Deed Records of Montgomery County, Ohio, **South 04° 42' 45" West**, passing a 1" pinched top pipe found at 737.06 feet, said pipe lying 1.49 feet east of the line, said pipe being the common corner of said Shell 7.502 acre tract and Dickinson 8.850 acre tract, in all a distance of **1698.01 feet to a railroad spike in concrete found**, said spike lying in the south line of the Southwest Quarter of Section 30, said spike being the southeast corner of said United States of America 79.74 acre tract, said spike lying in the center line of Benner Road;

Thence with the south line of the Southwest Quarter of Section 30 and the center line of Benner Road, **North 84° 29' 45" West**, a distance of **1333.45 feet to the True Point of Beginning**, containing **94.838 acres**, more or less, of which ***52.932 acres lying in the Southwest Quarter of Section 30, 36.224 acres lying in the Southeast Quarter of Section 36 and 5.682 acres lying in the Northeast Quarter of Section 35*** and being subject to all easements, highways and right of ways of record..

Bearing basis established on State Plane Coordinates South Zone, State of Ohio, per prior survey by Lockwood, Jones and Beals, dated; June 1st, 1982, said survey filed in the Montgomery County Engineer's Record of Land Surveys as survey reference number SUR-83-88.

This description prepared from an actual field survey performed under my direct supervision, Timothy W. Schram, Sr., Registered Professional Surveyor number 7299 of the State of Ohio, and that all monuments referenced herein and placed on the ground represents the boundaries of the herein described tract, and based on a Plat of Survey as recorded in the Montgomery County Engineer's Record of Land Surveys in Record Volume number _____ .

Timothy W. Schram, Sr.

Timothy W. Schram, Sr., Regist. Prof. Surveyor No. 7299
of the State of Ohio, August 21, 2000.
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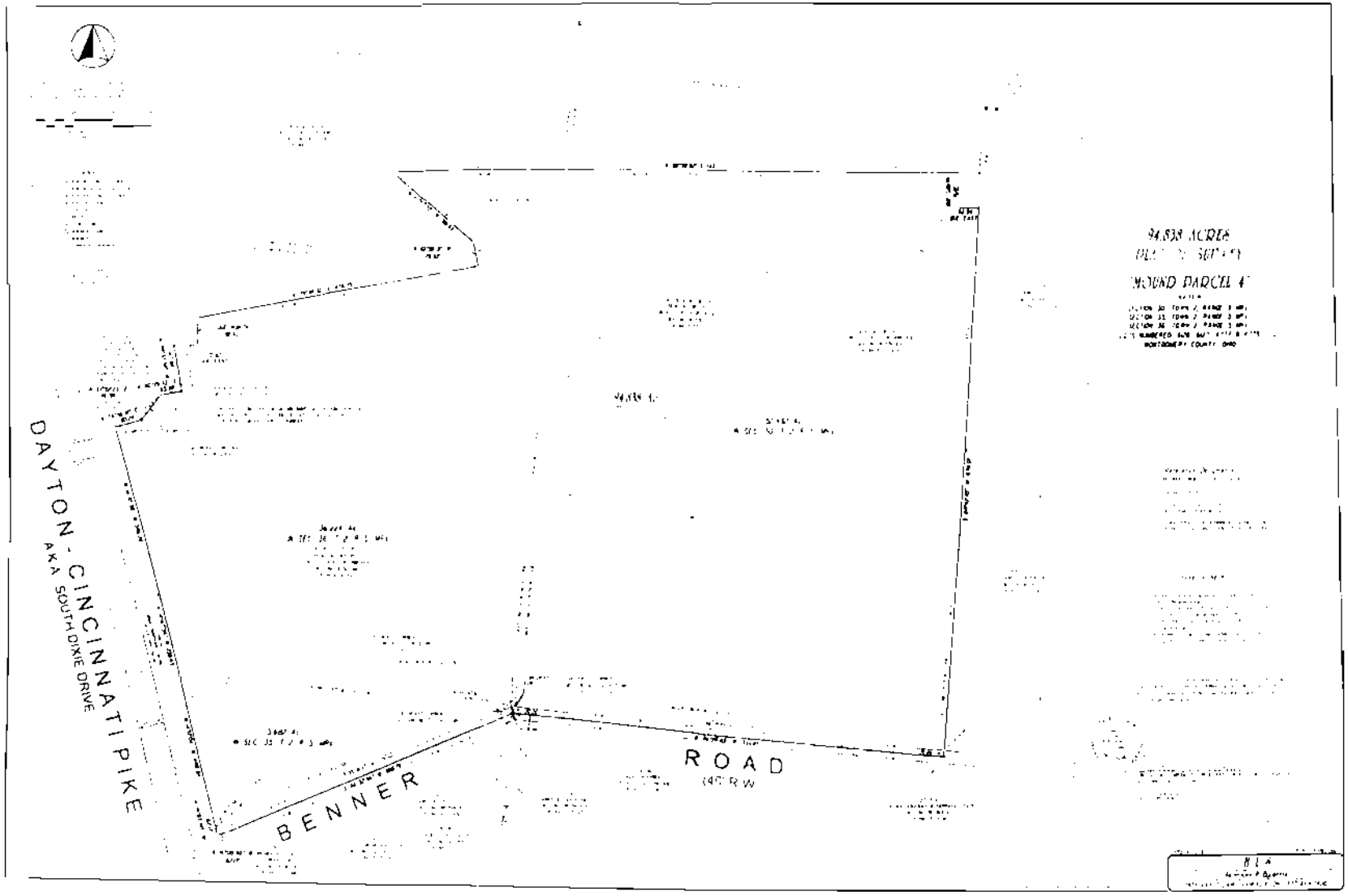
STATE OF OHIO
TIMOTHY W. SCHRAM, SR.
S-7299
REGISTERED
PROFESSIONAL SURVEYOR


94.938 ACRES
MOUND PARCEL 4
DAYTON - CINCINNATI PIKE
AKA SOUTH DIXIE DRIVE
BENNER
ROAD
(40' R/W)

APPENDIX B

RRE Summary Tables (Tables 2 through 8)

Table 2	Identification of Soil Constituents of Potential Concern for the Construction Worker Scenario in Parcel 4
Table 3	Identification of Soil Constituents of Potential Concern for the Site Employee Scenario in Parcel 4
Table 4	Identification of Current Groundwater Constituents of Potential Concern for the Construction Worker Scenario in Parcel 4
Table 5	Identification of Current Groundwater Constituents of Potential Concern for the Site Employee Scenario in Parcel 4
Table 6	Identification of Future Groundwater Constituents of Potential Concern for the Construction Worker Scenario in Parcel 4
Table 7	Identification of Future Groundwater Constituents of Potential Concern for the Site Employee Scenario in Parcel 4
Table 8	Current and Future Incremental Residual Risks for Parcel 4

Table 2: Identification of Soil Constituents of Potential Concern for the Construction Worker Scenario in Parcel 4

(Exposure Point Concentration (EPC) Compared to Background)

CAS Number	Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Detection Frequency	95% UCL	Concentration Used for Screening (EPC)	Background Value	Rationale for Contaminant Deletion or Selection
Metals										
7429-90-5	Aluminum	363	21400.00	mg/kg	B409	65-65	12700	12700.00	19000.00	NO
7440-36-0	Antimony	0.27	42.20	mg/kg	MND33-0103	20-48	17.6	12.60		YES
7440-38-2	Arsenic	1.7	17.10	mg/kg		65-65	6.99	6.99	8.60	NO
14753-03-0	Bismuth	0.76	70.40	mg/kg	CJ	48-51	73.3	70.40		YES
	Cerium	23.60	50.90	mg/kg		8-8	NC	50.90		YES
15067-28-4	Lead	2	255.00	mg/kg		65-65	20.6	20.60	48.00	NO
7439-93-2	Lithium	2.7	41.40	mg/kg	B409	45-46	17.6	17.60	26.00	NO
7439-95-4	Magnesium	583	68800.00	mg/kg	MND33-0103	65-65	21700	21700.00	40000.00	NO
7439-96-5	Manganese	42.3	5240.00	mg/kg		65-65	1010	1010.00	1400.00	NO
	Neodymium	16.5	33.40	mg/kg		7-8	NC	33.40		YES
14913-50-9	Thallium	0.35	2.10	mg/kg		11-50	0.66	0.66	0.46	YES
Semi-Volatile Organic Compounds										
	Acenaphthylene	44.0	290.00	ug/kg		4-58	243	243.00		YES
50-32-8	Benzo(a)pyrene	40.0	2500.00	ug/kg		11-58	330	330.00		YES
205-99-2	Benzo(b)fluoranthene	35.0	4800.00	ug/kg		21-58	439	439.00		YES
191-24-2	Benzo(g,h,i)perylene	47.0	250.00	ug/kg		8-58	241	241.00		YES
	Carbazole	41.0	420.00	ug/kg		4-50	219	219.00		YES
	Indeno(1,2,3-cd)pyrene	67.0	850.00	ug/kg		3-58	253	253.00		YES
85-01-8	Phenanthrene	78.0	3700.00	ug/kg		10-58	338	338.00		YES
Pesticides/PCBs										
7421-93-4	Endrin Aldehyde	0.28	0.93	ug/kg	MND22-4102	4-60	3.34	0.93		YES
53494-70-5	Endrin Ketone	0.24	0.86	ug/kg		4-65	3.43	0.86		YES
Radionuclides										
AC-227DA	Actinium-227	0.13	2.01	pCi/g		14-130	0.23	0.23		YES
10045-97-3	Cesium-137	0.06	0.90	pCi/g		130-188	0.36	0.36	0.42	NO
14255-04-0	Lead-210	0.38	3.35	pCi/g		94-117	1.76	1.76		YES
13981-16-3	Plutonium-238	0.013	55.40	pCi/g		142-480	87	55.40	0.13	YES
13982-63-3	Radium-226	0.39	3.26	pCi/g		137-180	1.34	1.34	2.00	NO
	Radium-228	0.636	2.57	pCi/g		10-10	NC	2.57		YES
14274-82-9	Thorium-228	0.195	1.79	pCi/g		66-80	1.07	1.07	1.50	NO
14269-63-7	Thorium-230	0.15	2.69	pCi/g		79-178	1.32	2.69	1.90	YES
7440-29-1	Thorium-232	0.037	5.60	pCi/g	S1049	184-491	0.83	0.83	1.40	NO
24678-82-8	Uranium-238	0.32	1.95	pCi/g		110-115	1.08	1.08	1.20	NO

Shaded items are COPCs

UCL - Upper Confidence Limit

EPC Exposure Point Concentration= minimum of either 95% UCL or maximum detected concentration

Table 3: Identification of Soil Constituents of Potential Concern for the Site Employee Scenario in Parcel 4

(Exposure Point Concentration Compared to Background Values)

CAS Number	Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Detection Frequency	95% UCL	Concentration Used for Screening (EPC)	Background Value	Rationale for Contaminant Deletion or Selection
Metals										
7429-90-5	Aluminum	1680	21400	mg/kg	B409	22-22	8570.00	8570.00	19000.00	NO
14733-03-0	Bismuth	0.76	28.50	mg/kg	GJ	12-14	NC	28.50		YES
7439-93-2	Lithium	2.7	27.30	mg/kg	B409	12-13	NC	27.30	26.00	YES
Semi-Volatile Organic Compounds										
91-57-6	2-Methylnaphthalene	63	63	ug/kg	B401	1-15	NC	63.00		YES
59-50-7	4-Chloro-3-methylphenol	7	7	ug/kg	MND33-0104	1-15	NC	7.00		YES
85-01-8	Phenanthrene	78	78	ug/kg	B401	1-15	NC	78.00		YES
Pesticides/PCBs										
72-54-8	4,4'-DDD	0.4	6.60	ug/kg	B409	2-21	4.04	4.04	4.20	NO
319-86-8	Delta-BHC	0.08	5.4	ug/kg	MND22-4101	3-22	4.67	4.67		YES
1031-07-8	Endosulfan Sulfate	0.93	0.56	ug/kg	MND22-4101	2-22	10.20	0.56		YES
7421-93-4	Endrin Aldehyde	0.28	0.93	ug/kg	MND22-4102	3-22	9.30	0.93		YES
53494-70-5	Endrin Ketone	0.24	0.25	ug/kg	B407	2-22	10.10	0.25		YES
Radionuclides										
AC-227	Actinium-227	0.13	2.01	pCi/g		14-124	0.24	0.24		YES
10045-97-3	Cesium-137	0.055	0.895	pCi/g		119-137	0.37	0.37	0.42	NO
14255-04-0	Lead-210	0.38	3.35	pCi/g		94-117	1.76	1.76		YES
13981-16-3	Plutonium-238	0.013	55.40	pCi/g		88-358	20.40	20.40	0.18	YES
13982-63-3	Radium-226	0.64	3.26	pCi/g		95-131	1.41	1.41	2.00	NO
	Radium-228	0.636	2.57	pCi/g		10-10	NC	2.57		YES
14274-82-9	Thorium-228	0.21	1.66	pCi/g	B405	38-40	1.03	1.03	1.50	NO
14269-63-7	Thorium-230	0.316	2.69	pCi/g		31-138	4.21	2.69	1.90	YES
7440-29-1	Thorium-232	0.037	5.60	pCi/g	S1049	141-369	0.73	0.73	1.40	NO
24678-82-8	Uranium-238	0.32	1.95	pCi/g		72-75	1.23	1.23	1.20	YES

Shaded items are COPCs

UCL - Upper Confidence Limit

EPC Exposure Point Concentration= minimum of either 95% UCL or maximum detected concentration

Table 4: Identification of Current Groundwater Constituents of Potential Concern for the Construction Worker Scenario in Parcel 4

(Exposure Point Concentration Compared to Background Values)

Chemical	Minimum Concentration	Maximum Concentration	Units	Detection Frequency	95 Percent UCL	Concentration Used for Screening EPC	Background Value	COPC for RRE
Inorganics								
Antimony	28	40.20	ug/L	5-29	80.30	40.20	0.578	YES
Cadmium	4.6	7.70	ug/L	6-32	5.25	5.25		YES
Copper	1.6	593.00	ug/L	22-32	22.70	22.70	1.167	YES
Lead	3.4	40.00	ug/L	5-32	7.28	7.28	10.05	NO
Radionuclides								
Thorium-230	0.01	1.99	pCi/L	11-32	1.25	1.25		YES
Uranium-238	0.13	8.25	pCi/L	41-48	0.47	0.47	0.688	NO 3

Shaded items are COPCs

UCL= Upper Confidence Limit

EPC= Exposure point concentration minimum of 95% UCL or maximum detected concentration

NO <Background Value

NC= 95% UCL not calculated, less than 20 samples in the data set.

Table 5: Identification of Current Groundwater Constituents of Potential Concern for the Site Employee Scenario in Parcel 4

(Exposure Point Concentration Compared to Background Values)

Chemical	Minimum Concentration	Maximum Concentration	Units	Detection Frequenc	95 Percent UCL	Concentration Used for Screening and EPC	Background Value	COPC for RRE
Inorganics								
Antimony	2.8	40.20	ug/L	5-29	80.30	40.20	0.578	YES
Cadmium	4.6	7.70	ug/L	6-32	5.25	5.25	[illegible]	YES
Copper	1.6	593.00	ug/L	22-32	22.70	22.70	1.167	YES
Lead	3.4	40.00	ug/L	5-32	7.28	7.28	10.05	NO
Radionuclides								
Actinium-227	0.50	0.50	pCi/L	1-10	NC	0.50	[illegible]	YES
Plutonium-239/240	0.00	2.00	pCi/L	6-20	8.87	2.00	0.125	YES
Thorium-228	0.01	2.17	pCi/L	14-35	105.00	2.17	0.779	YES
Thorium-230	0.01	1.99	pCi/L	11-32	1.25	1.25	[illegible]	YES
Tritium	110.00	7200.00	pCi/L	112-128	861.00	861.00	1485.47	NO
Uranium-234	0.20	8.14	pCi/L	14-19	NC	8.14	0.792	YES
Uranium-238	0.13	8.25	pCi/L	41-48	0.47	0.47	0.688	NO

UCL= Upper Confidence Limit

EPC= minimum of 95% UCL or maximum detected concentration

NO <Background Value

NC= 95% UCL not calculated, less than 20 samples in the data set.

Shaded items are COPCs

Table 6: Identification of Future Groundwater Constituents of Potential Concern for the Construction Worker Scenario in Parcel 4 (table comprises 2 pages)

(Bedrock 95% UCL or Maximum Detected Concentration Compared to Background Values)

Chemical	Minimum Concentration In Bedrock Wells	Maximum Concentration In Bedrock Wells	Units	Detection Frequency In Bedrock Wells	95 Percent UCL	Concentration Used for Screening	Background Value	COPC?
Inorganics								
Aluminum	20.1	31500.00	ug/L	107/115	6840.00	6840.00	37.523	YES
Antimony	0.35	41.60	ug/L	21/122	2.82	2.82	0.578	YES
Arsenic**	0.3	933.00	ug/L	26/ 114	11.80	11.80	32.997	NO
Beryllium**	0.03	2.30	ug/L	41/115	0.47	0.47		YES
Bismuth**	0.97	264.00	ug/L	23/103	23.20	23.20		YES
Cadmium	0.14	13.10	ug/L	11/124	0.75	0.75		YES
Chromium	0.27	44800.00	ug/L	78/120	5010.00	5010.00	6.076	YES
Copper	0.38	514.00	ug/L	81/117	26.80	26.80	11.167	YES
Lead**	0.4	32.00	ug/L	55/ 125	4.90	4.90	10.05	NO
Lithium	8.8	4280.00	ug/L	87/102	123.00	123.00	3.57	YES
Manganese	0.037	3030.00	ug/L	155/165	737.00	737.00	229.568	YES
Molybdenum	0.79	474.00	ug/L	51/98	32.50	32.50	5.997	YES
Nickel	1.24	11600.00	ug/L	82/120	749.00	749.00	34.957	YES
Thallium	3.1	6.90	ug/L	6/ 107	4.44	4.44		YES
Vanadium	0.15	277.00	ug/L	65/ 115	33.00	33.00	1.74	YES

Table 6: Identification of Future Groundwater Constituents of Potential Concern for the Construction Worker Scenario in Parcel 4 (table comprises 2 pages)

(Bedrock 95% UCL or Maximum Detected Concentration Compared to Background Values)

Chemical	Minimum Concentration In Bedrock Wells	Maximum Concentration In Bedrock Wells	Units	Detection Frequency In Bedrock Wells	95 Percent UCL	Concentration Used for Screening	Background Value	COPC?
Organic Compounds								
1,1-Dichloroethane^^	2.00	2.00	ug/L	1/ 238	0.75	0.75		NO:1
1,2-Dichloroethene**	1.00	35.00	ug/L	13/ 38	6.61	6.61		YES
Dichloromethane	1.00	610.00	ug/L	41/ 239	3.28	3.28		YES
Tetrachloroethene**	0.30	25.00	ug/L	55/ 247	3.37	3.37		YES
Trichloroethene	0.44	46.00	ug/L	152/ 273	5.12	5.12		YES
Radionuclides								
Radium-226	0.1260	39.47	pCi/L	43/ 59	2.34	2.34	0.996	YES
Strontium-90	0.74	42.40	pCi/L	57/ 57	2.22	2.22	0.975	YES
Thorium-228	0.02	8.50	pCi/L	39/ 54	90.70	8.50	0.779	YES
Thorium-230	0.0044	4.07	pCi/L	43/ 56	0.57	0.57	[illegible]	YES
Thorium-232	0.0005	2.11	pCi/L	31/ 63	0.78	0.78	0.314	YES
Tritium**	2.95	2816310.00	pCi/L	4440/4455	206000.00	206000.00	1485.47	YES
Uranium-234	0.03	59.10	pCi/L	60/ 69	2.12	2.12	0.792	YES
Uranium-238	0.03	1.34	pCi/L	57/ 75	0.51	0.51	0.688	NO

Shaded items are COPCs

UCL= Upper Confidence Limit

NC= 95% UCL not calculated, less than 20 samples in the data set.

** = Constituent detected in bedrock well, but not in production well

^^ = Constituent detected in production well, not in bedrock wells; reported frequency of detection based on production wells analyses

Table 7: Identification of Future Groundwater Constituents of Potential Concern for the Site Employee Scenario in Parcel 4 (table comprises 2 pages)

(Bedrock 95% UCL or Maximum Detected Concentration Compared to Background Values)

Chemical	Minimum Concentration In Bedrock Wells	Maximum Concentration In Bedrock Wells	Units	Detection Frequency In Bedrock Wells	95 Percent UCL	Concentration Used for Screening	Background Value	COPC?
Inorganics								
Aluminum	20.1	31500.00	ug/L	107/115	6840.00	6840.00	37.523	YES
Antimony	0.35	41.60	ug/L	121/122	2.82	2.82	0.578	YES
Arsenic**	0.3	933.00	ug/L	26/ 114	11.80	11.80	32.997	NO
Beryllium**	0.03	12.30	ug/L	41/115	0.47	0.47	[illegible]	YES
Bismuth**	0.9	264.00	ug/L	23/ 103	23.20	23.20	[illegible]	YES
Cadmium	0.14	13.10	ug/L	11/ 124	0.75	0.75	[illegible]	YES
Chromium	0.27	44800.00	ug/L	78/ 120	5010.00	5010.00	6.076	YES
Copper	0.38	514.00	ug/L	81/ 117	26.80	26.80	15.167	YES
Lead**	0.4	32.00	ug/L	55/ 125	4.90	4.90	10.05	NO
Lithium	8.8	4280.00	ug/L	87/ 102	123.00	123.00	55.7	YES
Manganese	0.037	3030.00	ug/L	155/ 165	737.00	737.00	229.568	YES
Molybdenum	0.79	474.00	ug/L	51/ 98	32.50	32.50	5.597	YES
Nickel	1.2	11600.00	ug/L	82/ 120	749.00	749.00	34.957	YES
Thallium	3.1	6.90	ug/L	6/ 107	4.44	4.44	[illegible]	YES
Vanadium	0.15	277.00	ug/L	65/ 115	33.00	33.00	17.1	YES

Table 7: Identification of Future Groundwater Constituents of Potential Concern for the Site Employee Scenario in Parcel 4 (table comprises 2 pages)

(Bedrock 95% UCL or Maximum Detected Concentration Compared to Background Values)

Chemical	Minimum Concentration In Bedrock Wells	Maximum Concentration In Bedrock Wells	Units	Detection Frequency In Bedrock Wells	95 Percent UCL	Concentration Used for Screening	Background Value	COPC?
Organic Compounds								
1,2-cis-Dichloroethene	0.06	17.00	ug/L	48/148	1.61	1.61	0.999	YES
1,2-Dichloroethene**	1.00	35.00	ug/L	13/38	6.61	6.61		YES
Dichloromethane	1.00	610.00	ug/L	41/239	3.28	3.28		YES
Trichloroethene	0.44	46.00	ug/L	152/273	5.12	5.12		YES
Radionuclides								
Plutonium-238	0.012	1.870	pCi/L	8/ 60	0.15	0.15	0.087	YES
Radium-226	0.1260	39.47	pCi/L	43/ 59	2.34	2.34	0.996	YES
Radium-228	1.50	1.50	pCi/L	1/ 1	NC	1.50		YES
Strontium-90	0.74	42.40	pCi/L	7/ 57	2.22	2.22	0.975	YES
Thorium-228	0.02	8.50	pCi/L	39/ 54	90.70	8.50	0.779	YES
Thorium-230	0.0044	4.07	pCi/L	43/ 56	0.57	0.57		YES
Thorium-232	0.0005	2.11	pCi/L	31/ 63	0.78	0.78	0.314	YES
Tritium	2.95	28163.00	pCi/L	4440/4455	206000.00	206000.00	148.547	YES
Uranium-234	0.03	59.10	pCi/L	60/ 69	2.12	2.12	0.792	YES
Uranium-238	0.03	1.34	pCi/L	57/ 75	0.51	0.51	0.688	NO

Shaded items are COPCs

UCL= Upper confidence Limit

NC= 95% UCL not calculated, less than 20 samples in the data set.

** = Constituent detected in bedrock well, but not in production well

^^ = Constituent detected in production well, not in bedrock wells; reported frequency of detection based on production wells analyses

Table 8: Current and Future Incremental Residual Risks for Parcel 4**

Scenario and Receptor	Media	Constituents	Pathway	Total Noncarcinogen Risk HI	Total Carcinogenic Risk ELCR
Construction Worker Scenario	Soil (all sample depths) Current and Future	Chemical and Radiological	Ingestion	1.6E-01	**1.7E-05**
			Dermal Contact	1.7E-03	4.0E-07
			Inhalation of Dust	NA	1.3E-08
			Inhalation of VOCs	NA	NA
			External	NA	**1.2E-05**
		Soil Total Risk		1.6E-01	**2.9E-05**
	Groundwater (Current)	Chemical and Radiological	Ingestion	**1.1E+00**	**2.1E-06**
			Dermal Contact	1.9E-01	NA
			Inhalation While Showering	NA	NA
		Current Groundwater Total Risk		**1.3E+00**	**2.1E-06**
	Groundwater (Future)	Chemical and Radiological	Ingestion	**4.9E+00**	**9.6E-06**
			Dermal Contact	4.6E-01	**2.8E-04**
			Inhalation While Showering	4.8E-04	7.6E-08
		Future Groundwater Total Risk		**5.4E+00**	**2.9E-04**
	Air*	Radiological	Inhalation	NA	2.0E-07
		Air Total Risk		NA	2.0E-07
	Cumulative Incremental Current Risk			**1.5E+00**	**3.2E-05**
	Cumulative Incremental Future Risk			**5.5E+00**	**3.2E-04**
Site Employee Scenario	Soil (0-2 ft bls Current and Future	Chemical and Radiological	Ingestion	3.2E-05	**3.0E-06**
			Inhalation of Dust	NA	2.5E-08
			Inhalation of VOCs	NA	NA
			External	NA	**6.1E-05**
		Soil Total Risk		3.2E-05	**6.4E-05**
	Groundwater (Current)	Chemical and Radiological	Ingestion	**1.1E+00**	**1.8E-05**
		Current Groundwater Total Risk		**1.1E+00**	**1.8E-05**
	Groundwater (Future)	Chemical and Radiological	Ingestion	**4.9E+00**	**5.4E-05**
		Future Groundwater Total Risk		**4.9E+00**	**5.4E-05**
	Air*	Radiological	Inhalation	NA	9.9E-07
		Air Total Risk		NA	9.9E-07
	Cumulative Incremental Current Risk			**1.1E+00**	**8.3E-05**
	Cumulative Incremental Future Risk			**4.9E+00**	**1.2E-04**

bls - below land surface

NA - Not applicable

*RRE values for air were brought forward from the Technical Position Report for Release Blocks D and H. (DOE 1999).

Numbers written as 1.0E-03 equal $1x10^{-3}$

**Source: Parcel 4 RRE Table 5.21. (DOE 2000)

Note: Negative risk values were not added into the total incremental risk.

Phase I Parcel

QUIT CLAIM DEED

The UNITED STATES OF AMERICA, acting by and through the Secretary of the Department of Energy (hereinafter sometimes called "Grantor"), under and pursuant to the authority of the Atomic Energy Act of 1954, Section 161 (g) (42U.S.C. §2201(g)), in consideration of the covenants contained herein, and other good and valuable consideration, duly paid by the Miamisburg Mound Community Improvement Corporation, a not-for-Profit corporation subsisting under the laws of Ohio and recognized by the Secretary of Energy as the agent for the community wherein the former Mound Facility is located (hereinafter sometimes called "Grantee"), the receipt of which is hereby acknowledged, hereby QUIT CLAIMS unto Grantee its successors and assigns, subject to the reservations, covenants, and conditions hereinafter set forth, all of its right, title and interest, together with all improvements thereon and appurtenances thereto, in the following described real property (hereinafter the "Premises), commonly referred to as Phase 1 – Parcels 1A, 1B and 1C, Parcel D, Parcel H, Parcel 3 and Parcel 4:

Phase 1, Parcel 1 A:

Situated in the Northwest Quarter of Section 30, Town 2, Range 5, M.R.S., City of Miamisburg, County of Montgomery, State of Ohio, being part of a 87.28 acre tract conveyed to the United States of America, as recorded in Deed Book volume 1214, Page 12 of the Deed Records of Montgomery County, Ohio, said 87.28 acre tract being comprised of a 59.75 acre tract, also a 19.40 acre tract, also a 9.97 acre tract, also a 0.78 acre tract and a 0.78 acre tract all known as Lot Numbered 2259 of the consecutive numbered lots of the City of Miamisburg, being a new division of 2.542 acres from said 87.28 acre tract and being more full bounded and described in **Exhibit A** attached hereto and incorporated herein.

Phase 1, Parcel 1 B:

Situate in Section 30 and 36, Town 2, Range 5, M.Rs., City of Miamisburg, County of Montgomery, State of Ohio, being part of a 87.28 acre tract conveyed to the United States of America, as recorded in Deed Book Volume 1214, Page 12 of the Deed Records of Montgomery County, Ohio, said 87.28 acre tract being comprised of a 59.75 acre tract, also a 19.40 acre tract, also a 9.97 acre tract, also a 0.78 acre tract and a 0.78 acre tract all known as Lot Numbered 2259 of the consecutive numbered lots of the City of Miamisburg, also being part of a 79.74 acre tract conveyed to the United States of America, as recorded in Microfiche No. 81-376A01 of the Deed Records of Montgomery County, Ohio, said 79.74 acre tract being comprised of a 24.197 acre tract and known as Lot Numbered 6128 of the consecutive numbered lots of the City of Miamisburg, also a 35.50 acre tract known as Lot Numbered 6127 of the consecutive numbered lots of the City of Miamisburg, and a 24.24 acre tract known as Lot Numbered 4777 of the consecutive numbered lots of the City of Miamisburg, also being part of a 20.46 acre tract conveyed to the United States of America, as recorded in Deed Book Volume 1215, Page 347 and part of a 17.58 acre tract conveyed to the United States of America, as recorded in Deed Book Volume 1214, Page 248, all of the Deed Records of Montgomery County, Ohio, said 20.46 acre tract and 17.58 acre tract being known as Lot Numbered 2290 of the consecutive numbered lots of the City of Miamisburg, being a new division of 42.882 acres from said 87.28 acre tract, 79.74 acre tract, 20.46 acre tract and 17.58 acre tract and being more fully bounded and described in **Exhibit B** attached hereto and incorporated herein:

Phase 1, Parcel 1 C:

Situate in Section 36, Town 2, Range 5, MRs., City of Miamisburg, County of Montgomery, State of Ohio, being part of a 79.74 acre tract conveyed to the United States of America, as recorded in Microfiche No. 81-376A01 of the Deed Records of Montgomery County, Ohio, said 79.74 acre tract being comprised of a 24.197 acre tract and known as Lot Numbered 6128 of the consecutive numbered lots of the City of Miamisburg, also a 35.50 acre tract known as Lot Numbered 6127 of the consecutive numbered lots of the City of Miamisburg, and a 24.24 acre tract known as Lot Numbered 4777 of the consecutive numbered lots of the City of Miamisburg, also being part of a 42.56 acre tract conveyed to the United States of America, as recorded in Microfiche No. 81-323A11 of the Deed Records of Montgomery County, Ohio, said 42.56 acre tract being comprised of a 46.313 acre tract known as Lot Numbered 4778 of the consecutive numbered lots of the City of Miamisburg, said 42.56 acre tract being all the remainder of an 80 acre tract as conveyed from Ray C. Dunaway and Thelma Mae Dunaway to Oak Knoll Development and Investment Co., Inc., as recorded in Microfiche No. 71-513B06 of the Deed Records of Montgomery County, Ohio, being a new division of 6.568 acres from said 79.74 acre tract and 42.56 acre tract and being more fully described in **Exhibit C** attached hereto and incorporated herein.

Parcel D:

Situate in the State of Ohio, County of Montgomery, City of Miamisburg and being part of Section 30, Fractional Town 2, Range 5 M.R.S. and being the tract of land previously transferred by the Grantor to Grantee by Quit Claim Deed recorded at Microfiche 99-0852B05 of the Montgomery County, Ohio Recorder's Deed Records and being more fully described in **Exhibit D** attached hereto and incorporated herein.

Parcel H:

Situate in the State of Ohio, County of Montgomery, City of Miamisburg and being part of Section 30 & 36, Fractional Town 2, Range 5 M.RS. also part of Section 25, Fractional Town 1, Range 6 MRS and being the tract of land previously transferred by Grantor to Grantee by Quit Claim Deed recorded at Microfiche 99-0852 B11 of the Montgomery County, Ohio Deed Records and being more fully described in **Exhibit E** attached hereto and incorporated herein.

Parcel 4:

Situate in the Southwest Quarter of Section 30, Town 2, Range 5, M.R.S., the Southeast Quarter of Section 36, Town 2, Range 5, M.R.S., Northeast Quarter Section 36, Town 2, Range 5, M.R.S., City of Miamisburg, County of Montgomery, State of Ohio, and being the tract of land previously transferred by Grantor to Grantee by Quit Claim Deed recorded at Instrument Number 02-128007 of the Montgomery County, Ohio Official Records and being more fully described in **Exhibit F** attached hereto and incorporated herein.

Parcel 3:

Situate in the Northwest Quarter of Section 30 and the Northeast Quarter of Fractional Section 36, Town 2, Range 5, M.R.S., City of Miamisburg, County of Montgomery, State of Ohio, being the tract of land previously transferred by Grantor to Grantee by Quit Claim Deed recorded at Instrument Number 02-128206 of the Montgomery County, Ohio Official Records

and being more fully described in **Exhibit G** attached hereto and incorporated herein.

EXCEPTING THEREFROM an easement hereby granted, upon or across the Premises, in connection with the covenants of Grantor and/or Grantee in paragraphs numbered 1.1-1.3, 3.2 and 3.3 of this Deed and as otherwise needed for purposes of any response action as defined under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended, including but not limited to, environmental investigation or remedial action on the Premises or on property in the vicinity thereof, including the right of access to, and use of, to the extent permitted by applicable law, utilities at reasonable cost, to the State of Ohio, acting by and through the Director of the Ohio Environmental Protection Agency (OEPA) and the Ohio Department of Health (ODH), their successors and assigns. Grantee understands that any such response action will be conducted in a manner so as to attempt to minimize interfering with the ordinary and reasonable use of the Premises;

RESERVING unto Grantor, the United States of America, acting by and through the U.S. Department of Energy (DOE) and/or the U.S. Environmental Protection Agency (USEPA), their successors and assigns, an easement to, upon or across the Premises in connection with the covenants of Grantor and/or Grantee in paragraphs numbered 1.1-1.3, 3.2 and 3.3 of this Deed and as otherwise needed for purposes of any response action as defined under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended, including but not limited to, environmental investigation or remedial action on the Premises or on property in the vicinity thereof, including the right of access to, and use of, to the extent permitted by applicable law, utilities at reasonable cost to Grantor. Grantee understands that any such response action will be conducted in a manner so as to attempt to minimize interfering with the ordinary and reasonable use of the Premises.

In connection with this conveyance, Grantor shall hold harmless and indemnify Grantee and any successor, assignee, transferee, lender or lessee of a person or entity that acquires ownership or control of any portion of the Premises, according to the provisions of 50 United States Code (USC) § 2811(b) and as limited by the scope, purposes and conditions contained in 50 USC § 2811 against any claim for injury to a person or property that results from the release or threatened release of a hazardous substance or pollutant or contaminant as a result of Department of Energy activities on the area commonly known as the former Mound Facility including but not limited to the Premises. This covenant shall run with the land.

This Deed and conveyance is made and accepted without warranty of any kind, either expressed or implied, except for the indemnity of 50 USC § 2811(b) and the warranty in paragraph 3.3 of this Deed, and is expressly made under and subject to all reservations, restrictions, rights, covenants, easements, licenses, and permits, whether or not of public record, to the extent that the same affect the Premises.

1. The parties hereto intend the following restrictions and covenants to run with the land and to be binding upon the Grantee and its successors, transferees, and assigns or any other person acquiring an interest in the Premises, for the benefit of Grantor, USEPA and the State of Ohio, acting by and through the Director of OEPA or ODH, their successors and assigns.

   1.1(a) As to that part of the Premises commonly known as Phase I, Parcels 1A, 1B and 1C, Grantee covenants that any soil from that part of the Premises shall not be placed on any property outside the boundaries of that described in instruments

recorded at Deed Book 1214, pages 10, 12, 15, 17 and 248; Deed Book 1215, page 347; Deed Book 1246, page 45; Deed Book 1258, pages 56 and 74; Deed Book 1256, page 179; Micro-Fiche 81-376A01; and Micro-Fiche 81-323A11 of the Deed Records of Montgomery County, Ohio (and as illustrated in the Phase I Parcel Environmental Summary, Notices of Hazardous Substances, Mound Plant, Miamisburg, Ohio dated December 2003) without prior written approval from ODH, OEPA, and USEPA, or successor agencies.

1.1(b) As to that part of the Premises commonly known as Parcel D, excepting those soils in the area approximately 40 feet wide and 218.17 feet long bounded on the east by the centerline of Mound Road as described in Exhibit D, Grantee covenants that any soil from that part of the Premises shall not be placed on any property outside the boundaries of that described in instruments recorded at Deed Book 1214, pages 10, 12, 15, 17 and 248; Deed Book 1215, page 347; Deed Book 1246, page 45; Deed Book 1258, pages 56 and 74; Deed Book 1215, page 347; Deed Book 1256, page 179; Micro-Fiche 81-376A01; and Micro-Fiche 81-323A11 of the Deed Records of Montgomery County, Ohio (and as illustrated in the CERCLA 120(h) Summary, Notices of Hazardous Substances Release Block D, Mound Plant, Miamisburg, Ohio dated January, 1999) without prior written approval from the Ohio Department of Health (ODH), or a successor agency.

1.1(c) As to that part of the Premises commonly known as Parcel H, excepting those soils contained within an area bounded as follows: Commencing at an iron pin found on the southerly projection of the centerline of Mound Road, said point also being the northeast corner of a 164.13 Acre tract of land as described in Deed Book 1246, Page 45 of the Deed Records of Montgomery County and being the **TRUE POINT OF BEGINNING**, thence South 06°38'48" West, 100.00 feet to an iron pin found; thence South 84°42'56" East, 193.40 feet to an iron pin found; then South 05°33'53" West, 571.98 feet to a point on the centerline of Mound Road; thence due West, 72.93 feet to a point; thence South 51°28'10" West, 9.97 feet to a point on the proposed westerly right-of-way of Mound Road; thence along the proposed westerly right-of-way of Mound Road, North 06°34'20" West, 299.85 feet to a point; thence North 04°05'41" West, 185.03 feet to a point; thence along the proposed westerly right-of-way of Mound Road, North 06°34'20" West, 75.76 feet to a point; thence along the proposed westerly right-of-way of Mound Road, on a curve to the right for a distance of 130.93 feet with a radius of 923.62 feet and a central angle of 08°07'19" and a chord distance of 130.82 feet and a chord bearing of North 02°30'42" West to a point; thence along the existing westerly right-of-way of Mound Road, on a non-tangent curve to the right for a distance of 6.10 feet with a radius of 360.00 feet and a central angle of 00°58'18" and a chord distance of 6.10 feet and a chord bearing of North 12°20'00' West to a point; thence South 89°52'28" East, 18.27 feet to the **POINT OF BEGINNING**, containing 6.604 acres more or less, Grantee covenants that any soil from that part of the Premises shall not be placed on any property outside the boundaries of that described in instruments recorded at Deed Book 1214, pages 10, 12, 15, 17 and 248; Deed Book 1215, page 347; Deed Book 1246, page 45; Deed Book 1258, pages 56 and 74; Deed Book 1256, page 179; Micro-Fiche 81-376A01; and Micro-Fiche 81-323A11 of the Deed Records of Montgomery

County, Ohio (and as illustrated in the CERCLA 120(h) Summary, Notices of Hazardous Substances Release Block II, Mound Plant, Miamisburg, Ohio dated July 26, 1999) without prior written approval from the Ohio Department of Health (ODH), or a successor agency.

1.1(d) As to that part of the Premises commonly known as Parcel 3, Grantee covenants that any soil from that part of the Premises shall not be placed on any property outside the boundaries of that described in instruments recorded at Deed Book 1214, pages 10, 12, 15, 17 and 248; Deed Book 1215, page 347; Deed Book 1246, page 45; Deed Book 1258, pages 56 and 74; Deed Book 1215, page 347; Deed Book 1256, page 179; Micro-Fiche 81-376A01; and Micro-Fiche 81-323A11 of the Deed Records of Montgomery County, Ohio (and as illustrated in the CERCLA 120(h) Summary, Notices of Hazardous Substances Release Parcel 3, Mound Plant, Miamisburg, Ohio dated September, 2001) without prior written approval from the Ohio Department of Health (ODH), or a successor agency.

1.1(e) As to that part of the Premises commonly known as Parcel 4, excepting those soils in the area 35 feet wide and 2,354.38 feet long bounded on the south by the centerline of Benner Road as described in Exhibit F, Grantee covenants that any soil from that part of the Premises shall not be placed on any property outside the boundaries of that described in instruments recorded at Deed Book 1214, pages 10, 12, 15, 17 and 248; Deed Book 1215, page 347; Deed Book 1246, page 45; Deed Book 1258, pages 56 and 74; Deed Book 1215, page 347; Deed Book 1256, page 179; Micro-Fiche 81-376A01; and Micro-Fiche 81-323A11 of the Deed Records of Montgomery County, Ohio (and as illustrated in the CERCLA 120(h) Summary, Notices of Hazardous Substances Release Parcel 4, Mound Plant, Miamisburg, Ohio dated March 21, 2001) without prior written approval from the Ohio Department of Health (ODH), or a successor agency.

1.2 Grantee covenants not to use, or allow the use of the Premises for any residential or farming activities, or any other activities which could result in the chronic exposure of children under eighteen years of age to soil or groundwater from the Premises. Restricted uses shall include, but not be limited to:

(1) single or multi family dwellings or rental units;
(2) day care facilities;
(3) schools or other educational facilities for children under eighteen years of age; and
(4) community centers, playgrounds, or other recreational or religious facilities for children under eighteen years of age.

The United States Department of Energy or its successor agency shall be contacted to resolve any questions which may arise as to whether a particular activity would be considered a restricted use.

1.3 Grantee covenants not to extract, consume, expose, or use in any way the groundwater underlying the premises without the prior written approval of the United States Environmental Protection Agency (Region V) and the OEPA.

2. The Grantor hereby grants to the State of Ohio and reserves and retains for itself, its successors and assigns an irrevocable, permanent, and continuing right to enforce the covenants of this Quitclaim Deed through proceedings at law or in equity, including resort to an action for specific performance, as against and at the expense of Grantee, its successors and assigns, including reasonable legal fees, and to prevent a violation of, or recover damages from a breach of, these covenants, or both. Any delay or forbearance in enforcement of said restrictions and covenants shall not be deemed to be a waiver thereof.

3. Pursuant to Section 120(h)(3) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended (42 U.S.C. §9620(h)(3)), the following is notice of hazardous substances, the description of any remedial action taken, and a covenant concerning the Premises.

   3.1 **Notice of Hazardous Substance:** Grantor has made a complete search of its files and records concerning the Premises. Those records indicate that the hazardous substances listed in **Exhibit H** attached hereto and made a part hereof, have been stored for one year or more or disposed of on the Premises and Exhibit B also shows the dates that such storage/disposal took place.

   3.2 **Description of Remedial Action Taken:** Institutional Controls are established. The Institutional Controls are set forth as covenants in Sections 1.1, 1.2, and 1.3 of this Deed.

   3.3 **Covenant:** Grantor covenants and warrants that all remedial action necessary for the protection of human health and the environment with respect to any hazardous substances remaining on the property has been taken, and any additional remedial action found to be necessary after the date of this Deed regarding hazardous substances existing prior to the date of this Deed shall be conducted by Grantor, provided, however, that the foregoing covenant shall not apply in any case in which the presence of hazardous substances on the property is due to the activities of Grantee, its successors, assigns, employees, invitees, or any other person subject to Grantee's control or direction.

4. Unless otherwise specified, all the covenants, conditions, and restrictions to this Deed shall be binding upon, and shall inure to the benefit of the assigns of Grantor and the successors and assigns of Grantee.

IN WITNESS WHEREOF, the United States of America, acting by and through its Secretary of the Department of Energy, has caused these presents to be executed this 11th day of February, 2009.

UNITED STATES OF AMERICA

State of Ohio)
County of Montgomery) SS.

Before me, a Notary Public in and for said State and County, appeared this 11 day of February, 2009, Brad Sokolovich, who acknowledged that he is the Real Property Officer of the Environmental Management Consolidated Business Center for the United States Department of Energy, with full authority to execute the foregoing on behalf of the United States of America, and who acknowledged the above to be his signature and his free act and deed.

SEAL

Randolph Tormey
Notary Public

RANDOLPH T. TORMEY
NOTARY PUBLIC-STATE OF OHIO
My Commission Has No Expiration Date
(O.R.C. Section 147.03)

Prepared by:
Randolph T. Tormey, Esq.
250 E. 5th Street, Ste 500
Cincinnati, OH 45202
(513) 246-0583
OH Atty. Regis. 0007803

Exhibit "A"
DESCRIPTION OF

2.542 Acres
Parcel 1A

located in
Section 30, Town 2, Range 5, MRs.
City of Miamisburg, Montgomery County, Ohio

Situate in the Northwest Quarter of Section 30, Town 2, Range 5, MRs., City of Miamisburg, County of Montgomery, State of Ohio, ***being part of a 87.28 acre tract conveyed to the United States of America, as recorded in Deed Book Volume 1214, Page 12*** of the Deed Records of Montgomery County, Ohio, said 87.28 acre tract being comprised of a 59.75 acre tract, also a 19.40 acre tract, also a 9.97 acre tract, also a 0.78 acre tract and a 0.78 acre tract all known as Lot Numbered 2259 of the consecutive numbered lots of the City of Miamisburg, ***being a new division of 2.542 acres from said 87.28 acre tract*** and being more fully bounded and described as follows:

Commencing at a "DOE" concrete monument found, said monument being the southwest corner of the Miami Mound Plat as recorded in Record Plat Book Volume 94, Page 34 of the Plat Records of Montgomery County, Ohio, said monument being the southeast corner of a 12.429 acre tract, known as Part lot Numbered 2259 of the consecutive numbered lots of the City of Miamisburg, Ohio, also known as Parcel "D" of the Mound Complex, conveyed to the Miamisburg Mound Community Improvement Corporation, as recorded in Deed Microfiche No. 99-0852B05 of the Deed Records of Montgomery County, Ohio, said monument lying in the north line of a 79.74 acre tract, known as City Lot Numbered 6128 of the consecutive numbered lots of the City of Miamisburg, Ohio, conveyed to the United States of America, as recorded in Microfiche No. 81-0376A01 of the Deed Records of Montgomery County, Ohio, reference a "DOE" concrete monument found, South 83° 59' 35" East, 34.07 feet, said monument being the northeast corner of said United States of America 79.74 acre tract; thence with the easterly line of said Miamisburg Mound Community Improvement Corp. 12.429 acre tract, the westerly line of the Miami Mound Plat, the westerly line of a 0.7 acre tract conveyed to Melissa A. Wilson, as recorded in Deed Microfiche No. 89-0125D01, the westerly line of a 0.26 acre tract conveyed to Betty J. Eckhart, as recorded in Deed Microfiche No. 98-0834C09, and the westerly line of a 0.78 acre tract conveyed to Randall and Rita Hilgefort, as recorded in Deed Microfiche No. 97-0746A08, all of the Deed Records of Montgomery County, Ohio, North 07° 06' 56" West, a distance of 714.44 feet to a 5/8" capped "LeRoy" iron pin found, said iron pin being set by William C. LeRoy, Professional Surveyor number 7664 of the State of Ohio by prior survey as recorded in the Montgomery County Engineer's Record of Land Surveys, Volume 1999, Page 0326, said iron pin being the northwest corner of said Hilgefort 0.78 acre tract, said iron pin lying in the north line of said original 19.4 acre tract and the south of said original 59.75 acre tract; thence with the north line of said Hilgefort 0.78 acre tract, South 85° 28' 23" East, a distance of 111.00 feet to a Mag nail set, said mag nail being the northeast corner of said Hilgefort 0.78 acre tract, said mag nail being the southeast corner of said original 59.75 acre tract, said mag nail being a center line of deflection point in the original center line of Mound Road; thence with the center line of Mound Road, the east line of said Miamisburg Mound Community Improvement Corp. 12.429 acre tract and the east line of said original 59.75 acre tract, North 05° 32' 42" East, a distance of 218.17 feet to a Mag nail set, said mag nail being the

northeast corner of said Miamisburg Mound Community Improvement Corp. 12.429 acre tract and the **True Point of Beginning** of the hereinafter described new division of 2.542 acres;

Thence with the north line of said Miamisburg Mound Community Improvement Corp. 12.429 acre tract, **North 85° 05' 35" West**, passing a Mag nail set at 30.00 feet, said mag nail lying in the west right of way line of Mound Road, in all a distance of **496.88 feet to a 5/8" iron pin set**, said iron pin being a point of curvature in the northwesterly line of said Miamisburg Mound Community Improvement Corp. 12.429 acre tract;

Thence with a new division line on the following eleven (11) courses,

1) **North 10° 39' 51" East**, a distance of **144.96 feet to a 5/8" iron pin set**;
2) **Thence, North 29° 43' 26" East**, a distance of **62.93 feet to a 5/8" iron pin set**;
3) **Thence, North 69° 33' 41" East**, a distance of **26.88 feet to a railroad spike set**;
4) **Thence, North 85° 25' 03" East**, a distance of **16.15 feet to a railroad spike set**;
5) **Thence, South 85° 59' 22" East**, a distance of **168.77 feet to a railroad spike set**;
6) **Thence, South 01° 34' 34" East**, a distance of **4.60 feet to a Mag nail set**;
7) **Thence, North 88° 51' 18" East**, a distance of **68.48 feet to a chiseled cross notch set**;
8) **Thence, North 06° 06' 00" East**, a distance of **16.15 feet to a 5/8" iron pin set**;
9) **Thence, South 85° 06' 10" East**, a distance of **31.61 feet to a 5/8" iron pin set**;
10) **Thence**, with a curve to the right, said tangent bearing being South 65° 24' 00" East, having a **delta angle of 69° 33' 41", a radius of 26.90 feet, an arc length of 32.78 feet** and **a chord bearing and distance of North 59° 30' 28" East,** ***30.79*** **feet to a 5/8" iron pin set**;
11) **Thence, South 85° 35' 05" East**, passing a 5/8" iron pin set at 94.16 feet, said iron pin lying in the west right of way line of Mound Road, in all a distance of **124.16 feet to a Mag nail set**, said mag nail lying in the east line of said original 59.75 acre tract, the east line of said United States of America 87.28 acre tract and the center line of Mound Road;

Thence with the east line of said original 59.75 acre tract, the east line of said United States of America 87.28 acre tract and the center line of Mound Road, **South 05° 32' 42" West**, a distance of **255.87 feet to the True Point of Beginning**, containing **2.542 acres**, more or less, being subject to all easements, highways and right of ways of record..

Bearing basis established as Grid North by GPS observation August 7th & 8th , 2002 at Latitude N39° 38' 25.81", Longitude W084° 17' 28.09" (Coast & Geodetic Survey Monument #G-139, 1947); Ohio State Plane Coordinate system, Ohio South Zone 3402 (NAD 83), True North being 01° 08' 11" east of Grid North.

This description prepared from an actual field survey performed under my direct supervision, Timothy W. Schram, Sr., Registered Professional Surveyor number 7299 of the State of Ohio, and that all monuments referenced herein and placed on the ground represents the boundaries of the herein described tract, and based on a Plat of Survey as recorded in the Montgomery County Engineer's Record of Land Surveys in Record Volume number _____, Page _____.

_____

Timothy W. Schram, Sr., Regist. Prof. Surveyor No. 7299
of the State of Ohio, September 11, 2002.

Exhibit "B"
DESCRIPTION OF

42.882 Acres

Parcel 1B

located in
Section 30 and 36, Town 2, Range 5, M.Rs.
City of Miamisburg, Montgomery County, Ohio

Situate in Section 30 and 36, Town 2, Range 5, M.Rs., City of Miamisburg, County of Montgomery, State of Ohio, ***being part of a 87.28 acre tract conveyed to the United States of America, as recorded in Deed Book Volume 1214, Page 12*** of the Deed Records of Montgomery County, Ohio, said 87.28 acre tract being comprised of a 59.75 acre tract, also a 19.40 acre tract, also a 9.97 acre tract, also a 0.78 acre tract and a 0.78 acre tract all known as Lot Numbered 2259 of the consecutive numbered lots of the City of Miamisburg, ***also being part of a 79.74 acre tract conveyed to the United States of America, as recorded in Microfiche No. 81-376A01*** of the Deed Records of Montgomery County, Ohio, said 79.74 acre tract being comprised of a 24.197 acre tract and known as Lot Numbered 6128 of the consecutive numbered lots of the City of Miamisburg, also a 35.50 acre tract known as Lot Numbered 6127 of the consecutive numbered lots of the City of Miamisburg, and a 24.24 acre tract known as Lot Numbered 4777 of the consecutive numbered lots of the City of Miamisburg, ***also being part of a 20.46 acre tract conveyed to the United States of America, as recorded in Deed Book Volume 1215, Page 347 and part of a 17.58 acre tract conveyed to the United States of America, as recorded in Deed Book Volume 1214, Page 248***, all of the Deed Records of Montgomery County, Ohio, said 20.46 acre tract and 17.58 acre tract being known as Lot Numbered 2290 of the consecutive numbered lots of the City of Miamisburg, ***being a new division of 42.882 acres from said 87.28 acre tract, 79.74 acre tract, 20.46 acre tract and 17.58 acre tract*** and being more fully bounded and described as follows:

Commencing at a "DOE" concrete monument found, said monument being the southwest corner of the Miami Mound Plat as recorded in Record Plat Book Volume 94, Page 34 of the Plat Records of Montgomery County, Ohio, said monument being the southeast corner of a 12.429 acre tract, known as Part lot Numbered 2259 of the consecutive numbered lots of the City of Miamisburg, Ohio, also known as Parcel "D" of the Mound Complex, conveyed to the Miamisburg Mound Community Improvement Corporation, as recorded in Deed Microfiche No. 99-0852B05 of the Deed Records of Montgomery County, Ohio, said monument lying in the north line of a 79.74 acre tract, known as City Lot Numbered 6128 of the consecutive numbered lots of the City of Miamisburg, Ohio, conveyed to the United States of America, as recorded in Microfiche No. 81-0376A01 of the Deed Records of Montgomery County, Ohio, said "DOE" monument being the **True Point of Beginning** of the hereinafter described new division of 42.882 acres;

Thence with the south line of the Miami Mound Plat, **South 83° 59' 35" East**, a distance of **34.07 feet to a "DOE" concrete monument found,** said monument being the northeast corner of said United States of America 79.74 acre tract, said monument being the northwest corner of a 7.502 acre tract conveyed to Daniel R. Shell, as recorded in Deed Microfiche No. 85-443D02 of the Deed Records of Montgomery County, Ohio, said 7.502 acre tract being known as Lot Numbered 6130 of the consecutive numbered lots of the City of Miamisburg, Ohio;

Thence with the east line of said United States of America 79.74 acre tract and the west line of said Shell 7.502 acre tract, **South 04° 42' 45" West**, a distance of **311.82 feet to a 5/8" capped "Schram" iron pin set by previous survey** by myself, Timothy W. Schram, Sr. for a new division of 94.838 acre tract, known as Parcel 4 of the Mound Complex, said iron pin being the northeasterly corner of said new division of 94.838 acre tract;

Thence with said new division line of said 94.838 acre tract on the following three (3) courses,

1) **Due West**, a distance of **62.54 feet to a 5/8" capped "Schram" iron pin set by previous survey;**
2) **Thence, Due North**, a distance of **111.18 feet to a 5/8" capped "Schram" iron pin set by previous survey;**
3) **Thence** with said new division line of 94.838 acres and a new division line of the herein described 45.259 acres, **South 89° 59' 52" West**, passing a point on the west line of Section 30 and the east line of Section 36 at 1249.47 feet, reference from said point a railroad spike found, South 05° 16' 42" West, 1682.63 feet, said spike being the south section corner of Section 30 and 36, also a concrete monument found, disturbed, North 05° 16' 42" East, 3724.33 feet, said concrete monument being the north corner of Section 30 and 36, also passing a 5/8" capped "Schram" iron pin set by previous survey at 1767.43 feet, said iron pin being a northerly corner of said new division of 94.838 acres, in all a distance of **1784.02 feet to a 5/8" iron pin set**, said iron pin being the southwest corner of the herein described new division of 45.259 acres, said iron pin also being a northerly corner of a new division of 6.568 acre tract, known as Parcel IC of the Mound Complex;

Thence with a new division line on the following twenty-three (23) courses,

1) **North 24° 17' 45" West**, a distance of **458.95 feet to a 5/8" iron pin set;**
2) **Thence, North 83° 58' 45" West**, a distance of **109.56 feet to a 5/8" iron pin set;**
3) **Thence, North 05° 38' 00" East**, a distance of **284.12 feet to a 5/8" iron pin set;**
4) **Thence, North 08° 45' 53" East**, a distance of **94.64 feet to a 5/8" iron pin set;**
5) **Thence, North 21° 05' 14" East**, a distance of **206.77 feet to a 5/8" iron pin set;**
6) **Thence, North 75° 37' 35" West**, a distance of **22.86 feet to a 5/8" iron pin set;**
7) **Thence, North 14° 15' 45" West**, a distance of **152.26 feet to a 5/8" iron pin set;**
8) **Thence, North 50° 25' 32" East**, a distance of **58.44 feet to a 5/8" iron pin set;**
9) **Thence, North 25° 13' 50" East**, a distance of **88.97 feet to a 5/8" iron pin set;**
10) **Thence, North 50° 57' 41" East**, a distance of **58.71 feet to a 5/8" iron pin set;**
11) **Thence, North 63° 34' 44" East**, a distance of **106.77 feet to a railroad spike set;**
12) **Thence, North 67° 55' 35" East**, a distance of **195.36 feet to a railroad spike set;**
13) **Thence, North 32° 10' 07" East**, a distance of **60.19 feet to a 5/8" iron pin set;**
14) **Thence, North 80° 03' 26" East**, a distance of **45.82 feet to a 5/8" iron pin set;**
15) **Thence, North 01° 21' 45" West**, a distance of **10.36 feet to a 5/8" iron pin set;**
16) **Thence, North 82° 56' 15" East**, a distance of **120.55 feet to a 5/8" iron pin set;**
17) **Thence, South 05° 28' 44" East**, a distance of **114.21 feet to a 5/8" iron pin set;**
18) **Thence, North 84° 30' 00" East**, a distance of **56.66 feet to a 5/8" iron pin set;**
19) **Thence, South 27° 23' 24" East**, a distance of **170.96 feet to a 5/8" iron pin set;**
20) **Thence, South 26° 26' 49" East**, a distance of **82.75 feet to a 5/8" iron pin set;**
21) **Thence, North 82° 42' 58" East**, passing a point on the west line of Section 30 and the east line of Section 36 at 101.51 feet, reference from said point a railroad spike found, South 05°

16' 42" West, 2878.31 feet, said spike being the south section corner of Section 30 and 36, also a concrete monument found, disturbed, North 05° 16' 42" East, 2528.66 feet, said concrete monument being the north corner of Section 30 and 36, in all a distance of **158.83 feet to a 5/8" iron pin set;**

22) **Thence, South 39° 17' 18" East**, a distance of **324.25 feet to a 5/8" iron pin set;**

23) **Thence, South 84° 30' 40" East,** a distance of **292.51 feet to a 5/8" iron pin set**, said iron pin being a westerly corner of a 12.429 acre tract, known as Part Lot Numbered 2259 of the consecutive numbered lots of the City of Miamisburg, Ohio, also known as Parcel "D" of the Mound Complex, conveyed to the Miamisburg Mound Community Improvement Corporation, as recorded in Deed Microfiche No. 99-0852B05 of the Deed Records of Montgomery County, Ohio;

Thence with the westerly line of said Miamisburg Mound Community Improvement Corp. 12.429 acre tract on the following three (3) courses,

1) **South 05° 34'05" West**, a distance of **360.00 feet to a 5/8" iron pin set;**

2) **Thence, South 84° 25' 51" East**, a distance of **93.50 feet to a 5/8" iron pin set;**

3) **Thence, South 05° 34' 05" West**, a distance of **291.47 feet to a 5/8" capped "LeRoy" iron pin found**, said iron pin being set by William C. LeRoy, Professional Surveyor number 7664 of the State of Ohio by prior survey as recorded in the Montgomery County Engineer's Record of Land Surveys, Volume 1999, Page 0326, said iron pin being the southwest corner of said Miamisburg Mound Community Improvement Corp. 12.429 acre tract, said iron pin lying in the south line of said United States of America 87.28 acre tract, said iron pin lying in the north line of said Untied State of America 79.74 acre tract;

Thence with the south line of said Miamisburg Mound Community Improvement Corp. 12.429 acre tract, the south line of said United States of America 87.28 acre tract and the north line of said Untied State of America 79.74 acre tract, **South 84° 32' 54" East**, a distance of **613.34 feet to the True Point of Beginning**, containing **42.882 acres**, more or less, of which ***18.230 acres lying in Section 30, 24.652 acres lying in Section 36,*** of which ***3.032 acres being part of Lot Numbered 6128, 5.088 acres being part of Lot Numbered 6127, 5.365 acres being part of Lot Numbered 4777, 10.109 acres being part of Lot Numbered 2259 and 19.288 acres being part of Lot Numbered 2290,*** all of the consecutive numbered lots of the City of Miamisburg, Ohio, and being subject to all easements, highways and right of ways of record.

Bearing basis established as Grid North by GPS observation August 7th & 8th , 2002 at Latitude N39° 38' 25.81", Longitude W084° 17' 28.09" (Coast & Geodetic Survey Monument #G-139, 1947); Ohio State Plane Coordinate system, Ohio South Zone 3402 (NAD 83), True North being 01° 08' 11" east of Grid North.

This description prepared from an actual field survey performed under my direct supervision, Timothy W. Schram, Sr., Registered Professional Surveyor number 7299 of the State of Ohio, and that all monuments referenced herein and placed on the ground represents the boundaries of the herein described tract, and based on a Plat of Survey as recorded in the Montgomery County Engineer's Record of Land Surveys in Record Volume number **2003**, Page **XXXX**.

_____

Timothy W. Schram, Sr., Regist. Prof. Surveyor No. 7299
of the State of Ohio, March 21, 2003.

Exhibit "C"
DESCRIPTION OF

6.568 Acres
Parcel 1C

located in
Section 36, Town 2, Range 5, MRs.
City of Miamisburg, Montgomery County, Ohio

Situate in Section 36, Town 2, Range 5, MRs., City of Miamisburg, County of Montgomery, State of Ohio, ***being part of a 79.74 acre tract conveyed to the United States of America, as recorded in Microfiche No. 81-376A01*** of the Deed Records of Montgomery County, Ohio, said 79.74 acre tract being comprised of a 24.197 acre tract and known as Lot Numbered 6128 of the consecutive numbered lots of the City of Miamisburg, also a 35.50 acre tract known as Lot Numbered 6127 of the consecutive numbered lots of the City of Miamisburg, and a 24.24 acre tract known as Lot Numbered 4777 of the consecutive numbered lots of the City of Miamisburg, ***also being part of a 42.56 acre tract conveyed to the United States of America, as recorded in Microfiche No. 81-323A11*** of the Deed Records of Montgomery County, Ohio, said 42.56 acre tract being comprised of a 46.313 acre tract known as Lot Numbered 4778 of the consecutive numbered lots of the City of Miamisburg, said 42.56 acre tract being all the remainder of an 80 acre tract as conveyed from Ray C. Dunaway and Thelma Mae Dunaway to Oak Knoll Development and Investment Co., Inc., as recorded in Microfiche No. 71-513B06 of the Deed Records of Montgomery County, Ohio, ***being a new division of 6.568 acres from said 79.74 acre tract and 42.56 acre tract*** and being more fully bounded and described as follows:

Commencing at a "DOE" concrete monument found, said monument being the southwest corner of the Miami Mound Plat as recorded in Record Plat Book Volume 94, Page 34 of the Plat Records of Montgomery County, Ohio, said monument being the southeast corner of a 12.429 acre tract, known as Part lot Numbered 2259 of the consecutive numbered lots of the City of Miamisburg, Ohio, also known as Parcel "D" of the Mound Complex, conveyed to the Miamisburg Mound Community Improvement Corporation, as recorded in Deed Microfiche No. 99-0852B05 of the Deed Records of Montgomery County, Ohio, said monument lying in the north line of a 79.74 acre tract, known as City Lot Numbered 6128 of the consecutive numbered lots of the City of Miamisburg, Ohio, conveyed to the United States of America, as recorded in Microfiche No. 81-0376A01 of the Deed Records of Montgomery County, Ohio, thence with the south line of the Miami Mound Plat, South 83° 59' 35" East, a distance of 34.07 feet to a "DOE" concrete monument found, said monument being the northeast corner of said United States of America 79.74 acre tract, said monument being the northwest corner of a 7.502 acre tract conveyed to Daniel R. Shell, as recorded in Deed Microfiche No. 85-443D02 of the Deed Records of Montgomery County, Ohio, said 7.502 acre tract being known as Lot Numbered 6130 of the consecutive numbered lots of the City of Miamisburg, Ohio; thence with the east line of said United States of America 79.74 acre tract and the west line of said Shell 7.502 acre tract, South 04° 42' 45" West, a distance of 311.82 feet to a 5/8" capped "Schram" iron pin set by previous survey by myself, Timothy W. Schram, Sr. for a new division of 94.838 acre tract, known as Parcel 4 of the Mound Complex, said iron pin being the northeasterly corner of said new division of 94.838 acres; thence with said new division line of said 94.838 acre tract on the following three (3) courses, 1) Due West, a distance of 62.54 feet to a 5/8" capped "Schram" iron pin set by previous survey; 2) thence, Due North, a distance of 111.18 feet to a 5/8" capped

"Schram" iron pin set by previous survey; 3) thence, South 89° 59' 52" West, passing a point on the west line of Section 30 and the east line of Section 36 at 1249.47 feet, reference from said point a railroad spike found, South 05° 16' 42" West, 1682.63 feet, said spike being the south section corner of Section 30 and 36, also a concrete monument found, disturbed, North 05° 16' 42" East, 3724.33 feet, said concrete monument being the north corner of Section 30 and 36, in all a distance of 1767.43 feet to a 5/8" capped "Schram" iron pin set by previous survey, said iron pin being a northerly corner of said new division of 94.838 acres, said iron pin being the **True Point of Beginning** of the hereinafter described new division of 6.568 acres;

Thence with said new division line of said 94.838 acre tract on the following six (6) courses,

1) **South 23° 53' 27" West**, a distance of **12.17 feet to a 5/8" capped "Schram" iron pin set by previous survey**;
2) **Thence, South 47° 17' 05" East**, a distance of **318.93 feet to a 5/8" capped "Schram" iron pin set by previous survey**;
3) **Thence, South 10° 55' 31" East**, a distance of **75.93 feet to a 5/8" capped "Schram" iron pin set by previous survey**;
4) **Thence, South 79° 34' 35" West**, a distance of **878.76 feet to a 5/8" capped "Schram" iron pin set by previous survey**;
5) **Thence, Due South**, a distance of **82.39 feet to a 5/8" capped "Schram" iron pin set by previous survey**;
6) **Thence, Due West**, a distance of **72.92 feet to a 5/8" capped "Schram" iron pin set by previous survey**, said iron pin lying in the northeasterly line of a 5.481 acre tract conveyed to the Consolidated Railroad Corporation, as recorded in Microfiche No. 78-502A01 of the Deed Records of Montgomery County, Ohio, said Consolidated Railroad Corporation 5.481 acre tract also known as Lot Numbered 4780 of the consecutive numbered lots of the City of Miamisburg, Ohio;

Thence with the northeasterly line of said Consolidated Railroad Corporation 5.481 acre tract, **North 09° 33' 38" West**, a distance of **351.85 feet to a 5/8" iron pin set**, said iron pin lying in the north line of said United States of America 42.56 acre tract, said iron pin being the southwest corner of a 1.6 acre tract, known as Tract number A-112, conveyed to the United States of America, as recorded in Deed Book Volume 1258, Page 74 of the Deed Records of Montgomery County, Ohio;

Thence with the north line of said Untied State of America 42.56 acre tract and the south line of said Untied States of America 1.6 acre tract, **South 84° 25' 01" East**, a distance of **100.51 feet to a 5/8" iron pin set**, said iron pin being the southeast corner of said Untied States of America 1.6 acre tract;

Thence with the easterly line of said Untied States of America 1.6 acre tract, **North 09° 26' 26" West**, a distance of **60.47 feet to a 5/8" iron pin set**, said iron pin being the northwesterly corner of the herein described new division of 6.568 acres;

Thence with a new division line on the following two (2) courses,

1) **North 79° 08' 30" East**, a distance of **666.53 feet to a 5/8" iron pin set**;

2) **Thence, North 24° 17' 45" West,** a distance of **23.06 feet to a 5/8" iron pin set,** said iron pin being a northerly corner of the herein described 6.568 acre tract, said iron pin being the southwest corner of a new division of 45.259 acre tract, known as Parcel IB of the Mound Complex;

Thence with the south line of said new division of 45.259 acres, **North 89° 59' 52" East,** a distance of **16.59 feet to the True Point of Beginning,** containing **6.568 acres**, more or less, and being subject to all easements, highways and right of ways of record..

Bearing basis established as Grid North by GPS observation August 7th & 8th , 2002 at Latitude N39° 38' 25.81", Longitude W084° 17' 28.09" (Coast & Geodetic Survey Monument #G-139, 1947); Ohio State Plane Coordinate system, Ohio South Zone 3402 (NAD 83), True North being 01° 08' 11" east of Grid North.

This description prepared from an actual field survey performed under my direct supervision, Timothy W. Schram, Sr., Registered Professional Surveyor number 7299 of the State of Ohio, and that all monuments referenced herein and placed on the ground represents the boundaries of the herein described tract, and based on a Plat of Survey as recorded in the Montgomery County Engineer's Record of Land Surveys in Record Volume number _____, Page _____.

_____

Timothy W. Schram, Sr., Regist. Prof. Surveyor No. 7299
of the State of Ohio, September 11, 2002.
F: 02088 Mound Parcel 5 Surv Parcel IC

EXHIBIT D

DESCRIPTION OF
12.429 Acres
located in
Section 30, Fractional Town 2, Range 5 MRS
part of
City of Miamisburg Lot No. 2259

DIV/2,9

K46-5-1-11

December 09, 1999

Situate in the State of Ohio, County of Montgomery, City of Miamisburg and being part of Section 30, Fractional Town 2, Range 5 M.R.S. and being part of City of Miamisburg Lot No. 2259 and being part of a tract of land conveyed to The United States of America as described in Deed Book 1214, Page 12-14 and being more particularly described as follows:

COMMENCING at a Concrete Monument Found (top broken off) at the Northwest Corner of Section 30, ***THENCE*** with the north line of said Section 30 and the northerly line of Fractional Township 2, Range 6 MRS, ***South 84° 00'12" East for a distance of 1249.75 feet*** to the Northwest corner of the Roads End Plat as recorded in Plat Book DD, Page 75 and the centerline of Mound Road extended north, (witness a 5/8" Rebar Found bearing South 63° 34'50" East at a distance of 0.30 feet from the Northwest corner of said Plat);

THENCE with said Centerline of Mound Road, ***South 05° 32'42" West for a distance of 2490.95 to a Mag Nail Set at the TRUE POINT OF BEGINNNG*** of the herein described tract;

THENCE continuing with said centerline, ***South 05° 32' 42" West for a distance of 218.17 feet to a Railroad Spike Found*** by common report at the Northeast corner of a 0.78 Acre tract of land conveyed to Randall & Rita Hilgefort as described in Deed MF 97-0746-A08;

THENCE with said 0.78 Acre Hilgeforts North line, ***North 85° 28'23" West for a distance of 111.00 feet to a 5/8" Rebar Set*** at said 0.78 Acre Hilgeforts Northwest corner, (passing a 5/8" Rebar Set at 30.00 feet);

THENCE with said 0.78 Acre Hilgeforts West line and the West line of a 0.26 Acre tract conveyed to Betty J. Eckhart as described in Deed MF 98-0834-C09 and the West line of a 0.7 Acre tract conveyed to Melissa A. Wilson as described in Deed MF 89-0125-D01 and the West Line of the Miami Mound Plat as recorded in Plat Book 94, Page 34, ***South 07° 06'56" East for a distance of 714.44 feet to a IP in Concrete Found*** at the Southwest corner of said Miami Mound Plat;

THENCE with the Southerly line of said City of Miamisburg Lot No. 2259, ***North 84° 32'54" West for a distance of 613.34 feet to a 5/8" Rebar Set;***

THENCE on a new division line, ***North 05° 34'05" East for a distance of 291.47 feet to a 5/8" Rebar Set;***

THENCE continuing on a new division line, ***North 84° 25' 51" West for a distance of 93.50 feet to a 5/8" Rebar Set;***

THENCE continuing on a new division line, ***North 05° 34'05" East for a distance of 360.00 feet to a 5/8" Rebar Set;***

THENCE continuing on a new division line, ***South 84° 26'02"East for a distance of 35.50 feet to a 5/8" Rebar Set;***

THENCE continuing on a new division line, ***North 05° 34'05"East for a distance of 131.23 feet to a 5/8" Rebar Set;***

THENCE continuing on a new division line on a ***TANGENT CURVE to the RIGHT with a RADIUS of 130.00 feet, a DELTA ANGLE of 89° 20'20", a ARC LENGTH of 202.72 feet with a CHORD BEARING of North 50° 14'15" East for a CHORD DISTANCE of 182.80 feet to a 5/8" Rebar Set;***

THENCE continuing on a new division line, ***South 85° 05'35" East for a distance of 496.88 feet BACK TO THE TRUE POINT OF BEGINNING***, (passing a 5/8" Rebar set at 466.88 feet).

Described tract contains 12.429 Acres more or less. North based on State Plane Coordinates, South Zone State of Ohio as taken from a drawing prepared by Lockwood, Jones and Beals dated 6-01-82, Project No. 2149. This Description is based on an actual Field Survey performed by HLS Surveyors and Engineers under the direct supervision of William C. LeRoy P.S. Ohio License Number 7664. Subject to all Easements, Highways, Covenants and Restrictions of Public Record.

William C. LeRoy P.S.
Ohio License No. 7664
12-9-99

STATE OF OHIO
WILLIAM C. LEROY 7664
REGISTERED PROFESSIONAL SURVEYOR

JOSEPH LITVIN P.E., P.S.
COUNTY ENGINEER
MONTGOMERY COUNTY DAYTON, OHIO
DESCRIPTION CHECKED AND APPROVED
BY EAM DATE 12/16/99

A.J. WAGNER
MONTGOMERY COUNTY AUDITOR
DIVISION

PARCEL D MOUND 99152PD

DEED 99-0858 B10

EXHIBIT E

DESCRIPTION OF
14.288 Acres
located in
Section 30&36, Fractional Town 2, Range 5 MRS
Section 25, Fractional Town 1, Range 6 MRS
part of
City of Miamisburg Lot No. 2259

DN|2,9

K46-5-1-10

December 09, 1999

Situate in the State of Ohio, County of Montgomery, City of Miamisburg and being part of Section 30 & 36, Fractional Town 2, Range 5 M.R.S. also part of Section 25, Fractional Town 1, Range 6 MRS and being part of City of Miamisburg Lot No. 2259 and being part of a tract of land conveyed to The United States of America as described in Deed Book 1214, Page 12-14, also part of a tract of land conveyed to the United States of America as described in Deed Book 1246, Page 49 and being more particularly described as follows:

COMMENCING at a Concrete Monument Found (top broken off) at the Northwest Corner of Section 30, *THENCE* with the west line of said Section 30, ***South 05° 45'57" West for a distance of 130.89 feet to a 1" Pinch Top Pipe Found*** at the Southwest corner of a 2.90 acre tract conveyed to Robert P. Heist as described in Deed MF 74-526-C09 and at the ***TRUE POINT OF BEGINNNG*** of the herein described tract;

THENCE with the south line of said 2.90 Acre Heist Lands, ***South 85° 04' 57" East for a distance of 1023.91 feet to a Concrete Monument with brass disc Found*** at the Southeast corner of said 2.90 Acre Heist Lands;

THENCE with the east line of said 2.90 Acre Heist Lands and the west right of way line of Mound Street extended, ***North 06° 53' 16" East for a distance of 231.00 feet to a Concrete Monument with brass disc Found,*** (passing a 5/8" Rebar Set at 100.99 feet, also passing a 5/8" Rebar Set on the North line of Section 30 at 129.56 feet);

THENCE leaving said right of way line, ***South84° 38'35" East for a distance of 30.00 feet to a 5/8" Rebar Capped Found (LJB)*** on the centerline of said Mound Street;

THENCE with the centerline of said Mound Street, ***South 06° 53'16" West for a distance of 100.00 feet to a 5/8" Rebar Capped Found (LJB);***

THENCE continuing with said centerline of said Mound Street, ***South 84° 38'08" East for a distance of 193.41 feet*** to the Northwest Corner of the Roads End Plat as recorded in Plat Book DD, Page 75, (witness a 5/8" Rebar Found bearing South 63° 34'50" East at a distance of 0.30 feet from the Northwest corner of said plat);

DEED 99-0852 003

THENCE continuing with said centerline of said Mound Street, ***South 05° 32'42" West for a distance of 571.99 feet to a Mag Nail Set;***

THENCE on a new division line, ***South 89° 58' 18" West for a distance of 72.86 feet to a 5/8" Rebar Set;***

THENCE continuing on a new division line, ***South 51° 26'20" West for a distance of 48.51 feet to a 5/8" Rebar Set;***

THENCE continuing on a new division line, ***South 83° 30'22" West for a distance of 97.29 feet to a 5/8" Rebar Set;***

THENCE continuing on a new division line, ***South 63°47'11" West for a distance of 98.67 feet to a 5/8" Rebar Set;***

THENCE continuing on a new division line, ***North 89° 57'40" West for a distance of 173.02 feet to a 5/8" Rebar Set;***

THENCE continuing on a new division line, ***North 83° 51'21"West for a distance of 247.27 feet to a 5/8" Rebar Set;***

THENCE continuing on a new division line on a ***TANGENT CURVE to the RIGHT with a RADIUS of 360.67 feet, a DELTA ANGLE of 58° 46'33", a ARC LENGTH of 369.99 feet with a CHORD BEARING of North 54° 28'04" West for a CHORD DISTANCE of 353.98 feet to a 5/8" Rebar Set;***

THENCE continuing on a new division line, ***North 25° 04'47" West for a distance of 194.43 feet to a 5/8" Rebar Set;***

THENCE continuing on a new division line, ***South 64° 01'25" West for a distance of 37.94 feet to a 5/8" Rebar Set;***

THENCE continuing on a new division line, ***North 64° 37' 16" West for a distance of 56.61 feet to a 5/8" Rebar Set;***

THENCE continuing on a new division line, ***North 25° 44'48" West for a distance of 160.76 feet to a 5/8" Rebar Set***, (passing a 5/8" Rebar Set at 99.15 feet on the west line of said Section 30)***;***

THENCE continuing on a new division line through Section 36, ***North 65° 31'15" East for a distance of 35.05 feet to a 5/8" Rebar Set*** on the East line of said Section 36***;***

THENCE with the East line of said Section 36, ***North 05° 29'16" East for a distance of 57.67 feet BACK TO THE TRUE POINT OF BEGINNING***.

Described tract contains 14.288 Acres more or less. North based on State Plane Coordinates, South Zone State of Ohio as taken from a drawing prepared by Lockwood, Jones and Beals dated 6-01-82, Project No. 2149. This Description is based on an actual Field Survey performed by HLS Surveyors and Engineers under the direct supervision of William C. LeRoy P.S. Ohio License Number 7664. Subject to all Easements, Highways, Covenants and Restrictions of Public Record.

Also subject to a Soil Exclusion Easement being more particularly described as follows:

COMMENCING at a Concrete Monument Found (top broken off) at the Northwest Corner of Section 30, ***THENCE*** with the west line of said Section 30, ***South 05° 45'57" West for a distance of 130.89 feet to a 1" Pinch Top Pipe Found*** at the Southwest corner of a 2.90 acre tract conveyed to Robert P. Heist as described in Deed MF 74-526-09;

THENCE with the south line of said 2.90 Acre Heist Lands, ***South 85° 04' 57" East for a distance of 1023.91 feet to a Concrete Monument with brass disc Found*** at the Southeast corner of said 2.90 Acre Heist Lands;

THENCE with the east line of said 2.90 Acre Heist Lands and the west right of way line of Mound Street extended, ***North 06° 53' 16" East for a distance of 231.00 feet to a Concrete Monument with brass disc Found,*** (passing a 5/8" Rebar Set at 100.99 feet, also passing a 5/8" Rebar Set on the North line of Section 30 at 129.56 feet) and the ***TRUE POINT OF BEGINNING*** of the herein described tract;

THENCE leaving said right of way line, ***South84° 38'35" East for a distance of 30.00 feet to a 5/8" Rebar Capped Found (LJB)*** on the centerline of said Mound Street;

THENCE with the centerline of said Mound Street, ***South 06° 53'16" West for a distance of 100.00 feet to a 5/8" Rebar Capped Found (LJB);***

THENCE continuing with said centerline of said Mound Street, ***South 84° 38'08" East for a distance of 193.41 feet*** to the Northwest Corner of the Roads End Plat as recorded in Plat Book DD, Page 75, (witness a 5/8" Rebar Found bearing South 63° 34'50" East at a distance of 0.30 feet from the Northwest corner of said plat)***;***

THENCE continuing with said centerline of said Mound Street, ***South 05° 32'42" West for a distance of 571.99 feet to a Mag Nail Set;***

THENCE with a new division line, ***South 89° 58' 18" West for a distance of 72.86 feet to a 5/8" Rebar Set;***

THENCE North 06° 48'23" West for a distance of 694.41 feet BACK TO THE TRUE POINT OF BEGINNING.

Said Easement contains 1.840 Acres more or less.

William C. LeRoy P.S.
Ohio License No. 7664
12-9-99

STATE OF OHIO
WILLIAM C. LEROY 7664
REGISTERED PROFESSIONAL SURVEYOR

TRANSFERRED
DEC 21 PM 1:52
A.J. WAGNER
AUDITOR

JOSEPH LITVIN P.E., P.S.
COUNTY ENGINEER
MONTGOMERY COUNTY DAYTON, OHIO
DESCRIPTION CHECKED AND APPROVED
BY EAM DATE 12/16/99

A.J. WAGNER
MONTGOMERY COUNTY AUDITOR
DIVISION

PARCEL H MOUND 99152ph.dwg

EXHIBIT F

DIV/1,2 K46-15-7-21,22
2,1 K46-11-9-7,8

DESCRIPTION OF
94.838 Acres
located in
Section 30, 35 and 36, Town 2, Range 5, MRs.
City of Miamisburg, Montgomery County, Ohio

Situate in the Southwest Quarter of Section 30, Town 2, Range 5, MRs., the Southeast Quarter of Section 36, Town 2, Range 5, MRs., Northeast Quarter Section 36, Town 2, Range 5, MRs., City of Miamisburg, County of Montgomery, State of Ohio, ***being part of a 79.74 acre tract conveyed to the United States of America, as recorded in Microfiche No. 81-376A01*** of the Deed Records of Montgomery County, Ohio, said 79.74 acre tract being comprised of a 24.197 acre tract and known as Lot Numbered 6128 of the consecutive numbered lots of the City of Miamisburg, also a 35.50 acre tract known as Lot Numbered 6127 of the consecutive numbered lots of the City of Miamisburg, and a 24.24 acre tract known as Lot Numbered 4777 of the consecutive numbered lots of the City of Miamisburg, ***also being part of a 42.56 acre tract conveyed to the United States of America, as recorded in Microfiche No. 81-323A11*** of the Deed Records of Montgomery County, Ohio, said 42.56 acre tract being comprised of a 46.313 acre tract known as Lot Numbered 4778 of the consecutive numbered lots of the City of Miamisburg, said 42.56 acre tract being all the remainder of an 80 acre tract as conveyed from Ray C. Dunaway and Thelma Mae Dunaway to Oak Knoll Development and Investment Co., Inc., as recorded in Microfiche No. 71-513B06 of the Deed Records of Montgomery County, Ohio, ***being a new division of 94.838 acres from said 79.74 acre and 42.56 acre tracts*** and being more fully bounded and described as follows:

Commencing at a railroad spike found in concrete, said spike being the southwest corner of Section 30, the southeast corner of Section 36 and the northeast corner of Section 35, said spike lying in the center line of Benner Road at an angle point in said road, said spike also being the southwest corner of said United States of America 79.74 acre tract and the southeast corner of said United States of America 42.56 acre tract, also being the northeast corner of a 0.47 acre tract conveyed to Danny and Judith Hall, as recorded in Microfiche No. 88-598D12 of the Deed Records of Montgomery County, Ohio, said spike having a scale coordinate value of North 594,365.34, East 1,496,165.88 of the Ohio Plane Coordinate System, South Zone, said spike being the **True Point of Beginning** of the hereinafter described 95.146 acre tract;

Thence with the center line of Benner Road and the northwesterly line of said Hall 0.47 acre tract, also the northwesterly line of a 0.764 acre tract conveyed to the City of Miamisburg, Ohio, as recorded in Microfiche No. 00-356C07 of the Deed Records of Montgomery County, Ohio, **South 66° 32' 34" West**, a distance of **958.76 feet to a Mag nail set**, said Mag nail being an angle point in the center line of Benner Road;

Thence continuing with the center line of Benner Road and the northwesterly line of said City of Miamisburg, Ohio 0.764 acre tract, **South 73° 18' 03" West**, a distance of **31.01 feet to a Mag nail set**, said Mag nail being the southwest corner of said United States of America 42.56 acre tract, said Mag nail also lying in the northeasterly line of the abandoned Miami & Erie canal lands, said lands being a 1.448 acre tract conveyed to the Miami Conservancy District, as recorded in Deed Book Volume 2450, Page 190 of the Deed Records of Montgomery County, Ohio, said Miami Conservancy

District 1.448 acre tract also being known as Lot Numbered 4782 of the consecutive numbered lots of the City of Miamisburg, Ohio;

Thence with the southwesterly line of said United States of America 42.56 acre tract and the northeasterly line of said Miami Conservancy District 1.448 acre tract on the following three (3) courses,

1) **North 14° 05' 40" West**, a distance of **62.17 feet to an axle found**, said axle being an angle point in said line;
2) **Thence, North 14° 12' 04" West**, a distance of **440.84 feet to an axle found**, said axle lying in the north line of the Northeast Quarter of Section 35 and the south line of the Southeast Quarter of Section 36, said axle also being an angle point in said line;
3) **Thence, North 14° 47' 54" West**, a distance of **259.69 feet to an axle found**, said axle being the northeasterly corner of said Miami Conservancy District 1.448 acre tract, said axle also being the southeasterly corner of lands conveyed to the Miami Conservancy District, as recorded in Deed Book Volume 2450, Page 194 of the Deed Records of Montgomery County, Ohio, said lands also being known as Lot Numbered 4781 of the consecutive numbered lots of the City of Miamisburg, Ohio;

Thence with the southwesterly line of said United States of America 42.56 acre tract and the northeasterly line of said Miami Conservancy District lands, **North 14° 45' 30" West**, a distance of **546.20 feet to a 5/8" iron pin set**, said iron pin being the southwesterly corner of a 5.481 acre tract conveyed to the Consolidated Railroad Corporation, as recorded in Microfiche No. 78-502A01 of the Deed Records of Montgomery County, Ohio, said Consolidated Railroad Corporation 5.481 acre tract also known as Lot Numbered 4780 of the consecutive numbered lots of the City of Miamisburg, Ohio;

Thence with the southerly line of said Consolidated Railroad Corporation 5.481 acre tract on the following three (3) courses,

1) **North 74° 56' 41" East**, a distance of **85.24 feet to a 1" iron pipe found**, said pipe being an angle point in said line;
2) **Thence, North 37° 22' 23" East**, a distance of **96.59 feet to a 5/8" iron pin found**, said iron pin being an angle point in said line;
3) **Thence, North 80° 25' 45" East**, a distance of **65.98 feet to a 1" iron pipe found**, said iron pipe being the southeasterly corner of said Consolidated Railroad Corporation 5.481 acre tract;

Thence with the northeasterly line of said Consolidated Railroad Corporation 5.481 acre tract, **North 09° 33' 38" West**, a distance of **147.88 feet to a 5/8" iron pin set**, said iron pin being the northwesterly corner of the herein described new division of 95.146 acres;

Thence with a new division line on the following nine (9) courses,

1) **Due East**, a distance of **72.92 feet to a 5/8" iron pin set**;
2) **Thence, Due North**, a distance of **82.40 feet to a 5/8" iron pin set**;
3) **Thence, North 79° 34' 35" East**, a distance of **878.75 feet to a 5/8" iron pin set**;
4) **Thence, North 10° 55' 31" West**, a distance of **75.93 feet to a 5/8" iron pin set**;
5) **Thence, North 47° 17' 05" West**, a distance of **318.93 feet to a 5/8" iron pin set**;
6) **Thence, North 23° 53' 27" East**, a distance of **12.17 feet to a 5/8" iron pin set**;

7) **Thence, North 89° 59' 52" East,** passing a point at 517.95 feet, said point lying in the east line of the Southeast Quarter of Section 36 and the west line of the Southwest Quarter of Section 30, reference a broken concrete monument found, North 05° 16' 42" East, 3724.34 feet, said concrete monument being the northeast corner of Section 36 and the northwest corner of Section 30 by common report, in all a distance of **1767.43 feet to a 5/8" iron pin set;**

8) **Thence, Due South,** a distance of **111.18 feet to a 5/8" iron pin set;**

9) **Thence, Due East,** a distance of **62.54 feet to a 5/8" iron pin set,** said iron pin lying in the east line of said United States of America 79.74 acre tract, said iron lying in the west line of a 7.502 acre tract conveyed to Daniel R. Shell, as recorded in Microfiche No. 85-443D02 of the Deed Records of Montgomery County, Ohio, said Shell 7.502 acre tract also being known as Lot Numbered 6130 of the consecutive numbered lots of the City of Miamisburg, Ohio, witness a concrete Department of Defense monument found, North 04° 42' 45" East, 311.82 feet, said monument being the northeast corner of said United States of America 79.74 acre tract;

Thence with the east line of said United States of America 79.74 acre tract and the west line of said Shell 7.502 acre tract, also the west line of a 8.850 acre tract conveyed to Frank C. Dickinson, as recorded in Microfiche No. 93-516A05 of the Deed Records of Montgomery County, Ohio, **South 04° 42' 45" West,** passing a 1" pinched top pipe found at 737.06 feet, said pipe lying 1.49 feet east of the line, said pipe being the common corner of said Shell 7.502 acre tract and Dickinson 8.850 acre tract, in all a distance of **1698.01 feet to a railroad spike in concrete found,** said spike lying in the south line of the Southwest Quarter of Section 30, said spike being the southeast corner of said United States of America 79.74 acre tract, said spike lying in the center line of Benner Road;

Thence with the south line of the Southwest Quarter of Section 30 and the center line of Benner Road, **North 84° 29' 45" West,** a distance of **1333.45 feet to the True Point of Beginning,** containing **94.838** acres, more or less, of which ***52.932 acres lying in the Southwest Quarter of Section 30, 36.224 acres lying in the Southeast Quarter of Section 36 and 5.682 acres lying in the Northeast Quarter of Section 35*** and being subject to all easements, highways and right of ways of record..

Bearing basis established on State Plane Coordinates South Zone, State of Ohio, per prior survey by Lockwood, Jones and Beals, dated; June 1st, 1982, said survey filed in the Montgomery County Engineer's Record of Land Surveys as survey reference number SUR-83-88.

This description prepared from an actual field survey performed under my direct supervision, Timothy W. Schram, Sr., Registered Professional Surveyor number 7299 of the State of Ohio, and that all monuments referenced herein and placed on the ground represents the boundaries of the herein described tract, and based on a Plat of Survey as recorded in the Montgomery County Engineer's Record of Land Surveys in Record Volume number _____.

KARL KEITH
COUNTY AUDITOR
MONTGOMERY COUNTY DAYTON, OHIO
DESCRIPTION APPROVED FOR
STRAIGHT TRANSFER CLOSURE
NOT CHECKED.
DATE 10/16/00
MAP DEPARTMENT

STATE OF OHIO
TIMOTHY W. SCHRAM, SR.
S-7299
REGISTERED PROFESSIONAL SURVEYOR

Timothy W. Schram, Sr.

Timothy W. Schram, Sr., Regist. Prof. Surveyor No. 7299
of the State of Ohio, August 21, 2000.
F: 2001/01018/01018a.des

KARL L. KEITH
MONTGOMERY COUNTY AUDITOR
DIVISION

EXHIBIT G

DESCRIPTION OF

4.805 Acres

located in

Northwest Quarter Section 30
Northeast Quarter Fractional Section 36 DIV/10
Town 2, Range 5, M.Rs.
City of Miamisburg, Montgomery County, Ohio

K46-5-1-12
DIV/13 K46-5-3-28

Situate in the Northwest Quarter of Section 30 and the Northeast Quarter of Fractional Section 36, Town 2, Range 5, M.Rs., City of Miamisburg, County of Montgomery, State of Ohio, ***being part of a remainder tract of 7.35 acres as conveyed to the United States of America, as recorded in Deed Book Volume 1246, Page 45, known as Tract No. A-109, of the Deed Records of Montgomery County, Ohio, said 7.35 acre tract also being part of Lot Numbered 2259 of the City of Miamisburg, Ohio, being part of a 1.61 acre tract conveyed to the United States of America, as recorded in Deed Book Volume 1256, Page 179, known as Tract No. A-110,*** of the Deed Records of Montgomery County, Ohio, ***being part of a 87.28 acre tract conveyed to the United States of America, as recorded in Deed Book Volume 1214, Page 12*** of the Deed Records of Montgomery County, Ohio, said 87.28 acre tract also being known as part of Lot Numbered 2259 and part of Lot Numbered 2290 of the City of Miamisburg, Ohio, said 1.61 acre tract also being part of Lots Numbered 6 and 7 of the Philip Gebhart plat as recorded in Record Plat Book Volume "A", Page 126 of the Plat Records of Montgomery County, Ohio, said 87.28 acre tract also being part of Lots Numbered 6, 7 and 14 of said Philip Gebhart plat, being a new division from said remainder 7.35 acre tract, 1.61 acre tract and 87.28 acre tract and being more fully bounded and described as follows:

Commencing at a Broken Concrete Monument found, said monument being the northwest corner of the Northwest Quarter of Section 30 and the northeast corner of the Northeast Quarter of Fractional Section 36, said monument also being the northwest corner of a 9.443 acre tract conveyed to Robert P. Heist, as recorded in Deed Microfiche No. 74-0526C09 of the Deed Records of Montgomery County, Ohio, said 9.443 acre tract being known as Lot Numbered 2258 of the City of Miamisburg, Ohio; thence with the west line of said Heist 9.443 acre tract, South 05° 45' 57" West, a distance of 130.89 feet to a 1" pinched top pipe found, said pipe being the northwest corner of said United States of America 7.35 acre remainder tract, also the northwest corner of Lot Numbered 2259 of the City of Miamisburg, Ohio, said iron pipe also being the northwest corner of a 14.288 acre tract conveyed to the Miamisburg Mound Community Improvement Corporation, as recorded in Deed Microfiche No. 99-0852B11 of the Deed Records of Montgomery County, Ohio, said iron pipe being the **True Point of Beginning** of the hereinafter described 4.805 acre tract;

Thence with the west line of said Miamisburg Mound Community Improvement Corporation 14.288 acre tract, **South 05° 29' 16" West**, a distance of **57.67 feet to a 5/8" iron pin reset**, said iron pin found bent, pulled and reset new iron pin;

Thence with a northwesterly line of said Miamisburg Mound Community Improvement Corporation 14.288 acre tract, **South 65°31' 15" West**, a distance of **35.05 feet to a 5/8" iron pin set**;

Thence with a southwesterly line of said Miamisburg Mound Community Improvement Corporation 14.288 acre tract, **South 25° 44' 48" East**, passing a point in the southeasterly line of said United States of America 1.61 acre tract and the north line of said United State of America 87.28 acre tract at 37.08 feet, also passing a point in the west line of the Northwest Quarter of Section 30 and the east line of the Northeast Quarter of Fractional Section 36 at 61.61 feet, in all a distance of **160.76 feet to a 2" mag nail set**;

Thence with a southerly line of said Miamisburg Mound Community Improvement Corporation 14.288 acre tract, **South 64° 37' 16" East**, passing a point on a southerly line of said United States of America 7.35 acre remainder tract and a northerly line of said United State of America 87.28 acre tract at 52.82 feet, in all a distance of **56.61 feet to a 5/8" iron pin set**;

Thence with a southeasterly line of said Miamisburg Mound Community Improvement Corporation 14.288 acre tract, **North 64° 01' 25" East**, passing a point on a southeasterly line of said United States of America 7.35 acre remainder tract and a northwesterly line of said United State of America 87.28 acre tract at 2.58 feet, in all a distance of **37.94 feet to a 5/8" iron pin found with an identification cap marked "LeRoy, 7664"**;

Thence with a southwesterly line of said Miamisburg Mound Community Improvement Corporation 14.288 acre tract, **South 25° 04' 47" East**, passing a point on the south line of said United States of America 7.35 acre remainder tract and the north line of said United State of America 87.28 acre tract at 20.96 feet, in all a distance of **194.43 feet to a 5/8" iron pin found with an identification cap marked "LeRoy, 7664"**, said iron pin being a point of curvature for a curve to the left;

Thence with a southwesterly line of said Miamisburg Mound Community Improvement Corporation 14.288 acre tract on a curve to the left, having **a delta angle of 28° 31' 32", a radius of 360.67 feet, an arc length of 179.57 feet and a chord bearing and distance of South 39° 20' 33" East, 177.72 feet to a 5/8" iron pin set**, said iron pin being the easterly corner of the herein described 4.805 acre tract;

Thence with new division line on the following thirteen (13) courses,

1) **South 40° 10' 30" West**, a distance of **91.47 feet to a 5/8" iron pin set**;
2) **Thence, South 23° 05' 31" East**, a distance of **17.73 feet to a 5/8" iron pin set**;
3) **Thence, South 64° 44' 27" West**, a distance of **98.64 feet to a 5/8" iron pin set**;
4) **Thence, North 50° 06' 58" West**, a distance of **22.74 feet to a railroad spike set**;
5) **Thence, South 66° 03' 34" West**, a distance of **39.97 feet to a railroad spike set**;
6) **Thence, North 23° 47' 05" West**, a distance of **359.64 feet to a railroad spike set**;
7) **Thence, North 59° 41' 15" West**, passing a point in the west line of the Northwest Quarter of Section 30 and the east line of the Northeast Quarter of Fractional Section 36 at 2.89 feet, in all a distance of **32.00 feet to a railroad spike set**;
8) **Thence, South 65° 05' 15" West**, a distance of **34.64 feet to a railroad spike set**;
9) **Thence, South 24° 54' 45" East**, a distance of **59.55 feet to a cross notch set in concrete**;
10) **Thence, South 65° 11' 32" West**, a distance of **268.32 feet to a 5/8" iron pin set**;
11) **Thence, North 24° 26' 30" West**, a distance of **24.31 feet to a railroad spike set**;
12) **Thence, North 65° 33' 30" East**, a distance of **7.67 feet to a 2" mag nail set**;

13) **Thence, North 24° 26' 30" West,** passing a point in the on the south line of said United States of America 1.61 acre remainder tract and the north line of said United State of America 87.28 acre tract at 221.39 feet, a distance of **308.52 feet to a 5/8" iron pin set,** said iron pin lying in the north line of said United States of America 1.61 acre tract;

Thence with the north line of said United States of America 1.61 acre tract, **North 65° 36' 29" East,** a distance of **478.50 feet to the *True Point of Beginning*,** containing **4.805 acres,** more or less, of ***which 1.952 acres being in the Northwest Quarter of Section 30 and 2.853 acres being in the Northeast Quarter of Fractional Section 36,*** subject to all easements and right of ways of record.

Bearing basis established per previous survey by HLS Surveyors & Engineers dated December 9, 1999 and recorded in Records of Land Survey Volume 1999, Page 0325 of the Montgomery County Engineer's Record of Land Surveys and Deed Microfiche No. 99-0852B11 of the Deed Records of Montgomery County, Ohio, along the north line of Parcel "H" as noted on said referenced survey plat, bearing of South 85° 04' 57" East.

This description prepared from an actual field survey performed under my direct supervision, Timothy W. Schram, Sr., Registered Professional Surveyor number 7299 of the State of Ohio, and that all monuments referenced herein and placed on the ground represents the boundaries of the herein described tract.

STATE OF OHIO
TIMOTHY W. SCHRAM, SR.
S-7299
REGISTERED
PROFESSIONAL SURVEYOR

Timothy W. Schram, Sr., Regist. Prof. Surveyor No. 7299
of the State of Ohio, March 10, 2002.

JOSEPH LITVIN P.E., P.S.
COUNTY ENGINEER
MONTGOMERY COUNTY DAYTON, OHIO
DESCRIPTION CHECKED AND APPROVED
BY SEB DATE 5/01/02
#2002-0140

KARL L. KEITH
MONTGOMERY COUNTY AUDITOR
DIVISION

F: 2000/00051/00051a.des

Phase I

Environmental Summary

CERCLA 120(h) SUMMARY
NOTICE OF HAZARDOUS SUBSTANCES

Final
December 2003

Miamisburg Closure Project

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

DEC 11 2003

REPLY TO THE ATTENTION OF: S-6J

Mr. Robert F. Warther
U.S. Department of Energy
Ohio Field Office
175 Tri County Parkway
Springdale, Ohio 45246

RE: DOE Mound Plant - Phase I Parcel Request for Concurrence to Transfer

Dear Mr. Warther:

Thank you for your letter requesting concurrence to transfer the Phase I Parcel at the United States Department of Energy (DOE) Mound Plant in Miamisburg, Ohio.

In evaluation of U.S. DOE's request, the United States Environmental Protection Agency (EPA) has reviewed the Phase I Record of Decision (ROD) signed by DOE, EPA, and the Ohio Environmental Protection Agency (OEPA), and the draft Proposed Final Phase I Environmental Summary - Notice of Hazardous Substances dated August 2003. David Seely of my staff has been coordinating the resolution of any outstanding issues relating to this request with DOE representatives at the Mound facility.

The Phase I ROD requires institutional controls be adopted that will ensure: 1) Maintenance of industrial/commercial land use; 2) Prohibition against residential use; 3) Prohibition against the use of ground water; 4) Site access for Federal and State Agencies for the purpose of sampling and monitoring; and 5) Prohibition against removal of Phase I soils from the DOE Mound property (as owned in 1998) boundary without approval from Ohio Department of Health , OEPA and EPA. In accordance with the Phase I ROD, these institutional controls will be included within the Quit Claim Deeds used to transfer the Phase I Parcel.

The Phase I ROD also identifies the use of Monitored Natural Attenuation (MNA) to address isolated elevated concentrations of trichloroethylene detected just above EPA drinking water standards. Ground water monitoring data over a period of several years have consistently shown that this contamination is not present as a contaminant plume. The ROD documents the appropriateness of selecting MNA as a remedy and specifies key elements of the ground water monitoring efforts that will be continued until such time that the contaminant groundwater concentrations are consistently below EPA drinking water standards.

In accordance with § 120 (h)(3) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) for transfer of any real property owned by the United States on which any hazardous substance was stored for one year or more, known to have been released, or disposed of, DOE is required to provide a covenant in the deeds for Parcel 1 warranting that all remedial action necessary to protect human health and the environment with respect to any such substance remaining on the property has been taken. Other requirements include: a covenant warranting that any additional remedial action found to be necessary after the date of such transfer shall be conducted by the United States; and a clause

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granting the United States access to the property in any case in which remedial action or corrective action is found to be necessary after the date of such transfer.

Based upon the above information, EPA concurs that DOE has demonstrated that the remedy selected in the Phase I Parcel ROD is operating properly and successfully. Therefore, EPA concurs that all remedial action necessary to protect public health and the environment with respect to any hazardous substance remaining within the Phase I Parcel has been taken and that transfer of the Phase I parcel may proceed.

EPA fully supports redevelopment and reuse of the structures and other property available at the Mound Plant. However, assurances must be provided that all property and building leases and transfers will be protective of public health and the environment. If you have any questions or concerns about this or future economic development issues at the site, please contact David Seely at (312) 886-7058.

Sincerely yours,

for William E. Muno, Director
Superfund Division

cc: Brian Nickel, OEPA
Paul Lucas, DOE-MCP

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Acronyms

BDP	Building Data Package
BVA	Buried Valley Aquifer
CERCLA	Comprehensive Environmental Response, Compensation & Liability Act
COPC	Constituent of Potential Concern
D&D	Decontamination & Decommissioning
EA	Environmental Assessment
FONSI	Finding of No Significant Impact
HI	Hazard Index
HQ	Hazard Quotient
MMCIC	Miamisburg Mound Community Improvement Corporation
NCP	National Contingency Plan
NFA	No Further Assessment
NWP	Nationwide Permit
O&M	Operations & Maintenance
ODH	Ohio Department of Health
OEPA	Ohio Environmental Protection Agency
OU	Operable Unit
OSC	On-Scene Coordinator
PCB	polychlorinated biphenyl
PCN	pre-construction notification
PRS	Potential Release Site
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision
RRE	Residual Risk Evaluation
RREM	Residual Risk Evaluation Methodology
TCE	trichloroethene(ethylene)
USACE	United States Army Corps of Engineers
USDOE	United States Department of Energy
USEPA	United States Environmental Protection Agency
WQC	Water Quality Certification

1.0 PURPOSE

The information contained in this notice is required under the authority of regulations promulgated under section 120 (h) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). This summary is intended to support a transfer by deed to new ownership for economic development by documenting that the U.S. Department of Energy's (US DOE) Mound Plant has met the requirements of CERCLA 120 (h) for Phase I. A copy shall be provided to all future owners.

2.0 PROPERTY DESCRIPTION

2.1 Description of Property Suitable for Transfer

This Environmental Summary addresses Phase I, which is located on the southern border of the Mound Plant as shown in Figure 1. Phase I is generally bound to the south by Parcel 4, which was recently transferred to the Miamisburg Mound Community Improvement Corporation (MMCIC), to the west and north by the plant proper, and to the east by the transferred Release Block D.

The legal description of Phase I, as recorded in the Phase I Record of Decision (Reference 1) is included as Appendix A of this Environmental Summary.

2.2 Regional Context of the Mound Plant and Transferred Property

The Mound Plant is in Montgomery County within the City of Miamisburg, Ohio as shown in Figure 2. At one time, the Mound Plant occupied approximately 306 acres. Prior to the transfer of Parcel 4, Benner Road formed the southern boundary of the plant. The Norfolk Southern Railroad roughly parallels the western boundary at a distance of 50-200 feet. At one time, the Mound Plant consisted of approximately 130 buildings with a total of 1.4 million square feet of floor space (although the number of buildings is constantly diminishing as buildings are decommissioned and demolished). Since 1999, approximately 126 acres have been transferred to MMCIC. Phase I occupies approximately 52 of the remaining 180 acres.

2.3 Historical Uses of Phase I

Phase I includes approximately 52 acres of land located in three distinct sections or parcels of the site property. The first parcel, the largest block of property in Phase I, includes lands located on the south central part of the original 182 acres of the site that was purchased in 1947. This piece of property also contains a portion of the south property (purchased in 1982) that was excluded from the transfer of Parcel 4. The second parcel of property included in Phase I is situated to the south of the Spoils Area and the site well pump houses, in the area designated as the south property. The third parcel of property in Phase I lies to the south-southeast of Building 38, and to the north of Parcel D that was transferred to the MMCIC in 1999.

Phase I includes 10 existing buildings and explosives magazines and 25 former production-era building sites including buildings, explosives storage magazines, and an electrical generator. Current and historic buildings are detailed in Appendix D. Included in

the activities that once took place in Phase I are explosives testing and production-related activities, administrative activities (i.e., offices and site security operations), utilities operations, waste processing operations (the Burn Area), and cleanup waste storage operations.

In addition to the 35 production-era buildings noted above, Phase I also includes building sites dating from the construction era (storage warehouse, a quonset-type building, and some other temporary buildings).

Phase I lands have also been used for various waste and non-waste storage activities including waste container management, equipment management, and for other general plant uses.

3.0 ENVIRONMENTAL FINDINGS

3.1 Methodology

In accordance with Section 120 (h)(3) of CERCLA, to the extent that information is available based on a complete search of DOE files, the following shall be placed in deeds: (1) a notice of the type and quantity of hazardous substances stored, disposed of, or released; (2) a notice of the time at which such storage, disposal, or release took place; and (3) a description of any remedial action taken. Information sources reviewed to obtain the information include:

- federal Government records,
- recorded chain of title documents,
- reasonably obtainable aerial photographs,
- visual inspection of the property and adjacent properties,
- reasonably obtainable records of releases on adjacent properties,
- interviews with current or former employees, and
- sampling, if appropriate under the circumstances.

Phase I includes 40 Potential Release Sites (PRSs). These PRSs were identified on the basis of potential radiological and/or chemical (non-radioactive) contamination, knowledge of historical land use, or on actual sample data. The locations of the PRSs in Phase I are shown in Figure 3 and detailed in Appendix E. Before transfer of a parcel can be completed, all buildings and PRSs must be evaluated for protectiveness or remediated to a protective level. Residual risks associated with remaining contamination in Phase I have been evaluated.

A Core Team with representatives from the DOE, US Environmental Protection Agency (USEPA), and Ohio Environmental Protection Agency (OEPA) performs a joint agency evaluation of each PRS. The Core Team uses process knowledge, site visits, and existing data to determine whether any action is warranted concerning the PRS and recommends the appropriate response(s).

Information in the following documents was used to support this Environmental Summary.

3.1.1 PRS and Building Documents for the PRSs and buildings located within Phase I (References 2-27 and 36-43). These PRSs were identified on the basis of potential radiological and/or chemical (non-radioactive) contamination using knowledge of historical land use or actual sample data. PRS and Building Data Packages (References 2-13, 20-25, and 36-43) provide a summary of information sufficient for the Core Team to make recommendations or change the status of the PRS or building. Action Memoranda (References 14, 15, and 26) provide a plan for addressing removal actions. On-Scene Coordinator (OSC) Reports (References 16-19 and 27) document completion of the removal action. The locations of the PRSs and buildings in Phase I are shown on Figure 3. Table 1 lists the Core Team conclusions for these PRSs. Table 2 lists the Core Team conclusions for these buildings.

3.1.2 Residual Risk Evaluation (RRE), Phase I (Reference 28). The RRE provides the evaluation of human health risks associated with any residual contamination that may remain in the parcel after all remedies within a parcel have been addressed. The evaluation, used in conjunction with the Proposed Plan, ensures that future users of the land will not be exposed to contamination levels that would pose unacceptable health risks.

3.1.3 Ecological Scoping Report, Phase I (Reference 35). This report was prepared in accordance with an OEPA procedure to determine if an ecological assessment is warranted at a site. Based on the site visit that is part of the OEPA procedure, the fact that no threatened or endangered species were observed within Phase I, and that no sensitive environments or ecologically important resources were identified within Phase I, the future reuse of Phase I as a research and industrial park, and the information developed during several characterization investigations and removal actions performed in the Phase I area, the report concluded that a more detailed assessment of the ecological risk is not warranted.

3.1.4 Proposed Plan for Phase I (Reference 29 and 34). The Proposed Plan identifies for the public the preferred option for addressing residual contamination at the Mound Plant, Phase I, by briefly summarizing the alternatives studied and highlighting the key factors that led to identifying the preferred alternative. The Phase I Proposed Plan was reissued in March 2003 to enable public comment on the following changes in Phase I:

- The northeast boundary was adjusted to remove any influence of trichloroethene (TCE) from PRS 87 (see Figure 5 of Reference 34).
- The northwest boundary was adjusted to accommodate traffic safety during the remediation of the remainder of the site (see Figure 5 of Reference 34).
- The description of the preferred alternative (see Sections 7 and 8 of Reference 34) was changed from "Institutional Controls and Groundwater Monitoring" to "Institutional Controls and Monitored Natural Attenuation".

The residual soil risk in Phase I was recalculated using the data from the revised boundaries and compared to the results published previously in the Phase I Residual Risk Evaluation (Reference 28). Table 19 of the Proposed Plan (reproduced in Appendix C as Table 12) shows that the boundary changes did not increase the incremental residual risk from soil in Phase I.

3.1.5 Record of Decision (ROD) for Phase I (Reference 1). The ROD documents the remedial action plan for the parcel and serves the following three functions: (1) certifies the remedy selection process was carried out in accordance with CERCLA, (2) describes the technical parameters of the remedy by specifying the treatment, engineering, and institutional components as well as cleanup levels, and (3) provides the public with a consolidated summary of information about the parcel and the chosen remedy, including the rationale behind the selection.

3.2 Building Analysis Summary

There are 10 DOE-owned buildings within Phase I (see Figure 3). These buildings were evaluated by the Core Team and determined to warrant No Further Assessment (NFA). Consequently, there is no building-related contamination warranting remedial action or environmental concern. The information in the following sections is summarizd in Table 13.

3.2.1 Asbestos

There are asbestos containing materials in some of the buildings in Phase I. There are no areas requiring asbestos abatement prior to transfer. Appropriate management practices may be required in the future for the buildings to remain protective. The situation in Phase I buildings with respect to asbestos can be summarized as follows:
Present, no remediation needed – Building 3
Asbestos bearing items removed – Building 87
None identified - Magazine 80-84, Building 95
Unlikely – Building 102
For more information consult the appropriate Building Data Package.

3.2.2 Lead

There is lead based paint in some of the buildings in Phase I. There are no areas in any of the buildings requiring lead abatement prior to transfer. Appropriate management practices may be required in the future for the buildings to remain protective. The situation in Phase I buildings with respect to lead based paint can be summarized as follows:
Present, no remediation needed – Building 3
None identified - Building 87, Magazine 80-84, Building 95
Unlikely – Building 102
For more information consult the specific Building Data Package.

3.2.3 Radon

Radon studies are presented in a 1989-90 Mound Indoor Radon study for buildings. There are no areas in any of the buildings requiring radon abatement prior to transfer.

3.2.4 Radiological Surveys

The final radiological surveys for the ten buildings remaining in Phase I met all surface contamination guidelines. This information is available in the building data packages (BDPs) listed in Section 7.0.

3.2.5 PCBs

There are no areas within Phase I requiring polychlorinated biphenyl (PCB) cleanup. There may be PCB containing ballasts in the fluorescent lights in some of the buildings in Phase I. Appropriate management practices may be required in the future for the buildings to remain protective. However, the situation in Phase I buildings with respect to lead based paint can be summarized as follows:
May be present in fluorescent lamp ballasts – Building 3
None identified - Building 87, Magazine 80-84, Building 95, Building 102
For more information consult the specific Building Data Package.

3.3 PRS Summary

The USDOE, USEPA, and OEPA have jointly decided that no additional remedial action for the PRSs in Phase I is necessary with the placement of Institutional Controls in the form of deed restrictions on future land use and Monitored Natural Attenuation for Phase I. As part of the remedy, DOE will continue to monitor groundwater in Phase I for TCE and its degradation products to verify that the concentration of TCE is decreasing due to natural attenuation an is not impacting the BVA. In addition, to provide assurance that the understanding of the barium, radium, nickel, and chromium in groundwater situation at specific wells in Phase I is correct, DOE will continue to monitor for these contaminants also.

Appendix E contains a brief summary of the history of the PRSs in Phase I and their contaminants. For a more detailed description of these PRSs, refer to the PRS data packages (References 2-13 and 36-43).

PRSs at Mound were identified based on either knowledge of historical land use that was considered potentially detrimental, or an actual sampling result showing elevated concentrations of contaminants. The locations of the PRSs in Phase I are shown in Figure 3.

3.4 RRE Summary

Pursuant to the Residual Risk Evaluation Methodology (RREM) (Reference 30), risks are quantified for both carcinogenic (cancer-causing) and non-carcinogenic (non-cancer-causing) contaminants. All analytes (carcinogenic and non-carcinogenic) detected at least once in soil and/or groundwater in Phase I were identified as constituents of potential concern (COPCs) and are listed in Appendix F. The maximum concentration of each COPC for soil and groundwater was compared to and screened against criteria established in the RREM and presented in the Phase I Residual Risk Evaluation (Reference 28). COPC tables for both groundwater and soil are presented in Tables 3 through 8 of Appendix C. COPCs that were carried through the RRE process are identified in the tables. The risk associated with the intake of a known or suspected carcinogen is reported in terms of the incremental lifetime cancer risk presented by that COPC, as estimated using the appropriate slope factor and the amount of material available for uptake. The acceptable risk range as defined by CERCLA and the National Contingency Plan (NCP) is 10^{-4} to 10^{-6} (one human in ten-thousand to one human in one-million incremental cancer

incidence). Potential human health hazards from exposure to non-carcinogenic contaminants are evaluated by using a Hazard Quotient (HQ). The HQ is determined by the ratio of the intake of a COPC to a reference dose or concentration for the contaminant of concern that is believed to represent a no-observable effect level. The contaminant of concern-specific HQs are then summed to provide an overall Hazard Index (HI). USEPA guidance sets a limit of 1.0 for the Comprehensive HI. The incremental carcinogenic risks and hazards associated with residual concentrations of COPCs in Phase I are also shown in Table 9 of Appendix C.

Evaluation of residual soil and groundwater contaminants within Phase I has resulted in a determination that future users of the land will not be exposed to contaminant levels that would pose unacceptable risks as long as compliance with the deed restrictions described in the Phase I Record of Decision are maintained. The soils within Phase I have not been evaluated for any use other than onsite industrial/commercial use. Any offsite disposition of the Phase I soil without proper handling, sampling, and management could create an unacceptable risk to offsite receptors.

3.5 Other Factors Considered

DOE developed a generic checklist of the issues to be considered in evaluating property to be transferred. The checklist was modified from that used by the Department of Defense in releasing property for sale. The checklist includes environmental problems from Mound Plant that are likely to concern a potential purchaser as well as items relating to the operational concerns from ongoing and future remedial actions. Table 10 contains a brief summary and references for all factors considered. Results of only those factors which affect Phase I are presented as follows:

3.5.1 Monitoring Equipment

Both DOE and OEPA operate air monitoring stations within Phase I. These are expected to operate through the end of the Mound Closure Project. There are also several monitoring wells within Phase I. Since continued groundwater monitoring is part of the selected remedy for Phase I, DOE will continue to have access to these locations via easements.

3.5.2 National Environmental Policy Act

Phase I lies within the boundaries of the Mound Plant described in the Environmental Assessment (EA) for Commercialization of the Mound Plant (Reference 31) and the resulting Finding of No Significant Impact (FONSI) issued on October 27, 1994 (Reference 32). The land use described in the EA is consistent with the institutional controls in the ROD for Phase I.

3.5.3 Resource Conservation and Recovery Act

A Resource Conservation and Recovery Act (RCRA) amended closure plan for the former "Burn Area" unit was approved by the Director of Ohio EPA on July 26, 1999. A modification to this approval requires that a deed restriction limiting future land-use scenarios be initiated for the parcel in which the former RCRA unit was located. In

accordance with the Director's approval, Ohio EPA will monitor compliance to ensure that the above noted institutional control is maintained.

3.5.4 Wetlands

Three characteristics must be present for an area to be classified as a jurisdictional wetland: (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology. One site in Phase I (Site HH, 0.03 acre) constitutes a jurisdictional wetland (Reference 33). In addition, Reference 33 indicated Site EE was constructed as a sedimentation basin and continues to be used for storm water runoff and silt control. Accordingly, it is not regulated. However, if the use of Site EE changes it could become regulated as a jurisdictional wetland.

Pursuant to 10 CFR Part 1022.5(d), when DOE property is proposed for disposal to non-Federal public or private parties, DOE must identify those uses that are restricted under Federal, state, or local wetlands regulations. Accordingly, the future owner of the site would be made aware of the following regulations governing activities in or near the wetlands.

According to the federal Clean Water Act, anyone who wishes to discharge dredged or fill material into the waters of the U.S., regardless of whether on private or public property, must obtain a Section 404 permit from the U.S. Army Corps of Engineers (USACE) and a Section 401 Water Quality Certification (WQC) from the state.

The USACE governs the discharges of dredged or fill material into headwaters and isolated waters of the United States with activity-specific Nationwide Permits (NWPs). The terms and conditions of the NWPs ensure that the activities result in minimal adverse effects on the aquatic environment. The NWPs require notification to the USACE district engineer for activities that result in the loss of greater than 0.1 acre of waters of the United States. Regional conditions may be added to the NWPs by division engineers to lower notification thresholds. Because the wetlands in question are less than 0.1 acre, a pre-construction notification (PCN) to the USACE will not be necessary.

OEPA has pre-granted Section 401 Water Quality Certifications to 404 permits for certain types of projects that are similar in nature and cause minimal degradation to waters of the state. These permits are called Nationwide Permits and substantially expedite the permitting process. To determine if a project qualifies for Nationwide Permits coverage, or requires an individual section 401 WQC from OEPA, applicants should contact the USACE first to discuss the project.

Existing wetland uses, as defined in rule 3745-1-53 of the Administrative Code, shall be maintained and protected in accordance with rules 3745-1-50 to 3745-1-54 of the Administrative Code [3745-1-05(C)(1)].

3.5.5 Clean Air Act

OEPA placed the roads and parking lots at Mound on permanent registration status with air permit F001. The roads and parking lots in Phase I are included under that permit.

4.0 FINDINGS OF SUITABILITY TO TRANSFER

In accordance with the provisions of CERCLA Section 120 (h), contaminated property can only be transferred if one of the following applies:

(1) a decision has been made that no remedial action is necessary ,

(2) all remedial action necessary to protect human health and the environment with respect to any such substance remaining on the property has been taken before the date of transfer and any such remedy has been demonstrated to the Administrator to be operating properly and successfully, or

(3) Early Transfer Authority, which allows for transfer before all necessary action is complete, has been granted by USEPA with concurrence from the Governor of the State of Ohio pursuant to CERCLA Section 120(h)(3)(C).

The future industrial use of the Mound Plant has been determined based upon agreement among USDOE, USEPA, and OEPA, and interested stakeholders. This land use is reflected in the MMCIC Mound Comprehensive Reuse Plan and is currently codified in the City of Miamisburg Zoning Ordinance for industrial/commercial use.

A joint agency decision among the USDOE, USEPA, and OEPA has been made that a remedial action has been taken that protects human health and the environment. EPA deems this condition to be satisfied if the institutional controls are implemented and operating successfully. Institutional controls in the form of deed restrictions on future land use will be placed on Phase I upon transfer as part of the remedy. The objective of these institutional controls is to prevent an unacceptable risk to human health and the environment by restricting the use of Phase I, including Phase I soils and groundwater, to that which is consistent with assumptions in the Phase I RRE. DOE or its successors or assigns, as the lead agency for this ROD, has the responsibility to implement, report on, monitor, maintain, and enforce these institutional controls both before and after the transfer. The following property deed restrictions and requirements will be imposed on the property to maintain protection of human health and the environment in the future:

- Maintenance of industrial/commercial land use;
- Prohibition against residential use;
- Prohibition against the use of groundwater;
- Site access for federal and state agencies for the purpose sampling and monitoring; and,
- Prohibition against removal of Phase I soils from the DOE Mound property (as owned in 1988) boundary without approval from the Ohio Department of Health (ODH), OEPA, and USEPA.

The Monitored Natural Attenuation of TCE at well 0411 portion of the remedy is also considered to be operating properly and successfully. This judgement is based on: the declining levels of TCE and DCE at well 0411, well 0443, and seep 0617 (Figures 4, 5, and 6); the lack of a source term; the small, limited area affected; and the lack of TCE migration. In addition, the monitoring data (Figures 4, 5, and 6) continue to support the analysis originally presented in the Phase I Record of Decision that indicated Monitored

Natural Attenuation is appropriate for Phase I. That analysis is reproduced here:

"According to the guidance *Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites, April 1999, EPA/540/R-99/009,* there are generally ten factors that should be considered to evaluate the appropriateness of a Monitored Natural Attenuation remedy. The factors, along with a brief explanation of how they relate to Phase I, are presented below:

1. *Whether the contaminants present in soil or groundwater can be effectively remediated by natural attenuation processes*

   The concentration of TCE in the groundwater is expected to decrease to a concentration less than the MCL through a naturally-occurring biodegradation process called reductive dehalogenation. In this process, chlorinated solvent compounds (such as TCE) gradually break down by having a halogen, in this case chlorine atoms, replaced with a hydrogen atom. This progression results in a successively lower number of halogens (chlorine atoms) attached to the compound structure, shown by:

   Trichloroethene (TCE)→ Dichloroethene (DCE) →Vinyl Chloride→ Ethene + Cl^-

   The assumption that this process is already taking place in the area is supported by the fact that dichloroethene (DCE) has been detected consistently along with the TCE in well 0411. Although it is expected that the primary natural process for attenuation will be reductive dehalogenation, other natural attenuation processes including dispersion, dilution, sorption, and others may also assist in naturally attenuating the contaminants at the site.

2. *Whether or not the contaminant plume is stable and the potential for the environmental conditions that influence plume stability to change over time*

   The wells in the Phase I area have been sampled over a period of several years. Sample results have consistently shown that the TCE contamination is not present as a plume, but is limited to a small area near the location of well 0411.

3. *Whether human health, drinking water supplies, other groundwaters, surface waters, ecosystems, sediments, air, or other environmental resources could be adversely impacted as a consequence of selecting MNA as the remediation option*

   There is no indication that the BVA or other environmental resources in the area of Phase I will be adversely affected by selecting MNA as the remediation option for TCE in Phase I.

4. *Current and projected demand for the affected resource over the time period that the remedy will remain in effect*

The bedrock aquifer, where the TCE has been detected above MCLs, is not currently used as a groundwater resource for the Mound Plant, nor is it anticipated to be used in the future. In fact, the Phase I area will be tied into the City of Miamisburg municipal water supply in the near future, further decreasing the likelihood that the bedrock aquifer would be used as a potable water source. Finally, the selected remedy calls for a restriction to be placed on the deed for Phase I that will prohibit the installation of wells in the Phase I area in the future.

5. *Whether the contamination, either by itself or as an accumulation with other nearby sources (on-site or off-site), will exert a long-term detrimental impact on available water supplies or other environmental resources*

   The BVA is designated as a sole source aquifer and serves as the primary potable water supply for the City of Miamisburg. Based upon years of groundwater data collected downgradient of well 0411, there is no indication that the BVA is threatened by the TCE contamination in the well 0411 area. These downgradient locations will be monitored as part of the selected remedy to verify that the BVA remains unaffected.

6. *Whether the estimated timeframe of remediation is reasonable compared to timeframes required for other more active methods of remediation*

   The fact that the concentrations are just slightly above the MCL of 5 ppb for TCE (15 ppb in well 0411 and 9 ppb in well 0443) would suggest that the timeframe for remediation should be fairly short. These relatively low concentrations, along with the fact that the bedrock aquifer exhibits relatively low yield rates, make remediation of the bedrock by more active methods an impractical option at this time. If concentrations were to increase, more active treatment methods may be evaluated.

7. *The nature and distribution of sources of contamination and whether these sources have been, or can be, adequately controlled*

   There are no known sources of TCE contamination in soil in the Phase I area.

8. *Whether the resulting transformation products present a greater risk, due to increased toxicity and/or mobility, than do the parent contaminants*

   Although vinyl chloride, a breakdown product of TCE, generally presents a higher risk to human receptors than TCE and is more persistent in groundwater, it is not anticipated that the original concentration of TCE (15 ppb) will support the production of high enough concentrations of vinyl chloride in the bedrock aquifer in Phase I to pose an unacceptable risk. In any event, there is no current exposure pathway to Phase I groundwater, and the selected remedy prohibits the installation of wells in the Phase I area.

9. *The impact of existing and proposed active remediation measures upon the MNA component of the remedy, or the impact of remediation measures or other operations/activities (e.g. pumping wells) in close proximity to the site*

   There are no operations or activities in close proximity to wells 0411 and 0443 that would impact the MNA component of the selected remedy.

10. *Whether reliable site-specific mechanisms for implementing institutional controls (e.g. zoning ordinances) are available, and if an institution responsible for their monitoring and enforcement can be identified*

    Institutional Controls will be implemented as part of the selected remedy for the Phase I property. The use of the bedrock groundwater will be prohibited as part of the selected remedy, and DOE, or its successors, have the responsibility to monitor, maintain and enforce these institutional controls in the future. "

In addition, DOE will continue to monitor groundwater in Phase I for TCE and its degradation products to verify that the concentration of TCE is decreasing due to natural attenuation and is not impacting the Buried Valley Aquifer (BVA). The specifics of the monitoring will be established in a Phase I Groundwater Monitoring Plan that will require approval by USEPA and OEPA. This will become part of the Operations & Maintenance (O&M) Plan required by the ROD. Key elements of the monitoring were outlined in Section 2.9.2 of the ROD. Groundwater monitoring provides assurance that the concentration of TCE observed in Phase I is decreasing and is not impacting the BVA. In addition, to provide assurance that the understanding of the barium, radium, nickel, and chromium in groundwater situation at specific wells in Phase I is correct, DOE will continue to monitor for these contaminants also.

5.0 ENVIRONMENTAL COVENANTS

DOE is committed to include a covenant in accordance with Section 120 (h)(3) of CERCLA in the deed for the sale or transfer of the property that warrants that:

A. All remedial action necessary to protect human health and the environment has been taken as long as the deed restrictions limiting land and groundwater use are in effect and enforced.

B. Any additional response action or corrective action found to be necessary after the date of sale or transfer shall be conducted by the United States [Section 120(h)(4)(D)(i)]. The requirements of the covenant shall not apply in any case in which the person or entity to whom the property is transferred is a potentially responsible party with respect to the property.

C. A clause granting the United States access to the property in any case in which a response action or corrective action is found to be necessary or such access is necessary to carry out a response action or corrective action on the adjoining property [Section 120 (h)(4)(D)(ii)].

6.0 NOTIFICATION / PUBLIC PARTICIPATION

The community has been an active participant in this process to date. Comments from the public on the PRS recommendation have been incorporated as part of the remedy evaluation. DOE believes all comments have been resolved with the commentor and the documents, comments, and responses have been placed in the CERCLA Public Reading Room.

Table 11 lists the Phase I PRS packages, Phase I Building Data Packages, Phase I RRE, and Phase I Proposed Plan along with the dates they were made available for public comment.

7.0 REFERENCES

Reference 1 Phase I Record of Decision, Final, July 2003.

Reference 2 PRS 16 Package, Final, November 1996.

Reference 3 PRS 73 Package, Final, August 2002.

Reference 4 PRS 74 Package, Final, May 1997.

Reference 5 PRS 258-265 Package, Final, August 2002.

Reference 6 PRS 370 Package, Final, February 1997.

Reference 7 PRS 371 Package, Final, May 1997.

Reference 8 PRS 372 Package, Final, November 1996.

Reference 9 PRS 383 Package, Final, September 1997.

Reference 10 PRS 384 Package, Final, January 1997.

Reference 11 PRS 306/314/406 Package, Final, November 1996.

Reference 12 PRS 418 Package, Final, February 2002.

Reference 13 PRS 419 Package, Final, April 2000.

Reference 14 Action Memorandum, Engineering Evaluation/Cost Analysis, Contingent Removal Action for Contaminated Soil, Final, August 2002.

Reference 15 PRS 304 Action Memorandum, Final, October 1998.

Reference 16 PRS 276 Removal Action On-Scene Coordinator (OSC) Report, Final, September 2002.

Reference 17 PRS 304 Removal Action On-Scene Coordinator (OSC) Report, Final, December 1998.

Reference 18 On-Scene Coordinator (OSC) Report for Building 21 (PRS 284) & Associated Soils (PRS 407 and PRS 281) Decontamination and Decommissioning (D&D) Project, Final, Revision 0, January 2000.

Reference 19 PRS 421 Removal Action On-Scene Coordinator (OSC) Report, Final, September 2002.

Reference 20 Building 3 Building Data Package, Final, August 2002.

Reference 21 Building 87 Building Data Package, Final, November 1997.

Reference 22 Magazines 80-84 Building Data Package, Final, August 2002.

Reference 23 Building 95 Building Data Package, Final, October 2002.

Reference 24 Building 102 Building Data Package, Final, August 2002.

Reference 25 SST Building Data Package, Final, August 2002.

Reference 26 Buildings 35 & 59 Action Memorandum, Final, May 1998.

Reference 27 On-Scene Coordinator (OSC) Report for Buildings 35 & 59 Removal Action, Final, April 1999.

Reference 28 Phase I Residual Risk Evaluation (RRE), Final, March 2003.

Reference 29 Phase I Proposed Plan, Public Review Draft, September 2002.

Reference 30 Residual Risk Evaluation Methodology (RREM), Final, Revision 0, January 6, 1997.

Reference 31 Environmental Assessment for Commercialization of the Mound Plant, October 1994.

Reference 32 Finding of No Significant Impact (FONSI), October 27, 1994.

Reference 33 Delineation of Federal Wetlands and Other Waters of the U.S., Final, August 1999.

Reference 34 Phase I Proposed Plan, Public Review Draft, March 2003. (Reissued to enable public comment on the Monitored Natural Attenuation component of the remedy and the impact of the boundary change.)

Reference 35 Phase I Ecological Scoping Report, Final, March 2003.

Reference 36 PRS 280 Package, Final, June 2002.

Reference 37 PRS 311/350 Package, Final, November 1996.

Reference 38 PRS 304/313 Package, Final, July 1997.

Reference 39 PRS 346/347/348/355/370 Package, Final, June 1997.

Reference 40 PRS 349 Package, Final, April 1997.

Reference 41 PRS 351/352/353/357/359/360/361/362/385/386/387 Package, Final, January 1997.

Reference 42 PRS 365 Package, Final, April 1997.

Reference 43 PRS 369 Package, Final, January 1997.

APPENDIX A

Legal Description of Phase I

The 2.5 acre portion of Phase I that is closest to Building 38 may not be transferred until after the demolition of Building 38 and associated soil remediation are complete. Therefore, the legal descriptions of the components of Phase I are labeled as exhibits for two Quit Claim Deeds. The contents of the appendix are:

Exhibit A of Quit Claim Deed for Parcel IA - Description of Parcel IA

Exhibit A of Quit Claim Deed for Parcels IB and IC - Description of Parcel IB

Exhibit B Quit Claim Deed for Parcels IB and IC - Description of Parcel IC

Exhibit "A"
DESCRIPTION OF

2.542 Acres

Parcel IA

located in
Section 30, Town 2, Range 5, MRs.
City of Miamisburg, Montgomery County, Ohio

Situate in the Northwest Quarter of Section 30, Town 2, Range 5, MRs., City of Miamisburg, County of Montgomery, State of Ohio, ***being part of a 87.28 acre tract conveyed to the United States of America, as recorded in Deed Book Volume 1214, Page 12*** of the Deed Records of Montgomery County, Ohio, said 87.28 acre tract being comprised of a 59.75 acre tract, also a 19.40 acre tract, also a 9.97 acre tract, also a 0.78 acre tract and a 0.78 acre tract all known as Lot Numbered 2259 of the consecutive numbered lots of the City of Miamisburg, ***being a new division of 2.542 acres from said 87.28 acre tract*** and being more fully bounded and described as follows:

Commencing at a "DOE" concrete monument found, said monument being the southwest corner of the Miami Mound Plat as recorded in Record Plat Book Volume 94, Page 34 of the Plat Records of Montgomery County, Ohio, said monument being the southeast corner of a 12.429 acre tract, known as Part lot Numbered 2259 of the consecutive numbered lots of the City of Miamisburg, Ohio, also known as Parcel "D" of the Mound Complex, conveyed to the Miamisburg Mound Community Improvement Corporation, as recorded in Deed Microfiche No. 99-0852B05 of the Deed Records of Montgomery County, Ohio, said monument lying in the north line of a 79.74 acre tract, known as City Lot Numbered 6128 of the consecutive numbered lots of the City of Miamisburg, Ohio, conveyed to the United States of America, as recorded in Microfiche No. 81-0376A01 of the Deed Records of Montgomery County, Ohio, reference a "DOE" concrete monument found, South 83° 59' 35" East, 34.07 feet, said monument being the northeast corner of said United States of America 79.74 acre tract; thence with the easterly line of said Miamisburg Mound Community Improvement Corp. 12.429 acre tract, the westerly line of the Miami Mound Plat, the westerly line of a 0.7 acre tract conveyed to Melissa A. Wilson, as recorded in Deed Microfiche No. 89-0125D01, the westerly line of a 0.26 acre tract conveyed to Betty J. Eckhart, as recorded in Deed Microfiche No. 98-0834C09, and the westerly line of a 0.78 acre tract conveyed to Randall and Rita Hilgefort, as recorded in Deed Microfiche No. 97-0746A08, all of the Deed Records of Montgomery County, Ohio, North 07° 06' 56" West, a distance of 714.44 feet to a 5/8" capped "LeRoy" iron pin found, said iron pin being set by William C. LeRoy, Professional Surveyor number 7664 of the State of Ohio by prior survey as recorded in the Montgomery County Engineer's Record of Land Surveys, Volume 1999, Page 0326, said iron pin being the northwest corner of said Hilgefort 0.78 acre tract, said iron pin lying in the north line of said original 19.4 acre tract and the south of said original 59.75 acre tract; thence with the north line of said Hilgefort 0.78 acre tract, South 85° 28' 23" East, a distance of 111.00 feet to a Mag nail set, said mag nail being the northeast corner of said Hilgefort 0.78 acre tract, said mag nail being the southeast corner of said original 59.75 acre tract, said mag nail being a center line of deflection point in the original center line of Mound Road; thence with the center line of Mound Road, the east line of said Miamisburg Mound Community Improvement Corp. 12.429 acre tract and the east line of said original 59.75 acre tract, North 05° 32' 42" East, a distance of 218.17 feet to a Mag nail set, said mag nail being the northeast corner of said Miamisburg Mound Community Improvement Corp.

12.429 acre tract and the **True Point of Beginning** of the hereinafter described new division of 2.542 acres;

Thence with the north line of said Miamisburg Mound Community Improvement Corp. 12.429 acre tract, **North 85° 05' 35" West**, passing a Mag nail set at 30.00 feet, said mag nail lying in the west right of way line of Mound Road, in all a distance of **496.88 feet to a 5/8" iron pin set**, said iron pin being a point of curvature in the northwesterly line of said Miamisburg Mound Community Improvement Corp. 12.429 acre tract;

Thence with a new division line on the following eleven (11) courses,

1) **North 10° 39' 51" East**, a distance of **144.96 feet to a 5/8" iron pin set**;
2) **Thence, North 29° 43' 26" East**, a distance of **62.93 feet to a 5/8" iron pin set**;
3) **Thence, North 69° 33' 41" East**, a distance of **26.88 feet to a railroad spike set**;
4) **Thence, North 85° 25' 03" East**, a distance of **16.15 feet to a railroad spike set**;
5) **Thence, South 85° 59' 22" East**, a distance of **168.77 feet to a railroad spike set**;
6) **Thence, South 01° 34' 34" East**, a distance of **4.60 feet to a Mag nail set**;
7) **Thence, North 88° 51' 18" East**, a distance of **68.48 feet to a chiseled cross notch set**;
8) **Thence, North 06° 06' 00" East**, a distance of **16.15 feet to a 5/8" iron pin set**;
9) **Thence, South 85° 06' 10" East**, a distance of **31.61 feet to a 5/8" iron pin set**;
10) **Thence**, with a curve to the right, said tangent bearing being South 65° 24' 00" East, having a **delta angle of 69° 33' 41", a radius of 26.90 feet, an arc length of 32.78 feet and a chord bearing and distance of North 59° 30' 28" East, *30.79* feet to a 5/8" iron pin set**;
11) **Thence, South 85° 35' 05" East**, passing a 5/8" iron pin set at 94.16 feet, said iron pin lying in the west right of way line of Mound Road, in all a distance of **124.16 feet to a Mag nail set**, said mag nail lying in the east line of said original 59.75 acre tract, the east line of said United States of America 87.28 acre tract and the center line of Mound Road;

Thence with the east line of said original 59.75 acre tract, the east line of said United States of America 87.28 acre tract and the center line of Mound Road, **South 05° 32' 42" West**, a distance of **255.87 feet to the True Point of Beginning**, containing **2.542 acres**, more or less, being subject to all easements, highways and right of ways of record..

Bearing basis established as Grid North by GPS observation August 7th & 8th , 2002 at Latitude N39° 38' 25.81", Longitude W084° 17' 28.09" (Coast & Geodetic Survey Monument #G-139, 1947); Ohio State Plane Coordinate system, Ohio South Zone 3402 (NAD 83), True North being 01° 08' 11" east of Grid North.

This description prepared from an actual field survey performed under my direct supervision, Timothy W. Schram, Sr., Registered Professional Surveyor number 7299 of the State of Ohio, and that all monuments referenced herein and placed on the ground represents the boundaries of the herein described tract, and based on a Plat of Survey as recorded in the Montgomery County Engineer's Record of Land Surveys in Record Volume number _____, Page _____.

_____

Timothy W. Schram, Sr., Regist. Prof. Surveyor No. 7299
of the State of Ohio, September 11, 2002.
F: 02088 Mound Parcel 5 Surv Parcel IA

Exhibit "A"
DESCRIPTION OF

42.882 Acres

Parcel IB

located in

Section 30 and 36, Town 2, Range 5, M.Rs.
City of Miamisburg, Montgomery County, Ohio

Situate in Section 30 and 36, Town 2, Range 5, M.Rs., City of Miamisburg, County of Montgomery, State of Ohio, ***being part of a 87.28 acre tract conveyed to the United States of America, as recorded in Deed Book Volume 1214, Page 12*** of the Deed Records of Montgomery County, Ohio, said 87.28 acre tract being comprised of a 59.75 acre tract, also a 19.40 acre tract, also a 9.97 acre tract, also a 0.78 acre tract and a 0.78 acre tract all known as Lot Numbered 2259 of the consecutive numbered lots of the City of Miamisburg, ***also being part of a 79.74 acre tract conveyed to the United States of America, as recorded in Microfiche No. 81-376A01*** of the Deed Records of Montgomery County, Ohio; said 79.74 acre tract being comprised of a 24.197 acre tract and known as Lot Numbered 6128 of the consecutive numbered lots of the City of Miamisburg, also a 35.50 acre tract known as Lot Numbered 6127 of the consecutive numbered lots of the City of Miamisburg, and a 24.24 acre tract known as Lot Numbered 4777 of the consecutive numbered lots of the City of Miamisburg, ***also being part of a 20.46 acre tract conveyed to the United States of America, as recorded in Deed Book Volume 1215, Page 347 and part of a 17.58 acre tract conveyed to the United States of America, as recorded in Deed Book Volume 1214, Page 248***, all of the Deed Records of Montgomery County, Ohio, said 20.46 acre tract and 17.58 acre tract being known as Lot Numbered 2290 of the consecutive numbered lots of the City of Miamisburg, ***being a new division of 42.882 acres from said 87.28 acre tract, 79.74 acre tract, 20.46 acre tract and 17.58 acre tract*** and being more fully bounded and described as follows:

Commencing at a "DOE" concrete monument found, said monument being the southwest corner of the Miami Mound Plat as recorded in Record Plat Book Volume 94, Page 34 of the Plat Records of Montgomery County, Ohio, said monument being the southeast corner of a 12.429 acre tract, known as Part lot Numbered 2259 of the consecutive numbered lots of the City of Miamisburg, Ohio, also known as Parcel "D" of the Mound Complex, conveyed to the Miamisburg Mound Community Improvement Corporation, as recorded in Deed Microfiche No. 99-0852B05 of the Deed Records of Montgomery County, Ohio, said monument lying in the north line of a 79.74 acre tract, known as City Lot Numbered 6128 of the consecutive numbered lots of the City of Miamisburg, Ohio, conveyed to the United States of America, as recorded in Microfiche No. 81-0376A01 of the Deed Records of Montgomery County, Ohio, said "DOE" monument being the **True Point of Beginning** of the hereinafter described new division of 42.882 acres;

Thence with the south line of the Miami Mound Plat, **South 83° 59' 35" East**, a distance of **34.06 feet to a "DOE" concrete monument found**, said monument being the northeast corner of said United States of America 79.74 acre tract, said monument being the northwest corner of a 7.502 acre tract conveyed to Daniel R. Shell, as recorded in Deed Microfiche No. 85-443D02 of the Deed Records of Montgomery County, Ohio, said 7.502 acre tract being known as Lot Numbered 6130 of the consecutive numbered lots of the City of Miamisburg, Ohio;

Thence with the east line of said United States of America 79.74 acre tract and the west line of said Shell 7.502 acre tract, **South 04° 42' 45" West, a distance of 311.82 feet to a 5/8" capped**

"Schram" iron pin set by previous survey by myself, Timothy W. Schram, Sr. for a new division of 94.838 acre tract, known as Parcel 4 of the Mound Complex, said iron pin being the northeasterly corner of said new division of 94.838 acre tract;

Thence with said new division line of said 94.838 acre tract on the following three (3) courses,

1) **Due West**, a distance of **62.54 feet to a 5/8" capped "Schram" iron pin set by previous survey**;

2) **Thence, Due North**, a distance of **111.18 feet to a 5/8" capped "Schram" iron pin set by previous survey**;

3) **Thence** with said new division line of 94.838 acres and a new division line of the herein described 45.259 acres, **South 89° 59' 52" West**, passing a point on the west line of Section 30 and the east line of Section 36 at 1249.47 feet, reference from said point a railroad spike found, South 05° 16' 42" West, 1682.63 feet, said spike being the south section corner of Section 30 and 36, also a concrete monument found, disturbed, North 05° 16' 42" East, 3724.33 feet, said concrete monument being the north corner of Section 30 and 36, also passing a 5/8" capped "Schram" iron pin set by previous survey at 1767.43 feet, said iron pin being a northerly corner of said new division of 94.838 acres, in all a distance of **1784.02 feet to a 5/8" iron pin set**, said iron pin being the southwest corner of the herein described new division of 45.259 acres, said iron pin also being a northerly corner of a new division of 6.568 acre tract, known as Parcel IC of the Mound Complex;

Thence with a new division line on the following twenty-three (23) courses,

1) **North 24° 17' 45" West**, a distance of **458.95 feet to a 5/8" iron pin set**;
2) **Thence, North 83° 58' 45" West**, a distance of **109.56 feet to a 5/8" iron pin set**;
3) **Thence, North 05° 38' 00" East**, a distance of **284.12 feet to a 5/8" iron pin set**;
4) **Thence, North 08° 45' 53" East**, a distance of **94.64 feet to a 5/8" iron pin set**;
5) **Thence, North 21° 05' 14" East**, a distance of **206.77 feet to a 5/8" iron pin set**;
6) **Thence, North 75° 37' 35" West**, a distance of **22.86 feet to a 5/8" iron pin set**;
7) **Thence, North 14° 15' 45" West**, a distance of **152.26 feet to a 5/8" iron pin set**;
8) **Thence, North 50° 25' 32" East**, a distance of **58.44 feet to a 5/8" iron pin set**;
9) **Thence, North 25° 13' 50" East**, a distance of **88.97 feet to a 5/8" iron pin set**;
10) **Thence, North 50° 57' 41" East**, a distance of **58.71 feet to a 5/8" iron pin set**;
11) **Thence, North 63° 34' 44" East**, a distance of **106.77 feet to a railroad spike set**;
12) **Thence, North 67° 55' 35" East**, a distance of **195.36 feet to a railroad spike set**;
13) **Thence, North 32° 10' 07" East**, a distance of **60.19 feet to a 5/8" iron pin set**;
14) **Thence, North 80° 03' 26" East**, a distance of **45.82 feet to a 5/8" iron pin set**;
15) **Thence, North 01° 21' 45" West**, a distance of **10.36 feet to a 5/8" iron pin set**;
16) **Thence, North 82° 56' 15" East**, a distance of **120.55 feet to a 5/8" iron pin set**;
17) **Thence, South 05° 28' 44" East**, a distance of **114.21 feet to a 5/8" iron pin set**;
18) **Thence, North 84° 30' 00" East**, a distance of **56.66 feet to a 5/8" iron pin set**;
19) **Thence, South 27° 23' 24" East**, a distance of **170.96 feet to a 5/8" iron pin set**;
20) **Thence, South 26° 26' 49" East**, a distance of **82.75 feet to a 5/8" iron pin set**;
21) **Thence, North 82° 42' 58" East**, passing a point on the west line of Section 30 and the east line of Section 36 at 101.51 feet, reference from said point a railroad spike found, South 05° 16' 42" West, 2878.31 feet, said spike being the south section corner of Section 30 and 36, also a concrete monument found, disturbed, North 05° 16' 42" East, 2528.66 feet, said concrete monument being the north corner of Section 30 and 36, in all a distance of **158.83 feet to a 5/8" iron pin set**;

22) **Thence, South 39° 17' 18" East**, a distance of **324.25 feet to a 5/8" iron pin set;**

23) **Thence, South 84° 30' 40" East**, a distance of **292.51 feet to a 5/8" iron pin set**, said iron pin being a westerly corner of a 12.429 acre tract, known as Part Lot Numbered 2259 of the consecutive numbered lots of the City of Miamisburg, Ohio, also known as Parcel "D" of the Mound Complex, conveyed to the Miamisburg Mound Community Improvement Corporation, as recorded in Deed Microfiche No. 99-0852B05 of the Deed Records of Montgomery County, Ohio;

Thence with the westerly line of said Miamisburg Mound Community Improvement Corp. 12.429 acre tract on the following three (3) courses,

1) **South 05° 34'05" West**, a distance of **360.00 feet to a 5/8" iron pin set;**

2) **Thence, South 84° 25' 51" East**, a distance of **93.50 feet to a 5/8" iron pin set;**

3) **Thence, South 05° 34' 05" West**, a distance of **291.47 feet to a 5/8" capped "LeRoy" iron pin found**, said iron pin being set by William C. LeRoy, Professional Surveyor number 7664 of the State of Ohio by prior survey as recorded in the Montgomery County Engineer's Record of Land Surveys, Volume 1999, Page 0326, said iron pin being the southwest corner of said Miamisburg Mound Community Improvement Corp. 12.429 acre tract, said iron pin lying in the south line of said United States of America 87.28 acre tract, said iron pin lying in the north line of said Untied State of America 79.74 acre tract;

Thence with the south line of said Miamisburg Mound Community Improvement Corp. 12.429 acre tract, the south line of said United States of America 87.28 acre tract and the north line of said Untied State of America 79.74 acre tract, **South 84° 32' 54" East**, a distance of **613.34 feet to the True Point of Beginning**, containing **42.882 acres**, more or less, of which ***18.230 acres lying in Section 30, 24.652 acres lying in Section 36,*** of which ***3.032 acres being part of Lot Numbered 6128, 5.088 acres being part of Lot Numbered 6127, 5.365 acres being part of Lot Numbered 4777, 10.109 acres being part of Lot Numbered 2259 and 19.288 acres being part of Lot Numbered 2290***, all of the consecutive numbered lots of the City of Miamisburg, Ohio, and being subject to all easements, highways and right of ways of record.

Bearing basis established as Grid North by GPS observation August 7th & 8th , 2002 at Latitude N39° 38' 25.81", Longitude W084° 17' 28.09" (Coast & Geodetic Survey Monument #G-139, 1947); Ohio State Plane Coordinate system, Ohio South Zone 3402 (NAD 83), True North being 01° 08' 11" east of Grid North.

This description prepared from an actual field survey performed under my direct supervision, Timothy W. Schram, Sr., Registered Professional Surveyor number 7299 of the State of Ohio, and that all monuments referenced herein and placed on the ground represents the boundaries of the herein described tract, and based on a Plat of Survey as recorded in the Montgomery County Engineer's Record of Land Surveys in Record Volume number **2003**, Page **XXXX**.

Timothy W. Schram, Sr., Regist. Prof. Surveyor No. 7299
of the State of Ohio, March 21, 2003.
F: 030026 Mound Parcel IB Revised

Exhibit "B"
DESCRIPTION OF

6.568 Acres
Parcel IC

located in
Section 36, Town 2, Range 5, MRs.
City of Miamisburg, Montgomery County, Ohio

Situate in Section 36, Town 2, Range 5, MRs., City of Miamisburg, County of Montgomery, State of Ohio, ***being part of a 79.74 acre tract conveyed to the United States of America, as recorded in Microfiche No. 81-376A01*** of the Deed Records of Montgomery County, Ohio, said 79.74 acre tract being comprised of a 24.197 acre tract and known as Lot Numbered 6128 of the consecutive numbered lots of the City of Miamisburg, also a 35.50 acre tract known as Lot Numbered 6127 of the consecutive numbered lots of the City of Miamisburg, and a 24.24 acre tract known as Lot Numbered 4777 of the consecutive numbered lots of the City of Miamisburg, ***also being part of a 42.56 acre tract conveyed to the United States of America, as recorded in Microfiche No. 81-323A11*** of the Deed Records of Montgomery County, Ohio, said 42.56 acre tract being comprised of a 46.313 acre tract known as Lot Numbered 4778 of the consecutive numbered lots of the City of Miamisburg, said 42.56 acre tract being all the remainder of an 80 acre tract as conveyed from Ray C. Dunaway and Thelma Mae Dunaway to Oak Knoll Development and Investment Co., Inc., as recorded in Microfiche No. 71-513B06 of the Deed Records of Montgomery County, Ohio, ***being a new division of 6.568 acres from said 79.74 acre tract and 42.56 acre tract*** and being more fully bounded and described as follows:

Commencing at a "DOE" concrete monument found, said monument being the southwest corner of the Miami Mound Plat as recorded in Record Plat Book Volume 94, Page 34 of the Plat Records of Montgomery County, Ohio, said monument being the southeast corner of a 12.429 acre tract, known as Part lot Numbered 2259 of the consecutive numbered lots of the City of Miamisburg, Ohio, also known as Parcel "D" of the Mound Complex, conveyed to the Miamisburg Mound Community Improvement Corporation, as recorded in Deed Microfiche No. 99-0852B05 of the Deed Records of Montgomery County, Ohio, said monument lying in the north line of a 79.74 acre tract, known as City Lot Numbered 6128 of the consecutive numbered lots of the City of Miamisburg, Ohio, conveyed to the United States of America, as recorded in Microfiche No. 81-0376A01 of the Deed Records of Montgomery County, Ohio, thence with the south line of the Miami Mound Plat, South 83° 59' 35" East, a distance of 34.07 feet to a "DOE" concrete monument found, said monument being the northeast corner of said United States of America 79.74 acre tract, said monument being the northwest corner of a 7.502 acre tract conveyed to Daniel R. Shell, as recorded in Deed Microfiche No. 85-443D02 of the Deed Records of Montgomery County, Ohio, said 7.502 acre tract being known as Lot Numbered 6130 of the consecutive numbered lots of the City of Miamisburg, Ohio; thence with the east line of said United States of America 79.74 acre tract and the west line of said Shell 7.502 acre tract, South 04° 42' 45" West, a distance of 311.82 feet to a 5/8" capped "Schram" iron pin set by previous survey by myself, Timothy W. Schram, Sr. for a new division of 94.838 acre tract, known as Parcel 4 of the Mound Complex, said iron pin being the northeasterly corner of said new division of 94.838 acres; thence with said new division line of said 94.838 acre tract on the following three (3) courses, 1) Due West, a distance of 62.54 feet to a 5/8" capped "Schram" iron pin set by previous survey; 2) thence, Due North, a distance of 111.18 feet to a 5/8" capped "Schram" iron pin set by previous survey; 3) thence, South 89° 59' 52" West, passing a point on the west line of Section 30 and

the east line of Section 36 at 1249.47 feet, reference from said point a railroad spike found, South 05° 16' 42" West, 1682.63 feet, said spike being the south section corner of Section 30 and 36, also a concrete monument found, disturbed, North 05° 16' 42" East, 3724.33 feet, said concrete monument being the north corner of Section 30 and 36, in all a distance of 1767.43 feet to a 5/8" capped "Schram" iron pin set by previous survey, said iron pin being a northerly corner of said new division of 94.838 acres, said iron pin being the **True Point of Beginning** of the hereinafter described new division of 6.568 acres;

Thence with said new division line of said 94.838 acre tract on the following six (6) courses,

1) **South 23° 53' 27" West**, a distance of **12.17 feet to a 5/8" capped "Schram" iron pin set by previous survey**;
2) **Thence, South 47° 17' 05" East**, a distance of **318.93 feet to a 5/8" capped "Schram" iron pin set by previous survey**;
3) **Thence, South 10° 55' 31" East**, a distance of **75.93 feet to a 5/8" capped "Schram" iron pin set by previous survey**;
4) **Thence, South 79° 34' 35" West**, a distance of **878.76 feet to a 5/8" capped "Schram" iron pin set by previous survey**;
5) **Thence, Due South**, a distance of **82.39 feet to a 5/8" capped "Schram" iron pin set by previous survey**;
6) **Thence, Due West**, a distance of **72.92 feet to a 5/8" capped "Schram" iron pin set by previous survey**, said iron pin lying in the northeasterly line of a 5.481 acre tract conveyed to the Consolidated Railroad Corporation, as recorded in Microfiche No. 78-502A01 of the Deed Records of Montgomery County, Ohio, said Consolidated Railroad Corporation 5.481 acre tract also known as Lot Numbered 4780 of the consecutive numbered lots of the City of Miamisburg, Ohio;

Thence with the northeasterly line of said Consolidated Railroad Corporation 5.481 acre tract, **North 09° 33' 38" West**, a distance of **351.85 feet to a 5/8" iron pin set**, said iron pin lying in the north line of said United States of America 42.56 acre tract, said iron pin being the southwest corner of a 1.6 acre tract, known as Tract number A-112, conveyed to the United States of America, as recorded in Deed Book Volume 1258, Page 74 of the Deed Records of Montgomery County, Ohio;

Thence with the north line of said Untied State of America 42.56 acre tract and the south line of said Untied States of America 1.6 acre tract, **South 84° 25' 01" East**, a distance of **100.51 feet to a 5/8" iron pin set**, said iron pin being the southeast corner of said Untied States of America 1.6 acre tract;

Thence with the easterly line of said Untied States of America 1.6 acre tract, **North 09° 26' 26" West**, a distance of **60.47 feet to a 5/8" iron pin set**, said iron pin being the northwesterly corner of the herein described new division of 6.568 acres;

Thence with a new division line on the following two (2) courses,

1) **North 79° 08' 30" East**, a distance of **666.53 feet to a 5/8" iron pin set**;
2) **Thence, North 24° 17' 45" West**, a distance of **23.06 feet to a 5/8" iron pin set**, said iron pin being a northerly corner of the herein described 6.568 acre tract, said iron pin being the southwest corner of a new division of 45.259 acre tract, known as Parcel IB of the Mound Complex;

Thence with the south line of said new division of 45.259 acres, **North 89° 59' 52" East**, a distance of **16.59 feet to the True Point of Beginning**, containing **6.568 acres**, more or less, and being subject to all easements, highways and right of ways of record..

Bearing basis established as Grid North by GPS observation August 7th & 8th , 2002 at Latitude N39° 38' 25.81", Longitude W084° 17' 28.09" (Coast & Geodetic Survey Monument #G-139, 1947); Ohio State Plane Coordinate system, Ohio South Zone 3402 (NAD 83), True North being 01° 08' 11" east of Grid North.

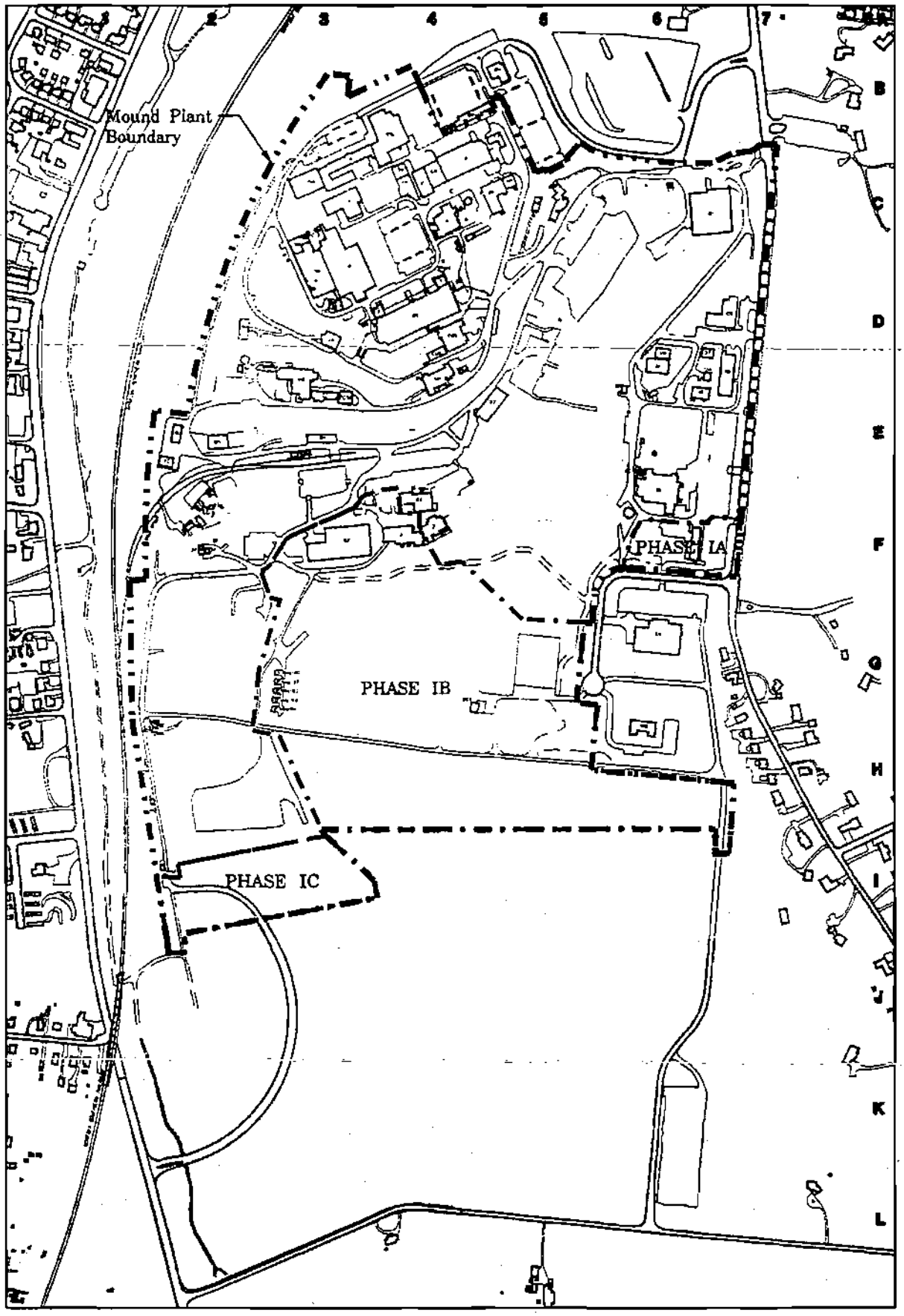
This description prepared from an actual field survey performed under my direct supervision, Timothy W. Schram, Sr., Registered Professional Surveyor number 7299 of the State of Ohio, and that all monuments referenced herein and placed on the ground represents the boundaries of the herein described tract, and based on a Plat of Survey as recorded in the Montgomery County Engineer's Record of Land Surveys in Record Volume number _____, Page _____.

_____

Timothy W. Schram, Sr., Regist. Prof. Surveyor No. 7299
of the State of Ohio, September 11, 2002.
F: 02088 Mound Parcel 5 Surv Parcel IC

APPENDIX B

Figures



Legend

Structures
Paved roadway
Unpaved roadway
Railroad
Water courses
Fence
Mound Plant Boundary
Contour line

0 100 200 400 600 800 1000
Scale In Feet

04/02/03	ISSUE FOR GENERAL USE	SEP	

MOUND

Environmental Restoration Geographic Information System

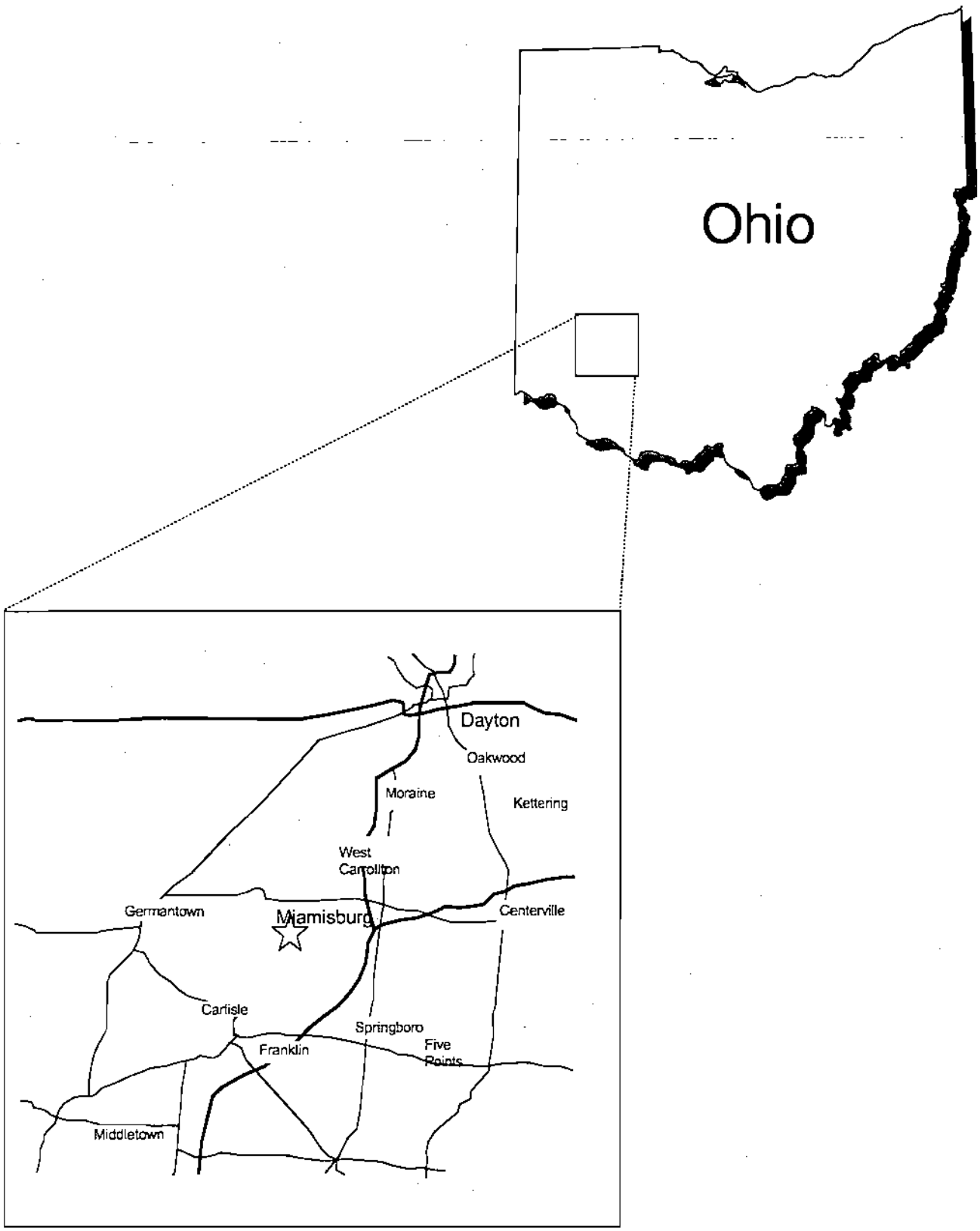
UNCLASSIFIED

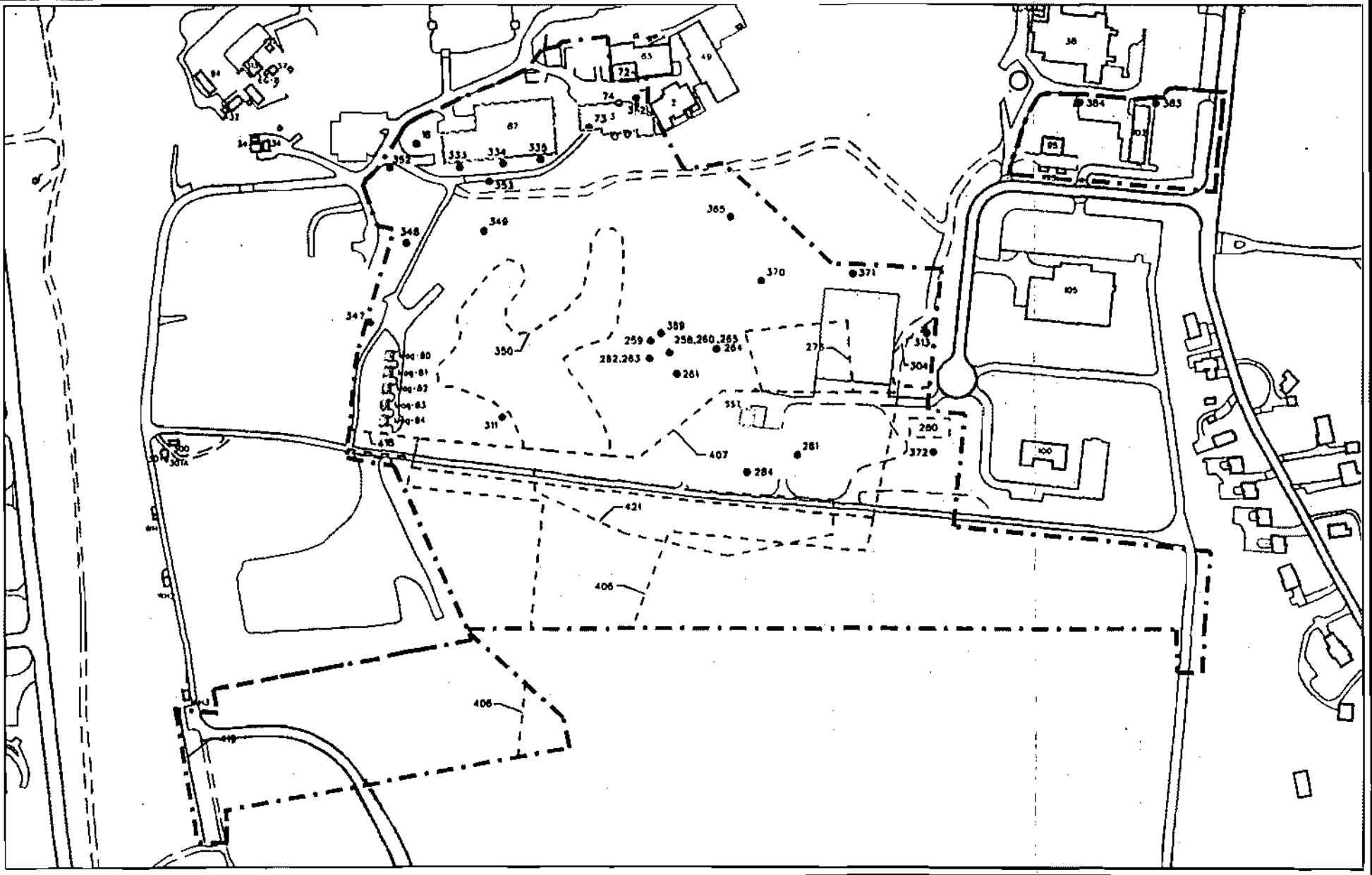
D

gen_site_plan.dgn

Figure 1
Location of Phase I

Figure 2: Regional Context of the Mound Plant





MOUND

Environmental Restoration Geographic Information System

SHEET	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
SHEET	1	2	3	4	5	6															

PART CLASSIFICATION

Figure 3: Phase I Buildings and PRSs

DRAWING CLASSIFICATION: UNCLASSIFIED

SIZE | DRAWING NUMBER: figure3.dgn | JOB NUMBER

DGN TYPE: STE | PROJ: ER-GIS | SCALE | SHEET 1 OF

STATUS: MD-REL-05/08/02 | ORIGIN: MSTATION

ISS	DATE	REVISION	BY	CHKD	ENG	APRVD	APVD	B
	03/04/03		SSF					

Figure 4 TCE and DCE in Monitoring Well 0411

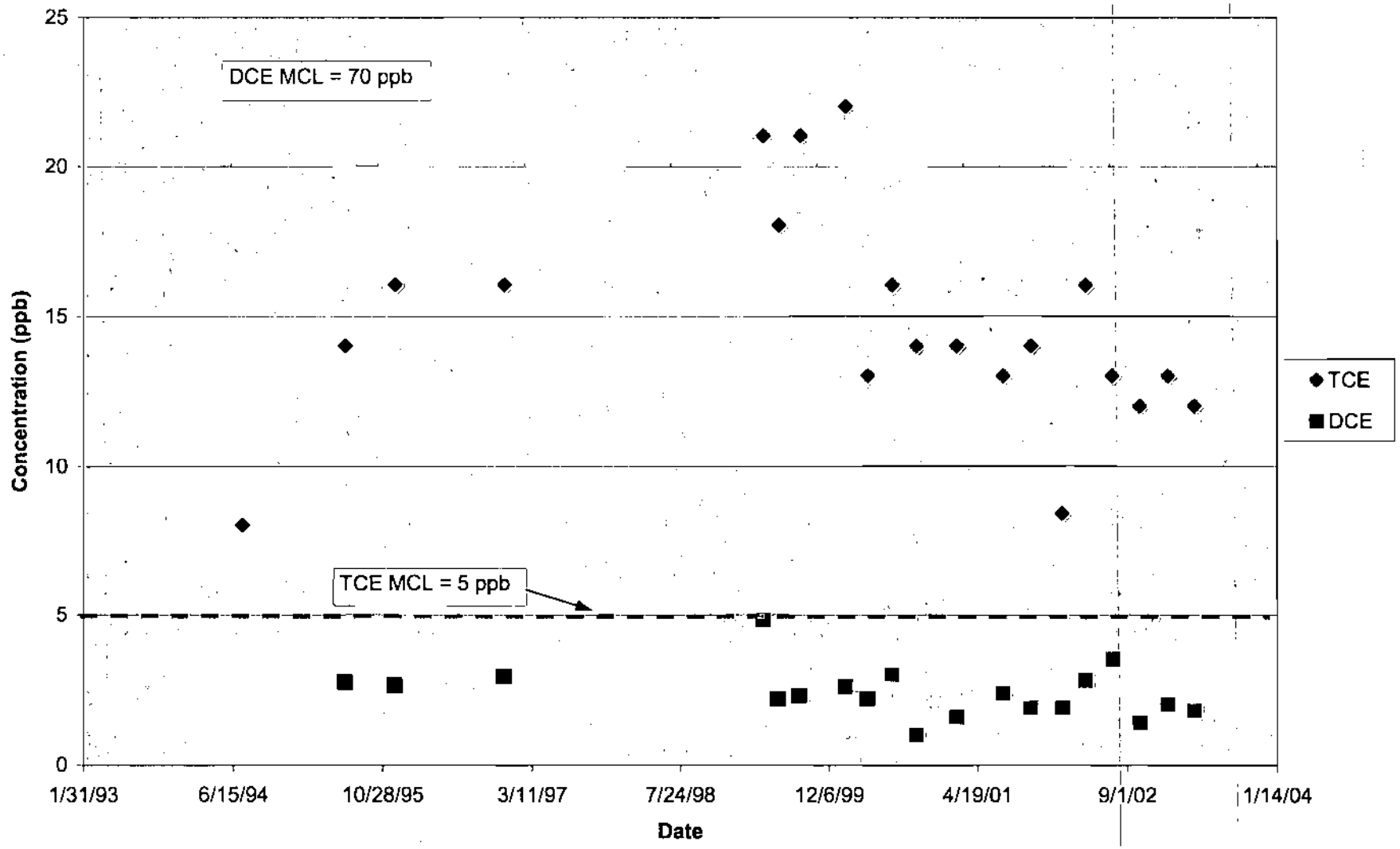


Figure 6 TCE and DCE in Seep 617

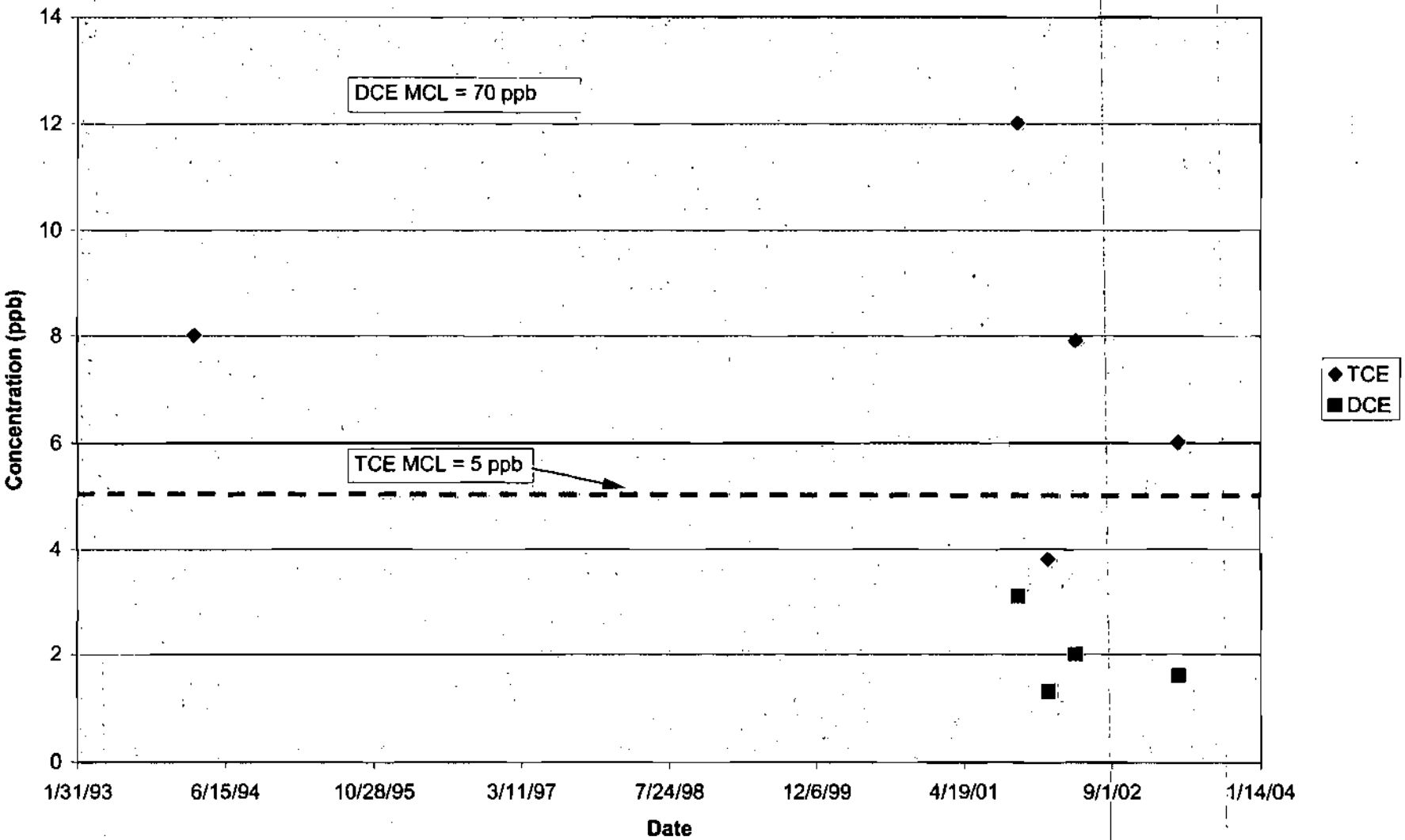
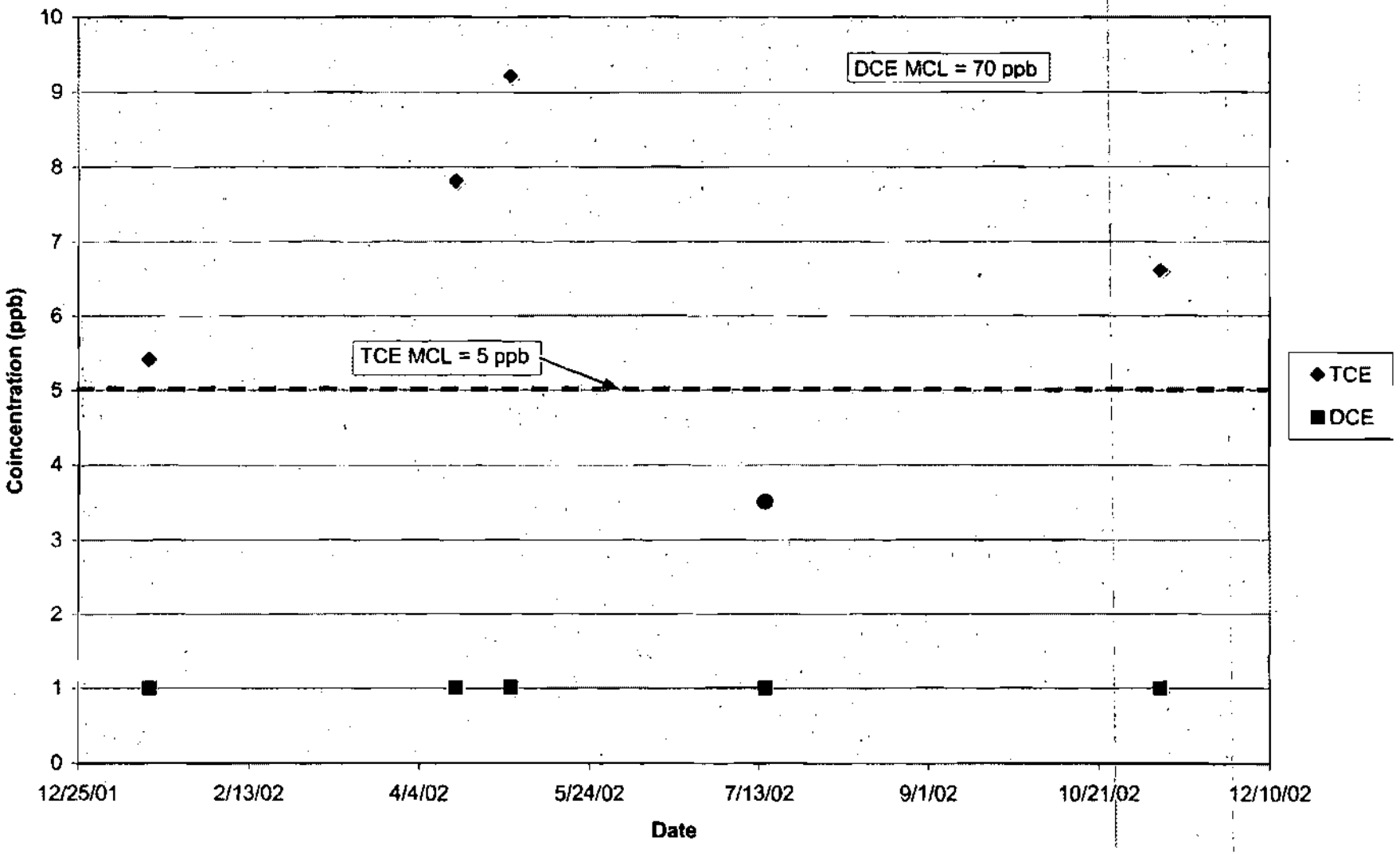


Figure 5 TCE and DCE in Monitoring Well 0443



APPENDIX C

Tables

Table 1: Phase I PRSs and Core Team Conclusions

PRS	Description	Core Team Decision	Closeout of PRS
16	Area C (Old Building 72)	NFA	Recommendation signed 8 May 1996
73	Evaporator Storage Area	NFA	Recommendation signed 17 January 2002
74	Quonset Hut: former waste storage site	NFA	Recommendation signed 19 February 1997
258-265	Burn Area	NFA	Recommendation signed 20 June 2001
276	Area 22: Orphan Soil from Other Areas	RA Complete	OSC Report signed 19 September 2002
280	Waste Oil Drum Field	NFA	Recommendation signed 28 February 2002
281	Area E, Waste Oil Spill	NFA	Recommendation signed 12 July 2000
284	Building 21 Thorium Sludge Storage Facility	RA Complete	OSC Report signed 17 February 2000
304	Excavated Material Disposal Area	RA Complete	OSC Report signed 21 December 1998
311	Potential Hot Spot Location S0706	NFA	Recommendation signed 4 March 1996
313	Potential Hot Spot Location S0982	NFA	Recommendation signed 19 February 1997
333	Explosive Surge Tank (Tank 263)	NFA	Recommendation signed 19 March 1997
334	Explosive Surge Tank (Tank 264)	NFA	Recommendation signed 19 March 1997
335	Explosive Surge Tank (Tank 265)	NFA	Recommendation signed 19 March 1997
347	Soil Contamination	NFA	Recommendation signed 20 November 1996
348	Soil Contamination	NFA	Recommendation signed 20 November 1996
349	Soil Contamination	NFA	Recommendation signed 19 February 1996

Table 1: Phase I PRSs and Core Team Conclusions
(continued)

PRS	Description	Core Team Decision	Closeout of PRS
350	Soil Contamination, Area West of Building 21	NFA	Recommendation signed 4 March 1996
352	Soil Contamination	NFA	Recommendation signed 20 November 1996
353	Soil Contamination	NFA	Recommendation signed 20 November 1996
362	Soil Contamination	NFA	Recommendation signed 20 November 1996
365	Soil Contamination	NFA	Recommendation signed 17 December 1996
369	Soil Contamination	NFA	Recommendation signed 20 November 1996
370	Soil Contamination	NFA	Recommendation signed 20 November 1996
371	Soil Contamination	NFA	Recommendation signed 18 December 1996
372	Soil Contamination	NFA	Recommendation signed 8 May 1996
383	Soil Contamination	NFA	Recommendation signed 31 March 1997
384	Soil Contamination	NFA	Recommendation signed 31 March 1997
406	Thorium Sludge Redrumming	NFA	Recommendation signed 14 March 1996
407	Soil Contamination West of Building 21	RA Complete	OSC Report signed 17 February 2000
418	PRS 418: Overflow Pond South Inlet	NFA	Recommendation signed 21 June 2000
419	Drainage Outflow Reroute	NFA	Recommendation signed 17 November 1999
421	Ridge	RA Complete	OSC Report signed 19 September 2002

NFA: No Further Assessment
RA: Removal Action

Table 2: Phase I Buildings and Core Team Conclusions

Building	Description	Core Team Decision	Closeout Action
3	EM Test Facility	NFA	Recommendation signed March 2002
87	Component Test Facility	NFA	Recommendation signed March 1997
Mag 80	Magazine	NFA	Recommendation signed March 2002
Mag 81	Magazine	NFA	Recommendation signed March 2002
Mag 82	Magazine	NFA	Recommendation signed March 2002
Mag 83	Magazine	NFA	Recommendation signed March 2002
Mag 84	Magazine	NFA	Recommendation signed March 2002
95	SM/PP Area Chiller Plant	NFA	Recommendation signed July 2002
102	Offices (Process Support Building)	NFA	Recommendation signed June 2002
SST	Salt Storage for Water Treatment and Road Salt	NFA	Recommendation signed March 2002

NFA: No Further Assessment

Table 3: Final Identification of Current and Future Soil COPCs for the Construction Worker Scenario

(EPC vs. Background) - Table 3 of the RRE

Analyte (unit)	CAS Number	Minimum Detect	Maximum Detect	Dist.	Detection Frequency	95% UCL of Mean	EPC	Background Concentration	COPC
Inorganics (mg/kg)									
Aluminum	7429-90-5	589.000	23000.000	N	145/ 146	15400.000	15400.000	19000.000	NO
Antimony	7440-36-0	0.210	44.500	D	64/ 209	8.460	8.460		YES
Arsenic	7440-38-2	0.490	19.500	X	137/ 143	8.220	8.220	8.600	NO
Bismuth	7440-69-9	0.820	72.700	X	33/ 59	133.000	72.700		YES
Copper	7440-50-8	1.800	1100.000	X	143/ 146	22.100	22.100	26.000	NO
Lead	7439-92-1	1.600	220.000	X	242/ 256	15.400	15.400	48.000	NO
Lithium	7439-93-2	2.300	34.100	N	53/ 55	18.300	18.300	26.000	NO
Manganese	7439-96-5s	65.200	8190.000	X	137/ 138	679.000	679.000	1400.000	NO
Thallium	7440-28-0	0.200	3.500	D	29/ 142	1.140	1.140	0.460	YES
Pesticides (mg/kg)									
Chlordane	57-74-9	0.019	0.098	D	2/ 23	0.016	0.016		YES
SVOCs (mg/kg)									
Benzo(a)anthracene	56-55-3	0.023	4.200	D	31/ 174	0.321	0.321		YES
Benzo(a)pyrene	50-32-8	0.023	3.600	D	29/ 174	0.316	0.316		YES
Benzo(g,h,i)perylene	191-24-2	0.027	2.100	D	16/ 174	0.304	0.304		YES
Phenanthrene	85-01-8	0.027	11.000	D	32/ 174	0.348	0.348		YES
Radionuclides (pCi/g)									
Actinium-227 +D	14952-40-0(+D)	0.050	2.110	D	37/ 282	0.304	0.304		YES:1
Actinium-227 long lived decay	14952-40-0L	0.050	2.110	D	37/ 282	0.304	0.304		YES
Actinium-228	14331-83-0	0.762	1.380	D	7/ 7	1.230	1.380		YES:3
Bismuth-214	14733-03-0	0.699	0.926	N	10/ 10	0.858	0.926		YES:2
Cesium-137 +D	10045-97-3(+D)	0.021	1.600	D	276/ 564	0.159	0.159	0.420	NO
Cesium-137 long lived decay	10045-97-3L	0.021	1.600	D	276/ 564	0.159	0.159	0.420	NO
Lead-210	14255-04-0	0.487	3.730	X	180/ 344	1.150	1.150		YES:2
Lead-210+D	14255-04-0(+D)	0.487	3.730	X	180/ 344	1.150	1.150		YES:2
Lead-210 long lived decay	14255-04-0L	0.487	3.730	X	180/ 344	1.150	1.150		YES:2
Lead-214	15067-28-4	0.570	1.120	N	20/ 20	0.921	0.921		YES:2
Plutonium-238	13981-16-3	0.012	396.400	D	665/1545	25.900	25.900	0.130	YES
Plutonium-239/240	PU-239/240	0.004	1.010	D	79/ 254	0.044	0.044	0.180	NO
Radium-224	13233-32-4	0.073	6.270	X	190/ 190	1.250	1.250		YES:3
Radium-226	13982-63-3	0.179	3.700	X	494/ 567	1.240	1.240	2.000	NO
Radium-226+D	13982-63-3(+D)	0.179	3.700	X	494/ 567	1.240	1.240	2.000	NO

Table 3: Final Identification of Current and Future Soil COPCs for the Construction Worker Scenario

(EPC vs. Background) - Table 3 of the RRE

Analyte (unit)	CAS Number	Minimum Detect	Maximum Detect	Dist.	Detection Frequency	95% UCL of Mean	EPC	Background Concentration	COPC
Radium-226 long lived decay	13982-63-3L	0.179	3.700	X	494/ 567	1.240	1.240	2.000	NO
Radium-228	15262-20-1	0.309	1.990	N	80/ 81	1.220	1.220		YES:3
Radium-228+D	15262-20-1(+D)	0.309	1.990	N	80/ 81	1.220	1.220		YES:3
Radium-228 long lived decay	15262-20-1L	0.309	1.990	N	80/ 81	1.220	1.220		YES:3
Thallium-208	14913-50-9	0.156	0.401	N	10/ 10	0.377	0.401		YES:3
Thorium-228+D	14274-82-9(+D)	0.037	4.520	X	342/ 384	1.640	1.640	1.500	YES:3
Thorium-228 long lived decay	14274-82-9L	0.037	4.520	X	342/ 384	1.640	1.640	1.500	YES:3
Thorium-230 long lived decay	14269-63-7L	0.100	7.510	X	340/ 595	2.830	2.830	1.900	YES:2
Thorium-232	7440-29-1	0.045	80.100	D	789/1805	0.832	0.832	1.400	NO
Thorium-232 long lived decay	7440-29-1L	0.045	80.100	D	789/1805	0.832	0.832	1.400	YES:4
Uranium-238 long lived decay	7440-61-1L	0.408	1.950	X	72/ 119	1.880	1.880	1.200	YES

"+D" : incorporates daughter products within the risk calculations
CAS: Chemical Abstract Service
UCL: upper confidence limit
EPC: Exposure Point Concentration
SVOCs: semivolatile organic compounds
Dist.: distribution where:
N = normal, L = lognormal, D = distribution not determined due to less than 20 or less than 50% detects, and
X = significantly different from lognormal or normal distribution
COPC: Constituent of Potential Concern, evaluation based on EPC vs. background
COPC = YES indicates the analyte is retained as a COPC; however, will not be evaluated individually because it is included in the risk assessment as part of the long lived decay chain of Ac-227 (reference 1), U-238 (reference 2), or Th-232 (reference 3). See Appendix H for details. For reference 4, Th-232 screens out but the Th-232 long lived decay chain was retained for risk evaluation.
COPC = NO indicates analyte was screened out based on: 2 = comparison to background, 3 = comparison to RBGV, and/or 4 = analyte is an essential human nutrient

Table 4: Final Identification of Current and Future Soil COPCs for the Site Employee Scenario
(EPC vs. Background) - Table 5 of the RRE

Analyte (unit)	CAS Number	Minimum Detect	Maximum Detect	Dist.	Detection Frequency	95% UCL of Mean	EPC	Background Concentration	COPC
Inorganics (mg/kg)									
Arsenic	7440-38-2	0.4900	19.500	X	9.9E-01	8.880	8.880	8.600	YES
Bismuth	7440-69-9	12.6000	72.700	X	26/ 36	104.000	72.700		YES
Lead	7439-92-1	1.6000	220.000	X	179/ 186	16.700	16.700	48.000	NO
Lithium	7439-93-2	2.3000	26.900	N	31/ 31	16.600	16.600	26.000	NO
Pesticides (mg/kg)									
Chlordane	57-74-9	0.0190	0.098	D	2/ 23	0.016	0.016		YES
SVOCs (mg/kg)									
Benzo(a)pyrene	50-32-8	0.0240	3.600	D	22/ 134	0.350	0.350		YES
Benzo(g,h,i)perylene	191-24-2	0.0270	2.100	D	12/ 134	0.333	0.333		YES
Phenanthrene	85-01-8	0.0270	11.000	D	25/ 134	0.398	0.398		YES
Radionuclides (pCi/g)									
Actinium-227 +D	14952-40-0(+D)	0.0500	2.110	D	36/ 219	0.354	0.354		YES
Actinium-227 long lived decay	14952-40-0L	0.0500	2.110	D	36/ 219	0.354	0.354		YES
Actinium-228	14331-83-0	0.7620	1.380	D	7/ 7	1.230	1.380		YES:3
Bismuth-214	14733-03-0	0.6990	0.926	N	10/ 10	0.858	0.926		YES:2
Cesium-137 +D	10045-97-3(+D)	0.0211	1.600	X	258/ 461	0.179	0.179	0.420	NO
Cesium-137 long lived decay	10045-97-3L	0.0211	1.600	X	258/ 461	0.179	0.179	0.420	NO
Lead-210	14255-04-0	0.6300	3.730	X	146/ 262	1.290	1.290		YES:2
Lead-210+D	14255-04-0(+D)	0.6300	3.730	X	146/ 262	1.290	1.290		YES:2
Lead-210 long lived decay	14255-04-0L	0.6300	3.730	X	146/ 262	1.290	1.290		YES:2
Lead-214	15067-28-4	0.8270	1.120	N	10/ 10	1.030	1.120		YES:2
Plutonium-238	13981-16-3	0.0122	396.400	D	592/1308	24.900	24.900	0.130	YES
Plutonium-239/240	PU-239/240	0.0039	1.010	D	64/ 230	0.044	0.044	0.180	NO
Radium-224	13233-32-4	0.0730	6.270	X	186/ 186	1.260	1.260		YES:3
Radium-226+D	13982-63-3(+D)	0.1790	3.700	X	411/ 466	1.250	1.250	2.000	NO
Radium-226 long lived decay	13982-63-3L	0.1790	3.700	X	411/ 466	1.250	1.250	2.000	NO
Radium-228	15262-20-1	0.5450	1.990	N	74/ 75	1.260	1.260		YES:3
Radium-228+D	15262-20-1(+D)	0.5450	1.990	N	74/ 75	1.260	1.260		YES:3
Radium-228 long lived decay	15262-20-1L	0.5450	1.990	N	74/ 75	1.260	1.260		YES:3
Thallium-208	14913-50-9	0.1560	0.401	N	10/ 10	0.377	0.401		YES:3
Thorium-228+D	14274-82-9(+D)	0.0370	4.520	X	319/ 356	1.700	1.700	1.500	YES:3
Thorium-228 long lived decay	14274-82-9L	0.0370	4.520	X	319/ 356	1.700	1.700	1.500	YES:3
Thorium-230 long lived decay	14269-63-7L	0.1000	7.510	X	317/ 499	2.700	2.700	1.900	YES:2

Table 4. Final Identification of Current and Future Soil COPCs for the Site Employee Scenario
(EPC vs. Background) - Table 5 of the RRE

Analyte (unit)	CAS Number	Minimum Detect	Maximum Detect	Dist.	Detection Frequency	95% UCL of Mean	EPC	Background Concentration	COPC
Thorium-232	7440-29-1	0.0450	80.100	D	675/1518	0.873	0.873	1.400	NO
Thorium-232 long lived decay	7440-29-1L	0.0450	80.100	D	675/1518	0.868	0.868	1.400	YES:4
Uranium-238 long lived decay	7440-61-1L	0.4760	1.950	X	50/ 91	2.030	1.950	1.200	YES

"+D" : incorporates daughter products within the risk calculations
CAS: Chemical Abstract Service
UCL: upper confidence limit
EPC: Exposure Point Concentration
SVOCs: semivolatile organic compounds
Dist.: distribution where:
N = normal, L = lognormal, D = distribution not determined due to less than 20 or less than 50% detects, and
X = significantly different from lognormal or normal distribution
COPC: Constituent of Potential Concern, evaluation based on EPC vs. background
COPC = YES indicates the analyte is retained as a COPC; however, will not be evaluated individually because it is included in the risk assessment as part of the long lived decay chain of Ac-227 (reference 1), U-238 (reference 2), or Th-232 (reference 3). See Appendix H for details. For reference 4, Th-232 screens out but the Th-232 long lived decay chain was retained for risk evaluation.

COPC = NO indicates analyte was screened out based on: 2 = comparison to background, 3 = comparison to RBGV, and/or
4 = analyte is an essential human nutrient

Table 5: Final Identification of Current Groundwater COPCs for the Construction Worker Scenario

(EPC vs. Background) - Table 7 of the RRE

Analyte (unit)	CAS Number	Minimum Detect	Maximum Detect	Detection Frequency	95% UCL	EPC	Background Concentration	COPC
Inorganics (mg/L)								
Antimony	7440-36-0	0.0028	0.014	3/ 20	0.044	0.014	0.001	YES
Cadmium	7440-43-9w	0.0046	0.008	5/ 25	0.007	0.007		YES
Copper	7440-50-8	0.0016	0.593	15/ 25	0.042	0.042	0.001	YES
Lead	7439-92-1	0.0034	0.040	5/ 25	0.013	0.013		YES
Volatile Organic Compounds (mg/L)								
Tert-butyl methyl ether	1634-04-4	0.0012	0.002	4/ 24	0.001	0.001		YES
Trichloroethylene (TCE)	79-01-6	0.0005	0.006	189/ 219	0.002	0.002		YES
Radionuclides (pCi/L)								
Thorium-230 long lived decay	14269-63-7L	0.0075	1.990	19/ 43	0.476	0.476		YES:2
Uranium-235 long lived decay	15117-96-1L	0.0063	2.300	30/ 53	0.466	0.466	0.814	NO
Uranium-238 long lived decay	7440-61-1L	0.1300	8.250	52/ 59	0.409	0.409	0.688	YES:5

EPC: exposure point concentration
UCL: upper confidence limit
CAS: Chemical Abstract Service

COPC: Constituent of Potential Concern
COPC = YES indicates the analyte is retained as a COPC; however, will not be evaluated individually because it is included in the risk assessment as part of the long lived decay chain of Ac-227 (reference 1), U-238 (reference 2), or Th-232 (reference 3). For reference 4, Th-232 screens out but the Th-232 long lived decay chain was retained for risk evaluation. For reference 5, U-238 screens out but the U-238 long lived decay chain was retained for risk evaluation.

COPC = NO indicates analyte was screened out based on: 2 = comparison to background, 3 = comparison to the lower of RBGV or MCL, and/or 4 = analyte is an essential human nutrient

Table 6: Final Identification of Current Groundwater COPCs for the Site Employee Scenario

(EPC vs. Background) - Table 9 of the RRE

Analyte (unit)	CAS Number	Minimum Detect	Maximum Detect	Detection Frequency	95% UCL	EPC	Background Concentration	COPC
Inorganics (mg/L)								
Antimony	7440-36-0	0.0028	0.014	3/ 20	0.0436	0.0144	0.0006	YES
Cadmium	7440-43-9w	0.0046	0.008	5/ 25	0.0066	0.0066		YES
Copper	7440-50-8	0.0016	0.593	15/ 25	0.0416	0.0416	0.0012	YES
Lead	7439-92-1	0.0034	0.040	5/ 25	0.0130	0.0130		YES
Volatile Organic Compounds (mg/L)								
Tert-butyl methyl ether	1634-04-4	0.0012	0.002	4/ 24	0.0006	0.0006		YES
Trichloroethylene (TCE)	79-01-6	0.0005	0.006	189/ 219	0.0023	0.0023		YES
Radionuclides (pCi/L)								
Plutonium-239/240	PU-239/240	0.0018	2.000	5/ 19	9.6400	2.0000	0.1250	YES
Thorium-228	14274-82-9	0.0085	2.170	17/ 46	25.6000	2.1700	0.7790	YES:3
Thorium-228+D	14274-82-9(+D)	0.0085	2.170	17/ 46	25.6000	2.1700	0.7790	YES:3
Thorium-228 long lived decay	14274-82-9L	0.0085	2.170	17/ 46	25.6000	2.1700	0.7790	YES:3
Thorium-230	14269-63-7	0.0075	1.990	19/ 43	0.4760	0.4760		YES:2
Thorium-230 long lived decay	14269-63-7L	0.0075	1.990	19/ 43	0.4760	0.4760		YES:2
Thorium-232 long lived decay	7440-29-1L	0.0025	0.100	8/ 44	0.3380	0.1000	0.3140	YES:4
Tritium	10028-17-8w	30.0000	7200.000	123/ 139	799.0000	799.0000	1485.4700	NO
Uranium-233/234	U-233/234	0.1670	0.361	36/ 36	0.2460	0.2460		YES
Uranium-234	13966-29-5	0.2000	8.140	19/ 24	2.0200	2.0200	0.7920	YES:2
Uranium-235	15117-96-1	0.0063	2.300	30/ 53	0.4660	0.4660	0.8140	NO
Uranium-235+D	15117-96-1(+D)	0.0063	2.300	30/ 53	0.4660	0.4660	0.8140	NO
Uranium-235 long lived decay	15117-96-1L	0.0063	2.300	30/ 53	0.4660	0.4660	0.8140	NO
Uranium-238	7440-61-1	0.1300	8.250	52/ 59	0.4090	0.4090	0.6880	NO
Uranium-238+D	7440-61-1(+D)	0.1300	8.250	52/ 59	0.4090	0.4090	0.6880	NO
Uranium-238 long lived decay	7440-61-1L	0.1300	8.250	52/ 59	0.4090	0.4090	0.6880	YES:5

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Table 6: Final Identification of Current Groundwater COPCs for the Site Employee Scenario

footnotes

"+D" - incorporates daughter products within the risk calculations
EPC: exposure point concentration
UCL: upper confidence limit
CAS: Chemical Abstract Service
COPC: Constituent of Potential Concern
COPC = YES indicates the analyte is retained as a COPC; however, will not be evaluated individually because it is included in the risk assessment as part of the long lived decay chain of Ac-227 (reference 1), U-238 (reference 2), or Th-232 (reference 3). See Appendix H for details. For reference 4, Th-232 screens out but the Th-232 long lived decay chain was retained for risk evaluation. For reference 5, U-238 screens out but the U-238 long lived decay chain was retained for risk evaluation.
COPC = NO indicates analyte was screened out based on: 2 = comparison to background, 3 = comparison to the lower of RBGV or MCL, and/or 4 = analyte is an essential human nutrient

Table 7: Final Identification of Future Groundwater COPCs for the Construction Worker Scenario

(Modeled Concentration vs. Background) - Table 11 of the RRE

Analyte (unit)	CAS Number	Future Modeled Screening Concentration	Background Concentration	COPC
Metals (mg/L)				
Aluminum	7429-90-5	2.0238	0.038	YES
Antimony	7440-36-0	0.0184	0.001	YES
Arsenic	7440-38-2	0.0184	0.033	NO
Barium	7440-39-3	0.1829	0.310	NO
Bismuth	7440-69-9	0.0241		YES
Cadmium	7440-43-9w	0.0080		YES
Chromium	7440-47-3	0.9642	0.006	YES
Copper	7440-50-8	0.0557	0.001	YES
Lead	7439-92-1	0.0194		YES
Lithium	7439-93-2	0.1510	0.056	YES
Manganese	7439-96-5w	0.2154	0.230	NO
Molybdenum	7439-98-7	0.0149	0.006	YES
Nickel	7440-02-0	0.2779	0.035	YES
Nitrate/Nitrite	14797-65-0nn	6.5098	5.3490	YES
Thallium	7440-28-0	0.0036		YES
Vanadium	7440-62-2	0.0257	0.017	YES
SVOCs (mg/L)				
Bis(2-ethylhexyl)phthalate	117-81-7	0.0176		YES
VOCs (mg/L)				
Bromochloromethane	74-97-5	0.0058		YES
Dichloromethane (Methylene Chloride)	75-09-2	0.0154		YES
Fluorobenzene	462-06-6	0.0087		YES
O-Chloroflurobenzene	348-51-6	0.0072		YES
Tetrachloroethene	127-18-4	0.0015		YES
Tert-butyl methyl ether	1634-04-4	0.0006		YES
Trichloroethylene (TCE)	79-01-6	0.0039		YES
Radionuclides (pCi/L)				
Plutonium-238	13981-16-3	0.2587	0.087	YES
Potassium-40	13966-00-2	48.3052		YES
Radium-226	13982-63-3	1.6849	0.996	YES:2
Radium-226 +D	13982-63-3(+D)	1.6849	0.996	YES:2
Radium-226 long lived decay	13982-63-3L	1.6849	0.996	YES:2
Radium-228	15262-20-1	0.4179		YES:3
Radium-228 +D	15262-20-1(+D)	0.4179		YES:3
Radium-228 long lived decay	15262-20-1L	0.4179		YES:3
Strontium-90	10098-97-2	1.4173	0.975	YES
Thorium-228	14274-82-9	77.5034	0.779	YES:3
Thorium-228+D	14274-82-9(+D)	77.5034	0.779	YES:3
Thorium-228 long lived decay	14274-82-9L	77.5034	0.779	YES:3
Thorium-230	14269-63-7	0.6202		YES:2
Thorium-230 long lived decay	14269-63-7L	0.6202		YES:2
Thorium-232	7440-29-1	0.1803	0.314	NO
Thorium-232 long lived decay	7440-29-1L	0.1803	0.314	YES:4

Table 7: Final Identification of Future Groundwater COPCs for the Construction Worker Scenario

(Modeled Concentration vs. Background) - Table 11 of the RRE

Analyte (unit)	CAS Number	Future Modeled Screening Concentration	Background Concentration	COPC
Tritium	10028-17-8w	66797.9574	1485.470	YES
Uranium-233	13968-55-3	1.3619		YES:6
Uranium-233 long lived decay	13968-55-3L	1.3619		YES
Uranium-234	13966-29-5	2.6013	0.792	YES:2
Uranium-235	15117-96-1	2.1485	0.814	YES:7
Uranium-235+D	15117-96-1(+D)	2.1485	0.814	YES:7
Uranium-235 long lived decay	15117-96-1L	2.1485	0.814	YES
Uranium-235/236	U-235/236	0.0184		YES:7
Uranium-238	7440-61-1	0.5524	0.688	NO
Uranium-238+D	7440-61-1(+D)	0.5524	0.688	NO
Uranium-238 long lived decay	7440-61-1L	0.5524	0.688	YES:5

·D' incorporates daughter products
:AS: Chemical Abstract Service
'OCs: volatile organic compounds
VOCs: semivolatile organic compounds

:OPC = YES indicates the analyte is retained as a COPC; however, will not be evaluated individually because it i ıcluded in the risk assessment as part of the long lived decay chain of Ac-227 (reference 1), U-238 (reference 2) r Th-232 (reference 3). For reference 4, Th-232 screens out but the Th-232 long lived decay chain was retained ɔr risk evaluation. For reference 5, U-238 screens out but the U-238 long lived decay chain was retained for risk valuation. Analyte is retained as a COPC; however, will not be evaluated individually because it is included in the sk assessment as part of the long lived decay chain of U-233 (reference 6) and U-235 (reference 7).

:OPC = NO indicates analyte was screened out based on: 2 = comparison to background, 3 = comparison to the ɔwer of RBGV or MCL, and/or 4 = analyte is an essential human nutrient

Table 8: Final Identification of Future Groundwater COPCs for the Site Employee Scenario

(Future Modeled Concentration vs. Background) - Table 13 of the RRE

Analyte (unit)	CAS Number	Future Modeled Screening Concentration	Background Concentration	COPC
Inorganics (mg/L)				
Aluminum	7429-90-5	2.0238	0.0375	YES
Antimony	7440-36-0	0.0184	0.0006	YES
Arsenic	7440-38-2	0.0184	0.0330	NO
Barium	7440-39-3	0.1829	0.3102	NO
Bismuth	7440-69-9	0.0241		YES
Cadmium	7440-43-9w	0.0080		YES
Chromium	7440-47-3	0.9642	0.0061	YES
Copper	7440-50-8	0.0557	0.0012	YES
Lead	7439-92-1	0.0194		YES
Lithium	7439-93-2	0.1510	0.0557	YES
Manganese	7439-96-5w	0.2154	0.2296	NO
Molybdenum	7439-98-7	0.0149	0.0056	YES
Nickel	7440-02-0	0.2779	0.0350	YES
Nitrate/Nitrite	14797-65-0nn	6.510	5.3490	YES
Thallium	7440-28-0	0.0036		YES
Vanadium	7440-62-2	0.0257	0.0171	YES
SVOCs (mg/L)				
Bis(2-ethylhexyl)phthalate	117-81-7	0.0176		YES
VOCs (mg/L)				
Bromochloromethane	74-97-5	0.0058		YES
Dichloromethane (Methylene Chloride)	75-09-2	0.0154		YES
Fluorobenzene	462-06-6	0.0087		YES
O-Chloroflurobenzene	348-51-6	0.0072		YES
Tert-butyl methyl ether	1634-04-4	0.0006		YES
Tetrachloroethene	127-18-4	0.0015		YES
Trichloroethylene (TCE)	79-01-6	0.0039		YES
Radionuclides (pCi/L)				
Plutonium-238	13981-16-3	0.2587	0.0870	YES
Potassium-40	13966-00-2	48.3052		YES
Radium-226	13982-63-3	1.6849	0.9960	YES:2
Radium-226 +D	13982-63-3(+D)	1.6849	0.9960	YES:2
Radium-226 long lived decay	13982-63-3L	1.6849	0.9960	YES:2
Radium-228	15262-20-1	0.4179		YES:3
Radium-228 +D	15262-20-1(+D)	0.4179		YES:3
Radium-228 long lived decay	15262-20-1L	0.4179		YES:3
Strontium-90	10098-97-2	1.4173	0.9750	YES
Thorium-228	14274-82-9	77.5034	0.7790	YES:3
Thorium-228+D	14274-82-9(+D)	77.5034	0.7790	YES:3
Thorium-228 long lived decay	14274-82-9L	77.5034	0.7790	YES:3
Thorium-230	14269-63-7	0.6202		YES:2
Thorium-230 long lived decay	14269-63-7L	0.6202		YES:2
Thorium-232	7440-29-1	0.1803	0.3140	NO
Thorium-232 long lived decay	7440-29-1L	0.1803	0.3140	YES:4
Tritium	10028-17-8w	66797.9574	1485.4700	YES

Table 8: Final Identification of Future Groundwater COPCs for the Site Employee Scenario

(Future Modeled Concentration vs. Background) - Table 13 of the RRE

Analyte (unit)	CAS Number	Future Modeled Screening Concentration	Background Concentration	COPC
Uranium-233	13968-55-3	1.3619		YES:6
Uranium-233 long lived decay	13968-55-3L	1.3619		YES
Uranium-234	13966-29-5	2.6013	0.7920	YES:2
Uranium-235	15117-96-1	2.1485	0.8140	YES:7
Uranium-235+D	15117-96-1(+D)	2.1485	0.8140	YES:7
Uranium-235 long lived decay	15117-96-1L	2.1485	0.8140	YES
Uranium-238	7440-61-1	0.5524	0.6880	NO
Uranium-238+D	7440-61-1(+D)	0.5524	0.6880	NO
Uranium-238 long lived decay	7440-61-1L	0.5524	0.6880	YES:5

+D' incorporates daughter products
CAS: Chemical Abstract Service
VOCs: volatile organic compounds
SVOCs: semivolatile organic compounds
RBGV: Risk-Based Guideline Value, value is the lower of 10^{-6} cancer risk or 0.1 hazard index
a - carcinogen value, b - noncarcinogen value, c - maximum contaminant level (MCL)
COPC: Constituent of Potential Concern
COPC = YES indicates the analyte is retained as a COPC; however, will not be evaluated individually because it s included in the risk assessment as part of the long lived decay chain of Ac-227 (reference 1), U-238 (reference !), or Th-232 (reference 3). For reference 4, Th-232 screens out but the Th-232 long lived decay chain was etained for risk evaluation. For reference 5, U-238 screens out but the U-238 long lived decay chain was etained for risk evaluation. Analyte is retained as a COPC; however, will not be evaluated individually because it s included in the risk assessment as part of the long lived decay chain of U-233 (reference 6) and U-235 reference 7).
COPC = NO indicates analyte was screened out based on: 2 = comparison to background, 3 = comparison to he lower of RBGV or MCL, and/or 4 = analyte is an essential human nutrient

Table 9: Incremental Residual Risk Summary

Table 36 of the RRE

Scenario and Receptor	Media	Constituents	Pathway	Total Non-Cancer Hazard or HI	Total Cancer Risk
Construction Worker Scenario	Current & Future Soil (all depths)	Chemical & Radiological	Oral	1.4E-01	**7.4E-06**
			Dermal Contact	1.6E-03	3.5E-07
			Inhalation of Dust	NA	2.0E-08
			Inhalation of VOCs	NA	NA
			External	NA	**9.5E-06**
			Soil Total Risk	1.4E-01	**1.7E-05**
	Current Groundwater	Chemical & Radiological	Oral	5.5E-01	**3.5E-06**
			Dermal Contact	3.1E-01	**1.3E-06**
			Inhalation While Showering	4.8E-07	NA
			Current Groundwater Total Risk	**8.6E-01**	**4.8E-06**
	Future Groundwater	Chemical & Radiological	Oral	**4.6E+00**	**2.0E-05**
			Dermal Contact	9.3E-01	**2.3E-06**
			Inhalation While Showering	1.4E-05	4.5E-08
			Future Groundwater Total Risk	**5.5E+00**	**2.2E-05**
	Air*	Radiological	Inhalation	NA	2.0E-07
			Air Total Risk	NA	2.0E-07
			Cumulative Incremental Current Risk	1.0E+00	**2.2E-05**
			Cumulative Incremental Future Risk	**5.7E+00**	**4.0E-05**
Site Employee Scenario	Current & Future Soil (0-2 feet bls)	Chemical & Radiological	Oral	4.6E-04	**4.0E-06**
			Inhalation of Dust	NA	9.7E-08
			Inhalation of VOCs	NA	NA
			External	NA	**1.2E-05**
			Soil Total Risk	4.6E-04	**1.6E-05**
	Current Groundwater	Chemical & Radiological	Oral	5.5E-01	**2.6E-05**
			Current Groundwater Total Risk	5.5E-01	**2.6E-05**
	Future Groundwater	Chemical & Radiological	Oral	**4.6E+00**	**9.3E-05**
			Future Groundwater Total Risk	**4.6E+00**	**9.3E-05**
	Air*	Radiological	Inhalation	NA	9.9E-07
			Air Total Risk	NA	9.9E-07
			Cumulative Incremental Current Risk	5.5E-01	**4.3E-05**
			Cumulative Incremental Future Risk	**4.6E+00**	**1.1E-04**

HI: Hazard Index
NA: not applicable
*RRE values for air were brought forward from the Technical Position Report for Release Blocks D and H. (Reference 20).
bolded values exceed cancer risk of 10^{-6} or non-cancer Hazard Index greater than 1.
bls: below land surface
VOCs: volatile organic compounds
Numbers written as 1.0E-3 equal 1x10-3 and 0.001

Table 10: Summary of Other Factors Considered for Phase I

Factor Considered	Affects Phase I? **Yes**	Affects Phase I? **No**	Recommendation/Conclusion	Reference
Cultural Resources		✔	There are no historic or cultural resources within Phase I.	Correspondence from Mark J. Epstein, Department Head, Resource Protection and Review, Ohio Historic Preservation Office dated July 31, 1998.
Drinking Water Quality		✔	In accordance with OEPA requirements, the site's drinking water is routinely tested fior various compounds. These analyses must be performed by a state certified laboratory. In 2001, the following analyses were performed: total coliform, lead, copper, nitrate, and volatile organic compounds. No exceedances were observed in 2001.	Miamisburg Environmental Management Project, Annual Site Environmental Report for Calendar Year 2001, September 2002
Endangered Species		✔	Two state-protected species were found: the dark-eyed junco (*Junxo hyemalis*) and the inland rush (*Juncus interior*). Because only one individual inland rush was located, it is not considered a viable breeding population at the Mound facility. The dark-eyed junco is not known to breed in southwestern Ohio. It has also been determined that the plant site is in the habitat range of the federally endangered species of Indiana Bat (*Myotis sodalis*); however, the Mound Site does not provide a suitable habitat for the Indiana Bat. Neither the solitary sitings of the rush and the junco, nor the potential habitat for the Indiana Bat, are expected to affect ongoing or future activities at the site.	Operable Unit 9 Hydrogeologic Investigation: Wetlands Determination Report, Technical Memorandum, Revision 1, January 1994 Operable Unit 9 Ecological Characterization Report, Final, March 1994

Table 10: Summary of Other Factors Considered for Phase I

Factor Considered	Affects Phase I? **Yes**	Affects Phase I? **No**	Recommendation/Conclusion	Reference
Fragment Arcs		✔	No fragment arcs and clearances zones due to explosive hazards at onsite operations exist in Phase I.	Drawing FSD 970058, "Clearance Zones and Fragment Arcs"
Monitoring Equipment	✔		Both DOE and OEPA operate air monitoring stations within Phase I. There are several monitoring wells within Phase I.	Groundwater Monitoring Program and Groundwater Protection Management Program Plan, April 1997, Revision 1 Mound Plant Environmental Monitoring Plan, July 1997
National Environmental Policy Act (NEPA)	✔		A Finding of No Significant Impact (FONSI) was issued on October 10, 1994 for the commercialization of the Mound Plant.	The Mound Plant EA for Commercialization of the Mound Plant, DOE/EA-1001, October 1994, and FONSI for the Commercialization of the Mound Plant EA, October 27, 1994

Table 10: Summary of Other Factors Considered for Phase I

Factor Considered	Affects Phase I? **Yes**	Affects Phase I? **No**	Recommendation/Conclusion	Reference
Resource Conservation and Recovery Act	✔		DOE has found no RCRA regulated units within Phase I warranting a RCRA closure action.	RCRA Part B Permit Application, Volume I, Section A, September 1995 (as amended)
			It has been determined that the closest facility boundary from Buildings 23 and 72 will not change with the sale of Phase I. Therefore, the risk assessment information prepared in conjunction with the RCRA Part B Permit and submitted to the Ohio Hazardous Waste Facility Board (HWFB) will not change.	Responses to Information requested by the Ohio HWFB Technical Staff transmitted to Bob Brown of the State of the Hazardous Waste Facility Board dated March 12, 1996.
			The Burn area was closed in accordance with procedures in the approved Burn Area Closure Plan.	Burn Area Closure Report, March 1998
Underground Storage Tanks		✔	There are no USTs located within Phase I.	EG&G Mound Applied Technologies, Active Underground Storage Tank Plan, November 1994
Wetlands	✔		Three characteristics must be present to be classified as jurisdictional wetlands: (1) hydrophytic vegetation, (2) hydric soils, and (3) wetlands hydrology. Absence of any one of these characteristics removes an area from consideration. One site (Site HH) examined within Phase I constitutes a jurisdictional wetland. In addition, Site EE	Operable Unit 9 Hydrogeologic Investigation: Wetlands Determination Report, Technical Memorandum, Revision 1, January 1994

Table 10: Summary of Other Factors Considered for Phase I

Factor Considered	Affects Phase I? **Yes**	Affects Phase I? **No**	Recommendation/Conclusion	Reference
			could become a jurisdictional wetland if its use changes from a sedimentation basin. Consistent with 10 CFR 1022, the applicability of wetland regulations to the property must be disclosed to the new owner.	Delineation of Federal Wetlands and Other Waters of the U.S., Final, August 1999 Notice of Wetlands Involvement for the Transfer of Land at the Miamisburg Closure Project, federal Register, Vol 67, No. 229, November 27, 2002
Floodplains		✔	No portion of Phase I lies within the 100-year floodplain. Consistent with 10 CFR 1022, the applicability of floodplain regulations to the property must be disclosed to the new owner.	South Property Floodplain Assessment and Notice of Floodplain Involvement, issued in Environmental Assessment of Mound Plant's South Property, June 1999
Clean Air Act	✔		OEPA placed the roads and parking lots on permanent registration status with air permit F001.	Air permit F001

Table 11: Phase I Documents and Public Comment Periods

Document	Comment Period (Begin)	Comment Period (End)
Phase I Proposed Plan*	26 March 2003	24 April 2003
Phase I Proposed Plan	2 October 2002	31 October 2002
Phase I RRE	25 September 2002	24 October 2002
PRS 16 Package	19 June 1996	17 July 1996
PRS 73 Package	27 March 2002	25 April 2002
PRS 74 Package	3 April 1997	8 May 1997
PRS 258-265 Package	12 June 2002	12 July 2002
PRS 276 CRA AM	2 October 2001	1 November 2001
PRS 280 Package	17 April 2002	17 May 2002
PRS 304 AM	21 December 1998	25 January 1999
PRS 304/313 Package	8 May 1997	16 June 1997
PRS 311/350 Package	18 March 1996	1 April 1996
PRS 346-8/355/370 Package	19 December 1996	23 January 1997
PRS 349 Package	3 April 1997	8 May 1997
PRS 351-3, 357, 359-62, 385-7 Package	19 December 1996	23 January 1997
PRS 365 Package	27 February 1997	3 April 1997
PRS 369 Package	19 December 1996	23 January 1997
PRS 371 Package	3 April 1997	8 May 1997
PRS 372 Package	15 May 1996	17 June 1996
PRS 383 Package	17 June 1997	18 July 1997
PRS 384 Package	19 December 1996	23 January 1997
PRS 406 Package	18 March 1996	1 April 1996
PRS 418 Package	9 August 2000	14 September 2000
PRS 419 Package	19 January 2000	17 February 2000
PRS 421 CRA AM	2 October 2001	1 November 2001
Building 3 BDP	27 March 2002	26 April 2002
Building 35 & 59 AM	20 April 1999	20 May 1999
Building 87 BDP	24 July 1997	23 August 1997

Mags 80-84 BDP	27 March 2002	26 April 2002
Building 95 BDP	4 September 2002	4 October 2002
Building 102 BDP	3 July 2002	2 August 2002
Building SST BDP	27 March 2002	26 April 2002

AM: Action Memo
BDP: Building Data Package
CRA: Contingent Removal Action
PRS: Potential Release Site

Note: Some PRSs are addressed in Building Data Packages or On-Scene Coordinator Reports.

* Proposed Plan reissued to enable public comment on the Monitored Natural Attenuation component of the remedy and the impact of the boundary change.

Table 12: Impact of Boundary Changes on Incremental Residual Soil Risk

Table 19 of the Proposed Plan

Scenario and Receptor	Media	Constituents	Pathway	Total Non-Cancer Hazard or HI	Total Non-Cancer Hazard or HI	Total Cancer Risk	Total Cancer Risk
				Boundary in October 2002	Current Boundary	Boundary in October 2002	Current Boundary
Construction Worker Scenario	Current & Future Soil (all depths)	Chemical & Radiological	Oral	1.4E-01	1.4E-01	**7.4E-06**	**7.4E-06**
			Dermal Contact	1.6E-03	2.2E-02	3.5E-07	3.5E-07
			Inhalation of Dust	NA	NA	2.0E-08	1.9E-08
			Inhalation of VOCs	NA	NA	NA	NA
			External	NA	NA	**9.5E-06**	**9.6E-06**
			Soil Total Risk	1.4E-01	1.6E-01	**1.7E-05**	**1.7E-05**
Site Employee Scenario	Current & Future Soil (0-2 feet bls)	Chemical & Radiological	Oral	4.6E-04	4.6E-04	**4.0E-06**	**4.0E-06**
			Inhalation of Dust	NA	NA	9.7E-08	9.7E-08
			Inhalation of VOCs	NA	NA	NA	NA
			External	NA	NA	**1.2E-05**	**1.2E-05**
			Soil Total Risk	4.6E-04	4.6E-04	**1.6E-05**	**1.6E-05**

HI: Hazard Index
NA: not applicable
bolded values exceed cancer risk of 10^{-6} or non-cancer Hazard Index greater than 1.
bls: below land surface
VOCs: volatile organic compounds
numbers written as 1.0E-3 equal 1x10-3 and 0.001

Table 13: Building Analysis Summary

	Asbestos	Lead	Radon	Radiological Surveys	PCBs
Building 3	Present, No remediation needed	Present, No remediation needed	No abatement required	Met surface contamination guidelines	May be present in flourescent lamp ballasts
Building 87	Asbestos bearing items removed	None identified	No abatement required	Met surface contamination guidelines	None identified
Building 95	None identified	None identified	No abatement required	Met surface contamination guidelines	None identified
Building 102	Unlikely	Unlikely	No abatement required	Met surface contamination guidelines	None identified
Magazine 80-84	None identified	None identified	No abatement required	Met surface contamination guidelines	None identified

APPENDIX D

Building Information

Phase I includes approximately 52 acres of land located in three distinct sections or parcels of the site property (Figure 1). The first parcel, the largest block of property in Phase I includes lands located on the south central part of the original 182 acres of the site that was purchased in 1947. This piece of property also contains a portion of the South Property (purchased in 1982). The second parcel of property included in Phase I is situated to the south of the Spoils Area and the site well pump houses, in the area designated as the South Property. The third parcel of property in Phase I lies to the south-southwest of Building 38.

Phase I includes 10 existing buildings and explosives magazines and 25 former production-era building sites including buildings, explosives storage magazines, and an electrical generator. Since the plant became operational, the properties in Phase I, with the exception of the South Property, have supported a number of plant related operations. Included in the activities that once took place in Phase I is explosives testing and production-related activities, administrative activities (i.e., offices and site security operations), utilities operations, waste processing operations (the Burn Area), and cleanup waste storage operations.

In addition to the production-era buildings noted above, Phase I also includes building sites dating from the construction era (a storage warehouse, a quonset-type hut building, and some temporary buildings).

Phase I lands have also been used for various waste and non-waste storage activities including waste container management, equipment management, and for other general plant uses.

BUILDINGS CURRENTLY LOCATED IN PHASE I

There are 10 existing buildings located within Phase I (as shown in Figure 3), including two buildings located in the Test Fire Area that have supported detonator and explosives testing operations (Buildings 3 and 87). In addition to the two Test Fire Area buildings, there are five explosives magazines located to the southwest of the Test Fire Area (Magazines 80, 81, 82, 83, and 84). Both of the buildings in the Test Fire Area and the explosives magazines are currently operated under users agreements that are being administered by MMCIC.

The remaining three buildings located in Phase I include Building 95, which is a chiller and steam plant that is located on the SM/PP Hill; Building 102, an office building located on the SM/PP Hill; and the Salt Storage (SST) Building.

Buildings currently located in Phase I are described below.

Building 3. Building 3 was constructed in 1963 and is an explosives material destructive test firing and environmental testing laboratory. With four additions to the building, including two attached corrugated fiberglass faced metal framed storage sheds, the square footage of Building 3 is currently 12,400 square feet.

When operated by DOE and the contractor, Building 3 included 17 environmental chambers for thermal testing, six systems for mechanical testing operations, two vibration testing systems, one centrifuge testing system, and three shock testing systems.

Building 3 was used as a facility for the destructive and environmental testing of explosives materials from the time of construction in 1963 until the building was turned over to EG&G Star City (now Perkin-Elmer) in 1994 under a lease agreement with the DOE. Building 3 has operated under that agreement since that time.

Building 87. Building 87 (or CTF-the Component Test Facility) is a two-story, 38,882 square foot, concrete structure, built slab-on-grade. The CTF offices and support facilities and other operational control/testing facilities that supported the testing cells were located on the first floor. The mechanical penthouse, on the second floor, contains HVAC heating and air conditioning, air handling units for the test cell areas, and a heat exchanger for hot water. The mechanical area occupies approximately 600 square feet. Building 87 was constructed in the 1980s and underwent shut down in about 1995.

Building 87 is currently being renovated by MMCIC for use by private industry.

Building 95. Building 95, the "SM/PP Chiller" consists of one larger building (Building 95) with 2,000 square feet of floor space, and two smaller ancillary buildings (Buildings 95-A and 95-B, each having 450 square feet of floor space. Buildings 95 (collectively) was constructed in the mid-1980s, in order to supplement P Building (Power Plant) operations, and in order to satisfy the demand for a chiller on the SM/PP Hill.

Building 102. Building 102 is a 10,982 square-foot two-story office building that was constructed in 1987 to support Mound's Decontamination and Decommissioning Program (D&D Program), and to provide an administrative area to house cleanup related staff. Through time, Building 102 has continued in its mission as an office, however, the building tenants have differed, including staff members from the PST Program, Soil Project team staff, as well as D&D Program staff members.

SST Building. SST Building was constructed in the early 1970s and is located in the vicinity of the former Burn Area, just to the southwest of where that area was located, and just to the east of the former Building 21 location. SST has been used for salt storage for snow control on site.

SST Building is a one-story, 590 square-foot, slab-on grade structure with wood framing for the walls and roof. The front of SST Building is open from wall to wall and from the ground to the roof. A 3-foot high concrete wall separates the wood structure from the slab and divides the area into two sections. Wood siding and the roof are covered with tar paper. SST Building was renovated in 2000.

Magazines 80, 81, 82, 83, and 84. Magazines 80, 81, 82, 83, and 84, are smaller explosives storage bunkers (explosives magazines) that were constructed in 1985.

Magazines 80, 81, 82, 83, and 84 each contain two-units or compartments. Each of the magazines is constructed of reinforced concrete as a box-shaped structure and considered non-standard earthen-covered magazines. The configuration of Magazines 80, 81, 82, 83, and 84 appears to be one unit. These magazines were used for the storage of energetic materials, and were used for that purpose, until they were transferred to EG&G Star City (now Perkin-Elmer) under a user agreement initiated with DOE.

The transition of Magazines 80, 81, 82, 83, and 84 to private industry took place in the mid-1990s, and these magazines have continued to operate under a user lease agreement since that time.

FORMER PRODUCTION ERA BUILDING SITES

There are numerous sites where production era buildings were once located within Phase I. Included in the former buildings that were located in Phase I are 4 buildings (Buildings 13, 14, 35, and 59) in the Test Fire Area that supported detonator and explosives testing operations. In addition to the Test Fire buildings, there were six explosives storage magazines to the southwest of the Test Fire Area (Magazines 4, 5, 8, 9, 10, and 20) that supported explosive operations.

Buildings 12 and 18 were located near the current Building 87 location into the 1980s. These buildings were apparently storage warehouses that were used to support explosives operations.

An additional four buildings or facilities were located in an area designated as the "Burn Area." This area was located to the northwest of SST Building, and included the Pyroshed Energetic Materials Waste Storage Unit, the Open Burn Energetic Materials Treatment Unit, Building 90 and the retort unit (an explosives treatment unit), and Magazine 53 (an explosives storage area).

Other building sites in Phase I also include the location for Building 39, a maintenance building, the location for an emergency electrical generator (Electric Generator Number 7), a process material storage building (Building 21), and four modular office buildings (Buildings 77, 78, 97, and 101).

The buildings once located on the former building sites within Phase I are described below.

Buildings 12 and 18. Building 12, titled the "Detonator Storage Building" was constructed in 1960, as a 57' x 32' long "Armco" steel building. Building 18, constructed in 1963, was similar in size and construction to Building 12. Both buildings were used to support explosives operations and were located about where Building 87 is currently located. Buildings 12 and Building 18 were demolished in the 1980s.

Building 13. Building 13 was a one-story, 44 square-foot wood-framed asbestos-coated steel structure on a concrete slab. Building 13 was located to the west of Building 21, and was used to support a program for remote monitoring of energetic materials

destructed in the Burn Area, located to the east. Building 13 contained a video monitor and electrical initiation equipment for firing explosive materials treatment devices. The building use, as described in 1990, was a "firing shed." Building 13 was demolished in 1997.

Building 14. Building 14 was a 42 square-foot, one-story, structure. This building was constructed with a wood and metal-frame and asbestos-coated sidewalls, with concrete deck roof on concrete footings. This building was used as an observation post in association with the former Burn Area to the east. The facility had no heating, cooling, or electrical services. The building use, as described in 1990, was metal melting. Building 14 was demolished in 1997.

Building 21. Building 21 was used for the storage of materials associated with two of Mound's processing missions, including thorium ores and protactinium ores (Cotter Concentrates). This structure was located along the south central border of the improved plant property; adjacent to the area designated as the Burn Area.

Building 21 was a 4,032 square-foot concrete structure with 10-inch thick floors and 14- to 16-inch thick walls. The roof was constructed of iron and steel. The facility was designed to ensure liquid tightness and was divided into two separate isolated bay areas. Building 21 became operational in 1964. Storage operations ended in 1987. Beginning in 1964, 1,338 drums of thorium oxalate were dumped in bulk form into the small bay area, while 3,576 drums of thorium hydroxide sludge were dumped in bulk form into the larger bay. The thorium sludge was ultimately sold to General Atomic Company for reclamation and was removed from Building 21 in 1975. Following removal of the thorium sludge, the building was cleaned and used as a staging area for Cotter Concentrates (high-level waste resulting from uranium milling). Approximately 1,258 drums of Cotter Concentrate were stored in Building 21. These drums were eventually shipped to the Nevada Test Site (NTS) in 1987 and use of Building 21 ceased. Since 1987, the building and surrounding area were maintained in a safe mode until the building was demolished in 1997.

Building 35. Building 35 was a 2,500 square-foot single-story structure built of concrete block. Building 35 was designed to provide x-ray and eddy current non-destructive testing of explosives. Building 35 was also used as the control room for the californium-252 multiplier (CFX) neutron radiography facility that was located in adjacent Building 59. Building 35 was demolished in the spring of 1998.

Building 39. Building 39, constructed in 1969, was a one-story structure constructed of prefabricated metal with a metal roof.

Initially, the eastern end of Building 39 was used by the Decontamination and Decommissioning project, which worked to produce fiberglass wooden boxes that were used for radioactive trash. The turntable used for this operation is still in place. Indications are that the facility was also used to perform gamma spectroscopy on these boxes.

From 1984 to 1988, the building was either inactive or used for storage.

In 1988, Building 39 was converted to a maintenance shop, and was divided into three sections: the east end was a machine shop; the middle was a break room; and the west end was used primarily for storage of building materials, parts, paints, and some solvents.

Building 39 was demolished in 1998.

Building 59. Building 59, the neutron radiography facility, was a 700 square-foot, two-story reinforced concrete structure with a rolled roof. Building 59 was constructed in 1970 to provide neutron radiography capability to the site.

Building 59 housed a neutron-radiation source (californium-252) that was used to supply neutrons to an assembly of uranium plates. The californium-252 source was stored remotely from the core when not in use; when radiography operations were to be conducted, the source would be transported via a hand-cranked source transfer system into its proper location within the core assembly. The californium-252 source was removed from the facility and transported to Oak Ridge National Lab in 1995. Building 59 was demolished in the spring of 1998.

Building 77 and 78. Building 77 and 78, both located to the north of Building 39 were modular office structures that were used in the early 1980s. Both Building 77 and Building 78 contained 12 rooms, each with overall dimensions of 23.5 feet by 60 feet, and a combined square footage of 2,995. Both of these buildings were removed from service or were dismantled by the 1990s.

Building 97. Building 97 was a 12-room, 7,410 square-foot, 23.5 foot by 60 foot modular office structure, located to the south of Building 39. Building 97 was constructed in the early to late 1980s and was removed from service and dismantled in the 1990s.

Building 101. Building 101 was a single-story modular building with wooden exterior and Hypalon roof. The square footage of Building 101 was 1,815. Building 101 was brought on site in 1986, and was used as offices for the area maintenance foreman and planner. It was sold and removed from the site in 1999.

Building 120. Building 120 was a 350 square-foot, one-story, wood-sided building with a metal roof. Building 120 was located just to the south of Building 102 and was used as an administrative office for the Decontamination and Decommissioning (D&D) Group. It was dismantled in 1998.

Burn Area Buildings. The Burn Area, excluding Magazine 53, described below, included three buildings and/or areas, as follows:

1. Pyroshed Energetic Materials Waste Storage Unit. This structure, known as the "Pyroshed" was used for the storage of pyrotechnic wastes and other energetic materials prior to their treatment at the Burn Area. The Pyroshed was located inside the fenced Burn Area and was constructed on a concrete pad measuring approximately 9 feet by 15 feet. The shed was approximately 7 feet high, with

chain-link fence walls. A locked entry gate was located in the front side of the structure.

2. Open Burn Energetic Materials Treatment Unit. The open burn unit was used for op en burning of non-liquid explosive waste, pyrotechnic waste, and thermal treatment of explosive-contaminated material.

   The open burn unit consisted of a 12.3-foot by 18-foot base encircled by a 10-foot high composite metal wall with a sand core. The treatment zone measured approximately 12 feet by 12 feet, and the remainder of the floor space was occupied by an access-way. The entrance consisted of a 4-foot wide aisle that turned at a right angle to enter the treatment zone. The unit was developed on an 18-inch wide by 30-inch deep continuous, concrete footing developed on native soil. The enclosure's sides consisted of 0.25-inch thick milled steel plates.

3. Building 90. Building 90, constructed in 1984 and demolished in 1997, was a pre-engineered sheet metal building constructed on a reinforced concrete slab. The retort unit part of this building was located within a rectangular enclosure attached to the east side of Building 90 that was approximately 30 feet long and 15 feet wide with 9-foot high walls. Building 90 was designed to house the unit controls and waste feed operations for the Retort Unit (rotary-kiln-thermal-treatment-unit). Operations in Building 90 were suspended in January 1996, and the building was demolished in 1996-1997.

The buildings and facilities within the Burn Area were used for the destruction of pyrotechnics and energetic materials, including regulated hazardous waste explosives. Consequently, these operations underwent a RCRA closure, and as a part of that process were demolished in 1997 and 1998.

Electrical Generator 7. EG-7 (emergency generator) was constructed in 1972 to provide emergency electrical power to the Test Fire Area. The generator was an internal combustion key-starting engine generator housed in an 80-foot square metal structure, which was located just to the north of Building 63. EG-7 remained available as an emergency generator until the 1990s, when it was taken out of use. EG-7 was sold in 1998.

Magazines 5, 8, 10, and 20. Magazines 5, 8, 10, and 20 were smaller explosive storage magazines or bunkers that were constructed in the mid-1950s and into the early 1960's. These magazines were located in the Test Fire Area, in a fenced area behind the former Building 85 site and behind Building 87. The purpose of these structures was for the storage of Mounds energetic materials. These buildings were demolished.

Magazine 53. Magazine 53 was a one-story, 239 square-foot reinforced concrete structure. The roof was made of reinforced steel, and the structure was covered with earth. Magazine 53 was constructed in 1970 and was used for the storage of pyrotechnics and energetic materials that were destroyed in the Burn Area. Magazine 53 was also used as a storage area for hazardous waste regulated explosives, and

consequently underwent a RCRA closure. Magazine 53, as part of this closure, was demolished in January 1998.

Magazines 4 and 9. Magazine 4, the bulk storage magazine, was constructed in 1962 as an earthen covered magazine. Magazine 53 was constructed in an area adjacent to Magazine 9. Magazine 4 contained 4 units, with the front of the structure measuring 53 feet across. Magazine 9 was constructed in 1956, also as an earthen covered magazine. Magazine 9 contained a single cell that measured 17-feet by 14-feet. Both magazines were in the vicinity of Building 87. Magazines 4 and 9 were demolished by the 1980s.

FORMER CONSTRUCTION-ERA BUILDING SITES LOCATED IN PHASE I

There are three locations within Phase I that were used during the time that the original 1948-era buildings were constructed on the Mound site. These locations are summarized below:

Warehouse 12. Warehouse 12 was located in the approximate vicinity of the Building 39 site and was constructed by Maxon Construction Company to provide an administrative area (i.e., storage warehouse) in 1947 during the construction era for Mound's original buildings. Later plant records do not indicate any mission-related uses for Warehouse 12. Based upon comparisons of site photographs and available information, Warehouse 12 was likely demolished in the late 1940s or the early 1950s.

Tropical Huts and other Temporary Buildings. A number of shacks and tents (tropical huts) were used in conjunction with the construction of the original plant buildings in the very early 1950s for the storage of debris and other polonium contaminated materials. Little information is available on these buildings. However, based upon early photographs, there were three of these structures located near the current location of Building 2.

Building 19 Quonset Hut. The Quonset Hut is a 40-foot by 60-foot Stransteel brand structure that was originally located at Dayton Unit III and was relocated to the Mound site. When Unit III was being cleaned up, this building was disassembled and was moved from Unit III. In 1949, it was relocated to the lower valley of the Mound Laboratory site where the existing Building 3 is now located.

The Quonset Hut was used for shipping, receiving, and storing of radioactive field materials in the 1950s.

The Quonset Hut was also used for storage of bismuth-chloride sludges from the polonium separations. At that time, 500 to 600 drums of sludge generated by the hydrolysis process were stored in the Quonset Hut awaiting a determination on potential reuse or shipment to the Oak Ridge site for burial.

The Quonset Hut was also used for the storage of thorium in 1952 and for the storage of Purex residues from 1949 to 1954.

In 1963, the Quonset Hut was again relocated when it was moved to its current location near the western property boundary.

OTHER LAND USE AREAS IN PHASE I

In addition to uses of the Test Fire Area (i.e., around Building 2) for the management of materials during the construction era and use of those same areas for early production era uses, the lands in Phase I have also been used for the following purposes:

SM/PP Pad. The SM/PP Pad is a concrete pad that was used by waste management for the management of low-level waste boxes containing soil and debris, as well as being used as a staging site for unused or empty low-level waste boxes. This pad is located to the east of the former Building 21 site and north of the SST Building.

Fenced Location for Storage of Equipment and Drums near Building 21. A fenced area to the east-southeast of Building 21 was used for the management of low-level waste drums and potentially contaminated equipment. This area was addressed as part of the Building 21 cleanup activities.

Building 21 soils management area, east of SST Building. This area was used for the management of soils excavated after the Building 21 operations ceased and was addressed as part of the Building 21 cleanup activities.

South Property Portions of Phase I. The portions of the south property included in Phase I are part of two property parcels containing 124 acres of rolling hills to the south of the main processing related areas. DOE had purchased the South Property (also called the "New Property") in 1981 in part as a buffer and in part for possible future expansions. Despite its purchase for possible future expansion, it has for the most part remained unused since the date of purchase. The only plant uses that have taken place in the areas to be transferred in Phase I are the installation of boundary fences, the grading of the surface and the associated filling in of low-lying areas, and road installation and mobile laboratory operations in support of the Canal Removal Action.

An older unimproved road. The road running from the vicinity of Building 105 to the area behind Buildings 2, 3, and 87 was improved and the curves banked to utilize the area as a haul road in support of clean up activities in the Building 21 area and in the Burn Area.

Unidentified trailers near Building 21 and the SST Building. A grouping of office-type trailers existed in the vicinity of Building 21 and the SST Building were removed from this location by the 1990s.

Concrete Pad West of Building 35. The Building 35 concrete pad area was used by waste management for the management of low-level waste boxes of soil and debris.

P Building Soils Management Area-"Petro Piles". In the early 1990s, soil that was removed in conjunction with the removal of the P Building fuel oil tank removal were staged in the vicinity of Building 87 and Building 85 for treatment in a biodegradation facility for petroleum contaminated soils.

Management Area for Equipment. In 1996 and 1997, along the current property line for (previously transferred) Release Block D and Phase I (west of Building 100), an area was used to store portable office trailers, modular guard shacks, portable utility buildings, and various types of equipment that had been removed from an equipment management area in the Spoils Area.

Storage of Bird-Cage Drums. In the mid-1990s, empty blue transport drums that had been used for the transportation of fissile (product) material were located along the current property line for Release Block D and Phase I (west of Building 100). These drums were constructed with an internal framework that suspended the material contained in the drum in the drums' center, allowing the placement of the drums in a manner that was consistent with the criticality requirements for the contained material.

APPENDIX E

PRS Information

PRS 16. Area C (Old Building 72) was a former Hazardous Waste Storage Area dismantled in accordance with an Ohio Environmental Protection Agency approved RCRA closure plan. Core Team decided that PRS 16 requires No Further Assessment.

PRS 73. PRS 73, the Evaporator Storage Area, was an equipment storage area located in the Test Fire Valley. Further Assessment sampling in July 2001 identified no levels of concern. Core Team decided that PRS 73 requires No Further Assessment.

PRS 74. Quonset Hut (former), placed on a potentially contaminated concrete floor shows no indication that its shell was ever contaminated. The concrete floor was removed in 1963. Core Team decided that PRS 74 requires No Further Assessment.

PRS 258-265. PRSs 258-265 refer to the waste storage and treatment facilities formerly located in the "Burn Area" where a variety of wastes such as explosive powders, pyrotechnic materials, solid wastes contaminated with energetic materials, and non-radiological weapons components were thermally treated. Beryllium was the only COC identified as exceeding its Guideline Value during sampling events. There are no reported recent historical events to indicate other reasons for concern. Core Team decided that PRSs 258-265 require No Further Assessment.

PRS 276. Area 22, Orphan Soil from Other Areas, was a potentially contaminated site due to its use as a temporary storage area for contaminated soils. The soils were removed in accordance with the Core Team recommendation. Core Team decided that PRS 276 requires No Further Assessment.

PRS 280. Further Assessment sampling in the Waste Oil Drum Field yielded only low-level and isolated exceedances were noted above 10^{-6} RBGVs/screening levels; however, none were above cleanup objectives (10^{-5} RBGV + background). Core Team decided that PRS 280 requires No Further Assessment.

PRS 281. Area E, identified as a historical, isolated waste oil spill, produced levels of radiological contamination over Mound soils guidelines for radium-226. The area was subject to the removal action associated with the Building 21 demolition. Core Team decided that PRS 281 requires No Further Assessment.

PRS 284. The Building 21 Thorium Sludge Storage Facility held 4,914 drums of thorium oxalate from 1966-1975 and 1,258 drums of Cotter Concentrate (high-level nuclear waste) until 1987. Cleanup and removal of Building 21 was completed 31 March 1997. Core Team decided that PRS 284 requires No Further Assessment.

PRS 304. This Excavated Material Disposal Area was created due to the dumping of low-level thorium soils. Sampling in 1984 found plutonium and thorium levels below the risk-based guideline values. Core Team decided that PRS 304 requires No Further Assessment.

PRS 311. Potential Hot Spot Location S0706 was identified during a 1983 site survey project, which discovered an isolated plutonium-238 reading of 29 pCi/g. This level is below all associated cleanup levels and guideline values. Core Team decided that PRS 311 requires No Further Assessment.

PRS 313. Potential Hot Spot Location S0982 was identified as a thorium hot spot during

the Radiological Site Survey Project. Results from sampling in 1995 indicated no radioactive contamination in excess of guideline criteria. Core Team decided that PRS 313 requires No Further Assessment.

PRS 333. PRS 333 is an explosive surge tank (Tank 263) located along the southern border of Building 87,a previous explosives testing area that has since undergone Safe Shutdown. Core Team decided that PRS 333 requires No Further Assessment.

PRS 334. PRS 334 is an explosive surge tank (Tank 264) located along the southern border of Building 87,a previous explosives testing area that has since undergone Safe Shutdown. Core Team decided that PRS 334 requires No Further Assessment.

PRS 335. PRS 335 is an explosive surge tank (Tank 265) located along the southern border of Building 87,a previous explosives testing area that has since undergone Safe Shutdown. Core Team decided that PRS 335 requires No Further Assessment.

PRS 347. PRS 347 was identified according to qualitative hydrocarbon detections found during the PETREX soil gas portion of OU5, Non Area of Concern investigation. The 1996 Soil Gas confirmation sampling effort discovered no contamination above the 10^{-6} risk range. Core Team decided that PRS 347 requires No Further Assessment.

PRS 348. PRS 348 was identified according to qualitative hydrocarbon detections found during the PETREX soil gas portion of OU5, Non Area of Concern investigation. The 1996 Soil Gas confirmation sampling effort discovered no contamination above the 10^{-6} risk range. Core Team decided that PRS 348 requires No Further Assessment.

PRS 349. PRS 349 was identified due to plutonium detections found during the Mound Soil Screening Analysis performed as part of the June 1994 OU5, Operational Area Phase I Investigation. All concentrations are below the 10^{-5} Risk Based Guideline Value. Core Team decided that PRS 349 requires No Further Assessment.

PRS 350. Soil Contamination, Area West of Building 21, consists of detectable plutonium concentrations; however, concentrations were below all associated cleanup levels and guideline values. Core Team decided that PRS 350 requires No Further Assessment.

PRS 352. PRS 352 was identified as an elevated soil gas location due to an elevated PETREX passive soil gas portion of the OU5, Non Area of Concern investigation. Soil gas confirmation sampling indicated that all concentrations of volatile, semivolatile, PCBs, pesticides, metals, radionuclides, and explosives within the soil were below applicable guideline criteria. Core Team decided that PRS 352 requires No Further Assessment.

PRS 353. PRS 353 was identified as an elevated soil gas location due to an elevated PETREX passive soil gas portion of the OU5, Non Area of Concern investigation. Soil gas confirmation sampling indicated that all concentrations of volatile, semivolatile, PCBs, pesticides, metals, radionuclides, and explosives within the soil were below applicable guideline criteria. Core Team decided that PRS 353 requires No Further Assessment.

PRS 362. PRS 362 was identified as an elevated soil gas location due to an elevated

PETREX passive soil gas portion of the OU5, Non Area of Concern investigation. Soil gas confirmation sampling indicated that all concentrations of volatile, semivolatile, PCBs, pesticides, metals, radionuclides, and explosives within the soil were below applicable guideline criteria. Core Team decided that PRS 362 requires No Further Assessment.

PRS 365. PRS 365 was identified as an elevated soil gas location due to an elevated PETREX passive soil gas survey result in 1994. A soil gas confirmation sample collected within 50 feet of this PRS indicated that all concentrations of volatile, semivolatile, PCBs, pesticides, metals, radionuclides, and explosives within the soil were below applicable guideline criteria. Core Team decided that PRS 365 requires No Further Assessment.

PRS 369. PRS 369 was identified as an elevated soil gas location due to elevation qualitative PETREX hydrocarbon levels. During the 1996 soil gas confirmation sampling, all concentrations of volatile, semivolatile, PCBs, pesticides, metals, radionuclides, and explosives within the soil were below applicable guideline criteria. Core Team decided that PRS 369 requires No Further Assessment.

PRS 370. PRS 370 was identified according to qualitative hydrocarbon detections found during the PETREX soil gas portion of OU5, Non Area of Concern investigation. The 1996 Soil Gas confirmation sampling effort discovered no contamination above the 10^{-6} risk range. Core Team decided that PRS 370 requires No Further Assessment.

PRS 371. PRS 371 was identified due to a single, elevated plutonium-238 detection during the OU5, Operational Area Phase I Investigation in 1994. In 1996, a sample was collected within approximately 25 feet of PRS 371 during the Soil Gas Confirmation Investigation. All concentrations of volatile, semivolatile, PCBs, pesticides, metals, radionuclides, and explosives within the soil were below applicable guideline criteria. Core Team decided that PRS 371 requires No Further Assessment.

PRS 372. PRS 372 was identified due to elevated soil gas measurements. Subsequent quantitative sampling showed that all soil samples taken in the area were at or below their respective 10^{-6} Risk Based Guideline Value. Core Team decided that PRS 372 requires No Further Assessment.

PRS 383. PRS 383 was identified as an area of possible organic contamination during the 1992 PETREX Survey. However, additional sampling in 1995 quantitatively determined that no volatile, semivolatile, PCBs, pesticides, metals, radionuclides, or explosives exceeded applicable guideline values. Core Team decided that PRS 383 requires No Further Assessment.

PRS 384. PRS 384 was identified due to elevated qualitative PETREX hydrocarbon levels. However, the soil gas confirmation investigation in 1996 determined that no volatile, semivolatile, PCBs, pesticides, metals, radionuclides, or explosives exceeded applicable guideline values. Core Team decided that PRS 384 requires No Further Assessment.

PRS 406. The southern portion of PRS 283 became a PRS due to potential thorium dust from the thorium sludge redrumming. However, radionuclides in the soils were

scattered and infrequent, and all occurrences were below the 10^{-5} risk-based guideline values. Core Team decided that PRS 406 requires No Further Assessment.

PRS 407. Soil Contamination West of Building 21 resulted in a removal action in which one to two feet of soil was excavated and disposed of via railcar shipments to Envirocare. PRS 407 was later binned No Further Action in 2000. Core Team decided that PRS 407 requires No Further Assessment.

PRS 418. PRS 418, the Overflow Pond South Inlet, was created to address potential plutonium-238, thorium-228, thorium-232, and Radium-226 contamination from PRS 407. Since the PRS 407 removal action, there are no known PRSs draining into the inlet. Although sample results for benzo(a)pyrene exceed the 10^{-6} guideline value, they are below the 10^{-5} risk-based guideline value. All other constituents are below guideline criteria. Core Team decided that PRS 418 requires No Further Assessment.

PRS 419. The Mound Plant Drainage Outflow Reroute, constructed during the Miami-Erie Canal Remediation Project, is monitored for radiological parameters under DOE Order 5400.1 and the DOE Regulatory Guide. It is also monitored for non-radiological parameters in accordance with the site's NPDES permit. To address potential radiological releases, the Outflow Reroute is also monitored daily for gross alpha and tritium, and bi-weekly from flow-proportional 24-hour composite samples for multiple radionuclides. Core Team decided that PRS 419 requires No Further Assessment.

PRS 421. PRS 421 is "The Ridge" across the road south of the location of the former Building 21. It was identified as a PRS when historical sampling data indicated the presence of contaminated soil. Contamination was confirmed during the verification sampling for PRS 407. The source of the contamination was surface runoff from the PRS 407 cleanup that followed preferential and intermediate drainage pathways south to the PRS 421 area. The removal action resulted in the excavation and containerization for disposal of approximately 105,133 cubic feet of soil, concrete, and asphalt. The cleanup objectives were 55 pCi/g for plutonium-238, 2.1 pCi/g for thorium-232, and 2.6 pCi/g for thorium-228. The OSC report documented that all verification sample results were below cleanup objectives.

APPENDIX F

Listing of All Detected Analytes

Analytes Detected in Surface and Subsurface Soil for the Construction Worker Scenario

Analyte (units)	CAS Number	Number of Detections	Minimum Detect	Maximum Detect	Distribution	Results Greater than Detection Limit	% Results Greater than Detection Limit	95% UCL of Mean	Exposure Concentration	Detection In Greater than 5%
BTEX Compounds										
Benzene (UG/KG)	71-43-2	0			O	0/ 15	0.0			NO
Ethylbenzene (UG/KG)	100-41-4	0			O	0/ 15	0.0			NO
Toluene (UG/KG)	108-88-3	0			O	0/ 15	0.0			NO
Xylenes, Total (UG/KG)	1330-20-7	0			O	0/ 15	0.0			NO
Explosives										
1,3,5-Trinitrobenzene (UG/KG)	99-35-4	0			O	0/ 81	0.0			NO
1,3-Dinitrobenzene (UG/KG)	99-65-0	0			O	0/ 81	0.0			NO
2,4,6-Trinitrotoluene (UG/KG)	118-96-7	1	1.1E+02	1.1E+02	D	1/ 91	1.1	6.3E+02	1.1E+02	NO
2,4-Dinitrotoluene (UG/KG)	121-14-2	0			O	0/ 75	0.0			NO
2,6-Dinitrotoluene (UG/KG)	606-20-2	0			O	0/ 32	0.0			NO
2-Amino-4,6-Dinitrotoluene (UG/KG)	35572-78-2	0			O	0/ 61	0.0			NO
4-Amino-2,6-Dinitrotoluene (UG/KG)	1946-51-0	0			O	0/ 19	0.0			NO
HMX (UG/KG)	2691-41-0	0			O	0/ 98	0.0			NO
Nitrobenzene (UG/KG)	98-95-3	1	3.8E+02	3.8E+02	D	1/ 32	3.1	4.7E+02	3.8E+02	NO
Nitroglycerin (UG/KG)	55-63-0	0			O	0/ 76	0.0			NO
PETN (UG/KG)	78-11-5	0			O	0/ 99	0.0			NO
RDX (UG/KG)	121-82-4	0			O	0/ 99	0.0			NO
Tetryl (UG/KG)	479-45-8	0			O	0/ 71	0.0			NO
Metals										
Aluminum (UG/KG)	7429-90-5	145	5.9E+05	2.3E+07	N	145/ 146	99.3	1.5E+07	1.5E+07	YES
Antimony (UG/KG)	7440-36-0	64	2.1E+02	4.5E+04	D	64/ 209	30.6	8.5E+03	8.5E+03	YES
Arsenic (UG/KG)	7440-38-2	137	4.9E+02	2.0E+04	X	137/ 143	95.8	8.2E+03	8.2E+03	YES
Barium (UG/KG)	7440-39-3	226	4.4E+03	6.0E+05	X	226/ 227	99.6	1.0E+05	1.0E+05	YES
Beryllium (UG/KG)	7440-41-7	220	5.0E+01	3.6E+03	X	220/ 226	97.3	1.1E+03	1.1E+03	YES
Bismuth (UG/KG)	7440-69-9	33	8.2E+02	7.3E+04	X	33/ 59	55.9	1.3E+05	7.3E+04	YES
Cadmium (UG/KG)	7440-43-9	69	2.5E+02	1.2E+04	D	69/ 227	30.4	1.5E+03	1.5E+03	YES
Calcium (UG/KG)	7440-70-2	145	1.4E+06	3.4E+08	X	145/ 146	99.3	1.5E+08	1.5E+08	YES
Chromium (UG/KG)	7440-47-3	226	1.1E+03	3.7E+04	X	226/ 227	99.6	1.7E+04	1.7E+04	YES
Cobalt (UG/KG)	7440-48-4	145	7.9E+02	2.5E+04	X	145/ 146	99.3	1.3E+04	1.3E+04	YES
Copper (UG/KG)	7440-50-8	143	1.8E+03	1.1E+06	X	143/ 146	97.9	2.2E+04	2.2E+04	YES
Cyanide (UG/KG)	57-12-5	35	1.0E+02	8.9E+03	D	35/ 162	21.6	5.8E+02	5.8E+02	YES
Iron (UG/KG)	7439-89-6	145	2.3E+04	4.3E+07	N	145/ 146	99.3	3.1E+07	3.1E+07	YES
Lead (UG/KG)	7439-92-1	242	1.6E+03	2.2E+05	X	242/ 256	94.5	1.5E+04	1.5E+04	YES
Lithium (UG/KG)	7439-93-2	53	2.3E+03	3.4E+04	N	53/ 55	96.4	1.8E+04	1.8E+04	YES

Analytes Detected in Surface and Subsurface Soil for the Construction Worker Scenario

Analyte (units)	CAS Number	Number of Detections	Minimum Detect	Maximum Detect	Distribution	Results Greater than Detection Limit	% Results Greater than Detection Limit	95% UCL of Mean	Exposure Concentration	Detection in Greater than 5%
Magnesium (UG/KG)	7439-95-4	145	1.2E+04	1.2E+08	X	145/ 146	99.3	2.9E+07	2.9E+07	YES
Manganese (UG/KG)	7439-96-5	137	6.5E+04	8.2E+06	X	137/ 138	99.3	6.8E+05	6.8E+05	YES
Mercury (UG/KG)	7439-97-6	61	3.0E+01	1.4E+03	D	61/ 139	43.9	1.2E+02	1.2E+02	YES
Molybdenum (UG/KG)	7439-98-7	49	2.2E+02	9.7E+03	L	49/ 54	90.7	4.0E+03	4.0E+03	YES
Nickel (UG/KG)	7440-02-0	224	2.3E+03	2.5E+05	X	224/ 227	98.7	2.2E+04	2.2E+04	YES
Potassium (UG/KG)	7440-09-7	142	3.1E+05	3.3E+08	X	142/ 147	96.6	1.9E+06	1.9E+06	YES
Selenium (UG/KG)	7782-49-2	19	4.6E+02	2.3E+03	D	19/ 131	14.5	9.6E+02	9.6E+02	YES
Silver (UG/KG)	7440-22-4	65	1.1E+02	2.1E+04	D	65/ 227	28.6	2.4E+03	2.4E+03	YES
Sodium (UG/KG)	7440-23-5	136	4.2E+04	3.5E+06	X	136/ 146	93.2	1.1E+06	1.1E+06	YES
Thallium (UG/KG)	7440-28-0	29	2.0E+02	3.5E+03	D	29/ 142	20.4	1.1E+03	1.1E+03	YES
Tin (UG/KG)	7440-31-5	22	6.7E+02	3.3E+03	D	22/ 54	40.7	1.2E+04	3.3E+03	YES
Vanadium (UG/KG)	7440-62-2	145	1.7E+03	4.3E+04	X	145/ 146	99.3	2.5E+04	2.5E+04	YES
Zinc (UG/KG)	7440-66-6	145	5.5E+03	4.6E+05	X	145/ 146	99.3	9.3E+04	9.3E+04	YES
Pesticides and/or PCBs										
4,4'-DDD (UG/KG)	72-54-8	0			O	0/ 122	0.0			NO
4,4'-DDE (UG/KG)	72-55-9	7	2.8E-01	1.8E+00	D	7/ 121	5.8	3.3E+00	1.8E+00	YES
4,4'-DDT (UG/KG)	50-29-3	0			O	0/ 122	0.0			NO
Aldrin (UG/KG)	309-00-2	1	5.4E-02	5.4E-02	D	1/ 122	0.8	2.2E+00	5.4E-02	NO
Alpha Chlordane (UG/KG)	5103-71-9	0			O	0/ 99	0.0			NO
Alpha-BHC (UG/KG)	319-84-6	0			O	0/ 122	0.0			NO
Aroclor-1016 (UG/KG)	12674-11-2	0			O	0/ 151	0.0			NO
Aroclor-1221 (UG/KG)	11104-28-2	0			O	0/ 151	0.0			NO
Aroclor-1232 (UG/KG)	11141-16-5	1	1.2E+02	1.2E+02	D	1/ 151	0.7	3.3E+01	3.3E+01	NO
Aroclor-1242 (UG/KG)	53469-21-9	1	1.2E+02	1.2E+02	D	1/ 151	0.7	3.3E+01	3.3E+01	NO
Aroclor-1248 (UG/KG)	12672-29-6	3	7.4E+01	9.1E+02	D	3/ 150	2.0	3.7E+01	3.7E+01	NO
Aroclor-1254 (UG/KG)	11097-69-1	1	2.2E+02	2.2E+02	D	1/ 151	0.7	5.8E+01	5.8E+01	NO
Aroclor-1260 (UG/KG)	11096-82-5	0			O	0/ 150	0.0			NO
Beta-BHC (UG/KG)	319-85-7	3	1.8E-01	1.2E+02	D	3/ 120	2.5	3.1E+00	3.1E+00	NO
Chlordane (UG/KG)	57-74-9	2	1.9E+01	9.8E+01	D	2/ 23	8.7	1.6E+01	1.6E+01	YES
Delta-BHC (UG/KG)	319-86-8	1	1.7E-01	1.7E-01	D	1/ 122	0.8	3.4E+00	1.7E-01	NO
Dieldrin (UG/KG)	60-57-1	3	5.2E-01	4.4E+00	D	3/ 122	2.5	3.1E+00	3.1E+00	NO
Endosulfan I (UG/KG)	959-98-8	0			O	0/ 122	0.0			NO
Endosulfan II (UG/KG)	33213-65-9	0			O	0/ 122	0.0			NO
Endosulfan Sulfate (UG/KG)	1031-07-8	0			O	0/ 122	0.0			NO
Endrin (UG/KG)	72-20-8	2	1.5E-01	2.3E+01	D	2/ 121	1.7	4.6E+00	4.6E+00	NO

Analytes Detected in Surface and Subsurface Soil for the Construction Worker Scenario

Analyte (units)	CAS Number	Number of Detections	Minimum Detect	Maximum Detect	Distribution	Results Greater than Detection Limit	% Results Greater than Detection Limit	95% UCL of Mean	Exposure Concentration	Detection in Greater than 5%
Endrin Aldehyde (UG/KG)	7421-93-4	0			O	0/ 108	0.0			NO
Endrin Ketone (UG/KG)	53494-70-5	2	5.2E-01	7.6E-01	D	2/ 122	1.6	1.3E+01	7.6E-01	NO
Gamma Chlordane (UG/KG)	5103-74-2	1	5.7E-02	5.7E-02	D	1/ 99	1.0	1.7E+01	5.7E-02	NO
Gamma-BHC (Lindane) (UG/KG)	58-89-9	0			O	0/ 122	0.0			NO
Heptachlor (UG/KG)	76-44-8	2	1.1E-01	1.3E-01	D	2/ 122	1.6	2.0E+00	1.3E-01	NO
Heptachlor Epoxide (UG/KG)	1024-57-3	2	1.1E-01	3.5E-01	D	2/ 122	1.6	1.3E+01	3.5E-01	NO
Methoxychlor (UG/KG)	72-43-5	0			O	0/ 122	0.0			NO
Toxaphene (UG/KG)	8001-35-2	0			O	0/ 122	0.0			NO
Phenols										
Phenolics (UG/KG)	64743-03-9	0			O	0/ 24	0.0			NO
Radiological										
Actinium-227 (PCI/G)	14952-40-0	37	5.0E-02	2.1E+00	D	37/ 282	13.1	3.0E-01	3.0E-01	YES
Actinium-228 (PCI/G)	14331-83-0	7	7.6E-01	1.4E+00	D	7/ 7	100.0	1.2E+00	1.4E+00	YES
Americium-241 (PCI/G)	14596-10-2	12	5.0E-02	3.8E+01	D	12/ 558	2.2	1.1E-01	1.1E-01	NO
Bismuth-207 (PCI/G)	13982-38-2	0			O	0/ 126	0.0			
Bismuth-210 (PCI/G)	14331-79-4	1	6.8E-02	6.8E-02	D	1/ 222	0.5	2.9E-02	2.9E-02	NO
Bismuth-210M (PCI/G)	BI-210M	3	1.4E-01	2.7E-01	D	3/ 84	3.6	5.5E-02	5.5E-02	NO
Bismuth-214 (PCI/G)	14733-03-0	10	7.0E-01	9.3E-01	N	10/ 10	100.0	8.6E-01	9.3E-01	YES
Cesium-137 (PCI/G)	10045-97-3	276	2.1E-02	1.6E+00	D	276/ 564	48.9	1.6E-01	1.6E-01	YES
Cobalt-60 (PCI/G)	10198-40-0	14	2.0E-02	5.0E-01	D	14/ 575	2.4	3.6E-02	3.6E-02	NO
Europium-152 (PCI/G)	14683-23-9	1	8.7E-02	8.7E-02	D	1/ 191	0.5	4.7E-02	4.7E-02	NO
Europium-154 (PCI/G)	15585-10-1	0			O	0/ 180	0.0			NO
Lead-210 (PCI/G)	14255-04-0	180	4.9E-01	3.7E+00	X	180/ 344	52.3	1.2E+00	1.2E+00	YES
Lead-212 (PCI/G)	15092-94-1	10	8.4E-01	1.2E+00	L	10/ 10	100.0	1.1E+00	1.2E+00	YES
Lead-214 (PCI/G)	15067-28-4	20	5.7E-01	1.1E+00	N	20/ 20	100.0	9.2E-01	9.2E-01	YES
Plutonium-238 (PCI/G)	13981-16-3	665	1.2E-02	4.0E+02	D	665/1545	43.0	2.6E+01	2.6E+01	YES
Plutonium-239 (PCI/G)	15117-48-3	83	3.5E-03	1.3E+00	X	83/ 90	92.2	6.9E-02	6.9E-02	YES
Plutonium-239/240 (PCI/G)	PU-239/240	79	3.7E-03	1.0E+00	D	79/ 254	31.1	4.4E-02	4.4E-02	YES
Plutonium-242 (PCI/G)	13982-10-0	0			O	0/ 5	0.0			NO
Potassium-40 (PCI/G)	13966-00-2	122	7.2E+00	3.7E+01	X	122/ 126	96.8	2.1E+01	2.1E+01	YES
Protactinium-231 (PCI/G)	14331-85-2	0			O	0/ 36	0.0			NO
Radium-224 (PCI/G)	13233-32-4	190	7.3E-02	6.3E+00	X	190/ 190	100.0	1.3E+00	1.3E+00	YES
Radium-226 (PCI/G)	13982-63-3	494	1.8E-01	3.7E+00	X	494/ 567	87.1	1.2E+00	1.2E+00	YES
Radium-228 (PCI/G)	15262-20-1	80	3.1E-01	2.0E+00	N	80/ 81	98.8	1.2E+00	1.2E+00	YES
Strontium-90 (PCI/G)	10098-97-2	0			O	0/ 21	0.0			NO

Analytes Detected in Surface and Subsurface Soil for the Construction Worker Scenario

Analyte (units)	CAS Number	Number of Detections	Minimum Detect	Maximum Detect	Distribution	Results Greater than Detection Limit	% Results Greater than Detection Limit	95% UCL of Mean	Exposure Concentration	Detection in Greater than 5%
Thallium-208 (PCI/G)	14913-50-9	10	1.6E-01	4.0E-01	N	10/ 10	100.0	3.8E-01	4.0E-01	YES
Thorium-227 (PCI/G)	15623-47-9	17	6.0E-02	4.4E-01	L	17/ 33	51.5	1.4E-01	1.4E-01	YES
Thorium-228 (PCI/G)	14274-82-9	342	3.7E-02	4.5E+00	X	342/ 384	89.1	1.6E+00	1.6E+00	YES
Thorium-229 (PCI/G)	15594-54-4	0			O	0/ 36	0.0			NO
Thorium-230 (PCI/G)	14269-63-7	340	1.0E-01	7.5E+00	X	340/ 595	57.1	2.8E+00	2.8E+00	YES
Thorium-232 (PCI/G)	7440-29-1	789	4.5E-02	8.0E+01	D	789/1805	43.7	8.3E-01	8.3E-01	YES
Tritium (PCI/G)	10028-17-8	1	1.4E+00	1.4E+00	D	1/ 21	4.8	2.0E+00	1.4E+00	NO
Uranium-234 (PCI/G)	13966-29-5	46	3.8E-01	1.6E+00	N	46/ 54	85.2	1.0E+00	1.0E+00	YES
Uranium-235 (PCI/G)	15117-96-1	28	2.7E-02	2.1E-01	D	28/ 77	36.4	1.9E-01	1.9E-01	YES
Uranium-235/236 (PCI/G)	U-235/236	0			O	0/ 2	0.0			NO
Uranium-238 (PCI/G)	7440-61-1	72	4.1E-01	2.0E+00	X	72/ 119	60.5	1.9E+00	1.9E+00	YES
Semi-Volatile Organics										
1,2,4-Trichlorobenzene (UG/KG)	120-82-1	0			O	0/ 159	0.0			NO
1,2-Dichlorobenzene (UG/KG)	95-50-1	0			O	0/ 159	0.0			NO
1,3-Dichlorobenzene (UG/KG)	541-73-1	0			O	0/ 159	0.0			NO
1,4-Dichlorobenzene (UG/KG)	106-46-7	0			O	0/ 159	0.0			NO
1-chloro-4-phenoxybenzene (UG/KG)	7005-72-3	0			O	0/ 159	0.0			NO
2,2'-oxybis(1-chloropropane) (UG/KG)	108-60-1	0			O	0/ 159	0.0			NO
2,4,5-Trichlorophenol (UG/KG)	95-95-4	0			O	0/ 159	0.0			NO
2,4,6-Trichlorophenol (UG/KG)	88-06-2	0			O	0/ 159	0.0			NO
2,4-Dichlorophenol (UG/KG)	120-83-2	0			O	0/ 159	0.0			NO
2,4-Dimethylphenol (UG/KG)	105-67-9	0			O	0/ 159	0.0			NO
2,4-Dinitrophenol (UG/KG)	51-28-5	0			O	0/ 159	0.0			NO
2,4-Dinitrotoluene (UG/KG)	121-14-2	0			O	0/ 91	0.0			NO
2,6-Dinitrotoluene (UG/KG)	606-20-2	0			O	0/ 134	0.0			NO
2-Benzyl-4-Chlorophenol (UG/KG)	120-32-1	0			O	0/ 30	0.0			NO
2-Chloronaphthalene (UG/KG)	91-58-7	0			O	0/ 174	0.0			NO
2-Chlorophenol (UG/KG)	95-57-8	0			O	0/ 159	0.0			NO
2-Methylnaphthalene (UG/KG)	91-57-6	3	5.4E+01	9.9E+01	D	3/ 174	1.7	2.8E+02	9.9E+01	NO
2-Methylphenol (UG/KG)	95-48-7	0			O	0/ 159	0.0			NO
2-Nitroaniline (UG/KG)	88-74-4	0			O	0/ 159	0.0			NO
2-Nitrophenol (UG/KG)	88-75-5	0			O	0/ 159	0.0			NO
3,3'-Dichlorobenzidine (UG/KG)	91-94-1	0			O	0/ 159	0.0			NO
3-Nitroaniline (UG/KG)	99-09-2	0			O	0/ 157	0.0			NO
4,6-Dinitro-o-Cresol (UG/KG)	534-52-1	0			O	0/ 159	0.0			NO

Analytes Detected in Surface and Subsurface Soil for the Construction Worker Scenario

Analyte (units)	CAS Number	Number of Detections	Minimum Detect	Maximum Detect	Distribution	Results Greater than Detection Limit	% Results Greater than Detection Limit	95% UCL of Mean	Exposure Concentration	Detection in Greater than 5%
4-Bromophenyl-phenyl Ether (UG/KG)	101-55-3	0			O	0/ 159	0.0			NO
4-Chloro-3-methylphenol (UG/KG)	59-50-7	0			O	0/ 159	0.0			NO
4-Chloroaniline (UG/KG)	106-47-8	0			O	0/ 159	0.0			NO
4-Methylphenol (UG/KG)	106-44-5	1	4.1E+02	4.1E+02	D	1/ 159	0.6	2.8E+02	2.8E+02	NO
4-Nitroaniline (UG/KG)	100-01-6	0			O	0/ 159	0.0			NO
4-Nitrophenol (UG/KG)	100-02-7	1	1.8E+02	1.8E+02	D	1/ 159	0.6	1.2E+03	1.8E+02	NO
Acenaphthene (UG/KG)	83-32-9	6	2.7E+01	4.3E+02	D	6/ 174	3.4	2.9E+02	2.9E+02	NO
Acenaphthylene (UG/KG)	208-96-8	0			O	0/ 174	0.0			NO
Anthracene (UG/KG)	120-12-7	13	2.2E+01	2.8E+03	D	13/ 174	7.5	3.1E+02	3.1E+02	YES
Benzidine (UG/KG)	92-87-5	0			O	0/ 21	0.0			NO
Benzo(a)anthracene (UG/KG)	56-55-3	31	2.3E+01	4.2E+03	D	31/ 174	17.8	3.2E+02	3.2E+02	YES
Benzo(a)pyrene (UG/KG)	50-32-8	29	2.3E+01	3.6E+03	D	29/ 174	16.7	3.2E+02	3.2E+02	YES
Benzo(b)fluoranthene (UG/KG)	205-99-2	35	2.5E+01	2.8E+03	D	35/ 174	20.1	3.2E+02	3.2E+02	YES
Benzo(g,h,i)perylene (UG/KG)	191-24-2	16	2.7E+01	2.1E+03	D	16/ 174	9.2	3.0E+02	3.0E+02	YES
Benzo(k)fluoranthene (UG/KG)	207-08-9	27	2.1E+01	3.4E+03	D	27/ 174	15.5	3.2E+02	3.2E+02	YES
Benzoic Acid (UG/KG)	65-85-0	5	7.8E+01	9.5E+01	D	5/ 139	3.6	1.5E+03	9.5E+01	NO
Benzyl Alcohol (UG/KG)	100-51-6	0			O	0/ 139	0.0			NO
Bis(2-chloroethoxy)methane (UG/KG)	111-91-1	0			O	0/ 159	0.0			NO
Bis(2-chloroethyl)ether (UG/KG)	111-44-4	0			O	0/ 159	0.0			NO
Bis(2-ethylhexyl)phthalate (UG/KG)	117-81-7	59	1.9E+01	6.5E+03	D	59/ 159	37.1	3.3E+02	3.3E+02	YES
Butyl Benzyl Phthalate (UG/KG)	85-68-7	3	4.8E+01	6.4E+01	D	3/ 159	1.9	2.8E+02	6.4E+01	NO
Carbazole (UG/KG)	86-74-8	2	1.5E+02	1.7E+02	D	2/ 89	2.2	2.0E+02	1.7E+02	NO
Chrysene (UG/KG)	218-01-9	30	2.0E+01	1.7E+03	D	30/ 159	18.9	3.0E+02	3.0E+02	YES
Di-n-butyl Phthalate (UG/KG)	84-74-2	61	2.1E+01	2.0E+03	D	61/ 240	25.4	3.1E+02	3.1E+02	YES
Di-n-octyl Phthalate (UG/KG)	117-84-0	1	4.0E+02	4.0E+02	D	1/ 159	0.6	2.8E+02	2.8E+02	NO
Dibenz(a,h)anthracene (UG/KG)	53-70-3	6	7.1E+01	8.0E+02	D	6/ 174	3.4	2.8E+02	2.8E+02	NO
Dibenzofuran (UG/KG)	132-64-9	6	3.2E+01	5.8E+02	D	6/ 159	3.8	2.7E+02	2.7E+02	NO
Diethyl Phthalate (UG/KG)	84-66-2	6	3.9E+01	1.1E+02	D	6/ 159	3.8	2.8E+02	1.1E+02	NO
Dimethyl Phthalate (UG/KG)	131-11-3	0			O	0/ 159	0.0			NO
Diphenylamine (UG/KG)	122-39-4	0			O	0/ 81	0.0			NO
Fluoranthene (UG/KG)	206-44-0	48	2.3E+01	1.1E+04	D	48/ 174	27.6	3.7E+02	3.7E+02	YES
Fluorene (UG/KG)	86-73-7	7	3.8E+01	1.1E+03	D	7/ 174	4.0	2.9E+02	2.9E+02	NO
Hexachlorobenzene (UG/KG)	118-74-1	0			O	0/ 159	0.0			NO
Hexachlorobutadiene (UG/KG)	87-68-3	0			O	0/ 159	0.0			NO
Hexachlorocyclopentadiene (UG/KG)	77-47-4	0			O	0/ 159	0.0			NO

Analytes Detected in Surface and Subsurface Soil for the Construction Worker Scenario

Analyte (units)	CAS Number	Number of Detections	Minimum Detect	Maximum Detect	Distribution	Results Greater than Detection Limit	% Results Greater than Detection Limit	95% UCL of Mean	Exposure Concentration	Detection In Greater than 5%
Hexachloroethane (UG/KG)	67-72-1	0			O	0/ 159	0.0			NO
Indeno(1,2,3-cd)pyrene (UG/KG)	193-39-5	18	2.5E+01	1.9E+03	D	18/ 174	10.3	3.0E+02	3.0E+02	YES
Isophorone (UG/KG)	78-59-1	0			O	0/ 159	0.0			NO
N-Nitroso-di-n-propylamine (UG/KG)	621-64-7	0			O	0/ 159	0.0			NO
N-Nitrosodiphenylamine (UG/KG)	86-30-6	8	5.7E+01	2.1E+02	D	8/ 159	5.0	2.7E+02	2.1E+02	YES
Naphthalene (UG/KG)	91-20-3	5	2.6E+01	4.1E+02	D	5/ 171	2.9	2.9E+02	2.9E+02	NO
Nitrobenzene (UG/KG)	98-95-3	0			O	0/ 134	0.0			NO
Pentachlorophenol (UG/KG)	87-86-5	0			O	0/ 159	0.0			NO
Phenanthrene (UG/KG)	85-01-8	32	2.7E+01	1.1E+04	D	32/ 174	18.4	3.5E+02	3.5E+02	YES
Phenol (UG/KG)	108-95-2	2	8.5E+01	3.2E+02	D	2/ 159	1.3	2.8E+02	2.8E+02	NO
Pyrene (UG/KG)	129-00-0	45	2.6E+01	9.7E+03	D	45/ 174	25.9	3.6E+02	3.6E+02	YES
Volatile Organics										
1,1,1,2-Tetrachloroethane (UG/KG)	630-20-6	0			O	0/ 23	0.0			NO
1,1,1-Trichloroethane (UG/KG)	71-55-6	4	1.0E+00	8.0E+00	D	4/ 200	2.0	3.4E+00	3.4E+00	NO
1,1,2,2-Tetrachloroethane (UG/KG)	79-34-5	0			O	0/ 200	0.0			NO
1,1,2-Trichloroethane (UG/KG)	79-00-5	0			O	0/ 200	0.0			NO
1,1-Dichloroethane (UG/KG)	75-34-3	1	3.0E+00	3.0E+00	D	1/ 200	0.5	3.4E+00	3.0E+00	NO
1,1-Dichloroethene (UG/KG)	75-35-4	0			O	0/ 200	0.0			NO
1,1-Dichloropropene (UG/KG)	563-58-6	0			O	0/ 23	0.0			NO
1,2,3-Trichlorobenzene (UG/KG)	87-61-6	0			O	0/ 23	0.0			NO
1,2,3-Trichloropropane (UG/KG)	96-18-4	0			O	0/ 23	0.0			NO
1,2,4-Trichlorobenzene (UG/KG)	120-82-1	0			O	0/ 3	0.0			NO
1,2,4-Trimethylbenzene (UG/KG)	95-63-6	0			O	0/ 23	0.0			NO
1,2-Dibromo-3-Chloropropane (UG/KG)	96-12-8	0			O	0/ 23	0.0			NO
1,2-Dichlorobenzene (UG/KG)	95-50-1	0			O	0/ 3	0.0			NO
1,2-Dichloroethane (UG/KG)	107-06-2	0			O	0/ 200	0.0			NO
1,2-Dichloroethene (UG/KG)	540-59-0	5	2.0E+00	2.1E+02	D	5/ 177	2.8	4.1E+00	4.1E+00	NO
1,2-Dichloropropane (UG/KG)	78-87-5	0			O	0/ 200	0.0			NO
1,2-Diethylbenzene (UG/KG)	135-01-3	0			O	0/ 31	0.0			NO
1,2-cis-Dichloroethene (UG/KG)	156-59-2	0			O	0/ 34	0.0			NO
1,2-trans-Dichloroethene (UG/KG)	156-60-5	0			O	0/ 34	0.0			NO
1,3,5-Trimethylbenzene (UG/KG)	108-67-8	0			O	0/ 23	0.0			NO
1,3-Dichlorobenzene (UG/KG)	541-73-1	0			O	0/ 3	0.0			NO
1,3-Dichloropropane (UG/KG)	142-28-9	0			O	0/ 23	0.0			NO
1,3-cis-Dichloropropene (UG/KG)	10061-01-5	0			O	0/ 200	0.0			NO

Analytes Detected in Surface and Subsurface Soil for the Construction Worker Scenario

Analyte (units)	CAS Number	Number of Detections	Minimum Detect	Maximum Detect	Distribution	Results Greater than Detection Limit	% Results Greater than Detection Limit	95% UCL of Mean	Exposure Concentration	Detection in Greater than 5%
1,3-trans-Dichloropropene (UG/KG)	10061-02-6	0			O	0/ 200	0.0			NO
1,4-Dichlorobenzene (UG/KG)	106-46-7	0			O	0/ 3	0.0			NO
2,2-Dichloropropane (UG/KG)	594-20-7	0			O	0/ 23	0.0			NO
2-Butanone (UG/KG)	78-93-3	18	1.0E+00	3.1E+01	D	18/ 177	10.2	6.8E+00	6.8E+00	YES
2-Chlorotoluene (UG/KG)	95-49-8	0			O	0/ 23	0.0			NO
2-Hexanone (UG/KG)	591-78-6	0			O	0/ 177	0.0			NO
4-Chlorotoluene (UG/KG)	106-43-4	0			O	0/ 23	0.0			NO
4-Methyl-2-pentanone (UG/KG)	108-10-1	9	1.0E+00	7.0E+00	D	9/ 177	5.1	6.0E+00	6.0E+00	YES
Acetone (UG/KG)	67-64-1	48	4.0E+00	1.7E+02	D	48/ 177	27.1	1.4E+01	1.4E+01	YES
Acetonitrile (UG/KG)	75-05-8	0			O	0/ 31	0.0			NO
Acrylonitrile (UG/KG)	107-13-1	0			O	0/ 31	0.0			NO
Benzene (UG/KG)	71-43-2	2	2.0E+00	5.0E+00	D	2/ 200	1.0	3.4E+00	3.4E+00	NO
Bromochloromethane (UG/KG)	74-97-5	0			O	0/ 23	0.0			NO
Bromodichloromethane (UG/KG)	75-27-4	1	5.0E+00	5.0E+00	D	1/ 200	0.5	3.4E+00	3.4E+00	NO
Bromoform (UG/KG)	75-25-2	0			O	0/ 200	0.0			NO
Bromomethane (UG/KG)	74-83-9	0			O	0/ 200	0.0			NO
Carbon Disulfide (UG/KG)	75-15-0	4	1.0E+00	3.0E+00	D	4/ 177	2.3	3.4E+00	3.0E+00	NO
Carbon Tetrachloride (UG/KG)	56-23-5	0			O	0/ 200	0.0			NO
Chlorobenzene (UG/KG)	108-90-7	0			O	0/ 200	0.0			NO
Chloroethane (UG/KG)	75-00-3	0			O	0/ 200	0.0			NO
Chloroform (Trichloromethane) (UG/KG	67-66-3	1	2.4E+01	2.4E+01	D	1/ 200	0.5	3.4E+00	3.4E+00	NO
Chloromethane (UG/KG)	74-87-3	2	1.0E+00	4.0E+00	D	2/ 200	1.0	5.7E+00	4.0E+00	NO
Dibromochloromethane (UG/KG)	124-48-1	1	1.0E+00	1.0E+00	D	1/ 200	0.5	3.4E+00	1.0E+00	NO
Dibromomethane (UG/KG)	74-95-3	0			O	0/ 23	0.0			NO
Dichlorodifluoromethane (UG/KG)	75-71-8	0			O	0/ 23	0.0			NO
Dichloromethane (Methylene Chloride) (UG/KG)	75-09-2	96	3.0E+00	6.8E+01	D	96/ 200	48.0	1.0E+01	1.0E+01	YES
Ethylbenzene (UG/KG)	100-41-4	9	1.0E+00	1.1E+01	D	9/ 200	4.5	3.4E+00	3.4E+00	NO
Ethylene Dibromide (1,2-Dibromoethane) (UG/KG	106-93-4	0			O	0/ 23	0.0			NO
FREON-113 (UG/KG)	76-13-1	0			O	0/ 39	0.0			NO
Hexachlorobutadiene (UG/KG)	87-68-3	0			O	0/ 3	0.0			NO
Hexane (UG/KG)	110-54-3	0			O	0/ 39	0.0			NO
Iodomethane (UG/KG)	74-88-4	0			O	0/ 31	0.0			NO
Isopropyl Benzene (UG/KG)	98-82-8	0			O	0/ 23	0.0			NO

Analytes Detected in Surface and Subsurface Soil for the Construction Worker Scenario

Analyte (units)	CAS Number	Number of Detections	Minimum Detect	Maximum Detect	Distribution	Results Greater than Detection Lim't	% Results Greater than Detection Limit	95% UCL of Mean	Exposure Concentration	Detection in Greater than 5%
Monobromobenzene (Phenyl bromide) (UG/KG)	108-86-1	0			O	0/ 23	0.0			NO
Naphthalene (UG/KG)	91-20-3	3	1.0E+00	6.0E+00	D	3/ 6	50.0	1.0E+01	6.0E+00	YES
Styrene (UG/KG)	100-42-5	0			O	0/ 200	0.0			NO
Tetrachloroethene (UG/KG)	127-18-4	13	2.0E+00	4.1E+01	D	13/ 200	6.5	3.9E+00	3.9E+00	YES
Toluene (UG/KG)	108-88-3	35	1.0E+00	5.1E+01	D	35/ 200	17.5	3.8E+00	3.8E+00	YES
Trichloroethylene (TCE) (UG/KG)	79-01-6	7	3.0E+00	7.4E+01	D	7/ 200	3.5	3.8E+00	3.8E+00	NO
Trichlorofluoromethane (UG/KG)	75-69-4	0			O	0/ 23	0.0			NO
Vinyl Acetate (UG/KG)	108-05-4	0			O	0/ 149	0.0			NO
Vinyl Chloride (UG/KG)	75-01-4	0			O	0/ 200	0.0			NO
Xylenes, Total (UG/KG)	1330-20-7	16	1.0E+00	3.9E+01	D	16/ 177	9.0	3.7E+00	3.7E+00	YES
m-Xylene (UG/KG)	108-38-3	0			O	0/ 11	0.0			NO
mp-Xylene (UG/KG)	mp-Xylene	23	5.0E+00	6.0E+00	X	23/ 23	100.0	6.0E+00	6.0E+00	YES
n-Butylbenzene (UG/KG)	104-51-8	0			O	0/ 23	0.0			NO
n-propylbenzene (UG/KG)	103-65-1	0			O	0/ 23	0.0			NO
o-Xylene (UG/KG)	95-47-6	0			O	0/ 34	0.0			NO
p-Isopropyltoluene (UG/KG)	99-87-6	0			O	0/ 23	0.0			NO
sec-Butylbenzene (UG/KG)	135-98-8	0			O	0/ 23	0.0			NO
tert-Butylbenzene (UG/KG)	98-06-6	0			O	0/ 23	0.0			NO

Analytes Detected in Surface Soil for the Site Employee Scenario

Analyte (units)	CAS Number	Number of Detections	Minimum Detect	Maximum Detect	Dist.	Results >Detection Limit	% Results >Detection Limit	95% UCL of Mean	Exposure Concentration	Detection in Greater than 5%
BTEX Compounds										
Benzene (UG/KG)	71-43-2	0			O	0/ 15	0.0			NO
Ethylbenzene (UG/KG)	100-41-4	0			O	0/ 15	0.0			NO
Toluene (UG/KG)	108-88-3	0			O	0/ 15	0.0			NO
Xylenes, Total (UG/KG)	1330-20-7	0			O	0/ 15	0.0			NO
Explosives										
1,3,5-Trinitrobenzene (UG/KG)	99-35-4	0			O	0/ 53	0.0			NO
1,3-Dinitrobenzene (UG/KG)	99-65-0	0			O	0/ 53	0.0			NO
2,4,6-Trinitrotoluene (UG/KG)	118-96-7	1	1.1E+02	1.1E+02	D	1/ 59	1.7	7.4E+02	1.1E+02	NO
2,4-Dinitrotoluene (UG/KG)	121-14-2	0			O	0/ 50	0.0			NO
2,6-Dinitrotoluene (UG/KG)	606-20-2	0			O	0/ 12	0.0			NO
2-Amino-4,6-Dinitrotoluene (UG/KG)	35572-78-2	0			O	0/ 52	0.0			NO
4-Amino-2,6-Dinitrotoluene (UG/KG)	1946-51-0	0			O	0/ 1	0.0			NO
HMX (UG/KG)	2691-41-0	0			O	0/ 66	0.0			NO
Nitrobenzene (UG/KG)	98-95-3	1	3.8E+02	3.8E+02	D	1/ 12	8.3	1.3E+03	3.8E+02	YES
Nitroglycerin (UG/KG)	55-63-0	0			O	0/ 50	0.0			NO
PETN (UG/KG)	78-11-5	0			O	0/ 53	0.0			NO
RDX (UG/KG)	121-82-4	0			O	0/ 67	0.0			NO
Tetryl (UG/KG)	479-45-8	0			O	0/ 46	0.0			NO
Metals										
Aluminum (UG/KG)	7429-90-5	105	5.9E+05	2.3E+07	N	105/ 105	100.0	1.2E+07	1.2E+07	YES
Antimony (UG/KG)	7440-36-0	42	2.1E+02	4.5E+04	D	42/ 146	28.8	1.3E+04	1.3E+04	YES
Arsenic (UG/KG)	7440-38-2	104	4.9E+02	2.0E+04	X	104/ 105	99.0	8.9E+03	8.9E+03	YES
Barium (UG/KG)	7440-39-3	158	4.4E+03	4.5E+05	X	158/ 158	100.0	1.0E+05	1.0E+05	YES
Beryllium (UG/KG)	7440-41-7	155	1.2E+02	3.6E+03	X	155/ 158	98.1	1.2E+03	1.2E+03	YES
Bismuth (UG/KG)	7440-69-9	26	1.3E+04	7.3E+04	X	26/ 36	72.2	1.0E+05	7.3E+04	YES
Cadmium (UG/KG)	7440-43-9	43	2.5E+02	1.2E+04	D	43/ 158	27.2	1.2E+03	1.2E+03	YES
Calcium (UG/KG)	7440-70-2	105	1.4E+06	3.1E+08	X	105/ 105	100.0	1.3E+08	1.3E+08	YES
Chromium (UG/KG)	7440-47-3	158	1.1E+03	3.7E+04	X	158/ 158	100.0	1.8E+04	1.8E+04	YES
Cobalt (UG/KG)	7440-48-4	105	7.9E+02	2.5E+04	X	105/ 105	100.0	1.3E+04	1.3E+04	YES
Copper (UG/KG)	7440-50-8	103	2.6E+03	1.1E+06	X	103/ 105	98.1	2.3E+04	2.3E+04	YES
Cyanide (UG/KG)	57-12-5	31	1.0E+02	8.9E+03	D	31/ 126	24.6	6.7E+02	6.7E+02	YES
Iron (UG/KG)	7439-89-6	105	2.3E+04	4.3E+07	N	105/ 105	100.0	2.8E+07	2.8E+07	YES
Lead (UG/KG)	7439-92-1	179	1.6E+03	2.2E+05	X	179/ 186	96.2	1.7E+04	1.7E+04	YES
Lithium (UG/KG)	7439-93-2	31	2.3E+03	2.7E+04	N	31/ 31	100.0	1.7E+04	1.7E+04	YES
Magnesium (UG/KG)	7439-95-4	105	1.2E+04	1.2E+08	X	105/ 105	100.0	3.3E+07	3.3E+07	YES
Manganese (UG/KG)	7439-96-5	104	6.5E+04	1.3E+06	X	104/ 104	100.0	5.7E+05	5.7E+05	YES

Analytes Detected in Surface Soil for the Site Employee Scenario

Analyte (units)	CAS Number	Number of Detections	Minimum Detect	Maximum Detect	Dist.	Results >Detection Limit	% Results >Detection Limit	95% UCL of Mean	Exposure Concentration	Detection in Greater than 5%
Mercury (UG/KG)	7439-97-6	43	3.0E+01	6.5E+02	D	43/ 97	44.3	1.0E+02	1.0E+02	YES
Molybdenum (UG/KG)	7439-98-7	29	4.7E+02	9.7E+03	L	29/ 31	93.5	5.9E+03	5.9E+03	YES
Nickel (UG/KG)	7440-02-0	157	2.3E+03	2.5E+05	X	157/ 158	99.4	2.3E+04	2.3E+04	YES
Potassium (UG/KG)	7440-09-7	103	3.1E+05	5.2E+06	X	103/ 105	98.1	1.7E+06	1.7E+06	YES
Selenium (UG/KG)	7782-49-2	18	4.9E+02	2.3E+03	D	18/ 96	18.8	1.1E+03	1.1E+03	YES
Silver (UG/KG)	7440-22-4	47	1.1E+02	2.1E+04	D	47/ 158	29.7	2.7E+03	2.7E+03	YES
Sodium (UG/KG)	7440-23-5	100	4.2E+04	3.5E+06	X	100/ 105	95.2	1.3E+06	1.3E+06	YES
Thallium (UG/KG)	7440-28-0	27	2.2E+02	3.5E+03	D	27/ 100	27.0	1.8E+03	1.8E+03	YES
Tin (UG/KG)	7440-31-5	7	1.1E+03	2.2E+03	D	7/ 31	22.6	2.2E+04	2.2E+03	YES
Vanadium (UG/KG)	7440-62-2	105	1.7E+03	4.0E+04	X	105/ 105	100.0	2.6E+04	2.6E+04	YES
Zinc (UG/KG)	7440-66-6	105	5.5E+03	4.6E+05	X	105/ 105	100.0	8.4E+04	8.4E+04	YES
Pesticides and/or PCBs										
4,4'-DDD (UG/KG)	72-54-8	0			O	0/ 86	0.0			NO
4,4'-DDE (UG/KG)	72-55-9	7	2.8E-01	1.8E+00	D	7/ 85	8.2	3.1E+00	1.8E+00	YES
4,4'-DDT (UG/KG)	50-29-3	0			O	0/ 86	0.0			NO
Aldrin (UG/KG)	309-00-2	1	5.4E-02	5.4E-02	D	1/ 86	1.2	2.3E+00	5.4E-02	NO
Alpha Chlordane (UG/KG)	5103-71-9	0			O	0/ 63	0.0			NO
Alpha-BHC (UG/KG)	319-84-6	0			O	0/ 86	0.0			NO
Aroclor-1016 (UG/KG)	12674-11-2	0			O	0/ 115	0.0			NO
Aroclor-1221 (UG/KG)	11104-28-2	0			O	0/ 115	0.0			NO
Aroclor-1232 (UG/KG)	11141-16-5	1	1.2E+02	1.2E+02	D	1/ 115	0.9	3.4E+01	3.4E+01	NO
Aroclor-1242 (UG/KG)	53469-21-9	1	1.2E+02	1.2E+02	D	1/ 115	0.9	3.4E+01	3.4E+01	NO
Aroclor-1248 (UG/KG)	12672-29-6	3	7.4E+01	9.1E+02	D	3/ 114	2.6	3.8E+01	3.8E+01	NO
Aroclor-1254 (UG/KG)	11097-69-1	1	2.2E+02	2.2E+02	D	1/ 115	0.9	5.9E+01	5.9E+01	NO
Aroclor-1260 (UG/KG)	11096-82-5	0			O	0/ 114	0.0			NO
Beta-BHC (UG/KG)	319-85-7	3	1.8E-01	1.2E+02	D	3/ 86	3.5	3.9E+00	3.9E+00	NO
Chlordane (UG/KG)	57-74-9	2	1.9E+01	9.8E+01	D	2/ 23	8.7	1.6E+01	1.6E+01	YES
Delta-BHC (UG/KG)	319-86-8	1	1.7E-01	1.7E-01	D	1/ 86	1.2	4.0E+00	1.7E-01	NO
Dieldrin (UG/KG)	60-57-1	3	5.2E-01	4.4E+00	D	3/ 86	3.5	2.8E+00	2.8E+00	NO
Endosulfan I (UG/KG)	959-98-8	0			O	0/ 86	0.0			NO
Endosulfan II (UG/KG)	33213-65-9	0			O	0/ 86	0.0			NO
Endosulfan Sulfate (UG/KG)	1031-07-8	0			O	0/ 86	0.0			NO
Endrin (UG/KG)	72-20-8	2	1.5E-01	2.3E+01	D	2/ 85	2.4	5.2E+00	5.2E+00	NO
Endrin Aldehyde (UG/KG)	7421-93-4	0			O	0/ 79	0.0			NO
Endrin Ketone (UG/KG)	53494-70-5	2	5.2E-01	7.6E-01	D	2/ 86	2.3	1.9E+01	7.6E-01	NO
Gamma Chlordane (UG/KG)	5103-74-2	1	5.7E-02	5.7E-02	D	1/ 63	1.6	2.0E+01	5.7E-02	NO
Gamma-BHC (Lindane) (UG/KG)	58-89-9	0			O	0/ 86	0.0			NO

Analytes Detected in Surface Soil for the Site Employee Scenario

Analyte (units)	CAS Number	Number of Detections	Minimum Detect	Maximum Detect	Dist.	Results >Detection Limit	% Results >Detection Limit	95% UCL of Mean	Exposure Concentration	Detection in Greater than 5%
Heptachlor (UG/KG)	76-44-8	2	1.1E-01	1.3E-01	D	2/ 86	2.3	2.0E+00	1.3E-01	NO
Heptachlor Epoxide (UG/KG)	1024-57-3	2	1.1E-01	3.5E-01	D	2/ 86	2.3	2.6E+01	3.5E-01	NO
Methoxychlor (UG/KG)	72-43-5	0			O	0/ 86	0.0			NO
Toxaphene (UG/KG)	8001-35-2	0			O	0/ 86	0.0			NO
Phenols										
Phenolics (UG/KG)	64743-03-9	0			O	0/ 24	0.0			NO
Radiological										
Actinium-227 (PCI/G)	14952-40-0	36	5.0E-02	2.1E+00	D	36/ 219	16.4	3.5E-01	3.5E-01	YES
Actinium-228 (PCI/G)	14331-83-0	7	7.6E-01	1.4E+00	D	7/ 7	100.0	1.2E+00	1.4E+00	YES
Americium-241 (PCI/G)	14596-10-2	11	5.0E-02	3.8E+01	D	11/ 458	2.4	1.1E-01	1.1E-01	NO
Bismuth-207 (PCI/G)	13982-38-2	0			O	0/ 96	0.0			NO
Bismuth-210 (PCI/G)	14331-79-4	1	6.8E-02	6.8E-02	D	1/ 194	0.5	2.3E-02	2.3E-02	NO
Bismuth-210M (PCI/G)	BI-210M	3	1.4E-01	2.7E-01	D	3/ 78	3.8	5.7E-02	5.7E-02	NO
Bismuth-214 (PCI/G)	14733-03-0	10	7.0E-01	9.3E-01	N	10/ 10	100.0	8.6E-01	9.3E-01	YES
Cesium-137 (PCI/G)	10045-97-3	258	2.1E-02	1.6E+00	X	258/ 461	56.0	1.8E-01	1.8E-01	YES
Cobalt-60 (PCI/G)	10198-40-0	11	2.0E-02	5.0E-01	D	11/ 461	2.4	3.4E-02	3.4E-02	NO
Europium-152 (PCI/G)	14683-23-9	1	8.7E-02	8.7E-02	D	1/ 176	0.6	4.3E-02	4.3E-02	NO
Europium-154 (PCI/G)	15585-10-1	0			O	0/ 176	0.0			NO
Lead-210 (PCI/G)	14255-04-0	146	6.3E-01	3.7E+00	X	146/ 262	55.7	1.3E+00	1.3E+00	YES
Lead-212 (PCI/G)	15092-94-1	10	8.4E-01	1.2E+00	L	10/ 10	100.0	1.1E+00	1.2E+00	YES
Lead-214 (PCI/G)	15067-28-4	10	8.3E-01	1.1E+00	N	10/ 10	100.0	1.0E+00	1.1E+00	YES
Plutonium-238 (PCI/G)	13981-16-3	592	1.2E-02	4.0E+02	D	592/1308	45.3	2.5E+01	2.5E+01	YES
Plutonium-239 (PCI/G)	15117-48-3	83	3.5E-03	1.3E+00	X	83/ 90	92.2	6.9E-02	6.9E-02	YES
Plutonium-239/240 (PCI/G)	PU-239/240	64	3.9E-03	1.0E+00	D	64/ 230	27.8	4.4E-02	4.4E-02	YES
Plutonium-242 (PCI/G)	13982-10-0	0			O	0/ 5	0.0			NO
Potassium-40 (PCI/G)	13966-00-2	96	7.5E+00	3.6E+01	X	96/ 96	100.0	1.9E+01	1.9E+01	YES
Protactinium-231 (PCI/G)	14331-85-2	0			O	0/ 36	0.0			NO
Radium-224 (PCI/G)	13233-32-4	186	7.3E-02	6.3E+00	X	186/ 186	100.0	1.3E+00	1.3E+00	YES
Radium-226 (PCI/G)	13982-63-3	411	1.8E-01	3.7E+00	X	411/ 466	88.2	1.3E+00	1.3E+00	YES
Radium-228 (PCI/G)	15262-20-1	74	5.5E-01	2.0E+00	N	74/ 75	98.7	1.3E+00	1.3E+00	YES
Strontium-90 (PCI/G)	10098-97-2	0			O	0/ 16	0.0			NO
Thallium-208 (PCI/G)	14913-50-9	10	1.6E-01	4.0E-01	N	10/ 10	100.0	3.8E-01	4.0E-01	YES
Thorium-227 (PCI/G)	15623-47-9	17	6.0E-02	4.4E-01	L	17/ 33	51.5	1.4E-01	1.4E-01	YES
Thorium-228 (PCI/G)	14274-82-9	319	3.7E-02	4.5E+00	X	319/ 356	89.6	1.7E+00	1.7E+00	YES
Thorium-229 (PCI/G)	15594-54-4	0			O	0/ 36	0.0			NO
Thorium-230 (PCI/G)	14269-63-7	317	1.0E-01	7.5E+00	X	317/ 499	63.5	2.7E+00	2.7E+00	YES
Thorium-232 (PCI/G)	7440-29-1	675	4.5E-02	8.0E+01	D	675/1518	44.5	8.7E-01	8.7E-01	YES

Analytes Detected in Surface Soil for the Site Employee Scenario

Analyte (units)	CAS Number	Number of Detections	Minimum Detect	Maximum Detect	Dist.	Results >Detection Limit	% Results >Detection Limit	95% UCL of Mean	Exposure Concentration	Detection in Greater than 5%
Tritium (PCI/G)	10028-17-8	1	1.4E+00	1.4E+00	D	1/ 16	6.3	2.2E+00	1.4E+00	YES
Uranium-234 (PCI/G)	13966-29-5	25	3.9E-01	1.6E+00	N	25/ 29	86.2	9.8E-01	9.8E-01	YES
Uranium-235 (PCI/G)	15117-96-1	13	3.3E-02	2.1E-01	D	13/ 55	23.6	2.5E-01	2.1E-01	YES
Uranium-238 (PCI/G)	7440-61-1	50	4.8E-01	2.0E+00	X	50/ 91	54.9	2.0E+00	2.0E+00	YES
Semi-Volatile Organics										
1,2,4-Trichlorobenzene (UG/KG)	120-82-1	0			O	0/ 119	0.0			NO
1,2-Dichlorobenzene (UG/KG)	95-50-1	0			O	0/ 119	0.0			NO
1,3-Dichlorobenzene (UG/KG)	541-73-1	0			O	0/ 119	0.0			NO
1,4-Dichlorobenzene (UG/KG)	106-46-7	0			O	0/ 119	0.0			NO
1-chloro-4-phenoxybenzene (UG/KG)	7005-72-3	0			O	0/ 119	0.0			NO
2,2'-oxybis(1-chloropropane) (UG/KG)	108-60-1	0			O	0/ 119	0.0			NO
2,4,5-Trichlorophenol (UG/KG)	95-95-4	0			O	0/ 119	0.0			NO
2,4,6-Trichlorophenol (UG/KG)	88-06-2	0			O	0/ 119	0.0			NO
2,4-Dichlorophenol (UG/KG)	120-83-2	0			O	0/ 119	0.0			NO
2,4-Dimethylphenol (UG/KG)	105-67-9	0			O	0/ 119	0.0			NO
2,4-Dinitrophenol (UG/KG)	51-28-5	0			O	0/ 119	0.0			NO
2,4-Dinitrotoluene (UG/KG)	121-14-2	0			O	0/ 75	0.0			NO
2,6-Dinitrotoluene (UG/KG)	606-20-2	0			O	0/ 113	0.0			NO
2-Benzyl-4-Chlorophenol (UG/KG)	120-32-1	0			O	0/ 27	0.0			NO
2-Chloronaphthalene (UG/KG)	91-58-7	0			O	0/ 134	0.0			NO
2-Chlorophenol (UG/KG)	95-57-8	0			O	0/ 119	0.0			NO
2-Methylnaphthalene (UG/KG)	91-57-6	3	5.4E+01	9.9E+01	D	3/ 134	2.2	3.0E+02	9.9E+01	NO
2-Methylphenol (UG/KG)	95-48-7	0			O	0/ 119	0.0			NO
2-Nitroaniline (UG/KG)	88-74-4	0			O	0/ 119	0.0			NO
2-Nitrophenol (UG/KG)	88-75-5	0			O	0/ 119	0.0			NO
3,3'-Dichlorobenzidine (UG/KG)	91-94-1	0			O	0/ 119	0.0			NO
3-Nitroaniline (UG/KG)	99-09-2	0			O	0/ 117	0.0			NO
4,6-Dinitro-o-Cresol (UG/KG)	534-52-1	0			O	0/ 119	0.0			NO
4-Bromophenyl-phenyl Ether (UG/KG)	101-55-3	0			O	0/ 119	0.0			NO
4-Chloro-3-methylphenol (UG/KG)	59-50-7	0			O	0/ 119	0.0			NO
4-Chloroaniline (UG/KG)	106-47-8	0			O	0/ 119	0.0			NO
4-Methylphenol (UG/KG)	106-44-5	1	4.1E+02	4.1E+02	D	1/ 119	0.8	2.9E+02	2.9E+02	NO
4-Nitroaniline (UG/KG)	100-01-6	0			O	0/ 119	0.0			NO
4-Nitrophenol (UG/KG)	100-02-7	1	1.8E+02	1.8E+02	D	1/ 119	0.8	1.3E+03	1.8E+02	NO
Acenaphthene (UG/KG)	83-32-9	5	6.5E+0	4.3E+02	D	5/ 134	3.7	3.0E+02	3.0E+02	NO
Acenaphthylene (UG/KG)	208-96-8	0			O	0/ 134	0.0			NO
Anthracene (UG/KG)	120-12-7	11	2.2E+01	2.8E+03	D	11/ 134	8.2	3.4E+02	3.4E+02	YES

Analytes Detected in Surface Soil for the Site Employee Scenario

Analyte (units)	CAS Number	Number of Detections	Minimum Detect	Maximum Detect	Dist.	Results >Detection Limit	% Results >Detection Limit	95% UCL of Mean	Exposure Concentration	Detection in Greater than 5%
Benzidine (UG/KG)	92-87-5	0			O	0/ 21	0.0			NO
Benzo(a)anthracene (UG/KG)	56-55-3	24	2.8E+01	4.2E+03	D	24/ 134	17.9	3.5E+02	3.5E+02	YES
Benzo(a)pyrene (UG/KG)	50-32-8	22	2.4E+01	3.6E+03	D	22/ 134	16.4	3.5E+02	3.5E+02	YES
Benzo(b)fluoranthene (UG/KG)	205-99-2	28	2.5E+01	2.8E+03	D	28/ 134	20.9	3.5E+02	3.5E+02	YES
Benzo(g,h,i)perylene (UG/KG)	191-24-2	12	2.7E+01	2.1E+03	D	12/ 134	9.0	3.3E+02	3.3E+02	YES
Benzo(k)fluoranthene (UG/KG)	207-08-9	24	2.5E+01	3.4E+03	D	24/ 134	17.9	3.4E+02	3.4E+02	YES
Benzoic Acid (UG/KG)	65-85-0	5	7.8E+01	9.5E+01	D	5/ 118	4.2	1.6E+03	9.5E+01	NO
Benzyl Alcohol (UG/KG)	100-51-6	0			O	0/ 118	0.0			NO
Bis(2-chloroethoxy)methane (UG/KG)	111-91-1	0			O	0/ 119	0.0			NO
Bis(2-chloroethyl)ether (UG/KG)	111-44-4	0			O	0/ 119	0.0			NO
Bis(2-ethylhexyl)phthalate (UG/KG)	117-81-7	44	2.0E+01	6.5E+03	D	44/ 119	37.0	3.8E+02	3.8E+02	YES
Butyl Benzyl Phthalate (UG/KG)	85-68-7	3	4.8E+01	6.4E+01	D	3/ 119	2.5	2.9E+02	6.4E+01	NO
Carbazole (UG/KG)	86-74-8	2	1.5E+02	1.7E+02	D	2/ 67	3.0	2.0E+02	1.7E+02	NO
Chrysene (UG/KG)	218-01-9	23	2.0E+01	1.7E+03	D	23/ 119	19.3	3.3E+02	3.3E+02	YES
Di-n-butyl Phthalate (UG/KG)	84-74-2	48	2.1E+01	2.0E+03	D	48/ 172	27.9	3.5E+02	3.5E+02	YES
Di-n-octyl Phthalate (UG/KG)	117-84-0	1	4.0E+02	4.0E+02	D	1/ 119	0.8	2.9E+02	2.9E+02	NO
Dibenz(a,h)anthracene (UG/KG)	53-70-3	6	7.1E+01	8.0E+02	D	6/ 134	4.5	3.0E+02	3.0E+02	NO
Dibenzofuran (UG/KG)	132-64-9	6	3.2E+01	5.8E+02	D	6/ 119	5.0	2.8E+02	2.8E+02	YES
Diethyl Phthalate (UG/KG)	84-66-2	6	3.9E+01	1.1E+02	D	6/ 119	5.0	2.9E+02	1.1E+02	YES
Dimethyl Phthalate (UG/KG)	131-11-3	0			O	0/ 119	0.0			NO
Diphenylamine (UG/KG)	122-39-4	0			O	0/ 53	0.0			NO
Fluoranthene (UG/KG)	206-44-0	40	2.3E+01	1.1E+04	D	40/ 134	29.9	4.3E+02	4.3E+02	YES
Fluorene (UG/KG)	86-73-7	7	3.8E+01	1.1E+03	D	7/ 134	5.2	3.0E+02	3.0E+02	YES
Hexachlorobenzene (UG/KG)	118-74-1	0			O	0/ 119	0.0			NO
Hexachlorobutadiene (UG/KG)	87-68-3	0			O	0/ 119	0.0			NO
Hexachlorocyclopentadiene (UG/KG)	77-47-4	0			O	0/ 119	0.0			NO
Hexachloroethane (UG/KG)	67-72-1	0			O	0/ 119	0.0			NO
Indeno(1,2,3-cd)pyrene (UG/KG)	193-39-5	14	2.5E+01	1.9E+03	D	14/ 134	10.4	3.3E+02	3.3E+02	YES
Isophorone (UG/KG)	78-59-1	0			O	0/ 119	0.0			NO
N-Nitroso-di-n-propylamine (UG/KG)	621-64-7	0			O	0/ 119	0.0			NO
N-Nitrosodiphenylamine (UG/KG)	86-30-6	5	7.8E+01	2.1E+02	D	5/ 119	4.2	2.8E+02	2.1E+02	NO
Naphthalene (UG/KG)	91-20-3	4	2.6E+01	4.1E+02	D	4/ 131	3.1	3.0E+02	3.0E+02	NO
Nitrobenzene (UG/KG)	98-95-3	0			O	0/ 113	0.0			NO
Pentachlorophenol (UG/KG)	87-86-5	0			O	0/ 119	0.0			NO
Phenanthrene (UG/KG)	85-01-8	25	2.7E+01	1.1E+04	D	25/ 134	18.7	4.0E+02	4.0E+02	YES
Phenol (UG/KG)	108-95-2	1	3.2E+02	3.2E+02	D	1/ 119	0.8	2.9E+02	2.9E+02	NO
Pyrene (UG/KG)	129-00-0	37	2.8E+01	9.7E+03	D	37/ 134	27.6	4.2E+02	4.2E+02	YES

Analytes Detected in Surface Soil for the Site Employee Scenario

Analyte (units)	CAS Number	Number of Detections	Minimum Detect	Maximum Detect	Dist.	Results >Detection Limit	% Results >Detection Limit	95% UCL of Mean	Exposure Concentration	Detection in Greater than 5%
Volatile Organics										
1,1,1,2-Tetrachloroethane (UG/KG)	630-20-6	0			O	0/ 23	0.0			NO
1,1,1-Trichloroethane (UG/KG)	71-55-6	4	1.0E+00	8.0E+00	D	4/ 109	3.7	3.1E+00	3.1E+00	NO
1,1,2,2-Tetrachloroethane (UG/KG)	79-34-5	0			O	0/ 109	0.0			NO
1,1,2-Trichloroethane (UG/KG)	79-00-5	0			O	0/ 109	0.0			NO
1,1-Dichloroethane (UG/KG)	75-34-3	1	3.0E+00	3.0E+00	D	1/ 109	0.9	3.1E+00	3.0E+00	NO
1,1-Dichloroethene (UG/KG)	75-35-4	0			O	0/ 109	0.0			NO
1,1-Dichloropropene (UG/KG)	563-58-6	0			O	0/ 23	0.0			NO
1,2,3-Trichlorobenzene (UG/KG)	87-61-6	0			O	0/ 23	0.0			NO
1,2,3-Trichloropropane (UG/KG)	96-18-4	0			O	0/ 23	0.0			NO
1,2,4-Trichlorobenzene (UG/KG)	120-82-1	0			O	0/ 3	0.0			NO
1,2,4-Trimethylbenzene (UG/KG)	95-63-6	0			O	0/ 23	0.0			NO
1,2-Dibromo-3-Chloropropane (UG/KG)	96-12-8	0			O	0/ 23	0.0			NO
1,2-Dichlorobenzene (UG/KG)	95-50-1	0			O	0/ 3	0.0			NO
1,2-Dichloroethane (UG/KG)	107-06-2	0			O	0/ 109	0.0			NO
1,2-Dichloroethene (UG/KG)	540-59-0	2	2.0E+00	6.0E+00	D	2/ 86	2.3	3.1E+00	3.1E+00	NO
1,2-Dichloropropane (UG/KG)	78-87-5	0			O	0/ 109	0.0			NO
1,2-Diethylbenzene (UG/KG)	135-01-3	0			O	0/ 28	0.0			NO
1,2-cis-Dichloroethene (UG/KG)	156-59-2	0			O	0/ 34	0.0			NO
1,2-trans-Dichloroethene (UG/KG)	156-60-5	0			O	0/ 34	0.0			NO
1,3,5-Trimethylbenzene (UG/KG)	108-67-8	0			O	0/ 23	0.0			NO
1,3-Dichlorobenzene (UG/KG)	541-73-1	0			O	0/ 3	0.0			NO
1,3-Dichloropropane (UG/KG)	142-28-9	0			O	0/ 23	0.0			NO
1,3-cis-Dichloropropene (UG/KG)	10061-01-5	0			O	0/ 109	0.0			NO
1,3-trans-Dichloropropene (UG/KG)	10061-02-6	0			O	0/ 109	0.0			NO
1,4-Dichlorobenzene (UG/KG)	106-46-7	0			O	0/ 3	0.0			NO
2,2-Dichloropropane (UG/KG)	594-20-7	0			O	0/ 23	0.0			NO
2-Butanone (UG/KG)	78-93-3	7	1.0E+00	1.7E+01	D	7/ 86	8.1	6.2E+00	6.2E+00	YES
2-Chlorotoluene (UG/KG)	95-49-8	0			O	0/ 23	0.0			NO
2-Hexanone (UG/KG)	591-78-6	0			O	0/ 86	0.0			NO
4-Chlorotoluene (UG/KG)	106-43-4	0			O	0/ 23	0.0			NO
4-Methyl-2-pentanone (UG/KG)	108-10-1	5	1.0E+00	6.0E+00	D	5/ 86	5.8	6.1E+00	6.0E+00	YES
Acetone (UG/KG)	67-64-1	14	4.0E+00	1.5E+02	D	14/ 86	16.3	9.0E+00	9.0E+00	YES
Acetonitrile (UG/KG)	75-05-8	0			O	0/ 28	0.0			NO
Acrylonitrile (UG/KG)	107-13-1	0			O	0/ 28	0.0			NO
Benzene (UG/KG)	71-43-2	0			O	0/ 109	0.0			NO
Bromochloromethane (UG/KG)	74-97-5	0			O	0/ 23	0.0			NO

Analytes Detected in Surface Soil for the Site Employee Scenario

Analyte (units)	CAS Number	Number of Detections	Minimum Detect	Maximum Detect	Dist.	Results >Detection Limit	% Results >Detection Limit	95% UCL of Mean	Exposure Concentration	Detection in Greater than 5%
Bromodichloromethane (UG/KG)	75-27-4	0			O	0/ 109	0.0			NO
Bromoform (UG/KG)	75-25-2	0			O	0/ 109	0.0			NO
Bromomethane (UG/KG)	74-83-9	0			O	0/ 109	0.0			NO
Carbon Disulfide (UG/KG)	75-15-0	2	1.0E+00	2.0E+00	D	2/ 86	2.3	3.1E+00	2.0E+00	NO
Carbon Tetrachloride (UG/KG)	56-23-5	0			O	0/ 109	0.0			NO
Chlorobenzene (UG/KG)	108-90-7	0			O	0/ 109	0.0			NO
Chloroethane (UG/KG)	75-00-3	0			O	0/ 109	0.0			NO
Chloroform (Trichloromethane) (UG/KG)	67-66-3	0			O	0/ 109	0.0			NO
Chloromethane (UG/KG)	74-87-3	1	4.0E+00	4.0E+00	D	1/ 109	0.9	5.6E+00	4.0E+00	NO
Dibromochloromethane (UG/KG)	124-48-1	0			O	0/ 109	0.0			NO
Dibromomethane (UG/KG)	74-95-3	0			O	0/ 23	0.0			NO
Dichlorodifluoromethane (UG/KG)	75-71-8	0			O	0/ 23	0.0			NO
Dichloromethane (Methylene Chloride) (UG/KG)	75-09-2	49	3.0E+00	6.8E+01	D	49/ 109	45.0	1.0E+01	1.0E+01	YES
Ethylbenzene (UG/KG)	100-41-4	3	1.0E+00	3.0E+00	D	3/ 109	2.8	3.1E+00	3.0E+00	NO
Ethylene Dibromide (1,2-Dibromoethane) (UG/KG	106-93-4	0			O	0/ 23	0.0			NO
FREON-113 (UG/KG)	76-13-1	0			O	0/ 28	0.0			NO
Hexachlorobutadiene (UG/KG)	87-68-3	0			O	0/ 3	0.0			NO
Hexane (UG/KG)	110-54-3	0			O	0/ 28	0.0			NO
Iodomethane (UG/KG)	74-88-4	0			O	0/ 28	0.0			NO
Isopropyl Benzene (UG/KG)	98-82-8	0			O	0/ 23	0.0			NO
Monobromobenzene (Phenyl bromide) (UG/KG)	108-86-1	0			O	0/ 23	0.0			NO
Naphthalene (UG/KG)	91-20-3	3	1.0E+00	6.0E+00	D	3/ 6	50.0	1.0E+01	6.0E+00	YES
Styrene (UG/KG)	100-42-5	0			O	0/ 109	0.0			NO
Tetrachloroethene (UG/KG)	127-18-4	7	2.0E+00	2.8E+01	D	7/ 109	6.4	3.7E+00	3.7E+00	YES
Toluene (UG/KG)	108-88-3	18	1.0E+00	5.1E+01	D	18/ 109	16.5	3.4E+00	3.4E+00	YES
Trichloroethylene (TCE) (UG/KG)	79-01-6	2	1.8E+01	2.0E+01	D	2/ 109	1.8	3.4E+00	3.4E+00	NO
Trichlorofluoromethane (UG/KG)	75-69-4	0			O	0/ 23	0.0			NO
Vinyl Acetate (UG/KG)	108-05-4	0			O	0/ 86	0.0			NO
Vinyl Chloride (UG/KG)	75-01-4	0			O	0/ 109	0.0			NO
Xylenes, Total (UG/KG)	1330-20-7	7	1.0E+00	3.9E+01	D	7/ 86	8.1	3.5E+00	3.5E+00	YES
m-Xylene (UG/KG)	108-38-3	0			O	0/ 11	0.0			NO
mp-Xylene (UG/KG)	mp-Xylene	23	5.0E+00	6.0E+00	X	23/ 23	100.0	6.0E+00	6.0E+00	YES
n-Butylbenzene (UG/KG)	104-51-8	0			O	0/ 23	0.0			NO
n-propylbenzene (UG/KG)	103-65-1	0			O	0/ 23	0.0			NO

Analytes Detected in Surface Soil for the Site Employee Scenario

Analyte (units)	CAS Number	Number of Detections	Minimum Detect	Maximum Detect	Dist.	Results >Detection Limit	% Results >Detection Limit	95% UCL of Mean	Exposure Concentration	Detection in Greater than 5%
o-Xylene (UG/KG)	95-47-6	0			O	0/ 34	0.0			NO
p-Isopropyltoluene (UG/KG)	99-87-6	0			O	0/ 23	0.0			NO
sec-Butylbenzene (UG/KG)	135-98-8	0			O	0/ 23	0.0			NO
tert-Butylbenzene (UG/KG)	98-06-6	0			O	0/ 23	0.0			NO

Analytes Detected in Groundwater in the Mound Production Wells

Analyte (units)	CAS Number	Minimum Detect	Maximum Detect	Dist.	Results >Detection Limit	% Results >Detection Limit	95% UCL of Mean	Exposure Concentration	Detection in Greater than 5%
Common Anions									
Nitrate (UG/L)	7697-37-2	738.00	2550.00	D	2/ 2	100.0		2550.00	YES
Nitrate/Nitrite (UG/L)	1497-55-8	680.00	4900.00	L	11/ 11	100.0	3510.00	4900.00	YES
Nitrite (UG/L)	14797-65-0			O	0/ 2	0.0			NO
Explosives									
1,3,5-Trinitrobenzene (UG/L)	99-35-4			O	0/ 2	0.0			NO
1,3-Dinitrobenzene (UG/L)	99-65-0			O	0/ 4	0.0			NO
2,4,6-Trinitrotoluene (UG/L)	118-96-7			O	0/ 2	0.0			NO
2,4-Dinitrotoluene (UG/L)	121-14-2			O	0/ 2	0.0			NO
2,6-Dinitrotoluene (UG/L)	606-20-2			O	0/ 2	0.0			NO
2-Amino-4,6-Dinitrotoluene (UG/L)	35572-78-2			O	0/ 4	0.0			NO
HMX (UG/L)	2691-41-0			O	0/ 4	0.0			NO
Nitrobenzene (UG/L)	98-95-3			O	0/ 4	0.0			NO
PETN (UG/L)	78-11-5			O	0/ 3	0.0			NO
RDX (UG/L)	121-82-4			O	0/ 4	0.0			NO
Tetryl (UG/L)	479-45-8			O	0/ 4	0.0			NO
Metals									
Aluminum (UG/L)	7429-90-5	68.80	148.00	D	6/ 22	27.3	163.00	148.00	YES
Antimony (UG/L)	7440-36-0	2.80	14.40	D	3/ 20	15.0	43.60	14.40	YES
Arsenic (UG/L)	7440-38-2			O	0/ 25	0.0			NO
Barium (UG/L)	7440-39-3	75.00	115.00	L	20/ 22	90.9	93.60	93.60	YES
Beryllium (UG/L)	7440-41-7			O	0/ 25	0.0			NO
Bismuth (UG/L)	7440-69-9			O	0/ 4	0.0			NO
Cadmium (UG/L)	7440-43-9	4.60	7.70	D	5/ 25	20.0	6.56	6.56	YES
Calcium (UG/L)	7440-70-2	94300.00	126000.00	L	24/ 24	100.0	110000.00	110000.00	YES
Chromium (UG/L)	7440-47-3	18.30	23.80	D	5/ 25	20.0	20.20	20.20	YES
Cobalt (UG/L)	7440-48-4			O	0/ 22	0.0			NO
Copper (UG/L)	7440-50-8	1.60	593.00	X	15/ 25	60.0	41.60	41.60	YES
Cyanide (UG/L)	57-12-5			O	0/ 4	0.0			NO
Iron (UG/L)	7439-89-6	19.00	1890.00	L	13/ 24	54.2	437.00	437.00	YES
Lead (UG/L)	7439-92-1	3.40	40.00	D	5/ 25	20.0	13.00	13.00	YES
Lithium (UG/L)	7439-93-2	2.90	2.90	D	2/ 4	50.0	604.00	2.90	YES
Magnesium (UG/L)	7439-95-4	29100.00	39600.00	L	24/ 24	100.0	34500.00	34500.00	YES
Manganese (UG/L)	7439-96-5	2.80	224.00	X	22/ 24	91.7	26.90	26.90	YES
Mercury (UG/L)	7439-97-6			O	0/ 22	0.0			NO
Molybdenum (UG/L)	7439-98-7	2.00	2.70	D	2/ 4	50.0	3980000.00	2.70	YES
Nickel (UG/L)	7440-02-0	2.10	27.10	D	5/ 25	20.0	16.30	16.30	YES

Analytes Detected in Groundwater in the Mound Production Wells

Analyte (units)	CAS Number	Minimum Detect	Maximum Detect	Dist.	Results >Detection Limit	% Results >Detection Limit	95% UCL of Mean	Exposure Concentration	Detection in Greater than 5%
Potassium (UG/L)	7440-09-7	2390.00	3650.00	X	20/ 26	76.9	4540.00	3650.00	YES
Selenium (UG/L)	7782-49-2	1.50	1.50	D	1/ 25	4.0	1.63	1.50	NO
Silver (UG/L)	7440-22-4	16.90	24.20	D	5/ 22	22.7	18.00	18.00	YES
Sodium (UG/L)	7440-23-5	46600.00	84200.00	L	24/ 24	100.0	66400.00	66400.00	YES
Thallium (UG/L)	7440-28-0	2.40	2.40	D	1/ 22	4.5	2.00	2.00	NO
Tin (UG/L)	7440-31-5	8.70	8.70	D	1/ 4	25.0	134.00	8.70	YES
Vanadium (UG/L)	7440-62-2	7.80	14.60	D	7/ 22	31.8	21.90	14.60	YES
Zinc (UG/L)	7440-66-6	4.50	57.70	D	9/ 25	36.0	73.70	57.70	YES
Pesticides and/or PCBs									
4,4'-DDD (UG/L)	72-54-8			O	0/ 18	0.0			NO
4,4'-DDE (UG/L)	72-55-9			O	0/ 18	0.0			NO
4,4'-DDT (UG/L)	50-29-3			O	0/ 18	0.0			NO
Aldrin (UG/L)	309-00-2			O	0/ 18	0.0			NO
Alpha Chlordane (UG/L)	5103-71-9			O	0/ 18	0.0			NO
Alpha-BHC (UG/L)	319-84-6			O	0/ 18	0.0			NO
Aroclor-1016 (UG/L)	12674-11-2			O	0/ 18	0.0			NO
Aroclor-1221 (UG/L)	11104-28-2			O	0/ 18	0.0			NO
Aroclor-1232 (UG/L)	11141-16-5			O	0/ 18	0.0			NO
Aroclor-1242 (UG/L)	53469-21-9			O	0/ 18	0.0			NO
Aroclor-1248 (UG/L)	12672-29-6			O	0/ 18	0.0			NO
Aroclor-1254 (UG/L)	11097-69-1			O	0/ 18	0.0			NO
Aroclor-1260 (UG/L)	11096-82-5			O	0/ 18	0.0			NO
Beta-BHC (UG/L)	319-85-7			O	0/ 18	0.0			NO
Delta-BHC (UG/L)	319-86-8			O	0/ 18	0.0			NO
Dieldrin (UG/L)	60-57-1			O	0/ 18	0.0			NO
Endosulfan I (UG/L)	959-98-8			O	0/ 18	0.0			NO
Endosulfan II (UG/L)	33213-65-9			O	0/ 18	0.0			NO
Endosulfan Sulfate (UG/L)	1031-07-8			O	0/ 18	0.0			NO
Endrin (UG/L)	72-20-8			O	0/ 18	0.0			NO
Endrin Aldehyde (UG/L)	7421-93-4			O	0/ 10	0.0			NO
Endrin Ketone (UG/L)	53494-70-5			O	0/ 18	0.0			NO
Gamma Chlordane (UG/L)	5103-74-2			O	0/ 18	0.0			NO
Gamma-BHC (Lindane) (UG/L)	58-89-9			O	0/ 18	0.0			NO
Heptachlor (UG/L)	76-44-8			O	0/ 18	0.0			NO
Heptachlor Epoxide (UG/L)	1024-57-3			O	0/ 18	0.0			NO
Methoxychlor (UG/L)	72-43-5			O	0/ 18	0.0			NO
Toxaphene (UG/L)	8001-35-2			O	0/ 18	0.0			NO

Analytes Detected in Groundwater in the Mound Production Wells

Analyte (units)	CAS Number	Minimum Detect	Maximum Detect	Dist.	Results >Detection Limit	% Results >Detection Limit	95% UCL of Mean	Exposure Concentration	Detection In Greater than 5%
Radiological									
Americium-241 (PCI/L)	14596-10-2			O	0/ 8	0.0			NO
Antimony-124 (PCI/L)	14683-10-4			O	0/ 2	0.0			NO
Antimony-125 (PCI/L)	14234-35-6			O	0/ 2	0.0			NO
Barium-133 (PCI/L)	13981-41-4			O	0/ 2	0.0			NO
Barium-140 (PCI/L)	14798-08-4			O	0/ 2	0.0			NO
Beryllium-7 (PCI/L)	13966-02-4			O	0/ 2	0.0			NO
Bismuth-207 (PCI/L)	13982-38-2			O	0/ 6	0.0			NO
Bismuth-210 (PCI/L)	14331-79-4	0.11	0.39	D	2/ 18	11.1	21.60	0.39	YES
Bismuth-211 (PCI/L)	15229-37-5			O	0/ 2	0.0			NO
Bismuth-212 (PCI/L)	14913-49-6			O	0/ 2	0.0			NO
Bismuth-214 (PCI/L)	14733-03-0			O	0/ 2	0.0			NO
Cerium-139 (PCI/L)	CE-139			O	0/ 2	0.0			NO
Cerium-141 (PCI/L)	13967-74-3			O	0/ 2	0.0			NO
Cerium-144 (PCI/L)	14762-78-8			O	0/ 2	0.0			NO
Cesium-134 (PCI/L)	13967-70-9			O	0/ 4	0.0			NO
Cesium-137 (PCI/L)	10045-97-3			O	0/ 14	0.0			NO
Cobalt-57 (PCI/L)	13981-50-5			O	0/ 2	0.0			NO
Cobalt-58 (PCI/L)	13981-38-9			O	0/ 2	0.0			NO
Cobalt-60 (PCI/L)	10198-40-0			O	0/ 11	0.0			NO
Europium-152 (PCI/L)	14683-23-9			O	0/ 4	0.0			NO
Europium-154 (PCI/L)	15585-10-1			O	0/ 4	0.0			NO
Europium-155 (PCI/L)	14391-16-3			O	0/ 4	0.0			NO
Iodine-131 (PCI/L)	24267-56-9			O	0/ 2	0.0			NO
Iridium-192 (PCI/L)	12154-84-6			O	0/ 2	0.0			NO
Iron-59 (PCI/L)	14596-12-4			O	0/ 2	0.0			NO
Lanthanum-140 (PCI/L)	13981-28-7			O	0/ 2	0.0			NO
Lead-212 (PCI/L)	15092-94-1			O	0/ 2	0.0			NO
Lead-214 (PCI/L)	15067-28-4			O	0/ 2	0.0			NO
Manganese-54 (PCI/L)	13966-31-9			O	0/ 2	0.0			NO
Mercury-203 (PCI/L)	13982-78-0			O	0/ 2	0.0			NO
Neptunium-237 (PCI/L)	13994-20-2			O	0/ 2	0.0			NO
Niobium-95 (PCI/L)	13967-76-5			O	0/ 2	0.0			NO
Plutonium-238 (PCI/L)	13981-16-3	0.01	0.25	D	8/ 57	14.0	0.18	0.18	YES
Plutonium-238/239 (PCI/L)	PU-238/239	0.01	0.01	D	1/ 6	16.7	0.01	0.01	YES
Plutonium-239 (PCI/L)	15117-48-3			O	0/ 38	0.0			NO
Plutonium-239/240 (PCI/L)	PU-239/240	0.00	2.00	D	5/ 19	26.3	9.64	2.00	YES

Analytes Detected in Groundwater in the Mound Production Wells

Analyte (units)	CAS Number	Minimum Detect	Maximum Detect	Dist.	Results >Detection Limit	% Results >Detection Limit	95% UCL of Mean	Exposure Concentration	Detection in Greater than 5%
Potassium-40 (PCI/L)	13966-00-2			O	0/ 10	0.0			NO
Protactinium-233 (PCI/L)	13981-14-1			O	0/ 2	0.0			NO
Protactinium-234 (PCI/L)	15100-28-4			O	0/ 2	0.0			NO
Radium-223 (PCI/L)	15623-45-7			O	0/ 2	0.0			NO
Radium-225 (PCI/L)	13981-53-8			O	0/ 2	0.0			NO
Radium-226 (PCI/L)	13982-63-3	0.10	0.52	D	6/ 18	33.3	0.54	0.52	YES
Ruthenium-103 (PCI/L)	13968-53-1			O	0/ 2	0.0			NO
Ruthenium-106 (PCI/L)	13967-48-1			O	0/ 2	0.0			NO
Scandium-46 (PCI/L)	13967-63-0			O	0/ 2	0.0			NO
Sodium-22 (PCI/L)	13966-32-0			O	0/ 2	0.0			NO
Strontium-85 (PCI/L)	13967-73-2	25.00	25.00	D	1/ 2	50.0		25.00	YES
Strontium-89 (PCI/L)	14158-27-1			O	0/ 2	0.0			NO
Strontium-90 (PCI/L)	10098-97-2	0.50	0.50	D	3/ 18	16.7	2.13	0.50	YES
Thallium-208 (PCI/L)	14913-50-9			O	0/ 2	0.0			NO
Thorium-227 (PCI/L)	15623-47-9	0.01	0.23	X	16/ 22	72.7	84.00	0.23	YES
Thorium-228 (PCI/L)	14274-82-9	0.01	2.17	D	17/ 46	37.0	25.60	2.17	YES
Thorium-230 (PCI/L)	14269-63-7	0.01	1.99	D	19/ 43	44.2	0.48	0.48	YES
Thorium-232 (PCI/L)	7440-29-1	0.00	0.10	D	8/ 44	18.2	0.34	0.10	YES
Thorium-234 (PCI/L)	15065-10-8			O	0/ 2	0.0			NO
Tin-126 (PCI/L)	15832-50-5			O	0/ 2	0.0			NO
Tritium (PCI/L)	10028-17-8	30.00	7200.00	X	123/ 139	88.5	799.00	799.00	YES
Uranium-233/234 (PCI/L)	U-233/234	0.17	0.36	L	36/ 36	100.0	0.25	0.25	YES
Uranium-234 (PCI/L)	13966-29-5	0.20	8.14	X	19/ 24	79.2	2.02	2.02	YES
Uranium-235 (PCI/L)	15117-96-1	0.01	2.30	X	30/ 53	56.6	0.47	0.47	YES
Uranium-235/236 (PCI/L)	U-235/236			O	0/ 7	0.0			NO
Uranium-238 (PCI/L)	7440-61-1	0.13	8.25	X	52/ 59	88.1	0.41	0.41	YES
Yttrium-88 (PCI/L)	7440-65-5			O	0/ 2	0.0			NO
Zirconium-95 (PCI/L)	13967-71-0			O	0/ 2	0.0			NO
Semi-Volatile Organics									
1,2,4-Trichlorobenzene (UG/L)	120-82-1			O	0/ 18	0.0			NO
1,2-Dichlorobenzene (UG/L)	95-50-1			O	0/ 32	0.0			NO
1,3-Dichlorobenzene (UG/L)	541-73-1			O	0/ 30	0.0			NO
1,4-Dichlorobenzene (UG/L)	106-46-7			O	0/ 32	0.0			NO
1-chloro-4-phenoxybenzene (UG/L)	7005-72-3			O	0/ 18	0.0			NO
2,2'-oxybis(1-chloropropane) (UG/L)	108-60-1			O	0/ 29	0.0			NO
2,4,5-Trichlorophenol (UG/L)	95-95-4			O	0/ 18	0.0			NO
2,4,6-Trichlorophenol (UG/L)	88-06-2			O	0/ 18	0.0			NO

Analytes Detected in Groundwater in the Mound Production Wells

Analyte (units)	CAS Number	Minimum Detect	Maximum Detect	Dist.	Results >Detection Limit	% Results >Detection Limit	95% UCL of Mean	Exposure Concentration	Detection in Greater than 5%
2,4-Dichlorophenol (UG/L)	120-83-2			O	0/ 18	0.0			NO
2,4-Dimethylphenol (UG/L)	105-67-9			O	0/ 18	0.0			NO
2,4-Dinitrophenol (UG/L)	51-28-5			O	0/ 18	0.0			NO
2,4-Dinitrotoluene (UG/L)	121-14-2			O	0/ 16	0.0			NO
2,6-Dinitrotoluene (UG/L)	606-20-2			O	0/ 16	0.0			NO
2-Benzyl-4-Chlorophenol (UG/L)	120-32-1			O	0/ 4	0.0			NO
2-Chloronaphthalene (UG/L)	91-58-7			O	0/ 18	0.0			NO
2-Chlorophenol (UG/L)	95-57-8			O	0/ 18	0.0			NO
2-Methylnaphthalene (UG/L)	91-57-6			O	0/ 18	0.0			NO
2-Methylphenol (UG/L)	95-48-7			O	0/ 18	0.0			NO
2-Nitroaniline (UG/L)	88-74-4			O	0/ 18	0.0			NO
2-Nitrophenol (UG/L)	88-75-5			O	0/ 18	0.0			NO
3,3'-Dichlorobenzidine (UG/L)	91-94-1			O	0/ 18	0.0			NO
3-Nitroaniline (UG/L)	99-09-2			O	0/ 18	0.0			NO
4,6-Dinitro-o-Cresol (UG/L)	534-52-1			O	0/ 18	0.0			NO
4-Bromophenyl-phenyl Ether (UG/L)	101-55-3			O	0/ 18	0.0			NO
4-Chloro-3-methylphenol (UG/L)	59-50-7			O	0/ 18	0.0			NO
4-Chloroaniline (UG/L)	106-47-8			O	0/ 18	0.0			NO
4-Methylphenol (UG/L)	106-44-5			O	0/ 18	0.0			NO
4-Nitroaniline (UG/L)	100-01-6			O	0/ 18	0.0			NO
4-Nitrophenol (UG/L)	100-02-7			O	0/ 18	0.0			NO
Acenaphthene (UG/L)	83-32-9			O	0/ 18	0.0			NO
Acenaphthylene (UG/L)	208-96-8			O	0/ 18	0.0			NO
Anthracene (UG/L)	120-12-7			O	0/ 18	0.0			NO
Benzo(a)anthracene (UG/L)	56-55-3			O	0/ 18	0.0			NO
Benzo(a)pyrene (UG/L)	50-32-8			O	0/ 18	0.0			NO
Benzo(b)fluoranthene (UG/L)	205-99-2			O	0/ 18	0.0			NO
Benzo(g,h,i)perylene (UG/L)	191-24-2			O	0/ 18	0.0			NO
Benzo(k)fluoranthene (UG/L)	207-08-9			O	0/ 18	0.0			NO
Benzoic Acid (UG/L)	65-85-0			O	0/ 13	0.0			NO
Benzyl Alcohol (UG/L)	100-51-6			O	0/ 13	0.0			NO
Bis(2-chloroethoxy)methane (UG/L)	111-91-1			O	0/ 18	0.0			NO
Bis(2-chloroethyl)ether (UG/L)	111-44-4			O	0/ 18	0.0			NO
Bis(2-ethylhexyl)phthalate (UG/L)	117-81-7			O	0/ 21	0.0			NO
Butyl Benzyl Phthalate (UG/L)	85-68-7			O	0/ 18	0.0			NO
Carbazole (UG/L)	86-74-8			O	0/ 9	0.0			NO
Chrysene (UG/L)	218-01-9			O	0/ 18	0.0			NO

Analytes Detected in Groundwater in the Mound Production Wells

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Di-n-butyl Phthalate (UG/L)	84-74-2			O	0/ 21	0.0			NO
Di-n-octyl Phthalate (UG/L)	117-84-0			O	0/ 18	0.0			NO
Dibenz(a,h)anthracene (UG/L)	53-70-3			O	0/ 18	0.0			NO
Dibenzofuran (UG/L)	132-64-9			O	0/ 18	0.0			NO
Diethyl Phthalate (UG/L)	84-66-2			O	0/ 18	0.0			NO
Dimethyl Phthalate (UG/L)	131-11-3			O	0/ 18	0.0			NO
Fluoranthene (UG/L)	206-44-0			O	0/ 18	0.0			NO
Fluorene (UG/L)	86-73-7			O	0/ 18	0.0			NO
Hexachlorobenzene (UG/L)	118-74-1			O	0/ 18	0.0			NO
Hexachlorobutadiene (UG/L)	87-68-3			O	0/ 18	0.0			NO
Hexachlorocyclopentadiene (UG/L)	77-47-4			O	0/ 18	0.0			NO
Hexachloroethane (UG/L)	67-72-1			O	0/ 18	0.0			NO
Indeno(1,2,3-cd)pyrene (UG/L)	193-39-5			O	0/ 18	0.0			NO
Isophorone (UG/L)	78-59-1			O	0/ 18	0.0			NO
N-Nitroso-di-n-propylamine (UG/L)	621-64-7			O	0/ 18	0.0			NO
N-Nitrosodiphenylamine (UG/L)	86-30-6			O	0/ 18	0.0			NO
Naphthalene (UG/L)	91-20-3			O	0/ 18	0.0			NO
Nitrobenzene (UG/L)	98-95-3			O	0/ 14	0.0			NO
Pentachlorophenol (UG/L)	87-86-5			O	0/ 21	0.0			NO
Phenanthrene (UG/L)	85-01-8			O	0/ 18	0.0			NO
Phenol (UG/L)	108-95-2			O	0/ 21	0.0			NO
Pyrene (UG/L)	129-00-0			O	0/ 18	0.0			NO
Volatile Organics									
1,1,1,2-Tetrachloroethane (UG/L)	630-20-6			O	0/ 202	0.0			NO
1,1,1-Trichloroethane (UG/L)	71-55-6	0.30	3.30	D	91/ 215	42.3	0.90	0.90	YES
1,1,2,2-Tetrachloroethane (UG/L)	79-34-5			O	0/ 213	0.0			NO
1,1,2-Trichloroethane (UG/L)	79-00-5			O	0/ 217	0.0			NO
1,1-Dichloroethane (UG/L)	75-34-3	3.50	3.50	D	1/ 213	0.5	0.34	0.34	NO
1,1-Dichloroethene (UG/L)	75-35-4	1.70	1.70	D	1/ 215	0.5	0.39	0.39	NO
1,1-Dichloropropene (UG/L)	563-58-6			O	0/ 167	0.0			NO
1,2,3-Trichlorobenzene (UG/L)	87-61-6			O	0/ 167	0.0			NO
1,2,3-Trichloropropane (UG/L)	96-18-4			O	0/ 192	0.0			NO
1,2,4-Trichlorobenzene (UG/L)	120-82-1			O	0/ 167	0.0			NO
1,2,4-Trimethylbenzene (UG/L)	95-63-6			O	0/ 167	0.0			NO
1,2-Dibromo-3-Chloropropane (UG/L)	96-12-8			O	0/ 2	0.0			NO
1,2-Dichlorobenzene (UG/L)	95-50-1			O	0/ 177	0.0			NO
1,2-Dichloroethane (UG/L)	107-06-2			O	0/ 219	0.0			NO

Analytes Detected in Groundwater in the Mound Production Wells

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1,2-Dichloroethene (UG/L)	540-59-0	1.30	7.20	L	10/ 13	76.9	5.57	7.20	YES
1,2-Dichloropropane (UG/L)	78-87-5			O	0/ 213	0.0			NO
1,2-Diethylbenzene (UG/L)	135-01-3			O	0/ 4	0.0			NO
1,2-cis-Dichloroethene (UG/L)	156-59-2	0.50	4.00	X	102/ 182	56.0	1.08	1.08	YES
1,2-trans-Dichloroethene (UG/L)	156-60-5	1.00	3.00	D	7/ 217	3.2	0.39	0.39	NO
1,3,5-Trimethylbenzene (UG/L)	108-67-8			O	0/ 167	0.0			NO
1,3-Dichlorobenzene (UG/L)	541-73-1			O	0/ 177	0.0			NO
1,3-Dichloropropane (UG/L)	142-28-9			O	0/ 167	0.0			NO
1,3-Dichloropropene (UG/L)	542-75-6			O	0/ 167	0.0			NO
1,3-Diethylbenzene (UG/L)	141-93-5			O	0/ 4	0.0			NO
1,3-cis-Dichloropropene (UG/L)	10061-01-5	0.50	1.20	D	2/ 215	0.9	0.55	0.55	NO
1,3-trans-Dichloropropene (UG/L)	10061-02-6			O	0/ 215	0.0			NO
1,4-Dichlorobenzene (UG/L)	106-46-7			O	0/ 177	0.0			NO
1,4-Diethylbenzene (UG/L)	105-05-5			O	0/ 4	0.0			NO
1-Chlorohexane (UG/L)	544-10-5			O	0/ 33	0.0			NO
2,2-Dichloropropane (UG/L)	594-20-7			O	0/ 167	0.0			NO
2-Butanone (UG/L)	78-93-3	7.00	41.00	D	3/ 13	23.1	16.80	41.00	YES
2-Chloroethylvinylether (UG/L)	110-75-8			O	0/ 40	0.0			NO
2-Chlorotoluene (UG/L)	95-49-8			O	0/ 183	0.0			NO
2-Hexanone (UG/L)	591-78-6			O	0/ 7	0.0			NO
4-Chlorotoluene (UG/L)	106-43-4			O	0/ 173	0.0			NO
4-Methyl-2-pentanone (UG/L)	108-10-1			O	0/ 11	0.0			NO
Acetone (UG/L)	67-64-1	2.00	12.00	D	6/ 11	54.5	11.90	12.00	YES
Acetonitrile (UG/L)	75-05-8			O	0/ 4	0.0			NO
Acrolein (UG/L)	107-02-8			O	0/ 3	0.0			NO
Acrylonitrile (UG/L)	107-13-1			O	0/ 7	0.0			NO
Benzene (UG/L)	71-43-2			O	0/ 215	0.0			NO
Benzyl Chloride (UG/L)	100-44-7			O	0/ 4	0.0			NO
Bromochloromethane (UG/L)	74-97-5			O	0/ 167	0.0			NO
Bromodichloromethane (UG/L)	75-27-4	0.50	3.70	D	3/ 215	1.4	0.38	0.38	NO
Bromoform (UG/L)	75-25-2			O	0/ 214	0.0			NO
Bromomethane (UG/L)	74-83-9			O	0/ 185	0.0			NO
Carbon Disulfide (UG/L)	75-15-0			O	0/ 11	0.0			NO
Carbon Tetrachloride (UG/L)	56-23-5			O	0/ 215	0.0			NO
Chlorobenzene (UG/L)	108-90-7			O	0/ 213	0.0			NO
Chloroethane (UG/L)	75-00-3			O	0/ 185	0.0			NO
Chloroform (Trichloromethane) (UG/L)	67-66-3	0.50	7.00	D	13/ 219	5.9	0.42	0.42	YES

Analytes Detected in Groundwater in the Mound Production Wells

Analyte (units)	CAS Number	Minimum Detect	Maximum Detect	Dist.	Results >Detection Limit	% Results >Detection Limit	95% UCL of Mean	Exposure Concentration	Detection in Greater than 5%
Chloromethane (UG/L)	74-87-3			O	0/ 187	0.0			NO
Chlorotoluene (UG/L)	25168-05-2			O	0/ 19	0.0			NO
Dibromochloromethane (UG/L)	124-48-1			O	0/ 215	0.0			NO
Dibromomethane (UG/L)	74-95-3			O	0/ 204	0.0			NO
Dichlorodifluoromethane (UG/L)	75-71-8			O	0/ 175	0.0			NO
Dichloromethane (Methylene Chloride) (U	75-09-2	3.00	13.00	D	8/ 217	3.7	0.70	0.70	NO
Ethylbenzene (UG/L)	100-41-4	0.50	0.60	D	2/ 219	0.9	0.48	0.48	NO
Ethylene Dibromide (1,2-Dibromoethane)	106-93-4			O	0/ 2	0.0			NO
FREON-113 (UG/L)	76-13-1	2.00	34.00	X	12/ 19	63.2	29.60	34.00	YES
Hexachlorobutadiene (UG/L)	87-68-3			O	0/ 167	0.0			NO
Isopropyl Benzene (UG/L)	98-82-8			O	0/ 167	0.0			NO
Monobromobenzene (Phenyl bromide) (U	108-86-1			O	0/ 202	0.0			NO
Naphthalene (UG/L)	91-20-3			O	0/ 167	0.0			NO
Styrene (UG/L)	100-42-5			O	0/ 174	0.0			NO
Tert-butyl methyl ether (UG/L)	1634-04-4	1.20	2.40	D	4/ 24	16.7	0.61	0.61	YES
Tetrachloroethene (UG/L)	127-18-4	0.29	2.20	X	114/ 218	52.3	0.96	0.96	YES
Toluene (UG/L)	108-88-3	0.60	3.00	D	4/ 219	1.8	0.50	0.50	NO
Trichloroethylene (TCE) (UG/L)	79-01-6	0.50	5.90	X	189/ 219	86.3	2.31	2.31	YES
Trichlorofluoromethane (UG/L)	75-69-4	2.20	2.20	D	1/ 210	0.5	0.43	0.43	NO
Vinyl Acetate (UG/L)	108-05-4			O	0/ 11	0.0			NO
Vinyl Chloride (UG/L)	75-01-4			O	0/ 219	0.0			NO
Xylenes, Total (UG/L)	1330-20-7	0.50	3.60	D	9/ 212	4.2	0.56	0.56	NO
mp-Xylene (UG/L)	mp-Xylene	0.60	2.40	D	8/ 167	4.8	0.31	0.31	NO
n-Butylbenzene (UG/L)	104-51-8			O	0/ 167	0.0			NO
n-propylbenzene (UG/L)	103-65-1			O	0/ 167	0.0			NO
o-Xylene (UG/L)	95-47-6	0.40	1.30	D	5/ 167	3.0	0.27	0.27	NO
p-Isopropyltoluene (UG/L)	99-87-6			O	0/ 167	0.0			NO
sec-Butylbenzene (UG/L)	135-98-8			O	0/ 167	0.0			NO
tert-Butylbenzene (UG/L)	98-06-6			O	0/ 167	0.0			NO

Analytes Detected in Groundwater in the Bedrock Wells

Analyte (units)	CAS Number	Minimum Detect	Maximum Detect	Dist.	Results >Detection Limit	% Results >Detection Limit	95% UCL of Mean	Exposure Concentration	Detection in Greater than 5%
Common Anions									
Nitrate (UG/L)	7697-37-2	1.7E+02	9.4E+03	D	5/ 10	50.0	1.1E+16	9.4E+03	YES
Nitrate/Nitrite (UG/L)	1497-55-8	6.3E+00	2.0E+04	X	76/ 113	67.3	3.1E+04	2.0E+04	YES
Nitrite (UG/L)	14797-65-0	1.0E+01	7.0E+01	D	2/ 21	9.5	1.4E+01	1.4E+01	YES
Explosives									
1,3,5-Trinitrobenzene (UG/L)	99-35-4	1.1E+00	1.1E+00	D	1/ 23	4.3	1.2E+00	1.1E+00	NO
1,3-Dinitrobenzene (UG/L)	99-65-0			O	0/ 43	0.0			NO
2,4,6-Trinitrotoluene (UG/L)	118-96-7	2.6E-01	2.6E-01	D	1/ 24	4.2	9.2E-01	2.6E-01	NO
2,4-Dinitrotoluene (UG/L)	121-14-2			O	0/ 23	0.0			NO
2,6-Dinitrotoluene (UG/L)	606-20-2			O	0/ 34	0.0			NO
2-Amino-4,6-Dinitrotoluene (UG/L)	35572-78-2			O	0/ 43	0.0			NO
HMX (UG/L)	2691-41-0			O	0/ 43	0.0			NO
Nitrobenzene (UG/L)	98-95-3			O	0/ 42	0.0			NO
PETN (UG/L)	78-11-5			O	0/ 40	0.0			NO
RDX (UG/L)	121-82-4			O	0/ 41	0.0			NO
Tetryl (UG/L)	479-45-8			O	0/ 43	0.0			NO
Metals									
Aluminum (UG/L)	7429-90-5	1.2E+01	3.2E+04	X	141/ 151	93.4	4.7E+03	4.7E+03	YES
Antimony (UG/L)	7440-36-0	3.5E-01	4.2E+01	D	47/ 158	29.7	3.2E+00	3.2E+00	YES
Arsenic (UG/L)	7440-38-2	3.0E-01	9.3E+02	D	35/ 150	23.3	7.3E+00	7.3E+00	YES
Barium (UG/L)	7440-39-3	1.8E+01	3.1E+03	X	148/ 150	98.7	1.4E+02	1.4E+02	YES
Beryllium (UG/L)	7440-41-7	3.0E-02	2.3E+00	D	56/ 151	37.1	3.8E-01	3.8E-01	YES
Bismuth (UG/L)	7440-69-9	8.2E-01	2.6E+02	D	29/ 139	20.9	2.1E+01	2.1E+01	YES
Boron (UG/L)	7440-42-8	5.7E+01	1.3E+02	D	7/ 8	87.5	1.1E+02	1.3E+02	YES
Cadmium (UG/L)	7440-43-9	1.4E-01	1.3E+01	D	17/ 161	10.6	7.0E-01	7.0E-01	YES
Calcium (UG/L)	7440-70-2	1.2E+02	1.5E+06	X	198/ 198	100.0	2.0E+05	2.0E+05	YES
Chromium (UG/L)	7440-47-3	2.0E-01	4.5E+04	X	106/ 155	68.4	1.6E+03	1.6E+03	YES
Cobalt (UG/L)	7440-48-4	3.1E-01	3.0E+02	D	63/ 151	41.7	1.7E+01	1.7E+01	YES
Copper (UG/L)	7440-50-8	3.8E-01	5.1E+02	X	118/ 153	77.1	1.8E+01	1.8E+01	YES
Cyanide (UG/L)	57-12-5	5.5E+00	1.4E+01	D	3/ 46	6.5	4.7E+00	4.7E+00	YES
Iron (UG/L)	7439-89-6	1.5E-01	1.9E+05	X	186/ 199	93.5	3.2E+04	3.2E+04	YES
Lead (UG/L)	7439-92-1	4.0E-01	4.0E+01	D	62/ 162	38.3	3.9E+00	3.9E+00	YES
Lithium (UG/L)	7439-93-2	1.2E+01	4.6E+03	X	123/ 138	89.1	1.4E+02	1.4E+02	YES
Magnesium (UG/L)	7439-95-4	2.7E+01	7.2E+05	X	199/ 199	100.0	7.7E+04	7.7E+04	YES
Manganese (UG/L)	7439-96-5	3.7E-02	3.0E+03	X	190/ 199	95.5	6.2E+02	6.2E+02	YES
Mercury (UG/L)	7439-97-6	1.0E-01	1.4E+00	D	3/ 151	2.0	6.1E-02	6.1E-02	NO
Molybdenum (UG/L)	7439-98-7	4.3E-01	4.7E+02	X	82/ 134	61.2	2.0E+01	2.0E+01	YES

Analytes Detected in Groundwater in the Bedrock Wells

Analyte (units)	CAS Number	Minimum Detect	Maximum Detect	Dist.	Results >Detection Limit	% Results >Detection Limit	95% UCL of Mean	Exposure Concentration	Detection in Greater than 5%
Nickel (UG/L)	7440-02-0	4.4E-01	1.2E+04	X	114/ 154	74.0	4.8E+02	4.8E+02	YES
Potassium (UG/L)	7440-09-7	2.1E+00	2.1E+05	X	186/ 200	93.0	1.6E+04	1.6E+04	YES
Selenium (UG/L)	7782-49-2	1.3E+00	9.1E+00	D	11/ 149	7.4	1.7E+00	1.7E+00	YES
Silicon (UG/L)	7440-21-3	2.2E+03	1.2E+04	D	6/ 6	100.0	1.7E+04	1.2E+04	YES
Silver (UG/L)	7440-22-4	1.8E-01	2.9E+01	D	13/ 153	8.5	1.1E+00	1.1E+00	YES
Sodium (UG/L)	7440-23-5	6.8E+01	7.3E+06	X	197/ 197	100.0	3.4E+05	3.4E+05	YES
Thallium (UG/L)	7440-28-0	1.1E+00	6.9E+00	D	10/ 147	6.8	3.4E+00	3.4E+00	YES
Tin (UG/L)	7440-31-5	1.4E+00	3.6E+02	D	29/ 136	21.3	7.5E+00	7.5E+00	YES
Vanadium (UG/L)	7440-62-2	1.5E-01	2.8E+02	D	72/ 151	47.7	2.3E+01	2.3E+01	YES
Zinc (UG/L)	7440-66-6	6.1E-01	4.0E+02	X	114/ 153	74.5	4.9E+01	4.9E+01	YES
Pesticides and/or PCBs									
4,4'-DDD (UG/L)	72-54-8			O	0/ 62	0.0			NO
4,4'-DDE (UG/L)	72-55-9			O	0/ 62	0.0			NO
4,4'-DDT (UG/L)	50-29-3			O	0/ 62	0.0			NO
Aldrin (UG/L)	309-00-2			O	0/ 62	0.0			NO
Alpha Chlordane (UG/L)	5103-71-9	3.2E-02	6.9E-02	D	3/ 62	4.8	1.1E-01	6.9E-02	NO
Alpha-BHC (UG/L)	319-84-6			O	0/ 62	0.0			NO
Aroclor-1016 (UG/L)	12674-11-2			O	0/ 62	0.0			NO
Aroclor-1221 (UG/L)	11104-28-2			O	0/ 62	0.0			NO
Aroclor-1232 (UG/L)	11141-16-5			O	0/ 62	0.0			NO
Aroclor-1242 (UG/L)	53469-21-9			O	0/ 62	0.0			NO
Aroclor-1248 (UG/L)	12672-29-6			O	0/ 62	0.0			NO
Aroclor-1254 (UG/L)	11097-69-1			O	0/ 62	0.0			NO
Aroclor-1260 (UG/L)	11096-82-5			O	0/ 62	0.0			NO
Beta-BHC (UG/L)	319-85-7			O	0/ 62	0.0			NO
Delta-BHC (UG/L)	319-86-8			O	0/ 62	0.0			NO
Dieldrin (UG/L)	60-57-1			O	0/ 62	0.0			NO
Endosulfan I (UG/L)	959-98-8			O	0/ 62	0.0			NO
Endosulfan II (UG/L)	33213-65-9			O	0/ 62	0.0			NO
Endosulfan Sulfate (UG/L)	1031-07-8			O	0/ 59	0.0			NO
Endrin (UG/L)	72-20-8			O	0/ 62	0.0			NO
Endrin Aldehyde (UG/L)	7421-93-4			O	0/ 48	0.0			NO
Endrin Ketone (UG/L)	53494-70-5			O	0/ 62	0.0			NO
Gamma Chlordane (UG/L)	5103-74-2			O	0/ 62	0.0			NO
Gamma-BHC (Lindane) (UG/L)	58-89-9			O	0/ 62	0.0			NO
Heptachlor (UG/L)	76-44-8			O	0/ 62	0.0			NO
Heptachlor Epoxide (UG/L)	1024-57-3			O	0/ 62	0.0			NO

Analytes Detected in Groundwater in the Bedrock Wells

Analyte (units)	CAS Number	Minimum Detect	Maximum Detect	Dist.	Results >Detection Limit	% Results >Detection Limit	95% UCL of Mean	Exposure Concentration	Detection in Greater than 5%
Methoxychlor (UG/L)	72-43-5			O	0/ 62	0.0			NO
Toxaphene (UG/L)	8001-35-2			O	0/ 62	0.0			NO
Radiological									
Americium-241 (PCI/L)	14596-10-2	6.8E-02	1.7E-01	D	6/ 43	14.0	2.9E+00	1.7E-01	YES
Bismuth-207 (PCI/L)	13982-38-2			O	0/ 50	0.0			NO
Bismuth-210 (PCI/L)	14331-79-4	1.2E-01	2.6E-01	D	2/ 55	3.6	8.0E+00	2.6E-01	NO
Bismuth-211 (PCI/L)	15229-37-5			O	0/ 4	0.0			NO
Bismuth-212 (PCI/L)	14913-49-6			O	0/ 4	0.0			NO
Bismuth-214 (PCI/L)	14733-03-0			O	0/ 4	0.0			NO
Cesium-134 (PCI/L)	13967-70-9			O	0/ 4	0.0			NO
Cesium-137 (PCI/L)	10045-97-3			O	0/ 56	0.0			NO
Cobalt-60 (PCI/L)	10198-40-0			O	0/ 56	0.0			NO
Europium-152 (PCI/L)	14683-23-9			O	0/ 4	0.0			NO
Europium-154 (PCI/L)	15585-10-1			O	0/ 4	0.0			NO
Europium-155 (PCI/L)	14391-16-3			O	0/ 4	0.0			NO
Lead-212 (PCI/L)	15092-94-1			O	0/ 4	0.0			NO
Lead-214 (PCI/L)	15067-28-4			O	0/ 4	0.0			NO
Neptunium-237 (PCI/L)	13994-20-2			O	0/ 4	0.0			NO
Plutonium-238 (PCI/L)	13981-16-3	9.0E-03	1.9E+00	D	8/ 62	12.9	2.4E-01	2.4E-01	YES
Plutonium-238/239 (PCI/L)	PU-238/239			O	0/ 2	0.0			NO
Plutonium-239 (PCI/L)	15117-48-3			O	0/ 5	0.0			NO
Plutonium-239/240 (PCI/L)	PU-239/240	3.0E-03	1.8E-01	D	12/ 52	23.1	5.4E-01	1.8E-01	YES
Plutonium-242 (PCI/L)	13982-10-0	1.1E-01	1.1E-01	D	1/ 2	50.0		1.1E-01	YES
Potassium-40 (PCI/L)	13966-00-2	1.3E+02	2.6E+02	D	5/ 54	9.3	1.4E+02	1.4E+02	YES
Protactinium-233 (PCI/L)	13981-14-1			O	0/ 4	0.0			NO
Protactinium-234 (PCI/L)	15100-28-4			O	0/ 4	0.0			NO
Radium-223 (PCI/L)	15623-45-7			O	0/ 4	0.0			NO
Radium-225 (PCI/L)	13981-53-8			O	0/ 4	0.0			NO
Radium-226 (PCI/L)	13982-63-3	1.3E-01	3.9E+01	X	50/ 66	75.8	2.4E+00	2.4E+00	YES
Radium-228 (PCI/L)	15262-20-1	5.7E-01	1.7E+01	L	8/ 8	100.0	4.5E+01	1.7E+01	YES
Strontium-89 (PCI/L)	14158-27-1			O	0/ 4	0.0			NO
Strontium-90 (PCI/L)	10098-97-2	7.5E-01	4.2E+01	D	8/ 57	14.0	2.2E+00	2.2E+00	YES
Thallium-208 (PCI/L)	14913-50-9			O	0/ 4	0.0			NO
Thorium-227 (PCI/L)	15623-47-9	5.8E-02	5.8E-02	D	1/ 5	20.0	2.4E+18	5.8E-02	YES
Thorium-228 (PCI/L)	14274-82-9	2.0E-02	8.5E+00	X	42/ 57	73.7	6.9E+01	8.5E+00	YES
Thorium-230 (PCI/L)	14269-63-7	4.4E-03	4.1E+00	L	45/ 59	76.3	5.4E-01	5.4E-01	YES
Thorium-232 (PCI/L)	7440-29-1	5.0E-04	2.1E+00	L	33/ 66	50.0	7.2E-01	7.2E-01	YES

Analytes Detected in Groundwater in the Bedrock Wells

Analyte (units)	CAS Number	Minimum Detect	Maximum Detect	Dist.	Results >Detection Limit	% Results >Detection Limit	95% UCL of Mean	Exposure Concentration	Detection in Greater than 5%
Thorium-234 (PCI/L)	15065-10-8			O	0/ 4	0.0			NO
Tritium (PCI/L)	10028-17-8	3.0E+00	2.8E+06	X	4473/4488	99.7	2.1E+05	2.1E+05	YES
Uranium-233 (PCI/L)	13968-55-3	2.7E-02	1.6E+01	D	3/ 3	100.0	1.6E+62	1.6E+01	YES
Uranium-233/234 (PCI/L)	U-233/234	1.5E-01	9.3E-01	D	5/ 5	100.0	2.7E+00	9.3E-01	YES
Uranium-234 (PCI/L)	13966-29-5	3.3E-02	6.7E+01	X	61/ 70	87.1	2.1E+00	2.1E+00	YES
Uranium-235 (PCI/L)	15117-96-1	7.8E-03	8.3E+00	D	20/ 43	46.5	6.9E+00	6.9E+00	YES
Uranium-235/236 (PCI/L)	U-235/236	3.7E-02	4.7E-02	D	2/ 26	7.7	9.6E-02	4.7E-02	YES
Uranium-238 (PCI/L)	7440-61-1	2.9E-02	6.6E+00	L	59/ 77	76.6	5.9E-01	5.9E-01	YES
Semi-Volatile Organics									
1,2,4-Trichlorobenzene (UG/L)	120-82-1			O	0/ 65	0.0			NO
1,2-Dichlorobenzene (UG/L)	95-50-1			O	0/ 99	0.0			NO
1,3-Dichlorobenzene (UG/L)	541-73-1	3.0E+00	3.0E+00	D	1/ 98	1.0	2.7E+00	2.7E+00	NO
1,4-Dichlorobenzene (UG/L)	106-46-7			O	0/ 99	0.0			NO
1-chloro-4-phenoxybenzene (UG/L)	7005-72-3			O	0/ 65	0.0			NO
2,2'-oxybis(1-chloropropane) (UG/L)	108-60-1			O	0/ 119	0.0			NO
2,4,5-Trichlorophenol (UG/L)	95-95-4			O	0/ 65	0.0			NO
2,4,6-Trichlorophenol (UG/L)	88-06-2			O	0/ 65	0.0			NO
2,4-Dichlorophenol (UG/L)	120-83-2			O	0/ 65	0.0			NO
2,4-Dimethylphenol (UG/L)	105-67-9			O	0/ 65	0.0			NO
2,4-Dinitrophenol (UG/L)	51-28-5			O	0/ 65	0.0			NO
2,4-Dinitrotoluene (UG/L)	121-14-2			O	0/ 42	0.0			NO
2,6-Dinitrotoluene (UG/L)	606-20-2			O	0/ 31	0.0			NO
2-Benzyl-4-Chlorophenol (UG/L)	120-32-1			O	0/ 44	0.0			NO
2-Chloronaphthalene (UG/L)	91-58-7			O	0/ 65	0.0			NO
2-Chlorophenol (UG/L)	95-57-8			O	0/ 65	0.0			NO
2-Methylnaphthalene (UG/L)	91-57-6	6.0E+00	6.0E+00	D	1/ 69	1.4	5.2E+00	5.2E+00	NO
2-Methylphenol (UG/L)	95-48-7			O	0/ 65	0.0			NO
2-Nitroaniline (UG/L)	88-74-4			O	0/ 65	0.0			NO
2-Nitrophenol (UG/L)	88-75-5			O	0/ 65	0.0			NO
3,3'-Dichlorobenzidine (UG/L)	91-94-1			O	0/ 66	0.0			NO
3-Nitroaniline (UG/L)	99-09-2			O	0/ 65	0.0			NO
4,6-Dinitro-o-Cresol (UG/L)	534-52-1			O	0/ 65	0.0			NO
4-Bromophenyl-phenyl Ether (UG/L)	101-55-3			O	0/ 65	0.0			NO
4-Chloro-3-methylphenol (UG/L)	59-50-7			O	0/ 65	0.0			NO
4-Chloroaniline (UG/L)	106-47-8			O	0/ 65	0.0			NO
4-Methylphenol (UG/L)	106-44-5	1.2E+01	6.1E+01	D	2/ 65	3.1	6.2E+00	6.2E+00	NO
4-Nitroaniline (UG/L)	100-01-6			O	0/ 64	0.0			NO

Analytes Detected in Groundwater in the Bedrock Wells

Analyte (units)	CAS Number	Minimum Detect	Maximum Detect	Dist.	Results >Detection Limit	% Results >Detection Limit	95% UCL of Mean	Exposure Concentration	Detection In Greater than 5%
4-Nitrophenol (UG/L)	100-02-7			O	0/ 65	0.0			NO
Acenaphthene (UG/L)	83-32-9	1.0E+00	1.0E+00	D	1/ 72	1.4	5.6E+00	1.0E+00	NO
Acenaphthylene (UG/L)	208-96-8			O	0/ 72	0.0			NO
Anthracene (UG/L)	120-12-7			O	0/ 72	0.0			NO
Benzo(a)anthracene (UG/L)	56-55-3			O	0/ 73	0.0			NO
Benzo(a)pyrene (UG/L)	50-32-8			O	0/ 73	0.0			NO
Benzo(b)fluoranthene (UG/L)	205-99-2			O	0/ 73	0.0			NO
Benzo(g,h,i)perylene (UG/L)	191-24-2			O	0/ 73	0.0			NO
Benzo(k)fluoranthene (UG/L)	207-08-9			O	0/ 73	0.0			NO
Benzoic Acid (UG/L)	65-85-0	1.0E+00	8.9E+02	D	2/ 62	3.2	3.7E+01	3.7E+01	NO
Benzyl Alcohol (UG/L)	100-51-6			O	0/ 62	0.0			NO
Bis(2-chloroethoxy)methane (UG/L)	111-91-1			O	0/ 65	0.0			NO
Bis(2-chloroethyl)ether (UG/L)	111-44-4			O	0/ 65	0.0			NO
Bis(2-ethylhexyl)phthalate (UG/L)	117-81-7	1.0E+00	9.5E+02	D	12/ 66	18.2	1.8E+01	1.8E+01	YES
Butyl Benzyl Phthalate (UG/L)	85-68-7			O	0/ 66	0.0			NO
Carbazole (UG/L)	86-74-8			O	0/ 50	0.0			NO
Chrysene (UG/L)	218-01-9			O	0/ 73	0.0			NO
Di-n-butyl Phthalate (UG/L)	84-74-2	6.0E-01	3.0E+00	D	5/ 65	7.7	5.6E+00	3.0E+00	YES
Di-n-octyl Phthalate (UG/L)	117-84-0			O	0/ 66	0.0			NO
Dibenz(a,h)anthracene (UG/L)	53-70-3			O	0/ 73	0.0			NO
Dibenzofuran (UG/L)	132-64-9			O	0/ 69	0.0			NO
Diethyl Phthalate (UG/L)	84-66-2	5.0E-01	5.0E-01	D	1/ 65	1.5	5.6E+00	5.0E-01	NO
Dimethyl Phthalate (UG/L)	131-11-3			O	0/ 65	0.0			NO
Fluoranthene (UG/L)	206-44-0	9.0E-01	9.0E-01	D	1/ 72	1.4	5.5E+00	9.0E-01	NO
Fluorene (UG/L)	86-73-7	2.0E+00	2.0E+00	D	1/ 72	1.4	5.4E+00	2.0E+00	NO
Hexachlorobenzene (UG/L)	118-74-1			O	0/ 65	0.0			NO
Hexachlorobutadiene (UG/L)	87-68-3			O	0/ 65	0.0			NO
Hexachlorocyclopentadiene (UG/L)	77-47-4			O	0/ 65	0.0			NO
Hexachloroethane (UG/L)	67-72-1			O	0/ 65	0.0			NO
Indeno(1,2,3-cd)pyrene (UG/L)	193-39-5			O	0/ 73	0.0			NO
Isophorone (UG/L)	78-59-1			O	0/ 65	0.0			NO
N-Nitroso-di-n-propylamine (UG/L)	621-64-7			O	0/ 65	0.0			NO
N-Nitrosodiphenylamine (UG/L)	86-30-6			O	0/ 65	0.0			NO
Naphthalene (UG/L)	91-20-3	5.0E+00	5.0E+00	D	1/ 72	1.4	5.5E+00	5.0E+00	NO
Nitrobenzene (UG/L)	98-95-3			O	0/ 23	0.0			NO
Pentachlorophenol (UG/L)	87-86-5			O	0/ 65	0.0			NO
Phenanthrene (UG/L)	85-01-8	3.0E+00	3.0E+00	D	1/ 72	1.4	5.2E+00	3.0E+00	NO

Analytes Detected in Groundwater in the Bedrock Wells

Analyte (units)	CAS Number	Minimum Detect	Maximum Detect	Dist.	Results >Detection Limit	% Results >Detection Limit	95% UCL of Mean	Exposure Concentration	Detection in Greater than 5%
Phenol (UG/L)	108-95-2	1.0E+00	2.0E+00	D	2/ 65	3.1	5.4E+00	2.0E+00	NO
Pyrene (UG/L)	129-00-0	6.0E-01	6.0E-01	D	1/ 72	1.4	5.5E+00	6.0E-01	NO
Volatile Organics									
1,1,1,2-Tetrachloroethane (UG/L)	630-20-6			O	0/ 211	0.0			NO
1,1,1-Trichloroethane (UG/L)	71-55-6	4.0E-01	7.0E+00	D	20/ 264	7.6	5.3E-01	5.3E-01	YES
1,1,2,2-Tetrachloroethane (UG/L)	79-34-5			O	0/ 261	0.0			NO
1,1,2-Trichloroethane (UG/L)	79-00-5			O	0/ 264	0.0			NO
1,1-Dichloroethane (UG/L)	75-34-3	2.0E+00	2.0E+00	D	1/ 263	0.4	6.5E-01	6.5E-01	NO
1,1-Dichloroethene (UG/L)	75-35-4			O	0/ 264	0.0			NO
1,2,3-Trichloropropane (UG/L)	96-18-4			O	0/ 185	0.0			NO
1,2-Dichlorobenzene (UG/L)	95-50-1			O	0/ 154	0.0			NO
1,2-Dichloroethane (UG/L)	107-06-2			O	0/ 265	0.0			NO
1,2-Dichloroethene (UG/L)	540-59-0	1.8E+00	3.5E+01	D	10/ 33	30.3	7.4E+00	7.4E+00	YES
1,2-Dichloropropane (UG/L)	78-87-5			O	0/ 263	0.0			NO
1,2-Diethylbenzene (UG/L)	135-01-3			O	0/ 47	0.0			NO
1,2-cis-Dichloroethene (UG/L)	156-59-2	9.1E-01	1.7E+01	D	46/ 166	27.7	1.3E+00	1.3E+00	YES
1,2-trans-Dichloroethene (UG/L)	156-60-5	8.5E-01	1.0E+01	D	13/ 248	5.2	7.3E-01	7.3E-01	YES
1,3-Dichlorobenzene (UG/L)	541-73-1			O	0/ 154	0.0			NO
1,3-Diethylbenzene (UG/L)	141-93-5			O	0/ 43	0.0			NO
1,3-cis-Dichloropropene (UG/L)	10061-01-5			O	0/ 254	0.0			NO
1,3-trans-Dichloropropene (UG/L)	10061-02-6			O	0/ 264	0.0			NO
1,4-Dichlorobenzene (UG/L)	106-46-7			O	0/ 154	0.0			NO
1,4-Diethylbenzene (UG/L)	105-05-5			O	0/ 43	0.0			NO
1-Chlorohexane (UG/L)	544-10-5			O	0/ 160	0.0			NO
2,2'-oxybis(1-chloropropane) (UG/L)	108-60-1			O	0/ 4	0.0			NO
2-Butanone (UG/L)	78-93-3	6.0E+00	6.5E+01	D	12/ 130	9.2	5.1E+00	5.1E+00	YES
2-Chloroethylvinylether (UG/L)	110-75-8			O	0/ 187	0.0			NO
2-Chlorotoluene (UG/L)	95-49-8			O	0/ 161	0.0			NO
2-Hexanone (UG/L)	591-78-6	1.0E+00	1.0E+00	D	1/ 33	3.0	5.4E+00	1.0E+00	NO
4-Chlorotoluene (UG/L)	106-43-4			O	0/ 139	0.0			NO
4-Methyl-2-pentanone (UG/L)	108-10-1			O	0/ 76	0.0			NO
Acetone (UG/L)	67-64-1	1.0E+00	1.7E+01	D	23/ 75	30.7	9.2E+00	9.2E+00	YES
Acetonitrile (UG/L)	75-05-8			O	0/ 48	0.0			NO
Acrylonitrile (UG/L)	107-13-1			O	0/ 48	0.0			NO
Benzene (UG/L)	71-43-2	2.5E+00	2.5E+00	D	1/ 275	0.4	1.2E+00	1.2E+00	NO
Benzyl Chloride (UG/L)	100-44-7			O	0/ 11	0.0			NO
Bromochloromethane (UG/L)	74-97-5	2.6E+01	2.6E+01	D	1/ 1	100.0		2.6E+01	YES

Analytes Detected in Groundwater in the Bedrock Wells

Analyte (units)	CAS Number	Minimum Detect	Maximum Detect	Dist.	Results >Detection Limit	% Results >Detection Limit	95% UCL of Mean	Exposure Concentration	Detection in Greater than 5%
Bromodichloromethane (UG/L)	75-27-4			O	0/ 264	0.0			NO
Bromoform (UG/L)	75-25-2			O	0/ 264	0.0			NO
Bromomethane (UG/L)	74-83-9			O	0/ 65	0.0			NO
Carbon Disulfide (UG/L)	75-15-0			O	0/ 76	0.0			NO
Carbon Tetrachloride (UG/L)	56-23-5	1.5E+00	1.5E+00	D	1/ 264	0.4	8.6E-01	8.6E-01	NO
Chlorobenzene (UG/L)	108-90-7	1.0E+00	1.0E+00	D	1/ 266	0.4	1.2E+00	1.0E+00	NO
Chloroethane (UG/L)	75-00-3			O	0/ 81	0.0			NO
Chloroform (Trichloromethane) (UG/L)	67-66-3	5.8E-01	1.1E+00	D	4/ 265	1.5	5.5E-01	5.5E-01	NO
Chloromethane (UG/L)	74-87-3	3.4E+00	3.4E+00	D	1/ 80	1.3	3.7E+00	3.4E+00	NO
Chlorotoluene (UG/L)	25168-05-2			O	0/ 50	0.0			NO
Dibromochloromethane (UG/L)	124-48-1			O	0/ 259	0.0			NO
Dibromomethane (UG/L)	74-95-3	2.8E+00	2.8E+00	D	1/ 213	0.5	1.0E+00	1.0E+00	NO
Dichlorodifluoromethane (UG/L)	75-71-8			O	0/ 34	0.0			NO
Dichloromethane (Methylene Chloride)	75-09-2	1.0E+00	6.1E+02	D	46/ 264	17.4	3.3E+00	3.3E+00	YES
Ethylbenzene (UG/L)	100-41-4			O	0/ 276	0.0			NO
FREON-113 (UG/L)	76-13-1	2.2E+00	2.2E+00	D	1/ 149	0.7	1.1E+00	1.1E+00	NO
Fluorobenzene (UG/L)	462-06-6	3.9E+01	3.9E+01	D	1/ 1	100.0		3.9E+01	YES
Hexane (UG/L)	110-54-3			O	0/ 4	0.0			NO
Iodomethane (UG/L)	74-88-4			O	0/ 4	0.0			NO
Monobromobenzene (Phenyl bromide)	108-86-1			O	0/ 210	0.0			NO
O-Chloroflurobenzene (UG/L)	348-51-6	3.2E+01	3.2E+01	D	1/ 1	100.0		3.2E+01	YES
Styrene (UG/L)	100-42-5			O	0/ 33	0.0			NO
Tetrachloroethene (UG/L)	127-18-4	3.0E-01	2.5E+01	D	50/ 264	18.9	2.4E+00	2.4E+00	YES
Toluene (UG/L)	108-88-3	1.0E+00	8.0E+00	D	8/ 276	2.9	1.2E+00	1.2E+00	NO
Trichloroethylene (TCE) (UG/L)	79-01-6	6.0E-01	4.6E+01	X	139/ 273	50.9	4.7E+00	4.7E+00	YES
Trichlorofluoromethane (UG/L)	75-69-4			O	0/ 221	0.0			NO
Vinyl Acetate (UG/L)	108-05-4			O	0/ 76	0.0			NO
Vinyl Chloride (UG/L)	75-01-4			O	0/ 265	0.0			NO
Xylenes, Total (UG/L)	1330-20-7			O	0/ 270	0.0			NO

Parcels 6, 7, and 8 Information

Parcels 6, 7, 8, and 9 Draft Quit Claim Deed

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QUIT CLAIM DEED

The UNITED STATES OF AMERICA, acting by and through the Secretary of the Department of Energy (hereinafter sometimes called "Grantor"), under and pursuant to the authority of the Atomic Energy Act of 1954, Section 161 (g) (42U.S.C. §2201(g)), in consideration of the covenants contained herein, and other good and valuable consideration, duly paid by the Miamisburg Mound Community Improvement Corporation, a not-for-Profit corporation subsisting under the laws of Ohio and recognized by the Secretary of Energy as the agent for the community wherein the former Mound Facility is located (hereinafter sometimes called "Grantee"), the receipt of which is hereby acknowledged, hereby QUIT CLAIMS unto Grantee its successors and assigns, subject to the reservations, covenants, and conditions hereinafter set forth, all of its right, title and interest, together with all improvements thereon and appurtenances thereto, the real property as described in Exhibit A hereto, excluding that portion of the property consisting of 3.320 acres, more or less, as described in Exhibit B hereto (hereinafter the "Premises), commonly referred to as Parcels 6, 7 and 8, but excluding therefrom Parcel 6A.

ALSO EXCEPTING THEREFROM an easement hereby granted, upon or across the Premises, in connection with the covenants of Grantor and/or Grantee in paragraphs numbered 1.1-1.3, 3.2 and 3.3 of this Deed and as otherwise needed for purposes of any response action as defined under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended, including but not limited to, environmental investigation or remedial action on the Premises or on property in the vicinity thereof, including the right of access to, and use of, to the extent permitted by applicable law, utilities at reasonable cost, to the State of Ohio, acting by and through the Director of the Ohio Environmental Protection Agency (OEPA) or the Ohio Department of Health (ODH), their successors and assigns. Grantee understands that any such response action will be conducted in a manner so as to attempt to minimize interfering with the ordinary and reasonable use of the Premises;

RESERVING unto Grantor, the United States of America, acting by and through the U.S. Dept. of Energy (DOE) and/or the U.S. Environmental Protection Agency (USEPA), their successors and assigns, an easement to, upon or across the Premises in connection with the covenants of Grantor and/or Grantee in paragraphs numbered 1.1-1.3, 3.2 and 3.3 of this Deed and as otherwise needed for purposes of any response action as defined under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended, including but not limited to, environmental investigation or remedial action on the Premises or on property in the vicinity thereof, including the right of access to, and use of, to the extent permitted by applicable law, utilities at reasonable cost to Grantor. Grantee understands that any such response action will be conducted in a manner so as to attempt to minimize interfering with the ordinary and reasonable use of the Premises.

In connection with this conveyance, Grantor shall hold harmless and indemnify Grantee and any successor, assignee, transferee, lender or lessee of a person or entity that acquires ownership or control of any portion of the Premises, according to the provisions of 50 USCS § 2811(b) and as limited by the scope, purposes and conditions contained in 50 USCS § 2811 against any claim for injury to a person or property that results from the release or threatened release of a hazardous substance or pollutant or contaminant as a result of Department of Energy activities on

the area commonly known as the former Mound Facility including but not limited to the Premises. This covenant shall run with the land.

This Deed and conveyance is made and accepted without warranty of any kind, either expressed or implied, except for the indemnity of 50 USCS § 2811(b) and the warranty in paragraph 3.3 of this Deed, and is expressly made under and subject to all reservations, restrictions, rights, covenants, easements, licenses, and permits, whether or not of public record, to the extent that the same affect the Premises.

1. The parties hereto intend the following restrictions and covenants to run with the land and to be binding upon the Grantee and its successors, transferees, and assigns or any other person acquiring an interest in the Premises, for the benefit of Grantor, USEPA and the State of Ohio, acting by and through the Director of OEPA or ODH, their successors and assigns.

   1.1(a) Grantee covenants that any soil from the Premises shall not be placed on any property outside the boundaries of that described in instruments recorded at Deed Book 1214, pages 10, 12, 15, 17 and 248; Deed Book 1215, page 347; Deed Book 1246, page 45; Deed Book 1258, pages 56 and 74; Deed Book 1256, page 179; Micro-Fiche 81-376A01; and Micro-Fiche 81-323A11 of the Deed Records of Montgomery County, Ohio (and as illustrated in the "Parcels 6, 7 and 8 Environmental Summary, Notices of Hazardous Substances, Mound Plant, Miamisburg, Ohio dated August 2010", Exhibit C hereto), without prior written approval from ODH, OEPA, and USEPA, or successor agencies.

   (b) Grantee covenants, in regard to the structure know as "T Building" as shown in Exhibit D attached hereto, that for areas 1C-05 (corridor 39), 1C-07, 1C-08, 1C-09, 1C-11, 1C-12, 1C-15, 1C-16, 1S-10 and SYS-02A/B/C Grantee shall not remove concrete floor material to a location outside that specified in paragraph 1.1(a) without the approval of USEPA or Ohio EPA and for areas 1C-10 and 1C-21 Grantee shall take no action that causes a penetration in the concrete floor of those areas without the prior approval of USEPA and Ohio EPA. The specified areas mentioned above are on the first floor of T Building and are designated in the T Building drawing in Exhibit D hereto. T Building is a five-story structure, entirely underground, located at and about Latitude N 39°37'48.75" and Longitude W 84°17'13.65" depicted in a diagram and photographs in Exhibit D. Ground level at the top of T Building is at an approximate elevation of 872' AMSL.

   1.2 Grantee covenants not to use, or allow the use of the Premises for any residential or farming activities, or any other activities which could result in the chronic exposure of children under eighteen years of age to soil or groundwater from the Premises. Restricted uses shall include, but not be limited to:

      (1) single or multi family dwellings or rental units;
      (2) day care facilities;
      (3) schools or other educational facilities for children under eighteen

years of age; and

(4) community centers, playgrounds, or other recreational or religious facilities for children under eighteen years of age.

The United States Department of Energy or its successor agency shall be contacted to resolve any questions which may arise as to whether a particular activity would be considered a restricted use.

1.3 Grantee covenants not to extract, consume, expose, or use in any way the groundwater underlying the premises without the prior written approval of the United States Environmental Protection Agency (Region V) and the OEPA.

2. The Grantor hereby grants to the State of Ohio and reserves and retains for itself, its successors and assigns an irrevocable, permanent, and continuing right to enforce the covenants of this Quitclaim Deed through proceedings at law or in equity, including resort to an action for specific performance, as against and at the expense of Grantee, its successors and assigns, including reasonable legal fees, and to prevent a violation of, or recover damages from a breach of, these covenants, or both. Any delay or forbearance in enforcement of said restrictions and covenants shall not be deemed to be a waiver thereof.

3. Pursuant to Section 120(h)(3) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended (42 U.S.C. §9620(h)(3)), the following is notice of hazardous substances, the description of any remedial action taken, and a covenant concerning the Premises.

3.1 **Notice of Hazardous Substance:** Grantor has made a complete search of its files and records concerning the Premises. Those records indicate that the hazardous substances listed in **Exhibit C** attached hereto and made a part hereof, have been stored for one year or more or disposed of on the Premises and Exhibit C also shows the dates that such storage/disposal took place.

3.2 **Description of Remedial Action Taken:** Institutional Controls are established. The Institutional Controls are set forth as covenants in Sections 1.1, 1.2, and 1.3 of this Deed.

3.3 **Covenant:** Grantor covenants and warrants that all remedial action necessary for the protection of human health and the environment with respect to any hazardous substances remaining on the property has been taken, and any additional remedial action found to be necessary after the date of this Deed regarding hazardous substances existing prior to the date of this Deed shall be conducted by Grantor, provided, however, that the foregoing covenant shall not apply in any case in which the presence of hazardous substances on the property is due to the activities of Grantee, its successors, assigns, employees, invitees, or any other person subject to Grantee's control or direction.

4. Unless otherwise specified, all the covenants, conditions, and restrictions to this Deed shall be binding upon, and shall inure to the benefit of the assigns of Grantor and the successors and assigns of Grantee.

IN WITNESS WHEREOF, the United States of America, acting by and through its Secretary of the Department of Energy, has caused these presents to be executed this _____day of _____, 2010.

UNITED STATES OF AMERICA

_____

State of Ohio)
County of Hamilton) SS.

Before me, a Notary Public in and for said State and County, appeared this _____day of _____, 2010, _____, who acknowledged that he is the Real Property Officer of the Environmental Management Consolidated Business Center for the United States Department of Energy, with full authority to execute the foregoing on behalf of the United States of America, and who acknowledged the above to be his signature and his free act and deed.

SEAL

_____
Notary Public

Prepared by:
Randolph T. Tormey, Esq.
250 E. 5th Street, Ste 500
Cincinnati, OH 45202
(513) 246-0583
OH Atty. Regis. 0007803

Exhibit "A"
DESCRIPTION OF

13.636 Acres

Parcel 6

located in
Section 30 and 36, Town 2, Range 5, M.Rs.
City of Miamisburg, Montgomery County, Ohio

Situate in Section 30 and 36, Town 2, Range 5, M.Rs., City of Miamisburg, County of Montgomery, State of Ohio, ***being part of a 87.28 acre tract conveyed to the United States of America, as recorded in Deed Book Volume 1214, Page 12*** of the Deed Records of Montgomery County, Ohio, said 87.28 acre tract being comprised of a 59.75 acre tract, also a 19.40 acre tract, also a 9.97 acre tract, also a 0.78 acre tract and a 0.78 acre tract all known as Lot Numbered 2259 of the consecutive numbered lots of the City of Miamisburg, ***also being part of a 33.11 acre tract conveyed to the United States of America, as recorded in Deed Book Volume 1246, Page 45*** of the Deed Records of Montgomery County, Ohio, said 33.11 acre tract being known as Lot Numbered 2290 of the consecutive numbered lots of the City of Miamisburg, ***also being part of a 1.61 acre tract conveyed to the United States of America, as recorded in Deed Book Volume 1256, Page 179***, of the Deed Records of Montgomery County, Ohio, said 1.61 acre tract being known as Lot Numbered 2290 of the consecutive numbered lots of the City of Miamisburg, ***being a new division of 13.635 acres from said 87.28 acre tract, 33.11 acre tract, and all the remainder of said 1.61 acre tract*** and being more fully bounded and described as follows:

Commencing at a "DOE" concrete monument found disturbed, said monument being the northwest corner of Section 30, said monument being the northeast corner of Section 36, said monument also being the northeasterly corner of a 6.63 acre tract (by deed) conveyed to the City of Miamisburg, Ohio, as recorded in Deed Book Volume 594, Page 410 of the Deed Records of Montgomery County, Ohio; thence with the east line of said City of Miamisburg 6.63 acre tract, the east line of Section 36 and the west line of Section 30, South 05° 16' 42" West, a distance of 130.25 feet to a point, witness a 1" pinched top pipe found, South 65° 36' 29" West, 1.28 feet, said pipe being the northwest corner of a 14.288 acre tract conveyed to Miamisburg Mound Community Improvement Corporation, as recorded in Deed Microfiche No. 99-0852B11 of the Deed Records of Montgomery County, Ohio, said 14.288 acre tract known as Parcel "H" of the recorded Mound Surveys, said 14.288 acre tract also known as Part of Lot Numbered 2259 of the consecutive numbered lots of the City of Miamisburg, Ohio, reference previous survey by HLS Surveyors & Engineers as recorded in Montgomery County Engineer's Record of Land Surveys Volume 1999, Page 0326, said pipe also being the northeasterly corner of a 4.805 acre tract conveyed to Miamisburg Mound Community Improvement Corporation, as recorded in Deed Microfiche No. _____ of the Deed Records of Montgomery County, Ohio, said 4.805 acre tract known as Parcel 3 of the recorded Mound Surveys, said 4.805 acre tract also known as Part of Lot Numbered 2259 and 2290 of the consecutive numbered lots of the City of Miamisburg, Ohio, reference previous survey by HLS Surveyors & Engineers as recorded in the Montgomery County Engineer's Record of Land Surveys, Volume 1999, Page 140; thence from said point with the northwesterly line of said 4.805 acre tract known as Parcel 3 and the southeasterly line of said City of Miamisburg 6.63 acre tract, South 65° 36' 29" West, a distance of 479.79 feet to a 5/8" capped "Schram" iron pin found, said pin set per previous survey reference, said iron pin being a westerly corner of said 4.805 acre tract known as Parcel 3, said iron pin being the **True Point of Beginning** of the hereinafter described new division of 13.636 acres;

Thence with a common boundary with said 4.805 acre tract known as Parcel 3 on the following thirteen (13) courses,

1) **South 24° 26' 30" East**, passing a point on the common boundary line of said United States of America 1.61 acre tract and said United States of America 87.28 acre tract at 87.13 feet, in all a distance of **308.52 feet to a 2-1/2" mag nail set**;
2) **Thence, South 65° 33' 30" West**, a distance of **7.67 feet to a railroad spike found**, said spike set per previous survey reference;
3) **Thence, South 24° 26' 30" East**, a distance of **24.31 feet to a 5/8" capped "LeRoy" iron pin found**, said iron pin per previous survey reference;
4) **Thence, North 65° 11' 32" East**, a distance of **268.32 feet to a cross notch found**, said cross notch set per previous survey reference;
5) **Thence, North 24° 54' 45" West**, a distance of **59.55 feet to a railroad spike found**, said spike set per previous survey reference;
6) **Thence, North 65° 05' 15" East**, a distance of **34.64 feet to a railroad spike found**, said spike set per previous survey reference;
7) **Thence, South 59° 41' 15" East**, passing a point on the east line of Section 36 and the west line of Section 30 at 29.11 feet, in all a distance of **32.00 feet to a railroad spike found**, said spike set per previous survey reference;
8) **Thence, South 23° 47' 05" East**, a distance of **359.64 feet to a railroad spike found**, said spike set per previous survey reference;
9) **Thence, North 66° 03' 34" East**, a distance of **39.97 feet to a railroad spike found**, said spike set per previous survey reference;
10) **Thence, South 50° 06' 58" East**, a distance of **22.74 feet to a 5/8" capped "Schram" iron pin found**, said iron pin per previous survey reference;
11) **Thence, North 64° 44' 27" East**, a distance of **98.64 feet to a 5/8" capped "Schram" iron pin found**, said iron pin per previous survey reference;
12) **Thence, North 23° 05' 32" West**, a distance of **17.73 feet to a 5/8" capped "Schram" iron pin found**, said iron pin per previous survey reference;
13) **Thence, North 40° 10' 30" East**, a distance of **91.47 feet to a 5/8" capped "LeRoy" iron pin found**, said iron pin per previous survey reference, said iron pin lying in the southwesterly line of said Miamisburg Mound Community Improvement Corporation 14.288 acre tract, said iron pin lying in a radial line having a radius to the left and a radial bearing of North 36° 23' 40" East;

Thence with the southwesterly and southerly line of said Miamisburg Mound Community Improvement Corporation 14.288 acre tract on the following two (2) courses,

1) with a curve to the left having a **delta angle of 30° 15' 10", a radius of 360.67 feet, an arc length of 190.44 feet** and a **chord bearing and distance of South 68° 43' 56" East, 188.23 feet to a 5/8" capped "LeRoy" iron pin found**, said iron pin per previous survey reference, said iron pin being the point of tangency of said curve;
2) **Thence, South 83° 51' 21" East**, a distance of **25.00 feet to a 5/8" iron pin set**, said iron pin being the northeasterly corner of the herein described new division;

Thence with a new division line through said United States of America 87.28 acre tract and said United States of America 33.11 acre tract on the following eighteen (18) courses,

1) **South 40° 32' 20" West, a distance of 86.35 feet to a 5/8" iron pin set**, said iron pin being a non-tangential point at the beginning of a curve to the left and having a radial bearing of South 10° 26' 59" East;

2) **Thence** with a curve to the left having **a delta angle of 42° 00' 18", a radius of 223.57 feet, an arc length of 163.90 feet and a chord bearing and distance of South 58° 32' 52" West, 160.26 feet to a 5/8" iron pin set;**

3) **Thence, South 37° 32' 43" West**, a distance of **70.00 feet to a 5/8" iron pin set;**

4) **Thence, South 31° 32' 43" West**, a distance of **65.00 feet to a 5/8" iron pin set;**

5) **Thence, South 27° 32' 43" West**, a distance of **60.00 feet to a 5/8" iron pin set at a point of curvature to the right;**

6) **Thence** with a curve to the right having **a delta angle of 20° 18' 39", a radius of 349.79 feet, an arc length of 124.00 feet and a chord bearing and distance of South 37° 42' 02" West, 123.35 feet to a 5/8" iron pin set;**

7) **Thence, South 47° 51' 21" West**, a distance of **162.02 feet to a 5/8" iron pin set;**

8) **Thence, North 88° 48' 49" West**, a distance of **34.05 feet to a cross notch set in a concrete walk;**

9) **Thence, North 52° 01' 06" West**, a distance of **45.26 feet to a 5/8" iron pin set;**

10) **Thence, North 15° 43' 55" East**, a distance of **99.81 feet to a 5/8" iron pin set;**

11) **Thence, North 23° 23' 40" West**, passing a point on the east line of Section 36 and the west line of Section 30 at 143.57 feet, reference from said point a railroad spike found, South 05° 16' 42" West, 4400.37 feet, said spike being the south section corner of Section 30 and 36, also a concrete monument found, disturbed, North 05° 16' 42" East, 1006.61 feet, said concrete monument being the north corner of Section 30 and 36, in all a distance of **349.18 feet to a 5/8" iron pin set;**

12) **Thence, South 65° 40' 00" West**, a distance of **328.05 feet to a 5/8" iron pin set;**

13) **Thence, South 65° 00' 16" West**, passing a point on the common boundary line of said United States of America 33.11 acre tract and said United States of America 87.28 acre tract at 137.10 feet, in all a distance of **186.04 feet to a 5/8" iron pin set;**

14) **Thence, North 24° 22' 42" West**, passing a point on the common boundary line of said United States of America 33.11 acre tract and said United States of America 87.28 acre tract at 26.80 feet, in all a distance of **206.00 feet to a 5/8" iron pin set;**

15) **Thence, South 65° 37' 18" West**, passing a point on the common boundary line of said United States of America 33.11 acre tract and said United States of America 87.28 acre tract at 69.30 feet, in all a distance of **123.40 feet to a 5/8" iron pin set;**

16) **Thence, North 24° 17' 30" West**, a distance of **124.98 feet to a 5/8" iron pin set;**

17) **Thence, South 65° 44' 19" West**, a distance of **138.10 feet to a 5/8" iron pin set;**

18) **Thence, North 24° 15' 41" West**, a distance of **127.04 feet to a 5/8" iron pin set**, said iron pin lying in the northwesterly line of said United States of America 33.11 acre tract, said iron pin lying in the southeasterly line of the Consolidated Rail Corporation lands as conveyed in Deed Microfiche No. 78-502A01 of the Deed Records of Montgomery County, Ohio, said common boundary line being an curve to the right having a radial bearing of South 60° 51' 35" East;

Thence with the northwesterly line of said United States of America 33.11 acre tract and the southeasterly line of said Consolidated Rail Corporation lands with a curve to the right having **a delta angle of 06° 49' 51", a radius of 3519.83 feet, an arc length of 419.64 feet and a chord bearing and distance of North 32° 33' 20" East, 419.39 feet to a "DOE" concrete monument found**, said monument being the northwest corner of said United States of America 33.11 acre tract;

Thence with the north line of said United States of America 33.11 acre tract, **South 84° 14' 50" East**, a distance of **102.31 feet to a "DOE" concrete monument found**, said monument being the northeast corner of said United States of America 33.11 acre tract, said monument lying in the west line of said City of Miamisburg 6.63 acre tract;

Thence with the east line of said United States of America 33.11 acre tract and the west line of said City of Miamisburg 6.63 acre tract, **South 05° 37' 45" West**, a distance of **90.34 feet to a "DOE" concrete monument found**, said monument being the northwest corner of said United States of America 1.61 acre tract, said monument being the southwest corner of said City of Miamisburg 6.63 acre tract;

Thence with the northwesterly line of said United States of America 1.61 acre tract and the southeasterly line of said City of Miamisburg 6.63 acre tract, **North 65° 36' 29" East**, a distance of **330.66 feet to the True Point of Beginning**, containing 13.636 acres, more or less, of which ***4.173 acres lying in Section 30, 9.463 acres lying in Section 36,*** of which ***4.173 acres being part of Lot Numbered 2259, 9.463 acres being part of Lot Numbered 2290, 6.431 acres being part of said United States of America 87.28 acre tract, 2.320 acres being part of said United States of America 33.11 acre tract and 0.712 acres being part of said United States of America 1.61 acre tract***, all of the consecutive numbered lots of the City of Miamisburg, Ohio, and being subject to all easements, highways and right of ways of record.

Bearing basis established as Grid North by GPS observation August 7th & 8th, 2002 at Latitude N39° 38' 25.81", Longitude W084° 17' 28.09" (Coast & Geodetic Survey Monument #G-139, 1947); Ohio State Plane Coordinate system, Ohio South Zone 3402 (NAD 83), True North being 01° 08' 11" east of Grid North.

This description prepared from an actual field survey performed under my direct supervision, Timothy W. Schram, Sr., Registered Professional Surveyor number 7299 of the State of Ohio, and that all monuments referenced herein and placed on the ground represents the boundaries of the herein described tract, and based on a Plat of Survey as recorded in the Montgomery County Engineer's Record of Land Surveys in Record Volume number **2004**, Page **0309**.

Timothy W. Schram, Sr., Regist. Prof. Surveyor No. 7299
of the State of Ohio, June 1, 2004.

F:\04001\ Mound Parcels

STATE OF OHIO
TIMOTHY W. SCHRAM, SR. 7299
REGISTERED PROFESSIONAL LAND SURVEYOR

JOSEPH LITVIN, P.E., P.S.
MONTGOMERY COUNTY ENGINEER
DAYTON, OHIO
APPROVED
BY EDM DATE 7/28/04
FILE NO. 2004 0309

EXHIBIT A
Parcel 7

Floyd Browne Group

Description of 42.307 Acres

Situated in the State of Ohio, County of Montgomery, City of Miamisburg, being part of Section 30 and Section 36, Fractional Township 2, Range 5, Miami Rivers Survey, being 40.385 acres out of Section 30, being 1.922 acres out of Section 36, being part of City of Miamisburg Lot No. 2259 and Lot No. 2290, being 40.219 acres of land that lie over and across an 87.28 acre tract of land described in deed to the United States of America of record in Deed Book 1214, Page 12, being 1.782 acres of land that lie over and across a 17.68 acre tract of land described in deed to the United States of America of record in Deed Book 1214, Page 248, being 0.140 acres of land that lie over and across a 20.46 acre tract of land described in deed to the United States of America of record in Deed Book 1215, Page 347, being 0.144 acres of land that lie over and across a 0.78 acre tract of land described in deed to the United States of America of record in Deed Book 1214, Page 17, being 0.022 acres of land that lie over and across a 0.78 acre tract of land described in deed to the United States of America of record in Deed Book 1214, Page 15, and being more particularly described as follows:

COMMENCING for reference at a concrete monument found at the northwest corner of said Section 30 and the northeast corner of said Section 36, being the northerly line of said Fractional Township 2, Range 5, and being the southerly line of Fractional Township 1, Range 6, Miami Rivers Survey;

Thence South 85°00'57" East with said Township line and the northerly line of said Section 30, a distance of 1249.65 feet to a point at the northeasterly corner of a 14.288 acre tract of land described in deed to Miamisburg Mound Community Improvement Corporation of record in Deed Microficho No. 02-146504-0038;

Thence South 05°32'59" West with the easterly line of said 14.288 acre tract, a distance of 731.91 feet to an iron pin set on the westerly line of a 42.63 acre tract of land as described in deed to the Village of Miamisburg of record in Deed Book 776, Page 581, being on the easterly line of said 87.28 acre tract, and being the **TRUE POINT OF BEGINNING** of the tract to be described;

Thence South 05°32'59" West with the westerly line of said 42.63 acre tract and the easterly line of said 87.28 acre tract, a distance of 389.54 feet to a surveyor's nail found on the centerline of Mound Road;

Thence crossing said 87.28 acre tract and both said 0.78 acre tracts with the following four (4) courses and distances:

1.) North 84°28'40" West, a distance of 198.41 feet to an iron pin set;

2.) South 41°54'30" West, a distance of 354.02 feet to an iron pin set at a point of curvature;

3.) With a curve to the left having a radius of 24.86 feet, a central angle of 113°00'50", a chord bearing of South 14°35'55" East, a chord length of 41.47 feet, and an arc length of 49.04 feet to an iron pin set;

4.) South 84°28'09" East, a distance of 394.00 feet to a surveyor's nail set on the centerline of said Mound Road;

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Thence South 05°32'59" West with the westerly line of said 42.63 acre tract, the easterly line of said 87.28 acre tract, and the centerline of said Mound Road, a distance of 790.36 feet to a surveyor's nail set;
Thence crossing said 87.28 acre tract with the following eleven (11) courses and distances:

1.) North 85°24'02" West, a distance of 124.08 feet to an iron pin found at a point of curvature;

2.) With a curve to the left having a radius of 26.90 feet, a central angle of 69°49'29", a chord bearing of South 69°41'14" West, a chord length of 30.79 feet, and an arc length of 32.78 feet to an iron pin found;

3.) North 85°16'52" West, a distance of 31.54 feet to an iron pin found;

4.) South 06°33'12" West, a distance of 16.13 feet to a cross notch found;

5.) South 88°51'53" West, a distance of 68.53 feet to a surveyor's nail found;

6.) North 00°39'23" West, a distance of 4.38 feet to a railroad spike found;

7.) North 85°56'03" West, a distance of 168.86 feet to an iron pin set;

8.) South 85°36'28" West, a distance of 16.02 feet to an iron pin set;

9.) South 69°32'50" West, a distance of 26.94 feet to an iron pin set;

10.) South 29°42'35" West, a distance of 62.82 feet to an iron pin found;

11.) South 10°37'07" West, a distance of 144.91 feet to an iron pin found on the northerly line of a 12.429 acre tract of land as described in deed to Miamisburg Mound Community Improvement Corporation of record in Deed Microfiche No. 99-141468-0006 and being the northerly right of way of Mound Parkway;

Thence with the westerly line of said 12.429 acre tract and the westerly right of way line of said Mound Parkway the following two (2) courses and distances:

1.) With a curve to the left having a radius of 130.00 feet, a central angle of 89°18'19", a chord bearing of South 50°16'29" West, a chord length of 182.73 feet, and an arc length of 202.63 feet to an iron pin set;

2.) South 05°37'19" West, a distance of 131.44 feet to an iron pin found;

Thence North 84°26'17" West with a northerly line of said 12.429 acre tract, a distance of 35.16 feet to an iron pin found;

Thence crossing said 87.28 acre tract with the following three (3) courses and distances:

1.) North 84°29'56" West, a distance of 292.60 feet to an iron pin found;

2.) North 39°16'45" West, a distance of 324.29 feet to an iron pin found.

3.) South 82°43'27" West, a distance of 158.71 feet to an iron pin found in said 20.46 acre tract;

Thence crossing into and through said 17.68 acre tract with the following eight (8) courses and distances:

1.) North 27°06'32" West, a distance of 253.63 feet to an iron pin found;

2.) South 84°32'08" West, a distance of 56.64 feet to an iron pin found;

3.) North 05°27'10" West, a distance of 114.14 feet to an iron pin found;

4.) North 82°55'39" East, a distance of 80.24 feet to an iron pin found;

5.) North 72°43'07" East, a distance of 103.56 feet to an iron pin found;

6.) North 73°35'51" East, a distance of 45.41 feet to an iron pin found;

7.) North 61°39'22" East, a distance of 58.74 feet to an iron pin found;

8.) North 38°11'13" East, a distance of 411.35 feet to an iron pin set in said 87.28 acre tract;

Thence crossing said 87.28 acre tract with the following eight (8) courses and distances:

1.) North 43°20'32" West, a distance of 87.40 feet to an iron pin found;

2.) North 27°28'02" East, a distance of 147.71 feet to an iron pin found;

3.) North 18°13'42" East, a distance of 198.86 feet to an iron pin set;

4.) North 22°25'51" East, a distance of 273.82 feet to an iron pin found;

5.) North 27°29'42" East, a distance of 224.29 feet to an iron pin found;

6.) North 42°10'34" East, a distance of 116.79 feet to an iron pin found;

7.) North 66°04'39" East, a distance of 86.46 feet to an iron pin found;

1.) South 89°50'28" East, a distance of 728.51 feet to the **TRUE POINT OF BEGINNING**, containing 42.307 acres of land, more or less.

Subject however to all easements, restrictions and rights-of-way of record, if any.

Basis of Bearing is the section line between Sections 30 and 36 being North 05°16'47" East as determined by GPS measurements between Montgomery County Monuments 1057 and 1058 and the Ohio State Plane Coordinate System, South Zone. All iron pins Set are 5/8" solid iron pins 30" in length with an orange plastic cap stamped "Floyd Browne Group".

The above description is based on and referenced to an exhibit prepared by Floyd Browne Group dated 06-12-06, attached hereto and made a part hereof.

All references are to the records of the Recorder's Office, Montgomery County, Ohio.

6/12/06

Maynard H. Thompson, P.S. Date
Professional Surveyor No. 7128

STATE OF OHIO
MAYNARD H. THOMPSON S-7128
REGISTERED PROFESSIONAL SURVEYOR

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Floyd Browne Group

EXHIBIT A
Parcel 8

Floyd Browne Group

Description of 45.247 Acres

Situated in the State of Ohio, County of Montgomery, City of Miamisburg, being part of Section 30 and Section 36, Fractional Township 2, Range 5, Miami Rivers Survey, being 5.297 acres out of Section 30, being 39.950 acres out of Section 36, being part of City of Miamisburg Lot No. 2259 and Lot No. 2290, being part of Lots Numbered 13, 14, 15, 16, 20, 21, 22, and 23 of the Philip Gebhart Plat of record in Plat Book Volume "A", Page 126, being 6.993 acres of land that lie over and across an 87.28 acre tract of land described in deed to the United States of America of record in Deed Book 1214, Page 12, being 7.878 acres of land that lie over and across a 17.68 acre tract of land described in deed to the United States of America of record in Deed Book 1214, Page 248, being 30.376 acres of land that lie over and across a 33.11 acre tract of land described in deed to the United States of America of record in Deed Book 1246, Page 45, and being more particularly described as follows:

COMMENCING for reference at a concrete monument found at the northwest corner of said Section 30 and the northeast corner of said Section 36, being the northerly line of said Fractional Township 2, Range 5, and being the southerly line of Fractional Township 1, Range 6, Miami Rivers Survey;

Thence South 85°00'57" East with said Township line and the northerly line of said Section 30, a distance of 1249.65 feet to a point at the northeasterly corner of a 14.288 acre tract of land described in deed to Miamisburg Mound Community Improvement Corporation of record in Deed Microfiche No. 02-146504-0038;

Thence South 05°32'59" West with the easterly line of said 14.288 acre tract, a distance of 572.24 feet to an iron pin set on the westerly line of a 42.63 acre tract of land as described in deed to the Village of Miamisburg of record in Deed Book 776, Page 581, being the southeasterly corner of said 14.288 acre tract, and being the **TRUE POINT OF BEGINNING** of the tract to be described;

Thence South 05°32'59" West with the westerly line of said 42.63 acre tract and the easterly line of said 87.28 acre tract, a distance of 159.07 feet to an iron pin set;

Thence crossing said 87.28 acre tract with the following nine (9) courses and distances:

1.) North 89°50'28" West, a distance of 726.51 feet to an iron pin found;

2.) South 66°04'39" West, a distance of 86.46 feet to an iron pin found;

3.) South 42°10'34" West, a distance of 116.79 feet to an iron pin found;

4.) South 27°29'42" West, a distance of 224.29 feet to an iron pin found;

5.) South 22°25'51" West, a distance of 273.82 feet to an iron pin set;

6.) South 18°13'42" West, a distance of 198.86 feet to an iron pin found;

7.) South 27°28'02" West, a distance of 147.71 feet to an iron pin found;

8.) South 43°20'32" East, a distance of 87.40 feet to an iron pin set;

9.) South 38°11'13" West, a distance of 411.35 feet to an iron pin found in said 17.68 acre tract;

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Thence crossing said 17.68 acre tract with the following thirty-three (33) courses and distances:

1.) South 61°39'22" West, a distance of 58.74 feet to an iron pin found;

2.) South 73°35'51" West , a distance of 45.41 feet to an iron pin found;

3.) South 72°43'07" West, a distance of 103.56 feet to an iron pin found;

4.) South 82°65'39" West, a distance of 80.24 feet to an iron pin found,

5.) South 82°58'13" West, a distance of 120.59 feet to an iron pin found;

6.) South 01°37'13" East, a distance of 10.31 feet to an iron pin found;

7.) South 80°04'06" West, a distance of 45.82 feet to an iron pin found;

8.) North 04°41'32" East, a distance of 53.96 feet to an iron pin set,

9.) North 46°26'35" East, a distance of 201.86 feet to an iron pin set;

10.) North 01°39'10" West, a distance of 41.56 feet to an iron pin set;

11.) South 89°28'55" West, a distance of 397.71 feet to an iron pin set;

12.) South 83°13'43" West, a distance of 387.72 feet to an iron pin set;

13.) South 07°27'35" East, a distance of 227.31 feet to an iron pin set;

14.) South 05°28'40" East, a distance of 44.09 feet to an iron pin set;

15.) South 07°58'24" East, a distance of 93.66 feet to an iron pin set;

16.) North 75°54'00" East, a distance of 78.91 feet to an iron pin set;

17.) North 24°27'29" West, a distance of 99.13 feet to an iron pin set;

18.) North 79°49'02" East, a distance of 75.88 feet to an iron pin set,

19.) North 82°54'26" East, a distance of 197.88 feet to an iron pin set;

20.) South 57°54'36" East, a distance of 29.12 feet to an iron pin set;

21.) North 81°50'07" East, a distance of 28.32 feet to an iron pin set;

22.) North 09°29'45" East, a distance of 17.42 feet to an iron pin set;

23.) North 77°13'35" East, a distance of 89.22 feet to an iron pin set;

24.) North 69°49'16" East, a distance of 84.57 feet to an iron pin set;

25.) South 06°55'42" West, a distance of 33.94 feet to a surveyor's nail set;

26.) South 19°27'18" West, a distance of 13.71 feet to an iron pin set;

27.) South 57°23'02" West, a distance of 36.99 feet to an iron pin set;

28.) South 67°15'25" West, a distance of 240.29 feet to an iron pin set;

29.) South 54°03'57" West, a distance of 63.19 feet to an iron pin set;

30.) South 29°43'09" West, a distance of 122.02 feet to an iron pin set;

31.) South 63°02'39" West, a distance of 31.36 feet to an iron pin set;

32.) South 76°52'04" West, a distance of 79.92 feet to an iron pin set;

33.) South 83°59'02" West, a distance of 347.69 feet to an iron pin set in said 33.11 acre tract;

Thence South 79°29'02" West crossing said 33.11 acre tract, a distance of 98.70 feet to an iron pin set on the easterly right of way line of the Consolidated Rail Corporation tract;

Thence with the easterly right of way line of said Consolidated Rail Corporation tract and the westerly line of said 33.11 acre tract the following three (3) courses and distances:

1.) With a curve to the right having a radius of 3669.83 feet, a central angle of 11°37'50", a chord bearing of North 03°16'21" East, a chord length of 743.66 feet, and an arc length of 744.94 feet to an iron pin found;

2.) South 84°41'06" East, a distance of 150.25 feet to an iron pin found;

3.) With a curve to the right having a radius of 3619.79 feet, a central angle of 19°53'33", a chord bearing of North 19°11'28" East, a chord length of 1215.90 feet, and an arc length of 1222.03 feet to an iron pin found on the westerly line of said 87.28 acre tract;

Thence crossing said 87.28 acre tract with the following five (5) courses and distances:

1.) South 24°05'45" East, a distance of 127.68 feet to an iron pin found;

2.) North 65°39'33" East, a distance of 138.18 feet to an iron pin found;

3.) South 24°14'27" East, a distance of 125.11 feet to an iron pin found;

4.) North 65°36'51" East, a distance of 123.37 feet to an iron pin found;

5.) South 24°21'20" East, a distance of 205.80 feet to an iron pin found in said 33.11 acre tract;

Thence crossing back into said 87.28 acre tract with the following twelve (12) courses and distances:

1.) North 65°25'37" East, a distance of 514.16 feet to an iron pin set;

2.) South 23°23'40" East, a distance of 349.34 feet to an iron pin found;

3.) South 15°42'36" West, a distance of 99.82 feet to an iron pin found;

4.) South 52°01'06" East, a distance of 45.16 feet to an iron pin set;

5.) South 88°48'49" East, a distance of 34.13 feet to an iron pin found;

6.) North 47°52'27" East, a distance of 162.00 feet to an iron pin found at a point of curvature;

7.) With a curve to the left having a radius of 349.79 feet, a central angle of 20°18'10", a chord bearing of North 37°43'22" East, a chord length of 123.30 feet, and an arc length of 123.95 feet to an iron pin found;

8.) North 27°34'17" East, a distance of 60.00 feet to an iron pin set;

9.) North 31°21'43" East, a distance of 84.96 feet to an iron pin set;

10.) North 37°32'43" East, a distance of 70.00 feet to an iron pin set at a point of curvature;

11.) With a curve to the right having a radius of 223.57 feet, a central angle of 42°00'18", a chord bearing of North 58°32'52" East, a chord length of 160.26 feet, and an arc length of 163.91 feet to an iron pin found;

12.) North 40°32'20" East, a distance of 86.52 feet to an iron pin set on the southerly line of said 14.288 acre tract;

Thence with the southerly line of said 14.288 acre tract the following six (6) courses and distances:

1.) South 83°55'13" East, a distance of 222.55 feet to an iron pin found;

2.) North 89°59'43" East, a distance of 173.01 feet to an iron pin found;

3.) North 63°47'11" East, a distance of 98.26 feet to an iron pin set;

4.) North 83°30'22" East, a distance of 97.43 feet to an iron pin found;

5.) North 51°47'30" East, a distance of 48.88 feet to an iron pin found;

6.) South 89°59'28" East, a distance of 72.24 feet to the **TRUE POINT OF BEGINNING,** containing 45.247 acres of land, more or less.

Subject however to all easements, restrictions and rights-of-way of record, if any.

Basis of Bearing is the section line between Sections 30 and 36 being North 05°16'47" East as determined by GPS measurements between Montgomery County Monuments 1057 and 1058 and the Ohio State Plane Coordinate System, South Zone. All iron pins Set are 5/8" solid iron pins 30" in length with an orange plastic cap stamped "Floyd Browne Group".

The above description is based on and referenced to an exhibit prepared by Floyd Browne Group dated 06-12-06, attached hereto and made a part hereof.

All references are to the records of the Recorder's Office, Montgomery County, Ohio.

6/12/06

Maynard H. Thompson P.S. Date
Professional Surveyor No. 7128

STATE OF OHIO
MAYNARD H. THOMPSON S-7128 REGISTERED PROFESSIONAL SURVEYOR

J:\Projects\TERRAN CORP\06-50304-010\SRVY\DWG\S-DOCS\45_247ac.doc

Floyd Browne Group

EXHIBIT B
Parcel 6A

Floyd Browne Group

DIV/2
K46-005-02.

Description of 3.320 Acres

Situate in the State of Ohio, County of Montgomery, City of Miamisburg, being part of Section 30, Township 2, Range 5, M.Rs., being 3.320 acres out of Section 30, being part of City of Miamisburg Lot Number 2259, being 0.637 acres of land that lie over and across a 0.78 acre tract of land described in deed to the United States of America of record in Deed Book 1214, Page 17, being 0.758 acres of land that lie over and across a 0.78 acre tract of land described in deed to the United States of America of record in Deed Book 1214, Page 15, being 1.925 acres of land that lie over and across an 87.28 acre tract of land described in deed to the United States of America of record in Deed Book 1214, Page 12, being Montgomery County Engineer Survey Record Number 2006-0269, and being more particularly described as follows:

COMMENCING for reference at a concrete monument found at the northwest corner of said Section 30 and the northeast corner of Section 36, being the northerly line of said Township 2, Range 5, and being the southerly line of Township 1, Range 6, M.Rs.;

Thence South 85°00'57" East with said Range line, the northerly line of City of Miamisburg Lot Number 2258, and the northerly line of said Section 30, a distance of 1249.65 feet to an iron pin set at the northeasterly corner of a 14.288 acre tract of land described in deed to Miamisburg Mound Community Improvement Corporation of record in Deed Instrument Record No. 02-146504;

Thence South 05°32'59" West with the easterly line of said 14.288 acre tract and the easterly line of said City Lot Number 2259, a distance of 1121.45 feet to a Mag nail set on the westerly line of a 42.63 acre tract of land as described in deed to the Village of Miamisburg of record in Deed Book 776, Page 581, passing a monument box found on the centerline of Mound Road (65 foot right of way) at a distance of 886.25 feet, being on the easterly line of said 87.28 acre tract, and being the **TRUE POINT OF BEGINNING** of the tract to be described;

Thence South 05°32'59" West with the centerline of said Mound Road, the westerly line of said 42.63 acre tract, the easterly line of said City Lot Number 2259, the easterly line of said 87.28 acre tract, and the easterly line of both said 0.78 acre tracts, a distance of 459.58 feet to a Mag nail set on the centerline of Mound Road, passing a Mag nail found at a distance of 324.29 feet;

Thence with a new division line though said 87.28 acre tract, said City Lot Number 2259, and both said 0.78 acre tracts with the following five (5) courses:

1.) North 84°28'09" West, a distance of 277.72 feet to an iron pin set, passing an iron pin set on the westerly right of way line of said Mound Road at a distance of 34.87 feet;

2.) North 05°31'51" East, a distance of 111.53 feet to a Mag nail set;

3.) North 84°28'09" West, a distance of 176.90 feet to a Mag nail set;

4.) North 41°54'30" East, a distance of 432.26 feet to a 5/8" iron pin found with a Schram cap, passing a 5/8" iron pin found at a distance of 77.95 feet;

5.) South 84°28'40" East, a distance of 198.41 feet, passing an iron pin set on the westerly right of way line of said Mound Road at a distance of 163.62

3769 Columbus Pike, P.O. Box 8016 ■ Delaware, Ohio 43015-8016 ■ 740.363.8792 ■ fax: 740.393.6536
www.floydbrowne.com ■ 1.800.325.7847

feet, to the **TRUE POINT OF BEGINNING**, containing 3.320 acres of land, more or less.

Subject however to all easements, restrictions and rights-of-way of record, if any.

Basis of Bearing is the section line between Sections 30 and 36 being North 05°16'47" East as determined by GPS measurements between Montgomery County Monuments 1057 and 1058 and the Ohio State Plane Coordinate System, South Zone. All iron pins set are 5/8" solid iron pins 30" in length with an orange plastic cap stamped "Floyd Browne Group".

The above description is based on and referenced to an exhibit prepared by Floyd Browne Group dated 09-12-06, attached hereto and made a part hereof.

All references are to the records of the Recorder's Office, Montgomery County, Ohio.

9/06/06

Maynard H. Thompson, P.S. Date
Professional Surveyor No. 7128

STATE OF OHIO
MAYNARD H. THOMPSON S-7128 REGISTERED
PROFESSIONAL SURVEYOR

JOSEPH LITVIN, P.E., P.S
MONTGOMERY COUNTY ENGINEER
DAYTON, OHIO
APPROVED
BY _____ DATE _____
FILE NO. 2006-02694

EXHIBIT C

Parcels 6, 7, and 8

Environmental Summary

CERCLA 120(h) SUMMARY
NOTICE OF HAZARDOUS SUBSTANCES

Final
August 2010

Miamisburg Closure Project
Miamisburg, Ohio

EXHIBIT D

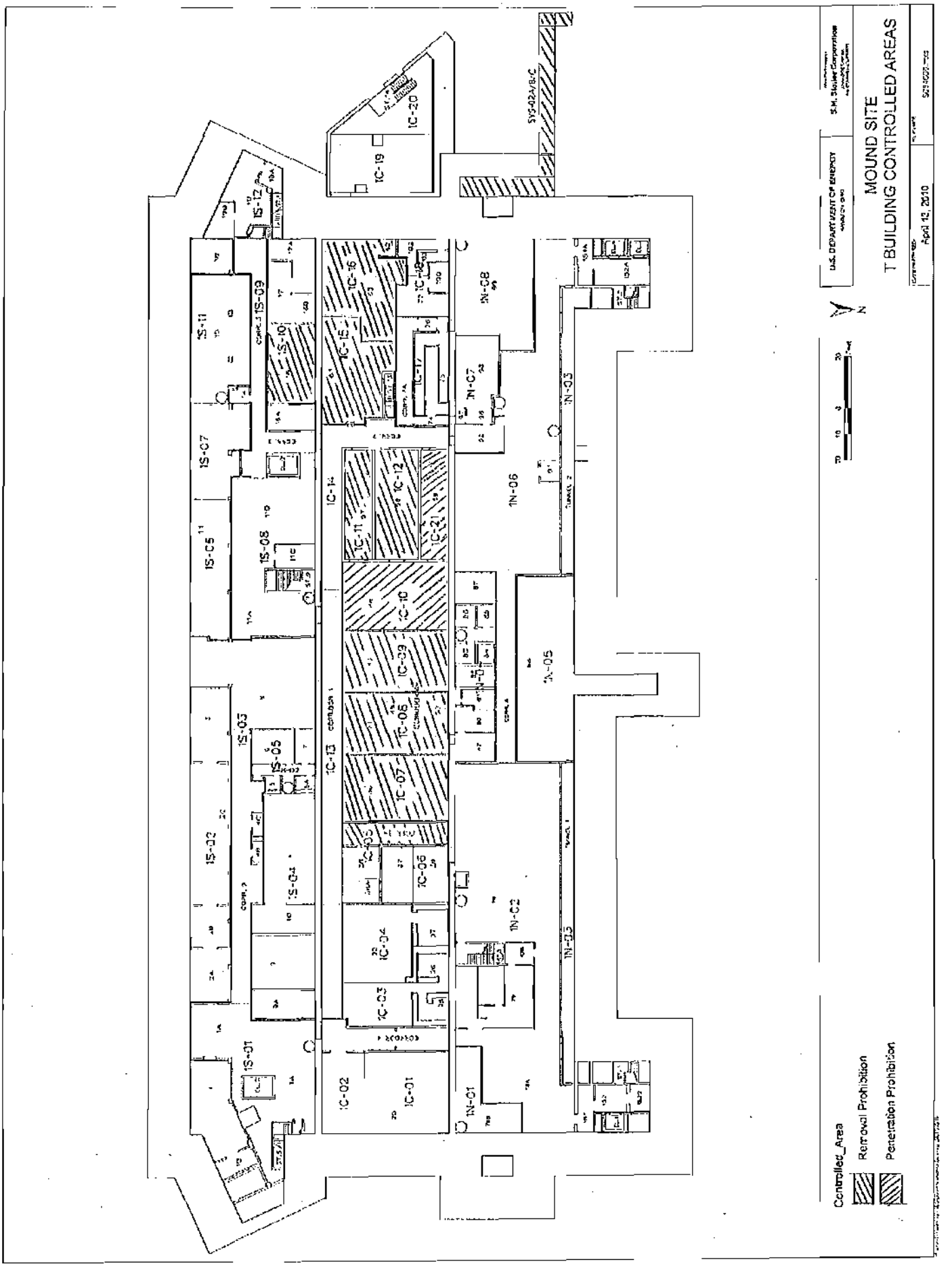
U.S. DEPARTMENT OF ENERGY
S.M. Stoller Corporation
MOUND SITE
T BUILDING CONTROLLED AREAS
April 12, 2010
N
Controlled Area
Removal Prohibition
Penetration Prohibition
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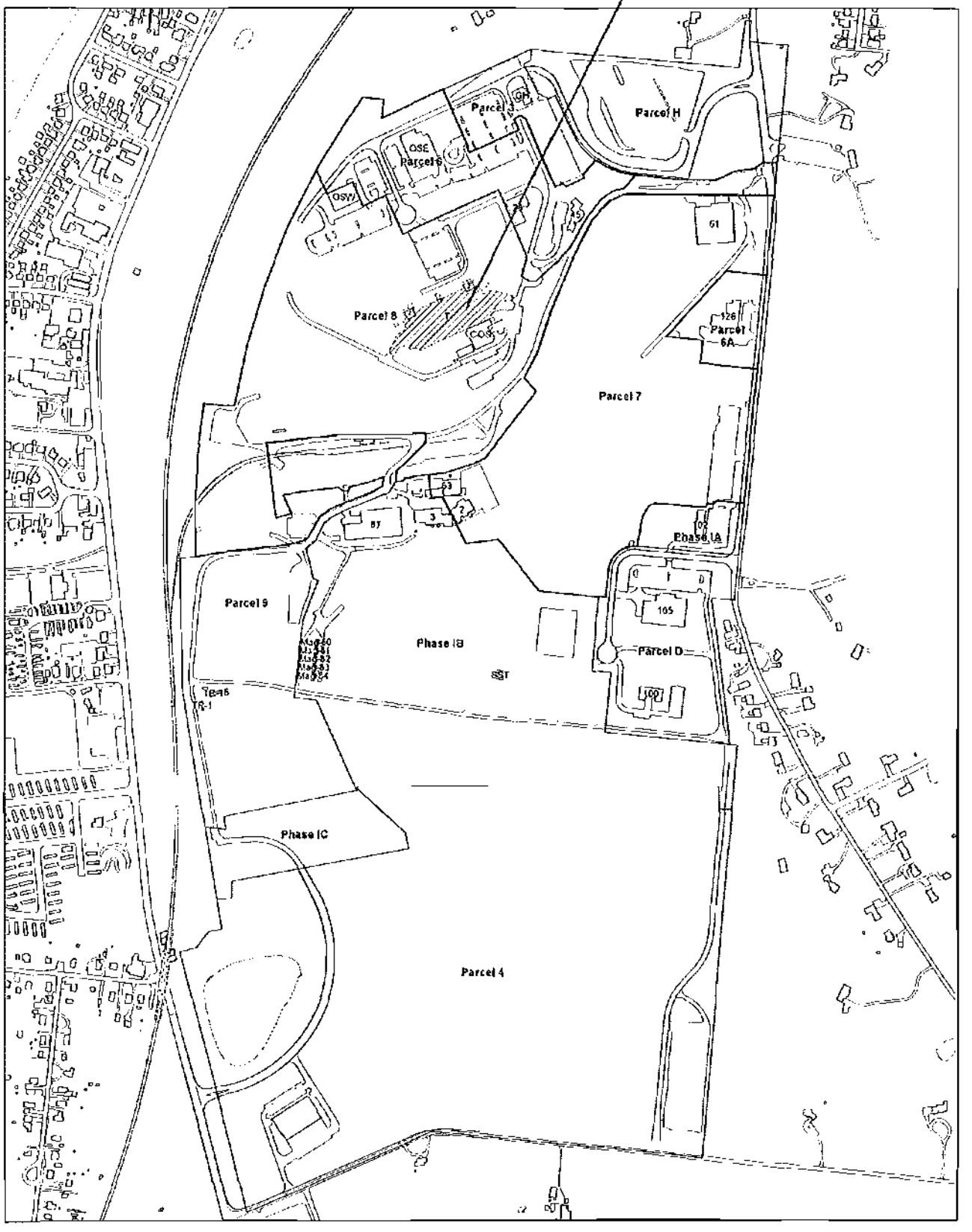
EXHIBIT D – T Building



Legend

- Parcel 6, 7 & 8
- Parcel - DOE
- Parcel - MMCIC
- Building
- T-Building
- Road - paved
- Railroad
- River
- Pond

N

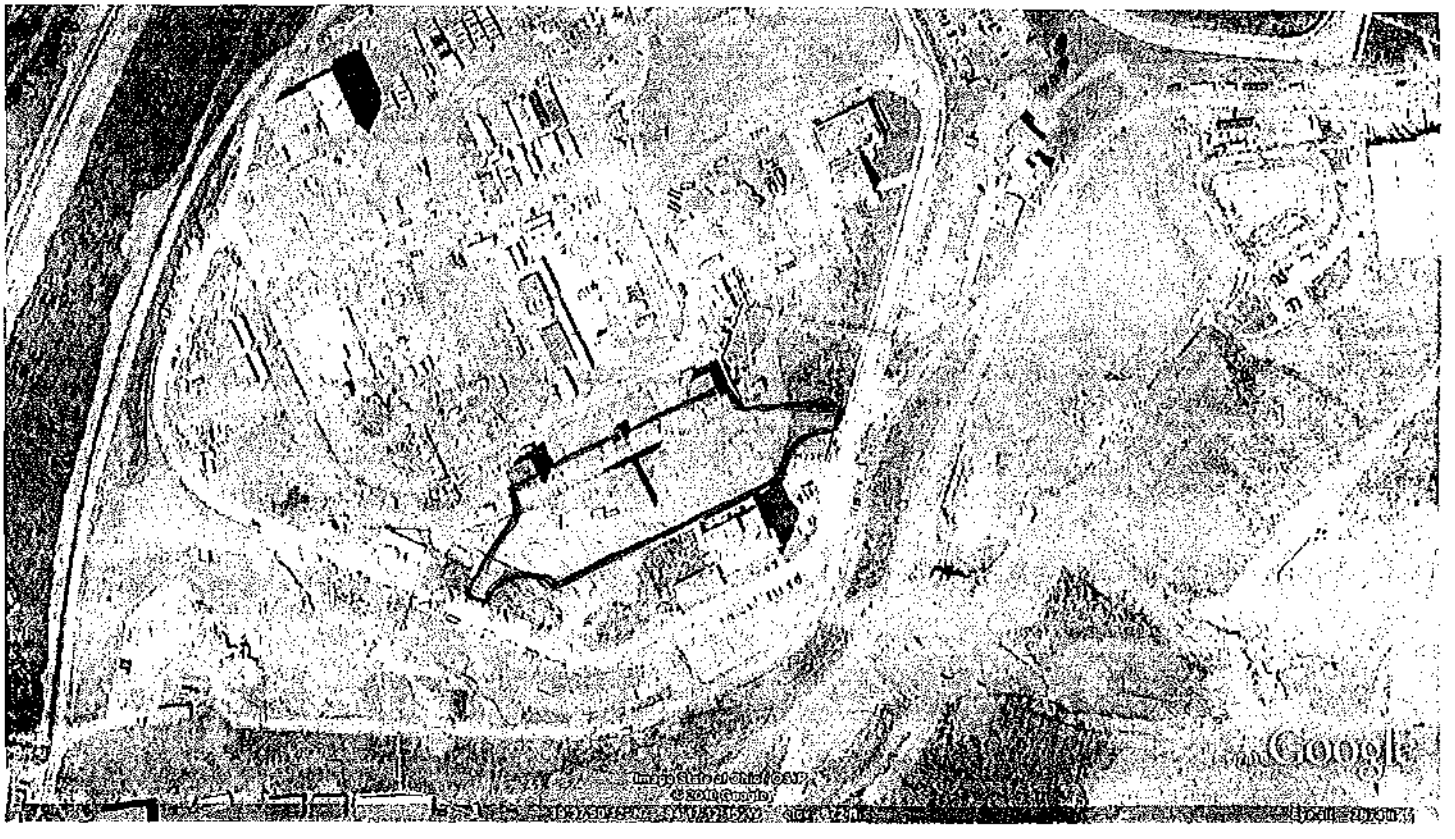
200 100 0 200 Feet

Mound Site
Parcel 6, 7 & 8
and T Building

DATE 9/27/10

FILE NAME mnd_parcels6_8_tbldg.mxd

EXHIBIT D – T Building



Parcels 6, 7, and 8

Environmental Summary

CERCLA 120(h) SUMMARY
NOTICE OF HAZARDOUS SUBSTANCES

Final
August 2010

Miamisburg Closure Project
Miamisburg, Ohio

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Table 1	Parcels 6, 7, and 8 Documents and Public Comment Periods
Table 2	Parcels 6, 7, and 8 PRSs and Core Team Conclusions
Table 3	Parcels 6, 7, and 8 Transfer Buildings and Core Team Conclusions
Table 4	Parcels 6, 7, and 8 Risk Summary
Table 5	Identification of Constituents of Potential Concern for the Construction Worker Exposed to Surface and Subsurface Soil in Parcel 6
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Acronyms

ACM	Asbestos Containing Material
BDP	Building Data Package
BVA	Buried Valley Aquifer
CERCLA	Comprehensive Environmental Response, Compensation & Liability Act
COPC	Constituent of Potential Concern
DCE	1,2 cis-dichloroethene
D&D	Decontamination & Decommissioning
EA	Environmental Assessment
FONSI	Finding of No Significant Impact
HI	Hazard Index
HQ	Hazard Quotient
MMCIC	Miamisburg Mound Community Improvement Corporation
NCP	National Contingency Plan
NFA	No Further Assessment
NWP	Nationwide Permit
O&M	Operations & Maintenance
ODH	Ohio Department of Health
OEPA	Ohio Environmental Protection Agency
OU	Operable Unit
OSC	On-Scene Coordinator
PCB	polychlorinated biphenyl
PCN	pre-construction notification
PRS	Potential Release Site
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision
RRE	Residual Risk Evaluation
RREM	Residual Risk Evaluation Methodology
TCE	trichloroethene(ethylene)
USACE	United States Army Corps of Engineers
USDOE	United States Department of Energy
USEPA	United States Environmental Protection Agency
WQC	Water Quality Certification

1.0 PURPOSE

The information contained in this notice is required under the authority of regulations promulgated under section 120 (h) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). This summary is intended to support a transfer by deed to new ownership for economic development by documenting that the U.S. Department of Energy's (US DOE) Mound Plant has met the requirements of CERCLA 120 (h) for Parcels 6, 7, and 8. A copy shall be provided to all future owners.

2.0 PROPERTY DESCRIPTION

2.1 Description of Property Suitable for Transfer

This Environmental Summary addresses Parcels 6, 7, and 8, which are located on the Mound Site as shown in Figure 1. The legal descriptions for Parcels 6, 7, and 8, as recorded in the Parcels 6, 7, and 8 Record of Decision (Reference 1) are included as Appendix C of this Environmental Summary.

2.2 Regional Context of the Mound Plant and Transferred Property

The Mound Plant is in Montgomery County within the City of Miamisburg, Ohio as shown in Figure 2. At one time, the Mound Plant occupied approximately 306 acres. Prior to the transfer of Parcel 4, Benner Road formed the southern boundary of the site. The Norfolk Southern Railroad roughly parallels the western boundary at a distance of 50-200 feet. At one time, the Mound Plant consisted of approximately 130 buildings with a total of 1.4 million square feet of floor space. Since 1999, approximately 128 acres have been transferred to MMCIC. Parcels 6, 7, and 8 occupy approximately 104 of the remaining 127 acres.

2.3 Historical Uses of Parcels 6, 7, and 8

Parcels 6, 7, and 8 comprise the majority of the operational area of the Mound Plant (Figure 1). There are 10 buildings in Parcels 6, 7, and 8. There are 332 Potential Release Sites (PRSs) in the Parcels. All buildings and PRSs in Parcels 6, 7, and 8 were evaluated for protectiveness or remediated to be protective. Any residual risks associated with remaining contamination in Parcels 6, 7, and 8 have been evaluated and are presented in the Parcels 6, 7, and 8 Residual Risk Evaluation (RRE). Details of PRSs are presented in Appendix E.

Parcel 6 occupies approximately 14 acres. Three buildings (28, 45, and OSE) are located on the property. Eighteen sites of former buildings are included in the parcel. Details of current and historic buildings are provided in Appendix D. Ceramic development and production, health physics calibration, weld development, various administrative functions (print shop, personnel, medical, records storage), and other support services (garage, maintenance shops, security operations) were among the activities conducted in these buildings.

Parcel 7 occupies approximately 42 acres. Four buildings (2, 61, 63, 126) remain on the property. Thirty-seven former buildings once stood on the parcel. Details of current and historic buildings are provided in Appendix D. Radioisotope Thermoelectric Generator (RTG) assembly, nuclear processing, administrative support (purchasing, office), and other support services (fire house, maintenance, and storage) were among the activities conducted in these buildings.

Parcel 8 occupies approximately 45 acres. Three buildings (COS, OSW, T) remain on the property. Eighty-nine former buildings once stood on the parcel. Details of current and historic buildings are provided in Appendix D. Tritium development and operations, explosives processing and production, waste water treatment, radioactive liquid waste processing, power generation, analytical services, environmental laboratory, waste management, and other support functions (office, weather monitoring, maintenance, guard posts, water production) were among the activities conducted in these buildings.

3.0 ENVIRONMENTAL FINDINGS

3.1 Methodology

In accordance with Section 120 (h)(3) of CERCLA, to the extent that information is available based on a complete search of DOE files, the following shall be placed in deeds: (1) a notice of the type and quantity of hazardous substances stored, disposed of, or released; (2) a notice of the time at which such storage, disposal, or release took place; and (3) a description of any remedial action taken. Information sources reviewed to obtain the information include:

- federal Government records,
- recorded chain of title documents,
- reasonably obtainable aerial photographs,
- visual inspection of the property and adjacent properties,
- reasonably obtainable records of releases on adjacent properties,
- interviews with current or former employees, and
- sampling, if appropriate under the circumstances.

Parcels 6, 7, and 8 include 332 Potential Release Sites (PRSs). These PRSs were identified on the basis of potential radiological and/or chemical (non-radioactive) contamination, knowledge of historical land use, or on actual sample data. The locations of the PRSs in Parcels 6, 7, and 8 are shown in Figure 3 and detailed in Appendix E. Before transfer of a parcel can be completed, all buildings and PRSs must be evaluated for protectiveness or remediated to a protective level. Residual risks associated with remaining contamination in Parcels 6, 7, and 8 have been evaluated.

A Core Team with representatives from the DOE, US Environmental Protection Agency (USEPA), and Ohio Environmental Protection Agency (OEPA) performs a joint agency

evaluation of each PRS. The Core Team uses process knowledge, site visits, and existing data to determine whether any action is warranted concerning the PRS and recommends the appropriate response(s).

Information in the following documents was used to support this Environmental Summary.

3.1.1 PRS and Building Documents for the PRSs and buildings located within Parcels 6, 7, and 8 (see Table 1). These PRSs were identified on the basis of potential radiological and/or chemical (non-radioactive) contamination using knowledge of historical land use or actual sample data. PRS and Building Data provide a summary of information sufficient for the Core Team to make recommendations or change the status of the PRS or building. Action Memoranda provide a plan for addressing removal actions. On-Scene Coordinator (OSC) Reports document completion of the removal action. The locations of the PRSs and buildings in Parcels 6, 7, and 8 are shown on Figure 3. Table 2 lists the Core Team conclusions for these PRSs. Table 3 lists the Core Team conclusions for these buildings.

3.1.2 Residual Risk Evaluation (RRE), Parcels 6, 7, and 8 (Reference 2). The RRE provides the evaluation of human health risks associated with any residual contamination that may remain in the parcel after all remedies within a parcel have been addressed. The evaluation, used in conjunction with the Proposed Plan, ensures that future users of the land will not be exposed to contamination levels that would pose unacceptable health risks.

3.1.3 Ecological Scoping Report, Parcels 6, 7, and 8 (Reference 3). This report was prepared in accordance with an OEPA procedure to determine if an ecological assessment is warranted at a site. Based on the site visit that is part of the OEPA procedure, the fact that no threatened or endangered species were observed within Parcels 6, 7, and 8, and that no sensitive environments or ecologically important resources were identified within Parcels 6, 7, and 8, the future reuse of Parcels 6, 7, and 8 as an industrial park, and the information developed during several characterization investigations and removal actions performed in the Parcels 6, 7, and 8 area, the report concluded that a more detailed assessment of the ecological risk is not warranted.

3.1.4 Proposed Plan for Parcels 6, 7, and 8 (Reference 4). The Proposed Plan identifies for the public the preferred option for addressing residual contamination at the Mound Site, Parcels 6, 7, and 8, by briefly summarizing the alternatives studied and highlighting the key factors that led to identifying the preferred alternative.

3.1.5 Record of Decision (ROD) for Parcels 6, 7, and 8 (Reference 1). The ROD documents the remedial action plan for the parcel and serves the following three functions: (1) certifies the remedy selection process was carried out in accordance with CERCLA, (2) describes the technical parameters of the remedy by specifying the treatment, engineering, and institutional components as well as cleanup levels, and (3) provides the public with a consolidated summary of information about the parcel and the chosen remedy, including the rationale behind the selection of the remedy for Parcels 6,7 and 8 described in Section 4.0 of this document.

3.2 Building Analysis Summary

There are 10 DOE-owned buildings within Parcels 6, 7, and 8 (see Figure 3). These buildings were evaluated by the Core Team and determined to warrant No Further Assessment (NFA). The information in the following sections is summarized in Table 11 Appendix B.

3.2.1 Asbestos

There are asbestos containing materials in some of the buildings in Parcels 6, 7, and 8. There are no areas requiring asbestos abatement prior to transfer. Appropriate management practices may be required in the future for the buildings to remain protective. The situation in Parcels 6, 7, and 8 buildings with respect to asbestos can be summarized as follows:
Present, no remediation needed – Building 2, 28, 45, 63, OSW, T
None identified – Building COS
Unlikely to be present – Building 61, 126, OSE
For more information consult the appropriate Building Data Package.

3.2.2 Lead

There is lead based paint in some of the buildings in Parcels 6, 7, and 8. There are no areas in any of the buildings requiring lead abatement prior to transfer. Appropriate management practices may be required in the future for the buildings to remain protective. The situation in Parcels 6, 7, and 8 buildings with respect to lead based paint can be summarized as follows:
Assumed Present, no remediation needed – Building 28, 45, T
None identified - Building 2, 61, OSW
Unlikely to be present – Building 63, 126, COS, OSE
For more information consult the specific Building Data Package.

3.2.3 Radon

Radon studies are presented in a 1989-90 Mound Indoor Radon study for buildings. There are no areas in any of the buildings requiring radon abatement prior to transfer.

3.2.4 Radiological Surveys

The final radiological surveys for the buildings remaining in Parcels 6, 7, and 8 met all surface contamination guidelines. This information is available in the building data packages (BDPs). For T Building, 98.4% of the building surfaces met free release surface contamination guidelines. The remaining 1.6% of the building met the dose based criteria of 15 mrem per year under an industrial use scenario. There are two areas in T Building that carry restrictions on the disturbance of the floor and there are restrictions on the disposal of debris generated from T Building as described in Section 4.0 of this document.

3.2.5 PCBs

There are no areas within Parcels 6, 7, and 8 requiring polychlorinated biphenyl (PCB) cleanup. There may be PCB containing ballasts in the fluorescent lights in some of the buildings in Parcels 6, 7, and 8. Appropriate management practices may be required in the future for the buildings to remain protective. However, the situation in Parcels 6, 7, and 8 buildings with respect to PCBs can be summarized as follows:
May be present in fluorescent lamp ballasts – Building 2, 28,45,126, COS, OSW
None identified - Building 28, 61, 63, OSE, T
For more information consult the specific Building Data Package.

3.3 PRS Summary

PRSs at Mound were identified based on either knowledge of historical land use that was considered potentially detrimental, or an actual sampling result showing elevated concentrations of contaminants. The locations of the PRSs in Parcels 6, 7, and 8 are shown in Figure 3.

Appendix E contains a brief summary of the history of the PRSs in Parcels 6, 7, and 8 and their contaminants. For a more detailed description of these PRSs, refer to the PRS data packages (Tables 1 and 2).

The USDOE, USEPA, and OEPA have jointly decided that no additional remedial action for the PRSs in Parcels 6, 7, and 8 is necessary with the placement of Institutional Controls in the form of deed restrictions on future land use and Monitored Natural Attenuation for Parcels 6, 7, and 8. As part of the remedy, DOE will continue to monitor groundwater in Parcels 6, 7, and 8 to verify that the concentration of TCE is decreasing due to natural attenuation and is not impacting the Buried Valley Aquifer (BVA).

3.4 RRE Summary

Pursuant to the Residual Risk Evaluation Methodology (RREM) (Reference 5), risks are quantified for both carcinogenic (cancer-causing) and non-carcinogenic (non-cancer-causing) contaminants. All analytes (carcinogenic and non-carcinogenic) detected at least once in soil in Parcels 6, 7, and 8 were identified as constituents of potential concern (COPCs) and are listed in Appendix F. The maximum concentration of each COPC for soil was compared to and screened against criteria established in the RREM and presented in the Parcels 6, 7, and 8 Residual Risk Evaluation (Reference 2). COPC tables for soil are presented in Tables 5 through 10 of Appendix B. COPCs that were carried through the RRE process are identified in the tables.

The risk associated with the intake of a known or suspected carcinogen is reported in

terms of the incremental lifetime cancer risk presented by that COPC, as estimated using the appropriate slope factor and the amount of material available for uptake. The acceptable risk range as defined by CERCLA and the National Contingency Plan (NCP) is 10^{-4} to 10^{-6} (one human in ten-thousand to one human in one-million incremental cancer incidence). Potential human health hazards from exposure to non-carcinogenic contaminants are evaluated by using a Hazard Quotient (HQ). The HQ is determined by the ratio of the intake of a COPC to a reference dose or concentration for the contaminant of concern that is believed to represent a no-observable effect level. The contaminant of concern-specific HQs are then summed to provide an overall Hazard Index (HI). USEPA guidance sets a limit of 1.0 for the Comprehensive HI. The incremental carcinogenic risks and hazards associated with residual concentrations of COPCs in Parcels 6, 7, and 8 are also shown in Table 4 of Appendix B.

Evaluation of residual soil contaminants within Parcels 6, 7, and 8 has resulted in a determination that future users of the land will not be exposed to contaminant levels that would pose unacceptable risks as long as compliance with the deed restrictions described in the Parcels 6, 7, and 8 Record of Decision are maintained. The soils within Parcels 6, 7, and 8 have not been evaluated for any use other than onsite industrial use. Any offsite disposition of the Parcels 6, 7, and 8 soil without proper handling, sampling, and management could create an unacceptable risk to offsite receptors.

3.5 Other Factors Considered

DOE developed a generic checklist of the issues to be considered in evaluating property to be transferred. The checklist was modified from that used by the Department of Defense in releasing property for sale. The checklist includes environmental problems from Mound Site that are likely to concern a potential purchaser as well as items relating to the operational concerns from ongoing and future remedial actions. Results of only those factors which affect Parcels 6, 7, and 8 are presented as follows:

3.5.1 Cultural Resources

Seventeen buildings in Parcels 6, 7, and 8 (A, B, C, E, G, H, I, M, P, R, T, W, GH, HH, PH, SD, and WD) were determined to be historically significant. All but T Building were demolished. This impact was mitigated by development of building specific documentation packages submitted to the National Archives and the Ohio Historic Preservation Office.

3.5.2 Monitoring Equipment

DOE operates air monitoring stations within Parcels 6, 7, and 8. These are expected to operate for at least one year after the Parcels 6, 7, and 8 ROD is signed. There are also several monitoring wells within Parcels 6, 7, and 8. Since continued groundwater monitoring is part of the selected remedy for Parcels 6, 7, and 8, DOE will continue to have access to these locations via easements.

3.5.3 National Environmental Policy Act

Parcels 6, 7, and 8 lie within the boundaries of the Mound Site described in the Environmental Assessment (EA) for Commercialization of the Mound Plant (Reference 6) and the resulting Finding of No Significant Impact (FONSI) issued on October 27, 1994 (Reference 7) as described in Section 4.0 of this document. The land use described in the EA is consistent with the institutional controls in the ROD for Parcels 6, 7, and 8.

3.5.4 Wetlands

Three characteristics must be present for an area to be classified as a jurisdictional wetland: (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology. There are no designated wetlands in Parcel 6. There are two designated wetlands (0.04 acre total) in Parcel 7. There are six designated wetlands (0.107 acre total) in Parcel 8. (Reference 8).

Pursuant to 10 CFR Part 1022.5(d), when DOE property is proposed for disposal to non-Federal public or private parties, DOE must identify those uses that are restricted under Federal, state, or local wetlands regulations. Accordingly, the future owner of the site would be made aware of the following regulations governing activities in or near the wetlands.

According to the federal Clean Water Act, anyone who wishes to discharge dredged or fill material into the waters of the U.S., regardless of whether on private or public property, must obtain a Section 404 permit from the U.S. Army Corps of Engineers (USACE) and a Section 401 Water Quality Certification (WQC) from the state.

The USACE governs the discharges of dredged or fill material into headwaters and isolated waters of the United States with activity-specific Nationwide Permits (NWPs). The terms and conditions of the NWPs ensure that the activities result in minimal adverse effects on the aquatic environment. The NWPs require notification to the USACE district engineer for activities that result in the loss of greater than 0.1 acre of waters of the United States. Regional conditions may be added to the NWPs by division engineers to lower notification thresholds.

OEPA has pre-granted Section 401 Water Quality Certifications to 404 permits for certain types of projects that are similar in nature and cause minimal degradation to waters of the state. These permits substantially expedite the permitting process. To determine if a project qualifies for Nationwide Permits coverage, or requires an individual section 401 WQC from OEPA, applicants should contact the USACE first to discuss the project.

Existing wetland uses, as defined in rule 3745-1-53 of the Administrative Code, shall be maintained and protected in accordance with rules 3745-1-50 to 3745-1-54 of the Administrative Code [3745-1-05(C)(1)].

3.5.5 Clean Air Act

The roads and parking lots in Parcels 6, 7, and 8 are included under OEPA permit F001.

4.0 FINDINGS OF SUITABILITY TO TRANSFER

In accordance with the provisions of CERCLA Section 120 (h), contaminated property can only be transferred if one of the following applies:

(1) a decision has been made that no remedial action is necessary ,

(2) all remedial action necessary to protect human health and the environment with respect to any such substance remaining on the property has been taken before the date of transfer and any such remedy has been demonstrated to the Administrator to be operating properly and successfully, or

(3) Early Transfer Authority, which allows for transfer before all necessary action is complete, has been granted by USEPA with concurrence from the Governor of the State of Ohio pursuant to CERCLA Section 120(h)(3)(C).

The future industrial use of the Mound Site has been determined based upon agreement among USDOE, USEPA, and OEPA, and interested stakeholders. This land use is reflected in the MMCIC Mound Comprehensive Reuse Plan and is currently codified in the City of Miamisburg Zoning Ordinance for industrial/commercial use.

A joint agency decision among the USDOE, USEPA, and OEPA has been made that a remedial action has been taken that protects human health and the environment. EPA deems this condition to be satisfied if the institutional controls are implemented and operating successfully. Institutional controls in the form of deed restrictions on future land use will be placed on Parcels 6, 7, and 8 upon transfer as part of the remedy. The objective of these institutional controls is to prevent an unacceptable risk to human health and the environment by restricting the use of Parcels 6, 7, and 8, including Parcels 6, 7, and 8 soils and groundwater, to that which is consistent with assumptions in the Parcels 6, 7, and 8 RRE. DOE or its successors or assigns has the responsibility to implement, report on, monitor, maintain, and enforce these institutional controls both before and after the transfer. The following property deed restrictions and requirements will be imposed on the property to maintain protection of human health and the environment in the future:

- Maintenance of industrial or commercial land use
- Prohibition against residential land use
- Prohibition against the use of groundwater without prior approval from the USEPA and OEPA
- Site access for federal and state agencies for the purpose of sampling and monitoring
- Prohibition against the removal of soil from within the site boundary to offsite locations without prior approval from USEPA and OEPA.
- Prohibition against the removal of concrete floor material in specified rooms of T Building to offsite locations without prior approval from USEPA and OEPA.
- Prohibition against the penetration of concrete floors in specified rooms of T Building locations without prior approval from USEPA and OEPA.

Monitoring and reporting of groundwater and seep water to ensure unacceptable levels of contamination do not migrate into drinking water sources in and around the site and to verify that the concentration of VOCs is decreasing due to natural attenuation. An annual review and report will be submitted to OEPA, Ohio Department of Health (ODH), and USEPA (pursuant to CERCLA).

The Monitored Natural Attenuation portion of the remedy is also considered to be operating properly and successfully. This judgement is based on: declining levels of VOCs observed; the lack of a source term; limited area affected; and the lack of VOC migration. In addition, the monitoring data continue to support the analysis originally presented in the Parcels 6, 7, and 8 Record of Decision that indicated Monitored Natural Attenuation is appropriate. That analysis is reproduced here:

According to the guidance Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites, April 1999, EPA/540/R-99/009, there are generally ten factors that should be considered to evaluate the appropriateness of a Monitored Natural Attenuation remedy. The factors, along with a brief explanation of how they relate to Parcels 6, 7, and 8, are presented below:

1. *Whether the contaminants present in soil or groundwater can be effectively remediated by natural attenuation processes*

The concentration of TCE in the groundwater is expected to decrease to a concentration less than the MCL through a naturally-occurring biodegradation process called reductive dehalogenation. In this process, chlorinated solvent compounds (such as TCE) gradually break down by having a halogen, in this case chlorine atoms, replaced with a hydrogen atom. This progression results in a successively lower number of halogens (chlorine atoms) attached to the compound structure, shown by:
Trichloroethene (TCE)→ Dichloroethene (DCE) →Vinyl Chloride→ Ethene + Cl^-
The assumption that this process is already taking place in the area is supported by the fact that dichloroethene (DCE) has been detected consistently along with the TCE.

2. *Whether or not the contaminant plume is stable and the potential for the environmental conditions that influence plume stability to change over time*

The wells in the Parcels 6, 7, and 8 area have been sampled over a period of several years. Sample results have consistently shown that the TCE contamination is limited to a small area near the location of wells 0315 and 0347.

3. *Whether human health, drinking water supplies, other groundwater, surface waters, ecosystems, sediments, air, or other environmental resources could be adversely impacted as a consequence of selecting MNA as the remediation option*

There is no indication that the BVA or other environmental resources in the area of Parcels 6, 7, and 8 will be adversely affected by selecting MNA as the remediation option for VOCs in Parcels 6, 7, and 8.

4. *Current and projected demand for the affected resource over the time period that the remedy will remain in effect*

The bedrock aquifer, where the TCE has been detected above MCLs, is not currently used as a groundwater resource for the Mound Site, nor is it anticipated to be used in the future. The City of Miamisburg municipal water supply supplies all potable water to the site. Finally, the selected remedy calls for a restriction to be placed on the deed that will prohibit the installation of wells in the Parcels 6, 7, and 8 area in the future without approval from USEPA and OEPA.

5. *Whether the contamination, either by itself or as an accumulation with other nearby sources (on-site or off-site), will exert a long-term detrimental impact on available water supplies or other environmental resources*

The BVA is designated as a sole source aquifer and serves as the primary potable water supply for the City of Miamisburg. Based upon years of groundwater data collected down gradient of wells 0315 and 0347, there is no indication that the BVA is threatened by the TCE contamination in the area. These down gradient locations will be monitored as part of the selected remedy to verify that the BVA remains unaffected.

6. *Whether the estimated timeframe of remediation is reasonable compared to timeframes required for other more active methods of remediation*

The fact that the concentrations are just slightly above the MCL of 5 ppb for TCE (maximum of 28 ppb) would suggest that the timeframe for remediation should be fairly short. These relatively low concentrations, along with the fact that the bedrock aquifer exhibits relatively low yield rates, make remediation of the bedrock by more active methods an impractical option at this time. If concentrations were to increase, more active treatment methods may be evaluated.

7. *The nature and distribution of sources of contamination and whether these sources have been, or can be, adequately controlled*

Each of the potential TCE sources have been addressed under the Mound 2000 process. The risk evaluation demonstrates the adequacy of the response.

8. *Whether the resulting transformation products present a greater risk, due to increased toxicity and/or mobility, than do the parent contaminants*

Although vinyl chloride, a breakdown product of TCE, generally presents a higher risk to human receptors than TCE and is more persistent in groundwater, it is not

anticipated that the original concentration of TCE (maximum 28 ppb) will support the production of high enough concentrations of vinyl chloride in the bedrock aquifer in Parcels 6, 7, and 8 to pose an unacceptable risk. In any event, there is no current exposure pathway to Parcels 6, 7, and 8 groundwater, and the selected remedy prohibits the installation of drinking water wells in the Parcels 6, 7, and 8 area.

9. *The impact of existing and proposed active remediation measures upon the MNA component of the remedy, or the impact of remediation measures or other operations/activities (e.g. pumping wells) in close proximity to the site*

There are no operations or activities in close proximity to wells 0315 or 0347 that would impact the MNA component of the selected remedy.

10. *Whether reliable site-specific mechanisms for implementing institutional controls (e.g. zoning ordinances) are available, and if an institution responsible for their monitoring and enforcement can be identified*

Institutional Controls will be implemented as part of the selected remedy for the Parcels 6, 7, and 8 properties. The controls will restrict use of the bedrock groundwater, and DOE, or its successors, have the responsibility to monitor, maintain and enforce these institutional controls in the future.

Based on these factors, it has been determined that Monitored Natural Attenuation is an appropriate remedy for the VOCs in the groundwater in Parcels 6, 7, and 8.

The specifics of the monitoring were established in the Parcels 6, 7, and 8 Groundwater Monitoring Plan approved by USEPA and OEPA. This is part of the Operations & Maintenance (O&M) Plan required by the ROD. Key elements of the monitoring were outlined in Section 2.9.3 of the ROD. Groundwater monitoring provides assurance that the concentration of VOCs observed in Parcels 6, 7, and 8 is decreasing and is not impacting the BVA.

5.0 ENVIRONMENTAL COVENANTS

DOE is committed to include a covenant in accordance with Section 120 (h)(3) of CERCLA in the deed for the sale or transfer of the property that warrants that:

A. All remedial action necessary to protect human health and the environment has been taken as long as the deed restrictions limiting land and groundwater use are in effect and enforced.

B. Any additional response action or corrective action found to be necessary after the date of sale or transfer shall be conducted by the United States [Section 120(h)(4)(D)(i)]. The requirements of the covenant shall not apply in any case in which the person or entity to whom the property is transferred is a potentially responsible party with respect to the property.

C. A clause granting the United States access to the property in any case in which a response action or corrective action is found to be necessary or such access is necessary to carry out a response action or corrective action on the adjoining property [Section 120 (h)(4)(D)(ii)].

6.0 NOTIFICATION / PUBLIC PARTICIPATION

The community has been an active participant in this process to date. Comments from the public on the PRS recommendations have been incorporated as part of the remedy evaluation. DOE believes all comments have been resolved with the commentor and the documents, comments, and responses have been placed in the CERCLA Public Reading Room.

Table 1 lists the Parcels 6, 7, and 8 PRS packages, Parcels 6, 7, and 8 Building Data Packages, Parcels 6, 7, and 8 RRE, and Parcels 6, 7, and 8 Proposed Plan along with the dates they were made available for public comment.

7.0 REFERENCES

Reference 1 Parcels 6, 7, and 8 Record of Decision, Final, August 2009.

Reference 2 Parcels 6, 7, and 8 Residual Risk Evaluation (RRE), Public Review Draft, September 2007.

Reference 3 Parcels 6, 7, 8 Ecological Scoping Report, Final, June 2005.

Reference 4 Parcels 6, 7, and 8 Proposed Plan, Public Review Draft, May 2009.

Reference 5 Residual Risk Evaluation Methodology (RREM), Final, Revision 0, January 6, 1997.

Reference 6 Environmental Assessment for Commercialization of the Mound Plant, October 1994.

Reference 7 Finding of No Significant Impact (FONSI), October 27, 1994.

Reference 8 Delineation of Federal Wetlands and Other Waters of the U.S., Final, August 1999.

APPENDIX A

Figures

Figure 1 Location of Parcels 6, 7, and 8
Figure 2 Regional Context of the Mound Plant
Figure 3 Parcels 6, 7, and 8 Buildings and PRSs

Figure 1 Location of Parcels 6, 7, and 8

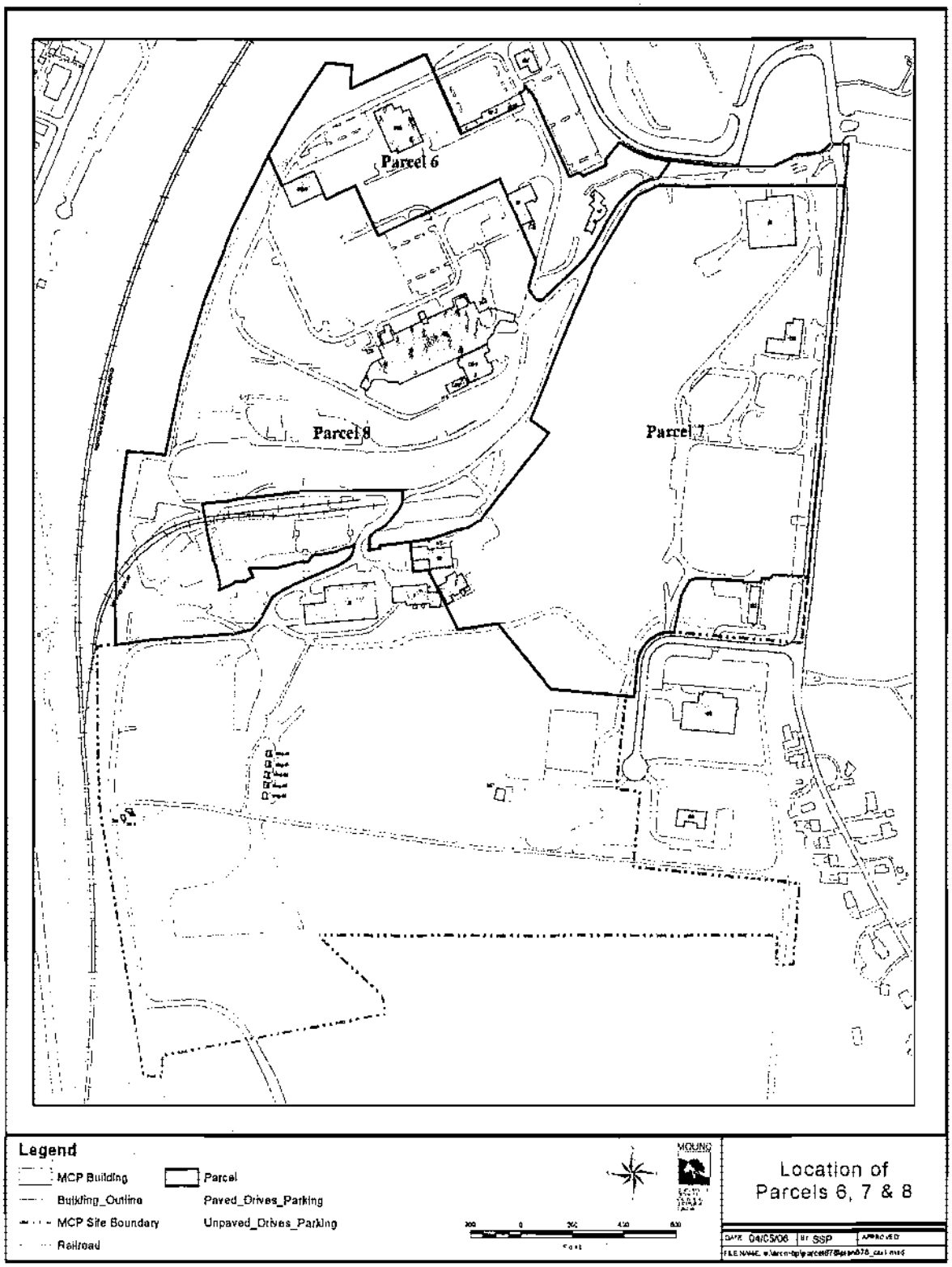
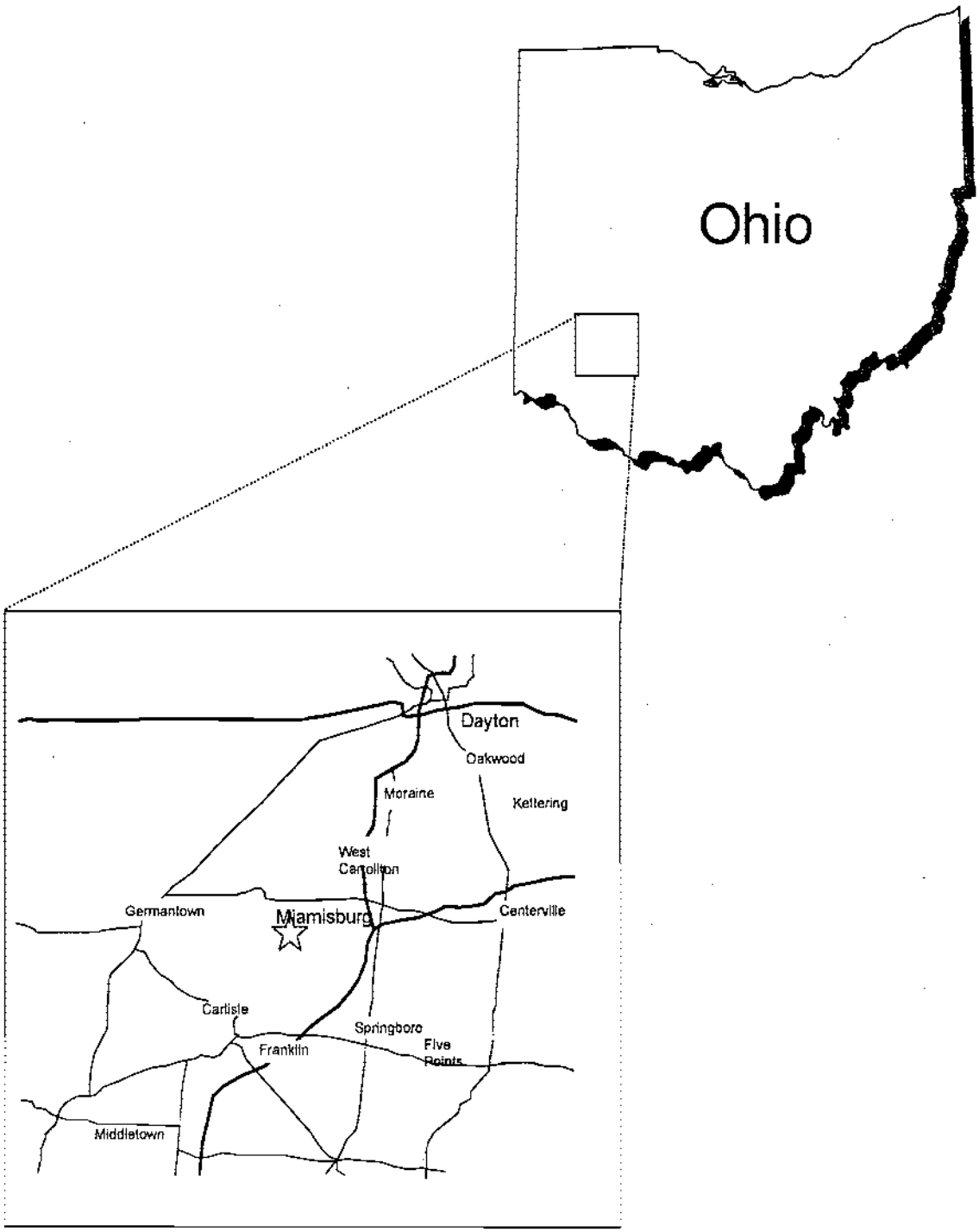


Figure 2 Regional Context of the Mound Plant



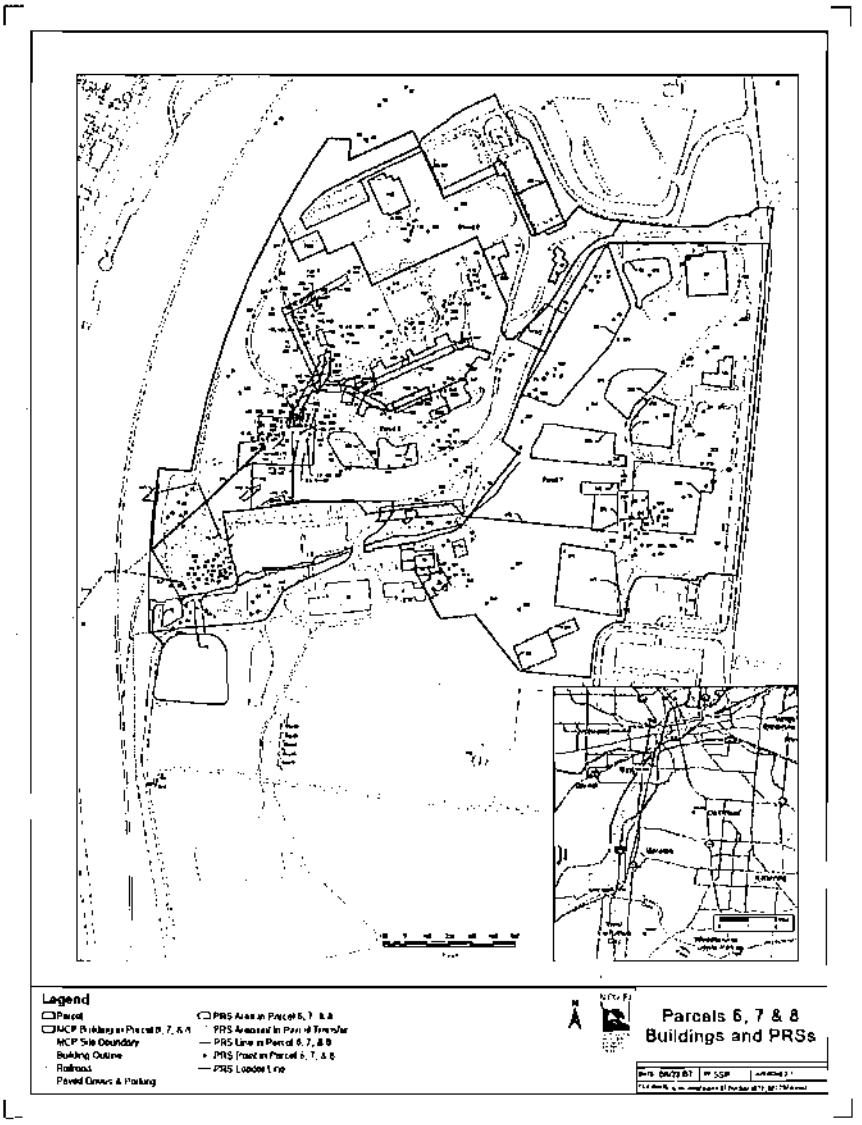


Figure 3 Parcels 6, 7, and 8 Buildings and PRSs

APPENDIX B

Tables

Table 1	Parcels 6, 7, and 8 Documents and Public Comment Periods
Table 2	Parcels 6, 7, and 8 PRSs and Core Team Conclusions
Table 3	Parcels 6, 7, and 8 Transfer Buildings and Core Team Conclusions
Table 4	Parcels 6, 7, and 8 Risk Summary
Table 5	Identification of Constituents of Potential Concern for the Construction Worker Exposed to Surface and Subsurface Soil in Parcel 6
Table 6	Identification of Constituents of Potential Concern for a Site Employee Exposed to Surface Soil in Parcel 6
Table 7	Identification of Constituents of Potential Concern for the Construction Worker Exposed to Surface and Subsurface Soil in Parcel 7
Table 8	Identification of Constituents of Potential Concern for a Site Employee Exposed to Surface Soil in Parcel 7
Table 9	Identification of Constituents of Potential Concern for the Construction Worker Exposed to Surface and Subsurface Soil in Parcel 8
Table 10	Identification of Constituents of Potential Concern for a Site Employee Exposed to Surface Soil in Parcel 8
Table 11	Building Analysis Summary

Table 1. Parcels 6, 7, and 8 Documents and Public Comment Periods

Parcel	Document	Comment Period Start	Comment Period End
6	Bldg 28 BDP/FSR	07/26/03	08/25/03
6	Bldg 40 BDP/WP	08/18/03	09/17/03
6	Bldg 45 BDP/FSR	05/16/05	06/15/05
6	Bldg 46 BDP/WP	05/14/03	06/13/03
6	Bldg 47 BDP/WP	05/19/03	06/18/03
6	Bldg 60 BDP/WP	03/11/03	04/10/03
6	Bldg 99 BDP/WP	8/18/03	9/17/03
6	Bldg A BDP/WP	02/14/04	03/15/04
6	Bldg C BDP/WP	1/6/98	2/5/98
6	Bldg G BDP/WP	06/30/03	07/30/03
6	Bldg GW, W BDP/WP	7/2/03	8/1/03
6	Bldg OSE BDP/FSR	10/24/03	11/23/03
6	PRS 106 (G soil) PRS Pkg	11/29/04	12/29/04
6	PRS 107-109 (G Gas Tank) PRS Pkg	2/12/98	3/16/98
6	PRS 126-127 (Bldg -28 Solvent Shed)	10/15/96	11/15/96
6	PRS 211,212 PRS Pkg	11/29/04	12/29/04
6	PRS 242	6/19/96	7/17/96
6	PRS 332	1/30/97	3/6/97
7	Bldg 2 BDP	4/17/02	5/17/02
7	Bldg 29 BDP/FSR	8/19/02	9/18/02
7	Bldg 30 BDP	06/12/04	07/12/04
7	Bldg 31 BDP	06/12/04	07/12/04
7	Bldg 31 Fact Sheet	06/12/04	07/12/04
7	Bldg 33 Slab PRS Pkg	11/13/03	12/13/03
7	Bldg 36 BDP/WP	11/10/03	12/10/03
7	Bldg 36 Dock Fact Sheet	05/05/04	06/04/04
7	Bldg 36 FSR Add 1	11/17/03	12/17/03
7	Bldg 37 BDP/WP	10/06/03	11/05/03
7	Bldg 38 AM Add 1	02/13/04	03/14/04
7	Bldg 38 AM	02/18/03	03/20/03
7	Bldg 44 BDP/FSR	8/19/2002	9/18/2002
7	Bldg 49 BDP/WP	11/01/01	12/01/01
7	Bldg 49 BDP/WP	02/13/03	03/15/03
7	Bldg 50 BDP/WP	11/07/03	12/07/03
7	Bldg 61 BDP	12/4/02	1/3/03
7	Bldg 63 BDP/FSR	8/28/02	9/27/02

Table 1. Parcels 6, 7, and 8 Documents and Public Comment Periods

Parcel	Document	Comment Period Start	Comment Period End
7	Bldg 98 BDP/FSR	10/2/02	11/1/02
7	Bldg 126 BDP/FSR	10/25/04	11/27/04
7	Bldg 128 BDP/FSR	03/18/05	04/17/05
7	Bldg GP-44 BDP/FSR	7/9/98	8/8/98
7	CRA Add 1 Structures AM Add 1	04/22/04	05/22/04
7	PRS 31-36, 125 &270 PRS Pkg	12/4/02	1/3/03
7	PRS 37, 399 PRS Pkg	11/29/96	1/1/97
7	PRS65/402/403/404 PRS Pkg	11/29/96	1/1/97
7	PRS 66 AM	01/05/03	02/04/03
7	PRS 66, 40 PRS Pkg	02/13/00	03/14/00
7	PRS 67 Fact Sheet	03/30/04	04/29/04
7	PRS 72 PRS Pkg	1/16/02	3/27/02
7	PRS 80 PRS Pkg	7/3/02	8/2/02
7	PRS 85 PRS Pkg	11/29/96	1/1/97
7	PRS 86 PRS Pkg	11/29/96	1/1/97
7	PRS 87 AM	11/17/04	12/17/04
7	PRS 87 PRS Pkg Add 1	9/3/03	10/3/03
7	PRS 176/177/178/300 PRS Pkg	1/9/97	2/13/97
7	PRS 266, 395 PRS Pkg	10/24/95	2/15/96
7	PRS 267 PRS Pkg Add 1	06/11/03	07/11/03
7	PRS 269 PRS Pkg	4/9/03	5/9/03
7	PRS 269 PRS Pkg Add 1	04/09/03	05/09/03
7	PRS 271, 336 PRS Pkg	11/29/04	12/29/04
7	PRS 274/275 PRS Pkg	12/18/02	1/18/03
7	PRS 274/275 Fact Sheet	4/3/02	5/3/02
7	PRS 277,278 PRS Pkg	4/17/02	5/17/02
7	PRS 277, 278 Fact Sheet	8/28/02	9/26/02
7	PRS 279 PRS Pkg	2/15/96	2/29/96
7	PRS 302 PRS Pkg	10/15/96	11/15/96
7	PRS 307 PRS Pkg	6/17/97	7/18/97
7	PRS 308 PRS Pkg	4/26/01	5/31/01
7	PRS 309 PRS Pkg	1/30/97	3/6/97
7	PRS 310, 382 PRS Pkg	1/15/97	2/15/97
7	PRS 315, 316, 319 PRS Pkg	1/30/97	3/6/97
7	PRS 330 PRS Pkg	4/3/97	5/8/97
7	PRS 331 PRS Pkg	10/15/96	11/15/96
7	PRS 338 PRS Pkg	1/30/97	3/6/97

Table 1. Parcels 6, 7, and 8 Documents and Public Comment Periods

Parcel	Document	Comment Period Start	Comment Period End
7	PRS 351-353/357/359/360-362/385-387 PRS Pkg	12/19/96	1/23/97
7	PRS 364 PRS Pkg	12/19/96	1/23/97
7	PRS 388 PRS Pkg	12/19/96	1/23/97
7	PRS 389/392 PRS Pkg	12/19/96	1/23/97
7	PRS 390/393/394 PRS Pkg	2/27/97	4/3/97
7	PRS 391 PRS Pkg	4/3/97	5/8/97
7	PRS 396 PRS Pkg	4/3/97	5/8/97
7	PRS 397 PRS Pkg Add 1	2/25/03	3/27/03
7	PRS 400 PRS Pkg	1/30/97	3/6/97
7	PRS 401 PRS Pkg	1/30/97	3/6/97
7	PRS 412 PRS Pkg	4/15/98	5/15/98
7	Bldg 30 OSC Report	No public review, finalized 12/22/04	
7	Bldg 31 OSC Report	No public review, finalized 5/31/05	
7	Bldg 38 Structure OSC Report	No public review, finalized 12/10/03	
7	Bldg 38 Soils OSC Report	No public review, finalized 1/30/06	
7	Bldg 50 RDS OSC Report	No public review, finalized 5/31/05	
7	PRS 277 OSC Report	No public review, finalized 3/06/03	
7	PRS 67 OSC Report	No public review, finalized 2/06/06	
7	PRS 68 OSC Report	No public review, finalized 3/20/06	
7	PRS 66 OSC Report	No public review, finalized 10/12/05	
7	PRS 66 OSC Report, Addendum 1	No public review, finalized 7/19/06	
7	PRS 87 OSC Report	No public review, finalized 3/06/06	
7	PRS 266 OSC Report	No public review, finalized 8/28/03	
8	Bldg 19 BDP/WP	4/30/03	5/30/03
8	Bldg 22 BDP/WP	10/07/04	11/06/04
8	Bldg 23 AM	7/16/03	8/15/03
8	Bldg 24 BDP/WP	2/25/05	3/27/05
8	Bldg 34 BDP/WP	5/22/03	6/21/03
8	Bldg 34 Slab/Soil Fact Sheet	11/22/05	12/22/05
8	Bldg 48 BDP/WP	12/05/03	1/04/04
8	Bldg 55 BDP/FSR	7/10/02	8/9/02
8	Bldg 56 BDP/WP	8/27/04	9/26/04
8	Bldg 57 AM	2/07/05	3/09/05
8	Bldg 72 BDP/WP	10/29/04	11/28/04
8	Bldg 89 BDP/WP	4/07/03	5/07/03
8	Bldg 94 BDP/WP	1/21/03	2/20/03
8	Bldg 104 BDP/WP	3/25/05	4/24/05

Table 1. Parcels 6, 7, and 8 Documents and Public Comment Periods

Parcel	Document	Comment Period Start	Comment Period End
8	Bldg 124 (CWPF) AM	12/06/04	1/05/05
8	Bldg B AM	3/02/04	4/01/04
8	Bldg COS BDP	11/15/00	12/15/00
8	Bldg DS BDP/WP	04/05/04	5/05/04
8	Bldg E AM	4/18/00	5/18/00
8	Bldg GP-8 BDP/WP	11/19/04	12/19/04
8	Bldg H AM	6/28/03	7/28/03
8	Bldg HH AM	8/22/02	9/21/02
8	Bldg I AM	5/6/02	6/5/02
8	Bldg MH Water Tower BDP/WP	4/09/04	5/09/04
8	Bldg M BDP/WP	7/25/01	8/27/01
8	Bldg OSW BDP/FSR	10/24/03	11/23/03
8	Bldg P BDP/WP	1/21/05	2/20/05
8	Bldg PS BDP	3/3/99	4/1/99
8	Bldg R AM	1/30/03	3/01/03
8	Bldg R/SW/58 & 68 Slab AM Add 1	8/23/04	9/22/04
8	Bldg SD, UGL AM	3/29/00	4/29/00
8	Bldg T AM	3/07/03	4/06/03
8	Bldg T BDP	3/07/03	4/06/03
8	Bldg T Factsheet	2/27/06	3/1/06
8	Bldg WD AM	2/21/00	3/22/00
8	Magazine 7 BDP	8/26/97	9/25/97
8	Magazine 11 BDP	8/26/97	9/25/97
8	Magazine 52 BDP	2/15/99	3/17/99
8	Magazine 54 BDP	8/26/97	9/25/97
8	Magazine 64 BDP	2/15/99	3/17/99
8	PRS 7 PRS Pkg	pending	pending
8	PRS 14 PRS Pkg	6/19/96	7/17/96
8	PRS 17 Fact Sheet	4/26/04	5/26/04
8	PRS 17 PRS Pkg	1/9/97	2/13/97
8	PRS 18 PRS Pkg	10/15/96	11/15/96
8	PRS 19 PRS Pkg	10/15/96	11/15/96
8	PRS 20 PRS Pkg	1/9/97	2/13/97
8	PRS 31-36, 125 & 270 PRS Pkg	12/4/02	1/3/03
8	PRS 41 Fact Sheet	12/05/03	1/04/04
8	PRS 41 PRS Pkg	2/24/03	3/26/03
8	PRS 42 PRS Pkg	1/9/97	2/13/97

Table 1. Parcels 6, 7, and 8 Documents and Public Comment Periods

Parcel	Document	Comment Period Start	Comment Period End
8	PRS 59 PRS Pkg	7/15/97	8/17/97
8	PRS 60 PRS Pkg	8/19/05	9/18/05
8	PRS 63 PRS Pkg	9/15/97	10/15/97
8	PRS 63 PRS Pkg Add 1	9/30/03	10/30/03
8	PRS 67-70 Fact Sheet	3/29/04	4/29/04
8	PRS 75 Fact Sheet	11/06/03	12/06/03
8	PRS 75 PRS Pkg	12/02/96	1/01/97
8	PRS 76 AM	11/17/04	12/17/04
8	PRS 81 PRS Pkg	5/15/96	6/17/96
8	PRS 82 PRS Pkg	1/14/97	2/13/97
8	PRS 84 PRS Pkg	9/16/96	10/15/96
8	PRS 90 PRS Pkg	3/1/96	4/1/96
8, offsite	PRS 91,92,94-98 PRS Pkg Add 1 (Rev 1)	2/17/06	3/19/06
8	PRS 101, 102 PRS Pkg	9/12/05	10/12/05
8	PRS 103 PRS Pkg	9/16/96	10/15/96
8	PRS 105 PRS Pkg	9/16/96	10/15/96
8	PRS 111 AM	3/18/96	4/1/96
8	PRS 110 PRS Pkg	5/8/97	6/16/97
8	PRS 112, 368 PRS Pkg	1/23/06	2/22/06
8	PRS 113-117 PRS Pkg	5/8/97	6/16/97
8	PRS 129, 130 PRS Pkg	06/18/97	07/18/97
8	PRS 147 PRS Pkg	3/18/96	4/1/96
8	PRS 153 PRS Pkg	1/9/97	2/13/97
8	PRS 154, 238 Fact Sheet	09/08/03	10/08/03
8	PRS 154, 238 PRS Pkg Add 1	01/21/03	02/20/03
8	PRS176, 177, 178, 300	1/9/97	2/13/97
8	PRS 234 PRS Pkg	09/15/96	10/15/96
8	PRS 235 PRS Pkg	5/8/97	6/16/97
8	PRS 236 PRS Pkg	6/19/96	7/17/96
8	PRS 237 Fact Sheet	09/08/03	10/08/03
8	PRS 237 PRS Pkg	11/15/97	12/15/97
8	PRS 238 Fact Sheet	09/08/03	10/08/03
8	PRS 239 PRS Pkg	3/18/96	4/14/96
8	PRS 240 Fact Sheet	08/21/03	09/20/03
8	PRS 240 PRS Pkg Add 1	2/27/06	3/26/06
8	PRS 243 PRS Pkg	9/16/96	10/10/96
8	PRS 244 PRS Pkg	2/04/97	3/06/97

Table 1. Parcels 6, 7, and 8 Documents and Public Comment Periods

Parcel	Document	Comment Period Start	Comment Period End
8	PRS 245 PRS Pkg	9/16/96	10/10/96
8	PRS 246 PRS Pkg	10/15/96	11/15/96
8	PRS 247 PRS Pkg	5/15/96	6/17/96
8	PRS 345 PRS Pkg	6/19/96	7/17/96
8	PRS 356 PRS Pkg	5/8/97	6/16/97
8	PRS 363 Fact Sheet	9/23/04	10/23/04
8	PRS 363 PRS Pkg	2/14/98	3/16/98
8	PRS 366 PRS Pkg	2/27/97	4/3/97
8	PRS 367 PRS Pkg	2/27/97	4/3/97
8	PRS 405 Fact Sheet	9/15/97	10/15/97
8	PRS 405 PRS Pkg	9/15/97	10/15/97
8	PRS 408 PRS Pkg	6/17/97	7/18/97
8	PRS 409 PRS Pkg Add 1	8/25/05	9/24/05
8	PRS 410 PRS Pkg Add 1	12/10/04	01/09/05
8	PRS 411 PRS Pkg	9/15/97	10/15/97
8	PRS 411 AM	9/15/97	10/15/97
8	PRS 413, 415, 423-440, Underground Lines AM	08/05/03	09/04/03
8	PRS 414 PRS Pkg Add 1	12/09/04	01/08/05
8	PRS 416 PRS Pkg	3/22/00	4/22/00
8	PRS 417 PRS Pkg	4/2/03	5/2/03
8	PRS 420 PRS Pkg	3/15/00	4/15/00
8	PRS 442 PRS Pkg	01/23/06	02/22/06
8	Bldg 124 (CWPF) OSC Report	No public review, finalized 6/15/06	
8	Bldg 34 Slab/Soil OSC Report	No public review, finalized 6/5/06	
8	Bldg T Stacks West OSC Report	No public review, finalized 2/9/06	
8	Bldg H OSC Report	No public review, finalized 9/27/04	
8	Bldg HH Structure OSC Report	No public review, finalized 4/20/05	
8	Bldg HH Structure OSC Report, Addendum 1	No public review, finalized 7/27/6	
8	Bldg 57 OSC Report	No public review, finalized 8/8/6	
8	Bldg R Structure OSC Report	No public review, finalized 2/02/06	
8	Bldg R/SW/B Slab OSC Report	No public review, finalized 8/3/6	
8	Bldg SW Structure OSC Report	No public review, finalized 2/02/06	
8	Bldg 58 Structure OSC Report	No public review, finalized 2/02/06	
8	Bldg T OSC Report	No public review, finalized 8/2/6	
8	Bldg 23 OSC Report	No public review, finalized 5/09/05	
8	Bldg WD OSC Report	No public review, finalized 2/07/06	
8	PRS 411 OSC Report	No public review, finalized 4/11/05	

Table 1. Parcels 6, 7, and 8 Documents and Public Comment Periods

Parcel	Document	Comment Period Start	Comment Period End
8	PRS 41 OSC Report	No public review, finalized 7/20/06	
8	PRS 17 OSC Report	No public review, finalized 3/30/06	
8	PRS 69 OSC Report	No public review, finalized 3/15/06	
8	PRS 70 OSC Report	No public review, finalized 7/19/6	
8	PRS 75 OSC Report	No public review, finalized 2/08/06	
8	PRS 76 OSC Report	No public review, finalized 5/31/05	
8	PRS 237 OSC Report	No public review, finalized 4/20/05	
8	PRS 11 OSC Report	No public review, finalized 8/2/6	
8	Grp 9 Subcontractor Compound OSC Report	No public review, finalized 5/11/06	
8	PRS 423 OSC Report	No public review, finalized 2/01/06	
8	Bldg HH Soils/Slab OSC Report	No public review, finalized 3/28/06	
8	PRS 123 OSC Report	No public review, finalized 10/10/05	
8	PRS 124 OSC Report	No public review, finalized 6/15/06	
8	PRS 153 OSC Report	No public review, finalized 6/15/06	
8	PRS 159 OSC Report	No public review, finalized 7/31/6	
6, 7, & 8	PRS 317 PRS Pkg	1/23/06	2/22/06
6, 7, & 8	Ecological Scoping Report, Parcels 6, 7, & 8	05/09/05	06/08/05
6, 7, & 8	Proposed Plan	7/10/09	8/10/09
6, 7, & 8	Residual Risk Evaluation	9/20/07	10/20/07
6, 7, & 8	Record of Decision	N/A	N/A

Note: OSC Reports do not require public review.

Table 2 - PRSs and Core Team Conclusions

Parcel	PRS	Description	Initial Core Team Decision	Closeout of PRS
6	106	G Building Soils (AKA Garage Area)	NFA	Recommendation signed 11/17/04
6	107	G Building Gasoline Tank (Tank 202)	NFA	Recommendation signed 12/17/97
6	108	G Building Gasoline Tank (Tank 203)	NFA	Recommendation signed 12/17/97
6	109	G Building Gasoline Tank (Tank 204)	NFA	Recommendation signed 12/17/97
6	126	Building 28 Solvent Storage Area	NFA	Recommendation signed 10/3/96
6	127	Building 28 Solvent Storage Shed	NFA	Recommendation signed 10/3/96
6	211	A Building Decontamination Shower Water Tank (Tank 28)	NFA	Recommendation signed 11/17/04
6	212	A Building Decontamination Shower Water Tank (Tank 29)	NFA	Recommendation signed 11/17/04
6	241	Northwest Parking Lots	NFA	Recommendation signed 5/13/97
6	242	VOC Potential Hot Spot Location 1016	NFA	Recommendation signed 5/8/96
7	32	Underground Sanitary Sewer Line G12	NFA	Recommendation signed 11/26/02
7	36	Underground Sanitary Sewer Line G15	NFA	Recommendation signed 11/26/02
7	37	Building 51 Waste Solvent Storage Tank (Tank 220)	NFA	Recommendation signed 11/21/96
7	38	Building 51 Waste Incinerator	NFA	Closed with PRS 66 OSC
7	39	Building 51 Waste Incinerator Scrubber	NFA	Closed with PRS 66 OSC
7	40	Building 66 Lot	NFA	Closed with PRS 66 OSC
7	65	Building 61 Area, Former Heavy Equipment Area	NFA	Recommendation signed 11/21/96
7	66	Area 7, Thorium and Polonium Wastes	Removal Action	OSC signed 9/30/05
7	67	Plant Drainage Ditch	Removal Action	OSC signed 1/10/06
7	68	Asphalt-Lined Pond	Removal action	OSC signed 1/10/06
7	72	Area 13, Polonium-Contaminated Wood from Dayton, Unit IV	NFA	Recommendation signed 1/16/02
7	77	Warehouse 10	Removal Action	OSC Signed 9/27/05
7	78	Warehouse 13	Removal Action	OSC Signed 9/27/05

Table 2 - PRSs and Core Team Conclusions

Parcel	PRS	Description	Initial Core Team Decision	Closeout of PRS
7	79	Warehouse 15	NFA	Recommendation signed 12/17/96
7	80	Warehouse 15A	Removal Action	OSC Signed 9/30/05
7	83	Building 2 Propane Storage Tank (Tank 122)	NFA	Recommendation signed 2/02
7	85	Building 29 Solvent Storage Shed	NFA	Recommendation signed 11/21/96
7	86	Building 29 Septic Tank (Tank 224)	NFA	Recommendation signed 11/21/96
7	87	Building 49 Solvent Storage Shed	Removal Action	OSC Signed 6/28/05
7	89	Test Fire Residual Storage Area	NFA	Recommendation signed 2/02
7	235	Area of Possible Elevated Thorium Activity	NFA	Recommendation signed 2/19/97
7	266	Area 8, Thorium-Contaminated Soils from Areas 1 and 9	Removal Action	OSC signed 8/22/03
7	267	Area 9, Thorium Storage and Redrumming Area	Removal Action	OSC Signed 9/27/05
7	268	Building 31, Contaminated Material Storage Building	Removal Action	OSC Signed 5/25/05
7	269	Building 36 Historic Gasoline Tanks (Tanks 239 and 240)	NFA	Recommendation signed 3/19/03
7	270	Underground Sanitary Sewer Lines G6 and G7	NFA	Recommendation signed 11/26/02
7	271	Building 37 Sanitary Waste Tank (Tank 100)	NFA	Recommendation signed 11/17/04
7	272	Area 10, Concrete Debris	NFA	Closed with Building 38 Soils OSC 9/27/05
7	273	Area 12, Thorium-Contaminated Soil from Area 1	Removal Action	OSC Signed 9/27/05
7	274	Area 21 Old Bunker	Removal Action	OSC signed 10/31/02
7	275	Area 21, Detonator Shack	Removal Action	OSC signed 10/31/02
7	277	Area J, Hillside Disposal Area (AKA Dredged Material Disposal Area 11a)	Removal Action	OSC signed 3/6/03
7	278	Area J, Hillside Catch Basin	Removal Action	OSC signed 3/6/03
7	285	Area 11, Contamination from SM Building Operations	Removal Action	Closed with Building 38 Soils OSC 9/27/05
7	286	Area 16, SM Building Sanitary Sewage Septic Tank Leach Field	Removal Action	Closed with Building 38 Soils OSC 9/27/05
7	287	SM Building Historic Septic Tank (Tank 241)	Removal Action	Closed with Building 38 Soils OSC 9/27/05
7	288	Area 17, SM Building Soils	Removal Action	Closed with Building 38 Soils OSC 9/27/05

Table 2 - PRSs and Core Team Conclusions

Parcel	PRS	Description	Initial Core Team Decision	Closeout of PRS
7	289	SM Building Alpha Wastewater Tank (Tank 210)	Removal Action	Closed with Building 38 Soils OSC 9/27/05
7	290	SM Building Alpha Wastewater Tank (Tank 211)	Removal Action	Closed with Building 38 Soils OSC 9/27/05
7	291	SM Building Alpha Wastewater Tank (Tank 212)	Removal Action	Closed with Building 38 Soils OSC 9/27/05
7	292	SM Building Alpha Wastewater Tank (Tank 213)	Removal Action	Closed with Building 38 Soils OSC 9/27/05
7	293	SM Building Solidification Unit (Room SM-1)	Removal Action	OSC Signed 5/03/05
7	294	WS Building Solidification Unit	Removal Action	OSC signed 11/19/03
7	295	Building 38 Solid Radioactive Waste Compactors (2 units)	Removal Action	OSC signed 11/19/03
7	296	Building 38 West Dock Sump (Tank 25)	Removal Action	Closed with Building 38 Soils OSC 9/27/05
7	297	Building 38 Alpha Wastewater Sump (Tank 26)	Removal Action	Closed with Building 38 Soils OSC 9/27/05
7	298	Building 38 Alpha Wastewater Sump (Tank 27)	Removal Action Complete	Closed with Building 38 Soils OSC 9/27/05
7	299	Building 38 Diesel Fuel Storage Tank (Tank 121)	Removal Action	OSC Signed 10/11/05
7	300	Area 19, Underground Waste Transfer Line	NFA	Recommendation signed 12/17/96
7	301	Building 38 In-Line Incinerator	Removal Action	OSC signed 11/19/03
7	302	Area D, Acid Leach Field	NFA	Recommendation signed 10/3/96
7	303	Warehouse 14 (AKA Pad 14)	Removal Action	OSC Signed 9/27/05
7	305	SM Stack	Removal Action	OSC signed 11/19/03
7	307	Site Survey Project Potential Hot Spot Location C0007	NFA	Recommendation signed 3/31/97
7	308	Site Survey Project Potential Hot Spot Location C0028	NFA	Recommendation signed 2/21/01
7	309	Site Survey Project Potential Hot Spot Location S0307	NFA	Recommendation signed 12/17/96
7	310	Site Survey Project Potential Hot Spot Location S0647	NFA	Recommendation signed 1/14/97
7	319	Epoxy Resin Disposal	NFA	Recommendation signed 12/17/96
7	326	Building 38 Sanitary Sump (Tank 254)	Removal Action	OSC signed 11/19/03
7	330	Building 2 Fuel Oil Tank (Tank 260)	NFA	Recommendation signed 2/19/97
7	331	Building 2 Tank (Tank 261)	NFA	Recommendation signed 10/3/96
7	336	Building 37 Waste Tank (AKA Low Risk Waste Tank) (Tank 267)	NFA	Recommendation signed 11/17/04

Table 2 - PRSs and Core Team Conclusions

Parcel	PRS	Description	Initial Core Team Decision	Closeout of PRS
7	338	Building 29 Septic Tank (Tank 270)	NFA	Recommendation signed 12/17/96
7	364	Elevated Soil Gas Location	NFA	Recommendation signed 11/20/96
7	382	Elevated Soil Gas Location	NFA	Recommendation signed 1/14/97
7	385	Elevated Soil Gas Location	NFA	Recommendation signed 11/20/96
7	386	Elevated Soil Gas Location	NFA	Recommendation signed 11/20/96
7	387	Elevated Soil Gas Location	NFA	Recommendation signed 11/20/96
7	388	Elevated Soil Gas Location	NFA	Recommendation signed 11/20/96
7	389	Elevated Soil Gas Location	NFA	Recommendation signed 11/20/96
7	390	Elevated Soil Gas Location	NFA	Recommendation signed 12/17/96
7	391	Elevated Soil Gas Location	NFA	Recommendation signed 2/19/97
7	392	Elevated Soil Gas Location	NFA	Recommendation signed 11/20/96
7	393	Elevated Soil Gas Location	NFA	Recommendation signed 12/17/96
7	394	Elevated Soil Gas Location	NFA	Recommendation signed 12/17/96
7	395	Elevated Soil Gas Location	NFA	Recommendation signed 12/18/96
7	396	Elevated Soil Gas Location	NFA	Recommendation signed 12/18/96
7	397	Elevated Soil Gas Location	NFA	Recommendation signed 2/19/3
7	398	Elevated Soil Gas Location	NFA	Recommendation signed 8/20/3
7	399	Elevated Soil Gas Location	NFA	Recommendation signed 11/21/96
7	400	Elevated Soil Gas Location	NFA	Recommendation signed 12/17/96
7	401	Elevated Soil Gas Location	NFA	Recommendation signed 12/17/96
7	402	Elevated Soil Gas Location	NFA	Recommendation signed 11/21/96
7	403	Elevated Soil Gas Location	NFA	Recommendation signed 11/21/96

Table 2 - PRSs and Core Team Conclusions

Parcel	PRS	Description	Initial Core Team Decision	Closeout of PRS
7	404	Elevated Soil Gas Location	NFA	Recommendation signed 11/21/96
7	412	Soil Contamination – Radiological	Removal Action	OSC signed 8/22/03
7	422	Plutonium Hot Spot	NFA	Recommendation signed 8/22/01
8	14	Area C, Waste Storage Area (AKA Drum Staging Area and Chemical Waste Storage)	NFA	Recommendation signed 5/8/96
8	15	Area C, Lithium Burn Area (AKA Lithium Carbonate Disposal)	NFA	Recommendation signed 2/19/97
8	17	Oil Burn Structure	Removal Action	OSC signed 1/10/06
8	18	Building 34, Fire Fighting Training Facility Pits	NFA	Recommendation signed 10/3/96
8	19	Building 34, Historical Firefighting Training Pit	NFA	Recommendation signed 10/3/96
8	20	Building 34, Aviation Fuel Storage Tank (Tank 219)	NFA	Recommendation signed 12/17/96
8	31	Underground Sanitary Sewer Line G5	NFA	Recommendation signed 11/26/02
8	32	Underground Sanitary Sewer Line G12	NFA	Recommendation signed 11/26/02
8	35	Underground Sanitary Sewer Lines G19 and G14	NFA	Recommendation signed 11/26/02
8	41	Area 3, Thorium Drum Storage and Redrumming Area	Removal Action	Pending
8	42	Area A, construction Soils from T Building	NFA	Recommendation signed 12/17/96
8	43	Wastewater Treatment plant Building 57 Grit Chamber (Tank 101)	Removal Action	Closed with Building 57 OSC 7/13/6
8	44	Building 57 Grit Conveyor	Removal Action	Closed with Building 57 OSC 7/13/6
8	45	Building 57 Comminuter (Tank 102)	Removal Action	Closed with Building 57 OSC 7/13/6
8	46	Building 57 Equalization Basin (Tank 103)	Removal Action	Closed with Building 57 OSC 7/13/6
8	47	Building 57 Equalization Basin (Tank 104)	Removal Action	Closed with Building 57 OSC 7/13/6
8	48	Building 57 Equalization Basin (Tank 105)	Removal Action	Closed with Building 57 OSC 7/13/6
8	49	Building 57 Equalization Basin (Tank 106)	Removal Action	Closed with Building 57 OSC 7/13/6
8	50	Building 57 Aeration Basin (Tank 107)	Removal Action	Closed with Building 57 OSC 7/13/6

Table 2 - PRSs and Core Team Conclusions

Parcel	PRS	Description	Initial Core Team Decision	Closeout of PRS
8	51	Building 57 Aeration Basin (Tank 108)	Removal Action	Closed with Building 57 OSC 7/13/6
8	52	Building 57 Clarifier (Tank 109)	Removal Action	Closed with Building 57 OSC 7/13/6
8	53	Building 57 Clarifier (Tank 110)	Removal Action	Closed with Building 57 OSC 7/13/6
8	54	Building 57 Sand Filters (2 units)	Removal Action	Closed with Building 57 OSC 7/13/6
8	55	Building 57 Chlorine Contact Chamber (Tank 111)	Removal Action	Closed with Building 57 OSC 7/13/6
8	56	Building 57 Chlorine Contact Chamber (Tank 112)	Removal Action	Closed with Building 57 OSC 7/13/6
8	57	Sludge Drying Beds	NFA	Recommendation signed 11/21/96
8	58	Dredge Spoil Drying Beds	NFA	Recommendation signed 11/21/96
8	59	Contaminated Soil Box Storage Area	NFA	Recommendation signed 5/13/97
8	60	Hazardous Waste Storage Area (Building 72)	NFA	Recommendation signed 6/14/05
8	61	Building 72 Outdoor Hazardous Waste Storage Area	NFA	Recommendation signed 6/14/05
8	62	Building 72 Empty Drum Storage Area	NFA	Recommendation signed 6/14/05
8	63	Building 19 Soils	NFA	Recommendation signed 9/19/03
8	64	Building 19 Historic Gasoline Tank (Tank 238)	NFA	Recommendation signed 2/19/03
8	67	Plant Drainage Ditch	Removal Action	OSC signed 1/10/06
8	69	Overflow Pond	Removal Action	OSC signed 1/10/06
8	70	Retention Basins and Weir Basin	Removal Action	OSC signed 7/6/6
8	75	Railroad Siding	Removal Action	6/29/05
8	76	Warehouse 9	Removal Action	5/25/05
8	82	Building 57 Diesel Fuel Storage Tank (Tank 118)	NFA	Recommendation signed 12/17/96
8	84	Building 56 Diesel Fuel Storage Tank (Tank 123)	NFA	Recommendation signed 8/20/96
8	90	Site Survey Project Potential Hot Spot Location S0425	NFA	Recommendation signed 3/4/96
8	91	Main Hill Seep 0601	Retired	1/24/06
8	92	Main Hill Seep 0602	Retired	1/24/06
8	101	Cooling Tower Basins	NFA	8/16/00

Table 2 - PRSs and Core Team Conclusions

Parcel	PRS	Description	Initial Core Team Decision	Closeout of PRS
8	102	Cooling Tower Drum Storage Area	NFA	8/16/00
8	103	E Building Soils	NFA	Recommendation signed 8/20/96
8	104	Scintillation Vial Storage Area	Removal Action	E Building OSC signed 10/21/02
8	105	E Building Solvent Storage Shed	NFA	Recommendation signed 8/20/96
8	110	I Building Soils	NFA	Recommendation signed 3/18/97
8	111	Monitor Well 0034	Removal Action	OSC signed 10/15/96
8	112	Paint Shop Area	NFA	Recommendation signed 10/11/5
8	113	Powerhouse Soils	NFA	Recommendation signed 3/18/97
8	114	Powerhouse Fuel Oil Storage Tank (Tank 113)	NFA	Recommendation signed 3/18/97
8	115	Powerhouse Fuel Oil Storage Tank (Tank 114)	NFA	Recommendation signed 3/18/97
8	116	Powerhouse Fuel Oil Storage Tank (Tank 115)	NFA	Recommendation signed 3/18/97
8	117	Powerhouse Fuel Oil Storage Tank (Tank 116)	NFA	Recommendation signed 3/18/97
8	118	M Building Soils	NFA	Recommendation signed 2/20/01
8	119	Room M-38 Metal Plating Rinse Water Sump (Tank 225)	NFA	Recommendation signed 2/20/01
8	120	Room M-108 Metal Plating Rinse Water Tank (Tank 119)	NFA	Recommendation signed 2/20/01
8	121	Vapor Degreasers	NFA	Recommendation signed 2/20/01
8	123	Area 5, Radioactive Waste Line Break	Removal Action	OSC signed 9/30/05
8	124	Building 48 Hillside	Removal Action	OSC signed 6/13/6
8	125	Underground Sanitary Sewer Line G24	NFA	Recommendation signed 11/26/02
8	126	Building 28 Solvent Storage Area	NFA	Recommendation signed 10/3/96
8	128	DS Building Solvent Storage Shed	NFA	Recommendation signed 4/16/98
8	129	B Building Solvent Storage Shed	NFA	Recommendation signed 5/13/97
8	130	B Building Temporary Drum Storage Area	NFA	Recommendation signed 5/13/97
8	131	SW Building Soils	Removal Action	Closed with RSWB OSC 7/20/6

Table 2 - PRSs and Core Team Conclusions

Parcel	PRS	Description	Initial Core Team Decision	Closeout of PRS
8	132	Area 15, Entombed SW Cave (Rooms SW 1-B)	Removal Action	Closed with RSWB OSC 7/20/6
8	133	SW Building Room 1-A	Removal Action	Closed with RSWB OSC 7/20/6
8	134	SW Building Drum Storage Area	Removal Action	Closed with RSWB OSC 7/20/6
8	135	Rooms SW-8 Beta Wastewater Tank (Tank 20)	Removal Action	Closed with RSWB OSC 7/20/6
8	136	Room SW-125 Beta Wastewater Tank (Tank 21)	Removal Action	Closed with RSWB OSC 7/20/6
8	137	Room SW-143 Beta Wastewater Tank (Tank 22)	Removal Action	Closed with RSWB OSC 7/20/6
8	138	Room SW-137 Beta Wastewater Sump (Tank 23)	Removal Action	Closed with RSWB OSC 7/20/6
8	139	Room SW-10 Beta Wastewater Sump (Tank 226)	Removal Action	Closed with RSWB OSC 7/20/6
8	140	Beta Waste Solidification Facility - SW Building	Removal Action	Closed with RSWB OSC 7/20/6
8	141	Tritium Effluent Removal System	Removal Action	Closed with RSWB OSC 7/20/6
8	142	SW/R Building Solid Radioactive Waste Compactor	Removal Action	Closed with RSWB OSC 7/20/6
8	143	R/SW/T Building Stack Diesel Fuel Storage Tank (Tank 117)	Removal Action	Closed with RSWB OSC 7/20/6
8	144	R Building Sanitary Waste Collection Tank (Tank 120)	Removal Action	Closed with RSWB OSC 7/20/6
8	145	Room R-128 Alpha Wastewater Tank (Tank 19)	Removal Action	Closed with RSWB OSC 7/20/6
8	146	R Building Room 121, 144, 146, and 148 entombed drains	Removal Action	Closed with RSWB OSC 7/20/6
8	147	HH Building Soils	NFA	Recommendation signed 3/14/96
8	148	HH Building Solidification Unit	Removal Action	OSC Signed 4/19/05
8	149	HH Building Pilot Incinerator	Removal Action	OSC Signed 4/19/05
8	150	Room HH-15 Beta Wastewater Sump (Tank 236)	Removal Action	OSC Signed 4/19/05
8	151	Room HH-6 Alpha Wastewater Sump (Tank 237)	Removal Action	OSC Signed 4/19/05
8	152	HH Building Beta Wastewater Sump (Tank 24)	Removal Action	OSC Signed 4/19/05
8	153	Area 20, Radioactive Waste Line Break	Removal Action	OSC signed 7/13/6
8	154	Area 23, Thorium Contaminated Soil	Removal Action	OSC signed 7/13/6
8	155	Old Sanitary Disposal (SD) Plant (AKA Old Sanitary Wastewater Treatment Plant)	Removal Action	OSC signed 7/6/6
8	156	Old SD Plant Tank (Tank 205)	Removal Action	OSC signed 7/6/6
8	157	Old SD Plant Tank (Tank 206)	Removal Action	OSC signed 7/6/6

Table 2 - PRSs and Core Team Conclusions

Parcel	PRS	Description	Initial Core Team Decision	Closeout of PRS
8	158	Old SD Plant Tank (Tank 207)	Removal Action	OSC signed 7/6/6
8	159	Area 4A, Sewage Sludge Drying Pits	Removal Action	OSC signed 7/6/6
8	160	Mixed Waste Storage Area (Building 23)	Removal Action	OSC Signed 5/03/05
8	161	Glass Melter Furnace	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	162	Glass Melter Feed Drum	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	163	Off-Gas Treatment System Deluge Tank	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	164	Off-Gas Treatment System Venturi Scrubber	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	165	Off-Gas Treatment System Cyclone Demister	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	166	Off-Gas Treatment System HEPA Filter	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	167	Off-Gas Treatment System WD Building Filter Bank	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	168	Off-Gas Treatment system Recycle Tank	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	169	Off-Gas Treatment System Strainer	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	170	Off-Gas Treatment System Leaf Solution Filter	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	171	Off-Gas Treatment System Iodine Absorption Filter	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	172	WDA Building Basement Wash Sump (Tank 11) (AKA Glass Melter Room Sump)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	173	Cyclone Incinerator	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	174	WD Building Drum Staging Area	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	175	Area 4, WD Building Influent Tank Overflow	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	176	Area 14, Radioactive Waste Line Break	NFA	Recommendation signed 12/17/96
8	177	Building 41 Alpha Wastewater Tank (Tank 208)	NFA	Recommendation signed 12/17/96
8	178	Building 41 Alpha Wastewater Tank (Tank 209)	NFA	Recommendation signed 12/17/96
8	179	WD Building Alpha Wastewater Influent Tank (Tank 3)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	180	WD Building Alpha Wastewater Influent Tank (Tank 4)	Removal Action	Closed in WD Building Structure OSC 9/29/05

Table 2 - PRSs and Core Team Conclusions

Parcel	PRS	Description	Initial Core Team Decision	Closeout of PRS
8	181	WD Building Alpha Wastewater Influent Tank (Tank 5)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	182	WD Building Alpha Influent Tank (Tank 6)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	183	Room WD-1 Basement Sump (Tank 12)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	184	Room WD-1 Alpha Wastewater Sump (Tank 17)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	185	Room WD-1 Sanitary Waste Sump (Tank 134)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	186	Room WD-8 Alpha Wastewater Sump (Tank 18)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	187	WD Building Alpha Wastewater Clariflocculators (2 units)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	188	WD Building Alpha Wastewater Mixing Box	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	189	WD Building Alpha Wastewater Sand Filters (2 units)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	190	WD Building Alpha Wastewater Bone Char Columns (2 units)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	191	WD Building Alpha Wastewater Effluent Tank (Tank 7)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	192	WD Building Alpha Wastewater Effluent Tank (Tank 8)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	193	WD Building Alpha Wastewater Effluent Tank (Tank 9)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	194	WD Building Alpha Wastewater Effluent Tank (Tank 10)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	195	WD Building Alpha Wastewater Sludge Pits (2 units)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	196	WD Building Alpha Wastewater Solidification/Drumming Unit	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	197	WD Building Solid Radioactive Waste Compactor	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	198	WDA Building Basement Sanitary Waste Tank (Tank 135)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	199	WDA Building Beta Wastewater Influent Tank (Tank 13)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	200	WDA Building Beta Wastewater Influent Tank (Tank 14)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	201	WDA Building Beta Wastewater Metering Station	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	202	WDA Building Beta Wastewater Mixing/Solidification Unit	Removal Action	Closed in WD Building Structure OSC 9/29/05

Table 2 - PRSs and Core Team Conclusions

Parcel	PRS	Description	Initial Core Team Decision	Closeout of PRS
8	203	WDA Building Alpha Wastewater Influent Tank (Tank 15)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	204	WDA Building Alpha Wastewater Influent Tank (Tank 16)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	205	WDA Building Alpha Wastewater Effluent Tank (Tank 214)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	206	WDA Building Alpha Wastewater Influent Tank (Tank 215)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	207	WDA Building Alpha Wastewater Influent Tank (Tank 216)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	208	WDA Building Solidification Unit	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	209	Building 62 Stack Deluge Tank (Tank 1)	Removal Action	Closed in RSWB OSC 7/20/6
8	210	Room H-131 Laundry Water Tank (Tank 2)	Removal Action	OSC signed 9/22/04
8	213	T Building Solidification Unit	Removal Action	Closed in T Building OSC 7/27/6
8	214	T Building Solid Radioactive Waste Compactor	Removal Action	Closed in T Building OSC 7/27/6
8	215	Room T-1 Cooling Water Sump (Tank 124)	Removal Action	Closed in T Building OSC 7/27/6
8	216	T Building, Corridor 2 Sanitary Wastewater Sump (Tank 125)	Removal Action	Closed in T Building OSC 7/27/6
8	217	Room T-11F Sanitary Wastewater Sump (Tank 126)	Removal Action	Closed in T Building OSC 7/27/6
8	218	Room T-15 Sanitary Wastewater Sump (Tank 127)	Removal Action	Closed in T Building OSC 7/27/6
8	219	T Building, Stair 3 Cooling Water Sump (Tank 128)	Removal Action	Closed in T Building OSC 7/27/6
8	220	Room T-78 Steam Condensate Sump (Tank 129)	Removal Action	Closed in T Building OSC 7/27/6
8	221	T Building, Corridor 8 Sanitary Wastewater Sump (Tank 130)	Removal Action	Closed in T Building OSC 7/27/6
8	222	Room T-78A Sanitary Wastewater Sump (Tank 131)	Removal Action	Closed in T Building OSC 7/27/6
8	223	Room T-90 Cooling System Condensate Sump (Tank 132)	Removal Action	Closed in T Building OSC 7/27/6
8	224	Room T-99 Sanitary Wastewater Sump (Tank 133)	Removal Action	Closed in T Building OSC 7/27/6
8	225	Room T-23 Beta Wastewater Sump (Tank 227)	Removal Action	Closed in T Building OSC 7/27/6
8	226	Room T-3 Floor Drain Sump (Tank 228)	Removal Action	Closed in T Building OSC 7/27/6
8	227	Room T-40 Alpha Wastewater Sump (Tank 229)	Removal Action	Closed in T Building OSC 7/27/6

Table 2 - PRSs and Core Team Conclusions

Parcel	PRS	Description	Initial Core Team Decision	Closeout of PRS
8	228	Room T-41 Alpha Wastewater Sump (Tank 230)	Removal Action	Closed in T Building OSC 7/27/6
8	229	Room T-50 Alpha Wastewater Sump (Tank 231)	Removal Action	Closed in T Building OSC 7/27/6
8	230	Room T-50 Alpha Wastewater Sump (Tank 232)	Removal Action	Closed in T Building OSC 7/27/6
8	231	T Building, Corridor 8 Alpha Wastewater Sump (Tank 233)	Removal Action	Closed in T Building OSC 7/27/6
8	232	T Building, Corridor 7 Alpha Wastewater Sump (Tank 234)	Removal Action	Closed in T Building OSC 7/27/6
8	233	Room T-63 Alpha Wastewater Sump (Tank 235)	Removal Action	Closed in T Building OSC 7/27/6
8	234	Building 58 Diesel Fuel Storage Tank (Tank 222)	NFA	Recommendation signed 8/20/96
8	235	Area of Possible Elevated Thorium Activity	NFA	Recommendation signed 2/19/97
8	236	Site Survey Project Potential Hot Spot Location S0166	NFA	Recommendation signed 5/8/96
8	237	Site Survey Project Potential Hot Spot Location S0175	Removal Action Complete	OSC signed 4/14/05
8	238	Site Survey Project Potential Hot Spot Location S1092	Removal Action	OSC signed 7/13/6
8	239	Site Survey Project Potential Hot Spot Location S0208	NFA	Recommendation signed 3/4/96
8	240	Site Survey Project Potential Hot Spot Location S0472	Removal Action	OSC signed 7/13/6
8	243	VOC Potential Hot Spot Location 1064	NFA	Recommendation signed 8/20/96
8	244	VOC Potential Hot Spot Locations 1076, 1077, 1079, and 1080	NFA	Recommendation signed 12/17/96
8	245	VOC Potential Hot Spot Location 1085	NFA	Recommendation signed 8/20/96
8	246	VOC Potential Hot Spot Locations 1117 and 1118	NFA	Recommendation signed 10/3/96
8	247	VOC Potential Hot Spot Location 1129	NFA	Recommendation signed 5/8/96
8	248	HH Building Stack	Removal Action	OSC signed 4/19/05
8	249	SW Building Stack (NCPDF)	Removal Action	Closed in RSWB OSC 7/20/6
8	250	SW Building Stack (SW1C)	Removal Action	Closed in RSWB OSC 7/20/6
8	251	SW Building Stack (HEFS)	Removal Action	Closed in RSWB OSC 7/20/6
8	252	B Building Stack	Removal Action	Closed in RSWB OSC 7/20/6

Table 2 - PRSs and Core Team Conclusions

Parcel	PRS	Description	Initial Core Team Decision	Closeout of PRS
8	253	T Building WEST Stack	Removal Action	Closed in RSWB OSC 7/20/6
8	254	T Building EAST Stack	Removal Action	Closed in RSWB OSC 7/20/6
8	255	WD Building Stack (ALR)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	256	WD Building Stack (AHR)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	257	WD Building Stack (SS)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	300	Area 19, Underground Waste Transfer Line	NFA	Recommendation signed 12/17/96
8	327	R-111 Calorimetry Bath (Tank 255)	Removal Action	Closed in RSWB OSC 7/20/6
8	328	R-111 Calorimetry Bath (Tank 266)	Removal Action	Closed in RSWB OSC 7/20/6
8	329	Building 62 Hot Waste Sump (Tank 258)	Removal Action	Closed in RSWB OSC 7/20/6
8	337	Building H Condensate Sump (Tank 268)	Removal Action Complete	OSC signed 9/22/04
8	339	T-44 Wastewater Sump (Tank 250)	Removal Action	Closed in T Building OSC 7/27/6
8	340	T-16b Wastewater Sump (Tank 251)	Removal Action	Closed in T Building OSC 7/27/6
8	341	T-90 Condensate Sump (Tank 269)	Removal Action	Closed in T Building OSC 7/27/6
8	342	T-1 Hot Side Fire Water Tank (Tank 271)	Removal Action	Closed in T Building OSC 7/27/6
8	343	T-20 Fire Water Sump (Tank 272)	Removal Action	Closed in T Building OSC 7/27/6
8	344	T-37 Fire Water Sump (Tank 273)	Removal Action	Closed in T Building OSC 7/27/6
8	345	Former Equipment Storage Area (see related site 16)	NFA	Recommendation signed 5/8/96
8	347	Elevated Soil Gas Location	NFA	Recommendation signed 11/20/96
8	351	Elevated Soil Gas Location	NFA	Recommendation signed 11/20/96
8	355	Elevated Soil Gas Location	NFA	Recommendation signed 11/20/96
8	356	Elevated Soil Gas Location	NFA	Recommendation signed 2/19/97
8	360	Elevated Soil Gas Location	NFA	Recommendation signed 11/20/96

Table 2 - PRSs and Core Team Conclusions

Parcel	PRS	Description	Initial Core Team Decision	Closeout of PRS
8	363	Elevated Soil Gas Location	Removal Action	OSC signed 1/10/06
8	366	Elevated Soil Gas Location	NFA	Recommendation signed 12/17/96
8	367	Elevated Soil Gas Location	NFA	Recommendation signed 12/17/96
8	368	Elevated Soil Gas Location	NFA	Recommendation signed 10/11/05
8	405	(North of Bldg. 23) Oil and PCB potential in soil	Removal Action	OSC signed 7/13/6
8	408	Prism Separator Oil Leak	NFA	Recommendation signed 5/13/97
8	411	Soil contamination – asphalt roadway	Removal Action	OSC signed 3/23/05
8	413	Soil contamination – creosote	Removal Action	OSC signed 3/7/2006
8	415	Soil Contamination - Radiological	Removal Action	OSC signed 9/30/05
8	417	Soil Contamination-High Soil Gas near Well 0312	NFA	Recommendation signed 3/19/03
8	423	Hot Waste Line - Segment 1A	Removal Action	OSC signed 9/27/05
8	424	Hot Waste Line - Segment 1B	Removal Action	OSC signed 9/27/05
8	425	Hot Waste Line - segment 2	Removal Action	Closed in RSWB Building OSC 7/20/6
8	426	Hot Waste Line - segment 5	Removal Action	OSC signed 9/27/05
8	427	Hot Waste Line - Segment 6	Removal Action	OSC signed 7/13/6
8	428	Hot Waste Line - Segment 7	Removal Action	OSC signed 7/13/6
8	429	Hot Waste Line - Segment 9	Removal Action	OSC signed 9/27/05
8	430	Hot Waste Line - Segment 9a	Removal Action	OSC signed 9/27/05
8	431	Hot Waste Line - Segment 10	Removal Action	OSC signed 9/27/05
8	432	Hot Waste Line - Segment 11	Removal Action	OSC signed 9/27/05
8	433	Hot Waste Line - Segment 12	Removal Action	OSC signed 9/27/05
8	434	Hot Waste Line - Segment 13a	Removal Action	OSC signed 9/27/05
8	435	Hot Waste Line - Segment 13b	Removal Action	OSC signed 9/27/05
8	436	Hot Waste Line - Segment 14	Removal Action	OSC signed 9/27/05
8	437	Hot Waste Line - Segment 3	Removal Action	Closed in RSWB Building OSC 7/20/6
8	438	Hot Waste Line - Segment 4	Removal Action	Closed in RSWB Building OSC 7/20/6
8	439	Hot Waste Line - Segment 4a	Removal Action	OSC signed 6/13/6
8	440	Hot Waste Line - Segment 8	Removal Action	Closed in RSWB Building OSC 7/20/6
OFFSITE	94	Main Hill Seep 604	Retired	1/24/2006

Table 2 - PRSs and Core Team Conclusions

Parcel	PRS	Description	Initial Core Team Decision	Closeout of PRS
OFFSITE	95	Main Hill Seep 605	Retired	1/24/2006
OFFSITE	96	Main Hill Seep 606	Retired	1/24/2006
OFFSITE	97	Main Hill Seep 607	Retired	1/24/2006
OFFSITE	98	Main Hill Seep 608	Retired	1/24/2006
OFFSITE	320	Dayton Unit 1	NFA	9/29/1997
OFFSITE	321	Dayton Unit 2	NFA	9/29/1997
OFFSITE	322	Dayton Unit 3	NFA	9/29/1997
OFFSITE	323	Dayton Unit 4	NFA	9/29/1997
OFFSITE	324	Dayton Warehouse	NFA	9/29/1997
OFFSITE	325	Marion Standby Facility	NFA	9/29/1997

NFA: No Further Action

PRS: Potential Release Site

OSC: On-Scene Coordinator Report

Table 3 - Transfer Buildings and Core Team Conclusions

Parcel	Building	Description	Core Team Decision	Closeout Action
6	28	Ceramic Production	NFA	Recommendation signed 7/23/03
	45	Health Physics Calibration Facility	NFA	Recommendation signed 5/5/2005
	OSE	Operations Support East	NFA	Recommendation signed 9/16/03
7	2	Energetic Materials Test Facility	NFA	Recommendation signed 2/19/97
	61	Warehouse (Logistical Support)	NFA	Recommendation signed 11/25/02
	63	Surveillance Facility	NFA	Recommendation signed 2/20/02
	126	Power System Technology Administration Building	NFA	Recommendation signed 9/22/04
8	COS	Central Operations Support	NFA	Recommendation signed 9/18/00
	OSW	Operations Support West	NFA	Recommendation signed 9/17/03
	T	Technical	Removal Action Complete	Recommendation signed 2/27/03

NFA: No Further Action

PRS: Potential Release Site

OSC: On-Scene Coordinator Report

Table 4 – Parcels 6, 7, and 8 Risk Summary

	Overall Risk Types	Total Non-Carcinogen Risk HI	Total Excess Lifetime Cancer Risk
Parcel 6			
Construction Worker	Total	NC	$3.5x10^{-5}$
	Background	NC	$2.0x10^{-5}$
	Incremental	NC	$1.5x10^{-5}$
Site Employee	Total	NC	$3.5x10^{-5}$
	Background	NC	$2.0x10^{-5}$
	Incremental	NC	$1.5x10^{-5}$
Parcel 7			
Construction Worker	Total	$8.6x10^{-3}$	$2.1x10^{-5}$
	Background	NC	$2.6x10^{-7}$
	Incremental	$8.6x10^{-3}$	$2.1x10^{-5}$
Site Employee	Total	$6.8x10^{-7}$	$1.7x10^{-5}$
	Background	NC	$1.1x10^{-8}$
	Incremental	$6.8x10^{-7}$	$1.7x10^{-5}$
Parcel 8			
Construction Worker	Total	0.17	$2.2x10^{-5}$
	Background	NC	$1.7x10^{-8}$
	Incremental	0.16	$2.2x10^{-5}$
Site Employee	Total	$1.8x10^{-10}$	$2.6x10^{-5}$
	Background	NC	$9.0x10^{-9}$
	Incremental	$1.8x10^{-10}$	$2.6x10^{-5}$

NA: not applicable

NC: not calculated due to the absence of toxicity data.

Table 5:

Identification of Constituents of Potential Concern for the Construction Worker Exposed to Surface and Subsurface Soil in Parcel 6

Analyte (SRC)	CAS Number	Minimum Concentration	Maximum Concentration	Detection Frequency	95% UCL	EPC	Background Value	RBGV	COPC?
Inorganics (mg/kg)									
Aluminum	7429-90-5	2.69E+03	1.47E+04	4/ 4	6.45E+05	1.47E+04	1.90E+04	1.69E+05	NO:2
Arsenic	7440-38-2	2.10E+00	5.30E+00	4/ 4	1.15E+01	5.30E+00	8.60E+00	2.26E+00	NO:2
Barium	7440-39-3	1.57E+01	4.54E+01	4/ 4	4.10E+02	4.54E+01	1.80E+02	1.25E+04	NO:2
Beryllium	7440-41-7	1.40E-01	8.60E-01	4/ 4	3.99E+01	8.50E-01	1.30E+00	3.70E+02	NO:2
Bismuth	7440-69-9	1.50E+00	1.50E+00	1/ 3	2.22E+01	1.50E+00	3.84E+01	---	NO:2
Cadmium	7440-43-9	3.00E-01	4.20E-01	3/ 5	1.02E+01	4.20E-01	2.10E+00	0.00E+00	NO:2
Calcium	7440-70-2	5.80E+04	2.17E+05	4/ 4	4.19E+06	2.17E+05	3.10E+05	---	NO:2
Chromium	**7440-47-3**	**5.40E+00**	**2.08E+01**	**5/ 5**	**2.61E+01**	**2.08E+01**	**2.00E+01**	---	**YES**
Cobalt	7440-48-4	3.00E+00	1.94E+01	4/ 4	2.39E+03	1.94E+01	1.90E+01	1.93E+03	NO:3
Copper	7440-50-8	1.06E+01	2.91E+01	4/ 4	1.11E+02	2.91E+01	2.60E+01	8.18E+03	NO:3
Iron	7439-89-6	6.51E+03	3.04E+04	4/ 4	5.92E+05	3.04E+04	3.50E+04	---	NO:2
Lead	7439-92-1	2.80E+00	2.67E+01	6/ 6	5.83E+01	2.67E+01	4.80E+01	---	NO:2
Lithium	**7439-93-2**	**1.03E+01**	**3.86E+01**	**4/ 4**	**2.56E+02**	**3.86E+01**	**0.00E+00**	---	**YES**
Magnesium	7439-95-4	1.05E+04	1.02E+05	4/ 4	8.61E+08	1.02E+05	4.00E+04	---	NO:5
Manganese	7439-96-5	2.54E+02	1.08E+03	4/ 4	8.39E+03	1.08E+03	1.40E+03	0.00E+00	NO:2
Mercury	7439-97-6	1.30E-01	1.30E-01	1/ 4	1.17E+03	1.30E-01	1.50E-01	5.78E+04	NO:2
Molybdenum	7439-98-7	5.10E-01	2.10E+00	2/ 3	7.96E+05	2.10E+00	2.72E+01	1.02E+03	NO:2
Nickel	7440-02-0	6.40E+00	3.46E+01	5/ 5	5.71E+01	3.46E+01	3.20E+01	4.09E+03	NO:3
Potassium	7440-09-7	5.55E+02	3.28E+03	4/ 4	1.52E+05	3.28E+03	1.90E+03	---	NO:5
Silver	7440-22-4	2.10E-01	2.10E-01	2/ 4	8.33E-01	2.10E-01	1.70E+00	1.02E+03	NO:2
Sodium	7440-23-5	2.16E+02	7.07E+02	4/ 4	5.85E+03	7.07E+02	2.40E+02	---	NO:5
Tin	7440-31-5	8.90E-01	1.20E+00	2/ 3	1.83E+01	1.20E+00	2.09E+01	1.23E+05	NO:2
Vanadium	7440-62-2	6.70E+00	1.97E+01	4/ 4	1.45E+02	1.97E+01	2.50E+01	2.04E+02	NO:2
Zinc	7440-66-6	2.71E+01	2.54E+02	4/ 4	1.23E+05	2.54E+02	1.40E+02	6.13E+04	NO:3
Semi-Volatile Organic Compounds (ug/kg)									
Acenaphthene	83-32-9	4.17E+01	3.37E+02	3/ 8	9.97E+02	3.37E+02	---	3.09E+06	NO:3
Anthracene	120-12-7	2.80E+01	9.28E+02	5/ 8	1.44E+03	9.28E+02	---	1.55E+07	NO:3
Benzo(a)anthracene	56-55-3	1.80E+01	1.84E+03	7/ 8	6.07E+03	1.84E+03	---	1.98E+03	NO:3
Benzo(a)pyrene	**50-32-8**	**2.30E+01**	**1.22E+03**	**6/ 8**	**1.96E+03**	**1.22E+03**	---	**1.98E+02**	**YES**
Benzo(b)fluoranthene	205-99-2	2.30E+01	1.89E+03	6/ 8	3.56E+03	1.89E+03	---	1.98E+03	NO:3
Benzo(g,h,i)perylene	**191-24-2**	**6.38E+01**	**8.55E+02**	**5/ 8**	**5.70E+02**	**5.70E+02**	---	**0.00E+00**	**YES**
Benzo(k)fluoranthene	207-08-9	2.30E+01	7.45E+02	6/ 8	8.79E+02	7.45E+02	---	1.98E+04	NO:3
Bis(2-ethylhexyl)phthalate	117-81-7	4.30E+01	5.80E+01	2/ 4	3.37E+04	5.80E+01	---	1.25E+05	NO:3
Chrysene	218-01-9	2.90E+01	3.01E+02	6/ 8	4.93E+02	3.01E+02	---	1.98E+06	NO:3
Dibenz(a,h)anthracene	**53-70-3**	**2.90E+01**	**2.18E+02**	**2/ 8**	**1.96E+03**	**2.18E+02**	---	**1.98E+02**	**YES**
Di-n-octyl Phthalate	117-84-0	1.70E+02	1.70E+02	1/ 4	2.17E+02	1.70E+02	---	8.18E+06	NO:3
Fluoranthene	206-44-0	4.50E+01	3.67E+03	7/ 8	1.27E+04	3.67E+03	---	2.06E+06	NO:3
Fluorene	86-73-7	4.60E+01	4.74E+02	3/ 8	1.15E+03	4.74E+02	---	2.06E+06	NO:3
Indeno(1,2,3-cd)pyrene	193-39-5	7.90E+01	9.77E+02	5/ 8	6.63E+02	6.63E+02	---	1.98E+03	NO:3
Phenanthrene	**85-01-8**	**2.50E+01**	**3.89E+03**	**7/ 8**	**3.21E+04**	**3.89E+03**	---	**0.00E+00**	**YES**
Pyrene	129-00-0	5.00E+01	4.56E+03	7/ 8	1.53E+04	4.56E+03	---	1.55E+06	NO:3
Volatile Organic Compounds (ug/kg)									
4-Methyl-2-pentanone	108-10-1	7.97E-01	7.97E-01	1/ 8	4.87E+03	7.97E-01	---	1.64E+07	NO:3
Acetone	67-64-1	1.10E+01	1.80E+01	3/ 8	4.50E+01	1.80E+01	---	1.84E+08	NO:3
Dichloromethane (Methylene Chloride)	75-09-2	6.00E+00	1.60E+01	4/ 8	2.07E+04	1.60E+01	---	7.63E+05	NO:3
Naphthalene	91-20-3	3.43E+01	3.43E+01	1/ 8	1.09E+03	3.43E+01	---	1.24E+06	NO:3
Tetrachloroethene	127-18-4	1.31E+00	1.30E+01	2/ 8	7.23E+02	1.30E+01	---	1.06E+04	NO:3
Toluene	108-88-3	5.41E-01	1.15E+00	4/ 9	9.56E+01	1.15E+00	---	2.00E+02	NO:3
Radionuclides (pCi/g)									
Actinium-227	14952-40-0(+D)	7.00E-02	1.10E-01	4/ 136	1.14E-01	1.10E-01	0.00E+00	5.02E-01	NO:1
Cesium-137	10045-97-3(+D)	2.00E-02	5.00E-01	79/ 146	5.82E-02	5.82E-02	4.20E-01	3.56E-01	NO:4
Cobalt-60	10198-40-0	3.00E-02	3.00E-02	1/ 146	2.18E-02	2.18E-02	0.00E+00	7.35E-02	NO:1
Lead-210	14255-04-0(+D)	1.50E-01	2.05E+00	102/ 145	6.23E-01	6.23E-01	1.20E+00	1.19E+00	NO:4
Plutonium-238	**13981-16-3**	**1.24E-02**	**4.10E+01**	**70/ 428**	**2.90E+01**	**2.90E+01**	**1.30E-01**	**1.13E+01**	**YES**
Plutonium-239/240	OER-100-70	3.70E-02	3.70E-02	1/ 9	7.16E-01	3.70E-02	1.80E-01	6.01E+00	NO:2
Potassium-40	13966-00-2	1.80E+01	2.31E+01	3/ 3	2.78E+01	2.31E+01	3.70E+01	1.12E+00	NO:2
Radium-226	13982-63-3(+D)	1.30E-01	3.53E+00	140/ 149	1.31E+00	1.31E+00	2.00E+00	1.05E-01	NO:4
Thorium-227	15623-47-9	1.80E-01	1.80E-01	1/ 2	0.00E+00	1.80E-01	0.00E+00	2.17E+00	NO:3
Thorium-228	14274-82-9(+D)	2.81E-01	9.00E-01	10/ 12	5.82E+01	9.00E-01	1.50E+00	1.14E-01	NO:2
Thorium-230 +D	**14269-63-7(+D)**	**3.28E-01**	**2.32E+00**	**12/ 150**	**2.76E+00**	**2.32E+00**	**1.90E+00**	**9.26E-02**	**YES**
Thorium-232	7440-29-1(+D)	4.00E-02	2.30E+00	157/ 452	1.12E+00	1.12E+00	1.40E+00	6.90E-02	NO:4
Tritium	10028-17-8p	1.87E-01	3.91E+00	4/ 4	3.33E+09	3.91E+00	1.60E+00	1.45E+04	NO:3
Uranium-233/234	13966-29-5	1.80E-01	6.70E-01	2/ 2	0.00E+00	6.70E-01	1.10E+00	5.52E-01	NO:2
Uranium-234	13966-29-5	2.31E-01	7.23E-01	5/ 5	1.37E+00	7.23E-01	1.10E+00	1.97E+01	NO:2
Uranium-235	15117-96-1(+D)	2.40E-02	4.75E-02	2/ 9	4.99E+01	4.75E-02	1.10E-01	1.55E+00	NO:2
Uranium-238	7440-61-1(+D)	2.32E-01	8.85E-01	8/ 11	3.51E+01	8.85E-01	1.20E+00	5.22E+00	NO:2

CAS - Chemical Abstract Service
COPC - Constituents of Potential Concern
EPC - Exposure Point Concentration
mg/kg - milligram per kilogram
ug/kg - microgram per kilogram
pCi/g - picocurie per gram
RBGV - Risk Based Guideline Value
UCL - Upper Confidence Limit

NO:1 - <5% Detects
NO:2 - Max<Background
NO:3 - Max< Risk Based Guideline Value
NO:4 - EPC< Background
NO:5 - Essential Human Nutrient

Bold text indicates COPCs selected

Lithium note: The RREM background value for lithium is 26 mg/kg and not 0.00 mg/kg as presented in this table. However, since the analyte would still become a COPC the value in the table was not modified.

Background values are base on the Operable Unit 9 Background Soils Investigation Chemistry Report (DOE 1994) or, in the case of nuclides with short half lives (Ac-227 Pb-210, and Pa-231) are based on the parent nuclide background and assumption of equilibrium with the parent nuclide.

--- not applicable, not available, or not calculated due to insufficient toxicity data

Table 6:

Identification of Constituents of Potential Concern for a Site Employee Exposed to Surface Soil In Parcel 6

Analyte (SRC)	CAS Number	Minimum Concentration	Maximum Concentration	Detection Frequency	95% UCL	EPC	Background Value*	RBGV	COPC?
Inorganics (mg/kg)									
Aluminum	7429-90-5	2.69E+03	1.47E+04	4/ 4	6.45E+03	1.47E+04	1.90E+04	1.69E+05	NO:2
Arsenic	7440-38-2	2.10E+00	5.30E+00	4/ 4	1.15E+01	5.30E+00	8.60E+00	2.26E+00	NO:2
Barium	7440-39-3	1.57E+01	4.54E+01	4/ 4	4.10E+02	4.54E+01	1.80E+02	1.25E+04	NO:2
Beryllium	7440-41-7	1.40E-01	8.60E-01	4/ 4	3.99E+01	8.60E-01	1.30E+00	3.70E+02	NO:2
Bismuth	7440-69-9	1.50E+00	1.50E+00	1/ 3	2.22E+01	1.50E+00	3.84E+01	---	NO:2
Cadmium	7440-43-9	3.00E-01	4.20E-01	3/ 5	1.02E+01	4.20E-01	2.10E+00	---	NO:2
Calcium	7440-70-2	5.60E+04	2.17E+05	4/ 4	4.19E+06	2.17E+05	3.10E+05	---	NO:2
Chromium	7440-47-3	5.40E+00	2.08E+01	5/ 5	2.51E+01	2.08E+01	2.00E+01	---	YES
Cobalt	7440-48-4	3.00E+00	1.94E+01	4/ 4	2.39E+03	1.94E+01	1.90E+01	1.03E+03	NO:3
Copper	7440-50-8	1.06E+01	2.91E+01	4/ 4	1.11E+02	2.91E+01	2.60E+01	6.18E+03	NO:3
Iron	7439-89-6	6.51E+03	3.04E+04	4/ 4	5.92E+05	3.04E+04	3.50E+04	---	NO:2
Lead	7439-92-1	2.60E+00	2.67E+01	6/ 6	5.83E+01	2.67E+01	4.80E+01	---	NO:2
Lithium	7439-93-2	1.03E+01	3.86E+01	4/ 4	2.56E+02	3.86E+01	---	---	YES
Magnesium	7439-95-4	1.05E+04	1.02E+05	4/ 4	6.81E+08	1.02E+05	4.00E+04	---	NO:5
Manganese	7439-96-5	2.84E+02	1.08E+03	4/ 4	8.38E+03	1.08E+03	1.40E+03	---	NO:2
Mercury	7439-97-6	1.30E-01	1.30E-01	1/ 4	1.17E+03	1.30E-01	1.50E-01	5.78E+04	NO:2
Molybdenum	7439-98-7	5.10E-01	2.10E+00	2/ 3	7.98E+05	2.10E+00	2.72E+01	1.02E+03	NO:2
Nickel	7440-02-0	6.40E+00	3.46E+01	5/ 5	5.71E+01	3.46E+01	3.20E+01	4.09E+03	NO:3
Potassium	7440-09-7	6.55E+02	3.28E+03	4/ 4	1.52E+05	3.28E+03	1.90E+03	---	NO:5
Silver	7440-22-4	2.10E-01	2.10E-01	2/ 4	8.33E-01	2.10E-01	1.70E+00	1.02E+03	NO:2
Sodium	7440-23-5	2.16E+02	7.07E+02	4/ 4	5.95E+03	7.07E+02	2.40E+02	---	NO:5
Tin	7440-31-5	8.90E-01	1.20E+00	2/ 3	1.63E+01	1.20E+00	2.09E+01	1.23E+05	NO:2
Vanadium	7440-62-2	6.70E+00	1.97E+01	4/ 4	1.45E+02	1.97E+01	2.50E+01	2.04E+02	NO:2
Zinc	7440-66-6	27.1	254.0	4/ 4	123,000.0	254.0	140.0	61,320.0	NO:3
Semi-Volatile Organic Compounds (ug/kg)									
Acenaphthene	83-32-9	4.17E+01	3.37E+02	3/ 8	9.97E+02	3.37E+02	---	3.09E+06	NO:3
Anthracene	120-12-7	2.60E+01	9.28E+02	5/ 8	1.44E+03	9.28E+02	---	1.55E+07	NO:3
Benzo(a)anthracene	56-55-3	1.80E+01	1.64E+03	7/ 8	6.07E+03	1.64E+03	---	1.98E+03	NO:3
Benzo(a)pyrene	**50-32-8**	**2.30E+01**	**1.22E+03**	**6/ 8**	**1.96E+03**	**1.22E+03**	---	**1.98E+02**	**YES**
Benzo(b)fluoranthene	205-99-2	2.30E+01	1.89E+03	6/ 8	3.58E+03	1.89E+03	---	1.98E+03	NO:3
Benzo(g,h,i)perylene	**191-24-2**	**6.36E+01**	**5.55E+02**	**5/ 8**	**5.70E+02**	**5.70E+02**	---	---	**YES**
Benzo(k)fluoranthene	207-08-9	2.30E+01	7.45E+02	6/ 8	6.79E+02	7.45E+02	---	1.98E+04	NO:3
Bis(2-ethylhexyl)phthalate	117-81-7	4.30E+01	5.80E+01	2/ 4	3.37E+04	5.80E+01	---	1.25E+05	NO:3
Chrysene	218-01-9	2.90E+01	3.01E+02	6/ 8	4.03E+02	3.01E+02	---	1.98E+05	NO:3
Dibenz(a,h)anthracene	**53-70-3**	**2.90E+01**	**2.18E+02**	**2/ 8**	**1.96E+03**	**2.18E+02**	---	**1.98E+02**	**YES**
Di-n-octyl Phthalate	117-84-0	1.70E+02	1.70E+02	1/ 4	2.17E+02	1.70E+02	---	8.18E+06	NO:3
Fluoranthene	206-44-0	4.50E+01	3.67E+03	7/ 8	1.27E+04	3.67E+03	---	2.06E+06	NO:3
Fluorene	86-73-7	4.60E+01	4.74E+02	3/ 8	1.15E+03	4.74E+02	---	2.06E+06	NO:3
Indeno(1,2,3-cd)pyrene	193-39-5	7.90E+01	9.77E+02	5/ 8	6.63E+02	6.63E+02	---	1.98E+03	NO:3
Phenanthrene	**85-01-8**	**2.50E+01**	**3.89E+03**	**7/ 8**	**3.21E+04**	**3.89E+03**	---	---	**YES**
Pyrene	129-00-0	5.00E+01	4.56E+03	7/ 8	1.53E+04	4.56E+03	---	1.55E+06	NO:3
Volatile Organic Compounds (ug/kg)									
4-Methyl-2-pentanone	108-10-1	7.97E-01	7.97E-01	1/ 8	4.87E+03	7.97E-01	#REF!	1.64E+07	NO:3
Acetone	67-64-1	1.10E+01	1.80E+01	3/ 9	4.50E+01	1.80E+01	#REF!	1.84E+08	NO:3
Dichloromethane (Methylene C	75-09-2	6.00E+00	1.60E+01	4/ 8	2.37E+04	1.60E+01	#REF!	7.63E+05	NO:3
Naphthalene	91-20-3	3.43E+01	3.43E+01	1/ 8	1.09E+03	3.43E+01	#REF!	1.24E+06	NO:3
Tetrachloroethene	127-18-4	1.31E+00	1.30E+01	2/ 8	7.23E+02	1.30E+01	#REF!	1.06E+04	NO:3
Toluene	108-88-3	5.41E-01	1.15E+00	4/ 9	9.56E+01	1.15E+00	#REF!	4.09E+07	NO:3
Radionuclides (pCi/g)									
Actinium-227	14952-40-0(+D)	7.00E-02	1.10E-01	4/ 136	1.14E-01	1.10E-01	1.10E-01	5.02E-01	NO:1
Cesium-137	10045-97-3(+D)	2.00E-02	5.00E-01	79/ 148	5.82E-02	5.82E-02	4.20E-01	3.56E-01	NO:4
Cobalt-60	10198-40-0	3.00E-02	3.00E-02	1/ 148	2.18E-02	2.18E-02	---	7.35E-02	NO:1
Lead-210	14255-04-0(+D)	1.50E-01	2.05E+00	102/ 145	6.23E-01	6.23E-01	1.20E+00	1.19E+00	NO:4
Plutonium-238	**13981-16-3**	**1.24E-02**	**4.10E+01**	**70/ 428**	**2.90E+01**	**2.90E+01**	**1.30E-01**	**1.13E+01**	**YES**
Plutonium-239/240	OER-100-70	3.70E-02	3.70E-02	1/ 9	7.16E-01	3.70E-02	1.80E-01	---	NO:2
Potassium-40	13966-00-2	1.80E+01	2.31E+01	3/ 3	2.78E+01	2.31E+01	3.70E+01	1.12E+00	NO:2
Radium-226	13982-63-3(+D)	1.30E-01	3.53E+00	140/ 149	1.31E+00	1.31E+00	2.00E+00	1.95E-01	NO:4
Thorium-227	15623-47-9	1.80E-01	1.80E-01	1/ 2	---	1.80E-01	---	2.17E+00	NO:3
Thorium-228	14274-82-9(+D)	2.81E-01	9.00E-01	10/ 12	5.82E+01	9.00E-01	1.50E+00	1.14E-01	NO:2
Thorium-230 +D	**14269-63-7(+D)**	**3.28E-01**	**2.32E+00**	**12/ 150**	**2.76E+00**	**2.32E+00**	**1.90E+00**	**5.86E-01**	**YES**
Thorium-232	7440-29-1(+D)	4.00E-02	2.30E+00	157/ 152	1.12E+00	1.12E+00	1.40E+00	---	NO:4
Tritium	10028-17-8	1.37E-01	3.91E+00	4/ 4	3.33E+09	3.91E+00	1.50E+00	1.45E+04	NO:3
Uranium-233/234	13966-29-5	1.80E-01	6.70E-01	2/ 2	---	6.70E-01	1.10E+00	5.52E-01	NO:2
Uranium-234	13966-29-5	2.11E-01	7.23E-01	5/ 5	1.37E+00	7.23E-01	1.10E+00	1.97E+01	NO:2
Uranium-235	15117-96-1(+D)	2.40E-02	4.75E-02	2/ 9	4.99E+01	4.75E-02	1.10E-01	1.55E+00	NO:2
Uranium-238	7440-61-1(+D)	2.32E-01	8.05E-01	10/ 11	3.51E+01	8.05E-01	1.20E+00	5.22E+00	NO:2

CAS - Chemical Abstract Service
COPC - Constituents of Potential Concern
EPC - Exposure Point Concentration
mg/kg - milligram per kilogram
ug/kg - microgram per kilogram
pCi/g - picocurie per gram
RBGV - Risk Based Guideline Value
UCL - Upper Confidence Limit
--- - not applicable, not available, or not calculated due to insufficient toxicity data

NO:1 - <5% Detects
NO:2 - Max<Background
NO:3 - Max< Risk Based Guideline Value
NO:4 - EPC< Background
NO:5 - Essential Human Nutrient

Bold text indicates COPCs selected

Background values are base on the Operable Unit 9 Background Soils Investigation Chemistry Report (DOE 1994) or, in the case of nuclides with short half lives (Ac-227 Pb-210, and Pa-231) are based on the parent nuclide background and assumption of equilibrium with the parent nuclide.

Table 7:

Identification of Constituents of Potential Concern for the Construction Worker Exposed to Surface and Subsurface Soil in MCP Parcel 7

Analyte (SRC)	CAS Number	Minimum Concentration	Maximum Concentration	Detection Frequency	95% UCL	EPC	Background Value	10^{-4} RBGV	COPC?
Inorganics (mg/kg)									
Aluminum	7429-90-5	7.45E+01	3.03E+05	491/ 492	1.30E+04	1.30E+04	1.90E+04	2.08E+04	NO:4
Antimony	7440-36-0	1.90E-01	3.37E+01	122/ 476	7.23E-01	7.23E-01	---	8.52E+00	YES
Arsenic	7440-38-2	1.00E+00	1.46E+01	493/ 529	5.59E+00	5.59E+00	8.60E+00	1.85E+00	NO:4
Barium	7440-39-3	1.90E-01	5.84E+02	497/ 527	6.36E+01	6.36E+01	1.80E+02	1.47E+03	NO:3
Beryllium	7440-41-7	9.00E-02	1.80E+00	463/ 493	6.46E-01	6.46E-01	1.30E+00	4.21E+01	NO:3
Bismuth	7440-69-9	4.60E-01	1.41E+02	37/ 134	1.76E+01	1.76E+01	3.84E+01	---	NO:4
Cadmium	7440-43-9	4.00E-02	7.30E+00	341/ 507	4.49E-01	4.49E-01	2.10E+00	---	NO:4
Calcium	7440-70-2	1.19E+03	3.09E+05	499/ 522	1.98E+05	1.98E+05	3.10E+05	---	NO:2
Cerium	7440-45-1	1.27E+01	7.41E+01	21/ 38	3.31E+01	3.31E+01	---	3.85E+04	NO:3
Chromium	7440-47-3	1.00E-01	7.57E+01	492/ 520	1.61E+01	1.61E+01	2.00E+01	---	NO:4
Cobalt	7440-48-4	6.00E-02	2.89E+01	480/ 516	8.66E+00	8.66E+00	1.90E+01	3.83E+02	NO:3
Copper	7440-50-8	1.00E-01	4.30E+02	494/ 516	1.73E+01	1.73E+01	2.60E+01	8.52E+02	NO:3
Cyanide	57-12-5	1.10E-01	3.14E+01	14/ 184	5.90E-01	5.90E-01	---	4.26E+02	NO:3
Dysprosium	7429-91-6	2.40E+00	5.90E+00	10/ 25	3.05E+00	3.05E+00	---	---	YES
Erbium	7440-52-0	6.60E+00	7.90E+00	6/ 38	4.78E+00	4.78E+00	---	---	YES
Europium	7440-53-1	8.80E-01	2.00E+00	16/ 24	1.31E+00	1.31E+00	---	---	YES
Gadolinium	7440-54-2	7.10E+00	8.83E+01	9/ 38	1.95E+01	1.95E+01	---	---	YES
Holmium	7440-60-0	2.20E+00	2.40E+00	2/ 38	1.47E+00	1.47E+00	---	---	YES
Iron	7439-89-6	1.42E+02	1.28E+05	501/ 523	5.19E+04	5.19E+04	3.50E+04	---	NO:5
Lanthanum	7439-91-0	5.50E+00	1.57E+01	10/ 38	9.59E+00	9.59E+00	---	---	YES
Lead	7439-92-1	1.30E+00	8.83E+01	502/ 532	1.19E+01	1.19E+01	4.80E+01	---	NO:4
Lithium	7439-93-2	1.40E-01	4.96E+01	410/ 446	2.25E+01	2.25E+01	---	---	YES
Lutetium	7439-94-3	5.00E-01	9.20E-01	4/ 24	3.87E-01	3.87E-01	---	---	YES
Magnesium	7439-95-4	4.22E+01	1.46E+05	501/ 523	4.08E+04	4.08E+04	4.00E+04	---	NO:5
Manganese	7439-96-5	9.50E+00	1.79E+03	488/ 510	8.95E+02	8.95E+02	1.40E+03	---	NO:4
Mercury	7439-97-6	1.00E-02	2.60E+00	157/ 516	5.56E-02	5.56E-02	1.50E-01	5.78E+04	NO:3
Molybdenum	7439-98-7	1.90E-01	1.08E+01	57/ 117	2.47E+00	2.47E+00	2.72E+01	1.06E+02	NO:2
Neodymium	7440-00-8	1.32E+01	4.61E+01	31/ 38	2.44E+01	2.44E+01	---	---	YES
Nickel	7440-02-0	1.10E-01	5.67E+01	485/ 517	1.84E+01	1.84E+01	3.20E+01	4.26E+02	NO:3
Potassium	7440-09-7	2.26E+01	6.49E+03	483/ 500	2.89E+03	2.89E+03	1.90E+03	---	NO:5
Praseodymium	7440-10-0	7.30E+00	1.21E+02	7/ 38	2.34E+01	2.34E+01	---	---	YES
[illegible]arium	7440-19-9	1.81E+01	2.04E+01	3/ 38	1.19E+01	1.19E+01	---	---	YES
[illegible]nium	7782-49-2	2.40E-01	1.20E+00	60/ 494	3.17E-01	3.17E-01	5.90E-01	1.06E+02	NO:3
[illegible]er	7440-22-4	7.00E-02	1.85E+01	93/ 507	5.45E-01	5.45E-01	1.70E+00	1.06E+02	NO:3
[illegible]dium	7440-23-5	2.40E+00	4.08E+03	483/ 523	4.36E+02	4.36E+02	2.40E+02	---	NO:5
[illegible]antalum	7440-25-7	2.01E+02	4.59E+02	7/ 31	1.41E+03	4.59E+02	---	---	YES
Terbium	7440-27-9	1.37E+01	1.49E+01	2/ 38	8.54E+00	8.54E+00	---	---	YES
Thallium	7440-28-0	1.70E-01	1.30E+00	54/ 517	3.36E-01	3.36E-01	4.60E-01	1.41E+00	NO:3
Tin	7440-31-5	6.40E-01	6.30E+00	38/ 141	3.40E+00	3.40E+00	2.09E+01	1.28E+04	NO:2
Vanadium	7440-62-2	9.00E-02	5.57E+01	491/ 516	1.99E+01	1.99E+01	2.50E+01	2.13E+01	NO:4
Ytterbium	7440-64-4	3.30E+00	3.90E+00	4/ 38	2.48E+00	2.48E+00	---	---	YES
Zinc	7440-66-6	4.70E-01	3.49E+03	498/ 520	6.79E+01	6.79E+01	1.40E+02	6.39E+03	NO:3
Explosives (ug/kg)									
2,6-Dinitrotoluene	606-20-2	5.00E+02	5.00E+02	1/ 516	2.20E+02	2.20E+02	---	3.54E+03	NO:1
HMX	2691-41-0	2.40E+02	2.40E+02	2/ 84	1.36E+03	2.40E+02	---	1.06E+06	NO:1
RDX	121-82-4	1.90E+02	1.90E+02	1/ 83	1.00E+03	1.90E+02	---	2.71E+04	NO:1
Pesticides and/or PCBs (ug/kg)									
4,4'-DDD	72-54-8	1.40E-01	1.40E-01	1/ 389	3.90E+00	1.40E-01	---	1.24E+04	NO:1
4,4'-DDE	72-55-9	7.90E-02	5.60E+00	6/ 389	3.64E+00	3.64E+00	---	8.77E+03	NO:1
4,4'-DDT	50-29-3	2.90E-01	7.90E+00	5/ 389	3.88E+00	3.88E+00	---	8.12E+03	NO:1
Aldrin	309-00-2	1.70E-01	2.20E-01	3/ 389	1.83E+00	2.20E-01	---	1.42E+02	NO:1
Alpha Chlordane	5103-71-9	1.00E-01	4.20E+01	9/ 367	7.83E+00	7.83E+00	---	7.61E+03	NO:1
Alpha-BHC	319-84-6	8.80E-01	3.00E+00	2/ 389	1.84E+00	1.84E+00	---	4.73E+02	NO:1
Aroclor-1248	12672-29-6	4.10E+01	1.70E+03	7/ 390	3.14E+01	3.14E+01	---	---	NO:1
Aroclor-1254	11097-69-1	1.40E+01	2.00E+02	10/ 390	4.05E+01	4.05E+01	---	3.20E+02	NO:1
Aroclor-1260	11096-82-5	4.00E+01	9.60E+01	3/ 390	3.94E+01	3.94E+01	---	---	NO:1
Beta-BHC	319-85-7	1.20E+01	1.20E+01	1/ 374	1.63E+00	1.63E+00	---	1.66E+03	NO:1
Chlordane	57-74-9	1.80E+01	4.00E+01	2/ 17	1.03E+01	4.00E+01	---	7.61E+03	NO:3
Delta-BHC	319-86-8	1.90E-01	1.50E+00	2/ 388	2.01E+00	1.50E+00	---	---	NO:1
Dieldrin	60-57-1	1.70E-01	7.90E-01	3/ 388	3.67E+00	7.90E-01	---	1.86E+02	NO:1
Endosulfan I	959-98-8	1.40E+00	1.70E+01	3/ 389	2.18E+00	2.18E+00	---	---	NO:1
Endosulfan II	33213-65-9	1.50E-01	2.50E+00	2/ 389	3.56E+00	2.50E+00	---	---	NO:1
Endosulfan Sulfate	1031-07-8	7.30E-01	7.30E-01	1/ 388	4.68E+00	7.30E-01	---	---	NO:1
Endrin	72-20-8	1.60E-01	1.30E+00	5/ 389	3.62E+00	1.30E+00	---	6.39E+03	NO:1
Endrin Aldehyde	7421-93-4	5.20E-01	8.40E-01	2/ 342	2.49E+00	8.40E-01	---	---	NO:1
Endrin Ketone	53494-70-5	1.00E-01	2.00E+01	4/ 388	4.71E+00	4.71E+00	---	---	NO:1
Gamma Chlordane	5103-74-2	6.60E-02	5.00E+01	14/ 372	7.84E+00	7.84E+00	---	7.61E+03	NO:1
Heptachlor	76-44-8	9.30E-02	2.90E+00	4/ 389	1.83E+00	1.83E+00	---	6.62E+02	NO:1
[illegible]nchlor Epoxide	1024-57-3	5.60E-01	5.60E-01	1/ 389	2.80E+00	5.60E-01	---	2.77E+02	NO:1
[illegible]oxychlor	72-43-5	7.80E-01	1.12E+01	4/ 388	2.15E+01	1.12E+01	---	1.06E+05	NO:1
[illegible]mi-Volatile Organic Compounds (ug/kg)									
[illegible]2-Dichlorobenzene	95-50-1	1.30E+01	1.30E+01	1/ 520	2.31E+02	1.30E+01	---	1.55E+06	NO:1
2,4,6-Tribromophenol	118-79-6	1.70E+03	1.70E+03	1/ 1	---	1.70E+03	---	---	YES
2-Fluorobiphenyl	321-60-8	1.40E+03	1.40E+03	1/ 1	---	1.40E+03	---	---	YES
2-Fluorophenol	367-12-4	1.90E+03	1.90E+03	1/ 1	---	1.90E+03	---	---	YES
2-Methylnaphthalene	91-57-6	2.00E+01	2.70E+03	28/ 517	2.28E+02	2.28E+02	---	8.52E+04	NO:3

Table 7:

Identification of Constituents of Potential Concern for the Construction Worker Exposed to Surface and Subsurface Soil in MCP Parcel 7

Analyte (SRC)	CAS Number	Minimum Concentration	Maximum Concentration	Detection Frequency	95% UCL	EPC	Background Value	10^{-4} RBGV	COPC?
4-Nitroaniline	100-01-6	9.20E+02	9.20E+02	1/ 515	6.63E+02	6.63E+02	---	5.16E+04	NO:1
Acenaphthene	83-32-9	1.90E+01	2.80E+03	59/ 517	2.32E+02	2.32E+02	---	9.76E+05	NO:3
Acenaphthylene	208-96-8	2.40E+01	6.10E+02	14/ 517	2.24E+02	2.24E+02	---	---	NO:1
Anthracene	120-12-7	1.80E+01	4.90E+03	88/ 517	2.39E+02	2.39E+02	---	4.88E+06	NO:3
Benzo(a)anthracene	**56-55-3**	**1.70E+01**	**5.70E+03**	**143/ 517**	**2.57E+02**	**2.57E+02**	---	**3.12E+03**	**YES**
Benzo(a)pyrene	**50-32-8**	**2.20E+01**	**5.10E+03**	**135/ 516**	**2.53E+02**	**2.53E+02**	---	**3.12E+02**	**YES**
Benzo(b)fluoranthene	**205-99-2**	**1.70E+01**	**5.00E+03**	**140/ 517**	**2.50E+02**	**2.50E+02**	---	**3.12E+03**	**YES**
Benzo(g,h,i)perylene	**191-24-2**	**1.30E+01**	**3.50E+03**	**113/ 517**	**2.38E+02**	**2.38E+02**	---	---	**YES**
Benzo(k)fluoranthene	207-08-9	2.00E+01	4.80E+03	132/ 517	2.58E+02	2.58E+02	---	3.12E+04	NO:3
Benzoic Acid	65-85-0	4.60E+01	1.80E+02	13/ 136	1.63E+03	1.80E+02	---	6.88E+07	NO:3
Bis(2-ethylhexyl)phthalate	117-81-7	1.90E+01	1.20E+04	188/ 515	2.50E+02	2.50E+02	---	1.72E+05	NO:3
Butyl Benzyl Phthalate	85-68-7	5.80E+01	1.00E+03	13/ 515	2.29E+02	2.29E+02	---	3.44E+06	NO:1
Carbazole	86-74-8	1.90E+01	1.50E+03	52/ 467	2.07E+02	2.07E+02	---	1.20E+05	NO:3
Chrysene	218-01-9	1.90E+01	6.30E+03	148/ 517	2.62E+02	2.62E+02	---	3.12E+05	NO:3
Di-n-butyl Phthalate	84-74-2	1.90E+01	5.30E+03	115/ 515	2.41E+02	2.41E+02	---	1.72E+06	NO:3
Di-n-octyl Phthalate	117-84-0	2.20E+01	8.20E+01	12/ 515	2.23E+02	8.20E+01	---	8.52E+05	NO:1
Dibenz(a,h)anthracene	**53-70-3**	**2.00E+01**	**9.10E+02**	**46/ 517**	**2.24E+02**	**2.24E+02**	---	**3.12E+02**	**YES**
Dibenzofuran	132-64-9	1.80E+01	9.90E+02	39/ 517	2.25E+02	2.25E+02	---	3.44E+04	NO:3
Diethyl Phthalate	84-66-2	1.20E+01	1.60E+03	23/ 515	2.25E+02	2.25E+02	---	1.38E+07	NO:1
Dimethyl Phthalate	131-11-3	3.90E+02	3.90E+02	1/ 515	2.24E+02	2.24E+02	---	2.13E+08	NO:1
Fluoranthene	206-44-0	2.00E+01	1.50E+04	184/ 516	3.23E+02	3.23E+02	---	6.51E+05	NO:3
Fluorene	86-73-7	1.90E+01	4.50E+03	51/ 517	2.32E+02	2.32E+02	---	6.51E+05	NO:3
Hexachlorobenzene	118-74-1	7.40E+02	7.40E+02	1/ 519	2.24E+02	2.24E+02	---	1.51E+03	NO:1
Hexachlorobutadiene	87-68-3	7.40E+02	7.40E+02	1/ 519	2.24E+02	2.24E+02	---	5.16E+03	NO:1
Hexachlorocyclopentadiene	77-47-4	7.40E+02	7.40E+02	1/ 515	2.24E+02	2.24E+02	---	1.03E+05	NO:1
Hexachloroethane	67-72-1	7.40E+02	7.40E+02	1/ 519	2.24E+02	2.24E+02	---	1.72E+04	NO:1
Indeno(1,2,3-cd)pyrene	193-39-5	1.70E+01	3.10E+03	103/ 515	2.36E+02	2.36E+02	---	3.12E+03	NO:3
Isophorone	78-59-1	1.30E+01	4.80E+01	4/ 515	2.25E+02	4.80E+01	---	2.54E+06	NO:1
N-Nitrosodiphenylamine	86-30-6	2.80E+02	2.80E+02	1/ 515	2.22E+02	2.22E+02	---	3.44E+05	NO:1
Nitrobenzene-d5	**4165-60-0**	**1.30E+03**	**1.30E+03**	**1/ 1**	---	**1.30E+03**	---	---	**YES**
P-Terphenyl-d14	**1718-51-0**	**1.40E+03**	**1.40E+03**	**1/ 1**	---	**1.40E+03**	---	---	**YES**
Pentachlorophenol	87-86-5	9.40E+01	9.40E+01	1/ 518	6.62E+02	9.40E+01	---	1.56E+04	NO:1
Phenanthrene	**85-01-8**	**1.80E+01**	**1.20E+04**	**178/ 517**	**2.99E+02**	**2.99E+02**	---	---	**YES**
enol	108-95-2	2.00E+01	1.50E+02	7/ 514	2.25E+02	1.50E+02	---	5.16E+06	NO:1
enol-d5	**4165-62-2**	**1.90E+03**	**1.90E+03**	**1/ 1**	---	**1.90E+03**	---	---	**YES**
yrene	129-00-0	1.80E+01	2.10E+04	187/ 516	3.18E+02	3.18E+02	---	4.88E+05	NO:3
Volatile Organic Compounds (ug/kg)									
1,1,1-Trichloroethane	71-55-6	1.00E+00	8.00E+00	8/ 969	3.65E+00	3.65E+00	---	6.84E+05	NO:1
1,1,2,2-Tetrachloroethane	79-34-5	6.00E-01	3.00E+00	4/ 968	3.64E+00	3.00E+00	---	3.50E+03	NO:1
1,1,2-Trichloroethane	79-00-5	1.00E+00	1.00E+00	2/ 968	3.64E+00	1.00E+00	---	8.19E+03	NO:1
1,1-Dichloroethane	75-34-3	6.00E+00	6.00E+00	1/ 969	3.65E+00	3.65E+00	---	1.93E+05	NO:1
1,1-Dichloroethene	75-35-4	3.00E+00	5.30E+01	4/ 973	3.69E+00	3.69E+00	---	4.20E+04	NO:1
1,2-Dichloroethane	107-06-2	2.00E+00	2.00E+00	1/ 973	3.65E+00	2.00E+00	---	3.45E+03	NO:1
1,2-Dichloroethene	540-59-0	9.00E-02	1.10E+04	50/ 962	5.36E+00	5.36E+00	---	1.92E+05	NO:3
1,2-Dichloropropane	78-87-5	1.00E+00	2.00E+00	2/ 969	3.64E+00	2.00E+00	---	2.08E+03	NO:1
1,2-Diethylbenzene	135-01-3	1.30E+01	1.30E+01	1/ 398	5.42E+00	5.42E+00	---	---	NO:1
1,2-cis-Dichloroethane (DCE)	156-59-2	2.00E+01	3.20E+03	15/ 28	1.59E+04	3.20E+03	---	2.13E+05	NO:3
1,3-Dichlorobenzene	541-73-1	1.00E+00	1.60E+01	2/ 520	2.34E+02	1.60E+01	---	5.16E+05	NO:1
1,3-cis-Dichloropropene	10061-01-5	8.00E-01	8.00E-01	1/ 762	3.76E+00	8.00E-01	---	---	NO:1
1,3-trans-Dichloropropene	10061-02-6	9.00E-01	9.00E-01	1/ 969	3.64E+00	9.00E-01	---	---	NO:1
1,4-Dichlorobenzene	106-46-7	1.30E+01	7.90E+01	3/ 524	2.28E+02	7.90E+01	---	1.00E+05	NO:1
2-Butanone	78-93-3	1.00E+00	2.50E+02	214/ 972	7.71E+00	7.71E+00	---	6.65E+06	NO:3
2-Hexanone	591-78-6	2.00E+00	1.30E+01	8/ 970	6.48E+00	6.48E+00	---	---	NO:1
4-Methyl-2-pentanone	108-10-1	8.00E-01	2.00E+01	20/ 970	6.51E+00	6.51E+00	---	1.47E+06	NO:1
Acetone	67-64-1	2.00E+00	3.40E+04	532/ 968	2.17E+01	2.17E+01	---	1.92E+07	NO:3
Acetonitrile	75-05-8	3.20E+01	1.20E+02	3/ 387	6.63E+01	6.63E+01	---	2.00E+05	NO:1
Acrylonitrile	107-13-1	4.00E+00	1.30E+01	3/ 399	6.73E+01	1.30E+01	---	1.82E+03	NO:1
Benzene	71-43-2	6.00E-01	9.00E+00	12/ 974	3.62E+00	3.62E+00	---	6.46E+03	NO:1
Bromodichloromethane	75-27-4	6.00E-01	6.00E-01	1/ 969	3.64E+00	6.00E-01	---	4.81E+04	NO:1
Bromoform	75-25-2	8.00E-01	1.00E+00	2/ 969	3.64E+00	1.00E+00	---	3.77E+05	NO:1
Carbon Disulfide	75-15-0	1.00E+00	3.70E+01	68/ 969	3.66E+00	3.66E+00	---	1.16E+05	NO:3
Carbon Tetrachloride	56-23-5	1.00E+00	2.00E+00	4/ 973	3.64E+00	2.00E+00	---	2.44E+03	NO:1
Chlorobenzene	108-90-7	5.00E-01	5.30E+03	15/ 974	3.83E+00	3.83E+00	---	4.85E+04	NO:1
Chloromethane	74-87-3	4.00E-01	1.10E+01	2/ 763	6.56E+00	6.56E+00	---	1.59E+04	NO:1
Dibromochloromethane	124-48-1	7.00E-01	7.00E-01	1/ 969	3.64E+00	7.00E-01	---	3.55E+04	NO:1
Dichloromethane (Methylene Chloride)	75-09-2	1.00E+00	3.00E+04	756/ 970	2.31E+01	2.31E+01	---	8.25E+04	NO:3
Ethylbenzene	100-41-4	1.00E+00	2.80E+02	18/ 971	3.62E+00	3.62E+00	---	7.80E+04	NO:1
FREON-113	76-13-1	3.00E+00	2.10E+01	4/ 572	3.73E+00	3.73E+00	---	6.93E+06	NO:1
Hexane	110-54-3	1.00E+00	4.20E+01	71/ 566	5.42E+00	5.42E+00	---	4.08E+04	NO:3
Isopropyl Benzene	98-82-8	2.00E+00	2.00E+00	1/ 5	7.08E+01	2.00E+00	---	5.28E+04	NO:3
Methyl Cyclohexane	**108-87-2**	**5.00E+00**	**6.00E+00**	**2/ 5**	**6.19E+00**	**6.00E+00**	---	---	**YES**
Naphthalene	91-20-3	2.40E+01	1.90E+03	26/ 517	2.25E+02	2.25E+02	---	3.44E+05	NO:3
ne	100-42-5	1.00E-01	2.80E+01	16/ 969	3.62E+00	3.62E+00	---	1.46E+06	NO:1
achloroethene (PCE)	127-18-4	5.00E-01	8.00E+00	24/ 973	3.62E+00	3.62E+00	---	3.66E+03	NO:1
luene	108-88-3	3.00E-01	3.20E+01	144/ 971	3.51E+00	3.51E+00	---	2.00E+05	NO:3
richloroethylene (TCE)	**79-01-6**	**8.00E-01**	**2.30E+04**	**81/ 996**	**5.54E+00**	**5.54E+00**	---	**4.38E+02**	**YES**
Trichloromethane (Chloroform)	67-66-3	4.00E-01	6.70E+01	15/ 972	3.69E+00	3.69E+00	---	2.56E+03	NO:1
Vinyl Chloride	75-01-4	1.00E+00	4.40E+02	22/ 996	7.71E+00	7.71E+00	---	1.07E+03	NO:1
Xylenes, Total	1330-20-7	5.00E-01	2.70E+02	35/ 971	3.72E+00	3.72E+00	---	6.42E+04	NO:1

Table 7:

Identification of Constituents of Potential Concern for the Construction Worker Exposed to Surface and Subsurface Soil in MCP Parcel 7

Analyte (SRC)	CAS Number	Minimum Concentration	Maximum Concentration	Detection Frequency	95% UCL	EPC	Background Value	10^{-4} RBGV	COPC?
Radionuclides (pCi/g)									
Actinium-227	**14952-40-0(+D)**	**5.00E-02**	**3.10E+00**	**177/1914**	**2.12E-01**	**2.12E-01**	**1.10E-01**	**4.56E-01**	**YES**
Actinium-228	14331-83-0	3.00E-01	1.83E+00	87/ 87	1.02E+00	1.02E+00	---	2.17E-01	NO:6
Americium-241	14596-10-2	2.00E-02	2.60E+00	103/2540	7.14E-02	7.14E-02	---	6.32E+00	NO:1
Bismuth-207	13982-38-2	1.00E-02	2.00E-01	14/ 623	3.24E-02	3.24E-02	---	1.39E-01	NO:1
Bismuth-210	14331-79-4	1.00E-02	1.00E-01	7/ 148	5.11E-02	5.11E-02	---	5.52E+01	NO:1
Bismuth-210M	BI-210M	4.70E-02	4.70E-02	1/ 561	4.20E-02	4.20E-02	---	---	NO:1
Bismuth-212	14913-49-6	6.60E-01	1.74E+00	18/ 18	1.09E+00	1.74E+00	---	1.11E+00	NO:6
Bismuth-214	14733-03-0	2.20E-01	1.40E+00	89/ 89	6.92E-01	6.92E-01	1.20E+00	1.31E-01	NO:6
Cerium-141	13967-74-3	1.61E+00	1.61E+00	1/ 1	---	1.61E+00	---	4.18E+00	NO:3
Cerium-144	14762-78-8	5.12E-01	5.12E-01	1/ 1	---	5.12E-01	---	8.91E+00	NO:3
Cerium-144/Praseodymium	14762-78-8(+D)	1.02E+00	1.02E+00	1/ 1	---	1.02E+00	---	3.23E+00	NO:3
Cesium-137	10045-97-3(+D)	1.00E-02	3.10E+01	545/2514	5.21E-02	5.21E-02	4.20E-01	3.82E-01	NO:4
Cobalt-60	10198-40-0	1.00E-02	9.19E-02	80/2514	3.22E-02	3.22E-02	---	7.91E-02	NO:1
Lead-210	14255-04-0	1.40E-01	3.97E+00	770/1932	6.46E-01	6.46E-01	1.20E+00	9.05E-01	NO:6
Lead-212	15092-94-1	8.50E-02	2.42E+00	204/ 204	8.46E-01	8.46E-01	---	1.79E+00	NO:6
Lead-214	15067-28-4	1.33E-01	1.66E+00	191/ 191	8.06E-01	8.06E-01	1.20E+00	1.00E+00	NO:6
Plutonium-238	**13981-16-3**	**3.10E-03**	**4.94E+02**	**2083/5827**	**5.94E+01**	**5.94E+01**	**1.30E-01**	**6.12E+00**	**YES**
Plutonium-239	15117-48-3	2.20E-02	3.20E-02	3/ 5	1.42E-01	3.20E-02	---	6.03E+00	NO:3
Plutonium-239/240	OER-100-70	1.60E-03	7.26E+00	422/1303	3.59E-02	3.59E-02	1.80E-01	---	NO:4
Plutonium-242	13982-10-0	4.26E-03	8.48E-03	2/ 6	1.03E-02	8.48E-03	---	6.33E+00	NO:3
Potassium-40	13966-00-2	1.15E+00	4.26E+01	720/ 749	2.28E+01	2.28E+01	3.70E+01	1.18E+00	NO:4
Protactinium-231	14331-85-2	8.30E-01	1.87E+00	2/ 441	9.09E-01	9.09E-01	---	2.73E+00	NO:1
Radium-224	13233-32-4	3.30E-01	1.94E+00	61/ 61	1.10E+00	1.10E+00	---	3.24E+00	NO:3
Radium-226	13982-63-3(+D)	1.50E-01	4.06E+00	2195/2527	1.18E+00	1.18E+00	2.00E+00	1.10E-01	NO:4
Radium-228 +D	**15262-20-1(+D)**	**2.12E-01**	**1.32E+01**	**502/ 515**	**1.06E+00**	**1.06E+00**	---	**1.67E-01**	**YES**
Strontium-90	10098-97-2(+D)	1.06E-01	1.58E+00	18/ 127	2.98E-01	2.98E-01	7.20E-01	9.40E+00	NO:3
Thallium-208	14913-50-9	4.00E-02	8.00E-01	149/ 150	3.34E-01	3.34E-01	---	5.59E-02	NO:6
Thorium-227	15623-47-9	2.30E-02	4.21E-01	36/ 37	1.82E-01	1.82E-01	---	2.14E+00	NO:3
Thorium-228	14274-82-9(+D)	7.30E-03	4.10E+01	1232/1508	1.84E+00	1.84E+00	1.50E+00	1.19E-01	NO:6
Thorium-230	14269-63-7(+D)	2.06E-02	1.32E+01	1204/2931	2.72E+00	2.72E+00	1.90E+00	9.26E-02	NO:6
Thorium-232	7440-29-1(+D)	6.80E-03	2.92E+01	3374/5057	8.10E-01	8.10E-01	1.40E+00	6.90E-02	NO:4
Thorium-234	15065-10-8	6.40E-01	2.20E+00	10/ 10	1.73E+00	2.20E+00	---	1.76E+01	NO:3
[illegible]um	10028-17-8	1.00E-02	5.85E+01	221/ 318	2.44E+00	2.44E+00	1.60E+00	7.58E+03	NO:3
[illegible]nium-233/234	**13966-29-5**	**7.34E-01**	**1.39E+00**	**4/ 4**	**2.24E+00**	**1.39E+00**	---	**4.82E-01**	**YES**
[illegible]anium-234	13966-29-5	7.05E-02	1.70E+00	505/ 545	5.70E-01	5.70E-01	1.10E+00	1.05E+01	NO:3
[illegible]ranium-235	15117-96-1(+D)	4.00E-03	2.50E-01	206/ 742	1.29E-01	1.29E-01	1.10E-01	1.54E+00	NO:3
Uranium-235/236	15117-96-1	2.02E-02	5.38E-02	10/ 37	3.88E-02	3.88E-02	---	3.10E-01	NO:3
Uranium-238	7440-61-1(+D)	5.62E-02	2.20E+00	569/1031	2.04E+00	2.04E+00	1.20E+00	4.13E+00	NO:3

CAS - Chemical Abstract Service
COPC - Constituents of Potential Concern
EPC - Exposure Point Concentration
mg/kg - milligram per kilogram
ug/kg - microgram per kilogram

NO:1 - <5% Detects
NO:2 - Max<Background
NO:3 - Max< Risk Based Guideline Value
NO:4 - EPC< Background
NO:5 - Essential Human Nutrient
NO:6 - Part of a chain which has members above that are COPCs
Bold text indicates COPCs selected

--- not applicable, not available, or not calculated due to insufficient toxicity data

Lithium note: The RREM background value for lithium is 26 mg/kg and not 0.00 mg/kg as presented in this table. However, since the analyte would still become a COPC the value in the table was not modified

Background values are base on the Operable Unit 9 Background Soils Investigation Chemistry Report (DOE 1994) or, in the case of nuclides with short half lives (Ac-227 Pb-210, and Pa-231) are based on the parent nuclide background and assumption of equilibrium with the parent nuclide.

R-228 note. A background value has not been calculated for Ra-228 and why none is provided in the table above. However, if Ra-228's parent nuclide background is considered (Th-232 at 1.4 pCi/g), Ra-228 would not be brought forward as a COPC. To be consistent with previous RREs, Ra-228 was presented with no background value and was brought forward as a COPC

Table 8:

Identification of Constituents of Potential Concern for the Site
Employee Exposed to Surface Soil in Parcel 7

Analyte (SRC)	CAS Number	Minimum Concentration	Maximum Concentration	Detection Frequency	95% UCL	EPC	Background Value	RBGV	COPC?
Inorganics (mg/kg)									
Aluminum	7429-90-5	6.59E+02	1.57E+05	84/ 84	1.21E+04	1.21E+04	1.90E+04	1.69E+05	NO:3
Antimony	7440-36-0	2.30E-01	2.80E+00	21/ 74	2.37E+00	2.37E+00	0.00E+00	8.18E+01	NO:3
Arsenic	7440-38-2	1.20E+00	1.46E+01	83/ 89	5.58E+00	5.58E+00	8.60E+00	2.26E+00	NO:4
Barium	7440-39-3	8.10E+00	4.24E+02	80/ 89	7.06E+01	7.06E+01	1.80E+02	1.25E+04	NO:3
Beryllium	7440-41-7	9.00E-02	1.10E+00	83/ 85	8.67E-01	8.67E-01	1.30E+00	3.70E+02	NO:2
Bismuth	7440-69-9	4.60E-01	1.41E+02	12/ 60	7.32E+00	7.32E+00	3.84E+01	---	NO:4
Cadmium	7440-43-9	1.00E-01	6.80E+00	36/ 83	1.57E+00	1.57E+00	2.10E+00	0.00E+00	NO:4
Calcium	7440-70-2	4.93E+03	3.09E+05	84/ 85	1.94E+05	1.94E+05	3.10E+05	---	NO:2
Cerium	7440-45-1	1.27E+01	4.47E+01	6/ 9	4.63E+01	4.47E+01	0.00E+00	3.85E+04	NO:3
Chromium	7440-47-3	1.30E+00	5.78E+01	82/ 86	1.42E+01	1.42E+01	2.00E+01	---	NO:4
Cobalt	7440-48-4	8.50E-01	2.04E+01	71/ 83	8.55E+00	8.55E+00	1.90E+01	1.93E+03	NO:3
Copper	7440-50-8	1.30E+00	4.80E+01	82/ 83	1.66E+01	1.66E+01	2.60E+01	8.18E+03	NO:3
Cyanide	57-12-5	2.40E-01	2.70E-01	2/ 73	5.17E-01	2.70E-01	0.00E+00	4.09E+03	NO:1
Dysprosium	7429-91-6	4.50E+00	4.50E+00	1/ 6	4.58E+00	4.50E+00	0.00E+00	---	YES
Erbium	7440-52-0	7.20E+00	7.20E+00	1/ 9	5.78E+00	7.20E+00	0.00E+00	---	YES
Europium	7440-53-1	1.40E+00	1.60E+00	2/ 6	2.13E+00	1.60E+00	0.00E+00	---	YES
Gadolinium	7440-54-2	2.89E+01	6.59E+01	3/ 9	2.02E+02	6.59E+01	0.00E+00	---	YES
Iron	7439-89-6	2.33E+03	3.88E+04	85/ 86	2.64E+04	2.64E+04	3.50E+04	---	NO:4
Lanthanum	7439-91-0	7.20E+00	1.57E+01	3/ 9	1.49E+01	1.57E+01	0.00E+00	---	YES
Lead	7439-92-1	3.60E+00	8.80E+01	89/ 91	1.61E+01	1.61E+01	4.80E+01	---	NO:4
Lithium	7439-93-2	1.90E+00	4.31E+01	82/ 83	2.02E+01	2.02E+01	0.00E+00	---	YES
Magnesium	7439-95-4	2.51E+03	1.46E+05	85/ 86	4.78E+04	4.78E+04	4.00E+04	---	NO:5
Manganese	7439-96-5	1.63E+02	9.76E+02	82/ 83	6.30E+02	6.30E+02	1.40E+03	—	NO:2
Mercury	7439-97-6	2.00E-02	6.60E-01	24/ 86	7.26E-02	7.26E-02	1.50E-01	5.78E+04	NO:3
Molybdenum	7439-98-7	1.90E-01	1.08E+01	44/ 55	2.68E+00	2.68E+00	2.72E+01	1.02E+03	NO:2
Neodymium	7440-00-8	1.32E+01	2.99E+01	6/ 9	3.16E+01	2.99E+01	0.00E+00	---	YES
Nickel	7440-02-0	1.40E+00	3.22E+01	75/ 83	1.73E+01	1.73E+01	3.20E+01	4.09E+03	NO:3
Potassium	7440-09-7	2.50E+02	6.09E+03	76/ 85	1.81E+03	1.81E+03	1.90E+03	---	NO:4
Praseodymium	7440-10-0	1.21E+02	1.21E+02	1/ 9	9.52E+01	1.21E+02	0.00E+00	---	YES
Selenium	7782-49-2	3.10E-01	7.60E-01	6/ 82	7.02E-01	7.02E-01	5.90E-01	1.02E+03	NO:3
Silver	7440-22-4	1.00E-01	6.60E+00	12/ 83	6.14E-01	6.14E-01	1.70E+00	1.02E+03	NO:3
Sodium	7440-23-5	9.48E+01	2.15E+03	71/ 88	5.13E+02	5.13E+02	2.40E+02	---	NO:5
Tantalum	7440-25-7	2.74E+02	4.59E+02	3/ 5	1.69E+03	4.59E+02	0.00E+00	---	YES
Thallium	7440-28-0	8.00E-01	8.00E-01	1/ 82	8.47E-01	8.00E-01	4.60E-01	1.35E+01	NO:1
Tin	7440-31-5	6.40E-01	6.30E+00	30/ 56	2.42E+00	2.42E+00	2.09E+01	1.23E+05	NO:2
Vanadium	7440-62-2	3.40E+00	4.00E+01	79/ 83	1.92E+01	1.92E+01	2.50E+01	2.04E+02	NO:3
Zinc	7440-66-6	4.90E+00	3.28E+02	84/ 85	7.01E+01	7.01E+01	1.40E+02	6.13E+04	NO:3
Pesticides and/or PCBs (ug/kg)									
4,4'-DDE	72-55-9	2.20E-01	3.90E-01	2/ 79	4.56E+00	3.90E-01	0.00E+00	1.68E+04	NO:1
4,4'-DDT	50-29-3	2.90E-01	4.90E+00	2/ 79	4.67E+00	4.67E+00	0.00E+00	9.56E+03	NO:1
Alpha Chlordane	5103-71-9	1.50E+00	1.60E+01	6/ 73	1.83E+01	1.60E+01	0.00E+00	7.64E+03	NO:3
Aroclor-1248	12672-29-6	9.80E+01	9.80E+01	1/ 79	3.14E+01	3.14E+01	0.00E+00	0.00E+00	NO:1
Aroclor-1254	11097-69-1	3.80E+01	1.30E+02	6/ 79	4.78E+01	4.78E+01	0.00E+00	6.83E+02	NO:3
Delta-BHC	319-86-8	1.90E-01	1.90E-01	1/ 78	2.41E+00	1.90E-01	0.00E+00	0.00E+00	NO:1
Dieldrin	60-57-1	2.40E-01	7.90E-01	2/ 78	5.23E+00	7.90E-01	0.00E+00	3.58E+02	NO:1
Endosulfan I	959-98-8	2.40E+00	2.40E+00	1/ 79	2.33E+00	2.33E+00	0.00E+00	0.00E+00	NO:1
Endrin	72-20-8	3.30E-01	1.30E+00	3/ 79	4.31E+00	1.30E+00	0.00E+00	6.13E+04	NO:1
Endrin Aldehyde	7421-93-4	5.70E-01	5.70E-01	1/ 69	2.84E+00	5.70E-01	0.00E+00	0.00E+00	NO:1
Endrin Ketone	53494-70-5	2.10E-01	2.10E-01	1/ 79	5.78E+00	2.10E-01	0.00E+00	0.00E+00	NO:1
Gamma Chlordane	5103-74-2	4.80E-01	1.60E+01	8/ 76	1.76E+01	1.60E+01	0.00E+00	7.64E+03	NO:3
Heptachlor	76-44-8	1.40E-01	2.90E+00	3/ 79	2.16E+00	2.16E+00	0.00E+00	1.27E+03	NO:1
Heptachlor Epoxide	1024-57-3	5.60E-01	5.60E-01	1/ 79	3.30E+00	5.60E-01	0.00E+00	6.29E+02	NO:1
Methoxychlor	72-43-5	7.80E-01	7.80E-01	1/ 78	2.50E+01	7.80E-01	0.00E+00	1.02E+06	NO:1
Semi-Volatile Organic Compounds (ug/kg)									
1,2-Dichlorobenzene	95-50-1	1.30E+01	1.30E+01	1/ 90	3.04E+02	1.30E+01	0.00E+00	2.92E+00	NO:1
2,4,6-Tribromophenol	118-79-6	1.70E+03	1.70E+03	1/ 1	0.00E+00	1.70E+03	0.00E+00	0.00E+00	YES
2-Fluorobiphenyl	321-60-8	1.40E+03	1.40E+03	1/ 1	0.00E+00	1.40E+03	0.00E+00	0.00E+00	YES
2-Fluorophenol	367-12-4	1.90E+03	1.90E+03	1/ 1	0.00E+00	1.90E+03	0.00E+00	0.00E+00	YES
2-Methylnaphthalene	91-57-6	3.30E+01	2.70E+03	7/ 87	2.64E+02	2.64E+02	0.00E+00	8.18E+03	NO:3
Acenaphthene	83-32-9	2.20E+01	2.00E+03	20/ 87	2.90E+02	2.90E+02	0.00E+00	3.09E+06	NO:3
Acenaphthylene	208-96-8	3.10E+01	6.10E+02	4/ 87	2.45E+02	2.45E+02	0.00E+00	0.00E+00	NO:1
Anthracene	120-12-7	2.50E+01	4.90E+03	30/ 87	3.31E+02	3.31E+02	0.00E+00	1.55E+07	NO:3
Benzo(a)anthracene	56-55-3	2.10E+01	5.70E+03	46/ 87	4.51E+02	4.51E+02	0.00E+00	1.98E+03	YES
Benzo(a)pyrene	50-32-8	2.40E+01	5.10E+03	44/ 88	4.41E+02	4.41E+02	0.00E+00	1.98E+02	YES
Benzo(b)fluoranthene	205-99-2	1.70E+01	5.00E+03	46/ 87	4.67E+02	4.67E+02	0.00E+00	1.98E+03	YES
Benzo(g,h,i)perylene	191-24-2	1.30E+01	3.50E+03	43/ 87	3.53E+02	3.53E+02	0.00E+00	0.00E+00	YES
Benzo(k)fluoranthene	207-08-9	2.00E+01	4.80E+03	46/ 87	5.01E+02	5.01E+02	0.00E+00	1.98E+04	NO:3
Benzoic Acid	65-85-0	4.80E+01	1.80E+02	8/ 35	1.93E+03	1.80E+02	0.00E+00	2.49E+08	NO:3
Bis(2-ethylhexyl)phthalate	117-81-7	2.00E+01	6.50E+03	44/ 85	3.14E+02	3.14E+02	0.00E+00	1.25E+05	NO:3
Butyl Benzyl Phthalate	85-68-7	5.00E+01	5.20E+02	2/ 85	2.38E+02	2.38E+02	0.00E+00	1.25E+07	NO:1
Carbazole	86-74-8	1.90E+01	1.50E+03	23/ 72	2.53E+02	2.53E+02	0.00E+00	8.72E+04	NO:3

Table 8:

Identification of Constituents of Potential Concern for the Site
Employee Exposed to Surface Soil in Parcel 7

Analyte (SRC)	CAS Number	Minimum Concentration	Maximum Concentration	Detection Frequency	95% UCL	EPC	Background Value	RBGV	COPC?
Chrysene	218-01-9	2.30E+01	6.30E+03	48/ 87	5.23E+02	5.23E+02	0.00E+00	1.98E+05	NO:3
Di-n-butyl Phthalate	84-74-2	3.40E+01	2.80E+02	9/ 85	2.38E+02	2.38E+02	0.00E+00	6.23E+06	NO:3
Dibenz(a,h)anthracene	53-70-3	2.00E+01	9.30E+02	22/ 87	2.50E+02	2.50E+02	0.00E+00	1.98E+02	YES
Dibenzofuran	132-64-9	1.80E+01	9.90E+02	14/ 87	2.50E+02	2.50E+02	0.00E+00	1.25E+05	NO:3
Diethyl Phthalate	84-66-2	2.30E+01	7.90E+01	6/ 85	2.28E+02	7.90E+01	0.00E+00	4.99E+07	NO:3
Fluoranthene	206-44-0	2.20E+01	1.50E+04	51/ 87	6.71E+02	6.71E+02	0.00E+00	2.06E+06	NO:3
Fluorene	86-73-7	1.90E+01	4.50E+03	18/ 87	2.93E+02	2.93E+02	0.00E+00	2.06E+06	NO:3
Hexachlorobenzene	118-74-1	7.40E+02	7.40E+02	1/ 88	2.36E+02	2.36E+02	0.00E+00	1.09E+03	NO:1
Hexachlorobutadiene	87-68-3	7.40E+02	7.40E+02	1/ 88	2.36E+02	2.36E+02	0.00E+00	1.87E+04	NO:1
Hexachlorocyclopentadiene	77-47-4	7.40E+02	7.40E+02	1/ 85	2.38E+02	2.38E+02	0.00E+00	3.70E+05	NO:1
Hexachloroethane	67-72-1	7.40E+02	7.40E+02	1/ 88	2.36E+02	2.36E+02	0.00E+00	6.23E+04	NO:1
Indeno(1,2,3-cd)pyrene	193-39-5	1.70E+01	3.10E+03	42/ 87	3.34E+02	3.34E+02	0.00E+00	1.98E+03	YES
N-Nitrosodiphenylamine	86-30-6	2.80E+02	2.80E+02	1/ 85	2.26E+02	2.26E+02	0.00E+00	3.56E+05	NO:1
Nitrobenzene-d5	4165-60-0	1.30E+03	1.30E+03	1/ 1	0.00E+00	1.30E+03	0.00E+00	0.00E+00	YES
P-Terphenyl-d14	1718-51-0	1.40E+03	1.40E+03	1/ 1	0.00E+00	1.40E+03	0.00E+00	0.00E+00	YES
Phenanthrene	85-01-8	2.10E+01	1.20E+04	50/ 87	7.16E+02	7.16E+02	0.00E+00	0.00E+00	YES
Phenol	108-95-2	4.00E+01	1.50E+02	2/ 84	2.35E+02	1.50E+02	0.00E+00	1.87E+07	NO:1
Phenol-d5	4165-62-2	1.90E+03	1.90E+03	1/ 1	0.00E+00	1.90E+03	0.00E+00	0.00E+00	YES
Pyrene	129-00-0	1.80E+01	2.10E+04	53/ 86	9.97E+02	9.97E+02	0.00E+00	1.55E+06	NO:3
Volatile Organic Compounds (ug/kg)									
1,1,2,2-Tetrachloroethane	79-34-5	3.00E+00	3.00E+00	1/ 264	4.15E+00	3.00E+00	0.00E+00	2.86E+04	NO:1
1,1,2-Trichloroethane	79-00-5	1.00E+00	1.00E+00	1/ 264	4.15E+00	1.00E+00	0.00E+00	1.00E+05	NO:1
1,2-Dichloroethane	107-06-2	2.00E+00	2.00E+00	1/ 267	4.14E+00	2.00E+00	0.00E+00	6.29E+04	NO:1
1,2-Dichloroethene	540-59-0	1.00E+00	1.40E+02	13/ 259	4.92E+00	4.92E+00	0.00E+00	1.84E+06	NO:3
1,2-Dichloropropane	78-87-5	2.00E+00	2.00E+00	1/ 264	4.13E+00	2.00E+00	0.00E+00	8.42E+04	NO:1
1,2-cis-Dichloroethene (DCE)	156-59-2	2.00E+01	3.20E+03	15/ 28	1.59E+04	3.20E+03	0.00E+00	2.04E+06	NO:3
1,3-Dichlorobenzene	541-73-1	1.00E+00	1.60E+01	2/ 90	3.32E+02	1.60E+01	0.00E+00	1.87E+06	NO:1
1,4-Dichlorobenzene	106-46-7	1.30E+01	4.40E+01	2/ 93	2.83E+02	4.40E+01	0.00E+00	7.27E+04	NO:1
2-Butanone	78-93-3	2.00E+00	5.50E+01	27/ 267	7.83E+00	7.83E+00	0.00E+00	1.23E+08	NO:3
2-Hexanone	591-78-6	5.00E+00	1.30E+01	2/ 265	6.96E+00	6.96E+00	0.00E+00	0.00E+00	NO:1
4-Methyl-2-pentanone	108-10-1	7.00E+00	2.00E+01	4/ 265	7.01E+00	7.01E+00	0.00E+00	1.84E+07	NO:1
Acetone	67-64-1	2.00E+00	6.00E+03	97/ 264	1.41E+01	1.41E+01	0.00E+00	1.84E+08	NO:3
Acrylonitrile	107-13-1	4.00E+00	5.00E+00	2/ 141	6.43E+01	5.00E+00	0.00E+00	1.06E+04	NO:1
Bromoform	75-25-2	1.00E+00	1.00E+00	1/ 264	4.15E+00	1.00E+00	0.00E+00	7.24E+05	NO:1
Carbon Disulfide	75-15-0	1.00E+00	2.00E+00	2/ 264	4.14E+00	2.00E+00	0.00E+00	2.04E+07	NO:1
Chlorobenzene	108-90-7	3.00E+00	1.00E+02	5/ 268	4.34E+00	4.34E+00	0.00E+00	4.09E+06	NO:1
Dichloromethane (Methylene Chloride)	75-09-2	3.00E+00	1.20E+04	203/ 265	2.16E+01	2.16E+01	0.00E+00	7.63E+05	NO:3
Ethylbenzene	100-41-4	1.00E+00	4.00E+00	4/ 266	4.10E+00	4.00E+00	0.00E+00	2.04E+07	NO:1
FREON-113	76-13-1	3.00E+00	3.00E+00	3/ 167	3.57E+00	3.00E+00	0.00E+00	6.13E+09	NO:1
Hexane	110-54-3	2.00E+00	8.00E+00	13/ 162	5.77E+00	5.77E+00	0.00E+00	2.25E+08	NO:3
Isopropyl Benzene	98-82-8	2.00E+00	2.00E+00	1/ 5	7.08E+01	2.00E+00	0.00E+00	2.04E+07	NO:3
Methyl Cyclohexane	108-87-2	5.00E+00	6.00E+00	2/ 5	6.19E+00	6.00E+00	0.00E+00	0.00E+00	YES
Naphthalene	91-20-3	2.70E+01	1.90E+03	11/ 87	2.62E+02	2.62E+02	0.00E+00	1.24E+06	NO:3
Styrene	100-42-5	4.00E-01	2.00E+00	3/ 265	4.12E+00	2.00E+00	0.00E+00	4.09E+07	NO:1
Tetrachloroethene (PCE)	127-18-4	1.00E+00	5.00E+00	5/ 268	4.13E+00	4.13E+00	0.00E+00	1.06E+04	NO:1
Toluene	108-88-3	1.00E+00	3.00E+00	33/ 266	4.00E+00	3.00E+00	0.00E+00	4.09E+07	NO:3
Trichloroethylene (TCE)	79-01-6	1.00E+00	5.40E+03	52/ 290	1.36E+01	1.36E+01	0.00E+00	1.43E+04	NO:3
Trichloromethane (Chloroform)	67-66-3	4.00E-01	6.70E+01	4/ 267	4.39E+00	4.39E+00	0.00E+00	2.04E+06	NO:1
Vinyl Chloride	75-01-4	9.00E+00	4.40E+02	10/ 290	9.98E+00	9.98E+00	0.00E+00	3.82E+03	NO:1
Xylenes, Total	1330-20-7	1.00E+00	1.80E+01	9/ 266	4.16E+00	4.16E+00	0.00E+00	4.09E+07	NO:1
Radionuclides (pCi/g)									
Actinium-227 +D	14952-40-0(+D)	2.30E-01	3.10E+00	62/ 905	2.08E-01	2.08E-01	1.10E-01	5.02E-01	YES
Actinium-228	14331-83-0	3.00E-01	1.70E+00	8/ 91	1.00E+00	1.00E+00	0.00E+00	2.01E-01	NO:6
Americium-241	14596-10-2	4.00E-02	2.60E+00	50/1145	7.30E-02	7.30E-02	0.00E+00	9.93E+00	NO:1
Bismuth-207	13982-38-2	1.50E-02	3.40E-02	4/ 205	3.47E-02	3.40E-02	0.00E+00	1.29E-01	NO:1
Bismuth-210	14331-79-4	1.00E-02	1.00E-02	2/ 61	8.96E-02	1.00E-02	0.00E+00	9.07E+01	NO:1
Bismuth-210M	BI-210M	4.70E-02	4.70E-02	1/ 251	3.62E-02	3.62E-02	0.00E+00	0.00E+00	NO:1
Bismuth-212	14913-49-6	6.60E-01	1.74E+00	18/ 18	1.09E+00	1.74E+00	0.00E+00	1.03E+00	NO:6
Bismuth-214	14733-03-0	2.20E-01	1.28E+00	83/ 83	6.64E-01	6.64E-01	1.20E+00	1.22E-01	NO:4
Cesium-137	10045-97-3(+D)	1.00E-02	2.90E+01	328/1229	7.20E-02	7.20E-02	4.20E-01	3.56E-01	NO:4
Cobalt-60	10198-40-0	2.00E-02	9.10E-02	24/1134	3.51E-02	3.51E-02	0.00E+00	7.35E-02	NO:1
Lead-210	14255-04-0(+D)	1.40E-01	9.97E+00	338/ 802	7.12E-01	7.12E-01	1.20E+00	1.19E+00	NO:4
Lead-212	15092-94-1	8.50E-02	2.42E+00	117/ 117	7.62E-01	7.62E-01	0.00E+00	1.71E+00	NO:6
Lead-214	15067-28-4	1.33E-01	1.23E+00	134/ 134	7.16E-01	7.16E-01	1.20E+00	9.29E-01	NO:4
Plutonium-238	13981-16-3	3.10E-03	4.94E+02	1435/3726	4.39E+01	4.39E+01	1.30E-01	1.13E+01	YES
Plutonium-239	15117-48-3	2.20E-02	3.30E-02	3/ 4	6.88E-02	3.30E-02	0.00E+00	1.12E+01	NO:3
Plutonium-239/240	DER-100-70	1.60E-03	7.26E+00	353/ 837	4.97E-02	4.97E-02	1.80E-01	0.00E+00	NO:4
Plutonium-242	13982-10-0	4.26E-03	8.48E-01	2/ 6	1.03E-02	8.48E-03	0.00E+00	1.17E+01	NO:3
Potassium-40	13966-00-2	1.15E+00	3.92E+01	339/ 342	1.94E+01	1.94E+01	3.70E+01	1.12E+00	NO:4
Radium-224	13233-32-4	8.09E-01	1.11E+00	3/ 3	1.38E+00	1.11E+00	0.00E+00	5.47E+00	NO:3
Radium-226	13982-63-3(+D)	1.68E-01	4.06E+00	985/1142	1.20E+00	1.20E+00	2.00E+00	1.05E-01	NO:4
Radium-228 +D	15262-20-1(+D)	2.88E-01	3.97E+00	179/ 181	1.05E+00	1.05E+00	0.00E+00	1.75E-01	YES
Strontium-90	10098-97-2(+D)	1.06E-01	1.50E+00	18/ 62	3.48E-01	3.48E-01	7.20E-01	1.50E+01	NO:3
Thallium-208	14913-50-9	4.00E-02	8.00E-01	115/ 116	3.27E-01	3.27E-01	0.00E+00	5.18E-02	NO:6
Thorium-227	15623-47-9	4.00E-02	4.21E-01	23/ 24	2.32E-01	2.32E-01	0.00E+00	2.17E+00	NO:3

Table 8:

Identification of Constituents of Potential Concern for the Site
Employee Exposed to Surface Soil in Parcel 7

Analyte (SRC)	CAS Number	Minimum Concentration	Maximum Concentration	Detection Frequency	95% UCL	EPC	Background Value	RBGV	COPC?
Thorium-228	14274-82-9(+D)	7.30E-03	4.34E+00	799/1032	2.57E+00	2.57E+00	1.50E+00	1.14E-01	NO:6
Thorium-230	14269-63-7(+D)	2.06E-02	7.62E+00	772/1526	2.47E+00	2.47E+00	1.90E+00	0.00E+00	NO:6
Thorium-232	7440-29-1(+D)	6.80E-03	2.92E+01	1794/2929	8.01E-01	8.01E-01	1.40E+00	0.00E+00	NO:4
Thorium-234	15065-10-8	6.40E-01	2.20E+00	8/ 8	2.08E+00	2.20E+00	0.00E+00	2.58E+01	NO:3
Tritium	10028-17-8p	3.91E-02	9.50E+00	12/ 28	3.57E+01	9.50E+00	1.60E+00	1.45E+04	NO:3
Uranium-233/234	**13966-29-5**	**7.34E-01**	**1.39E+00**	**4/ 4**	**2.24E+00**	**1.39E+00**	**0.00E+00**	**5.52E-01**	**YES**
Uranium-234	13966-29-5	9.60E-02	1.48E+00	242/ 248	6.57E-01	6.57E-01	1.10E+00	1.97E+01	NO:3
Uranium-235	15117-96-1(+D)	4.00E-03	2.30E-01	131/ 479	2.12E-01	2.12E-01	1.10E-01	1.55E+00	NO:3
Uranium-235/236	U-235/236	5.07E-02	5.07E-02	1/ 2	0.00E+00	5.07E-02	0.00E+00	3.32E-01	NO:3
Uranium-238	7440-61-1(+D)	9.00E-02	2.20E+00	265/ 568	2.43E+00	2.20E+00	1.20E+00	5.22E+00	NO:3

CAS - Chemical Abstract Service
COPC - Constituents of Potential Concern
EPC - Exposure Point Concentration
mg/kg - milligram per kilogram
ug/kg - microgram per kilogram
pCi/g - picocurie per gram
RBGV - Risk Based Guideline Value
UCL - Upper Confidence Limit

NO:1 - <5% Detects
NO:2 - Max<Background
NO:3 - Max< Risk Based Guideline Value
NO:4 - EPC< Background
NO:5 - Essential Human Nutrients
NO:6 - Part of a chain which has members above that are COPCs

Bold text indicates COPCs selected

- - - not applicable, not available, or not calculated due to insufficient toxicity data

Background values are base on the Operable Unit 9 Background Soils Investigation Chemistry Report (DOE 1994) or, in the case of nuclides with short half lives (Ac-227 Pb-210, and Pa-231) are based on the parent nuclide background and assumption of equilibrium with the parent nuclide.

Ra-228 note: A background value has not been calculated for Ra-228 and why none is provided in the table above. However, if Ra-226's parent nuclide background is considered (Th-232 at 1, pCi/g), Ra-228 would not be brought forward as a COPC. To be consistent with previous RREs, Ra-228 was presented with no background value and was brought forward as a COPC

Table 9

Identification of Constituents of Potential Concern for a Construction Worker Exposed to Surface Soil in the MCP Parcel 8

Analyte (SRC)	CAS Number	Minimum Concentration	Maximum Concentration	Detection Frequency	95% UCL	EPC	Background Value	10^{-4} RBGV	COPC?
Inorganics (mg/kg)									
Aluminum	7429-90-5	1.59E+00	2.14E+04	308/ 309	1.10E+04	1.10E+04	1.90E+04	2.08E+04	NO:4
Antimony	**7440-36-0**	**2.30E-01**	**6.90E+01**	**95/ 290**	**9.91E+00**	**9.91E+00**	---	**8.52E+00**	**YES**
Arsenic	7440-38-2	2.30E-03	3.22E+01	313/ 325	5.36E+00	5.36E+00	8.60E+00	1.85E+00	NO:4
Barium	7440-39-3	1.20E-02	6.23E+02	294/ 321	5.89E+01	5.89E+01	1.80E+02	1.47E+03	NO:3
Beryllium	7440-41-7	1.50E-04	1.30E+00	291/ 462	5.49E-01	5.49E-01	1.30E+00	4.21E+01	NO:3
Bismuth	7440-69-9	4.30E-01	1.01E+02	35/ 126	1.34E+01	1.34E+01	3.84E+01	---	NO:4
Cadmium	7440-43-9a	8.00E-02	2.42E+01	112/ 321	1.37E+00	1.37E+00	2.10E+00	5.46E+00	NO:4
Calcium	7440-70-2	1.33E+02	2.68E+05	309/ 311	1.42E+05	1.42E+05	3.10E+05	---	NO:2
Cerium	7440-45-1	2.46E+01	2.84E+01	2/ 25	2.38E+01	2.38E+01	---	3.85E+04	NO:3
Chromium	7440-47-3	3.60E-03	9.21E+01	303/ 308	1.73E+01	1.73E+01	2.00E+01	---	NO:4
Cobalt	7440-48-4	1.70E-03	2.80E+01	278/ 311	9.63E+00	9.63E+00	1.90E+01	3.83E+02	NO:3
Copper	7440-50-8	6.50E-03	3.82E+02	301/ 305	2.09E+01	2.09E+01	2.60E+01	8.52E+02	NO:3
Cyanide	57-12-5	1.10E-01	1.01E+01	45/ 254	5.58E-01	5.58E-01	---	4.26E+02	NO:3
Erbium	**7440-52-0**	**4.00E+01**	**1.62E+02**	**19/ 25**	**1.90E+02**	**1.62E+02**	---	---	**YES**
Iron	7439-89-6	4.33E+00	1.09E+05	312/ 314	2.28E+04	2.28E+04	3.50E+04	---	NO:4
Lead	7439-92-1	2.40E-03	3.10E+03	300/ 307	1.24E+01	1.24E+01	4.80E+01	---	NO:4
Lithium	**7439-93-2**	**1.10E+00**	**4.29E+01**	**195/ 208**	**1.97E+01**	**1.97E+01**	---	---	**YES**
Magnesium	7439-95-4	4.31E+01	1.08E+05	307/ 311	3.52E+04	3.52E+04	4.00E+04	---	NO:4
Manganese	7439-96-5s	1.75E-01	1.49E+03	304/ 306	5.49E+02	5.49E+02	1.40E+03	4.85E+02	NO:4
Mercury	7439-97-6	2.00E-02	9.10E-01	54/ 318	7.09E-02	7.09E-02	1.50E-01	5.78E+04	NO:3
Molybdenum	7439-98-7	5.30E-01	1.64E+01	58/ 122	2.85E+00	2.85E+00	2.72E+01	1.06E+02	NO:2
Neodymium	**7440-00-8**	**1.98E+01**	**2.22E+01**	**2/ 25**	**2.32E+01**	**2.22E+01**	---	---	**YES**
Nickel	7440-02-0	4.20E-03	1.07E+02	286/ 302	2.13E+01	2.13E+01	3.20E+01	4.26E+02	NO:3
Potassium	7440-09-7	5.16E-01	7.46E+03	286/ 313	2.22E+03	2.22E+03	1.90E+03	---	NO:5
Selenium	7782-49-2	1.20E-01	2.90E+00	34/ 303	5.41E-01	5.41E-01	5.90E-01	1.06E+02	NO:3
Silver	7440-22-4	1.90E-01	2.06E+01	92/ 319	3.74E+00	3.74E+00	1.70E+00	1.06E+02	NO:3
Sodium	7440-23-5	3.23E-01	2.62E+03	269/ 314	4.17E+02	4.17E+02	2.40E+02	---	NO:5
Tantalum	**7440-25-7**	**1.58E+02**	**5.53E+02**	**23/ 49**	**2.69E+02**	**2.69E+02**	---	---	**YES**
Thallium	**7440-28-0**	**5.20E-04**	**5.50E+00**	**58/ 312**	**7.05E-01**	**7.05E-01**	**4.60E-01**	**1.41E+00**	**YES**
Tin	7440-31-5	9.80E-01	8.00E+00	18/ 116	2.28E+00	2.28E+00	2.09E+01	1.28E+04	NO:2
Vanadium	7440-62-2	6.10E-03	4.68E+01	308/ 311	1.97E+01	1.97E+01	2.50E+01	2.13E+01	NO:4
Zinc	7440-66-6	1.20E-02	1.18E+03	305/ 307	6.55E+01	6.55E+01	1.40E+02	6.39E+03	NO:3
Dioxins/Dibenzofurans (µg/kg)									
1,2,3,4,6,7,8-HpCDD	**35822-46-9**	**2.10E-01**	**2.30E+00**	**3/ 27**	**4.34E-01**	**4.34E-01**	---	---	**YES**
1,2,3,6,7,8-HxCDF	55684-94-1	3.60E-01	3.60E-01	1/ 27	2.92E-01	2.92E-01	---	1.99E-01	NO:1
HpCDD	**37871-00-4**	**5.00E-01**	**4.10E+00**	**3/ 27**	**7.56E-01**	**7.56E-01**	---	**1.99E+00**	**YES**
HpCDF	38998-75-3	7.30E-01	7.30E-01	1/ 27	4.94E-01	4.94E-01	---	1.99E+00	NO:1
HxCDD	34465-46-8	1.70E-01	1.70E-01	1/ 27	2.02E-01	1.70E-01	---	1.99E 01	NO:1
OCDD	3268-87-9	3.10E-01	1.66E+01	3/ 27	1.71E+00	1.71E+00	---	1.99E+01	NO:3
OCDF	39001-02-0	5.40E-01	5.40E-01	1/ 27	6.28E-01	5.40E-01	---	1.99E+01	NO:1
Explosives (µg/kg)									
1,3,5-Trinitrobenzene	99-35-4	3.70E+02	3.70E+02	1/ 73	7.24E+02	3.70E+02	---	6.39E+05	NO:1
2,4-Dinitrotoluene	121-14-2	8.50E+02	8.50E+02	1/ 46	2.01E+02	2.01E+02	---	3.54E+03	NO:1
2,6-Dinitrotoluene	606-20-2	8.50E+01	9.50E+01	2/ 270	3.18E+02	9.50E+01	---	3.54E+03	NO:1
HMX	2691-41-0	3.80E+02	1.40E+03	4/ 73	1.40E+03	1.40E+03	---	1.06E+06	NO:3
RDX	121 82 4	2.90E+02	2.40E+03	6/ 73	1.11E+03	1.11E+03	---	2.71E+04	NO:3
Pesticides/PCBs (µg/kg)									
4,4'-DDD	72-54-8	2.40E-01	1.10E+01	5/ 220	6.19E+00	6.19E+00	---	1.24E+04	NO:1
4,4'-DDE	72-55-9	2.20E-01	3.10E+00	5/ 220	4.86E+00	3.10E+00	---	8.77E+03	NO:1
4,4'-DDT	50-29-3	1.40E-01	2.70E+01	23/ 219	8.49E+00	8.49E+00	---	8.12E+03	NO:3
Aldrin	309-00-2	5.70E-02	4.00E+00	10/ 220	2.85E+00	2.85E+00	---	1.42E+02	NO:1
Alpha Chlordane**	5103-71-9	2.70E-02	1.50E+00	10/ 216	2.02E+01	1.50E+00	---	7.61E+03	NO:1
Alpha BHC	319-84-6	4.30E-02	3.20E+00	24/ 220	2.91E+00	2.91E+00	---	4.73E+02	NO:1
Aroclor-1248	12672-29-6	1.80E+01	1.80E+01	1/ 239	4.39E+01	1.80E+01	---	---	NO:1
Aroclor-1254	11097-69-1	1.90E+01	7.90E+01	10/ 239	8.24E+01	7.60E+01	---	3.20E-02	NO:1
Aroclor-1260	11096-82-5	1.50E+01	4.40E+01	2/ 238	8.03E+01	4.40E+01	---	---	NO:1
Beta-BHC	319-85-7	4.20E-01	1.30E+01	5/ 220	3.06E+00	3.06E+00	---	1.66E+03	NO:1
Delta-BHC	319-86-8	1.00E-02	4.10E-01	6/ 220	3.94E+00	4.10E-01	---	---	NO:1
Dieldrin	60-57-1	7.60E-02	5.00E+01	14/ 220	4.47E+00	4.47E+00	---	1.86E+02	NO:3
Endosulfan I	959-98-8	4.60E-01	4.80E-01	1/ 220	4.34E+00	4.80E-01	---	---	NO:1
Endosulfan II	33213-65-9	1.50E-01	4.40E+00	8/ 220	4.87E+00	4.40E+00	---	---	NO:1
Endosulfan Sulfate	1031-07-8	2.20E-01	1.30E+00	6/ 220	3.56E+00	1.30E+00	---	---	NO:1
Endrin	72-20-8	2.20E-01	4.10E+00	10/ 219	5.08E+00	4.10E+00	---	6.39E+03	NO:1
Endrin Aldehyde	7421-93-4	1.30E-01	1.40E+01	7/ 220	6.61E+00	6.61E+00	---	---	NO:1
Endrin Ketone	53494-70-5	1.00E-01	5.40E+00	7/ 220	9.20E+00	5.40E+00	---	---	NO:1
Gamma Chlordane	5103-74-2	6.30E-01	5.10E+00	6/ 216	1.96E+01	5.10E+00	---	7.61E+03	NO:1
Gamma-BHC (Lindane)	58-89-9	4.30E-01	4.30E-01	1/ 220	2.75E+00	4.30E-01	---	2.29E+03	NO:1
Heptachlor	76-44-8	2.00E-01	7.20E-01	3/ 220	2.49E+00	7.20E-01	---	6.62E+02	NO:1
Heptachlor Epoxide	1024-57-3	1.40E-01	7.00E+00	10/ 220	5.80E+00	5.80E+00	---	2.77E+02	NO:3
Methoxychlor	72-43-5	1.30E+00	1.00E+02	6/ 220	4.51E+01	4.51E+01	---	1.06E+05	NO:3
Semi-Volatile Organic Compounds (µg/kg)									
1,2,4-Trichlorobenzene	120-82-1	1.20E+03	1.20E+03	1/ 254	2.96E+02	2.96E+02	---	3.72E+05	NO:1
1,2-Dichlorobenzene	95-50-1	6.40E-01	6.40E-01	1/ 257	3.27E+02	6.40E-01	---	1.55E+06	NO:1
2,4-Dimethylphenol	105-67-9	3.10E+04	3.10E+04	1/ 254	3.09E+02	3.09E+02	---	3.44E+05	NO:1
2,4-Dinitrotoluene	121-14-2	8.50E+02	8.50E+02	1/ 46	2.01E+02	2.01E+02	---	3.54E+03	NO:1
2-Benzyl-4-Chlorophenol	120-32-1	1.20E+02	1.20E+02	1/ 40	1.95E+02	1.20E+02	---	---	NO:1
2-Chlorophenol	95-57-8	9.40E+01	1.80E+03	2/ 254	2.96E+02	2.96E+02	---	8.60E+04	NO:1
2-Methylnaphthalene	91-57-6	1.40E+01	2.30E+04	11/ 269	4.38E+02	4.38E+02	---	8.52E+04	NO:1

Table 9

Identification of Constituents of Potential Concern for a Construction Worker Exposed to Surface Soil in the MCP Parcel 8

Analyte (SRC)	CAS Number	Minimum Concentration	Maximum Concentration	Detection Frequency	95% UCL	EPC	Background Value	10^{-6} RBGV	COPC?
2-Methylphenol	95-48-7	9.00E+01	1.30E+04	2/ 261	2.96E+02	2.96E+02	---	1.08E+06	NO:1
3,3'-Dichlorobenzidine	91-94-1	4.80E+01	1.10E+02	2/ 254	4.49E+02	1.10E+02	---	5.35E+03	NO:1
4-Chloro-3-methylphenol	59-50-7	8.50E+01	2.20E+03	3/ 254	2.96E+02	2.96E+02	---	---	NO:1
4-Methylphenol	106-44-5	4.60E+01	2.50E+04	3/ 261	3.09E+02	3.09E+02	---	1.06E+05	NO:1
4-Nitrophenol	100-02-7	2.40E+03	2.40E+03	1/ 254	1.11E+03	1.11E+03	---	---	NO:1
Acenaphthene	83-32-9	1.90E+01	5.10E+03	29/ 269	4.38E+02	4.38E+02	---	9.76E+05	NO:3
Acenaphthylene	208-96-8	1.20E+01	7.30E+02	7/ 269	4.19E+02	4.19E+02	---	---	NO:1
Anthracene	120-12-7	1.80E+01	3.80E+04	45/ 269	4.90E+02	4.90E+02	---	4.88E+06	NO:3
Benzo(a)anthracene	56-55-3	2.00E+01	9.60E+04	70/ 269	5.14E+02	5.14E+02	---	3.12E+03	YES
Benzo(a)pyrene	50-32-8	2.00E+01	1.10E+05	69/ 269	4.93E+02	4.93E+02	---	3.12E+02	YES
Benzo(b)fluoranthene	205-99-2	2.20E+01	1.20E+05	75/ 269	5.19E+02	5.19E+02	---	3.12E+03	YES
Benzo(g,h,i)perylene	191-24-2	2.00E+01	1.65E+05	59/ 269	5.23E+02	5.23E+02	---	---	YES
Benzo(k)fluoranthene	207-08-9	1.90E+01	1.10E+05	67/ 269	5.09E+02	5.09E+02	---	3.12E+04	YES
Benzoic Acid	65-85-0	4.00E+01	5.80E+03	9/ 126	2.03E+03	2.03E+03	---	6.86E+07	NO:3
Benzyl Alcohol	100-51-6	1.70E+04	1.70E+04	1/ 132	3.27E+02	3.27E+02	---	5.16E+06	NO:1
Bis(2-ethylhexyl)phthalate	117-81-7	2.20E+01	3.40E+03	139/ 255	3.46E+02	3.46E+02	---	1.72E+05	NO:3
Butyl Benzyl Phthalate	85-68-7	3.20E+01	1.30E+03	33/ 254	3.10E+02	3.10E+02	---	3.44E+06	NO:3
Carbazole	86-74-8	1.90E+01	1.70E+03	25/ 169	2.65E+02	2.65E+02	---	1.20E+05	NO:3
Chrysene	218-01-9	2.60E+01	1.20E+05	73/ 258	4.75E+02	4.75E+02	---	3.12E+05	NO:3
Dibenz(a,h)anthracene	53-70-3	2.00E+01	7.50E+02	28/ 267	4.27E+02	4.27E+02	---	3.12E+02	YES
Dibenzofuran	132-64-9	2.80E+01	1.10E+03	15/ 254	3.05E+02	3.05E+02	---	3.44E+04	NO:3
Diethyl Phthalate	84-66-2	2.00E+01	1.00E+02	6/ 254	2.93E+02	1.00E+02	---	1.38E+07	NO:1
Dimethyl Phthalate	131-11-3	3.40E+01	1.30E+02	3/ 254	2.93E+02	1.30E+02	---	2.13E+08	NO:1
Di-n-butyl Phthalate	84-74-2	1.90E+01	7.60E+04	68/ 256	3.61E+02	3.61E+02	---	1.72E+06	NO:3
Di-n-octyl Phthalate	117-84-0	2.10E+01	3.50E+05	34/ 254	3.05E+02	3.05E+02	---	8.52E+05	NO:3
Fluoranthene	206-44-0	1.50E+01	1.60E+05	101/ 270	6.29E+02	6.29E+02	---	6.51E+05	NO:3
Fluorene	86-73-7	2.30E+01	2.10E+04	26/ 269	4.57E+02	4.57E+02	---	6.51E+05	NO:3
Hexachlorobenzene	118-74-1	4.90E+01	4.90E+01	1/ 261	2.89E+02	4.90E+01	---	1.51E+03	NO:1
Indeno(1,2,3-cd)pyrene	193-39-5	1.60E+01	1.20E+05	57/ 267	4.56E+02	4.56E+02	---	3.12E+03	YES
Isophorone	78-59-1	4.10E+02	7.80E+02	2/ 254	2.84E+02	2.84E+02	---	2.54E+06	NO:1
N-Nitroso-di-n-propylamine	621-64-7	4.10E+01	1.10E+03	6/ 254	2.94E+02	2.94E+02	---	3.44E+02	NO:1
N-Nitrosodiphenylamine	86-30-6	1.50E+02	1.50E+02	1/ 254	2.91E+02	1.50E+02	---	3.44E+05	NO:1
Pentachlorophenol	87-86-5	1.20E+02	1.80E+03	5/ 261	1.08E+03	1.08E+03	---	1.56E+04	NO:1
Phenanthrene	85-01-8	1.80E+01	1.00E+05	82/ 269	6.23E+02	6.23E+02	---	---	YES
[illegible]nol	108-95-2	1.10E+02	2.20E+04	5/ 257	3.06E+02	3.06E+02	---	5.16E+06	NO:1
[illegible]rene	129-00-0	1.90E+01	1.60E+05	93/ 270	6.00E+02	6.00E+02	---	4.88E+05	NO:2
Volatile Organic Compounds (µg/kg)									
1,1,1-Trichloroethane	71-55-6	1.00E+00	3.04E+01	8/ 354	4.52E+00	4.52E+00	---	6.84E+05	NO:1
1,1-Dichloroethane	75-34-3	4.00E-01	4.00E-01	1/ 354	4.47E+00	4.00E-01	---	1.93E+05	NO:1
1,2-cis-Dichloroethene (DCE)	156-59-2	2.37E-01	1.12E+03	22/ 41	9.19E+01	9.19E+01	---	2.13E+05	NO:3
1,2-Dichloroethane	107-06-2	1.00E+00	1.00E+00	1/ 361	4.48E+00	1.00E+00	---	3.45E+03	NO:1
1,2-Dichloroethene	540-59-0	4.33E-01	1.16E+03	30/ 364	5.99E+00	5.99E+00	---	1.92E+05	NO:3
1,2-Dichloropropane	78-87-5	2.87E+00	2.87E+00	1/ 354	4.46E+00	2.87E+00	---	2.08E+03	NO:1
1,2-trans-Dichloroethane	156-60-5	2.00E+00	4.38E+02	3/ 44	4.35E+01	4.35E+01	---	4.26E+05	NO:3
1,4-Dichlorobenzene	106-46-7	1.10E+02	1.10E+03	2/ 284	3.16E+02	3.16E+02	---	1.00E+05	NO:1
2-Butanone	78-93-3	6.00E-01	4.60E+01	65/ 357	8.08E+00	8.08E+00	---	6.65E+06	NO:3
2-Hexanone	591-78-6	3.00E+00	6.10E+01	11/ 354	7.30E+00	7.30E+00	---	---	NO:1
4-Methyl-2-pentanone	108-10-1	6.00E-01	2.00E+01	23/ 354	7.17E+00	7.17E+00	---	1.47E+06	NO:3
Acetone	67-64-1	2.00E+00	2.50E+02	170/ 344	2.12E+01	2.12E+01	---	1.92E+07	NO:3
Acetonitrile	75-05-8	6.70E+01	6.70E+01	1/ 91	8.18E+01	6.70E+01	---	2.00E+05	NO:1
Acrylonitrile	107-13-1	8.00E+00	8.00E+00	1/ 94	9.65E+01	8.00E+00	---	1.82E+03	NO:1
Benzene	71-43-2	5.00E-01	8.00E+00	16/ 364	4.37E+00	4.37E+00	---	6.46E+03	NO:1
Carbon Disulfide	75-15-0	8.00E-01	1.33E+01	42/ 354	4.47E+00	4.47E+00	---	1.16E+05	NO:3
Carbon Tetrachloride	56-23-5	2.00E+00	2.00E+00	1/ 361	4.56E+00	2.00E+00	---	2.44E+03	NO:1
Chlorobenzene	108-90-7	2.00E+00	1.10E+01	2/ 361	4.49E+00	4.49E+00	---	4.85E+04	NO:1
Chloromethane	74-87-3	1.00E+00	6.00E+00	3/ 354	6.45E+00	6.00E+00	---	1.59E+04	NO:1
Dichloromethane (Methylene Chloride)	75-09-2	1.00E+00	1.40E+03	219/ 354	1.97E+01	1.97E+01	---	8.25E+04	NO:3
Ethylbenzene	100-41-4	7.00E-01	1.80E+01	33/ 377	4.32E+00	4.32E+00	---	7.80E+04	NO:3
FREON-113	76-13-1	2.00E+00	4.00E+01	4/ 128	6.39E+00	6.39E+00	---	6.93E+05	NO:1
Hexane	110-54-3	2.00E+00	3.00E+00	2/ 91	8.13E+00	3.00E+00	---	4.08E+04	NO:1
Naphthalene	91-20-3	1.60E+01	4.50E+01	11/ 269	4.31E+02	4.31E+02	---	3.44E+05	NO:1
Styrene	100-42-5	3.00E-01	3.00E+00	25/ 354	4.47E+00	3.00E+00	---	1.46E+06	NO:3
Tetrachloroethene (PCE)	127-18-4	2.00E-01	5.94E+03	59/ 374	8.15E+00	8.15E+00	---	3.66E+03	YES
Toluene	108-88-3	5.70E-01	7.00E+01	82/ 377	4.25E+00	4.25E+00	---	2.00E+05	NO:3
Trichloroethylene (TCE)	79-01-6	2.81E-01	9.52E+03	63/ 374	9.27E+00	9.27E+00	---	4.38E+02	YES
Trichloromethane (Chloroform)	67-66-3	3.00E-01	2.00E+00	25/ 361	4.46E+00	2.00E+00	---	2.56E+03	NO:3
Vinyl Chloride	75-01-4	3.86E-01	6.82E+01	6/ 374	7.35E+00	7.35E+00	---	1.07E+03	NO:1
Xylenes, Total	1330-20-7	3.00E-01	1.50E+02	45/ 377	4.75E+00	4.75E+00	---	6.02E+04	NO:3
Radionuclides (pCi/g)									
Actinium-227 +L ***	14952-40-0L	3.80E-02	2.65E+00	330/2319	2.57E-01	2.57E-01	1.10E-01	4.56E-01	YES
Actinium-228	14331-83-0	1.80E-05	2.48E+00	998/1309	6.69E-01	6.69E-01	---	2.17E-01	NO:6
Americium-241	14596-10-2	3.00E-02	3.36E+01	226/2650	1.08E-01	1.08E-01	---	6.32E+00	YES
[illegible]smuth-207	13982-38-2	1.00E-02	1.53E-01	10/1706	3.50E-02	3.50E-02	---	1.39E-01	NO:1
[illegible]muth-210M	BI-210M	5.00E-02	2.40E+00	32/1617	4.96E-02	4.96E-02	---	---	NO:1
[illegible]smuth-212	14913-49-6	5.30E-01	2.00E+00	36/ 37	1.48E+00	1.40E+00	---	1.11E+00	NO:6
[illegible]ismuth-214 ****	14733-03-0	2.81E-05	1.97E+00	1366/1381	6.18E-01	6.18E-01	1.20E+00	1.31E-01	NO:4
Cesium-137	10045-97-3(+D)	1.00E-02	2.50E+00	273/2643	5.94E-02	5.94E-02	4.20E-01	3.82E-01	NO:4
Cobalt-60	10198-40-0	1.00E-02	1.10E+00	40/2595	5.60E-02	5.60E-02	---	7.91E-02	NO:1
Lead-210 ****	14255-04-0(+D)	4.00E-02	1.17E+01	424/2255	1.10E+00	1.10E+00	1.20E+00	6.25E-01	NO:4
Lead-212	15092-94-1	3.44E-05	2.67E+00	1401/1407	6.51E-01	6.51E-01	---	1.79E+00	NO:6
Lead-214 ****	15067-28-4	2.10E-01	1.32E+00	481/ 483	5.99E-01	5.99E-01	1.20E+00	1.00E+00	NO:4

Table 9

Identification of Constituents of Potential Concern for a Construction Worker Exposed to Surface Soil in the MCP Parcel 8

Analyte (SRC)	CAS Number	Minimum Concentration	Maximum Concentration	Detection Frequency	95% UCL	EPC	Background Value	10^{-6} RBGV	COPC?
Neptunium-237	13994-20-2(+D)	5.00E-04	2.40E-01	13/ 14	6.91E-01	2.40E-01	- - -	1.10E+00	NO:3
Plutonium-238	13981-16-3	3.38E-03	8.44E+03	2758/5349	3.23E+01	3.23E+01	1.30E-01	5.12E+00	YES
Plutonium-239	15117-48-3	9.00E-03	1.24E-01	2/ 4	4.77E+03	1.24E-01	- - -	6.03E+00	NO:3
Plutonium-239/240	OER-100-70	3.30E-03	2.01E+01	821/2560	5.83E-02	5.83E-02	1.80E-01	- - -	NO:4
Plutonium-241	14119-32-5	1.50E+00	2.95E+00	4/ 6	1.03E+01	2.95E+00	- - -	5.06E+02	NO:3
Plutonium-242	13982-10-0	3.72E-03	5.50E-01	16/ 28	6.59E-01	5.50E-01	- - -	6.33E+00	NO:3
Potassium-40	13966-00-2	1.32E-03	4.84E+01	1526/1533	1.89E+01	1.89E+01	3.70E+01	1.18E+00	NO:4
Protactinium-231	14331-85-2(+D)	1.43E+00	3.00E+00	5/1666	9.82E-01	9.82E-01	- - -	- - -	NO:1
Radium-224	13233-32-4	2.36E-01	2.50E+00	20/ 20	9.35E-01	9.35E-01	- - -	3.24E+00	NO:3
Radium-226	13982-63-3(+D)	2.81E-05	3.91E+00	2435/2603	8.23E-01	8.23E-01	2.00E+00	1.10E-01	NO:4
Radium-228 +L	15262-20-1L	2.40E-01	2.48E+00	341/ 498	7.00E-01	7.00E-01	- - -	8.98E-02	YES
Strontium-90	10098-97-2(+D)	2.00E-01	1.62E+00	25/ 168	5.09E-01	5.09E-01	7.20E-01	9.40E+00	NO:3
Thallium-208	14913-50-9	4.70E-02	5.70E-01	428/ 430	2.61E-01	2.61E-01	- - -	5.59E-02	NO:6
Thorium-227	15623-47-9	2.00E-02	6.00E-01	48/ 53	3.07E-01	3.07E-01	- - -	2.14E+00	NO:6
Thorium-228 +L	14274-82-9L	3.85E-02	2.50E+01	2471/2526	8.26E-01	8.26E-01	1.50E+00	1.19E-01	NO:4
Thorium-229	15594-54-4	4.90E-01	8.45E-01	2/1201	4.78E-01	4.78E-01	- - -	1.90E+00	NO:1
Thorium-230	14269-63-7(+D)	5.00E-02	1.34E+01	2865/2953	1.25E+00	1.25E+00	1.90E+00	9.26E-02	NO:4
Thorium-232	7440-29-1(+D)	5.60E-02	3.77E+01	2979/5392	8.16E-01	8.16E-01	1.40E+00	6.90E-02	NO:4
Thorium-232 Daughters	TH-232DA	4.10E-01	4.90E-01	2/ 2	- - -	4.90E-01	1.40E+00	- - -	NO:2
Thorium-234	15065-10-8	5.48E-01	5.41E+00	21/ 21	1.53E+00	1.53E+00	- - -	1.76E+01	NO:3
Tritium	10028-17-8b	6.80E-02	8.95E+02	341/ 549	4.21E+01	4.21E+01	1.60E+00	7.58E+03	NO:3
Uranium-233/234	U-233/234	4.47E-01	1.02E+00	37/ 37	7.34E-01	7.34E-01	- - -	4.82E-01	YES
Uranium-234	13966-29-5	2.01E-01	1.26E+01	420/ 425	9.01E-01	9.01E-01	1.10E+00	1.05E+01	NO:4
Uranium-235	15117-96-1(+D)	3.00E-03	1.02E+00	269/1466	3.87E-01	3.87E-01	1.10E-01	1.54E+00	NO:3
Uranium-235/236	13968-29-5	1.94E-02	6.78E-02	13/ 27	4.69E-02	4.69E-02	- - -	3.10E-01	NO:3
Uranium-238 +L	7440-61-1L	1.10E-01	1.10E+02	628/1651	9.17E-01	9.17E-01	1.20E+00	8.98E-02	NO:4

CAS - Chemical Abstract Service
COPC - Constituents of Potential Concern
EPC - Exposure Point Concentration
mg/kg - milligram per kilogram
ug/kg - microgram per kilogram
pCi/g - picocurie per gram
RBGV - Risk Based Guideline Value
+L - Upper Confidence Limit
+D - Plus daughters up to the next long-lived daughter
+L - Includes long-lived daughters.

NO:1 - <5% Detects
NO:2 - Max<Background
NO:3 - Max< Risk Based Guideline Value
NO:4 - EPC< Background
NO:5 - Essential Human Nutrients
NO:6 - Part of a chain which has members above that are COPCs
*** Ac-227 background level assumes secular equilibrium with U235/236.
**** Pb-210, Pb-214 and Bi-214 background levels assume secular equilibrium with U-238.

Background values are base on the Operable Unit 9 Background Soils Investigation Chemistry Report (DOE 1994) or, in the case of nuclides with short half lives (Ac-227 Pb-210, and Pa-231) are based on the parent nuclide background and assumption of equilibrium with the parent nuclide.

- - - not applicable, not available, or not calculated due to insufficient toxicity data

Ra-228 note: A background value has not been calculated for Ra-228 and why none is provided in the table above. However, if Ra-228's parent nuclide background is considered (Th-232 at 1.4 pCi/g), Ra-228 would not be brought forward as a COPC. To be consistent with previous RREs, Ra-228 was presented with no background value and was brought forward as a COPC

Table 10

Identification of Constituents of Potential Concern for the Site Employee Exposed to Surface Soil in Parcel 8

Analyte (SRC)	CAS Number	Minimum Concentration	Maximum Concentration	Detection Frequency	95% UCL	EPC	Background Value	RBGV	COPC?
Inorganics (mg/kg)									
Aluminum	7429-90-5	1.59E+00	1.93E+04	147/ 148	1.20E+04	1.20E+04	1.90E+04	1.69E+05	NO:3
Antimony	7440-36-0	2.30E-01	6.90E+01	24/ 133	1.06E+01	1.06E+01	0.00E+00	8.18E+01	NO:3
Arsenic	7440-38-2	2.30E-03	1.33E+01	148/ 156	5.87E+00	5.87E+00	8.60E+00	2.26E+00	NO:4
Barium	7440-39-3	1.20E-02	6.23E+02	129/ 154	8.76E+01	8.76E+01	1.80E+02	1.25E+04	NO:3
Beryllium	7440-41-7	1.50E-04	1.30E+00	134/ 296	4.78E-01	4.78E-01	1.30E+00	3.70E+02	NO:3
Bismuth	7440-69-9	4.30E-01	1.01E+02	13/ 49	8.71E+00	8.71E+00	3.84E+01	- - -	NO:4
Cadmium	7440-43-9s	6.00E-02	2.42E+01	67/ 154	1.47E+00	1.47E+00	2.10E+00	1.01E+01	NO:4
Calcium	7440-70-2	1.33E+02	2.64E+05	147/ 148	1.63E+05	1.63E+05	3.10E+05	- - -	NO:2
Chromium	7440-47-3	3.60E-03	9.21E+01	150/ 154	1.70E+01	1.70E+01	2.00E+01	- - -	NO:4
Cobalt	7440-48-4	1.70E-03	2.80E+01	124/ 148	1.06E+01	1.06E+01	1.90E+01	1.93E+03	NO:3
Copper	7440-50-8	6.50E-03	3.82E+02	144/ 147	2.79E+01	2.79E+01	2.60E+01	8.18E+03	NO:3
Cyanide	57-12-5	1.20E-01	1.01E+01	22/ 119	8.64E-01	8.64E-01	0.00E+00	4.09E+03	NO:3
Erbium	7440-52-0	4.00E+01	6.87E+01	3/ 4	4.92E+08	6.87E+01	0.00E+00	- - -	YES
Iron	7439-89-6	4.33E+00	1.00E+05	150/ 151	2.41E+04	2.41E+04	3.50E+04	- - -	NO:4
Lead	7439-92-1	2.40E-03	3.10E+03	135/ 138	1.96E+01	1.96E+01	4.80E+01	- - -	NO:4
Lithium	7439-93-2	1.10E+00	3.93E+01	68/ 73	1.57E+01	1.57E+01	0.00E+00	- - -	YES
Magnesium	7439-95-4	4.31E+01	1.08E+05	147/ 148	4.53E+04	4.53E+04	4.00E+04	- - -	NO:5
Manganese	7439-96-5s	1.75E-01	8.31E+02	142/ 143	5.71E+02	5.71E+02	1.40E+03	3.25E+03	NO:2
Mercury	7439-97-6	2.00E-02	9.10E-01	38/ 150	9.08E-02	9.08E-02	1.50E-01	5.78E+04	NO:3
Molybdenum	7439-98-7	5.30E-01	1.64E+01	37/ 56	2.79E+00	2.79E+00	2.72E+01	1.02E+03	NO:2
Nickel	7440-02-0	4.20E-03	1.07E+02	136/ 146	2.28E+01	2.28E+01	3.20E+01	4.09E+03	NO:3
Potassium	7440-09-7	5.16E-01	5.15E+03	127/ 148	1.90E+03	1.90E+03	1.90E+03	- - -	NO:5
Selenium	7782-49-2	1.20E-01	2.30E+00	12/ 138	6.04E-01	6.04E-01	5.90E-01	1.02E+03	NO:3
Silver	7440-22-4	1.90E-01	1.89E+01	46/ 152	2.91E+00	2.91E+00	1.70E+00	1.02E+03	NO:3
Sodium	7440-23-5	3.23E-01	2.62E+03	119/ 151	8.71E+02	8.71E+02	2.40E+02	- - -	NO:5
Tantalum	7440-25-7	1.68E+02	4.44E+02	3/ 10	2.91E+02	4.44E+02	0.00E+00	- - -	YES
Thallium	7440-28-0	6.20E-04	5.50E+00	26/ 148	8.27E-01	8.27E-01	4.60E-01	1.35E+01	NO:3
Tin	7440-31-5	9.80E-01	6.00E+00	16/ 48	4.12E+00	4.12E+00	2.09E+01	1.23E+05	NO:2
Vanadium	7440-62-2	6.10E-03	4.68E+01	147/ 148	2.07E+01	2.07E+01	2.50E+01	2.04E+02	NO:3
Zinc	7440-66-6	1.20E-02	1.18E+03	143/ 144	1.00E+02	1.00E+02	1.40E+02	6.13E+04	NO:3
Dioxins & Dibenzofurans (µg/kg)									
1,2,3,4,6,7,8-HpCDD	35822-46-9	2.30E+00	2.30E+00	1/ 6	4.51E+02	2.30E+00	0.00E+00	0.00E+00	YES
HpCDD	37871-00-4	4.10E+00	4.10E+00	1/ 6	7.64E+02	4.10E+00	0.00E+00	3.81E+00	YES
OCDD	3268-87-9	3.10E-01	1.66E+01	2/ 6	1.77E+05	1.66E+01	0.00E+00	3.81E+01	NO:3
Pesticides/PCBs (µg/kg)									
4,4'-DDD	72-54-8	2.40E-01	2.40E-01	1/ 109	1.20E+01	2.40E-01	0.00E+00	2.38E+04	NO:1
4,4'-DDE	72-55-9	2.20E-01	3.10E+00	6/ 109	1.14E+01	3.10E+00	0.00E+00	1.68E+04	NO:3
4,4'-DDT	50-29-3	9.00E-01	2.70E+01	9/ 108	1.22E+01	1.22E+01	0.00E+00	9.56E+03	NO:3
Aldrin	309-00-2	5.70E-02	1.40E+00	8/ 109	6.30E+00	1.40E+00	0.00E+00	1.03E+02	NO:3
Alpha Chlordane**	5103-71-9	2.70E-02	1.50E+00	9/ 108	1.19E+02	1.50E+00	0.00E+00	7.64E+03	NO:3
Alpha-BHC	319-84-6	4.30E-02	2.50E+00	7/ 109	8.47E+00	2.50E+00	0.00E+00	9.08E+02	NO:3
Aroclor-1248	12672-29-6	1.80E+01	1.80E+01	1/ 116	6.84E+01	1.80E+01	0.00E+00	0.00E+00	NO:1
Aroclor-1254	11097-69-1	1.50E+01	6.30E+01	9/ 116	1.45E+02	6.30E+01	0.00E+00	6.83E+02	NO:3
Aroclor-1260	11096-82-5	1.50E+01	4.40E+01	2/ 115	1.42E+02	4.40E+01	0.00E+00	0.00E+00	NO:1
Beta-BHC	319-85-7	8.60E-01	1.30E+01	2/ 109	6.02E+00	6.02E+00	0.00E+00	3.18E+03	NO:1
Delta-BHC	319-86-8	1.20E-01	4.10E-01	5/ 109	7.44E+00	4.10E-01	0.00E+00	0.00E+00	NO:1
Dieldrin	60-57-1	7.80E-02	5.00E+01	10/ 109	1.21E+01	1.21E+01	0.00E+00	3.58E+02	NO:3
Endosulfan I	959-98-8	4.80E-01	4.80E-01	1/ 109	8.03E+00	4.80E-01	0.00E+00	0.00E+00	NO:1
Endosulfan II	33213-65-9	1.50E-01	4.40E+00	8/ 109	1.06E+01	4.40E+00	0.00E+00	0.00E+00	YES
Endosulfan Sulfate	1031-07-8	2.20E-01	1.30E+00	6/ 109	1.91E+01	1.30E+00	0.00E+00	0.00E+00	YES
Endrin	72-20-8	1.80E+00	4.10E+00	4/ 109	1.04E+01	4.10E+00	0.00E+00	6.13E+04	NO:1
Endrin Aldehyde	7421-93-4	1.30E-01	1.40E+01	7/ 93	1.20E+01	1.20E+01	0.00E+00	0.00E+00	YES
Endrin Ketone	53494-70-5	1.60E-01	5.40E+00	6/ 109	1.75E+01	5.40E+00	0.00E+00	0.00E+00	YES
Gamma Chlordane	5103-74-2	6.80E-01	5.10E+00	6/ 108	1.06E+02	5.10E+00	0.00E+00	7.64E+03	NO:3
Gamma-BHC (Lindane)	58-89-9	4.30E-01	4.30E-01	1/ 109	5.45E+00	4.30E-01	0.00E+00	4.40E+03	NO:1
Heptachlor	76-44-8	2.00E-01	2.00E-01	1/ 109	5.20E+00	2.00E-01	0.00E+00	1.27E+03	NO:1
Heptachlor Epoxide	1024-57-3	1.40E-01	6.80E-01	7/ 109	1.14E+01	6.80E-01	0.00E+00	6.29E+02	NO:3
Methoxychlor	72-43-5	1.50E+00	1.00E+02	2/ 109	8.37E+01	8.37E+01	0.00E+00	1.02E+06	NO:1
Semi-Volatile Organic Compounds (µg/kg)									
1,2-Dichlorobenzene	95-50-1	6.40E-01	6.40E-01	1/ 133	4.50E+02	6.40E-01	0.00E+00	2.92E+00	NO:1
2,4-Dimethylphenol	105-67-9	3.10E+04	3.10E+04	1/ 130	3.93E+02	3.93E+02	0.00E+00	1.25E+06	NO:1
2-Benzyl-4-Chlorophenol	120-32-1	1.20E+02	1.20E+02	1/ 17	2.03E+02	1.20E+02	0.00E+00	0.00E+00	YES
2-Methylnaphthalene	91-57-6	2.50E+01	2.30E+04	9/ 145	7.32E+02	7.32E+02	0.00E+00	8.18E+05	NO:3
2-Methylphenol	95-48-7	1.30E+04	1.30E+04	1/ 133	3.69E+02	3.69E+02	0.00E+00	1.02E+07	NO:1
3,3'-Dichlorobenzidine	91-94-1	4.80E+01	4.80E+01	1/ 130	6.12E+02	4.80E+01	0.00E+00	3.88E+03	NO:1
4-Methylphenol	106-44-5	4.60E+01	2.50E+04	2/ 133	4.01E+02	4.01E+02	0.00E+00	1.02E+06	NO:1
Acenaphthene	83-32-9	1.90E+01	5.10E+03	22/ 145	7.35E+02	7.35E+02	0.00E+00	3.09E+06	NO:3
Acenaphthylene	208-96-8	3.50E+01	7.30E+02	6/ 145	6.75E+02	6.75E+02	0.00E+00	0.00E+00	NO:1
Anthracene	120-12-7	1.90E+01	3.60E+04	35/ 145	9.03E+02	9.03E+02	0.00E+00	1.55E+07	NO:3
Benzo(a)anthracene	56-55-3	2.00E+01	9.60E+04	54/ 145	1.00E+03	1.00E+03	0.00E+00	1.98E+03	YES
Benzo(a)pyrene	50-32-8	2.00E+01	1.10E+05	54/ 145	9.27E+02	9.27E+02	0.00E+00	1.98E+02	YES
Benzo(b)fluoranthene	205-99-2	2.20E+01	1.20E+05	56/ 145	1.01E+03	1.01E+03	0.00E+00	1.98E+03	YES
Benzo(g,h,i)perylene	191-24-2	2.00E+01	1.65E+05	47/ 145	1.04E+03	1.04E+03	0.00E+00	0.00E+00	YES
Benzo(k)fluoranthene	207-08-9	1.90E+01	1.10E+05	52/ 145	9.73E+02	9.73E+02	0.00E+00	1.98E+04	YES
Benzoic Acid	65-85-0	4.50E+01	1.70E+02	5/ 72	1.91E+03	1.70E+02	0.00E+00	2.49E+08	NO:3

Table 10

Identification of Constituents of Potential Concern for the Site Employee Exposed to Surface Soil in Parcel 8

Analyte (SRC)	CAS Number	Minimum Concentration	Maximum Concentration	Detection Frequency	95% UCL	EPC	Background Value	RBGV	COPC?
Benzyl Alcohol	100-51-6	1.70E+04	1.70E+04	1/ 73	3.87E+02	3.87E+02	0.00E+00	1.87E+07	NO:1
Bis(2-ethylhexyl)phthalate	117-81-7	3.10E+01	2.30E+03	79/ 130	4.01E+02	4.01E+02	0.00E+00	1.25E+05	NO:3
Butyl Benzyl Phthalate	85-68-7	3.20E+01	5.20E+02	15/ 130	3.71E+02	3.71E+02	0.00E+00	1.25E+07	NO:3
Carbazole	86-74-8	1.90E+01	1.70E+03	23/ 74	4.48E+02	4.48E+02	0.00E+00	8.72E+04	NO:3
Chrysene	218-01-9	2.60E+01	1.20E+05	55/ 132	9.38E+02	9.38E+02	0.00E+00	1.98E+05	NO:3
Dibenz(a,h)anthracene	53-70-3	2.00E+01	7.50E+02	27/ 143	7.40E+02	7.40E+02	0.00E+00	1.98E+02	YES
Dibenzofuran	132-64-9	2.80E+01	1.10E+03	15/ 130	3.85E+02	3.85E+02	0.00E+00	1.25E+05	NO:3
Diethyl Phthalate	84-66-2	2.00E+01	1.00E+02	3/ 130	3.56E+02	1.00E+02	0.00E+00	4.99E+07	NO:1
Dimethyl Phthalate	131-11-3	1.30E+02	1.30E+02	1/ 130	3.52E+02	1.30E+02	0.00E+00	2.04E+09	NO:1
Di-n-butyl Phthalate	84-74-2	1.90E+01	7.80E+04	28/ 130	3.76E+02	3.76E+02	0.00E+00	6.23E+06	NO:3
Di-n-octyl Phthalate	117-84-0	2.70E+01	3.50E+05	16/ 130	3.81E+02	3.81E+02	0.00E+00	8.18E+06	NO:3
Fluoranthene	206-44-0	2.40E+01	1.80E+05	72/ 145	1.31E+03	1.31E+03	0.00E+00	2.06E+06	NO:3
Fluorene	86-73-7	2.30E+01	2.10E+04	24/ 145	8.29E+02	8.29E+02	0.00E+00	2.06E+06	NO:3
Hexachlorobenzene	118-74-1	4.90E+01	4.90E+01	1/ 133	3.48E+02	4.90E+01	0.00E+00	1.09E+03	NO:1
Indeno(1,2,3-cd)pyrene	193-39-5	1.50E+01	1.20E+05	45/ 143	8.09E+02	8.09E+02	0.00E+00	1.98E+03	YES
Isophorone	78-59-1	4.10E+02	7.80E+02	2/ 130	3.33E+02	3.33E+02	0.00E+00	1.84E+06	NO:1
N-Nitroso-di-n-propylamine	621-64-7	7.40E+02	7.40E+02	1/ 130	3.45E+02	3.45E+02	0.00E+00	2.49E+02	NO:1
N-Nitrosodiphenylamine	86-30-6	1.50E+02	1.50E+02	1/ 130	3.50E+02	1.50E+02	0.00E+00	3.56E+05	NO:1
Pentachlorophenol	87-86-5	1.80E+02	1.90E+02	2/ 133	1.34E+03	1.90E+02	0.00E+00	7.12E+03	NO:1
Phenanthrene	85-01-8	1.80E+01	1.00E+05	61/ 145	1.42E+03	1.42E+03	0.00E+00	0.00E+00	YES
Phenol	108-95-2	2.20E+04	2.20E+04	1/ 133	3.79E+02	3.79E+02	0.00E+00	1.87E+07	NO:1
Pyrene	129-00-0	1.90E+01	1.60E+05	69/ 145	1.28E+03	1.28E+03	0.00E+00	1.55E+06	NO:3
Volatile Organic Compounds (µg/kg)									
1,1,1-Trichloroethane	71-55-6	3.00E+00	1.10E+01	4/ 138	4.20E+00	4.20E+00	0.00E+00	5.72E+07	NO:1
1,2-cis-Dichloroethene (DCE)	156-59-2	2.37E-01	1.12E+03	11/ 13	3.04E+04	1.12E+03	0.00E+00	2.04E+06	NO:3
1,2-Dichloroethane	107-06-2	1.00E+00	1.00E+00	1/ 141	4.12E+00	1.00E+00	0.00E+00	6.29E+04	NO:1
1,2-Dichloroethene	540-59-0	4.33E-01	1.16E+03	12/ 148	6.48E+00	6.48E+00	0.00E+00	1.84E+06	NO:3
1,2-trans-Dichloroethene	156-60-5	3.61E+01	4.38E+02	2/ 16	6.82E+03	4.38E+02	0.00E+00	4.09E+06	NO:3
2-Butanone	78-93-3	1.00E+00	2.10E+01	11/ 140	9.60E+00	9.60E+00	0.00E+00	1.23E+08	NO:3
2-Hexanone	591-78-6	3.00E+00	6.10E+01	3/ 138	8.66E+00	8.66E+00	0.00E+00	0.00E+00	NO:1
4-Methyl-2-pentanone	108-10-1	6.00E-01	2.00E+01	5/ 138	8.49E+00	8.49E+00	0.00E+00	1.64E+07	NO:1
Acetone	67-64-1	3.00E+00	2.10E+02	61/ 136	2.20E+01	2.20E+01	0.00E+00	1.84E+08	NO:3
Acetonitrile	75-05-8	6.70E+01	6.70E+01	1/ 20	7.99E+01	6.70E+01	0.00E+00	0.00E+00	YES
Acrylonitrile	107-13-1	8.00E+00	8.00E+00	1/ 23	1.93E+02	8.00E+00	0.00E+00	1.06E+04	NO:1
Benzene	71-43-2	1.00E+00	2.00E+00	2/ 159	4.14E+00	2.00E+00	0.00E+00	1.04E+05	NO:1
Carbon Disulfide	75-15-0	3.00E+00	9.00E+00	2/ 138	4.37E+00	4.37E+00	0.00E+00	2.04E+07	NO:1
Carbon Tetrachloride	56-23-5	2.00E+00	2.00E+00	1/ 141	4.32E+00	2.00E+00	0.00E+00	4.40E+04	NO:1
Chlorobenzene	108-90-7	2.00E+00	2.00E+00	1/ 141	4.11E+00	2.00E+00	0.00E+00	4.09E+06	NO:1
Chloromethane	74-87-3	6.00E+00	6.00E+00	1/ 138	6.45E+00	6.00E+00	0.00E+00	0.00E+00	NO:1
Dichloromethane (Methylene Chloride)	75-09-2	1.00E+00	1.40E+03	88/ 138	2.76E+01	2.76E+01	0.00E+00	7.63E+05	NO:3
Ethylbenzene	100-41-4	8.00E-01	1.70E+01	8/ 156	4.08E+00	4.08E+00	0.00E+00	2.04E+07	NO:3
FREON-113	76-13-1	2.00E+00	2.00E+00	1/ 37	6.54E+00	2.00E+00	0.00E+00	6.13E+09	NO:1
Naphthalene	91-20-3	4.50E+01	4.50E+03	10/ 145	7.11E+02	7.11E+02	0.00E+00	1.24E+06	NO:3
Styrene	100-42-5	6.00E-01	2.00E+00	4/ 138	4.26E+00	2.00E+00	0.00E+00	4.09E+07	NO:1
Tetrachloroethene (PCE)	127-18-4	2.58E-01	2.54E+03	18/ 154	8.96E+00	8.96E+00	0.00E+00	1.06E+04	NO:3
Toluene	108-88-3	5.70E-01	7.00E+01	23/ 156	4.36E+00	4.36E+00	0.00E+00	4.09E+07	NO:3
Trichloroethylene (TCE)	79-01-6	2.81E-01	9.52E+03	22/ 154	9.64E+00	9.64E+00	0.00E+00	1.43E+04	NO:3
Trichloromethane (Chloroform)	67-66-3	3.00E-01	2.00E+00	8/ 141	4.01E+00	2.00E+00	0.00E+00	2.04E+06	NO:3
Vinyl Chloride	75-01-4	3.86E-01	6.82E+01	5/ 154	9.14E+00	9.14E+00	0.00E+00	3.82E+03	NO:1
Xylenes, Total	1330-20-7	3.00E-01	1.50E+02	12/ 156	4.56E+00	4.56E+00	0.00E+00	4.09E+07	NO:3
Radionuclides (pCi/g)									
Actinium-227 +L***	14952-40-0L	3.80E-02	2.65E+00	206/2160	2.64E-01	2.64E-01	1.10E-01	5.02E-01	YES
Actinium-228	14331-83-0	3.80E-05	2.48E+00	998/1309	6.69E-01	6.69E-01	0.00E+00	2.01E-01	NO:6
Americium-241	14596-10-2	3.00E-02	3.36E+01	209/2258	1.07E-01	1.07E-01	0.00E+00	9.93E+00	YES
Bismuth-207	13982-38-2	1.00E-02	1.53E-01	7/1562	3.57E-02	3.57E-02	0.00E+00	1.29E-01	NO:1
Bismuth-210M	BI-210M	9.70E-02	2.41E+00	30/1518	5.06E-02	5.06E-02	0.00E+00	8.67E-01	NO:1
Bismuth-212	14913-49-6	5.30E-01	2.40E+00	36/ 37	1.48E+00	1.48E+00	0.00E+00	1.03E+00	NO:6
Bismuth-214 ****	14733-03-0	2.81E-05	1.97E+00	1366/1381	6.18E-01	6.18E-01	1.20E+00	1.22E-01	NO:4
Cesium-137	10045-97-3(+D)	1.00E-02	1.40E+00	253/2281	5.61E-02	5.61E-02	4.20E-01	3.56E-01	NO:4
Cobalt-60	10198-40-0	1.00E-02	1.01E+00	33/2245	5.15E-02	5.15E-02	0.00E+00	7.35E-02	NO:1
Lead-210 +D ****	14255-04-0(+D)	2.40E-01	1.17E+01	374/2066	1.13E+00	1.13E+00	1.20E+00	1.19E+00	NO:4
Lead-212	15092-94-1	3.44E-05	2.67E+00	1400/1406	6.51E-01	6.51E-01	1.50E+00	1.73E+00	NO:4
Lead-214 ****	15067-28-4	2.10E-01	1.32E+00	480/ 482	5.99E-01	5.99E-01	1.20E+00	9.29E-01	NO:4
Neptunium-237	13994-20-2(+D)	2.00E-02	2.40E-01	4/ 4	3.16E+05	2.40E-01	0.00E+00	1.08E+00	NO:3
Plutonium-238	13981-16-3	4.74E-03	8.44E+03	2473/4317	2.59E+01	2.59E+01	1.30E-01	1.13E+01	YES
Plutonium-239	15117-48-3	0.00E-03	1.24E-01	2/ 4	4.77E+03	1.24E-01	0.00E+00	1.12E+01	NO:3
Plutonium-239/240	OER-100-70	3.30E-03	2.01E+01	780/2330	6.02E-02	6.02E-02	1.80E-01	1.11E+01	NO:4
Plutonium-242	13982-10-0	1.40E-01	5.50E-01	4/ 5	2.78E+02	5.50E-01	0.00E+00	1.17E+01	NO:3
Potassium-40	13966-00-2	1.32E-03	4.60E+01	1488/1471	1.88E+01	1.88E+01	3.70E+01	1.12E+00	NO:4
Radium-224	13233-32-4	2.30E-01	2.50E+00	8/ 8	1.97E+00	2.50E+00	1.50E+00	5.47E+00	NO:3
Radium-226	13982-63-3(+D)	2.81E-05	3.91E+00	2124/2249	7.96E-01	7.96E-01	2.00E+00	1.05E-01	NO:4
Radium-228 +L	15262-20-1L	2.40E-01	2.48E+00	327/ 483	7.00E-01	7.00E-01	0.00E+00	6.92E-02	YES
Strontium-90	10098-97-2(+D)	4.60E-01	1.62E+00	14/ 118	5.55E-01	5.55E-01	7.20E-01	1.50E+01	NO:3
Thallium-208	14913-50-9	4.70E-02	5.70E-01	428/ 430	2.61E-01	2.61E-01	0.00E+00	5.18E-02	NO:6
Thorium-227	15623-47-9	2.00E-02	6.00E-01	48/ 53	3.07E-01	3.07E-01	0.00E+00	2.17E+00	NO:3
Thorium-228 +L	14274-82-9L	3.85E-02	2.50E+01	2272/2291	7.96E-01	7.96E-01	1.50E+00	1.14E-01	NO:4
Thorium-230	14269-63-7(+D)	5.00E-02	5.23E+00	2281/2600	1.15E+00	1.15E+00	1.90E+00	9.58E-02	NO:4
Thorium-232	7440-29-1(+D)	5.60E-02	3.77E+01	2606/4290	7.52E-01	7.52E-01	1.40E+00	6.88E-02	NO:4
Thorium-232 Daughters (PCI/G)	7440-29-1	4.10E-01	4.90E-01	2/ 2	0.00E+00	4.90E-01	1.40E+00	0.00E+00	NO:2

Table 10

Identification of Constituents of Potential Concern for the Site Employee Exposed to Surface Soil in Parcel 8

Analyte (SRC)	CAS Number	Minimum Concentration	Maximum Concentration	Detection Frequency	95% UCL	EPC	Background Value	RBGV	COPC?
Thorium-234	15065-10-8	6.26E-01	5.41E+00	9/ 9	3.14E+00	5.41E+00	0.00E+00	2.58E+01	NO:3
Tritium	10028-17-8p	6.80E-02	8.95E+02	292/ 438	5.43E+01	5.43E+01	1.60E+00	1.45E+04	NO:3
Uranium-233/234	**13966-29-5**	**4.47E-01**	**8.13E-01**	**12/ 12**	**6.86E-01**	**8.13E-01**	**0.00E+00**	**3.52E-01**	**YES**
Uranium-234	13966-29-5	2.01E-01	1.26E+01	309/ 310	8.97E-01	8.97E-01	1.10E+00	1.97E+01	NO:3
Uranium-235	15117-96-1(+D)	3.00E-03	1.02E+00	188/1318	4.01E-01	4.01E-01	1.10E-01	1.55E+00	NO:3
Uranium-235/236	15117-96-1	4.82E-02	4.82E-02	1/ 4	2.02E-01	4.82E-02	0.00E+00	3.32E-01	NO:3
Uranium-238 +L	7440-61-1L	1.10E-01	1.10E+02	372/1421	8.41E-01	8.41E-01	1.20E+00	9.36E-02	NO:4

CAS - Chemical Abstract Service
COPC - Constituents of Potential Concern
EPC - Exposure Point Concentration
mg/kg - milligram per kilogram
ug/kg - microgram per kilogram
pCi/g - picocurie per gram
RBGV - Risk Based Guideline Value
UCL - Upper Confidence Limit
+D - Plus daughters up to the next long-lived daughter
+L - Includes long-lived daughters.

NO:1 - <5% Detects
NO:2 - Max<Background
NO:3 - Max< Risk Based Guideline Value
NO:4 - EPC< Background
NO:5 Essential Human Nutrients
NO:6 Part of a Chain that has members above that are COPCs
*** Ac-227 background level assumes secular equilibrium with U235/236.
**** Pb-210, Pb-214 and Bi-214 background levels assume secular equilibrium with U-238.
Bold text indicates COPCs selected

Lithium note: The RREM background value for lithium is 28 mg/kg and not 0.00 mg/kg as presented in this table, however, since the analyte would still become a COPC, the value in the table was not modified.

- - - not applicable, not available, or not calculated due to insufficient toxicity data

Background values are base on the Operable Unit 9 Background Soils Investigation Chemistry Report (DOE 1994) or, in the case of nuclides with short half lives (Ac-227 Pb-210, and Pa-231) are based on the parent nuclide background and assumption of equilibrium with the parent nuclide.

Ra-228 note: A background value has not been calculated for Ra-228 and why none is provided in the table above. However, if Ra-228's parent nuclide background is considered (Th-232 at 1.4 pCi/g), Ra-228 would not be brought forward as a COPC. To be consistent with previous RREs, Ra-228 was presented with no background value and was brought forward as a COPC

Table 11: Building Analysis Summary

	Asbestos	Lead	Radon	Radiological Surveys	PCBs
Building 2	Present, No remediation needed	None identified	No abatement required	N/A	May be present in flourescent lamp ballasts
Building 28	Present, No remediation needed	Assumed Present, No remediation needed	No abatement required	Met surface contamination guidelines	None identified
Building 45	Present, No remediation needed	Assumed Present, No remediation needed	No abatement required	Met surface contamination guidelines	May be present in flourescent lamp ballasts
Building 61	Unlikely to be present	None identified	No abatement required	Met surface contamination guidelines	None identified
Building 63	Present, No remediation needed	Unlikely to be present	No abatement required	Met surface contamination guidelines	None identified
Building 126	Unlikely to be present	Unlikely to be present	No abatement required	Met surface contamination guidelines	May be present in flourescent lamp ballasts
Building COS	None identified	Unlikely to be present	No abatement required	Met surface contamination guidelines	May be present in flourescent lamp ballasts
Building OSE	Unlikely to be present	Unlikely to be present	No abatement required	Met surface contamination guidelines	None identified
Building OSW	Present, No remediation needed	None identified	No abatement required	Met surface contamination guidelines	May be present in flourescent lamp ballasts
Building T	Present, No remediation needed	Assumed Present, No remediation needed	No abatement required	Met surface contamination guidelines	None identified

APPENDIX C

Legal Description of Parcels 6, 7, and 8

The contents of the appendix are:

Description of Parcel 6

Description of Parcel 7

Description of Parcel 8

PARCEL 6
LEGAL DESCRIPTION

Exhibit "A"
DESCRIPTION OF
13.636 Acres
Parcel 6
located in
Section 30 and 36, Town 2, Range 5, M.Rs.
City of Miamisburg, Montgomery County, Ohio

Situate in Section 30 and 36, Town 2, Range 5, M.Rs., City of Miamisburg, County of Montgomery, State of Ohio, ***being part of a 87.28 acre tract conveyed to the United States of America, as recorded in Deed Book Volume 1214, Page 12*** of the Deed Records of Montgomery County, Ohio, said 87.28 acre tract being comprised of a 59.75 acre tract, also a 19.40 acre tract, also a 9.97 acre tract, also a 0.78 acre tract and a 0.78 acre tract all known as Lot Numbered 2259 of the consecutive numbered lots of the City of Miamisburg, ***also being part of a 33.11 acre tract conveyed to the United States of America, as recorded in Deed Book Volume 1246, Page 45*** of the Deed Records of Montgomery County, Ohio, said 33.11 acre tract being known as Lot Numbered 2290 of the consecutive numbered lots of the City of Miamisburg, ***also being part of a 1.61 acre tract conveyed to the United States of America, as recorded in Deed Book Volume 1256, Page 179,*** of the Deed Records of Montgomery County, Ohio, said 1.61 acre tract being known as Lot Numbered 2290 of the consecutive numbered lots of the City of Miamisburg, ***being a new division of 13.635 acres from said 87.28 acre tract, 33.11 acre tract, and all the remainder of said 1.61 acre tract*** and being more fully bounded and described as follows:

Commencing at a "DOE" concrete monument found disturbed, said monument being the northwest corner of Section 30, said monument being the northeast corner of Section 36, said monument also being the northeasterly corner of a 6.63 acre tract (by deed) conveyed to the City of Miamisburg, Ohio, as recorded in Deed Book Volume 594, Page 410 of the Deed Records of Montgomery County, Ohio; thence with the east line of said City of Miamisburg 6.63 acre tract, the east line of Section 36 and the west line of Section 30, South 05° 16' 42" West, a distance of 130.25 feet to a point, witness a 1" pinched top pipe found, South 65° 36' 29" West, 1.28 feet, said pipe being the northwest corner of a 14.288 acre tract conveyed to Miamisburg Mound Community Improvement Corporation, as recorded in Deed Microfiche No. 99-0852B11 of the Deed Records of Montgomery County, Ohio, said 14.288 acre tract known as Parcel "H" of the recorded Mound Surveys, said 14.288 acre tract also known as Part of Lot Numbered 2259 of the consecutive numbered lots of the City of Miamisburg, Ohio, reference previous survey by HLS Surveyors & Engineers as recorded in Montgomery County Engineer's Record of Land Surveys Volume 1999, Page 0326, said pipe also being the northeasterly corner of a 4.805 acre tract conveyed to Miamisburg Mound Community Improvement Corporation, as recorded in Deed Microfiche No. _____ of the Deed Records of Montgomery County, Ohio, said 4.805 acre tract known as Parcel 3 of the recorded Mound Surveys, said 4.805 acre tract also known as Part of Lot Numbered 2259 and 2290 of the consecutive numbered lots of the City of Miamisburg, Ohio, reference previous survey by HLS Surveyors & Engineers as recorded in the Montgomery County Engineer's Record of Land Surveys, Volume 1999, Page 140; thence from said point with the northwesterly line of said 4.805 acre tract known as Parcel 3 and the southeasterly line of said City of Miamisburg 6.63 acre tract, South 65° 36' 29" West, a distance of 479.79 feet to a 5/8" capped "Schram" iron pin found, said pin set per previous survey reference, said iron pin being a westerly corner of said 4.805 acre tract known as Parcel 3, said iron pin being the **True Point of Beginning** of the hereinafter described new division of 13.636 acres;

Thence with a common boundary with said 4.805 acre tract known as Parcel 3 on the following thirteen (13) courses,

1) **South 24° 26' 30" East**, passing a point on the common boundary line of said United States of America 1.61 acre tract and said United States of America 87.28 acre tract at 87.13 feet, in all a distance of **308.52 feet to a 2-1/2" mag nail set;**
2) **Thence, South 65° 33' 30" West**, a distance of **7.67 feet to a railroad spike found**, said spike set per previous survey reference;
3) **Thence, South 24° 26' 30" East**, a distance of **24.31 feet to a 5/8" capped "LeRoy" iron pin found**, said iron pin per previous survey reference;
4) **Thence, North 65° 11' 32" East**, a distance of **268.32 feet to a cross notch found**, said cross notch set per previous survey reference;
5) **Thence, North 24° 54' 45" West**, a distance of **59.55 feet to a railroad spike found**, said spike set per previous survey reference;
6) **Thence, North 65° 05' 15" East**, a distance of **34.64 feet to a railroad spike found**, said spike set per previous survey reference;
7) **Thence, South 59° 41' 15" East**, passing a point on the east line of Section 36 and the west line of Section 30 at 29.11 feet, in all a distance of **32.00 feet to a railroad spike found**, said spike set per previous survey reference;
8) **Thence, South 23° 47' 05" East**, a distance of **359.64 feet to a railroad spike found**, said spike set per previous survey reference;
9) **Thence, North 66° 03' 34" East**, a distance of **39.97 feet to a railroad spike found**, said spike set per previous survey reference;
10) **Thence, South 50° 06' 58" East**, a distance of **22.74 feet to a 5/8" capped "Schram" iron pin found**, said iron pin per previous survey reference;
11) **Thence, North 64° 44' 27" East**, a distance of **98.64 feet to a 5/8" capped "Schram" iron pin found**, said iron pin per previous survey reference;
12) **Thence, North 23° 05' 32" West**, a distance of **17.73 feet to a 5/8" capped "Schram" iron pin found**, said iron pin per previous survey reference;
13) **Thence, North 40° 10' 30" East**, a distance of **91.47 feet to a 5/8" capped "LeRoy" iron pin found**, said iron pin per previous survey reference, said iron pin lying in the southwesterly line of said Miamisburg Mound Community Improvement Corporation 14.288 acre tract, said iron pin lying in a radial line having a radius to the left and a radial bearing of North 36° 23' 40" East;

Thence with the southwesterly and southerly line of said Miamisburg Mound Community Improvement Corporation 14.288 acre tract on the following two (2) courses,

1) with a curve to the left having a delta angle of 30° 15' 10", a radius of 360.67 feet, an arc length of 190.44 feet and a chord bearing and distance of South 68° 43' 56" East, 188.23 feet to a 5/8" capped "LeRoy" iron pin found, said iron pin per previous survey reference, said iron pin being the point of tangency of said curve;
2) Thence, South 83° 51' 21" East, a distance of 25.00 feet to a 5/8" iron pin set, said iron pin being the northeasterly corner of the herein described new division;

Thence with a new division line through said United States of America 87.28 acre tract and said United States of America 33.11 acre tract on the following eighteen (18) courses,

1) **South 40° 32' 20" West, a distance of 86.35 feet to a 5/8" iron pin set,** said iron pin being a non-tangential point at the beginning of a curve to the left and having a radial bearing of South 10° 26' 59" East;

2) **Thence** with a curve to the left **having a delta angle of 42° 00' 18", a radius of 223.57 feet, an arc length of 163.90 feet and a chord bearing and distance of South 58° 32' 52" West, 160.26 feet to a 5/8" iron pin set;**

3) **Thence, South 37° 32' 43" West, a distance of 70.00 feet to a 5/8" iron pin set;**

4) **Thence, South 31° 32' 43" West, a distance of 65.00 feet to a 5/8" iron pin set;**

5) **Thence, South 27° 32' 43" West, a distance of 60.00 feet to a 5/8" iron pin set at a point of curvature to the right;**

6) **Thence** with a curve to the right **having a delta angle of 20° 18' 39", a radius of 349.79 feet, an arc length of 124.00 feet and a chord bearing and distance of South 37° 42' 02" West, 123.35 feet to a 5/8" iron pin set;**

7) **Thence, South 47° 51' 21" West, a distance of 162.02 feet to a 5/8" iron pin set;**

8) **Thence, North 88° 48' 49" West, a distance of 34.05 feet to a cross notch set in a concrete walk;**

9) **Thence, North 52° 01' 06" West, a distance of 45.26 feet to a 5/8" iron pin set;**

10) **Thence, North 15° 43' 55" East, a distance of 99.81 feet to a 5/8" iron pin set;**

11) **Thence, North 23° 23' 40" West,** passing a point on the east line of Section 36 and the west line of Section 30 at 143.57 feet, reference from said point a railroad spike found, South 05° 16' 42" West, 4400.37 feet, said spike being the south section corner of Section 30 and 36, also a concrete monument found, disturbed, North 05° 16' 42" East, 1006.61 feet, said concrete monument being the north corner of Section 30 and 36, in all a distance of **349.18 feet to a 5/8" iron pin set;**

12) **Thence, South 65° 40' 00" West, a distance of 328.05 feet to a 5/8" iron pin set;**

13) **Thence, South 65° 00' 16" West,** passing a point on the common boundary line of said United States of America 33.11 acre tract and said United States of America 87.28 acre tract at 137.10 feet, in all a distance of **186.04 feet to a 5/8" iron pin set;**

14) **Thence, North 24° 22' 42" West,** passing a point on the common boundary line of said United States of America 33.11 acre tract and said United States of America 87.28 acre tract at 26.80 feet, in all a distance of **206.00 feet to a 5/8" iron pin set;**

15) **Thence, South 65° 37' 18" West,** passing a point on the common boundary line of said United States of America 33.11 acre tract and said United States of America 87.28 acre tract at 69.30 feet, in all a distance of **123.40 feet to a 5/8" iron pin set;**

16) **Thence, North 24° 17' 30" West, a distance of 124.98 feet to a 5/8" iron pin set;**

17) **Thence, South 65° 44' 19" West, a distance of 138.10 feet to a 5/8" iron pin set;**

18) **Thence, North 24° 15' 41" West, a distance of 127.04 feet to a 5/8" iron pin set,** said iron pin lying in the northwesterly line of said United States of America 33.11 acre tract, said iron pin lying in the southeasterly line of the Consolidated Rail Corporation lands as conveyed in Deed Microfiche No. 78-502A01 of the Deed Records of Montgomery County, Ohio, said common boundary line being an curve to the right having a radial bearing of South 60° 51' 35" East;

Thence with the northwesterly line of said United States of America 33.11 acre tract and the southeasterly line of said Consolidated Rail Corporation lands with a curve to the right **having a delta angle of 06° 49' 51", a radius of 3519.83 feet, an arc length of 419.64 feet and a chord bearing and distance of North 32° 33' 20" East, 419.39 feet to a "DOE" concrete monument found,** said monument being the northwest corner of said United States of America 33.11 acre tract;

Thence with the north line of said United States of America 33.11 acre tract, **South 84° 14' 50" East**, a distance of **102.31 feet to a "DOE" concrete monument found**, said monument being the northeast corner of said United States of America 33.11 acre tract, said monument lying in the west line of said City of Miamisburg 6.63 acre tract;

Thence with the east line of said United States of America 33.11 acre tract and the west line of said City of Miamisburg 6.63 acre tract, **South 05° 37' 45" West**, a distance of **90.34 feet to a "DOE" concrete monument found**, said monument being the northwest corner of said United States of America 1.61 acre tract, said monument being the southwest corner of said City of Miamisburg 6.63 acre tract;

Thence with the northwesterly line of said United States of America 1.61 acre tract and the southeasterly line of said City of Miamisburg 6.63 acre tract, **North 65° 36' 29" East**, a distance of **330.66 feet to the True Point of Beginning**, containing **13.636 acres**, more or less, of which ***4.173 acres lying in Section 30, 9.463 acres lying in Section 36,*** of which ***4.173 acres being part of Lot Numbered 2259, 9.463 acres being part of Lot Numbered 2290, 6.431 acres being part of said United States of America 87.28 acre tract, 2.320 acres being part of said United States of America 33.11 acre tract and 0.712 acres being part of said United States of America 1.61 acre tract***, all of the consecutive numbered lots of the City of Miamisburg, Ohio, and being subject to all easements, highways and right of ways of record.

Bearing basis established as Grid North by GPS observation August 7th & 8th, 2002 at Latitude N39° 38' 25.81", Longitude W084° 17' 28.09" (Coast & Geodetic Survey Monument #G-139, 1947); Ohio State Plane Coordinate system, Ohio South Zone 3402 (NAD 83), True North being 01° 08' 11" east of Grid North.

This description prepared from an actual field survey performed under my direct supervision, Timothy W. Schram, Sr., Registered Professional Surveyor number 7299 of the State of Ohio, and that all monuments referenced herein and placed on the ground represents the boundaries of the herein described tract, and based on a Plat of Survey as recorded in the Montgomery County Engineer's Record of Land Surveys in Record Volume number **2004**, Page **0309**.

Timothy W. Schram, Sr., Regist. Prof. Surveyor No. 7299
of the State of Ohio, June 1, 2004.

F/040012 Mound Parcel 6

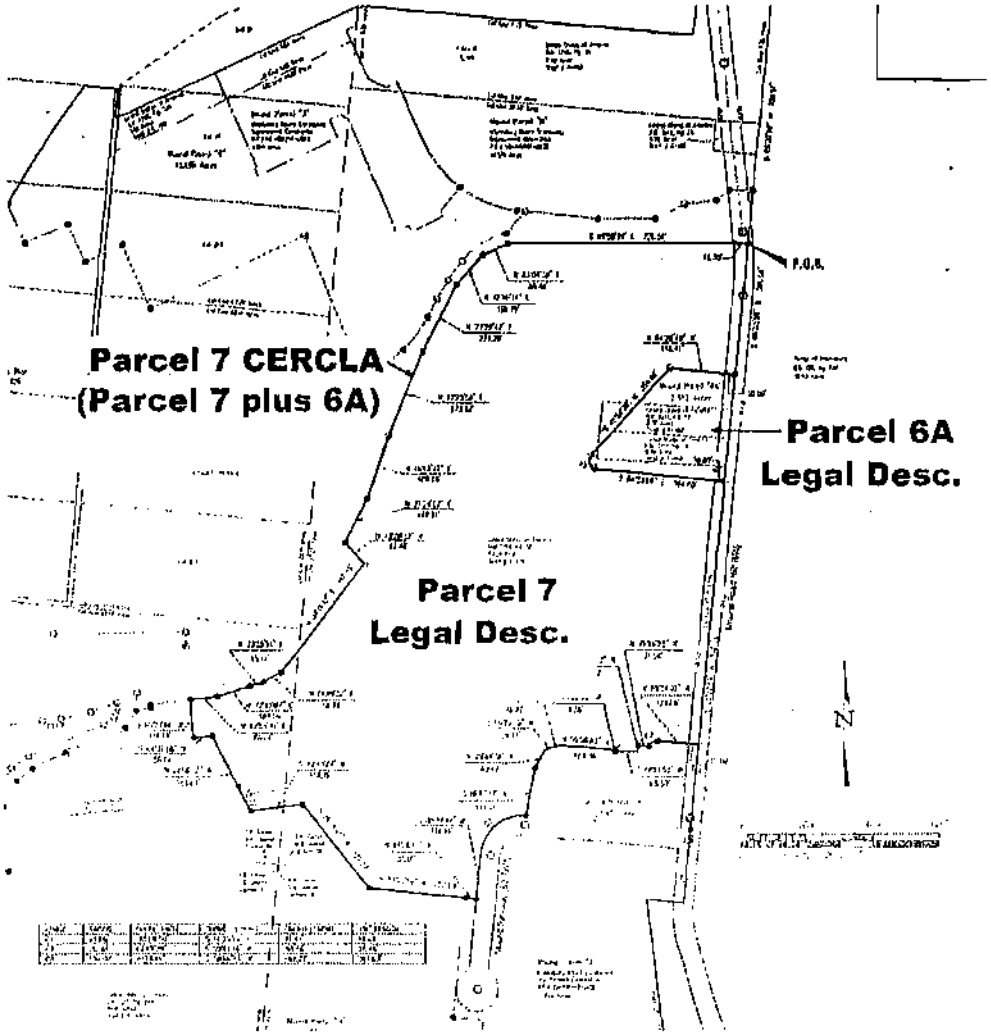
STATE OF OHIO
TIMOTHY W. SCHRAM, SR. 7299
REGISTERED PROFESSIONAL LAND SURVEYOR

JOSEPH LITVIN, P.E., P.S.
MONTGOMERY COUNTY ENGINEER
DAYTON, OHIO
APPROVED
BY EJM DATE 7/28/04
FILE NO. 2004 0309

PARCEL 7
LEGAL DESCRIPTION

Note:

For the purposes of CERCLA and this Proposed Plan, the Parcel 7 boundary is defined in *Figure 2 Location of Parcels Within Site Boundary*. It should be noted however that the CERCLA Parcel 7 as defined in Figure 2 contains a small parcel of land (2.352 Acres) previously identified as "Parcel 6A". Although not shown in Figure 2, Parcel 6A was surveyed separate from the legal survey of Parcel 7 because it contains the DOE Legacy Management Building which may or may not be transferred in the future. So as to avoid any confusion on this matter, the legal description of Parcel 7 together with the legal description of Parcel 6A comprise the CERCLA Parcel 7 (see below).



Floyd Browne Group

Description of 42.307 Acres

Situated in the State of Ohio, County of Montgomery, City of Miamisburg, being part of Section 30 and Section 36, Fractional Township 2, Range 5, Miami Rivers Survey, being 40.385 acres out of Section 30, being 1.922 acres out of Section 36, being part of City of Miamisburg Lot No. 2259 and Lot No. 2290, being 40.219 acres of land that lie over and across an 87.28 acre tract of land described in deed to the United States of America of record in Deed Book 1214, Page 12, being 1.782 acres of land that lie over and across a 17.68 acre tract of land described in deed to the United States of America of record in Deed Book 1214, Page 248, being 0.140 acres of land that lie over and across a 20.46 acre tract of land described in deed to the United States of America of record in Deed Book 1215, Page 347, being 0.144 acres of land that lie over and across a 0.78 acre tract of land described in deed to the United States of America of record in Deed Book 1214, Page 17, being 0.022 acres of land that lie over and across a 0.78 acre tract of land described in deed to the United States of America of record in Deed Book 1214, Page 15, and being more particularly described as follows:

COMMENCING for reference at a concrete monument found at the northwest corner of said Section 30 and the northeast corner of said Section 36, being the northerly line of said Fractional Township 2, Range 5, and being the southerly line of Fractional Township 1, Range 6, Miami Rivers Survey;

Thence South 85°00'57" East with said Township line and the northerly line of said Section 30, a distance of 1249.65 feet to a point at the northeasterly corner of a 14.288 acre tract of land described in deed to Miamisburg Mound Community Improvement Corporation of record in Deed Microfiche No. 02-146504-0038;

Thence South 05°32'59" West with the easterly line of said 14.288 acre tract, a distance of 731.91 feet to an iron pin set on the westerly line of a 42.63 acre tract of land as described in deed to the Village of Miamisburg of record in Deed Book 776, Page 581, being on the easterly line of said 87.28 acre tract, and being the **TRUE POINT OF BEGINNING** of the tract to be described;

Thence South 05°32'59" West with the westerly line of said 42.63 acre tract and the easterly line of said 87.28 acre tract, a distance of 389.54 feet to a surveyor's nail found on the centerline of Mound Road;

Thence crossing said 87.28 acre tract and both said 0.78 acre tracts with the following four (4) courses and distances:

1.) North 84°28'40" West, a distance of 198.41 feet to an iron pin set;

2.) South 41°54'30" West, a distance of 354.02 feet to an iron pin set at a point of curvature;

3.) With a curve to the left having a radius of 24.86 feet, a central angle of 113°00'50", a chord bearing of South 14°35'55" East, a chord length of 41.47 feet, and an arc length of 49.04 feet to an iron pin set;

4.) South 84°28'09" East, a distance of 394.00 feet to a surveyor's nail set on the centerline of said Mound Road;

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www.floydbrowne.com ■ 1.800.325.7647

Thence South 05°32'59" West with the westerly line of said 42.63 acre tract, the easterly line of said 87.28 acre tract, and the centerline of said Mound Road, a distance of 790.36 feet to a surveyor's nail set;
Thence crossing said 87.28 acre tract with the following eleven (11) courses and distances:

1.) North 85°24'02" West, a distance of 124.08 feet to an iron pin found at a point of curvature;

2.) With a curve to the left having a radius of 26.90 feet, a central angle of 69°49'29", a chord bearing of South 59°41'14" West, a chord length of 30.79 feet, and an arc length of 32.78 feet to an iron pin found;

3.) North 85°16'52" West, a distance of 31.54 feet to an iron pin found;

4.) South 08°33'12" West, a distance of 16.13 feet to a cross notch found;

5.) South 88°51'53" West, a distance of 68.53 feet to a surveyor's nail found;

6.) North 00°39'23" West, a distance of 4.38 feet to a railroad spike found;

7.) North 85°56'03" West, a distance of 168.86 feet to an iron pin set;

8.) South 85°36'28" West, a distance of 16.02 feet to an iron pin set;

9.) South 69°32'50" West, a distance of 26.94 feet to an iron pin set;

10.) South 29°42'35" West, a distance of 62.82 feet to an iron pin found;

11.) South 10°37'07" West, a distance of 144.91 feet to an iron pin found on the northerly line of a 12.429 acre tract of land as described in deed to Miamisburg Mound Community Improvement Corporation of record in Deed Microfiche No. 99-141468-0006 and being the northerly right of way of Mound Parkway;

Thence with the westerly line of said 12.429 acre tract and the westerly right of way line of said Mound Parkway the following two (2) courses and distances:

1.) With a curve to the left having a radius of 130.00 feet, a central angle of 89°18'19", a chord bearing of South 50°16'29" West, a chord length of 182.73 feet, and an arc length of 202.63 feet to an iron pin set;

2.) South 05°37'19" West, a distance of 131.44 feet to an iron pin found;

Thence North 84°26'17" West with a northerly line of said 12.429 acre tract, a distance of 35.16 feet to an iron pin found;

Thence crossing said 87.28 acre tract with the following three (3) courses and distances:

1.) North 84°29'56" West, a distance of 292.60 feet to an iron pin found;

2.) North 39°18'45" West, a distance of 324.29 feet to an iron pin found;

3.) South 82°43'27" West, a distance of 158.71 feet to an iron pin found in said 20.46 acre tract;

Thence crossing into and through said 17.68 acre tract with the following eight (8) courses and distances:

1.) North 27°08'32" West, a distance of 253.63 feet to an iron pin found;

2.) South 84°32'08" West, a distance of 56.64 feet to an iron pin found;

3.) North 05°27'10" West, a distance of 114.14 feet to an iron pin found;

4.) North 82°55'39" East, a distance of 80.24 feet to an iron pin found;

5.) North 72°43'07" East, a distance of 103.56 feet to an iron pin found;

6.) North 73°35'51" East, a distance of 45.41 feet to an iron pin found;

7.) North 61°39'22" East, a distance of 58.74 feet to an iron pin found;

8.) North 38°11'13" East, a distance of 411.35 feet to an iron pin set in said 87.28 acre tract;

Thence crossing said 87.28 acre tract with the following eight (8) courses and distances:

1.) North 43°20'32" West, a distance of 87.40 feet to an iron pin found;

2.) North 27°28'02" East, a distance of 147.71 feet to an iron pin found;

3.) North 18°13'42" East, a distance of 198.86 feet to an iron pin set;

4.) North 22°25'51" East, a distance of 273.82 feet to an iron pin found;

5.) North 27°29'42" East, a distance of 224.29 feet to an iron pin found;

6.) North 42°10'34" East, a distance of 116.79 feet to an iron pin found;

7.) North 66°04'39" East, a distance of 86.46 feet to an iron pin found;

1.) South 89°50'28" East, a distance of 726.51 feet to the **TRUE POINT OF BEGINNING**, containing 42.307 acres of land, more or less.

Subject however to all easements, restrictions and rights-of-way of record, if any.

Basis of Bearing is the section line between Sections 30 and 36 being North 05°16'47" East as determined by GPS measurements between Montgomery County Monuments 1057 and 1058 and the Ohio State Plane Coordinate System, South Zone. All iron pins Set are 5/8" solid iron pins 30" in length with an orange plastic cap stamped "Floyd Browne Group".

The above description is based on and referenced to an exhibit prepared by Floyd Browne Group dated 06-12-06, attached hereto and made a part hereof.

All references are to the records of the Recorder's Office, Montgomery County, Ohio.

6/12/06

Maynard H. Thompson, P.S. Date
Professional Surveyor No. 7128

STATE OF OHIO
MAYNARD H. THOMPSON S-7128
REGISTERED PROFESSIONAL SURVEYOR

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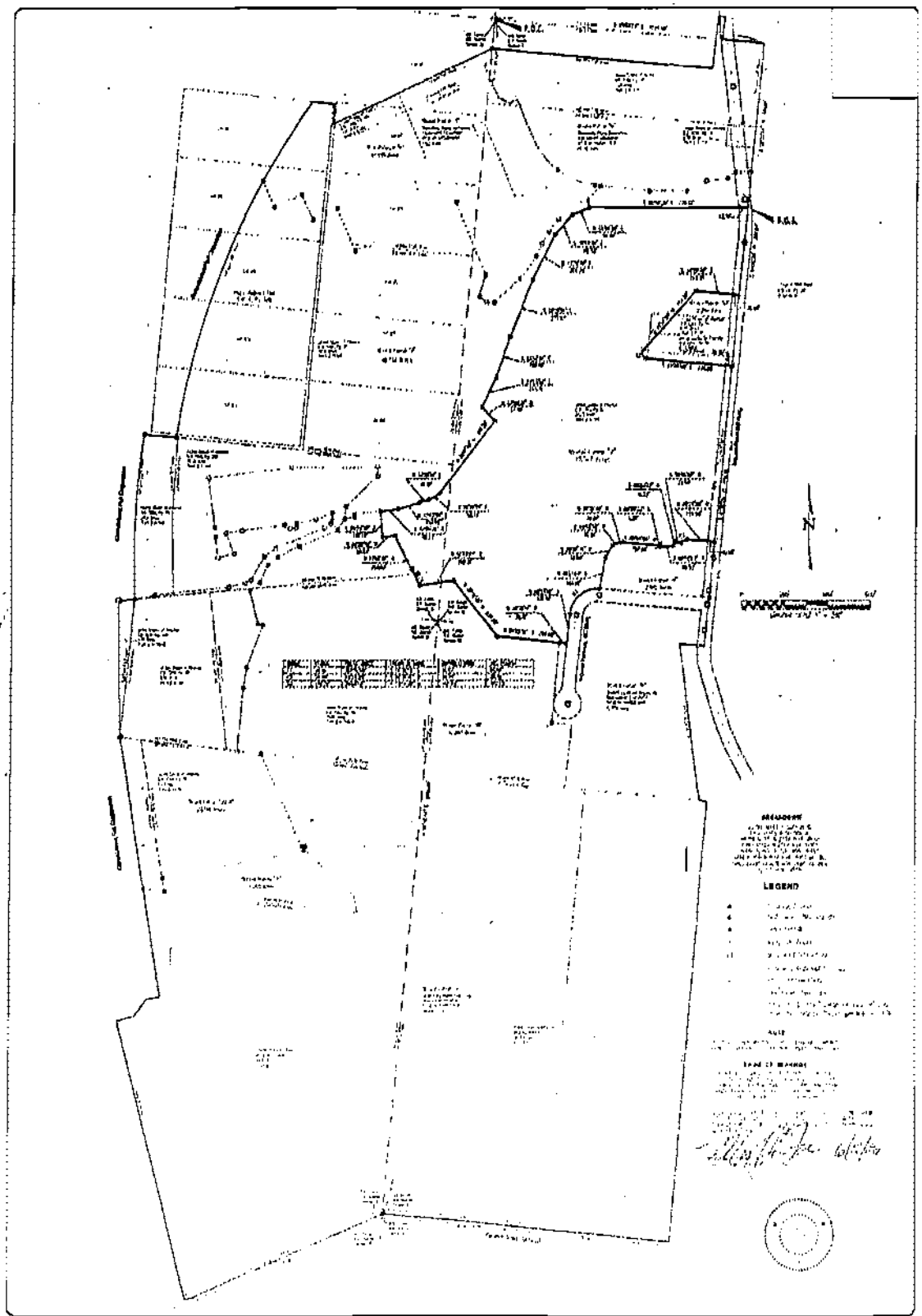

TERRAN CORPORATION
BOUNDARY SURVEY
MOUND ROAD
MIAMISBURG, OHIO

42.307 ACRES

D IV/2
K46-005-02.

Floyd Browne Group

Description of 3.320 Acres

Situate in the State of Ohio, County of Montgomery, City of Miamisburg, being part of Section 30, Township 2, Range 5, M.Rs., being 3.320 acres out of Section 30, being part of City of Miamisburg Lot Number 2259, being 0.637 acres of land that lie over and across a 0.78 acre tract of land described in deed to the United States of America of record in Deed Book 1214, Page 17, being 0.758 acres of land that lie over and across a 0.78 acre tract of land described in deed to the United States of America of record in Deed Book 1214, Page 15, being 1.925 acres of land that lie over and across an 87.28 acre tract of land described in deed to the United States of America of record in Deed Book 1214, Page 12, being Montgomery County Engineer Survey Record Number 2006-0269, and being more particularly described as follows:

COMMENCING for reference at a concrete monument found at the northwest corner of said Section 30 and the northeast corner of Section 36, being the northerly line of said Township 2, Range 5, and being the southerly line of Township 1, Range 6, M.Rs.;

Thence South 85°00'57" East with said Range line, the northerly line of City of Miamisburg Lot Number 2258, and the northerly line of said Section 30, a distance of 1249.65 feet to an iron pin set at the northeasterly corner of a 14.288 acre tract of land described in deed to Miamisburg Mound Community Improvement Corporation of record in Deed Instrument Record No. 02-146504;

Thence South 05°32'59" West with the easterly line of said 14.288 acre tract and the easterly line of said City Lot Number 2259, a distance of 1121.45 feet to a Mag nail set on the westerly line of a 42.63 acre tract of land as described in deed to the Village of Miamisburg of record in Deed Book 776, Page 581, passing a monument box found on the centerline of Mound Road (65 foot right of way) at a distance of 886.25 feet, being on the easterly line of said 87.28 acre tract, and being the **TRUE POINT OF BEGINNING** of the tract to be described;

Thence South 05°32'59" West with the centerline of said Mound Road, the westerly line of said 42.63 acre tract, the easterly line of said City Lot Number 2259, the easterly line of said 87.28 acre tract, and the easterly line of both said 0.78 acre tracts, a distance of 459.58 feet to a Mag nail set on the centerline of Mound Road, passing a Mag nail found at a distance of 324.29 feet;

Thence with a new division line though said 87.28 acre tract, said City Lot Number 2259, and both said 0.78 acre tracts with the following five (5) courses:

1.) North 84°28'09" West, a distance of 277.72 feet to an iron pin set, passing an iron pin set on the westerly right of way line of said Mound Road at a distance of 34.87 feet;

2.) North 05°31'51" East, a distance of 111.53 feet to a Mag nail set;

3.) North 84°28'09" West, a distance of 176.90 feet to a Mag nail set;

4.) North 41°54'30" East, a distance of 432.26 feet to a 5/8" iron pin found with a Schram cap, passing a 5/8" iron pin found at a distance of 77.95 feet;

5.) South 84°28'40" East, a distance of 198.41 feet, passing an iron pin set on the westerly right of way line of said Mound Road at a distance of 163.62

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feet, to the **TRUE POINT OF BEGINNING,** containing 3.320 acres of land, more or less.

Subject however to all easements, restrictions and rights-of-way of record, if any.

Basis of Bearing is the section line between Sections 30 and 36 being North 05°16'47" East as determined by GPS measurements between Montgomery County Monuments 1057 and 1058 and the Ohio State Plane Coordinate System, South Zone. All iron pins set are 5/8" solid iron pins 30" in length with an orange plastic cap stamped "Floyd Browne Group".

The above description is based on and referenced to an exhibit prepared by Floyd Browne Group dated 09-12-06, attached hereto and made a part hereof.

All references are to the records of the Recorder's Office, Montgomery County, Ohio.

9/06/06

Maynard H. Thompson, P.S. Date
Professional Surveyor No. 7128

STATE OF OHIO
MAYNARD H. THOMPSON S-7128
REGISTERED PROFESSIONAL SURVEYOR

JOSEPH LITVIN, P.E., P.S
MONTGOMERY COUNTY ENGINEER
DAYTON, OHIO
APPROVED
BY _____ DATE _____
FILE NO. 2006-02694

PARCEL 8
LEGAL DESCRIPTION

Floyd Browne Group

Description of 45.247 Acres

Situated in the State of Ohio, County of Montgomery, City of Miamisburg, being part of Section 30 and Section 36, Fractional Township 2, Range 5, Miami Rivers Survey, being 5.297 acres out of Section 30, being 39.950 acres out of Section 36, being part of City of Miamisburg Lot No. 2259 and Lot No. 2290, being part of Lots Numbered 13, 14, 15, 16, 20, 21, 22, and 23 of the Philip Gebhart Plat of record in Plat Book Volume "A", Page 126, being 6.993 acres of land that lie over and across an 87.28 acre tract of land described in deed to the United States of America of record in Deed Book 1214, Page 12, being 7.878 acres of land that lie over and across a 17.68 acre tract of land described in deed to the United States of America of record in Deed Book 1214, Page 248, being 30.376 acres of land that lie over and across a 33.11 acre tract of land described in deed to the United States of America of record in Deed Book 1246, Page 45, and being more particularly described as follows:

COMMENCING for reference at a concrete monument found at the northwest corner of said Section 30 and the northeast corner of said Section 36, being the northerly line of said Fractional Township 2, Range 5, and being the southerly line of Fractional Township 1, Range 6, Miami Rivers Survey;

Thence South 85°00'57" East with said Township line and the northerly line of said Section 30, a distance of 1249.65 feet to a point at the northeasterly corner of a 14.288 acre tract of land described in deed to Miamisburg Mound Community Improvement Corporation of record in Deed Microfiche No. 02-146504-0038;

Thence South 05°32'59" West with the easterly line of said 14.288 acre tract, a distance of 572.24 feet to an iron pin set on the westerly line of a 42.63 acre tract of land as described in deed to the Village of Miamisburg of record in Deed Book 776, Page 581, being the southeasterly corner of said 14.288 acre tract, and being the **TRUE POINT OF BEGINNING** of the tract to be described;

Thence South 05°32'59" West with the westerly line of said 42.63 acre tract and the easterly line of said 87.28 acre tract, a distance of 159.67 feet to an iron pin set;

Thence crossing said 87.28 acre tract with the following nine (9) courses and distances:

1.) North 89°50'28" West, a distance of 726.51 feet to an iron pin found;

2.) South 66°04'39" West, a distance of 86.46 feet to an iron pin found;

3.) South 42°10'34" West, a distance of 116.79 feet to an iron pin found;

4.) South 27°29'42" West, a distance of 224.29 feet to an iron pin found;

5.) South 22°25'51" West, a distance of 273.82 feet to an iron pin set;

6.) South 18°13'42" West, a distance of 198.86 feet to an iron pin found;

7.) South 27°28'02" West, a distance of 147.71 feet to an iron pin found;

8.) South 43°20'32" East, a distance of 87.40 feet to an iron pin set;

9.) South 38°11'13" West, a distance of 411.35 feet to an iron pin found in said 17.68 acre tract;

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Thence crossing said 17.68 acre tract with the following thirty-three (33) courses and distances:

1.) South 61°39'22" West, a distance of 58.74 feet to an iron pin found;

2.) South 73°35'51" West., a distance of 45.41 feet to an iron pin found;

3.) South 72°43'07" West, a distance of 103.56 feet to an iron pin found;

4.) South 82°55'39" West, a distance of 80.24 feet to an iron pin found;

5.) South 82°58'13" West, a distance of 120.59 feet to an iron pin found;

6.) South 01°37'13" East, a distance of 10.31 feet to an iron pin found;

7.) South 80°04'06" West, a distance of 45.82 feet to an iron pin found;

8.) North 04°41'32" East, a distance of 53.96 feet to an iron pin set;

9.) North 46°26'35" East, a distance of 201.86 feet to an iron pin set;

10.) North 01°39'10" West, a distance of 41.56 feet to an iron pin set;

11.) South 89°28'55" West, a distance of 397.71 feet to an iron pin set;

12.) South 83°13'43" West, a distance of 387.72 feet to an iron pin set;

13.) South 07°27'35" East, a distance of 227.31 feet to an iron pin set;

14.) South 05°28'40" East, a distance of 44.09 feet to an iron pin set;

15.) South 07°58'24" East, a distance of 93.66 feet to an iron pin set;

16.) North 75°54'00" East, a distance of 78.91 feet to an iron pin set;

17.) North 24°27'29" West, a distance of 99.13 feet to an iron pin set;

18.) North 79°49'02" East, a distance of 75.88 feet to an iron pin set;

19.) North 82°54'26" East, a distance of 197.88 feet to an iron pin set;

20.) South 57°54'36" East, a distance of 29.12 feet to an iron pin set;

21.) North 81°50'07" East, a distance of 28.32 feet to an iron pin set;

22.) North 09°29'45" East, a distance of 17.42 feet to an iron pin set;

23.) North 77°13'35" East, a distance of 89.22 feet to an iron pin set;

24.) North 69°49'16" East, a distance of 84.57 feet to an iron pin set;

25.) South 06°55'42" West, a distance of 33.94 feet to a surveyor's nail set;

26.) South 19°27'18" West, a distance of 13.71 feet to an iron pin set;

27.) South 57°23'02" West, a distance of 36.99 feet to an iron pin set;

28.) South 67°15'25" West, a distance of 240.29 feet to an iron pin set;

29.) South 54°03'57" West, a distance of 63.19 feet to an iron pin set;

30.) South 29°43'09" West, a distance of 122.02 feet to an iron pin set;

31.) South 63°02'39" West, a distance of 31.36 feet to an iron pin set;

32.) South 76°52'04" West, a distance of 79.92 feet to an iron pin set;

33.) South 83°59'02" West, a distance of 347.69 feet to an iron pin set in said 33.11 acre tract;

Thence South 79°29'02" West crossing said 33.11 acre tract, a distance of 98.70 feet to an iron pin set on the easterly right of way line of the Consolidated Rail Corporation tract;

Thence with the easterly right of way line of said Consolidated Rail Corporation tract and the westerly line of said 33.11 acre tract the following three (3) courses and distances:

1.) With a curve to the right having a radius of 3669.83 feet, a central angle of 11°37'50", a chord bearing of North 03°16'21" East, a chord length of 743.66 feet, and an arc length of 744.94 feet to an iron pin found;

2.) South 84°41'06" East, a distance of 150.25 feet to an iron pin found;

3.) With a curve to the right having a radius of 3519.79 feet, a central angle of 19°53'33", a chord bearing of North 19°11'28" East, a chord length of 1215.90 feet, and an arc length of 1222.03 feet to an iron pin found on the westerly line of said 87.28 acre tract;

Thence crossing said 87.28 acre tract with the following five (5) courses and distances:

1.) South 24°05'45" East, a distance of 127.68 feet to an iron pin found;

2.) North 65°39'33" East, a distance of 138.18 feet to an iron pin found;

3.) South 24°14'27" East, a distance of 125.11 feet to an iron pin found;

4.) North 65°36'51" East, a distance of 123.37 feet to an iron pin found;

5.) South 24°21'20" East, a distance of 205.80 feet to an iron pin found in said 33.11 acre tract;

Thence crossing back into said 87.28 acre tract with the following twelve (12) courses and distances:

1.) North 65°25'37" East, a distance of 514.16 feet to an iron pin set;

2.) South 23°23'40" East, a distance of 349.34 feet to an iron pin found;

3.) South 15°42'36" West, a distance of 99.82 feet to an iron pin found;

4.) South 52°01'06" East, a distance of 45.16 feet to an iron pin set;

5.) South 88°48'49" East, a distance of 34.13 feet to an iron pin found;

6.) North 47°52'27" East, a distance of 162.00 feet to an iron pin found at a point of curvature;

7.) With a curve to the left having a radius of 349.79 feet, a central angle of 20°18'10", a chord bearing of North 37°43'22" East, a chord length of 123.30 feet, and an arc length of 123.95 feet to an iron pin found;

8.) North 27°34'17" East, a distance of 60.00 feet to an iron pin set;

9.) North 31°21'43" East, a distance of 64.96 feet to an iron pin set;

10.) North 37°32'43" East, a distance of 70.00 feet to an iron pin set at a point of curvature;

11.) With a curve to the right having a radius of 223.57 feet, a central angle of 42°00'18", a chord bearing of North 58°32'52" East, a chord length of 160.26 feet, and an arc length of 163.91 feet to an iron pin found;

12.) North 40°32'20" East, a distance of 86.52 feet to an iron pin set on the southerly line of said 14.288 acre tract;

Thence with the southerly line of said 14.288 acre tract the following six (6) courses and distances:

1.) South 83°55'13" East, a distance of 222.55 feet to an iron pin found;

2.) North 89°59'43" East, a distance of 173.01 feet to an iron pin found;

3.) North 63°47'11" East, a distance of 98.26 feet to an iron pin set;

4.) North 83°30'22" East, a distance of 97.43 feet to an iron pin found;

5.) North 51°47'30" East, a distance of 46.88 feet to an iron pin found;

6.) South 89°59'28" East, a distance of 72.24 feet to the **TRUE POINT OF BEGINNING**, containing 45.247 acres of land, more or less.

Subject however to all easements, restrictions and rights-of-way of record, if any.

Basis of Bearing is the section line between Sections 30 and 36 being North 05°16'47" East as determined by GPS measurements between Montgomery County Monuments 1057 and 1058 and the Ohio State Plane Coordinate System, South Zone. All iron pins Set are 5/8" solid iron pins 30" in length with an orange plastic cap stamped "Floyd Browne Group".

The above description is based on and referenced to an exhibit prepared by Floyd Browne Group dated 06-12-06, attached hereto and made a part hereof.

All references are to the records of the Recorder's Office, Montgomery County, Ohio.

6/12/06

Maynard H. Thompson, P.S. Date
Professional Surveyor No. 7128

STATE OF OHIO
MAYNARD H. THOMPSON S-7128 REGISTERED PROFESSIONAL SURVEYOR

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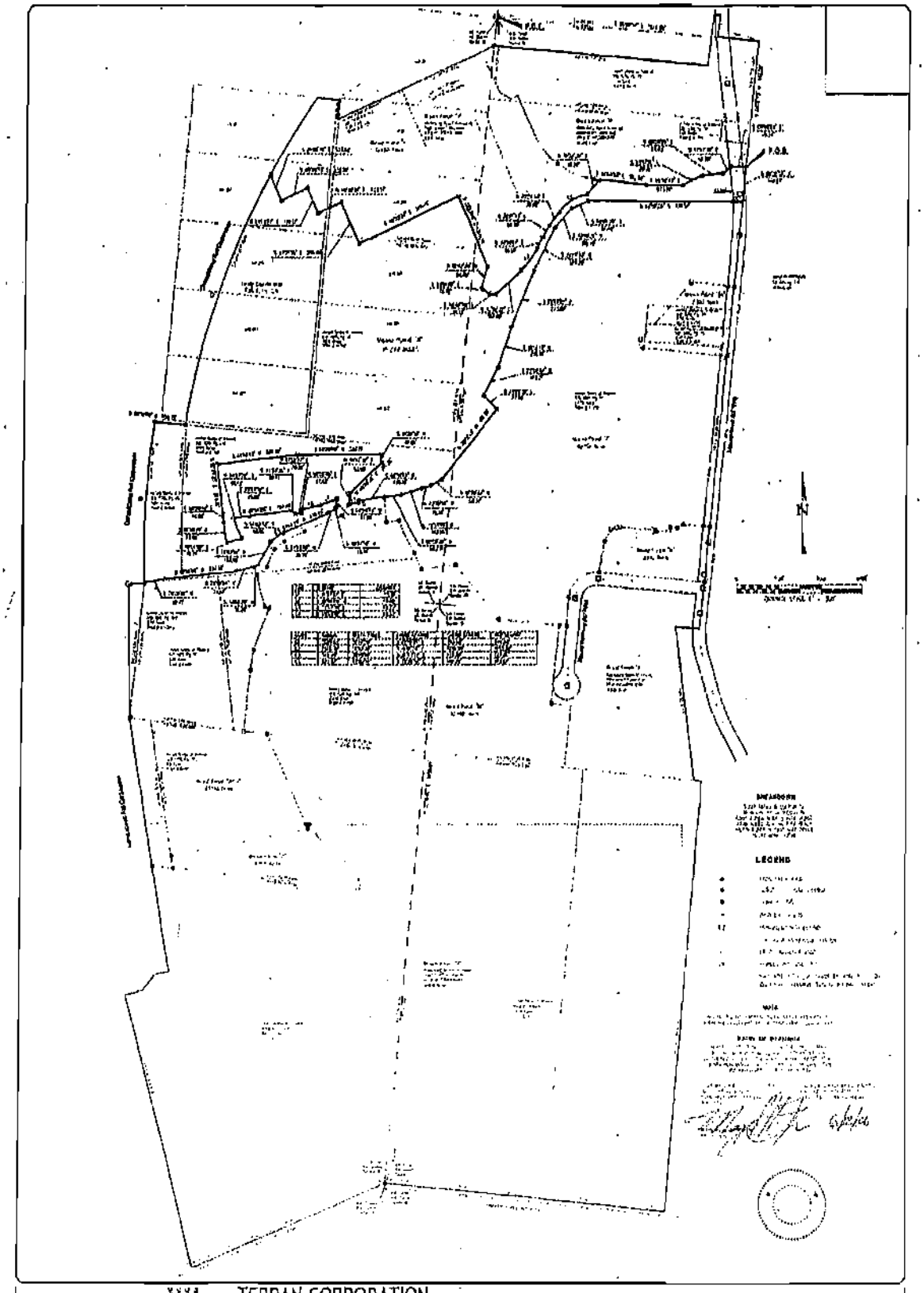

TERRAN CORPORATION
BOUNDARY SURVEY
MOUND ROAD
MIAMISBURG, OHIO

Floyd Browne Group

45.247 ACRES

APPENDIX D

Building Information

BUILDINGS LOCATED IN PARCEL 6

Building 28.
The building was used for ceramics development and production. It is currently leased by MMCIC. The facility is a one-story structure slab-on-grade structure reinforced concrete masonry structure with slab-on-grade floor, a built-up membrane roof along with an adjacent metal storage shed. Electric, water and sewer are available. The building has a stand-alone boiler.

Building 45.
The facility was used for calibrating Health Physics instrumentation and personnel dosimeters. The facility consists of an original single-story concrete block structure. The original building structure was constructed in 1968. The first addition, totaling 2,784 sq. ft., was built in 1988. The original building and first addition consist of a single story concrete structure with a penthouse for housing mechanical equipment. The second addition, totaling approximately 6,800 sq. ft. was completed in 1995 and consists of a two-story structure on the southern side of the original building and a one-story structure on the northern side of the original building.

Building OSE.
Building OSE housed offices for the Department of Energy, an auditorium, photographic services, and the site computer facility. The building was used for the same purpose since construction. The Building is a steel frame four-story structure and penthouse, with a brick facing and built-up membrane roof. The building had central steam and chilled water for heating and air conditioning.

BUILDINGS DEMOLISHED IN PARCEL 6

Building 40
On the first floor of the structure (approximately 6,150 sq. ft.) was printing and microfilming shops and a vault for document storage. Offices were located on the second floor (approximately 3,880 sq. ft.). The third floor (approximately 2,170 sq. ft.) housed utility services with interstitial space between the ceiling and roof for ductwork. The building had been used for the same purpose since construction. No research, development or production activities using radioactive or energetic materials were known to have occurred in the building.

Building 46.
The building contained specialized welding facilities that supported the heat source program. Welding development for energetic materials was also performed, along with machine shop activities, which were conducted in the building. No research, development, and testing activities using radioactive materials have been known to have occurred in the building.

Building 47.
The building was originally utilized as the plant fire station. From 1987 to the late 1990's, the building housed administrative offices for protective security personnel, weapons storage areas, and classified waste storage areas. The building was renovated to serve its original purpose as a fire station allowing Building 98 to be demolished as part of the PRS66 cleanup.

Building 60.
The facility was used for ceramic development and non-destructive testing since its construction. The building had been leased by the MMCIC in 1995 for a period of time.

Building 65.
Building 65 was a one-story, 2,400-square-foot wooden modular structure. The building was bordered by Building GP-1 (north), Building 28 (south), a parking lot (east), and Building W (west). Building 65 was constructed in 1979 for use as an office area. The building was emptied and dismantled in 1996. It was used for the same purpose since construction. The building was not contaminated with radiological or energetic material.

Building 91.
Building 91 was a two story 8,065-square-foot, steel frame, wood-sided modular building with a Hypalon roof. The facility was located south of the perimeter fence in the northeast region of the Mound site. Building 91 was constructed in 1985 with the purpose of providing program support office space and space for dosimeter evaluation.

Building 96.
Building 96 was a 432-square-foot, prefabricated metal building. The facility was assembled in 1984. It was bordered by Building W on the west, Building 47 to the east, Buildings 60 and 28 to the south, and Building GP-1 to the north. The facility was sold to a private party, disassembled, and moved offsite. The building was not known to be contaminated with radiological or energetic materials.

Building 99.
The first and second floors of the facility were used as administrative areas for security personnel. The first floor also contained a locksmith shop and communications center. The third floor housed the Emergency Operations Center (EOC). The fourth floor was a penthouse used as a mechanical room. The building had been used for the same purposes since construction.

A Building.
Offices were on the first and second floors, with the medical facility on the first floor. The basement contained the Classification Office and Document Control. This building had been used for the same purpose since construction. No

research, development, or production activities using radioactive or energetic materials have occurred in the building. Building A was located between, and connected to Buildings OSW and OSE.

C Building.
Building C was a one-story structure, with a basement, constructed of concrete block with brick face exterior. Building C was one of the original buildings constructed in 1948 and contained 13,403 square feet. Adjacent buildings were Building A to the north, Building M to the south, Building 40 to the east, and Building H to the west. The building was originally the old cafeteria and provided that service until 1986. Afterwards the building was used for offices, record storage, engineering project storage, maintenance storage, and as an emergency shelter. The building was not contaminated with radioactive or energetic materials.

G Building.
Building G served as the repair maintenance facility for plant vehicles and heavy-duty equipment. The building was located south of OSE Building and between Building 40 and GW Building.

GP-15 Building.
Guard Post 15 was a 53 square-foot building demolished in 2002.

GP-5A Building.
Guard Post 5A was a 60 square-foot building demolished in 1998.

GW Building.
GW building was originally built to house offices, bonded stores, and receiving/inspection for weapons programs. Before it was demolished, it housed long-term record storage and offices.

BUILDINGS LOCATED IN PARCEL 7

Building 2.
Building 2, Energetic Materials Destructive Testing, is a one-story, 6,291-square-foot, reinforced concrete and concrete block structure. The building has two attached metal storage sheds. The building is bounded by Building 63-E/63-W to the north, and Buildings 3 and 49 were to the west and east, respectively. Building 2 was constructed in 1953 and had been used for the same purpose since construction.

Building 61.
Building 61 was a central warehouse and receiving facility at Mound. No research, development, or production activities using radioactive or energetic materials have occurred in the building. It should be noted that at various times contaminated equipment for disposition has passed through it; however, no

cleanup actions are anticipated. The building is a split level design. One-half of the building has offices; the other half contains high, open bays for materials storage handling.

Building 63.
Building 63 is comprised of two structures connected together: Building 63-E contained quality product testing laboratories on the first floor and offices and lavatory facilities on the second. Building 63-W, an environmental storage and spin test facility, is a one-story, 3,100-square-foot, concrete block, slab-on-grade structure. This portion of the building contained offices, environmental storage chambers, a spin test facility, and a lavatory. The building is bounded by a parking lot to the north, Building 49 to the east, a roadway to the south, and Building 59 to the west. Building 63-E/63-W was constructed in 1981. The building was used for the same purpose since construction. Research and testing activities using energetic materials occurred in the building. Research, development and testing activities using radioactive materials did not occur there.

Building 126.
Building 126, a single story office building, was constructed in support of the Nuclear Energy mission at Mound. The building currently serves as office space for DOE Legacy Management and contractor personnel.

BUILDINGS DEMOLISHED IN PARCEL 7

Building 27
Building 27 was named the Explosive Processing Facility and located in the area to the west of the former "Test Fire Area". The area was a small complex of five structures including Building 42 a production building, Building 67 an office structure, and explosive magazines 52 and 64. The building was used for explosive formulation. It was constructed of masonry walls with blowout panels in the walls. Also included was an addition to the building that included explosive processing cells, a micro room, instrument room, and offices.

Building 29
Building 29 was used for plastics formulation and manufacturing. The building was bounded by Building 98 to the west, a parking lot to the south, a roadway to the north and Building 45 across the roadway. The main floor contained a mechanical room, refrigeration storage unit, plastic test room, roll mill room, mixer room, solvent supply room, dry plastic process room and office support including toilets, locker, janitorial, storage, and office. The mezzanine supported an asbestos slurry kettle and the penthouse equipment, including two varnish kettles, a Malta mixer, acetone pumps, and the building air exhaust filter system. A lean-to on the northeast side of the building held two tank containers for contaminated acetone. A lean-to on the opposite side of the building provided

shelter for containers of new acetone. The building operations ended in 1987. The building was used for the same purpose since construction.

Building 30.
Building 30 housed a radiological counting laboratory. Liquid scintillation counting was used to count paper smear samples for the detection of tritium and gross alpha/beta activity. Several years ago Building 30 was converted from use as an office/storage area to a counting laboratory. The building previously housed a gamma scan facility for waste drums and boxes.

Building 31.
Building 31 was used for storage of radiological waste in sealed containers. The facility was a prefabricated metal building with a metal roof and slab-on-grade floor. The facility plus ancillary concrete slabs and loading docks have been removed.

Building 33.
Building 33 was assigned to the D&D group for the storage of materials, protective clothing, and parts, and for the maintenance of heavy and light equipment used in the D&D process. The building supported the repair of specific equipment removed from D&D to be reused elsewhere at Mound, transferred to other DOE activities, or sold. Building 33 was constructed in 1965. The building had been used for equipment maintenance and storage since construction.

Building 36.
The building was used to support general-purpose heat source testing operations. Operations conducted in the building were high-temperature bakeout and cleaning of graphite modules. No research, development, or production activities using radioactive or energetic materials have been known to have occurred in the building.

Building 37.
Building 37 was used for two purposes. One use was research, development and production in conjunction with the US Advance Battery Consortium. The other use was converting processes with freon or other hazardous materials to processes that use safer materials. The building was later converted to a machine shop in support of the heat source program. The activities performed were machining, cleaning, heat treating, and inspection. No research, development, or production activities using radiation or energetic materials have been known to have occurred in the building.

Building 38.
Building 38, also called PP (Plutonium Processing) Building, was formerly used as a Pu-238 production processing facility, the assembly and testing of Radioisotopic Thermoelectric Generators (RTGs), the repackaging and storage of excess nuclear material, and the storage and identification of orphan sources

from Mound. The following additions were made to the original structure: (1) a men's change room, 1,764 sq. ft.; (2) a low level liquid waste facility and tanker loading pad, 547 sq. ft.; (3) a waste solidification facility, 2,184 sq. ft.; and (4) two 360 sq. ft. dock towers with an overhead rail crane in each.

Building 44.
Building 44 was bordered on three sides by a combination of gravel, dirt, and grass. The west side of the building paralleled a paved road. Adjacent buildings were Building SM on the west and Building GP-44 on the north. The building contained an office, store room, dining area, lavatories, and a combination food preparation and dishwashing room. Building 44 was constructed in 1970 and was used for the same purpose since construction until September 1994 when it was used as an employee rest area, "brown bag" lunch room, and meeting and training facility for employees working in the SM/PP area.

Building 49.
The building contained production laboratories, office lavatories, a locker room, storage, and a large staging area. Production activities using energetic materials have occurred in the building. The building had been used for the same purpose since its construction in 1971. Research, development and testing activities using radioactive materials have not been known to have occurred in the building.

Building 50.
Building 50 was the radioisotopic thermoelectric generator (RTG) assembly and testing facility. The first floor of the structure was a process area for the assembly of RTGs. RTGs are sealed radioactive sources containing encapsulated plutonium. The building was segregated into two areas, a buffer area where RTG assembly and storage was conducted and a controlled area, where support activities occur. The second floor penthouse housed utility services.

Building 51.
Building 51 was located in the central portion of the Test Fire Valley between the Main Hill and the SM/PP Hill. The building was constructed in 1970 to provide waste incineration for the Mound Plant.

Building 66.
Building 66, an office building, was a 650-square-foot, one-story wood-sided structure. It was a modular structure, setting on concrete footings. The building was bounded by a parking lot (south), Building 98 to the east, a dirt area leading to a street (north), and Building 51 (west). Building 66 was constructed in 1980. The building was built for a supply support office. No research, development, or production activities using radioactive or energetic materials occurred in the building.

Building 71.
Building 71 was a flammable liquids storage facility. The building contained 820 square feet of storage space.

Building 73.
Building 73 was the central compressed gas cylinder storage location at the Mound facility. It was situated north of Building 61 and south of Building 71. To the east was a 800,000-gallon impoundment, built to retain storm runoff and associated sediments. The building was constructed in 1983.

Building 88.
Building 88 was a 7,200-square-foot, single-story, prefabricated structure. It was modular in design and had a wood exterior structure. The building was located in the SM/PP area of Mound. A roadway and Buildings 50 and 37 were to the south. The other three sides of the building were surrounded by an open grassed area. Building 88 was erected in 1984 to provide administrative offices to the radioisotopes thermoelectric generator (RTG) program.

Building 98.
Building 98 was a two-story, 8,517-square-foot, firehouse. Offices, personnel support and training facilities, the operations center, and vehicles were located on the second floor. Vehicles housed there included those for structural fires, an ambulance and a hazardous materials (HAZMAT) mobile unit with response materials. Building 98 was constructed in 1987and was used for the same purpose since construction.

Building 110.
Building 110 was the fuel facility that had been located in the upper portion of the Test Fire Valley between the Main Hill and the Special Metallurgical/Plutonium Processing (SM/PP) Hill, between Building 51 and the Brickmaker. Built in 1988, the facility included two above ground fuel tanks (a 6,000-gallon gasoline tank and a 4,000-gallon diesel fuel tank), two filling station-type gas pumps, and an oil/water separator. The facility served to supply fuel to plant vehicles and emergency power diesel engines. Services to the facility were terminated prior to demolition. No waste was stored at the Building 110 facility.

Building 118.
Building 118 was 360 a square-foot Inspection Station.

Building 120.
Building 120 was constructed in 1980. The building was built for an office and the storage of Radiological Assistance Team supplies. It later became administrative offices for the Decontamination and Decommissioning (D&D) Group and the Heat Source Program.

Buildling 128.
Building 128 was constructed in 2001 in support of the Nuclear Energy mission at Mound. The building contained two 100 HP hot water boilers and a duplex primary/secondary pumping system to provide hot water to Buildings 50, 36, 37 and 126.

Brickmaker.
The Brickmaker Tents were constructed in 1992 as temporary structures to house the brickmaker equipment. The three tents were steel-framed Rubb®-Brand buildings measuring approximately 39 x 60 feet, 15 x 40 feet, and 25 x 60 feet. The tents were located in the upper portion of the Test Fire Valley between the Main Hill and the Special Metallurgical/Plutonium Processing (SM/PP) Hill. The Brickmaker equipment, which had been housed in the tents, was designed to compress low-level radioactively contaminated soils into extruded bricks for soil offsite disposal. Trial runs of the equipment occurred in 1994 and 1995. However, elevated disposal costs for compacted soil, as well as equipment operational challenges caused the brickmaker equipment to be uneconomical. Later, a pilot program to test a process to combine coal and paper sludge into briquettes was initiated and then abandoned. In 1999, the brickmaker equipment was radiologically surveyed and cleared for free release. The equipment was sold at auction and removed from the site. Adjacent to the Brickmaker Tents, there had also been a single-wide trailer with wooden decking. That trailer was removed in 1997, transferred to the Spoils Area, and later demolished. Subsequent to the removal of the brickmaker equipment, the tents were used to provide temporary shelter to heavy equipment. No waste was stored in the Brickmaker Tents. There were no utilities or sanitary services provided at the Brickmaker Tents. There was a sump (located just south of where the largest tent had been located) that had been used to contain runoff from the brickmaker equipment. After completing the Brickmaker Tent demolition, the sump fluid was removed and analyzed. The analytical results were all below appropriate screening levels. The sump was then removed, radiologically surveyed, and disposed of, and the resulting excavation backfilled. There were no Potential Release Sites (PRSs) associated with the Brickmaker Tents.

CS Building.
CS Building was a 3000 square foot Carpenter Shop that was demolished prior to 1959.

EG-2.
EG-2 provided operational space for an emergency diesel generator. It included a 5000-gallon underground storage tank, which had been filled with concrete and a 500-gallon above ground fuel oil tank.

EG-7.
EG-7 was a single-story, 80 sq. ft. rectangular building used to house an emergency generator to provide emergency power to the Test Fire Valley. EG-7

was built in 1972, and taken out of commission in the 1990s. EG-7 was located immediately adjacent to the Test Fire substation. Due to its proximity to the 12,470V underground lines of the Test Fire substation, and with the concurrence of the Core Team, the concrete slab was left in place following removal of the building and generator.

GP-16.
Guard Post 16 was a 102 square-foot building demolished in 1998.

GP-38.
Guard Post 38 was a 50 square-foot building demolished in 1998.

GP-44.
Building GP-44, a former guard post, was a 365-square-foot, one-story structure. The building contained an equipment room, the former guard office, and a clothing storage room. When GP-44 was an active guard post, Room 4 was used for uniform storage and Room 3 was used as a laundry room for security uniforms.

Magazine 6.
Magazine 6 was a one-story, 90-square-foot reinforced concrete structure. The roof was also of reinforced concrete. Magazine 6 was constructed in 1949 and was used for storage of energetic materials since construction.

SM Building.
SM was a large building that processed radioactive materials. It was demolished in the 1990s, and contaminated soils associated with the building were removed.

Warehouse 4.
Warehouse 4 was 2507 square-foot warehouse demolished between 1949 and 1959 (based on aerial photos).

Warehouse 5.
Old Warehouse 5 was 9540 square-foot warehouse demolished between 1949 and 1959 (based on aerial photos).

Warehouse 6.
Old Warehouse 6 was 2611 square-foot warehouse demolished between 1949 and 1959 (based on aerial photos).

Warehouse 8.
Warehouse 8 was 3450 square-foot warehouse demolished prior to 1959 (based on aerial photos).

Warehouse 10.
Warehouse 10 was 4235 square-foot warehouse demolished between 1949 and 1959 (based on aerial photos).

Warehouse 13.
Warehouse 13 was 4299 square-foot warehouse demolished between 1949 and 1959 (based on aerial photos).

Warehouse 14.
Warehouse 14 was 3960 square-foot warehouse demolished between 1965 and 1968 (based on aerial photos).

Warehouse 15.
Warehouse 15 was 6248 square-foot warehouse demolished between 1965 and 1968 (based on aerial photos).

Warehouse 15A.
Warehouse 15A was 1052 square-foot warehouse demolished between 1965 and 1968 (based on aerial photos).

BUILDINGS LOCATED IN PARCEL 8

COS Building.
The building was used for production support for weapons components including explosive laboratories, a standards lab and a robotics lab. The building has been leased since 1995 by the DOE to the MMCIC. It has been subleased since 1995 by MMCIC.

OSW Building.
Building OSW housed computer aided design (CAD) products, process, drawing control program management and administrative offices, including the MEMP's project office. The building had been used as an administrative support facility since its construction.

T Building.
Building T is a heavily-reinforced, underground concrete structure built in 1948. The building had two floors that were compartmentalized into three general areas by two 30 inch thick fire walls. The reinforced concrete exterior structure has a 15-foot thick roof, 16-foot thick walls on an eight-foot thick slab. The overall design of the building was to withstand a direct hit by a bomb. Access to the building is by tower either at the east and west end of the building or by a service tunnel. Adjacent buildings were Buildings E, M, and R to the north, Building HH to the south, and Building DS (above). Building T was originally used to purify Polonium-210 for use in nuclear weapons. The facility was later used to extract various other radionuclides, such as bismuth and beryllium. Other operations included nickel carbonyl vapor deposition plating processes, neutron activation

analysis, and the storage of packaged transuranic (TRU) materials. Building T was later used for tritium operations, recovery and purification, calorimetry production, heat source calibration, and x-ray and safeguards gamma scanning.

BUILDINGS DEMOLISHED IN PARCEL 8

Building 1.
Building 1 was constructed in 1958. It consisted of four heavy-walled rooms, plus a small office area. Research and testing activities involving energetic materials have been conducted in the building. In the past, the building was used for processing and blending of explosive powders. More recently, it was used for packaging of energetic materials.

Building 5.
Building 5 was a 375 square-foot Inspection Station demolished in 1998.

Building 16.
Building 16 was a one-story metal structure on a concrete slab with a metal roof. The building was constructed in 1958 and was used to store equipment in support of operations in Building I. The building was located on the western perimeter of the main hill. Adjacent buildings were Building I to the northwest, Building SW to the east, and Magazines 7 and 11 to the south.

Building 17.
Building 17 was constructed in 1961. Adjacent buildings were Building I to the north and west, Building SW across the roadway to the east, and Magazines 7 and 11 to the south, and Building 16 to the west. The building was used to store and stage chemicals in support of Bonded Stores during production. Chemicals were only opened in the building to sample or test them. Prior to storing chemicals, metal rods and excess material, other than chemicals, were stored there.

Building 19.
The building was a metal jumbo Quonset hut with interior offices/areas/walls. It was initially used for excess equipment storage and salvage sales. More recently the building was used as an investigative-derived materials (IDM) storage facility and as a preparation/packaging facility for samples involving CERCLA project activities.

Building 22.
Building 22 was used to store excess equipment and engineering project materials. In the summer of 1995, the building was modified to accommodate solid radioactive LLW storage activities.

Building 23.
The building was originally constructed as a warehouse for the staging and shipping of low-level radioactive waste. The building was then used to store mixed and transuranic (TRU) mixed waste. The building was modified in 1994 to contain spills by coating the floor and installing trenches and dikes.

Building 25.
The building initially was used as a low-level counting (radiological measurement) facility. Historical documents indicate that pre-World War II materials were sought for the counting facility, presumably to eliminate the possibility that trace levels of man-made radionuclides would influence the analysis. It later housed instrumentation that was used to collect meteorological information. Computers in the building received data from two onsite weather-monitoring towers. These computers were connected to Lawrence Livermore Laboratory, where the information would be used to predict dispersion patterns in the event of any airborne releases.

Building 26.
Building 26 was constructed in 1965. The building was used for a welding shop, storage, and office areas. It was emptied and dismantled in 1996

Building 34.
The building served as the old burn building, an area formerly used for training Mound firefighters. Various fuels and flammable materials were burned to simulate potential emergency situations. The facility was later used as the soils counting lab.

Building 41.
Building 41 was a 234 square-foot Waste Transfer Station that was demolished between 1983 and 1994 (based on aerial photos).

Building 48.
Building 48 was constructed in 1970. Offices were on the first floor, and analytical laboratories and a machine shop were located on the second floor. This building was renovated in the late 1999 timeframe to serve as the environmental monitoring laboratory.

Building 55.
Building 55 was constructed in the early 1970's. The two-room structure consisted of a former water testing laboratory containing a sink and an electric water heater and a storage/equipment room. The building was most recently used for storing water sampling equipment, supplies, and containers.

Building 56.
The building and associated structures were used as the booster station for fire suppression since its initial construction. It was not known to be contaminated

with radioactive or energetic materials. It housed a diesel-powered fire suppression water pump station and a 500-gallon (above grade) fuel storage tank. The facility included an at-grade 350,000 gallon metal groundwater storage tank adjacent to the building.

Building 57.
The building was the control room/lab for the Sanitary Sewer Plant since its initial construction.

Building 58.
Building 58 was the alpha and beta air filter bank and plenum exhaust for Building SW. A HEPA filtration system filtered out alpha and beta particulate from the exhaust of several rooms in Building SW. The building contained ventilation equipment possibly contaminated with radioactive materials.

Building 68.
Building 68 was constructed in 1979. Adjacent buildings were Building R to the north, Building E to the east, and Building DS to the south. Building 68 was used as a staging area for Decontamination and Decommissioning (D&D) operations and as a storage area for Maintenance. Containers of radioactive waste, primarily of low-specific activity (LSA), from Buildings R and SW were staged for shipping. A portion of Building 68 was used to store parts and materials for maintenance operations. The building was used for the same purpose since construction. No research, development or production activities using radiation or energetic materials occurred in the building.

Building 69.
Building 69 was a 1,620-square-foot, single-story, modular wooden building. The building was bordered by Building M to the north, Building T west tower to the west, Building T east tower to the east, and Building DS to the south. The building was used for offices and was sold in 1996.

Building 70.
Building 70 was a 3,366-square-foot building that housed offices. The building was bordered by Building E to the north, Building T west tower to the west, Building T east tower to the east, and Building DS to the south. The building was used for offices and was sold in 1996.

Building 72.
Building 72 was designed for and was used for hazardous waste storage since it was constructed. Constructed in 1984, had three bays, with a dry sump under each bay to collect spillage. The sump's contents were pumped to drums. An interior masonry wall provided extra protection for the storage of explosive materials.

Building 79.
Building 79 was a modular office trailer located east of Buildings 23 and WD, and south of Building 56. The building was used exclusively for offices. No research, development, or production activities using radioactive or energetic materials occurred in the building.

Building 89.
The building was originally used for the storage of sealed energetic materials. Since leasing the building in 1999, the MMCIC had used it for general storage. No research, development, or production activities using radioactive materials were known to have occurred in the building.

Building 92.
Building 92 was a one-story wooden modular structure on concrete pillars. The building was brought on site in 1984 and was located on the western perimeter of the main hill. Building 92 was originally used for several years as a training facility in support of production operations at Mound. The types of training classes taught were production documentation methods, product index training, microscope and gauging techniques, and solder certification. Chemicals used in the solder certification training were ethyl alcohol, lead-based solder, soldering flux, and remover. Later the building was converted to offices for Industrial Hygiene.

Building 93.
Building 93 was constructed in 1984. The building was originally assembled as an office facility. The building was used for the same purpose since construction. The building was not contaminated with radiological or energetic materials.

Building 94.
Building 94 was used for CERCLA environmental program contractor staging and for soil and water sample storage. The building originally housed a laboratory in one bay and environmental ovens in the other two bays. Investigations related to materials compatibility were conducted using energetic materials.

Building 104.
The facility served as the maintenance shop for the test fire area and contained office areas and electronics and small parts assembly room, parts storage, and a fabrication/maintenance shop. No research, development, or production activities using radioactive or energetic materials occurred in the building.

Building 112.
Building 112 contained equipment filters and effluent treatment, testing and monitoring. Building 112, constructed in 1985, was one of the buildings that comprised the Mound Wastewater Treatment Plant (MWWTP), commonly referred to as the Sanitary Disposal (SD) Facility.

Building 113.
Building 113 contained dewatering equipment and was used for chemical and equipment storage. This was one of the buildings that which comprise the Mound Wastewater Treatment Plant (MWWTP), commonly referred to as the Sanitary Disposal (SD) Facility.

Building 114.
Building 114 had 432 sq. ft. and in 1990 was being used for Nitrogen separation.

Building 123.
Building 123 was a 3838 square-foot Waste Processing building demolished in 2004.

Building 124.
The facility was used for size-reducing waste from site removals that contain both radioactive and chemical contamination. The facility housed a box repackaging area, plasma arc cutting station, a blasting room, and a compactor station. This facility was a temporary Rubb Manufactured Building erected on an 8-inch reinforced concrete slab.

Building 125.
The Alpha Treatment System facility was located at Mound on a site formerly occupied by Building 79. The facility was a temporary building structure, mirroring the radioactive wastewater treatment process done in Building WD.

Building 415.
Building 415 was used for chemical and equipment storage. This is one of six buildings which comprise the Mound Wastewater Treatment Plant (MWWTP), commonly referred to as the Sanitary Disposal (SD) Facility.

Building 432.
Building 432 contained equipment to test samples of water. This was one of six buildings which comprise the Mound Wastewater Treatment Plant (MWWTP), commonly referred to as the Sanitary Disposal (SD) Facility.

B Building.
Until 1956, B Building was used for biological animal studies addressing acute and chronic effects of exposure to polonium and actinium. After 1956, the building was used for the production of inert and/or plastic components of weapons devices and detonators. It was used for non-destructive testing, laser welding and marking, physical vapor deposition (PVD), metallurgical inspections, and as a mold shop. Organic solvents were used in many of these operations. There was a clean room in the north addition that had high-efficiency particulate air (HEPA) filter modules in the wall to filter incoming room air. The clean room was used for physical vapor deposition and transducer production.

BPB

BPB was a 11,250 square-foot Ex-Situ Bioremediation facility demolished in 2001.

DS Building.

Building DS housed metrology, receiving inspection, and non-destructive testing facilities. The metrology area contained processes conventional to metrology: measurement, calibrations and testing for the following five areas: electrical, dimensional, physical, mass, and temperature.

E Building and Annex.

E Building, the "electronics laboratory" was constructed in 1948, as one of Mound's original structures. E Building was constructed to provide an area for repairing, designing and building electronic equipment that was used in the various laboratories and processing areas. Building activities included explosives research and beryllium machining. Later the building supported analytical laboratories used for environmental analysis, offices for the site environmental monitoring personnel and for waste management personnel. The building was not contaminated with energetic materials. Minor chemical and radiological contamination may have been present prior to demolition.

EG-1.

The building housed a Caterpillar D348 diesel generator that provided standby power to the T/R/SW West Stack and portions of Building SW. It also included a 5000 gallon underground storage tank which has been filled with concrete.

EG-4.

The building housed a Caterpillar D348 diesel generator.

EG-6.

The building housed a Caterpillar D348 diesel generator that serves as the standby power to the Building 58 exhaust fans and portions of Building SW.

EG-7.

Electrical Generator #7 supported TF Security Lights and was removed in 2001.

EG-8.

This facility housed an emergency generator and was one of six buildings which comprise the Mound Wastewater Treatment Plant (MWWTP), commonly referred to as the Sanitary Disposal (SD) Facility.

FH-1.

Stack Fan House-1 and 2 were constructed as brick buildings to house exhaust fans that serviced T Building.

FH-2.
Stack Fan House-1 and 2 were constructed as brick buildings to house exhaust fans that serviced T Building.

GP-5.
Building GP-5 was a guard post located to the east of T Building.

GP-8.
Building GP-8 was a security guard post located along the Mound Road at the east entrance to the Mound Plant, north of Building 61.

GP-8A.
Building GP-8A was a security guard post located along the Mound Road at the east entrance to the Mound Plant, north of Building 61.

H Building.
Building H housed the laundry facilities for plant uniforms worn by radiation workers, explosives workers, and maintenance personnel. The water generated from the laundry was collected in a holding tank on the "hot side" of the building. Then the water was drained through a pipe to a lift station at Building SW and transferred to WD Building.

HH Building.
The building was originally built to receive and process highly acidic and highly contaminated liquid radioactive waste from the polonium processing operations in Building T. This waste was processed to recover bismuth for reuse. Liquid waste from this process was collected in a sump in the southwest corner of Room 6 and then sent via an underground line to WD Building (this pipeline was removed a few years ago). The polonium waste processing ended about 1958. In the mid-1950s, the building was also used for several projects involving the separation of Pa-231 and Th-230, as well as other isotopes from some processed uranium byproduct materials obtained from other AEC operations. In about 1960, HE-3 separation was started in Building-HH using thermal diffusion columns. In the early 1960s, the building was used for the separation of a variety of stable isotopes using gaseous thermal diffusion, liquid thermal diffusion, and cryogenic processes. In the late 1970s, there was some experimental work done with uranium. From about 1964 to about 1985, He-3 was separated in Rooms 17 and 18 using cryogenic carbon traps to remove the tritium from the feed gas. In the early 1980s, chemical exchange experimentation was also conducted in the building. The sulfur, calcium, and nitrogen isotopes were separated using packed columns. The building has been demolished.

I Building.
Building I was used for loading and testing of explosive actuators in support of defense programs. There were two Class 100,000 clean rooms in the building. One of the clean rooms, which had never been used, was on the newly

remodeled second floor of the northwest addition. This clean room had high efficiency particulate air absorber (HEPA) filter modules in the ceiling to filter incoming room air and new HEPA lab benches throughout.

M Building.
Building M was one of the original buildings constructed in 1948. Building M was the former machine shop and housed electroplating operations. Other functions conducted in the building over the years included electronics maintenance, an electrical substation, and excess material staging and storing.

Mag-10.
Magazine 10 was a one-story reinforced concrete structure constructed for storage of pyrotechnics and energetic materials.

Mag-11.
Magazine 11 was a one-story reinforced concrete structure constructed for storage of pyrotechnics and energetic materials.

Mag-5.
Magazine 5 was a one-story reinforced concrete structure constructed for storage of pyrotechnics and energetic materials.

Mag-54.
Magazine 54 was a one-story reinforced concrete structure constructed for storage of pyrotechnics and energetic materials.

Mag-7.
Magazine 7 was a one-story reinforced concrete structure constructed for storage of pyrotechnics and energetic materials.

P Building.
The power house provided space for the centralized process and breathing air, boilers for steam, chilled water supply and return along with treatment of raw water (potable) and electrical power distribution. The Mound East electrical substation was located within Room 3, on the first floor of Building P. Both received power from three parallel DP&L 12.5 KV feeders. Electrical power was then distributed throughout Mound to each substation. In addition to the office-related rooms, the first floor contained the two main boilers, three chillers, potable water treatment equipment, a standby generator, the main plant control/utilities distribution and consumption monitoring console station, chemicals/chemical injection equipment, and plant controls. The mezzanine contained pumps, compressors and two chillers.

PS Building.
This facility housed the paint shop with an OEPA-permitted paint spray booth. It contained processes conventional to painting such as brush painting and spray

painting, storage of supplies (latex and non-latex paints), sanding, priming, and drying. The building also housed a sign fabrication area that made computer-generated signs.

R Building.
Building R was one of the original buildings constructed in 1948. The building was divided into two areas: the "cold" side and the "hot" side. The "hot" side was associated with radiological areas; in particular, it was used for tritium recovery and various analytical support tasks. The "cold" side of the building contained research and development laboratories, analytical laboratories, a respirator fitting facility, offices, and the library. The building was contaminated with energetic and radiological materials. In several rooms, beryllium contamination existed in fumehoods and associated ductwork.

S-B.
Shed B occupied 60 square-feet and was removed in 2000.

SD Building.
Building SD was a two-story, 1,593-square-foot facility that was used for sewage disposal. It was constructed in 1948. It remained in service until 1975. The building was bordered by Building 56 on the west, Building WD to the east and north, and a roadway along the south side. The building was used for sanitary treatment and sewage disposal. The facility was potentially contaminated with radioactive materials and metals.

SW Building.
Building SW was located on the main hill. Adjacent buildings were Building B to the north, Building R to the east, and Building I to the west. Building SW was used for tritium recovery and purification, tritium component development, component evaluation, titanium hydride synthesis, and analysis of materials. Past operations included research projects on plutonium, uranium, thorium, and protactinium. The building was contaminated with radiological materials. No research, development or production activities using energetic materials have occurred in the building.

WD Building.
Building WD was the treatment facility for low specific activity (LSA) radioactive liquid wastes generated by process activities at Mound. Processes, which were housed within the WD facility, include alpha wastewater treatment, beta wastewater treatment, laboratory and bench-scale research, LSA waste drum repackaging, a glass melter furnace and a packed bed reactor.

Warehouse 15.
WH-15 was a 6248 square-foot warehouse that was demolished between 1965 and 1968 (based on aerial photos).

Warehouse 7.
WH-7 was a 4200 square-foot warehouse that was demolished between 1949 and 1959 (based on aerial photos).

Warehouse 9.
WH-9 was a 1470 square-foot warehouse that was demolished between 1959 and 1965 (based on aerial photos).

APPENDIX E

PRS Information

PARCEL 6

PRS-106: G Building Soils (a.k.a. Garage Area).

PRS-107, PRS-108 and PRS-109: G Building Gasoline Tank (Tank 202).
PRSs 107, 108, and 109 were the locations of three historical underground gasoline storage tanks. All three tanks were removed. Soil around the tanks was excavated, spread out at a stockpile location to volatilize the gasoline, and disposed at the Mound construction spoils area.

PRS-126 and PRS-127: Building 28 Solvent Storage Area.
PRSs 126 and 127 refer to the temporary storage locations for waste solvents generated by the Building 28/60 operations. The solvents were used in cleaning operations during the manufacture of weapon components.

PRS-211: A-Building Decontamination Shower Water Tank (Tank 28)..

PRS 212: A-Building Decontamination Shower Water Tank (Tank 29).

PRS-241: Northwest Parking Lots.
PRS 241 consists of the northwest parking lots, including the parking lots east of OSE Building, south of GH Building and the parking lot north of A Building. This PRS was created due to several positive soil gas detections..

PRS-242: Volatile Organic Compound (VOC) Potential Hot Spot Location 1016.
The site was designated a PRS because of VOC detections during a soil gas survey.

PARCEL 7

PRS-308: Site Survey Project Potential Hot Spot Location C0028.
The PRS 308 was identified as a radiological hot spot (C0028) located near the eastern boundary of Mound Plant SM/PP Hill.

PRS-412: Soil Contamination – Radiological.
PRS 412 (hot spot C0033) was identified during the radiological Site Survey Project. Thorium was detected at 42 pCi/g at this location.

PRS-32: Underground Sanitary Sewer Line G12.
PRSs 31-36, 125 and 270 were identified as the result of breaks and/or separations in Mound's sanitary sewer lines, identified during a 1982 video survey of the lines.

PRS-36: Underground Sanitary Sewer Line G15.

Potential Release Sites (PRSs) 31-36, 125 and 270 were identified as PRSs as a result of breaks and/or separations in Mound's sanitary sewer lines, identified during a 1982 video survey of the lines.

PRS-37: Building 51 Waste Solvent Storage Tank (Tank 220).
PRS 37 was identified as an underground storage tank used to hold waste solvents prior to incineration, in Building 51.

PRS-38: Building 51 Waste Incinerator.
This PRS was associated with Building 51 which was demolished to facilitate the PRS 66 Removal Action.

PRS-39: Building 51 Waste Incinerator Scrubber.
This PRS was associated with Building 51 which was demolished to facilitate the PRS 66 Removal Action.

PRS-40: Building 66 Lot.
PRS 40 was identified as a local area of plutonium-238 contamination found during a construction project.

PRS-65: Building 61 Area, Former Heavy Equipment Area.
PRS 65 was identified the Building 61 Heavy Equipment Storage Area.

PRS-66: Area 7, Thorium and Polonium Wastes.
PRS 66 encompassed a historical ravine that had been leveled with fill, and paved over with asphalt. Records show the practice of disposing waste items into the ravine continued through the mid-1960s.

PRS-67: Plant Drainage Ditch.
PRS 67 is an open, unlined channel that flows above ground through the central part of the facility from Building 22 to the retention basins on the western plant boundary. The ditch carries surface run-off from both the Main Hill and SM/PP Hill areas and the asphalt lined pond that drains the ditch through culvert, emerging behind Building 22. From that point the open ditch falls 40 feet over a length of 1800 feet.

PRS-68: Asphalt-Lined Pond.
The Asphalt-lined pond (near Building 61) was identified as a PRS during the Preliminary Review/Visual Site Inspection for RCRA facilities in 1988. The Asphalt-lined pond began operating in the 1970s. It was approximately 150 ft by 150 ft with a nominal capacity of 1.5 million gallons. The pond received storm water from the SM/PP Hill storm sewers, SM/PP hillside runoff, and non-contact cooling water. The pond provided temporary storage, flow equalization, and retention time for removing suspended solids prior to discharge to the drainage ditch (PRS 67).

PRS-72: Area 13, Polonium-Contaminated Wood from Dayton, Unit IV.
PRS 72 was identified as the area used in the early 1950s for the storage of contaminated materials (i.e., wood, equipment and other material) brought to Mound from the former Dayton Unit operations.

PRS-77: Warehouse 10.
This PRS is the footprint of previously removed warehouse.

PRS-78: Warehouse 13.
This PRS was the footprint of previously removed warehouse.

PRS-79: Warehouse 15.
PRS 79 was the historical warehouse 15. It was identified as a PRS because of thorium redrumming operations performed in the warehouse. It was dismantled in mid-1960s and the Central Fire House (Building 98) was constructed on the location.

PRS-80: Warehouse 15A.
PRS 80 was identified due to process history pertaining to operations in Warehouse 15A, primarily the loading of radioactive waste for offsite shipment.

PRS-83: Building 2 Propane Storage Tank (Tank 122).

PRS-85: Building 29 Solvent Storage Shed.
PRS 85 was identified due to its use as a solvent storage shed. Construction and operation of the shed began in 1972 and the shed became inactive in 1990.

PRS-86: Building 29 Septic Tank (Tank 224).
PRS 86 is an actinium contaminated soils area near an inactive underground septic tank.

PRS-87: Building 49 Solvent Storage Shed.
PRS 87 refers to the sheds that supplied solvents to the cleaning operations performed in Building 49. The Building 49 operations used two sheds. The first shed was built in 1968 and operated until 1986. This shed, located on the north side of Building 49, was demolished in 1986 to provide space for the construction of the Building 49 addition. Another shed was built and was located approximately 100 feet east of the Building 49 addition. This shed was a small metal structure (8x12x10 feet) that was operational from 1986 to the early 1990s.

PRS-89: Test Fire Residual Storage Area.

PRS-235: Area of Possible Elevated Thorium Activity.
As a result of the 1983 Radiological Site Survey, this plot of soil (25000 ft^2) was identified as an area of possible elevated thorium activity.

PRS-266: Area 8, Thorium-Contaminated Soils from Areas 1 and 9.
PRS 266 was identified as a potential release site as a result of historical information and the Radiological Site Survey performed in October 1983. The 25,000 sq. ft. area has three sets of data indicating high levels of thorium-232 (greater than 200 pCi/g).

PRS-267: Area 9, Thorium Storage and Redrumming Area.
PRS 267 was identified as one of the site's historic thorium redrumming areas. It became a PRS based on historic operations and sample results above screening levels.

PRS-268: Building 31, Contaminated Material Storage Building.

PRS-269: Building 36 Historic Gasoline Tanks (Tanks 239 and 240).
Potential Release Site (PRS) 269 is an area of land where two underground fuel storage tanks were shown to be located in support of original plant construction in a 1948 construction drawing that indicated a fueling facility existed near the northwest corner of Building 50. No documentation of the tanks having been removed has been found, although it is believed that they were removed as part of construction demobilization.

PRS-270: Underground Sanitary Sewer Lines G6 and G7.
Potential Release Sites (PRSs) 31-36, 125 and 270 were identified as PRSs as a result of breaks and/or separations in Mound's sanitary sewer lines, identified during a 1982 video survey of the lines.

PRS-271: Building 37 Sanitary Waste Tank (Tank 100).

PRS-272: Area 10, Concrete Debris.
This soils area was identified as a Potential Release Site (PRS) because of (1) evidence that polonium-210 contaminated debris was dumped in the area and (2) suspicion of thorium-232 and or plutonium-238 run-off from Area 12 (PRS 273).

PRS-273: Area 12, Thorium-Contaminated Soil from Area 1.
This soils area was identified as a PRS due to historic use as a disposal site for radiological contaminated soil. Plutonium and thorium exist in the soil of PRS 273 at levels which present an unacceptable risk to potential future construction activities.

PRS-274: Area 21 Former Detonator Shack.
The Potential Release Site (PRS) 274/275 Removal Action was performed at a soil location on the south central slope of the Special Metallurgical/Plutonium Processing (SM/PP) Hill, west-northwest of Building 105 on the southeast end of the Mound Plant.

PRS-275: Former Explosives Bunker.

Potential Release Sites (PRS) 274/275 were former structures located in the east-central part of the Mound Plant property.

PRS-277: Area J, Hillside Disposal Area (AKA Dredged Material Disposal Area 11a).
Potential Release Site (PRS) 277/278 is a former disposal area (chemical and radiological) and catch basin located in the east central part of the Mound property.

PRS-278: Area J, Hillside Catch Basin.
Potential Release Site (PRS) 277/278 is a former disposal area (chemical and radiological) and catch basin located in the east central part of the Mound property, and was binned Further Assessment by the Core Team in 1995.

PRS-285: Area 11, Contamination from SM Building Operations.

PRS-286: Area 16, SM Building Sanitary Sewage Septic Tank Leach Field.

PRS-287: SM Building Historic Septic Tank (Tank 241).

PRS-288: Area 17, SM Building Soils.

PRS-289: SM Building Alpha Wastewater Tank (Tank 210).

PRS-290: SM Building Alpha Wastewater Tank (Tank 211).

PRS-291: SM Building Alpha Wastewater Tank (Tank 212).

PRS-292: SM Building Alpha Wastewater Tank (Tank 213).

PRS-293: SM Building Solidification Unit (Room SM-1).

PRS-294: WS Building Solidification Unit.

PRS-295: Building 38 Solid Radioactive Waste Compactors (2 units).

PRS-296: Building 38 West Dock Sump (Tank 25).

PRS-297: Building 38 Alpha Wastewater Sump (Tank 26).

PRS-298: Building 38 Alpha Wastewater Sump (Tank 27).

PRS-299: Building 38 Diesel Fuel Storage Tank (Tank 121).

PRS-300: Area 19, Underground Waste Transfer Line.

This PRS was identified based on the fact that a pair of lines (waste transfer system) had been installed to transfer plutonium-238 contaminated waste solutions from SM Building to WD Building. The PRS consists of the WTS lines and the soil surrounding them from the SM area to the WD Building, a distance of approximately 2,600 feet.

PRS-301: Building 38 In-Line Incinerator.

PRS-302: Area D, Acid Leach Field.
PRS 302 was identified as the acid leach field, which was intended to neutralize acidic solutions spilled from a plutonium processing facility.

PRS-303: Warehouse 14 (AKA Pad 14).
Potential Release Site (PRS) 303 was identified as a result of historical storage of waste materials in Warehouse 14 (AKA, Pad 14).

PRS-305: SM Stack.

PRS-307: Site Survey Project Potential Hot Spot Location C0007.
Potential Release Site (PRS) 307 was identified due to a subsurface thorium detection.

PRS-309: Site Survey Project Potential Hot Spot Location S0307.
Potential Release Site (PRS) 309 was identified due to a single thorium detection during the site survey project. No hazardous or radioactive waste generating processes were known to have occurred at this location.

PRS-310: Site Survey Project Potential Hot Spot Location S0647.
Potential Release Site (PRS) 310 was created due to a cesium detection. Potential Release Site (PRS) 382 was identified from relatively elevated qualitative soil gas information (PETREX).

PRS-319: Epoxy Resin Disposal. (Waste Transportation Vehicles, Trash Dumpsters, and Epoxy Resin Waste Storage Site – Building 49).
Potential Release Sites (PRSs) 315, 316 and 319 were identified in the 1988 RCRA Facility Assessment (RFA) during the Visual Site Inspection (VSI) at Mound. They were identified due to potential releases from the trash dumpsters or the waste transport vehicles.

PRS-326: Building 38 Sanitary Sump (Tank 254).

PRS-330: Building 2 Fuel Oil Tank (Tank 260).
PRS 330 is the site of a former underground storage tank located in the western sector of the original Mound Plant.

PRS-331: Building 2 Tank (Tank 261).

This location was identified as a Potential Release Site (PRS) because the tank had been used to receive the discharge of sanitary waste water from Building 2.

PRS-336: Building 37 Waste Tank (AKA Low Risk Waste Tank) (Tank 270).
Potential Release Site (PRS) 336 was identified as the Building 29 Septic Tank, which is now inactive.

PRS-338: Building 29 Septic Tank (Tank 270).
This tank is approximately 20 feet beneath the parking lot in fill material east of Building 29.

PRS-364: Elevated Soil Gas Location.
Potential Release Site (PRS) 364 was identified due to elevated qualitative PETREX hydrocarbon levels.

PRS-382: Elevated Soil Gas Location (Soil Contamination – Building 95).
Potential Release Site (PRS) 382 was created due to a cesium detection. The cesium at PRS 382 has subsequently been removed and sampling conducted in 1995 indicated that no cesium was present.

PRS-385: Elevated Soil Gas Location.
This PRS was identified as a result of elevated, qualitative PETREX soil gas sampling during an OU5 investigation.

PRS-386: Elevated Soil Gas Location.
This PRS was identified as a result of elevated, qualitative PETREX soil gas sampling during an OU5 investigation.

PRS-387: Elevated Soil Gas Location.
This PRS was identified as a result of elevated, qualitative PETREX soil gas sampling during an OU5 investigation.

PRS-388: Elevated Soil Gas Location (Soil Contamination – Parking Lot Area Near SM/PP Hillside
Potential Release Site (PRS) 388 was identified due to elevated qualitative PETREX hydrocarbon levels.

PRS-389: Elevated Soil Gas Location.
PRSs 389 and 392 were located in the eastern sector of the original Mound plant. These soil locations were identified as PRSs due to qualitative hydrocarbon detections found during the PETREX soil gas portion of the OU5, *Non Area of Concern* investigation.

PRS-390: Elevated Soil Gas Location (Soil Contamination – Organic Compounds).

PRSs 390, 393 and 394 were located in the northern sector of the original Mound plant. These soil locations were identified as PRSs due to qualitative hydrocarbon detections found during the PETREX soil gas portion of the OU5, *Non Area of Concern* investigation.

PRS-391: Elevated Soil Gas Location.
This area was identified as a Potential Release Site in June 1994 due to qualitative PETREX soil gas results obtained during the OU5, Operational Area Phase I Investigation.

PRS-392: Elevated Soil Gas Location.
PRSs 389 and 392 were located in the eastern sector of the original Mound plant. These soil locations were identified as PRSs due to qualitative hydrocarbon detections found during the PETREX soil gas portion of the OU5, *Non Area of Concern* investigation.

PRS-393: Elevated Soil Gas Location (Soil Contamination – Organic Compounds).
PRSs 390, 393 and 394 were located in the northern sector of the original Mound plant. These soil locations were identified as PRSs due to qualitative hydrocarbon detections found during the PETREX soil gas portion of the OU5, *Non Area of Concern* investigation.

PRS-394: Elevated Soil Gas Location (Soil Contamination – Organic Compounds).
PRSs 390, 393 and 394 were located in the northern sector of the original Mound plant. These soil locations were identified as PRSs due to qualitative hydrocarbon detections found during the PETREX soil gas portion of the OU5, *Non Area of Concern* investigation.

PRS-395: Elevated Soil Gas Location.
This PRS was identified due to qualitative PETREX soil gas results from an OU5 investigation. Subsequent, quantitative sample indicated all concentrations of VOCs, SVOCs, PCBs, pesticides, metals, radionuclides, and explosives below regulatory and 10^{-6} risk based levels.

PRS-396: Elevated Soil Gas Location.
This area was identified as Potential Release Site in June 1994 due to qualitative PETREX soil gas results during the OU5, Operational Area Phase I Investigation.

PRS-397: Elevated Soil Gas Location.
Potential Release Site (PRS) 397 is located south of the former fuel tanks (Figure 1). FA was performed and confirmed that levels of BTEX and PAH were acceptable.

PRS-398: Elevated Soil Gas Location.

This PRS is within the footprint of the PRS 66 Removal Action.

PRS-399: Elevated Soil Gas Location.
PRS 399 was identified as a result of a single elevated relative soil gas reading near the Building 51 Solvent Waste Tank. The tank was removed in 1990. Soil sampling in 1991, 1992, and 1996 failed to detect any organics above the guideline criteria. In addition, all samples indicated that radionuclides were below guideline criteria.

PRS-400: Elevated Soil Gas Location.
This soils location was identified as PRS 400 due to a single plutonium-238 detection found during the OU5, Operational Area Phase I Investigation.

PRS-401: Elevated Plutonium-238 Location
This soils location was identified as PRS 401 due to a single plutonium-238 detection found during the OU5, Operational Area Phase I Investigation.

PRS-402: Elevated Soil Gas Location.
This PRS was identified as a result of qualitative soil gas sampling during an OU5 investigation.

PRS-403: Elevated Soil Gas Location.
This PRS was identified as a result of qualitative soil gas sampling during an OU5 investigation.

PRS-404: Elevated Soil Gas Location.
This PRS was identified as a result of qualitative soil gas sampling during an OU5 investigation.

PRS-422: Plutonium Hot Spot (Elevated Plutonium-238 Spot).
PRS 422 was identified as a PRS based on a historic elevated plutonium-238 sample that was collected in 1982.

PARCEL 8

PRS-7: Plant Sanitary Outfall Pipeline.

PRS-14: Area C, Waste Storage Area (AKA Drum Staging Area and Chemical Waste Storage).
Potential Release Site (PRS) 14 was suspected to contain Volatile Organic Compounds (VOCs) due to the historical use as a drum storage area for staging chemical waste prior to off-site disposal.

PRS-15: Area C, Lithium Burn Area (AKA Lithium Carbonate Disposal).
PRS 15 was identified due to process history pertaining to the disposal of lithium hydride residue left in drums during the mid-1950s.

PRS-17: Oil Burn Structure.
This Potential Release Site is the Building 34, Oil Burn Structure. It was identified as a PRS because aviation fuel was used in the test-burning operation in the structure. The 1993 OU3, Limited Field Investigation sampled the area in and around the structure.

PRS-18: Building 34, Fire Fighting Training Facility Pit.
The Potential Release Site (PRS) 18 is a former location of the fire fighting training area. In 1989, a cleanup operation was performed at PRS 18 to remove uranium contamination in soil. In 1995, a second cleanup operation was performed at PRS 18 to removed petroleum contamination in soil.

PRS-19: Building 34, Historical Fire Fighting Training Pit.
This Potential Release Site (PRS) 19 is the historical fire fighting pit. It was identified as a Potential Release Site in 1993 during the OU3, Limited Field Investigation.

PRS-20: Building 34, Aviation Fuel Storage Tank (Tank 219).
Potential Release Site (PRS) 20 was identified because of its use as an aviation fuel underground storage tank. The tank was removed in 1990.

PRS-31: Underground Sanitary Sewer Line G5.
Potential Release Sites (PRSs) 31-36, 125 and 270 were identified as PRSs as a result of breaks and/or separations in Mound's sanitary sewer lines, identified during 1982 video survey of the lines.

PRS-32: Underground Sanitary Sewer Line G12.
Potential Release Sites (PRSs) 31-36, 125 and 270 were identified as PRSs as a result of breaks and/or separations in Mound's sanitary sewer lines, identified during 1982 video survey of the lines.

PRS-35: Underground Sanitary Sewer Lines G19 and G14.
Potential Release Sites (PRSs) 31-36, 125 and 270 were identified as PRSs as a result of breaks and/or separations in Mound's sanitary sewer lines, identified during 1982 video survey of the lines.

PRS-41: Area 3, Thorium Drum Storage and Redrumming Area.

PRS-42: Area A, construction Soils from T-Building.
Potential Release Site (PRS) 42 was identified as a PRS due to T Building construction activities and the placement of the excavated soils at this location.

PRS-43: Wastewater Treatment Plant Building 57 Grit Chamber (Tank 101).

PRS-44: Building 57 Grit Conveyer.

PRS-45: Building 57 Comminuter (Tank 102).

PRS-46: Building 57 Equalization Basin (Tank 103).

PRS-47: Building 57 Equalization Basin (Tank 104).

PRS-48: Building 57 Equalization Basin (Tank 105).

PRS-49: Building 57 Equalization Basin (Tank 106).

PRS-50: Building 57 Aeration Basin (Tank 107).

PRS-51: Building 57 Aeration Basin (Tank 108).

PRS-52: Building 57 Clarifier (Tank 109).

PRS-53: Building 57 Clarifier (Tank 110).

PRS-54: Building 57 Sand Filters (2 units).

PRS-55: Building 57 Chlorine Contact Chamber (Tank 111).

PRS-56: Building 57 Chlorine Contact Chamber (Tank 112).

PRS-57: Sludge Spoil Drying Beds.
The sludge drying beds were identified as a Potential Release Site (PRS) 57, in 1988, when elevated levels of plutonium-238 at 1,235 pCi/g and thorium-232 at 63 pCi/g were measured during the construction project to remove the beds. The elevated concentrations were not from the beds but from the soil under the beds after removal. The contamination in the area came from PRS 41, an area that includes PRS 57.

PRS-58: Dredge Spoil Drying Beds.
Potential Release Site (PRS) 58 was identified by the RCRA Facility Assessment due to its use as a storage area for the dredged spoils drying beds.

PRS-59: Contaminated Soil Box Storage Area.
PRS 59 was identified as a storage area for boxes containing plutonium contaminated soil during a USEPA 1988 Preliminary Review/Visual Site Inspection.

PRS-60: Hazardous Waste Storage Area (Building 72).

PRS-61: Building 72 Outdoor Hazardous Waste Storage Area.

PRS-62: Building 72 Empty Drum Storage Area.

PRS-63: Building 19 Soils (Soil Contamination – Building 29).
This site became a PRS because of potential Cobalt-60 and Cesium-137 contamination.

PRS-64: Building 19 Historic Gasoline Tank (Tank 238).

PRS-67: Plant Drainage Ditch.
PRS 67 is an open, unlined channel that flows above ground through the central part of the facility from Building 22 to the retention basins on the western plant boundary. The ditch carries surface run-off from both the Main Hill and SM/PP Hill areas and the asphalt lined pond that drains the ditch through culvert, emerging behind Building 22. From that point the open ditch falls 40 feet over a length of 1800 feet.

PRS-69: Overflow Pond.
PRS 69 is the Mound Overflow Pond and outflow pipe. It is a PRS due to the presence of plutonium-238 contamination, site sanitary landfill leachate, effluent from the plant drainage system, and storm water runoff. The overflow pond is located near the southwest corner of the original plant property. Operating continuously since 1979, the pond has a capacity of 5 million gallons.

PRS-70: Retention Basins and Weir Basin.
This PRS consists of an open-topped impoundment with earthen sides which is used to control the flow of water from the open drainage ditch. The bottom is partitioned into basins by concrete dividers. Also included in this PRS is the Weir basin. It is connected to the retention basins by a spillway.

PRS-71: Building 85 Waste Solvent Tank (Tank 136).
Historical process knowledge indicated that this Potential Release Site (PRS), which is a below grade tank located adjacent to Building 85, was never used.

PRS-75: Railroad Siding (Historical Railroad Spur Area).
Potential Release Site (PRS) 75 is a soils area in the vicinity of the railway siding, created due to its use as a radioactive drum storage, loading, unloading, and repackaging area.

PRS-76: Warehouse 9.
This location was identified as a PRS as a result of historical information on operations conducted in the warehouse. Warehouse 9 was built as part of the original construction of Mound.

PRS-82: Building 57 Diesel Fuel Storage Tank (Tank 118).
Potential Release Site (PRS) 82 was identified as an underground storage tank used to store diesel fuel to start an emergency generator near Building 57.

PRS-84: Building 56 Diesel Fuel Storage Tank (Tank 123).
This former location of a diesel fuel tank was identified as a Potential Release Site (PRS) because of its inclusion in the Mound Plant Underground Storage Tank Program Plan and Regulatory Status Review.

PRS-90: Site Survey Project Potential Hot Spot Location S0425 (Soil Contamination – Building 22).
Potential Release Site (PRS) 90 was based on an isolated thorium reading of 5.74 pCi/g gathered during the 1983 site survey; however, no known radioactive or hazardous waste generating processes were known to have occurred at the location of PRS 90.

PRS-91: Main Hill Seep 0601.
This is one of several seeps located on the hillside of the Main Hill. Water from the seeps shows elevated concentrations of tritium and VOCs.

PRS-92: Main Hill Seep 0602.
This is one of several seeps located on the hillside of the Main Hill. Water from the seeps shows elevated concentrations of tritium and VOCs.

PRS-101: Cooling Tower Basins.

PRS-102: Cooling Tower Drum Storage Area.

PRS-103: E Building Soils.
This soils location was identified as a Potential Release Site (PRS) because of the detection of Volatile Organic Compounds (VOCs) during the Mound Reconnaissance Sampling soil gas survey.

PRS-104: Scintillation Vial Storage Area.
This PRS was located in E Building.

PRS-105: E Building Solvent Storage Shed.
Potential Release Site (PRS) 105 is a remediated soils location that was the former location of the E Building Solvent Storage Shed.

PRS-110: I-Building Soils.
This PRS was identified due to VOC detections during a quantitative OU 5 investigation.

PRS-111: Monitor Well 0034.
Potential Release Site (PRS) 111 was initially identified as a result of a visual inspection of Monitoring Well 0034 which discovered an oily substance during surveillance activities in 1986.

PRS-112: Paint Shop Area.

PRS-113: Powerhouse Soils (Former Tank Site – Powerhouse Fuel Oil Storage Tanks and Soil Contamination).
PRS 113 refers to a single toluene soil gas .

PRS-114, 115, 116, 117: Powerhouse Fuel Oil Storage Tanks (Tanks 113, 114, 115, 116) (Former Tank Site – Powerhouse Fuel Oil Storage Tanks and Soil Contamination).
PRSs 114-117 were the four underground fuel oil tanks near the Powerhouse.

PRS-118: M Building Soils.

PRS-119: Room M-38 Metal Plating Rinse Water Sump (Tank 225).

PRS-120: Room M-108 Metal Plating Rinse Water Tank (Tank 119)

PRS-121: Vapor Degreasers.

PRS-123: Area 5, Radioactive Waste Line Break.
PRS 123 was identified as a result of a December 1970 waste line break. Several radionuclides were detected in the soils at PRS 123.

PRS-124: Building 48 Hillside.
Potential Release Site (PRS) 124 was identified due to a release on 11-09-1967. 1,500 to 2,000 gallons of low-level radioactive wastewater were accidentally released during waste line repair.

PRS-125: Underground Sanitary Sewer Line G24.
Potential Release Sites (PRSs) 31-36, 125, and 270 were identified as PRSs as a result of breaks and/or separations in Mound's sanitary sewer lines, identified during a 1982 video survey of the lines.

PRS-126: Building 28 Solvent Storage Area (Solvent Storage Site – Outside Area Next to Building 28).
Potential Release Sites (PRSs) 126 and 127 refer to the temporary storage locations for waste solvents generated by the Building 28/60 operations.

PRS-128: DS Building Solvent Storage Shed.

PRS-129: B Building Solvent Storage Shed.
PRS 129/130 was the B Building solvent storage shed and its adjacent drum storage pad. VOCs were detected in the soils around PRS 129/130.

PRS-130: B Building Temporary Drum Storage Area.
PRS 129/130 was the B Building solvent storage shed and its adjacent drum storage pad. VOCs were detected in the soils around PRS 129/130.

PRS-131: SW Building Soils.

PRS-132: Area 15, Entombed SW Cave (Rooms SW 1-B).

PRS-133: SW Building Room 1-A.

PRS-134: SW Building Drum Storage Area.

PRS-135: Rooms SW-8 Beta Wastewater Tank (Tank 20).

PRS-136: Room SW-125 Beta Wastewater Tank (Tank 21).

PRS-137: Room SW-143 Beta Wastewater Tank (Tank 22).

PRS-138: Room SW-137 Beta Wastewater Sump (Tank 23).

PRS-139: Room SW-10 Beta Wastewater Sump (Tank 226).

PRS-140: Beta Waste Solidification Facility – SW Building.

PRS-141: Tritium Effluent Removal System.

PRS-142: SW/R Building Solid Radioactive Waste Compactor.

PRS-143: R/SW-T Building Stack Diesel Fuel Storage Tank (Tank 117).

PRS-144: R Building Sanitary Waste Collection Tank (Tank 120).

PRS-145: Room R-128 Alpha Wastewater Tank (Tank 19).

PRS-146: R Building Room 121, 144, 146 and 148 Entombed Drains.

PRS-147: HH Building Soils.
Potential Release Site (PPRS) 147 was identified as a result of the Soil Gas Survey which detected toluene levels ranging from 5 to 23, 142 parts per billion (ppb). No detection of toluene was indicated in the down gradient seep #602, which is approximately 250 feet from PRS 147.

PRS-148: HH Building Solidification Unit.

PRS-149: HH Building Pilot Incinerator.

PRS-150: Room HH-15 Beta Wastewater Sump (Tank 236).

PRS-151: Room HH-6 Alpha Wastewater Sump (Tank 237).

PRS-152: HH Building Beta Wastewater Sump (Tank 24).

PRS-153: Area 20, Radioactive Waste Line Break.
Potential Release Site (PRS) 153 is a soil area on the hillside west of the Hydrolysis House (HH) Building and bounded on the south by a roadway. This soils area, also known as Area 20, was designated a PRS because of contamination by leaks of wastewater from the 3-inch underground pipeline that transversed the northern boundary of this soil area.

PRS-154: Area 23, Thorium Contaminated Soil.
Potential Release Site (PRS) 154, also known as Area 23, is located on the WD hillside and was identified as a PRS based on historic soil sample detections of Plutonium-238, Radium-226, and Uranium-238.

PRS-155: Old Sanitary Disposal (SD) Plant (AKA Old Sanitary Wastewater Treatment Plant).

PRS-156: Old SD Plant Tank (Tank 205).

PRS-157: Old SD Plant Tank (Tank 206).

PRS-158: Old SD Plant Tank (Tank 207).

PRS-159: Area 4A, Sewage Sludge Drying Pits.

PRS 160: Mixed Waste Storage Area (Building 23).

PRS-161: Glass Melter Furnace.

PRS-162: Glass Melter Feed Drum.

PRS-163: Off-Gas Treatment System Deluge Tank.

PRS-164: Off-Gas Treatment System Venturi Scrubber.

PRS-165: Off-Gas Treatment System Cyclone Demister.

PRS-166: Off-Gas Treatment System HEPA Filter.

PRS-167: Off-Gas Treatment System WD Building Filter Bank.

PRS-168: Off-Gas Treatment System Recycle Tank.

PRS-169: Off-Gas Treatment System Strainer.

PRS-170: Off-Gas Treatment System Leaf Solution Filter.

PRS-171: Off-Gas Treatment System Iodine Absorption Filter.

PRS-172: WDA Building Basement Wash Sump (Tank 11) (AKA Glass Melter Room Sump).

PRS-173: Cyclone Incinerator.

PRS-174: WD Building Drum Staging Area.

PRS-175: Area 4, WD Building Influent Tank Overflow.

PRS-176: Area 14, Radioactive Waste Line Break.
In 1974, the soils associated with the WTS leaks (PRS-176) were remediated. In the mid 1980s, the WTS line, the two holding tanks, and Building 43 were removed.

PRS-177: Building 41 Alpha Wastewater Tank (Tank 208).

PRS-178: Building 41 Alpha Wastewater Tank (Tank 209).

PRS-179: WD Building Alpha Wastewater Influent Tank (Tank 3).

PRS-180: WD Building Alpha Wastewater Influent Tank (Tank 4).

PRS-181: WD Building Alpha Wastewater Influent Tank (Tank 5).

PRS-182: WD Building Alpha Influent Tank (Tank 6).

PRS-183: Room WD-1 Basement Sump (Tank 12).

PRS-184: Room WD-1 Alpha Wastewater Sump (Tank 17).

PRS-185: Room WD-1 Sanitary Waste Sump (Tank 134).

PRS-186: Room WD-8 Alpha Wastewater Sump (Tank 18).

PRS-187: WD Building Alpha Wastewater Clariflocculators (2 units).

PRS-188: WD Building Alpha Wastewater Mixing Box.

PRS-189: WD Building Alpha Wastewater Sand Filters (2 units).

PRS-190: WD Building Alpha Wastewater Bone Char Columns (2 units).

PRS-191: WD Building Alpha Wastewater Effluent Tank (Tank 7).

PRS-192: WD Building Alpha Wastewater Effluent Tank (Tank 8).

PRS-193: WD Building Alpha Wastewater Effluent Tank (Tank 9).

PRS-194: WD Building Alpha Wastewater Effluent Tank (Tank 10).

PRS-195: WD Building Alpha Wastewater Sludge Pits (2 units).

PRS-196: WD Building Alpha Wastewater Solidification/Drumming Unit.

PRS-197: WD Building Solid Radioactive Waste Compactor.

PRS-198: WDA Building Basement Sanitary Waste Tank (Tank 135).

PRS-199: WDA Building Beta Wastewater Influent Tank (Tank 13).

PRS-200: WDA Building Beta Wastewater Influent Tank (Tank 14).

PRS-201: WDA Building Beta Wastewater Metering Station.

PRS-202: WDA Building Beta Wastewater Mixing/Solidification Unit.

PRS-203: WDA Building Alpha Wastewater Influent Tank (Tank 15).

PRS-204: WDA Building Alpha Wastewater Influent Tank (Tank 16).

PRS-205: WDA Building Alpha Wastewater Effluent Tank (Tank 214).

PRS-206: WDA Building Alpha Wastewater Influent Tank (Tank 215).

PRS-207: WDA Building Alpha Wastewater Influent Tank (Tank 216).

PRS-208: WDA Building Solidification Unit.

PRS-209: Building 62 Stack Deluge Tank (Tank 1).

PRS-210: Room H-131 Laundry Water Tank (Tank 2).

PRS-213: T Building Solidification Unit.

PRS-214: T Building Solid Radioactive Waste Compactor.

PRS-215: Room T-1 Cooling Water Sump (Tank 124).

PRS-216: T Building, Corridor 2 Sanitary Wastewater Sump (Tank 125).

PRS-217: Room T-11F Sanitary Wastewater Sump (Tank 126).

PRS-218: Room T-15 Sanitary Wastewater Sump (Tank 127).

PRS-219: T Building, Stair 3 Cooling Water Sump (Tank 128).

PRS-220: Room T-78 Steam Condensate Sump (Tank 129).

PRS-221: T Building, Corridor 8 Sanitary Wastewater Sump (Tank 130).

PRS-222: Room T-78A Sanitary Wastewater Sump (Tank 131).

PRS-223: Room T-90 Cooling System Condensate Sump (Tank 132).

PRS-224: Room T-99 Sanitary Wastewater Sump (Tank 133).

PRS-225: Room T-23 Beta Wastewater Sump (Tank 227).

PRS-226: Room T-3 Floor Drain Sump (Tank 228).

PRS-227: Room T-40 Alpha Wastewater Sump (Tank 229).

PRS-228: Room T-41 Alpha Wastewater Sump (Tank 230).

PRS-229: Room T-50 Alpha Wastewater Sump (Tank 231).

PRS-230: Room T-50 Alpha Wastewater Sump (Tank 232).

PRS-231: T Building, Corridor 8 Alpha Wastewater Sump (Tank 233).

PRS-232: T Building, Corridor 7 Alpha Wastewater Sump (Tank 234).

PRS-233: Room T-63 Alpha Wastewater Sump (Tank 235).

PRS-234: Building 58 Diesel Fuel Storage Tank (Tank 222).
This Potential Release Site (PRS) 234 is a former location of a 3,000 gallon unlined, steel tank that was used to supply diesel fuel to an emergency generator.

PRS-235: Area of Possible Elevated Thorium Activity.
This plot of soil (25000 ft^2) was identified as an area of possible elevated thorium activity as a result of the 1983 Radiological Site Survey.

PRS-236: Site Survey Project Potential Hot Spot Location S0166.

Potential Release Site (PRS) 236 was identified after 34.5 pCi/g of plutonium-238 was detected in a surface sample, location S0166, collected from the dock area on the southwest corner of SW Building in 1983-84.

PRS-237: Site Survey Project Potential Hot Spot Location S0175.
Potential Release Site (PRS) 237 became a PRS due to the elevated detections of cesium-137 and cobalt-60 found during the Site Survey Project. PRS 237 is located approximately 100 feet northwest of I Building at the edge of the road.

PRS-238: Site Survey Project Potential Hot Spot Location S1092.

PRS-239: Site Survey Project Potential Hot Spot Location S0208.
This site was identified as a Potential Release Site (PRS) due to detectable plutonium-238 levels at surface soil samples.

PRS-240: Site Survey Project Potential Hot Spot Location S0472.

PRS-243: VOC Potential Hot Spot Location 1064.
The soils location was identified as a Potential Release Site (PRS) because of the detection of toluene during the Mound Reconnaissance Sampling soil gas survey.

PRS-244: VOC Potential Hot Spot Locations 1076, 1077, 1079, and 1080.
Potential Release Site (PRS) 244 was designated as a PRS because of the detection of volatile organic compounds (VOCs) in four sampling locations surrounding the Mound Plant road located west of B Building and OSW Building during the 1992 Soil Gas Survey. The contaminants of concern were toluene and trichloroethane. Both were below their respective guideline criteria. Core Team decided that PRS 244 requires No Further Assessment.

PRS-245: VOC Potential Hot Spot Location 1085.
This soils location was identified as a Potential Release Site (PRS) because of the detection of Volatile Organic Compounds (VOCs) during the Mound Reconnaissance Sampling soil gas survey.

PRS-246: VOC Potential Hot Spot Locations 1117 and 1118.
Potential Release Site (PRS) 246 was designated as a PRS due to the detection of trichloroethene (TCE and tetrachloroethene (PCE) during the 1993 Soil Gas Survey.

PRS-247: VOC Potential Hot Spot Location 1129.
This Potential Release Site (PRS) was created due to quantitative soil gas volatile organic compound (VOC) detection.

PRS-248: HH Building Stack.

PRS-249 SW Building Stack (NCDPF).

PRS-250: SW Building Stack (SW1C).

PRS-251: SW Building Stack (HEFS).

PRS-252: B Building Stack.

PRS-253: T Building WEST Stack.

PRS-254: T Building EAST Stack.

PRS-255: WD Building Stack (ALR).

PRS-256: WD Building Stack (AHR).

PRS-257: WD Building Stack (SS).

PRS-282: Spoils Disposal Area/Construction Spoils Area.

PRS-300: Area 19, Underground Waste Transfer Line.
This PRS was identified based on the fact that a pair of lines (waste transfer system) had been installed to transfer plutonium-238 contaminated waste solutions from SM Building to WD Building. The PRS consists of the WTS lines and the soil surrounding them from the SM area to the WD Building, a distance of approximately 2,600 feet.

PRS-327: R-111 Calorimetry Bath (Tank 255).

PRS-328: R-111 Calorimetry Bath (Tank 266).

PRS-329: Building 62 Hot Waste Sump (Tank 258).

PRS-337: Building H Condensate Sump (Tank 268).

PRS-339: T-44 Wastewater Sump (Tank 250).

PRS-340: T-16b Wastewater Sump (Tank 251).

PRS-341: T-90 Condensate Sump (Tank 269).

PRS-342: T-1 Hot Side Fire Water Tank (Tank 271).

PRS-343: T-20 Fire Water Sump (Tank 272).

PRS-344: T-37 Fire Water Sump (Tank 273).

PRS-345: Former Equipment Storage Area (see related site 16).
The area became a Potential Release Site (PRS) because it was used by contractors in the 1980s as an equipment yard and staging area. The area was associated with Area C Lithium Burn Area and the Past Hazardous Waste Storage Facility in the OU9 Site Scoping Report.

PRS-347, 348, 355 and 370: Elevated Soil Gas Locations.
PRSs 346, 347, 348, 355 and 370 were soil Potential Release Sites (PRSs) located in the southern sector of the original Mound Plant.

PRS-351, 352, 353, 360, 361, 362, 385, 386, and 387: Elevated Soil Gas Location.
PRSs 351, 352, 353, 357, 359, 360, 361, 362, 385, 386, and 387 were located in the western sector of the original Mound Plant.

PRS-356: Elevated Soil Gas Location.

PRS-363: Elevated Soil Gas Location. PRS 363 was an isolated Pu-238 hot spot identified during the site survey for the OU5, Non-AOC investigation in June 1994 – October 1994). No radioactive or hazardous waste generating processes were known to have occurred at the location of PRS 363. Core Team decided that PRS 363 requires No Further Assessment.

PRS-366: PRS 366 is a soil Potential Release Site (PRS) located in the western sector of the original Mound Plant. This soil location was identified as a PRS due to qualitative hydrocarbon detections found during the PETREX soil gas portion of the OU5, Non-AOC investigation. Core Team decided that PRS 366 requires No Further Assessment.

PRS-367: Elevated Soil Gas Location. PRS 367 is a soil Potential Release Site (PRS) located in the western sector of the original Mound Plant. This soil location was identified as a PRS due to qualitative hydrocarbon detections found during the PETREX soil gas portion of the OU5, Non-AOC investigation. Core Team decided that PRS 367 requires No Further Assessment.

PRS-368: Elevated Soil Gas Location.

PRS-405: (North of Bldg. 23) Oil and PCB Potential in Soil. Potential Release Site (PRS) 405 is a soil area located approximately 5 feet north of Building 23 (Waste Management Facility) at the east end of that building. PRS 405 was identified during construction activities in June 1994 when an oily substance was discovered.

PRS-408: Prism Separator Oil Leak.

PRS 408 is a chemical (Shell Rotella 10W lubricating oil) contamination soils area located in the "Prism" nitrogen production membrane system, which supplied house nitrogen to R and SW buildings.

PRS-411: Soil Contamination – Asphalt Roadway.
Potential Release Site (PRS) 411 was identified as a PRS site due to elevated FIDLER readings that were discovered during a Health Physics Survey.

PRS-413: Soil Contamination – creosote.
PRS 413 is a chemically contaminated soil location situated in the vicinity of the old Sanitary Disposal (SD) facility. The SD facility, now removed, was located on the southwest side of the Mound Plant Main Hill, approximately northwest of, and on terrain elevated above, the Plant Waste Disposal (WD) Building.

PRS-415: Soil Contamination – Radiological.
Potential Release Site (PRS) 415 was established during the binning process for DS Building. A data review of soils areas around DS Building identified soil sampling location ID SCR307 with values of Plutonium-238 and Thorium-232 above guideline criteria.

PRS-417: Soil Contamination-High Soil Gas Near Well 0312.

PRS-423, 424, 425, 426, 427 and 428: Hot Waste Line – Segments 1A, 1B, 2, 5, 6, and 7. PRSs 423, 424, 425, 426, 427 and 428 were identified because the underground line segments carried radioactively contaminated effluent from H Building operations to the Waste Disposal Building (WD).

PRS-429, 430, 431, 432, 433, 434, 435, and 436: Hot Waste Line – Segments 9a, 10, 11, 12, 13a, 13b, 14.
PRSs 429, 430, 431, 432, 433, 434, 435, and 436 were identified because the underground line segments carried radioactively contaminated effluent from T Building operations to the Waste Disposal Building (WD).

PRS-437, 438, and 439: Hot Waste Line – Segment 3, 4, 4a. PRS 437, 438 and 439 were identified because the underground line segments carried radioactively contaminated effluent from R and SW Building operations to the Waste Disposal Building (WD).

PRS-440: Hot Waste Line – Segment 8. PRS 440 was identified because the underground line segment carried radioactively contaminated effluent from SW Building operations to the Waste Disposal Building (WD).

PRS-442: PRS 442 is the subsurface area located below the asphalt-lined pond (PRS 68). PRS 442 was identified as a PRS due to the evidence of backfill within the footprint of the pond prior to its construction.

APPENDIX F

Listing of All Detected Analytes

Appendix F:Analytes Detected in Surface and Subsurface Soil for the Construction Worker Scenario

Analyte (units)	CAS Number	Number of Detections	Minimum Detect	Maximum Detect	Distribution	Results Greater than Detection Limit	% Results Greater than Detection Limit	95% UCL of Mean	Exposure Concentration	Detection in Greater than 5%
BTEX Compounds										
Benzene (UG/KG)	71-43-2	0			O	0/ 15	0.0			NO
Ethylbenzene (UG/KG)	100-41-4	0			O	0/ 15	0.0			NO
Toluene (UG/KG)	108-88-3	0			O	0/ 15	0.0			NO
Xylenes, Total (UG/KG)	1330-20-7	0			O	0/ 15	0.0			NO
Explosives										
1,3,5-Trinitrobenzene (UG/KG)	99-35-4	0			O	0/ 81	0.0			NO
1,3-Dinitrobenzene (UG/KG)	99-65-0	0			O	0/ 81	0.0			NO
2,4,6-Trinitrotoluene (UG/KG)	118-96-7	1	1.1E+02	1.1E+02	D	1/ 91	1.1	6.3E+02	1.1E+02	NO
2,4-Dinitrotoluene (UG/KG)	121-14-2	0			O	0/ 75	0.0			NO
2,6-Dinitrotoluene (UG/KG)	606-20-2	0			O	0/ 32	0.0			NO
2-Amino-4,6-Dinitrotoluene (UG/KG)	35572-78-2	0			O	0/ 61	0.0			NO
4-Amino-2,6-Dinitrotoluene (UG/KG)	1946-51-0	0			O	0/ 19	0.0			NO
HMX (UG/KG)	2691-41-0	0			O	0/ 98	0.0			NO
Nitrobenzene (UG/KG)	98-95-3	1	3.8E+02	3.8E+02	D	1/ 32	3.1	4.7E+02	3.8E+02	NO
Nitroglycerin (UG/KG)	55-63-0	0			O	0/ 76	0.0			NO
PETN (UG/KG)	78-11-5	0			O	0/ 99	0.0			NO
RDX (UG/KG)	121-82-4	0			O	0/ 99	0.0			NO
Tetryl (UG/KG)	479-45-8	0			O	0/ 71	0.0			NO
Metals										
Aluminum (UG/KG)	7429-90-5	145	5.9E+05	2.3E+07	N	145/ 146	99.3	1.5E+07	1.5E+07	YES
Antimony (UG/KG)	7440-36-0	64	2.1E+02	4.5E+04	D	64/ 209	30.6	8.5E+03	8.5E+03	YES
Arsenic (UG/KG)	7440-38-2	137	4.9E+02	2.0E+04	X	137/ 143	95.8	8.2E+03	8.2E+03	YES
Barium (UG/KG)	7440-39-3	226	4.4E+03	6.0E+05	X	226/ 227	99.6	1.0E+05	1.0E+05	YES
Beryllium (UG/KG)	7440-41-7	220	5.0E+01	3.6E+03	X	220/ 226	97.3	1.1E+03	1.1E+03	YES
Bismuth (UG/KG)	7440-69-9	33	8.2E+02	7.3E+04	X	33/ 59	55.9	1.3E+05	7.3E+04	YES
Cadmium (UG/KG)	7440-43-9	69	2.5E+02	1.2E+04	D	69/ 227	30.4	1.5E+03	1.5E+03	YES
Calcium (UG/KG)	7440-70-2	145	1.4E+06	3.4E+08	X	145/ 146	99.3	1.5E+08	1.5E+08	YES
Chromium (UG/KG)	7440-47-3	226	1.1E+03	3.7E+04	X	226/ 227	99.6	1.7E+04	1.7E+04	YES
Cobalt (UG/KG)	7440-48-4	145	7.9E+02	2.5E+04	X	145/ 146	99.3	1.3E+04	1.3E+04	YES
Copper (UG/KG)	7440-50-8	143	1.8E+03	1.1E+06	X	143/ 146	97.9	2.2E+04	2.2E+04	YES
Cyanide (UG/KG)	57-12-5	35	1.0E+02	8.9E+03	D	35/ 162	21.6	5.8E+02	5.8E+02	YES
Iron (UG/KG)	7439-89-6	145	2.3E+04	4.3E+07	N	145/ 146	99.3	3.1E+07	3.1E+07	YES
Lead (UG/KG)	7439-92-1	242	1.6E+03	2.2E+05	X	242/ 256	94.5	1.5E+04	1.5E+04	YES
Lithium (UG/KG)	7439-93-2	53	2.3E+03	3.4E+04	N	53/ 55	96.4	1.8E+04	1.8E+04	YES

Appendix F:Analytes Detected in Surface and Subsurface Soil for the Construction Worker Scenario

Analyte (units)	CAS Number	Number of Detections	Minimum Detect	Maximum Detect	Distribution	Results Greater than Detection Limit	% Results Greater than Detection Limit	95% UCL of Mean	Exposure Concentration	Detection in Greater than 5%
Magnesium (UG/KG)	7439-95-4	145	1.2E+04	1.2E+08	X	145/ 146	99.3	2.9E+07	2.9E+07	YES
Manganese (UG/KG)	7439-96-5	137	6.5E+04	8.2E+06	X	137/ 138	99.3	6.8E+05	6.8E+05	YES
Mercury (UG/KG)	7439-97-6	61	3.0E+01	1.4E+03	D	61/ 139	43.9	1.2E+02	1.2E+02	YES
Molybdenum (UG/KG)	7439-98-7	49	2.2E+02	9.7E+03	L	49/ 54	90.7	4.0E+03	4.0E+03	YES
Nickel (UG/KG)	7440-02-0	224	2.3E+03	2.5E+05	X	224/ 227	98.7	2.2E+04	2.2E+04	YES
Potassium (UG/KG)	7440-09-7	142	3.1E+05	3.3E+08	X	142/ 147	96.6	1.9E+06	1.9E+06	YES
Selenium (UG/KG)	7782-49-2	19	4.6E+02	2.3E+03	D	19/ 131	14.5	9.6E+02	9.6E+02	YES
Silver (UG/KG)	7440-22-4	65	1.1E+02	2.1E+04	D	65/ 227	28.6	2.4E+03	2.4E+03	YES
Sodium (UG/KG)	7440-23-5	136	4.2E+04	3.5E+06	X	136/ 146	93.2	1.1E+06	1.1E+06	YES
Thallium (UG/KG)	7440-28-0	29	2.0E+02	3.5E+03	D	29/ 142	20.4	1.1E+03	1.1E+03	YES
Tin (UG/KG)	7440-31-5	22	6.7E+02	3.3E+03	D	22/ 54	40.7	1.2E+04	3.3E+03	YES
Vanadium (UG/KG)	7440-62-2	145	1.7E+03	4.3E+04	X	145/ 146	99.3	2.5E+04	2.5E+04	YES
Zinc (UG/KG)	7440-66-6	145	5.5E+03	4.6E+05	X	145/ 146	99.3	9.3E+04	9.3E+04	YES
Pesticides and/or PCBs										
4,4'-DDD (UG/KG)	72-54-8	0			O	0/ 122	0.0			NO
4,4'-DDE (UG/KG)	72-55-9	7	2.8E-01	1.8E+00	D	7/ 121	5.8	3.3E+00	1.8E+00	YES
4,4'-DDT (UG/KG)	50-29-3	0			O	0/ 122	0.0			NO
Aldrin (UG/KG)	309-00-2	1	5.4E-02	5.4E-02	D	1/ 122	0.8	2.2E+00	5.4E-02	NO
Alpha Chlordane (UG/KG)	5103-71-9	0			O	0/ 99	0.0			NO
Alpha-BHC (UG/KG)	319-84-6	0			O	0/ 122	0.0			NO
Aroclor-1016 (UG/KG)	12674-11-2	0			O	0/ 151	0.0			NO
Aroclor-1221 (UG/KG)	11104-28-2	0			O	0/ 151	0.0			NO
Aroclor-1232 (UG/KG)	11141-16-5	1	1.2E+02	1.2E+02	D	1/ 151	0.7	3.3E+01	3.3E+01	NO
Aroclor-1242 (UG/KG)	53469-21-9	1	1.2E+02	1.2E+02	D	1/ 151	0.7	3.3E+01	3.3E+01	NO
Aroclor-1248 (UG/KG)	12672-29-6	3	7.4E+01	9.1E+02	D	3/ 150	2.0	3.7E+01	3.7E+01	NO
Aroclor-1254 (UG/KG)	11097-69-1	1	2.2E+02	2.2E+02	D	1/ 151	0.7	5.8E+01	5.8E+01	NO
Aroclor-1260 (UG/KG)	11096-82-5	0			O	0/ 150	0.0			NO
Beta-BHC (UG/KG)	319-85-7	3	1.8E-01	1.2E+02	D	3/ 120	2.5	3.1E+00	3.1E+00	NO
Chlordane (UG/KG)	57-74-9	2	1.9E+01	9.8E+01	D	2/ 23	8.7	1.6E+01	1.6E+01	YES
Delta-BHC (UG/KG)	319-86-8	1	1.7E-01	1.7E-01	D	1/ 122	0.8	3.4E+00	1.7E-01	NO
Dieldrin (UG/KG)	60-57-1	3	5.2E-01	4.4E+00	D	3/ 122	2.5	3.1E+00	3.1E+00	NO
Endosulfan I (UG/KG)	959-98-8	0			O	0/ 122	0.0			NO
Endosulfan II (UG/KG)	33213-65-9	0			O	0/ 122	0.0			NO
Endosulfan Sulfate (UG/KG)	1031-07-8	0			O	0/ 122	0.0			NO
Endrin (UG/KG)	72-20-8	2	1.5E-01	2.3E+01	D	2/ 121	1.7	4.6E+00	4.6E+00	NO

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Analyte (units)	CAS Number	Number of Detections	Minimum Detect	Maximum Detect	Distribution	Results Greater than Detection Limit	% Results Greater than Detection Limit	95% UCL of Mean	Exposure Concentration	Detection in Greater than 5%
Endrin Aldehyde (UG/KG)	7421-93-4	0			O	0/ 108	0.0			NO
Endrin Ketone (UG/KG)	53494-70-5	2	5.2E-01	7.6E-01	D	2/ 122	1.6	1.3E+01	7.6E-01	NO
Gamma Chlordane (UG/KG)	5103-74-2	1	5.7E-02	5.7E-02	D	1/ 99	1.0	1.7E+01	5.7E-02	NO
Gamma-BHC (Lindane) (UG/KG)	58-89-9	0			O	0/ 122	0.0			NO
Heptachlor (UG/KG)	76-44-8	2	1.1E-01	1.3E-01	D	2/ 122	1.6	2.0E+00	1.3E-01	NO
Heptachlor Epoxide (UG/KG)	1024-57-3	2	1.1E-01	3.5E-01	D	2/ 122	1.6	1.3E+01	3.5E-01	NO
Methoxychlor (UG/KG)	72-43-5	0			O	0/ 122	0.0			NO
Toxaphene (UG/KG)	8001-35-2	0			O	0/ 122	0.0			NO
Phenols										
Phenolics (UG/KG)	64743-03-9	0			O	0/ 24	0.0			NO
Radiological										
Actinium-227 (PCI/G)	14952-40-0	37	5.0E-02	2.1E+00	D	37/ 282	13.1	3.0E-01	3.0E-01	YES
Actinium-228 (PCI/G)	14331-83-0	7	7.6E-01	1.4E+00	D	7/ 7	100.0	1.2E+00	1.4E+00	YES
Americium-241 (PCI/G)	14596-10-2	12	5.0E-02	3.8E+01	D	12/ 558	2.2	1.1E-01	1.1E-01	NO
Bismuth-207 (PCI/G)	13982-38-2	0			O	0/ 126	0.0			
Bismuth-210 (PCI/G)	14331-79-4	1	6.8E-02	6.8E-02	D	1/ 222	0.5	2.9E-02	2.9E-02	NO
Bismuth-210M (PCI/G)	BI-210M	3	1.4E-01	2.7E-01	D	3/ 84	3.6	5.5E-02	5.5E-02	NO
Bismuth-214 (PCI/G)	14733-03-0	10	7.0E-01	9.3E-01	N	10/ 10	100.0	8.6E-01	9.3E-01	YES
Cesium-137 (PCI/G)	10045-97-3	276	2.1E-02	1.6E+00	D	276/ 564	48.9	1.6E-01	1.6E-01	YES
Cobalt-60 (PCI/G)	10198-40-0	14	2.0E-02	5.0E-01	D	14/ 575	2.4	3.6E-02	3.6E-02	NO
Europium-152 (PCI/G)	14683-23-9	1	8.7E-02	8.7E-02	D	1/ 191	0.5	4.7E-02	4.7E-02	NO
Europium-154 (PCI/G)	15585-10-1	0			O	0/ 180	0.0			NO
Lead-210 (PCI/G)	14255-04-0	180	4.9E-01	3.7E+00	X	180/ 344	52.3	1.2E+00	1.2E+00	YES
Lead-212 (PCI/G)	15092-94-1	10	8.4E-01	1.2E+00	L	10/ 10	100.0	1.1E+00	1.2E+00	YES
Lead-214 (PCI/G)	15067-28-4	20	5.7E-01	1.1E+00	N	20/ 20	100.0	9.2E-01	9.2E-01	YES
Plutonium-238 (PCI/G)	13981-16-3	665	1.2E-02	4.0E+02	D	665/1545	43.0	2.6E+01	2.6E+01	YES
Plutonium-239 (PCI/G)	15117-48-3	83	3.5E-03	1.3E+00	X	83/ 90	92.2	6.9E-02	6.9E-02	YES
Plutonium-239/240 (PCI/G)	PU-239/240	79	3.7E-03	1.0E+00	D	79/ 254	31.1	4.4E-02	4.4E-02	YES
Plutonium-242 (PCI/G)	13982-10-0	0			O	0/ 5	0.0			NO
Potassium-40 (PCI/G)	13966-00-2	122	7.2E+00	3.7E+01	X	122/ 126	96.8	2.1E+01	2.1E+01	YES
Protactinium-231 (PCI/G)	14331-85-2	0			O	0/ 36	0.0			NO
Radium-224 (PCI/G)	13233-32-4	190	7.3E-02	6.3E+00	X	190/ 190	100.0	1.3E+00	1.3E+00	YES
Radium-226 (PCI/G)	13982-63-3	494	1.8E-01	3.7E+00	X	494/ 567	87.1	1.2E+00	1.2E+00	YES
Radium-228 (PCI/G)	15262-20-1	80	3.1E-01	2.0E+00	N	80/ 81	98.8	1.2E+00	1.2E+00	YES
Strontium-90 (PCI/G)	10098-97-2	0			O	0/ 21	0.0			NO

Appendix F:Analytes Detected in Surface and Subsurface Soil for the Construction Worker Scenario

Analyte (units)	CAS Number	Number of Detections	Minimum Detect	Maximum Detect	Distribution	Results Greater than Detection Limit	% Results Greater than Detection Limit	95% UCL of Mean	Exposure Concentration	Detection in Greater than 5%
Thallium-208 (PCI/G)	14913-50-9	10	1.6E-01	4.0E-01	N	10/ 10	100.0	3.8E-01	4.0E-01	YES
Thorium-227 (PCI/G)	15623-47-9	17	6.0E-02	4.4E-01	L	17/ 33	51.5	1.4E-01	1.4E-01	YES
Thorium-228 (PCI/G)	14274-82-9	342	3.7E-02	4.5E+00	X	342/ 384	89.1	1.6E+00	1.6E+00	YES
Thorium-229 (PCI/G)	15594-54-4	0			O	0/ 36	0.0			NO
Thorium-230 (PCI/G)	14269-63-7	340	1.0E-01	7.5E+00	X	340/ 595	57.1	2.8E+00	2.8E+00	YES
Thorium-232 (PCI/G)	7440-29-1	789	4.5E-02	8.0E+01	D	789/1805	43.7	8.3E-01	8.3E-01	YES
Tritium (PCI/G)	10028-17-8	1	1.4E+00	1.4E+00	D	1/ 21	4.8	2.0E+00	1.4E+00	NO
Uranium-234 (PCI/G)	13966-29-5	46	3.8E-01	1.6E+00	N	46/ 54	85.2	1.0E+00	1.0E+00	YES
Uranium-235 (PCI/G)	15117-96-1	28	2.7E-02	2.1E-01	D	28/ 77	36.4	1.9E-01	1.9E-01	YES
Uranium-235/236 (PCI/G)	U-235/236	0			O	0/ 2	0.0			NO
Uranium-238 (PCI/G)	7440-61-1	72	4.1E-01	2.0E+00	X	72/ 119	60.5	1.9E+00	1.9E+00	YES
Semi-Volatile Organics										
1,2,4-Trichlorobenzene (UG/KG)	120-82-1	0			O	0/ 159	0.0			NO
1,2-Dichlorobenzene (UG/KG)	95-50-1	0			O	0/ 159	0.0			NO
1,3-Dichlorobenzene (UG/KG)	541-73-1	0			O	0/ 159	0.0			NO
1,4-Dichlorobenzene (UG/KG)	106-46-7	0			O	0/ 159	0.0			NO
1-chloro-4-phenoxybenzene (UG/KG)	7005-72-3	0			O	0/ 159	0.0			NO
2,2'-oxybis(1-chloropropane) (UG/KG)	108-60-1	0			O	0/ 159	0.0			NO
2,4,5-Trichlorophenol (UG/KG)	95-95-4	0			O	0/ 159	0.0			NO
2,4,6-Trichlorophenol (UG/KG)	88-06-2	0			O	0/ 159	0.0			NO
2,4-Dichlorophenol (UG/KG)	120-83-2	0			O	0/ 159	0.0			NO
2,4-Dimethylphenol (UG/KG)	105-67-9	0			O	0/ 159	0.0			NO
2,4-Dinitrophenol (UG/KG)	51-28-5	0			O	0/ 159	0.0			NO
2,4-Dinitrotoluene (UG/KG)	121-14-2	0			O	0/ 91	0.0			NO
2,6-Dinitrotoluene (UG/KG)	606-20-2	0			O	0/ 134	0.0			NO
2-Benzyl-4-Chlorophenol (UG/KG)	120-32-1	0			O	0/ 30	0.0			NO
2-Chloronaphthalene (UG/KG)	91-58-7	0			O	0/ 174	0.0			NO
2-Chlorophenol (UG/KG)	95-57-8	0			O	0/ 159	0.0			NO
2-Methylnaphthalene (UG/KG)	91-57-6	3	5.4E+01	9.9E+01	D	3/ 174	1.7	2.8E+02	9.9E+01	NO
2-Methylphenol (UG/KG)	95-48-7	0			O	0/ 159	0.0			NO
2-Nitroaniline (UG/KG)	88-74-4	0			O	0/ 159	0.0			NO
2-Nitrophenol (UG/KG)	88-75-5	0			O	0/ 159	0.0			NO
3,3'-Dichlorobenzidine (UG/KG)	91-94-1	0			O	0/ 159	0.0			NO
3-Nitroaniline (UG/KG)	99-09-2	0			O	0/ 157	0.0			NO
4,6-Dinitro-o-Cresol (UG/KG)	534-52-1	0			O	0/ 159	0.0			NO

Appendix F:Analytes Detected in Surface and Subsurface Soil for the Construction Worker Scenario

Analyte (units)	CAS Number	Number of Detections	Minimum Detect	Maximum Detect	Distribution	Results Greater than Detection Limit	% Results Greater than Detection Limit	95% UCL of Mean	Exposure Concentration	Detection in Greater than 5%
4-Bromophenyl-phenyl Ether (UG/KG)	101-55-3	0			O	0/ 159	0.0			NO
4-Chloro-3-methylphenol (UG/KG)	59-50-7	0			O	0/ 159	0.0			NO
4-Chloroaniline (UG/KG)	106-47-8	0			O	0/ 159	0.0			NO
4-Methylphenol (UG/KG)	106-44-5	1	4.1E+02	4.1E+02	D	1/ 159	0.6	2.8E+02	2.8E+02	NO
4-Nitroaniline (UG/KG)	100-01-6	0			O	0/ 159	0.0			NO
4-Nitrophenol (UG/KG)	100-02-7	1	1.8E+02	1.8E+02	D	1/ 159	0.6	1.2E+03	1.8E+02	NO
Acenaphthene (UG/KG)	83-32-9	6	2.7E+01	4.3E+02	D	6/ 174	3.4	2.9E+02	2.9E+02	NO
Acenaphthylene (UG/KG)	208-96-8	0			O	0/ 174	0.0			NO
Anthracene (UG/KG)	120-12-7	13	2.2E+01	2.8E+03	D	13/ 174	7.5	3.1E+02	3.1E+02	YES
Benzidine (UG/KG)	92-87-5	0			O	0/ 21	0.0			NO
Benzo(a)anthracene (UG/KG)	56-55-3	31	2.3E+01	4.2E+03	D	31/ 174	17.8	3.2E+02	3.2E+02	YES
Benzo(a)pyrene (UG/KG)	50-32-8	29	2.3E+01	3.6E+03	D	29/ 174	16.7	3.2E+02	3.2E+02	YES
Benzo(b)fluoranthene (UG/KG)	205-99-2	35	2.5E+01	2.8E+03	D	35/ 174	20.1	3.2E+02	3.2E+02	YES
Benzo(g,h,i)perylene (UG/KG)	191-24-2	16	2.7E+01	2.1E+03	D	16/ 174	9.2	3.0E+02	3.0E+02	YES
Benzo(k)fluoranthene (UG/KG)	207-08-9	27	2.1E+01	3.4E+03	D	27/ 174	15.5	3.2E+02	3.2E+02	YES
Benzoic Acid (UG/KG)	65-85-0	5	7.8E+01	9.5E+01	D	5/ 139	3.6	1.5E+03	9.5E+01	NO
Benzyl Alcohol (UG/KG)	100-51-6	0			O	0/ 139	0.0			NO
Bis(2-chloroethoxy)methane (UG/KG)	111-91-1	0			O	0/ 159	0.0			NO
Bis(2-chloroethyl)ether (UG/KG)	111-44-4	0			O	0/ 159	0.0			NO
Bis(2-ethylhexyl)phthalate (UG/KG)	117-81-7	59	1.9E+01	6.5E+03	D	59/ 159	37.1	3.3E+02	3.3E+02	YES
Butyl Benzyl Phthalate (UG/KG)	85-68-7	3	4.8E+01	6.4E+01	D	3/ 159	1.9	2.8E+02	6.4E+01	NO
Carbazole (UG/KG)	86-74-8	2	1.5E+02	1.7E+02	D	2/ 89	2.2	2.0E+02	1.7E+02	NO
Chrysene (UG/KG)	218-01-9	30	2.0E+01	1.7E+03	D	30/ 159	18.9	3.0E+02	3.0E+02	YES
Di-n-butyl Phthalate (UG/KG)	84-74-2	61	2.1E+01	2.0E+03	D	61/ 240	25.4	3.1E+02	3.1E+02	YES
Di-n-octyl Phthalate (UG/KG)	117-84-0	1	4.0E+02	4.0E+02	D	1/ 159	0.6	2.8E+02	2.8E+02	NO
Dibenz(a,h)anthracene (UG/KG)	53-70-3	6	7.1E+01	8.0E+02	D	6/ 174	3.4	2.8E+02	2.8E+02	NO
Dibenzofuran (UG/KG)	132-64-9	6	3.2E+01	5.8E+02	D	6/ 159	3.8	2.7E+02	2.7E+02	NO
Diethyl Phthalate (UG/KG)	84-66-2	6	3.9E+01	1.1E+02	D	6/ 159	3.8	2.8E+02	1.1E+02	NO
Dimethyl Phthalate (UG/KG)	131-11-3	0			O	0/ 159	0.0			NO
Diphenylamine (UG/KG)	122-39-4	0			O	0/ 81	0.0			NO
Fluoranthene (UG/KG)	206-44-0	48	2.3E+01	1.1E+04	D	48/ 174	27.6	3.7E+02	3.7E+02	YES
Fluorene (UG/KG)	86-73-7	7	3.8E+01	1.1E+03	D	7/ 174	4.0	2.9E+02	2.9E+02	NO
Hexachlorobenzene (UG/KG)	118-74-1	0			O	0/ 159	0.0			NO
Hexachlorobutadiene (UG/KG)	87-68-3	0			O	0/ 159	0.0			NO
Hexachlorocyclopentadiene (UG/KG)	77-47-4	0			O	0/ 159	0.0			NO

Appendix F:Analytes Detected in Surface and Subsurface Soil for the Construction Worker Scenario

Analyte (units)	CAS Number	Number of Detections	Minimum Detect	Maximum Detect	Distribution	Results Greater than Detection Limit	% Results Greater than Detection Limit	95% UCL of Mean	Exposure Concentration	Detection in Greater than 5%
Hexachloroethane (UG/KG)	67-72-1	0			O	0/ 159	0.0			NO
Indeno(1,2,3-cd)pyrene (UG/KG)	193-39-5	18	2.5E+01	1.9E+03	D	18/ 174	10.3	3.0E+02	3.0E+02	YES
Isophorone (UG/KG)	78-59-1	0			O	0/ 159	0.0			NO
N-Nitroso-di-n-propylamine (UG/KG)	621-64-7	0			O	0/ 159	0.0			NO
N-Nitrosodiphenylamine (UG/KG)	86-30-6	8	5.7E+01	2.1E+02	D	8/ 159	5.0	2.7E+02	2.1E+02	YES
Naphthalene (UG/KG)	91-20-3	5	2.6E+01	4.1E+02	D	5/ 171	2.9	2.9E+02	2.9E+02	NO
Nitrobenzene (UG/KG)	98-95-3	0			O	0/ 134	0.0			NO
Pentachlorophenol (UG/KG)	87-86-5	0			O	0/ 159	0.0			NO
Phenanthrene (UG/KG)	85-01-8	32	2.7E+01	1.1E+04	D	32/ 174	18.4	3.5E+02	3.5E+02	YES
Phenol (UG/KG)	108-95-2	2	8.5E+01	3.2E+02	D	2/ 159	1.3	2.8E+02	2.8E+02	NO
Pyrene (UG/KG)	129-00-0	45	2.6E+01	9.7E+03	D	45/ 174	25.9	3.6E+02	3.6E+02	YES
Volatile Organics										
1,1,1,2-Tetrachloroethane (UG/KG)	630-20-6	0			O	0/ 23	0.0			NO
1,1,1-Trichloroethane (UG/KG)	71-55-6	4	1.0E+00	8.0E+00	D	4/ 200	2.0	3.4E+00	3.4E+00	NO
1,1,2,2-Tetrachloroethane (UG/KG)	79-34-5	0			O	0/ 200	0.0			NO
1,1,2-Trichloroethane (UG/KG)	79-00-5	0			O	0/ 200	0.0			NO
1,1-Dichloroethane (UG/KG)	75-34-3	1	3.0E+00	3.0E+00	D	1/ 200	0.5	3.4E+00	3.0E+00	NO
1,1-Dichloroethene (UG/KG)	75-35-4	0			O	0/ 200	0.0			NO
1,1-Dichloropropene (UG/KG)	563-58-6	0			O	0/ 23	0.0			NO
1,2,3-Trichlorobenzene (UG/KG)	87-61-6	0			O	0/ 23	0.0			NO
1,2,3-Trichloropropane (UG/KG)	96-18-4	0			O	0/ 23	0.0			NO
1,2,4-Trichlorobenzene (UG/KG)	120-82-1	0			O	0/ 3	0.0			NO
1,2,4-Trimethylbenzene (UG/KG)	95-63-6	0			O	0/ 23	0.0			NO
1,2-Dibromo-3-Chloropropane (UG/KG)	96-12-8	0			O	0/ 23	0.0			NO
1,2-Dichlorobenzene (UG/KG)	95-50-1	0			O	0/ 3	0.0			NO
1,2-Dichloroethane (UG/KG)	107-06-2	0			O	0/ 200	0.0			NO
1,2-Dichloroethene (UG/KG)	540-59-0	5	2.0E+00	2.1E+02	D	5/ 177	2.8	4.1E+00	4.1E+00	NO
1,2-Dichloropropane (UG/KG)	78-87-5	0			O	0/ 200	0.0			NO
1,2-Diethylbenzene (UG/KG)	135-01-3	0			O	0/ 31	0.0			NO
1,2-cis-Dichloroethene (UG/KG)	156-59-2	0			O	0/ 34	0.0			NO
1,2-trans-Dichloroethene (UG/KG)	156-60-5	0			O	0/ 34	0.0			NO
1,3,5-Trimethylbenzene (UG/KG)	108-67-8	0			O	0/ 23	0.0			NO
1,3-Dichlorobenzene (UG/KG)	541-73-1	0			O	0/ 3	0.0			NO
1,3-Dichloropropane (UG/KG)	142-28-9	0			O	0/ 23	0.0			NO
1,3-cis-Dichloropropene (UG/KG)	10061-01-5	0			O	0/ 200	0.0			NO

Appendix F:Analytes Detected in Surface and Subsurface Soil for the Construction Worker Scenario

Analyte (units)	CAS Number	Number of Detections	Minimum Detect	Maximum Detect	Distribution	Results Greater than Detection Limit	% Results Greater than Detection Limit	95% UCL of Mean	Exposure Concentration	Detection in Greater than 5%
1,3-trans-Dichloropropene (UG/KG)	10061-02-6	0			O	0/ 200	0.0			NO
1,4-Dichlorobenzene (UG/KG)	106-46-7	0			O	0/ 3	0.0			NO
2,2-Dichloropropane (UG/KG)	594-20-7	0			O	0/ 23	0.0			NO
2-Butanone (UG/KG)	78-93-3	18	1.0E+00	3.1E+01	D	18/ 177	10.2	6.8E+00	6.8E+00	YES
2-Chlorotoluene (UG/KG)	95-49-8	0			O	0/ 23	0.0			NO
2-Hexanone (UG/KG)	591-78-6	0			O	0/ 177	0.0			NO
4-Chlorotoluene (UG/KG)	106-43-4	0			O	0/ 23	0.0			NO
4-Methyl-2-pentanone (UG/KG)	108-10-1	9	1.0E+00	7.0E+00	D	9/ 177	5.1	6.0E+00	6.0E+00	YES
Acetone (UG/KG)	67-64-1	48	4.0E+00	1.7E+02	D	48/ 177	27.1	1.4E+01	1.4E+01	YES
Acetonitrile (UG/KG)	75-05-8	0			O	0/ 31	0.0			NO
Acrylonitrile (UG/KG)	107-13-1	0			O	0/ 31	0.0			NO
Benzene (UG/KG)	71-43-2	2	2.0E+00	5.0E+00	D	2/ 200	1.0	3.4E+00	3.4E+00	NO
Bromochloromethane (UG/KG)	74-97-5	0			O	0/ 23	0.0			NO
Bromodichloromethane (UG/KG)	75-27-4	1	5.0E+00	5.0E+00	D	1/ 200	0.5	3.4E+00	3.4E+00	NO
Bromoform (UG/KG)	75-25-2	0			O	0/ 200	0.0			NO
Bromomethane (UG/KG)	74-83-9	0			O	0/ 200	0.0			NO
Carbon Disulfide (UG/KG)	75-15-0	4	1.0E+00	3.0E+00	D	4/ 177	2.3	3.4E+00	3.0E+00	NO
Carbon Tetrachloride (UG/KG)	56-23-5	0			O	0/ 200	0.0			NO
Chlorobenzene (UG/KG)	108-90-7	0			O	0/ 200	0.0			NO
Chloroethane (UG/KG)	75-00-3	0			O	0/ 200	0.0			NO
Chloroform (Trichloromethane) (UG/KG)	67-66-3	1	2.4E+01	2.4E+01	D	1/ 200	0.5	3.4E+00	3.4E+00	NO
Chloromethane (UG/KG)	74-87-3	2	1.0E+00	4.0E+00	D	2/ 200	1.0	5.7E+00	4.0E+00	NO
Dibromochloromethane (UG/KG)	124-48-1	1	1.0E+00	1.0E+00	D	1/ 200	0.5	3.4E+00	1.0E+00	NO
Dibromomethane (UG/KG)	74-95-3	0			O	0/ 23	0.0			NO
Dichlorodifluoromethane (UG/KG)	75-71-8	0			O	0/ 23	0.0			NO
Dichloromethane (Methylene Chloride) (UG/KG)	75-09-2	96	3.0E+00	6.8E+01	D	96/ 200	48.0	1.0E+01	1.0E+01	YES
Ethylbenzene (UG/KG)	100-41-4	9	1.0E+00	1.1E+01	D	9/ 200	4.5	3.4E+00	3.4E+00	NO
Ethylene Dibromide (1,2-Dibromoethane) (UG/KG	106-93-4	0			O	0/ 23	0.0			NO
FREON-113 (UG/KG)	76-13-1	0			O	0/ 39	0.0			NO
Hexachlorobutadiene (UG/KG)	87-68-3	0			O	0/ 3	0.0			NO
Hexane (UG/KG)	110-54-3	0			O	0/ 39	0.0			NO
Iodomethane (UG/KG)	74-88-4	0			O	0/ 31	0.0			NO
Isopropyl Benzene (UG/KG)	98-82-8	0			O	0/ 23	0.0			NO

Appendix F:Analytes Detected in Surface and Subsurface Soil for the Construction Worker Scenario

Analyte (units)	CAS Number	Number of Detections	Minimum Detect	Maximum Detect	Distribution	Results Greater than Detection Limit	% Results Greater than Detection Limit	95% UCL of Mean	Exposure Concentration	Detection in Greater than 5%
Monobromobenzene (Phenyl bromide) (UG/KG)	108-86-1	0			O	0/ 23	0.0			NO
Naphthalene (UG/KG)	91-20-3	3	1.0E+00	6.0E+00	D	3/ 6	50.0	1.0E+01	6.0E+00	YES
Styrene (UG/KG)	100-42-5	0			O	0/ 200	0.0			NO
Tetrachloroethene (UG/KG)	127-18-4	13	2.0E+00	4.1E+01	D	13/ 200	6.5	3.9E+00	3.9E+00	YES
Toluene (UG/KG)	108-88-3	35	1.0E+00	5.1E+01	D	35/ 200	17.5	3.8E+00	3.8E+00	YES
Trichloroethylene (TCE) (UG/KG)	79-01-6	7	3.0E+00	7.4E+01	D	7/ 200	3.5	3.8E+00	3.8E+00	NO
Trichlorofluoromethane (UG/KG)	75-69-4	0			O	0/ 23	0.0			NO
Vinyl Acetate (UG/KG)	108-05-4	0			O	0/ 149	0.0			NO
Vinyl Chloride (UG/KG)	75-01-4	0			O	0/ 200	0.0			NO
Xylenes, Total (UG/KG)	1330-20-7	16	1.0E+00	3.9E+01	D	16/ 177	9.0	3.7E+00	3.7E+00	YES
m-Xylene (UG/KG)	108-38-3	0			O	0/ 11	0.0			NO
mp-Xylene (UG/KG)	mp-Xylene	23	5.0E+00	6.0E+00	X	23/ 23	100.0	6.0E+00	6.0E+00	YES
n-Butylbenzene (UG/KG)	104-51-8	0			O	0/ 23	0.0			NO
n-propylbenzene (UG/KG)	103-65-1	0			O	0/ 23	0.0			NO
o-Xylene (UG/KG)	95-47-6	0			O	0/ 34	0.0			NO
p-Isopropyltoluene (UG/KG)	99-87-6	0			O	0/ 23	0.0			NO
sec-Butylbenzene (UG/KG)	135-98-8	0			O	0/ 23	0.0			NO
tert-Butylbenzene (UG/KG)	98-06-6	0			O	0/ 23	0.0			NO

T Building Core Team Position Paper and Drawing

End of current text

The Mound Core Team
P.O. Box 66
Miamisburg, Ohio 45343-0066

6/29/09

As you know, The Proposed Plan for Parcels 6, 7 and 8 contains a restriction on the use of T Building which prohibits the penetration of concrete floors in rooms 50, 57 and 59 of T Building without prior approval from USEPA, OEPA, and ODH. The Miamisburg Mound Community Improvement Corporation (MMCIC) has asked the Core Team for a "blanket" approval to conduct limited activities in these rooms that should not result in an unacceptable risk to workers in the building.

The Core Team has evaluated this request and hereby grants approval for these activities provided they are conducted in accordance with the following policy guidelines:

1. Any driven penetration (e.g. concrete nails or explosive driven nails) of up to four inches in depth can be conducted without approval. As notification, the Core Team shall be provided a description of the activity, drawing of the room, and location of the proposed penetrations two weeks prior to physical activity.
2. Penetrations that involve removal of concrete shall be filled with concrete or steel. They shall not exceed four inches depth without approval of the Core Team. All penetrations of four inches or less requiring removal of concrete (drilling etc.) will require the submittal of a description of the activity, drawing of the room, and location of the proposed penetrations to the Core Team two weeks prior to the physical activity for notification purposes.
3. Any actions which remove or damage the concrete (including "driven penetrations") shall be filled within 120 days of completion.
4. Routine T Building occupants should be excluded from the area of activity for the duration of the renovation.

For your information, the Core Team has prepared the attached Position Paper which the Core Team used in its evaluation. MMCIC can use this Position Paper and these policy guidelines in determining which future activities may be acceptable to the Core Team in rooms 50, 57 and 59 of T Building. In any event, MMCIC must request approval for any activity not on this approved list.

DOE/MEMP: Paul C Lucas 7/14/09
Paul C. Lucas, Remedial Project Manager

USEPA: Timothy J. Fischer
Timothy J. Fischer, Remedial Project Manager

OEPA: K. R. Nickel 7/14/09
Brian K. Nickel, Project Manager

Position Paper
T Building Cap Areas Renovation Guidelines

Background: T Building (Technical Building) is a massively constructed building on the Mound site with ten foot thick heavily reinforced concrete floors and similarly robust ceilings and walls. During the remediation of the T Building, the contractor encountered bulk contamination of the floor and footings in certain areas. Attempts to complete remediation of the contaminated floor and footer in the west end of room 50 and east end of rooms 57 and 59 were technically and economically difficult to justify. Following an assessment of the risks involved to the building's structural integrity if removal of contaminated concrete continued (attached), a decision was made to leave the contaminated concrete sub floor and footer in place, and to add a cap of color coded (red) concrete to provide a margin of safety from the residual contamination. The Department of Energy (DOE) currently owns the facility and wishes to transfer ownership to the Miamisburg Mound Community Improvement Corporation (MMCIC) for future development. To ensure the health and safety of future workers and occupants of T Building, a deed restriction will be placed on T Building limiting the disturbance of concrete in those areas with residual contamination. This paper outlines some of the technical basis allowing latitude in the disturbance of the concrete cap.

As stated above, the DOE and its contractors evaluated the residual contamination to ensure that future worker safety was protected. Specifically future worker doses were modeled to ensure that they would not reasonably be expected to receive an additional 15 mrem of equivalent dose due to occupation in T Building. Samples of the residual contamination were taken. As a conservative measure, the average of the five highest areas of contamination was used as input for the entire area. This data was input into the RESRAD Build dose evaluation code. This code is jointly developed by the DOE and the Nuclear Regulatory Commission (NRC) for just this type of situation.

Under this scenario, two types of workers were evaluated. The first type was an office worker who occupies the building for an entire year. Doses for this type of worker were previously calculated and found to fall within the 15 mrem per year guidelines. The calculations for this type of worker assume that no renovation is occurring while that worker occupies the area, i.e. the concrete cap is intact. A second worker, the renovation worker, was originally modeled using similar physical characteristics of the building, but differing inputs commensurate with the type of work. For example, the breathing rates and occupancy rates for the renovation worker differ from that of an office worker. The original calculations for the renovation worker in T Building were 1.86 mrem. Of that dose, 0.17 mrem is due to direct radiation from the residual contamination under the protective cap. The remainder is from low level residual contamination throughout T Building.

A review of the Final Status Surveys for T Building indicates that the thickness of the cap is nominally 11 inches. It was placed at this thickness to bring the floor elevation level with the adjoining hallway floor surfaces. Based on the very low dose rates cited above (0.17 mrem) for external exposure, there is excess concrete serving as a shielding material for the bulk contamination below. This would allow for temporary removal or penetration of some portion of this concrete to allow for anchoring of equipment and walls of future tenants. It should be noted,

that in order to maintain the integrity of the calculations for the office worker, any floor penetration should be repaired or steel anchors inserted (steel being a better shield than concrete).

Calculations: As implied, records for the original calculations were retrieved from storage. Although it was generally known that excess concrete was placed, there was no known calculation of how much excess existed and none was found during the review of the records. The RESRAD Build calculations that were found used all 11 inches of concrete as shielding to arrive at the 0.17 mrem cited earlier. In addition, due to the presence of the cap, it was assumed that none of the contamination contained in the subsurface concrete and footers becomes airborne.

RESRAD Build continues to be maintained and updated by Argonne National Laboratory. The current version is slightly modified from the version originally used to model these doses. In order to ensure continuity, a baseline calculation was performed using the parameters from the original calculations. With only slight variations, they agreed. The original calculations indicated 1.70 mrem due to other building residual contamination. The new version calculated this same component to be 1.69 mrem. The total for both the cap area and the remainder of the building was 1.86 mrem for both versions, indicating strong agreement between the two.

In order to establish a margin of safety another calculation used the same input parameters except that the thickness of the cap was reduced by seven inches (to a nominal four inches total thickness). This further reduced thickness yielded an exposure to the renovation worker of 5.93 mrem. This remains protective of the renovation worker.

Recommendation: If the core team decides to allow penetration of the "red" concrete cap, it would be prudent to allow for some margin of safety to preclude accidental penetration to depths greater than currently analyzed. Note that the cap penetrations should be restored or replaced with anchors that provide similar or greater shielding capabilities. Recall also that one of the major assumptions is that the cap prevents the contamination below it from becoming airborne, so that the integrity of the cap must be maintained. Consideration must be given to the ability to ensure that recommendations are followed (i.e. penetrations are not greater than depth specified etc.). Also note that additional work could be carried out safely but may require additional analysis.

Policy Guidelines: As discussed, some guidelines should be established to administer penetration of the concrete in these areas. Such guidelines could be as follows:

1. Any driven penetration (e.g. concrete nails or explosive driven nails) of up to four inches in depth can be conducted without approval. As notification, the Core Team should be provided a description of the activity, drawing of the room, and location of the proposed penetrations two weeks prior to physical activity.
2. Penetrations that involve removal of concrete shall be filled with concrete or steel. They shall not exceed four inches depth without approval of the Core Team. All penetrations of four inches or less requiring removal of concrete (drilling etc.) will require the submittal of a description of the activity, drawing of the room, and location of the proposed penetrations to the Core Team two weeks prior to the physical activity for notification purposes.
3. Any actions which remove or damage the concrete (including "driven penetrations") shall be filled within 120 days of completion.
4. Routine T Building occupants should be excluded from the area of activity for the duration of the renovation.

Controlled_Area

Removal Prohibition

Penetration Prohibition

20 10 0 20 Feet

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U.S. DEPARTMENT OF ENERGY
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MOUND SITE
T BUILDING CONTROLLED AREAS

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