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.

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,

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

TABLE OF CONTENTS

ACRONYMS iii

I. PURPOSE 1

II. PROPERTY DECSRIPTION 1
- A. Description of Property Suitable for Transfer 1
- B. Regional Context of the Mound Plant and Transferred Property 1
- C. Historical Uses of Parcel 3 1

III. ENVIRONMENTAL FINDINGS 2
- A. Methodology 2
- B. Building Analysis Summary 3
  - 1. Asbestos 3
  - 2. Lead 3
  - 3. Radon 4
  - 4. Radiological Surveys 4
  - 5. Polychlorinated Biphenyls 4
- C. Potential Release Site (PRS) Summary 4
- D. Residual Risk Evaluation (RRE) Summary 5
- E. Other Factors Considered 6
  - 1. Cultural Resources 6
  - 2. Drinking Water 6
  - 3. Monitoring Equipment 7
  - 4. National Environmental Policy Act 7
  - 5. Clean Air Act 7

IV. FINDINGS OF SUITABILITY TO TRANSFER 7

V. ENVIRONMENTAL COVENANTS 8

VI. NOTIFICATION / PUBLIC PARTICIPATION 8

TABLES

on or follows page

Table 1 Parcel 3 PRSs and Core Team Conclusions 2

Table 2 Parcel 3 Buildings and Core Team Conclusions 2

Table 3 Identification of Soil Constituents of Potential Concern for the Construction Worker Scenario in Parcel 3 ..... Appendix B

(continued)

Table 4 Identification of Soil Constituents of Potential Concern for the Site Employee Scenario in Parcel 3 ..... Appendix B

Table 5 Identification of Current Groundwater Constituents of Potential Concern for the Construction Worker Scenario in Parcel 3 ..... Appendix B

Table 6 Identification of Current Groundwater Constituents of Potential Concern for the Site Employee Scenario in Parcel 3 ..... Appendix B

Table 7 Identification of Future Groundwater Constituents of Potential Concern for the Construction Worker Scenario in Parcel 3 ..... Appendix B

Table 8 Identification of Future Groundwater Constituents of Potential Concern for the Site Employee Scenario in Parcel 3 ..... Appendix B

Table 9 Current and Future Incremental Residual Risks for Parcel 3 ..... Appendix B

Table 10 Summary of Other Factors Considered for Parcel 3 6

Table 11 Parcel 3 Documents and Public Comment Periods 8

FIGURES

follows page

Figure 1 Location of Parcel 3 1

Figure 2 Regional Context of the Mound Plant 1

Figure 3 PRSs and Buildings within Parcel 3 2

APPENDICES

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

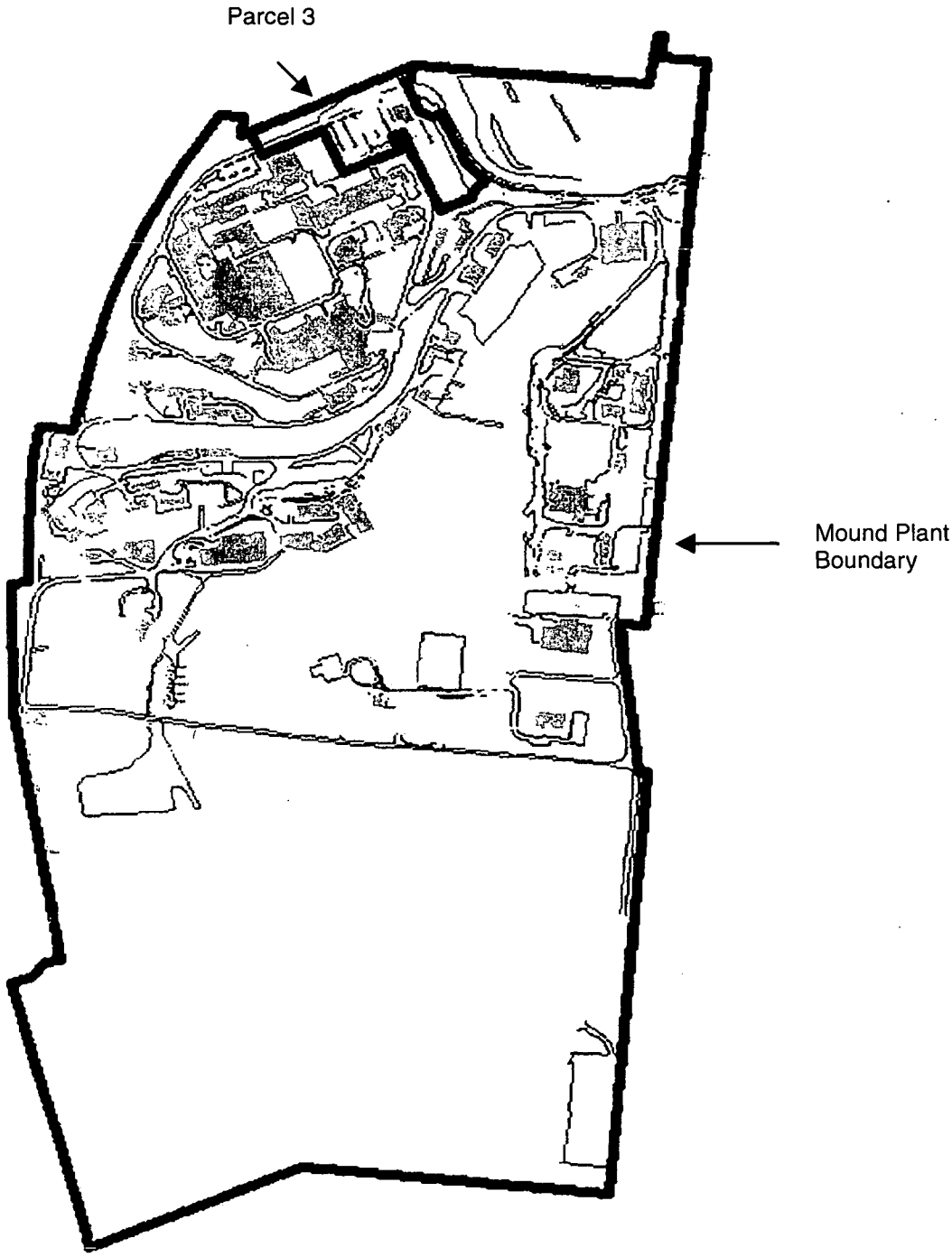

Figure 1: Location of Parcel 3

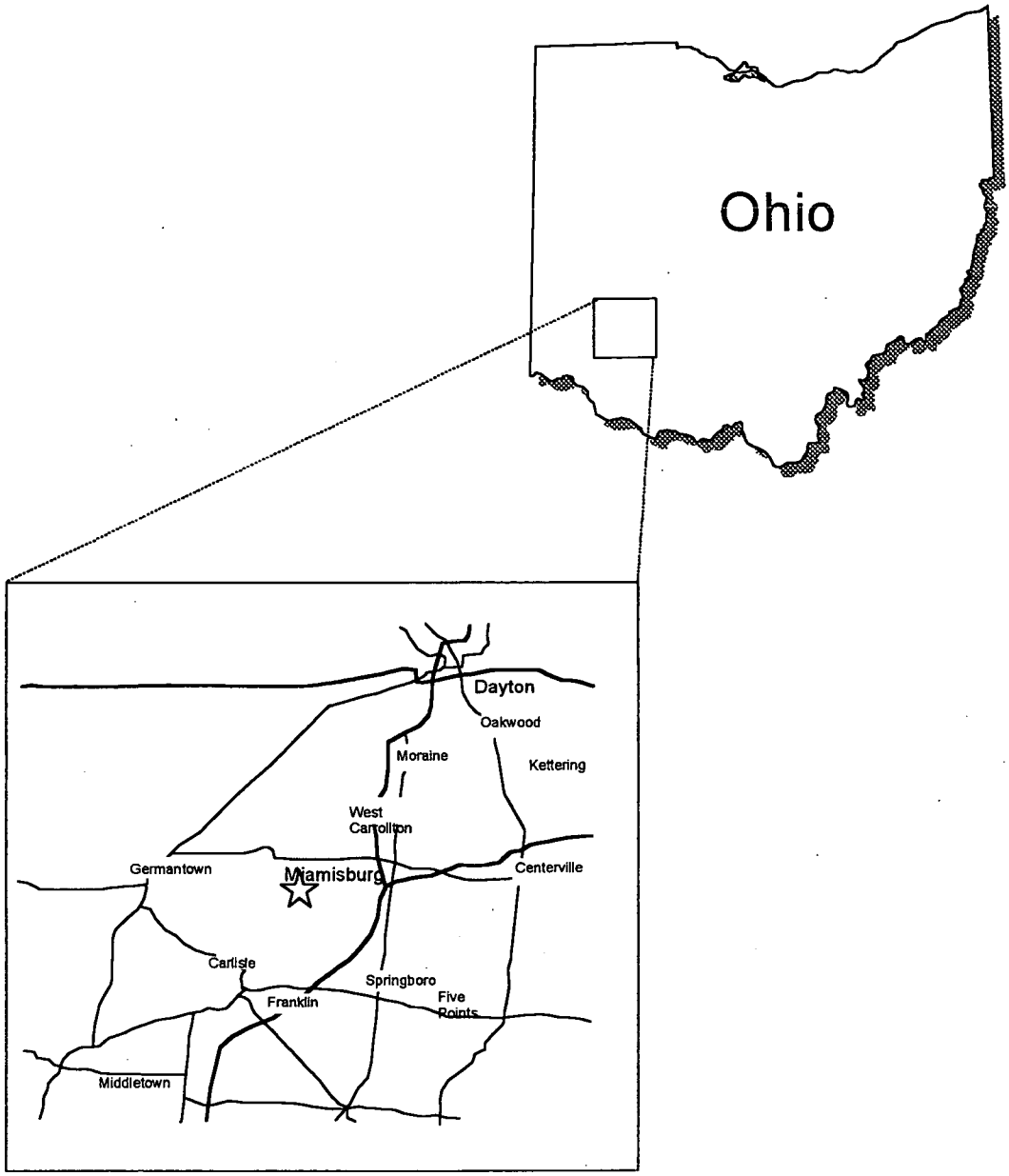

Figure 2: Regional Context of the Mound Plant

(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.

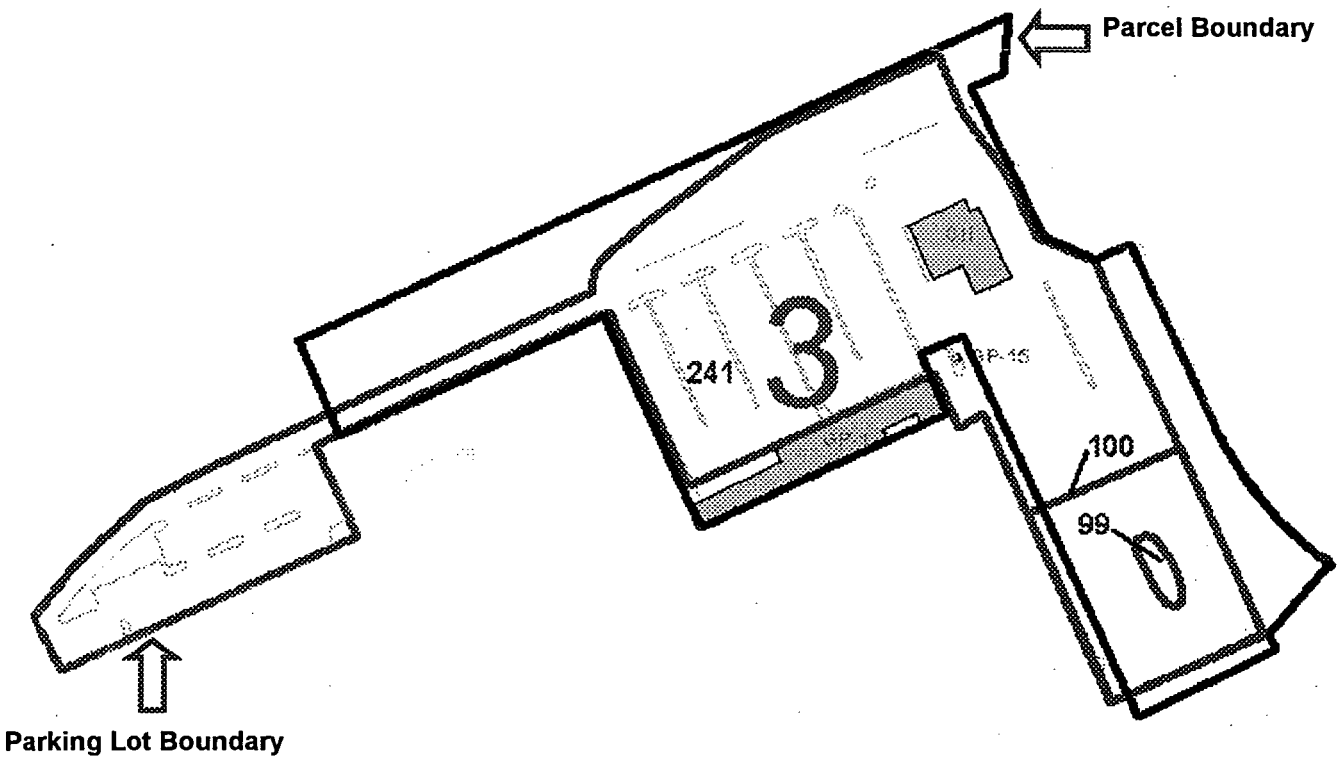

Figure 3: PRSs and Buildings within Parcel 3

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	RADIUS	CHORD	DIRECTION	CHORD LENGTH
C1	180.89	28°44'57"	360.01'	S 33°59'53" E		179.00

LINE TABLE

NUMBER	DIRECTION	DISTANCE
L1	S 23°57'22" E	17.73'
L2	N 50°48'40" W	21.44'
L3	N 39°05'44" E	7.80'
L4	N 20°40'37" W	10.55'
L5	S 67°59'08" W	3.37'
L6	N 34°33'52" W	10.33'
L7	N 30°37'22" W	16.36'
L8	N 3°07'46" W	13.93'
L9	S 63°06'[illegible] W	1.98'
L10	S 23°08'46" E	13.45'
L11	S 63°53'40" W	26.71'

CITY OF MIAMISBURG
DB 394 PG 40

N 63°39'29" E 770.18'

S 63°37'23" W 264.18'

N 24°23'37" W 124.00'

N 24°23'37" W 226.00'

S 63°59'32" W 142.57'

1 STORY BRICK BUILDING 1959

BUILDING CORNER IN BOUNDARY LINE

BUILDING CORNER IN BOUNDARY LINE 0.42'

U.S.A.
DB 394 PG 41
PART CITY OF MIAMISBURG
LOT No. 2290

U.S.A.
DB 394 PG 41
PART CITY OF MIAMISBURG
LOT No. 2259

ACREAGE SECTION 30 - 1.982 ACRES

N 24°23'37" W 226.00'

S 63°39'29" W 30.00'

S 63°39'29" W 90.00'

S 63°39'29" W 33.00'

S 63°39'29" W

S 63°39'29" W 770.18'

N 24°23'37" W 124.00'

N 24°23'37" W 226.00'

S 63°59'32" W 142.57'

S 63°37'23" W 264.18'

N 63°39'29" E 770.18'

S 63°39'29" W

S 63°39'29" W 33.00'

S 63°39'29" W

S 63°39'29" W 90.00'

S 63°39'29" W 30

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 backgroud 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 $1x10^{-3}$

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