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Task Order LM00-712
Control Number 12-0673

June 11, 2012

U.S. Department of Energy
Office of Legacy Management
ATTN: Gwen Hooten
10995 Hamilton-Cleves Hwy.
Harrison, OH 45030

SUBJECT: Contract No. DE-AM01-07LM00060, S. M. Stoller Corporation (Stoller)
Annual Assessment of the Effectiveness of Sitewide Institutional Controls
Applied to the Former DOE Mound Site Property, June 2012

Dear Ms. Hooten:

Enclosed are fifteen copies of the final report, "Annual Assessment of the Effectiveness of Sitewide Institutional Controls Applied to the Former Mound Site Property, June 2012." This report is due to the US Environmental Protection Agency and the Ohio Environmental Protection Agency by June 13.

Copies of the report will be available to the public in the Mound Reading Room, and a pdf copy will be added to the LM Mound Website under "Site Documents and Links."

The Stoller LMS Team is committed to high-quality customer service and continuous improvement. We would appreciate any feedback you may have on this submittal.

Please contact Joyce Massie at 937-287-1333 if you have any questions.

Sincerely,

William A. Hertel
Stoller Site Manager

WAH:jp

Enclosures

cc: w/o enclosure (electronic)
Jane Powell, DOE

Gwen Hooten
Control Number 12-0673
Page 2

cc: w/enclosure
Sharon Barr, Stoller
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rc-mound
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Department of Energy

Washington, DC 20585

June 13, 2012

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U.S. Environmental Protection Agency
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Mr. Brian Nickel
Ohio Environmental Protection Agency
401 East 5th Street
Dayton, OH 45402-2911

Subject: Annual Assessment of the Effectiveness of Sitewide Institutional Controls Applied to the Former DOE Mound Site Property, June 2012

Dear Mr. Fischer and Mr. Nickel:

Enclosed please find the "Annual Assessment of the Effectiveness of Sitewide Institutional Controls Applied to the Former Mound Site Property," June 2012. This report was prepared in accordance with the "Operation and Maintenance Plan for the Implementation of Institutional Controls at the 1998 Mound Plant Property, Phase I Parcel Update, Rev. 0."

The report includes the results of DOE's physical inspections of the site and the April 19, 2012 walkdown with the US Environmental Protection Agency, the Ohio Environmental Protection Agency, and the Ohio Department of Health. It also includes information obtained during the DOE review of related records from the City of Miamisburg, Mound Development Corporation, and the Ohio Department of Natural Resources well logs.

Copies of the report will be available to the public in the Mound Reading Room, and a pdf copy will be added to the LM Mound Website under "Site Documents and Links."

Please call me at (720) 880-4349 if you have any questions or require additional information. Please send any correspondence to:

U.S. Department of Energy
Office of Legacy Management
10995 Hamilton-Cleves Hwy.
Harrison, OH 45030

Sincerely,

Gwen Hooten
Mound Acting Site Manager
DOE-LM-20.2



Mr. Tim Fischer
Mr. Brian Nickel
Page 2

cc w/enclosure:
Jane Powell, DOE
Paul Lucas, DOE
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Ellen Stanifer, City of Miamisburg
rc-mound

**Annual Assessment of the
Effectiveness of
Sitewide Institutional Controls
Applied to the Former DOE
Mound Site Property
Miamisburg, Ohio**

June 2012



**U.S. DEPARTMENT OF
ENERGY**

Legacy
Management

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**Annual Assessment of the Effectiveness of
Sitewide Institutional Controls
Applied to the Former DOE Mound Site Property
Miamisburg, Ohio**

June 2012

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Abbreviations

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CRP	Comprehensive Reuse Plan
DOE	U.S. Department of Energy
EM	Office of Environmental Management
EMCBC	Environmental Management Consolidated Business Center
EPA	U.S. Environmental Protection Agency
ES	<i>Environmental Summary CERCLA 120(h) Summary Notice of Hazardous Substances 120(h)</i>
IC	institutional control
LM	Office of Legacy Management
MDC	Mound Development Corporation (formerly MMCIC)
MMCIC	Miamisburg Mound Community Improvement Corporation
MNA	monitored natural attenuation
NESHAPs	National Emission Standards for Hazardous Air Pollutants
O&M Plan	<i>Operation and Maintenance (O&M) Plan for the Implementation of Institutional Controls at the 1998 Mound Plant Property, Phase I Parcel</i>
ODH	Ohio Department of Health
Ohio EPA	Ohio Environmental Protection Agency
OU-1	Operable Unit 1
ROD	record of decision
Stoller	S.M. Stoller Corporation

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1.0 Introduction

This report documents the U.S. Department of Energy (DOE) Office of Legacy Management (LM) 2012 annual assessment of the effectiveness of sitewide institutional controls (ICs) for the entire Mound Site¹ in Miamisburg, Ohio, for the period from April 30, 2011, to April 30, 2012. The site has completed all of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) 120(h) requirements for property transfer as an industrial-use site.

This annual IC assessment determined that the ICs continue to function as designed, adequate oversight mechanisms are in place to identify possible violations of ICs, and adequate resources are available to correct or mitigate any problems if violations occur.

ICs are non-engineered instruments, such as administrative and legal controls, that help minimize the potential for human exposure to contamination and protect the integrity of the remedy. Each annual IC assessment includes a physical inspection of land parcels; discussions with the property owners; a review of all applicable records, including construction, street-opening, occupancy, and other permits; zoning modification requests; and well drilling logs.

The Mound Site ICs, which take the form of deed restrictions, are defined in each parcel's record of decision (ROD) and *Environmental Summary CERCLA 120(h) Summary Notice of Hazardous Substances* (ES) which are listed in Section 12, "References." The ICs were developed with input from the public; the City of Miamisburg; the U.S. Environmental Protection Agency (EPA); the Ohio Environmental Protection Agency (Ohio EPA); the Ohio Department of Health (ODH); and the Mound Development Corporation (MDC), formerly called the Miamisburg Mound Community Improvement Corporation (MMCIC).

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

DOE contacted EPA, Ohio EPA, and ODH 30 days before the visual inspection. DOE must submit the annual assessment report to EPA and Ohio EPA no later than June 13 of each year.

2.0 RODs and the Parcel Transfer Process

In January 1998, DOE executed the original sales agreement with MDC. The agreement called for the transfer of discrete land parcels to MDC, via a series of quitclaim deeds, after the parcels were declared excess to DOE's needs and after all requirements of CERCLA 120(h) for property transfer were met. As MDC acquired a parcel, it became part of the Mound Advanced Technology Center, a light industrial/technology park that MDC operates. The same parcel transfer process was continued in the revised sales agreement, *Sales Contract by and between the United States Department of Energy and the Miamisburg Mound Community Improvement Corporation, August 28, 2008* (DOE 2008).

¹ The Mound Site was also formerly identified by the Atomic Energy Commission as the Mound Laboratory and the Mound Plant.

Table 1 summarizes the final parcels, ROD dates, remedies, IC objectives, and legal enforcement instruments.

Table 1. Mound Site Summary of Parcel RODs, Remedies, ICs, and Legal Instruments

Parcel	Former ID or Other Names	ROD Date	Acreage	Remedy	Objectives of ICs	Legal Instrument
OU-1	OU-1	1995		See Parcel 9		
D	Release Block D	1999	12.43	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.	Deed restrictions in quitclaim deeds
H	Release Block H	1999	14.29	ICs		
3	None	2001	5.581	ICs		
4	South property	2001	94.838	ICs		
Phase I	A	2003	2.542	Monitored natural attenuation ICs		
	B		42.882			
	C		6.568			
6	Parcels 6, 7, and 8	2010	13.636	Monitored natural attenuation ICs		
7			42.307			
8			45.247			
6A	Within Parcel 7	2010	2.352	ICs		
9	OU-1 ROD amendment	2011	23.148	Hydraulic containment Surface water controls Long-term groundwater monitoring ICs	Deed restrictions in environmental covenant	
OU-4	Miami Erie Canal	2004		No action	None required.	None required

At the time of this annual IC assessment, MDC owns Parcels D, H, 3, and 4 and the Phase I parcel (which comprises sub-parcels A, B, and C). The DOE Office of Environmental Management (EM) owns Parcels 6, 6A, 7, 8, and 9. EM amended the Operable Unit 1 (OU-1) ROD in 2011, expanding the footprint and renaming the area “Parcel 9.” Figure 1 shows the original boundaries of the former DOE Mound Site Property divided into parcels. The shaded areas indicate the parcels that have been transferred to MDC.

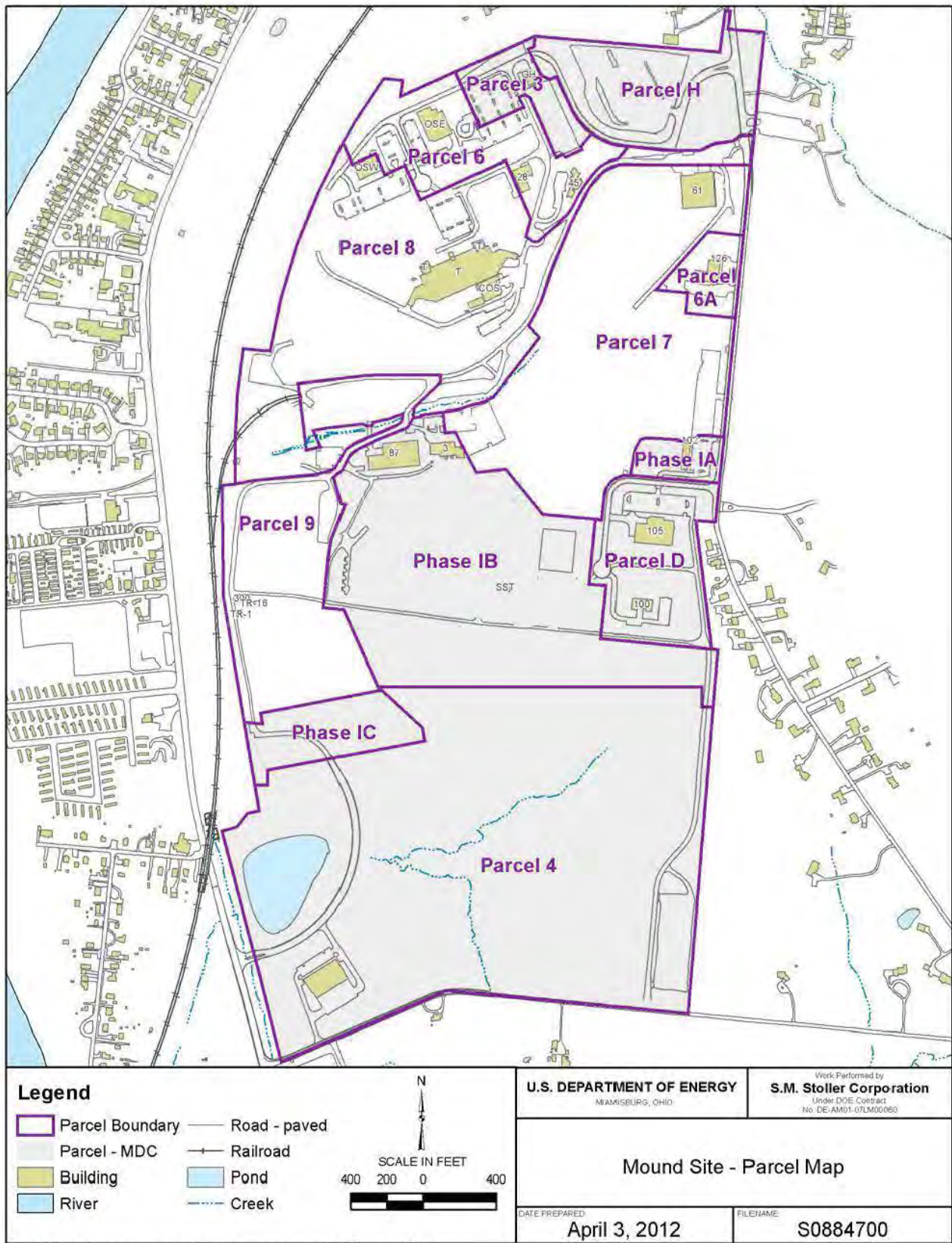


Figure 1. Parcel Map of the DOE Mound Site, Miamisburg, Ohio

Table 2 summarizes the existing buildings and the parcel transfer dates.

Table 2. Mound Site Parcels, Buildings, and Transfer Information

Parcel	Number of Structures	DOE Building Names/Numbers (See Table 3 for current street addresses)	Date Transferred	Owner
D	2	100, 105	March 1999	MDC
H	0		August 1999	MDC
3	1	Guard House (GH)	August 2002	MDC
4	1	MDC Flex Building	April 2001	MDC
Phase I	8	3, 87, 102, Magazines 80–84, salt storage shed	February 2009	MDC
6	3	Office Support East (OSE), 28, 45		EM
7	1	61 (MDC demolished 2, 63, and 63W in 2011)		EM
8	3	Central Office Space (COS), Office Support West (OSW), T Building		EM
9	3	300, Trailers 1 and 16		EM
6A	1	126		EM
Total	23			

3.0 Overview of Institutional Controls (ICs)

ICs are non-engineered instruments, such as administrative and legal controls, that help minimize the potential for human exposure to contamination and protect the integrity of the remedy. ICs are defined in each ROD and described in the *Operation and Maintenance (O&M) Plan for the Implementation of Institutional Controls at the 1998 Mound Plant Property, Phase I Parcel (O&M Plan)* (DOE 2004a).

DOE remediated the former DOE Mound Site Property to EPA's risk-based standards for industrial/commercial use only. Because the site is not approved for unlimited use, ICs were imposed as part of the CERCLA remedy. The Mound ICs take the form of deed restrictions, which were developed with input from the public, the City of Miamisburg, the regulators, and MDC.

The ROD and ES for each parcel contained deed-restriction language that was embedded in the quitclaim deed or environmental covenant. These documents are recorded with Montgomery County, Ohio, so that all future property owners will know about the deed restrictions.

Additional information on ICs can be found in *Institutional Controls: A Citizen's Guide to Understanding Institutional Controls at Superfund, Brownfields, Federal Facilities, Underground Storage Tank, and Resource Conservation and Recovery Act Cleanups* (EPA 2005).

The Mound Site ICs in the form of deed restrictions are designed to:

1. **Prohibit the removal of soil** from the original DOE Mound Site Property boundaries, unless prior written approval from Ohio EPA and 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 Ohio EPA has been obtained.
3. **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 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 (Figure 15) to offsite locations without prior approval from EPA, Ohio EPA, and ODH.
5. **Prohibit the penetration of concrete floors** in specified rooms of T Building (Figure 15) without prior approval from EPA, Ohio EPA, and ODH.
6. **Allow site access for federal and state agencies** for sampling and monitoring.

The preceding deed-restriction language is a summary only. The RODs contain the parcel-specific deed-restriction language. 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/land/sites/oh/mound/mound.htm>).

OU-1; the Phase I parcel; and Parcels 6, 7, and 8 have CERCLA remedies that also require groundwater monitoring. The physical conditions of the wells and seeps covered by those remedies were inspected for this assessment and are included in this report.

4.0 Period of Review

This annual assessment covers the period from April 30, 2011, to April 30, 2012.

This annual assessment identifies new information—such as new construction, demolition, or excavation; lot-splits or the sale of parcels to new landowners; and permit applications filed by property owners or their agents—since the last reporting period. Previous annual assessments are available in the CERCLA Public Reading Room or online at the LM Mound website (<http://www.lm.doe.gov/land/sites/oh/mound/mound.htm>).

5.0 Aerial View of the Mound Site Property

Figure 2 is an aerial photo, taken in March 2011, that shows the entire site looking north.

Figure 3 shows the parcel boundaries laid over a March 2011 aerial photograph of the Mound Site.

The next aerial photo, normally taken before each CERCLA Five-Year Review, is planned for 2016.

6.0 Summary of 2011 Annual Assessment and CERCLA Five-Year Review

6.1 2011 Annual Assessment

6.1.1 Summary

As stated in the *Annual Assessment of the Effectiveness of Site-Wide Institutional Controls Applied to the Former DOE Mound Site Property* (DOE 2011b), the assessment concluded that the Mound Site ICs functioned as designed, adequate oversight mechanisms appeared to be in place to identify possible violations, and adequate resources were available to correct or mitigate any problems if a violation were to occur.

6.1.2 Recommendations or Findings

There were no recommendations from the 2011 annual assessment.

6.2 2011 CERCLA Five-Year Review

6.2.1 Five-Year Review Summary

In 2011, DOE also conducted the CERCLA Five-Year Review, which evaluated the implementation and performance of the selected site remedies. The *Third Five-Year Review for the Mound, Ohio, Site, Miamisburg, Ohio* (DOE 2011d) stated:

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.

6.2.2 Five-Year Review Recommendations

The following three recommendations were identified as a result of the Five-Year Review and associated actions:

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.

6.2.3 EPA-Identified Issues to be Addressed in the 2016 Five-Year Review

In the September 27, 2011, approval letter, EPA concurred with the protectiveness statements and approved the report. However, EPA also listed the following issues that must be addressed in future Five-Year Reviews at the Mound site:

- While the Summary Form on p. *xii* makes title work for Parcels 6, 7, and 8 a follow-up action, it leaves out title work for Parcels D, H, 3, and 4 and Phase 1. Title work must be completed for all parcels as part of the Five-Year Review of the ICs process.
- EPA, Ohio EPA, and DOE are currently finalizing a *Sitewide IC Management and Land Use Control Plan* for the DOE Mound property. This plan should be included as an appendix in future Five-Year Reviews to aid in the review process.

7.0 2012 Physical Inspections Performed

S.M. Stoller Corporation (Stoller) personnel conducted thorough physical inspections in March and April 2012 before hosting the joint annual site walkdown with the regulators. Those inspections looked for violations of ICs, such as soil removal, well installation, nonindustrial/noncommercial use, and the physical conditions of wells and seeps.

The annual walkdown with the regulators and stakeholders occurred on April 19, 2012, with a driving tour of the site. Gwen Hooten, LM Mound Site Manager, began the walkdown at the Mound Science and Energy Museum with a presentation that defined the scope of the annual assessment and presented the results of the preliminary inspections. Participants were given a safety briefing, a copy of the presentation, and the IC checklist for the walkdown.

Participants in the annual walkdown included: Gwen Hooten, LM; Larry Kelly and Paul Lucas, Environmental Management Consolidated Business Center (EMCBC); Tim Fischer, EPA; Anthony Campbell, Ohio EPA; Joe Crombie, ODH; Frank Bullock, MDC; Ellen Stanifer, City of Miamisburg; Bill Hertel, Chuck Friedman, Yvonne Deyo, Greg Lupton, and Gary Weidenbach, Stoller; and Joyce Massie, JGMS.



Figure 2. Mound Site Looking North (March 2011)



Figure 3. Mound Site, Showing Parcel Boundaries (March 2011)

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*Figure 4. IC Assessment Walkdown (April 19, 2012).
(Left to Right: Tim Fischer, Paul Lucas, Larry Kelly, Frank Bullock, Anthony Campbell, Joe Crombie, Ellen Stanifer, Chuck Friedman, Bill Hertel, Greg Lupton, Gwen Hooten.)*

The following sections summarize the results of the preliminary inspections and the physical walkdown on April 19, 2012. Appendix A contains the completed checklist.

7.1 Parcel D

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 within this parcel.

7.2 Parcel H (Formerly Release Block H)

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 within this parcel.

One area of Parcel H, shown in purple in Figure 5, is exempt from the soil-removal restriction. Modifications to the entry and the rerouting of Mound Road isolated this area from the original Mound property.

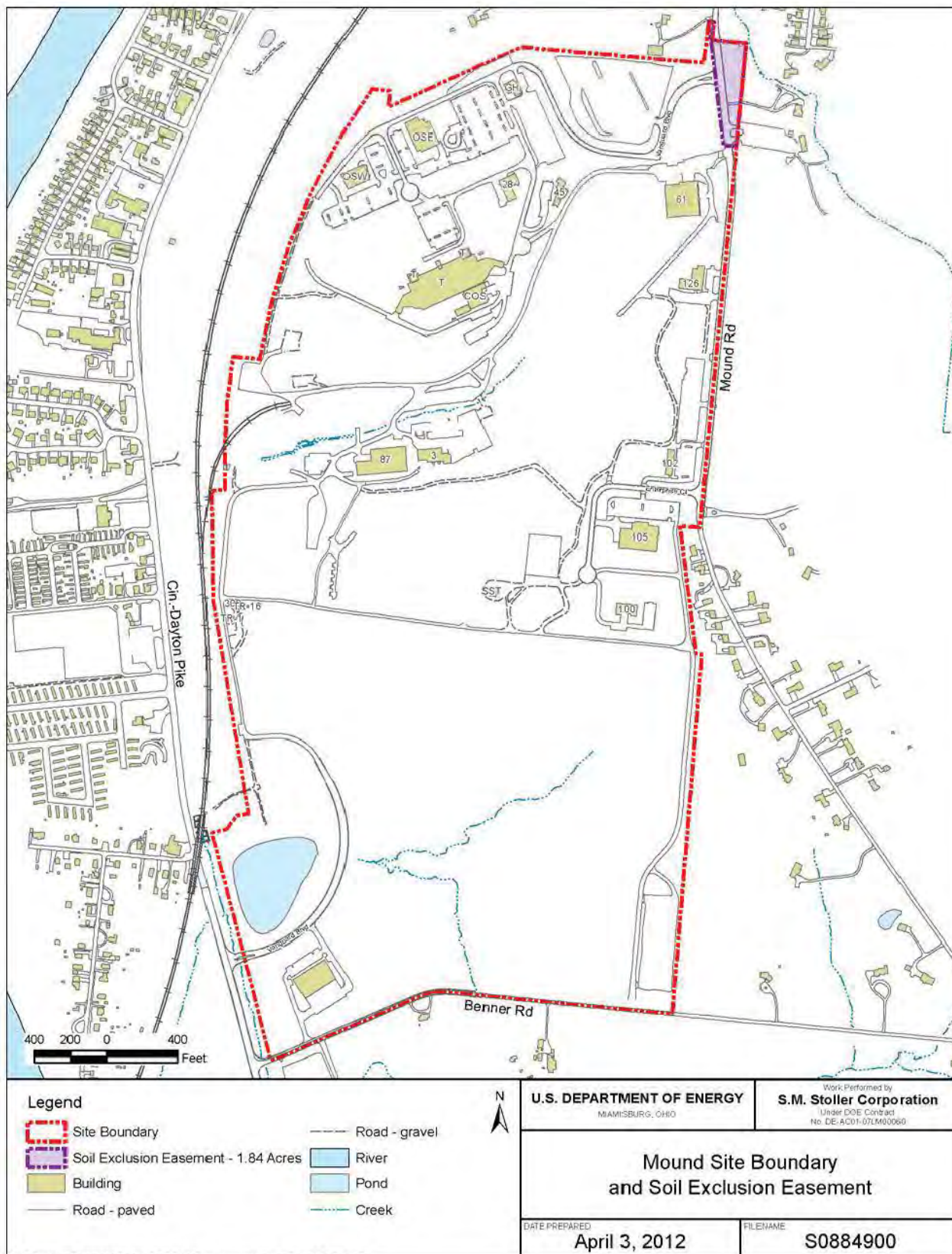


Figure 5. Parcel H Soil-Removal Exclusion Area within the Original Mound Site Boundary

7.3 Parcel 3

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 use within this parcel.

7.4 Parcel 4

There was no evidence of unauthorized well installation or soil removal within this parcel.

Two signs, which state, "Recreational Use Prohibited," were observed at the pond used for retaining and detaining storm-water runoff in the southwestern part of Parcel 4.

Stoller personnel observed one person fishing at the pond in February 2012 and advised them that the site is cleared for industrial reuse but not for recreational use.

The Core Team agreed on the following wording regarding the signage beginning with the 2011 annual IC assessment:

The second five-year review for the DOE Mound site recommended that the issue of adequate signage around the Parcel 4 retention basin be addressed by DOE, EPA, and Ohio EPA. 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 Ohio EPA 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 Mound Development Corporation 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.

7.5 Parcels 6, 7, and 8

7.5.1 Parcel 6, 7, and 8 Physical Inspection

In Parcel 6A, DOE and Stoller vacated Building 126 at 955 Mound Road in September 2011. EM personnel moved to the EMCBC office in Cincinnati, Ohio. LM and Stoller consolidated offices at the Fernald Preserve in Harrison, Ohio.

In Parcel 7, MDC removed Buildings 2, 63, and 63W and added parking areas in 2011. These activities were funded by a state grant and overseen by MDC. Figure 6 and Figure 7 show the buildings in 2010, and Figure 8 shows the parking area in March 2012 after the buildings were removed.



Figure 6. Buildings 63 and 63W in 2010



Figure 7. Building 2 in 2010



Figure 8. Parking Area That Replaced Buildings 2, 63, and 63W

There was a theft of steel grates from over the concrete storm drains along the western site boundary in Parcel 8 during the reporting period. Figure 9 to Figure 13 show the open storm drains. Stoller personnel advised that the thefts were reported to local law enforcement.



Figure 9. Storm Drain from Which a Grate Was Stolen in Parcel 8, Looking North and Uphill Along the Western Site Boundary



Figure 10. Section of Parcel 8's Western Site Boundary from Which Grates Were Stolen, Looking North and Uphill



Figure 11. Storm Drain from Which Grates Were Stolen, Looking Southwest in Parcel 8



Figure 12. Storm Drain from Which Grate Was Stolen in Parcel 8



Figure 13. Manhole from Which Grate Was Stolen in Parcel 8

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 within Parcel 6, 7, or 8.

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. In Figure 15 the special-IC areas on the first floor of T Building are depicted with crosshatching.

Appendix C to this report provides additional information regarding these areas with special ICs. It includes the four-page agreement and position paper *T Building Special ICs Core Team Agreement and Position Paper, 6-29-09*, which provided policy guidelines. It also includes the 2010 baseline photos of each room that these special ICs cover. On April 24, LM took additional photos of the cracks and documented their locations and current condition as a baseline for future inspections. This information, which is included in Appendix C, will assist in future inspections.

Figure 14 shows the red concrete area; the photo was taken during the April 5, 2012, physical inspection of the building. These cracks were observed and noted in previous annual IC assessments. Appendix E, “Photos of T Building Red Concrete Cracks,” provides more detailed photos of the cracks taken during April 2012. As stated in the 2011 annual IC assessment report, the cracks are not of concern to the Core Team at this time, but DOE will continue to monitor them during future IC assessments.



Figure 14. 2012 Photo of Crack in Red Concrete Slab in T Building Areas Where Penetration of Concrete Floor is Prohibited Without Prior Approval

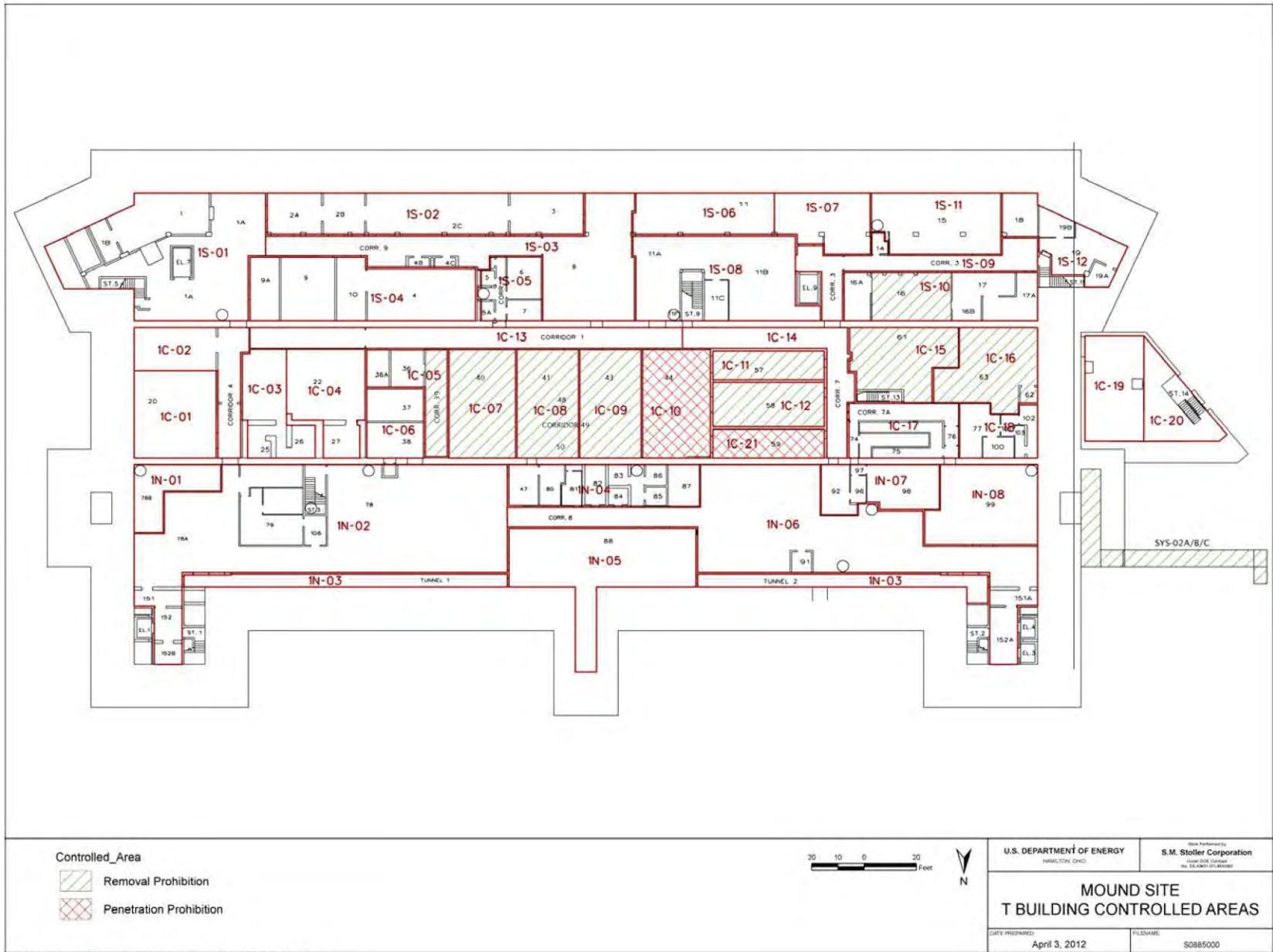


Figure 15. T Building Areas with Additional ICs

7.5.2 Parcel 6, 7, and 8 Wells and Seeps

Appendix D lists the Parcel 6, 7, and 8 groundwater monitoring wells and seeps, maps their locations, and provides photos taken during the physical inspections.

Because the groundwater monitoring is not an IC, the annual IC assessment only verifies the conditions of the wells and seeps; it does not determine the effectiveness of the monitored natural attenuation (MNA) remedy. The remedy for Parcels 6, 7, and 8 includes MNA and ICs for the land (which encompass 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 2011* (DOE 2012a) 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>.

All of the Parcel 6, 7, and 8 wells were locked and in good condition. Several marker flags for the seep locations were missing and replaced after the March 2012 inspection. Personnel who sample the seeps typically use Global Positioning System locations.

7.6 Parcel 9 (Formerly OU-1)

The OU-1 area was formerly covered by the *Operable Unit 1 Record of Decision* (DOE 1995) and the selected remedy, which included:

- The collection and treatment of groundwater contaminated with volatile organic compounds, and the disposal of treated water, using the pump-and-treat system.
- The control of surface water in the OU-1 area and long-term groundwater monitoring.
- ICs to control access.

EM amended the OU-1 ROD in 2011. The amended ROD, *Amendment of the Operable Unit 1 Record of Decision, U.S. Department of Energy, Mound Closure Project, Final* (DOE 2011a), incorporated the physical changes in OU-1, expanded the area to include all of Parcel 9, and added the general site ICs described in Section 3.0.

7.6.1 Parcel 9 Physical Inspection

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 within this parcel.

In March 2012, MDC began construction of the spine road to improve Vanguard Boulevard from Parcel 4 to Excelitas. Figure 16 through Figure 19 are photos of roadwork construction taken on April 5, 2012.



Figure 16. Work on Spine Road, Looking South Toward Wells 0315 and 0347



Figure 17. Work on Spine Road in OU-1 Area, Looking Southeast from Roadway. Well P053 is in Center Right of Photo.



Figure 18. Work on Spine Road, Looking North Toward OU-1 Area



Figure 19. Work on Spine Road, Looking Southeast from Trailer 1 in OU-1 Area

7.6.2 Parcel 9 (OU-1) Wells

Appendix D lists the OU-1 wells, maps their locations, and provides photos taken of them during the physical inspections.

Because the groundwater monitoring is not an IC, the annual IC assessment only verifies the conditions of the wells and seeps; it does not determine the effectiveness of the remedy. Environmental restoration monthly reports provide 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 at the LM website <http://gems.lm.doe.gov/imf/ext/gems/jsp/launch.jsp>. Photographs, maps, and physical features can also be viewed on this website.

All of the OU-1 wells were locked and in good condition. LM installed a new monitoring well (well 0451) during the rebound study conducted during this reporting period. This well did not have a permanent marker.

7.7 Phase I Parcel

7.7.1 Phase I Physical Inspection

The Phase I parcel consists of three noncontiguous sub-parcels (A, B, and C), which were transferred to MDC in February 2009. The remedy for the Phase I parcel includes ICs for the land and MNA to address trichloroethylene-impacted groundwater.

The Mound Science and Energy Museum moved into the former DOE Building 102 at 1075 Mound Road in 2011.

Metal grates that covered the concrete storm drain along the east-west roadway in the Phase IB parcel were stolen. See Figure 20 through Figure 25.



Figure 20. Single Remaining Grate



Figure 21. Single Remaining Grate



Figure 22. Section of Storm Drain from Which Grates Were Stolen



Figure 23. Section of Storm Drain from Which Grates Were Stolen, Looking East



Figure 24. Section of Storm Drain from Which Grates Were Stolen, Looking West from Center Roadway



Figure 25. Section of Storm Drain from Which Grates Were Stolen, Looking East from Center Roadway

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 within this parcel.

7.7.2 Phase I Parcel Wells and Seep

Appendix D lists the Phase I wells and seep, maps their locations, and provides photos taken of them during the physical inspections.

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 include groundwater monitoring requirements describe in the *Phase I Remedy (Monitored Natural Attenuation) Groundwater Monitoring Plan* (DOE 2004b). The *Phase I Groundwater Monitoring Report Calendar Year 2011* (DOE 2012b) includes an analysis of the groundwater monitoring. Both of these documents are available on the LM website <http://www.lm.doe.gov/mound/Sites.aspx>.

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

8.0 Interviews and Record Reviews

8.1 Interviews with City Personnel and Review of City Records

In addition to conducting the physical inspections for the annual assessment, DOE reviews documents from local governments to ensure that ICs are being followed. These include construction, street-opening, occupancy, or other permits; zoning modification requests; City Planning Commission requests; and well logs issued for land parcels that have completed the CERCLA 120(h) process for property transfer. Documents may be at the City of Miamisburg, at

Miami Township, at Montgomery County, or in the Ohio Department of Natural Resources' well log files.

The City of Miamisburg database allows permits to be searched by keyword (e.g., permit number, date, location, nature of work). Permits issued before the database was implemented (i.e., permits documented in DOE's annual reports dating back to 2001) may not be in the City's database. However, the City retains hard copies of all permits in accordance with a records-retention plan that meets all State of Ohio requirements.

LM and Stoller personnel requested that the City of Miamisburg Engineering Department query their computer tracking system for permits issued to any addresses on Capstone Drive, on Vanguard Boulevard, on Enterprise Court, on Vantage Point, on Mound Road (between 885 and 1195), and on Benner Road (between 799 Benner Road and Dayton Cincinnati Road, on the odd-numbered side of street). In addition, the Engineering Department checked for other construction work or other activities, such as the creation of parking lots or roads that require any City Planning approvals. Table 5 lists those permits.

Although the property is not subject to City of Miamisburg permitting requirements until DOE conveys the land parcel to MDC, the City-permitting process familiarizes the City with the Mound Site. DOE has performed spot-checks of permits in the City Engineering Department files since May 2001 to confirm that the permits are maintained under configuration control. The City does not maintain files on buildings that MDC plans to demolish. City files do exist on buildings that have been demolished; however, those files are now considered obsolete.

Table 3 shows the DOE building identification and the Miamisburg street addresses for each building. Seven buildings (3, 87, 100, 102, 105, the MDC Flex Building, and GH), five magazines (80 through 84), and a salt storage shed are in land parcels transferred to MDC. Figure 26 shows the location of site buildings.

Since City permits are filed according to address, MDC or subsequent property owners must inform DOE of changes to the street names or building addresses.

Table 3. Crosswalk of Street Addresses to DOE Building Identifications

DOE Building ID	Former Address	Current Miamisburg Street Address	Parcel
2		Demolished 2011	7
28		925 Capstone Drive	6
45		930 Capstone Drive	6
61		885 Mound Road	7
63		1070 Vanguard Boulevard Demolished 2011	7
87 and 3		1100 Vanguard Boulevard	IB ^a
100		790 Enterprise Court	D ^a
102		1075 Mound Road	IA ^a
105		1195 Mound Road	D ^a
126		955 Mound Road	6A
COS		965 Capstone Drive	8
GH	500 Capstone Circle	500 Vantage Point	3 ^a
OSE	480 Capstone Circle	480 Vantage Point	6
OSW	460 Capstone Circle	460 Vantage Point	8
T Building		945 Capstone Drive	8
Magazines 80–84	None	None	IB ^a
Trailers 1 and 16, and Building 300	None	1275 Vanguard Boulevard	9
MDC Flex Building		1390 Vanguard Boulevard (main building)	4 ^a
	1390 Vanguard Boulevard	1388 Vanguard Boulevard (lighting)	4 ^a
	1390 Vanguard Boulevard	1384 Vanguard Boulevard	4 ^a
	1390 Vanguard Boulevard	1380 Vanguard Boulevard	4 ^a
	1390 Vanguard Boulevard	1374 Vanguard Boulevard	4 ^a
	1390 Vanguard Boulevard	1370 Vanguard Boulevard	4 ^a

^a Parcel has been transferred to MDC.

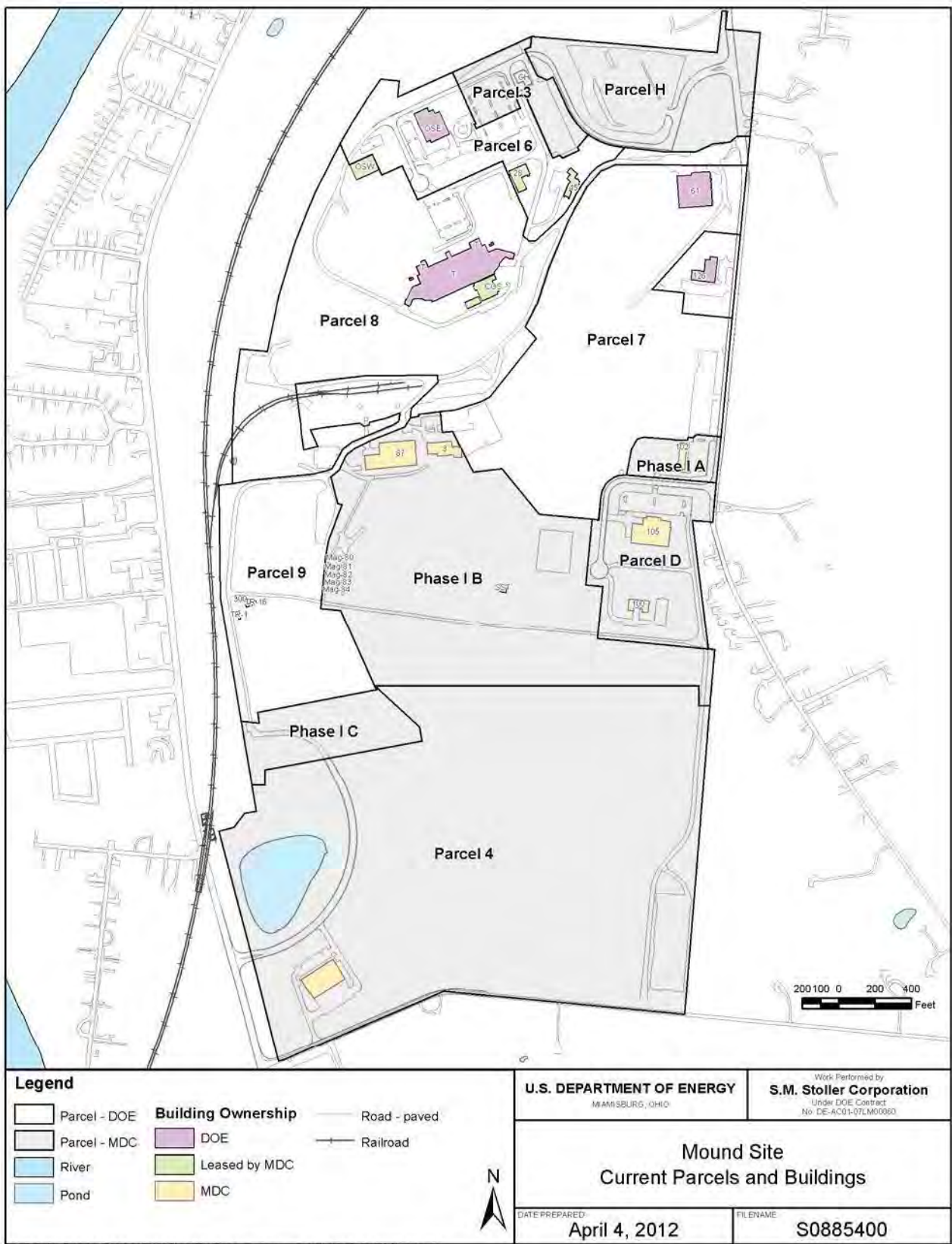


Figure 26. Mound Site Building and Parcel Ownership

Table 4 lists all permits on file that were issued for the site during the period being assessed. The City of Miamisburg Building Inspection Department provided a permit report on April 28, 2012.

Table 4. City of Miamisburg Permit Files for Mound Site (April 1, 2011, to March 31, 2012)

Location of Work	Permit Number	Date of Permit Application	Nature of Work	Work Performed By
985 Capstone Drive	20110004S	2/08/11	Sign permit	Kap Signs
	20110168B	11/15/11	Sprinkler/fire	Dayton Fire Protection
1100 Vanguard Boulevard	20110067B	5/13/11	Sprinkler/fire	A-1 Sprinkler
1070 Vanguard Boulevard	20110125B	8/29/11	Demolition	B&B Wrecking
	20120003E	1/06/12	Electric	Chapel EI
790 Enterprise Court		1/11/12	OK to release to Dayton Power & Light	City Inspector
	20110043B	4/11/11	Occupancy	Self
1075 Mound Road		4/14/11	Certificate of occupancy	City Inspector
	20110021S	8/16/11	Sign	Kap Signs

Table 5 lists work requests that did not require a City permit but did require review by the City Planning Commission. These requests included excavation and paving activities.

Table 5. City of Miamisburg Files—Planning Commission and Other Reviews

Location of Work	ID Number	Date of Application	Submitted By	Nature of Work	Parcel/ Building	Status
The City Building Inspection Department reported that no City Planning Commission reviews were performed during this period.						

Permits filed with the City of Miamisburg do not have an expiration date. To ensure that the appropriate City officials approve permit work performed since the last annual assessment, DOE and the property owner should remain knowledgeable of permits if work covered by that permit were to be postponed.

Most of the work performed by MDC or other parties (e.g., contractors to MDC) on the former DOE Mound Site Property that Gwen Hooten (LM) and Frank Bullock (MDC) were aware of during the 12-month reporting period appeared to be adequately covered by permits submitted to, and approved by, the City of Miamisburg. However, there were no City permits issued for the work performed to upgrade the heating, ventilation, and air-conditioning controllers or for removing partitions and flooring in the OSE Building.

In general, the permit-review process demonstrated that the City of Miamisburg's recordkeeping system is adequate. However, continued education of City employees will be very important.

8.2 Records of Property Owners

DOE reviews MDC construction contracts or easements during the annual IC assessments to ensure that the IC restrictions continue to be included.

There were no permits issued for the road construction project extending Vanguard Boulevard and installing parking lots. The City Engineering Department stated in an e-mail, “Per Bob Stanley - EPA permits were required and received for: Water and sewer extensions and storm sewer. With Bob signing off on the drawings, was the ok to go ahead. He signed on 1/20/12.”

Because this work is on DOE-owned property, EMCBC issued a license to MDC to perform the work. EM and LM/Stoller personnel reviewed the work plans and technical specifications. The technical specifications required the contractor to adhere to all City construction requirements. The City inspector was onsite every day because Vanguard Boulevard is a City street, which the City will maintain. EM delegated responsibility to LM/Stoller to monitor the construction work to ensure compliance with the terms of the license.

MDC and all future property owners must ensure that contractors performing work (e.g., landscaping, utility work that involves excavation, construction) comply with the ICs. MDC provides a pre-construction package that includes a description of the ICs, and MDC includes the following language in the “Technical Requirements” section of its requests for proposal and subsequent work orders: “Excavated soils must be managed and remain on MDC property. Soils from excavation shall be placed at an on-site location, as directed by MDC.”

MDC monitors the vendor’s work and conformance with technical requirements. MDC also provides the vendor with a real estate easement that includes detailed information on the ICs. Appendix B is an example of a real estate easement used for utility work that is registered with Montgomery County.

MDC’s *Comprehensive Reuse Plan Update* (MMCIC 2003) (CRP) is available in the CERCLA Reading Room and online at <http://www.lm.doe.gov/mound/Sites.aspx>. To coordinate the movement of soil on the site, the CRP included a sitewide soil-grading plan. The CRP was incorporated into the City of Miamisburg’s comprehensive plan, which is the basis for the property zoning within the city limits. If MDC subdivides and sells portions of the Mound Site, the new property owners will be required to comply with the CRP and the City’s comprehensive plan.

MDC plans to plat the entire DOE Mound Site Property. In order to receive financing (i.e., for new construction) on land parcels that make up the original DOE Mound site property, MDC will record a lot-split with the Montgomery County Recorder’s Office. If MDC does not require financing for property improvements, it does not have to immediately record a Miamisburg Planning Commission–approved lot-split with the County. However, if MDC decides to sell the property, it has to record the lot-split with the County at that time. The recorded real estate documentation would include the original quitclaim deed and the ES associated with the original parcel to ensure that future property owners of individual lot-splits know of the ICs.

Public education is an important component of DOE’s post-closure responsibilities. Educating all future property owners about their responsibility to comply with the ICs is an essential element of DOE’s public-education campaign. It is also necessary to educate the general public on the

importance of adhering to the sitewide ICs. When the annual report is completed and made available in the CERCLA Reading Room and on the LM website, DOE publishes a public notice that describes the ICs. Postings (such as warning signs near the MDC pond, which state that recreational use is prohibited) are crucial to teaching the public to comply with ICs.

9.0 Conclusions

The ICs for the Mound Site 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.

10.0 Recommendations

Table 6 lists outstanding recommendations from previous inspections, and the status of those recommendations. Table 7 lists new recommendations from this year's inspection.

Table 6. Outstanding Recommendations from Previous Annual or Five-Year CERCLA Inspections of ICs

Origin	Issue/Recommendation	Status 2011 Report	Corrected?	Current Status 2012 Report
2011 Annual IC Assessment	No recommendations resulted from the 2011 annual IC assessment.			
2011 Five-Year Review	Verify that the quitclaim deed for Parcels 6, 7, and 8 is appropriately recorded and is free and clear of all liens and encumbrances.			In process
2011 Five-Year Review	Finalize the <i>Sitewide IC Management/Land Use Control Plan (with CERCLA Summary)</i> .			In process
2011 Five-Year Review	Finalize the sitewide O&M Plan for groundwater remedies.			In process

Table 7. Recommendations from 2012 Annual Inspection for ICs

Number	Issue/Recommendation	Responsible
1	Install a permanent marker for well 0451.	LM/Stoller
2	Work with the City to ensure that permit and zoning systems that capture future site work involving soil removal, regardless of property ownership, will be maintained.	LM/Stoller
3	Complete the soil removal white paper, which will become part of the O&M Plan.	EM/LM/Stoller

11.0 Contact Information

For further information on the content of this annual report or the former DOE Mound Site Property in general, contact:

Gwen Hooten
Acting Mound Site Manager
U.S. Department of Energy
Office of Legacy Management
11025 Dover Street, Suite 1000
Westminster, CO 80021
Cell: (720) 880-4349
E-mail: Gwen.hooten@lm.doe.gov

For further information on the regulatory guidelines that govern the CERCLA 120(h) process for property transfer at the former DOE Mound Site Property, contact:

Tim Fischer
Remedial Project Manager
U.S. Environmental Protection Agency
77 W. Jackson Boulevard
Chicago, IL 60604-3590
(312) 886-7058

or

Brian Nickel
Remedial Project Manager
Ohio Environmental Protection Agency
401 E. Fifth Street
Dayton, Ohio 45402-2911
(937) 285-6468

12.0 References

DOE (U.S. Department of Energy), 1995. *Operable Unit 1 Record of Decision*, Final, June.

DOE (U.S. Department of Energy), 1999a. *CERCLA 120(h) Summary Notice of Hazardous Substances Release Block D, Final and Record of Decision for Release Block D*, February.

DOE (U.S. Department of Energy), 1999b. *CERCLA 120(h) Summary Notice of Hazardous Substances for Release Block H, Mound Plant, Miamisburg, Ohio*, Final, July.

DOE (U.S. Department of Energy), 1999c. *Record of Decision for Release Block D*, Final, February.

DOE (U.S. Department of Energy), 1999d. *Record of Decision for Release Block H*, Final, June.

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DOE (U.S. Department of Energy), 2001b. *Parcel 3 Record of Decision*, Final, August.

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DOE (U.S. Department of Energy), 2009b. *Parcels 6, 7, 8 Record of Decision*, August.

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DOE (U.S. Department of Energy), 2012a. *Parcel 6, 7, 8 Groundwater Monitoring Report Calendar Year 2011*, LMS/MND/S07540, U.S. Department of Energy Office of Legacy Management, March.

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EPA (U.S. Environmental Protection Agency) 2005. *Institutional Controls: A Citizen's Guide to Understanding Institutional Controls at Superfund, Brownfields, Federal Facilities, Underground Storage Tank, and Resource Conservation and Recovery Act Cleanups*, OSWER 9255.0-98 EPA-540-R-04-004, February, available online at http://www.epa.gov/fedfac/pdf/ic_ctzns_guide.pdf, accessed May 7, 2012.

MMCIC (Miamisburg Mound Community Improvement Corporation), 2003. *Comprehensive Reuse Plan Update*, December.

Appendix A

Annual Assessment Checklists for the Mound Site

(Inspections conducted in March and April 2012)

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CHECKLIST WORKSHEET – COMBINED – ALL PARCELS
Review of Effectiveness of Institutional Controls

Scope: Entire Mound Site, Miamisburg, Ohio	
Preliminary inspections performed on: March 13 and 26, April 5	
Physical inspection walkdown with Regulators on: April 19, 2012	
Review led by: Gwen Hooten, DOE LM	
Participants in Physical inspection walkdown on April 19, 2012:	
Gwen Hooten, LM; Larry Kelly and Paul Lucas, EMCBC; Tim Fischer, EPA; Anthony Campbell, Ohio EPA; Joe Crombie, ODH; Frank Bullock, MDC; Ellen Stanifer, City of Miamisburg; Bill Hertel, Chuck Friedman, Yvonne Dayo, Greg Lupton, Gary Weidenbach, Stoller; and Joyce Massie, JGMS.	
Summary of property improvements since the previous review.	
(For example, have buildings been demolished or erected?)	
Has surface water flow been modified? Has landscaping been done?)	Yes (<input checked="" type="checkbox"/>) No (<input type="checkbox"/>)
MDC demolished Buildings 2, 63, and 63W in Excelitas area (old test fire)	
MDC installed new parking lots in that area	
MDC began work on the spine road on March 26. The road is located in Parcels 8 and 9 and Phase IC. EMCBC granted license for the road to be built on DOE property. Road will extend the MDC roadway in Parcel 4 to Excelitas and install parking areas in the former rail loadout area.	
EMCBC delegated some oversight of spine road to LM/Stoller, who reviewed construction drawings and is observing work.	
Evidence of unauthorized soil removal? Yes (<input type="checkbox"/>) No (<input checked="" type="checkbox"/>)	
No evidence of soil removal. MDC oversaw work on building demo, parking lot installation, and start of spine road construction.	
Evidence of unauthorized groundwater use? Yes (<input type="checkbox"/>) No (<input checked="" type="checkbox"/>)	
One new well was found on Ohio Department of Natural Resources (ODNR) website. This is groundwater monitoring well #0451 installed by Stoller as part of the OU-1 rebound test. The location of the well was listed under the address for the OU-1 pump & treat structures, 1275 Vanguard Blvd.	
Evidence of land use other than “Industrial” (e.g., residential)? Yes (<input type="checkbox"/>) No (<input checked="" type="checkbox"/>)	
No non-industrial use observed.	
Signage/Markers in good repair (if applicable)? Yes (<input checked="" type="checkbox"/>) No (<input type="checkbox"/>)	
Observed two signs at pond in Parcel 4.	
Groundwater monitoring wells maintained properly? Yes (<input checked="" type="checkbox"/>) No (<input type="checkbox"/>)	
All wells were locked and in good condition. New Well 0451 does not have a permanent marker.	
Seeps were marked with plastic flags and markings were illegible. Seeps 0606, 0607, 0608 had no flags	
New flags were installed after the preinspection.	
Fencing in good repair (if applicable)? N/A (<input checked="" type="checkbox"/>)	
Fencing is not an IC	
Air monitoring stations maintained properly (if applicable)? N/A (<input checked="" type="checkbox"/>)	
Air monitoring is not an IC, and DOE removed all on and off-site air monitoring stations	
Containment system(s) in good repair (if applicable)? N/A (<input checked="" type="checkbox"/>)	
Containment systems are not an IC	
Site Surveillance equipment in good repair (if applicable)? N/A (<input checked="" type="checkbox"/>)	
Site surveillance equipment is not an IC	
Other equipment associated with maintenance of the ICs in good repair N/A (<input checked="" type="checkbox"/>)	
No other equipment is associated with maintenance of ICs	

CHECKLIST WORKSHEET
Review of Effectiveness of Institutional Controls

T BUILDING ONLY – Areas with additional institutional controls

Have ICs been followed? Other comments.

Yes () No ()

T Building is currently locked and all entry is controlled by DOE and Stoller

The cracks in the red concrete cap over one of the two areas in T Building did not appear to have changed significantly since the 2011 inspection.

On April 24, Stoller took baseline photos to document the location and current conditions of the cracks. These photos and a room drawing showing locations will be added to the Appendix to the assessment report.

Summary and status of open issues or recommendations from previous reviews

Dates of previous inspections and five-year reviews:

	Origin	Issue/Recommendation	Corrected?	Current status 2012 Report
	2008 Annual	Landowner or management organization will notify DOE-LM when there are changes of address or street names on site. Building permits are filed by street addresses.		Pending
	2011 Annual	None		
	2011 Five-year review	Verify that the quitclaim deed for Parcels 6, 7, and 8 is appropriately recorded and is free and clear of all liens and encumbrances.		In process
	2011 Five-year review	Finalize the sitewide IC Management/Land Use Control Plan (with CERCLA Summary).		In process
	2011 Five-year review	Finalize the sitewide O&M Plan for groundwater remedies.		In process

Personnel interviewed during the physical inspection of parcel, or during review of documentation associated with the parcel:

Jayne Hansel and Leslie Karacia, City of Miamisburg Engineering Department, 937-847-6532, Stoller personnel provided information and assisted with inspections of wells, seeps, and the interior of T Bldg.

Stoller personnel were Gary Weidenbach Bob Ransbottom, and Roy Mowen; Steve Pawel also provided the necessary site drawings and T Building floor layouts.

List of Documents reviewed (e.g., street opening permits or construction permits approved by the City of Miamisburg, engineering drawings for improvements to property, aerial photographs, maps, City Planning Commission requests, Ohio Department of Natural Resources well logs):

Requested the Engineering Department to query their database for all permits for addresses on Capstone Drive, Vanguard Boulevard, Vantage Point, Enterprise Court, Mound Road (between 885-1195 odd numbered side of street), and Benner Road (between 799 and Dayton Cincinnati Road, odd numbered side of street).

Also requested any information on other activities requiring City approval such as zoning, parking lot construction, etc.

Reviewed the Ohio Department of Natural Resources well logs on the ODNR website.

Based upon the review of the above-listed documents, were property improvements covered by the appropriate approvals (e.g., construction permit approved by City)?

Yes () No ()

Received data from city on 4-17-12.

Results did not include any permitting or approvals for new spine road construction or the parking lots in Bldg 63 footprint or for HVAC control improvements in OSE Building.

CHECKLIST WORKSHEET – COMBINED – ALL PARCELS
Review of Effectiveness of Institutional Controls

Requested additional information.

There were no permits issued for the road construction project extending Vanguard Boulevard and installing parking lots. The City Engineering Department stated in an email, "Per Bob Stanley - EPA permits were required and received for: Water and sewer extensions and storm sewer. With Bob signing off on the drawings, was the ok to go ahead. He signed on 1/20/12."

Because this work is on DOE-owned property, EMCBC issued a license to MDC to perform the work. EM and LM/Stoller personnel reviewed the workplans and technical specifications.

The technical specifications required the contractor to adhere to all City construction requirements. The City inspector was on site every day because Vanguard Boulevard is a City street will be maintained by the City.

During the inspection, was there physical evidence of movement of soil off site or use of groundwater that was not approved by the regulators? Yes () No (X)

There was no evidence of unapproved work performed since last inspection.

Construction activities underway for new spine road in OU-1 area. Soil movement within site.

EM delegated responsibility to LM/Stoller to monitor the construction work to assure compliance to the terms of the license.

Miscellaneous items noted during review or physical inspection:

Stolen property:

Hundreds of feet of heavy metal grills were stolen leaving the trenches uncovered. Grills over storm sewer concrete drains southeast of Seep 0601 along west property line in Parcel 8 and drains along back roadway south of salt storage shed in Phase IB.

Stoller personnel advised that they filed police reports for the DOE-owned Parcel 8 thefts, and informed MDC of the thefts in Phase IB. MDC filed police reports for those thefts.

All wells included in the groundwater monitoring for Phase I, Parcels 6, 7, and 8, and OU-1 were painted and in good condition.

There was one new well in OU-1 - Well 0451

Recommendations from preliminary physical inspection:

Install legible markers at the seeps. Stoller installed new marker flags in early April 2012.

Determine exactly what City permits are required for site activities.

Reword annual IC assessment request to City to detail the exact records' search needed.

Recommendations from April 19, 2012 physical walkdown:

None

Conclusion/comments from all physical inspections:

ICs appear to be functioning as designed.

CHECKLIST WORKSHEET
Review of Effectiveness of Institutional Controls

Checklist prepared by U.S. Department of Energy

Gwen Hooten, LM Acting Mound Site Manager

April 19 physical walkdown comments were submitted by:
None

Date: April 19, 2012

Appendix B

Real Estate Easement for Utility Work Performed on MDC Property

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**SUPPLEMENTARY DECLARATION OF EASEMENT TO
REAL ESTATE EASEMENT NO. 99-OH-00011**

THIS SUPPLEMENTARY DECLARATION OF EASEMENT TO REAL ESTATE EASEMENT NO. 99-OH-00011 ("Supplementary Declaration of Easement") 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 Real Estate Easement No. 99-OH-00011 executed on September 22, 1999, and recorded at Microfiche No. 99-0702D09 (the "Original Easement"), The United States of America, acting by and through the Department of Energy ("DOE"), granted to AMERITECH an easement for the installation of communication lines over the area depicted in the Original Easement (the "Original Easement Area"), described in Exhibit A, attached hereto and incorporated herein by reference.

B. By virtue of a Quitclaim Deed dated August 4, 1999, and recorded at Microfiche No. 99-0852B11 of the Montgomery County, Ohio Recorder's office, and by virtue of a Quitclaim Deed dated November 19, 1999, and recorded at Microfiche No. 99-0852B05 of such Recorder's office, The United States of America, acting by and through the Secretary of the DOE, conveyed to Declarant the real property described on Exhibit B, attached hereto and incorporated herein by reference ("Declarant's Property"), which property is burdened by the Original Easement.

C. Declarant now desires to expand the Original Easement Area on the terms and conditions set forth 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. Grant. Declarant hereby grants to AMERITECH, its successors and assigns, a permanent, non-exclusive easement upon, over and under the area of the Declarant's Property described in Exhibit C, attached hereto and incorporated herein by reference ("Expanded Easement Area"). By making use of the Expanded Easement Area, AMERITECH shall be deemed to have agreed to be bound by the terms and conditions of this Declaration.

2. Compliance With Restrictions. AMERITECH shall have reviewed the restrictions and covenants set forth in the Deeds by which DOE conveyed to Declarant the Declarant's Property prior to the construction or installation of any of AMERITECH's equipment. AMERITECH agrees that, as set forth in the Deeds, its use of the Expanded 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:

2.1 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,

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\$98.00 03/20/03
EASE-03-039151 0023
Montgomery County
Judy Dodge Recorder

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. AMERITECH 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.

2.2 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.

2.3 AMERITECH 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 Deeds and this Supplementary Declaration of Easement, the terms of the Deeds shall control.

3. Incorporation of Original Easement. This Supplementary Declaration of Easement incorporates by reference all of the terms, conditions and covenants of the Original Easement Agreement. By its acceptance of the easement granted in this Supplementary Declaration of Easement, AMERITECH hereby covenants to comply with and observe the terms, conditions and covenants of the Original Easement for the benefit of Declarant, its successors and assigns forever, and agrees that Declarant, its successors and assigns forever, shall have the right to enforce such terms, covenants and conditions. As used in the Original Easement, the term "premises" shall mean Declarant's real property, whether or not burdened by the easements granted herein or in the Original Easement, and all surrounding Government-owned real property. All notices required to be provided to the DOE under the Original Easement shall be provided to Declarant at 720 Mound Road, COS Bldg., Suite 480, Miamisburg, Ohio 45342-6714, Attn: Planning Manager, or such other address as provided by Grantor.

4. Reservation. Declarant reserves for itself, its successors and assigns forever, the right to use the Expanded Easement Area for any purpose not inconsistent with the rights conveyed to AMERITECH herein; provided however, that Declarant shall not use the Expanded Easement Area in a manner that will prevent or hinder its use by AMERITECH for the purposes provided herein.

5. Covenants Run with the Land. All covenants, agreements and conditions contained in this Supplementary Declaration of Easement shall be considered as running with the land.

IN WITNESS WHEREOF, the undersigned has executed this Supplementary Declaration of Easement on behalf of Declarant as of the day and year first set forth above.

DECLARANT:

MIAMISBURG MOUND COMMUNITY
IMPROVEMENT CORPORATION

By: Michael J. Grunzelman

Printed Name: Michael J. Grunzelman

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. Grunzelman the President of MIAMISBURG MOUND COMMUNITY IMPROVEMENT CORPORATION, an Ohio non-profit corporation, on behalf of said corporation.

Jean Wysong
NOTARY PUBLIC

Jean 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 Wormsley & Lombard Co., L.P.A.
33 W. First Street, Suite 600
Dayton, Ohio 45402

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Appendix C

T Building Rooms with Special ICs

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T Building Rooms with Special ICs

In addition to the ICs for the entire site, T Building has the following additional IC restrictions as described in the Parcel 6, 7, and 8 Record of Decision.

1. Prohibit the removal of concrete floor material in specified rooms of T Building (Figure 1) to off-site locations without prior approval from EPA, Ohio EPA, and ODH.
2. Prohibit the penetration of concrete floors in specified rooms of T Building (Figure 1) without prior approval from EPA, Ohio EPA, and ODH.

On June 29, 2009, the Mound Core Team signed an agreement for the position paper which provided policy guidelines for limited activities in these rooms which should not result in unacceptable risk to workers in the building.

The four-page agreement and position paper, T Building Special ICs Core Team Agreement and Position Paper, 6-29-09, are included in the CERCLA administrative record, in this appendix, and will be included in subsequent annual IC assessment reports.

Photos of T Building Rooms

The photos in this appendix show the baseline conditions of the rooms in April 2010. No changes have occurred since those photos were taken.

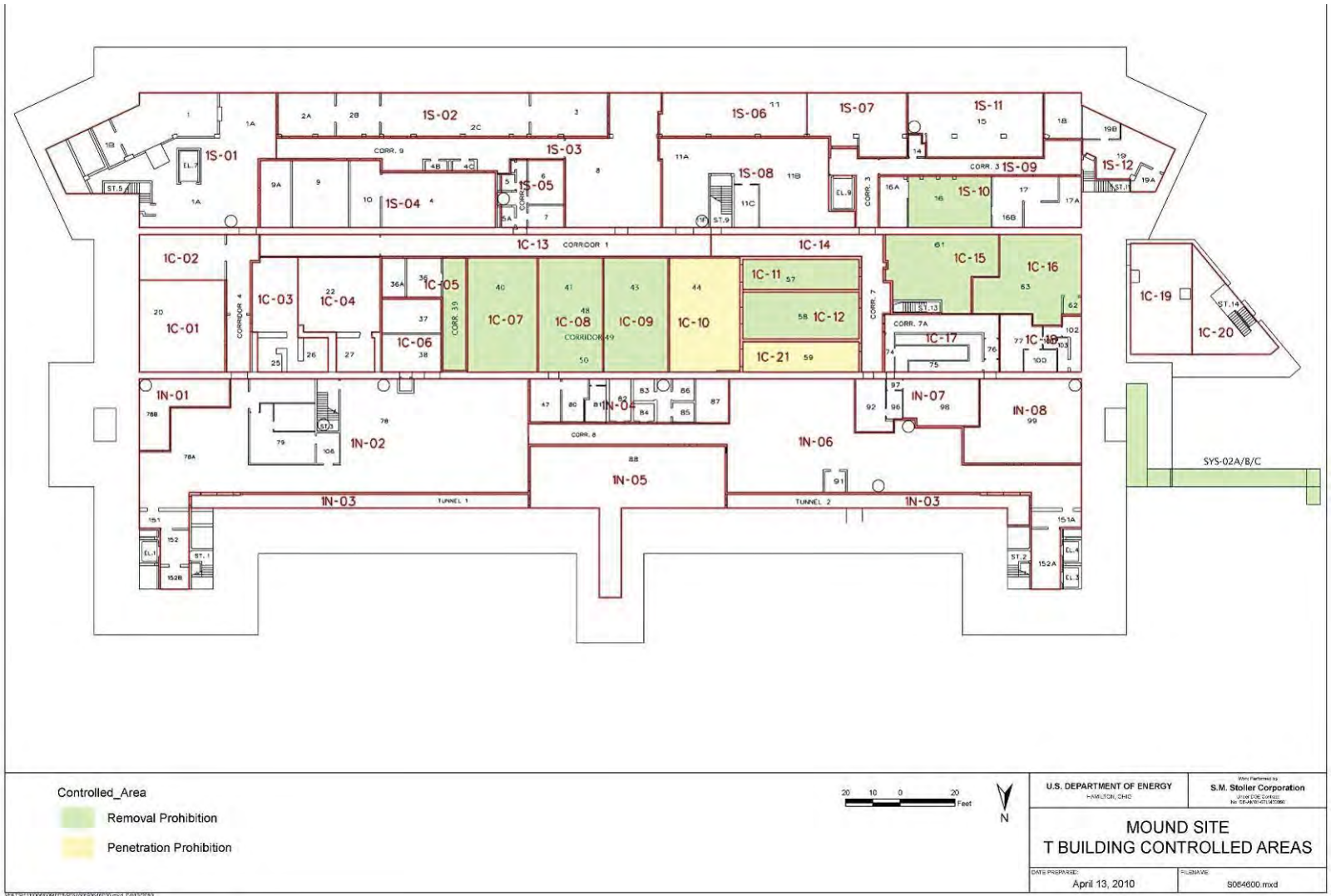


Figure C-1. T Building Rooms with Special ICs



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: Brian K. 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.

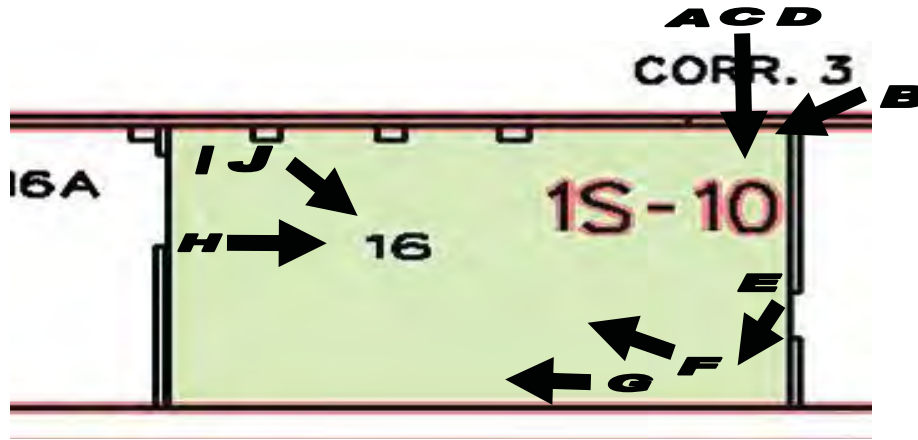


Figure C-2. T Bldg. Room 16 View A



Figure C-3. T Bldg. Room 16 View B



Figure C-4. T Bldg. Room 16 View C



Figure C-5. T Bldg. Room 16 View D



Figure C-6. T Bldg. Room 16 View E



Figure C-7. T Bldg. Room 16 View F



Figure C-8. T Bldg. Room 16 View G



Figure C-9. Room 16 View H



Figure C-10. T Bldg. Room 16 View I



Figure C-11. T Bldg. Room 16 View J

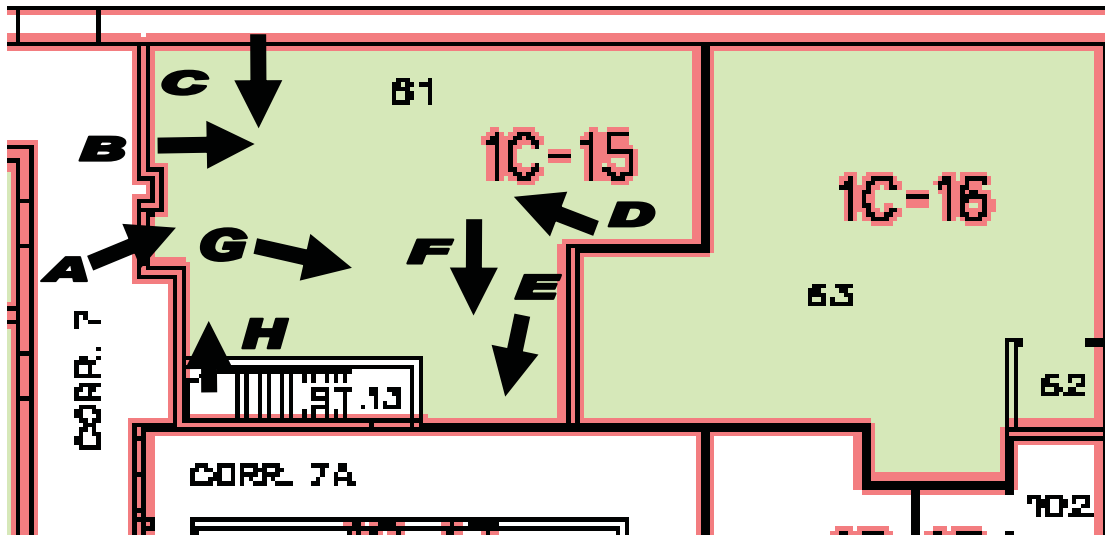


Figure C-12. T Bldg. Room 61 View A



Figure C-13. T Bldg. Room 61 View B



Figure C-14. T Bldg. Room 61 View C



Figure C-15. T Bldg. Room 61 View D



Figure C-16. T Bldg. Room 61 View E



Figure C-17. T Bldg. Room 61 View F



Figure C-18. T Bldg. Room 61 View G



Figure C-19. T Bldg. Room 61 View H

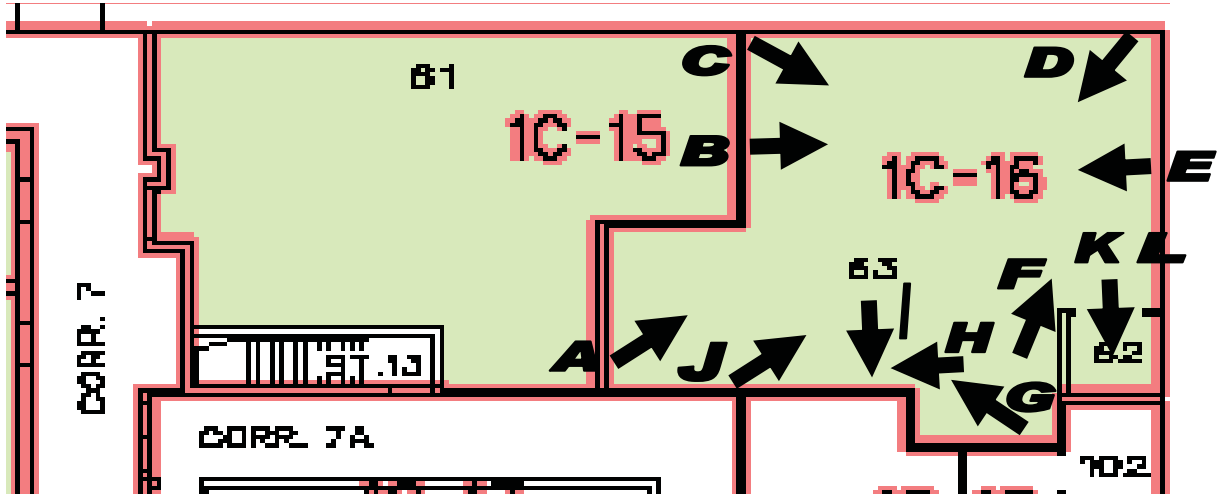


Figure C-20. T Bldg. Room 63 View A



Figure C-21. T Bldg. Room 63 View B



Figure C-22. T Bldg. Room 63 View C



Figure C-23. T Bldg. Room 63 View D



Figure C-24. T Bldg. Room 63 View E



Figure C-25. T Bldg. Room 63 View F



Figure C-26. T Bldg. Room 63 View G



Figure C-27. T Bldg. Room 63 View H



Figure C-28. T Bldg. Room 63 View I



Figure C-29. T Bldg. Room 63 View J



Figure C-30. T Bldg. Room 62 View L



Figure C-31. T Bldg. Room 62 View M

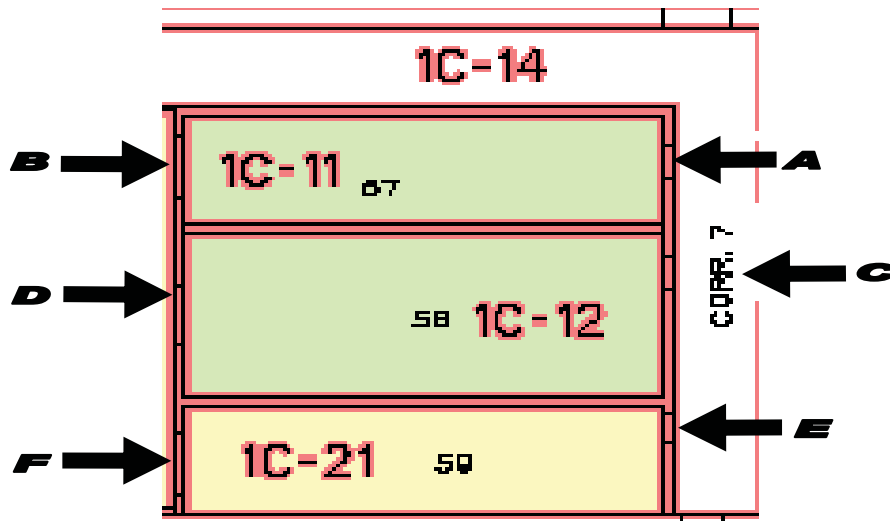


Figure C-32. T Bldg. Room 57 View A



Figure C-33. T Bldg. Room 57 View B



Figure C-34. T Bldg. Room 58 View C



Figure C-35. T Bldg. Room 58 View D



Figure C-36. T Bldg. Room 59 View E



Figure C-37. T Bldg. Room 59 View F

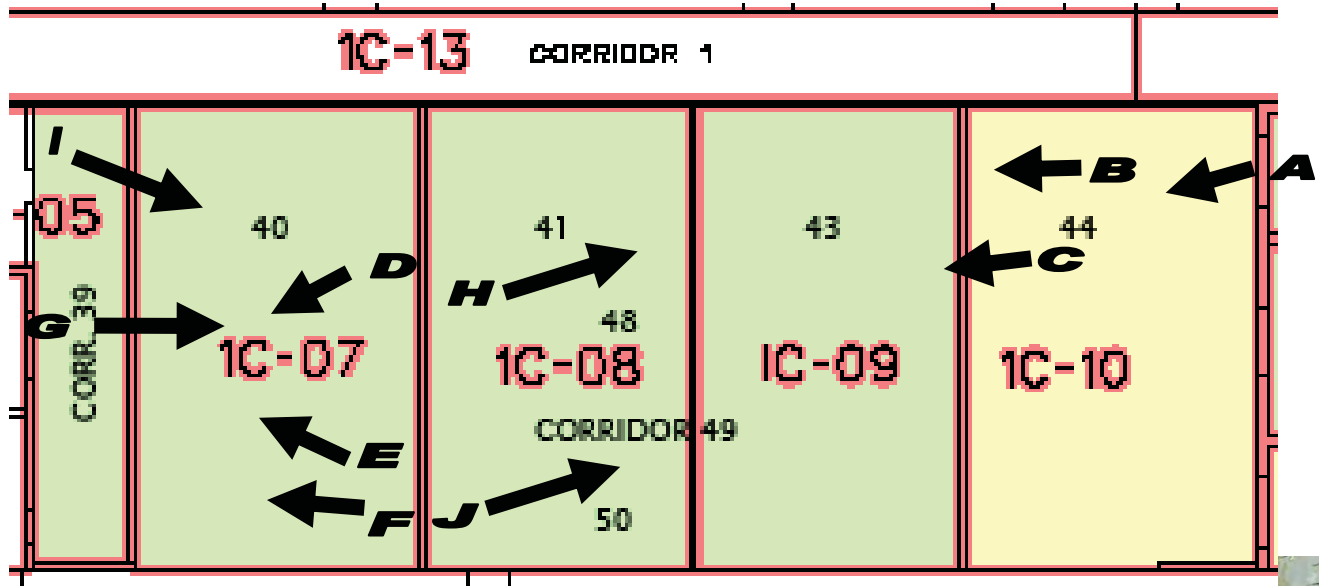


Figure C-38. T Bldg. Rooms 39-44, 48-50 View A

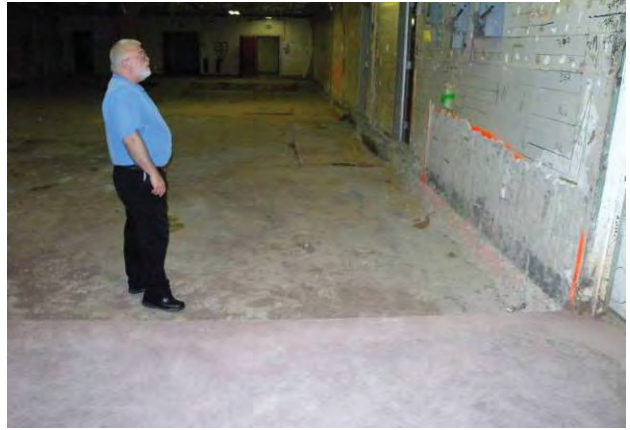


Figure C-39. T Bldg. Rooms 39-44, 48-50 View B



Figure C-40. T Bldg. Rooms 39-44, 48-50 View C



Figure C-41. T Bldg. Rooms 39-44, 48-50 View D



Figure C-42. T Bldg. Rooms 39-44, 48-50 View E



Figure C-43. T Bldg. Rooms 39-44, 48-50 View F



Figure C-44. T Bldg. Rooms 39-44, 48-50 View G



Figure C-45. T Bldg. Rooms 39-44, 48-50 View H

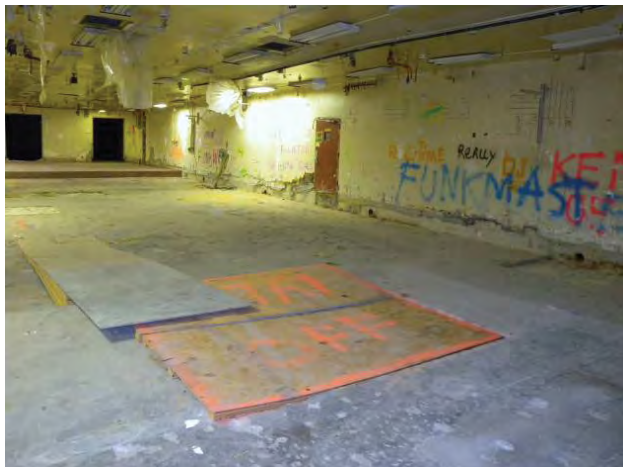


Figure C-46. T Bldg. Rooms 39-44, 48-50 View K



Figure C-47. T Bldg. Rooms 39-44, 48-50 View L

Appendix D

Listings and Photos of Monitoring Wells and Seeps

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D1. Parcel 6, 7, and 8 Remedy Wells and Seeps

Table D–1 and Figure D–1 show the Parcel 6, 7, and 8 groundwater monitoring wells and seep locations. Table D–2 shows 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; 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 2011* (DOE 2012) includes an analysis of the groundwater monitoring. Both documents are available on the LM website at <http://www.lm.doe.gov/mound/Sites.aspx>.

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

Well/Seep ID	Located in Parcel 8	Offsite
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

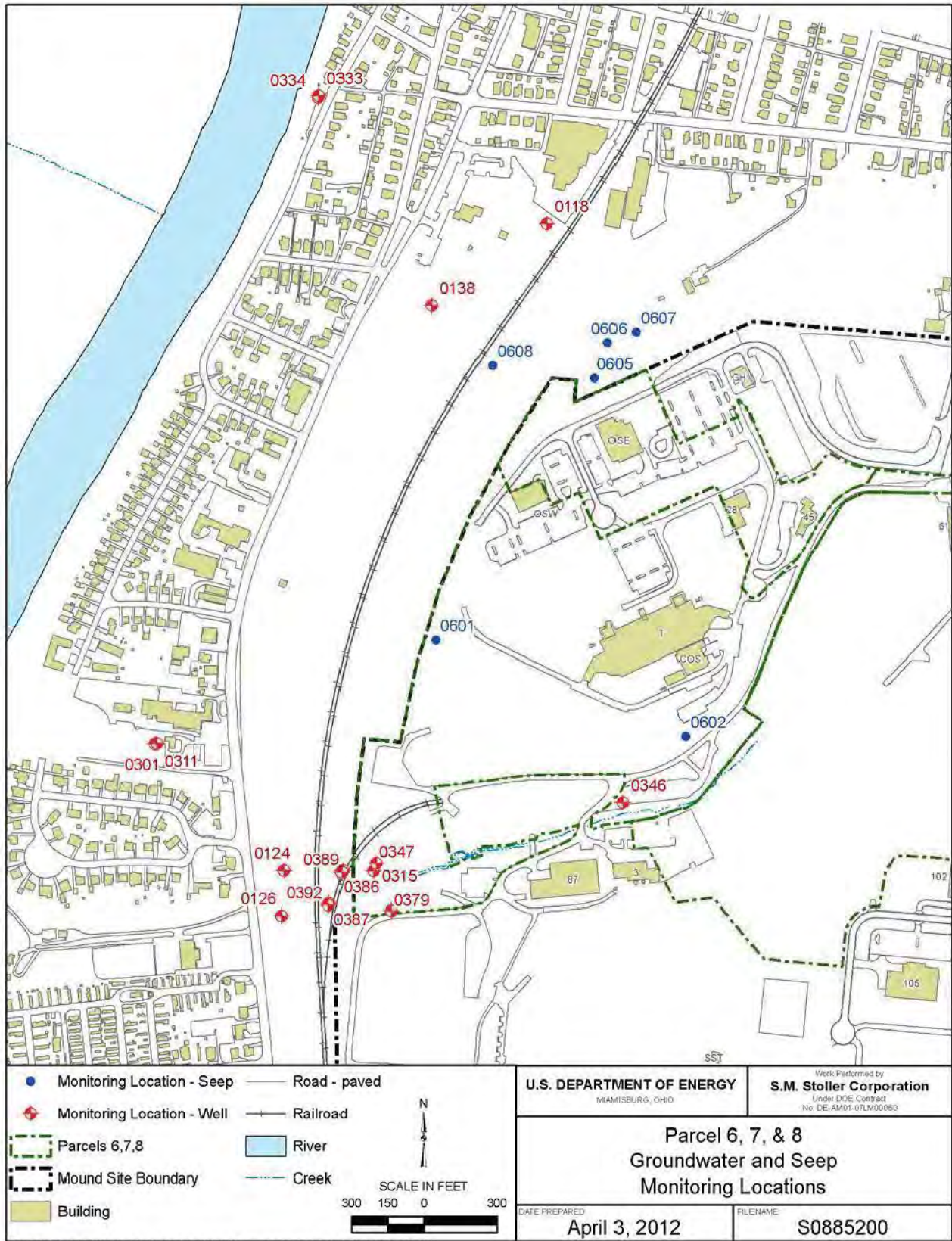


Figure D-1. Parcel 6, 7, and 8 Groundwater and Seep Monitoring Locations

Table D-2. Photos of Parcel 6, 7, and 8 Wells and Seeps



Well 0118, Offsite



Well 0124, Offsite



Well 0126, Offsite



Well 0138, Offsite



Wells 0301 and 0311, Offsite



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



Wells 0386 and 0389, Offsite



Wells 0387 and 0392, Offsite



Well 0315



Well 0346



Well 0347



Well 0379



Seep 0601, Onsite



Seep 0602, Onsite South of COS



Seep 0605 Offsite North of OSE



Seep 0606 Offsite North of OSE



Seep 0607, Offsite North of OSE



Seep 0608, Offsite, On Hillside by Railroad Tracks

D2. OU-1 (Parcel 9) Wells

Table D-3 and Figure D-2 list and show the locations of the OU-1 monitoring wells. Table D-4 shows photos that were taken in March before the start of the OU1 spine road construction. All wells were locked, labeled, and in good condition.

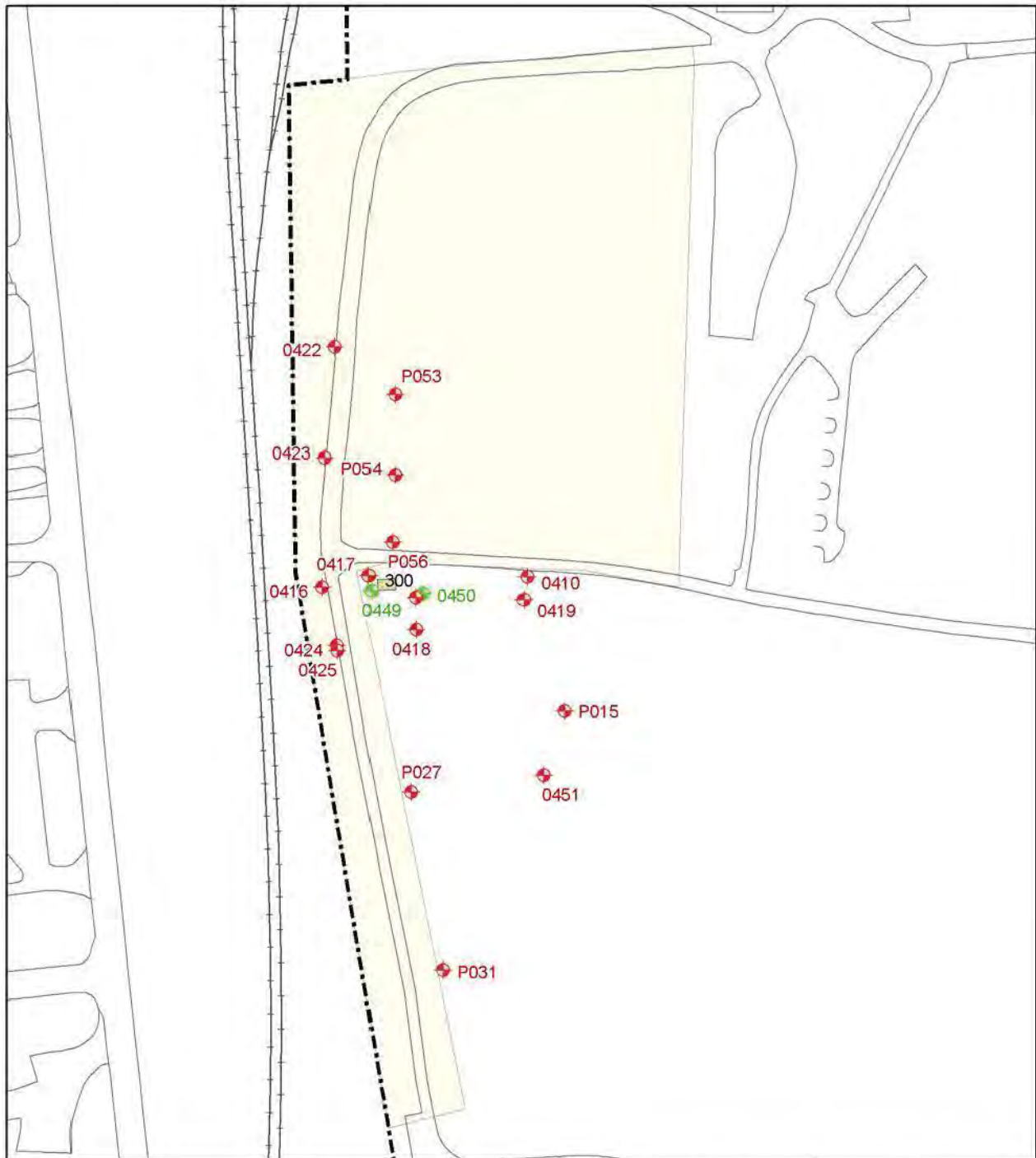
Because the groundwater monitoring is not an IC, the annual IC assessment only verifies the conditions of the wells and seeps; it does not determine the effectiveness of the remedy. The ER Monthly Report provides data on the OU-1 pump-and-treat system and the results of groundwater monitoring. Historical water quality and water level data for existing wells can be found on the LM 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.

LM installed a new well (0451) during the OU-1 rebound test. This well did not have a permanent marker.

Table D-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)
0451 (new)



<ul style="list-style-type: none"> Monitoring Location Extraction Well Building Mound Site Boundary Road - paved Railroad Creek OU-1 Area 	 SCALE IN FEET 100 50 0 100 	U.S. DEPARTMENT OF ENERGY <small>MAMISBURG, OHIO</small>	<small>Work Performed by</small> S.M. Stoller Corporation <small>Under DOE Contract No. DE-AM01-07LM00060</small>
		OU-1 Wells	

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Figure D-2. OU-1 wells

Table D-4. Photos of OU-1 Wells



Well P015



Well P027



Well P031



Well P053



Well P054



Well 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 0450



Well 0451 (installed in November 2011)

D3. Phase I Remedy Wells and Seeps

Table D-5 and Figure D-3 give the locations of the eight 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>. Table D-6 contains photos showing the condition of the wells and seep in March 2012. These photos were taken before the start of the spine road construction.

Because the groundwater monitoring is not an IC, the annual IC assessment only verifies the conditions of the wells and seeps; it does not determine the effectiveness of the MNA remedy. The Phase I remedy includes ICs and MNA, which includes groundwater monitoring requirements described in the *Phase I Remedy (Monitored Natural Attenuation) Groundwater Monitoring Plan, Final* (DOE 2004b), The *Phase I Groundwater Monitoring Report Calendar Year 2011* (DOE 2012) includes an analysis of the groundwater monitoring. Both documents are available on the LM website at <http://www.lm.doe.gov/mound/Sites.aspx>.

Table D-5. Monitoring Wells and Seeps Included in Phase I Remedy

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

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

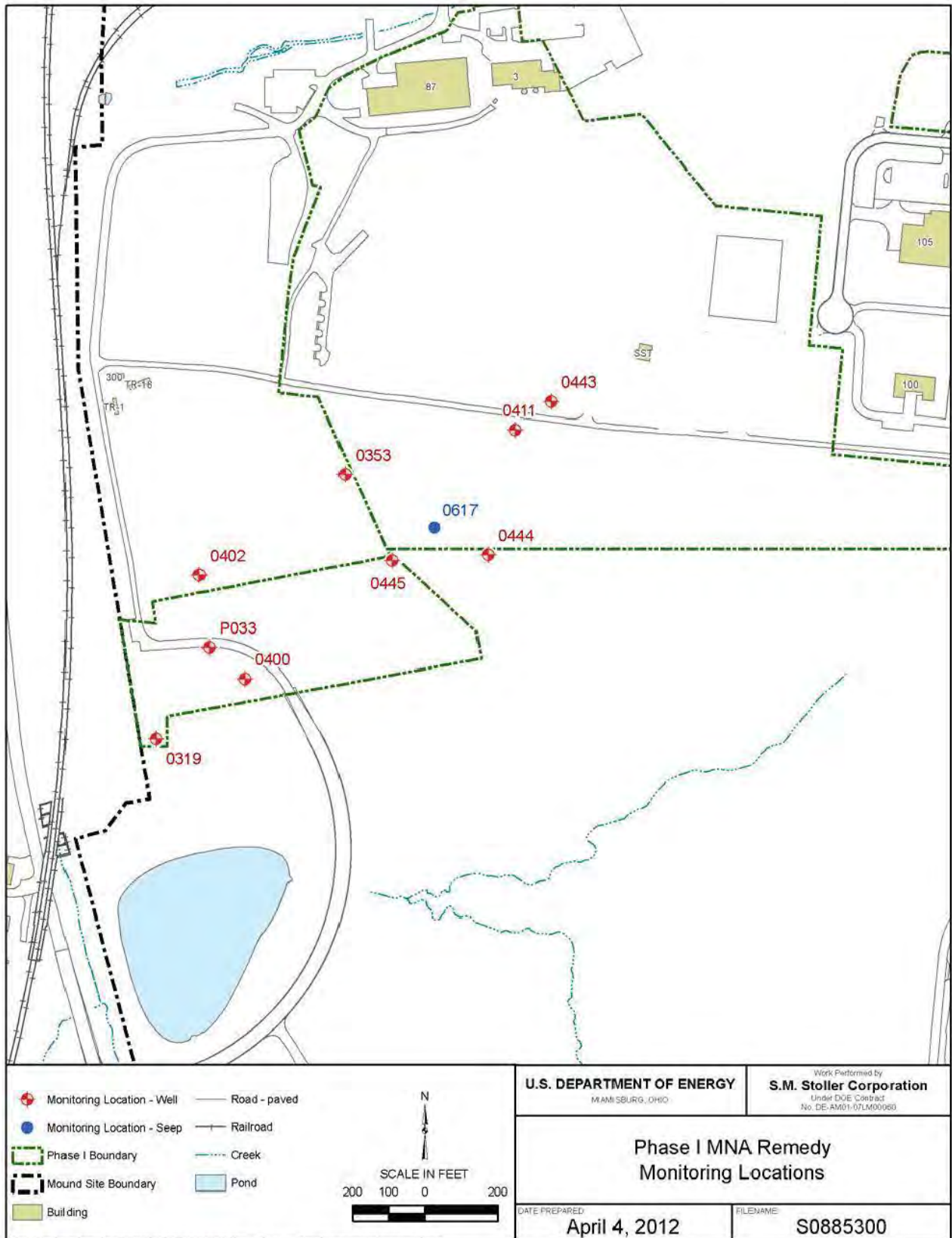


Figure D-3. Phase I MNA Remedy Monitoring Well Location

Table D-6. Photos of Phase I Parcel Wells and Seeps



Well P033



Well 0353



Well 0400



Well 0402



Well 0411



Well 0443



Well 0444



Well 0445



Seep 0617

Well 0319 is not being sampled

Appendix E

Photos of T Building Red Concrete Cracks

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E1. 2012 Photos of Red Concrete Cracks

The following photographs in Table E-1 were taken to document the baseline condition of the cracks in the red concrete in specified rooms in T Building. The room diagram in Figure E-1 indicates the location of the cracks labeled A through I.

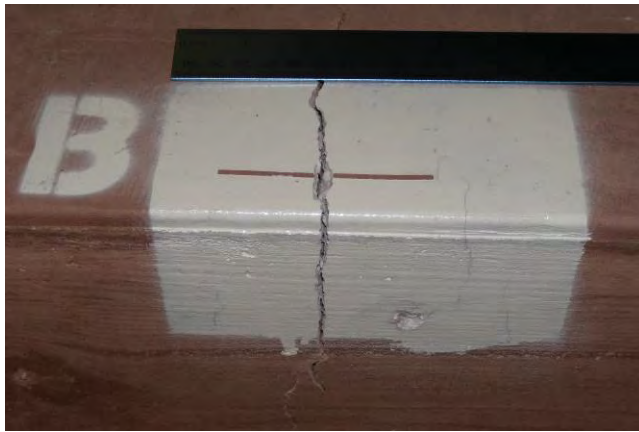
Table E-1. Photos of T Building Red Concrete Area 2012



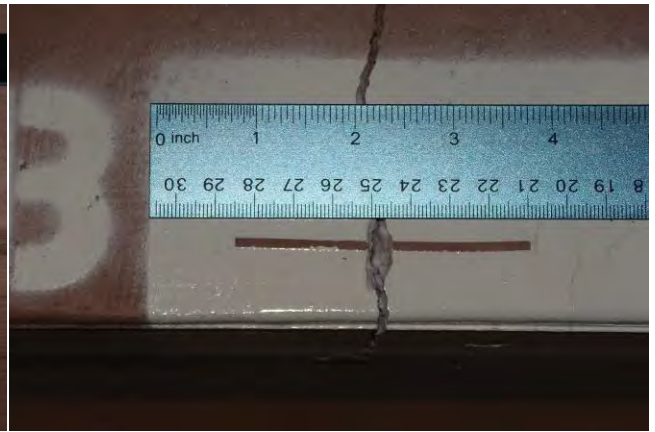
Sample A



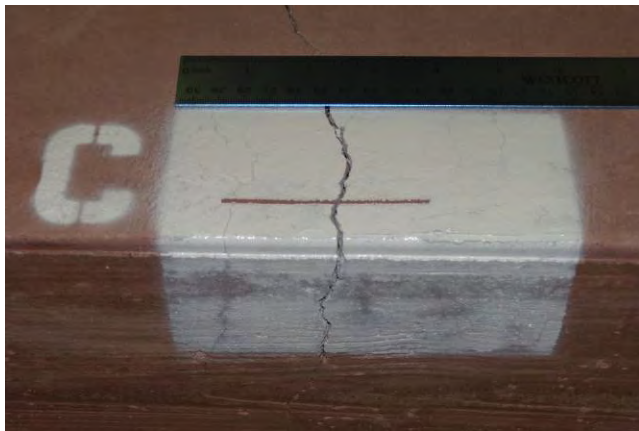
Sample A closeup



Sample B



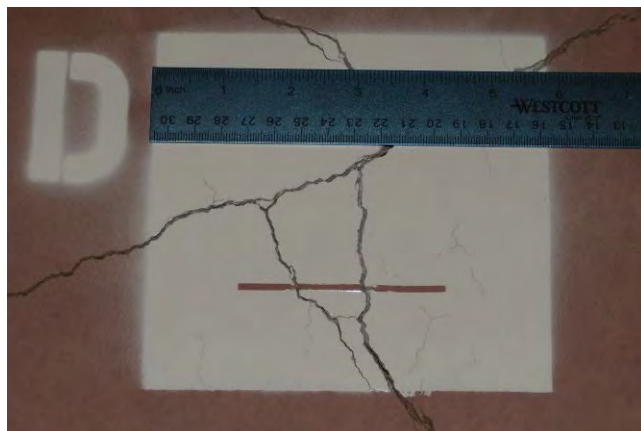
Sample B closeup



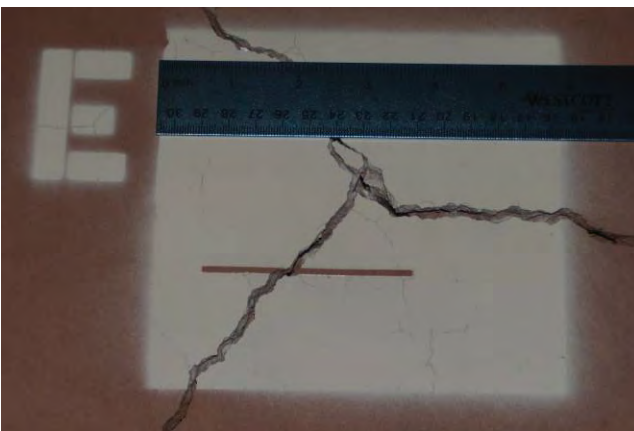
Sample C



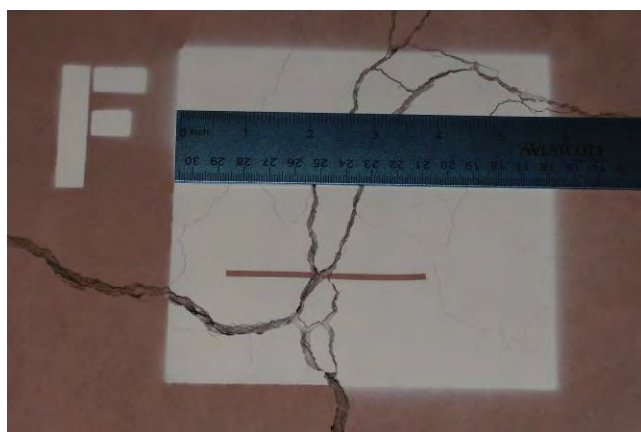
Sample C closeup



Sample D



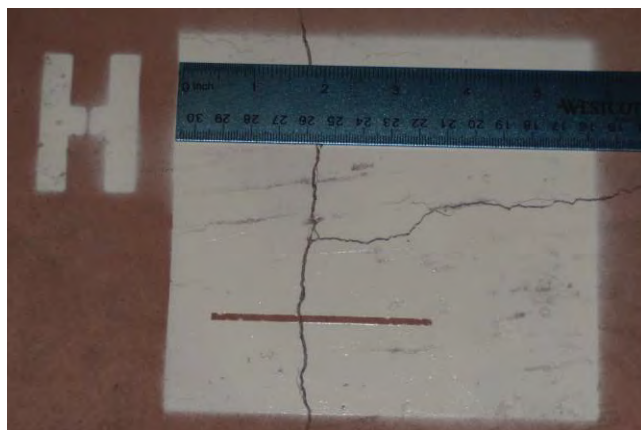
Sample E



Sample F



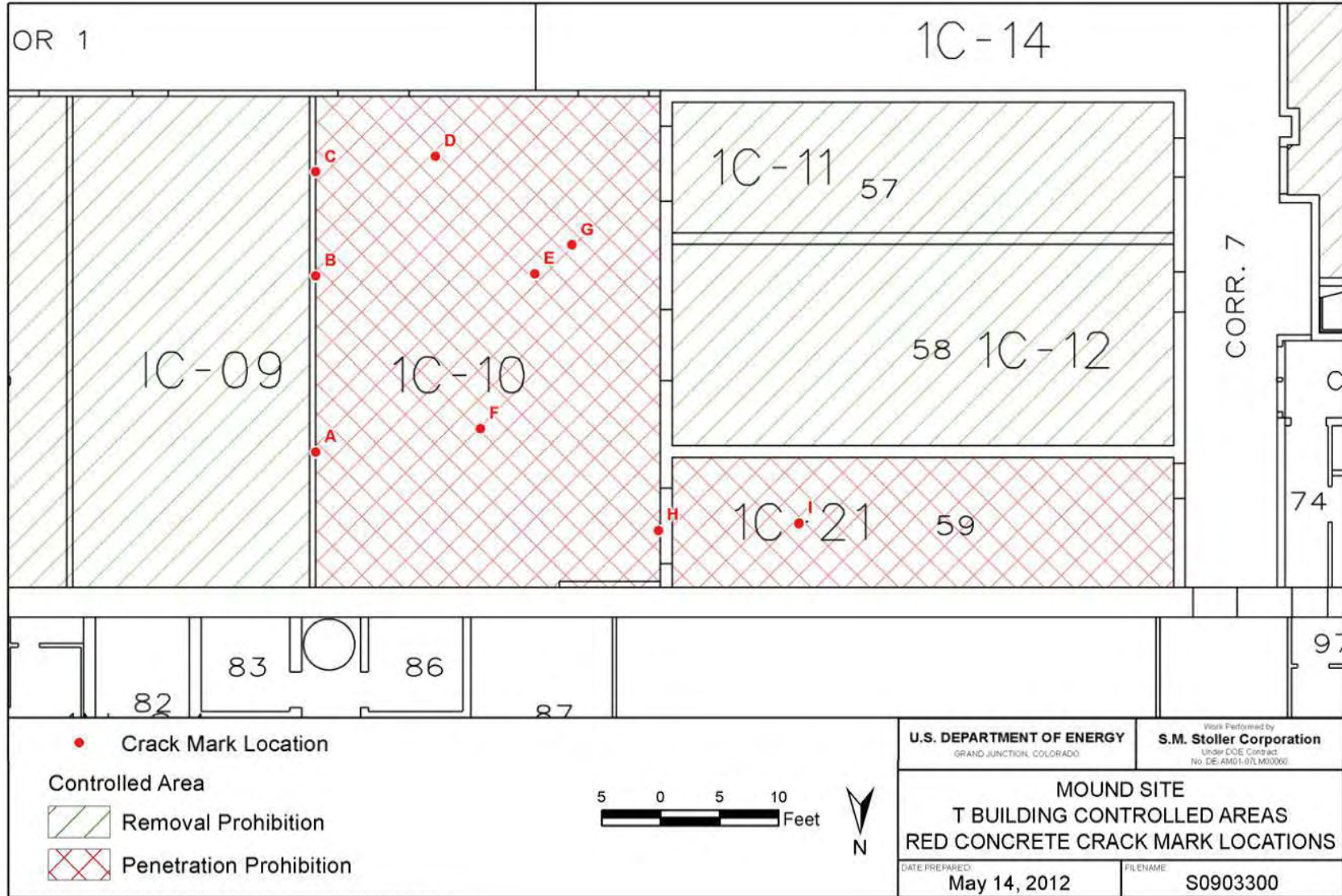
Sample G



Sample H



Sample I



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Figure E-1. Red Concrete Crack Mark Locations 2012