Appendix B

Site Inspection Checklists

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I. SITE INFORMATION	
Site name: Mound Plant Site	**Date of inspection: 3/23/16**
Location and Region: Miamisburg, Ohio	**EPA ID: OH6890008984**
Agency, office, or company leading the five-year review: US Department of Energy	**Weather/temperature: Sunny / 50s**

Remedy Includes: (Check all that apply)

- ☐ Landfill cover/containment
- ☐ Access controls
- **X** Institutional controls
- ☐ Groundwater pump and treatment
- ☐ Surface water collection and treatment
- ☐ Monitored natural attenuation
- ☐ Groundwater containment
- ☐ Vertical barrier walls
- **X** Other **Site-wide information (i.e., programs, costs, and documents) is evaluated in this checklist**

Attachments: **X** Inspection team roster attached ☐ Site map attached

II. INTERVIEWS (Check all that apply)

1. **O&M site manager** **Melissa Lutz** (Name) **Mound Site Lead** (Title) **3/31/16** (Date)
   Interviewed ☐ at site **X** at office ☐ by phone Phone no. _____
   Problems, suggestions; **X** Report attached _____

2. **O&M staff** **Gary Weidenbach** (Name) **Site Operations** (Title) **3/30/16** (Date)
   Interviewed ☐ at site **X** at office ☐ by phone Phone no. _____
   Problems, suggestions; **X** Report attached _____

   O&M staff **Roy Mowen** (Name) **Mound Site H&S Lead** (Title) **3/31/16** (Date)
   Interviewed ☐ at site **X** at office ☐ by phone Phone no. _____
   Problems, suggestions; **X** Report attached _____

   O&M staff **Rebecca Cato** (Name) **Project Hydrogeologist** (Title) **4/1/16** (Date)
   Interviewed ☐ at site **X** at office ☐ by phone Phone no. _____
   Problems, suggestions; **X** Report attached _____

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

Agency ___**City of Miamisburg** _____
Contact __**Chris Fine** _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; □ Report attached __**documented in Annual Assessment of the Effectiveness of Institutional Controls at the Mound, Ohio, Site - 2016**_____

Agency ___**City of Miamisburg**_____
Contact ___**Ryan Homsi**_____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; □ Report attached ___**documented in Annual Assessment of the Effectiveness of Institutional Controls at the Mound, Ohio, Site - 2016**_____

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

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

4. **Other interviews** (optional) **X** Report attached. - Annual Assessment of the Effectiveness of Institutional Controls at the Mound, Ohio, Site - 2016

Leslie Karacia – City of Miamisburg, Engineering Department – building permit review

Jan Hansel – City of Miamisburg, Engineering Department – permit review

Eric Cluxton – MDC (President) – property owner representative

Justin Rich – BOI Solutions – property owner representative

Andrew Dahlinger – BOI Solutions – property owner representative

Mike Hill – Dyrdek Group – property owner representative

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

1. **O&M Documents**
   - X O&M manual — X Readily available — X Up to date — ☐ N/A
   - X As-built drawings — X Readily available — ☐ Up to date — ☐ N/A
   - ☐ Maintenance logs — ☐ Readily available — ☐ Up to date — X N/A

   Remarks_____

2. **Site-Specific Health and Safety Plan** — X Readily available — X Up to date — ☐ N/A
   - X Contingency plan/emergency response plan — X Readily available — X Up to date — ☐ N/A

   Remarks_____

3. **O&M and OSHA Training Records** — X Readily available — ☐ Up to date — ☐ N/A

   Remarks_____

4. **Permits and Service Agreements**
   - ☐ Air discharge permit — ☐ Readily available — ☐ Up to date — X N/A
   - ☐ Effluent discharge — ☐ Readily available — ☐ Up to date — X N/A
   - ☐ Waste disposal, POTW — ☐ Readily available — ☐ Up to date — X N/A
   - X Other permits **Access Permits** — X Readily available — X Up to date — ☐ N/A

   Remarks_____

5. **Gas Generation Records** — ☐ Readily available — ☐ Up to date — X N/A

   Remarks_____

6. **Settlement Monument Records** — ☐ Readily available — ☐ Up to date — X N/A

   Remarks_____

7. **Groundwater Monitoring Records** — ☐ Readily available — ☐ Up to date — X N/A

   Remarks_____

8. **Leachate Extraction Records** — ☐ Readily available — ☐ Up to date — X N/A

   Remarks_____

9. **Discharge Compliance Records**
   - ☐ Air — ☐ Readily available — ☐ Up to date — X N/A
   - ☐ Water (effluent) — ☐ Readily available — ☐ Up to date — X N/A

   Remarks_____

10. **Daily Access/Security Logs** — ☐ Readily available — ☐ Up to date — X N/A

    Remarks_____

IV. O&M COSTS

1. **O&M Organization**

☐ State in-house ☐ Contractor for State
☐ PRP in-house ☐ Contractor for PRP
☐ Federal Facility in-house **X** Contractor for Federal Facility
☐ Other_____
_____

2. **O&M Cost Records**

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

Total annual cost by year for review period if available

For 2016 CERCLA 5 Year Review			
Year	**O&M Cost**	**OU-1 Cost**	**Combined Cost**
2011	$614,208	n/a	$614,208
2012	$557,879	n/a	$557,879
2013	$766,757	n/a	$766,757
2014	$484,191	$500,857	$985,048
2015	$342,820	$242,401	$585,221
Total	$2,765,855	$743,258	$3,509,113

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

Describe costs and reasons: Starting in 2012, additional field investigations were performed to better understand the distribution of VOCs in OU-1 groundwater; however, the costs associated with these investigations were not significant compared to the overall O&M costs for the project during 2012 and 2013. During 2014 and 2015, more substantial additional costs were incurred from the OU-1 EA Field Demonstration and have been separated as shown above.

V. ACCESS AND INSTITUTIONAL CONTROLS **X** Applicable ☐ N/A

A. Fencing

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

B. Other Access Restrictions

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

C. Institutional Controls (ICs)

1. **Implementation and enforcement**
Site conditions imply ICs not properly implemented ☐ Yes **X** No ☐ N/A
Site conditions imply ICs not being fully enforced ☐ Yes **X** No ☐ N/A

Type of monitoring (*e.g.*, self-reporting, drive by) **self-reporting and walk-over surveys**
Frequency ___Annual_____
Responsible party/agency **US Department of Energy**
Contact **Gwendolyn Hooten** **Project Manager** **April 2016**
Name Title Date Phone no.

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

Specific requirements in deed or decision documents have been met **X** Yes ☐ No ☐ N/A
Violations have been reported **X** Yes ☐ No ☐ N/A
Other problems or suggestions: ☐ Report attached
None

2. **Adequacy** **X** ICs are adequate ☐ ICs are inadequate ☐ N/A
Remarks **Review of annual reports and results from Five-year inspections indicate that ICs are functioning as intended.**

D. General

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

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

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

VI. GENERAL SITE CONDITIONS

A. Roads **X** Applicable ☐ N/A

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

B. Other Site Conditions

Remarks Vanguard Blvd was completed during this review period. This road extends from Mound Ave at the NW corner of the site and crosses Parcel 7, Parcel 8, and OU-1 (Parcel 9). Improvements to stormwater controls and site access were a result of the addition of this road through the Mound site. The addition of this road did not result in changes to O&M at the site.

VII. LANDFILL COVERS ☐ Applicable **X** N/A

VIII. VERTICAL BARRIER WALLS ☐ Applicable **X** N/A

IX. GROUNDWATER/SURFACE WATER REMEDIES ☐ Applicable **X** N/A

X. OTHER REMEDIES

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

Inspection Checklists are included for each area with specific remedies:

OU-1 Pump and Treatment

Phase I MNA Remedy

Parcels 6, 7, and 8 MNA Remedy

XI. OVERALL OBSERVATIONS

A. Implementation of the Remedy

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

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

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

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

B. Adequacy of O&M

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

Operation and maintenance activities are performed as outlined in the *Operations and Maintenance Plan for the US Department of Energy, Mound, Ohio, Site*, which incorporated the requirements of the *Operations and Maintenance (O&M) Plan for the Implementation of Institutional Controls at the 1998 Mound Plant Property*. DOE has performed annual walk-overs and records reviews with respect to ICs and has found that portion of the remedy to be functioning as intended, thus far.

C.	Early Indicators of Potential Remedy Problems
	Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs that suggest that the protectiveness of the remedy may be compromised in the future. None have been identified from this review.
D.	**Opportunities for Optimization**
	Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy. None have been identified from this review.

I. SITE INFORMATION

Site name: Mound Plant Site	**Date of inspection: 3/23/16**
Location and Region: Miamisburg, Ohio	**EPA ID: OH6890008984**
Agency, office, or company leading the five-year review: US Department of Energy	**Weather/temperature: Sunny / 50s**

Remedy Includes: (Check all that apply)

- ☐ Landfill cover/containment
- ☐ Access controls
- ☐ Institutional controls
- **X** Groundwater pump and treatment
- ☐ Surface water collection and treatment
- ☐ Monitored natural attenuation
- **X** Groundwater containment
- ☐ Vertical barrier walls
- **X** Other___**Permitted discharge of treated water** _____

Attachments: ☐ Inspection team roster attached ☐ Site map attached

II. INTERVIEWS (Check all that apply)

Interview included with Institutional Controls checklist.

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

1. **O&M Documents**
   - **X** O&M manual — **X** Readily available — **X** Up to date — ☐ N/A
   - ☐ As-built drawings — **X** Readily available — **X** Up to date — ☐ N/A
   - ☐ Maintenance logs — **X** Readily available — **X** Up to date — ☐ N/A

   Remarks__**The Operations and Maintenance Plan for the US Department of Energy Mound, Ohio, Site was prepared in 2014, which combined the O&M requirements for each remedy at the Mound site. Prior to that, each area/remedy had its own specific O&M document**. _____

2. **Site-Specific Health and Safety Plan** — **X** Readily available — **X** Up to date — ☐ N/A
   - **X** Contingency plan/emergency response plan — **X** Readily available — **X** Up to date — ☐ N/A

   Remarks_____

3. **O&M and OSHA Training Records** — **X** Readily available — **X** Up to date — ☐ N/A

   Remarks_____

4. **Permits and Service Agreements**
   - ☐ Air discharge permit — ☐ Readily available — ☐ Up to date — ☐ N/A
   - **X** Effluent discharge — **X** Readily available — **X** Up to date — ☐ N/A
   - ☐ Waste disposal, POTW — ☐ Readily available — ☐ Up to date — ☐ N/A
   - ☐ Other permits_____ — ☐ Readily available — ☐ Up to date — ☐ N/A

   Remarks__**Effluent monitored under CERCLA ATD under NPDES (Authorization Number 1IN90010*BD**) _____

5. **Gas Generation Records** — ☐ Readily available — ☐ Up to date — **X** N/A

   Remarks_____

6.	**Settlement Monument Records**	☐ Readily available	☐ Up to date	**X** N/A
	Remarks_____			
7.	**Groundwater Monitoring Records**	**X** Readily available	☐ Up to date	☐ N/A
	Remarks_____			
8.	**Leachate Extraction Records**	☐ Readily available	☐ Up to date	**X** N/A
	Remarks_____			
9.	**Discharge Compliance Records**			
	☐ Air	☐ Readily available	☐ Up to date	☐ N/A
	X Water (effluent)	**X** Readily available	**X** Up to date	☐ N/A
	Remarks____**Data reported in monthly DMR reports to OEPA**_____			
10.	**Daily Access/Security Logs**	☐ Readily available	☐ Up to date	**X** N/A
	Remarks_____			

IV. O&M COSTS

Costs included with Institutional Controls checklist.

V. ACCESS AND INSTITUTIONAL CONTROLS **X** Applicable ☐ N/A

Institutional controls covered under separate checklist

VI. GENERAL SITE CONDITIONS

General site conditions included with Institutional Controls checklist.

VII. LANDFILL COVERS ☐ Applicable **X** N/A

Landfill was excavated in 2007 and 2011

VIII. VERTICAL BARRIER WALLS ☐ Applicable **X** N/A

IX. GROUNDWATER/SURFACE WATER REMEDIES **X** Applicable ☐ N/A

A. Groundwater Extraction Wells, Pumps, and Pipelines **X** Applicable ☐ N/A

1. **Pumps, Wellhead Plumbing, and Electrical**
X Good condition **X** All required wells properly operating ☐ Needs Maintenance ☐ N/A
Remarks_____
_____
_____

2. **Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
X Good condition ☐ Needs Maintenance
Remarks_____
_____

3. **Spare Parts and Equipment**
X Readily available **X** Good condition ☐ Requires upgrade ☐ Needs to be provided
Remarks_____
_____

B. Surface Water Collection Structures, Pumps, and Pipelines ☐ Applicable **X** N/A

1. **Collection Structures, Pumps, and Electrical**
☐ Good condition☐ Needs Maintenance
Remarks_____
_____

2. **Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
☐ Good condition☐ Needs Maintenance
Remarks_____
_____

3. **Spare Parts and Equipment**
☐ Readily available ☐ Good condition☐ Requires upgrade ☐ Needs to be provided
Remarks_____
_____

C. Treatment System **X** Applicable ☐ N/A

1. **Treatment Train** (Check components that apply)

☐ Metals removal ☐ Oil/water separation ☐ Bioremediation

X Air stripping ☐ Carbon adsorbers

☐ Filters_____

X Additive (*e.g.*, chelation agent, flocculent)___**Drewsperse**_____

X Others____**SVE system – removed in 2007**_____

X Good condition ☐ Needs Maintenance

X Sampling ports properly marked and functional

X Sampling/maintenance log displayed and up to date

X Equipment properly identified

X Quantity of groundwater treated annually__**See table below – volumes given in gallons**_____

☐ Quantity of surface water treated annually_____

Remarks____**The P&T system was placed in stand-by in September 2014 to support a 3-yr field demonstration in the OU-1 area** _____

_

	2011	2012	2013	2014	2015
January	1788400	1792500	1591425	1639700	0
February	1447200	1585500	1398100	1478800	0
March	1692500	1572900	1582900	1628400	0
April	1524200	1727700	2244513	1579100	0
May	1783300	1675300	1633600	1616430	0
June	879200	1507900	1556900	1503000	0
July	0	1157400	1582400	1568625	0
August	0	1321000	1575100	1555200	0
September	0	1115600	1529700	729700	0
October	0	1538500	1587200	0	0
November	0	1312300	1646600	0	0
December	1319900	1477900	1587200	0	0
Totals	10434700	17784500	19515638	13298955	0

2011 – rebound study performed from June 20, 2011 through December 5, 2011. P&T system in standby.

2013 – April volumes include additional water pumped from well 0452 during pumping test

2014 – P&T system placed in standby on September 15, 2014 to support ongoing EA Field Demonstration

2. **Electrical Enclosures and Panels** (properly rated and functional)

☐ N/A **X** Good condition ☐ Needs Maintenance

Remarks_____

_____

3. **Tanks, Vaults, Storage Vessels**

X N/A ☐ Good condition☐ Proper secondary containment ☐ Needs Maintenance

Remarks_____

_____

4. **Discharge Structure and Appurtenances**
☐ N/A **X** Good condition ☐ Needs Maintenance
Remarks_____
_____

5. **Treatment Building(s)**
☐ N/A **X** Good condition (esp. roof and doorways) ☐ Needs repair
X Chemicals and equipment properly stored
Remarks_____
_____

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

D. Monitoring Data

1. Monitoring Data
X Is routinely submitted on time **X** Is of acceptable quality

2. Monitoring data suggests:
X Groundwater plume is effectively contained ☐ Contaminant concentrations are declining

D. Monitored Natural Attenuation

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

X. OTHER REMEDIES

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

XI. OVERALL OBSERVATIONS

A. Implementation of the Remedy

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

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

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

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

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

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

Presently the P&T system is in standby to support the EA Field Demonstration that was started in 2014. This field demonstration is being performed to evaluate the performance and viability of attenuation of cVOC in the OU-1 soil and groundwater. Evaluation of the effectiveness of EA requires that the natural movement of groundwater occur through the treatment systems and simulates the conditions that would be present during a MNA remedy. The regulators approved placing the P&T system in standby on September 15, 2014.

B.	**Adequacy of O&M**
	Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. Operation and maintenance activities are performed as outlined in the *OU-1 Pump and Treatment Operational and Maintenance Plan*. The DOE also performs annual inspections on long-term remedies as called out in this plan and other O&M Plans. DOE has performed groundwater monitoring, effluent monitoring, and system monitoring and has found this remedy to be functioning as intended.
C.	**Early Indicators of Potential Remedy Problems**
	Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future. There are no early indicators of potential issues that could affect the protectiveness of the remedy. Data collected during the first year of the EA Field Demonstration have been encouraging that attenuation of cVOCs in soil and groundwater may be a viable alternative to the present P&T remedy.
D.	**Opportunities for Optimization**
	Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy. No opportunities for optimization were identified. The primary focus is on OU-1 EA Field Demonstration. It is anticipated if the TCE and PCE plumes continue to decrease in size and mass and the geochemical conditions within the treatment zones are sustained, the DOE can propose transitioning from P&T to MNA. Data from the first year indicate enhanced attenuation has accelerated progress toward remedial objectives and will significantly reduce costs in the future.

I. SITE INFORMATION	
Site name: Mound Plant Site	**Date of inspection: 3/23/16**
Location and Region: Miamisburg, Ohio	**EPA ID: OH6890008984**
Agency, office, or company leading the five-year review: US Department of Energy	**Weather/temperature: Sunny / 50s**

Remedy Includes: (Check all that apply)

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

Attachments: ☐ Inspection team roster attached ☐ Site map attached

II. INTERVIEWS (Check all that apply)

Interviews included with Institutional Controls checklist

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

1. **O&M Documents**
   - **X** O&M manual — **X** Readily available — **X** Up to date — ☐ N/A
   - ☐ As-built drawings — ☐ Readily available — ☐ Up to date — ☐ N/A
   - ☐ Maintenance logs — ☐ Readily available — ☐ Up to date — ☐ N/A

   Remarks_____

2. **Site-Specific Health and Safety Plan** — **X** Readily available — **X** Up to date — ☐ N/A
   - **X** Contingency plan/emergency response plan — **X** Readily available — **X** Up to date — ☐ N/A

   Remarks_____

3. **O&M and OSHA Training Records** — **X** Readily available — **X** Up to date — ☐ N/A

   Remarks_____

4. **Permits and Service Agreements**
   - ☐ Air discharge permit — ☐ Readily available — ☐ Up to date — **X** N/A
   - ☐ Effluent discharge — ☐ Readily available — ☐ Up to date — **X** N/A
   - ☐ Waste disposal, POTW — ☐ Readily available — ☐ Up to date — **X** N/A
   - ☐ Other permits_____ — ☐ Readily available — ☐ Up to date — ☐ N/A

   Remarks_____

5. **Gas Generation Records** — ☐ Readily available — ☐ Up to date — **X** N/A

   Remarks_____

6. **Settlement Monument Records** — ☐ Readily available — ☐ Up to date — **X** N/A

   Remarks_____

7.	**Groundwater Monitoring Records**	**X** Readily available	**X** Up to date	☐ N/A
	Remarks_____			
8.	**Leachate Extraction Records**	☐ Readily available	☐ Up to date	**X** N/A
	Remarks_____			
9.	**Discharge Compliance Records**			
	☐ Air	☐ Readily available	☐ Up to date	**X** N/A
	☐ Water (effluent)	☐ Readily available	☐ Up to date	**X** N/A
	Remarks_____			
10.	**Daily Access/Security Logs**	☐ Readily available	☐ Up to date	**X** N/A
	Remarks_____			

IV. O&M COSTS

Costs included with Institutional Controls checklist

V. ACCESS AND INSTITUTIONAL CONTROLS **X** Applicable ☐ N/A

Institutional controls covered under separate checklist

VI. GENERAL SITE CONDITIONS

General site conditions covered under Institutional Controls checklist

VII. LANDFILL COVERS ☐ Applicable **X** N/A

VIII. VERTICAL BARRIER WALLS ☐ Applicable **X** N/A

IX. GROUNDWATER/SURFACE WATER REMEDIES **X** Applicable ☐ N/A

A. Groundwater Extraction Wells, Pumps, and Pipelines ☐ Applicable **X** N/A

1. **Pumps, Wellhead Plumbing, and Electrical**
☐ Good condition☐ All required wells properly operating ☐ Needs Maintenance ☐ N/A
Remarks_____
_____
_____

2. **Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
☐ Good condition☐ Needs Maintenance
Remarks_____
_____

3. **Spare Parts and Equipment**
☐ Readily available ☐ Good condition☐ Requires upgrade ☐ Needs to be provided
Remarks_____
_____

B. Surface Water Collection Structures, Pumps, and Pipelines ☐ Applicable **X** N/A

1. **Collection Structures, Pumps, and Electrical**
☐ Good condition☐ Needs Maintenance
Remarks_____
_____

2. **Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
☐ Good condition☐ Needs Maintenance
Remarks_____
_____

3. **Spare Parts and Equipment**
☐ Readily available ☐ Good condition☐ Requires upgrade ☐ Needs to be provided
Remarks_____
_____

C. Treatment System ☐ Applicable **X** N/A

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

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

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

4. **Discharge Structure and Appurtenances**
☐ N/A ☐ Good condition☐ Needs Maintenance
Remarks_____
_____

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

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

D. Monitoring Data

1. Monitoring Data
X Is routinely submitted on time **X** Is of acceptable quality

2. Monitoring data suggests:
☐ Groundwater plume is effectively contained **X** Contaminant concentrations are declining

D. Monitored Natural Attenuation

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

X. OTHER REMEDIES

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

XI. OVERALL OBSERVATIONS

A. Implementation of the Remedy

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

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

Groundwater monitoring has been performed as prescribed in the *Operations and Maintenance Plan for the US Department of Energy, Mound, Ohio, Site*, which incorporated the requirements of the *Phase I Remedy (Monitored Natural Attenuation) Groundwater Monitoring Plan*. Results from this monitoring indicate that concentrations do not exceed target levels and concentrations of TCE in the source wells have been declining or remaining stable. No changes to the monitoring program have been made on the basis of the data collected during this period.

B. Adequacy of O&M

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

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

C. Early Indicators of Potential Remedy Problems

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

None

D. Opportunities for Optimization

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

None

I. SITE INFORMATION

Site name: Mound Plant Site	**Date of inspection: 3/23/16**
Location and Region: Miamisburg, Ohio	**EPA ID: OH6890008984**
Agency, office, or company leading the five-year review: US Department of Energy	**Weather/temperature: Sunny / 50s**

Remedy Includes: (Check all that apply)

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

Attachments: ☐ Inspection team roster attached ☐ Site map attached

II. INTERVIEWS (Check all that apply)

Interviews included with Institutional Controls checklist

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

1. **O&M Documents**
   - **X** O&M manual — **X** Readily available — **X** Up to date — ☐ N/A
   - ☐ As-built drawings — ☐ Readily available — ☐ Up to date — ☐ N/A
   - ☐ Maintenance logs — ☐ Readily available — ☐ Up to date — ☐ N/A

   Remarks_____

2. **Site-Specific Health and Safety Plan** — **X** Readily available — **X** Up to date — ☐ N/A
   - **X** Contingency plan/emergency response plan — **X** Readily available — **X** Up to date — ☐ N/A

   Remarks_____

3. **O&M and OSHA Training Records** — **X** Readily available — **X** Up to date — ☐ N/A

   Remarks_____

4. **Permits and Service Agreements**
   - ☐ Air discharge permit — ☐ Readily available — ☐ Up to date — **X** N/A
   - ☐ Effluent discharge — ☐ Readily available — ☐ Up to date — **X** N/A
   - ☐ Waste disposal, POTW — ☐ Readily available — ☐ Up to date — **X** N/A
   - ☐ Other permits_____ — ☐ Readily available — ☐ Up to date — ☐ N/A

   Remarks_____

5. **Gas Generation Records** — ☐ Readily available — ☐ Up to date — **X** N/A

   Remarks_____

6. **Settlement Monument Records** — ☐ Readily available — ☐ Up to date — **X** N/A

   Remarks_____

7.	**Groundwater Monitoring Records** Remarks_____	**X** Readily available	**X** Up to date	☐ N/A
8.	**Leachate Extraction Records** Remarks_____	☐ Readily available	☐ Up to date	**X** N/A
9.	**Discharge Compliance Records**			
	☐ Air	☐ Readily available	☐ Up to date	**X** N/A
	☐ Water (effluent) Remarks_____	☐ Readily available	☐ Up to date	**X** N/A
10.	**Daily Access/Security Logs** Remarks_____	☐ Readily available	☐ Up to date	**X** N/A

IV. O&M COSTS

Costs included with Institutional Controls checklist

V. ACCESS AND INSTITUTIONAL CONTROLS **X** Applicable ☐ N/A

Institutional controls covered under separate checklist

VI. GENERAL SITE CONDITIONS

General site conditions included with Institutional Controls checklist

VII. LANDFILL COVERS ☐ Applicable **X** N/A

VIII. VERTICAL BARRIER WALLS ☐ Applicable **X** N/A

IX. GROUNDWATER/SURFACE WATER REMEDIES **X** Applicable ☐ N/A

A. Groundwater Extraction Wells, Pumps, and Pipelines ☐ Applicable **X** N/A

1. **Pumps, Wellhead Plumbing, and Electrical**
☐ Good condition☐ All required wells properly operating ☐ Needs Maintenance ☐ N/A
Remarks_____
_____
_____

2. **Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
☐ Good condition☐ Needs Maintenance
Remarks_____
_____

3. **Spare Parts and Equipment**
☐ Readily available ☐ Good condition☐ Requires upgrade ☐ Needs to be provided
Remarks_____
_____

B. Surface Water Collection Structures, Pumps, and Pipelines ☐ Applicable **X** N/A

1. **Collection Structures, Pumps, and Electrical**
☐ Good condition☐ Needs Maintenance
Remarks_____
_____

2. **Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
☐ Good condition☐ Needs Maintenance
Remarks_____
_____

3. **Spare Parts and Equipment**
☐ Readily available ☐ Good condition☐ Requires upgrade ☐ Needs to be provided
Remarks_____
_____

C. Treatment System ☐ Applicable **X** N/A

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

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

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

4. **Discharge Structure and Appurtenances**
☐ N/A ☐ Good condition☐ Needs Maintenance
Remarks_____
_____

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

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

D. Monitoring Data

1. Monitoring Data
X Is routinely submitted on time **X** Is of acceptable quality

2. Monitoring data suggests:
☐ Groundwater plume is effectively contained **X** Contaminant concentrations are declining

D. Monitored Natural Attenuation

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

X. OTHER REMEDIES

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

XI. OVERALL OBSERVATIONS

A. Implementation of the Remedy

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

Groundwater in the Parcels 6, 7, and 8 area is monitored for tritium and TCE and its degradation products to verify that the downgradient BVA is not affected and to verify that source removal will result in decreasing concentrations. In addition, groundwater discharging from seeps is monitored for the same constituents.

Groundwater monitoring has been performed as prescribed in the *Operations and Maintenance Plan for the US Department of Energy, Mound, Ohio, Site*, which incorporated the requirements of the *Parcel 6, 7 and 8Remedy (Monitored Natural Attenuation) Groundwater Monitoring Plan*. Results from this monitoring indicate that concentrations of VOCs, primarily TCE, are variable. The trigger level for TCE in groundwater in source wells has been exceeded periodically. Increasing trends in TCE have been identified in source well 0347 and seep 0602, both located onsite. The MCL for TCE is exceeded in several BVA wells located closest to the source wells. The remainder of the BVA wells shows no impact. Elevated tritium continues to be measured in the groundwater and seeps with the highest levels measured in the seeps. Decreasing tritium levels are observed in all the seeps and groundwater wells.

The sampling frequency for tritium was decreased to semi-annual based on declining values. The frequency for VOC sampling remains at quarterly due to variability and increasing values at some locations.

B. Adequacy of O&M

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

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

C. Early Indicators of Potential Remedy Problems

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

None

D. Opportunities for Optimization

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

The sampling frequency for tritium was decreased to semi-annual based on declining values.

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Interview questions for CERCLA Five Year Review:

1. What is your overall impression of the project? (general sentiment)
The Mound Team continues to do a great job implementing long-term surveillance and operations and maintenance (O&M) activities at the site to ensure that the remedies remain functional and effective. They work closely with the regulatory agencies, interacting on a routine basis.

2. Is the remedy functioning as expected? How well is the remedy performing?
The remedies are functioning as expected. Phase I and Parcels 6, 7 & 8 have an MNA remedy. Note that DOE is conducting a 3-year field demonstration at OU-1, which currently has an active remedy of pump and treat, to evaluate the use of edible oils to enhance the natural attenuation processes. The field demonstration was designed to determine whether structured geochemical zones can be established that expedite the attenuation of cVOCs in OU-1 groundwater. The results for the first year are encouraging, showing that the dissolved TCE and PCE plumes have decreased in size and mass.

3. What does the monitoring data show? Are there any trends that show contaminant levels are decreasing?
The data for Phase I and Parcels 6, 7 & 8 show that site contamination is not affecting the Buried Valley Aquifer located downgradient of these wells. There are down ward trends at a number of locations in Phase I and Parcels 6, 7 & 8, most notably over the past few years at all locations monitored for tritium are reporting downward trends.

4. Is there a continuous on-site O&M presence? If so, please describe staff and activities. If there is not a continuous on-site presence, describe staff and frequency of site inspections and activities.
There is not a continuous on-site presence at the Mound Site. Staff perform monthly activities at the site, such as inspections of the pump and treat system, site inspections, and water levels at OU-1, as well as quarterly sampling for Phase I and Parcels 6, 7 & 8 and the annual IC assessment. Other visits to the site are made on an as needed basis, such as to participate in meetings.

5. Have there been any significant changes in the O&M requirements, maintenance schedules, or sampling routines since start-up or in the last five years? If so, do they affect the protectiveness or effectiveness of the remedy? Please describe changes and impacts.
There have not been any significant changes to the O&M requirements, maintenance schedules, or sampling routines in the past five years.

6. Have there been unexpected O&M difficulties or costs at the site since start-up or in the last five years? If so, please give details.
There have not been any unexpected O&M difficulties or costs at the site in the past five years.

7. Have there been opportunities to optimize O&M, or sampling efforts? Please describe changes and resultant or desired cost savings or improved efficiency.
While there have not been any opportunities to optimize O&M activities or sampling efforts, efforts have been made to facilitate that in the future with the OU-1 Field Demonstration study. As mentioned above, results from the first year of the field demonstration indicate that the dissolved TCE and PCE plumes have decreased in size and mass, meaning that the plumes are not expanding. So far, the enhanced attenuation has accelerated progress toward remedial objectives and will significantly reduce costs.

8. Do you have any comments, suggestions, or recommendations regarding the project?
My only comment is that the next couple of years will be significant for OU-1. The field demonstration is entering it's second of three years of monitoring. If the field demonstration data continues to show positive results, the hope is that the OU-1 remedy can be changed from an active pump and treat, to a passive attenuation remedy, pending regulatory approval. If the remedy is changed to a passive attenuation, there will be significant optimization to O&M at the site with the removal of the pump and treatment system.

Melissa Lutz
Mound Site Lead
3/31/2016

Interview questions for CERCLA Five Year Review:

1. What is your overall impression of the project? (general sentiment)
From responses received when asked, sampling activities and the remedy of oil injection (OU_1) appear to be going as planned.

2. Is the remedy functioning as expected? How well is the remedy performing?
Not technical on this issue.

3. What does the monitoring data show? Are there any trends that show contaminant levels are decreasing?
Not technical on this issue.

4. Is there a continuous on-site O&M presence? If so, please describe staff and activities. If there is not a continuous on-site presence, describe staff and frequency of site inspections and activities.
No continuous presence at the Mound site. Quarterly and semi-annual sampling activities performed by samplers from LM Fernald, Ohio, site. Monthly routine inspections and completion of inspection checklists are performed by Operation staff. Corrective and/or preventative maintenance is performed as required by Operations staff.

5. Have there been any significant changes in the O&M requirements, maintenance schedules, or sampling routines since start-up or in the last five years? If so, do they affect the protectiveness or effectiveness of the remedy? Please describe changes and impacts.
Not technical on this issue.

6. Have there been unexpected O&M difficulties or costs at the site since start-up or in the last five years? If so, please give details.
None to my knowledge.

7. Have there been opportunities to optimize O&M, or sampling efforts? Please describe changes and resultant or desired cost savings or improved efficiency.
Not technical on this issue.

8. Do you have any comments, suggestions, or recommendations regarding the project?
None.

Gary Weidenbach
Mound Site Operations Lead
3/28/2016

Interview questions for CERCLA Five Year Review:

1. What is your overall impression of the project? (general sentiment)
The project went smoothly due to good planning. (Primarily reference to the OU-1 Field Demonstration)

2. Is the remedy functioning as expected? How well is the remedy performing?
I have not reviewed the data, however people in the know have indicated the process is working very well.

3. What does the monitoring data show? Are there any trends that show contaminant levels are decreasing?
I have been told that the levels are decreasing.

4. Is there a continuous on-site O&M presence? If so, please describe staff and activities. If there is not a continuous on-site presence, describe staff and frequency of site inspections and activities.
No there is not a continuous on-site presence. There are still activities at Mound such that there usually is a representative at Mound one or more days per week or at least bi-weekly. Sampling activities are now quarterly and semiannually.

5. Have there been any significant changes in the O&M requirements, maintenance schedules, or sampling routines since start-up or in the last five years? If so, do they affect the protectiveness or effectiveness of the remedy? Please describe changes and impacts.
The air stripper in building 300 is now in standby mode while the remedy is being studied. We perform a monthly test of this system to keep it in the "Ready" condition as part of the agreement. Groundwater sampling has been reduced to quarterly due to the success of the project.

6. Have there been unexpected O&M difficulties or costs at the site since start-up or in the last five years? If so, please give details.
I am not aware of any difficulties or additional costs.

7. Have there been opportunities to optimize O&M, or sampling efforts? Please describe changes and resultant or desired cost savings or improved efficiency.
The Mound Project has been able to reduce the sampling to quarterly and semiannually. The building 300 Pump and Treat system is still on Standby.

8. Do you have any comments, suggestions, or recommendations regarding the project?
The Mound Project is proceeding as planned

Roy Mowen
Mound Site H&S Lead
3/31/2016

Interview questions for CERCLA Five Year Review:

1. What is your overall impression of the project? (general sentiment)
The project is going well. Sampling and O&M activities at the site continue to be performed as scheduled. The remedies continue to function as intended.

2. Is the remedy functioning as expected? How well is the remedy performing?
The remedies are functioning as expected.
The MNA groundwater remedies for Phase I and Parcels 6, 7 & 8 provide adequate data to ensure that the downgradient BVA is not adversely affected by impacted groundwater originating from the Mound site. Data are collected and review in a timely manner and allow for adequate notification if changes were to occur.
The OU-1 P&T system is presently in standby mode to accommodate the enhanced attenuation field demonstration. This demonstration has been performed to evaluate the use of edible oils to enhance the natural attenuation processes and support transitioning from the P&T to MNA to address the VOCs in the OU-1 soil and groundwater. Prior to placing the OU-1 P&T system in standby, the system was functioning as intended.

3. What does the monitoring data show? Are there any trends that show contaminant levels are decreasing?
The data for Phase I show that VOC-impacted groundwater is not adversely affecting the Buried Valley Aquifer and decreasing levels have been observed in the bedrock wells where TCE is monitored.
The data for Parcels 6, 7, and 8 show that tritium- and VOC-impacted groundwater is not adversely affecting the Buried Valley Aquifer. Tritium levels continue to decrease in both the groundwater and seeps since the remediation activities on the Main Hill. VOC concentrations have been variable and the trigger value for TCE in the source wells has been exceeded periodically; however, not as often as previous year. More frequent sampling is performed to better monitor these changes.
The results for the first year of the OU-1 EA Field Demonstration are encouraging, showing the formation of the treatment zones. Data show the dissolved TCE and PCE plumes have decreased in size and mass.

4. Is there a continuous on-site O&M presence? If so, please describe staff and activities. If there is not a continuous on-site presence, describe staff and frequency of site inspections and activities.
There is not a continuous on-site presence at the Mound Site. Project personnel are typically at the site at least twice a month to perform inspections and measure static water levels in OU-1. Groundwater sampling is performed quarterly OU-1 and Parcels 6, 7 & 8 and semiannual for Phase I. The IC inspection is performed annually.

5. Have there been any significant changes in the O&M requirements, maintenance schedules, or sampling routines since start-up or in the last five years? If so, do they affect the protectiveness or effectiveness of the remedy? Please describe changes and impacts.
There have not been any significant changes to the O&M requirements.

6. Have there been unexpected O&M difficulties or costs at the site since start-up or in the last five years? If so, please give details.
There have not been any unexpected O&M difficulties or costs.

7. Have there been opportunities to optimize O&M, or sampling efforts? Please describe changes and resultant or desired cost savings or improved efficiency.
Several wells have been removed from the Parcel 6, 7, and 8 monitoring network. However, the data from the Phase I and Parcels 6, 7, and 8 MNA remedies do not support any additional decrease in sampling frequency. The primary focus is on OU-1 EA Field Demonstration. It is anticipated if the TCE and PCE plumes continue to decrease in size and mass and the geochemical conditions within the treatment zones are sustained, the DOE can propose transitioning from P&T to MNA. Data from the first year indicate enhanced attenuation has accelerated progress toward remedial objectives and will significantly reduce costs in the future.

8. Do you have any comments, suggestions, or recommendations regarding the project?
None.

Rebecca Cato
Mound Site Project Hydrogeologist
4/1/2016