The Office of Legacy Management's community meeting was held on October 7, 2009, at the Fernald Preserve Visitors Center. Twenty-seven people attended the meeting, for an update on site maintenance and Visitors Center usage.

Agenda

- **Nature Nook**
- **Health and Safety**
- **Fernald updates**
- **Site operations**
- **Visitors Center**
- **Six-month look-ahead**

8730.02 10/09

Meeting agenda for part 1 of the community meeting.

Nature Nook

Canada thistle

(Cirsium arvense)

- An invasive, non-native species
- Native to Europe and western Asia
- Extensive root system that displaces native species
- Eradicate through spraying and physical removal

8730.03 10/09

A regular feature of the community meeting is the Nature Nook, which highlights flora and fauna that inhabit the Fernald Preserve. Noxious weeds are usually non-native, aggressive species that can take over an ecosystem. State laws require landowners to control noxious weeds. Controlling noxious weeds is one of our most significant maintenance activities throughout the year. Noxious weeds are "spot sprayed" with herbicide, mowed, and sometimes physically removed.

Fernald Preserve

Legacy Management Mission

Manage DOE's post-closure responsibilities and ensure the protection of human health and the environment.

8730.04 10/09

The Office of Legacy Management's mission.

Worker Health and Safety

OSHA Recordables (yearly)

DOE Complex	LM	Industry
1.5	1.4	4.2

Fernald Preserve (quarterly)

Lost time	First aid	Recordables
1	1	1

8730.05 10/09

The Fernald Preserve's safety performance, as well as Legacy Management's safety performance continues to be better than industry standards.

Aquifer

- **Groundwater pumping rate 2009 to date is 105 percent of design**
- **Continue treating groundwater as necessary to meet discharge limits**
- **Shut down pumping for 30 days (May-June)**
- **Continue pump and treat operations as necessary to meet regulatory commitments**

8730.06 10/09

The aquifer cleanup, which involves pumping and treating water from the aquifer, is progressing as planned. Based on groundwater modeling, the aquifer cleanup is projected to be completed in 2026. To date, over 9.78 billion gallons of groundwater have been treated since 1993.

Ecological Restoration

- **Ecological monitoring of wetlands**
- **New trail construction**
- **Invasive species control**
- **Prescribed burns**

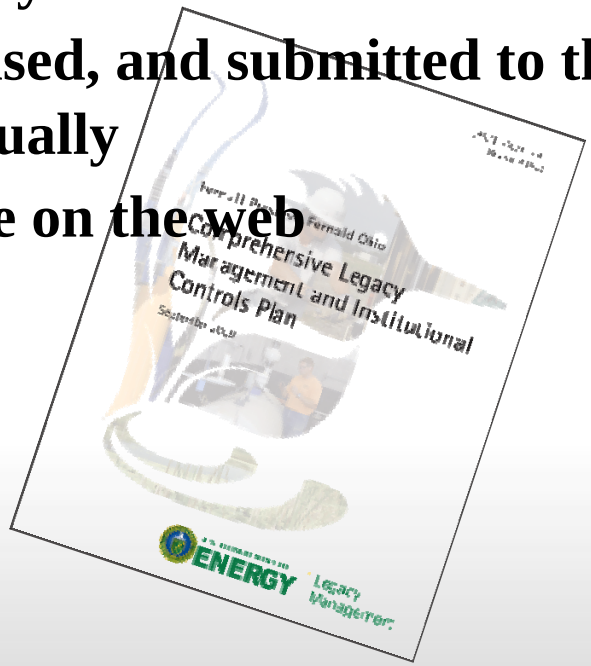
8730.07 10/09

The ecological restoration of the Fernald Preserve is ongoing. New trails are being constructed, wetland mitigation is being monitored, and invasive species are being controlled. The recently completed Hickory Trail was opened to the public on September 26. The Sycamore Trail will be opened in early November.

LMICP

Legacy Management and Institutional Controls Plan

- **LMICP is a two-volume document**
  Volume I: management details for the site
  Volume II: required under CERCLA remediation and is a legally enforceable document
- **LMICP is reviewed, revised, and submitted to the regulatory agencies annually**
- **Available and searchable on the web**



8730.08 10/09

The *Legacy Management and Institutional Controls Plan* was developed to document the requirements for the long-term care of the Fernald Preserve, and has been issued every year.

Sampling

2009

- **OSDF leak detection monitoring at 42 locations**
- **Groundwater sampling at 140 monitoring**
- **Surface water sampling at 21 locations**
- **Treated effluent sample at one location**
- **Air particulate monitoring at six locations**
- **Direct radiation monitoring at 11 locations**
- **Sediments sampling at two locations in the Great Miami River**
- **Continuing approved semi-annual, quarterly, and daily sampling**

Routine environmental monitoring is conducted to ensure the continued effectiveness of the site's cleanup. The current monitoring regiment includes sampling groundwater, surface water, treated effluent, air particulates, and sediment.

Prescribed Burns

Irwin Prairie

March 2009

8730.10 10/09

he Irwin prairie on the west side of the site along Paddys Run Road was burned in March 2009.

Prescribed Burns

Irwin Prairie

March 2009

8730.11 10/09

During the Irwin prairie burn, trained personnel kept a watchful eye to ensure success.

Prescribed Burns

Irwin Prairie

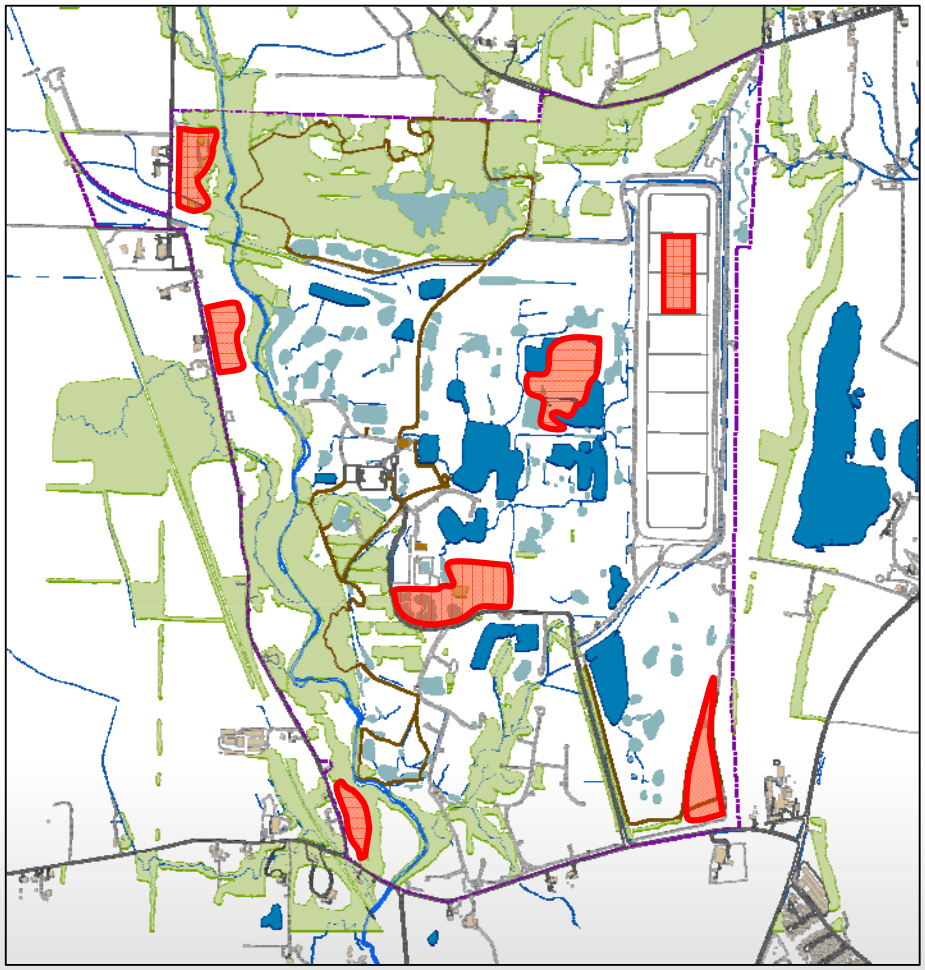
August 2009

8730.12 10/09

The Irwin prairie 5 months after the prescribed burn.

Prescribed Burns

Spring 2010 Priorities

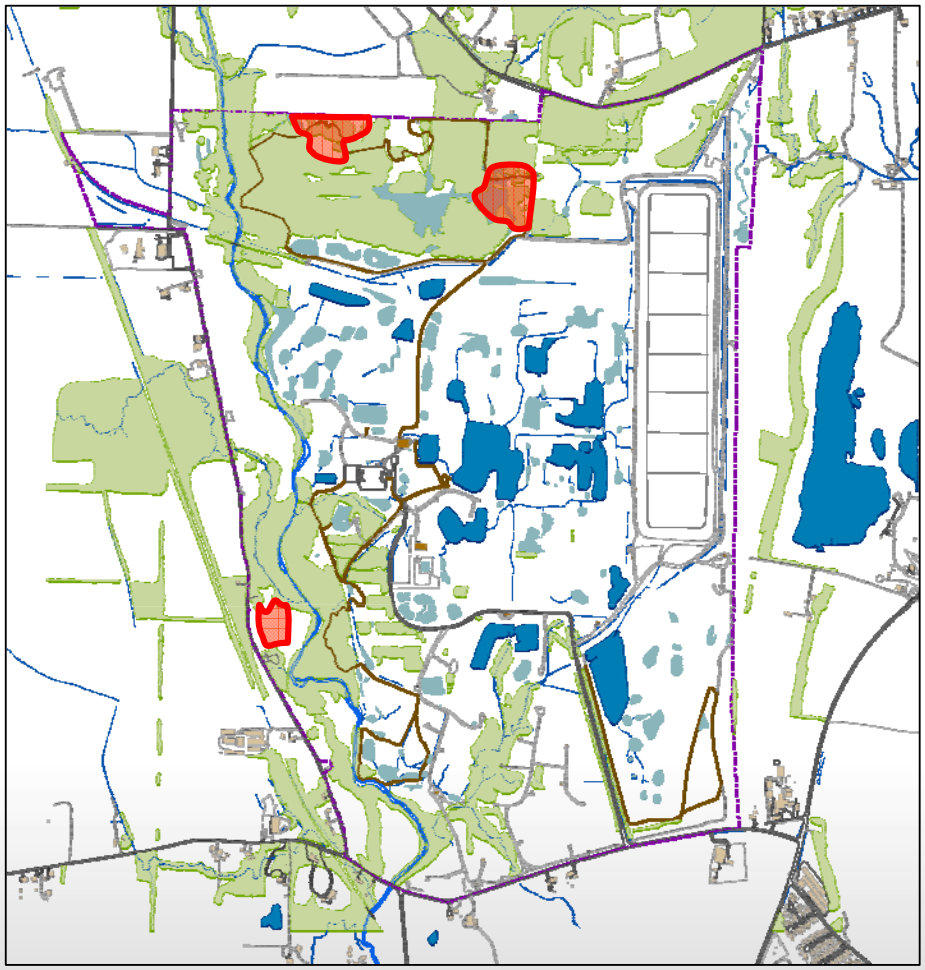


8730.14 10/09

There will be more prescribed burns in the early spring of 2010. Prescribed burns are the best way to maintain healthy prairies and are a weed-control method that the U.S. Environmental Protection Agency prefers.

Prescribed Burns

Fall 2010 Priorities



8730.14 10/09

Several additional areas are scheduled for prescribed burns in the fall of 2010.

Biowetland

8730.15 10/09

The biowetland at the Fernald Preserve Visitors Center processes all of the wastewater from the Visitors Center by using plants, microorganisms, and natural interactions with the environment.

Visitors Center

Since the Visitors Center opened, the Community Meeting Room has been used by schools, conservation organizations, hikers, and cyclists.

Community Relations

- **Curriculum development**
- **Fernald Preserve usage**
- **Visitors Center usage**

During the Visitors Center's first year of operation, a wide variety of groups—including schools, birders, Scouts, and hikers—have stopped by.

Look Ahead

October–April

- **Continue aquifer restoration**
- **Continue sampling**
- **Continue on-site disposal facility monitoring**
- **Conduct prescribed burns**

The 6-month look-ahead explains the work forecast through the fall and winter.

Annual Community Meeting

Join us:

April 7, 2010

6:30 p.m.

Fernald Preserve Visitors Center

Jane Powell
DOE-LM Fernald Preserve Manager
(513) 648-3148
Jane.Powell@LM.doe.gov

Sue Walpole
S.M. Stoller Community Relations
(513) 648-4026
Sue.Walpole@LM.doe.gov

General
(513) 648-6000
Fernald@LM.doe.gov
www.LM.doe.gov

8730.19 10/09

The date for the next meeting was changed to April 28, 2010, 6:30 p.m. The next meeting and will feature a Full Moon Hike starting at the Visitors Center.

Agenda

- **Site inspections**
- **Ecological monitoring**
- **Air monitoring**
- **Surface water monitoring**
- **On-site disposal facility**
- **Aquifer restoration**
- ***Legacy Management and Institutional Controls Plan***

Meeting agenda for part 2 of the community meeting.

Inspections

Site and On-Site Disposal Facility

- **Quarterly site inspections**
- **Quarterly OSDF inspections**
- **Natural Resource Trustee walk downs**

8730.21 10/09

The inspection process continues according to the *Legacy Management and Institutional Controls Plan*.

Monitoring

Ecological

- **Wetland mitigation monitoring**
- **Reptile cover board monitoring**
- **OSDF Cells 4–7 herbaceous cover**

8730.22 10/09

Wetland vegetation surveys in 24 areas demonstrate that many native plants are thriving. Reptile cover boards are used to monitor snakes and small mammals.

Monitoring

Air

- **Radon**
- **Radiological air particulate**
- **Direct radiation**

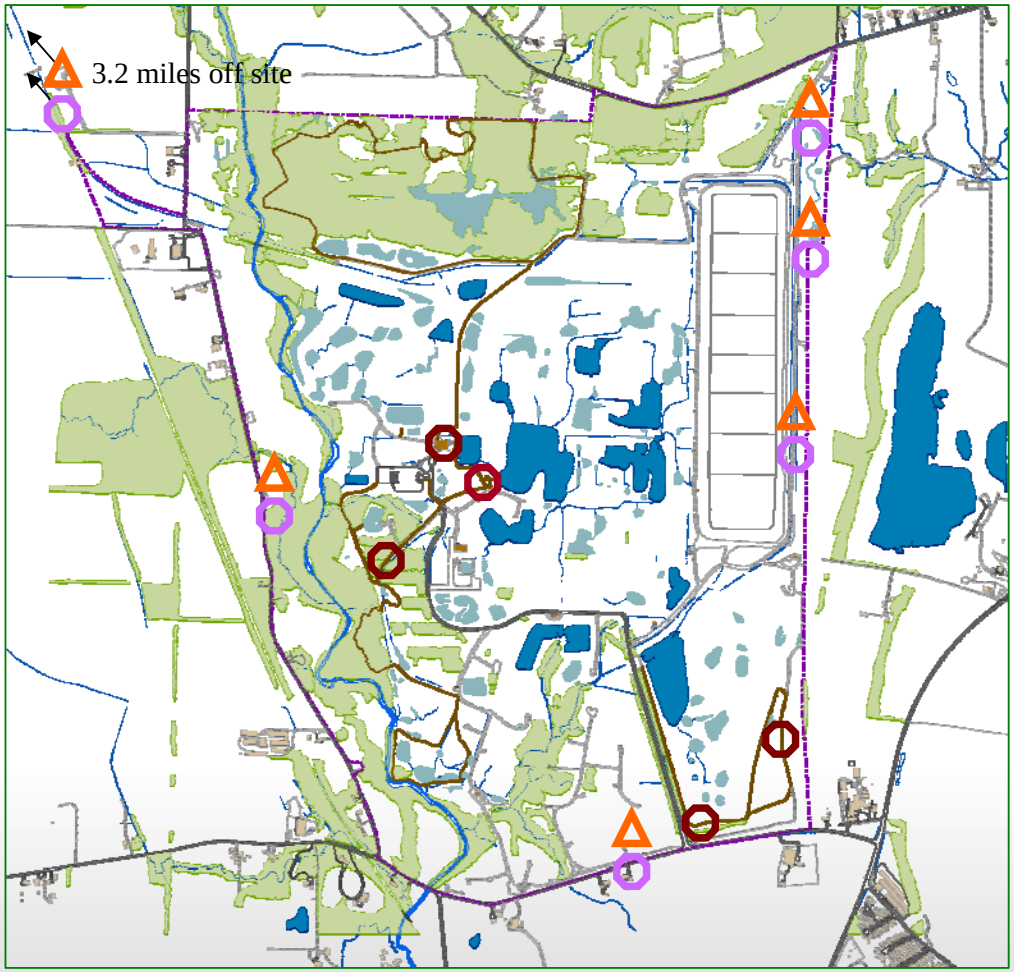
8730.23 10/09

The air monitoring program provides an ongoing assessment of the completed site remediation.

Monitoring

Air and Dosimeter Locations

Air/Radon
Dosimeter 2008
Dosimeter 2009
(Additional)



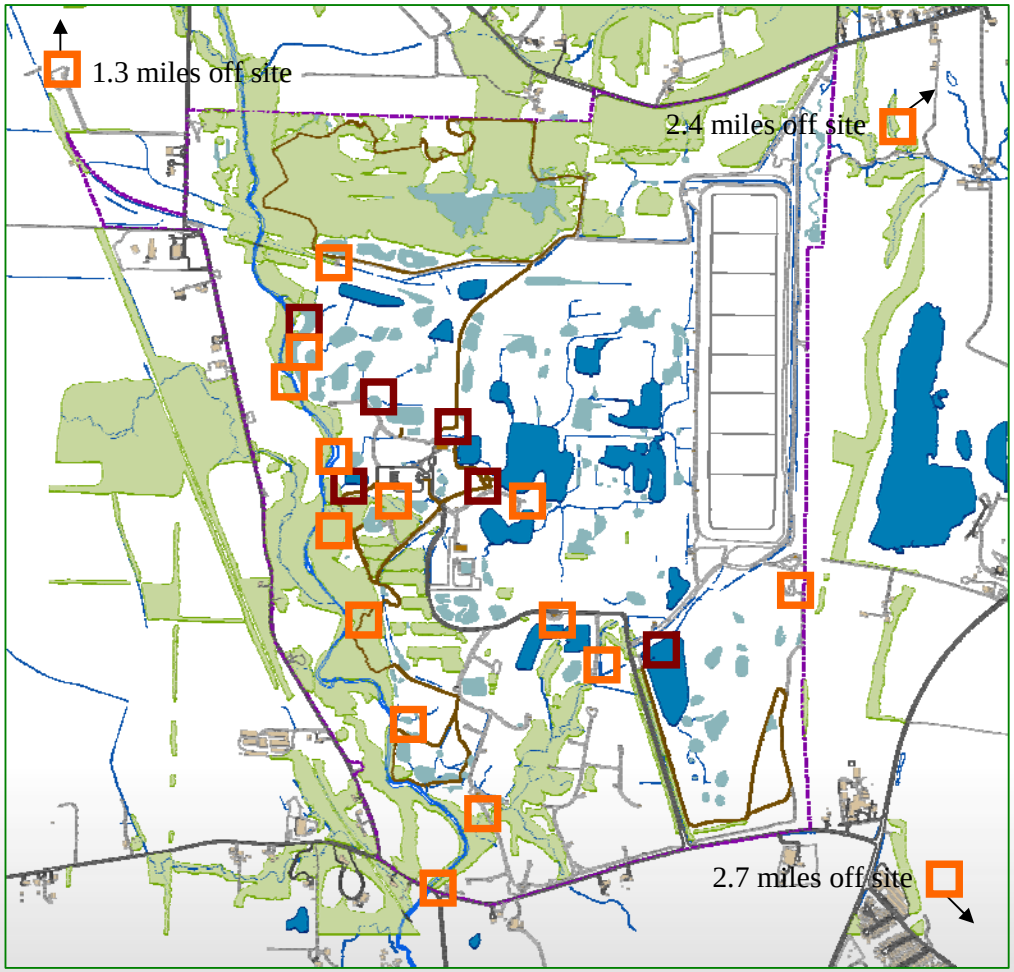
8730.24 10/09

Air and dosimeter locations.

Monitoring

Surface Water and Treated Effluent Locations

2008
2009



8730.25 10/09

Several surface water sampling locations were added in 2009 when the site was opened to the public.

On-Site Disposal Facility

8730.26 10/09

The On-Site Disposal Facility is an engineered waste-storage area that holds 2.95 million cubic yards of waste.

On-Site Disposal Facility

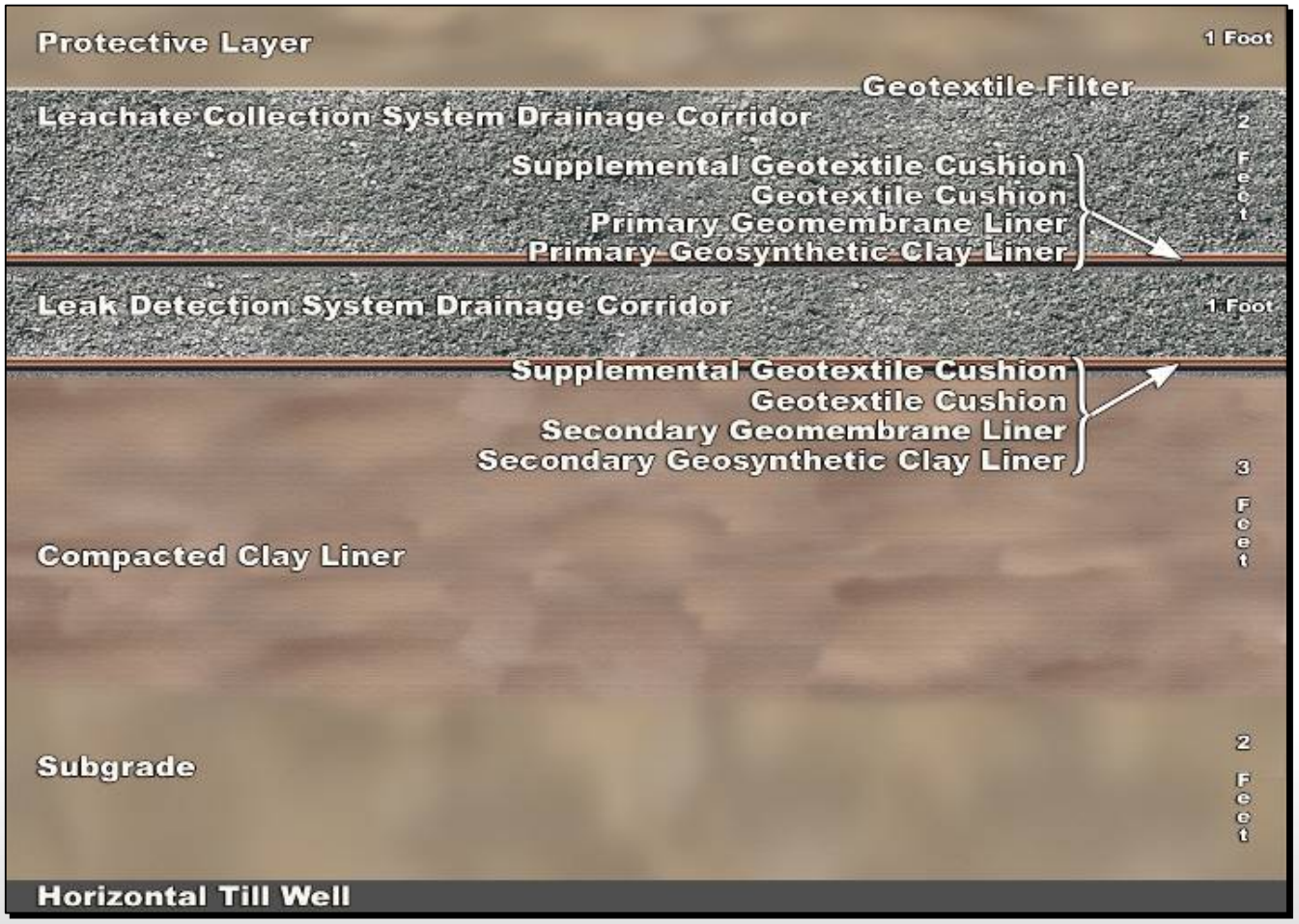
Cover

8730.27 10/09

The On-Site Disposal Facility's engineered cover system.

On-Site Disposal Facility

Liner

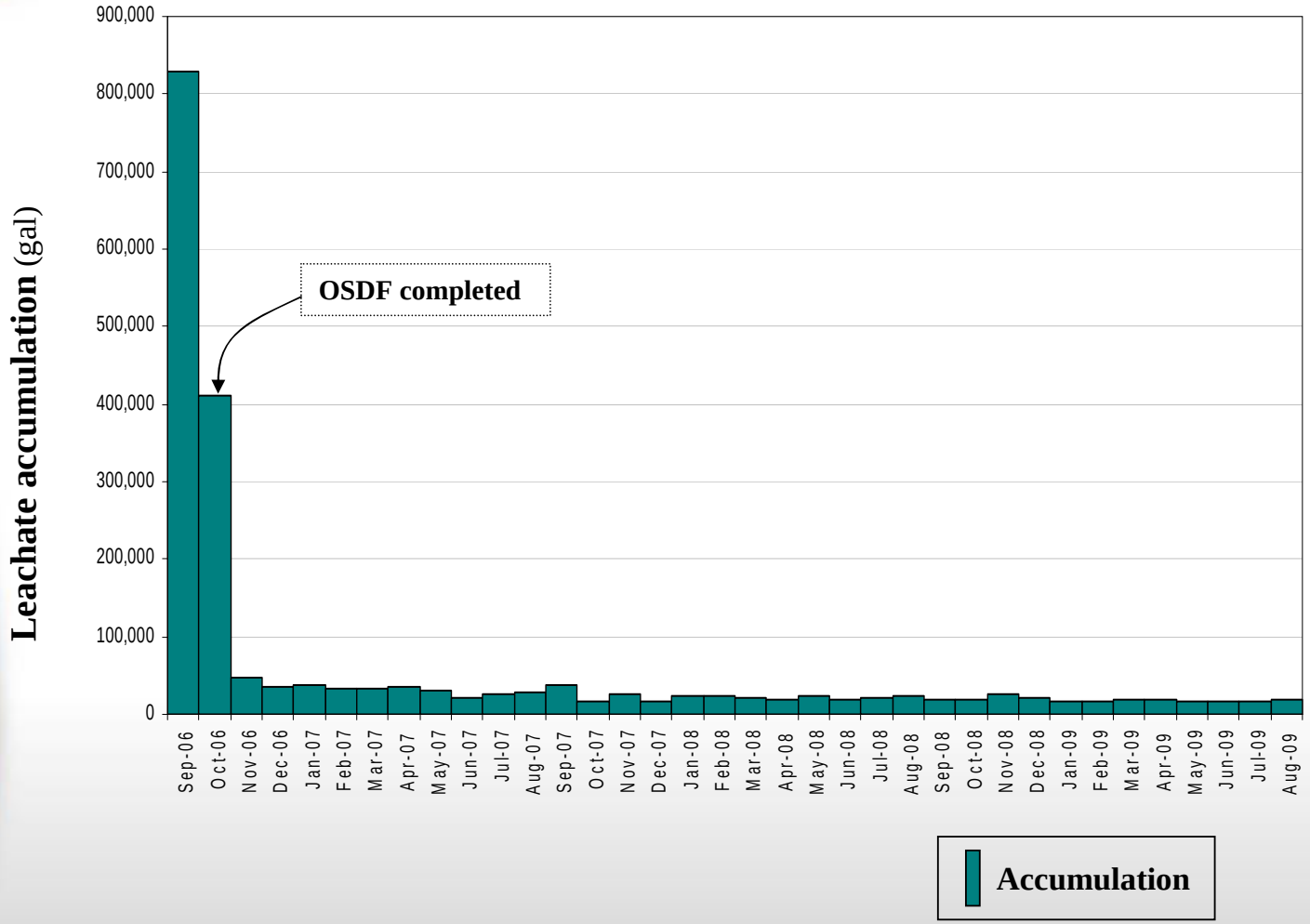


8730.28 10/09

The On-Site Disposal Facility's engineered liner system.

On-Site Disposal Facility

Leachate Collection System

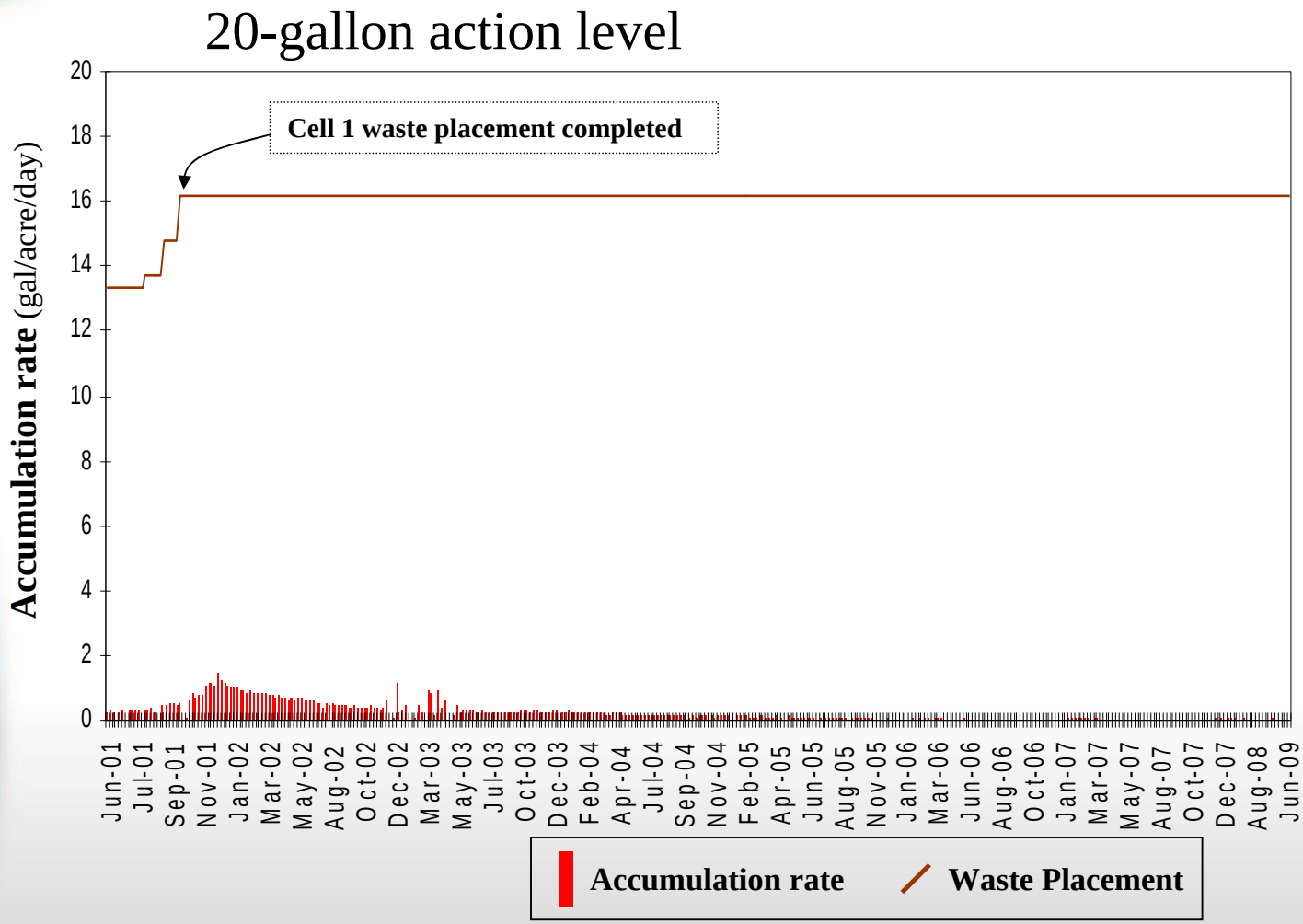


8730.29 10/09

Leachate is the moisture in the waste within the On-Site Disposal Facility. The leachate is collected and transferred to a treatment facility. Before the cover system was completed in October 2006, monthly leachate flows were hundreds of thousands of gallons per month. Since then, monthly leachate flows have decreased to less than 20,000 gallons.

On-Site Disposal Facility

Leak Detection System: Cell 1

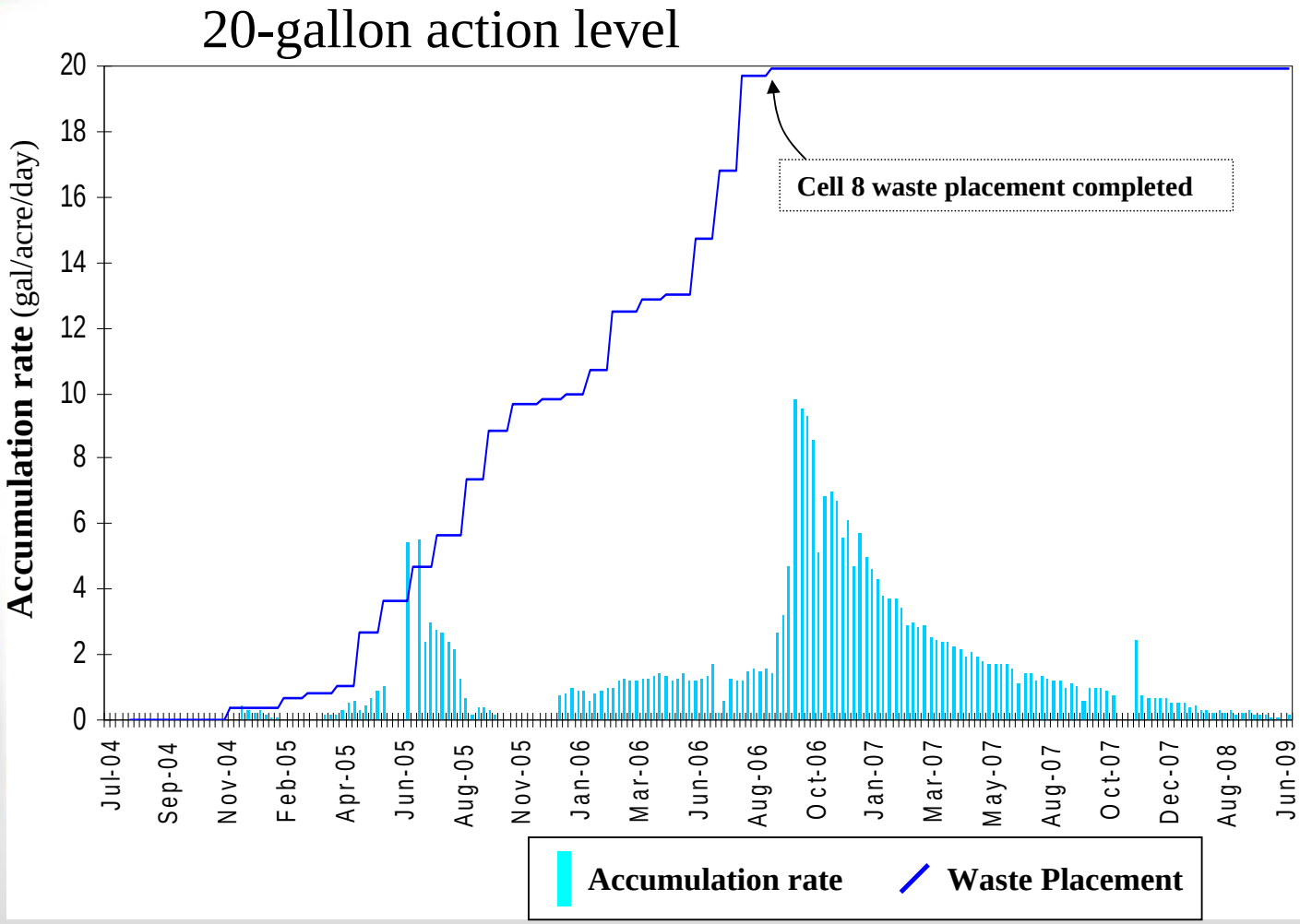


8730.30 10/09

Cell 1 of the On-Site Disposal Facility was the first of eight cells filled with waste and capped. The volume of water collected from this cell's leak detection system is well below the action level, and the system is operating as designed.

On-Site Disposal Facility

Leak Detection System: Cell 8



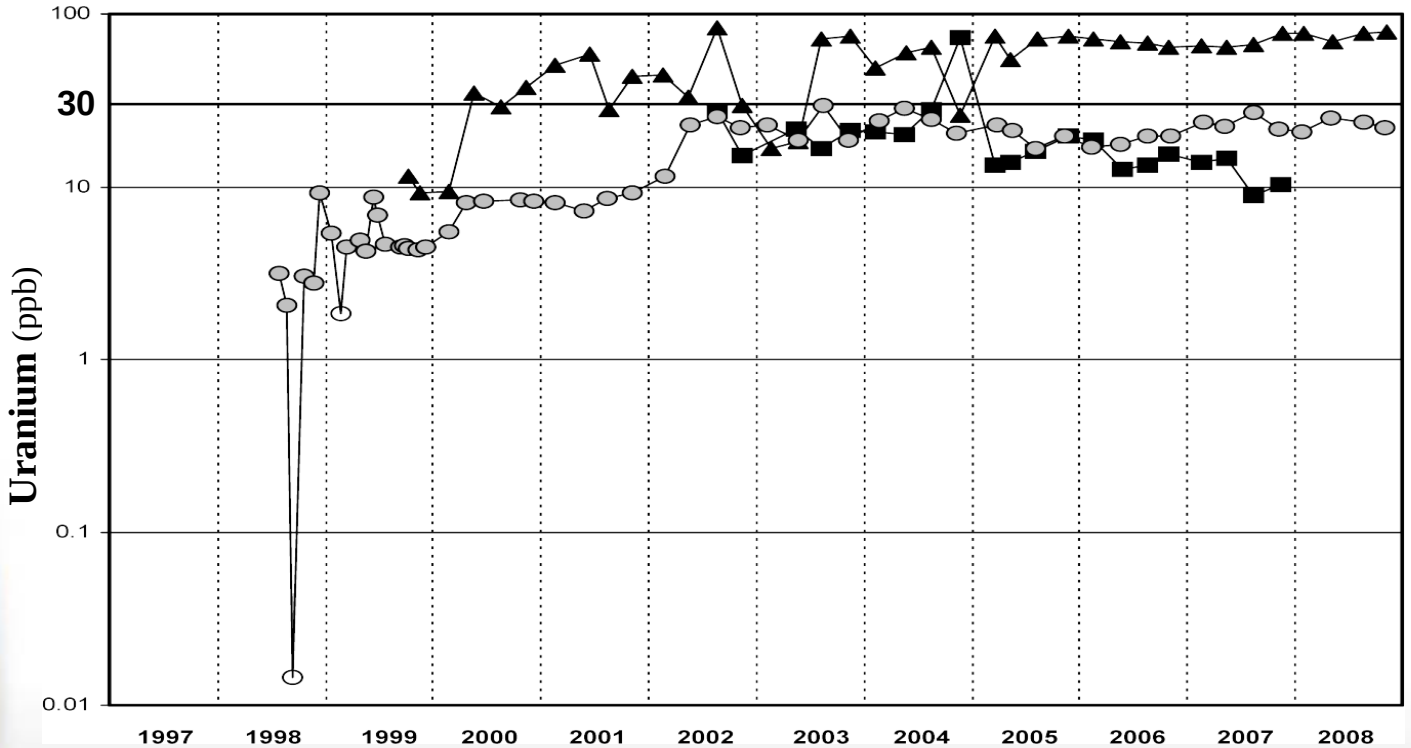
8730.31 10/09

Cell 8 of the On-Site Disposal Facility was the last of eight cells filled with waste and capped. The volume of water collected from this cell's leak detection system is well below the action level, and the system is operating as designed.

On-Site Disposal Facility

Uranium Concentrations: Cell 3

LCS/LDS/HTW



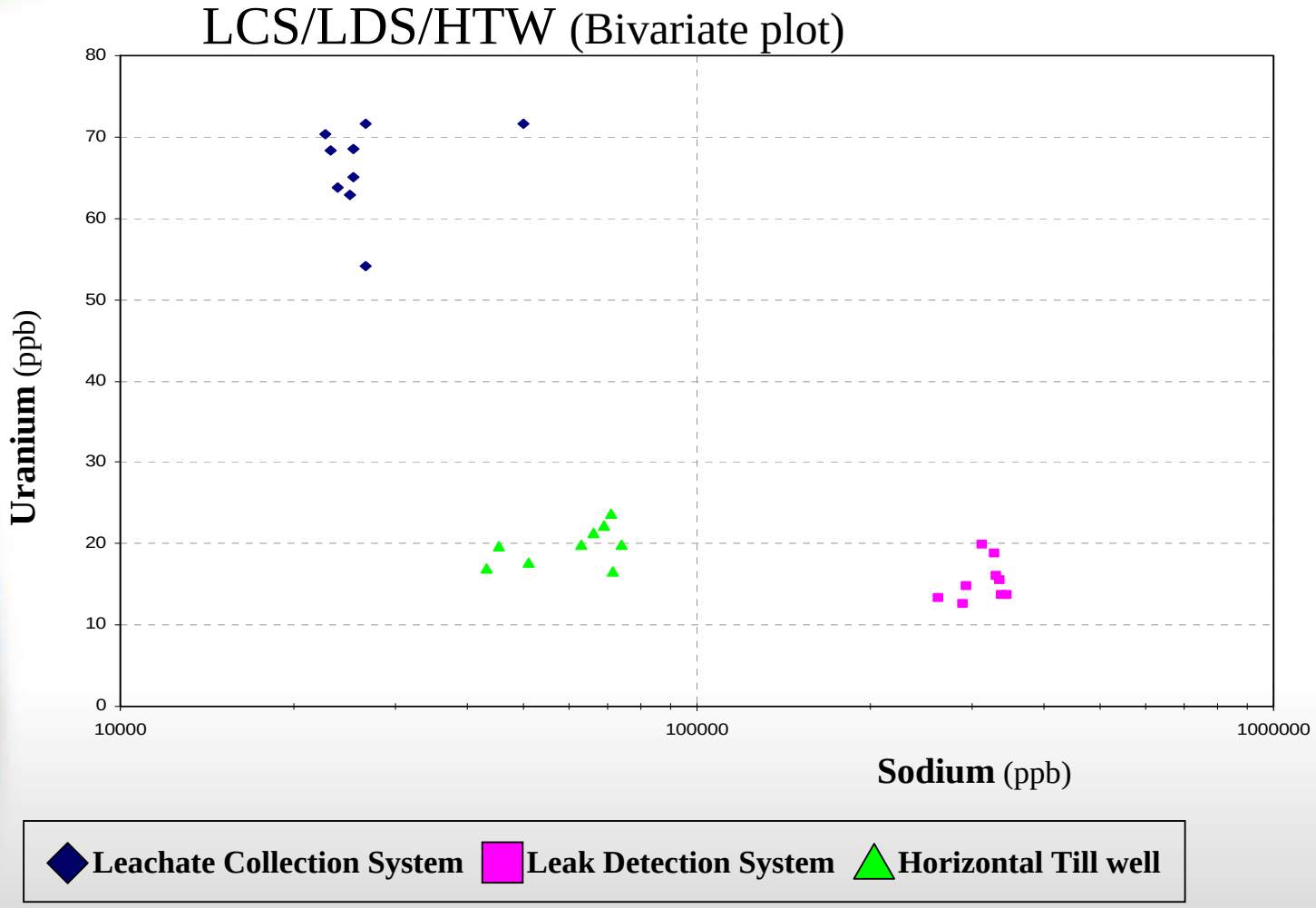
▲ Leachate Collection System ■ Leak Detection System ● Horizontal Till well

8730.32 10/09

Uranium concentrations in and below Cell 3 demonstrate that the liner system is working as designed.

On-Site Disposal Facility

Uranium vs. Sodium Concentrations: Cell 3



8730.33 10/09

Uranium concentrations versus sodium concentrations in and below Cell 3 demonstrate that the liner system is working as designed.

On-Site Disposal Facility

2008 Performance

- **No indication of leaks**
- **Highest leak detection system maximum accumulation**
  - **Cell 5: 1.36 gallons per acre per day (gpad)**
  - **20 gpad initial response leakage rate**
- **Leachate collection system volumes have stabilized and continue to diminish**
- **Leak detection system accumulation rates indicate liner systems are performing within cell design**
- **Water quality trends in the horizontal till wells and Great Miami Aquifer wells are concentration fluctuations beneath the facility**
- **No visual signs of compromised cap integrity**

The On-Site Disposal Facility cap and liner systems are performing as designed.

Aquifer Restoration

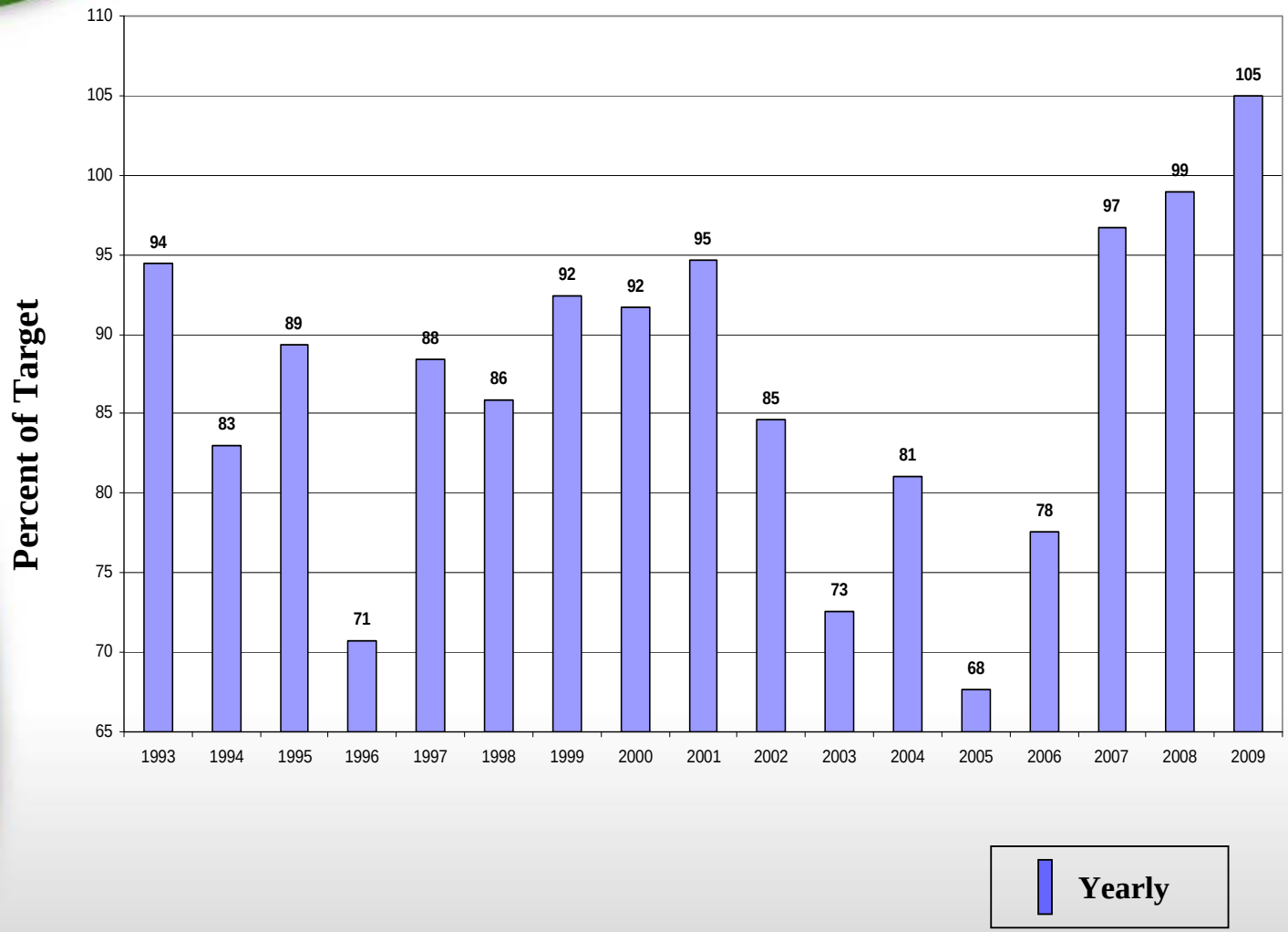
- **4,800 gallons per minute target flow rate**
- **23 extraction wells**
- **140 monitoring wells**
- **26.5 billion gallons extracted**
- **9.78 billion gallons treated**
- **9,507 pounds of uranium removed**
- **Project completion in 2026**

8730.35 10/09

Groundwater cleanup continues at the Fernald Preserve.

Aquifer Restoration

Pumping – Percent of Target Achieved



8730.36 10/09

2009 has been the best year so far for operations related to the site's groundwater cleanup.

Aquifer Restoration

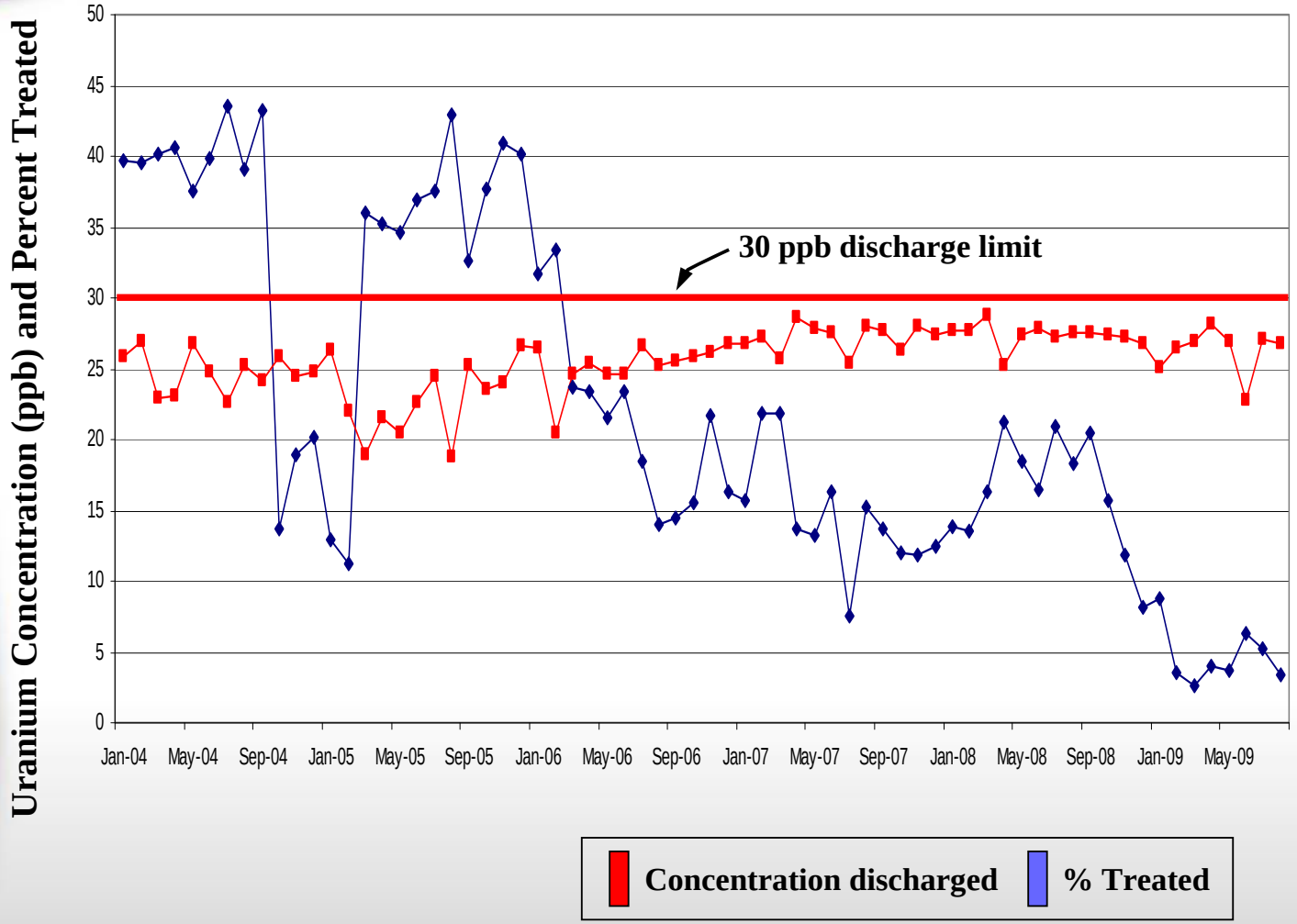
Regulatory Limits

- Meet 30 parts per billion monthly average uranium discharge limit to Great Miami River
- Meet 600 pound per year uranium discharge limit to the Great Miami River

The U.S. Environmental Protection Agency sets regulatory limits for the Fernald Preserve.

Aquifer Restoration

Treatment Needs

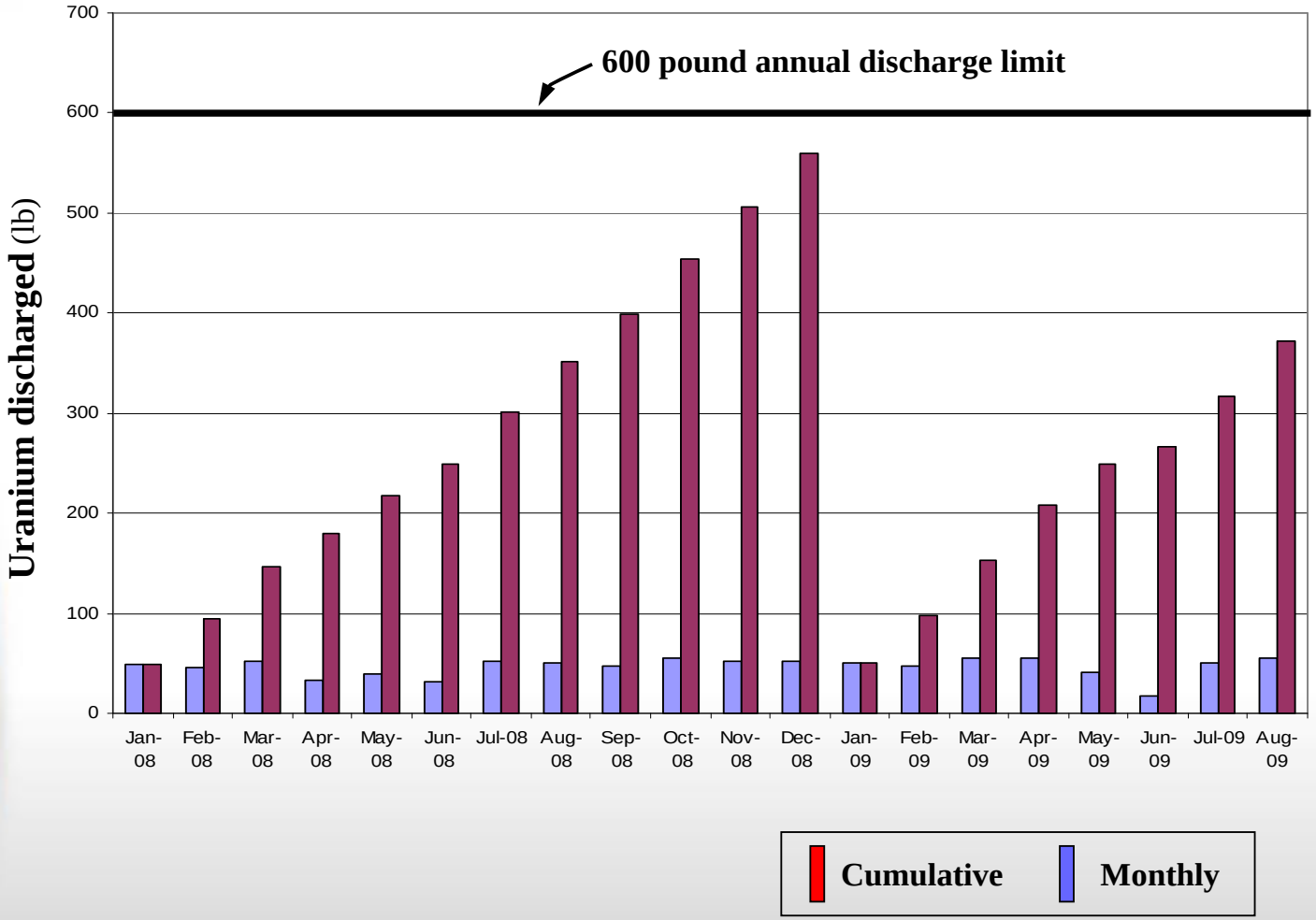


8730.38 10/09

Treatment needs have declined over time. Compliance with the uranium discharge limit has been maintained.

Aquifer Restoration

Uranium Discharged
(pounds)

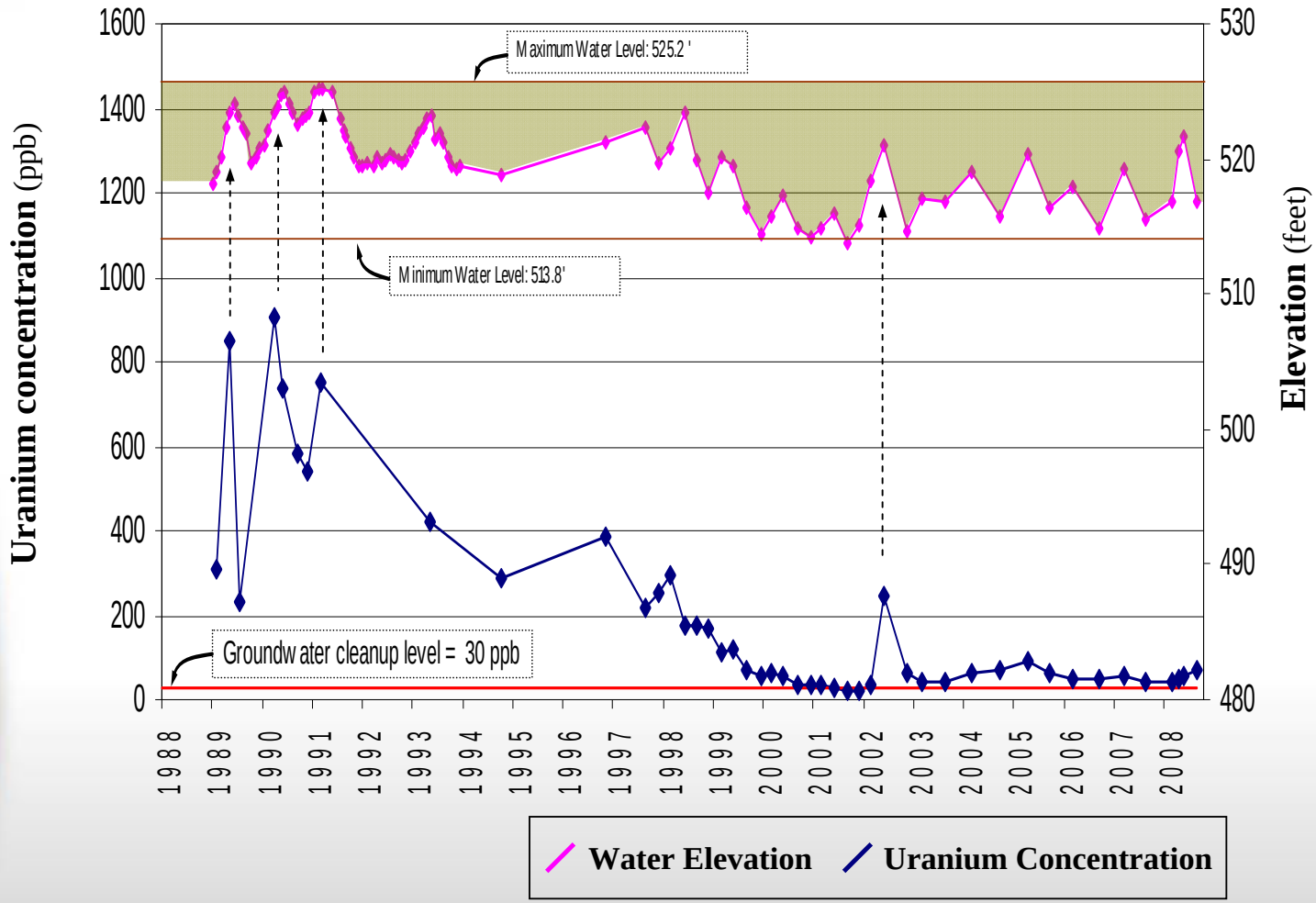


8730.39 10/09

Uranium discharge levels to the Great Miami River comply with the limits set by the U.S. Environmental Protection Agency.

Aquifer Restoration

Monitoring Well 2046 Water Level



8730.40 10/09

The uranium concentration in the groundwater is related to aquifer water levels beneath some areas of the site.

Aquifer Restoration

Water Level Rebound Study

Purpose

- Uranium on sediments above water table under some source areas
- Shut down 19 of 23 extraction wells for one month
- Allow water levels to rebound
- Redissolve uranium bound to sediments

Maximum Water Level Rise

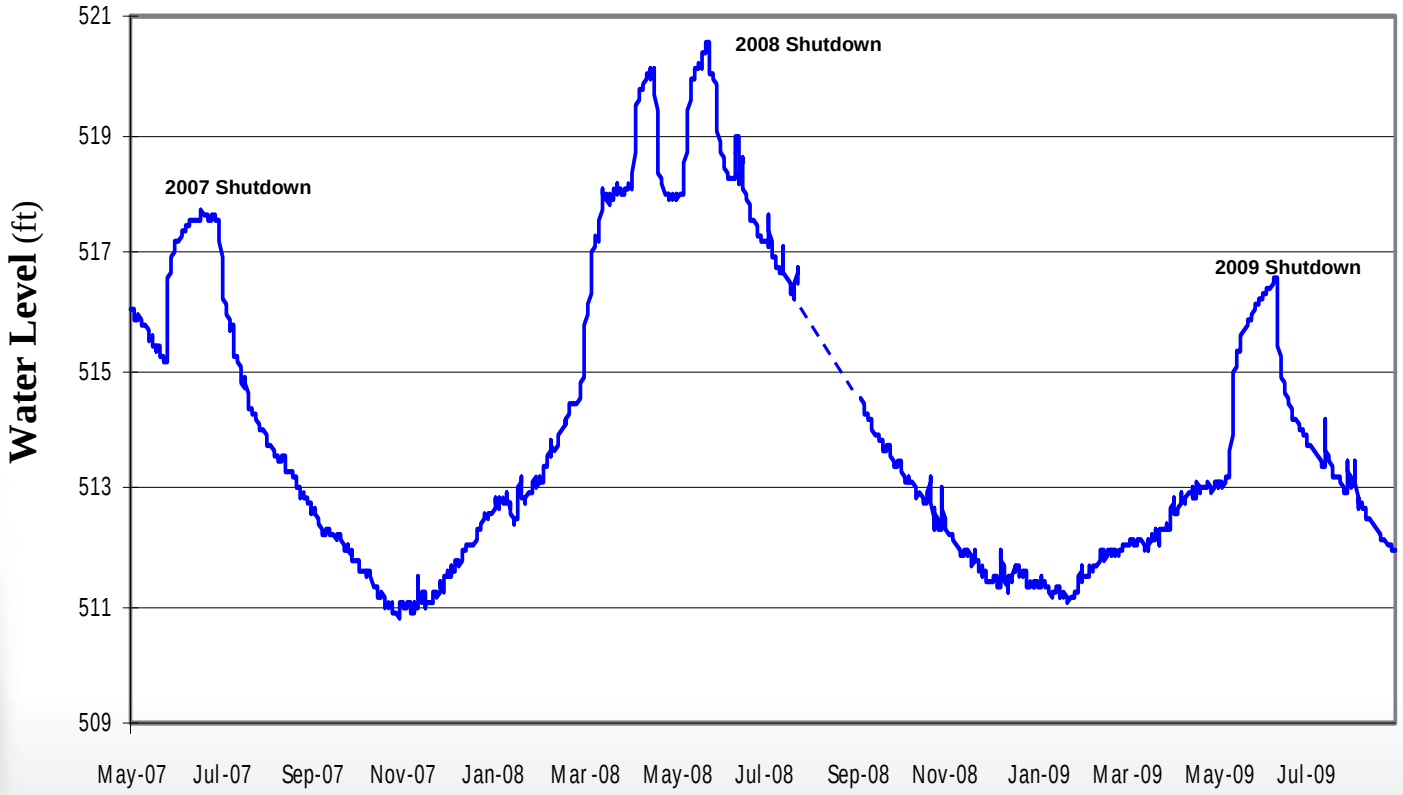
- 2007: approximately 2.6 feet
- 2008: approximately 2.5 feet
- 2009: approximately 3.1 feet

Annual well field pumping shutdowns are designed to help remove uranium from the Great Miami Aquifer.

Aquifer Restoration

Water Levels

(May 2007 – September 2009, Well 62433)



8730.42 10/09

Water levels in the Great Miami Aquifer change seasonally and are highest in the late spring and early summer.

LMICP

Legacy Management and Institutional Controls Plan

- **Developed to document the requirements for long-term care of the site and is submitted annually to regulatory agencies**
- **Volume I provides details for site management**
  - **No significant changes**
- **Volume II is required by the CERCLA remediation process and is legally enforceable document as part of the site remedy**
- **Changes**
  - **Updated Fernald Preserve web page**
  - **CERCLA Administrative Record is available and searchable**

8730.43 10/09

The *Legacy Management and Institutional Controls Plan* is available on the Office of Legacy Management website.

LMICP

Volume II Attachments

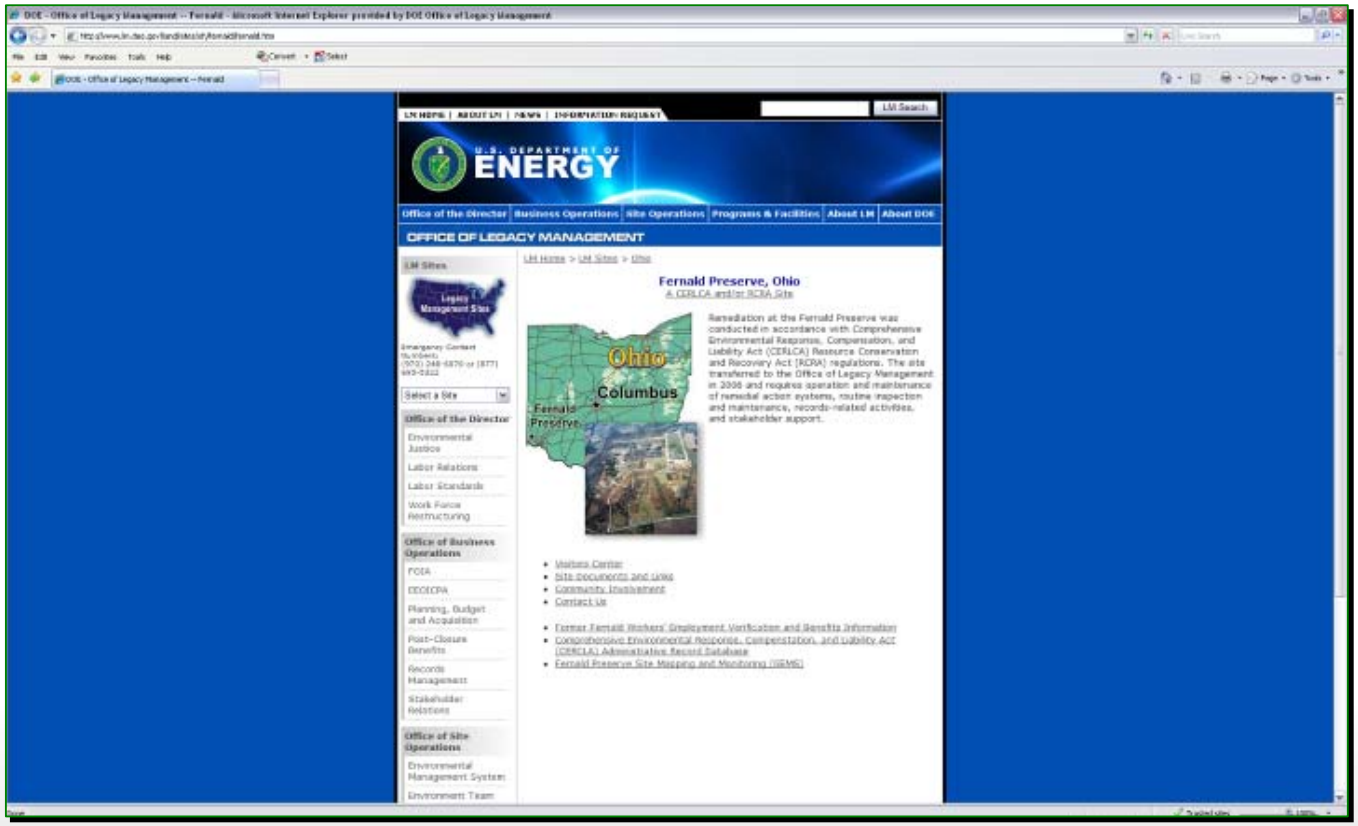
- ***Attachment A: Operations and Maintenance Master Plan for Aquifer Restoration and Water Treatment***
  - No significant changes
- ***Attachment B: Post-Closure Care and Inspection Plan***
  - No significant changes
- ***Attachment C: Groundwater/Leak Detection and Leachate Monitoring Plan***
  - Revision made to reflect OEPA approved parameter lists and sampling schedules
- ***Attachment D: Integrated Environmental Monitoring Plan***
  - Two Proposed Changes
    - Cease boundary air monitoring program
    - New monitoring period for Great Miami River sediment
- ***Attachment E: Community Involvement Plan***
  - No significant Changes

8730.44 10/09

The *Legacy Management and Institutional Controls Plan* is available on the Office of Legacy Management website.

LMICP

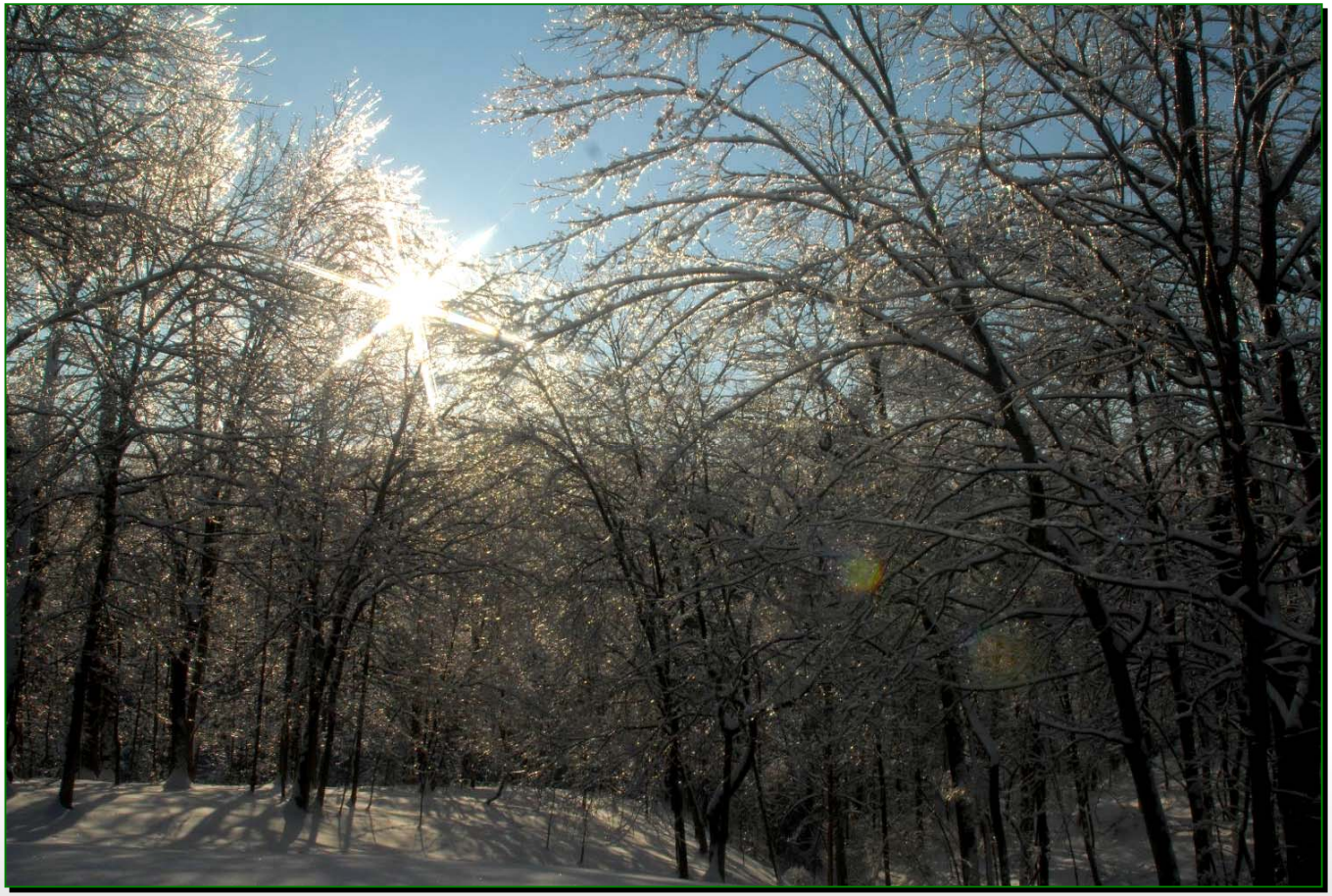
www.LM.doe.gov



8730.45 10/09

Further information can be found on the Office of Legacy Management website and on the Fernald Preserve website, shown here.

Questions?



8730.46 10/09

Questions were answered at the end of this meeting.