



# PADUCAH GASEOUS DIFFUSION PLANT CITIZENS ADVISORY BOARD

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## **Paducah Gaseous Diffusion Plant Citizens Advisory Board Meeting Minutes November 16, 2006**

The Citizens Advisory Board met at the CAB office in Paducah, Kentucky, November 16, 2006, at 6 p.m.

**Board members present:** Allen Burnett, Judy Clayton, Shirley Lanier, Bobby Lee, Janet Miller, Elton Priddy and John Russell

**Board members absent:** John Anderson, Jim Smart, and James Tidwell

**Liaison members and related regulatory agency employees:** Brian Begley, Bill Clark, Jon Maybriar, Edward Winner, Kentucky Division of Waste Management; Tim Kreher, Kentucky Department of Fish and Wildlife Resources; David Williams, Environmental Protection Agency; Steve Hampson, John Volpe, Kentucky Radiation Health Branch

**Deputy Designated Federal Official:** Reinhard Knerr

**Portsmouth/Paducah Chief Operating Officer:** Rachel Blumenfeld

**DOE Interim Federal Coordinator:** Mitch Hicks

**DOE-related employees:** Rich Bonczek, Tracey Brindley, Yvette Cantrell, Pete Coutts, Kim Crenshaw, Paul Corpstein, Paul Gagnon, Bruce Gardner, Michael Gerle, Guy Griswald, Steve Kay, Matt LaBarge, Bruce Phillips, Steve Polston, Eric Roberts, Rob Seifert and Barry Tilden

Eight members of the public attended the meeting.

## Agenda

Kay asked for modifications to the agenda. **The Board adopted the agenda as submitted by consensus.**

## Minutes

Kay asked for modifications to the draft October minutes. **The Board approved the minutes as submitted by consensus.**

## Announcements

Burnett said that Rhonda Smith had accepted a new position in Milwaukee, Wisconsin and presented a letter of resignation as chair and member of the Board at the retreat. Burnett assumed the Chair position and asked that nominations for Chair-Elect be sent to him. An election will be held at the January meeting. Knerr said Smith brought experience and values to the Citizens Advisory Board (CAB). He presented a plaque in appreciation for her time and service to the Board.

Burnett said the CAB's scope of responsibility has been added to the public packets and displayed on the flip chart. He asked that public comments stay within that scope.

## Deputy Designated Federal Official *Attachment 1*

Questions/Comments	Answers
<b>Maybriar:</b> Was the C-612-A Clamshell removed down to the foundation?	<b>Knerr:</b> It was a concrete pad and the frame was not bolted down to the facility so it was quick to take down.
<b>Burnett:</b> Were the pipes that carried the hydrogen fluoride inside the C-410 Building contained within the facility or were they connected to anything on the outside of the building?	<b>Knerr:</b> All the pipes were within the facility.
<b>Burnett:</b> Has all of the surface scrap metal been placed in gondola cars?	<b>Knerr:</b> There are not enough gondola cars on site. Some of the final bits are staged or have been placed in remedial containers to be quickly loaded onto the gondola cars.
<b>Maybriar:</b> Is the delay of the bridge construction going to affect the completion report for the scrap metal project?	<b>Knerr:</b> No.

<b>Lee:</b> What is the resolution on the geophysical survey for Solid Waste Management Unit (SWMU) 145?	<b>Brindley:</b> Electromagnetic 61 resolution (EM61) technology is used. It shows metal or material changes in composition of the subsurface at a depth. It helps determine if there are burial cells as the area is walked over.
<b>Lee:</b> Does the technology show shape?	<b>Brindley:</b> No, it just shows resolution.

### **Federal Coordinator**

Hicks said he is looking forward to working with the CAB. The retreat was beneficial.

### **Liaison Comments**

Kreher said he was notified of potential hot spots in soil piles located off McCaw Road. Knerr said Paducah Remediation Services (PRS) is investigating the piles and samples have been taken. Maybriar said the U.S. Department of Energy (DOE) notified Kentucky Division of Waste Management (KDWM) about the soil that was discovered along Little Bayou Creek. He said they have split samples with DOE and instructed them to modify a SWMU Assessment Report to include the new area of soil that has been found. Miller asked how the area was discovered. Brindley said it was found during a routine survey. In taking an alternate route to Little Bayou Creek, an area was noticed that did not look like natural piles of soils. Based on the area around the pile, the soil is expected to be at least 20 years old. She said the validated data should be available to the regulators in about three weeks. Miller asked the size of the pile. Brindley said it was approximately 2500 cubic yards and it appears to be where the creek was dredged. It is outside the fence, which is accessible to hunters. Kreher said the hunters must check in; it is not free entry. He said the hunters are warned to stay out of the area and the area is marked with postings and tape.

Maybriar said Kentucky invoked an informal dispute on the Southwest Plume Site Investigation (SI) document when EPA's comments were received. KDWM is working with DOE to establish a path forward and resolve the trichloroethylene (TCE) degradation factor issue. He said Kentucky has approved the Burial Grounds Work Plan with a conditional concurrence. He said they are working on the comments for the C-400 Land Use Control Implementation Plan (LUCIP).

Williams said the U.S. Environmental Protection Agency (EPA) issued a letter of nonconcurrence on the Southwest Plume SI document to invoke informal dispute primarily on the degradation factor issue. EPA approved the Burial Grounds Work Plan because DOE included polychlorinated biphenyl (PCB) analysis on all samples. EPA is reviewing the C-400 LUCIP.

Lee asked for a description of the Dissolved Phase Plume. Williams said there are two large plumes at the site, the Northeast and the Northwest Plume and then the dissolved phase of the Southwest Plume. DOE is looking at all of the dissolved phase plumes as they move away from the facility. EPA's and Kentucky's comments on the Site Management Plan (SMP) included accelerating the research on the dissolved phase plumes.

Volpe said the Board and two members of the public were provided copies of the reports requested at the October Board meeting. He said a question of surveying public properties was addressed with the Radiation Health Branch and they are working with the Kentucky Resource Council on that issue. Epidemiological data is being discussed with the Department of Public Health. He brought health assessments to the branch's attention as well.

**Public Comment**

Jurka discussed the hair analysis results from the Agency for Toxic Substances and Disease Registry reports of Paducah Gaseous Diffusion Plant (PGDP) employees that do not live within the two-mile radius of the plant. She discussed the results of the community members indicating a higher body burden of metals than the employees.

Jurka said she appreciated the Board providing a list of contacts for various departments but other contacts are needed from Kentucky, EPA and DOE for local contacts other than liaison members of the Board. Blumenfeld asked if Jurka is asking for a list of contacts for different agencies. Jurka said she would like a list from DOE, EPA and Kentucky. Maybriar said he routinely works with the group of people that are at the table. He asked what contacts she is looking for. Jurka asked for the contacts that are directly responsible for the Paducah site.

Vander Boegh said that at the last meeting there were comments about the C-613 Basin and discussion about the suspended solids levels. The overflowing water was at 100 milligrams per liter (mpl) and inside the basin was at 200 mpls. He asked if that was the same reading that was taken at Outfall 001. He asked what the acreage was that flowed into the basin. Brindley said approximately 60 acres.

English asked when the Depleted Uranium Hexafluoride (DUF<sub>6</sub>) facility was up and running would this site be involved in the dry cast storage manufacturing. Griswald said Uranium Disposition Services would not be manufacturing dry cast containers. Dry material would be put in cylinders, which had contained the UF<sub>6</sub>.

**Task Forces/Presentations**

Brindley provided a presentation on the C-746-U Landfill groundwater assessment (*Attachment 2*). Questions and answers (paraphrased) appear below.

Questions/Comments	Answers
<p><b>Burnett:</b> The monitoring wells are sampled quarterly. Is that for compliance?</p>	<p><b>Brindley:</b> The permit requires quarterly sampling. Typically, the samples are taken the first month of every quarter. The samples that were required in the letter were conducted.</p>

<p><b>Lee:</b> What are the consequences on the exceedences?</p>	<p><b>Brindley:</b> The state must be notified within 48 hours of an exceedence. The resampling must be conducted along with an assessment plan. After state approval of the assessment plan, PRS has 60 days to implement the plan. A corrective action plan is prepared or enhanced monitoring may be in order when the state determines the appropriate action.</p>
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### **Waste Disposition/Water Quality Subcommittee**

Lee said the subcommittee received DOE’s response to the state on Vander Boegh’s allegations of free liquids entering the C-746-U Landfill. She is reviewing the executive summary for the D1 Surface Water Operable Unit Site Investigation. The subcommittee may want to comment on the document.

Smart drafted a letter to the Division of Water (DOW) on the Kentucky Pollutant Discharge Elimination System (KPDES) permit. An extension was not given for public comment on the permit and the subcommittee does not feel like the public was given time to process the changes. Burnett reviewed the letter and asked the Board for approval. Lee said the subcommittee did not approve or disapprove of the letter but agreed to present it to the Board. **The Board adopted the letter as modified by consensus.**

Russell said that last month he asked the question whether any water entered the C-613 Basin other than runoff water from the scrap metal project. He was told there were not. After that meeting, he received comments on the KPDES permit from the Kentucky Resource Council (KRC) describing seven effluent streams going into the basin. He asked if there were seven effluent streams and if they are continuous or sporadic into that basin. Knerr said he believed the KRC was referring to streams that are processed through the Pump and Treat facility, which does not feed into the sedimentation basin. Blumenfeld said they would review those comments and have an answer at the January meeting.

### **Action Items**

Lee said the draft recommendation to DOE on the landfill allegations is pending based on the review of the response from DOE to KDWM’s letter.

Knerr said he wanted to discuss DOE copying the CAB on all comments from EPA and Kentucky with the regulators and suggested adding the issue to the Executive Committee agenda.

Lee said Brindley has been preparing requests for the geographic information system database at each subcommittee meeting so that action can be closed.

Burnett said the only thing that has been located on the “off-site dump maps” requested by Vander Boegh is construction piles and Vander Boegh has indicated that is not what he is looking for. It has not been identified what to look for. Vander Boegh said he would not go

forward on producing the maps until additional information was received from the public. He said he has been given many locations for potential “dump sites” but he does not have the time to verify if they are legitimate. Maybriar asked that Vander Boegh provide his contact information to any individuals that have a concern.

Maybriar said the Agreement in Principle data would be evaluated further and if possible, presented to the CAB in January.

DOE provided a presentation on the plans for the C-746-U Landfill groundwater assessment earlier in the meeting. The action can be closed.

Volpe said Jurka was provided data on airborne plutonium. The action can be closed.

Knerr said Kentucky provided draft language for the signs along the Little Bayou Creek to help the Paducah site meet environmental indicators. Blumenfeld said a recommendation has been sent to headquarters for review. Lee asked that the action remain open until the signs are in place.

Miller said she has not received validated data of the sediment in the basin. The action is pending.

Kay said the letter to DOW on the KPDES permit was approved earlier in the meeting. The action can be closed.

Volpe said maps indicating the location of air monitors across the site was given to the Board prior to the meeting. Staff will mail the locations to Linda Long.

Russell asked whether new signs or fences had been placed at Section 5 of the North-South Diversion Ditch. Knerr said there was damage from wildfire last year and some new signs were erected to replace existing signs. That area had been recently mowed so the signs were more visible.

Lee said a copy of the response to KDWM regarding the allegations of free liquids entering the landfill was received. Knerr asked that the subcommittee review and discuss the response at the January meeting and if they feel a presentation is necessary, it can be put on the agenda.

Knerr said DOE is still investigating why the concentrations of dissolved uranium did not change from before the rainstorm versus during the rainstorm after the sedimentation basin overflowed. PRS is doing additional monitoring to isolate potential sources.

### **Public Comments**

Jurka asked given the close proximity of the Northeast Plume to the C-746-U Landfill, what geologic anomaly prohibits technetium 99 (Tc<sup>99</sup>) from migrating through the Regional

Ground Aquifer or why do those monitoring wells identify Tc<sup>99</sup> while the plume data does not. Brindley said the question could be answered at the January meeting.

## **Administrative Issues**

### **Budget Review**

Burnett said third party review and carryover money has been included in the budget. Blumenfeld said the budget would be in continuing resolution at least through February.

### **Work Plan Review**

Burnett said the new work plan includes the 2007 milestones and deliverables that are divided up into subcommittee and individual assignments. The most important projects would be tracked. Lee said the Waste/Water subcommittee assigned projects and agreed to keep the same meeting time. She said the Community Outreach and the Long Range Strategy/Stewardship subcommittee projects should be added to the work plan. She said it was suggested that those two subcommittees could meet every other month and the Waste/Water subcommittee would continue to meet every month. Burnett said it might be more convenient to meet another time but that time seems to work for the meantime. Knerr asked if the CAB Work Plan had ever been approved by DOE Headquarters after the Chair and DDFO have signed off on it. Kay said that has not happened in the past. It is a rolling document that is modified monthly. Cantrell said there is a requirement for the work plan to be a signed document in order for DOE to establish priorities. Blumenfeld said it could be clarified with Doug Frost.

### **January Agenda**

Blumenfeld said the Land Acquisition Study initial review at the Portsmouth/Paducah Project Office has been completed and is not sure how long it would take Kentucky Resource Consortium for Energy and the Environment to turn around the comments.

Knerr said DOE would provide changes between the 2005 SMP and the 2006 SMP.

Blumenfeld suggested the C-400 design support investigation for the January agenda. Burnett said it should be presented in the subcommittee. It could then be decided if it should be presented to the full Board.

### **Executive Committee**

Burnett said the National Chairs meeting would be held in Las Vegas March 28-30. The budget will allow for two members to participate.

Burnett said two membership applications have been received. The Community Outreach subcommittee recommended sending Gary Long's application to DOE for approval and appointment. **The Board approved the recommendation by consensus.**

The Executive Committee will meet Wednesday, November 29 at noon.

### **Retreat**

Burnett said the draft retreat minutes are in the packet for review. The Bylaws and Operating Procedures were modified to include the changes from the retreat. Burnett reviewed the changes and said the documents would be voted on at the January meeting. The Bylaw changes include mandatory participation in subcommittees. The changes in the Operating Procedures include replacing ex-officio to liaison. Task forces will be called subcommittees instead of task forces. He said scheduling the retreat in August to coincide with the fiscal year was also discussed. A summary of the retreat evaluations is in the packet. Burnett said there has to be improved communication between board meetings.

### **Other**

Russell asked if the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) cell is being considered. He was told at previous meeting that the CERCLA cell was not being considered and now there are milestones for the project beginning in 2008. Blumenfeld said at one point in time the CERCLA cell was actively considered, then it was taken off as an option, and at the time of the request for proposal DOE did ask the new remediation contractor to do work on helping DOE to decide if there would be a CERCLA cell at the site.

Russell said the milestone list mentions a variance request for expansion of the landfill capacity. Blumenfeld said that is relating to the leachate capacity. There are provisions under the regulations about the tanks and the leachate that is generated at the landfill. A request for a variance can be requested based on real time treatment capacity. PRS is looking into pursuing that.

The meeting adjourned at 8:45 p.m.

**Project Status Update for DOE Paducah Citizens Advisory Board  
November 16, 2006  
Project: Surface Water Operable Unit (On-Site)**

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**Contact Persons:**

**U.S. Department of Energy:** David Dollins

**Paducah Remediation Services LLC:** Tracey Brindley/Craig Jones/Jana White

**Commonwealth of Kentucky:** Jon Maybriar/Brian Baker

**U.S. Environmental Protection Agency:** David Williams

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**Purpose:** Environmental Cleanup

**Description:** The Surface Water Operable Unit (On-Site) Project includes a site investigation to identify hot spots in ditches and outfalls, including Sections 3, 4, and 5 of the North-South Diversion Ditch. The site investigation scope also includes an evaluation of whether additional sediment control measures are needed, as well as actions for potential legacy releases associated with the storm sewer system. The results of the site investigation will be documented in a Site Investigation/Baseline Risk Assessment Report and non-time-critical removal action documentation, as appropriate.

**Key documents:**

- Sampling and Analysis Plan for Site Investigation and Risk Assessment of the Surface Water Operable Unit (On-Site), DOE/OR/07-2137&D2/R2
- Surface Water Operable Unit (On-site) Site Investigation and Baseline Risk Assessment Report at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, DOE/LX/07-0001/D1

**Issues:** None

**Recent accomplishments:**

- Milestone extension request to complete revisions to the D1 SWOU SI/RA report accepted by EPA and state

**Activity over next 60 days:**

- Issuance of the D1 SWOU SI/RA report to EPA and state by November 14, 2006 milestone
- Submission of the Removal Notification by 1/10/07

**FFA Milestones:**

- Issue Site Investigation/Risk Assessment Report by November 14, 2006
- Issue Removal Notification by January 10, 2006

**Project Status Update for DOE Paducah Citizens Advisory Board**  
**November 16, 2006**  
**Project: DOE Material Storage Areas (DMSAs)**

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**Contact Persons:**

**U.S. Department of Energy:** Jeff Snook

**Paducah Remediation Services LLC:** John Samples

**Commonwealth of Kentucky:** Jon Maybriar/Leo Williamson

**U.S. Environmental Protection Agency:** David Williams

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**Purpose:** Environmental Cleanup/Waste Disposition

**Description:** The 160 DMSAs were non-leased areas inside buildings, as well as outdoor areas. DOE accepted the return of the areas, and the material and equipment they contained, from USEC on December 31, 1996, to facilitate NRC certification of the gaseous diffusion plants. At that time, most of the contents needed detailed inventory, characterization, and disposition. Since that time, DOE and contractors have been documenting contents, resolving environmental concerns such as draining and disposing of oils from old equipment, and segregating and disposing of wastes.

**Key documents:**

- PGDP Department of Energy Material Storage Area Characterization/Remediation Plan (BJC/PAD-186/R4), April 2001
- Agreed Order DWM-31434-042
- Documented Safety Analysis (DSA)

**Issues:**

- Increased rigor in characterizing painted items for PCB content has impacted characterization, packaging, and disposal activities. An effort is under way to resolve the different requirements and allowances between Kentucky and EPA regulations for solid waste disposal of painted items.

**Recent accomplishments/activities:**

- In October:
  - Characterized 2,525 ft<sup>3</sup> of material (~80 completed)
  - Packaged 7,947 ft<sup>3</sup> of material
  - Disposed of 12,517 ft<sup>3</sup> of material (~56% completed)
  - Completed final closure certification for 20 DMSA RCRA closures.

**Activity over next 60 days:**

- Transition to rail shipment to disposal sites
- Resume shipment of material to off-site disposal sites

**Project Status Update for DOE Paducah Citizens Advisory Board**  
**November 16, 2006**  
**Project: Scrap Metal Removal Project**

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**Contact Persons:**

**U.S. Department of Energy:** Reinhard Knerr  
**Paducah Remediation Services LLC:** Chris Marshall  
**Commonwealth of Kentucky:** Jon Maybriar  
**U.S. Environmental Protection Agency:** David Williams

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**Purpose:** Environmental Cleanup/Waste Disposition

**Description:** About 31,000 tons of scrap metal exists at the PGDP, excluding nickel ingots. This project involves the removal of 21,700 tons of general scrap metal, 2,000 tons of aluminum ingots, and approximately 7,412 tons of classified scrap. The project does not include the recycling or disposal of 9,700 tons of nickel.

**Key documents:**

- Engineering Evaluation and Cost Analysis
- Action Memorandum
- Removal Action Work Plans
- Agreed Order DWM-31434-042
- Documented Safety Analysis (DSA)

**Issues:** Repairs are required to a rail bridge, which will delay the final train shipment. USEC is making the repairs, which are scheduled to be completed in December.

**Recent accomplishments:**

- On October 12, 2006, 4,075 tons of scrap metal were shipped via rail to EnergySolutions
- Since January 1, 2006, 14,215 tons of scrap metal have been shipped via rail to EnergySolutions
- The final unit train carrying scrap metal in high sided gondola cars and construction equipment back to Utah on flat bed rail cars is scheduled to ship in January 2007

**Activity over next 60 days:**

- Complete disposition operations by inspecting, sorting, size-reducing and packaging scrap metal
- Continue demobilization activities under the EnergySolutions contract
- Ship final scrap metal in January 2007

**Project Status Update for DOE Paducah Citizens Advisory Board  
November 16, 2006**

**Project: Decontamination & Decommissioning (D&D)**

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**Contact Persons:**

**U.S. Department of Energy:** Reinhard Knerr

**Paducah Remediation Services LLC:** Don Ulrich/Brad Montgomery

**Commonwealth of Kentucky:** Jon Maybriar

**U.S. Environmental Protection Agency:** David Williams

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**Purpose:** Environmental Cleanup/Waste Disposition

**Description:** The D&D project has completed development of Comprehensive Environmental Response, Compensation, and Liability Act regulatory documentation and has initiated actual D&D of the C-410/420 Feed Plant Complex. The current scope of D&D includes infrastructure removal on the C-410/C-420 complex, as well as ongoing surveillance and maintenance of the C-410/C-420 complex and the C-340 Metals Plant complex. Scope also included development of Safety Basis Documentation for the removal of equipment, piping, and stored material from the C-410 Complex. Operations at both complexes ended in 1977.

The Engineering Evaluation and Cost Analysis and the Action Memorandum for three inactive Facilities, the C-402 Limehouse, the C-405 Contaminated Items Incinerator, and the C-746-A West End Smelter, have been completed and approved. The Removal Action Work Plan for the C-402 Limehouse has been approved by the regulatory agencies, and the C-405 and C-746-A West End Smelter RAWP was submitted to the regulatory agencies for review and approval.

**Key documents (C-410 and Inactive Facilities):**

- Engineering Evaluation/Cost Analysis (EE/CA)
- Action Memorandum
- Removal Action Work Plan (RAWP)
- Cultural Resources Assessment of C-410 Complex
- Agreed Order DWM-31434-042
- Removal Action Report

**Issues:** None

**Recent accomplishments/activities:**

- Completed sampling and purging of HF, Hydrogen, and Fluorine piping in C-410 Sector II, Zones 42 and 43, required before the piping can be removed
- Initiated worker walkdowns to support work package development
- Initiated electrical equipment and conduit demolition in Zones 34, 35, 36, 37, 42, 43, and 52
- Continued asbestos abatement in Zone 54 of the C-410 Complex, and utility piping and equipment demolition in zones 35 through 52
- Performed interior non-load bearing wall demolition in C-410 Zones 34-37
- Resumed shipment of debris from the C-410 Complex to Energy Solutions in Utah
- Shipped 26 intermodals (approximately 16,000 cubic feet) in October

**Activity over next 60 days:**

- Continue packaging and characterization of loose materials in C-410 Complex
- Continue piping and electrical equipment demolition in zones 35 through 52 of C-410

- Remove fluorine, hydrogen, and HF piping in Zones 42 and 43 of C-410
- Continue fixative application to exterior painted metal surfaces of the building
- Package demolition debris for shipment to EnergySolutions of Utah
- Submit D0 C-402 Removal Action Report for review
- Mobilize and start field work on C-405 removal action
- Continue asbestos abatement activities in Sector 2 and 3 of C-410
- Continue removal and treatment of chemicals remaining in piping or equipment to convert them to an inert state in C-410 Complex

**Project Status Update for DOE Paducah Citizens Advisory Board**  
**November 16, 2006**  
**Project: Groundwater Operable Unit**

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**Contact Persons:**

**U.S. Department of Energy:** David Dollins

**Paducah Remediation Services, LLC:** Joe Tarantino/Mike Clark/Bryan Clayton

**Commonwealth of Kentucky:** Jon Maybriar/Todd Mullins

**U.S. Environmental Protection Agency:** David Williams

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**Purpose:** Environmental Restoration

**Description:** This project addresses environmental remediation of groundwater contamination on a site-wide basis at the Paducah Gaseous Diffusion Plant. The main contaminants of concern are trichloroethylene (TCE) and technetium-99 (<sup>99</sup>Tc). Remedial actions will be designed and implemented after completion and signing of Records of Decision (RODs).

Specific projects include:

- NE & NW Plumes Pump and Treat
- Southwest Plume
- Dissolved Phase Plumes Remedy
- C-400 Remedial Action

**Key documents:**

- Feasibility Study of the Groundwater Operable Unit at PGDP (DOE/OR/07-1857/D2)
- Agreed Order DWM-31434-042
- Six-Phase Treatability Report (DOE/OR/07-2113)
- Proposed Remedial Action Plan for the Volatile Organic Compound Contamination at the C-400 Cleaning Building (DOE/OR/07-2114)
- Southwest Plume Site Investigation Work Plan (DOE/OR/07-2094)
- S&T Landfill Site Investigation Work Plan (DOE/OR/07-2098)
- Record of Decision for Interim Remedial Action for the Groundwater Operable Unit for the Volatile Organic Compound Contamination at the C-400 Cleaning Building (DOE/OR/07-2150&D2/R2)
- Remedial Design Work Plan for the Interim Remedial Action for the Volatile Organic Compound Contamination at the C-400 Cleaning Building (DOE/OR/07-2214&D2)
- Remedial Design Support Investigation Characterization Plan for the Interim Remedial Action for the Volatile Organic Compound Contamination at the C-400 Cleaning Building (DOE/OR/07-2211&D2)
- Site Investigation Report for the Southwest Groundwater Plume (DOE/OR/07-2180&D2)
- Site Investigation Report for the C-746-S&T Landfills (DOE/OR/07-2212&D2)
- Land Use Control Implementation Plan: Interim Remedial Action for the Groundwater Operable Unit for the Volatile Organic Contamination at the C-400 Cleaning Building (DOE/OR/07-2151&D1)

**Issues:** Discussions with Kentucky and EPA are continuing concerning the use of TCE degradation factors utilized in groundwater modeling to support risk assessment development in the Southwest Plume SI/RA report. The D2 SW Plume Site Investigation Report review by USEPA and Kentucky has been completed and both issued letters of nonconcurrency on the D2 document. The USEPA invoked informal dispute under the FFA.

All parties are continuing to work in unison with the KRCEE to resolve the TCE degradation factor issue.

**Recent accomplishments:**

- Continued development of the C-400 Remedial Design Report and the Remedial Action Work Plan
- Kentucky and USEPA completed their review of the D2 Southwest Plume Site Investigation/Risk Assessment
- TCE degradation meetings being held on two-week basis with all parties and with the assistance of specialists from other organizations

**Activity over next 60 days:**

- Continue with development of the C-400 Remedial Action Work Plan and Design Report
- Continue meeting to resolve the TCE degradation
- Continue the FFA Informal Dispute Resolution process

**FFA Milestones:**

- D1 Proposed Remedial Action Plan for Southwest Plume by 10/14/06 (Milestone being modified pending resolution of the TCE degradation factor used in groundwater models and issuance of the regulator non-concurrence letters.)
- D1 Remedial Action Work Plan for C-400 by 11/22/06 (90-day extension request in process)
- D1 Remedial Design Report (90% design) for C-400 by 12/8/06 (90-day extension request in process)

**Project Status Update for DOE Paducah Citizens Advisory Board**  
**November 16, 2006**  
**Project: Solid Waste Contained Landfill**

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**Contact Persons:**

**U.S. Department of Energy:** Jeff Snook

**Paducah Remediation Services LLC:** Matt LaBarge/Paul Corpstein

**Commonwealth of Kentucky:** Todd Hendricks

**U.S. Environmental Protection Agency:** David Williams

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**Purpose:** Waste Disposition

**Description:** The operating landfill and support facilities are located on 60-acres of DOE property near Ogden Landing Road, operating under a permit from the Kentucky Division of Waste Management (KDWM). Landfill disposal operations began in 1997. DOE uses the landfill for disposal of solid waste generated from its operations at the Paducah site. Examples of wastes accepted include non-hazardous soil and debris from environmental cleanup and other DOE projects, protective clothing worn by workers, paper, packaging, and landfill office wastes. No waste classified as hazardous or radioactive is accepted.

**Key documents:**

- Environmental Assessment for the Construction, Operation and Closure of the Solid Waste Landfill at the Paducah Gaseous Diffusion Plant (DOE/EA-1046)
- Environmental Assessment on the Implementation of the Authorized Limits Process for Waste Acceptance at the C-746-U Landfill (DOE/EA-1414)
- Waste Acceptance Criteria for the Department of Energy Treatment, Storage, and Disposal Units at the Paducah Gaseous Diffusion Plant (BJC/PAD-111R)
- C-746-U Landfill Solid Waste Disposal Facility Permit Number 073-00045

**Issues:** DOE is responding to allegations that liquids have been disposed of at the landfill.

**Recent accomplishments/activities:**

- Completed covering areas of Landfill not currently used with a minimum of 18" of compacted long term cover to reduce infiltration and generation of leachate
- Disposed 25.9 tons of waste material
- Completing Permit Minor Modification to document Best Management Practices, add revised HELP Model results, and remove 8-day freeboard requirement

**Activity over next 60 days:**

- Complete training and Proficiency Testing of personnel for operation of the leachate treatment system and perform Management Assessment of Operations Capabilities
- Complete analysis of treated leachate (sampled in August), submit results to KDWM and KRC per Agreed Order, and begin operations of the leachate treatment unit
- Continue disposal of construction debris and other non-hazardous solid waste streams

**Project Status Update for DOE Paducah Citizens Advisory Board**  
**November 16, 2006**  
**Project: Burial Grounds Operable Unit**

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**Contact Persons:**

**U.S. Department of Energy:** Jeff Snook

**Paducah Remediation Services LLC:** Tracey Brindley/Kendall Holt

**Commonwealth of Kentucky:** Jon Maybriar

**U.S. Environmental Protection Agency:** David Williams

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**Purpose:** Environmental Cleanup/Waste Disposition

**Description:** A Remedial Investigation/Feasibility Study (RI/FS) Scoping Document and the RI/FS Work Plan for the investigation of the Burial Ground Operable Unit (BGOU) at PGDP have been developed. The documents utilize a compilation of sampling information collected on and around the PGDP over the course of the last ten years. The BGOU includes Solid Waste Management Units (SWMUs) 2, 3, 4, 5, 6, 7, 30, and 145.

**Key documents:**

- Scoping Document for the Burial Grounds Operable Unit Remedial Investigation/Feasibility Study at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky
- Work Plan for the Burial Grounds Operable Unit Remedial Investigation/Feasibility Study at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, DOE/OR/07-2179

**Issues:** None

**Recent accomplishments:**

- Conditional concurrence on the D2 R1 RI/FS Work Plan was received from Kentucky and EPA via letters dated September 29, 2006

**Activity over next 60 days:**

- Receive approval of the RI/FS Work Plan
- Mobilize and begin remedial investigation field activities

**Project Status Update for DOE Paducah Citizens Advisory Board**  
**November 16, 2006**  
**Project: Waste Disposition**

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**Contact Persons:**

**U.S. Department of Energy:** Reinhard Knerr  
**Paducah Remediation Services LLC:** Matt LaBarge/Greg Shaia  
**Commonwealth of Kentucky:** Jon Maybriar  
**U.S. Environmental Protection Agency:** David Williams

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**Purpose:** Waste Disposition

**Description:** DOE is responsible for disposal and/or recycling of legacy wastes (wastes generated at the PGDP prior to establishment of USEC on July 1, 1993); wastes generated from ongoing DOE projects; and a limited amount of waste generated by USEC. After characterization to assure selection of the appropriate disposition method, non-hazardous and non-radioactive wastes are disposed of in the DOE Solid Waste Contained Landfill. *(Please see landfill update sheet.)* Hazardous and radioactive wastes are treated if necessary and shipped off-site to approved DOE or commercial disposal facilities. Wastewater (collected from sumps in diked areas in DOE waste storage facilities at PGDP) is treated and discharged in accordance with the Kentucky Pollutant Discharge Elimination System permit.

**Key documents:**

- Paducah Waste Acceptance Criteria (BJC/PAD-11, Revision 4)
- Final Environmental Assessment for Proposed Disposition of Waste from the Paducah Site (DOE/EA-1339 and Addendum DOE/EA-1339-A) (FONSI)
- Agreed Order DWM-31434-042
- Site Treatment Plan (STP) DWM-30039-042

**Issues:**

- None

**Recent accomplishments/activities:**

- Disposed 982 cubic feet legacy waste in C-746-U Landfill

**Activity over next 60 days:**

- Overpack or repackage outside legacy waste for future shipment to Energy *Solutions*
- Dispose legacy waste stored in outside locations in C-746-U Landfill

**Project Status Update for DOE Paducah Citizens Advisory Board**  
**November 16, 2006**  
**Project: Depleted Uranium Hexafluoride (DUF<sub>6</sub>) Conversion Facility**

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**Contact Persons:**

**U.S. Department of Energy:** John Sheppard

**Uranium Disposition Services:** Guy Griswold

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**Purpose:** Design, build, and operate the DOE DUF<sub>6</sub> Conversion Facility.

**Description:** The Atomic Energy Act, as amended, gives DOE responsibility for the DUF<sub>6</sub> inventory, which is a by-product from enriching uranium for nuclear fuel. At Paducah, approximately 36,200 cylinders contain approximately 436,400 metric tons of DUF<sub>6</sub>. DOE selected Uranium Disposition Services LLC to design, build, and operate facilities in Paducah and Portsmouth to convert DUF<sub>6</sub> to a more stable form for disposal or recycling.

The project site occupies approximately 11 acres immediately adjacent to DOE's DUF<sub>6</sub> cylinder storage yards. The completed capital costs for the facility at Paducah are estimated to be ≈ \$91,000,000. The major facilities on the DUF<sub>6</sub> project include the Conversion Building, Administration Building, Warehouse and Maintenance Building, KOH Regeneration Building, and the HF Neutralization Building. The project work also includes a railroad connection, rail sidings, load out facilities, roads, storage areas for full and empty cylinders, and all utilities.

Groundbreaking occurred in July 2004 and construction has continued since that time. At the conclusion of construction, all systems will be tested and the plant will undergo an Operational Readiness Review. The facility construction is to be complete in 2007. Following Readiness Reviews, facility operations are scheduled to commence in 2008.

**Key Documents for the Conversion Project:**

- Final Environmental Impact Statement for the Construction and Operation of the DUF<sub>6</sub> Conversion Facility at the Paducah Site (DOE/EIS-0359)
- Record of Decision for Construction and Operation of the DUF<sub>6</sub> Conversion Facility
- Paducah Conversion Facility Preliminary Documented Safety Analysis, DUF<sub>6</sub>-C-G-PSA-001, Rev. 0

**Recent accomplishments/activities:**

- Conversion Building – 806 of 832 or 97% pre-cast structural components erected. All wall panels installed. An additional 19 solid wall panels are being fabricated for internal walls. Continued work to install enhanced panel connections.
- Warehouse Building – Building 100%. Punch list cleared.
- Administration Building – Continued to install conduit, fire sprinklers, pull cable, install floor tile and ceiling tile and paint walls
- Construction on Bayou Creek Railroad – Project 100% complete and punch list being cleared
- BOP Foundations – Over last 6 months placed in excess of 4,800 cubic yards for 18 Balance of Plant (BOP) building and structure foundations. Over 90% of BOP foundations complete. Hydrogen and Nitrogen pads remain and will be completed later.
- Power to facilities – All conduit cleaning complete. All conduit and supports installed and 12,000 linear feet of 15 KV cable received.
- Moved selected electrical components to permanent pad locations
- KOH – S-31 completing premobilization work, submittals and ordering materials
- Continued receiving equipment at site (material received on 90 packages)

- Received miscellaneous structural steel for project facilities (auxiliary steel, crane supports, gratings, ladders and handrails)

**Construction activity scheduled over next 60 days:**

- Finish Administration Building
- Install 19 interior wall panels and remaining roof panels on Conversion Building
- Caulk Conversion Building concrete panel joints and install enhanced connections
- Place concrete floors and roof slabs in Conversion Building
- Complete pulling 15 KV cable from switchyard to UDS switchgear and terminate at switchgear
- Install Conversion bay crane and connect to temporary power
- Mobilize S-33 exterior steel subcontractor
- Mobilize the HVAC subcontractor - S-42
- Mobilize Conversion Building Roof subcontractor - S-23
- Continue pre-mobilization of Piping/Mechanical Equipment package S-40
- Continue pre-mobilization of Electrical Distribution and Instrumentation S-43
- Turn Potable water on for DUF<sub>6</sub> Site
- Complete USEC second Fire Water connection to UDS system
- Revise Interface Control Document for connection to USEC utilities to add electric metering and fire protection
- Fire proof metal embedments and paint/seal Conversion Building interior walls and floors

**Procurement activity planned next 60 days:**

- Award Fire Protection – S-41
- Bid Architectural Finishes – S-32
- Award onsite rail subcontract – S-34
- Bid project painting inside the Conversion Building S-38 and general facility painting S-37
- Continue to Bid and Procure Major Equipment RFPs

**Project Notes:**

- Project schedule modified to reflect Conversion Building delay
- Schedule being developed to integrate electrical, HVAC and piping subcontractor work by area in Conversion Building

**Project Status Update for DOE Paducah Citizens Advisory Board**  
**November 16, 2006**  
**Project: Depleted Uranium Hexafluoride (DUF<sub>6</sub>) Project Surveillance & Maintenance**

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**Contact Persons:**

**DOE Site Office:** John Sheppard

**Uranium Disposition Services:** Barry Tilden

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**Purpose:** Maintain safe storage of DOE DUF<sub>6</sub> cylinder inventory pending disposition.

**Description:** The Atomic Energy Act, as amended, gives DOE responsibility for the DUF<sub>6</sub> inventory, which is a by-product from enriching uranium for nuclear fuel. At Paducah, approximately 36,540 cylinders contain approximately 440,775 metric tons of DUF<sub>6</sub>. There are also 182 cylinders of low-enriched UF<sub>6</sub>, about 703 cylinders of "normal" UF<sub>6</sub> (which has not gone through the enrichment process), and 276 empty cylinders. The DOE inventory at Paducah includes the material generated from 1952 until the establishment of USEC in July 1993, and material transferred from USEC to DOE since that time. Surveillance and maintenance involves safely storing DUF<sub>6</sub>. Most of the 60-acre DOE cylinder yard complex now consists of concrete yards, which provide for improved storage and inspection.

**Key Documents for surveillance/maintenance:**

- Handling and Inspection of DOE 48-Inch Diameter UF<sub>6</sub> Cylinders at Paducah (UDS-PA-2400)
- Agreed Order DWM-31434-030
- Final Environmental Impact Statement for the Construction and Operation of the DUF<sub>6</sub> Conversion Facility at the Paducah Site (DOE/EIS-0359)
- Record of Decision for Construction and Operation of the DUF<sub>6</sub> Conversion Facility
- Documented Safety Analysis for the DOE Cylinder Yards, BJC/PAD-459
- Technical Safety Requirements for the DOE Cylinder Yards, UDS-C-TSR-001

**Recent accomplishments/activities:**

- Completed DOE obligations under an agreement with the Bonneville Power Administration (BPA) to transfer 672 cylinders of DUF<sub>6</sub> to BPA to supply power reactor fuel; (Completed in September)
- Completed the transfer of 463 cylinders of off-spec "normal" UF<sub>6</sub> cylinders to USEC to fulfill an agreement between USEC and DOE for USEC to remove Tc-99 contamination from the cylinders and provide DOE with "clean" UF<sub>6</sub> feed material; (Completed in September)
- As of the end of October, UDS completed 5% of the annual cylinder inspections, 7% of the quadrennial cylinder inspections and 7% of the radiological surveys required for the fiscal year that will end September 30, 2007. All scheduled inspections and surveys were completed for October.
- Annual cylinder yard inventory was completed in September and no discrepancies were noted.

**Activity over next 60 days for surveillance/maintenance:**

- Continue moving cylinders from C-745-C cylinder storage yard in the northwest portion of the site to the DOE cylinder storage yards located near the conversion facility.

# Progress at Paducah

## Paducah Citizens Advisory Board



Reinhard Knerr  
Paducah Site Office Lead  
November 16, 2006



- CAB Retreat
- D&D
- DUF6
- Burial Grounds
- Northwest Corner Scrap Metal Project



# Decontamination and Decommissioning



- C-612-A Clamshell removed
- Storage facility damaged by September storm



# Inactive Facilities D&D



- Now doing preliminary site setup for C-405 Incinerator demolition
- Mobilization projected for mid-November
- Demolition projected to start in early December
- Completion scheduled for February-March 2007

Trailers have been moved in to support work at C-405; fencing to restrict access to the work zone will be installed the week of November 13.



# C-410/420 D&D



- Completed sampling and purging HF, hydrogen and fluorine piping in Sector II, Zones 42 and 43
- Continued removing equipment and debris

Workers remove pipes that carried HF inside C-410; the pipes previously were purged of residual HF



# DUF6 Conversion Project

- 97% of Conversion Building's pre-cast panels installed
- Warehouse Building finished



Above, framework for equipment extends to the top floor of the Conversion Building; at left, duct work installation in the Administration Building.



# Environmental Projects

## Burial Grounds Operable Unit

- Preliminary work for Remedial Investigation has begun; investigation field work will start by January 2007

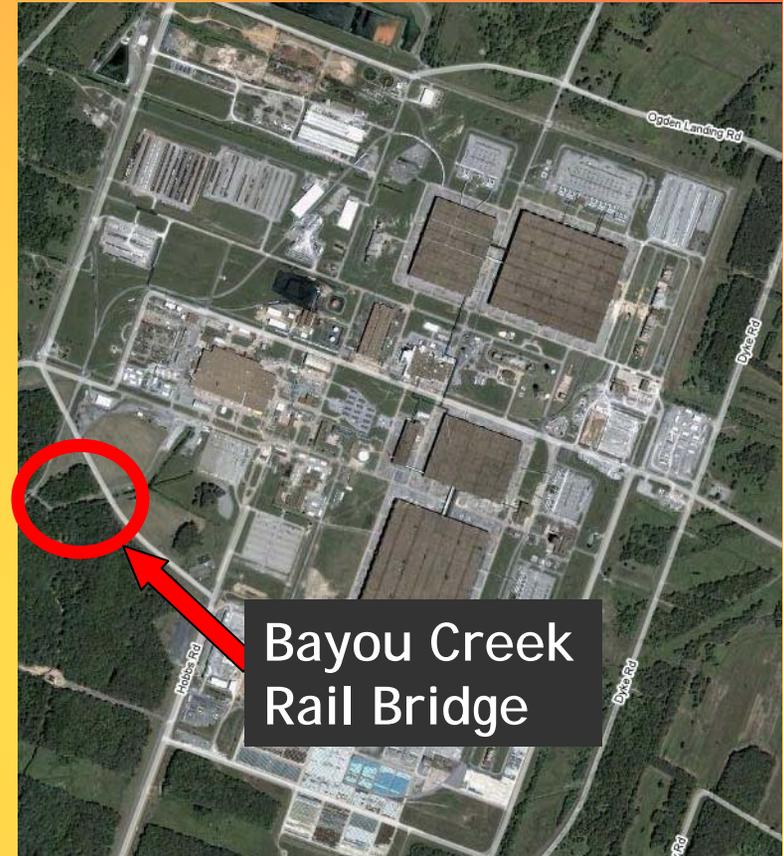
A worker performs a geophysical survey of SWMU 145 (C-746-P). This is one of the preliminary activities required before the Burial Grounds Remedial Investigation begins.



# Challenges



# Northwest Corner Scrap Metal Removal



- Final rail shipment delayed by repairs to rail bridge of Bayou Creek
  - USEC has awarded repair contract
  - Work scheduled to begin mid-November; completion 4-6 weeks

# Northwest Corner Scrap Metal Removal

- Demobilization activities continue
  - Grading of hills/mounds
  - Leveling of site
  - Seeding of grass
  - Removal of debris and brush
  - Decontamination of equipment
- Completion projected for December



Above, a “hill” made from fill dirt is leveled and used to raise low lying areas in another location in the scrapyards (left).

At far left, brush is removed and loaded for disposal.





DOE Portsmouth/Paducah Project Office



# C-746-U Landfill Groundwater Assessment



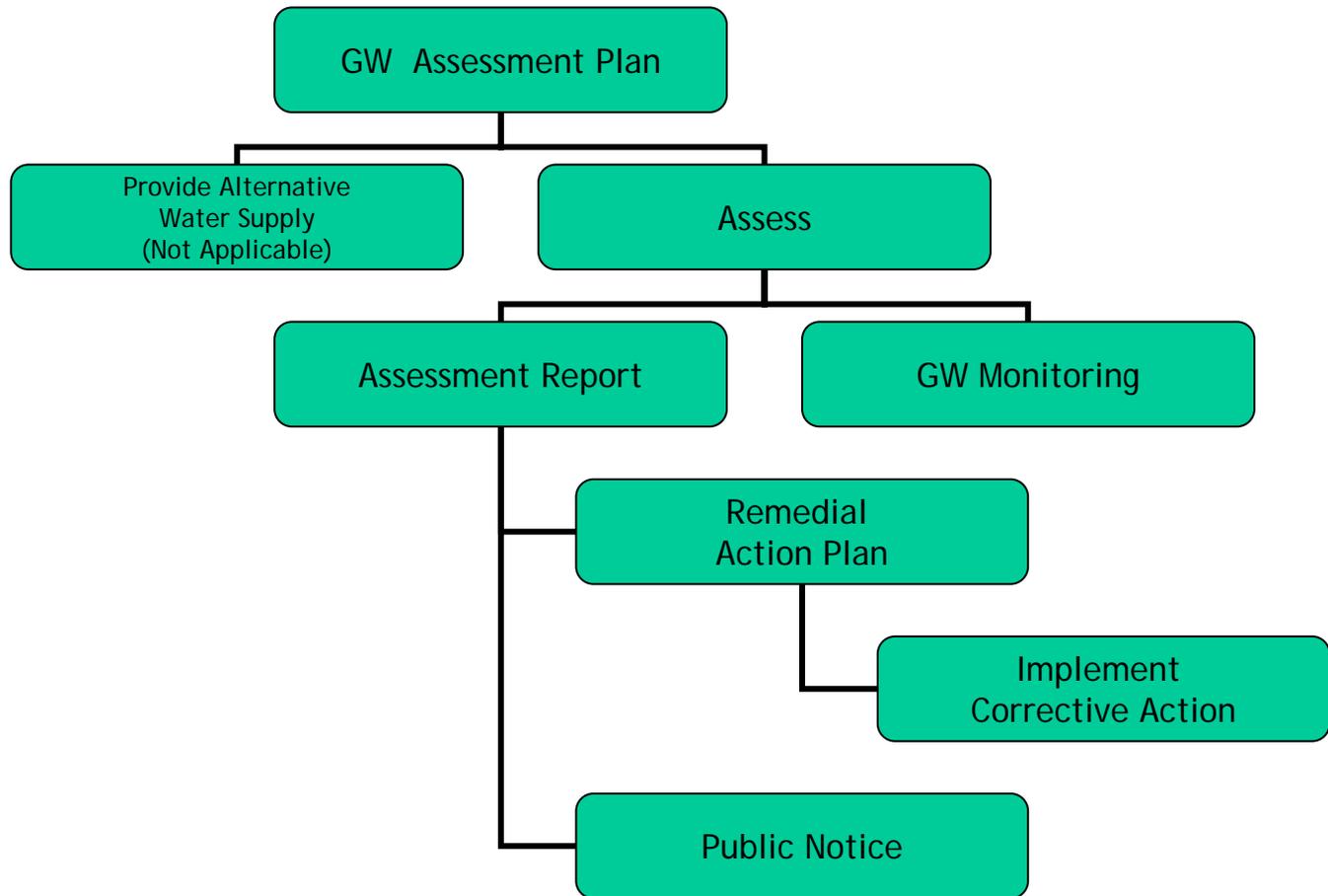
# C-746-U Landfill Groundwater Monitoring

- On August 30, 2006, DOE received a letter from KDWM in response to statistical exceedence reports submitted to KDWM
- The letter required DOE to submit a revised Groundwater Assessment Plan addressing previous exceedences for the C-746-U Landfill wells
- The letter required the assessment plan to be submitted within 30 days



# C-746-U Assessment & Corrective Action Flow Chart

## 401 KAR 48:300 Section 8





# C-746-U Permit Conditions

## Groundwater Monitoring Exceedence Evaluation Requirements

*T-12 page 125 of the C-746-U Solids Waste Permit*

- **Monitoring:** The operator of a solid waste site or facility shall be required to prepare and submit a groundwater assessment plan if laboratory analyses of one (1) or more monitoring wells at the site or facility shows the presence of one (1) or more parameters listed in 40 CFR 302.4, Appendix A as of October 1988, above the maximum containment level (MCL) in 401 KAR 31:031 or significant increase over naturally occurring background levels for parameters that have no MCL. For parameters that have no maximum contaminant levels a significant increase over background shall be determined using a statistical test as specified in Section 9 of 401 KAR 48:300. [401 KAR 48:300 Section 8(1)]



## C-746-U Landfill Groundwater Monitoring

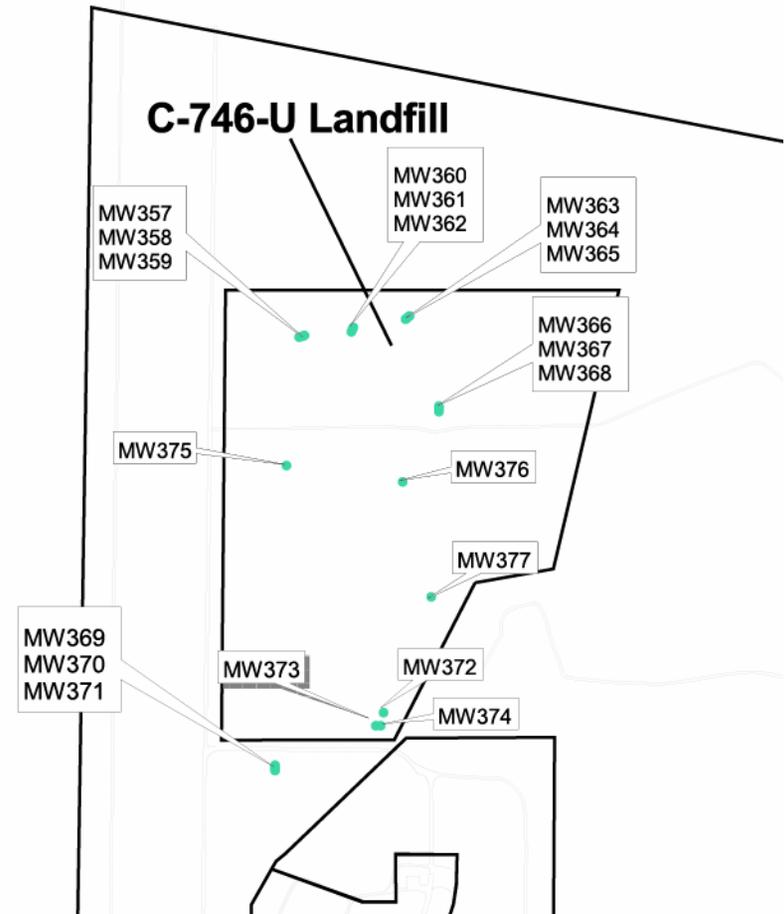
- Groundwater is monitored for compliance in the upper Regional Gravel Aquifer and the lower Regional Gravel Aquifer
- Monitoring wells are sampled quarterly
- Results are compared to Maximum Contaminant Levels (MCLs) and statistically analyzed for increases
- Exceedences are reported to the state within 48 hours of completion of verification and technical review



# C-746-U MCL and Statistical Exceedences

## Monitoring Wells (12) with Exceedences

- Gross Beta (MCL): MW372 (URGA), MW373 (LRGA)
- Carbon Disulfide (Statistical): MW362 (UCRS)
- Chemical Oxygen Demand (Statistical): MW358 (LRGA)
- Manganese (Statistical): MW366 (URGA)
- Sulfate (Statistical): MW359 (UCRS), MW362 (UCRS), MW365 (UCRS)
- Tc-99 (Statistical): MW361 (LRGA), MW372 (URGA), MW373 (LRGA)
- PCBs (Statistical): MW361 (LRGA), MW363 (URGA), MW365 (UCRS)
- Radium-228 (MCL): MW362 (UCRS), MW363 (URGA), MW364 (LRGA), MW369 (URGA)
- Total Organic Carbon (Statistical): MW358 (LRGA)
- TCE (MCL): MW370 (LRGA), MW372 (URGA), MW373 (LRGA)





# C-746-U Landfill Groundwater Monitoring

- DOE requested an extension of the Groundwater Assessment Plan development in order to
  - Resample the twelve wells for the extension list of parameters during the October 2006 routine sampling event (to avoid costs of duplicating some parameters that are required quarterly)
  - Obtain results from this sampling, validate the results, and incorporate them into the development of the Groundwater Assessment Plan
  - Coincide with the submittal of the routine groundwater data from the October 2006 sampling event (February 2007)