



PADUCAH GASEOUS DIFFUSION PLANT CITIZENS ADVISORY BOARD

111 Memorial Drive • Paducah, Kentucky 42001 • (270) 554-3004 • PaducahCAB@bellsouth.net • www.pgdpceb.org

Paducah Gaseous Diffusion Plant Citizens Advisory Board Meeting Minutes April 20, 2006

The Citizens Advisory Board (CAB) met at the CAB office in Paducah, Kentucky, April 20, 2006, at 6 p.m.

Board members present: John Anderson, Allen Burnett, Shirley Lanier, Bobby Lee, Linda Long, Janet Miller, John Russell, Jim Smart, and Rhonda Smith

Board member absent: Chad Kerley

Ex Officio members and related regulatory agency employees present: Brian Begley, Jon Maybriar and Leo Williamson, Kentucky Division of Waste Management; Tim Kreher, Kentucky Department of Fish and Wildlife Resources; and David Williams, Environmental Protection Agency

Deputy Designated Federal Official present: William Murphie

Portsmouth/Paducah Chief Operating Officer: Rachel Blumenfeld

DOE Federal Coordinator present: David Dollins

DOE-related employees present: Jeannie Brandstetter, Yvette Cantrell, Greg Cook, Kim Crenshaw, Bruce Gardner, Guy Griswald, Dick Halbrook, Steve Hampson, Mitch Hicks, Steve Kay, Christopher Lee, Jim McVay, James Miller, P.A. Piper, Bruce Phillips, Joe Tarantino, and Elizabeth Trawick

Four members of the public attended the meeting.

Agenda

Kay asked for proposed modifications to the agenda. There were none. **The Board adopted the agenda by consensus.**

Minutes

Kay asked for proposed modifications to the draft March minutes. There were none. **The Board approved the minutes as submitted by consensus.**

Deputy Designated Federal Official *Attachment 1*

Murphie provided the project updates to the Board. Questions and answers (paraphrased) appear below.

Question/Comment	Answer
Mr. Burnett – How many cars are in a unit train?	Mr. Murphie – 24 cars
Dr. Russell – The emphasis for the land acquisition was never that purchase of property would be an exchange for remediation. It was thought that it might be in addition to remediation.	Mr. Murphie – The plan is to consider all options. From a U.S. Department of Energy (DOE) perspective, there is a motivation to look at what the land purchase would do. All the perimeters under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) will be considered, including institutional controls. If the land is owned by DOE, that could change the cleanup action. The study will be taking into account whether remediation is in the best interest of the taxpayers. Mr. Williams – A land acquisition would be regarded as a land use control, which would be a part of a CERCLA remedy. CERCLA still requires that continued progress be shown in the remediation. The Environmental Protection Agency (EPA) is working with DOE to bring the groundwater contamination at the Paducah site under control.

<p>Ms. Long – This all started 18 years ago when a person asked the health department to check her well for contamination. The government knew there was pollution in the water and made no effort to check wells for neighbors. The pump and treat is a waste of money and time. The plant never should have been located in the middle of a populated area. The neighbors will be told their property is not worth anything and will be given an unfair amount and then later the real estate values will go up after the neighbors move. Industrial plants are moving out of the country. That is my home and I want to live there. I do not want any deals and I want my neighborhood left alone. I cannot see the government appropriating enough money to buy all of that land. I have a dim view of this study.</p>	<p>Mr. Murphie – The study would document your feelings and part of the research would be to put on the record your feelings about these things to be considered and dealt with. It could be very beneficial to you to move forward with this study.</p>
<p>Dr. Russell – Is DOE ready to move forward with the Kentucky Research Consortium for Energy and the Environment (KRCEE) doing the study? How much money is in the contract? I am surprised other entities are not allowed to apply for that grant.</p>	<p>Mr. Murphie – There is no funding defined, it is not an earmark. We are working with KRCEE to define a cost estimate to support this scope of work, which will be a few \$100,000. There is no requirement for feedback, it is just a courtesy. Congress said to get it done and we have to move forward.</p>
<p>Mr. Maybriar – The Division of Waste Management commented on the statement of work (SOW). Is there a deadline for all of the comments and will DOE be responding to the comments and issuing a new SOW?</p>	<p>Mr. Murphie – We were waiting to see what the reaction would be. If there are no real problems, we will tell KRCEE to get moving, but if there are problems, we could wait a reasonable amount of time.</p>
<p>Mr. Williams – Is a land acquisition study being done at any other DOE facilities?</p>	<p>Mr. Murphie – No, just the Paducah site.</p>
<p>Ms. Smith – There are no dates or deadlines on the timeline for comments. Does the Board need additional time to evaluate the SOW?</p>	<p>Mr. Murphie – The Board can review the SOW for an additional week. Responses are due to Mr. Dollins by April 28. Ms. Brandstetter – Please copy the Board on all comments to Mr. Dollins.</p>
<p>Ms. Smith – Is the area to be evaluated the property adjacent to the plant?</p>	<p>Mr. Murphie – The area above the plume will be evaluated.</p>

<p>Dr. Smart – There needed to be a milestone half way through the study from KRCEE to address the Citizens Advisory Board (CAB) on their how the study is going and their findings.</p>	<p>Mr. Hampson – Meetings with the CAB and the public have been proposed in the draft SOW and it can be accommodated.</p> <p>Mr. Murphie – A CAB briefing could be added.</p>
---	---

Federal Coordinator Comments

Dollins said the National Chairs Meeting would be held in Oak Ridge next week.

Ex-Officio Comments

Maybriar said Guffey discussed the permit modification that includes changing operations from Bechtel Jacobs Company (BJC) to Paducah Remediation Services (PRS), DOE Material Storage Area Closure Plans, Site Treatment Plans, and the draft permit prepared by EPA covering organic emissions in four tanks. He said changes to the permit would be received by DOE on Monday. He said a comment was received that there is a piece of property off of Palestine School Road that historically a private contractor had brought and stored feed cylinders that were going to the Paducah Gaseous Diffusion Plant (PGDP). After Williams and he did some research, the property was located and based on the information that was found, it was never owned or ran by DOE. It was a private entity that handled the cylinders and it was not enriched uranium, it was a feedstock for the facility. That information was turned over to the Radiation Control Branch (RCB) to investigate if there is risk to the citizens living in that area. Williams said the facility, which was called the Nuclear Transport and Storage, was a permitted facility. Maybriar said the facility did hold a historic Rad license through the RCB. Williams said under the original Atomic Energy Commission, private facilities were needed to store feed material for the plant. He said the UF₆ cylinders were kept in storage until the Paducah plant was ready for them. He said the facility sued the plant in 1988 because the plant allowed free storage of unriched product but was dismissed because a private party cannot sue the United States. According to the records, annual reports were filed with the state until 1998. The biggest concern is that it is an open access area to the public.

Maybriar said the state is investigating rubble piles, some associated with Waste Area Grouping (WAG) 17 and other rubble piles that have not been documented. He said over 40 additional rubble piles were not identified under the WAG 17 investigation. After the Rad surveys were complete, none of the piles in the Wildlife Management Area (WMA) were contaminated with radiation. One rubble pile in Outfall 1 was found to be contaminated and DOE was there in 15 minutes to do an investigation. He said that area was immediately secured with Rad postings and within one week, the material was brought back inside the plant.

Maybriar said that Long had asked at the previous meeting if her pond could be sampled and he said the state could sample the soil, water and her fish if she wishes. He said the mercury found in some ponds sampled in the past is not believed to be coming from the PGDP. He

said there is a statewide fish advisory for mercury consumption in the fish. Maybriar said they could talk off line to set up a time for sampling.

Russell said the newspaper reported the whistleblower suit involving the manager of the landfill alleges that material containing radiation was put into the landfill by other standards than negotiated with DOE. He said that radioactivity is appearing in the leachate and that radioactivity is not affected by the leachate treatment process. The article said the Division of Waste Management is looking into this issue. Maybriar said he would talk with the solid waste branch; they deal with the leachate treatment system. Burnett said he thought those accusations are from long ago. Smith said she had just seen it in the newspaper the previous day. Russell said he believed the issue of the level of radioactive material that is allowed to be placed in the landfill has been settled. Whether or not consideration was given to the levels of radioactivity that would appear in the leachate and then be affected by the treatment is what is new. Maybriar said he would get a response to the question. Murphie said the landfill is not a low-level waste or a hazardous waste disposal facility. DOE regulates the levels of what is allowed to go into the landfill and it is not a zero standard. Analysis has been done to determine what is an acceptable safe level of radioactivity to go into the landfill to be a non-radioactive facility. He said it is almost at non-detectable levels and is well within drinking water standards.

Russell said the news also had a story about the security fence at the PGDP being cut. A statement by someone said there wasn't any enriched uranium of any value to be stolen inside the plant so they must have been trying to steal something else. Why are they spending \$15 million dollars a year to make secure something that isn't of value? Murphie said this issue was taken very serious; the Federal Bureau of Investigation and homeland security was contacted. He said an immediate inventory was taken of all items and nothing appeared to be missing. He said it is still being investigated.

Williams said EPA Headquarters has been mandated to get human health exposure and groundwater contamination migration under control in Paducah. He said that the congressional hearing he spoke of last month was not specific to Paducah. He said the hearing was for confirmation of Susan Parker Bodine, EPA Assistant Administrator. In her confirmation hearing, the Senator held up her nomination until details could be gathered on the 103 sites on the Superfund National Priorities List for getting the environmental indicators under control. Her confirmation went through in December and in February, Ms. Bodine wrote a letter to James Rispoli, DOE Assistant Secretary, indicating the sites that environmental indicators were not under control and emphasized the congressional mandate to track the indicators and to accelerate the projects that would bring the indicators under control.

Kreher said when members of the public access the WMA, particularly DOE-owned property, they are very stringent to identify those members and make clear on where they may go to minimize security issues. He said a hole was cut through the fence and it is being brushed off. He asked if it is known for sure whether the person that cut the fence is not still inside. He said there is a big show of security with the WMA users that are being honest and security did not prevent someone not suppose to be there on getting through the fence.

Kreher said he believes some of the security priorities are being focused in the wrong direction. Murphie said the situation is not being taken lightly. He said the United States Enrichment Corporation (USEC) administers the guard force and sets the security policies under their license. If there were an issue, he would be happy to go with Kreher to talk to USEC about the problem.

Public Comments

Johnson, former DOE contractor employee, said he discovered when working on the waste management projects that 5000 cylinders had been generated and no database was set up to track the contents. He said the waste water was poorly managed. He said there were very limited controls on what was dumped into the landfill and DOE cannot tell the levels of radioactive nuclides that were in the landfill. Johnson said when the waste in the dumpsters was inspected, Resource Conservation and Recovery Act (RCRA) waste, PCB waste, asbestos, and highly radioactive materials were found. He said he could answer several of the questions that have been asked by the Board members. He said he had spoken with Tony Hatton, Division of Waste Management, about the problems at the PGDP.

Jurka said regarding the land acquisition study, the Paducah Sun article said that DOE will be looking at 9,500 acres. She said the reservation is only 3,500 acres and the Land Acquisition Study SOW states the study would be the area above the plume. Jurka said there is no way that the 9,500 acres is just the area above the plume. She said it has been asked several times how many residential wells are actually contaminated. In the Federal Facilities Agreement, it states 12 wells are contaminated. She said Laura Schachter, DOE Lexington Public Affairs, had contacted her and said the SOW would be changed to include everyone on the Water Policy. Jurka said two of the driving factors of the End State Vision are natural attenuation and institutional controls. She said those factors would be used to eliminate the cost problem for cleaning up the groundwater plume but it does not help if the plumes take a different route caused by an earthquake or plant shutdown. She said the Active Citizens for Truth would not participate in the comments for the SOW; she is speaking on her own behalf. Jurka said this study would also be interfering with a lawsuit that has been ongoing since 1957.

Task Forces/Presentations *Attachment 2*

Halbrook provided a presentation on the Ecological Impact Summary Project by the KRCEE. Questions and answers (paraphrased) appear below.

Question/Comment	Answer
<p>Mr. Maybriar – Have you checked to see if there are other studies that have been done in this area to determine whether there are good background studies? For example, samples of fish with mercury concentrations have been found in ponds, but it cannot be tied to the PGDP.</p>	<p>Dr. Halbrook – The first thing that is being done with this data is looking at the concentration for when you should become concerned. This data is to establish which wildlife may need to be looked at closer.</p>

<p>Mr. Williams – Are you looking at any missing species that may be sensitive to the contaminants and have not been present since the plant started up?</p>	<p>Dr. Halbrook – I have not looked to see what species would be expected to be in this area. One species of interest would be mink.</p>
<p>Ms. Lee – When all of the 800 documents have been entered into the Management System, who would have access to that information?</p>	<p>Dr. Halbrook – The database should be complete in October. It should be accessible to the public. Dr. Hampson – It is “to be determined” where the information can be accessed.</p>
<p>Mr. Dollins – Please explain the concentration levels based on the data gathered.</p>	<p>Dr. Hampson – The concentrations found at Paducah for cadmium, lead, and mercury are significantly less than expected. These concentrations are preliminary and conclusions cannot be drawn from them.</p>
<p>Mr. Maybriar – Historically, the Division of Waste Management has funded studies in the last five or six years with Dr. Halbrook. The state is working with him to pull together data from the reports that we have and a White Paper will be submitted to him. A proposal has been forwarded to DOE to fund a study through the AIP to look at snapping turtles in the area with Dr. Halbrook. The study would last three years.</p>	<p>Ms. Blumenfeld – I had only heard of that proposal last week.</p>

Waste Disposition/Water Quality Task Force

Lee said the Waste Disposition/Water Quality task force received updates on several ongoing projects and the task force will receive a one page summary sheet on the Southwest Plume at the next meeting.

Lee said the land acquisition study is not a decision document but neighbors might be interested in the results. She said she can't see the harm in doing the study.

Lee asked if EPA was working with Kentucky Department of Fish and Wildlife Resources (KDFWR) on the signage in the WMA. Williams said human exposure is not under control due to child recreators at the Little Bayou Creek (LBC). DOE, the state, and EPA are working to resolve the issue whether that would be additional signage or additional institutional controls. Kreher said all public access where the road crosses is clearly signed. He said KDFWR is waiting to see what the EPA suggests. Maybriar said DOE and the state each tests twice a year and they are not seeing severe contamination widespread through the whole stream. Some 10₋₆ risk exposure is found which is almost no health effects and is acceptable with the state of Kentucky. 10₋₄ risk exposure is also found which indicates slightly higher elevated levels of pcbs and radionuclides. Blumenfeld said the risk is

hypothetical. Williams said the EPA has seen pictures of kids swimming and activity in the LBC recently so it is no longer hypothetical.

Public Comments

Jurka said the human health exposure is not included in the food webs that Dr. Halbrook showed in his presentation. She said there are many things on the web that the residents in that area consume such as the deer, rabbits and fish. She said she would like to see human health data included in the studies and there are many ways to test to see if human health is being impacted. Jurka said hair analysis from people in that area show metals in the 95 percentile in toxicity. She said there are many people in that area that would participate in the testing if funding was made available.

Administrative Issues

Budget Review

Smith asked if EHI would receive a contract amendment from DOE to increase the budget to \$345,000. Murphie said DOE has \$345,000 set aside for CAB activities but have only committed \$292,000 to EHI at this time. He said money had been set aside at the time the 8a contract was being set up, because DOE did not know if there would be costs beyond EHI for the CAB and there was an overlap with Bechtel Jacobs Company, LLC (BJC) on work done and not charged. Murphie asked Dollins to check with BJC to make sure there are no outstanding charges. He said the \$345,000 is available for CAB activities whether it is in the contract or not. He said before the end of the year this money will be committed to EHI's contract. Smith asked if the money could carryover to next year if not all of the money is used. Murphie said DOE is a fortunate organization to have carryover money and any money left over will be added to the money received in 2007. He said if the CAB does not use the money, it could be used for cleanup money. Burnett asked that the spreadsheet indicate how much of the budget is EHI's and how much is Board expenditures. Dollins said Burnett's request should be addressed in the Executive Committee meeting.

Review of Workplan and April Agenda

Dollins asked to postpone the Site Management Plan presentation until June to allow time for DOE to respond to comments made by the state and EPA. Smith suggested that the Land Acquisition Study SOW be added to the May agenda to discuss comments that are received.

Action Items

Dollins said DOE has provided the CAB with the Land Acquisition SOW so the action for providing information to the CAB can be closed. Brandstetter asked if the Oak Ridge Environmental Information System (OREIS) data should be added to the Community Outreach agenda or does the information provided in the Annual Site Environmental Report (ASER) meet the need for the fish and wildlife sampling. Miller said there are pages and pages of data on OREIS and it is not in explanatory form. Lee asked if the ASER data was available electronically. Dollins said to contact Cook at BJC for an electronic copy.

Subcommittee Report

Executive Committee

Smith said the Annual Report is lacking a letter from Murphie for the “Message from the Deputy Designated Federal Official.” Brandstetter said Laura Schachter, DOE, is reportedly working on the letter. Smith asked for DOE to provide a contact for the Board since Paducah Remediation Services (PRS) will be taking over the remediation contract. Dollins said Yvette Cantrell would be his temporary contact for PRS if anything was needed in Public Relations.

Chairs Meeting Preparation

Burnett asked Murphie how the transition from BJC to PRS was going. Murphie said it is going better than the Portsmouth transition. He said the lessons learned from Portsmouth have been used at Paducah. Burnett said the newspaper reported that PRS underbid the contract by \$100 million. Murphie said the original contract was for five years. When the protests came in, DOE had to start all over and the period of performance was fixed. PRS’s contract is for three and a half years. It is for the same level of effort but for a smaller period of time and is unfair to say that PRS underbided the contract by \$100 million.

Smith asked if the draft topics are sufficient for the Chairs Meeting. She said if anyone has any comments on any of the topics to be addressed, please send them to staff on the following day.

Murphie said the submittal of the Land Acquisition Draft SOW to the CAB was intended to build a relationship with the community. He said DOE is trying to accommodate some of the complaints and criticisms of the past. He said it is very difficult for him when people directly or indirectly impugn their integrity believing they are not telling the truth but they are doing their best. Murphie said he is speaking for himself, Blumenfeld and his entire team. Murphie said as federal employees, they do not get anything out of this business except their commitment to the taxpayer and their commitment to do the right thing. He said they do not get any financial rewards by playing games with anybody. He said there may be some misunderstandings, but if anyone truly believes they are being misled, please come to him and talk about it.

Smith said that Melissa Nielson has approved the CAB’s membership package. However, one of the new members has withdrawn his membership due to other obligations. She said there is one unexpired term that Murphie can approve through November 2006.

Smith said a new Chair for the Community Outreach task force will be discussed at the next Executive Committee meeting.

The meeting adjourned at 9:10 p.m.

**Project Status Update for DOE Paducah Citizens Advisory Board
April 13, 2006**

Project: Solid Waste Contained Landfill

Contact Persons:

Bechtel Jacobs Company LLC: Jim Ehlers/Steve Davis

Commonwealth of Kentucky: Todd Hendricks

U.S. Environmental Protection Agency: David Williams

Citizens Advisory Board: John Russell

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-111R4)
- C-746-U Landfill Solid Waste Disposal Facility Permit Number 073-00045

Issues:

- The Kentucky Division of Waste Management (KDWM) issued a letter of withdrawal on July 6, 2005 for the S, T and U permit modification due to an administrative error. The public comment period had not expired and the permit was issued prematurely. Currently the landfill facility is operating on the existing permit, which expires in 2006. Permit was reissued for public comment on July 11, 2005. Permission to construct Leachate Treatment Facility was withdrawn pending reissuance of the Permit. The comment period closed August 10, 2005. KDWM is addressing comments received.

Recent accomplishments/activities:

- A&K Construction began mobilization on March 20, 2006 to start construction of the C-746-U Leachate Treatment Facility
- Ground broken on March 23
- Underground electrical construction completed on April 6
- Foundation concrete pour completed April 12
- Building construction to begin week of April 17

Activity over next 60 days:

- Complete the construction on the C-746-U Leachate Treatment Facility
- Continue disposal of construction debris and other non-hazardous solid waste streams
- Support the Kentucky Research Consortium for Energy and Environment Holocene Displacement Study
- Initiate construction of leachate treatment facility within two weeks of reissuance of Permit

Project Status Update for DOE Paducah Citizens Advisory Board

April 13, 2006

Project: Waste Disposition

Contact Persons:

Bechtel Jacobs Company LLC: Greg Shaia

Commonwealth of Kentucky: Jon Maybriar

U.S. Environmental Protection Agency: David Williams

Citizens Advisory Board: John Russell

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-30039-42

Issues:

- None

Recent accomplishments/activities:

- Continued repackaging and disposition activities to Energy Solutions and C-746-U Landfill for waste stored in outside facilities
- Shipped tanker of liquid waste to TSCA Incinerator
- Shipped mixed low-level waste to Perma-Fix facilities for treatment
- Shipped clean scrap wire for recovery

Activity over next 60 days:

- Complete shipment of UF₄ from Duratek to EnergySolutions
- Complete disposition of 5,055 containers of Agreed Order "no-longer contains" waste at EnergySolutions or the C-746-U Landfill, as appropriate
- Complete disposition of approximately 3,000 containers of LLW stored in outside facilities
- Ship tanker of liquid waste and several trucks of solid incinerable waste to TSCA Incinerator
- Repackage mixed low-level waste for shipment to treatment/disposal at Energy Solutions and Perma-Fix facilities

**Project Status Update for DOE Paducah Citizens Advisory Board
April 13, 2006**

Project: Decontamination & Decommissioning (D&D)

Contact Persons:

Bechtel Jacobs Company LLC: Brad Montgomery

Commonwealth of Kentucky: Jon Maybriar

U.S. Environmental Protection Agency: David Williams

Citizens Advisory Board: John Russell

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 C402 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 is under development.

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

Issues:

A UF6 release occurred inside C-410 Building on March 1, 2006, when a mechanic snagged an instrument line while routing an air line through the building, resulting in the line breaking. The line contained residual material that was not completely removed when the facility was shut down. Monitoring outside the building indicated no detectable HF outside the building. Evaluation of work controls or other methods to insure additional releases can be prevented are ongoing.

Recent accomplishments/activities:

- Initiated D&D activities in the C-402 Limehouse within 15 days of RAWP approval, as required by FFA
- Completed electrical isolation, air gapping of electrical equipment, and demolition of electrical equipment in C-402
- Completed PCB paint removal from 13 breached fluorine cells; ten have been shipped to ToxCo for reuse
- Continued crane rehabilitation in C-410 Complex. One of five cranes is ready for load testing; two more are nearing readiness to load test.
- Busswork removal from Sector 2 is approximately 40% complete
- Continued packaging loose debris and waste from Sector 1; shipped two intermodal containers, two SeaLand containers, and six ST-90 containers of debris for disposal
- Continued application of fixative on stacks and painted metal outside building
- USEC Completed rerouting of power from C-402 Facility

Activity over next 60 days:

- Review approach with management for resuming activities in the C-410 Complex
- Ship last three breached fluorine cells to ToxCo for reuse
- Continue packaging of loose materials in C-410 Complex
- Ship C-411 (Sector 1) demolition debris to EnergySolutions of Utah for disposal
- Continue demolition activities in C-402 Lime House
- Continue fixative application to exterior stacks
- Package demolition debris for shipment to EnergySolutions of Utah
- Submit RAWP for C-405 Incinerator and C-746-A West End Smelter to regulatory agencies for review and approval
- Perform sampling for waste characterization of C-405 Incinerator and C-746-A West End Smelter

Project Status Update for DOE Paducah Citizens Advisory Board
April 13, 2006
Project: DOE Material Storage Areas (DMSAs)

Contact Persons:

Bechtel Jacobs Company LLC: Rick Keeling
Commonwealth of Kentucky: Jon Maybriar/Mike Guffey
U.S. Environmental Protection Agency: David Williams
Citizens Advisory Board: John Russell

Purpose: Environmental Cleanup/Waste Disposition

Description: The 160 DMSAs are 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. Effort is under way to resolve different requirements and allowances between Kentucky and EPA regulations for solid waste disposal of painted items.

Recent accomplishments/activities:

- 4,448 ft³ of material characterized (including sampling) during March
- 6,689 ft³ of material packaged for disposal during March
- 7,059 ft³ of material disposed during March
- An additional 8,707 ft³ of metal pallets removed from DMSAs for re-use by other projects

Activity over next 60 days:

- Complete disposition of the remaining DMSA OS-15 material
- Complete the sizing, packaging, and disposition of OS-4 and OS-14 rail cars
- Continue characterization of "Priority B" DMSAs under the Agreed Order
- Initiate final closure certification for approximately 20 DMSA RCRA Closures

Project Status Update for DOE Paducah Citizens Advisory Board
April 13, 2006
Project: Groundwater Operable Unit

Contact Persons:

Bechtel Jacobs Company LLC: Bryan Clayton/Lance Fleming

Commonwealth of Kentucky: Jon Maybriar/Todd Mullins

U.S. Environmental Protection Agency: David Williams

Citizens Advisory Board: Jim Smart

Deleted: <sp>

Purpose: Environmental Cleanup

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 (⁹⁹Tc). Remedial actions will be designed and implemented after completion and signing of Records of Decision (RODs).

Key documents:

- Feasibility Study of the Groundwater Operable Unit at PGDP (DOE/OR/07-1857)
- 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 Workplan (DOE/OR/07-2094)
- S&T Landfill Site Investigation Workplan (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 (DOE/OR/07-2214&D2)
- Remedial Design Support Investigation Characterization Plan (DOE/OR/07-2211&D2)
- Site Investigation Report for the Southwest Groundwater Plume (DOE/OR/07-2180&D1)
- 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 the State of Kentucky and EPA are continuing concerning the use of degradation factors utilized in groundwater modeling to support risk assessment development. The D2 SW Site Investigation Report is being updated utilizing revised degradation values in the groundwater modeling.

Recent accomplishments:

- Evaluated proposals from contractors responding to the Request for Proposal for a remediation contractor to design, build and operate the Electrical Resistance Heating at the C-400 Building and provided recommendation for award to the DOE Oak Ridge Procurement. DOE provided direction on April 2, 2006, that the interim action will be performed as part of the new environmental restoration contract.
- Developed Errata Sheet for the D2 Remedial Design Work Plan and submitted to Kentucky and USEPA for acceptance on 3/6/05
- D2 Site Investigation Report for the C-746-S&T Landfills was approved by the regulators. All additional environmental restoration activities will be evaluated and implemented as part of the Burial Grounds Operable Unit.
- Issued the D1 Land Use Control Implementation Plan for the C-400 Interim Remedial Action. Extension received on April 2 from the USEPA requesting an additional 30 days to review the LUCIP.
- Continued Supporting a Department of Energy Headquarters Remedy Review Team in evaluating the status of remediation at PGDP for Burial Grounds and Groundwater

Activity over next 60 days:

- Initiate design and design investigation activities for the implementation of the C-400 Interim Remedial Action
- Receive approval of the Errata Sheet for the D2 Remedial Design Work Plan for the Interim Remedial Action of C-400
- Receive approval of the Land Use Control Implementation Plan for the C-400 Interim Remedial Action
- Issue D2 Site Investigation for the Southwest Groundwater Plume

FFA Milestones:

- Submit D2 Southwest Plume Site Investigation Report by 5/17/06 and D1 Proposed Remedial Action Plan by 7/16/06 (Milestone being modified pending resolution of the degradation factor use in groundwater models)

Project Status Update for DOE Paducah Citizens Advisory Board
April 13, 2006
Project: Surface Water Operable Unit (On-Site)

Contact Persons:

Bechtel Jacobs Company LLC: Dave Guyan/Lance Fleming
Commonwealth of Kentucky: Jon Maybriar/Brian Baker
U.S. Environmental Protection Agency: David Williams
Citizens Advisory Board: Jim Smart

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.

Issues: None

Recent accomplishments:

- Prepared Draft Site Investigation/Risk Assessment report for BJC review

Activity over next 60 days:

- Prepare Site Investigation/Baseline Risk Assessment Report for DOE review

FFA Milestones:

- Issue Site Investigation/Risk Assessment Report by August 16, 2006
- Issue Removal Notification by October 12, 2006

Project Status Update for DOE Paducah Citizens Advisory Board
April 13, 2006
Project: Scrap Metal Removal Project

Contact Persons:

Bechtel Jacobs Company LLC: Frank Overby/Chris Marshall/Craig Jones
Commonwealth of Kentucky: Jon Maybriar
U.S. Environmental Protection Agency: David Williams
Citizens Advisory Board: Jim Smart/John Russell

Purpose: Environmental Cleanup/Waste Disposition

Description: About 36,000 tons of scrap metal exists at the PGDP, excluding nickel ingots. This project involves the removal of 26,700 tons of general scrap metal, 2,000 tons of aluminum ingots, and approximately 7,000 tons of classified scrap. The project does not include the recycling or disposal of 9,700 tons of nickel. Note the classified scrap total has been revised downward based on field experience.

Key documents:

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

Issues: None

Recent accomplishments:

- 251 tons of scrap metal were shipped by truck in January 2006 from C-746-D yard to NTS. Since recertification of the waste shipping program by NTS in July 2005, BJC has shipped 2,979 tons of scrap to NTS
- In April 2006, 1,305 tons of scrap metal were shipped via rail to EnergySolutions, LLC
- Since January 1, 2006, 3,358 tons of scrap metal have been shipped via rail to EnergySolutions, LLC
- Approval has been granted to begin utilizing High Sided Gondolas for rail shipments to EnergySolutions, LLC

Activity over next 60 days:

- Continue disposition operations by inspecting, sorting, size-reducing and packaging scrap metal
- Continue shipment of scrap metal to NTS and EnergySolutions

**Project Status Update for DOE Paducah Citizens Advisory Board
April 13, 2006**

Project: Burial Grounds Operable Unit

Contact Persons:

Bechtel Jacobs Company LLC: John Young/Lance Fleming
Commonwealth of Kentucky: Jon Maybriar
U.S. Environmental Protection Agency: David Williams
Citizens Advisory Board: John Russell

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:

- BGOU D2 RI/FS Work Plan was completed and distributed to the Commonwealth of Kentucky and the EPA on December 19, 2005
- The regulators have requested a second 30 day extension on the review period

Activity over next 60 days:

- Receive regulator approval of the RI/FS Work Plan by April 21, 2006

**Project Status Update for DOE Paducah Citizens Advisory Board
April 11, 2006**

Project: Depleted Uranium Hexafluoride (DUF₆) Project Surveillance & Maintenance

Contact Persons:

DOE Site Office: John Sheppard
Uranium Disposition Services: Dick Veazey
Commonwealth of Kentucky:
U.S. Environmental Protection Agency:
Citizens Advisory Board:

Purpose: Maintain safe storage of DOE DUF₆ cylinder inventory pending disposition.

Description: The Atomic Energy Act, as amended, gives DOE responsibility for the DUF₆ 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 DUF₆. There are also 182 cylinders of low-enriched UF₆, about 1,500 cylinders of "normal" UF₆ (which has not gone through the enrichment process), and 275 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 DUF₆. Most of the 60-acre DOE cylinder yard complex now consists of concrete yards, which provide for improved storage and inspection. In recent years, DOE cleaned and painted 3,368 cylinders which had surface corrosion. DOE continually monitors and inspects its cylinder inventory to assure safe storage.

Key Documents for surveillance/maintenance:

- Handling and Inspection of DOE 48-Inch Diameter UF₆ Cylinders at Paducah (PA-2400)
- Agreed Order DWM-31434-030
- Final Environmental Impact Statement for the Construction and Operation of the DUF₆ Conversion Facility at the Paducah Site (DOE/EIS-0359)
- Record of Decision for Construction and Operation of the DUF₆ Conversion Facility
- Documented Safety Analysis for the DOE Cylinder Yards, BJC/PAD-459
- Technical Safety Requirements for the DOE Cylinder Yards, BJC/PAD-461

Issues: OIG Review of 30A Cylinders

Recent accomplishments/activities:

- An agreement with the Bonneville Power Administration (BPA) has been approved to transfer 672 cylinders of DUF₆ to BPA to supply power reactor fuel; a total of 460 cylinders have been transferred through March 2006
- Cylinder yards on the south side of the plant have been reconfigured to a Property Protection Area (PPA). Work in the PPA does not require security clearance; UDS controls access according to a DOE approved security plan
- An agreement with USEC has been approved to "clean up" 743 cylinders of off-spec "normal" UF₆; a total of 401 cylinders have been transferred through March 2006
- Extensive review of 30A cylinder records in response to the OIG Management Alert and a sampling plan was developed. Sampling was completed on February 6, 2006. No phosgene was detected.
- Supported DOE in preparation for January 19 Congressional field hearing

Activity over next 60 days for surveillance/maintenance:

- Continue transferring cylinders to USEC as per the two previously mentioned agreements
- Issue a Characterization Report on the resolution of the phosgene issue in 30A cylinders.

**Project Status Update for DOE Paducah Citizens Advisory Board
February 9, 2006**

Project: Depleted Uranium Hexafluoride (DUF₆) Conversion Facility

Contact Persons:

DOE Site Office: John Sheppard
Uranium Disposition Services: Guy Griswold
Commonwealth of Kentucky:
U.S. Environmental Protection Agency:
Citizens Advisory Board:

Purpose: Design, build, and operate the DOE DUF₆ Conversion Facility.

Description: The Atomic Energy Act, as amended, gives DOE responsibility for the DUF₆ 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 DUF₆. DOE selected Uranium Disposition Services LLC to design, build, and operate facilities in Paducah and Portsmouth to convert DUF₆ to a more stable form for disposal or recycling.

The project site occupies approximately 11 acres immediately adjacent to DOE's DUF₆ cylinder storage yards. The completed capital costs for the facility at Paducah are estimated to be ≈ \$91,000,000. The major facilities on the DUF₆ 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 is expected to commence conversion operations in 2007.

Key Documents for the Conversion Project:

- Final Environmental Impact Statement for the Construction and Operation of the DUF₆ Conversion Facility at the Paducah Site (DOE/EIS-0359)
- Record of Decision for Construction and Operation of the DUF₆ Conversion Facility
- Paducah Conversion Facility Preliminary Documented Safety Analysis, DUF6-C-G-PSA-001, Rev. F

Issues: None

Recent accomplishments/activities:

- Conversion Building – The foundation has been completed
- Warehouse Building – Placement of siding and roofing has been completed and work continues on the interior of the facility
- Administration Building – The foundation has been completed
- Construction prep for offsite rail spur continued
- Place gravel around Conversion Building – 95% complete

Construction activity scheduled over next 60 days:

- Begin erection of the Administration Building structural steel
- Begin construction of offsite rail spur
- Begin construction of balance of plant foundations S-39
- Begin erection of Conversion Building panels and columns by March 15, 2006
- Continue construction of Bayou Creek railroad bridge
- USEC to begin connection to PGDP utilities

- Begin construction of Power Feed to Facility

Procurement activity planned next 60 days:

- Award HVAC package - S-42
- Award Piping/Mechanical Equipment package - S-40
- Award Electrical Distribution and Instrumentation - S-43
- Award process pre-engineered buildings - S-31
- Bid Conversion Building Roof – S-23
- Bid Structural Steel Installation – S-33
- Continue Bid Major Equipment RFPs

ECOLOGICAL IMPACT SUMMARY PROJECT

**Richard S. Halbrook
Cooperative Wildlife Research Laboratory
Southern Illinois University**

**Howard Whiteman
Department of Biological Sciences
Murray State University**

Objective

- **This project will collect, evaluate, and summarize ecological assessments and management activities**
- **Provide an ecological strategy to guide future ecological activities**
- **Produce a “living” document that will serve as the basic reference for ecological assessments and management-related activities**

Phase I

Collect and chronologically organize existing ecological data

Identify contaminants of concern

Develop potential food web contaminant transfer models for terrestrial and aquatic environments

Phase II

Perform a detailed evaluation and summation of existing ecological assessments and management-related activities

Merge existing data from historical studies with potential food web conceptual models to identify existing data gaps

Phase III

Develop a strategy that provides an extensive summary of the chronology and results of historical ecological assessments

Provide a framework for future ecological study that addresses identified data gaps and information needed for future management decisions.

Objective 1: Collect and Chronological Organization of Data

- Existing data, estimated to be greater than 800 individual documents, have been located and are being entered into **EndNotes** Bibliographic Management System.
- currently several hundred documents have been entered into the database. This is and will continue to be an ongoing process.

Objective 2: Identification of Contaminants of Ecological Concern

- **A summary of metal, polychlorinated biphenyl (PCB), and radionuclide data reported in various reports and documents relating to analysis of biological samples has been compiled.**

Polychlorinated biphenyls (PCBs) previously analyzed in biological samples collected on or near the Paducah Gaseous Diffusion Plant, Paducah, KY.

PCB (Aroclor)	Mammals Various ¹ 1992 (6) ²	Deer 1993 (19)	Fish ³ 1998 (67)	Hawk ⁴ 1998 (69)	Rabbit 1999 (5)	Raccoon 1999 (22)	Otter 2000 (74)	Deer 2001 (39)	Deer 2002 (37)	Scrap Yard Mammals ⁵ 2002 (25)
1016	†				†			†	†	†
1221		†			†	†		†	†	†
1232	†	†			†			†	†	†
1242		†						†		
1248		†			†	†		†	†	†
1254		†	†	†	†	†		†	†	†
1260	†	†	†	†	†	†	†	†	†	†

PCB congener data

Radionuclides previously analyzed in biological samples collected on or near the Paducah Gaseous Diffusion Plant, Paducah, KY.

Radionuclide	Mammals Various ¹ 1992 (6) ²	Deer 1993 (19)	Fish ³ 1998 (67)	Hawk ⁴ 1998 (69)	Rabbit 1999 (5)	Raccoon 1999 (22)	Otter 2000 (74)	Deer 2001 (39)	Deer 2002 (37)	Scrap Yard Mammals ⁵ 2002 (25)
Cesium 137					†			†		
Neptunium 237					†				†	
Plutonium 239/240					†				†	
Potassium 40								†		
Strontium 90					†					
Technetium 99					†			†	†	
Uranium 234					†			†	†	
Uranium 235					†			†	†	
Uranium 238					†			†	†	

Kidney and liver Cd concentrations > 10 mg/kg FW = Cd contamination

Kidney Cd concentrations > 100 mg/kg FW = life threatening

Paducah deer max kidney Cd = 3.88 mg/kg

Liver Pb concentrations > 20 mg/kg FW = concern

Paducah deer max liver Pb = 3.3 mg/kg

Paducah river otter max liver concentration = 4.85 mg/kg FW

Tissue Hg concentrations > 4.0 mg/kg FW = concern

Liver Hg concentrations >10 mg/kg FW = sublethal effects

Paducah river otter liver Hg concentrations = 1.38 mg/kg FW

Liver total PCB concentrations > 4 mg/kg FW = concern

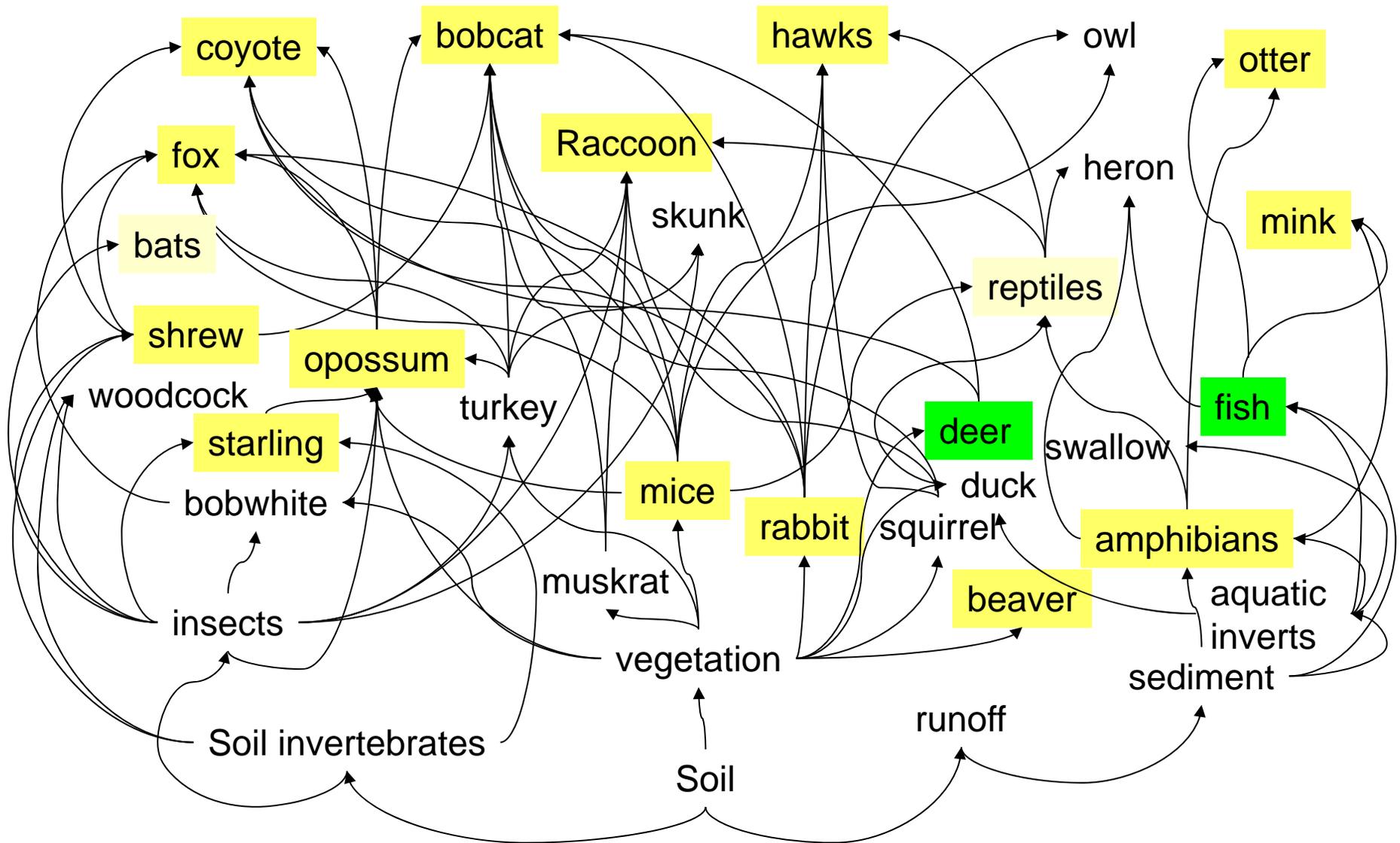
Paducah mink liver concentration = 1.1 mg/kg Aroclor 1260 (n = 1)

Paducah river otter liver concentration = 2.47 & 4.75 mg/kg Aroclor 1260

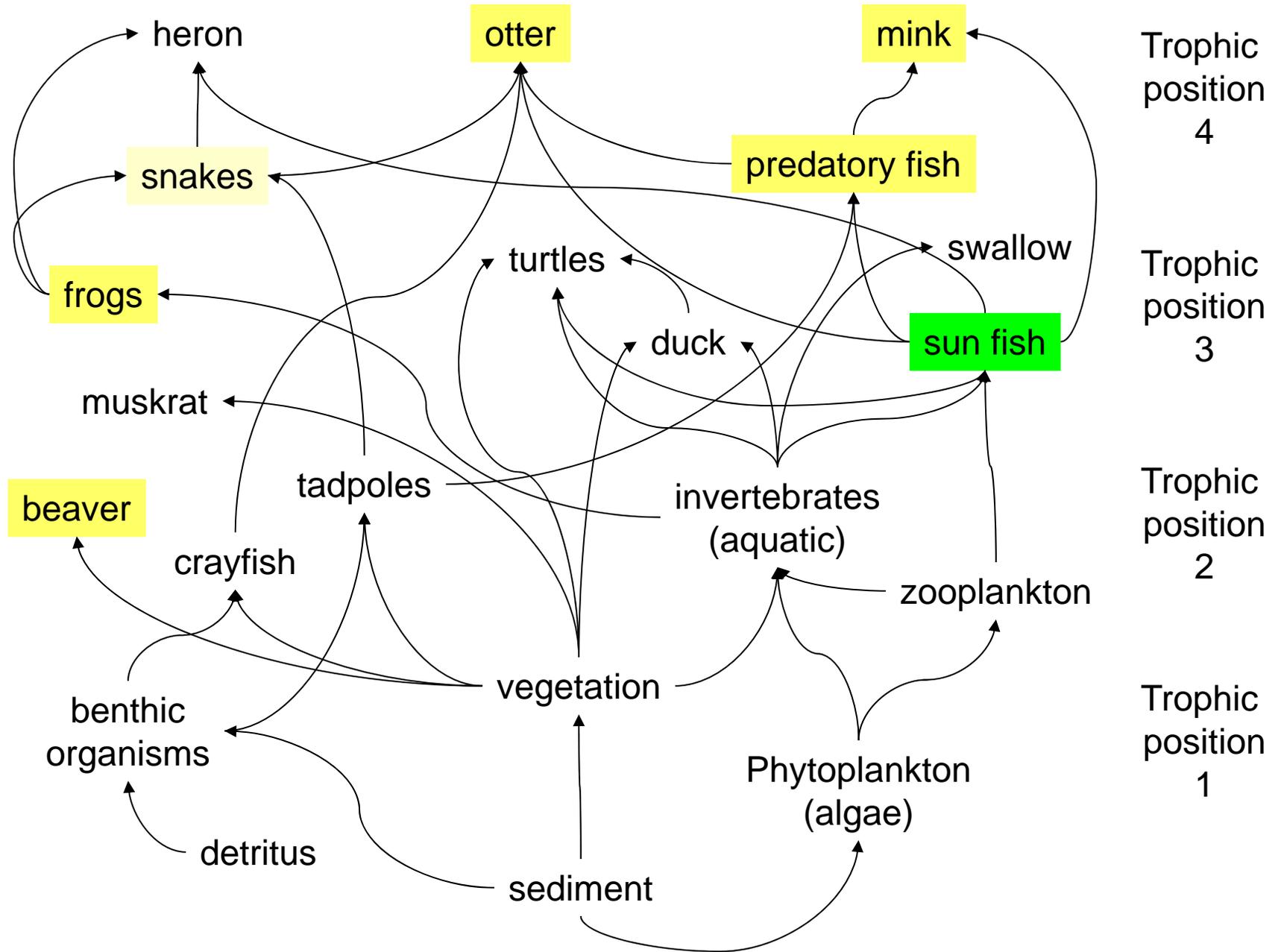
Objective 3: Develop Conceptual Food Web Transfer Models

- **A generalized conceptual food web model (contaminants transfer model) for the PGDP and surrounding area was developed along with more specific aquatic, avian, and mammalian trophic position models.**

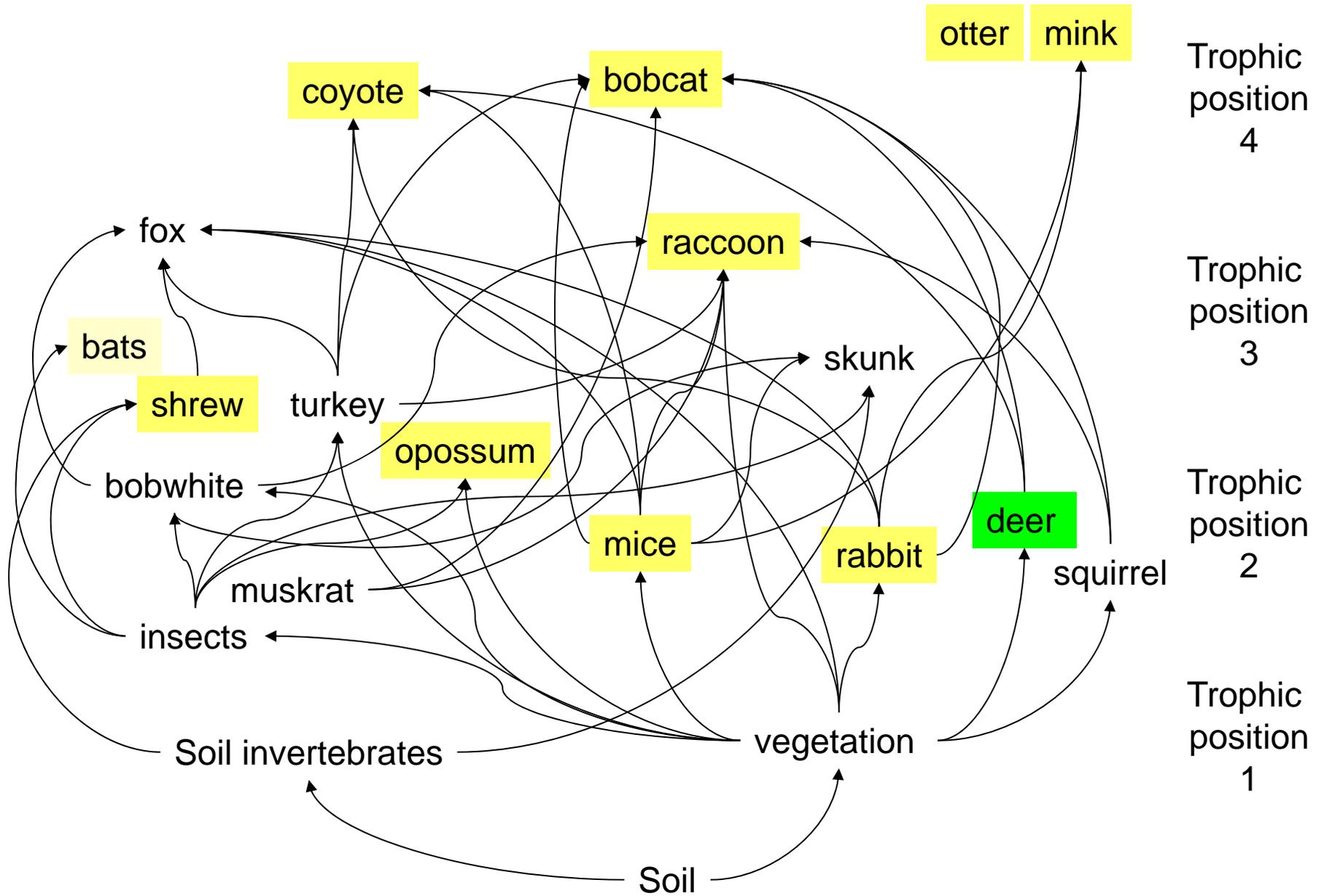
Paducah Food Web Model (contaminants transfer model)



Aquatic Food Web (contaminant transfer model)



Terrestrial Mammalian Food Web (contaminant transfer model)



Terrestrial Avian Food Web (contaminant transfer model)

