

Autumn 2016



## Inside

- Groundwater Investigations Pg. 2
- New Staff: Chris Jung Pg. 3

Right and below: Monitoring well installation at the Paducah Site.

# Oversight News

Newsletter of the Commonwealth's Environmental Oversight Section for the Dept. of Energy's Paducah Site

*Kentucky Department for Environmental Protection  
Division of Waste Management  
Hazardous Waste Branch  
Paducah Site Section*

## First Phase of Northeast Plume Field Work Complete



Seven monitoring wells and two piezometers were installed during the first phase of the northeast plume optimization project in September. All seven transect wells are equally spaced ~400 ft from the east side of C-400. The wells will be monitored initially for two quarters to establish baseline concentrations of trichloroethene (TCE) and technetium-99 (TC-99). The data will be used to monitor any changes in groundwater concentrations or flow direction once the new extraction wells are operational. The two piezometers were located in strategic locations that will inform the overall well design and construction of each extraction well.

## Groundwater Investigations

Monitoring well sampling events are conducted to evaluate and substantiate the Department of Energy's (DOE) sampling procedures and to verify the quality of their laboratory analysis. There were 94 monitoring wells sampled in 114 sampling events in 2015. Each sampling event was located either within the known trichloroethene (TCE) plume footprint or in close proximity to a plume. The concentrations detected by DOE for TCE and technetium-99 (Tc-99) at various monitoring well locations are used to determine the extent of contaminant plumes at the Paducah site, as interpreted in DOE site plume maps.

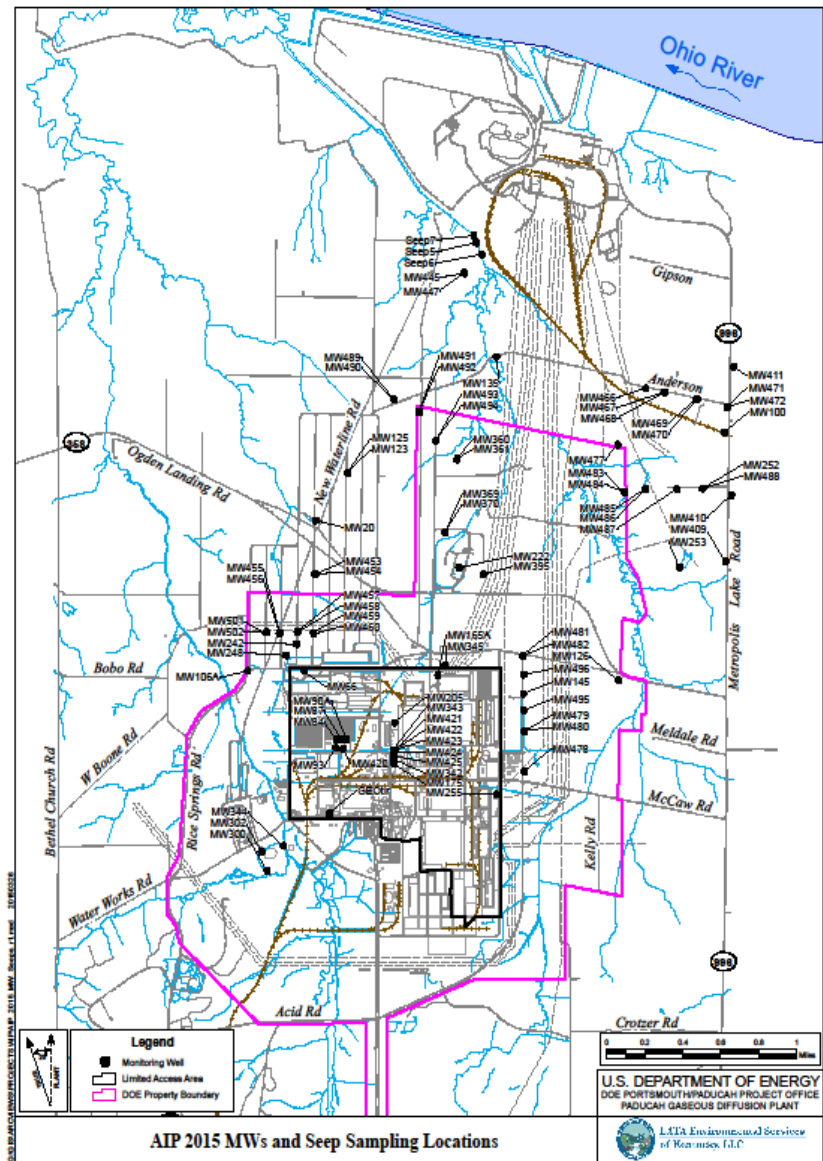
AIP staff split samples with DOE on 11 of the 114 sampling events. Split sampling activities demonstrated a general similarity between those samples collected and analyzed by Kentucky and those collected and analyzed by DOE. During the split sampling events, Kentucky also monitored DOE's sampling procedures to verify this work was performed in compliance with Environmental Protection Agency (EPA) Standard Operating Procedures for field measurements and sampling methods.

Six seeps in Little Bayou Creek (LBC) were added to Kentucky's sampling program in 2002; a seventh seep was discovered and added in June 2007. These seeps are located where groundwater is upwelling in a channelized portion of LBC, along a Porter's Creek Clay exposure. The locations of the seeps can change by several

feet after major storm events, when high flow causes changes in depositional features (sand bar shifting) and in the banks of the creek (sloughing). The base flow in LBC is comprised primarily of discharges from plant outfalls. These seeps are located downstream of the Paducah site, 2 miles from the plant and 2 miles upstream from the confluence of LBC and the

Ohio River. The locations can be seen on the 2015 AIP Monitoring Well and Seep Sampling Locations map.

The June 2015 sampling event showed 32 ug/L TCE in Seep 5 and 11 ug/L TCE in Seep 7. The December 2015 showed 23 ug/L TCE in Seep 5. The May 2016 sampling event showed 1.7 ug/L TCE and Tc-99 was not detected in Seep 5.





## Chris Jung Joins the Paducah Site Section



Chris Jung joined the Paducah Gaseous Diffusion Plant Section on November 16.

Chris graduated from Auburn University with a BS in Geology. He started with the Cabinet in 2003 in the HWB Corrective Action Section and earned his Professional Geologist License in 2006. He will be working on all remediation projects, especially ones focused on cleaning up the groundwater.

Chris resides in Lexington with his wife, Lee Ann, and their two children, Spencer (17) and Maisie (15). He enjoys the outdoors and spending time with his family.

### *Kentucky Department for Environmental Protection*

Paducah Site Section  
300 Sower Boulevard, Frankfort, KY 40601  
Frankfort KY 40601

Phone: 502-782-6317  
Web: [waste.ky.gov](http://waste.ky.gov)  
E-mail: [brian.begley@ky.gov](mailto:brian.begley@ky.gov)

**The mission of the Kentucky Division of Waste Management is to protect human health and the environment by minimizing adverse impacts on all citizens of the Commonwealth through the development of fair, equitable, and effective waste management programs.**



Printed on recycled paper with federal or state funds when printed.



Kentucky Environmental Oversight News is published quarterly by the Kentucky Department for Environmental Protection's Division of Waste Management. It features information regarding environmental cleanup activities at the DOE Paducah Site and related topics. Additional information is available from:

Brian Begley, Supervisor Paducah Site Section,  
Kentucky Division of Waste Management,  
300 Sower Boulevard, Frankfort, KY 40601.

Phone: 502-782-6317 E-mail: [brian.begley@ky.gov](mailto:brian.begley@ky.gov)

**Acknowledgment:** This material is based upon work supported by the Department of Energy under Award Number DE-EM0002382.

**Disclaimer:** This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

The Kentucky Department for Environmental Protection does not discriminate on the basis of race, color, religion, sex, ancestry, age, disability or veteran status. The department provides on request, reasonable accommodations necessary to afford an individual with a disability an opportunity to participate in all services, programs, and activities. To request materials in an alternate format, please call 502-782-6317. Persons with hearing and speech impairments can contact the agency using the Kentucky Relay Service, a toll-free telecommunication device for the deaf (TDD). For voice to TDD, call 800-648-6057. For TDD to voice, call 800-648-6056.