Contaminated Soil Area South of Outfall 011
Solid Waste Management Unit (SWMU) Assessment Report

SWMU/AOC NUMBER: 541

DATE OF ORIGINAL SAR: 01/15/03

DATE OF SAR REVISIONS: 06/10/09

REGULATORY STATUS: Area of Concern (AOC)

LOCATION: South of Outfall 011 near Little Bayou Creek. See enclosed map.

APPROXIMATE DIMENSION OR CAPACITY: Approximately 480 ft by 210 ft

FUNCTION: No known use.

BRIEF HISTORY: This area was discovered on April 16, 2002, during routine radiological surveys in support of sampling activities when an area with elevated radiological readings was identified. The area contained soil piles that were likely generated as a result of past construction activities at the Paducah Gaseous Diffusion Plant. This area was sampled on September 30, 2002. Upon receipt of preliminary results, DOE categorized this area as an AOC. This area was further characterized in December 2008, during the Soil Pile Addendum 1-B investigation.

PRESENT OPERATIONAL STATUS: Inactive

DATES OPERATED: Unknown

SITE/PROCESS DESCRIPTION: Unknown

WASTE DESCRIPTION: Contaminated Soils

WASTE QUANTITY: The waste quantity is estimated to be between 1,900 yd^3 (the volume estimated based on 2002 samples) and 4,300 yd^3 (the volume estimated assuming the entire volume of the soil pile is contaminated). The waste quantity will be updated as additional data become available.

SUMMARY OF ENVIRONMENTAL SAMPLING DATA: During 2002, the area was surveyed upon initial discovery. Fixed beta/gamma measurements ranging from approximately 26,000 dpm/100 cm2 to over 300,000 dpm/100 cm2 were recorded. Highest readings were obtained in a significantly small, localized area (approximately 1 acre) with several small mounds of soil. Data from locations sampled in the AOC were reviewed. Metals, polychlorinated biphenyls (PCBs), semivolatiles, volatiles, and radionuclides were analyzed in soils. Analytical results indicate the presence of metals, PCBs, semivolatiles, and radionuclides. No metals results exceeded the Resource Conservation and Recovery Act (RCRA) Bulk Metals levels (401 *KAR* 31:030 Section 4 incorporating 40 *CFR* 261.24). All samples had detectable PCB. Some sampling points exceeded the Toxic Substances Control Act limit of 50 ppm. Significant levels of uranium (greater than 1,000 pCi/g) were measured at five sampling points. All other sampling points showed uranium greater than background. There were some points with detectable technetium-

99, plutonium-239/240, and radium-226. There were no RCRA issues identified with the semivolatile results.

In December 2008, 242 soil samples were collected for field screening with 24 samples being sent to a fixed-base laboratory for analysis. As a result of the 2008 sampling event, additional areas within the AOC were determined to have similar levels of PCBs and uranium, as did the original five sample results collected in 2002. The most elevated Total PCB concentration was 38.2 mg/kg from the subsurface sample at location LBCSOOB162. The surface soil sample with the most elevated concentration of Total PCBs (31.1 mg/kg) was from location LBCSOOB55.The most elevated concentration of uranium in a surface soil sample (3,600 mg/kg as a metal and 1,020 pCi/g as uranium-238) was from location LBCSOOB169 and the most elevated concentration of uranium in a subsurface soil sample (3,430 mg/kg as a metal and 1,660 pCi/g as uranium-238) was from location LBCSOOB162.

DESCRIPTION OF RELEASE AND MEDIA AFFECTED:

GROUNDWATER:	None known
SURFACE WATER:	None known
SOIL:	See Above
ECOLOGY AFFECTED (i.e., threatened/endangered species):	None known

DOCUMENTATION OF NO RELEASE: No documentation identified.

IMPACT ON OR BY OTHER SWMU/AOC: There is no evidence that this AOC impacts or is being impacted by other SWMUs/AOCs.

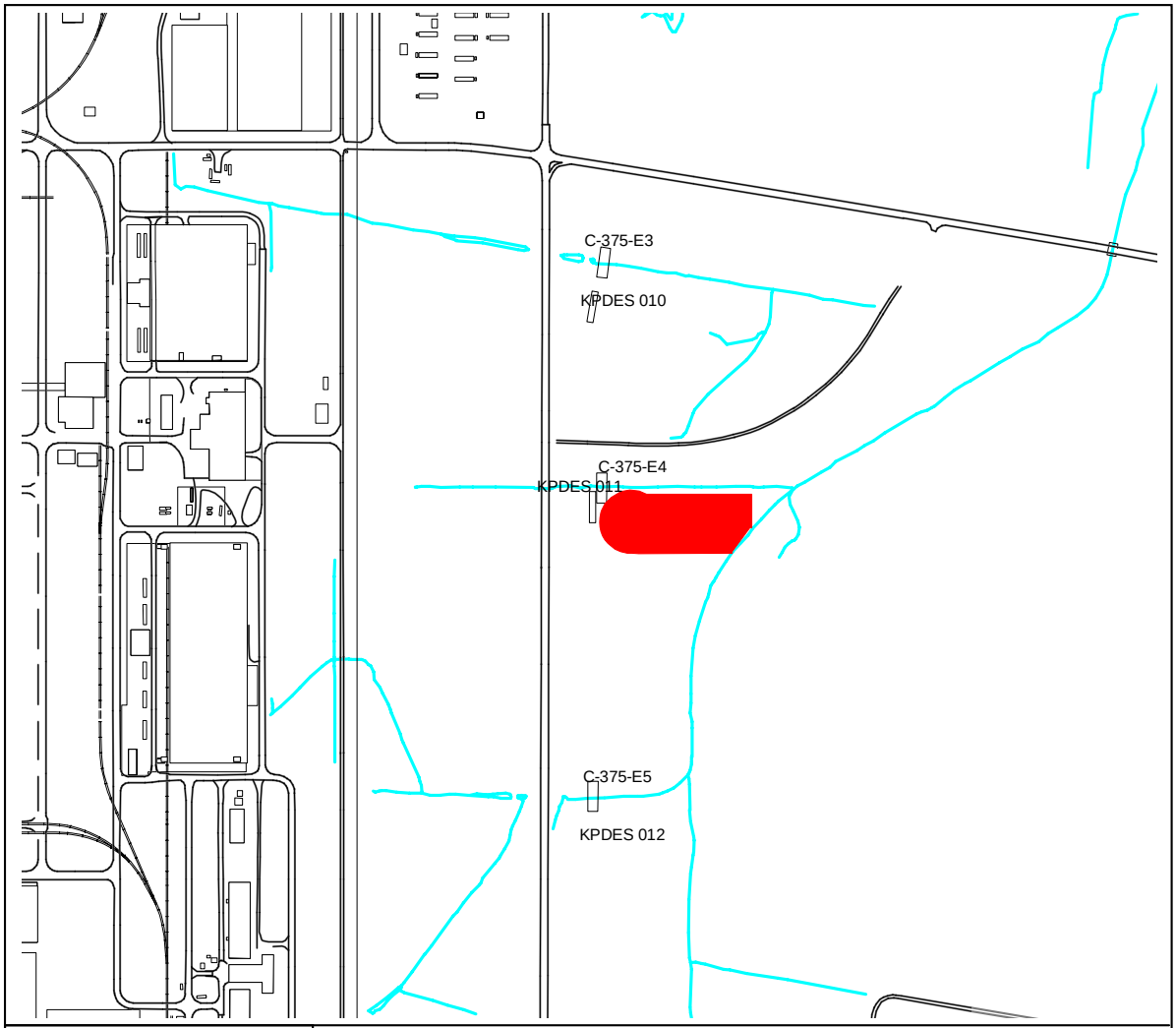
PRG COMPARISON: N/A

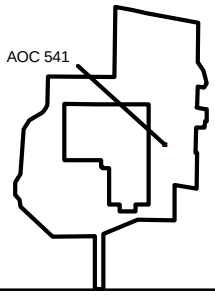
RFI NECESSARY: Yes, as identified in the Hazardous Waste Facility Permit (KY8-890-008-982).

OPERABLE UNIT ASSIGNMENT: Soils Operable Unit

PHOTOGRAPH OF SOIL PILES AOC 541

AOC 541: April 16, 2009





LEGEND:

% SWMU 541 Area
Buildings

200 0 200 400 Feet

AOC 541

U.S. DEPARTMENT OF ENERGY
DOE PORTSMOUTH/PADUCAH PROJECT OFFICE
PADUCAH GASEOUS DIFFUSION PLANT

PADUCAH Remediation Services
A Portage Shaw Joint Venture Company

FIGURE No. 541_545_SAR_MAP.apr
DATE 04-28-09