

United States Environmental Protection Agency
Region IV
POLLUTION REPORT

Date: Tuesday, March 21, 2017

From: Perry Gaughan, OSC

Subject: TVA continues O&M of Oil Collection System

Boyd's Creek III Oil Site

Oil Well Road, Glasgow, KY

Latitude: 36.9428600

Longitude: -85.9426100

POLREP No.:	43	Site #:	Z426
Reporting Period:	12/01/2015 to 1/01/2017	D.O. #:	
Start Date:	6/1/1993	Response Authority:	OPA
Mob Date:	6/1/1993	Response Type:	Non-Time-Critical
Demob Date:		NPL Status:	Non NPL
Completion Date:		Incident Category:	Removal Action
CERCLIS ID #:		Contract #	
RCRIS ID #:		Reimbursable Account #	
FPN#			

Site Description

The incident involves an ongoing discharge of crude oil into Boyd's Creek and the Barren River Lake which is a navigable waterway. This ongoing removal action was continued under an Interagency Agreement between EPA Region 4 and the Tennessee Valley Authority. Funding was obtained under the OSC's OPA authority and through support from the National Pollution Fund Center in December, 2008.

EPA Region 4 has been involved in plugging abandoned oil wells in and around Boyd's Creek south of Glasgow, Kentucky since 1983. The Boyd's Creek III Site consists of a karst spring that discharges oil and high-sulfur water to the creek on a 50 acre farm along Oil Well Road south of Glasgow. An oil containment and collection system was established in the mid 1990's and has been maintained through an Interagency Agreement with the Tennessee Valley Authority on a monthly basis.

The leaking wells have been the result of historically poor drilling and plugging techniques combined with the particular hydrogeologic conditions in the area. The present oil discharge appears to be the result of one, or several improperly abandoned oil wells. In August 2004, as a result of a geophysics survey conducted by EPA ERT, two additional abandoned oil wells were discovered upgradient of the spring and successfully plugged.

During 2014, the National Pollution Fund Center encouraged EPA Region 4 to conduct additional efforts at closing this Site since it has been an ongoing response since the 1995. To assist in this effort, the OSC tasked EPA ERT to conduct a second geophysics survey to further assess the area upgradient of the current oil collection system. In June 2014, EPA ERT's Greg Powell and technical contractors from SERAS conducted the survey. The primary objective of the survey was to map lateral variations of soil resistivity/conductivity to identify areas of low resistivity (high conductivity) that might be related to oil-associated brine emanating from improperly plugged oil wells. A second objective was to map the subsurface geology to identify natural conduits, such as fractures and dissolution features. A report summarizing these assessment findings was submitted to the OSC during the week of Jan 19th, 2015. (Documents Section - SERAS report and Figures Attachment)

Based on the findings of the geophysics study, two new anomalies were found which warranted further investigation. (See Figure 8 of Figures Attachment in Document Section) .

Current Activities

This report summarizes the operations and maintenance (O&M) activities Tennessee Valley Authority (TVA) performed for the US Environmental Protection Agency's (USEPA) Boyds Creek crude oil recovery project located in Glasgow, Kentucky. This report covers the 13-month monitoring period of December 01, 2015 through January 01, 2017. The funding for the project is through an Interagency Agreement (IAG) DW-64-92319301-0 between TVA and EPA.

TVA performed basic O&M activities at the Boyds Creek facility during (5) site visits conducted throughout the 13-month period. Following the upgrade of the monitoring system in 2012 the frequency of site visits has been reduced due to the new system's reliability. Site operating conditions were normal with no system upsets (oil release) being observed during the monitoring period. Approximately 3,700 gallons of oil were collected during the monitoring period, with the largest amount (2000 gallons) being collected during the January 2016 site visit.

response.epa.gov/BoydsCreek