

United States Environmental Protection Agency
Region IV
POLLUTION REPORT

Date: Thursday, October 22, 2015

From: Perry Gaughan, OSC

Subject: Test Trenching Operations and OPA 90 Funding Request

Boyd's Creek III Oil Site
Oil Well Road, Glasgow, KY
Latitude: 36.9428600
Longitude: -85.9426100

POLREP No.:	41	Site #:	Z426
Reporting Period:	10/19/2015 to 10/24/2015	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

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

During the week of October 19th, the OSC tasked ERRS contractors to conduct test trenching operations for abandoned subsurface oil wells along Boyds Creek south of Glasgow, Kentucky. EPA ERT's Greg Powell was also available to assist in the investigation. A previous geophysics survey performed by EPA ERT revealed two possible well locations (anomalies) on the 50 acre farm along Oil Well Road south of Glasgow. The shallower anomaly immediately above the Boyds Creek flood plain was further assessed by excavating test trenches along a 120 foot wide plateau on the farm. During the test trench investigation, a 10 inch wide bore hole was found and appears to be an abandoned oil well. The OSC tasked ERRS to procure an oil well service subcontractor to geophysically log the well and eventually plug it.

Planned Removal Actions

During discussions with the property owner, permission was granted to conduct test trenching excavations for the shallow anomaly on the plateau area above the collection system. Once that effort is completed additional geoprobing and conductivity assessment activities for the deeper anomaly near the crest of the hillside may be indicated.

Next Steps

The OSC plans to plug the abandoned well during the week of November 9th 2015. An additional \$150,000 in funding is required. Oil well plugging is anticipated to take between 5-12 days depending on the geological anomaly which will be addressed during the plugging operation. The oil well service subcontractor plans to drill/mill the existing well with drilling mud to minimize flow of crude oil into geological fractures in the area.

Key Issues

Funding Requirements: Additional funding of \$150,000 is required to conduct the above well plugging operation.

[response.epa.gov/BoydCreek](https://www.epa.gov/BoydCreek)