

U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Beaver Creek Bridge Crude Oil Spill - Removal Polrep



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region IV

Subject: POLREP #9
Replugging Efforts of Abandoned Oil Well Continues
Beaver Creek Bridge Crude Oil Spill

Glasgow, KY
Latitude: 36.9914130 Longitude: -85.9861300

To:
From: Perry Gaughan, OSC
Date: 1/22/2015
Reporting Period: 1/12/2015 through 1/21/2015

1. Introduction

1.1 Background

Site Number:	Z4ZB	Contract Number:	
D.O. Number:		Action Memo Date:	
Response Authority:	OPA	Response Type:	Emergency
Response Lead:	EPA	Incident Category:	Removal Action
NPL Status:	Non NPL	Operable Unit:	
Mobilization Date:	9/19/2014	Start Date:	9/19/2014
Demob Date:		Completion Date:	
CERCLIS ID:		RCRIS ID:	
ERNS No.:		State Notification:	
FPN#:	E14459	Reimbursable Account #:	

1.1.1 Incident Category

Region 4 Emergency Response and Removal Branch (ERRB) responded to a continuous release of crude oil along a one half mile section of Beaver Creek three miles west of Glasgow, Kentucky. Response efforts were initially requested by Kentucky Dept Environmental Protection (KDEP) and are being performed under the OSC's Oil Pollution Act authority.

1.1.2 Site Description

The spill Site is along the flood plain of a 50 acre farm three miles west of Glasgow. Crude oil continues to emanate from a creek bank into a 100 yard section of Beaver Creek in a remote section of the creek. Approximately a one half mile stretch of the creek has been impacted. The spill is located immediately south of a recent interchange construction by Kentucky DOT along the Louie B. Nunn Expressway between Interstate 65 and Glasgow, Ky.

1.1.2.1 Location

The spill is located along Beaver Creek on a 50 acre farm along State Route 1297 where it runs under the Louie B. Nunn Expressway.

1.1.2.2 Description of Threat

The crude oil release is emanating from the Harrison No. 2 abandoned oil well 80 feet from Beaver Creek. There are two additional abandoned oil wells on the flood plain but test trenching operations conducted in December of 2014 confirmed the source as the Harrison No. 2 well. According to Kentucky Oil and Gas, this well was most likely improperly plugged in the mid 1980's.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results

EPA working with Kentucky DEP and the property owner has located three former well locations which could potentially be the source of crude. Kentucky DOT has recently built an interchange on the L. Nunn Expressway on an 8 acre parcel of the farm upgradient of the creek.

The Harrison No. 2 well was uncovered and cemented on October 3rd by EPA and ERRs contractors (reference Polrep #3). However, crude oil continues to flow from the creek bank.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

Based on the continuing release of crude oil to Beaver Creek and test trenching operations indicating that

the crude continued to come from the Harrison No.2 Well plugged in early October 2014, the OSC requested additional funding from NPFC in late December 2014 to drill out the previous cement plug and replug the well. Emphasis during this replugging effort would be centered around removing abandoned 2" production tubing left in the well from a depth of 200-600 feet. Plugging operations in early October simply involved placing a cast iron bridge plug on good well casing at 123 feet and cementing the well to land surface. The well log survey conducted on October 1st showed that well casing stopped at 140 feet but that the casing was properly cemented.

January 12th through January 21st

Downhole operations continued to be hampered by bad casing at 30 feet and the decision was made to procure smaller diameter casing (5 1/2") so that operations at 200 feet and below were not impeded. Efforts to place 200 feet of 5 1/2" casing early in the week were unsuccessful again because of the corroded casing at 30 feet. The oil subcontractor worked with a local well tool supplier and ran a series of "swedges" (6", 6 1/4 " and 6 1/2 ") in an effort to open the old well casing for the 5 1/2 casing to pass the obstruction. These efforts were unsuccessful. In addition, efforts to mill through the obstruction to allow the casing to enter were also unsuccessful.

Barnett and Smith had a "casing shoe" (casing guide - see images) manufactured which was attached to the 5 1/2" casing and this effort was successful in placing 190 feet of 5 1/2 casing downhole. Since the placement of the new casing, operations again are centered on removing/ or milling through the 2" production tubing at a depth of 200 feet. The annular space around the 2" tubing appears to be filled with iron sulfide, debris and corroded casing from years of groundwater erosion. Operations include "washing down" down the annular space of the 2" tubing in an effort to remove debris and creek sediment.

2.1.3 Enforcement Activities, Identity of Potentially Responsible Parties (PRPs)

The OSC is working with Kentucky Oil and Gas in identifying previous drillers in the area. Once identified, EPA will pursue normal responsible party liability and request plugging records by operators. Wells in this area of Kentucky date back to 1930's to 1940's. Wells in an area of Boyds Creek less than ten miles from this site date back to 1865 (Civil War).

2.1.4 Progress Metrics

<i>Waste Stream</i>	<i>Medium</i>	<i>Quantity</i>	<i>Manifest #</i>	<i>Treatment</i>	<i>Disposal</i>

2.2 Planning Section

2.2.1 Anticipated Activities

2.2.1.1 Planned Response Activities

Continue drilling through the failed cement plug and resetting a new cast iron bridge plug at a lower depth. The oil producing formation is reported to be at a depth of 600 feet (Leeper Formation) and attempts will be made to place the plug at that depth to avoid future issues.

2.2.1.2 Next Steps

2.2.2 Issues

2.3 Logistics Section

No information available at this time.

2.4 Finance Section

No information available at this time.

2.5 Other Command Staff

No information available at this time.

3. Participating Entities

3.1 Unified Command

3.2 Cooperating Agencies

Kentucky DEP, Kentucky Oil and Gas, Kentucky DOT

4. Personnel On Site

ERRs (CMC Inc.) - 1 response manager, 4 laborers.

5. Definition of Terms

No information available at this time.

6. Additional sources of information

No information available at this time.

7. Situational Reference Materials

No information available at this time.