

U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Oak Grove Village Well Site - Removal Polrep
Initial Removal Polrep



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region VII

Subject: POLREP #1
Initial
Oak Grove Village Well Site
07PZ
Sullivan, MO
Latitude: 38.2414160 Longitude: -91.0920990

To:
From: Doug Ferguson, OSC
Date: 6/27/2016
Reporting Period: 3/15/2015-6/27/2016

1. Introduction

1.1 Background

Site Number:	07PZ	Contract Number:	
D.O. Number:		Action Memo Date:	
Response Authority:	CERCLA	Response Type:	Time-Critical
Response Lead:	PRP	Incident Category:	Removal Action
NPL Status:	NPL	Operable Unit:	
Mobilization Date:	4/13/2016	Start Date:	4/13/2016
Demob Date:		Completion Date:	
CERCLIS ID:	MOD981717036	RCRIS ID:	
ERNS No.:		State Notification:	
FPN#:		Reimbursable Account #:	

1.1.1 Incident Category

Enforcement-lead time-critical removal action.

1.1.2 Site Description

Commercial cavern/cave. (La Jolla Spring Cave Complex)

1.1.2.1 Location

Sullivan, Missouri

1.1.2.2 Description of Threat

TCE releases to the groundwater at nearby sites has migrated into the cavern spring water which has resulted in TCE vapors in the air within the cavern above levels of health concern for workers and possibly cave tour visitors.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results

From October 2002 to January 2005, the EPA and MDNR conducted six sampling events (air and water) in the La Jolla Spring Cave Complex. Sample results detected the presence of Freon 12; Freon 11; 1,1-dichloroethene; methylene chloride; cis-1,2-dichloroethene; trichloroethene; toluene; m,p-xylene; 1,4-dichlorobenzene; tetrachloroethene; ethanol; 2-propanol; and acetone. In the cave air, Freon 11 was detected as high as 270 $\mu\text{g}/\text{m}^3$ and TCE was detected as high as 1,700 $\mu\text{g}/\text{m}^3$. Water samples within the La Jolla Spring Cave Complex detected Freon 11 as high as 2.13 $\mu\text{g}/\text{L}$ and TCE as high as 12.6 $\mu\text{g}/\text{L}$. The cave owner took immediate steps to increase air flow within the cavern and samples collected in 2004 and 2005 showed that those actions had decreased TCE concentrations to acceptable levels.

In 2011, EPA issued a toxicological evaluation for TCE based on the best available science. This comprehensive evaluation identified potential adverse health effects at lower concentrations of TCE than used in the past. Air sampling conducted within the Cave Complex from March 2013 until November 2015

showed the presence of TCE above these lower concentrations. TCE was detected as high as 660 µg/m³ in cavern air in October 2015.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

TRW, Inc. (the PRP at the site) has agreed to perform the following actions to reduce TCE concentrations in the cave and gift shop:

1. Two ventilation wells will be installed on the main trunk of the cave system upstream of the Jungle Room. The vent wells will be outfitted with blowers at the ground surface designed to withdraw air from the cave. The operation of the blowers may vary depending on weather conditions. The purpose of the system is to capture and vent air that has migrated through the cave before it reaches the developed portion of the cave.
2. An evaluation will be conducted of the heating, ventilation and air conditioning (HVAC) system in the gift shop to determine whether appropriate modifications are necessary to reduce the amount of cave air entering the gift shop building. This evaluation will be provided within 60 days after the ventilation wells have been pilot tested and are fully operational or sooner.
3. Portable air cleaners will be installed in the gift shop area, and the area between the gift shop and the air lock doors. The cleaners will treat the air in these areas to remove TCE. The continuing operation of these cleaners will be evaluated as work is completed and may continue as necessary.
4. The existing air lock doors will be upgraded and a signal system installed to indicate whether one or both doors are open to avoid accidental simultaneous openings of both sets of doors.
5. An alternative source of water will replace the use of contaminated spring water for cleaning and maintaining the cave features.

2.1.2 Response Actions to Date

To date, the following actions have been completed: installation of two ventilation boreholes with blowers, installation of portable air cleaners, installation of a permanent airlock to replace the temporary airlock; improvement of the air-sealing and ventilation control at the main entrance; and evaluation and improvements of the amphitheater entrance ventilation control.

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

A potentially responsible party has been identified as TRW, Inc. and they are performing the removal action with EPA oversight.

2.2 Planning Section

2.2.1 Anticipated Activities

Installation of a water line to exchange the wash water used for cave maintenance from the stream water to well water.

2.2.1.2 Next Steps

Continue to monitor TCE concentrations in the cavern air to determine if levels below human health concern can be reached and sustained.

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

2.5.1 Safety Officer

ARCADIS personnel.

2.5.2 Information Officer

Chris Whitley USEPA

3. Participating Entities

3.1 Cooperating Agencies

Missouri Department of Natural Resources

US Geological Survey

Missouri Department of Health and Senior Services

Agency for Toxic Substances and Disease Registry

4. Personnel On Site

ARCADIS (typically 1-2 personnel)

USEPA

USGS (1-2 personnel)

5. Definition of Terms

No information available at this time.

6. Additional sources of information

6.1 Internet location of additional information/report

<https://semspub.epa.gov/src/collection/07/SC34273>

6.2 Reporting Schedule

Quarterly

7. Situational Reference Materials

No information available at this time.