U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Highway 3 PCE - Removal Polrep
Initial Removal Polrep

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region VII

Subject: **POLREP #8**
Progress
Highway 3 PCE
A7R4
Le Mars, IA
Latitude: 42.7941567 Longitude: -96.1655778

To:
From: Susan Fisher, OSC
Date: 8/8/2015
Reporting Period: 7/20/2015 to 7/22/2015

1. Introduction

1.1 Background

Site Number:	A7R4	**Contract Number:**	
D.O. Number:		**Action Memo Date:**	8/21/2013
Response Authority:	CERCLA	**Response Type:**	Time-Critical
Response Lead:	EPA	**Incident Category:**	Removal Action
NPL Status:	Non NPL	**Operable Unit:**	
Mobilization Date:	8/26/2013	**Start Date:**	8/26/2013
Demob Date:		**Completion Date:**	
CERCLIS ID:	IAN000706042	**RCRIS ID:**	
ERNS No.:		**State Notification:**	yes
FPN#:		**Reimbursable Account #:**	

1.1 Background

Site No.:	A7R4
Response Authority	CERCLA, §104(a)
Response Type	Time Critical
CERCLIS No.:	IAN000706042
Operable Unit	00
Type of Removal Action	RV – Removal
Lead	SUPR
NPL Status:	Non-NPL
State Notification	IDNR Notified
Action Memorandum Status	Approved August 21, 2013
Start Date:	8/26/2013
Demobilization Date:	N/A
Completion Date:	N/A

1.1.1 Incident Category

CERCLA incident category: Inactive Production Facility

1.1.2 Site Description

1.1.2.1 Site Location

The Highway 3 PCE Site (Site) is located southeast of the intersection of Plymouth Street West (Iowa Highway 3) and Central Avenue Northeast in Le Mars, Iowa. The approximate geographic coordinates of the Site are 42.792694 degrees north latitude and 96.165928 degrees west longitude (Google Earth 2011). The city of Le Mars, Iowa, has a population of 9,826 (U.S Census Bureau 2010), and is located in Plymouth County in northwestern Iowa about 25 miles northeast of Sioux City, Iowa, on U.S Highway 75. The Site is located in downtown Le Mars, Iowa, where current and past commercial and industrial use facilities may have released contaminants into soil and thus groundwater.

1.1.2.2 Description of Threat

Sources of hazardous substances include possible leaks or spills of tetrachloroethene (PCE) and/or trichloroethene (TCE) in Le Mars, Iowa. Likely sources at this Site include areas of contaminated soil resulting from spills or improper handling of dry cleaning solvents. Investigation activities at the Site sought to determine if a release of PCE to groundwater has occurred at any current or former dry cleaning facilities. Sample media included soil gas, soil and groundwater. Based upon the sample results, it appears that a contaminated soil source is present at an active dry cleaning property located approximately 175 feet east of the intersection of Plymouth and Central Avenue within the Site in Le Mars. The area or volume of this apparent source is unknown at this time. Based on investigations at the Site, dry cleaning operations at this facility use PCE. Analytical results from samples collected by the EPA indicate that hazardous substances have been released into the environment. PCE and TCE are hazardous substances as identified in CERCLA section 101(14) and as listed at 40 CFR section 302.4. PCE and TCE have been detected in soil, groundwater and air samples, and have exceeded removal action levels (RALs) and screening levels.

1.1.3 Removal Preliminary Assessment/Removal Site Inspection Results

PCE was first detected during an April 2008 Le Mars Coal Gas Plant site investigation. In 2009 the EPA completed a Pre-Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Screening Report for the Site. The Pre-CERCLIS report documented the presence of PCE in groundwater at levels that may pose an unacceptable risk to human health or ecological receptors. Therefore, further assessment activity at the Site was deemed warranted to assess the extent of the PCE contamination in Le Mars. The Site was subsequently entered into CERCLIS.

Field activities associated with a Preliminary Assessment (PA) investigation were conducted between July and October 2011. During the PA investigation, a sampling grid with approximately 50-by-50-foot cells (80-foot spacing across roadways) was established to conduct soil gas monitoring over the suspected source areas. At each node of the grid (32 locations), a passive soil gas module was installed and later collected. PCE was detected in 21 of the 33 samples collected. The highest concentrations of PCE were found in samples collected from locations adjacent to the active dry cleaning building.

Subslab soil gas samples were collected beneath the slabs of various buildings that may be potential source areas for PCE, or that may be affected by vapor intrusion. All samples, except for the field blank, contained concentrations of PCE above the Regional Screening Level (RSL) for industrial air quality. The samples collected from buildings adjacent to the active dry cleaning building contained the highest concentrations of PCE.

Groundwater sampling locations were chosen to better define the migration pathway of the PCE plume and to delineate its hydrogeological extent. Twenty-three groundwater samples (including two field blank samples) were collected at 10 direct-push technology (DPT) temporary monitoring well (MW) locations. Nine water samples had concentrations of PCE that exceeded a Superfund Chemical Data Matrix (SCDM) benchmark value. Of those nine samples, seven had PCE concentrations greater than the Maximum Contaminant Level (MCL) of 5.0 micrograms per liter (µg/L). Two DPT soil borings were advanced for the purpose of subsurface soil sampling: one on the north side and one on the south side of the active dry cleaning building. Locations were selected based on PCE and TCE soil gas data obtained during the PA. PCE was detected in all of the subsurface soil samples; however, SCDM benchmark values were not exceeded.

A Removal Assessment (RA) was initiated in August 2012. Subslab and indoor air sampling was conducted during the RA. Data results from subslab soil gas and indoor air sampling of businesses and residential buildings showed PCE and TCE contamination inside of the buildings higher that the recommended industrial and residential RALs and screening levels for PCE and TCE.

PA and RA soil, soil gas, groundwater, subslab soil gas, and indoor air sample result tables can be found in the document section.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

Analytical results from samples collected by the EPA during the PA and RA indicate that hazardous substances have been released into the environment. PCE and TCE were detected in soil, groundwater and air samples, and have exceeded RALs and screening levels.

On August 21, 2013, a time-critical removal Action Memorandum with a 12-month exemption was signed for the Highway 3 PCE Site. The removal action addresses immediate threats to public health, welfare and the environment posed by the Site.

2.1.2 Response Actions to Date

On July 20, 2014 to July 23, 2015, 14 grab samples were collected from 14 properties at the Site. These sample were collected from locations where samples were previously collected, but analytical results were not above RALs and/or screening levels. These samples were analyzed in the EPA mobile laboratory. None of the sample constituents exceeded RALs and/or screening levels.

Eighteen indoor air samples were collected with summa cannisters. These samples were sent to the EPA Laboratory for analysis.

All samples collected had PCE and/or TCE results below RALs and screening levels??????

During sample collection activities OSC Fisher talked to the new owners of the property at 14 Central Ave

SE. This property was sampled December 2013 for indoor air. Sample results showed indoor air results above EPA RALs. The previous owner refused access for installation of a vapor mitigation system. The new owners live and work in the property. OSC Fisher discussed the December results with new owners. The new owners signed an access agreement to install vapor mitigation systems. The system is scheduled to be installed on August 25, 2015.

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

Currently a PRP has not been identified.

2.1.4 Progress Metrics

Site RALs are:

Contaminant	Residential	Business
PCE (Indoor Air) RAL	42 µg/m^3	180 µg/m^3
TCE (Indoor Air) RAL	2.0 µg/m^3	8.8 µg/m^3
PCE Subslab Vapor (Screening Level)	420 µg/m^3	1800 µg/m^3
TCE Subslab Vapor (Screening Level)	20 µg/m^3	88 µg/m^3

See the following tables in the document section:

Table 1 Removal - Sub slab soil gas and indoor air sample results
Table 2 Removal - Property addresses where vapor mitigation systems were installed

2.2 Planning Section

2.2.1 Anticipated Activities

2.2.1.1 Planned Response Activities

- Conduct additional subslab soil gas and indoor air sampling.
- Conduct soil and groundwater collection and analysis at additional locations in the investigation area.
- Based on the results of these analyses, it may be necessary to address source areas which could include soil removal, soil remediation or groundwater remediation activities.
- Install vapor abatement systems in residential homes and businesses containing either indoor air or subslab soil gas PCE and/or TCE vapor concentrations exceeding the site-specific RALs for soil gas contaminants. Site-specific action levels were prepared by the EPA's toxicologists, to eliminate direct exposure to potentially harmful PCE and/or TCE vapors. Initially, abatement systems will be installed in homes and businesses exceeding the RALs. Additional systems may be installed depending on sample results, and could include schools and day care facilities.
- Monitor the effectiveness of the vapor abatement systems by conducting verification indoor air sampling following the installation of the systems.

2.2.1.2 Next Steps

Conduct additional subslab and indoor air sampling as needed. Sample properties that vapor mitigations systems have been installed to confirm systems are working properly. Sample previously sampled properties with no detection or low detection limits to confirm any changes.

2.2.2 Issues

No outstanding issues at this time.

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

2.5.3 Information Officer

Pam Houston with the EPA is the CIC on this site.

3. Participating Entities

3.1 Unified Command

3.2 Cooperating Agencies

The City of Le Mars, Iowa, has assisted the EPA by providing office space for the on-site project manager and

providing a meeting space for public meetings. The City is supportive of the Removal Action.

4. Personnel On Site

Personnel on site include:

1 EPA OSC
1 START employee
2 ERRS employees
2 ERRS subcontractors

5. Definition of Terms

ATSDR	Agency for Toxic Substance Disease Registry
CFR	Code of Federal Registration
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
DCE	dichloroethene
EC	electric conductivity
EPA	Environmental Protection Agency
ERRS	Emergency and Rapid Response Services
fbgs	feet below grade surface
IDNR	Iowa Department of Natural Resources
MCL	Maximum Contaminant Level
MW	monitoring well
OSC	On-Scene Coordinator
PCE	Tetrachloroethene
PID	photoionization detector
ppm	parts per million
PRP	Potentially Responsible Party
RAL	removal action level
SB	soil boring
START	Superfund Technical Assessment & Response Team
TCE	Trichloroethene
µg/L	micrograms per Liter
µg/kg	micrograms per kilogram
$\mu g/m^3$	micrograms per cubic meter
VOCs	volatile organic compounds

6. Additional sources of information

6.1 Internet location of additional information/report

PCE - A hazardous substance in CERCLA section 101(14) as listed at 40 CFR section 302.4. A man-made chemical that is widely used for dry cleaning clothes and for metal degreasing. It evaporates easily into the air and has a sharp, sweet odor. Exposure to PCE at very high concentrations (particularly in closed, poorly ventilated areas) can cause dizziness, headache, drowsiness, confusion, nausea, difficulty in speaking and walking, unconsciousness and death. PCE has been shown to cause liver tumors in mice and kidney tumors in rats. It has been determined that PCE is a Class 2A carcinogen via inhalation based on long-term exposure.

TCE - A hazardous substance in CERCLA section 101(14) as listed at 40 CFR section 302.4. A man-made chemical typically used in metal degreasing. The Agency for Toxic Substances and Disease Registry reports that inhalation exposure to TCE at very high concentrations may affect the central nervous system, with symptoms such as dizziness, headaches, confusion, euphoria, facial numbness and weakness. Recent studies have linked TCE with structural heart malformations associated with exposure during the prenatal period.

For more information on these chemicals go to:
http://www.atsdr.cdc.gov/toxprofiles/index.asp

Vapor Intrusion - Occurs when vapors produced by a chemical spill or groundwater contamination plume migrate through soil and the foundations of structures and into the indoor air. When chemicals are spilled on the ground, they will seep into the soil and make their way into the groundwater. VOCs, including PCE and TCE, produce vapors that travel through soil. These vapors can enter buildings, through cracks in the foundation, or a basement with a dirt floor, or concrete slab or crawl space.

For more information about vapor intrusion got to:
http://www.epa.gov/region07/factsheets/2010/faq_about_vapor_intrusion_201002.htm

7. Situational Reference Materials

No information available at this time.