**United States Environmental Protection Agency**
**Region V**
**POLLUTION REPORT**

**Date:** Tuesday, December 2, 2008
**From:** Steven Renninger

**To:**

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|---|---|
| Randy Watterworth, OEPA | Rafael Gonzalez, EPA-OPA |
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| Jim Crawford, OEPA | Mark Johnson, EPA |
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| David Chung, EPA | Greg Powell, EPA |
| Maria Gonzalez, EPA 5 | Carol Ropski, EPA 5 |
| Mark Durno, EPA 5 | Stacey Coburn, EPA 5 RPM |
| Rick Karl, EPA 5 | |

**Subject:** Final POLREP
Behr VOC Plume - EPA Fund Lead Removal
919 North Keowee Street, Dayton, OH
Latitude: 39.7739250
Longitude: -84.1814060

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| **POLREP No.:** | 5 | **Site #:** | B5FH |
| **Reporting Period:** | May 3 through October 17, 2008 | **D.O. #:** | 0091 |
| **Start Date:** | 11/2/2007 | **Response Authority:** | CERCLA |
| **Mob Date:** | 11/2/2007 | **Response Type:** | Time-Critical |
| **Demob Date:** | 10/17/2008 | **NPL Status:** | Non NPL |
| **Completion Date:** | 10/17/2008 | **Incident Category:** | Removal Action |
| **CERCLIS ID #:** | | **Contract #** | 68-S5-03-06 |
| **RCRIS ID #:** | | | |

**Site Description**

The Behr VOC Plume (EPA Fund Lead Removal) and the Behr VOC Plume Site (funded by Chrysler) are simultaneous removal actions at the same site. This POLREP is for the Behr VOC Plume (EPA Fund Lead Removal). For further information on the Behr VOC Plume Site (Chrysler funded) see the following link:

"http://www.epaosc.net/behrvocplume"

The Behr Dayton Thermal Products Facility (Behr-Dayton facility) is located at 1600 Webster Street, Dayton, Montgomery County, Ohio. The Behr-Dayton facility manufactures vehicle air conditioning and engine cooling systems at the facility. Chrysler Corporation owned and operated the Behr-Dayton facility from at least 1937 until April of 2002.

The groundwater beneath the Behr-Dayton facility is contaminated with volatile organic compounds, including trichloroethene (TCE). Chrysler contracted Earth Tech to design, install, and operate two systems for the remediation of soil and groundwater contamination under the Behr-Dayton facility, with TCE as the main contaminant of concern. Earth Tech installed a Soil Vapor Extraction (SVE) system on the Behr-Dayton facility property for soil remediation and began operation in October 2003. The system was operated through December 2005.

Earth Tech installed a groundwater remediation system on the Behr-Dayton facility property and began operation in June 2004.

The TCE-contaminated ground water has migrated from the Behr-Dayton facility to the south/southwest through residential, commercial and industrial areas.

Earth Tech has conducted groundwater monitoring on a network of 75 on-site and off-site groundwater

monitoring wells since 2001. In 2003, the following monitoring wells were sampled and contained elevated levels of TCE: MW010s (17,000 ppb), MW028s (9,600 ppb), and MW029s (16,000 ppb). These monitoring wells are located along the southern perimeter of the Behr-Dayton facility (MW010s) or in the adjacent neighborhood (MW028s and MW029s).

On September 28, 2006, Earth Tech submitted quarterly groundwater sampling results to Ohio EPA. In the report, Earth Tech stated that one shallow groundwater monitoring well, MW038s, which is located at the intersection of Daniel Street and Lamar Street (residential area south of Behr Dayton facility), contained a TCE concentration of 3,900 parts per billion (ppb). Groundwater in the area of the Behr-Dayton facility is located approximately 20 feet below ground surface.

On October 16, 2006, Ohio EPA installed a total of seven soil gas probes along Daniel Street, Lamar Street and Milburn Avenue to evaluate potential risk posed by vapor intrusion from a VOC groundwater plume. The depth of the soil gas probes were approximately one to two feet above the depth of groundwater, which was determined to be approximately 20 feet below ground surface. Once the soil probes were installed, an air sample was collected and analyzed for VOCs. Ohio EPA soil gas analytical results detected TCE concentrations as high as 160,000 ppb.

On November 6, 2006, Ohio EPA formally requested U.S. EPA to conduct a time-critical removal action to assess whether vapor intrusion was occurring at the site.

Vapor Intrusion is the migration of volatile organic compounds from contaminated shallow groundwater to soil gas to the indoor air of properties. ATSDR and the Ohio Department of Health (ODH) established TCE screening levels for residential and commercial sub-slab and indoor air. The ATSDR and ODH residential indoor air screening level is 0.4 ppb and the residential sub-slab screening level is 4 ppb. The ATSDR and ODH commercial indoor air screening level is 1.7 ppb and the commercial sub-slab screening level is 17 ppb.

In November 2006, U.S. EPA conducted a site assessment in the residential neighborhood immediately south of the Behr-Dayton facility. U.S. EPA collected sub-slab vapor probe and indoor air samples from eight residences. Analytical results indicated that eight sub-slab vapor probe air samples had TCE vapor levels greater than the ATSDR and ODH screening level of 4 ppb, and five sub-slab vapor probe air samples have a TCE vapor level greater than the ATSDR immediate action level of 1,000 ppb, with a maximum TCE concentration of 62,000 ppb.

Analytical results indicated all eight residences which were sampled showed TCE vapor levels greater than the ATSDR screening level of 0.4 ppb, and three residences with an indoor air sample having a TCE vapor level greater than the ATSDR immediate action level of 100 ppb, with a maximum TCE vapor level of 260 ppb.

Based on analytical results and conditions during the 2006 Site Assessment, the Site met the criteria for a removal action as outlined in 40 CFR 300.415(b)(2). The chemicals detected at the Site pose an imminent health threat and present a danger to individuals occupying the residential structures at the Site.

In December 2006, Chrysler signed an Administrative Order on Consent (AOC) to conduct a removal action at the site. The removal action involves conducting a vapor intrusion investigation and installing vapor abatement systems in residential, commercial and industrial facilities that have indoor and sub-slab air concentrations greater than the ATSDR and ODH screening levels of 0.4 and 4 ppb, respectively.

From January through December 2007, Chrysler sampled over 80 residential, commercial and industrial locations. Chrysler submitted two work plans (Phase I and Phase II) to summarize and detail removal activities. A total of 35 vapor abatement systems were installed in a combination of residential and commercial structures by Chrysler contractors. Chrysler will continue to conduct vapor intrusion sampling in the areas outlined in the Phase I and II work plans. For further information on the Behr VOC Plume Site (Chrysler funded) see the following link:

"http://www.epaosc.net/behrvocplume"

In August 2007, U.S. EPA issued a letter to Chrysler requesting Chrysler to conduct vapor intrusion sampling in an area of the McCook Field Neighborhood bordered to the north by Protzman Street, to the east by Kiser Street and to the south by State Route 4. 2007 groundwater and soil gas data indicated the potential for vapor intrusion in the area where additional removal work was required.

In October 2007, Chrysler issued a letter to U.S. EPA formally stating that they do not intend to conduct vapor intrusion sampling in the area (southern McCook Field neighborhood) U.S. EPA requested in

August 2007.

Following a dispute resolution, on November 8, 2007, the U.S. EPA submitted a letter to Chrysler indicating that U.S. EPA would be initiating a fund-lead removal action within the southern McCook Field Neighborhood including residential sampling and mitigation. See "Area of Investigation" Map in the documents section of the website.

On November 15, 2007, a U.S. EPA public meeting was conducted at Kiser Elementary School to update the community on the upcoming U.S. EPA-funded vapor intrusion investigation sampling within the McCook Field Neighborhood. Approximately 140 people attended the public meeting.

From November 2007 through January 2008, U.S. EPA established a Command Post located at 919 North Keowee Street, collected baseline air samples from 127 residencial locations and installed 19 residential vapor abatement mitigation systems.

From January 2008 through February 17, 2008, U.S. EPA collected baseline air samples from 68 residential locations, collected vapor abatement proficiency air samples from 19 locations and installed 28 residential vapor abatement mitigation systems.

From February 18, 2008 through May 2, 2008, U.S. EPA collected baseline air samples from 66 residencial locations, collected vapor abatement proficiency air samples from 87 locations and installed 44 residential vapor abatement mitigation systems.

**Current Activities**

During the month of May 2008, U.S. EPA collected 8 baseline air samples, vapor abatement proficiency air samples (post mitigation sampling) from 38 locations and installed 12 residential vapor abatement mitigation systems.

During the month of June 2008, U.S. EPA collected 2 baseline air samples, vapor abatement proficiency air samples from 25 locations and installed 15 residential vapor abatement mitigation systems.

During the month of July 2008, U.S. EPA collected 1 baseline air sample, vapor abatement proficiency air samples from 37 locations and installed 19 residential vapor abatement mitigation systems.

During the month of August 2008, U.S. EPA collected 3 baseline air samples, vapor abatement proficiency air samples from 43 locations and installed 6 residential vapor abatement mitigation systems.

During the month of September 2008, U.S. EPA collected 2 baseline air samples, vapor abatement proficiency air samples from 52 locations and installed 5 residential vapor abatement mitigation systems. In September, the Behr VOC Site was proposed to be listed on the National Priorities List (NPL). The U.S. EPA Remedial Program initiated development of a work plan for the RI/FS at the Site.

During the month of October 2008, U.S. EPA collected vapor abatement proficiency air samples from 12 locations and installed 1 residential vapor abatement mitigation system. On October 8, 2008, U.S. EPA conducted a public meeting at Kiser Elementary School to summarize site activities and to explain that the site is being transferred to U.S. EPA's remedial program for a remedial investigation. On October 17, 2008, U.S. EPA closed the command post located at 919 North Keowee Street.

PROJECT SUMMARY:

From November 19, 2007 through October 17, 2008, U.S. EPA sampled 277 out of 336 locations within the southern McCook Field Neighborhood.

A total of 118 out of 277 locations (42.6%) showed indoor air TCE levels greater than the TCE indoor air screening level of 0.4 ppbv and sub-slab TCE levels greater than the TCE sub-slab screening level of 4.0 ppbv. A total of 116 of the 118 locations accepted U.S. EPA's offer to install a residential vapor abatement mitigation system.

A total of 46 out of 277 locations (16.6%) showed indoor air TCE levels less than the TCE indoor air screening level of 0.4 ppbv but sub-slab TCE levels greater than the TCE sub-slab screening level of 4.0 ppbv. U.S. EPA offered to install a residential vapor abatement mitigation system in all 46 of these locations. 33 of the 46 locations accepted U.S. EPA's offer to install a residential vapor abatement mitigation system.

A total of 91 out of 277 locations (32.9%) require “No Further Action” due to air sampling showing TCE levels less than the screening levels.

A total of 14 out of the remaining 59 locations “Denied Access” for U.S. EPA vapor intrusion sampling. U.S. EPA and local health department attempted contact with non-responsive property owners in the EPA Area of Investigation with multiple public meetings, mailed letters, and visits.

U.S. EPA installed a total of 149 vapor abatement mitigation systems in the southern McCook Field neighborhood. U.S. EPA has supplied an Operations & Maintenance (O&M) binder to each of the 149 locations where U.S. EPA installed a residential vapor abatement mitigation system. The O&M binder includes information such as copies of all paperwork signed, baseline and proficiency sample results (post mitigation sampling), U.S. EPA website information and system warranty information.

**Planned Removal Actions**

None.

**Next Steps**

1. The U.S. EPA remedial program has initiated development of a remedial investigation workplan.

2. The PRP (Chrysler) funded removal action continues in the area of investigation south of the Behr facility. See "Area of Investigation" Map in the documents section of the website.

**Key Issues**

1. TCE-contaminated groundwater is causing elevated levels of TCE vapors to migrate via soil gas into structures (vapor intrusion).
2. Over the course of the EPA funded removal action, U.S. EPA sampled 277 out of 336 locations within the southern McCook Field Neighborhood and installed 149 vapor abatement mitigation systems in residential homes.

**Disposition of Wastes**

Not Applicable. Vapor Intrusion mitigation.

response.epa.gov/behrvocplumeepafundleadremoval