

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

**Date:** Tuesday, July 14, 2009

**From:** Jim Silver

**Subject:** On-going activities

Southwest Jefferson County Mining Site OU 00

13291 State Rd CC, DeSoto, MO

Latitude: 38.1394353

Longitude: -90.4693197

<b>POLREP No.:</b>	4	<b>Site #:</b>	A7D2
<b>Reporting Period:</b>	3/17 /09 to 7/14/09	<b>D.O. #:</b>	0019
<b>Start Date:</b>	10/1/2007	<b>Response Authority:</b>	CERCLA
<b>Mob Date:</b>	10/1/2007	<b>Response Type:</b>	Time-Critical
<b>Demob Date:</b>		<b>NPL Status:</b>	Non NPL
<b>Completion Date:</b>		<b>Incident Category:</b>	Removal Action
<b>CERCLIS ID #:</b>	MON000705443	<b>Contract #</b>	EP-R7-07-12
<b>RCRIS ID #:</b>			

**Site Description**

The Jefferson County Lead District Site consists of high concentrations of lead contamination from mining. The ore would normally be hauled from the mines to the concentrators (also known as mills) where it was formed into lead concentrate. Lead concentrate at the site was/is derived from the physical concentration of lead sulfide ore and is typically 70 to 80 percent - 700,000 to 800,000 parts per million (ppm) lead sulfide.

The primary problem areas at this site which require action are lead contaminated soils in yards, drinking water wells contaminated with metals, and lead contaminated dust in homes along these roadways.

Jefferson County is located in southeastern Missouri. It is bordered on the north by St. Louis County and the Meramec River; on the east by the Mississippi River; on the south by St. Genevieve and St. Francis Counties; and on the west by Washington and Franklin Counties. The County encompasses 664 square miles. According to the 2000 census, the population of Jefferson County is 198,099 people. The county seat is located in Hillsboro, Missouri. Jefferson County was organized in 1818 and named in honor of former President Thomas Jefferson.

Mining activities in Jefferson County began in the early 1800s in southern Jefferson County, where the Cambrian dolomite source rock is concentrated along Big River and other major streams. The first production operation was a lead shot tower erected in 1809 in the southern part of Herculaneum. Two mines were in operation as early as 1818: Gray's mine was located on Big River and McKane's mine was located on Dry Creek. Many other mines were opened in the 1830s and 1840s for the production of lead, zinc, and barium (tiff). By 1855, three smelters were operating in Jefferson County, including Valles Mines, Mammoth Mines, and Sandy Mines. Historical records indicate that over three million pounds of lead was shipped out of Jefferson County annually during this time period, making it one of the leading lead producers.

The IMOP database lists 253 historical sites associated with mining and production operations in Jefferson County. Of these, 202 of the mining sites were designated for lead or lead and other commodities, particularly zinc and barium (tiff). Most of the remaining sites were exclusively tiff mines. Past mining operators in Jefferson County included the St. Joe Lead Company (now Doe Run), the Valle Mining Company, the Big River Lead Company, Del Stocking, Magnolia Mining & Milling Company, Sandy Mining Company, National Lead Company, Bennett Lead & Zinc Company, Walther Mining Company, Ed Dixon, Big River L.M., M. & Development Company, and Iva Schmitz-Rome & John. Of these operators, Doe Run is the only mining operator currently listed in Jefferson County. Doe Run's smelter was opened in 1892 by their predecessor, the St. Joe Lead Company. In 2003, the Doe Run smelter was producing over 100,000 tons of lead a year. The Valle Mining company is also still in existence, but no longer mines for lead. According to historical records, the company operated the lead mine and smelting operation at Valles Mines from approximately 1824 through the 1930s. The ruins of several ore milling structures, a former smelter, chat piles, and mill wastes are still present in the vicinity of Valle Mines.

In September 2006, EPA began an integrated site assessment, which included soil and groundwater sampling in the area. During this sampling event, EPA sampled the soil at 353 residences located on or near mining or mine waste disposal areas. Based on this data, approximately 22% (55) of these residential properties had soils which exceeded 400 ppm, and roughly 6% (22) had soils which exceeded 1200 ppm for lead. Beginning in September 2006, EPA also sampled approximately 304 private drinking water wells in Jefferson County. Of these 304 wells sampled, 36 (12%) were found with lead levels greater than 15 ppb and 2 with cadmium levels greater than 5 ppb. Of those wells with lead greater than 15 ppb, 16 (5%) had lead levels greater than 30ppb.

### **Current Activities**

EPA continues to sample residential yards and private drinking water wells. In OU 00, 100 properties have been found with lead levels greater than the removal action level of 1,200 ppm. Thirty-eight drinking water wells have lead levels above the action level of 15 ug/L (ppb), and two wells are above the action level of 5 ug/L for cadmium. All of those residents have been offered bottled water as an alternative for drinking and cooking.

EPA has excavated the lead-contaminated soil from 41 of the properties thus far.

### **Planned Removal Actions**

EPA will continue to sample residential yards and private drinking water wells. EPA will continue to provide alternative drinking water and will continue with excavation of contaminated residential yards.

### **Next Steps**

Complete study of filtration systems and begin installation of point-of-use filtration systems in homes with contaminated drinking water.

### **Key Issues**

Periodic heavy rains throughout the spring and summer, and steep slopes on most properties excavated has made it difficult to establish lawns. Ditches are cut into the new lawns, requiring crews to rework the damaged areas (sometimes more than once at a property). Various techniques have been used and are being evaluated to reduce the erosion problem.

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