

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

**Date:** Friday, May 18, 2007

**From:** Greg Weigel

**To:** Chris Field, EPA Region 10 (POLREP List) Calvin Terada, EPA ERU

**Subject:** POLREP - Initiation of PRP-lead Removal Action  
FMC Pond 16S  
Hwy 30, 3 miles west of Pocatello, Pocatello, ID  
Latitude: 42.9028000  
Longitude: -112.5586000

<b>POLREP No.:</b>	2	<b>Site #:</b>	10EY
<b>Reporting Period:</b>		<b>D.O. #:</b>	
<b>Start Date:</b>	4/12/2007	<b>Response Authority:</b>	CERCLA
<b>Mob Date:</b>	4/12/2007	<b>Response Type:</b>	Time-Critical
<b>Demob Date:</b>		<b>NPL Status:</b>	NPL
<b>Completion Date:</b>		<b>Incident Category:</b>	Removal Action
<b>CERCLIS ID #:</b>	IDD984666610	<b>Contract #</b>	
<b>RCRIS ID #:</b>			

**Site Description**

FMC manufactured elemental phosphorus from the late 1940s until December 2001. Since 2001, FMC has decommissioned and dismantled the manufacturing plant and closed waste ponds. RCRA closed Pond 16S covers an area of approximately 10.2 acres and contains approximately 140 acre feet of phosphorus containing waste from the elemental phosphorus manufacturing process. The Pond 16S RCRA cap consists of a seven foot thick evapo-transpiration layer composed of soil, gravel and sand, which overlays a geo-synthetic composite barrier and drainage system over the waste. A pressure monitoring and gas collection system was installed around the perimeter. Eight temperature monitoring sensors were also installed in well casings on top of the cap that extend through the geo-synthetic barrier to above the waste.

In June 2006, visible air emissions were observed coming from the temperature monitoring ports (TMPs) at Pond 16S. Air emissions were subsequently observed by Shoshone Bannock Tribal staff in September, 2006. These were thought to be emissions of phosphorus pentoxide, from the auto-ignition of phosphine gas. FMC reported that phosphine gas had collecting in TMP well casings, where it was auto-igniting. The auto-ignition concentration of phosphine is 20,000 parts per million (ppm). The concentration of phosphine gas that is immediately dangerous to life and health is 50 ppm. In November 2006, the EPA On-Scene Coordinator and START contractor conducted removal site assessment activities at Pond 16S. Additional, follow-up air sampling was conducted by EPA and START contractor in December, 2006. Air samples were collected of ambient air in the vicinity of Pond 16S, as well as from a TMP. Analytical results showed phosphine concentrations up to 360 ppm from the TMP. Additionally, hydrogen cyanide and hydrogen sulfide gasses were detected at significant concentrations. In ambient air, hydrogen sulfide was detected at low levels; phosphine and hydrogen cyanide were not detected in ambient air.

In December 2006, EPA issued a Unilateral Administrative Order under CERCLA, requiring FMC to characterize gas generation under the cap, conduct ambient air monitoring, and design, construct and operate a gas extraction and treatment system capable of drawing down gas concentrations under the cap to safe levels. The scope of work was subsequently modified to also require FMC to implement an interim gas extraction and treatment system until the larger system can be designed and built.

**Current Activities**

On April 12, 2007, FMC began operation of the Mobile Gas Extraction and Treatment Unit, required under the Order. The Mobile Unit is an interim gas extraction and treatment system designed to extract and treat gasses from under the Pond 16S cap, by extracting gas at relatively low volume from a single TMP.

On April 13, 2007, the EPA OSC was on site meeting with FMC and Shoshone Bannock Tribal

personnel, to review operation of the Mobile Unit and discuss the Gas Characterization and Ambient Air Monitoring Work Plans.

### Planned Removal Actions

FMC will begin sample collection week of May 21, 2007, as required for implementation of the Ambient Air Monitoring and Gas Characterization Work Plans. Ambient Air Monitoring will include collection of 11 sets of air samples over 30 days from 3 locations downwind of Pond 16S, and one upwind location. Additionally, FMC will conduct monitoring on the cap surface to determine if gasses are leaking through the cap, and will collect soil gas samples to determine if gasses may be migrating laterally from under the cap. Gas Characterization will involve the collection of three sets of samples from each of the 8 TMPs to characterize gas generation under the cap. The EPA OSC will be on site to oversee portions of the sample collection effort.

FMC will provide a 60% design for the final gas extraction and treatment system by the end of May.

### Next Steps

The OSC must receive comments from Tribes on May revision to the Gas Characterization and Ambient Air Monitoring Work Plans. After consideration of Tribal comments, the OSC anticipates approving the revised portion of the Work Plans, so that Work Plans implementation can begin as scheduled week of May 21, 2007.

### Key Issues

Since deployment of the Mobile Unit, FMC has provided weekly activity reporting, including phosphine concentration of gas extracted from TMP #2. The reported concentrations are back-calculated from concentrations of phosphine measured in diluted gas before undergoing treatment. The calculated concentrations have been extremely high, ranging from approximately 100,000 ppm phosphine to 500,000 ppm phosphine. FMC believes these reported concentrations may be biased high as a result of inaccurate calculation formulae. Analytical results from gas characterization sample collection will provide data on actual concentrations from the 8 locations of the TMPs.

### Estimated Costs \*

	Budgeted	Total To Date	Remaining	% Remaining
<b>Extramural Costs</b>				
<b>Intramural Costs</b>				
<b>Total Site Costs</b>	\$0.00	\$0.00	\$0.00	0.00%

\* The above accounting of expenditures is an estimate based on figures known to the OSC at the time this report was written. The OSC does not necessarily receive specific figures on final payments made to any contractor(s). Other financial data which the OSC must rely upon may not be entirely up-to-date. The cost accounting provided in this report does not necessarily represent an exact monetary figure which the government may include in any claim for cost recovery.

[response.epa.gov/FMCPond16S](http://response.epa.gov/FMCPond16S)

POLREP #2 Last Updated 9/27/2007