

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

**Date:** Sunday, August 3, 2008  
**From:** Leo Francendese

**Subject:** Cap Progress/Liner Laid/Topsoil Blending  
Barite Hill Nevada Goldfields  
McCormick, SC  
Latitude: 33.8711000  
Longitude: -82.2972000

<b>POLREP No.:</b>	13	<b>Site #:</b>	A4NZ
<b>Reporting Period:</b>	7/13/08 - 8/4/08	<b>D.O. #:</b>	
<b>Start Date:</b>	10/15/2007	<b>Response Authority:</b>	CERCLA
<b>Mob Date:</b>	10/15/2007	<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>		<b>Contract #</b>	
<b>RCRIS ID #:</b>			

#### **Site Description**

The Barite Hill/Nevada Goldfields site is located approximately 3 miles south of McCormick, South Carolina between US 378 and US 221 on the northern side of Road 30 in McCormick County, South Carolina. The mine site is relatively remote; there are no buildings, homes, or commercial buildings within 0.5 miles of the boundary. The site actively mined gold from 1991 to 1995. From 1995 until Nevada Goldfields filed for Chapter 7 Bankruptcy in 1999, the reclamation of the site was being addressed by Nevada Goldfields. On July 7, 1999 Nevada Goldfields handed the facility's keys to SCDHEC and abandoned the site.

The site is located along a topographic high ridge area forming the headwaters of an unnamed tributary to Hawes Creek. The topography of the area consists of rolling hills with ridgelines at an elevation of about 500 feet. Within the site, the ridgeline comprising the site has a high point of about 510 feet and an average elevation of approximately 480 feet.

The permitted mine site totals 795.2 acres. Of this total, 659.7 acres are designated as buffer area (areas not disturbed beyond the pre-mine natural state); therefore the maximum disturbance area is 135.5 acres.

The facility used a cyanide solution in a heap leach process to extract gold from ore. There are 7 processing ponds and 1 sediment pond onsite. Three large, multi-acre waste rock piles exist in varying condition. Each waste rock pile has the potential for producing acid. Storm water run on and runoff are not controlled at the site. The Main Pit ("Acid Pit") from the mining operations remains. The 10 acre Acid Pit contains approximately 60,000,000 gallons of water with an average pH of 2 ~ 2.2 and a high dissolved metal content. Seeps from the Acid Pit containing acidic water with high dissolved metal content are being released to the northern unnamed tributaries of Hawes Creek which borders the pit at a rate of approximately 5 gpm.

As per a referral by the State of South Carolina, the EPA Region 4 Removal Program conducted a Removal Site Evaluation (RSE) according to the National Contingency Plan (NCP). During the RSE of March 2007, the OSC conducted an emergency response whose scope included the demolition of a furnace building and onsite neutralization of over 2000 lbs of varying strength acids and bases. As of 9/19/07, the Agency has approved an Action Memorandum to conduct a removal action. The removal action commenced on 10/15/07 and includes a Bureau of Reclamation designed cap for the 250,000 CYs of acid producing waste rock adjacent to the Acid Pit, Acid Pit neutralization and cyanide deactivation in one of the onsite process ponds.

The project is expected to take about 12 to 16 months to complete and is projected to cost approximately 4,000,000 dollars. Details concerning this action can be found in both the documents section and Pollution Reports (POLREPS) which are updated on a periodic basis.

#### **Current Activities**

Cap Construction Progress (North and South)

- 100 percent cap saprolite layer graded
- 98 percent grading of cap clay layer

- 10 percent cap rip rap zones placed
- 100 percent cap toe construction
- 100 percent cap liner laid
- 10 percent cap topsoil blending/placement
- 0 percent cap seeding
- 40 percent irrigation system
- 75 percent watershed drainage completed
- 40 percent spillway constructed

- The Barite Hill Pit Lake water quality continues to improve as documented by the most recent late July 08 data. This can be referenced in the following updated table:

<https://www.epaosc.net/sites/2768/files/pit%20lake%20data%20comps%20as%20of%20july%2030%202008%5B1%5D.pdf>

- Please refer to the attached webpage link for the complete SCDHEC 61-68 Water Classifications and Standards. [http://www.epa.gov/waterscience/standards/wqslibrary/sc/sc\\_4\\_wqs.pdf](http://www.epa.gov/waterscience/standards/wqslibrary/sc/sc_4_wqs.pdf)

- ORP continues to demonstrate negative conditions conducive to SRB activity as metal sulfide capture continues. Daily measurements can be found via <http://www.isi-data.com/Default.aspx> login jharrington password jharrington

#### Planned Removal Actions

- 40 ml HDPE textured liner was laid during the week of July 28th according to the BOR recommended design.
- Georgia Pacific continues to provide organic base for the topsoil blend. Beginning the week of July 28th, the organic base will be shredded and mixed with onsite saprolite to create the recommended sandy loam topsoil. Blend is being coordinated with SCDHEC and the local County Soil Conservation agent.
- SCDHEC has recommended a blend of fescue and rye for the expected late September to mid October seeding with potential for a springtime inoculated clover seeding event.
- Subcontractor has been selected for the installation of the irrigation well pump tentatively scheduled for mid August 2008.

#### Next Steps

- Region 4 Office of Regional Counsel, HQ Attorneys that are experts on Good Samaritan orders from OECA's Office of Site Remediation Enforcement and SCDHEC continue to pursue negotiations for an arrangement to provide post removal removal site controls with a publically held private mining/reclamation firm.
- Coordination with the Remedial Program continues for post removal cap monitoring. RPM has selected the designer. The intent is to create a long term monitoring system that measures various parameters for both the Barite Hill Pit Lake and the engineered cap for the North and South Waste Rock areas.
- BOR and ORD national mining experts in addition to an international reclamation expert met onsite during the week of the 28th to evaluate site remediation progress as it pertains to the Barite Hill Pit Lake seep and receiving creek historically known as Mineral Springs Creek. Initial field measured flowrates at 3 locations were observed to be less than 1 gpm. This is a 5 fold decrease from the seep rate observed prior to removal remediation efforts on the Barite Hill Pit Lake. The findings likely indicate that mineralization is occurring in the seeps that are similar in nature to the Barite Hill Pit Lake. A letter report of the complete findings will be available in the next POLREP.

#### Estimated Costs \*

	Budgeted	Total To Date	Remaining	% Remaining
<b>Extramural Costs</b>				
CMC Environmental Services	\$3,300,000.00	\$2,645,000.00	\$655,000.00	19.85%
Bureau of Reclamation	\$350,000.00	\$300,000.00	\$50,000.00	14.29%
TN&A	\$250,000.00	\$210,000.00	\$40,000.00	16.00%
<b>Intramural Costs</b>				
<b>Total Site Costs</b>	<b>\$3,900,000.00</b>	<b>\$3,155,000.00</b>	<b>\$745,000.00</b>	<b>19.10%</b>

\* 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/baritehillnevadagoldfieldsremoval](http://response.epa.gov/baritehillnevadagoldfieldsremoval)