

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

**Date:** Friday, May 2, 2008

**From:** Leo Francendese

**Subject:** Grading/Neutralization Complete/Capping Begins/Annual Mining Conference  
Recognition  
Barite Hill Nevada Goldfields  
McCormick, SC  
Latitude: 33.8711000  
Longitude: -82.2972000

<b>POLREP No.:</b>	9	<b>Site #:</b>	A4NZ
<b>Reporting Period:</b>	4-19-08 thru 4-30-08	<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

### CONSTRUCTION ACTIVITIES

- Carbide lime neutralization of the Acid Pit water began on February 4th, 2008. The operation is complete and equipment is being deconned. Approximately 1858 tons of carbide lime were mixed into the pit waters at a 4% mixture rate in an aerated batched application system developed and constructed by the prime contractor.
- Patented carbon loading treatment methodology continued as part of the Acid Pit treatment strategy. This application part of this treatment is nearly complete as well with monitoring and sampling of results pending. To date, approximately 1281 tons of Georgia Pacific provided, aged-wood chips, 375 tons of molasses and 21 tons of methanol have been carbon loaded into the Acid Pit.
- The Acid Pit is currently maintaining negative orp conducive to the growth of sulfate reducing bacteria and also maintaining a pH between 7 and 7.5.
- Grading of both waste rock piles has been completed and the layering and grading of site sourced clay has begun following the BOR design.
- Georgia Pacific delivered approx 1500 CY of donated material to be used as topsoil. Results are pending for carbon and nitrogen analysis in order to determine suitability of the material for revegetation.

### INVESTIGATION/EVALUATION ACTIVITIES IN SUPPORT OF BOR DESIGN

- BOR Spillway design calculations are 80% complete.
- Satellite recorded mini-trolls continue to operate in the Acid Pit at 5' and 40' measuring parameters such as DO, ORP, pH, temperature and turbidity.
- Please see [www.isi-data.com](http://www.isi-data.com) for updates at 1:00 PM and 7:00 AM. Login: jharrington Pass: jharrington.
- Weather station continues to monitor and record daily work conditions.

### MEETINGS/PUBLIC AFFAIRS

- The SCDHEC representative was onsite 4-30-08 and met with R4 Removal Program management to survey the progress and coordinate with OSC. The State continues to be satisfied with the pace, design and success of the project. Additional discussion took place regarding the potential for a US based mining/restoration company to pursue taking on post removal operations and maintenance.
- BOR presented the project on April 22 at the EPA sponsored 16th Annual Mine Design, Operations, and Closure Conference held in Butte, Montana. The project was received as a model for restoration of an acid mine pit. The simultaneous addition of carbon and lime to the acidic pit lake, which resulted in formation of a thin layer of iron sulfide sludge, was seen to be an important advancement in the practice of mine reclamation.

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