

# **Captain Jack Mill**

## **Left Hand Canyon, Boulder County, Colorado**

### **Overview of Selected Remedy**

The selected remedy for cleaning up the Captain Jack Mill Superfund Site has two components, as it controls both surface and subsurface contamination sources.

To control subsurface contamination, the remedy (Alternative 3B in the Remedial Investigation / Feasibility Study) consists of an installed bulkhead, mine pool mitigation, and phased successive biochemical reactor treatment. The concrete bulkhead will plug the draining mine adit, impounding the mine water. The mine pool environment will have reduced oxygen levels, which, coupled with an injected caustic chemical, will increase the pH of the water to a neutral condition (Phase I). If necessary, after approximately two years of neutralization, the Colorado Department of Public Health and Environment may install a series of biochemical reactors outside of the mine (Phase II). The reactors use microorganisms to transform hazardous contaminants into non-hazardous substances. Following bioreactor treatment, the water would flow through wetlands for additional "polishing" treatment before entering Lefthand Creek. Because of uncertainties over the mine workings, there will be extensive groundwater monitoring once the bulkhead is installed.

Under the selected surface remedy (Alternative 2C), all waste will be excavated and placed in several onsite consolidation cells. The selected remedy calls for excavation of all site material containing contaminants of concern in concentrations above the remedial action levels.

To contain the waste, each consolidation cell will have a cap. The caps will likely consist of a liner impervious to water, coarse material to prevent rainwater from seeping down and contacting the waste, and topsoil to support vegetation. Before the liner is placed on the waste, alkaline material would be mixed into the top six inches of the waste material to minimize acidic leaching. Officials will fully evaluate potential locations for the consolidation cells, as well as locations from which to borrow dirt for the cap, during the design phase.

### **Planned Activity**

The following are the tentative timelines for activities:

#### Surface:

Design:	2011
Construction:	2011

#### Subsurface:

Design:	Spring 2011 - Spring 2012
Construction:	Spring - Fall 2012