



Colorado Department
of Public Health
and Environment

California Gulch Superfund Site Operable Unit 6

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY • REGION 8 • JUNE 2010

Proposed Plan Announced to Amend the OU6 (Stray Horse Gulch) Record of Decision

Public Meeting & Comment Period Announced

The U.S. Environmental Protection Agency (EPA) and the State of Colorado (State) invite the public to review and comment on a proposed plan to amend the 2003 Record of Decision for Operable Unit 6 (OU6) of the California Gulch Superfund Site located near Leadville, Colorado. This plan affects a portion of the existing remedy addressing environmental contamination in the Stray Horse Gulch area of OU6.

The *Proposed Plan to Amend the OU6 Record of Decision* outlines EPA's and the State's proposed modifications to the remedy selected for Stray Horse Gulch in 2003. The purpose of this fact sheet is two-fold: 1) provide an abbreviated explanation of the proposed remedy modifications, and 2) explain opportunities for public comment.

For more information about the remedy modifications proposed by EPA and the State, the public is encouraged to review the entire *Proposed Plan to Amend the OU6 Record of Decision* (information on how to obtain a copy of this and other documents are provided in the box on page 4 of this fact sheet).

Your Opportunities to Comment

Release of the *Proposed Plan to Amend the OU6 Record of Decision (Proposed Plan)* begins a process that may result in the selection of an amended remedy for OU6. Your comment and input about the proposed plan and the draft *Procedures to Reduce Potential Adverse Impacts to Historic Sites in the Proposed Work Area in OU6* are important and encouraged.

Your oral and written comments about the proposed plan are welcome at the public meeting (see sidebar) and during a public comment period that runs until **July 12, 2010**. Written comments may also be sent to EPA Project Manager Linda Kiefer (see sidebar for mailing information).

We want to hear from you!

Public Meeting Invitation

June 24, 2010 at 6:30 p.m.
National Mining Hall of Fame
& Museum, Longyear Auditorium
120 West 9th Street, Leadville, CO 80461
(Use 10th Street entrance)

Public Comment Period:

June 10, 2010 to July 12, 2010

Send Written Comments to:

Linda Kiefer, Project Manager
U.S. EPA, Region 8 (EPR-SR)
1595 Wynkoop Street
Denver, CO 80202-1129
E-mail: kiefer.linda@epa.gov

Written comments will be accepted and must be postmarked or sent by e-mail by close of business on **July 12, 2010**. Requests for an extension of the comment period must be made in writing to Linda Kiefer at the above address and received by 5:00 pm on **July 12, 2010**.

¿Habla Español?

Esta reunión cere el 24 de junio del 2010 (6:30 p.m.) en el Museo de la Minería y es sobre el plan para limpiar la contaminacion medioambiental en StrayHorse Gulch cerca de Leadville, Colorado. Si usted quiere un traductor durante esta reunión, por favor llamé Karen Edson gratis a 800-227-8917 ext. 312-6136.

Question? Contact:

Jennifer Lane
Community Involvement Coordinator
800-227-8917, ext. 312-6813
E-mail: lane.jennifer@epa.gov

2003 Cleanup Plan

The cleanup remedies for Stray Horse Gulch, documented in the 2003 Record of Decision, combined two strategies to address acid rock drainage. Acid rock drainage results when rain or snowmelt flows through and over disturbed mine waste containing sulfides. This drainage contains heavy metals that are toxic to aquatic organisms (fish and what they eat) and has historically caused problems with water quality in the Arkansas River.

The first strategy was to consolidate and cap mine waste rock piles, and the second was to manage surface water. The consolidate and cap portion of the remedy prevents the generation of acid rock drainage. Waste rock was excavated, consolidated and covered with a multilayered “cap” to prevent snowmelt and rain from making contact with the sulfidic waste rock. EPA consolidated and capped the following waste rock piles in Stray Horse Gulch: Penrose, Hamm’s, Maid of Erin, Mahala and Wolfstone. EPA also moved some of the waste rock from the Ponsardine to an area near the Mikado and RAM piles. The capping remedies in the OU6 remedy are performing as expected with periodic maintenance.

The surface water management remedy implemented in Stray Horse Gulch involved two components. The first involved construction of diversion ditches uphill of waste rock piles. The ditches divert clean water around sulfide-containing waste rock. These diversions reduce the amount of water that comes into contact with the piles and thereby reduces the generation of acid rock drainage. The second component involved constructing diversion ditches and retention ponds below waste rock piles to collect contaminated runoff. The original intent was to contain all of the acid rock drainage in the retention ponds. However, more drainage was generated than the ponds could hold, so EPA constructed an overflow system. The acid rock drainage, collected in the Marion Pond and then discharged into the Marion Shaft, moves through a series of stopes, laterals and shafts to the Leadville Mine Drainage Tunnel. The tunnel is used to convey the surface water to U.S. Bureau of Reclamation’s water treatment plant for processing and subsequent release into the Arkansas River. This strategy allows acid rock drainage to be generated but attempts to manage and treat contaminated water. EPA implemented the surface water management strategy at the Adelaide-Ward,

RAM, Greenback, Highland Mary, Resurrection-Fortune, New Mikado, Old Mikado and Pyrenees waste rock piles.

Aspects of the 2003 Decision Not Implemented

To date, the following components of the selected remedy have not been implemented:

- a bulkhead in the tunnel has not been constructed;
- an on-site repository has not been constructed as part of another operable unit; and
- land use controls under an ICO District were implemented but then repealed.

Reason for the Proposed Modification to the 2003 Cleanup Plan

The present acid rock drainage collection and diversion system is relatively successful in eliminating the release of acid rock drainage to surface water. What is of concern to EPA and the State, however, is the several million gallons of acid rock drainage generated from the uncapped mine waste rock piles that are annually diverted to the Leadville Mine Drainage Tunnel. Studies conducted before and after signing the 2003 Record of Decision indicate that only a portion of the acid rock drainage introduced into the tunnel from the Marion Shaft arrives at the Bureau’s plant for treatment. The portion of the acid rock drainage that is unaccounted for may migrate into mine workings and/or natural fractures/faults with the potential to discharge to alluvial groundwater and/or springs and seeps and eventually may enter a stream or river.

It is these uncertainties that have convinced EPA and the State that the remedy as presently implemented does not sufficiently meet the Remedial Action Objectives set forth in the 2003 Record of Decision. In addition, uncertainties regarding the fate of the acid rock drainage placed down the Marion Shaft raise significant doubts regarding the long-term effectiveness of this portion of the selected remedy.

Proposed Remedy Modifications

The proposed remedy amendment includes the following components:

- Expand and enhance the current clean water diversion systems along the Mahala, Pyrenees, Greenback, RAM, Old Mikado, New Mikado, and Adelaide-Ward to increase the volume of clean water transported away from acid rock drainage-generating sources. Clean water will be collected and diverted into existing clean water systems such as California Gulch, Stray Horse Gulch and Starr Ditch.
- In order to prevent infiltration of snowmelt and rain into the mine waste and reduce the volume of acid rock drainage generated, EPA will cap, as determined in the design phase, all or parts of the Greenback, RAM, Old Mikado, New Mikado, and Adelaide-Ward Mine waste rock piles. Due to their historic value, the piles will be capped in a way that will maintain their current appearance to the greatest extent possible. In particular, the surfaces of the piles that are visible along the Mineral Belt Trail and county roads will be handled with great care. At the request of Lake County officials in 2009, EPA conducted a pilot capping study to demonstrate various capping approaches that can achieve the environmental goals of acid rock drainage reduction while at the same time minimizing the alteration of the appearance of the piles.
- The existing acid rock drainage collection system including retention ponds (Pyrenees, Greenback, Marion, RAM, Old Mikado, New Mikado, Upper Adelaide and Lower Adelaide) will be enhanced, enlarged and lined to be able to hold spring runoff flows of the acid rock drainage generated. The specific sizing of the retention ponds will be determined in the design phase and will be based on a 100-year event design capacity with the option of constructing 500-year event ponds where feasible.
- Eliminate use of the Leadville Mine Drainage Tunnel for conveyance of acid rock drainage to the Bureau's treatment plant except in the case of an extreme weather event whereby the only other option would be to release untreated acid rock drainage into Stray Horse Gulch.
- Monitoring of groundwater and water levels in the tunnel will be shifted to the OU12 site-wide surface and groundwater remedy. The monitoring plan, which is part of the OU12 Record of Decision, is being developed as part of the OU12 remedial design.
- A site-wide repository will be constructed in Stray Horse Gulch as part of the OU6 remedy. This repository will be made available for disposal of sediment or soils generated by periodic maintenance of remedy features by EPA or the State at OU5, OU6, OU7, OU11 and OU12. Additionally, remediation wastes from residential and non-residential soil removals in OU9, as directed by the OU9 Work Group, and soil excavations of commercial properties throughout the site, up to a limit of 2,500 cubic yards per project, may be placed in the repository. The repository will meet applicable or relevant and appropriate requirements, including the States' Solid Waste regulations and federal RCRA subtitle D regulations. After construction, the State and Lake County will operate and maintain the repository.
- Institutional controls (ICs) are needed to protect engineered remedies and to reduce exposure to contaminants left in place. Lake County has enacted land use control ordinances for other OUs at the site. EPA will work with Lake County to develop a similar land use control ordinance for OU6. These controls will protect existing remedies, including caps and diversions, and will ensure that future changes in land use are protective of human health and the environment. The institutional controls for OU6 will need to comply with Colorado's Environmental Covenants Act (C.R.S. 25-15-317 to 327).

Cost Estimate for the Modifications

Capital Cost	\$18,000,000
Time to Implement.....	2 years
100-year present worth operation & maintenance costs.....	\$458,043
100-year present worth costs	\$18,458,043

Historic Mitigation

EPA and the State developed a draft *Procedures to Reduce Potential Adverse Impacts to Historic Sites in the Proposed Work Area in OU6*. The draft plan is available for review and comment (please see box below on how to obtain a copy). Generally, EPA seeks to avoid impacting identified cultural resources, but if avoidance is not possible, EPA will mitigate impacts of the proposed remedial actions on historic features in the area. Additionally, EPA may restore head frames and other structures, and provide interpretive signage and other features along the Mineral Belt Trail to support heritage tourism based on public input. These historic mitigation objectives will be included in a *Historic Preservation Plan*. The draft *Historic Preservation Plan* will be available for public input during the design phase.

The final mitigation plan, which will include the *Procedures to Reduce Potential Adverse Impacts to Historic Sites in the Proposed Work Area in OU6* and the *Historic Preservation Plan*, will be based on community input regarding historic preservation and mitigation. See www.merid.org/leadville for more information. EPA will finalize the mitigation plan during the design phase of the project.

How Can I Obtain a Copy of the Proposed Plan and Other Documents?

Copies of the *Proposed Plan to Amend the OU6 Record of Decision* and the draft *Procedures to Reduce Potential Adverse Impacts to Historic Sites in the Proposed Work Area in OU6* are available at the information repositories, the Lake County Commissioners' office and at EPA Region 8's California Gulch Web page:

www.epa.gov/region8/superfund/co/calgulch

You can also request a copy of the documents by contacting Jennifer Lane, EPA's Community Involvement Coordinator:

Phone (toll-free): 800-227-8917, ext. 312-6813

E-mail: lane.jennifer@epa.gov

We Value Your Opinions About This Fact Sheet!

Please take a few moments to either telephone or e-mail your responses to Jennifer Lane:

Phone: 800-227-8917, ext. 312-6813

E-mail: lane.jennifer@epa.gov

1. How clear and understandable are our fact sheets and other mailings?
2. Are we providing the information you need and in a timely manner?
3. What other information can we provide to help you?

Information Repository Locations

Lake County Public Library
1115 Harrison Avenue
Leadville, CO 80461
719-486-0569

Colorado Mountain College Library
Timberline Campus
Leadville, CO 80461
719-486-4249

Copies of these documents can also be found on our Web page:

www.epa.gov/region8/superfund/co/calgulch

State Project Contacts

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