http://yosemite.epa.gov/r9/sfund/r9sfdocw.nsf/vwsoalphabetic/Iron+Mountain+Mine?OpenDocument
Last updated on Friday, November 04, 2011

Region 9: Superfund

Iron Mountain Mine

EPA #: CAD980498612

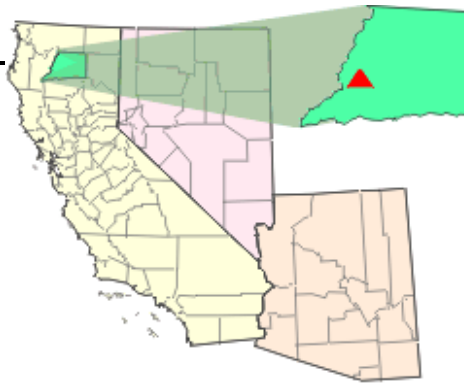
State: California(CA)

County: Shasta

City: 9 miles northwest of Redding

Congressional District: 02

Other Names: Other Names:



Map this site in Cleanups in My Community

Bulletin Board

On this page

Links

Iron Mountain Mine in the press!

EXIT Disclaimer

Record Searchlight (Redding newspaper, includes video) - June 2009

San Francisco Chronicle - June 2009

Description and History

NPL Listing History

NPL Status: Final
Proposed Date: 12/30/82
Final Date: 09/08/83
Deleted Date:

From the 1860s through 1963, the 4,400-acre Iron Mountain Mine (IMM) site periodically was mined for iron, silver, gold, copper, zinc, and pyrite. Though mining operations were discontinued in 1963, underground mine workings, waste rock dumps, piles of mine tailings, and an open mine pit still remain at the site. Historic mining activity at IMM has fractured the mountain, exposing minerals in the mountain to surface water, rain water, and oxygen. When pyrite is exposed to moisture and oxygen, sulfuric acid forms. This sulfuric acid runs through the mountain and leaches out copper, cadmium, zinc, and other heavy metals. This acid flows out of the seeps and portals of the mine. Much of the acidic mine drainage ultimately is channeled into the Spring Creek Reservoir by creeks surrounding IMM. The Bureau of Reclamation periodically releases the stored acid mine drainage into Keswick Reservoir. Planned releases are timed to coincide with the presence of diluting releases of water from Shasta Dam. On occasion, uncontrolled spills and excessive waste releases have occurred when Spring Creek Reservoir reached capacity. Without sufficient dilution, this results in the release of harmful quantities of heavy metals into the Sacramento River. Approximately 70,000 people use surface water within 3 miles as their source of drinking water. The low pH and high heavy metal contamination from the mine have caused the virtual elimination of aquatic life in sections of Slickrock Creek, Boulder Creek, and Spring Creek. Since 1963, spills from the containment reservoir during large storms have caused at least 20 major fish kills in the Sacramento River [1.]. Winter-run salmon are listed as endangered by the National Marine Fisheries Service under the Endangered Species Act The Sacramento River downstream of its confluence with drainage from Iron Mountain Mine is the sole spawning ground for this species and a failure of the retention dam is considered a significant risk to their continued existence [2.]

1. Nordstrom, D.K. and C. N. Alpers, 1999. Negative pH, efflorescent mineralogy, and consequences for environmental restoration at the Iron Mountain Superfund site, California *Proc. Natl. Acad. Sci. U.S.A. 96, 3455.*

2. Good, T.P., R.S. Waples, and P. Adams (editors). 2005. Updated status of federally listed ESUs of West Coast salmon and steelhead. U.S. Dept. Commer., NOAA Tech. Memo. NMFS-NWFSC-66, 598 p. available at: http://www.nwr.noaa.gov/Publications/Biological-Status-Reviews/loader.cfm?csModule=security/getfile&pageid=21346 See page 145 for a summary of factors, including Iron Mountain Mine.

Contaminants and Risks

Contaminated Media:

Surface Water

Environmentally Sensitive Area

Surface water has been contaminated by the release of sulfuric acid, copper, zinc, and cadmium from the mine. People face a health risk if they accidentally ingest or come into direct contact with mine drainage. There is a potential for accumulation of contaminants in fish. The unplanned release of contaminants acutely toxic to aquatic life has contributed to the steady decline in fish populations and has contributed to the listing of the Winter Run Chinook Salmon as an endangered species.

Who is Involved

This site is being addressed through Federal and potentially responsible parties' actions.

Investigation and Cleanup Activities

This site is being addressed in six stages: emergency actions and five long-term remedial phases focusing on water management, and cleanup of major sources in Boulder Creek, the Old Mine/No. 8 Mine, area source AMD discharges and sediments.

Emergency Actions: A lime neutralization process was installed at the site to treat acid mine discharge from the Richmond Portal prior to discharge to the reservoir. This system was operated by the EPA during the winter rainy season of 1988 until 1989. Rhone- Poulenc, Inc., a

Initial Actions potentially responsible party, operated a similar system during the 1989 to 1990, 1990 to 1991, 1991 to 1992, 1992 to 1993, and 1993 to 1994 rainy seasons.


Cleanup Ongoing

Water Management: In late 1986, the EPA selected cleanup remedies addressing several parts of the Water Management area. Cleanup activities include: capping selected cracked and caved ground areas; diverting clean Upper Slickrock Creek water around waste rock and mine tailing piles; diverting Upper Spring Creek; diverting clean surface water in South Fork Spring Creek to Rock Creek; enlarging the Spring Creek debris dam; and performing hydrogeologic studies and field-scale pilot demonstrations to better define the feasibility of controlling acid mine drainage formation. The studies and pilot demonstrations were completed. In 1989, the EPA completed capping cracked and caved ground areas and the open pit mine on Iron Mountain. The EPA completed the diversion of Slick Rock Creek in early 1990. Rhone-Poulenc completed construction of the Upper Spring Creek diversion in early 1991. EPA has not constructed two of the actions, the South fork of Spring Creek Diversion and the enlargement of the Spring Creek Debris Dam. EPA has proposed an alternate treatment approach that eliminated the need for these water management actions.


Cleanup Ongoing

Richmond Mine and Lawson Tunnel AMD Discharges: The EPA completed its study of the nature and extent of major point source contaminant sources in the Boulder Creek Watershed. In late 1992, the EPA selected an interim remedy to treat the acid mine drainage discharges from the Richmond Mine and Lawson Tunnel by constructing collection and conveyance systems, and a lime neutralization treatment plant. The treatment plant has been built and has been operating since 1994. Treatment will continue, until an alternate remedy could be developed to recover metals or control the discharges, to assure meeting all cleanup goals.


Cleanup Ongoing

Old Mine/No. 8 Mine AMD Discharges: The EPA has studied the nature and extent of contamination that discharges from the mine seep that originates from the Old Mine and No. 8 Mine. In the fall of 1993, the EPA selected an interim cleanup remedy, which included collecting and treating the acid mine drainage discharges from these sources. A collection and conveyance system, and a treatment system have been built and have been in operation to treat these AMD discharges since 1994.


Cleanup Ongoing

Slickrock Creek Area Source AMD Discharges: The EPA completed its study of the nature and extent of the area source AMD discharges from the Slickrock Creek drainage at IMM. In September 1997, EPA selected a remedy that relies on the collection and treatment of the contaminated Slickrock Creek flows to establish significant additional control of the IMM AMD discharges. In September 2000 EPA completed the construction of a clean water diversion system, a five acre sedimentation basin, surface water controls, a small earthfill embankment dam, and a conveyance pipeline to assure the collection and treatment of the contaminated discharges at the existing treatment plant. Only minor modifications to the IMM treatment plant were required to implement this additional treatment effort.


Cleanup Ongoing

Spring Creek Arm of Keswick Reservoir Sediments: The EPA completed its study of the nature and extent of contamination associated with sediments downgradient of IMM that are located in the Spring Creek Arm of Keswick Reservoir. In September 2000 EPA selected a remedy that provides for dredging approximately 200,000 cubic yards of copper and zinc contaminated sediments from the Spring Creek Arm of Keswick Reservoir.

In August 2008 the EPA initiated construction of the first phase of this cleanup action by constructing access roadways and clearing the disposal cell area. EPA expects to complete the construction of the project infrastructure and perform the contaminated sediment dredging operations over the next three to four years.


Site Studies

Boulder Creek Area Source AMD Discharges: The EPA continues to collect data to characterize the nature and extent of Boulder Creek area source AMD discharges. The EPA is continuing to study potential remedial approaches for the area source AMD discharges from the Boulder Creek drainage.

In 1989, the EPA ordered the potentially responsible parties to implement emergency response corrective measures to remove the metal contamination. In 1990, the EPA, under an Administrative Order, required the parties to implement the Upper Spring Creek diversion cleanup action. In 1991, the EPA ordered the potentially responsible parties to assume responsibility for operation and

maintenance of the completed cleanup actions. In 1992, the EPA ordered the potentially responsible parties to construct the treatment system for the Boulder Creek Watershed. In 1993, the EPA ordered potentially responsible parties to implement the collection and treatment system for the acid mine drainage discharges at the Old Mine/No. 8 Mine

Cleanup Results to Date

The installation and operation of the full scale neutralization system, the capping of areas of the mine, and the construction and operation of the Slickrock Creek Retention Reservoir to collect contaminated runoff for treatment have significantly reduced the acid and metal contamination in surface water at the Iron Mountain Mine site. Cleanup activities are continuing and additional studies are taking place. The diversion of Upper Spring Creek has greatly increased the ability of the EPA and the Bureau of Reclamation to manage the continuing release of contaminants from the site to minimize harm to the Sacramento River ecosystem until a final remedy can be selected and implemented.

Potentially Responsible Parties

Potentially responsible parties (PRPs) refers to companies that are potentially responsible for generating, transporting, or disposing of the hazardous waste found at the site.

PRPs for the Iron Mountain Mine site include: AventisCrop Sciences (formerly Rhone-Poulenc), Iron Mountain Mines, Inc., and Mr. T. W. Arman.

Documents and Reports

Administrative Records

MATHESON REMOVAL

Sediment Studies Operable Unit

September 1997 Record of Decision (part 1)

September 1997 Record of Decision (part 1)

September 1997 Record of Decision (part 2)

September 1997 Record of Decision (part 2)

September 1997 Record of Decision (part 3)

September 1997 Record of Decision (part 3)

September 1997 Record of Decision (part 4)

September 1997 Record of Decision (part 4)

September 1997 Record of Decision (part 5)

September 1997 Record of Decision (part 5)

Fact Sheets

10/01/00 Proposed $862 Million Settlement to Pay for Iron Mountain Mine Cleanup

08/01/03 EPA Conducts Five Year Review of Cleanup

08/01/04 Opportunity for Public Comment on Proposed Plan to Clean up Contaminated Sediments

03/01/05 IMM PROJECT UPDATE: REMOVAL OF PYRITE MINING WASTES FROM MATHESON SITE.

02/29/08 U.S. EPA Conducting Five-Year Review of Site

06/23/09 EPA Accelerating Cleanup Efforts at Iron Mountain Mine Site Supporting Local Economy with Recovery Act Funds

09/15/09 EPA Will Be Dredging Sediments in Spring Creek Arm of Keswick Reservoir

03/17/10 EPA Will Be Dredging Sediments in Spring Creek Arm of Keswick Reservoir

Records of Decision

10/03/86 Record of Decision for Operating Unit 01

09/30/92 Record of Decision for Boulder Creek Operable Unit [7.2MB]

09/24/93 Record of Decision for Old and No. 8 Mines [6.3MB]

09/30/97 Record of Decision for Slickrock Creek Area [10.7MB]

09/30/04 Record of Decision (ROD) for Spring Creek Arm of Keswick Reservoir Operable Unit 5

Technical Documents

09/30/93 First Five Year Review Report

10/08/98 Second Five Year Review Report

09/30/03 Third Five Year Review Report

07/14/08 Fourth Five Year Review Report

Community Involvement

Public Meetings:

Public Information Repositories

The public information repositories for
the site are at the following locations:

Redding Library Shasta Public Libraries 1100 Parkview Avenue Redding, CA 96001 530-245-7252

The most complete collection of documents
is the official EPA site file, maintained at
the following location:

Superfund Records Center
Mail Stop SFD-7C
95 Hawthorne Street, Room 403
San Francisco, CA 94105
(415) 820-4700

Enter main lobby of 75 Hawthorne street,
go to 4th floor of South Wing Annex.

Additional Links
Contacts

	Name	Phone Number	Email	Address
EPA Site Manager	Lily Tavassoli James Sickles	415-972-3146 415-972-3265	Tavassoli.Lily@epamail.epa.gov Sickles.James@epamail.epa.gov	Mail Code SFD72 75 Hawthorne Street San Francisco, CA 94105
EPA Community Involvement Coordinator	Dana Barton	415-972-3087 1-800-231-3075	Barton.Dana@epamail.epa.gov	Mail Code SFD63 75 Hawthorne Street San Francisco, CA 94105
EPA Public Information Center		415-947-8701	r9.info@epa.gov	
State Contact	Ed Cargile	916-255-3703	ECargile@dtsc.ca.gov	Department of Toxic Substances Control 8800 Cal Center Drive Sacramento, 95826-3200

PRP Contact				
Community Contact				
Other Contacts				
After Hours (Emergency Response)	US EPA	(800) 424-8802		

Last updated September 19, 2011