



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

AR0006

SDMS # 99414

ACTION MEMORANDUM

DATE: July 8, 1999

SUBJECT: Request for a Removal Action at the Buena Vista/Klau Mercury Mine Site,
San Luis Obispo County, California

FROM: Daniel Suter, OSC 
Emergency Response Office (SFD-6)

TO: Keith Takata, Director
Superfund Programs (SFD-1)

THRU: Terry Brubaker, Chief 
Emergency Response Office (SFD-6)

I. PURPOSE

The purpose of this Action Memo is to request and document approval of the proposed Removal Action described herein for the Buena Vista/Klau Mercury Mine Site located in San Luis Obispo County, California ("the Site").

Conditions presently exist at the Site which, if not addressed by implementing the response action documented in this Action Memorandum; may lead to continued off-site migration and release of contaminants which may pose an imminent and substantial endangerment to the public health or welfare or the environment.

II. SITE CONDITIONS AND BACKGROUND

Site Status:	Non-NPL
Category of Removal:	Time-Critical
CERCLIS ID:	CA114190578
SITE ID:	FM

A. Site Description

The Buena Vista/Klau Mercury Mine Site consists of two parcels of property. The properties, known as the Buena Vista mine and the Klau mine, are owned by Buena Vista Mine, Inc. ("BVMI"), and are located approximately 12 miles west of Paso Robles, San Luis Obispo County. Mineral extraction in the vicinity of the site began in the late 1860's and continued until 1970. During mining operations, mining waste including waste rock, tailings and mercury extraction wastes were dumped in drainage channels situated downstream from the mines. Weathering from heavy rains have caused deep erosional channels throughout the site, thereby releasing additional sediment into the North Fork and South Fork of Las Tablas Creek, both of which are tributaries of Las Tablas creek. Data collected by the California Regional Water Quality Control Board ("the Regional Board") demonstrate that mercury-laden sediment from the site is impacting the Las Tablas Creek and the Lake Nacimiento Reservoir (see Figure 1).

1. Physical location

The Buena Vista/Klau Mercury Mine Site consists of two adjacent parcels of property. The Buena Vista Mine is located at Township 26S and 27S, Range 10E, Sections 3, 4, 33 and 34 of the U. S. Geological Survey Series (USGS), Mount Diablo Base & Meridian, Aldelaida 15 minute Quadrangle. The Buena Vista Mine Property is listed as assessment parcels 014-341-003 and 014-341-004 of the San Luis Obispo County Assessor's Office. The Klau Mine is located at Township 26S, Range 10E, Section 33 USGS Mount Diablo Base & Meridian, Aldelaida 15 minute Quadrangle. The Klau Mine property is listed as assessment parcels 014-341-001 of the San Luis Obispo County Assessor's Office. The area surrounding the Site is largely used for grazing purposes. The Lake Nacimiento Reservoir is approximately 10 miles north of the Site.

2. Site characteristics

The Buena Vista/Klau Mine Site consists of two abandoned mine sites which encompasses approximately 175 acres, and include five miles of underground workings, a two acre mine pit, and eroded slopes comprised of approximately 300,000 tons of mine tailings, overburden and waste rock. The mine slopes are eroding into tributaries of Las Tablas Creek which flows to the Lake Nacimiento Reservoir. Approximately 100,000 cubic yards of mine tailings have been consolidated next to a drainage channel. These tailings are generating Acid Mine Drainage (AMD) at the rate of between five and ten gallons per minute. Additional AMD is being generated from the surface expressions of the below ground workings. A small lake, approximately one acre large and 12 to 18 feet deep, is situated above the underground workings on the Klau Mine property. This lake is recharging the underground workings and causing additional AMD generation. The area around the Site is characterized by very steep

topography, with elevation ranging from 1,050 feet to more than 1,600 feet. Las Tablas Creek is a tributary to the Lake Nacimiento Reservoir, which in turn flows into the Salinas River and on to the Monterey Bay National Marine Sanctuary.

3. Removal site evaluation

On May 15, 1999 On-Scene Coordinator (OSC) Dan Suter, a member of the START Team, two Emergency Response Remediation Services (ERRS) personal, and personnel from the Central Coast Regional Water Quality Control Board (RWQCB) conducted a removal site evaluation. The removal site evaluation included observations from the site walk, and the review of information and data provided by the RWQCB.

The RWQCB has in its possession analytical data from the chemical analysis of the mine tailings, the sediment eroding into Las Tablas Creek, Las Tablas Creek sediment, dissolved mercury concentrations in Las Tablas Creek water, and background conditions. Total mercury concentrations in background sediments (all in mg/kg or parts per million) ranged from .04 ppm to 1.0 ppm, with a mean of .276 ppm. Total mercury concentrations in sediment eroding from the Klau mine into Las Tablas Creek ranged from 5.5 ppm to 16,500 ppm, with a mean concentration of 2259 ppm. The mine tailings pile at the Buena Vista Mine contain mercury concentrations of up to 940 ppm. Dissolved mercury concentrations in Las Tablas Creek water directly below the mine ranged as high as 0.046 mg/L. All water samples collected significantly exceeded the EPA ambient water quality criteria for mercury of 0.000012 mg/L.

In 1994, the RWQCB commissioned a study to identify and determine the sources of mercury contamination into the Lake Nacimiento Reservoir. The study concluded that the Buena Vista/Klau Site is the primary source of mercury loading and water pollution within the Las Tablas watershed, and that the Las Tablas Creek watershed contributes over half of the total mercury load to the Lake Nacimiento Reservoir. The Buena Vista/Klau Site, therefore, is the primary contributing source of mercury contamination in the Las Tablas Creek and Lake Nacimiento Reservoir system. The study also found a significant bioaccumulation of mercury in several fish species. The California Department of Health Services (DHS) has posted health advisories along Las Tablas Creek and at Lake Nacimiento Reservoir. Elevated mercury concentrations in the fish in the Lake Nacimiento Reservoir has triggered the San Luis Obispo County Environmental Health Department to issue a Health Advisory on Catching and Eating Fish in Lake Nacimiento and Las Tablas Creek. This Health Advisory warned women who are pregnant or who may soon become pregnant, nursing mothers, and children under five not to eat fish caught in this area, and warned all other persons not to eat more than one meal per month of fish caught in this area.

4. Release or threatened release into the environment of a hazardous substance, or pollutant or contaminant

Mercury is a hazardous substances as defined by Section 101(14) of CERCLA. A continued and / or unmitigated release of mercury from the Site could constitute a threat to the local human and animal populations, as well as to surface waters including the Las Tablas Creek and Lake Nacimiento reservoir. Lake Nacimiento reservoir is a designated drinking water source and is currently a drinking water aquifer recharge source as well as a recreational boating / fishing resource.

5. NPL status

This Site is not currently being evaluated for the NPL.

6. Maps, Pictures and other Graphic Representations

Maps and photographs of the site are attached to this Action Memo.

B. Other Actions to Date

1. Previous actions

Buena Vista Mines, Inc. (BVMI) has performed limited remediation steps at the Buena Vista Mine, and little or no remediation steps at the Klau Mine. A rudimentary AMD collection and treatment system has been installed at the Buena Vista Mine. Silt fences and water diversion channels have been constructed at the Buena Vista Mine with limited success in stopping off site migration of the contaminants. Historical information appears to indicate that the BVMI plugged the Carson Drift, the main adit at the Klau Mine, in an attempt to curtail the inflow of water to the mine workings. No other actions appear to have been performed at the Klau Mine.

2. Current actions

Currently ongoing operation and maintenance of the AMD treatment system is being performed at the Buena Vista Mine. There is no work currently occurring on the Klau mine property. Conversations with BVMI's consultant, SECOR, left the impression with those attending the site visit that SECOR has not been given full authorization by BVMI to perform the necessary remedial measures at the mines to contain and control sediment runoff and AMD discharge into the forks of Las Tablas Creek.

C. State and Local Authorities' Roles

1. State and local actions to date

For the past eleven years the RWQCB has been collecting and analyzing data from the Site, the Las Tablas Creek, and more recently Lake Nacimiento Reservoir in order to determine the extent of mercury contamination. The RWQCB has also issued numerous orders to BVMI requiring BVMI to address the contamination at and flowing from the site. All of the orders have basically been ignored by BVMI.

2. Potential for continued State/local response

Neither the State nor the local agencies have sufficient funds to perform the Site cleanup. It is been brought to the attention of the RWQCB staff that the RWQCB will be expected to play a significant role in the cleanup, and to perform certain activities such as operation and maintenance of a constructed AMD wetland treatment system and continued monitoring of the situation. The RWQCB staff have notified their management and is currently researching funding. In addition, representatives from State and local response organizations may be requested to assist and coordinate with the OSC in various tasks including planning and community relations.

III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

Pursuant to Section 300.415(b)(2) of the National Contingency Plan ("NCP") the following conditions necessary for initiating a removal action exist:

A. Actual or potential exposure to hazardous substances or pollutants or contaminants by nearby populations or the food chain

Transport of mercury-laden sediment from the Site to the Las Tablas watershed and Lake Nacimiento Reservoir has been documented by the RWQCB. The biological data collected by the RWQCB to date appears to indicate that biological receptors within the Las Tablas watershed and Lake Nacimiento Reservoir are accumulating mercury. Lake Nacimiento Reservoir is a designated source of drinking water and is currently a drinking water aquifer recharge source. Water samples collected from the Las Tablas Creek significantly exceeded the EPA ambient water quality criteria for mercury of 0.000012 mg/L. Lake Nacimiento Reservoir is also used for many recreational purposes including boating and fishing. High mercury levels have led to health warnings regarding the consumption of fish from the lake. The principle pathway for the uptake of mercury by humans and wildlife is through the consumption of fish. As a result of its tendency to bioaccumulate in the food chain, mercury concentrations tend to be higher in upper trophic level species.

B. Actual or potential contamination of drinking water supplies

Lake Nacimiento is a designated source of drinking water and is currently a drinking water aquifer recharge source. Water samples collected from the Las Tablas Creek significantly exceeded the EPA ambient water quality criteria for mercury of 0.000012mg/L.

C. Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release

Not applicable.

D. High levels of hazardous substances or pollutants or contaminants in soils at or near the surface, that may migrate

Elevated levels of mercury are present in the tailing pile, eroded slopes and in sediments present in the Las Tablas Creek. Sampling conducted by the Regional Board has demonstrated that such transport has occurred in the past and is continuing to occur.

E. Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released

Heavy winter rains have caused severe surface erosion particularly along the banks of the Klau branch of Las Tablas Creek. The surface erosion has increased transport of mercury-laden sediments to the Las Tablas Creek and on to the Lake Nacimiento Reservoir.

F. Threat of fire or explosion

Not applicable.

IV. ENDANGERMENT DETERMINATION

Actual or threatened releases of hazardous substances or from this Site, if not addressed by implementing the response action selected in this Action Memorandum, may present an imminent and substantial endangerment to public health, or welfare, or the environment.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

A. Proposed Actions

1. Proposed action description

This removal action will consist of the following activities:

- Site prep and mobilization. This will include grading the entrance road to the Site and mobilization of equipment and personnel;
- At the Buena Vista Mine, preparation of the existing mine pit area to receive fill material. This will include grading and compaction in the area next to the mine pit;
- Excavation and transport of the Buena Vista reactive mine tailings and Klau mine tailings from the stream banks and drainage area to the mine pit repository area. This will require cutting haul roads to facilitate transport of material and excavation and transport of approximately 100,000 cubic yards from the Buena Vista mine and 50,000 cubic yards from the Klau mine;
- Placement and compaction of the excavated mining waste within the existing mine pit repository area. The mining waste will be placed in lifts and compacted appropriately;
- Final grading, contouring and installation of a liner covering the mine tailings within the mine pit area in order to prevent future AMD generation, erosion and landsliding;
- Grade, contour, revegetate and divert storm water from the existing eroded slopes;
- Drain the existing lake at the Klau mine and regrade the area above the underground workings to prevent recharge of the underground workings and additional AMD generation; and
- Construct a gravity fed wetlands to treat the remaining AMD seeps.

2. Applicable or relevant and appropriate requirements (ARARs)

This removal action will, to the extent practicable considering the exigencies of the situation, attain applicable or relevant and appropriate requirements under federal environmental or state environmental or facility siting laws.

Project Contingency (15%)	10,500
START Subtotal	\$ 80,500
Extramural Subtotal	\$1,802,050
Project Contingency(5%)	90,102
Total Extramural Cost	\$1,892,152
EPA Regional Personnel	50,000
EPA Headquarters Direct (10% of Regional Hours)	5,000
EPA Travel and Lodging	10,000
EPA Total	\$ 65,000
Project Total	\$1,957,152

VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

If this action is not taken or is delayed, surface erosion will continue to transport mercury-laden sediments to the Las Tablas Creek and on to the Lake Nacimiento reservoir. AMD will continue to flow to Las Tablas Creek and into the Lake Nacimiento Reservoir eventually flowing to the Salinas River and on to Monterey Bay.

VII. OUTSTANDING POLICY ISSUES

No outstanding policy issues have been identified at this time.

VIII. ENFORCEMENT

See Enforcement Confidential Addendum

IX. RECOMMENDATION

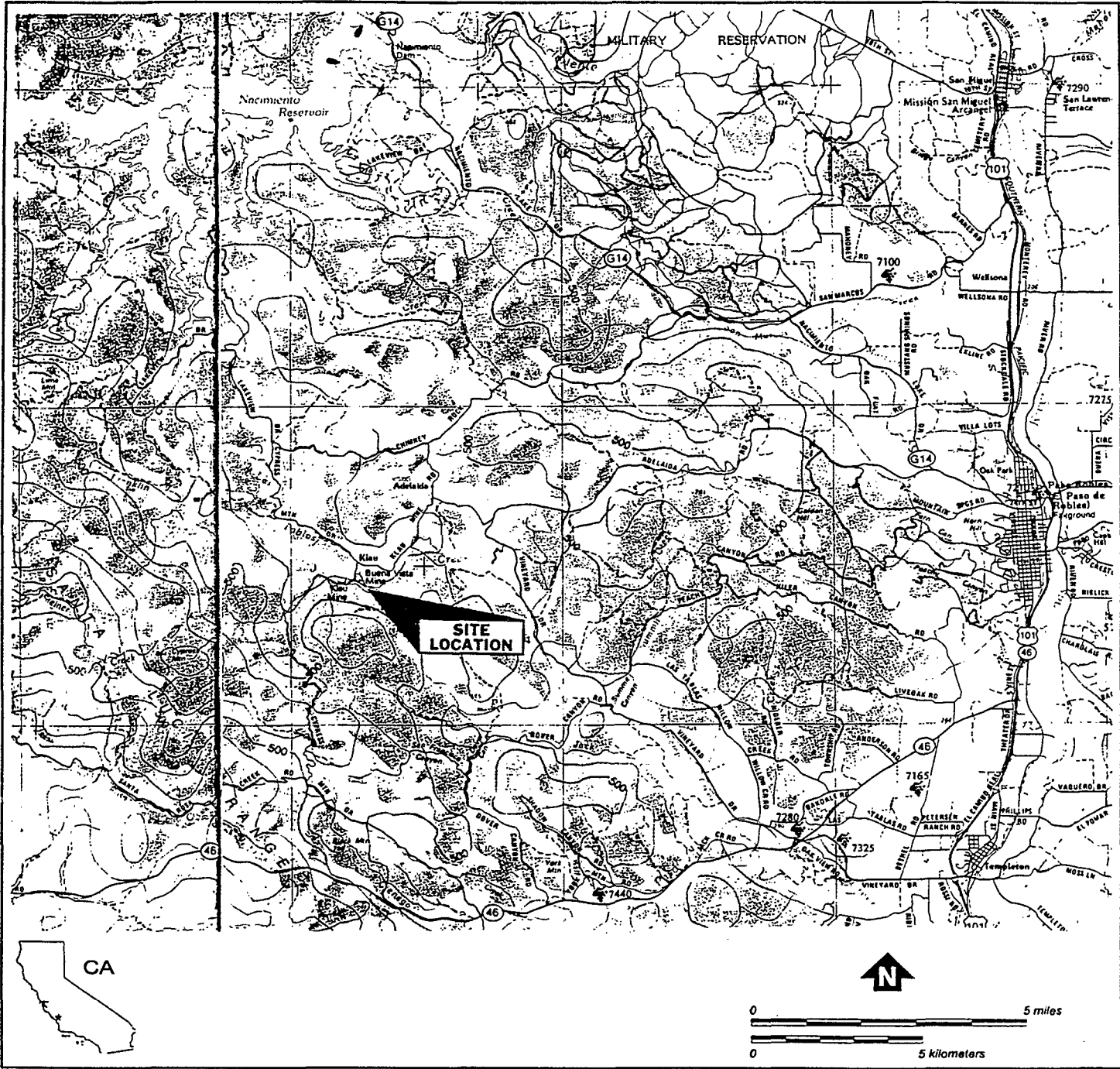
This decision document represents the selected removal action for the Buena Vista/Klau Mercury Mine Site located in San Luis Obispo County, California, developed in accordance with CERCLA as amended, and the NCP. This decision is based on the administrative record for the site.

Conditions at the site meet the NCP section 300.415(b)(2) criteria for a removal and I recommend you approve the proposed removal action. The total project ceiling if approved will be \$1,957,152. Of this, an estimated \$1,149,978 comes from the Regional removal allowance. Dependant upon budget allocations an additional \$571,572 will come from the Regional removal allowance.

[Handwritten Signature] 1/8/99
Approval Signature Date

Disapproval Signature

Date



ecology and environment, inc

Figure 1
SITE LOCATION MAP
Buena Vista/Klau Mercury Mines
San Luis Obispo, CA

005116

TDD:09-9905-0004
PAN:0428BVSFFX
Date: June 14, 1999