

U.S. ENVIRONMENTAL PROTECTION AGENCY  
POLLUTION/SITUATION REPORT  
Emancipation Mine - Removal Polrep



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Region VIII

**Subject:** POLREP #2  
Progress  
Emancipation Mine  
A8E6  
Salina, CO  
Latitude: 40.0507090 Longitude: -105.3710030

**To:** Susan Martino, Boulder County  
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**Date:** 1/22/2015

**Reporting Period:** 12/6/2014-1/21/2015

## 1. Introduction

### 1.1 Background

<b>Site Number:</b>	A8E6	<b>Contract Number:</b>	
<b>D.O. Number:</b>		<b>Action Memo Date:</b>	10/28/2014
<b>Response Authority:</b>	CERCLA	<b>Response Type:</b>	Time-Critical
<b>Response Lead:</b>	EPA	<b>Incident Category:</b>	Removal Action
<b>NPL Status:</b>	Non NPL	<b>Operable Unit:</b>	00
<b>Mobilization Date:</b>	11/3/2014	<b>Start Date:</b>	11/3/2014
<b>Demob Date:</b>		<b>Completion Date:</b>	
<b>CERCLIS ID:</b>	CON000801923	<b>RCRIS ID:</b>	
<b>ERNS No.:</b>		<b>State Notification:</b>	Yes
<b>FPN#:</b>	N/A	<b>Reimbursable Account #:</b>	

Note: This Site was confusingly named in EPA's Superfund Enterprise Management System for the Emancipation Mine which is nearby but not located directly where the work is being performed. Once the name was entered into the database, it could not be changed.

#### 1.1.1 Incident Category

Abandoned Mining Materials (Mill Tailings)

#### 1.1.2 Site Description

The Site is a residential property along Fourmile Creek in the Front Range of the Rocky Mountains. The property contains, at best estimate, 30,000-40,000 cubic yards of re-processed mill tailings that were deposited in the floodplain sometime prior to 1950.

In September 2013, an extreme flash flood changed the course of the creek. The creek is now undercutting the tailings deposit resulting in erosion and the mass slumping of soil, contaminated with heavy metals, into the creek.

##### 1.1.2.1 Location

The Site is located along Fourmile Creek immediately downstream of Salina, Colorado. It is approximately seven miles west of Boulder, Colorado, along Fourmile Canyon Drive. The latitude is 40.050869, and the longitude is -105.370810. The Site is at an elevation of roughly 6,500 feet.

##### 1.1.2.2 Description of Threat

The mill tailings contain elevated levels of arsenic and other heavy metals which are harmful to human health and aquatic ecosystems. Several downstream residential properties obtain water directly from the creek or from shallow fluvial wells. There is also a community water diversion downstream of the Site.

Continued erosion of the mill tailings, resulting in the release of hazardous materials into the creek, threatens residential water supplies and adversely impacts Fourmile Creek's aquatic ecosystem. Due to a severe wildfire that occurred in the area in 2010, Fourmile Creek is now especially prone to flash flooding. This flash flooding could result in a mass failure of mill tailings into the creek.

**1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results**

The tailings deposit is approximately 30,000 - 40,000 cubic yards in size and contains elevated levels of heavy metals, most notably arsenic. The average concentration of arsenic is approximately 200 mg/kg with some locations exceeding 2,000 mg/kg (EPA's screening level for arsenic is 50 mg/kg). This contaminated material readily and regularly migrates from the deposit into Fourmile Creek.

The following criteria exist for the initiation of a removal action in accordance with 40 CFR 300.415(b)(2) of the National Contingency Plan:

- Actual or potential exposure to nearby human populations, animals or the food chain from hazardous substances or pollutants or contaminants;
- Actual or potential contamination of drinking water supplies or sensitive ecosystems;
- High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface that may migrate;
- Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released;
- The lack of availability of other appropriate federal or state response mechanisms to respond to the release.

Work must be performed to stabilize the mill tailings before the upcoming spring snowmelt to prevent additional erosion of the tailings into Fourmile Creek.

**2. Current Activities**

**2.1 Operations Section**

**2.1.1 Narrative**

EPA's Response Unit assessed various options to address the continued erosion of the tailings into Fourmile Creek including:

1. Stabilizing the tailings in place.
2. Removing and disposing of a portion of the tailings and reconfiguring the remaining material so that it could be stabilized on Site
3. Completely removing and disposing of the the tailings to the extent practical.

Due to the proximity of the tailings to the creek, the lack of available space along this stretch of the water body and the likelihood of future flood events, EPA determined that the best course of action was to remove the tailings from the Site to the extent practical.

**2.1.2 Response Actions to Date**

EPA's Emergency and Rapid Response Services (ERRS) contractor mobilized to the Site on 11/3/14 and has performed the following activities:

- Established traffic control and public safety measures.
- Removed existing vegetation from the tailings deposit and used the vegetation to create wood chips for the Site's restoration phase.
- Diverted Fourmile Creek away from the tailings pile to the extent practical.
- Constructed access ramps and an area to stage excavated material prior to its disposal.
- Began excavation and disposal of contaminated material.

EPA's Superfund Technical Assessment & Response Team (START) contractor assisted with traffic control and provided Site documentation services. START also provided sampling and monitoring support.

Updated actions as of 1/21/2015:

- Eastern edge of tailings impoundment continues to be excavated in lifts. Depth of excavation varies due to uneven rock layers being encountered near bottom.
- Established further erosion controls due to snow and wind to protect creek. This consisted of sloping the tailings pile back and placing silt fencing around the bottom of the tailings pile. Dust suppression and wetting the road are also measures being taken.
- Sampled creek and residence drinking water/well located just downstream of site to assess for arsenic levels and ensure no further contamination has taken place. Will reassess creek prior to demob.
- Cleared and grubbed tailings pile on western end of tailings pile to prepare for excavation. Sampled several test pits to determine extent of contamination along this edge of the tailings pile.
- Paying close attention for historic mine artifacts during excavation. A wall was encountered on the eastern edge, but was in a very brittle condition. Boulder County and a local historian assessed the structure and determined it was a table used in the milling process and nothing that would likely be worth trying to save due to it's condition.
- Mine waste continues to be transported to the landfill daily.

**2.1.3 Enforcement Activities, Identity of Potentially Responsible Parties (PRPs)**

Unknown at this time.

**2.1.4 Progress Metrics**

Emancipation Mine Site - Transportation and Disposal Tracking

ER - Environmental Restoration - Trucking

IW - Iron Woman - Sub Trucking

WC - Waste Connections - Landfill

Date	ER Loads	ER CY Transport	IW Loads	IW CY Transport	IW Price/CY	IW Total	WCA Price/CY	WCA Total
11/21/14	0	0	15	150	\$31.00	\$4,650.00	\$11.50	\$1,725.00
11/24/14	0	0	30	300	\$31.00	\$9,300.00	\$11.50	\$3,450.00
11/25/14	0	0	34	340	\$31.00	\$10,540.00	\$11.50	\$3,910.00
11/26/14	0	0	45	450	\$31.00	\$13,950.00	\$11.50	\$5,175.00
12/1/14	6	80	23	230	\$31.00	\$7,130.00	\$11.50	\$3,565.00
12/2/14	15	194	33	330	\$31.00	\$10,230.00	\$11.50	\$6,026.00
12/3/14	14	188	32	320	\$31.00	\$9,920.00	\$11.50	\$5,842.00
12/4/14	15	194	32	320	\$31.00	\$9,920.00	\$11.50	\$5,911.00
12/5/14	16	208	37	370	\$31.00	\$11,470.00	\$11.50	\$6,647.00



## 2.4 Finance Section

### 2.4.1 Narrative

Depending on the amount of contaminated material encountered and the time that it will take to pull the material back from the creek, EPA may decide to finish the project in the fall of 2015. If this is the case, the project will be funded over 2 fiscal years.

As of 1/21/2015, it appears as if we may be able to finish a majority if not all of the excavation this season.

### Estimated Costs \*

	Budgeted	Total To Date	Remaining	% Remaining
<b>Extramural Costs</b>				
ERRS - Cleanup Contractor	\$1,550,000.00	\$879,485.00	\$670,515.00	43.26%
TAT/START	\$50,000.00	\$25,000.00	\$25,000.00	50.00%
<b>Intramural Costs</b>				
USEPA - Direct	\$30,000.00	\$17,000.00	\$13,000.00	43.33%
<b>Total Site Costs</b>				
	\$1,630,000.00	\$921,485.00	\$708,515.00	43.47%

\* The above accounting of expenditures is an estimate based on figures known to the OSC at the time this report was written. The OSC does not necessarily receive specific figures on final payments made to any contractor(s). Other financial data which the OSC must rely upon may not be entirely up-to-date. The cost accounting provided in this report does not necessarily represent an exact monetary figure which the government may include in any claim for cost recovery.

## 2.5 Other Command Staff

### 2.5.1 Safety Officer

Not applicable.

### 2.5.2 Liaison Officer

Not applicable.

### 2.5.3 Information Officer

Not applicable.

## 3. Participating Entities

### 3.1 Unified Command

Not applicable.

### 3.2 Cooperating Agencies

EPA is cooperating with Boulder County's Flood Recovery Team and its Department of Transportation. EPA has also been in contact with several state of Colorado agencies including the Department of Public Health and Environment and the State Historical Preservation Office.

## 4. Personnel On Site

EPA Personnel:

1 On-Scene Coordinator

ERRS Personnel:

1 Response Manager

1 Foreman

2 Equipment Operators

3 Field Technicians

4 Truck Drivers

2 Subcontracted Truck Drivers

START Personnel:

1 Sampling and Monitoring Technician

## 5. Definition of Terms

EPA: Environmental Protection Agency

ERRS: Emergency and Rapid Response Services (Contractor)

OSC: On-Scene Coordinator

START: Superfund Technical Assistance and Response Team (Contractor)

**6. Additional sources of information**

**6.1 Internet location of additional information/report**

[www.epaosc.org/Emancipation](http://www.epaosc.org/Emancipation)

**6.2 Reporting Schedule**

The next report will be distributed in mid February 2015.

**7. Situational Reference Materials**

Not applicable.

POLREP #2 Last Updated 3/18/2015