U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Barker Hughesville Mining District NPL - Block P Mine Complex - Removal Polrep

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region VIII

Subject: **POLREP #5**
Progress
Barker Hughesville Mining District NPL - Block P Mine Complex
08-5N
Monarch, MT
Latitude: 47.0878906 Longitude: -110.6378174

To: Laura Williams, EPA

From: Steve Way, OSC
Date: 12/10/2012
Reporting Period: October - November 30, 2012

1. Introduction

1.1 Background

Site Number:	08-5N	**Contract Number:**	
D.O. Number:	NA	**Action Memo Date:**	8/19/2010
Response Authority:	CERCLA	**Response Type:**	Non-Time-Critical
Response Lead:	PRP	**Incident Category:**	Removal Action
NPL Status:	NPL	**Operable Unit:**	OU1
Mobilization Date:		**Start Date:**	10/1/2010
Demob Date:		**Completion Date:**	
CERCLIS ID:		**RCRIS ID:**	
ERNS No.:		**State Notification:**	
FPN#:		**Reimbursable Account #:**	

1.1.1 Incident Category

CERCLA Non-time Critical Removal Action

1.1.2 Site Description

Mining: The Site is the location of historical mining and mineral processing only. The removal action involves the consolidation of approximately 260,000 cubic yards (cy) of waste rock into an on-site repository.

1.1.2.1 Location

The Barker Hughesville Mining District NPL Site (Site) is within Judith Basin County and Cascade County, approximately 40 miles southeast of Great Falls, Montana. The removal action includes related activities at Block P Mine, Wright and Edwards mines, Belt Patent Mine, and Grey Eagle Mine ('Block P Mine Complex'). Upper Galena Creek drainage is located in the center of the Site, downstream of Green Creek and Daisy Creek. It encompasses about 1,178 acres and includes Galena Creek from Block P Mine through the town of Barker. The Upper Galena Creek drainage also includes Silver Creek and Bend Gulch Creek. There are a total of 19 mine sites located within this drainage, the largest of which is Block P Mine. Water quality in Galena Creek is poor throughout the drainage due to degrading influences from Block P Mine Complex, upstream tributaries with contaminated mine waste, numerous adit discharges to the creek, and recharge from impacted groundwater. Creek water is often rust-colored, the pH is seasonally low, and the stream bed is iron stained.

1.1.2.2 Description of Threat

Analyses of samples collected at the Site indicate the presence of high concentrations of heavy metals including zinc, cadmium and lead in waste, sediment and mine drainage waters. For example, flows from Block P Mine adit contain zinc at concentrations ranging from 27,000 to 30,000 micrograms per liter (ug/L). In addition, these same hazardous substances are found in several miles of surface water at the Site.

Aquatic life in Galena Creek below the Block P Mine Complex is practically non-existent. Impacts to aquatic life are evident in the Dry Fork of Belt Creek below the confluence with Galena Creek due to elevated concentrations of heavy metals and low pH water being transported from the mines. Galena Creek surface water sampling shows that concentrations of heavy metals increase 10 to 20 times immediately below the Block P Mine from those samples collected immediately above the Block P Mine. These concentrations are more than 10 times above the surface water quality standards for some metals.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results

The estimated waste rock volume for the five mines of the Block P Mine Complex is approximately 260,000 cubic yards. (Includes mines waste dumps: Block P, Wright, Edwards, Belt Patent and an unnamed pile.) These waste rock dumps are located within the channels of Galena Creek and a tributary (an intermittent stream) to Silver Creek. Recent samples have shown lead concentrations in the waste rock dumps range from approximately 4,500 milligrams per kilogram (mg/kg) to 21,000 mg/kg. Zinc is also highly elevated in several waste rock samples with concentrations ranging up to approximately 3,000 mg/kg. Water from seasonal snow melt run-off and precipitation events percolate through the mine wastes, producing acid mine drainage from the dumps, releasing hazardous substances into area drainages and associated groundwater, and eroding additional wastes into surface water.

In addition, contaminated water accumulated in underground mine workings flows from adits directly into surface drainages. Flow volumes from the Block P Mine adit (discharge water at approximately a pH of 3.5 standard units) vary widely during the year, ranging as high as approximately 300 gallons per minute. Also, alluvial groundwater levels rise seasonally, saturating portions of the waste dumps which further contribute to hazardous substance releases into surface water.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

The waste rock from the Block P, Wright, and Edwards mines and Belt Patent has been consolidated in the repository on land now owned by Doe Run Resources company. The repository is designed so as to minimize infiltration and run-on and, in turn, prevent migration of hazardous substances from the waste rock. The cover system includes a geo-synthetic membrane system (40 mil LLDPE geomembrane, geogrid/geo-textile), and a soil cap. The removal action is expected to contribute to remedial performance, is intended to provide long-term protection, and to be consistent with future actions at the Site. Restoration tasks are largely complete with the exception of planting along Galena Creek at the Block P mine area.

2.1.2 Response Actions to Date

- **The final surveyed volume of waste now in the repository is approximately 230,000 cubic yards. The cover system with geosynthetic liner material and a soil cover was completed in November. Seeding and straw mulch was also placed on the soil cover before demobilization.**
- **Measures implemented at the repository include the following: installation of the perimeter road and berm, installation of drainage trenches around the perimeter of the repository, installation of several culverts and drain pipe to divert water away from the toe of the repository, seeding and mulching of adjacent exposed slopes, placement of slash on the steep slope to the southeast of the repository, and installation of straw bales and silt fence as BMPs at discharge points where water is diverted away from the repository**
- **Revegetation: Amendments (lime kiln dust and organic matter) were added to the Wright/Edwards, Belt Patent and Block P Mine area soils. Timber and slash from the area was placed in the base of the drainage. Hydro-seeding was completed on the dump sites and reclaimed roads.**
- **The final depth of excavation in the Galena Ck channel was approximately 10 feet below original waste grade in the upper reach, which required some modification to the design of the channel structure, and it appears to have lowered the water level relative to the Block P mine adit.**
- **Galena Creek channel alignment and armoring was completed following placement of additional riprap and channel widening. Additional erosion control measures were installed along the Galena creek drainage at the base of the Block P mine dump slope using straw bales and wattles.**
- **Permanent culverts were installed in Galena Ck at the upstream and downstream end of the Block P Mine. These were lined with a layer of coarse rock to facilitate fish travel also.**
- **Wright/ Edwards drainage channel check dams were installed and slash placed in the base of the channel at multiple points to capture sediment during run-off and aid in slope stability.**

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

An Administrative Order on Consent was signed in June 2011 to have the Doe Run Company implement the removal action. Prior to that an AOC was in effect for the Engineering Evaluation and Cost Analysis (EE/CA) in 2008.

2.1.4 Progress Metrics

Waste Stream	*Medium*	*Quantity*	*Manifest #*	*Treatment*	*Disposal*
Mine waste	soil	230,000 cy	oniste		Landfill

2.2 Planning Section

2.2.1 Anticipated Activities 2.2.1.1 Planned Response Activities

- Galena creek channel restoration will be completed in the Spring of 2012 at the Block P Mine.

2.3 Logistics Section

No information available at this time.

2.4 Finance Section

No information available at this time.

2.5 Other Command Staff

No information available at this time.

3. Participating Entities

USDA Forest Service staff are involved with the site on a routine basis, including the District Ranger for the Belt Ranger District and Forest Service OSC.

4. Personnel On Site

Doe Run has a fulltime person overseeing the operations, and Barr Engineering maintains a field engineer onsite.

The contractor has a superintendant, 2 operators and 7 truck drivers.

5. Definition of Terms

No information available at this time.

6. Additional sources of information

No information available at this time.

7. Situational Reference Materials

No information available at this time.

POLREP #5 Last Updated 12/10/2012