

**BASIN TOWNSITE OPERABLE UNIT 1**  
**Basin Mining Area Superfund Site**

Basin Mining Area Superfund Site Town of Basin Operable Unit 1 (OU1)  
Jefferson, County, Montana

**Date:** October 10, 2001

**Status of Site:** EPA has issued the Record of Decision for the Town of Basin Project Operable Unit 1 of the Basin Mining Area Superfund Site in Jefferson County, Montana. BLM has surface land management responsibility for land within this operable unit. This is located at Lot 20 Section 17 T6N R5W and is identified as parcel 4.4 of the Riverside Tailings. EPA Region VIII was prepared to initiate work on this site in 2001 however, a prohibition regarding new starts on National Priority List (NPL) Sites prevented this action from starting. EPA has issued a Response Action Contract for Remedial Enforcement Oversight, Non-Time Critical Removal Activities and the Final Basis for Design Report for this site. Construction was initiated in FY 2002.

BLM has entered into agreement with the EPA's contractor, the Bureau of Reclamation in order to fund the clean-up of mine waste, and its disposal, from BLM managed public land contained within this site.

**Watershed:** Boulder River Watershed HUC# 10020006

**Acres in Watershed:** 28,615 acres

**Miles of Stream in Watershed:** 22 miles

**Miles of Stream to be cleaned up and BLM's portion:** <0.3 miles total in current OU1 action. Total to be determined by EPA, BLM and USFS in the Cleanup of Watershed of Basin and Cataract Creeks (Operable Unit 02).

**Site Background:** The Basin Mining Area NPL Site includes the community of Basin (Town of Basin OU1), Montana and the surrounding watersheds of Basin Creek, Cataract Creek, and part of the Upper Boulder River watersheds (Watershed OU2). Hard rock mining began in the Basin area in the 1870's and continued intermittently into the late 1950's. Extensive mining and milling within the Basin Mining Area have resulted in uncontrolled releases of metal contaminants from waste rock, tailings and contaminated water to local streams. The town of Basin OU1 consists of several tailings pile areas around the town, a small smelter site, a mill site, and a suspected leaching operation on the east side of town.

This site was placed on the National Priorities List (NPL) in October of 1999. Previous studies led to this listing. Field sampling has been conducted from April through July, 2000. 47 surface soil samples were taken from areas identified from historical aerial photographs and site reconnaissance as potential source areas. The tailings located on

public land contain arsenic concentrations greater than 96mg/kg (365mg/kg) and lead concentrations greater than 800mg/kg. Lead in water along the Boulder River contaminant concentrations exceed the primary remediation goals for antimony, copper, lead, iron, and zinc at two locations.

Previous and current investigations have documented contamination at several mine waste sources and residential areas throughout Basin. Based on the contamination and transport mechanisms, the following remedial action objectives are recommended for residential soil and mining waste.

- Prevent direct exposure of the population to elevated concentrations in surface soil and mine waste.
- Control erosion of contaminated soil by wind and water from surface locations.
- Control airborne transport of mine waste particles, especially fine-grained materials such as tailings.
- Control erosion of mine waste into local water courses.
- Control leaching and migration of contaminants from mine waste into surface water.
- Control leaching and migration of contaminants from mine waste into groundwater.

**Lead Agency Status:** The EPA is the lead agency for this National Priorities List site, Town of Basin Operable Unit 1. The BLM, USFS and BOR are support agencies. BLM and USFS are funding their share of the cleanup on lands under their jurisdiction and the BOR is functioning as the general contractor for the clean-up.

**Reclamation Status:** The above remedial action objectives were used in determining the final remedial action for the Town of Basin. The Record of Decision presents the selected remedy for the Town of Basin Operable Unit (OU1) of the Basin Mining Area NPL Site in Jefferson County, Montana. The selected remedy for OU1 is the Removal/Transportation/Disposal (Luttrell Repository)/Institutional Controls Alternative. The selected remedy for contaminated residential soils and mine waste includes the following features:

Excavation, transportation, and disposal of contaminated residential soil and mine waste from the Town of Basin to the Luttrell repository.

Backfill the excavated areas with clean soil and revegetate the areas.

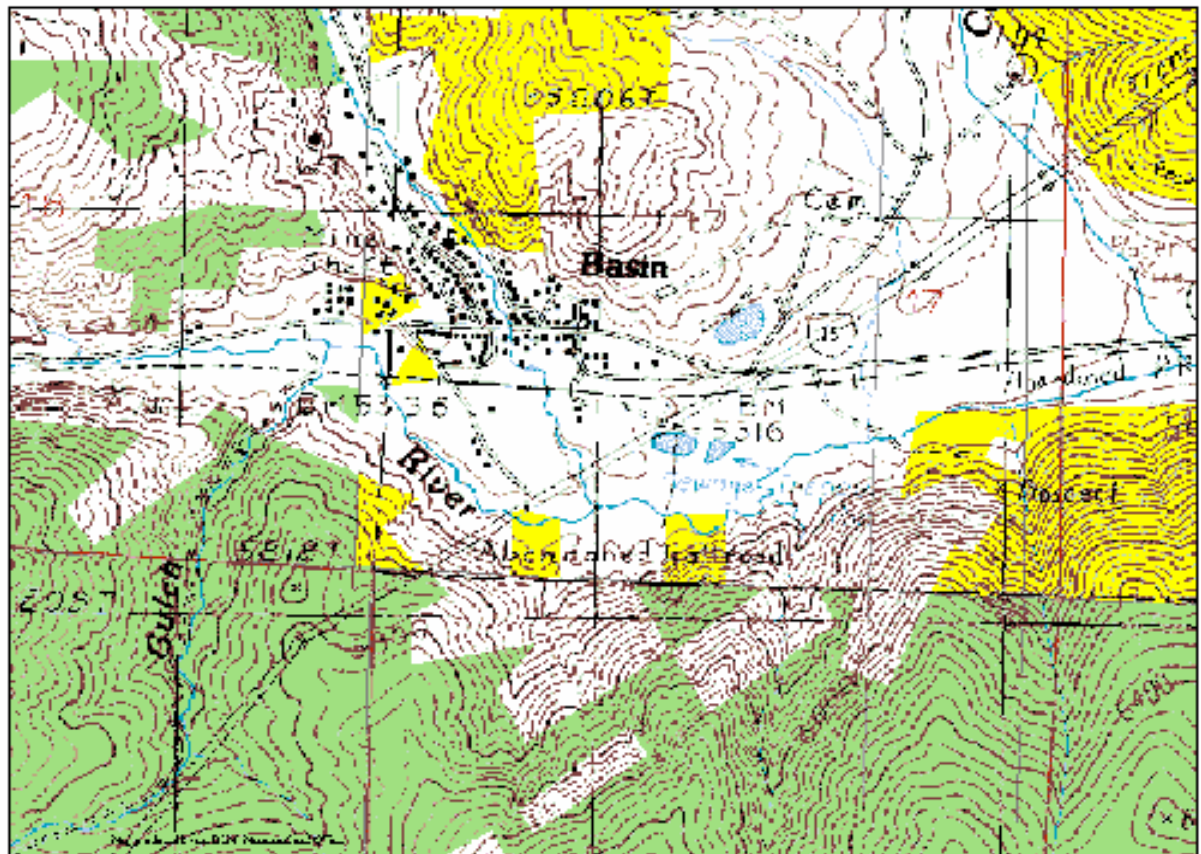
Implementation of institutional controls, which are measures to control exposure to areas where removal of mine waste may not be feasible (under structures, etc.), if risks associated with such mine waste are identified.

The selected remedy is protective of human health and the environment through the following:

1. All of the contaminated soil will be removed from the residential yards, the streamside tailings, Basin Street Tailings, the Jib Tailings, and the source areas near the wastewater treatment plant. The ore pile, located north of basin, and the upper 2 feet of contaminated soil beneath this pile will also be removed.
2. All excavations will be backfilled with clean soil and revegetated, preventing direct exposure of the Basin residents to contaminants in the soil.
3. Removal and placement of the waste material in the Luttrell Repository will control both erosion and airborne transport of contaminants in the town. Removal will also reduce leaching and migration of contaminants from mine waste into groundwater and erosion of contaminants into surface water.
4. While removal of waste material could cause a short-term exposure to airborne contamination during excavation and transportation, this exposure will be reduced by dust control measures implemented during the actual construction of this selected remedy.
5. The institutional controls component of this alternative for mine waste (proprietary controls, information, and education programs) will continue to control direct exposure to contaminants that may be inaccessible, if risks associated with such mine waste are identified.

# Basin NPL Site

State of Montana  
Surface Management Responsibility - Custom 1:15073.2 Scale

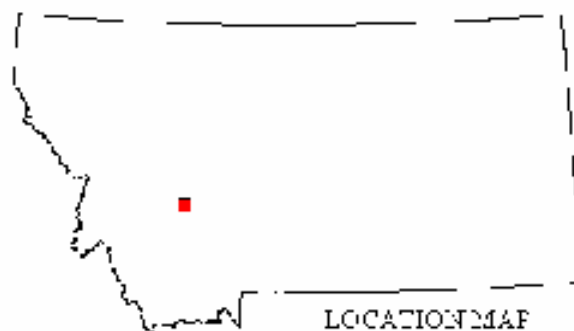
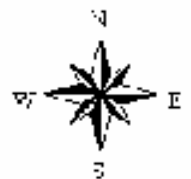


State of Montana

1:15073

## LAND STATUS LEGEND

- Private Lands
- Bureau of Land Management
- National Forests
- Indian Lands
- Military Reservation
- Agricultural Research Station
- Bankhead Jones Land Use Land
- National Park Service
- National Wildlife Refuge



LOCATION MAP

This map was made by the Bureau of Land Management  
using the best available information as of 1994.

**CAUTION:**  
Land ownership data is derived from several sources  
data from the 1:150,000 scale base map. Therefore,  
land ownership may not be shown in parcels  
smaller than 40 acres, and land ownership lines  
may have a plotting error due to source data.



LAND STATUS RESPONSIBILITY OF THE FEDERAL  
BUREAU OF LAND MANAGEMENT  
MONTANA STATE OFFICE

Map printed August 1998

The Boulder River Watershed was selected in 1996 as one of two pilot watersheds in the nation to implement the Interdepartmental Abandoned Mine Land Watershed Initiative. BLM has cleaned up several AML sites within this watershed and has plans to complete two more AML site clean-ups in 2002.

This area contains mine tailings and contaminated soil from historic precious metal mining activities. The town of Basin (Operable Unit 1 (OU1)) and the associated Basin and Cataract Creeks, as well as part of the Upper Boulder River (OU2) are currently part of the Basin Mining Area Superfund Site administered by the EPA.

**Contact:**

Peter Bierbach is the BLM point of contact regarding this site.

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**PRP Report:** The Potential Responsible Party (PRP) Report preparation was conducted by EPA. BLM did not utilize Central Hazardous Materials Funding (CHF) for PRP report preparation.

**PRP Involvement:** At this time there are no known PRPs that are taking part in this NPL site remediation effort.

**Evaluation Methodology:** BLM will coordinate closely with EPA in the cleanup of mine tailing from public lands under it's jurisdiction. Milestones will be those developed and agreed to between BLM and EPA for the final remedial action at this site.

**Funding:** MT BLM received Central Hazmat funds for this project. Estimated cost is \$100,000. In FY-2001, BLM entered into an agreement with the BOR to fund the BLM portion of this remediation effort. In addition BLM entered into a use agreement with the state of Montana to utilize the Luttrell Pit Repository to store mine waste from this project.

Basin Creek Watershed tributary of the Boulder River and the Boulder River HUC# 10020006

**Sites Identified With Water Quality Issues and Ownership:** Basin Mining Area (OU1)

**Location:** Latitude/Longitude: 46° 20'47" / 112° 19' 36"

**Ownership:** Mix of Forest Service, Private and BLM.

**PRP Information:** EPA Report

**Existing Studies:** Montana Bureau of Mines and Geology Open File Report: Abandoned/Inactive Mines of Montana, U.S. Bureau of Land Management; Abandoned Hard book Mine Priority Sites (Pioneer Technical, 1995), Abandoned Hardrock Mine Priority Sites (Pioneer Technical, 1995); EPA Remedial Investigation/Feasibility Study (RI/FS), Draft Final Sampling and Analysis Plan for Basin Mining Area Superfund Site Town of Basin Operable Unit 1 (OU1) Jefferson County, Montana (EPA, 2000); Draft Community Relations Plan For Basin Mining Area Superfund Site Town of Basin Operable Unit 1 (OU1) Jefferson County, Montana (EPA, 2000); Aerial Survey and Property Ownership Report (EPA 2000), Remedial Alternatives Screening Technical Memorandum for Basin Mining Area Superfund Site Town of Basin Operable Unit 1 (OU1) Jefferson County, Montana (EPA, 2000); USGS studies. Cultural Resource Inventory and Evaluation, Renewable Technologies Incorporated, Final Data Evaluation Technical Memorandum, (EPA 2000), Final Human Health Risk Assessment Report, (EPA 2000), Draft Feasibility Study, (EPA 2000) Final Feasibility Study (EPA 2000), Draft Remedial Investigation Report (EPA 2000) Final Remedial Investigation Report (EPA 2000), Draft FS Detailed Remedial Alternative Analysis Technical Memorandum (EPA 2000), Prefinal Basis of Design Report (EPA 2001), Response Action Contract for Remedial, Enforcement Oversight, and Non-Time Critical Removal Activities at Sites of Release or Threatened Release of hazardous Substances in EPA Region 8 Draft Final Basis of Design Report (EPA 2001), Response Action Contract for Remedial, Enforcement Oversight, and Non-Time Critical Removal Activities at Sites of Release or Threatened Release of hazardous Substances in EPA Region 8 Final Basis of Design Report (EPA 2001),

**Site Water Quality Issues:** The tailings located on public land contain arsenic concentrations greater than 96mg/kg (365mg/kg) and lead concentrations greater than 800mg/kg. These tailings are located within the floodplain of the Boulder River. Lead in water along the Boulder River exceed the primary remediation goals for antimony, copper, lead, iron, and zinc at two locations.

**Water Quality Impairments (303 d List):** Water Quality in the Boulder River and its tributaries are listed as not meeting beneficial uses due to abandoned mines.

**Recommended for Remediation:** The selected remedy for OU1 is the Removal/Transportation/Disposal (Luttrell Repository)/Institutional Controls Alternative.

**Estimated Costs:** \$3,876,200

**Physical Safety Sites:** Unknown, not on BLM managed public lands.