

Work Plan
Camp Bird Removal Action
05/30/2017

Site Name: Camp Bird Mine
Site ID: A8H9

Site Description

The Camp Bird is a famous gold mine located near Ouray, CO. A large amount of mine waste is located at the entrance to the mine's Level 14. Three water bodies run in direct contact to this mine waste: Sneffels Creek, Imogene Creek and Canyon Creek (which is formed by the confluence of Sneffels and Imogene Creeks).

Aerial View of the Camp Bird Mine at the Entrance to Level 14 in 2002¹



Removal Site Evaluation

Mine waste containing heavy metals is being actively eroded into Sneffels Creek, Imogene Creek and Canyon Creek. There is a potential that this erosion may dramatically increase due to increased runoff, streamflow and/or the mass failure of existing slopes. Some areas at the site are included in an existing mining permit with the State of Colorado.

Circumstances at the Site meet the requirements for a removal action under Section 300.415(b)(2) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP).

¹ Source: Mining History Association, <http://www.mininghistoryassociation.org/CampBird.htm>.

Removal Action Description

2017 Construction Season

Task: General Project Management

Description: Perform project management duties and general support functions.

Deliverables	Due Dates
Health and Safety Plan	TBD
Emergency Notification Plan	TBD
Monthly Status Update Template	TBD
Monthly Status Update	7 th of each month
Final Report Template	
Final Report	

Task: Improve the existing road between Camp Bird Level 14 and Level 3.

Description: Improve the existing 4-wheel drive county road between Level 14 and Level 3 so that it can be used to safely haul rip rap and cover material from Level 3 to the Camp Bird Mine workings at Level 14. Maintain traffic control and public safety on the road during construction.

Deliverables	Due Dates
Map of road improvements and appropriate design sketches.	TBD
Traffic Control and Public Safety Plan	TBD

Task: Stabilize historic waste deposits.

Description: Remove the waste deposit that is furthest downstream on the south side of Canyon Creek. This waste deposit is uncapped and bisected by a north-south trending *side channel*. Waste east of the *side channel* will be removed and consolidated with waste on the west side of the side drainage. The length of the *side channel* will be stabilized with rip-rap. Erosion control features will be designed and constructed across the entire disturbed area and uncapped area. In addition, the entire disturbed area and uncovered waste on either *side channel* shall be amended with topsoil/compost and revegetated.

Note: This area is not included in the existing mining permit with the State of Colorado. A portion of this area lies on property of the United States Forest Service.

Deliverables	Due Dates
Map of planned erosion control and restoration features.	TBD
Cut/Fill Excavation Plan and appropriate design sketches.	TBD

Task: Excavate stream channels away from the modern tailings deposits.

Description: Remove the choke point in Canyon Creek using explosives and crush the resulting rock for use as rip-rap material. Excavate the south and west banks of Imogene and Canyon Creeks downstream of the access bridge at the portal to divert the creeks away from the toe of the modern tailings deposits (located within the State-permitted mining area). Widen and restore the stream channel. Armor the channel banks to account for both normal flows and flood events. Install erosion control features across the entire constructed channel. Amend uncovered areas in the floodplain with topsoil/compost and revegetate them. Consolidate and cap soil and waste material generated during this construction effort upland away from the creeks.

Deliverables	Due Dates
Map of planned erosion control and stream features.	TBD
Stream Restoration Plan and appropriate design sketches.	TBD

2018 Construction Season

Task: Stabilize mine waste deposits outside of the permitted mining boundary.

Description: Regrade the historic mine waste deposits and existing cover material located south of Canyon Creek and outside of the State-permitted mining boundary to ensure slope stability. Construct appropriate erosion control features and cap all areas with rock harvested from Level 3.

Deliverables	Due Dates
Map of planned erosion control and restoration features.	TBD
Cut/Fill Excavation Plan and appropriate design sketches.	TBD

Tasks to be completed under revised permit with the State of Colorado

The area to the north of both Sneffels Creek and Canyon Creek contains a large tailings deposit. This area is generally included in an existing mining permit with the State of Colorado but the property is in bankruptcy and the area is not being maintained. The slopes of this tailings deposit are too steep, not well covered and are showing signs of instability.

The slope of the tailings deposit along Sneffels Creek upstream of its confluence with Canyon Creek shall be regraded to pull the toe back away from the creek.

All slopes in this area shall be stabilized by: 1) re-grading the slopes to support the installation of topsoil and/or compost and revegetation and/or 2) installing erosion fabric that is keyed in at the top and bottom of the slopes. This erosion fabric will be covered with large rip rap at the base of the slopes along the creeks and smaller rip rap towards the top. Much of this rip rap material may be harvested from Level 3 of the Camp Bird Mine workings.

In addition, the areas outside of this removal action yet within the existing mining permit with the State of Colorado shall be regraded, revegetated and/or otherwise restored to prevent long-term erosion should those areas no longer be used to support mining activities.