

Site Update Silver Dyke Adit and Drainage Site

Operational Period 5

August 14 - 20, 2023

Site Description

The Silver Dyke Mine Adit and Drainage Site is located within Operable Unit 3 (OU3) of the Carpenter-Snow Creek Mining District National Priorities List (NPL) Site (CSCMD Site), near the Town of Neihart, Cascade County, Montana. This emergency response includes initial activities to address severe erosional damage to the area around and down drainage of the Silver Dyke Mine adit that was caused by a high level of snowmelt followed by extremely heavy rains this past Spring.

Announcements

EPA anticipates occasional sediment releases and water discoloration resembling rainfall runoff in the drainage between the Silver Dyke adit and Carpenter Creek during EPA's construction activities.

Site Goals

Goal 1: Improve water management and erosion control.

- a. Divert water away from the drainage above the adit **(complete)**.
- b. Stabilize the slope above the adit to support construction **(complete)**.
- c. Complete stabilization of the slope above the adit **(in progress)**.
- d. Upgrade the bridge/water crossing at Carpenter Creek.
- e. Restore disturbed areas.
- f. Repair the toe of the two large fluvial tailings ponds.

Goal 2: Open and stabilize the Silver Dyke Adit.

- a. Prep the "Glory Hole" to receive waste **(complete)**.
- b. Remove waste rock from below the adit to the Glory Hole **(complete)**.
- c. Construct containment ponds below the adit **(in progress)**.
- d. Provide a stable flow channel for the adit drainage **(in progress)**.
- e. Conduct geophysical surveys **(in progress)**.
- f. Prep drill site above the adit.
- g. Drill into and drain the adit.
- h. Remove material blocking the adit to the Glory Hole.
- i. Install structure to keep the adit open and draining.
- j. Remove containment ponds.

Operational Period Objectives

The following were the Objectives for this past Operational Period:

1. Continue to stabilize slope above the adit.
2. Begin construction of two water management ponds below the adit.
3. Begin construction of a stable flow channel for the adit drainage.
4. Begin geophysical investigation of adit conditions.
5. Other Site management tasks.

Operational Period 5 Accomplishments

1. Another bench was cut into the slope above the adit. All benches are being reshaped and will be eventually capped and reseeded. The drainage of this slope is being improved to move runoff away from the adit.
2. A large water management pond was constructed below the road that passes the adit to support the eventual opening of the adit. Approximately 450 yds³ of waste rock was moved from this area to the Glory Hole to make room for the pond (9,270 yds³ of waste rock has been moved to date). A large berm was then constructed across the adit's drainage using native soil cover trucked in from surrounding areas. A culvert and spillway were installed in the resulting water management pond to control the flow of water when the adit is opened.
3. A stable flow channel for the adit's drainage was developed using rock and native soil harvested from nearby areas. The rock was used to line the channel of the adit's drainage from the road down to the large water management pond and the native soil was used to cap the regraded waste rock which forms the slopes on either side of the channel. Approximately 2070 yds³ of native soil was used to both cap the slopes and create a berm for the large water management pond.
4. Electrical Resistivity Tomography (ERT) and Electromagnetic (EM) Digital Geophysical Mapping Surveys were conducted during this Operations Period in an effort to locate the adit so that a well can be drilled into it. Historic mining maps were used to establish three separate survey transects. Preliminary data indicates that the location of the adit was detected on one of the three transects (the transect closest to the adit). The adit's location must be detected on two of the transects to create a line which indicates the adit's direction. The data is continuing to be processed.
5. Additional erosion control measures were taken in preparation for anticipated rainfall and additional rock to being used for drainage control was harvested.
6. During this operational period a drone collected videos at the site and the site team established a new dashboard to track operations.

PLANNED ACTIVITIES

For the Operational Period 6, August 21 - 27, 2023, the following operations are planned:

1. Continue to stabilize the slope above the adit.
2. Construct second containment pond below the adit.
3. Continue building stable flow channel for the adit discharge.
4. Conduct Seismic 3D geophysics investigation.
5. Continue road improvement, run on/off and erosion control work.
6. Continue to harvest rock for use on drainage controls.
7. Scope repair of the toe of the two large fluvial tailings ponds along Carpenter Creek.

For additional information please visit the EPA Silver Dyke Adit and Drainage Site Response page: <https://response.epa.gov/silverdykeadit>



Erosion benches above the adit.



Geophysical survey work.



Containment pond berm construction.



Drill rig access work.