




MINERALS PROGRAM INSPECTION REPORT
PHONE: (303) 866-3567

The Division of Reclamation, Mining and Safety has conducted an inspection of the mining operation noted below. This report documents observations concerning compliance with the terms of the permit and applicable rules and regulations of the Mined Land Reclamation Board.

MINE NAME: Reclamation Pit No 1	MINE/PROSPECTING ID#: M-1977-153	MINERAL: Sand and gravel	COUNTY: Adams
INSPECTION TYPE: Monitoring	INSPECTOR(S): Jared L. Ebert	INSP. DATE: February 2, 2017	INSP. TIME: 09:00
OPERATOR: Denver Water Department	OPERATOR REPRESENTATIVE: Ryan Stitt, Denver Water	TYPE OF OPERATION: 112c - Construction Regular Operation	
REASON FOR INSPECTION: Normal I&E Program	BOND CALCULATION TYPE: None	BOND AMOUNT: \$0.00	
DATE OF COMPLAINT: NA	POST INSP. CONTACTS: None	JOINT INSP. AGENCY: None	
WEATHER: Cloudy	INSPECTOR'S SIGNATURE: 	SIGNATURE DATE: February 7, 2017	

GENERAL INSPECTION TOPICS

This list identifies the environmental and permit parameters inspected and gives a categorical evaluation of each. No problems or possible violations were noted during the inspection. The mine operation was found to be in full compliance with Mineral Rules and Regulations of the Colorado Mined Land Reclamation Board for the Extraction of Construction Materials and/or for Hard Rock, Metal and Designated Mining Operations. Any person engaged in any mining operation shall notify the office of any failure or imminent failure, as soon as reasonably practicable after such person has knowledge of such condition or of any impoundment, embankment, or slope that poses a reasonable potential for danger to any persons or property or to the environment; or any environmental protection facility designed to contain or control chemicals or waste which are acid or toxic-forming, as identified in the permit.

(AR) RECORDS----- <u>N</u>	(FN) FINANCIAL WARRANTY----- <u>NA</u>	(RD) ROADS----- <u>Y</u>
(HB) HYDROLOGIC BALANCE----- <u>Y</u>	(BG) BACKFILL & GRADING----- <u>Y</u>	(EX) EXPLOSIVES----- <u>NA</u>
(PW) PROCESSING WASTE/TAILING---- <u>NA</u>	(SF) PROCESSING FACILITIES----- <u>NA</u>	(TS) TOPSOIL----- <u>Y</u>
(MP) GENL MINE PLAN COMPLIANCE- <u>Y</u>	(FW) FISH & WILDLIFE----- <u>Y</u>	(RV) REVEGETATION---- <u>Y</u>
(SM) SIGNS AND MARKERS----- <u>N</u>	(SP) STORM WATER MGT PLAN---- <u>NA</u>	(CI) COMPLETE INSP---- <u>NA</u>
(ES) OVERBURDEN/DEV. WASTE----- <u>NA</u>	(SC) EROSION/SEDIMENTATION--- <u>Y</u>	(RS) RECL PLAN/COMP-- <u>Y</u>
(AT) ACID OR TOXIC MATERIALS----- <u>NA</u>	(OD) OFF-SITE DAMAGE----- <u>Y</u>	(ST) STIPULATIONS----- <u>NA</u>

Y = Inspected and found in compliance / N = Not inspected / NA = Not applicable to this operation / PB = Problem cited / PV = Possible violation cited

OBSERVATIONS

This was a monitoring inspection of the Reclamation Pit No. 1 (M-1977-153) and the Road Runner's Rest II Pit (M-1979-195). These are two separate permits that are operated by the City and County of Denver, Board of Water Commissioners (Denver Water). Denver Water treats these two sites as one operation since the permit area for these two sites encompass one large reservoir. Given this, the inspection of these sites occurred simultaneously. I, Jared Ebert of the Colorado Division of Reclamation, Mining and Safety (Division) conducted the inspection. Mr. Ryan Stitt, Wes Eversole, Kris Sandoval and Brad Piede with Denver Water accompanied me during the inspection. The weather was cold and cloudy during the inspection.

A map is included with this report, the permit area for these two sites are depicted. This is not a certified survey map and the permit area was estimated using the index maps from the approved permit and ArcGIS software and is included for reference only. For more accurate maps, please see the approved permit file for each of these sites. The Reclamation Pit No. 1 consists of three parcels that are not contiguous but total about 159.85 acres. The Road Runner's Rest II Pit does consist of a single parcel and is about 168.41 acres in size. The post mine land use approved for these sites is Developed Water Resources, and the site consists of a large reservoir. Also within the northeast parcel of the Reclamation Pit No. 1 site, is an area north of 120th Parkway where a small recharge basin was also created.

Backfilling and Grading:

The majority of the reservoir's interior pit slopes varied in steepness from a 4:1 to 3:1 horizontal to vertical ratio. The reclamation plan requires the interior pit slopes to be graded to a 3:1 horizontal to vertical ratio. The pit slopes were stable and vegetated with grasses. One small portion of the southwest corner of the reservoir has interior slopes that were steeper than a 3:1 horizontal to vertical ratio. This area was shown to the representatives of Denver Water. This area will need to be graded to the required 3:1 horizontal to vertical ratio.

Separate from the reservoir is a small parcel that was mined in the northeast parcel of the Reclamation Pit No. 1 site. A small pit basin remains at this site that appears to catch run-off from the surrounding area. The side slopes of this basin were gentle and did not appear to be greater than a 3:1 angle.

Hydrologic Balance:

The pit was holding a small amount of water. On January 23, 2017, Mr. Stitt provided the Division a letter from the Colorado Division of Water Resources dated June 30, 2016 certifying that the slurry wall installed around the reservoir had met the design standards outlined in the August 1999 State Engineer Guidelines (SEO) for Lining Criteria for Gravel Pits. It appears a ground water mounding drain has been installed on the west side of the Reclamation Pit. The representatives from Denver water showed me the location of where the mounding drain was located as well as some valves that direct the water of the mounding drain to the discharge points.

Gen. Compliance With Mine Plan:

Mining appears to be mostly complete at the site. There are some stockpiles of material still in place on the southwest side of the reservoir in the bottom of the pit. According to Mr. Stitt, Denver Water would like to get rid of some or most of this material to increase the reservoirs capacity.

Roads:

There appears to be an access road around the reservoir that will remain on the site when reclamation is complete to facilitate operations at the reservoir. Denver Water will need to revise the reclamation plan to indicate that this road will be left in place after reclamation.

Reclamation Success:

The approved reclamation plan calls for the creation of a water reservoir that is surrounded by a slurry wall. As indicated in the Hydrologic Balance section of this report, the slurry wall has passed the required SEO guidelines. Several water conveyance structures were permitted to remain at the site including an outlet to the South Platte River. This outlet was located in the northeast Reclamation Pit No. 1 parcel north of 120th Parkway. Several other structures/facilities such as inlet and outlets, ramps to the bottom of the pit, and roads will remain on the site to facilitate site maintenance and reservoir operations. Denver Water will need to update the reclamation plan to indicate all the structures and roads that will remain on the site as well as update the reclamation plan map to show the location of these structures.

The reclamation plans for both permits require the affected area to be topsoiled and revegetated using an approved seed mixture. Based on my observations at the site, it would appear the affected areas have been topsoiled and seeded except for those areas where a road or structure/facility has been installed. Dense grass was observed throughout the site and it appears that Denver Water mowed the vegetation at the end of the growing season. Given this, it was difficult to determine the species of grass that have established. Large patches of noxious weeds were not observed.

The pit basin north of 120th Parkway is vegetated and stable with the exception of the western side of this parcel that has sparse vegetation established. It appears the operator has installed some underground water conveyance facilities at this location and this area was recently affected and vegetation has not established there.

Revegetation:

Please see the Reclamation Success section of this report for a discussion of the vegetation that has established at the site.

PHOTOGRAPHS



Figure 1. Southwest corner of the Reservoir, steep pit slope that will need to be graded to a 3:1.



Figure 2. Stockpiles at southwest corner of reservoir.



Figure 3. From northwest corner of the reservoir looking east.



Figure 4. From northwest corner looking southeast.



Figure 5. Northeast parcel of the Reclamation Pit No. 1 area. Small drainage basin.

Inspection Contact Address

Ryan Stitt, Denver Water
Denver Water Department
1600 W. 12th Ave.
Denver, CO 80204



Enclosure: Reclamation Pit No. 1 (M-1977-153) and Road Runner's Rest II Pit (M-1979-195) Map

CC: None

Reclamation Pit No. 1 (M-1977-153) and Road Runner's Rest II Pit (M-1979-195)



Legend

-  ReclamationPit_M1977153
-  RoadRunnersRestIIPit_M1979195

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

0 500 1,000 2,000 Feet

Map Created: Jared Ebert, DRMS
February 6, 2017

Permit boundaries were estimated
based on the Index Map for the respective permits.