




**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.

<b>MINE NAME:</b> Pit 29	<b>MINE/PROSPECTING ID#:</b> M-1980-183	<b>MINERAL:</b> Sand and gravel	<b>COUNTY:</b> Adams
<b>INSPECTION TYPE:</b> Monitoring	<b>INSPECTOR(S):</b> Jared L. Ebert	<b>INSP. DATE:</b> February 8, 2018	<b>INSP. TIME:</b> 10:30
<b>OPERATOR:</b> Brannan Sand and Gravel Company, L.L.C.	<b>OPERATOR REPRESENTATIVE:</b> Joshua Oliver	<b>TYPE OF OPERATION:</b> 112c - Construction Regular Operation	
<b>REASON FOR INSPECTION:</b> Normal I&E Program	<b>BOND CALCULATION TYPE:</b> Partial Bond	<b>BOND AMOUNT:</b> \$1,377,450.00	
<b>DATE OF COMPLAINT:</b> NA	<b>POST INSP. CONTACTS:</b> None	<b>JOINT INSP. AGENCY:</b> None	
<b>WEATHER:</b> Clear	<b>INSPECTOR'S SIGNATURE:</b> 	<b>SIGNATURE DATE:</b> March 7, 2018	

**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>Y</u>	(FN) FINANCIAL WARRANTY----- <u>Y</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>Y</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>Y</u>	(SP) STORM WATER MGT PLAN---- <u>NA</u>	(RS) RECL PLAN/COMP-- <u>Y</u>
(ES) OVERBURDEN/DEV. WASTE----- <u>NA</u>	(SC) EROSION/SEDIMENTATION--- <u>Y</u>	(ST) STIPULATIONS----- <u>NA</u>
(AT) ACID OR TOXIC MATERIALS----- <u>NA</u>	(OD) OFF-SITE DAMAGE----- <u>Y</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 normal monitoring inspection of the Pit 29 site, DRMS permit number M-1980-083 operated by Brannan Sand and Gravel (Brannan). I, Jared Ebert with the Colorado Division of Reclamation, Mining and Safety (Division or DRMS) conducted the inspection. Mr. Joshua Oliver with Brannan accompanied me during the inspection.

This is a 177.67 acre 112c mining operation located in Adams County. The post mining land use approved for the site is developed water resources. The site is split into three areas; Mining Areas I, II and III. Overall, mining appears to be complete at the site with the exception of the extraction and transport of stockpiled material located in Mining Area III. Mr. Oliver did indicate that Brannan may excavate the remaining un-mined material located where the current pump-house is being operated within Mining Area II.

### **Backfilling and Grading:**

Mining Area I at the southern end of the site has been reclaimed as a water storage reservoir. The reservoir was holding water and the slopes above the waterline appeared stable with the exception of some bank cutting at the southern end of the lake. Rip-rap has not been placed on the reclaimed slopes.

Mining Area II at the center of the site is being reclaimed as a water storage reservoir. According to Mr. Oliver, the slurry wall is leaking and the landowner is taking measures to repair the slurry wall. The pit is being dewatered. The majority of the slopes of the reservoir have been graded to a 3H:1V ratio or less. The slopes around the pump house located on the west side of the reservoir are steep, likely graded to a 1.5H:1V ratio. Near the southeast corner of this reservoir on the eastern reservoir slope and area estimated to be 150 to 200 feet in length has not been graded to the required 3H:1V slope. The slope is steep to near vertical at the base at this location. Mr. Oliver indicated they may need to bring in material to finish grading this area to the required slope.

The Operator has a large pile of material stockpiled in Mining Area III at the north end of the site. Brannan is loading and hauling this material offsite for use in construction projects.

### **Financial Warranty:**

The Division currently holds a financial warranty in the amount of \$1,377,450.00. The Division has evaluated this amount and believe it is adequate at this time.

### **Off-site Damage:**

Brannan has installed a French drain at the southwest corner of Mining Area II to alleviate off-site flooding of the property south of this area. The southwest corner manhole was opened and observed. Water was flowing through the French drain and standing water was not observed on the property to the south.

### **Reclamation Success:**

Largely, reclamation is complete in Mining Area I and the area is being utilized as a water storage reservoir. The vegetation above the waterline is fairly sparse consisting of annual weedy vegetation. Some willows and trees have volunteered and established along the southern pit slope. The vegetation established around the southern reservoir is not adequate for the site to be released at this time. This was discussed with Mr. Oliver. Brannan may want to consider conducting some soils test to determine if soil amendments may be necessary

and may need to re-seed the site.

The current reclamation plan calls for rip-rapping the top-bank of the reservoirs. Mr. Oliver indicated that they may wish to revise the requirement and either eliminate the requirement or limit the location where rip-rap will be installed. Brannan will need to file a Technical Revision with the Division to revise this requirement along with providing justification for this revision. There are locations observed at the southern reservoir where some bank cutting was observed along the southern and eastern pit slopes. It is likely that rip-rap will need to be installed in these areas to stabilize the slopes from further erosion.

Revegetation:

As discussed above, the vegetation established around the southern reservoir is inadequate for release at this time.

## PHOTOGRAPHS



Figure 1. From the western end of Mining Area III looking north. From on top of stockpile.



Figure 2. Mining Area III from near the center on stockpile looking north.



**Figure 3. From the southwest corner of Mining Area II looking northeast.**



**Figure 4. Un-finished steep slope on east slope of Mining Area II.**





Figure 5. Location of where French Drain was installed. From southwest corner looking east.



Figure 6. Manhole in southwest corner of French drain. Water flowing.



Figure 7. View of the property south of the French drain.



Figure 8. View of the property south of the French Drain.





**Figure 9. From the southwest corner of Mining Area I looking north.**



**Figure 10. From the southwest corner of Mining Area I looking east. South slope, some bank cutting was observed.**





**Figure 11. Unfinished slope on the east side of Mining Area II.**

**Inspection Contact Address**

Joshua Oliver  
Brannan Sand and Gravel Company, L.L.C.  
2500 East Brannan Way  
Denver, CO 80229

Enclosure

CC: