




**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> Stagecoach Pit	<b>MINE/PROSPECTING ID#:</b> M-1983-067	<b>MINERAL:</b> Sand and gravel	<b>COUNTY:</b> Adams
<b>INSPECTION TYPE:</b> Surety Release Inspection	<b>INSPECTOR(S):</b> Jared L. Ebert	<b>INSP. DATE:</b> April 9, 2018	<b>INSP. TIME:</b> 09:00
<b>OPERATOR:</b> Albert Frei & Sons Inc.	<b>OPERATOR REPRESENTATIVE:</b> Ben Frei	<b>TYPE OF OPERATION:</b> 112c - Construction Regular Operation	
<b>REASON FOR INSPECTION:</b> Normal I&E Program	<b>BOND CALCULATION TYPE:</b> None	<b>BOND AMOUNT:</b> \$231,191.00	
<b>DATE OF COMPLAINT:</b> NA	<b>POST INSP. CONTACTS:</b> None	<b>JOINT INSP. AGENCY:</b> None	
<b>WEATHER:</b> Cloudy	<b>INSPECTOR'S SIGNATURE:</b> 	<b>SIGNATURE DATE:</b> April 11, 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>NA</u>	(TS) TOPSOIL----- <u>Y</u>
(MP) GENL MINE PLAN COMPLIANCE- <u>Y</u>	(FW) FISH & WILDLIFE----- <u>NA</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 an inspection of the Stagecoach Stop Pit, DRMS Permit No. M-1983-067, operated by Albert Frei & Sons, Inc. (AFS). I, Jared Ebert with the Colorado Division of Reclamation, Mining and Safety (DRMS or Division) conducted the inspection. Mr. Ben Frei with AFS and Steve O'Brain with Environment, Inc. accompanied me during the inspection. The Division received a full/final release request in accordance with Rule 4.17 on February 27, 2018 for this site. This inspection was conducted to evaluate if the site is eligible for final bond release.

The site is a 52.4 acre 112c operation. The approved post mining land use is Developed Water Resources. The operator was approved to install a slurry wall around the pit excavation to seal the pit from the inflow of groundwater to create a water storage reservoir. Mining is complete, the slurry wall has been installed and the pit has been reclaimed.

### **Backfilling and Grading:**

The pit slopes have been graded to a 3H:1V ratio or less. The pit slopes are vegetated and stable.

### **Financial Warranty:**

The Division currently holds a letter of credit in the amount of \$231,191.00. The Division will approve the full warranty release request.

### **Hydrologic Balance:**

The slurry wall was installed between October of 2005 and December of 2005. On March 12, 2018, the Division received a letter from the Colorado Division of Water Resources indicating the final liner for the reservoir was approved by the State Engineer's Office on August 4, 2015 and that they did not have any objections to the request for full reclamation responsibility release. Water was observed at the north end of the reservoir and the Operator was pumping the water from the pit to the catchment basin on the west side of the site.

In 2009, DRMS received several complaints from members of the Zigan Lake Homeowners Association (HOA) regarding elevated ground water levels resulting from the gravel mining and reclamation in the adjacent pits. In this case, it appears groundwater is mounding against the slurry wall resulting in elevated ground water levels. There are three permitted mining and reclamation operations adjacent to the Zigan Lake and the residential area. These sites include the Stagecoach Stop Pit (M-1983-067), the Worthing Pit (M-1977-526) and Pit 29 (M-1980-183). Each of these sites has developed mitigation measures to address the high water tables.

For the Stagecoach Stop Pit, the mitigation plan was approved with Technical Revision No. 4 (TR04) which was approved on March 23, 2010. According to TR04, there is a direct correlation between the adjacent Zigan Lake water elevation and the level of the water behind the slurry wall. The plan was for AFS to install a permanent drainage structure between Zigan Lake and the South Platte River to allow the Zigan Lake HOA to regulate the water elevation of the lake. The drainage structure was installed and based on the Division's records several maintenance items and updates to the system were completed in 2014 and 2015 to insure the system functions properly. At the time of this inspection the inlet structure was observed. Based on past records, the top of the inlet vault is 5,015.65 feet. The water level was about 1 foot below the top of the vault. The outlet

was observed and water was discharging to the South Platte River.

Gen. Compliance With Mine Plan:

Mining is complete. A portion of the reservoir is within the Worthing Pit permit area to the north of this site. The Operator has excavated some material at the base of the pit in this area. AFS is the permit holder for the Worthing Pit.

Roads:

The reclamation plan indicates an access road will be maintained around the perimeter of the reservoir for maintenance and access.

Reclamation Success:

The majority of the site has been reclaimed as a water storage reservoir. The area above the anticipated water level has been revegetated with grasses. The Division observed Western Wheatgrass, Sand Dropseed, Blue Grama and pubescent wheatgrass within the reclaimed area. The site was recently mowed and some weed species were observed that the Operator will need to continue to monitor and treat. Once the site is released, the landowner will be responsible for complying with the county weed management requirements.

The site has been backfilled and graded in accordance with the approved plan. The affected area above the projected water line of the reservoir has been revegetated in accordance with the approved plan. The slurry wall has been installed and has passed the State Engineer's liner requirements and the AFS has implemented the groundwater level mitigation plan approved with TR04. Given this, the Division will approve the full bond release request.

Topsoil:

Several piles of soil were left at the base of the pit at the south side of the reservoir. Once the site is released the landowner can only use these piles onsite.

**PHOTOGRAPHS**



Figure 1. From the northeast corner of the reservoir looking west.



Figure 2. From the northeast corner of the reservoir looking south.



Figure 3. From the southeast corner of the reservoir looking north.



Figure 4. Western catchment basin.





**Figure 5. Discharge from the Zigan Lake pipe to the South Platte River.**



**Figure 6. Inlet structure at Zigan Lake.**

**Inspection Contact Address**

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Enclosure

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