



**COLORADO**


Division of Reclamation,  
Mining and Safety

Department of Natural Resources

## 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> Arkins Park Quarries	<b>MINE/PROSPECTING ID#:</b> M-1985-212	<b>MINERAL:</b> Sandstone (silica, st quartzite)	<b>COUNTY:</b> Larimer
<b>INSPECTION TYPE:</b> Monitoring	<b>INSPECTOR(S):</b> Jared L. Ebert	<b>INSP. DATE:</b> April 17, 2017	<b>INSP. TIME:</b> 09:30
<b>OPERATOR:</b> ARKINS PARK STONE CORPORATION	<b>OPERATOR REPRESENTATIVE:</b> Dewey Chandler and David Sprague	<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> \$137,600.00	
<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 18, 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>Y</u>	(RD) ROADS----- <u>N</u>
(HB) HYDROLOGIC BALANCE----- <u>N</u>	(BG) BACKFILL & GRADING----- <u>N</u>	(EX) EXPLOSIVES----- <u>N</u>
(PW) PROCESSING WASTE/TAILING---- <u>N</u>	(SF) PROCESSING FACILITIES----- <u>N</u>	(TS) TOPSOIL----- <u>N</u>
(MP) GENL MINE PLAN COMPLIANCE- <u>Y</u>	(FW) FISH & WILDLIFE----- <u>N</u>	(RV) REVEGETATION---- <u>N</u>
(SM) SIGNS AND MARKERS----- <u>N</u>	(SP) STORM WATER MGT PLAN---- <u>N</u>	(CI) COMPLETE INSP---- <u>N</u>
(ES) OVERBURDEN/DEV. WASTE----- <u>N</u>	(SC) EROSION/SEDIMENTATION--- <u>N</u>	(RS) RECL PLAN/COMP-- <u>N</u>
(AT) ACID OR TOXIC MATERIALS----- <u>N</u>	(OD) OFF-SITE DAMAGE----- <u>N</u>	(ST) STIPULATIONS----- <u>N</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 partial inspection of the Arkins Park Quarries, DRMS Permit No. M-1985-212, operated by Arkins Park Stone Corporation (Arkins). I, Jared Ebert of the Colorado Division of Reclamation, Mining and Safety (Division) conducted the inspection. Mr. David Sprague and Dewey Chandler with Arkins accompanied me during the inspection. The weather was partly cloudy and cool.

This is a 177 acre 112c sandstone quarry. The Division recently approved Amendment Application No. 3 (AM03) on February 13, 2017 which added 15.4 acres to the permit area which will increase the total permit area to 192.4 acres. Arkins must submit an additional \$79,434.00 in financial warranty in order to finalize AM03. According to Mr. Chandler, Arkins is working on submitting the additional financial warranty. The purpose of this inspection was to observe a blast conducted by Arkins. Mr. Chandler contacted the Division after the approval of AM03 to discuss the possibility of eliminating the requirement to conduct periodic seismic testing during blasting. Arkins requested the Division observe a blast. In order to remove this requirement, Arkins must submit and receive approval of a Technical Revision. The Technical Revision will need to demonstrate why seismic testing should not be required.

### **Financial Warranty:**

The Division currently holds a financial warranty in the amount of \$137,600.00. The Division last conducted a site-wide cost estimate during the review of AM03 and set the required surety to \$216,534.00 on February 13, 2017. The Division has reviewed this amount and believe it to be adequate. Arkins must still submit the additional required surety.

### **Gen. Compliance With Mine Plan:**

Arkins prepared a blast in "B" quarry on the north end of the site. They drilled eighteen blast holes, each about two inches in diameter and six feet deep. According to Mr. Sprague they put about one pound of ANFO in each of the blast holes. They stemmed each blast hole with dirt and rock from the drilling operation. They use an electric initiation system and there are no delays so each hole detonates at the same time. The blast was initiated and air blast was fairly minimal and flyrock was not observed. Quarrying is occurring on a ridge above County Road 27, there are powerlines along County Road 27 and there are several houses and other structures located east of the quarry. It appears that these structures vary in distance from each of the active quarry faces but on average are 1,500 feet to 2,000 feet away from the active quarry face where blasting occurs.

Arkins is required to maintain a log of each of the blasting events. I observed the blast logs maintained in the mine office. These logs documented the blasts from February 16, 2016 to December 1, 2016. According to the office employees, Mr. Sprague maintains the current years blast logs. According to the AM03 revised mine plan, blast logs are to include a specific list of information for each blast. Based on the blast logs observed during this inspection, the log forms contain a space to document each of the required pieces of information. However, many of the log forms were not filled out in their entirety. The information missing for many of the logs observed was: wind direction, wind speed and the height and length of stemming used. This information should be tracked. One of the spaces on the form requests the "Address of Blast". The Division assumes this is meant to document the location of the blast. Most of the blast forms observed did not have a physical address but some type of an identifier like "N Troupp". Based on this information, it is unknown where the specific location of each blast occurred. Future blast records should cite the specific location of the blast. A

common accepted practice is to list the location of the blast hole that is closest to a structure not owned or controlled by the operator. The location should be listed in latitude and longitude or using Universal Transverse Mercator (UTM) coordinates. Also, this hole should be shown on the blast sketch and the sketch should have a north arrow.

## PHOTOGRAPHS

Approximate Location of  
Blast



Figure 1. West end of "B" quarry.

LY TRANSACTIONS  
#2  
2016

ARKINS PARK STONE BLAST REPORT FORM

Name of Blaster: David Sprague Date: 12-1-16  
Time of Detonation: 3:00 Permit Number: 1-069-1753  
Address of Blast: N. Troup  
Type of Material Blasted: Sandstone  
Number of Holes: 18 Burden: 12' Spacing: 3' Diameter of Holes: 2  
Depth of Holes: 3' to 5' Type of Delay Caps Used: SF/m5 Delay Period: 0  
Type of Explosive: UNIGEL / ANFO Amount Used per Hole: 1.17# UNIGEL / 1.62# ANFO  
Total Amount of Explosives Used: 19.08#  
Maximum amount of explosives and holes detonated within 8 milliseconds: 19.08# / 18 holes

WEATHER CONDITIONS  
Temperature: 50  
Wind Direction: \_\_\_\_\_  
Wind Speed: \_\_\_\_\_

BUILDINGS/STRUCTURES  
Nearest Building/Structure: Freemans  
Direction: \_\_\_\_\_  
Distance (feet): 1,500

Method of Firing: ☒ Electric ☐ Non-electric  
☐ Cap and fuse ☐ Other: \_\_\_\_\_

Type of Stemming: Rock/Dirt Height or Length of Stemming: \_\_\_\_\_  
Mats or other protection used: none

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Figure 2. Example blast log.

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**Inspection Contact Address**

Judy Sprague  
ARKINS PARK STONE CORPORATION  
5975 NCR 27  
Loveland, CO 80538

Enclosure: None

CC: Dewey Chandler, via e-mail