



COLORADO
Division of Reclamation,
Mining and Safety
Department of Natural Resources

December 22, 2021

Michael Krauth
KrauthCo Inc
800 Garden Park Road
Cañon City, CO 81212

**Re: J&J Stone Pit #1, Permit No. M-2011-004, Technical Revision (TR-2);
Preliminary Adequacy Review**

Mr. Krauth:

The Division of Reclamation, Mining and Safety (DRMS) received a request for a Technical Revision (TR-2) addressing the following:

Blasting Plan.

The submittal was called complete for the purpose of filing on December 7, 2021. The **decision date for TR-2 is January 6, 2022**. Please be advised that if you are unable to satisfactorily address any concerns identified in this review before the decision date, **it will be your responsibility to request an extension of the review period**. If there are outstanding issues that have not been adequately addressed prior to the end of the review period, and no extension has been requested, the Division may deny this Technical Revision.

The following comments are based on the DRMS review of the request for TR-2:

- 1) Stipulations and Conditions Agreement: Item No. 4 is the only part of the submittal that addresses any of information the DRMS requires in a blasting plan. Attachment A includes a complete list of all these required elements. Please submit a blasting plan that addresses and incorporates the elements in Attachment A.

If you have any questions or need further information, please contact me at (303)866-3567 x8169.

Sincerely,

Timothy A. Cazier, P.E.
Environmental Protection Specialist

Attachment: Key Elements of a Blasting Plan

ec: DRMS file
Angela Bellantoni, PhD



ATTACHEMENT A

Key Elements of a Blasting Plan

- I. Blast Schedule Notification:
 - a. Name, address & phone number of Operator;
 - b. Identify where blasting will occur;
 - c. Day(s) and time(s) of blasting;
 - d. Methods used to control access;
 - e. Outline warning signals (e.g., sirens, horns, etc.);
 - f. Schedule distribution (who is notified: e.g., workers, residents, local governments, etc.).
- II. Pre-Blast Surveys – where agreed to and approved by structure owners:
 - a. Generally for structures within one half mile of the blast area;
 - b. Establish a pre-blasting record of existing structure(s) condition;
 - c. ID structures or contents sensitive to blasting.
- III. Blast Plan:
 - a. Limits on ground vibration;
 - b. Limits on airblast;
 - c. Methods used to control adverse effects of blasting;
 - d. Description of monitoring systems to be used and where to be set up;
 - e. Blasting protocol/procedure;
 - f. Anticipated typical blast design (this information can have a range so as not to require a specific design for each blast:
 - i. Blast purpose – what product is expected (e.g., riprap, crushed aggregate, etc.);
 - ii. Number, spacing, diameter and depth of holes;
 - iii. Type and amount of stemming material;
 - iv. Blasting agent and amount per hole; and
 - v. Type of delay detonator and delay periods expected.
 - g. Location(s) of blast monitoring.
- IV. Commit to Generating and Filing a Blast Report - The DRMS requires all Operators using explosives to complete a blasting report for each shot. The report must be retained by the Operator for at least 3 years and be available for inspection by the DRMS on demand. The record shall contain the following data, but should not be submitted as part of the Blasting Plan:
 - a. Location date and time of blast;
 - b. Name, signature and license number of blaster-in-charge;
 - c. Identification, direction and distance in feet from the nearest blast hole to the nearest potentially affected structure, such as any dwelling, school, church, or community or institutional building either:
 - i. not located in the permit area; or
 - ii. Not owned nor leased by the person who conducts the mining operations.
 - d. Weather conditions, including: temperature, wind direction, and approximate velocity;
 - e. Type of material blasted;
 - f. Sketches of the blast pattern including number of holes, burden spacing, and delay pattern. Sketches shall also show decking, if holes are decked to achieve different delay times within a hole;

- g. Diameter and depth of holes;
- h. Types of explosives used;
- i. Total weight of explosives used per hole and maximum weight of explosives used per 8-millisecond period;
- j. Initiation system;
- k. Type and length of stemming;
- l. Mats or other protections used;
- m. Type of delay detonator and delay periods used;
- n. Number of persons in the blasting crew; and
- o. Seismographic records where required including:
 - i. Type of instrument sensitivity and the calibration signal of the gain setting or certification of annual calibration;
 - ii. Exact location of instrument, the blast date and time, and the instrument distance from the blast;
 - iii. Name of the person and firm taking the reading;
 - iv. Name of the person and firm analyzing the seismographic record; and
 - v. The vibration level recorded