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

1313 Sherman Street, Room 215
Denver, CO 80203

October 14, 2015

Mr. Rob Mangone
Rocky Mountain Materials & Asphalt, Inc
1910 Rand Ave
Colorado Springs, CO 80906

Re: Red Canyon Quarry; DRMS File No. M-1985-043;
Technical Revision (TR-03) Supplemental Adequacy Comment

Dear Mr. Mangone:

On October 9, 2015 the Division of Reclamation, Mining and Safety (Division) performed blast monitoring at a complainant's residence near the Red Canyon Quarry. During the monitoring event, blast effects mitigation options were discussed with both the complainant and Mr. Tom Smith, representing the Red Canyon Quarry. All parties agreed to a blasting notification process through which the complainant of would be informed of upcoming blasting operations. The Division requires this notification process be documented by updating the blasting plan and advocates incorporating the updated blasting plan in Technical Revision No. 3 (TR-03, *Geotechnical Stability Exhibit*), as it is a related topic and currently under review by the Division.

The agreed to blasting notification process requires Red Canyon to notify the complainant 72 to 96 hours in advance of a planned blasting operation and to provide a three to four hour window in which the blast will take place. These specifics need to be included in the blasting plan along with the other key elements outlined in **Attachment A**, Key Elements of a Blasting Plan.

The Division sent its Preliminary Adequacy Review (PAR) letter on September 25, 2015 prior to the blast monitoring event. We recommend the updated blasting plan be submitted with the responses to the PAR. If you have any questions, please contact me at (303) 866-3567, ext. 8169.

Sincerely,

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

ec: Wally Erickson, DRMS
DRMS file
Tom Smith, RMMA
Complainant

ATTACHMENT 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