

January 11, 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);
Second Adequacy Review**

Mr. Krauth:

The Division of Reclamation, Mining and Safety (DRMS) has completed its review of your responses (received January 5, 2022 to our December 22, 2021 preliminary adequacy review (PAR) of your blasting plan technical revision (TR) request. **The current decision date for this TR is January 31, 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 DRMS may deny this TR.

The substantially updated blasting plan requires the following information and clarifications:

- A. Use of explosives: Item I of the “Key Elements of a Blasting Plan” provided with our December 22 PAR is intended to outline what is to be provided with a blast notification to nearby residents and local governments (if required). Item 1c in the submitted blasting plan should commit to providing a date when the planned blast is to be shot and a time window when the blast is expected to occur (e.g., between 10 am and 3 pm). The notice should be at least 24 hours prior to the blast but not more than 72 hours. Please provide a typical/expected time window for this section of the blasting plan and indicate whether any local government agencies are required to be notified of scheduled blasts.
- B. Pre-Blast Survey: A pre-blast survey is intended to document the existing condition of structures that have the potential to be damaged by blasting operations (primarily buildings and wells), near where blasting is going to occur (typically within a half mile of the blast). This survey protects the mine and its Operator in the event a complaint is filed by the structure’s owner alleging damage from blasting that existed prior to blasting. Please provide a description of what, if any, discussions were had with Mr. Waters regarding pre-blast surveys of his nearby residence shown in Figure 1 of your blasting



plan submitted on January 5th. Also clarify whether or not there are any wells or water lines within the half-mile radius. You should also document any discussions you may have had, or should have with owners of five other structures, or cluster of structures listed below (identified via a review of Google Earth imagery):

Structure No.	No. of potential structures in cluster	Latitude (decimal degrees)	Longitude (decimal degrees)
1	one	38.511551°	-105.208699°
2	three	38.504831°	-105.210338°
3	two	38.502931°	-105.206716°
4	three	38.500565°	-105.207182°
5	four	38.499252°	-105.205281°

- C. Ground vibration: This section of the blasting plan is intended to provide a commitment of not-to-exceed ground vibrations as measured by a seismograph and/or calculated weight of explosive detonated within any 8 millisecond window based on scaled distance. Please provide a not-to-exceed limit. (Note: the DRMS Minerals regulations do not have specific standards, but we recommend standards posed by the DRMS Coal regulations {see Table 1}. If you wish to use standards other than those posed by the DRMS Coal regulations, please provide justification for those standards).

Table 1 - DRMS Coal Ground Vibration Limits

Distance (D) from the Blasting Site (in feet)	Maximum Allowable Peak Particle Velocity (V max) for Ground Vibration (in inches/secondH)	Scaled-Distance Factor to be Applied without Seismic Monitoring (DsI)
0 to 300	1.25	50
301 to 5000	1.00	55
5001 and beyond	0.75	65
H	Ground velocity shall be measured as the particle velocity. Peak particle velocities shall be recorded in three mutually perpendicular directions from the blasting site. The maximum peak particle velocity shall be the largest of any of the three measurements.	
I	Applicable to the scaled-distance equation of paragraph 4.08.4(10)(c)(i)	

- D. Limits on air blast: This section of the blasting plan is intended to provide a commitment of not-to-exceed air blast or over pressure as measured by a microphone designed for such measurements. Please provide a not-to-exceed limit. (Note: the DRMS Minerals regulations do not have specific standards, but we recommend standards posed by the

DRMS Coal regulations. {see Table 2}. If you wish to use standards other than those posed by the DRMS Coal regulations, please provide justification for those standards).

Table 2 - DRMS Coal Air Blast Limits

Lower Frequency Limit of Measuring System, Hz (3dB)	Maximum Level in dB
0.1 Hz or lower – flat response ¹	134 peak
2 Hz or lower – flat response.....	133 peak
6 Hz or lower – flat response.....	129 peak
C-weighted, slow response	105 C
¹ Only when approved by the Division	

- E. Monitoring systems: The blasting plan states monitoring systems are the responsibility of the blasting professional. That may be part of your agreement with the blaster, but it is the Permittee's responsibility to ensure each blast is monitored, regardless of what the blaster plans. Please be sure the blaster incorporates monitoring to demonstrate compliance with the limits described in Comments C and D above.
- F. Blast design: The DRMS uses the information in the blast design to characterize the blasting operations. Please provide the following information that was not provided as part of Item 3.f of the January 5th submittal (a range for these items is acceptable):
- Expected diameter and spacing of the 10-12' deep holes.
 - Amount of ANFO expected for each hole and/or per each 8-millisecond delay.
- G. Location(s) of blast monitoring: The blasting plan states "Blast monitoring shall be used if and when any regulatory threshold is being approached based on above mentioned calculations provided by the blasting contractor". The DRMS as a regulatory authority requires blast monitoring to demonstrate compliance with established vibration limits. Please provide a written commitment to monitor each blast, regardless of expected impact.
- H. Blast Report: Item IV of the "Key Elements of a Blasting Plan" provided with our December 22 PAR is intended to outline what is to be included in the required blast report. This report does not need to be submitted, but must be available for inspection by the DRMS for three years following the blast for which it contains the records. The commitment to generate a blast report is what is required for approval. You should acknowledge or state explicitly in the Application blast plan that Items a - o in Item IV of the "Key Elements of a Blasting Plan" will be included in the blast report.

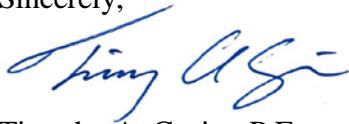
Mr. Michael Krauth

January 10, 2022

Page 4

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

Sincerely,

A handwritten signature in blue ink, appearing to read "Tim A. Cazier".

Timothy A. Cazier, P.E.

Environmental Protection Specialist

cc: DRMS file
Angela Bellantoni, PhD, EAI