

STATE OF
COLORADO

Eschberger - DNR, Amy <amy.eschberger@state.co.us>

Need extension for TR-5 / Cross Gold Mine / M1977-410

Richard Mittasch <rmittasch@nedmining.com>

Fri, Jun 12, 2020 at 11:56 AM

To: "Eschberger - DNR, Amy" <amy.eschberger@state.co.us>

Amy

Here is the Submission for the adequacy response for TR 5

I'm also including a request for 15 day extension so that your office may properly review it

I really appreciate your response in this manner

respectfully

Richard mittasch

[Quoted text hidden]

2 attachments

**TR-5 Adequacy responses 6-12-2020.pdf**
482K**DRMS Extension Request TR No5 6-12-2020.pdf**
259K



June 12, 2020
Permit No. M-1977-410

Amy Eschberger
Environmental Protection Specialist
Colorado Department of Natural Resources
Division of Reclamation, Mining and Safety
1313 Sherman Street, Room 215,
Denver, CO 80203

**RE: Cross Gold Mine, Permit No. M-1977-410, Technical Revision No. 5 (TR-05),
Preliminary Adequacy Review**

Dear Ms. Eschberger,

This letter is provided by Grand Island Resources (GIR) in response to the Adequacy Review letter from DRMS dated May 26, 2020 in conjunction with Permit No. M-1977-410, Technical Revision 5 (TR-05). After reviewing the materials submitted, DRMS identified several adequacy items that require additional information before an approval of TR-05 can be issued. These items are:

- 1) *Adequacy concerns related to the steel sets and future ground support design requirements expressed in an attached Memorandum from Jeff Graves, DRMS, dated May 20, 2020.*
- 2) *Given the potential for offsite damage and impacts to Caribou Road from any further destabilization of the collapsed portion of the Idaho Tunnel (including the void), the Division considers the collapse repair to be a high priority project requiring implementation as soon as reasonably possible (after TR-05 approval). Therefore, please provide a proposed schedule for implementation of this project.*

Jeff Graves, DRMS

Adequacy issues expressed by Jeff Graves include the following comments (paraphrasing, in italics), with corresponding replies submitted by GIR:

- 1) *The operator's desire to utilize cellular concrete to fill the collapsed void is an appropriate application for that construction material. The challenge with utilizing cellular concrete in this application is the connectivity of the void space being addressed. If the void space is not as continuous as described or pictured in TR-5, then the cellular concrete will not completely encapsulate the steel sets as designed, requiring additional void filling with a pumped material from the drift elevation to achieve the intended design. For steel sets to provide adequate passive stabilization of overburden material, there cannot be void space between the sets and overlying material.*

The collapse void was continuous with full connectivity across the back and down both ribs. Unfortunately, since TR-5 was submitted, the sides of the void have sloughed in such that the void completely daylighted in the slope in the form of a pit or crater. In so doing, the steel sets and lagging installed beneath the void were buried in the process. In order to prevent additional

sloughing that could destabilize the slope and endanger the County Road, GIR backfilled the pit with pervious cellular concrete.

To ensure that no large voids exist behind the steel sets or lagging which could compromise these ground support elements, GIR intends to probe for remaining voids from within the tunnel through holes drilled in the lagging expressly for that purpose, or between individual lagging planks. If voids are encountered, they will be filled with polyurethane foam.

2) *The applicant should verify the beam size for steel sets*

The correct size for the steel set I-beams is W6x20

3) *The designer should specify the steel type associated with any steel applications.*

The I-beams are composed of A992 steel with a Yield Tensile Strength of 50,000 psi.

4) *The applicant should provide detail of connection at the steel set footing to adequately demonstrate that the posts are laterally constrained.*

The steel set posts are anchored to 1 ft square concrete footings by means of 6-in. x 3/4- inch. diameter "Red Head" expansion bolts. The concrete footings include a rebar cage around the area where the anchors are positioned when installed.

5) *The design life should be provided as an evaluation criteria for any implemented ground control measures.*

As indicated in the Cross Mine permit (M1977-410) the operation has an estimated life of 50 years.

With a long service life, a high degree of reliability is therefore required. For this reason, in part, the existing timber ground supports at the portal are being replaced with steel sets.

The Q-System adopted for ground support design includes safety requirements that depend on the purpose, use and service life for the underground opening. To incorporate these safety requirements a factor called ESR (Excavation Support Ratio) is used. To provide a high degree of reliability GIR intends to adopt a conservative ESR = 1.3 as recommended for roadway, railroad and access tunnels, rather than the less conservative use of ESR =1.6 typically considered for permanent mine openings and water tunnels. Recognizing that all rock mass classification systems rely on some level of generalization that must be applied to site specific conditions, GIR is also committed conservative selection of rock mass characterization parameters and to upsizing the support requirements whenever a question or borderline condition exists when applying the Q-System. Where mixed conditions exist GIR will adopt rock mass parameters which are suitable for the weaker material.

Schedule for Implementation

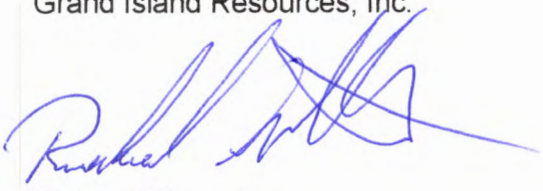
Since TR-5 was submitted, the sides of the void sloughed in such that the void completely daylighted in the slope in the form of a pit or crater. In order to prevent additional sloughing that could destabilize the slope and endanger the County Road, GIR backfilled the pit with pervious cellular concrete.

After the cellular concrete cures for several weeks, GIR proposes to begin placing an additional 3 or 4 lifts of this material to partially fill in the saddle over the tunnel for long-term stability of the slope and tunnel portal. Each lift is anticipated to be 4- or 5-ft thick placed in a set back or stairstep fashion. Individual lifts will be secured to the preceding lift with No. 8 rebar anchors on 1-ft center-to-center spacing. 8-inch x 3-inch x 8-ft long Douglas Fir lagging will be used as formwork and left in-place as facing. This entire mass will be anchored into the slope using grouted threadbar to serve as a slope retaining structure. Figure 6 presents a schematic illustration of this proposed design. GIR proposes to constructed the individual lifts in 2-week intervals such that the entire stabilization effort can be completed by late August.

Should you have any additional questions or concerns please feel free to contact me at (516) 582-0833 or by email at Rmittasch@nedmining.com at your convenience.

Sincerely,

Grand Island Resources, Inc.



Richard Mittasch
VP of Operations

Encl: Figures



GRAND ISLAND
RESOURCES

Project No. US 0401		File No.	
GIS:	JST	06/10/20	
Check:	JST	06/10/20	
Review:	JST	06/10/20	
Scale As Shown		Rev 0	
Figure x			

Section

Project
Title
Cross Mine Technical Revision No. 5

