



COLORADO

**Division of Reclamation,
Mining and Safety**

Department of Natural Resources

1313 Sherman Street, Room 215
Denver, CO 80203

July 1, 2015

Mr. David Bieber
Front Range Aggregates, LLC
1161 S. Perry St., Ste.110
Castle Rock, CO 80104

**Re: Parkdale Project, Permit No. M-1997-054;
Technical Revision (TR-6) Preliminary Adequacy Review**

Dear Mr. Andrews:

On June 10, 2015 the Division of Reclamation, Mining and Safety (Division) received a request for a Technical Revision (TR-10) addressing the following:

- *Revise the pit reclamation slope from a 3:1 slope angle with a compacted clay liner, to a slope with a static factor of safety not less than 1.5 and a liner that meets applicable design standards.*

The submittal was called complete for the purpose of filing on June 10, 2015. The decision date for TR-6 is **July 10, 2015**. 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 will deny this technical revision.

The following comments are based on the Division's review of the Request for Technical Revision TR-06:

- 1) Cover Letter, Last Paragraph: The closing paragraph proposes "Increasing the slope angle from 3:1 (horizontal to vertical) to 2:1 (horizontal to vertical)". Rule 3.1.5(7) of the Mineral Rules and Regulations of The Colorado Mined Land Reclamation Board for The Extraction of Construction Materials requires "*In all cases where a lake or pond is produced as a portion of the Reclamation Plan, all slopes, unless otherwise approved by the Board or Office, shall be no steeper than a ratio of 2:1 (horizontal to vertical ratio), except from 5 feet*

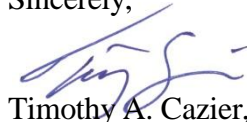


above to 10 feet below the expected water line where slopes shall be not steeper than 3:1."
Please provide the following:

- a. The expected operating level of the water storage facility,
 - b. Engineering drawings, sections, and/or details showing the expected water line/operating level and the 3H:1V side slopes where required by Rule 3.1.5(7).
- 2) Applegate Group Memorandum – The opening paragraph mentions: a) the "proposed groundwater drain". The Division could not find any information on the groundwater drain; b) "Soil Strength parameters were determined from tests performed by North American Testing, Inc.", yet the attached lab report is from Geo-Logic Associates, and assumption No. 3 states "Soil Parameters for the undisturbed alluvium and bedrock were based on our previous analysis"; and c) "The section geometry was based off a figure provided by you (*David Bieber*)". Please provide the following:
- a. Drawings and analyses related to the groundwater drain in order for the Division to understand the intent and evaluate its effectiveness,
 - b. Clarification on the source(s) for each soil parameter ("Slope Fill", "Native Alluvium", and "Native Shale Bedrock") used in the stability analyses, and
 - c. The section geometry based off a figure provided by David Bieber. This should include the final mined slope of the alluvium and the proposed liner for comparison to the slope stability analyses. (*Note: based on Comment No. 1 above, this section geometry should be revised.*)
- 3) Slope Stability Analyses: Based on the aforementioned Rule 3.1.5(7), the stability analyses should be re-run with the appropriate slope geometry. Please provide the updated analyses.

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

ec: Wally Erickson, DRMS
DRMS file