

# STATE OF COLORADO

DIVISION OF RECLAMATION, MINING AND SAFETY  
Department of Natural Resources

1313 Sherman St., Room 215  
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## MEMORANDUM

John W. Hickenlooper  
Governor

Mike King  
Executive Director

Loretta Piñeda  
Director

**To:** Dustin Czapla

**From:** Tim Cazier, P.E. 

**Date:** February 27, 2013

**Re: CM-25 Mine Drainage Design Plan – Second General Stormwater  
Comments, Permit No. M-1977-307 / AM-01**

The Division of Reclamation, Mining and Safety (DRMS) engineering staff has reviewed the January 2013 “Response to Adequacy Review #2” for the CM-25 Mine prepared by O’Connor Design Group, Inc. The following comments are posed to ensure adequate engineering analyses and design practices are implemented to eliminate or reduce to the extent practical the disturbance to the hydrologic balance expected by the mining operation with respect to water quality and quantity in accordance with Rules 3.1.6(1), 6.4.21(10) and 7.3.1. Please note, as this site is a designated mining operation (DMO), compliance with Rule 7.3.1 is applicable, thus requiring certified designs and specifications for engineered elements associated with the environmental protection plan (EPP).

1. Page 1, Response 1a – “possible liner”. The DRMS agrees this area should have a liner to collect potential leachate and prevent it from entering the underlying waste rock. Based on the drawing provided in Attachment 2, the DRMS has four concerns in addition to the unaddressed compaction and permeability specifications requested in the original Comment 1a:
  - a. A six-inch liner is insufficient. The DRMS requires a minimum clay liner thickness of 12 inches.
  - b. In order for the leachate collection system to function properly, it needs to be drained by gravity and have a lined collection pond or receptacle. Please provide drawings to indicate the expected drainage system slope and a collection pond/receptacle to separate collected leachate from the environment.
  - c. Please explain how the clay liner will be protected from desiccation cracking that could cause the liner to leak.
  - d. The liner needs a leak detection system to ensure the leachate collection system is functioning properly. Please provide a description and drawings for a leak detection system.

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- e. Please provide the originally requested compaction and permeability specifications for the clay liner.
2. Page 6, Response 5 – pond reclamation. Stormwater ponds require maintenance to prevent embankment breaching and/or headcutting which leads to long-term erosion problems. In addition, the Division of Water Resources may require the release of stormwater within 72 hours if there is a call on the river. As such the DRMS requires the retention pond to be reclaimed so that stormwater is not retained unless the land owner intends to use and maintain the pond after mine reclamation. Please provide revised reclamation plans for the pond or documentation demonstrating the land owner intends to maintain the structure.

**Drawings:**

3. Pages 22, 33 – 36. Pursuant to Rule 7.3.1, certified designs and specifications for engineered elements associated with the environmental protection plan (EPP) are required. Please provide these drawings stamped and signed by the appropriate Colorado registered professional engineer.

**General Comment:**

4. The apparently electronically pasted drawings in Attachments 2, 3 and 4 are very difficult, if not in some cases impossible to read. Please provide first generation drawings in future submittals to facilitate DRMS's understanding of the intended design.
5. There is a page numbering discrepancy between Attachment 2 (page 22) and Attachment 3 (page 33). The DRMS assumes pages 23 – 32 are not missing. If this is not the case, please provide pages 23 – 32.

If either you or the applicants have any questions regarding the comments above, please call me at (303) 866-3567, extension 8169.