

# STATE OF COLORADO

## DIVISION OF RECLAMATION, MINING AND SAFETY

Department of Natural Resources

1313 Sherman St., Room 215

Denver, Colorado 80203

Phone: (303) 866-3567

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March 11, 2013

Glen Williams  
Cotter Corp.  
P.O. Box 700  
Nucla, CO 81424

John W. Hickenlooper  
Governor

Mike King  
Executive Director

Loretta Piñeda  
Director

**RE: SM-18 Mine, File No. M-1978-116, Amendment (AM2) Second Adequacy Review.**

Dear Mr. Williams:

The Division of Reclamation, Mining and Safety (Division) is in the process of reviewing the above referenced application in order to ensure that it satisfies the requirements of the *Colorado Mined Land Reclamation Act* (Act) and the associated *Mineral Rules and Regulations of the Colorado Mined Land Reclamation Board for Hard Rock, Metal, and Designated Mining Operations* (Rules). During review of the material submitted, the Division determined that the following issue(s) shall be adequately addressed before the application can be considered for approval.

### Application Form

1. The revised application form submitted in Attachment 1 must be signed and notarized. Please submit a signed and notarized application form.

### Exhibit C

2. The response submitted for Item 9 of the preliminary adequacy review states that Figure C2 has the proposed roads added. According to the Figure C2 legend the only added feature is the vent hole located approximately 450' west of the leases eastern boundary. Please clarify / verify if this is the only intended proposed area on Figure C2. Also Figure C2 must be signed and dated by the qualified map maker.
3. The revised Figure C4 that shows a proposed permit boundary of 1.38 acres within the current permit boundary of 9.74 acres near the SMPA Transformer. This is not acceptable. Also the revised figure is not signed by the qualified map maker. Please re-submit a revised Figure C4 that is signed and accurately portrays the permit area.

### Exhibit D

4. Please disclose the source of the twelve inches of compacted clay proposed in the construction of the ore storage pad.
5. On Page D-6 under Item g, it is stated that additional roads will be built to access ventilation shafts as needed. As stated in item number 2 of this review, the revised Figure C2 legend shows the only added feature is the vent hole located approximately 450' west of the leases eastern boundary. Please verify that this is the case.

Exhibit F

6. The revised Figures F1 and F2 address the original adequacy issues by removing the topsoil stockpile and displaying contour lines that portray the site topography. Please submit signed revised Figures F1 and F2.

Environmental Protection Plan

7. Regarding the radiometric survey submitted. Please clarify the highest levels detected. According to the survey figures provided in attachment 6 areas that are black are greater than 120 uR/hr.

Please submit your response(s) to the above listed issue(s) by April 22, 2013, in order to allow the Division sufficient time for review prior to the May 1, 2013 decision date. If additional time is required to respond to the issues a request to extend the decision date must be submitted no later than April 22, 2013 or the application may be denied. The Division will continue to review your application and will contact you if additional information is needed.

If you require additional information or have questions or concerns, please contact me at the DRMS Grand Junction Field Office at phone no. (970) 241-2042.

Sincerely,



Travis Marshall  
Environmental Protection Specialist

Enclosure(s): General Stormwater Comments, Tim Cazier, P.E.

cc: Ed Cotter  
U.S. Department of Energy  
2597 Legacy Way  
Grand Junction, CO 81503

Russ Means, DRMS

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## MEMORANDUM

John W. Hickenlooper  
Governor

Mike King  
Executive Director

Loretta Piñeda  
Director

**To:** Travis Marshall

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

**Date:** March 8, 2013

**Re:** SM-18 Mine Drainage Design Plan – General Stormwater Comments, Permit  
No. M-1978-116 / AM-02

The Division of Reclamation, Mining and Safety (DRMS) engineering staff has reviewed the July 18, 2012 Drainage Design Plan (DDP), Engineered Stormwater Management Plan for the SM-18 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 ESWMP-5, section 7.2. The NOAA Atlas 2, Volume III charts provided in the attachments are illegible due to the small scale. Please state the specific design storm depths used for runoff analyses for both the 10-year and 100-year, 24-hour events.
2. Page ESWMP-5, section 7.3. This section states the surface soils at the site are considered Hydrologic Soils Group (HSG) B, but no specific references are given. The soil types on Figure U5 indicate the natural soils in the area defined by the subbasins analyzed are "23", Bodot, and "88", rock outcrop-orthents complex. According to the soil survey in Exhibit I, the Bodot soil profile is described as "0 to 3 inches Cobbly clay loam"; and "3 to 30 inches Cobbly silty clay". Both clay loam and silty clay are considered HSG D, as are rock outcrops. Furthermore, the Soil Survey of San Miguel Area, Colorado Parts of Dolores, Montrose, and San Miguel Counties lists the Bodot series runoff class as "very high". Please revise the selected curve numbers (CN) to reflect HSG D (CN = 89/80 – poor/fair), or provide documentation to substantiate the claim of HSG B.
3. Curve number data. Curve number data is only provided for "OFF 10" and "OFF 20" (pages ESWMP-14 and 15). Please provide similar information for onsite basins 10, 20, 30, and 40.

4. Page ESWMP-6, second paragraph, “Haested FlowMaster” output, DDP Drawings 3 and 4 of 7. It is stated the channels are “capable of transporting the 100-year flows”. The DRMS could not find the FlowMaster analyses referenced.
  - a. Please provide the referenced FlowMaster analyses. When providing these analyses, note that channel roughness is seldom uniform, the DRMS requires channels be evaluated for both stability and capacity, i.e., minimum and maximum expected roughness. For example, an excavated earth channel, after weathering would be expected to have a minimum  $n = 0.018$  (use to evaluate stability or maximum expected velocity); and a maximum  $n = 0.025$  (use to evaluate capacity). In addition, the DRMS requires channel freeboard be evaluated for all engineered channels: channels shall be designed with a minimum of 0.5 feet of freeboard unless the velocity head ( $v^2/2g$ ) is significant, then the minimum required freeboard is half the velocity head, or  $v^2/4g$ .
  - b. Please provide a rationale for the selected roughness coefficients, and evaluate each designated channel/ditch design slope for both capacity and stability.
  - c. Please design all engineered ditches with the appropriate freeboard and provide channel design depths for construction.
  - d. Please note that channels expecting erosive channel velocities will need to be armored with appropriately sized revetment or constructed in non-erodible material, such as bedrock.
5. Page ESWMP-6 and 7, sections 7.4 and 7.5 and Retention Ponds Drainage Design Plans (Sheet 1 and 5 of 5). The 100-year, 24-hour runoff volume criteria used for sizing storage in the ponds is acceptable. However, spillways are necessary to pass runoff from successive storms as there is no way presented in the Retention Pond design plan to drain the ponds via gravity. As such, the emergency spillways for each of the ponds need to be designed to convey 100-year peak flow, assuming the ponds are full (to the spillway invert elevation) at the onset of the design storm. Please provide analyses and designs to demonstrate all three spillways have the capacity and armoring revetment to pass the peak flow resulting from the 100-year, 24-hour design storm. *(NOTE – The DRMS checked with the Colorado Division of Water Resources (DOWR) District 63 water commissioner (Tom Brigham) regarding the status of the Dolores River appropriations. DWR’s requirement to release retained stormwater within 72 hours is seasonal and is subject to change.)* The DRMS suggests the Operator consider a low level outlet be designed into the pond in case a call is put on the Dolores River, the Operator can comply with the DOWR requirements.
6. Page ESWMP-7, section 7.5 and Page ESWMP-23. It is not clear whether the pond volume is for the existing pond (Sheet 1 of 5) or proposed improvement (Sheet 5 of 5). Please provide clarification.
7. Please address the reclamation/post mining plan for the retention ponds. The DRMS strongly encourages breaching the embankment upon closure unless the landowner has a use for the ponds (e.g., stock pond) and intends to maintain them.

March 8, 2013

**DDP Drawings:**

8. Sheets 1 and 5 of 5. No spillways or low level outlets are provided for the retention ponds. Please provide spillway locations, designs (sections and profiles), and specifications sufficient to convey the design flow to the toe of the embankment.
9. Sheets 3 and 4 of 5. Each section lists a water surface elevation and velocity. In reference to Comment #4 above, please be sure the water surface elevation corresponds to the Manning's n used for capacity and the velocity corresponds to the Manning's n used for stability.
10. Sheet 4 of 5. There is an error for the percentage slope listed for Section 20-2. It should be 14.00% slopes are suspect. Please correct the typo.

**General Comments:**

11. Sheet 1 of 5 channel/ditch sections. Some sections are looking downstream, others are looking upstream. The convention for water course sections is looking towards the downstream direction. This helps in avoiding confusion as to flow direction. Please consider this for future submittals.
12. Page ESWMP-5, first paragraph 7. The NRCS is referenced as the "National Resource Conservation Service". The "N" stands for "Natural", not "National".

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