



# State of Utah

DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

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August 17, 1988

TO: File

FROM: Mike DeWeese, Reclamation Hydrologist *MD*

RE: Plan to Finalize Reclamation, Blazon No. 1 Mine, North American Equities, ACT/007/021-88A, Folder #2, Carbon County, Utah.

## SYNOPSIS

The Blazon No. 1 Mine Plan to Finalize Reclamation, received Aug. 10, 1988, has been reviewed with regard to hydrologic design criteria. This plan was submitted partially in response to Violation N88-13-2-1. Deficiencies exist in several areas of the current plan.

## ANALYSIS

Calculations submitted for the primary spillway design are incorrect. The proposed spillway is slightly undersized as a result of using orifice flow conditions in the calculations. At very low head conditions the inlet is weir controlled. The correct methodology uses both flow conditions to determine spillway size. However, Division calculations showed only minor differences in the final design due to other disparities. Therefore, the division accepts the proposed primary spillway design.

The proposed drop-inlet combination spillway does not meet the requirements for an emergency spillway structure. The applicant shall present an adequate spillway design as required by UMC 817.46. The Division recommends utilizing an open channel emergency spillway placed against the natural slope, with a grass lined exit channel.

The proposed pond design indicates the slope at the inlet will produce erosive flow velocities. The applicant shall include protective measures against erosion at the inlet as required by UMC 817.49 (c). The division recommends the installation of properly sized rip rap at this site.

The sedimentation pond design sketch included in the plan lacks sufficient detail for conducting a thorough review. The applicant shall present a detailed sedimentation pond design map, certified by a registered professional engineer, showing pond dimensions and contours, elevations, and inlet and outlet structures.

The Division has reviewed submitted calculations for sediment volume, design storm peak flows, and sedimentation pond volume and found them to be acceptable.

Discrepancies exist between channel dimensions presented in the design sketches and channel dimensions used in the design program inputs. The proposed rip rap design for channel side slopes is accepted by the Division. However, the applicant shall revise the plan to provide consistent channel design dimensions, specifically for channel side slopes.

No information is presented on the gradation of filter blanket material or rip rap. The applicant shall include the size distribution of both the rip rap and the filter blanket material to be used in the channel design.

The proposed plan calls for rip rap material to be placed on the channel banks and the channel bottom to remain undisturbed. The Division conditionally accepts the proposed plan provided that:

- (i) The applicant shall rip rap the channel bottom through the entire length of reach #3 with an acceptable rip rap material.
- (ii) Rip rap shall be selectively placed in the channel bottom of reach #1 and #2 under the combined direction of the supervising field engineer on site and Division personnel.

The plan proposes to reclaim the transformer road by using fill material from the outslope of the road to fill in the cutslope. If sufficient fill material is not available to adequately restore the cutslope to approximate original contour, the applicant shall install treatment measures such as water bars to control erosion.

There are no provisions in the plan for treatment of the flow from the access road ditch below culvert c. The applicant shall include treatment measures, such as straw bales, to be installed below culvert c and the permit boundary, as required by UMC 817.45. Site inspections by the Division have shown runoff from the road drainage ditch is contributing to an active headcut near Long Creek. As a mitigative measure, the applicant shall provide a design for rip rap at this site, or alternatively divert the road drainage to Mud Creek before leaving the permit area. The Division recommends the installation of a swale across the road to divert the ditch into the abandoned stream channel on Mud Creek.

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The plan does not sufficiently address the proposed transfer of the water well. The applicant must submit a written request for approval of such a transfer as required by UMC 817.53.

RECOMMENDATIONS

The deficiencies described in the above analysis must be addressed or rectified where necessary before approval can be granted. Upon submittal of a complete and accurate response, it will be recommended that the Plan to Finalize Reclamation be approved.

cc: B Team

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