

July 5, 1988

TO: File *JRH*

FROM: Randy Harden, Reclamation Engineer

RE: Blazon Mine Reclamation, Little Snyder Drainage Designs,
North American Equities, Blazon #1 Mine, ACT/007/021,
Folder #2, Carbon County, Utah

Summary

With regard to the July 1, 1988 submittal by North American Equities for the Blazon #1 Mine, the submittal is considered sufficient to meet the conditions of Stipulation UMC 817.21-(1)-RPS, of the Reclamation Plan. However minor deficiencies and comments pertaining to the design are provided below in the analysis.

Analysis

With regard to the stability analysis of the slopes of the drainage, NAE has not provided sufficient copies of the analysis and report. This information was submitted to the Division last fall in a draft proposal, but was never formalized and submitted to the Division. 5 Copies of the stability analysis and report should be submitted to the Division for final approval and filing.

The Design as proposed does not account for the unstable area above and to the southeast of Little Snyder Drainage. This area currently shows signs of surface and near surface slope failure. The toe of this embankment should be properly backfilled in order to maintain stability. The design provided for the drainage does not comment on this.

Design of the filter Blanket material for Little Snyder Channel calls for side slopes of 1:1 (45°). The angle of repose for sand is approximately 37°, which would indicate that the sand and the gravel filter blanket materials must be placed in the channel simultaneously with the riprap material in order to achieve the desired design section for the channel. This is not impossible but would be considered difficult during construction to accomplish.

The trash rack design as shown in the drawing will not work as intended. The placement of the hinge will not allow for opening of the rack. This should be corrected during the fabrication and the installation of the trash rack.

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Rebar placement in the walls of the culvert inlet structure appears to be placed on the wrong side of the wall. The tension side of the structure is the inside surface of the wall rather than the outside. This should be corrected prior to construction of the drop structure.

The consultant has indicated that a 90° elbow will be placed at the end of the existing 24 inch culvert to deflect flow downstream into Mud Creek. The consultant should check thrust forces on the elbow in order to determine whether or not the elbow will require bracing or reinforcement.

As suggested by the Division Soils Specialist, the sod currently covering the topsoil stockpile is recommended to be placed immediately adjacent to the riprap materials placed in the channel of Little Snyder Drainage. If NAE is in concurrence with this suggestion, the detail section of the drainage channel should be modified to reflect this. Sod should be indicated where topsoil material is currently shown on the cross section.

A generalized section of the swale to be installed should be included on the drawings. The plan view should indicate the grade at which the swale is to be placed. This information is found in the hand-written calculations of the report but could not be found on the design drawings.

The design of the riprapped channel down Little Snyder Drainage calls for a total excavated depth of 5 feet. Earlier field measurements indicated that the existing 24 inch culvert in the drainage is at approximately that same depth. During construction of the channel, in those areas where the 24 inch culvert is found to be less than 4 feet below the final finished bottom channel depth, the culvert must be removed, crushed or filled to prevent piping or eventual failure of the culvert below the riprapped channel. In those areas where the culvert exceeds 4 feet below the bottom of the finished channel, removal or filling of the culvert will not be explicitly required, but will be recommended by the Division during the construction. This change to the design must be incorporated into the reclamation plan.

No anchoring or transition from the natural stream channel to the riprapped section of Little Snyder Drainage is included in the plan. NAE should at least indicate in the plan how this transition is to be accomplished in order to prevent head-cutting of the natural channel above the riprap.

WOBTEAM:16:pp 4-5
cc: S. Linner
R. Summers