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STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

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March 16, 1984

Mr. Alan W. Smith
North American Equities, NV
1401 17th Street, Suite 1510
Denver, Colorado 80202

RE: Determination of Completeness
Response
Blazon #1 Mine
ACT/007/021, Folder No. 2
Carbon County, Utah

Dear Mr. Smith:

Please find enclosed the Division's comments concerning Blazon's response to the Determination of Completeness (DOC) review of January 25, 1984. The items concerning 700 series regulations must be adequately addressed before the plan can be determined complete and the Technical Analysis (TA) can be initiated. Included are some Technical Deficiencies (items involve 800 series regulations) which need to be addressed before the TA can be completed. At the request of Mr. Mike Glen of ACZ, Inc., the Division has extended the date for the submittal of this material to March 23, 1984.

Please contact me or Susan Linner if any questions arise on these comments.

Sincerely,

James W. Smith, Jr.
Coordinator of Mined
Land Development

JWS/jvb
79050

cc: Allen Klein, OSM
Mike Glen, ACZ, Inc.
S. Linner, DOGM

DETERMINATION OF COMPLETENESS

North American Equities
Blazon #1 Mine
ACT/007/021, Carbon County, Utah

UMC 783.16 Surface Water Information

The applicant is requested to submit the anion-cation balance calculation for all samples submitted. The applicant may specify what percent imbalance was used as limit for acceptable examples for base line data submitted in the plan.

UMC 783.17 Alternative Water Supply

The applicant needs to revise the commitment to mitigate interrupted surface water supplies for wildlife uses to include any water use (p. 783.17(1)).

UMC 783.19 Vegetation Information

Until the letter verifying production figures from the Soil Conservation Service is received, this section cannot be considered technically adequate.

While sample methods (use of a pin frame, belt transects and point-center quarter measurements) are acceptable, sample units were not randomly located. For example, transect orientation was fixed, distance along the transect was fixed (systematic sampling) and even though a "random numbers" table was utilized to locate the beginning point of the transect, by limiting the distance to 10 meters in any direction automatically precluded sampling within a 3 meter strip on the far side of the reference area. Also, the location of each successive transect was dependant on the location of the one preceding it (staticified). As pointed out in the Division's guidelines, in order for a sample to be considered random each sample unit must have an equal (and independent) chance of being sampled at any time during the sampling sequence. In light of this, please correct the statements in section UMC 783.19 and in exhibit 6 that refer to random sampling to reflect the correct sampling design.

While the density of Aspen and Douglas Fir can be added to obtain a total tree density, combining the two sets of sample data into one set to obtain a mean tree density and standard deviation does not give accurate results.

UMC 783.25 Cross Sections Maps and Plans

The Premining and post mining cross sections have been indicated to be insufficient in the previous review. Maps 6, 7 and 13 were not supplemented by new material and the operator maintains that they are adequate. Since I was unable to locate them, I cannot comment other than to back up the previous geologists opinion or principle!

A question on page nine of the DOC was not answered. It regards fill (possibly the one north of Snider Canyon)?

UMC 784.13 (b)(5) Reclamation Plan

i) The applicant needs to provide more detail in the planting and seeding schedule - "either fall or spring" is not sufficient, i.e. which season is optional for seeding? Planting? If seeding is done in the spring, will final grading and topsoil redistribution also be done in the spring? (If this be the case, irrigation will probably be needed.) If final grading and topsoil distribution is done in the fall and seeding is done in the spring, what measures will be employed to protect against erosion until the ground dries sufficiently to drill seed?

ii) Again, the seeding rates proposed appear too low to establish the necessary plant cover to control erosion (grass & forb seeding rate should be between 50-80 pure live seeds/ft² for drill seeding and double this rate for broadcast seeding. Any woody plant seeds would be in addition to this rate).

The applicant is reminded that a diverse community must be established. It is unlikely that the four species selected for the meadow vegetation type will provide for a diverse community.

iii) Please clarify whether "Shrub Islands" will be established only if transplants are used or if shrub seeds will be seeded separately (from grasses and forbs) to create these "islands".

The requirements for woody plant establishment (trees and shrubs) of UMC 817.117 apply to areas developed for wildlife as well (as commercial forests). (See UMC 817.116(b)(3)(iv)). Please note that the requirements of UMC 817.117(c) must be met. Therefore the shrubs and three seeding/planting plan must be revised to establish a woody plant density of at least 90% of the woody plant density of the reference area.

iv) How will mulch be anchored on steep slopes (small farm implements generally will not handle over 15 - 20% slope)? Also, page 784.13-4 identifies "up to 4,000 pounds per acre of straw or native hay" to be used on steep slopes. First, the minimum amount needs to be identified and secondly, what grade (% slope) is considered a steep slope.

vi) Due to the destructive nature of production sampling, it is recommended that any post-revegetation production sampling be done only at the end of the liability period as required by UMC 817.116(b)(1). The monitoring plan appears to center around reference area sampling vs. revegetated area sampling. Reference area monitoring need only include periodic assessment of range condition (reference areas must be in fair or

better range condition at the time of bond release) until the end of the liability period (see UMC 817.116(b)(1)). Frequency and survival (especially woody plants) data can provide valuable insights as to whether a diverse, permanent community is being established. The applicant should consider adding these parameters to the monitoring plan. (See also comments under UMC 817.97)

UMC 784.14 Reclamation Plans: Protection of Hydrologic Balance

The applicant must submit a detailed proposed post-operation/reclamation plane water monitoring program. This plan should include monitoring points, frequency of sampling, reporting procedures, site access, and parameters to be sampled.

UMC 784.20 Subsidence Control Plan

The applicant has generally complied with all concerns brought up in the DOC but the following comments should be passed on anyway;

a. The subsidence survey which is mentioned and requested to be conducted within 60 days of the resumption of planned mining activities should include a surface reconnaissance on foot. Data should be compiled after the spring snowmelt is complete in 1984. Aerial photography should augment this investigation. An initial report should be submitted as early as possible in 1984 particularly if surficial expression of subsidence effects is noted.

b. The applicant should also be aware of the usefulness for placing an additional subsidence monitoring point well outside of the area of potential subsidence effects either to the north east or south of the permit area. Finally, dependant upon the quality of information presented in the twice annual reports to the division and the type of quantitative measurements taken the reports may be reduced to one annual report after a baseline period has been completed.

UMC 784.23 Operation Plan: Maps and Plans

The applicant is requested to detail the stream channel fill more completely. Indicate length of affected channel, volume of fill to be used, bank stabilization techniques (include velocity calculations), and measure to comply with 817.44(d) (i.e. restore riparian vegetation, natural channel meandering, natural longitudinal profile and cross-section, and aquatic habitats).

The applicant is requested to show limits of chute waste pile and/or location of proposed containment box for this material with commitment to maintain this pile within those limits.

TECHNICAL DEFICIENCIES

UMC 817.22 Topsoil: Removal

The applicant suggests a replacement topsoil depth of 2 - 3 inches plus a balance of substitute material to be derived from the pad.

The applicant's assumption that 6 inches of total (topsoil plus substitute material) medium will be adequate is seriously questioned. Please provide rationale.

What volume of pad material is available for substitute material? What sampling and analysis methods will be utilized to affirm the suitability of proposal substitute materials. Describe sampling methods and frequency, laboratory methods as well as reporting format.

Substitute material data will be necessary as a baseline condition to demonstrate compliance with UMC 786.19(b).

UMC 817.24 Topsoil: Redistribution

The applicants discussion under this part is inadequate. However, the narrative presented on this topic under UMC 817.22 is adequate to satisfy the completeness requirement of this section. Consequently, it should be moved to this part of the document.

UMC 817.25 Topsoil: Nutrients and Amendments

The applicant should detail the sampling frequency, parameters to be evaluated, and provide the basis of making fertility recommendations. In lieu of providing the basis for recommendations, the applicant may wish to commit to Division guidelines in place at the time of reclamation.

The implements used to distribute amendments, the form of fertilizer and the timing of nutrient application must be discussed.

UMC 817.57 Hydrologic Balance: Stream Buffer Zones

The applicant must submit detailed plans for the proposed cover over the streams channel, if that cover is still proposed, including type of cover, design calculations and construction methods and precautions.

UMC 817.97 Protection of Fish, Wildlife and Related Environmental Values

In light of crucial-critical moose habitat along riparian areas, the applicant should include willows and other appropriate browse species in the seeding/planting plan.

UMC 817.106 Regrading of Stabilizing Rills and Gullies

The applicant must address methods of minimizing disturbance to reclaimed areas during repair of rills and gullies.

RECLAMATION SURETY

The Reclamation Bond will need to be re-evaluated the applicants proposal does not include rental or labor rates in the cost estimates. Also please indicate from what source your rates were obtained. Note the Division does not accept salvage value of any existing structures.