



State of Utah

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November 28, 1989

TO: Susan Linner, Permit Supervisor

FROM: Lynn Kunzler, Reclamation Biologist *LK*

RE: Technical Analysis, Castlegate Coal Company, Castlegate Mine, ACT/007/004, Folder #2, Carbon County, Utah

Summary:

A technical review of the referenced MRP received on June 23, 1989 has been completed. Several technical issues were identified and need to be resolved prior to granting a final permit.

Analysis:

UMC 817.111-.117 Revegetation Plan: General Requirements - LK

The MRP contains a range condition analysis of the Barn Canyon grass-sage reference area (for 1989). In past reviews, as well as in commitments made in the MRP, Castlegate is to have the range condition of all reference areas reevaluated on a 3 to 5 year basis. Please provide a current range condition analysis for the Castlegate mixed brush, the Castlegate riparian, The Crandall Canyon conifer, the Crandall Canyon riparian, the Sowbelly grass-sage and the Sowbelly mixed brush reference areas.

Due to past damage caused by grazing animals in the 'Goose Island' area, the operator was requested to provide plans to protect reclaimed areas for a minimum 2-year period. This protection plan has not yet been provided.

The seed mix on Table 9.20 (page 63) was developed in 1979, prior to the implementation of Utah's permanent coal program. This mix does not meet the requirements of UMC 817.111-.112 and should therefore be deleted from the MRP (This mix contains only grass and shrub species, several competitive introduced species (no demonstration that the requirements of UMC 817.112 are satisfied) and is unlikely to produce a diverse and permanent vegetation cover supportive of the postmining land use).

November 28, 1989

Page 2

The applicant currently proposes to disc areas for seed bed preparation to reduce compaction (Chapter 9, page 50). Deep ripping (i.e. 18 - 24 inches) is preferred to reduce compaction in that it leaves a more roughened surface, which improves vegetation establishment.

In Section 3.9-2 (UMC 784.13(b)(5)), it states that seed and fertilizer will be mixed together and applied with a hydroseeder. This needs to be revised to show seed and fertilizer will not be mixed in the hydroseeder (it has been demonstrated that over 50% of the seed will lose its viability under these conditions). The preferred alternative is to hand broadcast fertilizer prior to seeding.

The MRP needs to clarify that seed and mulch will be applied in two separate operations (see sections 3.2-5, 3.3-4, 3.4-4, 3.7-5).

The reclamation timetable is not acceptable in that it does not identify each major step in reclamation, the relative time for each step, and the approximate time of the year. For example, Seeding should not be conducted prior to October 1, and Planting of transplants should be done in early spring.

While the MRP provides a supplemental planting mix for ephemeral/intermittent drainages, the various sections in the MRP do not discuss the use of this mix, nor do the reclamation maps show the locations for its use. The operator needs to provide details of the planting plan, including the timing of planting operations.

The MRP does not discuss in detail the reclamation of Gravel Canyon. At this time it is assumed that the Castlegate Area reclamation plan covers this area since it is identified on the Castlegate Area Map. This needs to be clarified in the MRP.

The MRP does not identify final revegetation of the cut and fill slopes associated with the Crandall Canyon access road (if the initial seeding was intended to be final revegetation, it needs to be made clear in the MRP).

Table 3.1-10, which deals with the reclamation costs of Hardscrabble Canyon identifies 21 acres for revegetation. Until final bond release is made, the operator needs to carry bond coverage for the revegetation cost of the 3 acre 'Goose Island' area. Therefore, the acreage on this table needs to be increased to 24 acres.

November 28, 1989
Page 3

Several problems (inconsistencies) were noted on the final reclamation maps as follows:

Exhibit 3.2-3 (Sowbelly Gulch No. 5 Mine, Postmining Reclamation) - This map does not show the ephemeral drainage planting areas.

Exhibit 3.3-3 (Hardscrabble Canyon No. 3 and No. 4 Portals Postmining Reclamation) - The plant symbols on the map do not match the symbols in the legend and the map does not show the ephemeral drainage planting areas.

Exhibit 3.4-3 (Castlegate Area Post Reclamation) - The plant symbols on the map do not match the symbols in the legend and the map does not show the ephemeral drainage planting areas. Also, the legend should identify the appropriate seed mixes/planting mixes to be used.

Exhibit 3.7-9 (Crandall Canyon Reclamation Configuration) This map does not identify or correlate the appropriate seeding/planting mixes (see Seeding/Planting Lists in Chapter 9, page 53) to be used in disturbed areas.

Recommendations:

The operator needs to resolve these issues prior to issuance of a permit.

cc: B-Team
BT3013/81-83