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State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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April 17, 2000

TO: Internal File

THRU: Joe Helfrich, Project Team Lead *JH*

FROM: Paul Baker, Reclamation Biologist *PB*

RE: Hardscrabble As-Builts, Castle Gate Holding Company, Castle Gate Mine, ACT/007/004-AM00A, Internal File

SUMMARY:

The permittee for the Castle Gate Mine has been reclaiming Hardscrabble Canyon since 1993. The substation at the upper end of the canyon remains, but all other facilities have either been removed or modified for the postmining land use. The canyon containing the No. 4 Mine was reclaimed in 1993 with some additional work done in 1995. The Goose Island refuse disposal area was reclaimed in 1984, and part of this area was reworked in 1999. The rest of the canyon was regraded and reseeded in 1996 through 1999. The Board of Oil, Gas and Mining gave the permittee an Earth Day Award for the reclamation work done in 1996.

Some of the plan the Division originally approved was contingent on what conditions were found during regrading. For example, there are some cliffs near the lower gate that were covered with sidecast material during original construction, and it was not known how much sidecast material was present or whether it would be possible to expose these cliffs. Because there were unknown conditions, it was necessary to make numerous field modifications, and these should be reflected in the current amendment.

TECHNICAL ANALYSIS:

REVEGETATION

Regulatory Reference: R645-301-341

TECHNICAL MEMO

Analysis:

Although some changes were made, the permittee mostly followed the approved mining and reclamation plan. This plan included applying about two tons per acre of alfalfa hay as a soil amendment, mixing this into the soil through gouging, seeding, applying about one ton per acre

of straw mulch, then hydromulching with about 500 pounds per acre of wood fiber mulch and tackifier to hold the straw.

The application contains a few statements that are confusing. The application says in the last paragraph on page 3.3-32, "Once the growth media was placed and during incorporation of the mulch, the surface soil was gouged to a depth of approximately 12 to 18 inches . . ." The alfalfa that was incorporated was not considered mulch; it was a soil amendment. Also, the previous paragraph mentions that hay was incorporated into the soil through deep gouging, so the statement in the last paragraph is redundant.

Also on page 3.3-32, the application indicates gouges 12 to 18 inches deep would extend below the substitute topsoil depth. The original plan was to only use nine inches of soil, so this would have been correct. However, since the applicant used an average of 22 inches of soil, gouges should not have extended below the soil, except, of course, where the soil was thinner than the average or the gouges were deep. The point that the subsoil is not toxic is still valid.

On page 3.3-33, the application says the seed/planting mixes in Species Lists 1 and 5 were used for revegetation. These species lists are in chapter nine. The permittee made some modifications to these mixes and, as required, reported the modifications in the annual reports. The application should indicate the seed mixes were modified and either give the modifications or tell where the information can be found. Although referring to the annual reports would be acceptable, it would be best to include the information in the application.

Findings:

Information provided in the proposal is not adequate to meet the requirements of this section of the regulations. Prior to final approval, the applicant must supply the following in accordance with:

R645-301-341, The discussion about mulching and gouging needs to be clarified.

The application indicates mulch was incorporated through gouging, but alfalfa hay was incorporated into the soil as a soil amendment rather than as mulch.

TECHNICAL MEMO

R645-301-341, The application indicates 12 to 18-inch-deep gouges would extend below the soil. This was true when the applicant was only going to use nine inches of soil, but since an average of 22 inches of soil was applied, the gouges should not have extended below the soil.

R645-301-341, The applicant varied from the seed and planting mixes shown in the plan, and this needs to be reflected in the application. The changes were reported in the annual reports, so the applicant could simply refer to these reports. It would be better, though, if the changes were shown in the application.

RECOMMENDATIONS:

The application should not be approved until deficiencies discussed in this memorandum have been resolved.

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