



State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

Norman H. Bangertter
Governor

Dee C. Hansen
Executive Director

Dianne R. Nielson, Ph.D.
Division Director

355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
801-538-5340

June 22, 1992

TO: Pamela Grubaugh-Littig, Permit Supervisor

FROM: Henry Sauer, Senior Reclamation Soils Specialist 

RE: Division Order DO-91A Response Review, Gordon Creek #2, #7 and #8 Mines, ACT/007/016, Folder #2, Carbon County, Utah

SYNOPSIS

The permittee has responded (received May 7, 1992) to Division Order DO-91A. Many issues which were not adequately addressed in the permittee's response remain unresolved. The majority of the issues include unsubstantiated claims, incomplete analysis of the reclamation procedures, and a disregard for regulatory and permitting requirements.

The forthcoming review includes Division Order deficiencies and deficiencies noted during this writer's comprehensive review of the reclamation plan for the #2, #7 and #8 Mines.

TECHNICAL ANALYSIS

R645-301-233. Topsoil Substitutes and Supplements

1) On page 8-27 of the Permit Application Package (PAP) the permittee commits to collecting and analyzing spoil material by dividing the mine site into ten square meter grid sections and randomly sampling the soil/spoil from 10% of the grids. The results from the soil/spoil laboratory analyses will be employed to determine the suitability of the proposed substitute topsoil material (fill material) for the #2 Mine. Additionally, as a means of identifying the extent of unsuitable material (i.e., Sodium Absorption Ratio > 12) in the vicinity of soil sample site location #3 (Plate 8-1a), soil samples will also be collected and analyzed.

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The PAP specifically states that the collection and analysis will proceed "within ninety days of reclamation." If one considers the first date of seeding to be no earlier than September 1, 1992 (page 3-88A of the Division Order) then soil/spoil sample collection should have occurred during the month of June, 1992.

The soil/spoil sampling plan outlined in the PAP has not been implemented to date (personal communication with Mr. Dan Guy). Nor has the permittee submitted, for Division approval, alternative proposals for the collection and laboratory analysis of soil/spoil material.

The permittee must implement the approved soil/spoil sampling plan immediately.

2) On page 3-38 of the PAP the operator states topsoil will not be redistributed on slopes that exceed 70 percent (approximately 1.5h:1v slopes). However, the permittee does not describe, identify or physicochemically characterize the plant growth material which will remain on slopes greater than 70 percent.

The permittee must therefore substantiate the suitability the aforementioned material as a substitute topsoil material for final reclamation. In addition, the permittee must depict, on an appropriate map or plate, the areas which will not have topsoil redistributed on the surface.

R645-301-242. Soil Redistribution

The Division believes that in many circumstances where large textural differences exist between the regraded spoil and the redistributed topsoil abrupt interfaces are created. These interfaces tend to increase the lateral movement of percolating soil water which may form failure planes and induce chemical hard pans. Therefore, spoil material must be deep ripped to at least 12 inches below the spoil surface. In addition, suitable regraded spoil and the initial lift of soil material (i.e., 6 inches) should be deep ripped simultaneously to avoid the creation of an impenetrable interface between the soil and spoil material.

On page 3-85 and 8-31 of the PAP the permittee commits to breaking up surface clods. The Division believes that clod dissipation is unnecessary in areas where seed will be broadcast and/or where the soil structural condition will not prohibit the operation of conventional drill seeding equipment and/or where there is an ample fine earth fraction.

R645-301-243. Soil Nutrients and Amendments

Page 3-85 of the PAP refers to gaining valuable information from the Gordon Creek No. 3 and No. 6 Mines to help determine the type(s) and rate(s) of fertilizer application. The applicant must submit a fertilizer and amendment plan which incorporates the information gained from the G.C. #3 and #6 Mines.

The permittee must also submit a fertilizer and amendment plan which includes the soil sampling procedure employed during final reclamation. This plan should include sampling frequency, and field and laboratory procedures employed.

R645-301-244. Soil Stabilization

The permittee must describe the mechanisms by which redistributed topsoil will be stabilized to effectively control erosion on slopes steeper than 3h:1v.

R645-301-553.700. Backfilling and Grading

The permittee's proposal to retain highwalls at the No. 2 Mine is unacceptable for the following reason:

- 1) The claim that the fill material is not available because of contamination. The PAP contain no physicochemical data or fill profile descriptions which substantiates this claim. In fact the fill material in question was originally estimated (page 3-45, revision date: 8/10/89) to contain no more than two percent (by volume) contaminated material and was also proposed as a substitute topsoil for final reclamation. In the permittee's response to the Division Order, estimated volume of contaminated material increases to 10-20%. No information or calculations are provided to indicate how this estimate was revised or derived.

- 2) On page 3-83.1 of the PAP (revised 8/10/89) the permittee states that "...most of the mine site [No. 2 Mine] is located in the canyon bottom and there are no obvious rock ledge outcrops, no problems are anticipated in recovering the require amount of material..." In the response to the Division Order, the permittee claims that "Slopes to the canyon bottom are extremely steep and represent extremely hazardous areas on which to operate machinery." These two statements are contradictory.

In addition, if the material which comprises the No. 2 Mine yard is fill material, excavation down to the original surface can be controlled through backfilling and grading designs. These designs could easily prevent hazardous operating conditions for machinery operators.

- 3) The permittee claims that there are natural rock ledges in the area. The area immediately surrounding the mine site does not contain, to my knowledge, natural cliff faces.