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State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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TO: Pamela Grubaugh-Littig, Permit Supervisor

FROM: Henry Sauer, Senior Reclamation Soils Specialist *HS*

RE: Technical Deficiencies in Revised Reclamation Plan, Mountain Coal Company, Gordon Creek #2, #7 & #8 Mine, ACT/007/016, Folder #2, Carbon County, Utah

SYNOPSIS

On February 1, 1993, the permittee submitted, for Division approval, a revised reclamation plan. The revision of the reclamation plan was required by Division Order DO-91A.

Technical deficiencies exist which must be rectified prior to approval of the proposed reclamation plan.

Many of the comments below and the operator's response are contingent upon the decisions made between the Division and the permittee with regard to the backfilling and grading plans, approximate original contour (AOC) and highwall/cut slope stability requirements.

ANALYSIS

R645-301-233.100 - Topsoil Substitute and Supplements

Division Order DO-92A, Regulation R645-301-233.100 required the permittee to "... submit a plan (other than the approved plan outlined in the PAP) to demonstrate the suitability of the proposed substitute topsoil material in the event that the No. 2 Mine highwalls require complete reclamation." The permittee responded to the Division Order by submitting a backfilling and grading plan which proposes the retention of highwalls/cut slopes with only partial backfilling of these

features in an around the No. 2 Mine (reclamation designs for the access road to the No. 2 Mine were not discussed in the PAP). The permittee did not submit a proposal to revise the substitute topsoil sampling plan as directed and instead submitted the results form a soil/spoil sampling effort that was not reviewed or approved by the Division. Therefore, a revised plan must be submitted to the Division for review. This plan must be designed in accordance with the final decision regarding AOC requirements and highwall/cut slope retention (see Mr. Jesse Kelley's technical comments under section #3). Or the soil sampling plan described in the approved plan must be implemented immediately.

The laboratory results from the No. 2 Mine pad are not adequate to demonstrate the suitability of the proposed substitute topsoil. The forthcoming is a critical review (given the limited procedural information provided) of the unapproved soil/spoil sampling. This is included to prevent the same mistakes from being included in the implementation of the approved sampling plan or the design of the revised sampling plan for the No. 2 Mine.

The sampling methods employed are not clear or complete. The identification of the depth increments and the type of sample is difficult to interpret (Example: Soil Sample Site GC2-10: 16" RB, 36" Coal/Soil, 72" Clay Rock 8-14"). Would the example listed above mean the profile consisted of 0-16" of RB (this abbreviation is not identified, but is assumed to mean road base), 16-36" inches of coal/soil and 36-72" gravel and cobble sized claystone of a medium diameter of 8-14"? Or is there 36" of coal/soil overlaid by 16" of RB and underlaid by 72" of claystone equating to 10 feet of profile. Did the composite sample include all of these increments or just the "... 72" Clay Rock 8"-14"...?" Sample GC2-9 indicates that an A and B horizon was encounter in the fill of the access road, this appears to be a misidentification and must be clarified. GC2-12 is identified as being drilled through an "8' Sandstone Ledge" and when comparing Plate 3-7 to 3-1 the area surrounding the sample site will remain at the same elevation. Bed rock is not an acceptable plant growth medium for final reclamation. Composite samples of the soil/spoil profiles are not acceptable and do not characterize the potential variability of the material in question. Especial when one considers the highly variable "horizons" in the examples mentioned above. Soil/spoil material which remains below a cut area and acts as the plant growth medium for final reclamation must be sampled and analyzed.

The soil/spoil sample results provided cannot be considered adequate characterization of the proposed substitute topsoil material given the current backfilling and grading plan. Therefore, a new proposal for demonstrating the

suitability of said material (including material in the vicinity of the access road) must be made whether or not the grading plan is approved as designed in the current submission.

In addition, the intensive sampling described on page 8-28.1 of the PAP for sampling of the spoil material around the No. 3 sample site (No. 2 Mine area) location has not been accomplished and must be a part of any new sampling proposal. The aforementioned demonstration of suitability must be reviewed, approved and implemented prior to the onset of reclamation activities.

The nutrient and amendment soil sampling plan described on pages 3-48 and 3-48a defers sampling until after grading activities. This sampling procedure should occur in areas receiving stockpiled topsoil and subsoil. If the sampling plan described below is acceptable to the operator, then fertilizer recommendations can be ascertain from the results of the sampling of the areas not receiving topsoil (i.e., No. 2 Mine yard and access road).

Based on the review of the reclamation cross-sections (Plates 3-8, A through C) and the post mining topography maps it appears that large areas (of various slope percentages), predominantly on the north side of the disturbed area, from the No. 7 mine portals down to the east side of the Right Fork of Bryner Canyon, will not be backfilled and will not receive topsoil. The suitability of the spoil/soil material in these areas has not be demonstrate and must be prior to backfilling and grading operations. In order to do this, the operator must sample the proposed substitute topsoil at a frequency of one sample site per acre. At each sample site depth segregated samples at 0-6", 6-12" and 12-24" must be collected and analyzed for the parameters in the Division Guidelines for the Management of Topsoil and Overburden, Table 1 (Nitrate-Nitrogen should be substituted for Total-Nitrogen). The following constituents from Table 1 may be omitted from the analysis: Alkalinity; and available water capacity. Where coal and/or shale is encountered, selenium and boron must be analyzed in addition to the constituents found in Table 1, as amended.

The commitment (page 3-19) to sample slope of greater than 70% to determine the suitability of the proposed substitute topsoil material requires some refinement. First, would the proposed sample interval (150 feet) be on the basis of linear cut slope length. Second, where there is a substantial length of 70% or greater slope, would there be sampling at various heights above the reclaimed grade? Third, the laboratory analyses must follow that outlined in the paragraph above. The operator must propose a contingency plan in the event that the

proposed substitute topsoil is unsuitable. In addition, the material in question, upon approval, must receive appropriate seedbed preparation to facilitate water percolation and sustained seed contact to the surface (i.e., surface roughening with hand tools).

General Comments

Page 8-28.1 mentions "All material found to be unsuitable will be disposed of in an approved landfill." This statement, and others like it, must be removed. It directly contradicts R645-301-528.320 which states that "Disposal of mine waste must be placed in a new or existing disposal site within a permit area approved by the Division." The operator then goes on to say (page 8-32) that "Waste materials (i.e., oil, grease) and other potentially toxic materials and fill surrounding them, will be identified visually and taken to and approved landfill prior to reclamation. Also these material will be covered with a sufficient amount of fill material to prevent contamination of the plant growth zone." The permittee must specify the disposal location, techniques and cover depth (similar to the four foot cover depth commitment made on page 3-17), for the disposal of "unsuitable material."

On page 3-48, the operator states that the spoil material "may" be ripped. Please state whether or not the spoil will be ripped. The intention of the DO was to scarify spoil to a depth of at least 12 inches. Integrating spoil and soil (first six inch lift) by scarification will prevent abrupt interfaces. If the operator chooses to take this approach then ripping will be a minimum of 18 inches. Regardless, the spoil material must be ripped to a depth of no less than 12 inches.

Numerous errors exist on Plates 3-8A through 3-8C. The extent of backfilling in many chases extends outside the present disturbed area boundaries and are not depicted as such on Plate 3-7. Highwalls/cut slopes are depicted on the cross-sections but are omitted on the postmining topography map. The cut slope on the south side of the No. 2 Mine yard east of the No. 7 sediment pond is not depicted as being reclaimed and in fact is proposed to be excavated. These anomalies must be clarified and consistently represent throughout the PAP.

The operator discusses the maximization of surface roughness utilizing "grouzers, rippers or other mechanical means." The Division's criteria for surface roughness is a surface which is very difficult to walk over which has large (2-3 foot diameter) irregularly position depression. Similar to that which would be

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created by a 3 cubic yard backhoe bucket. An example of achieving this standard would be the original reclamation grade on the upper access road at the Huntington No. 4 Mine.

RECOMMENDATION

The aforementioned deficiencies must be adequately addressed prior to permit approval.

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