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December 11, 1996

TO: File

THRU: Joe Helfrich, Permit Supervisor JCH

FROM: Robert Davidson, Soils Reclamation Specialist RAD

RE: Technical Analysis of MRP Topsoil Revision, Willow Creek Mine, Cyprus Plateau Mining Company, ACT/007/038-96C, Folder #2, Carbon County, Utah

SYNOPSIS

Cyprus Plateau Mining Company (CPMC) submitted a topsoil revision that addresses the Division's Order 96A, "Order & Findings of Permit Deficiency" issued on May 21, 1996. The revision provides a detail soil evaluation and operation plan for soils salvaged from Schoolhouse Canyon, Conveyors SC-6 and SC-7 vicinity, and affiliated transfer buildings. This Technical Review summarizes the revisions associated with the environmental resource, operational plan, and reclamation plan of the MRP.

ENVIRONMENTAL RESOURCE INFORMATION
SOILS RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 783.21, 817.200(c); R645-301-220, -301-411.

Analysis:

The Division issued a Division Order 96A on May 21, 1996, that found the permit deficient in that the MRP did not address soil salvage in the Schoolhouse Canyon Refuse Pile area or soil salvage and reclamation in the area of conveyors SC-6 and SC-7 and their associated transfer buildings that were under construction for the Willow Creek Mine. In response to the Division Order, Cyprus Plateau Mining Corporation (CPMC) extensively sampled soils in the Schoolhouse Canyon refuse pile area and examined soils in the conveyor and transfer building area. The Schoolhouse Canyon sampling program involved 10

additional soil pits and thoroughly collecting samples from 6 of the excavated pits.

The soil resource information collected for the 1996 Schoolhouse Canyon Refuse Pile area and Castle Gate conveyor area soils sampling was added to the Soil Resource section of the MRP. The methodologies used for soil evaluation were identical to those used for the 1996 soils sampling program for the Willow Creek Mine. For the Schoolhouse Canyon Refuse Pile area, samples were collected from 6 of the 10 excavated soils pits. The samples were analyzed for the soil parameters as set forth in the Division's Guidelines for topsoil.[1]

Schoolhouse Canyon soil pit locations are located on the Facilities Area Soils Map (Map #4) while soil profile descriptions are provided for all 10 pits in the Soil Resource section of the MRP. Nine of the 10 pits in Schoolhouse Canyon were in undisturbed soils while the tenth pit was located in the disturbed soils beneath the diversion ditch. According to the Order I soils map in the Castle Gate Permit, these disturbed soils on this site below the diversion ditch belong to the Strych and Colluvium Soils Mapping Unit. This description is in error since these soils are disturbed and consist of material which was blasted away from a sandstone ledge when the diversion ditch was constructed. These materials are at the angle of repose. The undisturbed soils correspond to the SCS Carbon County soil survey series #47, Guben-Rock Outcrop Complex.

Soils in the conveyor and transfer building area have already been mapped to an Order I soils survey level which is found in the Castle Gate Permit. These soils correspond to either "Made Land" or "Areas Disturbed by Mining Prior to 1977 and not re-affected by Castle Gate Coal Company." The revision states that no undisturbed soils remain in this area which could be salvaged. However, CPMC identified and recovered minor quantities of suitable disturbed soil material from the conveyor area during construction. This salvaged material was placed on the Willow Creek topsoil stockpile.

Findings:

This portion of the revised permit meets the regulatory requirements.

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[1]Leatherwood, J., and Duce, D., 1988. Guidelines for Management of Topsoil and Overburden for Underground and Surface Coal Mining. State of Utah Department of Natural Resources, Division of Oil, Gas and Mining.

OPERATION PLAN TOPSOIL AND SUBSOIL

Regulatory Reference: 30 CFR Sec. 817.22; R645-301-230.

Analysis:

Future expansion of the Schoolhouse Canyon Refuse Pile will disturb an additional 12.08 acres. Not all of the future disturbance contains salvageable soil. The disturbance area associated with the diversion ditch accounts for 4.73 acres and includes the fill immediately down slope of the diversion ditch which cannot be removed without undermining the ditch. Therefore, the proposed expansion areas potentially available for soil salvage totals 7.35 acres.

Areas within the 7.35 acres that would preclude soil salvage included rock outcrops, rock ledges, and boulders. Boulders were defined as rocks with a diameter greater than two feet. These areas were quantified to reduce that portion of non-salvageable soil. Salvageable soil would have to be pulled down slope onto the surface of the refuse pile using a tracked backhoe and, therefore, some mixing of the soil with the surface refuse and consequent soil loss in inevitable. CPMC estimates soil loss at three percent of the total volume of salvageable soil.

Calculated volume of the resulting potentially salvageable soil in the Schoolhouse Canyon Refuse Pile expansion area is approximately 15,500 cubic yards. The average thickness removal depth for the 7.35 acres is 16 inches of undisturbed soils. The soil will be stockpiled in either the Willow Creek topsoil pile or the Gravel Canyon stockpile. Table 4.2-1, Soil Recovery and Storage Plans, has been revised and updated to reflect the additional topsoil recovery from the refuse pile expansion area.

In the vicinity of Conveyors SC-6 and SC-7, approximately 600 cubic yards of additional disturbed soil material was salvaged and placed in the Willow Creek topsoil stockpile. CPMC states that no additional soil salvage in this area is planned since all reasonably available soils were identified and recovered. No specifics are given for actual basis for salvaging soils, details for depths and actual areas of salvage, or personnel and their credentials making the decisions for salvage. Therefore the Division is unable to assess if the correct quality or quantity of soil was salvaged. Salvageable 'reasonable available soils' to CPMC may or may not be reasonable to a non-biased party. As demonstrated in past construction activities, disturbed or undisturbed soils are often looked at as construction fill. The cost and inconvenience of salvaging soil materials are frequently used as excuses for not salvaging what could be appropriate growth media. These points of argument are particularly valid since the Castle Gate MRP shows a deficit of soil available for reclamation

in these pre-disturbed areas.

Findings:

This portion of the revised permit meets the regulatory requirements.

RECLAMATION PLAN TOPSOIL AND SUBSOIL

Regulatory Reference: 30 CFR Sec. 817.22; R645-301-240.

Analysis:

The current Castle Gate MRP commitment is to place 24 inches of soil cover on the Schoolhouse Canyon refuse pile. This soil primarily comes from the Gravel Canyon stockpile which currently contains 97,000 cubic yards of soils. This resulting acreage for the 24 inch commitment equates to 30 acres. With the additional 15,500 cubic yards of soil salvage from the Schoolhouse Canyon Refuse pile expansion area, the total volume of soil available for reclaiming the refuse pile is increased to 112,500 cubic yards. Based on the 30 acres of total disturbance for the refuse pile, the projected overall soil replacement depth will be increased to 2.34 feet.

Findings:

This portion of the revised permit meets the regulatory requirements.