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

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March 25, 1999

TO: File

THRU: Joe Helfrich, Permit Supervisor

THRU: Daron Haddock, Permit Supervisor

FROM: Michael Suflita, Reclamation Hydrologist

RE: Topsoil Borrow Site Amendment, Cyprus Plateau Mining Corp., Star Point Mine, ACT/007/006-98-2, File #2, Carbon County, Utah.

SUMMARY

On February 17, 1999 the Division received an application to amend the Mining and Reclamation plan by establishing a supplemental soils borrow area in the event there was insufficient soil for reclamation purposes. The property is owned by the Applicant and is expected to be used only if necessary and then, in two stages that minimizes disturbance. This technical memo is a review of the hydrologic aspects of the proposed amendment.

TECHNICAL ANALYSIS

OPERATION PLAN

Regulatory Reference: R645-301-742

Analysis:

The amendment contains a description of the sediment control measures to be used. These include silt fences, and a berm between the topsoil storage pile and the excavated borrow area. Numerous references in the text in chapters two, five, and seven reference the use of these methods. See also Dwg. 5-1 which shows their location. The silt fences will be of the type in the approved MRP and, importantly, will be installed before any borrow activities are begun. These methods are typical for such operations and are expected to be adequate. The plan to only use the borrow area only if necessary and then to divide the area into two stages of operation will significantly reduce sediment losses.

There is, however, one important omission in the plan with regards to sediment control. The reclamation schedule on page 5-15 only covers the tasks related to seeding, mulching, and fertilization. There is no indication of the time interval between the end of borrowing operations and the beginning of revegitation. Page 2-13 indicates, "Should the salvage of borrow soils require more than one season, the salvaged topsoil for reclamation of the borrow area will be seeded with a quick growing vegetative cover....to help control erosion from wind and water." Page 2-14 indicates, "The stockpile will be protected from wind and water erosion by prompt establishment and maintenance of a vegetative cover (if time permits)." In both cases no mention is made of the borrow area itself and there is no definite time established. Page 5-10 also commits to "Reclaiming areas suitable for reclamation as soon as practicable following the stripping operations." Page 3-10 indicates, "Reclamation activities prior to final reclamation will, to the extent feasible, be performed contemporaneously with soil borrow operations." Neither of these are definitive as to the actual time between end of borrowing and start of reclamation. As related verbally by the Applicant, the nature of this project is to take the borrowed soil to two locations in the minesite reclamation area resulting in some delays in the removal of the soil from the borrow pit.

The leaving of the borrow area and it's topsoil storage pile open for extended times causes several concerns. First, there is the risk of summer thunderstorms which can and do result in several inches of rainfall which results in substantial soil loss and could cause the soil to be washed off the new permit area. The schedule shows the reclamation beginning in October, with the thunderstorm season of July and August occurring just before. That scenario will have the entire borrow area and topsoil pile exposed to such storms.

The second concern is the growth of weeds in the borrow area if it's left open for extended periods. These weed plants and seeds would then be transported to the minesite reclamation area and infect that area in addition to the new borrow area. This would create a substantial problem in the reclamation process.

Typically, the Division has approved reclamation plans with a two week interval between the time the soil is removed from an area and seeding takes place on that same area. This operation appears to need more time, however, that time should not exceed two months.

Other regulations bearing on this issue are:

R645-301-341, The plan will include, at a minimum: A detailed schedule and timetable for the completion of each major step in the revegetation plan.

R645-301-352, Contemporaneous Reclamation. Revegetation on all land that is disturbed by coal mining and reclamation operations, will occur as contemporaneously as practicable with mining operations, ... The Division may establish schedules that define contemporaneous reclamation.

R645-301-532, Sediment control methods include but are not limited to: Disturbing the smallest practicable area at any one time during the mining operation through progressive backfilling, grading, and prompt revegetation....

Finding:

The plan does not meet minimum regulatory requirements in its present form. The Applicant must address those deficiencies as found in this analysis and provide the following, prior to approval, in accordance either the requirements of:

R645-301-742, adequate sediment control in the form of a revised timetable and commitments to revegitate borrow and topsoil areas no longer than two months after work is finished in these areas.

Regulatory Reference R645-301-729

Analysis:

Comparison of the maps in the application to the Gentry Mountain Cumulative Hydrologic Impact Assessment (CHIA) show that the proposed borrow area is about one-quarter mile inside the CHIA boundary. This indicates the CHIA will not need to be redone and the Probable Hydrologic Consequences Determination will not need to be altered by the proposed borrow area. The borrow area is expected to cause a relatively minor impact, especially when compared to the other activities of the mining operation.

Finding:

The information provided in the application is considered adequate to meet the requirements of this section of the regulations.

Regulatory Reference: R645-301-731.200

Analysis:

The plan has no provision for surface or ground water monitoring at the new borrow area. There are only ephemeral streams near the site and no groundwater aquifers are in the area. The operation will not impound any water and no surface or ground water impacts are expected. The disturbed area is small and given all these factors it does not appear necessary to perform any monitoring at the site.

Finding:

The information provided in the application is considered adequate to meet the requirements of this section of the regulations.

Regulatory Reference R645-301-731.300

Analysis:

As detailed in Chapter 2 and described in Chapter 7, soils analysis of the borrow area materials shows no acid-forming or toxic-forming materials are present at the site.

Finding:

The information provided in the application is considered adequate to meet the requirements of this section of the regulations.

Regulatory References R645-301-731.500, .600, .800; -301-733, -734, -735, -736, -738

Analysis:

Numerous regulatory references do not apply to this proposed amendment because the relevant situations are not present at the borrow site. These include no Discharges, Stream Buffer Zones, Water Rights and Replacement, Impoundments, Discharge Structures, Disposal of Excess Spoil, and Temporary Casing and Sealing of Wells.

Finding:

The information provided in the application is considered adequate to meet the requirements of these sections of the regulations.

RECLAMATION PLAN

Regulatory Reference R645-301-760

Analysis:

The reclamation plan for the borrow area is to grade and contour the site after soil removal to approximately original contour and blending the edges of the site with the

surrounding land. There will be positive drainage at all points and the natural channel in the southeast corner is restored. Drawings 5-2 and 5-3 give reclamation topography for restoring the site with one and two stages of soil removal. Appendix 7-1 provides calculations for RC-1, the restored natural channel. The appropriate design of a 10-year, 6-hour storm is used and the channel appears appropriately designed.

The site is to have the stored topsoil respread with the area then being roughened with mounds and depressions having a depth of 12 to 24 inches. Then the area will be seeded, fertilized, and mulched. This is a typical treatment for reclamation and is expected to be successful.

There is a deficiency in the omission of a time schedule showing the interval between the end of borrow operations and the start of reseeding. That situation is detailed in the Operations Plan portion of this Technical Analysis and will not be covered again here.

Finding:

The information provided in the application is considered adequate to meet the requirements of this section of the regulations.

RECOMMENDATION:

Prior to approval, the requirements of R645-301-742 must be provided as detailed above.