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

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March 7, 1997

TO: File
THRU: Daron Haddock, Permit Supervisor *DRH*
FROM: Sharon Falvey, Senior Reclamation Hydrologist *SKF*
RE: Midterm Permit Review, Cottonwood Wilburg Mine, ACT\015\019, Folder #2, Emery County, Utah.

SUMMARY:

As part of the midterm permit review, information contained in the existing MRP is examined to determine whether the plan meets the requirements of the R645 regulations for reclamation at the Cottonwood Wilburg Mine, Cottonwood Fan Portal Site.

RECLAMATION PLAN

HYDROLOGIC RECLAMATION INFORMATION

Regulatory Reference: 30 CFR Sec. 784.14, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-301-512, -301-513, -301-514, -301-515, -301-532, -301-533, -301-542, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-733, -301-742, -301-743, -301-750, -301-751, -301-760, -301-761.

Ground-water Monitoring

No ground water monitoring plan was presented for the Cottonwood fan portal area. No groundwater monitoring is specifically tied to reclamation of this area. It is unclear whether discharge may occur from outcrops following reclamation at this site. A monitoring plan may be necessary for gravity discharge from the portal. See the discussion under Gravity Discharge in this T.A.

Surface-water Monitoring

In appendix 3 the monitoring plan states that water monitoring will be conducted at the cottonwood fan portal above and below the sedimentation ponds during the reclamation phase. However, no parameters or sampling frequency were identified. Additionally, the information presented in appendix V conflicts with this information.

The Cottonwood Canyon Creek USGS flume downstream of the fan portal will continue to be monitored in accordance with established guidelines during reclamation.

Acid And Toxic-forming Materials

The plan states that all acid and toxic forming materials will be buried with at least four feet of material. No location was identified as needing four feet of cover material.

Transfer Of Wells

No transfer of wells are proposed associated with the reclamation of the Cottonwood fan portal area.

Discharges Into An Underground Mine

No discharges into the underground mine should occur as the proposed backfill and grading is designed to slope and redirect water away from the portal at the Cottonwood Wilburg fan site. Maximum slopes used in designs for stability are 1.5H:1V. Construction of all slopes are stated to be 67%.

Gravity Discharges

On page 4-1 in the plan it is stated that the Cottonwood fan portal will require drains or, special hydrological containment seals. Hydrologic consequences identified in the PHC, include a statement that water in the Deer Creek Mine workings will migrate down to the cottonwood workings. The plan does not make it clear that no entry was developed at the fan portal site. It is not clear whether a gravity discharge may occur at this site.

Water Quality Standards And Effluent Limitations

The permittee will be required to show that ground and surface water at the site meet the requirements of the R645 regulations prior to bond release.

Diversions

The diversion ditch located above the fan portal is proposed to be backfilled using material present on the outer shoulder and berm. Nine water bars are proposed to be constructed at locations as indicated on Drawing CM-10828-CP. They will extend diagonally from the uphill slope to the brow of the down-hill slope across the reclaimed ditch and down the face of the slope.

The contour maps and cross section details presented do not provide adequate site specific information to allow a determination on whether the proposed design is adequate. No designs were presented to demonstrate that the water bar diversions meet the minimum requirements of R645-301-742. Water bar diversions are probably not a good design for

reclamation as they require maintenance over time. The drainage plan may better meet the regulatory requirements by providing grading plan that distributes the flow over the slopes blending with the uphill terrain.

Stream Buffer Zones

No stream buffer zone information specific to this mining activity was found. However, the site appears to be within 100 feet of the original stream channel in some areas. The adjacent Trail Mountain Mine diverted the Cottonwood Creek into a culvert thus, diverting the stream. Should the reclamation of this site be conducted following reclamation at the Trail Mountain Mine a specific buffer zone variance would be necessary.

Sediment Control Measures

The plan states that final grading and preparation of overburden will be conducted along the contour to minimize erosion. If grading along the contour is hazardous to equipment operators, grading will be conducted in a direction other than parallel to the contours.

Areas of potential concentrated overland flow are proposed to be protected with erosion control matting placed beneath rock riprap. These areas were not identified on a reclamation map.

The contour maps and cross section details do not provide adequate site specific information to allow a determination on whether the proposed sediment control measures are adequate.

Siltation Structures

Other than the Alternate Sediment Control Measure in place in Area 3-7, the sedimentation ponds will be retained to treat runoff from the site during the reclamation phase. The grading plan does not provide information which shows how all disturbed areas will be treated during reclamation. The contour maps and cross section details presented do not provide site specific information which allows the division to make a finding that the existing sedimentation ponds are designed to meet the regulatory requirements for treating the disturbed area through the reclamation period.

Sedimentation Ponds

Once the bonding period is complete and revegetation is satisfactory the sedimentation ponds will be backfilled and graded. This determination is made by the Division following a request from the permittee at Phase II bond release.

Other Treatment Facilities

No other treatment facilities are associated with the Cottonwood fan portal area.

Siltation Structure Exemptions

No exemption from using siltation structures were granted associated with reclamation of the cottonwood fan portal area.

Discharge Structures

No discharge structures are proposed for retention as permanent structures. The contour maps and cross section details presented do not provide adequate site specific information to determine whether the existing sedimentation ponds are designed to meet the regulatory requirements for treating the disturbed area through the reclamation period.

Impoundments

No impoundments are proposed to be retained as permanent structures at the reclaimed cottonwood fan portal site.

Casing And Sealing Of Wells

No casing and sealing of wells are directly associated with the cottonwood mine portal reclamation.

Findings:

The permittee has not met the requirements of this section. The permittee must provide the following in accordance with:

R645-301-730. Provide a surface and ground water monitoring plan that relates to the suitability of the postmining land use, that will demonstrate that the waters meet all applicable state and federal water quality laws, which is based on the PHC and, is clearly presented in the plan, for the reclamation phase through bond release.

R645-301-120. Provide information in the plan that clarifies the existing configuration and the applicable requirements necessary to complete R645-301-731.500 as it relates to the potential for gravity reclamation as it relates to the entry to the cottonwood fan portal.

R645-742.300. Provide site specific design information to show that the diversions meet design criteria required by R645-742.300 for reclamation configuration at the fan Portal.

R645-732.210. Provide site specific design information to show the sedimentation ponds meet the design criteria required by R645-303-732.210 for the reclamation configuration at the fan Portal.