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 DIVISION OF OIL, GAS AND MINING

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TO: Internal File

THRU: Priscilla Burton, Reclamation Soils Specialist, Project Team Lead 

FROM: Gregg Galecki, Reclamation Specialist 

RE: Exhibit 20, Revision to the Crandall Canyon Reclamation Plan, Plateau Mining Corporation, Willow Creek Mine, C/007/038-SR01A

SUMMARY:

The proposed changes to Exhibit 20, Section 3.7 of the Willow Creek /Crandall Canyon MRP were received at the Division on January 8, 2001. The primary change in the proposal is to leave the current road in place for the surrounding landowners. Due to a change in the proposed post-mining land use, the current amendment is considered a Significant Revision. This technical memo is a review of the Significant Revision from a hydrologic perspective.

Information found in the proposal is considered inadequate to meet the requirements of the State regulations. The requisite deficiencies are outlined below.

TECHNICAL ANALYSIS:

RECLAMATION PLAN

ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES

Regulatory Reference: 30 CFR Sec. 701.5, 784.24, 817.150, 817.151; R645-100-200, -301-513, -301-521, -301-527, -301-534, -301-537, -301-732.

Analysis:

Pending the approval of the Significant Revision to retain the access road, the applicant must demonstrate the landowner is aware of their assumed responsibility to repair and maintain the road. Appendix 3.7V outlines the landowners' request that the road will remain, but does not address the responsibility for maintenance.

TECHNICAL MEMO

Findings:

Prior to final approval, the applicant must supply the following information:

R645-301-527.240, -534.330, the applicant must demonstrate the landowner is aware of their responsibility to repair and maintain the road.

HYDROLOGIC 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.

Analysis:

Sediment control measures

The combined application of sediment control measures and "Best Technology Currently Available"(BTCA) suggests an alternative to the standard/proposed rip-rap channel should be discussed. Current technology indicates 'natural stream corridor restoration' has many benefits over the standard rip-rap channel. The current design of the channel is a constant 5.6 percent grade extended over a length of 3450 feet (Map Exhibit 3.7-7E). From an engineering design standpoint, incorporating drop structures and natural stream bank construction would provide the channel with lower velocities, longer retention time, and trap additional sediment traps compared to a rip-rap channel. In a rip-rap channel, if rock becomes dislodged, a scour point develops a breach in the bed. Without an extensive and diverse root-mat a potential failure of the channel is possible. In a naturally restored channel, a more extensive and varied root-mat reduces the likelihood of a potential breach in the system, and generally provides better habitat.

Findings:

Prior to final approval, the applicant must supply the following information:

R645-301-532, -731.121, Demonstrate a true evaluation of whether 'natural stream corridor restoration' practices are economically feasible at the site.

MAPS, PLANS, AND CROSS SECTIONS OF RECLAMATION OPERATIONS

Regulatory Reference: 30 CFR Sec. 784.23; R645-301-323, -301-512, -301-521, -301-542, -301-632, -301-731.

Reclamation facilities maps

Analysis:

Within the amendment there are numerous references to the reclaiming of the cut-slopes within the facilities area. Appendix 3.7U indicates all cut-slopes will be backfilled, with the exception of PRCS-1 through PRCS-4. With the road remaining in place, cut-slopes along the road will no longer be reclaimed. Maps labeled Exhibits 3.7-7A through 3.7-7C illustrate all the cut-slopes as existing outside the Disturbed Area boundary. Exhibit 3.7-7B illustrates one area where the cut-slope will remain (PRCS-1, while PRCS-2 is absent), which suggests all other cut-slopes within the facilities area will be reclaimed. Exhibit 3.7-7 illustrate cross sections that intersect such cut-slopes, yet cross sections A-A', C-C', D-D' and G-G' do not indicated that the cut-slopes are being re-graded/reclaimed.

Findings:

Prior to approval, the applicant must supply the following information in accordance with:

R645-301-746.220, Consistently and accurately outline which cut-slopes are going to be reclaimed. Also, if cut-slopes are to be reclaimed they need to be illustrated as existing within the Disturbed Area boundary.

Final surface configuration maps

Analysis:

The following are a few apparent typographic errors located on some of the Exhibit maps. On Exhibit 3.7-7C, culverts 22 and 23 are labeled as **CCD** (Ditches as opposed to **CCC**), and culvert CCC-17 is mislabeled as CCC-27. On Exhibit 3.7-7B, there are two ditches labeled as CCD-11.

Findings:

Prior to approval, the applicant must supply the following information in accordance with:

R645-300-133.100, Correct minor typographic errors on Exhibits 3.7-7B and 3.7-7C so they are complete and accurate.

TECHNICAL MEMO

Reclamation surface and subsurface manmade features maps

Analysis:

Alternate Sediment Control Measures will be implemented at Topsoil stockpiles No.1 and No.2, as outlined in Section 3.7-64, but Map Exhibit 3.7-7C does not illustrate that these areas will be reclaimed; only that they will be re-contoured after the removal of the stockpiles. The operator needs to illustrate/demonstrate how these stockpiles will be accessed, and if any additional reclamation will occur. Primarily, outline how Stockpile No. 2 is going to be transported across the drainage. It is assumed that any sediment controls necessary, when transporting Stockpile No. 2 across the creek, will be implemented.

Findings:

Prior to approval, the applicant must supply the following information in accordance with:

R645-301-542.600, -542.630, Describe through illustration or narrative, how the Topsoil Stockpiles will be accessed, and if any additional reclamation will occur in those areas.

RECOMMENDATION:

The application should not be approved until the applicant has adequately addressed the following items discussed in detail in this memorandum:

- 1.) Demonstrate the landowner is aware of their responsibility to repair and maintain the road.
- 2.) Demonstrate a true evaluation of whether 'natural stream corridor restoration' practices are economically feasible at the site.
- 3.) Consistently and accurately outline which cut-slopes are going to be reclaimed
- 4.) Correct minor typographic errors on Exhibits 3.7-7B and 3.7-7C so they are complete and accurate
- 5.) Describe through illustration or narrative, how the Topsoil Stockpiles will be accessed, and if any additional reclamation will occur in those areas.