



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

Michael O. Leavitt
 Governor
 Kathleen Clarke
 Executive Director
 Lowell P. Braxton
 Division Director

1594 West North Temple, Suite 1210
 PO Box 145801
 Salt Lake City, Utah 84114-5801
 801-538-5340
 801-359-3940 (Fax)
 801-538-7223 (TDD)

September 22, 1999

TO: File

THRU: Pamela Grubaugh-Littig, Permit Supervisor *pgl*
 Daron Haddock, Permit Supervisor *y OAZ*

FROM: Peter Hess, Reclamation Specialist III, Team Lead *PH*
 Sharon Falvey, Senior Reclamation Hydrologist *SFP*
 Wayne Western, Senior Reclamation Engineer *W W*
 Robert Davidson, Senior Reclamation Soils Scientist *RAD*
 Paul Baker, Senior Reclamation Biologist *PB*

RE: Willow Creek As-Builts, Plateau Mining Corporation, Willow Creek Mine,
 ACT/007/038-98G, Folder #2, Carbon County, Utah

SUMMARY:

The following technical analyses have been prepared by the aforementioned in response to the deficiency response received from Plateau Mining Corporation on August 3, 1999. Several deficiencies remain with respect to hydrology and vegetation. Please respond to same by October 17, 1999.

ADMINISTRATIVE INFORMATION

VALID EXISTING RIGHTS

Regulatory Reference: R645-301-114

Analysis:

RIGHT OF ENTRY

Some of the right of entry information has been updated. Included in the updates is information about federal lease UTU-73975, dated February 1, 1997. It appears the information in the application is complete and accurate.

Findings:

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

ENVIRONMENTAL RESOURCE INFORMATION

VEGETATION RESOURCE INFORMATION

Regulatory Reference: R645-301-320.

Analysis:

Vegetation Resource Information

Changes have been made to Table 3.2-2, but this table is not clear. The total disturbed area acreage, 55.57 acres, appears to be correct. However, it is uncertain how the acreage figure for previous disturbance areas, 45.23 acres, relates to the acreage figures for "Previously Disturbed--Unreclaimed" and "AML Reclamation" areas at the bottom of the table, 63.9 acres. These two figures should be the same. The applicant needs to reconcile or explain the SE differences.

Findings:

Information provided in the proposal is not considered adequate to meet the requirements of this section of the regulations. Prior to final approval, the applicant must supply the following in accordance with:

R645-301-321, It is unclear why the acreage figures in Table 3.2-2 do not match, and the application needs to either reconcile the figures or explain the differences.

Regulatory Reference: R645-301-411. R645-301-323

Analysis:

Cultural Resource Maps

Map 11 is a map of cultural resources in the area of the mine. Included are several historic and prehistoric sites and paleontological resources. This map has been in the

confidential file and needs to remain there.

The new map has updated disturbed area information, but the baseline information has not changed. Contours are those that existed prior to construction. The map can be approved as submitted, but it needs to be in the confidential file.

Vegetation Reference Area and Wildlife Maps

The applicant has chosen to include maps of the proposed Barn Canyon shaft facility. Figure 3.2-1 is a map showing vegetation communities in the area, and it can be approved.

Map 5 shows vegetation in the region, including two reference areas near the Castle Gate Preparation Plant and two near the Willow Creek Mine. The reference area in Dry Canyon is not part of the revegetation success standards, but it is understood from the applicant that it may be needed in the future. Three reference areas in Crandall Canyon are shown on other maps in the mining and reclamation plan.

Map 6 shows vegetation communities and sampling sites in and near the mine and preparation plant. It also shows, in more detail, the locations of three reference areas. In a 1999 site visit, representatives of the Division and the applicant were not able to find two of the posts marking the grass/sage reference area or any of the markers for the mixed brush reference area. While it appears the map is properly marked according to previously-approved maps, these reference areas still need to be marked in the field.

The design of the original vegetation sampling was based on whether the site was previously disturbed, and the vegetation cover success standard is a weighted average of cover in areas previously disturbed and not previously disturbed by mining. Therefore, when sampling for revegetation success, it will be important to know exactly where the boundaries are. This information is clearly shown on Map 6 submitted with this amendment, and it is important that these boundaries be retained in any future revisions to this map.

The Regional Wildlife Map, Map 7, has been revised to include boundaries of the current permit area and recent raptor survey information. It shows eight golden eagle nests near the surface facilities and three other raptor nests in the permit area. The map is clear and of good quality and will be useful in determining potential effects on wildlife.

Map 8 shows where biological surveys were taken in and near Willow Creek. It shows the locations of fish and macro invertebrate sample sites, including those samples that were taken in Willow Creek before it was relocated. This map can be approved.

Willow Creek As-Builts
ACT/007/038-98G
September 22, 1999
Page 4

Findings:

Information provided in the proposal is considered adequate to meet the requirements of this section of the regulations.

RECOMMENDATIONS:

The Division should not give final approval until the problems discussed in this memorandum have been rectified.

Existing Structures and Facilities Maps

Analysis:

Mine Facilities Maps

On May 19, 1999, Peter Hess and Wayne Western ground-truthed Map 18B, Surface Facilities Map, for the Willow Creek mine received on April 30, 1999. Several deficiencies were identified. The map was resubmitted and the deficiencies were corrected.

Findings:

The permittee has met the minimum requirements of this section.

Analysis:

Surface Water Resource Maps

Lakes, streams, ponds, and springs within and adjacent to the proposed permit area are shown on Maps 15 and 16. Vegetation and soils associated with watersheds draining to the Willow Creek Mine disturbed area and drainage controls at the mine are now shown on Map 16A.

Water Monitoring Location Maps

Ground water and surface water monitoring stations are shown on Map 15 in Volume 15. Map 15 now includes wells B-11, B-12 and UG-B312 drilled in association with K-seam in-mine water investigation.

Findings:

The submitted amendment meets the minimum requirements for the R645 regulations.

OPERATION PLAN

TOPSOIL AND SUBSOIL

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

Analysis:

The As-built submittal includes discussion of topsoil salvage and storage as follows:

- Topsoil Salvage
- Soil Storage in Gravel Canyon

Topsoil Salvage

The disturbed area boundaries shown on Figure 3.1-1 Barn Canyon Shaft Facility Soils Study have been changed from the original map submitted in 1998. Boundaries of the soil map units were extrapolated from the original map based upon information received from Jim Nyenhuis. Exhibit 5, Soils Information, contains the original Barn Canyon soil survey and field notes, including the original Figure 3.1-1, Soils Map.

Subsequent permit modifications since construction have resulted in an overall increase of disturbance acreage for the Willow Creek Mine. Updated soils operational information concerning these modifications are documented. These permit modifications include the clean coal stockpile expansion, degasification wells, Schoolhouse Canyon Refuse soil salvage, and Barn Canyon Shaft installation. The following table summarizes each of these permit modifications in terms of acreage and total soils salvaged:

Permit Area	Disturbed Acreage	Soil Salvage Yd ³
Barn Canyon topsoil	0.46	906
Barn Canyon Substitute Topsoil	0.46	1,646
Clean Coal Pile	3.91	10,639
Schoolhouse Canyon	7.35	15,500
Degasification wells	2.2	2,319

Within the Barn Canyon disturbance area, *Map Unit A, Perma sandy loam*, is mapped in an undisturbed area under predominantly Gambel's oak vegetation. An average two feet of

suitable soil is available for salvage. Pockets of soil salvage may reach depths of 35 inches, but are not included within the projected soil salvage volumes. This soil is classified as a Mollisol which have deep rich A horizons. This soil will be salvaged and segregated from other soils salvaged from this site as described on page 4.5-12 and Table 5.4-1 of the MRP. Table 4.2-1 indicates that 345.8 yards of Mollisol (Undisturbed-A) will be salvaged and placed in the Willow Creek storage location as shown on Map 18B. The total projected acreage for soil salvage is estimated at 0.46 acres. If the entire area within the disturbed area boundary is disturbed, the maximum area would increase to 0.84 acres.

Topsoil Storage

Four long-term soil storage sites are described on page 4.5-53 of the MRP. They are the Gravel Canyon site; two storage piles in Crandall Canyon; and a storage site at Willow Creek. The Mollisol soil which will be separately handled during the Barn Canyon development will be placed at the Willow Creek site as shown on Map 18B. Table 5.4-1 indicates that the Barn Canyon project will generate 2,555 CY of substitute topsoil. This is a misleading statement, actually, there will be 906 CY of topsoil salvaged and the remaining 1,646 CY qualifies as substitute topsoil to be stored at gravel canyon. If all of the 2,555 CY noted in Table 5.4-1 is substitute topsoil, then Table 4.2-1 is in error. Table 4.2-1 and Table 5.4-1 must be brought to agreement.

Tables 4-2.1A and Table 4-2.1 relate the projected and actual soil salvage volumes, respectively. However, in this submittal, the volumes itemized in Table 4-2.1A are actual

salvage volumes. The figures in Table 4.2-1 have been altered from those in the MRP, acreage and depth of salvage have been omitted from this table and volumes do not correlate with those itemized in Table 4-2.1 of the approved MRP. Table 4-2.1 should include a subheading for topsoil salvaged from the degasification well sites. In both Table 4-2.1 and 4-2.1A, it is not clear whether the disturbed soil salvaged from 7.35 acres at the Schoolhouse Canyon site is the total projected to be salvaged or whether the acreage and yardage figures will change in the near future with refuse storage expansion. To eliminate confusion, Plateau Mining Corporation and the Division will meet together to successfully compile soil recovery and storage information into a table format that is clear and concise, without loss of information. The re-compiled tables will be submitted at completion.

Findings:

As determined in the analysis and findings of this Technical Analysis, approval of the plan is subject to the following Permit Condition. The applicant is subject to compliance with the following Permit Condition and has committed to comply with the requirements of this condition.

Accordingly, the permittee has committed to comply with the requirements of the following Permit Condition, as specified, and in accordance with the requirements of:

R645-301-121.100 and R645-301-121.200, Tables 4-2.1, Table 4-2.1A and Table 5.4-1 must be edited for clarity and brought into agreement as described in the technical analysis section above.

Analysis:

Stream buffer zones.

The approved plan shows the 100 foot buffer zone along Willow Creek would be maintained through the facilities area except in a 200 foot segment at the main access road bridge crossing, and along an 800 foot length of Willow Creek reconstruction. The final construction resulted in reduced buffer zones along two linear stretches, 300 feet long, totaling 600 feet plus the 800 linear feet Willow Creek reconstruction. The existing segments disturbed within the 100 foot buffer zone are delineated on map 18. The final configuration information will be included in Exhibit 14, but was not submitted at this time (see: pg 4.7-8 in this amendment). The area north east of the site is disturbed within the Willow Creek buffer zone to divert drainage around the disturbed area perimeter.

Diversions.

The plan that was approved prior to construction provided ditch and culvert designs sized for the 25-year, 24-hour precipitation event. Following construction, the applicant provided designs meeting the 10-year, 6-hour event. In accordance with Utah State rule R645-742.314 the Division required the greater peak flow; from the 10-year, 24-hour event; or from the 10-year, 6-hour event to be provided for the disturbed area perimeter drainage and undisturbed perimeter ditches. Maintenance standards are to be held to this design measurement. These measures were required to: 1) ensure the pond volume is retained for the design event by reducing the potential for undisturbed upstream drainage contributing runoff to the sedimentation pond, and 2) ensure the perimeter ditches adjacent to willow creek will continue to discharge to the pond for the 10 year, 24-hour event (minimum design requirements for the sedimentation pond). The applicant submitted the plan showing that these design criteria are met. The applicant also provided additional drainage plan changes to decrease their potential for impact on and off the permit area.

Sediment Control Measures.

Sedimentation Ponds

Sedimentation pond construction varied from the approved pond designs and some construction features on pond 001 and 002 did not fully meet standard design practices. Pond design information was also provided for pond 12A and 12B, as pond 003 was not constructed. This application provided design changes to improve the function of ponds 001 and 002. Information on pond 001 is contained in Table 1 and summarizes the initial approved permit design information, information for the existing pond, and information for the proposed configuration.

Table 1.

Sediment Pond 001 Proposed Design v.s. Approved and As-built			
Element	Approved Initial permit	As-built April 30, 1999	Proposed Changes August 3, 1999
Area Draining to Pond	26 acres	40.92 acres	44.78
Max Capacity Elevation/ volume	6168.5 ft 6.88 acre feet	6169.2 ft 9.7 acre feet	6168.8 ft. 9.30 Acre Feet
Max sediment capacity elevation/volume	0.33 acre feet	1.32 acre feet	6164.0 ft./4.8 AF 1.34 AF- 3 yr storage capacity

Sediment Pond 001 Proposed Design v.s. Approved and As-built

Element	Approved Initial permit	As-built April 30, 1999	Proposed Changes August 3, 1999
60% sediment clean out level	unknown	unknown	2.88 AF 6161.6
Design capacity	25-yr, 24-hr 2.97 AF	10-yr, 24-hr 3.16 AF	10-yr, 24-hr 4.25 AF includes 3.36 AF plus 0.89 AF mine water discharge at 0.45 cfs over a 24 hour period.
Mine water discharge	0.1 cfs / five day period	0.17 cfs/three day period	See design capacity above and table 2 below.
Excess Storage	2.58	4.88	Without Mine water discharge (0.89 AF) and assuming a 3 year sediment storage the excess storage is 4.66 AF.
Primary Spillway	6168.5 vertical riser 18"	6169.2 vertical riser 18"	6168.8 ft vertical riser 24"
Decant	6165.5 3-Orifice	6165.5 3-Orifice	6164.0 ft. Single 6 inch decant with shutoff valve.
Oil skimmer	Oil skimmer with trash rack	Trash rack only	Oil skimmer to be placed on the primary spillway.
Emergency Spillway	6168.5	6169.5	6169.81
Minimum freeboard	1.37	0.99 (text pg 4.5-50)	0.97 ft (between emergency spillway and embankment).
Embankment top width	40 ft	20ft	Elements for stability were not reviewed. Elements for stability should be reviewed by an engineer.

Sediment Pond 001 Proposed Design v.s. Approved and As-built

Element	Approved Initial permit	As-built April 30, 1999	Proposed Changes August 3, 1999
Side slopes	All impoundments not steeper than 2H:1V	Commitment removed: actual steepest side slope not provided.	Elements for stability were not reviewed. Elements for stability should be reviewed by an engineer.
Pond Embankment	Not found.	6170.95 ft.	6171.25 ft. minimum

A 4" pipeline is provided to transfer water from pond 001 to 013 and other ponds as necessary. Mine water discharge may be routed to five ponds 001, 12A, 12B, 13, and the Thickener Tank Overflow. The pond capacity information is presented in Table 2 below. In general, the amendment allows for Mine water storage in the ponds up to the decant elevation. Total available volume is based largely on the storage remaining beyond that occupied by sediment.

Table 2.

Mine Water and Storage in Sedimentation Ponds					
Element	Pond 1	Pond 12A	Pond 12B	Pond 13	Thickener Tank Over Flow
Max Sediment capacity/ elevation	4.8 AF 6164.0 ft.	0.64 AF 6103.6 ft.	0.64 AF 6093.5 ft.	Not found in plan. 6250.2 ft.	None.
60% Sediment capacity/ elevation	2.88 AF 6161.6 ft.	0.38 AF 6102.6 ft.	0.38 AF 6092.7 ft.	Design information not found in plan.	None.
Runoff volume 10 year-24 hr event.	3.36 AF plus 0.89 AF Mine water discharge.	Storage for 0.47 AF of 1.44 AF	0.97 AF from pond 12A and 1.04 AF from 12B	Design information not found in plan.	None. 5.42 AF provided to contain a spill from the thickener tank.
Decant Elevation	6164.3 ft.	6103.6 ft.	6095.05 ft.	Design information not found in plan.	None.
Mine water discharge capacity/ elevation	0.45 cfs over 24 hours. 5.6 AF/ 6164.3 ft.	0.64 AF 6103.6 ft.	0.64 AF 6093.4 ft.	5.91 AF 6250.2 ft.	2.45 AF 6123.2 ft.
Total Capacity	9.3 AF	1.11 AF	2.65 AF	Design information not found in plan.	7.87 AF
Excess Storage	0.3 ft. above decant invert.	None if full to maximum sediment capacity.	None if full to maximum sediment capacity.	Design information not found in plan.	None if full to 6123.2 ft.

The text in the permit states the MSHA pond 013 will be inspected monthly as authorized

by MSHA. An MSHA authorization was included in Volume 10, Exhibit 10 and allows inspections to be conducted every 30 days, effective through March 1, 2000, with attached conditions. In summary the conditions include: 1) immediate inspection after a seismic activity in the vicinity, any report of instability hazard or unusual condition, a reservoir spill, or rainfall equal to 1.2 inches within a 6 hr period, 2) a precipitation event of 1 inch in a six hour period requires inspection within 24 hrs, 3) all inspections will record the amount of water and depth behind the embankment, and the freeboard measurement, and 4) a record of daily rainfall will be maintained. Note: the request letter to MSHA stated the pond water level was not expected to increase above 4 inches of water while the present plan indicates Mine water storage may need to be contained in the pond.

Alternate Sediment Control Measures

The submitted plan identifies five ASCA's (Alternate Sediment Control Areas). The ASCA's are shown on the Drainage and Sediment Control Plan maps while the Alternate Sediment Control Measures are provided in Appendix F. The applicant provided standard practices for these areas. Standards for success and effectiveness for implementing and maintaining these measures will be determined by the inspector in the field.

Water quality standards and effluent limitations.

The transfer of Mine water from Sediment Pond No. 001 to Sediment Pond 003 is shown on Map 18B. If the water does not meet UPDES discharge requirements, this pipe is proposed to be used to transfer water to other ponds as well. On page 4.5-29 the following commitments are made: 1) the applicant will not discharge mine water from the K-seam, and 2) water will be discharged from the decant only if it meets UPDES discharge requirements. Similar information is found on pp. 4.7-10 and Ex. 13-18.

Mine water discharge may be routed to five ponds 001, 12A, 12B, 13, and the Thickener Tank Overflow. Pond storage and capacity for Mine water storage are provided in Table 2 under **Sedimentation Ponds** above.

Findings:

This amendment does not meet the minimum regulatory requirements. The amendment must include the following:

R645-301-120. Provide a plan that is complete, clear and concise: 1) Page 4.5-29 does not match with 4.5-30. 2) The information presented for Pond 013 can not be reviewed because the section for design calculations are not provided within the

plan in the Division's Public Information Center: The referenced location for designs contains information for Pond 011. 3) The information provided regarding handling Mine water and sediment pond design information is not clearly presented in the plan text.

RECOMMENDATION:

The applicant is encouraged to correct the remaining deficiencies outlined in this amendment. It is suggested the applicant come to the Division with the recommended changes and be prepared to show the amendment can be compiled into the existing plan to obtain approval.

The applicant has requested that maps 16, 27, 28, and 29 be removed from the plan. These maps contained the proposed Willow Creek channel configuration and design information that was used to re-construct the channel. Design maps and design information should be retained at the Division until a detailed "as-built" survey is provided for Willow Creek relocation.

RECLAMATION PLAN

TOPSOIL AND SUBSOIL

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

Analysis:

Information contained in Section 5.2.2.2, Soil Replacement Practices, shows updated soil replacement information.

Degasification Wells - The information concerning reclamation of the degasification wells has been omitted from section 5.2.2.2 and Table 4-2.1. This is acceptable because the Division acknowledges that the wells are under BLM jurisdiction.

Findings:

The applicant complies with this section.