



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

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****Corrected Copy**

December 15, 1999

Johnny Pappas, Sr. Environmental Engineer
Plateau Mining Corporation
847 Northwest Highway 191
Helper, Utah 84526

Re: Willow Creek As-Built Conditional Approval, Plateau Mining Corporation, Willow Creek Mine, ACT/007/038-98G, Folder #3, Carbon County, Utah

Dear Mr. Pappas:

The as-built amendment and the proposal to raise the embankment of pond 001 and replace the coal fines found in the embankment with clean fill, is hereby conditionally approved. This approval is being conditioned with the following stipulations because the amendment did not provide adequate documentation on how the requirements of the R645 regulations would be met in addressing coal waste in the embankment:

The following permit conditions must be implemented during construction:

R645-301-742. Provide a silt fence berm and straw bales to prevent sediment contributions to Willow Creek;

R645-301-560. Coal waste, to be transported to the Schoolhouse Refuse Pile, and noncoal waste must be handled according to the approved plan;

R645-301-742.221.39. The embankment fill must be properly compacted;

R645-514.312. Provide a certified report on results from the pocking to identify the coal waste location. Elevation, location, and extent should be mapped. It is also requested that the operator conduct the coal waste delineation in coordination with Pete Hess, Division Reclamation Specialist; and

**** R645-301-521 and R645-301-511.200.** If it is determined coal waste in the embankment needs to be removed immediately additional co-ordination

with the army corps will need to be conducted to replace the coal waste in the embankment with clean fill. If it is determined the pond can be safely operated, until a complete engineering design with a stability analyses is provided and approved by the Division, the permittee will submit a proposal with stability analyses prior to completing the construction to remove the remaining coal waste from the embankment.

The following permit conditions also need to be provided to the Division immediately following construction:

R645-301-514-300. Certification that all design standards in the R645 regulations were met during pond construction. This should include certification that the pond can be safely operated in any areas where the coal waste might remain and should include any additional design and construction requirements for the structure;

R645-301-533. Provide slope stability analyses as required under R645-301-533 assuming rapid drawdown in the pond and an elevated water surface in Willow Creek for critical sections of the embankment.

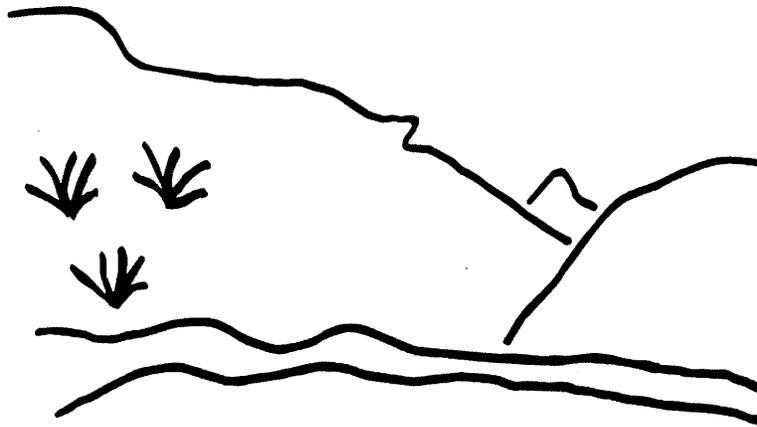
R645-301-121. Provide changes to the text applicable to the final design features for pond 001 within 30 days of completion of the construction.

Please submit clean copies of the entire as-built amendment to date (information associated with coal waste in the embankment should be submitted as a separate amendment) that can be incorporated into the Willow Creek Mine plan by January 18, 2000. If you have further questions you may contact Pamela Grubaugh-Littig (801-538-5268), Sharon Falvey (801-538-5260) or Pete Hess (435-613-5622).

Sincerely,


Pamela Grubaugh-Littig
Permit Supervisor

State of Utah



Utah Oil Gas and Mining

Coal Regulatory Program

Willow Creek As-Builts
ACT/007/038- 98G
Technical Analysis
December 15, 1999

INTRODUCTION

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Plateau Mining Corporation (PMC) revised and updated the Willow Creek Mine permit with as-built information. The As-Built submittal incorporates field changes made during and after construction, including amendment modifications for the Clean Coal Stockpile Expansion, degassification wells, and Barn Canyon. Changes were submitted to the Division on April 30, 1999, with revised pages submitted on August 3, 1999 and on October 29, 1999. Additional designs to raise the pond embankment and replace the coal fines found in the embankment with clean fill was provided in the information submitted on December 7, 1999.

Information regarding the K-Seam in-mine water will be updated when the permittee completes the Probable Hydrologic Impacts for proposed K-seam dewatering. Information including the Willow Creek construction details were submitted but will be handled as amendment 99-H. Willow Creek relocation design maps and design information contained in the plan should be retained by the Division until the as-built survey is reviewed. Additionally, a review is now required for the reclamation plan due to the changes made to the operations configuration; reclamation design information was not considered during this review.

SUMMARY OF DEFICIENCIES

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R645-301-521 and R645-301-511.200. If it is determined coal waste in the embankment needs to be removed immediately additional co-ordination with the army corps will may need to be conducted to replace the coal waste in the embankment with clean fill. If it is determined the pond can be safely operated, until a complete engineering design with a stability analyses is provided, and approved by the Division, the permittee will submit a proposal with stability analyses prior to completing the construction to remove the remaining coal waste from the embankment.

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R645-301-533. Provide slope stability analyses as required under R645-301-533 assuming rapid drawdown in the pond and an elevated water surface in Willow Creek for critical sections of the embankment.

R645-301-121. Provide changes to the text applicable to the final design features for pond 001.

TECHNICAL ANALYSIS

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 to clearly show the amount of previously disturbed and reclaimed, previously disturbed and not reclaimed, and previously undisturbed acreage. The total disturbed area acreage, 55.57 acres, appears to be correct.

Findings:

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

MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION

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.

TECHNICAL ANALYSIS

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.

Existing Structures and 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.

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 the K-seam mine water investigations.

Findings:

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

TECHNICAL ANALYSIS

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, degassification 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 Yd³
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
Degassification 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 2 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 in the MRP. They are the Gravel Canyon site; two storage piles in Crandall Canyon; and the topsoil stockpile site at Willow Creek as follows:

TECHNICAL ANALYSIS

- The two Crandall Canyon stockpiles contain 18,000 CY of soil. The Gravel Canyon pile is discussed in the PRCC mine reclamation plan.
- The Gravel Canyon stockpile originally contained 97,000 CY of soil. The original volume placement is discussed in the PRCC mine reclamation plan. The Gravel Canyon stockpile is projected to contain 125,656 CY of soil, with 10,639 CY of soil salvaged from the clean coal pile expansion and sediment pond 011 expansion, 15,810 CY of soil salvaged from the Schoolhouse Canyon refuse pile expansion, and 2,207 CY of subsoil salvaged from future construction of the Barn Canyon ventilation shaft site.
- The Willow Creek stockpile currently contains 120,470 CY of soil from soil salvaged during construction of the Willow Creek site. An additional 346 CY from Barn Canyon undisturbed A horizon topsoil will be placed on the Willow Creek stockpile and will bring the total volume to 120,816 CY.

Barn Canyon Ventilation Shaft Site

The Mollisol soil, undisturbed A horizon topsoil (345.8 CY), will be separately salvaged and handled from the subsoil during the Barn Canyon development and will be placed on the Willow Creek stockpile as shown on Map 18B. Tables 4.2-1 and 4.2-1A indicate that the Barn Canyon project will generate 2,207 CY of subsoil and substitute topsoil. Of this amount, 1646 CY of soil will be excess cut material from deeper soils taken from both Map unit A, Perma sandy loam and from Map Unit B, Pathead cobbly loam. These deeper cut materials will extend past the deeper soils and into parent material, and therefore, qualify as substitute topsoil. Projected subsoil salvage will include 37.2 CY from disturbed C horizons and 523.4 CY from undisturbed B horizons.

Findings:

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

HYDROLOGIC RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 701.5, 784.14; R645-100-200, -301-724.

Analysis:

Stream buffer zones.

The approved plan shows the 100 foot Willow Creek buffer zone maintained along the facilities area except in a 200 foot segment at the main access road bridge crossing, and along a 800 foot length of Willow Creek reconstruction. The final construction resulted in reduced buffer zones of 600 feet along two 300 foot linear stretches, in addition to, the 800 linear feet of

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. The north east Willow Creek buffer zone area was used to divert drainage around the disturbed area perimeter.

Diversions.

The approved plan, 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 measure. 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 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.

Sedimentation Ponds

The constructed sedimentation ponds varied from the approved 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 because 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 which summarizes the information from the initial approved permit design, the existing pond, and the proposed configuration.

Coal fines were uncovered within the embankment while replacing the primary spillway to meet design criteria on pond 001. As a result, the permittee provided design changes to raise the pond embankment and replace the coal fines with clean fill. The application does not include adequate information to describe the site conditions or the engineering practices that will be conducted on site.

In a phone conversation on December 10, 1999 Mr. Johnny Pappus, Environmental Engineer - Plateau Mining Corporation, relayed the following information to Sharon Falvey, Reclamation Hydrologist.

- 1) Coal waste was found in a layer between compacted fill material.
- 2) Coal waste was found within a 5 foot depth below the embankment surface.
- 3) From observations gathered during the primary spillway excavation the coal lense was expected to diminish near drainage ditch DD-25 (Map 24).
- 4) The current objective is to excavate the coal waste material from the embankment and replace it with clean fill along the area between the pond access road and to

TECHNICAL ANALYSIS

- an area just past drainage ditch DD-25.
- 5) The remaining embankment along the road between the pond and Willow Creek will be pocked on the inside embankment to determine if additional coal waste is present.

The information gathered by pocking the pond inslope along the embankment past drainage DD-25 to the pond inlet to determine coal waste location will be used to identify additional embankment work that may need to be completed. If waste is present in excessive amounts the embankment may need to be re-worked immediately. If the embankment along the road between the pond and Willow Creek contains a lense of coal waste the operator will be required to maintain the water level at a safe distance below the waste until the waste is replaced with clean compacted fill. It was indicated by Mr. Pappus waste in the embankment probably occurs in the same location as that found near the culvert and might result from coal waste placed as fill during reclamation activities conducted at the site prior to building the current Willow Creek Mine.

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 Pond. Excess water may be pumped into the mine for use in the water make-up system by tying into the raw water tank supply line. The pond capacity information is presented in Table 2 below. In general the amendment allows for minewater storage in the ponds up to the decant elevation. Total available volume is based largely on the storage remaining beyond that occupied by sediment. Mine water discharge may include the inflow rate plus the decant rate if water quality meet the discharge standards of the UPDES discharge permit.

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 occurs in the vicinity, any report of instability hazard or unusual condition occurs, a reservoir spill occurs, or rainfall equal to 1.2 inches occurs 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 minewater storage may need to be contained in the pond.

TECHNICAL ANALYSIS

Table 1.

Sediment Pond 001 Approved Design v.s. As-built and Proposed Design			
Element	Approved Initial permit	As-built April 30, 1999	Proposed Changes December 7, 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	6171.0 ft. 11.55 Acre Feet
Max sediment capacity elev./vol.	0.33 acre feet	1.32 acre feet	6163.9 ft./4.7 AF 1.34 AF- 3 yr storage capacity
60% sediment clean out level	unknown	unknown	2.8 AF 6161.5
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 of minewater discharged over a 24 hour period.
Minewater 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 minewater discharge (0.89 AF) and assuming a 3 year sediment storage the excess storage is 5.96 AF.
Primary Spillway	6168.5 vertical riser 18"	6169.2 vertical riser 18"	6171.0 ft vertical riser 24"
Decant	6165.5 3-Orifice	6165.5 3-Orifice	6163.9 ft. Single 10 inch decant elbow with gate 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	6172.0
Minimum freeboard	1.37	0.99 (text pg 4.5- 50)	1.5 ft (between emergency spillway and embankment).
Embankment top width	40 ft	20ft	Elements for stability should be reviewed by an engineer.
Side slopes	All impoundments not steeper than 2H:1V	Commitment removed: actual steepest side slope not provided.	Elements for stability should be reviewed by an engineer.
Pond Embankment	Not found.	6170.95 ft.	6173.5 ft. minimum

TECHNICAL ANALYSIS

Table 2.

Mine Water and Storage in Sedimentation Ponds					
Element	Pond 1	Pond 12A	Pond 12B	Pond 13	Thickener Pond
Max Sediment capacity/elevation	4.8 AF 6164.0 ft.	0.64 AF 6103.6 ft.	0.64 AF 6093.5 ft.	5.82 AF. 6200.5 ft.	None.
60% Sediment Capacity/elevation	2.88 AF 6161.6 ft.	0.38 AF 6102.6 ft.	0.38 AF 6092.7 ft.	3.49 AF 6196.4 ft.	None.
Runoff volume 10 year-24 hr event.	3.36 AF plus 0.89 AF minewater discharge.	Storage for 0.47 AF of 1.44 AF	0.97 AF from pond 12A and 1.04 AF from 12B	3.18 AF 6205.0 ft.	None. 5.42 AF provided to contain a spill from the thickener tank.
Decant Elevation.	6163.9 ft.	6103.7 ft.	6093.4 ft.	6200.5	None.
Minewater discharge /elevation.	6166.8 ft.	0.64 AF 6103.6 ft.	0.64 AF 61093.4 ft.	5.91 AF 6250.2 ft.	2.45 AF 6123.2 ft.
Total Capacity.	11.55 AF	1.11 AF	2.65 AF	9.0 AF	7.87 AF
Excess Storage.	2.4 AF above decant invert.	None if full to maximum sediment capacity.	None if full to maximum sediment capacity.	None if full to maximum sediment capacity.	None 2.4 AF if full to 6123.2 ft.

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 minewater from Sediment Pond No. 001 to Sediment Pond 013 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 Ex13-18.

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

TECHNICAL ANALYSIS

Findings:

This amendment does not meet the minimum regulatory requirements because the plan needs to incorporate all design changes conducted to upgrade the pond.

Engineering design certification and coal waste removal from the embankment needs to be completed prior to determining this section complete. However, to facilitate identifying the coal wastes extent in the embankment and to facilitate coal waste removal the amendment should be approved with the following conditions attached to the approval.

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R645-301-514-300. Certification that all design standards in the R645 regulations were met during pond construction. This should include certification that the pond can be safely operated in any areas where the coal waste might remain and should include any additional design and construction requirements for the structure;

R645-301-533. Provide slope stability analyses as required under R645-301-533

TECHNICAL ANALYSIS

assuming rapid drawdown in the pond and an elevated water surface in Willow Creek for critical sections of the embankement.

R645-301-121. Provide changes to the text applicable to the final design features for pond 001.

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.

Degassification Wells - The information concerning reclamation of the degassification 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:

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