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State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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October 25, 2001

TO: Internal File

THRU: Priscilla W. Burton, Senior Reclamation Specialist/Soils and Team Lead

FROM: Pete Hess, Senior Reclamation Specialist WHW for PWH
Wayne H. Western, Senior Reclamation Specialist WHW

RE: Surface Mining of Barrier Coal, Lodestar Energy, Inc., White Oak Mine, C/007/001-SR01A-2

SUMMARY:

The Permittee proposes to begin contour (surface) mining at the White Oak mine. Underground mining ceased as of the last week of September 2001 and the Permittee is in the process of demolition surface facilities will not be needed for surface mining.

Contour Mining will be utilized to recover the coal from the Lower O'Connor Seam and the Upper O'Connor seam. Plate 5-1C illustrates the progression of coal recovery and itemizes the ratio of coal to banked spoil. The average ratio of coal to spoil that will be moved is 1:4. Production is expected to be 773,000 tons total. The contour mine should be complete within 14 months (Section 523, page 500-15).

This submittal adds 8.28 acres to the disturbed area boundary. The change in mining method is considered a significant revision to the permit. The application supplements the existing MRP, but does not replace it. The chronology of SR01A is as follows:

Lodestar amendment received February 2, 2001
Determination of Completeness with stipulations March 19, 2001
Supplemental information received April 17, 2001
Division Technical Analysis July 13, 2001
Lodestar second submittal with soils information and drill logs September 10, 2001.
Division Technical Analysis October 12, 2001.

TECHNICAL ANAYLSIS:

ENVIRONMENTAL RESOURCE INFORMATION

Regulatory Reference: Pub.L 95-87 Sections 507, 508; 30 CFR 779.

GENERAL

Regulatory Reference: 30 CFR Sections 779.11; 783.12.R645-301 Sections 411; 521; 721.

Minimum Regulatory Requirements:

Include a description of the existing, pre-mining environmental resources within the proposed permit area and adjacent areas that may be affected or impacted by the proposed underground mining activities.

Analysis:

The White Oak Mine is located on the northern Wasatch Plateau. Topography of the permit area is marked by one main drainage, Mud Creek (sometimes referred to as Clear Creek and Pleasant Valley Creek), which empties into Scofield Reservoir north of the mine plan area. Several other lateral drainages flow into Mud Creek. The Belina Mina Complex is located on a tributary, Whisky Gulch, to one of these lateral drainages, Eccles Creek. These drainage areas are V-shaped valleys with very steep slopes and narrow bottoms. The Mud Creek drainage has a more U-shaped Valley with steep slopes and a broad, relatively flat bottom.

The Price River/Huntington Creek drainage divide crosses the permit area. On the east side of the divide, Mud Creek drains into the Scofield Reservoir, which releases water into the Price River. On the west side, water from Huntington Creek drains into the San Rafael River.

The permit area is underlain by the Musuk Shale Member of the Mancos Shale, the Star Point Sandstone, the Blackhawk Formation and Price River Formation of the Upper Cretaceous Mesa Verde Group. The Blackhawk Formation is the coal-bearing unit. The area is cut by several faults, the largest being the north-northeast-trending Pleasant Valley Fault east of the mining area. Other important faults that influence the groundwater flow in the vicinity of the Belina Mine Complex are the O'Connor and Connelville Faults. An intrusive dike extends through the area and is believed to serve as an east-west ground water barrier through the Belina Mines Complex. Although groundwater movement primarily occurs along the zones mentioned above, numerous small seasonal springs also occur from the Blackhawk Formation.

The White Oak Mine Complex is at an elevation of 9,200 feet. The slopes at the Belina Mine Complex range from 30 to 50 %. The North facing slopes are covered with Engelman Spruce and subalpine fir. Aspen communities are found on the south facing slopes. Mountain

meadow communities are scattered on upper slopes and ridges. The Mine Complex is bi-sected by a perennial stream that is bordered by the spruce-fir forest.

The Division reviewed the environmental resource information that is required for describing and identifying lands subject to surface coal mining over the life of the mine as outlined in R645-301-411, R645-301-521, and R645-301-721. The Division recapitulates and comments upon the resource information provided in the application under the heading of Environmental Resource Information in this Technical Analysis.

Findings:

The requirements of this section of the regulations are meet the minimum general requirements of the Regulations.

PERMIT AREA

Regulatory Requirements: 30 CFR Section 779.12; 783.12; 778.15; 779.24. R645-301-521.

Minimum Regulatory Requirements:

Describe and identify the lands subject to surface coal mining operations over the estimated life of those operations and the size, sequence, and timing of the subareas for which it is anticipated that individual permits for mining will be sought.

Analysis:

The permit area encompasses six and ½ square miles of land (Vol 2, page 1-1), plus 160 acres from the 1999 lease modification (Volume A4). Total acres within the disturbed area boundary are 142.8 total with 60.9 acres within the Mine Complex boundaries (Vol 2, page 1-10). The White Oak Mine Complex is located approximately 2 miles south west of the intersection of highways 96 and 264 in the Whisky Creek Canyon. Sometimes the White Oak Mine Complex is referred to as the Belina Mine Complex in the MRP.

The Permittee has reclassified the disturbed areas as follows:

- Loadout Facility.....33.2 acres
- General Office Area .....2.6 acres
- Lower Haul Road .....22.7 acres
- Upper Haul Road.....23.4 acres
- Mine Complex.....69.2 acres
- Total Areas.....151.1 acres

The permitted increased the disturbed area boundary at the White Oak mine complex by 8.28 acres to 69.2 acres. The reason for the increase is for maximizing coal recovery. Within the Mine Complex disturbed area boundary underground mining and the related surface facilities

have already disturbed 29.5 acres. Surface mining will disturb an additional 17.3 acres. Undisturbed islands within the disturbed area boundary total 22.4 acres. See Section 114 of the MRP for additional details.

Drawing R645-301-100 is entitled Permit Area Base Map. The map's scale is 1" = 2,000' and shows the permit boundaries and appears to be drawn on a USGS topographic base map. The permit boundaries are marked and most of the permit area is hatched. The map was stamped received on October 19, 2001. The Division considers the map adequate to show the permit boundaries for the White Oak mine

On Page 1-9, section 114 of the MRP, the Permittee lists the legal description for the permit area, including the 160-acre lease addition that occurred in 2000.

Findings:

The information in the proposed significant revision is adequate to meet the minimum Permit Area requirements of the Regulations.

MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sections 780.14; 779.24; 779.25. R645-301 Sections 323; 411; 521; 622; 722; 731.

Minimum Regulatory Requirements:

The permit application must include as part of the Resource Information, the following maps, plans and cross sections:

Affected area boundary maps

The boundaries of all areas proposed to be affected over the estimated total life of the underground mining activities, with a description of size, sequence, and timing of the mining of subareas for which it is anticipated that additional permits will be sought.

Archeological site maps

Known archeological sites within the permit or adjacent areas. Note - Information on the nature and location of archeological resources on public land and Indian land as required under the Archeological Resources Protection Act of 1979 must be submitted separately from the application, and marked and held as confidential.

Coal resource and geologic information maps

Nature, depth, and thickness of the coal seams to be mined, any coal or rider seams above the seam to be mined, each stratum of the overburden, and the stratum immediately below the lowest coal seam to be mined. All coal crop lines and the strike and dip of the coal to be mined within the proposed permit area.

Cultural resource maps

The boundaries of any public park and locations of any cultural and historical resources listed or eligible for listing in the National Register of Historic Places. Each cemetery that is located in or within 100 feet of the proposed permit area. Any land within the proposed permit area which is within the boundaries of any units of the National System of Trails or the Wild and Scenic Rivers System, including study rivers designated under Section 5(a) of the Wild and Scenic Rivers Act. Any other relevant information required by the Division.

Existing structures and facilities maps

Location and dimensions of existing areas of spoil, waste, coal development waste, and noncoal waste disposal, dams, embankments, other impoundments, and water treatment and air pollution control facilities within the proposed permit area.

Existing surface configuration maps

Sufficient slope measurements to adequately represent the existing land surface configuration of the area affected by surface operations and facilities, measured and recorded according to the following: each measurement shall consist of an angle of inclination along the prevailing slope extending 100 linear feet above and below or beyond the coal outcrop or the area to be disturbed or, where this is impractical, at locations specified by the Division; where the area has been previously mined, the measurements shall extend at least 100 feet beyond the limits of mining disturbances, or any other distance determined by the Division to be representative of the premining configuration of the land; and, slope measurements shall take into account natural variations in slope, to provide accurate representation of the range of natural slopes and reflect geomorphic differences of the area to be disturbed.

Mine workings maps

Location and extent of know workings of active, inactive, or abandoned underground mines, including mine openings to the surface within the proposed permit and adjacent areas. Location and extent of existing or previously surface-mined areas within the proposed permit area.

Monitoring and sampling location maps

Elevations and locations of test borings and core samplings. Elevations and locations of monitoring stations used to gather data on water quality and quantity, fish and wildlife, and air quality, if required, in preparation of the application

Permit area boundary maps

The boundaries of land within the proposed permit area upon which the applicant has the legal right to enter and begin underground mining activities.

Subsurface water resource maps

Location and extent of subsurface water, if encountered, within the proposed permit or adjacent areas, including, but not limited to, areal and vertical distribution of aquifers, and portrayal of seasonal differences of head in different aquifers on cross sections and contour maps.

Surface and subsurface manmade features maps

The location of all buildings in and within 1,000 feet of the proposed permit area, with identification of the current use of the buildings. The location of surface and subsurface manmade features within, passing through, or passing over the proposed permit area, including, but not limited to, major electric transmission lines, pipelines, and agricultural drainage tile fields. Each public

road located in or within 100 feet of the proposed permit area.

Surface and subsurface ownership maps

All boundaries of lands and names of present owners of record of those lands, both surface and subsurface, included in or contiguous to the permit area.

Surface water resource maps

The locations of water-supply intakes for current users of surface waters flowing into, out of, and within a hydrologic area defined by the Division, and those surface waters which will receive discharges from affected areas in the proposed permit area. Location of surface water bodies such as streams, lakes, ponds, springs, constructed or natural drains, and irrigation ditches within the proposed permit and adjacent areas.

Vegetation reference area maps

The location and boundaries of any proposed reference areas for determining the success of revegetation.

Well maps

Location, and depth if available, of gas and oil wells within the proposed permit area and water wells in the permit area and adjacent areas.

Cross sections, maps, and plans included in a permit application as required by this section shall be prepared by, or under the direction of, and certified by a qualified, registered, professional engineer, a professional geologist, or in any State which authorizes land surveyors to prepare and certify such cross sections, maps, and plans, a qualified, registered, professional, land surveyor, with assistance from experts in related fields such as landscape architecture, and shall be updated periodically as required by the Division.

Analysis:

Affected Area Boundary Maps

The Division usually considers the affected area to be synonymous with the permit area. Mining activities that are within the affected area include but not limited to surface facilities and underground working. For the White Oak, mine the affected area will also include the surface mine, which will be within the disturbed area boundary.

Map R645-301-100 shows the permit area, which will not change. The disturbed area boundaries at the loadout facility, the general mine offices and the upper and lower haul roads will not change. The disturbed area boundary at the main mine facility will change. The acreage at the site will increase from 60.9 acres to 69.2 acres.

Map 645-301-521.150 received on September 10, 2001 and shows the proposed changes to the disturbed area boundaries. The changes include increasing the outer disturbed area boundaries and mining within undisturbed islands within the disturbed area boundaries. The undisturbed islands were not official marked and were included in the disturbed acreage.

Existing Structures and Facilities Maps

"Existing Structure" means a structure or facility used in connection with or to facilitate coal mining and reclamation operations for which construction began prior to January 21, 1981. Most of the structures were constructed in 1974 or 1975 with some structures being constructed in the 1980s. The Permittee did not include an existing structures and facilities map in the MRP.

In section 526 of the MRP the Permittee lists each structure by map identification number and name along with a brief description that includes approximate date that the structures were constructed. The information in the MRP is adequate to show what structures and facilities existed before surface mining.

The Permittee is in the process of demolishing most of the structures at the mine site because they are either located where surface mining will take place or they are no longer needed. Map R645-301-521.150 sheet 4a of 4 shows the structures that exist at the time the September 10, 2001 submittal was being prepared. Map 645-301-521.150 sheet 4b of 4 shows those surface structures that should exist when surface mining begins.

In Section 521.121 of the MRP the Permittee states that maps showing all buildings within 1,000 feet of the mine permit area are shown on Map 521.124 sheets 1 through 4. Map 521.124 only shows the areas near the disturbed area boundaries not the permit boundaries.

Existing Surface Configuration Maps

The Permittee does not have maps and cross sections of the pre-disturbed areas, because most of the mine site existed before August 3, 1977. The Permittee does have several maps that show the topography of the mine site during underground mining.

Plate 5-1C White Oak Complex Projected Surface Mining Plan and Map R645-301-521.160, White Oak Complex X-Sections of Surface Mining Area Sheet A, shows the pre-surface topography. Cross-sections on Map R645-301-521.160, White Oak Complex X-Sections of Surface Mining Area Sheet B through D show the pre-surface mining and reclaimed surface mining topography.

Note: the contours on map R645-301-521.150 do not match the all of the contours on other maps that show the pre-surface mining surface. This is most likely due to slightly different base maps being used. The differences are minor and the Division will not require that all pre-surface mining contours be identical.

Mine Workings Maps

Plate 5-1D shows the underground workings for the upper O'Connor seam and Plate 5-1E shows the location of the underground workings for the lower O'Connor seam. The outline

of the proposed surface mine is overlaid on those maps. A registered professional engineer has certified both maps. The Division considers those mine working maps to be adequate to evaluate the relationship between surface and underground mining.

Map R645-301-521.141a, shows the underground workings in the Belina No.1 Mine and map R645-301-521.141b is the mine maps of the Belina No. 2 Mine. Map R645-301-521.111 shows the mine workings in the Pleasant Valley mining district, which include mine not associated with either of the Belina mines.

Permit Area Boundary Maps

The permit area map (Drawing R645-301-100, Permit Area Base Map) shows the correct permit area.

Surface and Subsurface Ownership Maps

Map R645-301-112.500, Surface Ownership, and Map R645-301-112.600, Coal Ownership, show the surface and subsurface ownership for the areas in and around the permit boundaries. The maps were incorporated into the MRP on Nov. 15, 1994. The Permittee has not indicated that any information on the maps has changed since then.

On Plate 5-1C the Permittee shows the locations of the proposed surface mine. A small part of the surface mine is located on Federal coal. Because the Permittee does not have permission to surface mine the Federal coal they must identify the areas within the White Oak mine complex that have Federal coal on Plate 5-1C.

Surface and subsurface manmade features maps

In Section 521.122 of the MRP, the Permittee states that all man-made features within, passing through, or passing over the mine permit area are depicted on Map 521.122.

Findings:

The information in the proposed significant revision is not considered adequate to meet the requirements of the Maps, Plans, and Cross Sections Resource Information section of the regulations.

OPERATION PLAN

Regulatory Reference: Pub. L 95-87 Sections 515, 516; 30 CFR 780.

Minimum Regulatory Requirements:

The objectives of this section is to ensure that the Division is provided with comprehensive and reliable information on proposed underground mining activities, and to ensure that those activities are allowed to be conducted only in compliance with the regulatory program.

Provide a general description of the mining operations proposed to be conducted during the life of the mine within the proposed permit area, including, at a minimum, the following: a narrative description of the type and method of coal mining procedures and proposed engineering techniques, anticipated annual and total production of coal, by tonnage, and the major equipment to be used for all aspects of those operations; and, a narrative explaining the construction, modification, use, maintenance, and removal of the following facilities (unless retention of such facility is necessary for post-mining land use is specified.) The following facilities must be described: dams, embankments, and other impoundments; overburden and topsoil handling and storage areas and structures; coal removal, handling, storage, cleaning, and transportation areas and structures; spoil, coal processing waste, mine development waste, and non-coal waste removal, handling, storage, transportation, and disposal areas and structures; mine facilities; and, water pollution control facilities.

MINING OPERATIONS AND FACILITIES

Regulatory Reference: 30 CFR Sections 779.11, 784.11. R645-301 Sections 231; 526; 528.

Minimum Regulatory Requirements:

The objectives of this section is to ensure that the Division is provided with comprehensive and reliable information on proposed underground mining activities, and to ensure that those activities are allowed to be conducted only in compliance with the regulatory program.

Provide a general description of the mining operations proposed to be conducted during the life of the mine within the proposed permit area, including, at a minimum, the following: a narrative description of the type and method of coal mining procedures and proposed engineering techniques, anticipated annual and total production of coal, by tonnage, and the major equipment to be used for all aspects of those operations; and, a narrative explaining the construction, modification, use, maintenance, and removal of the following facilities (unless retention of such facility is necessary for post-mining land use is specified.) The following facilities must be described: dams, embankments, and other impoundments; overburden and topsoil handling and storage areas and structures; coal removal, handling, storage, cleaning, and transportation areas and structures; spoil, coal processing waste, mine development waste, and non-coal waste removal, handling, storage, transportation, and disposal areas and structures; mine facilities; and, water pollution control facilities.

Analysis:

General

The Permittee has nearly exhausted the coal reserves that can be recovered by underground mining and now wants to recover the barrier coal by surface mining.

In section 523 of the MRP the Permittee states:

The surface mining mine plan of the barrier coal is planned to recover a large portion of the coal adjacent to the portal accesses at the White Oak Complex. The surface mining

operation will remove barrier coal and some underground pillars. The area to be mined encompasses the maximum economic recovery of the remaining barrier coal in this area by recovering coal that would otherwise be left by the underground mining process. The factors limiting the amount of coal to be recovered are the depth of overburden to the coal seam, and second mined underground workings. The disturbed area boundary was enlarged to recover the maximum reserves available. The reclamation coal in the barriers in the White Oak mine site will not be removed until the underground mining activity is completed at the White Oak No. 2 mine. The removal of coal by surface means will be completed prior to the permanent sealing of the mine portal openings. Access to the underground portion of the mines will be restricted during the surface mining process.

In section 523.200 of the MRP the Permittee states:

The surface mining of the barrier coal at the White Oak Complex will maximize the recovery of coal reserves that would otherwise be left by underground mining. The ground water evident in the area of mining is minimal and will not be adversely affected by this operation and the subsequent reclamation. The surface water flows that report to Whisky Creek will repot to sediment control structures during the mining and reclamation process and the stream alteration and restoration plan is approved to put the stream water flow back into the lower Whisky Creek. The material that the spoil is comprised of ahs been tested and determined to be non-toxic, so water quality will not be compromised.

The surface mining of coal in the barriers at the White Oak Mine Site will not be stated until the underground mining activity is completed at the White Oak No. 2 Mine. MSHA's approval of the blasting and ground control plans recognizes that the mines are inactive. The removal of coal by surface means will be completed prior to the permanent sealing of the mine portal openings. Access to the underground portion of the mines will be restricted during the surface mining process.

Both the Division and MSHA will classify the underground mines as inactive during surface mining. The Division will allow the Permittee to mine within 500 feet of the underground working in order to maximize coal recovery. Exposing the underground workings during surface mining will not result in water pollution or be a hazard to health and safety of the public.

Type and Method of Mining Operations

In the past, the Permittee recovered coal by room and pillar methods. The reserves that can be recovered by underground methods have nearly been exhausted. The Permittee wants to recover some of the barrier coal by surface mining. That calls type of surface mining to be done as contour mining.

The Permittee plans to begin surface mining as follows:

- Removal facilities that are in the proposed surface mining area.
- Install ditches 2001, 2002 and dugout D-1.
- Remove topsoil
- Begin removing coal in the Lower O' Connor seam
- Develop the Upper O' Connor seam.
- Production should be 600,000 ton over a 12 to 14 month period.
- Reclaim the site.

The Permittee did not state when backfilling and grading of the surface mine would occur or what the maximum disturbed acreage would be. However, R645-301-553 requires that once an area has been mine backfilling and grading must occur within 60 days or when mining has advance 1,500 feet. Due to the size of the surface mine the limiting factor will usually be 60 days.

The Permittee identified the areas of Federal Coal on Plate 5-1C with sufficient accuracy for the Division to determine what areas within the surface mine are Federally owned. To avoid confusion the Permittee committed to stake the boundary before mining.

Permittee makes the following statement.

The surface mining plan shows part of the area to be mined in months 12 and 14 that falls on to open Federal Coal. Lodestar commits that if an agreement with the BLM is not reached by the time the mining reaches this area, the coal will not be mined in the parts of months 12 and 14 that fall on open Federal coal. Lodestar commits to survey this property and identify this boundary with stakes.

The Permittee committed to take step to prevent mining Federal coal without authorization.

Facilities and Structures

The Permittee proposes to construct a new sediment pond Dugout D-1 in connection with the surface mining operation. For more information on existing facilities and structures, see the *Existing Structures* section of this TA. Information about the new sediment pond Dugout D-1and the hydrologic section

Findings:

The information in the proposed significant revision is considered adequate to meet the requirements of the mining operations and facilities section of the regulations

EXISTING STRUCTURES:

Regulatory Reference: 30 CFR Sections 780.12, 784.12. R645-301-526.

Minimum Regulatory Requirements:

"Existing Structure" means a structure or facility used in connection with or to facilitate coal mining and reclamation operations for which construction began prior to January 21, 1981.

Provide a description of each existing structure proposed to be used in connection with or to facilitate the surface coal mining and reclamation operation. The description shall include: the location; plans of the structure which describe its current condition; approximate dates on which construction of the existing structure was begun and completed; and, a showing, including relevant monitoring data or other evidence, whether the structure meets the permanent program performance standards or, if the structure does not meet the permanent program performance standards, a showing whether the structure meets the interim program performance standards.

Provide a compliance plan for each existing structure proposed to be modified or reconstructed for use in connection with or to facilitate the surface coal mining and reclamation operation. The compliance plan shall include: design specifications for the modification or reconstruction of the structure to meet the permanent program design and performance standards; a construction schedule which shows dates for beginning and completing interim steps and final reconstruction; provisions for monitoring the structure during and after modification or reconstruction to ensure that the permanent program performance standards are met; and, a showing that the risk of harm to the environment or to public health or safety is not significant during the period of modification or reconstruction.

Analysis:

"Existing Structure" means a structure or facility used in connection with or to facilitate coal mining and reclamation operations for which construction began prior to January 21, 1981. Most of the structures were constructed in 1974 or 1975 with some structures being constructed in the 1980s.

The Division did not require any specific monitoring program for the pre-SMCRA structures and no monitoring program will be required as part of the surface mining operation. The general performance standards are that protection of the environment and public safety. The Division conducts monthly inspections at the mine site. If problems are found the inspector will take action to insure that the problem is corrected.

Most of the structures in the White Oak mine site will be demolished before surface mining begins. The mine structures are shown on Maps 521.150 "As Built" Sheets 1 through 4 that was received on November 18, 1999 and incorporated on November 19, 1999. The Permittee submitted a revised map 521.150 "As Built" Sheet 4a of 4, received September 10, 2001 to show that many of the surface structures at the mine site have been removed. Map R645-301-521.150 Sheet 4b of 4 shows those surface facilities that will exist when surface mining begins.

Findings:

The Permittee met the minimum regulatory requirements of this section.

RELOCATION OR USE OF PUBLIC ROADS

Regulatory Reference: 30 CFR Sections 780.33; 784.18.
R645-301 Sections 521; 526.

Minimum Regulatory Requirements:

Describe, with appropriate maps and cross sections, the measures to be used to ensure that the interests of the public and landowners affected are protected if, the applicant seeks to have the Division approve conducting the proposed underground mining activities within 100 feet of the right-of-way line of any public road, except where mine access or haul roads join that right-of-way, or relocating a public road.

Analysis:

The Permittee has facilities at the mine loadout that are within 100 feet of a public road. Concerns about public safety were subject to public comment during the initial review. The haul road to the mine site is a private and permitted. Since all new surface disturbance will be done at the mine site the regulations regarding relocation of use of a public road are not relevant to surface mining and the approval of the significant revision SR01A.

Findings:

Information in the proposal is adequate to meet the minimum requirements of the relocation or use of public roads section of the regulations.

COAL RECOVERY

Regulatory Reference: 30 CFR Sections 816.59; 817.59. R645-301-522.

Minimum Regulatory Requirements:

Underground mining activities shall be conducted so as to maximize the utilization and conservation of the coal, while utilizing the best technology currently available to maintain environmental integrity, so that re-affecting the land in the future through surface coal mining operations is minimized.

Analysis:

The Permittee proposes to conduct surface mining in and around the disturbed area boundary of the White Oak mine site. The main reason for surface mining is to recover coal that

was unrecoverable by underground mining. The area of potential surface mining is limited by the location of underground workings and overburden depth.

In order to increase coal recovery the Permittee will increase the disturbed area boundary by 8.3 acres. See Plate 5-1C, Plate 5-1D (Upper O'Connor Seam) and Plate 5-1E (Lower O' Conner Seam) for the mine plan. The Permittee plans of recovering 773,100 tons of coal and the average overburden to coal ratio is 3.98.

The Permittee proposes conducting surface mining within 500 feet of an underground mine. R645-301-523.200 prohibits mining within 500 feet to any point of either an active or abandoned underground mine, except that the operations results in improved resource recovery. All of the coal that the Permittee proposes to mine is within 500 feet of underground mines. If the Permittee does not recover the coal by surface mining then the reserves will not be recovered.

The Division approved the Permittee coal recovery plan because:

- The coal that will be recovered by surface mining cannot be mined by underground methods.
- The Permittee will recover all coal reserves located at or near the surface facilities.

Findings:

Information in the proposal is adequate to meet the minimum requirements of the coal recovery section of the regulations.

SUBSIDENCE CONTROL PLAN

Regulatory Reference: 30 CFR Sections 784.20; 784.20; 817.121; 817.122. R645-301 Sections 521; 525; 724.

Minimum Regulatory Requirements:

Renewable resources survey

Include a survey, which shall show whether structures or renewable resource lands exist within the proposed permit area and adjacent area and whether subsidence, if it occurred, could cause material damage or diminution of reasonably foreseeable use of such structures or renewable resource lands. If the survey shows that no such structures or renewable resource lands exist, or no such material damage or diminution could be caused in the event of mine subsidence, and if the Division agrees with such conclusion, no further information need be provided in the application under this section.

Subsidence control plan

In the event the survey shows that such structures or renewable resource lands exist, and that subsidence could cause material damage or diminution of value or foreseeable use of the land, or if the Division determines that such damage or diminution could occur, the application shall include a subsidence control plan which shall contain the following information:

1.) A description of the method of coal removal, such as longwall mining, room-and-pillar removal, hydraulic mining, or other extraction methods, including the size, sequence, and timing for the development of underground workings.
2.) A map of underground workings which describes the location and extent of areas in which planned-subsidence mining methods will be used and which includes all areas where measures will be taken to prevent or minimize subsidence and subsidence related damage and where appropriate, to correct subsidence-related material damage.
3.) A description of the physical conditions, such as depth of cover, seam thickness, and lithology, which affect the likelihood or extent of subsidence and subsidence-related damage.
4.) A description of monitoring, if any, needed to determine the commencement and degree of subsidence so that, when appropriate, other measures can be taken to prevent, reduce, or correct material damage.
5.) Except for those areas where planned subsidence is projected to be used, a detailed description of the subsidence control measures that will be taken to prevent or minimize subsidence and subsidence-related damage, including, but not limited to: backstowing or backfilling of voids; leaving support pillars of coal; leaving areas in which no coal is removed, including a description of the overlying area to be protected by leaving the coal in place; and, taking measures on the surface to prevent material damage or lessening of the value or reasonably foreseeable use of the surface.
6.) A description of the anticipated effects of planned subsidence, if any.
7.) A description of the measures to be taken to mitigate or remedy any subsidence-related material damage to, or diminution in value or reasonably foreseeable use of the land, or structures or facilities to the extent required under State law.
8.) Other information specified by the Division as necessary to demonstrate that the operation will be conducted in accordance with the performance standards for subsidence control.

Performance standards for subsidence control

The operator shall either adopt measures consistent with known technology which prevent subsidence from causing material damage to the extent technologically and economically feasible, maximize mine stability, and maintain the value and reasonably foreseeable use of surface lands; or, adopt mining technology which provides for planned subsidence in a predictable and controlled manner. Nothing in this part shall be construed to prohibit the standard method of room-and-pillar mining.

The operator shall comply with all provisions of the approved subsidence control plan.

The operator shall correct any material damage resulting from subsidence caused to surface lands, to the extent technologically and economically feasible, by restoring the land to a condition capable of maintaining the value and reasonably foreseeable uses which it was capable of supporting before subsidence, and, to the extent required under applicable provisions of State law, either correct material damage resulting from subsidence caused to any structures or facilities by repairing the damage or compensate the owner of such structures or facilities in the full amount of the diminution in value resulting from the subsidence. Repair of damage includes rehabilitation, restoration, or replacement of damaged structures or facilities. Compensation may be accomplished by the purchase prior to mining of a non-cancelable premium-prepaid insurance policy.

Underground mining activities shall not be conducted beneath or adjacent to: public buildings and facilities; churches, schools, and hospitals; or, impoundments with a storage capacity of 20 acre-feet or more or bodies of water with a volume of 20 acre-feet or more, unless the subsidence control plan demonstrates that subsidence will not cause material damage to, or reduce the reasonably foreseeable use of, such features or facilities. If the Division determines that it is necessary in order to minimize the potential for material damage to the features or facilities described above or to any aquifer or body of water that serves as a significant water source for any public water supply system, it may limit the percentage of coal extracted under or adjacent thereto.

If subsidence causes material damage to any of the features or facilities, the Division may suspend mining under or adjacent to such features or facilities until the subsidence control plan is modified to ensure prevention of further material damage to

such features or facilities.

The Division shall suspend underground mining activities under urbanized areas, cities, towns, and communities, and adjacent to industrial or commercial buildings, major impoundments, or perennial streams, if imminent danger is found to inhabitants of the urbanized areas, cities, towns, or communities.

Within a schedule approved by the Division, the operator shall submit a detailed plan of the underground workings. The detailed plan shall include maps and descriptions, as appropriate, of significant features of the underground mine, including the size, configuration, and approximate location of pillars and entries, extraction ratios, measures taken to prevent or minimize subsidence and related damage, areas of full extraction, and other information required by the Division. Upon request of the operator, information submitted with the detailed plan may be held as confidential.

Notification

At least 6 months prior to mining, or within that period if approved by the Division, the underground mine operator shall mail a notification to all owners and occupants of surface property and structures above the underground workings. The notification shall include, at a minimum, identification of specific areas in which mining will take place, dates that specific areas will be undermined, and the location or locations where the operator's subsidence control plan may be examined.

Analysis:

Renewable Resources Survey

The forestland in and around the White Oak mine is classified as a renewable resource. Since renewable resources exist within the permit boundary the Permittee will be required to develop a subsidence control plan.

Subsidence Control Plan

The mining plan analyzed refers to three monitoring plans that will be used to control the underground mining activities in the upper and lower O'Connor coal seams. Those plans provide accurate monitoring which in turn will effectively minimize or negate surface impacts due to mining of the two-seam Federal lease. The plans are as follows:

Subsidence Control Plan

The revision received February 17, 2000 includes two map revisions, Plates 5-1A, which is the five year mine plan for the White Oak #2 Mine (lower O'Connor seam) and Plate 5-1B, which is the five year mine plan for the #1 Mine in the upper O'Connor. Four subsidence monitoring points are indicated, one for each panel to be developed during 2000 through 2003. The monitoring points will be installed prior to development of the top seam for the establishment of baseline elevation data, and will be monitored throughout the mining of the bottom seam, until subsidence monitoring of the area is no longer deemed necessary by the UDNR/OGM and the surface management agency.

The subsidence monitoring points will be differentially surveyed twice during the first year of mining in the lease modification area. Pedestrian surface walk-overs will be conducted post-snow melt and pre-snow fall annually to inspect for mining related surface impacts in lease modification area U-017354. If no subsidence is detected during the first and second differential level survey, then the frequency for conducting it will be reduced to once a year. The frequency for conducting the pedestrian surface walkovers may also be reduced to an annual inspection. The information which is compiled, will be analyzed and submitted to the UDNR/OGM not more than 45 days after collection of the field data, when such data is gathered more than once a year. When data is only collected annually, it may be submitted as part of the Permittee's annual report.

Monitoring of the subsidence control points by differential level survey and the overlying surface will continue until no longer deemed necessary by the UDNR/OGM and the concerned surface management agency.

Monitoring of Extraction Ratio

The "approved" maximum of fifty percent extraction of coal by plan view area will be monitored by the Permittee by comparing daily/monthly production records against mine maps. Mine maps showing where bottom coal has been extracted, and where slabbing or pocket and wing extraction methods have been utilized will be marked on a shift by shift basis and will be maintained by the Mine's engineer. Calculations comparing daily/monthly production records to the aforementioned maps will be forwarded quarterly to the USBLM and the UDNR/OGM for confirmation.

Monitoring of Pillar Stacking

Coordination of Pillar Sizes in the Upper and Lower O'Connor Coal Seams.

Primary development mining of coal support pillars (seventy foot centers, minimum) and secondary extraction of bottom coal, as well as some pillar size reduction will be practiced in both the upper and lower O'Connor coal seams, (White Oak #1 and #2 Mines). The top seam will be mined first, as depicted on Plate 5-1B from 2001 through 2003. Frequent engineering check surveys will be conducted to ensure that the mine plan developed by the Permittee is conducted according to projection, (Plate 5-1B). This information will be used to correlate the stacking of identically sized pillars in the #2 Mine, (Plate 5-1A).

The stacking of pillars will be monitored by the Mine's engineer to ensure that a success ratio of better than 90% is occurring in the two coal seams. A report, which

is P.E. certified by the engineer monitoring the pillar stacking, will be forwarded to the Division and the concerned surface management agency on a quarterly basis.

Surface Mining

The proposed surface mining is not expected to result in any additional subsidence.

Performance Standards for Subsidence control

The Permittee adopted standard room and pillar mining method, which is commonly used in the area. Room and pillar mining usually prevents subsidence from causing material damage to the extent technologically and economically feasible, maximize mine stability, and maintain the value and reasonably foreseeable use of surface lands.

The operator shall correct any material damage resulting from subsidence caused to surface lands, to the extent technologically and economically feasible, by restoring the land to a condition capable of maintaining the value and reasonably foreseeable uses which it was capable of supporting before subsidence, and, to the extent required under applicable provisions of State law, either correct material damage resulting from subsidence caused to any structures or facilities by repairing the damage or compensate the owner of such structures or facilities in the full amount of the diminution in value resulting from the subsidence. Repair of damage includes rehabilitation, restoration, or replacement of damaged structures or facilities.

Underground mining activities shall not be conducted beneath or adjacent to: public buildings and facilities; churches, schools, and hospitals; or, impoundments with a storage capacity of 20 acre-feet or more or bodies of water with a volume of 20 acre-feet or more, unless the subsidence control plan demonstrates that subsidence will not cause material damage to, or reduce the reasonably foreseeable use of, such features or facilities. If the Division determines that it is necessary in order to minimize the potential for material damage to the features or facilities described above or to any aquifer or body of water that serves as a significant water source for any public water supply system, it may limit the percentage of coal extracted under or adjacent thereto.

If subsidence causes material damage to any of the features or facilities, the Division may suspend mining under or adjacent to such features or facilities until the subsidence control plan is modified to ensure prevention of further material damage to such features or facilities.

The Division shall suspend underground mining activities under urbanized areas, cities, towns, and communities, and adjacent to industrial or commercial buildings, major impoundments, or perennial streams, if imminent danger is found to inhabitants of the urbanized areas, cities, towns, or communities.

Within a schedule approved by the Division, the operator shall submit a detailed plan of

the underground workings. The detailed plan shall include maps and descriptions, as appropriate, of significant features of the underground mine, including the size, configuration, and approximate location of pillars and entries, extraction ratios, measures taken to prevent or minimize subsidence and related damage, areas of full extraction, and other information required by the Division. Upon request of the operator, information submitted with the detailed plan may be held as confidential

Notification

At least 6 months prior to mining, or within that period if approved by the Division, the underground mine operator shall mail a notification to all owners and occupants of surface property and structures above the underground workings. The notification shall include, at a minimum, identification of specific areas in which mining will take place, dates that specific areas will be undermined, and the location or locations where the operator's subsidence control plan may be examined.

Findings:

The requirements of this section of the regulations are considered adequate in regard to the proposed permit changes for the addition of surface mining.

SLIDES AND OTHER DAMAGE

Regulatory Reference: 30 CFR Sections 816.99, 817.99; R645-301-515.

Minimum Regulatory Requirements:

At any time a slide occurs which may have a potential adverse effect on public, property, health, safety, or the environment, the person who conducts the underground mining activities shall notify the Division by the fastest available means and comply with any remedial measures required by the Division.

The permit application will incorporate a description of notification when potential impoundment hazards exist. The requirements for the description are: If any examination or inspection discloses that a potential hazard exists, the person who examined the impoundment will promptly inform the Division of the finding and of the emergency procedures formulated for public protection and remedial action. If adequate procedures cannot be formulated or implemented, the Division will be notified immediately. The Division will then notify the appropriate agencies that other emergency procedures are required to protect the public.

Analysis:

In Section 515.100 of the MRP the Permittee commits to the following:

At any time a slide occurs which may have a potential adverse effect on public health, safety or the environment, Lodestar will notify the Division as soon as possible and will comply

with the remedial measures required to stabilize the slide.

R645-301-515.100 requires the Permittee to make a commitment to notify the Division in case of slides and what remedial action should be taken. The Division found that the Permittee has made that commitment.

Findings:

The requirements of this section of the regulations are considered adequate in regard to the proposed permit changes for the addition of surface mining.

ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES

Regulatory Reference: 30 CFR Sections 784.24; 817.150; 816.150 ;817.15. R645-301 Sections 521; 527; 534; 732.

Minimum Regulatory Requirements:

Road classification system

Each road shall be classified as either a primary road or an ancillary road. A primary road is any road which is: used for transporting coal or spoil; frequently used for access or other purposes for a period in excess of six months; or, to be retained for an approved postmining land use. An ancillary road is any road not classified as a primary road.

Plans and drawings

Each applicant for an underground coal mining and reclamation permit shall submit plans and drawings for each road to be constructed, used, or maintained within the proposed permit area. To ensure environmental protection appropriate for their planned duration and use, including consideration of the type and size of equipment used, the design and construction or reconstruction of roads shall incorporate appropriate limits for grade, width, surface materials, surface drainage control, culvert placement, and culvert size, in accordance with current, prudent engineering practices, and any necessary design criteria established by the Division. The plans and drawings shall:

1.) Include a map, appropriate cross sections, design drawings, and specifications for road widths, gradients, surfacing materials, cuts, fill embankments, culverts, bridges, drainage ditches, low-water crossings, and drainage structures;
2.) Contain the drawings and specifications of each proposed road that is located in the channel of an intermittent or perennial stream, as necessary for approval of the road by the Division;
3.) Contain the drawings and specifications for each proposed ford of perennial or intermittent streams that is used as a temporary route, as necessary for approval of the ford by the Division;
4.) Contain a description of measures to be taken to obtain approval of the Division for alteration or relocation of a natural stream channel;
5.) Contain the drawings and specifications for each low-water crossing of perennial or intermittent stream channels so that the Division can maximize the protection of the stream; and,
6.) Describe the plans to remove and reclaim each road that would not be retained under an approved postmining land use, and the schedule for this removal and reclamation.

Performance standards

All roads road shall be located, designed, constructed, reconstructed, used, maintained, and reclaimed so as to:

1.) Control or prevent erosion, siltation, and the air pollution attendant to erosion, including road dust and dust occurring on other exposed surfaces, by measures such as vegetating, watering, using chemical or other dust suppressants, or otherwise stabilizing all exposed surfaces in accordance with current, prudent engineering practices;
2.) Control or prevent damage to fish, wildlife, or other habitat and related environmental values;
3.) Control or prevent additional contributions of suspended solids to streamflow or runoff outside the permit area;
4.) Neither cause nor contribute to, directly or indirectly, the violation of State or Federal water quality standard applicable to receiving waters;
5.) Refrain from seriously altering the normal flow of water in streambeds or drainage channels;
6.) Not locate any road in the channel of an intermittent or perennial stream unless specifically approved by the Division. Roads shall be located to minimize downstream sedimentation and flooding;
7.) Prevent or control damage to public or private property, including the prevention or mitigation of adverse effects on lands within the boundaries of units of the National Park System, the National Wildlife Refuge System, the National System of Trails, the National Wilderness Preservation System, the Wild and Scenic Rivers System, including designated study rivers, and National Recreation Areas designated by Act of Congress;
8.) Use nonacid- and nontoxic-forming substances in road surfacing: and,
9.) Maintain all roads to meet the performance standards of this part and any additional criteria specified by the Division. A road damaged by a catastrophic event, such as a flood or earthquake, shall be repaired as soon as is practicable after the damage has occurred.

In addition to the above, primary roads shall meet the following requirements:

1.) The construction or reconstruction of primary roads shall be certified in a report to the Division by a qualified registered professional engineer, or in any State which authorizes land surveyors to certify the construction or reconstruction of primary roads, a qualified registered professional land surveyor, with experience in the design and construction of roads. The report shall indicate that the primary road has been constructed or reconstructed as designed and in accordance with the approved plan;
2.) Each primary road embankment shall have a minimum static factor of 1.3. The Division may establish engineering design standards for primary roads through the State program approval process, in lieu of engineering tests, to establish compliance with the minimum static safety factor of 1.3 for all embankments;
3.) Primary roads shall be located to minimize erosion, insofar as is practicable, on the most stable available surface;
4.) Fords of perennial or intermittent streams by primary roads are prohibited unless they are specifically approved by the Division as temporary routes during periods of road construction.
5.) Each primary road shall be constructed or reconstructed, and maintained to have adequate drainage control, using structures such as, but not limited to bridges, ditches, cross drains, and ditch relief drains. The drainage control system shall be designed to safely pass the peak runoff from a 10-year, 6-hour precipitation event, or greater event as specified by the Division. Drainage pipes and culverts shall be installed as designed, and maintained in a free and operating condition and to prevent or control erosion at inlets and outlets. Drainage ditches shall be constructed and maintained to prevent uncontrolled drainage over the road surface and embankment. Culverts shall be installed and maintained to sustain the vertical soil pressure, the passive resistance of the foundation, and the weight of vehicles using the road. Natural stream channels shall not be altered or relocated without the prior approval of the Division. Except as specifically approved by the Division, structures for perennial or intermittent stream channel crossings shall be made using bridges, culverts, low-water crossings, or other structures designed, constructed, and maintained using current, prudent engineering practices. The Division shall ensure that low-water crossings are designed, constructed, and maintained to prevent erosion of the structure or streambed and additional contributions of suspended solids to streamflow.
6.) Primary roads shall be surfaced with material approved by the Division as being sufficiently durable for the

anticipated volume of traffic and the weight and speed of vehicles using the road.

Primary road certification

The plans and drawings for each primary road shall be prepared by, or under the direction of, and certified by a qualified registered professional engineer, or in any State which authorizes land surveyors to certify the design of primary roads a qualified registered professional land surveyor, experienced in the design and construction of roads, as meeting the requirements of this chapter; current, prudent engineering practices; and any design criteria established by the Division.

Other Transportation Facilities

The plan must include a detailed description of each road, conveyor, and rail system to be constructed, used, or maintained within the proposed permit area. The description will include a map, appropriate cross sections, and the following: specifications for each road width, road gradient, road surface, road cut, fill embankment, culvert, bridge, drainage ditch, and drainage structure; measures to be taken to obtain Division approval for alteration or relocation of a natural drainageway; a maintenance plan describing how roads will be maintained throughout their life to meet the design standards throughout their use; a commitment that if a road is damaged by a catastrophic event, such as a flood or earthquake, the road will be repaired as soon as practical after the damage has occurred; a report of appropriate geotechnical analysis, where approval of the Division is required for alternative specifications, or for steep cut slopes.

Analysis:

Road classification system

The Permittee does not propose to construct any roads during the operational phase of the surface mining project that need to be permitted or designed under R645-301-534 or R645-301-537. Such roads do not require to be permitted or have engineering designs for the following reasons:

- All surface water runoff reports to a sediment pond and is treated before discharge so water quality is not an issue.
- No permanent or designed structure such as culverts, bridges and ditches area associated with the pit roads.
- The pit roads will be used for any short time periods
- The pit roads will be reclaimed.
- The public will not have access to the pit roads.
- Safety issues will be overseen by MSHA.
- The Division has not required engineering designs for roads on the pad areas of other mines.
- Other states such as Colorado, Wyoming and Montana do not require designs for pit roads.

On Plate 645-301-527 Sheet 13 of the PAP, the Permittee shows that part of the main haul road will be retained and a new road sections and a turnaround will be constructed. The retained road will connect to existing roads that lead to Boarding House Canyon. On Page R-17 of 37 of the approved MRP the Permittee classifies the access roadway to Boarding House Canyon across the top of the ridge west of the White Oak Complex as an ancillary road.

The original reclamation plan was to reclaim the main haul road before the main mine complex would be reclaimed. Access to the main mine site would be through upgrading existing roads outside of the permit area and upgrading existing roads jeep trails and wheel tracks into roads. Since the Permittee no longer proposes to access the site from Boarding House Canyon for reclamation the jeep trails and wheel tracks will not be upgraded to roads.

Plans and drawings

No engineered or certified plans or drawings are required for the proposed pit roads.

The Spoils Backfill & Reclamation Details map illustrates two roads (drawing Appendix R2 Figure R-11), located in the extreme southwestern portion of the disturbed area (almost due west of Dugout D-1), that exist on 2:1 and 3:1 slopes, respectively. On the plan view of the proposed contours illustration, it is not clear what roads and facilities will remain upon completion of the proposed amendment.

Performance standards

No specific performance standards are associated with the proposed pit roads. Safety issues will be the primary responsibility of MSHA.

Primary road certification

No engineered or certified plans or drawings are required for the proposed pit roads.

Other Transportation Facilities

The Permittee does not propose to construct or modify any other transportation facilities in association with surface mining.

Findings:

The Permittee has met the minimum Operational Road System requirements of the Regulations.

SPOIL AND WASTE MATERIALS

Regulatory Reference: 30 CFR Sections 701.5; 784.19; 784.25; 816.71; 816.73; 816.74; 816.79; 816.81; 816.83; 816.84; 816.87; 817.71; 817.72; 817.73; 817.74; 817.81; 817.83; 817.84; 817.87; 817.89.R645-100-200; R645-301 Sections 210; 211; 212; 412; 512; 513; 514; 521; 526; 528; 535; 536; 542; 553; 745; 746; 747.

Minimum Regulatory Requirements:

Disposal of noncoal mine wastes

Noncoal mine wastes including, but not limited to, grease, lubricants, paints, flammable liquids, garbage, abandoned mining machinery, lumber, and other combustible materials generated during mining activities shall be placed and stored in a controlled manner in a designated portion of the permit area. Placement and storage shall ensure that leachate and surface runoff do not degrade surface or ground water, that fires are prevented, and that the area remains stable and suitable for reclamation and revegetation compatible with the natural surroundings.

Final disposal of noncoal mine wastes shall be in a designated disposal site in the permit area or a State-approved solid waste disposal area. Disposal sites in the permit area shall be designed and constructed to ensure that leachate and drainage from the noncoal mine waste area does not degrade surface or underground water. Wastes shall be routinely compacted and covered to prevent combustion and windborne waste. When the disposal is completed, a minimum of 2 feet of soil cover shall be placed over the site, slopes stabilized, and revegetated. Operation of the disposal site shall be conducted in accordance with all local, State, and Federal requirements.

At no time shall any noncoal mine waste be deposited in a refuse pile or impounding structure, nor shall any excavation for a noncoal mine waste disposal site be located within 8 feet of any coal outcrop or coal storage area.

Any noncoal mine waste defined as "hazardous" under Section 3001 of the Resource Conservation and Recovery Act (RCRA) (Pub. L. 94-580, as amended) and 40 CFR Part 261 shall be handled in accordance with the requirements of Subtitle C of RCRA and any implementing regulations.

Coal mine waste

Each plan shall contain descriptions, including appropriate maps and cross-section drawings of the proposed disposal methods and sites for placing underground development waste and excess spoil generated at surface areas affected by surface operations and facilities. Each plan shall describe the geotechnical investigation, design, construction, operation, maintenance, and removal, if appropriate, of the structures.

All coal mine waste shall be placed in new or existing disposal areas within a permit area that are approved by the Division for this purpose. Coal mine waste shall be placed in a controlled manner to:

1.) Minimize adverse effects of leachate and surface-water runoff on surface- and ground-water quality and quantity;
2.) Ensure mass stability and prevent mass movement during and after construction;
3.) Ensure that the final disposal facility is suitable for reclamation and revegetation compatible with the natural surroundings and the approved postmining land use;
4.) Not create a public hazard; and
5.) Prevent combustion.

Coal mine waste materials from activities located outside a permit area may be disposed of in the permit area only if approved by the Division. Approval shall be based upon a showing that such disposal will be in accordance with the standards of this section.

The disposal facility shall be designed using current, prudent engineering practices and shall meet any design criteria established by the Division. A qualified registered professional engineer, experienced in the design of similar earth and waste structures, shall certify the design of the disposal facility. The disposal facility shall be designed to attain a minimum long-term static safety factor of 1.5. The foundation and abutments must be stable under all conditions of construction. Sufficient foundation

investigations, as well as any necessary laboratory testing of foundation material, shall be performed in order to determine the design requirements for foundation stability. The analyses of the foundation conditions shall take into consideration the effect of underground mine workings, if any, upon the stability of the disposal facility.

If any examination or inspection discloses that a potential hazard exists, the Division shall be informed promptly of the finding and of the emergency procedures formulated for public protection and remedial action. If adequate procedures cannot be formulated or implemented the Division shall be notified immediately. The Division shall then notify the appropriate agencies that other emergency procedures are required to protect the public.

Refuse piles

Refuse piles shall meet the requirements of coal mine waste, the additional requirements provided below and the requirements of 30 CFR Sections 77.214 and 77.215.

If the disposal area contains springs, natural or manmade water courses, or wet-weather seeps, the design shall include diversions and underdrains as necessary to control erosion, prevent water infiltration into the disposal facility, and ensure stability. Uncontrolled surface drainage may not be diverted over the outslope of the refuse pile. Runoff from areas above the refuse pile and runoff from the surface of the refuse pile shall be diverted into stabilized diversion channels designed to safely pass the runoff from a 100-year, 6-hour precipitation event. Runoff diverted from undisturbed areas need not be commingled with runoff from the surface of the refuse pile.

Underdrains shall comply with the general requirements for the disposal of excess spoil.

Slope protection shall be provided to minimize surface erosion at the site. All disturbed areas, including diversion channels that are not riprapped or otherwise protected, shall be revegetated upon completion of construction.

All vegetative and organic materials shall be removed from the disposal area prior to placement of coal mine waste. Topsoil shall be removed, segregated and stored or redistributed. If approved by the Division, organic material may be used as mulch or may be included in the topsoil to control erosion, promote growth of vegetation, or increase the moisture retention of the soil.

The final configuration of the refuse pile shall be suitable for the approved postmining land use. Terraces may be constructed on the outslope of the refuse pile if required for stability, control of erosion, conservation of soil moisture, or facilitation of the approved postmining land use. The grade of the outslope between terrace benches shall not be steeper than 2h:1v (50 percent).

No permanent impoundments shall be allowed on the completed refuse pile. Small depressions may be allowed by the Division if they are needed to retain moisture, minimize erosion, create and enhance wildlife habitat, or assist revegetation, and if they are not incompatible with the stability of the refuse pile.

Following final grading of the refuse pile, the coal mine waste shall be covered with a minimum of 4 feet of the best available, nontoxic and noncombustible material, in a manner that does not impede drainage from the underdrains. The Division may allow less than 4 feet of cover material based on physical and chemical analyses which show that the revegetation requirements will be met.

A qualified registered professional engineer, or other qualified professional specialist under the direction of the professional engineer, shall inspect the refuse pile during construction. The professional engineer or specialist shall be experienced in the construction of similar earth and waste structures. Such inspection shall be made at least quarterly throughout construction and during critical construction periods. Critical construction periods shall include, at a minimum: Foundation preparation including

the removal of all organic material and topsoil; Placement of underdrains and protective filter systems; Installation of final surface drainage systems; and, The final graded and revegetated facility. Regular inspections by the engineer or specialist shall also be conducted during placement and compaction of coal mine waste materials. More frequent inspections shall be conducted if a danger of harm exists to the public health and safety or the environment. Inspections shall continue until the refuse pile has been finally graded and revegetated or until a later time as required by the Division.

The qualified registered professional engineer shall provide a certified report to the Division promptly after each inspection that the refuse pile has been constructed and maintained as designed and in accordance with the approved plan and this Chapter. The report shall include appearances of instability, structural weakness, and other hazardous conditions. The certified report on the drainage system and protective filters shall include color photographs taken during and after construction, but before underdrains are covered with coal mine waste. If the underdrain system is constructed in phases, each phase shall be certified separately. The photographs accompanying each certified report shall be taken in adequate size and number with enough terrain or other physical features of the site shown to provide a relative scale to the photographs and to specifically and clearly identify the site. A copy of each inspection report shall be retained at or near the minesite.

Impounding structures

New and existing impounding structures constructed of coal mine waste or intended to impound coal mine waste shall meet the requirements for coal mine waste.

Coal mine waste shall not be used for construction of impounding structures unless it has been demonstrated to the Division that the stability of such a structure conforms to the requirements of this part and that the use of coal mine waste will not have a detrimental effect on downstream water quality or the environment due to acid seepage through the impounding structure. The stability of the structure and the potential impact of acid mine seepage through the impounding structure shall be discussed in detail in the design plan submitted to the Division.

Each impounding structure constructed of coal mine waste or intended to impound coal mine waste shall be designed, constructed, and maintained in accordance with the requirements for temporary impoundments. Such structures may not be retained permanently as part of the approved postmining land use.

Each impounding structure constructed of coal mine waste or intended to impound coal mine waste that meets the criteria of 30 CFR Sec. 77.216(a) shall have sufficient spillway capacity to safely pass, adequate storage capacity to safely contain, or a combination of storage capacity and spillway capacity to safely control, the probable maximum precipitation of a 6-hour precipitation event, or greater event as specified by the Division. Spillways and outlet works shall be designed to provide adequate protection against erosion and corrosion. Inlets shall be protected against blockage.

Runoff from areas above the disposal facility or runoff from the surface of the facility that may cause instability or erosion of the impounding structure shall be diverted into a stabilized diversion channels designed to safely pass the runoff from a 100-year, 6-hour design precipitation event.

Impounding structures constructed of or impounding coal mine waste shall be designed and function so that at least 90 percent of the water stored during the design precipitation event can be removed within a 10-day period.
Burning and burned waste utilization

Coal mine waste fires shall be extinguished by the person who conducts the surface mining activities, in accordance with a plan approved by the Division and the Mine Safety and Health Administration. The plan shall contain, at a minimum, provisions to ensure that only those persons authorized by the operator, and who have an understanding of the procedures to be used, shall be involved in the extinguishing operations. No burning or unburned coal mine waste shall be removed from a permitted disposal area without a removal plan approved by the Division. Consideration shall be given to potential hazards to persons working or living in

the vicinity of the structure.

Return of coal processing waste to abandoned underground workings

Each plan shall describe the design, operation and maintenance of any proposed coal processing waste disposal facility, including flow diagrams and any other necessary drawings and maps, for the approval of the Division and the Mine Safety and Health Administration.

Each plan shall describe the source and quality of waste to be stowed, area to be backfilled, percent of the mine void to be filled, method of constructing underground retaining walls, influence of the backfilling operation on active underground mine operations, surface area to be supported by the backfill, and the anticipated occurrence of surface effects following backfilling.

The applicant shall describe the source of the hydraulic transport mediums, method of dewatering the placed backfill, retainment of water underground, treatment of water if released to surface streams, and the effect on the hydrologic regime.

The plan shall describe each permanent monitoring well to be located in the backfilled area, the stratum underlying the mined coal, and gradient from the backfilled area.

The requirements of this section shall also apply to pneumatic backfilling operations, except where the operations are exempted by the Division from requirements specifying hydrologic monitoring.

Excess Spoil: General Requirements

Excess spoil shall be placed in designated disposal areas within the permit area, in a controlled manner to: minimize the adverse effects of leachate and surfacewater runoff from the fill on surface and ground waters; ensure mass stability and prevent mass movement during and after construction; and, ensure that the final fill is suitable for reclamation and revegetation compatible with the natural surroundings and the approved postmining land use.

The fill and appurtenant structures shall be designed using current, prudent engineering practices and shall meet any design criteria established by the Division. A qualified registered professional engineer experienced in the design of earth and rock fills shall certify the design of the fill and appurtenant structures. The fill shall be designed to attain a minimum long-term static safety factor of 1.5. The foundation and abutments of the fill must be stable under all conditions of construction.

The disposal area shall be located on the most moderately sloping and naturally stable areas available, as approved by the Division, and shall be placed, where possible, upon or above a natural terrace, bench, or berm, if such placement provides additional stability and prevents mass movement.

Sufficient foundation investigations, as well as any necessary laboratory testing of foundation material, shall be performed in order to determine the design requirements for foundation stability. The analyses of foundation conditions shall take into consideration the effect of underground mine workings, if any, upon the stability of the fill and appurtenant structures. When the slope in the disposal area is in excess of 2.8h:1v (36 percent), or such lesser slope as may be designated by the Division based on local conditions, keyway cuts (excavations to stable bedrock) or rock toe buttresses shall be constructed to ensure stability of the fill. Where the toe of the spoil rests on a downslope, stability analyses shall be performed to determine the size of rock toe buttresses and keyway cuts.

All vegetative and organic materials shall be removed from the disposal area prior to placement of excess spoil. Topsoil shall be removed, segregated and stored and redistributed in accordance with the requirements for topsoil handling. If approved by the Division, organic material may be used as mulch or may be included in the topsoil to control erosion, promote growth of vegetation, or increase the moisture retention of the soil.

Excess spoil shall be transported and placed in a controlled manner in horizontal lifts not exceeding 4 feet in thickness; concurrently compacted as necessary to ensure mass stability and to prevent mass movement during and after construction; graded so that surface and subsurface drainage is compatible with the natural surroundings; and covered with topsoil or substitute material. The Division may approve a design which incorporates placement of excess spoil in horizontal lifts other than 4 feet in thickness when it is demonstrated by the operator and certified by a qualified registered professional engineer that the design will ensure the stability of the fill and will meet all other applicable requirements.

The final configuration of the fill shall be suitable for the approved postmining land use. Terraces may be constructed on the outslope of the fill if required for stability, control of erosion, to conserve soil moisture, or to facilitate the approved postmining land use. The grade of the outslope between terrace benches shall not be steeper than 2h:1v (50 percent).

No permanent impoundments are allowed on the completed fill. Small depressions may be allowed by the Division if they are needed to retain moisture, minimize erosion, create and enhance wildlife habitat, or assist revegetation; and if they are not incompatible with the stability of the fill.

Excess spoil that is acid- or toxic-forming or combustible shall be adequately covered with nonacid, nontoxic and noncombustible material, or treated, to control the impact on surface and ground water, to prevent sustained combustion, and to minimize adverse effects on plant growth and the approved postmining land use.

If the disposal area contains springs, natural or manmade water courses, or wet weather seeps, the fill design shall include diversions and underdrains as necessary to control erosion, prevent water infiltration into the fill, and ensure stability. Underdrains shall consist of durable rock or pipe, be designed and constructed using current, prudent engineering practices and meet any design criteria established by the Division. The underdrain system shall be designed to carry the anticipated seepage of water due to rainfall away from the excess spoil fill and from seeps and springs in the foundation of the disposal area and shall be protected from piping and contamination by an adequate filter. Rock underdrains shall be constructed of durable, nonacid-, nontoxic-forming rock (e.g., natural sand and gravel, sandstone, limestone, or other durable rock) that does not slake in water or degrade to soil materials, and which is free or coal, clay, or other nondurable material. Perforated pipe underdrains shall be corrosion resistant and shall have characteristics consistent with the long-term life of the fill.

Slope protection shall be provided to minimize surface erosion at the site. All distributed areas, including diversion channels that are not riprapped or otherwise protected, shall be revegetated upon completion of construction.

A qualified registered professional engineer or other qualified professional specialist under the direction of the professional engineer, shall periodically inspect the fill during construction. The professional engineer or specialist shall be experienced in the construction of earth and rock fills. Such inspections shall be made at least quarterly throughout construction and during critical construction periods. Critical construction periods shall include at a minimum: foundation preparation, including the removal of all organic material and topsoil; placement of underdrains and protective filter systems; installation of final surface drainage systems; and, the final graded and revegetated fill. Regular inspections by the engineer or specialist shall also be conducted during placement and compaction of fill materials. The qualified registered professional engineer shall provide a certified report to the Division promptly after each inspection that the fill has been constructed and maintained as designed and in accordance with the regulatory requirements. The report shall include appearances of instability, structural weakness, and other hazardous conditions. The certified report on the drainage system and protective filters shall include color photographs taken during and after construction, but before underdrains are covered with excess spoil. If the underdrain system is constructed in phases, each phase shall be certified separately. Where excess durable rock spoil is placed in single or multiple lifts such that the underdrain system is constructed simultaneously with excess spoil placement by the natural segregation of dumped materials, color photographs shall be taken of the underdrain as the underdrain system is being formed. The photographs accompanying each certified report shall be taken in adequate size and number with enough terrain or other physical features of the site shown to provide a relative scale to the photographs and to specifically and clearly identify the site. A copy of each inspection report shall be

retained at or near the mine site.

Coal mines waste may be disposed of in excess spoil fills if approved by the Division and, if such waste is: placed in accordance with the requirements for refuse piles; nontoxic and nonacid forming; and, of the proper characteristics to be consistent with the design stability of the fill.

Spoil resulting from face-up operations for underground coal mine development may be placed at drift entries as part of a cut-and-fill structure, if the structure is less than 400 feet in horizontal length and designed in accordance with the general requirements for the disposal of excess spoil.

Excess Spoil: Valley fills/head-of-hollow fills

Valley fills and head-of-hollow fills shall meet the general requirements for excess spoil and the following additional requirements.

The top surface of the completed fill shall be graded such that the final slope after settlement will be toward properly designed drainage channels. Uncontrolled surface drainage may not be directed over the outslope of the fill. Runoff from areas above the fill and runoff from the surface of the fill shall be diverted into stabilized diversion channels and to safely pass the runoff from a 100-year, 6-hour precipitation event.

A rock-core chimney drain may be used in a head-of-hollow fill, instead of the underdrain and surface diversion system normally required, as long as the fill is not located in an area containing intermittent or perennial streams. A rock-core chimney drain may be used in a valley fill if the fill does not exceed 250,000 cubic yards of material and upstream drainage is diverted around the fill. The alternative rock-core chimney drain system shall be incorporated into the design and construction of the fill as follows:

1.) The fill shall have, along the vertical projection of the main buried stream channel or rill, a vertical core of the durable rock at least 16 feet thick which shall extend from the toe of the fill to the head of the fill and from the base of the fill to the surface of the fill. A system of lateral rock underdrains shall connect this rock core to each area of potential drainage or seepage in the disposal area. The underdrain system and rock core shall be designed to carry the anticipated seepage of water due to rainfall away from the excess spoil fill and from seeps and springs in the foundation of the disposal area.

2.) A filter system to ensure the proper long-term functioning of the rock core shall be designed and constructed using current, prudent engineering practices.

3.) Grading may drain surface water away from the outslope of the fill and toward the rock core. In no case, however, may intermittent or perennial streams be diverted into the rock core. The maximum slope of the top of the fill shall be 33h:1v (3 percent). A drainage pocket may be maintained at the head of the fill during and after construction, to intercept surface runoff and discharge the runoff through or over the rock drain, if stability of the fill is not impaired. In no case shall this pocket or sump have a potential capacity for impounding more than 10,000 cubic feet of water. Terraces on the fill shall be graded with a 3- to 5-percent grade toward the fill and a 1-percent slope toward the rock core.

Excess Spoil: Durable rock fills

The Division may approve the alternative method of disposal of excess durable rock spoil by gravity placement in single or multiple lifts, provided the following conditions are met: durable rock fills shall meet the general requirements for excess spoil except as provided in this section; the excess spoil consists of at least 80 percent, by volume, durable, nonacid- and nontoxic-forming rock (e.g., sandstone or limestone) that does not slake in water and will not degrade to soil material. Where used, noncemented clay

shale, clay spoil, soil, or other nondurable excess spoil material shall be mixed with excess durable rock spoil in a controlled manner such that no more than 20 percent of the fill volume, as determined by tests performed by a registered engineer and approved by the Division, is not durable rock; a qualified registered professional engineer certifies that the design will ensure the stability of the fill and meet all other applicable requirements; the fill is designed to attain a minimum long-term static safety factor of 1.5, and an earthquake safety factor of 1.1; the underdrain system may be constructed simultaneously with excess spoil placement by the natural segregation of dumped materials, provided the resulting underdrain system is capable of carrying anticipated seepage of water due to rainfall away from the excess spoil fill and from seeps and springs in the foundation of the disposal area and the other requirements for drainage control are met; and, surface water runoff from areas adjacent to and above the fill is not allowed to flow onto the fill and is diverted into stabilized diversion channels designed to safely pass the runoff from a 100-year, 6-hour precipitation event.

Excess Spoil: Preexisting benches

The Division may approve the disposal of excess spoil through placement on preexisting benches, provided that the general requirements for excess spoil and the requirements of this section are met.

Excess spoil shall be placed only on the solid portion of the preexisting bench. The fill shall be designed, using current, prudent engineering practices, to attain a long-term static safety factor of 1.3 for all portions of the fill. The preexisting bench shall be backfilled and graded to achieve the most moderate slope possible which does not exceed the angle of repose, and eliminate the highwall to the maximum extent technically practical.

Disposal of excess spoil from an upper actively mined bench to a lower preexisting bench by means of gravity transport may be approved by the Division provided that: the gravity transport courses are determined on a site-specific basis by the operator as part of the permit application and approved by the Division to minimize hazards to health and safety and to ensure that damage will be minimized between the benches, outside the set course, and downslope of the lower bench should excess spoil accidentally move; all gravity-transported excess spoil, including that excess spoil immediately below the gravity transport courses and any preexisting spoil that is disturbed, is rehandled and placed in horizontal lifts in a controlled manner, concurrently compacted as necessary to ensure mass stability and to prevent mass movement, and graded to allow surface and subsurface drainage to be compatible with the natural surroundings and to ensure a minimum long-term static safety factor of 1.3. Excess spoil on the bench prior to the current mining operation that is not disturbed need not be rehandled except where necessary to ensure stability of the fill; a safety berm is constructed on the solid portion of the lower bench prior to gravity transport of the excess spoil. Where there is insufficient material on the lower bench to construct a safety berm, only that amount of excess spoil necessary for the construction of the berm may be gravity transported to the lower bench prior to construction of the berm; and, excess spoil shall not be allowed on the downslope below the upper bench except on designated gravity-transport courses properly prepared by removing topsoil. Upon completion of the fill, no excess spoil shall be allowed to remain on the designated gravity-transport course between the two benches and each transport course shall be reclaimed.

Analysis:

Disposal of noncoal waste

Noncoal mine waste is described in R645-301- 542.741 as including, but not limited to grease, lubricants, paints, flammable liquids, garbage, abandoned mining machinery, lumber and other combustible materials generated during mining activities will be placed and stored in a controlled manner in a designated portion of the permit area. Noncoal mine waste can also be classified as hazardous and non-hazardous waste according to RCRA.

The Permittee states in the reclamation plan of the MRP that any non-coal waste material,

which is considered to be toxic or hazardous materials, will be disposed of in accordance with federal, state and local regulations. Proper disposal of non-coal waste is usually done at a permitted waste disposal facility (page R-8 of 37).

In the reclamation section of the MRP (pages 9 and 10 of 37) the Permittee states that all mining related structures located within the disturbed areas will be demolished, salvaged or otherwise removed with the exception of concrete foundations buries 18" below final grade. All asphalt will be hauled to a state approved disposal facility or reprocessed and donated to UDOT for road construction. Concrete not buried in place will be crushed and use to backfill portals, or aggregate or a backfill. When crushed concrete is used a fill it will be place against the toe of existing slope that will be backfilled.

That information is repeated on page 500-31 of the PAP. The Permittee plans to have metal dumpsters for the temporary storage of all noncoal waste. As needed those dumpsters will be emptied and the noncoal waste will be sent to a State approved landfill. Information in the bond calculations show that all noncoal waste will be sent to ECDC, a licensed landfill, with the exception of steel, which will be sent to a recycle facility. The Division considers the information in the bond calculations adequate.

In the reclamation section of the PAP (pager-8 of 35) the Permittee state's the following about asphalt disposal:

All asphalt will either be hauled to a State approved disposal facility, reprocessed and donated to UDOT for use as a resource for State highways.

Coal mine waste

The Permittee claims that no coal mine waste will be generated. Coal mine waste will be placed in a controlled manner to prevent combustion and ensure stability and protect the environment (page R-7 of 37).

The term coal mine waste and related terms are defined in R645-100-200 as follows:

- "Coal Mine Waste" means coal processing waste and underground development waste.
- "Coal Processing Waste" means earth materials which are separated from the product coal during cleaning, concentrating, or the processing or preparation of coal.
- "Underground Development Waste" means waste-rock mixtures of coal, shale, claystone, siltstone, sandstone, limestone, or related materials that are excavated, moved, and disposed of from underground workings in connection with UNDERGROUND COAL MINING AND RECLAMATION ACTIVITIES.

The Permittee is scheduled to cease underground coal mining prior to surface mining and no coal processing will occur during surface mining. Therefore, the Permittee is not scheduled to produce any underground development waste.

In section 521.143 of the MRP the Permittee states the following:

The only disposal site(s) to date are garbage hoppers within the mine permit area.

R645-301-521.143 refers to disposal sites for underground mine development waste and excess spoil not noncoal waste. The Permittee needs to clarify that section of the MRP.

Refuse piles

The Permittee states that no refuse will be generated and no refuse piles will be stored on the surface (page R-8 of 37).

A refuse pile is defined by R645-100-200 as the following:

"Refuse Pile," means a surface deposit of coal mine waste that does not impound water, slurry, or other liquid or semiliquid material.

Since the Permittee is not scheduled to produce coal mine waste in connection with surface mining the Division does not anticipate that any slurry piles will be created.

Impounding structures

The Permittee does not propose to construct any impounding structures from coal mine waste. No impounding structures constructed from coal mine waste are at the site.

Burning and burned waste utilization

The Permittee will extinguish all coal mine waste fires in accordance with plans that have been approved by MSHA and the Division.

Return of coal processing waste to abandoned underground workings

No underground development waste will disposed in underground workings.

Excess spoil

Excess spoil and related terms are defined in R645-100-200 as follows:

- "Spoil" means overburden that has been removed during coal mining and reclamation

operations.

- "Excess Spoil" means spoil material disposed of in a location other than the mined-out area, provided that the spoil material used to achieve the approximate original contour or to blend the mined-out area with the surrounding terrain in accordance with R645-301-553.220 in nonsteep slope areas will not be considered excess spoil.

On page 500-31 of chapter 5, the Permittee states the following:

As per the UDOGM definition, there are no excess spoil disposal areas within the mine permit area. However, should it become necessary to create a waste disposal area, it will be accomplished in accordance with the requirements of the regulations, and other federal, state and local regulations.

The existing MRP makes provisions for spoil in Volume 1/1 on page O-14 at the top of the page. Spoil taken to the spoil management area will be used as fill material during final reclamation or for routine maintenance. The Permittee estimates that the spoil storage area has a capacity of 22,500 cubic yards (Operations Plan page O-14). The spoil storage area is shown on Map R645-301-527, Sheet 12 and also on Map R645-301-231.300, Sheet 4.

Information in MRP supports the claim that no excess spoil will be generated during surface mining. All overburden will be disposed of in the mine pits. Under the heading of Disturbed Area Spoil Management (on page O-14 of 14 in the Operation Plan section of the MRP) the Permittee states the following:

For the purpose of this section, the following terms have the specified meanings.

"Spoil" means, sediment from sediment pond 004A, dugout D-1 ditch sediment, material from sediment traps, embankment slough material, coal laden soils, and materials gathered from general maintenance cleanup.

"Temporary" means, interval until cured or sampled and analyzed for stability and/or contaminates.

Spoils generated within the disturbed area will be taken to the upper pad area east of S-25, which is labeled "Spoil Management Area" on Map R645-301-231.300, Sheet 4 of 4 on the MRP.

"Mined-out area" is not defined in the R645 regulations. The Division will consider the disturbed areas to be mined-out areas. Therefore, the Division does not consider material that is scheduled to be placed in the spoil storage area to be excess spoil.

Findings:

Information provided in the proposed amendment is considered adequate to meet the requirements of this section.

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sections 773.17; 774.13; 780.21; 780.25; 780.29; 784.14; 784.16; 784.29; 816.41; 816.42; 816.43; 816.45; 816.49; 816.56; 816.57; 817.41; 817.42; 817.43; 817.45; 817.49; 817.56; 817.57. R645-300 Sections 140; 141; 142; 143; 144; 145; 146; 147; 147; 148; R645-301 Sections 512; 514; 521; 531; 532; 533; 536; 542; 720; 731; 732; 733; 742; 743; 750; 761; 764.

Minimum Regulatory Requirements:

General

All underground mining and reclamation activities shall be conducted to minimize disturbance of the hydrologic balance within the permit and adjacent areas, to prevent material damage to the hydrologic balance outside the permit area, and to support approved post-mining land uses in accordance with the terms and conditions of the approved permit and the performance standards of this part. The Division may require additional preventative, remedial, or monitoring measures to assure that material damage to the hydrologic balance outside the permit area is prevented. Mining and reclamation practices that minimize water pollution and changes in flow shall be used in preference to water treatment.

Groundwater Monitoring

In order to protect the hydrologic balance underground mining activities shall be conducted according to the hydrologic reclamation plan. Ground-water quality shall be protected by handling earth materials and runoff in a manner that minimizes acidic, toxic, or other harmful infiltration to ground-water systems and by managing excavations and other disturbances to prevent or control the discharge of pollutants into the ground water.

Ground-water monitoring shall be conducted according to the ground-water monitoring plan. The Division may require additional monitoring when necessary. Ground-water monitoring data shall be submitted every 3 months to the Division or more frequently as prescribed by the Division. Monitoring reports shall include analytical results from each sample taken during the reporting period. When the analysis of any ground-water sample indicates noncompliance with the permit conditions, the operator shall promptly notify the Division and immediately provide for any accelerated or additional monitoring necessary to determine the nature and extent of noncompliance and the results of the noncompliance. Plans and hydrologic information to evaluate and mitigate the noncompliance situation and information relevant to the PHC shall be submitted to the Division as required.

Ground-water monitoring shall proceed through mining and continue during reclamation until bond release. The Division may modify the monitoring requirements including the parameters covered and the sampling frequency if the operator demonstrates, using the monitoring data obtained, that: the operation has minimized disturbance to the prevailing hydrologic balance in the permit and adjacent areas and prevented material damage to the hydrologic balance outside the permit area; water quantity and quality are suitable to support approved postmining land uses; or, monitoring is no longer necessary to achieve the purposes set forth in the monitoring plan.

Equipment, structures, and other devices used in conjunction with monitoring the quality and quantity of ground water onsite and offsite shall be properly installed, maintained, and operated and shall be removed by the operator when no longer needed.

Surface Water Monitoring

In order to protect the hydrologic balance, underground mining activities shall be conducted according to the approved plan, and the following: surface-water quality shall be protected by handling earth materials, ground-water discharges, and runoff in a manner that minimizes the formation of acidic or toxic drainage; prevents, to the extent possible using the best technology currently available, additional contribution of suspended solids to streamflow outside the permit area; and otherwise prevent water pollution. If drainage control, restabilization and revegetation of disturbed areas, diversion of runoff, mulching, or other reclamation and remedial practices are not adequate to meet water-quality standards and effluent limitations, the operator shall use and maintain the necessary water-treatment facilities or water-quality controls. Surface-water quantity and flow rates shall be protected by handling earth materials and runoff in accordance with the steps outlined in the approved plan.

Surface-water monitoring shall be conducted according to the approved surface-water monitoring plan. The Division may require additional monitoring when necessary. Surface-water monitoring data shall be submitted every 3 months to the Division or more frequently as prescribed by the Division. Monitoring reports shall include analytical results from each sample taken during the reporting period. When the analysis of any surface-water sample indicates noncompliance with the permit conditions, the operator shall promptly notify the Division and immediately provide for any accelerated or additional monitoring necessary to determine the nature and extent of noncompliance and the results of the noncompliance. Plans and hydrologic information to evaluate and mitigate the noncompliance situation and information relevant to the PHC shall be submitted to the Division as required. The reporting requirements of the water monitoring plan do not exempt the operator from meeting any National Pollutant Discharge Elimination System (NPDES) reporting requirements.

Surface-water monitoring shall proceed through mining and continue during reclamation until bond release. The Division may modify the monitoring requirements, except those required by the NPDES permitting authority, including the parameters covered and sampling frequency if the operator demonstrates, using the monitoring data obtained, that: the operation has minimized disturbance to the hydrologic balance in the permit and adjacent areas and prevented material damage to the hydrologic balance outside the permit area; water quantity and quality are suitable to support approved postmining land uses; and, monitoring is no longer necessary to achieve the purposes set forth in the approved monitoring plan.

Equipment, structures, and other devices used in conjunction with monitoring the quality and quantity of surface water onsite and offsite shall be properly installed, maintained, and operated and shall be removed by the operator when no longer needed.

Acid- and toxic-forming materials and underground development waste

Drainage from acid- and toxic-forming materials and underground development waste into surface water and ground water shall be avoided by: identifying and burying and/or treating, when necessary, materials which may adversely affect water quality, or be detrimental to vegetation or to public health and safety if not buried and/or treated; and, storing materials in a manner that will protect surface water and ground water by preventing erosion, the formation of polluted runoff, and the infiltration of polluted water.

Discharges into an underground mine

Discharges into an underground mine are prohibited, unless specifically approved by the Division after a demonstration that the discharge will: minimize disturbance to the hydrologic balance on the permit area, prevent material damage outside the permit area and otherwise eliminate public hazards resulting from underground mining activities; not result in a violation of applicable water quality standards or effluent limitations; be at a known rate and quality which shall meet the effluent limitations for pH and total suspended solids, except that the pH and total suspended solids limitations may be exceeded, if approved by the Division; and, meet with the approval of the Mine Safety and Health Administration.

Discharges shall be limited to the following: water; coal-processing waste; fly ash from a coal-fired facility; sludge from an acid-mine-drainage treatment facility; flue-gas desulfurization sludge; inert materials used for stabilizing underground mines; and, underground mine development wastes.

Water from one underground mine may be diverted into other underground workings according to the requirements of this section.

Gravity discharges from underground mines

Surface entries and accesses to underground workings shall be located and managed to prevent or control gravity discharge of water from the mine. The surface entries and accesses of drift mines first used after the implementation of a State, Federal, or Federal Lands Program and located in acid-producing or iron-producing coal seams shall be located in such a manner as to prevent any gravity discharge from the mine. Gravity discharges of water from an underground mine first used before the implementation of a State, Federal, or Federal Lands Program, may be allowed by the Division if it is demonstrated that the untreated or treated discharge complies with the performance standards and any additional NPDES permit requirements.

Water-quality standards and effluent limitations

Compliance with all applicable State and Federal water quality laws and regulations and with the effluent limitations for coal mining promulgated by the U.S. Environmental Protection Agency set forth in 40 CFR Part 434.

Diversions: General

With the approval of the Division, any flow from mined areas abandoned before May 3, 1978, and any flow from undisturbed areas or reclaimed areas, after meeting the criteria for siltation structure removal, may be diverted from disturbed areas by means of temporary or permanent diversions. All diversions shall be designed to minimize adverse impacts to the hydrologic balance within the permit and adjacent areas, to prevent material damage outside the permit area and to assure the safety of the public. Diversions shall not be used to divert water into underground mines without approval of the Division.

The diversion and its appurtenant structures shall be designed, located, constructed, and maintained to: be stable; provide protection against flooding and resultant damage to life and property; prevent, to the extent possible using the best technology currently available, additional contributions of suspended solids to streamflow outside the permit area; and, comply with all applicable local, State, and Federal laws and regulations.

Temporary diversions shall be removed when no longer needed to achieve the purpose for which they were authorized. The land disturbed by the removal process shall be restored. Before diversions are removed, downstream water-treatment facilities previously protected by the diversion shall be modified or removed, as necessary, to prevent overtopping or failure of the facilities. This requirement shall not relieve the operator from maintaining water-treatment facilities as otherwise required.

A permanent diversion or a stream channel reclaimed after the removal of a temporary diversion shall be designed and constructed so as to restore or approximate the premining characteristics of the original stream channel including the natural riparian vegetation to promote the recovery and the enhancement of the aquatic habitat. The Division may specify additional design criteria for diversions.

Diversions: Perennial and intermittent streams

Diversion of perennial and intermittent streams within the permit area may be approved by the Division after making the finding relating to stream buffer zones that the diversions will not adversely affect the water quantity and quality and related environmental resources of the stream. The design capacity of channels for temporary and permanent stream channel diversions

shall be at least equal to the capacity of the unmodified stream channel immediately upstream and downstream from the diversion. Protection against flooding and resultant damage to life and property shall be met when the temporary and permanent diversions for perennial and intermittent streams are designed so that the combination of channel, bank and flood-plain configuration is adequate to pass safely the peak runoff of a 10-year, 6-hour precipitation event for a temporary diversion and a 100-year, 6-hour precipitation event for a permanent diversion. The design and construction of all stream channel diversions of perennial land intermittent streams shall be certified by a qualified registered professional engineer as meeting the performance standards and any design criteria set by the Division.

Diversions: Miscellaneous flows

Diversion of miscellaneous flows, which consist of all flows except for perennial and intermittent streams, may be diverted away from disturbed areas if required or approved by the Division. Miscellaneous flows shall include ground-water discharges and ephemeral streams. The design, location, construction, maintenance, and removal of diversions of miscellaneous flows shall meet all of the general performance standards of this section. Protection against flooding and resultant damage to life and property shall be met when the temporary and permanent diversions for miscellaneous flows are designed so that the combination of channel, bank and flood-plain configuration is adequate to pass safely the peak runoff of a 2-year, 6-hour precipitation event for a temporary diversion and a 10-year, 6-hour precipitation event for a permanent diversion.

Stream buffer zones

No land within 100 feet of a perennial stream or an intermittent stream shall be disturbed by underground mining activities, unless the Division specifically authorizes underground mining activities closer to, or through, such a stream. The Division may authorize such activities only upon finding that: underground mining activities will not cause or contribute to the violation of applicable State or Federal water quality standards and will not adversely affect the water quantity and quality or other environmental resources of the stream; and, if there will be a temporary or permanent steam-channel diversion, it will comply with the regulatory requirements for diversions.

The area not to be disturbed shall be designated as a buffer zone, and the operator shall mark it accordingly with buffer zone markers.

Sediment control measures

Appropriate sediment control measures shall be designed, constructed, and maintained using the best technology currently available to: prevent, to the extent possible, additional contributions of sediment to stream flow or to runoff outside the permit area; meet the more stringent of applicable State or Federal effluent limitations; and, minimize erosion to the extent possible.

Sediment control measures include practices carried out within and adjacent to the disturbed area. The sedimentation storage capacity of practices in and downstream from the disturbed areas shall reflect the degree to which successful mining and reclamation techniques are applied to reduce erosion and control sediment. Sediment control measures consist of the utilization of proper mining and reclamation methods and sediment control practices, singly or in combination. 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; stabilizing the backfilled material to promote a reduction of the rate and volume of runoff; retaining sediment within disturbed areas; diverting runoff away from disturbed areas; diverting runoff using protected channels or pipes through disturbed areas so as not to cause additional erosion; using straw dikes, riprap, check dams, mulches, vegetative sediment filters, dugout ponds, and other measures that reduce overland flow velocity, reduce runoff volume, or trap sediment; treating with chemicals; and, treating mine drainage in underground sumps.

Siltation Structures: General

All surface drainage from disturbed areas shall be passed through a siltation structure before leaving the permit area. Siltation structures shall mean a sedimentation pond, a series of sedimentation ponds, or other treatment facility. Other treatment facilities means any chemical treatments, such as flocculation, or mechanical structures, such as clarifiers, that have a point-source discharge and that are utilized to prevent additional contribution of suspended solids to streamflow or runoff outside the permit area.

Disturbed area requiring treatment through a siltation structure shall not include those areas in which the only underground mining activities include: diversion ditches, siltation structures, or roads that are designed, constructed and maintained in accordance with the regulatory requirements; and, for which the upstream area is not otherwise disturbed by the operator.

Additional contributions of suspended solids and sediment to streamflow or runoff outside the permit area shall be prevented to the extent possible using the best technology currently available. Siltation structures for an area shall be constructed before beginning any underground mining activities in that area, and upon construction shall be certified by a qualified registered professional engineer, or when authorized under the regulations, by a qualified registered professional land surveyor, to be constructed as designed and as approved in the reclamation plan.

Any siltation structure which impounds water shall be designed, constructed and maintained in accordance with the requirements for impoundments.

Siltation structures shall be maintained until removal is authorized by the Division and the disturbed area has been stabilized and revegetated. In no case shall the structure be removed sooner than 2 years after the last augmented seeding. When the siltation structure is removed, the land on which the siltation structure was located shall be regraded and revegetated in accordance with the reclamation plan. Sedimentation ponds approved by the Division for retention as permanent impoundments may be exempted from this requirement.

Any point-source discharge of water from underground workings to surface waters which does not meet effluent limitations shall be passed through a siltation structure before leaving the permit area.

Siltation Structures: Sedimentation ponds

Sedimentation ponds, when used, shall: be used individually or in series; be located as near as possible to the disturbed area and out of perennial streams unless approved by the Division; and, be designed, constructed, and maintained to:

1.) Provide adequate sediment storage volume;

2.) Provide adequate detention time to allow the effluent from the ponds to meet State and Federal effluent limitations;

3.) Contain or treat the 10-year, 24-hour precipitation event ("design event") unless a lesser design event is approved by the Division based on terrain, climate, other site-specific conditions and on a demonstration by the operator that the effluent limitations will be met;

4.) Provide a nonclogging dewatering device adequate to maintain the required time;

5.) Minimize, to the extent possible, short circuiting;

6.) Provide periodic sediment removal sufficient to maintain adequate volume for the design event;

7.) Ensure against excessive settlement;

8.) Be free of sod, large roots, frozen soil, and acid- or toxic-forming coal-processing waste; and

9.) Be compacted properly.

A sedimentation pond shall include either a combination of principal and emergency spillways or a single open-channel spillway configured as specified in this section, designed and constructed to safely pass the applicable design precipitation event. The Division may approve a single open-channel spillway that is: of nonerodible construction and designed to carry sustained flows; or earth- or grass-lined and designed to carry short-term infrequent flows at non-erosive velocities where sustained flows are not expected.

The required design precipitation event for a sedimentation pond meeting the spillway requirements of this section is: for a sedimentation pond meeting the size or other criteria of 30 CFR Sec. 77.216(a), a 100-year 6-hour event, or greater event as specified by the Division; or, for a sedimentation pond not meeting the size or other criteria of 30 CFR Sec. 77.216(a), a 25-year 6-hour event, or greater event as specified by the Division.

In lieu of meeting the above spillway requirements, the Division may approve a sedimentation pond that relies primarily on storage to control the runoff from the design precipitation event when it is demonstrated by the operator and certified by a qualified registered professional engineer or, as applicable, a qualified registered professional land surveyor that; the sedimentation pond will safely control the design precipitation event; the water from which shall be safely removed in accordance with current, prudent, engineering practices; and, such a sedimentation pond shall be located where failure would not be expected to cause loss of life or serious property damage. If the sediment pond is located where failure would be expected to cause loss of life or serious property damage, a sedimentation pond that relies primarily on storage to control the runoff from the design precipitation event may be allowed if, in addition to the design event, is: in the case of a sedimentation pond meeting the size or other criteria of 30 CFR Sec. 77.216(a), designed to control the precipitation of the probable maximum precipitation of a 6-hour event, or greater event as specified by the Division; or, in the case of a sedimentation pond not meeting the size or other criteria of 30 CFR Sec. 77.216(a), designed to control the precipitation of a 100-year 6-hour event, or greater event as specified by the Division.

Siltation Structures: Other treatment facilities

Other treatment facilities shall be designed to treat the 10-year, 24-hour precipitation even unless a lesser design event is approved by the Division based on terrain, climate, other site-specific conditions and a demonstration by the operator that the effluent limitations will be met. Other treatment facilities shall be designed, constructed and maintained accordance with the applicable requirements as described under sediment ponds.

Siltation Structures: Exemptions

Exemptions to the requirements of this section may be granted if: the disturbed drainage area within the total disturbed area is small; and, the operator demonstrates that siltation structures and alternate sediment control measures are not necessary for drainage from the disturbed drainage areas to meet effluent limitations and applicable State and Federal water-quality standards for the receiving waters.

Discharge structures

Discharge from sedimentation ponds, permanent and temporary impoundments, coal processing waste dams and embankments, and diversions shall be controlled, by energy dissipators, riprap channels, and other devices, where necessary, to reduce erosion, to prevent deepening or enlargement of stream channels, and to minimize disturbance of the hydrologic balance.

Discharge structures shall be designed according to standard engineering design procedures.

Impoundments

The following requirements apply to both temporary and permanent impoundments:

1.) An impoundment meeting the size or other criteria of 30 CFR Sec. 77.216(a) shall comply with the requirements of 30 CFR Sec. 77.216 and this section.

2.) The design of impoundments shall be certified as designed to meet the requirements of the regulations using current, prudent, engineering practices and any design criteria established by the Division. The qualified, registered, professional engineer or qualified, registered, professional, land surveyor shall be experienced in the design and construction or impoundments.

3.) An impoundment meeting the size or other criteria of 30 CFR Sec. 77.216(a) or located where failure would be expected to cause loss of life or serious property damage shall have a minimum static safety factor of 1.5 for a normal pool with steady state seepage saturation conditions, and a seismic safety factor of at least 1.2. Impoundments not meeting the size or other criteria of 30 CFR Sec. 77.216(a), except for a coal mine waste impounding structure, and located where failure would not be expected to cause loss of life or serious property damage shall have a minimum static safety factor of 1.3 for a normal pool with steady state seepage saturation conditions. For an impoundment not meeting the size of other criteria of 30 CFR Sec. 77.216(a), where failure would not be expected to cause loss of life or serious property damage, the Division may establish engineering design standards that ensure stability comparable to a 1.3 minimum static safety factor in lieu of engineering tests to establish compliance with the minimum static safety factor of 1.3.

4.) Impoundments shall have adequate freeboard to resist overtopping by waves and by sudden increases in storage volume.

5.) Foundations and abutments for an impounding structure shall be stable during all phases of construction and operation and shall be designed based on adequate and accurate information on the foundation conditions. For an impoundment meeting the size or other criteria of 30 CFR Sec. 77.216(a), foundation investigation, as well as any necessary laboratory testing of foundation material, shall be performed to determine the design requirements for foundation stability. All vegetative and organic materials shall be removed and foundations excavated and prepared to resist failure. Cutoff trenches shall be installed if necessary to ensure stability.

6.) Slope protection shall be provided to protect against surface erosion at the site and protect against sudden drawdown.

7.) Faces of embankments and surrounding areas shall be vegetated, except that faces where water is impounded may be riprapped or otherwise stabilized in accordance with accepted design practices.

8.) Spillways. An impoundment shall include either a combination of principal and emergency spillways, a single open-channel spillway, or, be configured as an impoundment that relies primarily on storage to control the runoff from the applicable design precipitation event. The Division may approve a single open-channel spillway that is: of nonerodible construction and designed to carry sustained flows; or, earth- or grass-lined and designed to carry short-term, infrequent flows at non-erosive velocities where sustained flows are not expected. Except impoundments that rely primarily on storage to control the runoff, the required design precipitation events for an impoundment having spillways are: for an impoundment meeting the size or other criteria of 30 CFR Sec.

77.216(a) a 100-year 6-hour event, or greater event as specified by the Division; and, for an impoundment not meeting the size or other criteria of 30 CFR Sec. 77.216(a), a 25-year 6-hour event, or greater event as specified by the Division. In lieu of meeting the single open-channel spillway requirements, the Division may approve an impoundment that relies primarily on storage to control the runoff from the design precipitation event when it is demonstrated by the operator and certified by a qualified registered professional engineer or qualified registered professional land surveyor that the impoundment will safely control the design precipitation event, the water from which shall be safely removed in accordance with current, prudent, engineering practices. Such an impoundment shall be located where failure would not be expected to cause loss of life or serious property damage, except where: in the case of an impoundment meeting the size or other criteria of 30 CFR Sec. 77.216(a), it is designed to control the precipitation of the probable maximum precipitation of a 6-hour event, or greater event as specified by the Division; or, in the case of an impoundment not meeting the size or other criteria of 30 CFR Sec. 77.216(a), it is designed to control the precipitation of a 100-year6-hour event, or greater event as specified by the Division.

9.) The vertical portion of any remaining highwall shall be located far enough below the low-water line along the full extent of highwall to provide adequate safety and access for the proposed water users.

10.) Inspections. Except as provided in paragraph (a)(10)(iv) of this section, a qualified registered professional engineer or other qualified professional specialist under the direction of a professional engineer, shall inspect each impoundment as provided in paragraph (a)(10)(i) of this section. The professional engineer or specialist shall be experienced in the construction of impoundments.

Inspections shall be made regularly during construction, upon completion of construction, and at least yearly until removal of the structure or release of the performance bond. The qualified registered professional engineer, or qualified registered professional land surveyor as applicable, shall promptly after each inspection provide to the Division a certified report that the impoundment has been constructed and/or maintained as designed and in accordance with the approved plan and this section. The report shall include discussion of any appearance of instability, structural weakness or other hazardous condition, depth and elevation of any impounded waters, existing storage capacity, any existing or required monitoring procedures and instrumentation, and any other aspects of the structure affecting stability. A copy of the report shall be retained at or near the minesite.

A qualified registered professional land surveyor may inspect any temporary or permanent impoundment that does not meet the size or other criteria of 30 CFR Sec. 77.216(a) and certify and submit the report required above, except that all coal mine waste impounding structures shall be certified by a qualified registered professional engineer. The professional land surveyor shall be experienced in the construction of impoundments. Impoundments subject to 30 CFR Sec. 77.216 must be examined in accordance with 30 CFR Sec. 77.216-3. Other impoundments shall be examined at least quarterly by a qualified person designated by the operator for appearance of structural weakness and other hazardous conditions.

If any examination or inspection discloses that a potential hazard exists, the person who examined the impoundment shall promptly inform the Division of the finding and of the emergency procedures formulated for public protection and remedial action. If adequate procedures cannot be formulated or implemented, the Division shall be notified immediately. The Division shall then notify the appropriate agencies that other emergency procedures are required to protect the public.

A permanent impoundment of water may be created, if authorized by the Division in the approved permit based upon the following demonstration:

1.) The size and configuration of such impoundment will be adequate for its intended purposes.

2.) The quality of impounded water will be suitable on a permanent basis for its intended use and, after reclamation, will meet applicable State and Federal water quality standards, and discharges from the

impoundment will meet applicable effluent limitations and will not degrade the quality of receiving water below applicable State and Federal water quality standards.

3.) The water level will be sufficiently stable and be capable of supporting the intended use.

4.) Final grading will provide for adequate safety and access for proposed water users.

5.) The impoundment will not result in the diminution of the quality and quantity of water utilized by adjacent or surrounding landowners for agricultural, industrial, recreational, or domestic uses.

6.) The impoundment will be suitable for the approved postmining land use.

The Division may authorize the construction of temporary impoundments as part of underground mining activities.

Ponds, impoundments, banks, dams, and embankments

Each application shall include a general plan for each proposed sedimentation pond, water impoundment, and coal processing waste bank, dam, or embankment within the proposed permit area. Each general plan shall:

1.) Be prepared by, or under the direction of, and certified by a qualified, registered, professional engineer, a professional geologist, or in any State which authorizes land surveyors to prepare and certify such plans, a qualified, registered, professional land surveyor with assistance from experts in related fields such as landscape architecture;

2.) Contain a description, map, and cross section of the structure and its location;

3.) Contain preliminary hydrologic and geologic information required to assess the hydrologic impact of the structure;

4.) Contain a survey describing the potential effect on the structure from subsidence of the subsurface strata resulting from past underground mining operations if underground mining has occurred; and

5.) Contain a certification statement which includes a schedule setting forth the dates when any detailed design plans for structures that are not submitted with the general plan will be submitted to the Division. The Division shall have approved, in writing, the detailed design plan for a structure before construction of the structure begins.

Each detailed design plan for a structure that meets or exceeds the size or other criteria of the Mine Safety and Health Administration, 30 CFR Section 77.216(a) shall:

1.) Be prepared by, or under the direction of, and certified by a qualified registered professional engineer with assistance from experts in related fields such as geology, land surveying, and landscape architecture;

2.) Include any geotechnical investigation, design, and construction requirements for the structure;

3.) Describe the operation and maintenance requirements for each structure; and

4.) Describe the timetable and plans to remove each structure, if appropriate.

Each detailed design plan for a structure that does not meet the size or other criteria of 30 CFR Section 77.216(a) shall:

1.) Be prepared by, or under the direction of, and certified by a qualified, registered, professional engineer, or in any State which authorizes land surveyors to prepare and certify such plans, a qualified, registered, professional land surveyor, except that all coal processing waste dams and embankments covered by Sections 817.81-817.84 of this Chapter shall be certified by a qualified, registered, professional engineer;

2.) Include any design and construction requirements for the structure, including any required geotechnical information;

3.) Describe the operation and maintenance requirements for each structure; and

4.) Describe the timetable and plans to remove each structure, if appropriate.

Sedimentation ponds, whether temporary or permanent, shall be designed in compliance with the requirements of Siltation Structures. Any sedimentation pond or earthen structure which will remain on the proposed permit area as a permanent water impoundment shall also be designed to comply with the requirements for Impoundments. Each plan shall, at a minimum, comply with the requirements of the Mine Safety and Health Administration, 30 CFR Sections 77.216-1 and 77.216-2.

Permanent and temporary impoundments shall be designed to comply with the requirements for Impoundments. Each plan for an impoundment meeting the size of other criteria of the Mine Safety and Health Administration shall comply with the requirements of 30 CFR Sec. 77.216-1 and 77.216-2. The plan required to be submitted to the District Manager of MSHA under Sec. 77.216 of this title shall be submitted to the Division as part of the permit application. For an impoundment not meeting the size of other criteria of 30 CFR Sec. 77.216(a) and located where failure would not be expected to cause loss of life or serious property damage, the Division may establish through the State program approval process engineering design standards that ensure stability comparable to a 1.3 minimum static safety factor in lieu of engineering tests to establish compliance with the minimum static safety factor of 1.3.

Coal processing waste banks, dams and embankments shall be designed to comply with the requirements for Coal Mine Waste. Each plan shall comply with the requirements of the Mine Safety and Health Administration, 30 CFR Sections 77.216-1 and 77.216-2, and shall contain the results of a geotechnical investigation of the proposed dam or embankment foundation area, to determine the structural competence of the foundation which will support the proposed dam or embankment structure and the impounded material. The geotechnical investigation shall be planned and supervised by an engineer or engineering geologist, according to the following:

1.) The number, location, and depth of the borings and test pits shall be determined using current prudent engineering practice for the size of the dam or embankment, quantity of material to be impounded, and subsurface conditions.

2.) The character of the overburden and bedrock, the proposed abutment sites, and any adverse geotechnical conditions which may affect the particular dam, embankment, or reservoir site shall be considered.

3.) All springs, seepage, and ground-water flow observed or anticipated during wet periods in the area of the proposed dam or embankment shall be identified on each plan.

4.) Consideration shall be given to the possibility of mudflows, rock-debris falls, or other landslides into the dam, embankment, or impounded material.

If the structure is 20 feet or higher or impounds more than 20 acre-feet, each plan of this section shall include a stability

analysis of each structure. The stability analysis shall include, but not be limited to, strength parameters, pore pressures, and long-term seepage conditions. The plan shall also contain a description of each engineering design assumption and calculation with a discussion of each alternative considered in selecting the specific design parameters and construction methods.

Analysis:

Discharges into an underground mine

In Section 513.600 of the PAP the Permittee state the following:

The surface mining activities will mine through the portal areas of the inactive underground mines. During this process, the flows from highwall seeps and intermittent spring may flow into the inactive mine workings prior to spoil being pushed into the mine openings. This flow will be minimal as well as seasonal. The water that migrates into the mine workings will not be degraded.

The spoil material from the overburden and the coal seam have been tested and have been found to be non-acid forming.

This discharge into the underground mine opening will have prior approval by MSHA and the Division.

Discharge into underground mines deals with both engineering and hydrology issues. The engineering issues deal mostly with health and safety. Since the underground section of the mine will be inactive, discharge into the underground workings will not endanger the human health and safety. MSHA, who has the primary responsibility for health and safety issues must also approve the discharge plan. The water from the seeps and springs is non-toxic and should not result in degradation of the groundwater.

The hydrology issues deal with water quality and flow. The Division has concerns that water from seeps and springs will flow through the backfill and into the underground mine. The main hydrology issues associated with flow into the mine are as follows:

- Minimize disturbance to the hydrologic balance on the permit area
- Water quality standards or effluent limitations

Gravity discharges

All mine portals are situated up gradient from all mine workings, and are not expected to discharge water.

Sedimentation ponds.

Sediment Pond 004A is a small roughly square shaped pond located at the eastern end of the mine complex. Pond 004a collects surface runoff from the majority of the disturbed areas at the Belina Mines. The pond's designs have been approved and are included in the approved MRP.

Sediment Pond Dugout D-1 is a small rectangular shaped sediment pond that will be located in the southwestern area of the mine complex. Pond Dugout D-1 was not meet the size or embankment height to be classified as an MSHA pond because the pond's storage capacity is 0.31 acre-feet and in incised. The pond is scheduled to be built before topsoil is removed for surface mining. Dugout D-1 collects surface runoff from all disturbed and undisturbed areas upstream.

The engineering design requirements for Dugout D-1 are as follows:

- The pond has a stability factor of 2.8, which exceeds the 1.3 minimum requirements.
- Since the pond is incised the Permittee should be able to keep the pond stable during construction.
- The pond has a safety factor of 7.02 against sudden drawdown.
- The pond is located way from the highwalls,
- The pond will be subject to inspections by a qualified individual on a quarterly basis and by a registered professional engineer on an annual basis.

Findings:

The information in the proposed significant revision is adequate to meet the minimum hydrologic information requirements of the Regulations.

SUPPORT FACILITIES AND UTILITY INSTALLATIONS

Regulatory Reference: 30 CFR Sec. 780.38, 784.30, 816.181, 817.180, 817.181; R645-301-526.

Minimum Regulatory Requirements:

Each applicant for an underground coal mining and reclamation permit shall submit a description, plans, and drawings for each support facility to be constructed, used, or maintained within the proposed permit area. The plans and drawings shall include a map, appropriate cross sections, design drawings, and specifications sufficient to demonstrate compliance.

Support facilities shall be operated in accordance with a permit issued for the mine or coal preparation plant to which it is incident or from which its operation results. In addition to the other provisions of this part, support facilities shall be located, maintained, and used in a manner that: prevents or controls erosion and siltation, water pollution, and damage to public or private property; and, to the extent possible using the best technology currently available, minimizes damage to fish, wildlife, and related environmental values and minimizes additional contributions of suspended solids to streamflow or runoff outside the permit area. Any such contributions shall not be in excess of limitations of State or Federal law.

All surface and underground mining activities shall be conducted in a manner which minimizes damage, destruction, or disruption of services provided by oil, gas, and water wells; oil, gas, and coal-slurry pipelines, railroads; electric and telephone lines; and water and sewage lines which pass over, under, or through the permit area, unless otherwise approved by the owner of those facilities and the Division.

Support facilities shall be operated in accordance with a permit issued for the mine or coal preparation plant to which it is incident or from which its operation results. In addition to the other provisions of this part, support facilities shall be located, maintained, and used in a manner that prevents or controls erosion and siltation, water pollution, and damage to public or private property. Support facilities shall, to the extent possible using the best technology currently available, minimizes damage to fish, wildlife, and related environmental values; and, minimizes additional contributions of suspended solids to streamflow or runoff outside the permit area. Any such contributions shall not be in excess of limitations of State or Federal law.

Analysis:

R645-301-526.210 requires the Permittee to include the following statement in the MRP:

All coal mining and reclamation operations will be conducted in a manner which minimizes damage, destruction, or disruption of services provided by oil, gas, and water wells; oil, gas, and coal-slurry pipelines, railroads; electric and telephone lines; and water and sewage lines which pass over, under, or through the permit area, unless otherwise approved by the owner of those facilities and the Division.

R645-301-526.220 requires the Permittee to include the following statement in the MRP:

Support facilities will be operated in accordance with a permit issued for the mine or coal preparation plant to which it is incident or from which its operation results.

The Permittee made those statements in section 526.200 and 526.200.

The Permittee is also required to give the Division plans and drawing for each support facility within the permit area. In addition, the Permittee must include maps, cross sections, design drawings, and specifications sufficient to demonstrate how each facility will comply with applicable performance standards.

The Division does not have specific performance standards for support facilities and utility installation. The standards that are listed in R645-301-526.221 and R645-301-526.222 deal with the following:

- Prevents or controls erosion and siltation, water pollution, and damage to public or private property.
- To the extent possible using the best technology currently available - minimizes damage to fish, wildlife, and related environmental values; and minimizes additional contributions of suspended solids to stream flow or runoff outside the permit area. Any such contributions will not be in excess of limitations of Utah or Federal law.

Most of the surface facilities that were used for underground operations will be removed before surface mining. Permittee proposes to construct a new sediment pond, Dugout D-1, in conjunction with the surface mining operation. The surface facilities that are scheduled to exist during surface mine are as follows:

- Well House
- Reclaim Belt and Truck Bin
- White Oak Truck Loadout
- White Oak Loadout Substation
- White Oak No. 1 Conveyor Gallery
- Stacking Tube
- Reclaim Tunnel
- Dugout D-1 Pond
- Ditch 1001
- Ditch 1002
- Topsoil Storage Areas
- Ditch 1003
- Ditch 1004 Temporary Spoil Storage Area
- Whisky Creek Stream Relocation

Findings:

The requirements of this section of the regulations are considered adequate concerning the proposed permit changes for the addition of surface mining.

SIGNS AND MARKERS

Regulatory Reference: 30 CFR Sec. 816.11, 817.11; R645-301-521.

Minimum Regulatory Requirements:

Signs and markers shall: be posted, maintained, and removed by the person who conducts the underground mining activities; be of a uniform design throughout the activities that can be easily seen and read; be made of durable material; and, conform to local laws and regulations. Signs and markers shall be maintained during all activities to which they pertain.

Mine and permit identification signs shall be displayed at each point of access from public roads to areas of surface operations and facilities on permit areas for underground mining activities. Signs will show the name, business address, and telephone number of the person who conducts underground mining activities and the identification number of the current regulatory program permit authorizing underground mining activities. Signs shall be retained and maintained until after the release of all bonds for the permit area.

Perimeter markers shall clearly mark the perimeter of all areas affected by surface operations or facilities before beginning

mining activities.

Buffer zones shall be clearly marked to prevent disturbance by surface operations and facilities.

Topsoil markers shall be used where topsoil or other vegetation-supporting material is segregated and stockpiled.

Analysis:

R645-301-521.200 through R645-301-521.230 list the design requirements and information that must be list on mine identification signs. R645-301-521-241 (underground mine requirement) requires that **signs be posted at all access point from a public road to the surface operations areas and mine facilities areas**. R645-301-521.242 (surface mine requirement) requires that mine identification **signs be place at all access point to the permit area from public roads**.

The Permittee committed in Section 521.240 through 521.244 of the MRP to place mine identification signs at each point of access to the mine permit area from public roads. The commitment will require the Permittee to change the location of mine identification signs.

Topsoil piles will be labeled with signs during the barrier coal removal operation.

Findings:

The requirements of this section of the regulations are considered adequate in regard to the proposed permit changes for the addition of surface mining.

USE OF EXPLOSIVES

Regulatory Reference: 30 CFR Sec. 816.61 816.62 816.64 816.66 816.67 816.68, 817.61, 817.62, 817.64, 817.66, 817.67, 817.68; R645-301-524.

Minimum Regulatory Requirements:

Signs and markers shall: be posted, maintained, and removed by the person who conducts the underground mining activities; be of a uniform design throughout the activities that can be easily seen and read; be made of durable material; and, conform to local laws and regulations. Signs and markers shall be maintained during all activities to which they pertain.

Mine and permit identification signs shall be displayed at each point of access from public roads to areas of surface operations and facilities on permit areas for underground mining activities. Signs will show the name, business address, and telephone number of the person who conducts underground mining activities and the identification number of the current regulatory program permit authorizing underground mining activities. Signs shall be retained and maintained until after the release of all bonds for the permit area.

Perimeter markers shall clearly mark the perimeter of all areas affected by surface operations or facilities before beginning mining activities.

Buffer zones shall be clearly marked to prevent disturbance by surface operations and facilities.

Topsoil markers shall be used where topsoil or other vegetation-supporting material is segregated and stockpiled.

At least 30 days before initiation of blasting, the operator shall notify, in writing, all residents or owners of dwellings or other structures located within 1/2 mile of the permit area how to request a preblasting survey. A resident or owner of a dwelling or structure within 1/2 mile of any part of the permit area may request a preblasting survey. This request shall be made, in writing, directly to the operator or to the Division, who shall promptly notify the operator. The operator shall promptly conduct a preblasting survey of the dwelling or structure and promptly prepare a written report of the survey. An updated survey of any additions, modifications, or renovations shall be performed by the operator if requested by the resident or owner.

The operator shall determine the condition of the dwelling or structure and shall document any preblasting damage and other physical factors that could reasonably be affected by the blasting. Structures such as pipelines, cables, and transmission lines, and cisterns, wells, and other water systems warrant special attention; however, the assessment of these structures may be limited to surface conditions and other readily available data. The written report of the survey shall be signed by the person who conducted the survey. Copies of the report shall be promptly provided to the Division and to the person requesting the survey. If the person requesting the survey disagrees with the contents and/or recommendations contained therein, he or she may submit to both the operator and the Division a detailed description of the specific areas of disagreement. Any surveys requested more than 10 days before the planned initiation of blasting shall be completed by the operator before the initiation of blasting.

General performance standards

The operator shall notify, in writing, residents within 1/2 mile of the blasting site and local governments of the proposed times and locations of blasting operations. Such notice of times that blasting is to be conducted may be announced weekly, but in no case less than 24 hours before blasting will occur. Unscheduled blasts may be conducted only where public or operator health and safety so require and for emergency blasting actions. When an operator conducts an unscheduled surface blast incidental to underground coal mining operations, the operator, using audible signals, shall notify residents within 1/2 mile of the blasting site and document the reason. All blasting shall be conducted between sunrise and sunset unless nighttime blasting is approved by the Division based upon a showing by the operator that the public will be protected from adverse noise and other impacts. The Division may specify more restrictive time periods for blasting.

Blasting signs, warnings, and access control

The operator shall conspicuously place signs reading "Blasting Area" along the edge of any blasting area that comes within 100 feet of any public-road right-of-way, and at the point where any other road provides access to the blasting area and at all entrances to the permit area from public roads or highways, place conspicuous signs which state "Warning! Explosives in Use," which clearly list and describe the meaning of the audible blast warning and all-clear signals that are in use, and which explain the marking of blasting areas and charged holes awaiting firing within the permit area.

Warning and all-clear signals of different character or pattern that are audible within a range of 1/2 mile from the point of the blast shall be given. Each person within the permit area and each person who resides or regularly works within 1/2 mile of the permit area shall be notified of the meaning of the signals in the blasting notification.

Access within the blasting areas shall be controlled to prevent presence of livestock or unauthorized persons during blasting and until an authorized representative of the operator has reasonably determined that no unusual hazards, such as imminent slides or undetonated charges, exist and access to and travel within the blasting area can be safely resumed.

Control of adverse effects

Blasting shall be conducted to prevent injury to persons, damage to public or private property outside the permit area, adverse impacts on any underground mine, and change in the course, channel, or availability of surface or ground water outside the permit area.

Airblast shall not exceed the maximum limits specified in the regulations at the location of any dwelling, public building, school, church, or community or institutional building outside the permit area. The maximum airblast and ground-vibration standards shall not apply at structures owned by the Permittee and not leased to another person or at structures owned by the Permittee and leased to another person, if a written waiver by the lessee is submitted to the Division before blasting.

Flyrock travelling in the air or along the ground shall not be cast from the blasting site: more than one-half the distance to the nearest dwelling or other occupied structure; beyond the area of control; or beyond the permit boundary.

In all blasting operations, except as otherwise authorized, the maximum ground vibration shall not exceed the values approved by the Division. All structures in the vicinity of the blasting area, such as water towers, pipelines and other utilities, tunnels, dams, impoundments, and underground mines shall be protected from damage by establishment of a maximum allowable limit on the ground vibration, submitted by the operator and approved by the Division before the initiation of blasting.

The maximum allowable ground vibration shall be reduced by the Division beyond the limits otherwise provided by this section, if determined necessary to provide damage protection. The Division may require an operator to conduct seismic monitoring of any or all blasts and may specify the location at which the measurements are taken and the degree of detail necessary in the measurement.

Records of blasting operations

The operator shall retain a record of all blasts for at least 3 years. Upon request, copies of these records shall be made available to the Division and to the public for inspection.

Analysis:

General

Lodestar Energy, Inc. is proposing to contour strip the upper and lower O'Connor coal seams in the Mine facilities area. The area to be mined will be approximately 43 acres in size, and between 600,000 and 700,000 tons of reserve are capable of being recovered. The upper O'Connor is overlaid by one hundred and nine feet of overburden, which consists of multiple layers of shale and sandstone. The largest sandstone member is 22 feet thick. The lower O'Connor is also overlain by shales and sandstones which comprise the eighty feet of interburden separating the two seams. The thickest sandstone member in the interburden is nine feet in thickness. The aforementioned information was taken from the review of information provided by the permittee through analysis of the stratigraphic column of drill hole 75-30-3.

The permittee has submitted, as part of SR01A three blast sketches which leave the certified blaster designing the blasting pattern a great deal of flexibility relative to the design criteria. As example, burden and spacing dimensions have the capability of being varied from ten to twenty-five feet, with borehole diameters having the ability to be varied from five inches to nine inches. This seems credible, based on the varying thicknesses of the numerous sandstone members which must be fractured in order to expose the coals. The controlling factors relative

to the blast design will be the control of the adverse affects produced by air blast and ground vibration. Based on the 960 foot distance from the blasting area to the nearest manmade structure which must be protected (the Questar natural gas pipeline), the maximum amount of explosive which can be legally shot per 8 millisecond delay period calculates to be 289 pounds, assuming a scaled distance factor of 55 and a maximum peak particle velocity of 1 "/sec. This also assumes that seismic monitoring will not be conducted, as indicated on page 2 of the proposed blasting plan.

The permittee's proposed plan discusses on page 1 delay periods and decking for the proposed blasting design which will be submitted prior to the shot. The varying geology around the contour strip perimeter must be taken into account to allow the Utah certified surface blaster the flexibility needed to design each shot in order to maximize fragmentation and minimize adverse affects. The proposed plan states that "When the distances to the closest dwelling do not allow detonation of the entire column of explosives within the blast hole, a "down the hole delay system" will be used." "Each deck will be detonated one at a time, and separated by at least 8 milliseconds".

It should be noted within this document that although the permittee has the privilege to submit the specific blast design prior to the shot, the permittee should allow the Division and MSHA (as committed to by the permittee) an adequate amount of time to review the design prior to the anticipated time for the firing of that particular shot. It is assumed that, through the additional knowledge gained by the shooting of several rounds in the White Oak pit areas, that a standardized design will be capable of being formulated by the State of Utah certified surface blaster, and that the need for the review of each design prior to shooting will be eliminated. When the standardized shot design has been determined, then that design should become included as part of the White Oak surface mining and reclamation plan.

Blasting and Explosives are discussed in Section 524 of the submittal. Appendix 524 contains the blasting plan, dated April 6, 2001. The appendix provides a generalized geologic cross section from drill hole 75-30-3; a ground control plan; and a blasting plan which outlines typical borehole loading profile and shot pattern. The explosives will consist of ammonium nitrate prills (AN) and #2 diesel fuel (FO). Detonation of the column of blasting agent will be accomplished by some type of high explosive. **The type of detonator needs to be described in detail, as required by R645-301-524.230.**

Additional information submitted with the plan indicates that the White Oak No. 1 mine has noncombustible material pushed into the portals at a distance of 1000 feet. The No. 2 mine will be closed in a similar manner before commencing surface mining. Additional bench thickness (50 feet) will be kept over the portal openings during surface mining for stability reasons.

The Permittee should integrate recent stratigraphic information into the blasting plan. The Permittee should integrate recent stratigraphic information into the blasting plan. The

Permittee indicated on October 22, 2001 that a blasting plan utilizing ANFO had been reviewed and approved by the U.S. Department of Labor, Mine Safety and Health Administration (MSHA). The inclusion of that MSHA approval within this submittal was not possible due to the timing of that approval and the necessity of completing an expedient review of the deficiencies aired in the last Division review of the Lodestar blasting plan. The Permittee has submitted a revision to the blasting plan, (page 2 of 3, blasting plan, APPENDIX 524) which includes two plan views showing the sequencing in milliseconds of the delay patterns. Burden and spacing dimensions remain the same, ranging from ten to twenty-five feet. This will give the Utah certified surface blaster the flexibility needed to ensure adequate fragmentation and control of adverse affects.

Pre-blasting Survey

There are no dwellings, public buildings, schools, churches, or community or institutional buildings within 1,000 feet of the blasting area. There are no active or abandoned mines within 500 feet of the blasting area. Therefore, based on R645-301-524.220, the blast design to be utilized may be submitted "at a time, before the blast, if approved by the Division".

Section 524.300 indicates that a blasting survey will be conducted if greater than five pounds of explosives are used and provides the components of the survey. The Utah 645 regulations require that a survey is required for all surface mine blasting. In particular, the Division would advise that Questar Gas is notified as per item I of the blasting survey outline provided on page 500-17. Utah Regulation R645-301-524.330 directs that special attention is paid to structures such as pipelines. Copies of the pipeline survey must be provided to the Division (R645-301-524.340).

Performance Standards

There appears to be a misunderstanding concerning the five pounds of explosives or blasting agent on page 500-17. Many people believe that when using less than five pounds of explosives, the blast is not regulated. This is just not true. Blasts that use five pounds or less explosives need not follow the published blasting schedule (R645-301-524) and for underground mining only (R645-301-524.300), the pre-blast survey is not required when using five pounds of explosives or less. All other performance standards apply. Whether using less than or more than five pounds of explosives, the surface mining permit must include steps taken to achieve compliance with blaster certification program (R645-301-524.100); blast design (R645-301-524.200); preblasting survey (R645-301-524.300); schedule of blasts (R645-301-524.400 and 524.460); control of adverse blasting effects (R645-301-524.600); description of blasting records kept on file at the mine site (R645-301-524.700).

Blaster Certification Program

SR01A addresses blaster certification in Section 524.100, located on page 500-17.

524.100 commits the Permittee to use a certified blaster for the shooting of all blasts incident to surface mining and underground coal mining. The Permittee commits on page 500-16, Section 524.100 to use a Utah certified surface blaster to conduct all shots relevant to surface blasting at the Whiskey Creek Mine.

Regulatory Reference: R645-301-524.800

"Each operator will comply will all appropriate Utah and federal laws and regulations in the use of explosives". Included within the federal laws are the 30 CFR Part 77, Subpart N, 77.1300, 77.1301, 77.1302, 77.1303, and 77.1304. The permittee needs to commit to complying with these rules as well as any other State or federal laws relative to the use, storage and/or transportation of explosives.

Blasting Signs, Warnings and Access Control

Warnings, signs and access control are addressed in the Blasting Notice given in section 524.400 and are re-iterated again in Section 524.500. Blasts using five pounds or less of explosives need not follow the posted blasting schedule, but must be preceeded by audible signals as per R645-301-524.410. The Permittee has included within the deficiency response received on October 19, 2001 a proposed blasting schedule (page 500-17, Section 524.400) which proposes that the Permittee will conduct normal blasting operations during daylight hours during weekdays Monday through Saturday. Blasting may be conducted on Sunday if weather conditions or an emergency warrants. Night time blasting will not be conducted unless approved by the Division. Also included is a "Notice of Blasting Schedule" for publication in a local newspaper of general circulation.

Control of Adverse Effects

OSM has reviewed the blasting plan submitted by Lodestar Energy, Inc. for the Whisky Creek Mine near Scofield, Utah. Page I-2 of 4 of the currently approved mining and reclamation plan indicates that "the White Oak properties are within the Wasatch Plateau coal field on the west flank of the Clear Creek Anticline (Doelling, 1972), and ....., the dip of the strata is generally towards the southwest ((i.e., into the Mines)), ranging from four to eight percent (two to five degrees). Thus any water which percolates within the reclaimed highwall should drain into the Mine workings rather than gravity discharge from them.

The nearest structure is the Questar Gas 16 inch pipeline which is 960' west from the blast area. Page 500-19 of the October 19 submittal commits the blast design to the implementation of the scaled distance factor and a maximum peak particle velocity of one inch/second for ground vibration. This is adequate.

The U. S. Bureau of Mines conducted a study into the level of acceptable vibration for high-pressure gas transmission lines. That research resulted in a recommendation level of 5.0 inches

per second.

The Permittees October 19, 2001 deficiency response states on Page 500-19 that any surface air blast generated by Lodestar would have a zero affect on that structure. Therefore, the monitoring for surface air blast requirement is not applicable.

Record of Blasting Operations

Contents of blasting records are described in section 524.700, which is located on page 500-21 of SR01A. Such records will be maintained for three years at the General Office. The commitment contained within 524.700 meets the blasting record requirements outlined within R6450301-524.700 through 524.760.

Findings:

The information in the proposed significant revision is considered adequate to meet the Operational Use of Explosives requirements of the Regulations.

MAPS, PLANS, AND CROSS SECTIONS OF MINING OPERATIONS

Regulatory Reference: 30 CFR Sections 780.14; 784.23. R645-301 Sections 512; 301; 521; 542; 632; 731. R645-302-323.

Minimum Regulatory Requirements:

Each application shall contain maps, plans, and cross sections which show the mining activities to be conducted, the lands to be affected throughout the operation, and any change in a facility or feature to be caused by the proposed operations, if the facility or feature was shown and described as an existing structure.

The following shall be shown for the proposed permit area:

Affected area maps

The boundaries of all areas proposed to be affected over the estimated total life of all mining activities and reclamation activities, with a description of size, sequence, and timing of phased reclamation activities and treatments. All maps and cross sections used for mining design and mining operations shall clearly show the affected and permit area boundaries in reference to the reclamation work being accomplished.

Mining facilities maps

Location of each facility used in conjunction with mining operations. Such structures and facilities shall include, but not be limited to: buildings, utility corridors, roads, and facilities to be used in mining and reclamation operations or by others within the permit area; each coal storage, cleaning, and loading area; each topsoil, spoil, coal preparation waste, underground development waste, and noncoal waste storage area; each water diversion, collection, conveyance, treatment, storage and discharge facility; each source of waste and each waste disposal facility relating to coal processing or pollution control; each facility to be used to protect and enhance fish and wildlife related environmental values; each explosives storage and handling facility; location of each sedimentation pond, permanent water impoundment, coal processing waste bank, and coal processing water dam and

embankment, and disposal areas for underground development waste and excess spoil; and, each plan or profile, at cross sections specified by the Division, of the anticipated surface configuration to be achieved for the affected areas during mining operations.

Mine workings maps

Location and extent of known workings of proposed, active, inactive, or abandoned underground mines, including mine openings to the surface within the proposed permit and adjacent areas. Location and extent of existing or previously surface-mined areas within the proposed permit area.

Monitoring and sampling location maps

Elevations and locations of test borings and core samplings. Elevations and locations of monitoring stations used to gather data on water quality and quantity, subsidence, fish and wildlife, and air quality, as required during mining operations.

Certification Requirements

Cross sections, maps, and plans required to show the design, location, elevation, or horizontal or vertical extent of the land surface or of a structure or facility used to conduct mining and reclamation operations shall be prepared by, or under the direction of, and certified by a qualified, registered, professional engineer, a professional geologist, or in any State which authorizes land surveyors to prepare and certify such cross sections, maps, and plans, a qualified, registered, professional land surveyor, with assistance from experts in related fields such as landscape architecture.

Each detailed design plan for an impounding structure that meets or exceeds the size or other criteria of the Mine Safety and Health Administration, 30 CFR Section 77.216(a) shall: be prepared by, or under the direction of, and certified by a qualified registered professional engineer with assistance from experts in related fields such as geology, land surveying, and landscape architecture; include any geotechnical investigation, design, and construction requirements for the structure; describe the operation and maintenance requirements for each structure; and, describe the timetable and plans to remove each structure, if appropriate.

Each detailed design plan for an impounding structure that does not meet the size or other criteria of 30 CFR Section 77.216(a) shall: be prepared by, or under the direction of, and certified by a qualified, registered, professional engineer, or in any State which authorizes land surveyors to prepare and certify such plans, a qualified, registered, professional land surveyor, except that all coal processing waste dams and embankments shall be certified by a qualified, registered, professional engineer; include any design and construction requirements for the structure, including any required geotechnical information; describe the operation and maintenance requirements for each structure; and, describe the timetable and plans to remove each structure, if appropriate.

Analysis:

Affected area maps

The Division usually considers that the permit boundaries to be the maximum extent of the affected areas. Therefore, the Division will accept a permit boundary map in place of an affected area map. The mine facilities and mine workings maps show the areas within the permit area that are affected by mining. Map R645-301-521.124 sheet 4 of 4 shows the proposed changes to the disturbed area boundaries.

Mining facilities maps

Map 645-301-521.150 Sheet 4b of 4 received on September 10, 2001; show the Belina Mine (sometimes called Whisky Creek Surface Mine) surface facilities that will exist during surface mining.

Map R645-301-521.160, show the contours that will exist prior to any surface mining activities. The Division has told the Permittee that detailed maps and cross sections of the pit areas during mining are not needed because the topography will be changing rapidly. However, the Division does need to have a detailed surface facilities map that will show features that will be permanent features during surface mining. The only such features that will affect the surface topography are the topsoil storage piles. Map R645-301-521.165, Potential Topsoil Storage Pile Cross Sections show the location of the topsoil stockpiles and cross-sections.

The Permittee has decided to store the explosive off the main haul road. See Drawing 645-301-521.150 Sheet 3 of 4 for more details.

The Permittee has submitted revised plates R645-301-521.150, Sheets 2 of 4 and 3 of 4 to address the deficiency relative to the failure of the Permittee to locate all explosive storage magazines on a certified surface operations and facilities map, as required under R645-301-512.120. The new maps are P.E. certified by Mr. David Miller, Business Manager and Utah registered professional engineer. The maps identify S-22 as the ammonium nitrate storage bin, and S-23 as the detonator magazine. Based on a conversation with Mr. Miller, the 6% by weight #2 diesel fuel and the 94% by weight ammonium nitrate prills will be mixed at the borehole being loaded. Hence, the five hundred foot distance depicted on the two aforementioned drawings is an adequate separation distance for the storage of up to 150,000 pounds of ammonium nitrate, as confirmed by a review of Table 55.218, Table of distances for storage of explosive materials, Chapter 40, *Organized Crime Control Act of 1970, Title XI, Public Law 91-452.*

Mine workings maps

Plate 5-1 A, White Oak Mine No. 2 and Plate 5-1 B, White Oak Mine No. 1 shows the location of the underground workings. The maps are dated as being updated on February 4, 2000 and were incorporated in the MRP on March 3, 2000.

The timing and sequence surface mining maps is Plate 5-1C. Plate 5-1D, Upper O' Connor Seam Mine Surface and Underground, and Plate 5-1E, Lower O' Connor Seam Mine Surface and Underground show the location of the surface mine to the underground workings. The maps provide the Division with enough information to evaluate the surface mining operations.

Findings:

The information in the proposed significant revision is considered adequate to meet the

requirements of the Maps, Plans, and Cross Sections of Mining Operations section of the regulations.

RECLAMATION PLAN

Regulatory Reference: Pub. L 95-87 Sections 508, 515, 516; 30 CFR 780.

GENERAL REQUIREMENTS

Regulatory Reference: PL 95-87 Sections 515 and 516. 30 CFR Sections 780.18; 780.21; 780.23; 780.25; 780.31; 780.33; 780.35; 780.16; 780.22; 780.14; 780.37; 784.25; 780.15. R645-301 Sections 231; 233; 322; 323; 331; 333; 341; 342; 411; 412; 422; 512; 513; 521; 522; 525; 526; 527; 528; 529; 531; 533; 534; 536; 537; 542; 623; 624; 625; 626; 631; 632; 731; 723; 724; 725; 726; 728; 729; 731; 732; 733; 746; 764; 830.

Minimum Regulatory Requirements:

Provide a plan for the reclamation of the lands within the proposed permit area, showing how the applicant will comply with the regulatory program and the environmental protection performance standards. The plan shall include, at a minimum, contain the following information for the proposed permit area: a detailed timetable for the completion of each major step in the reclamation plan; a detailed estimate of the cost of the reclamation of the proposed operations required to be covered by a performance bond, with supporting calculations for the estimates; a plan for backfilling, soil stabilization, compacting, and grading, with contour maps or cross sections that show the anticipated final surface configuration of the proposed permit area; a plan for redistribution of topsoil, subsoil, and other material along with a demonstration of the suitability of topsoil substitutes or supplements shall be based upon analysis of the thickness of soil horizons, total depth, texture, percent coarse fragments, pH, and areal extent of the different kinds of soils; other chemical and physical analyses, field-site trials, or greenhouse tests if determined to be necessary or desirable to demonstrate the suitability of the topsoil substitutes or supplements may also be required; a plan for revegetation including, but not limited to, descriptions of the schedule of revegetation, species and amounts per acre of seeds and seedlings to be used, methods to be used in planting and seeding, mulching techniques, irrigation, if appropriate, and pest and disease control measures, if any, measures proposed to be used to determine the success of revegetation, and, a soil testing plan for evaluation of the results of topsoil handling and reclamation procedures related to revegetation; a description of the measures to be used to maximize the use and conservation of the coal resource; a description of measures to be employed to ensure that all debris, acid-forming and toxic-forming materials, and materials constituting a fire hazard are disposed of accordingly and a description of the contingency plans which have been developed to preclude sustained combustion of such materials; a description, including appropriate cross sections and maps, of the measures to be used to seal or manage mine openings, and to plug, case, or manage exploration holes, other bore holes, wells, and other openings within the proposed permit area; and, a description of steps to be taken to comply with the requirements of the Clean Air Act, the Clean Water Act, and other applicable air and water quality laws and regulations and health and safety standards.

APPROXIMATE ORIGINAL CONTOUR RESTORATION

Regulatory Reference: 30 CFR Sections 780.23, 784.15; 785.16, 816.102, 816.107, 816.133; 817.102; 817.107; 817.133. R645-301 Sections 234; 270; 271; 412; 413; 512; 531; 533; 553; 536; 542; 731; 732; 733; 764.

Minimum Regulatory Requirements:

Note :The following requirements have been suspended insofar as they authorize any variance from approximate original

contour for surface coal mining operations in any area which is not a steep slope area.

Criteria for permits incorporating variances from approximate original contour restoration requirements.

The Division may issue a permit for nonmountaintop removal mining which includes a variance from the backfilling and grading requirements to restore the disturbed areas to their approximate original contour. The permit may contain such a variance only if the Division finds, in writing, that the applicant has demonstrated, on the basis of a complete application, that the following requirements are met:

1.) After reclamation, the lands to be affected by the variance within the permit area will be suitable for an industrial, commercial, residential, or public postmining land use (including recreational facilities).
2.) The criteria for the proposed post mining land use will be met.
3.) The watershed of lands within the proposed permit and adjacent areas will be improved by the operations when compared with the condition of the watershed before mining or with its condition if the approximate original contour were to be restored. The watershed will be deemed improved only if: the amount of total suspended solids or other pollutants discharged to ground or surface water from the permit area will be reduced, so as to improve the public or private uses or the ecology of such water, or flood hazards within the watershed containing the permit area will be reduced by reduction of the peak flow discharge from precipitation events or thaws; the total volume of flow from the proposed permit area, during every season of the year, will not vary in a way that adversely affects the ecology of any surface water or any existing or planned use of surface or ground water; and, the appropriate State environmental agency approves the plan.
4.) The owner of the surface of the lands within the permit area has knowingly requested, in writing, as part of the application, that a variance be granted. The request shall be made separately from any surface owner consent given for right-of-entry and shall show an understanding that the variance could not be granted without the surface owner's request.

If a variance is granted, the requirements of the post mining land use criteria shall be included as a specific condition of the permit, and, the permit shall be specifically marked as containing a variance from approximate original contour.

A permit incorporating a variance shall be reviewed by the Division at least every 30 months following the issuance of the permit to evaluate the progress and development of the surface coal mining and reclamation operations to establish that the operator is proceeding in accordance with the terms of the variance. If the Permittee demonstrates to the Division that the operations have been, and continue to be, conducted in compliance with the terms and conditions of the permit, the review specified need not be held. The terms and conditions of a permit incorporating a variance may be modified at any time by the Division, if it determines that more stringent measures are necessary to ensure that the operations involved are conducted in compliance with the requirements of the regulatory program. The Division may grant variances only if it has promulgated specific rules to govern the granting of variances in accordance with the provisions of this section and any necessary, more stringent requirements.

Analysis:

The requirements for restoring a site to the approximate original contour (AOC) are couched in the backfilling and grading regulations. The only regulation that specially mentions AOC requirements is R645-301-553.110 that states the following:

"Achieve the approximate original contour (AOC), except as provided in R645-301-553.500 through R645-301-553.540 (previously mined areas (PMA's), continuously mined areas (CMA's) and areas subject to the AOC provisions), R645-301-553.600 through R645-301-553.612 (PMA's and CMA's), R645-302-270 (non-mountaintop

removal on steep slopes), R645-302-220 (mountaintop removal mining), R645-301-553.700 (thin overburden) and R645-301-553.800 (thick overburden)"

The White Oak mine site is a blend of pre and post SMCRA disturbances. Most of the pre-SMCRA disturbances have been in continuous use. In addition to the area already disturbed the Permittee will increase the disturbed area boundary by 8.28 acres to 69.2 acres. Within the Mine Complex disturbed area boundary underground mining and the related surface facilities have already disturbed 29.5 acres. Surface mining will disturb an additional 17.3 acres. Undisturbed islands within the disturbed area boundary total 22.4 acres

Under R645-301-553.500 and R645-301-553.600, a permittee is not required to meet the highwall elimination requirements if the area have been previously or continuously mined since August 3, 1977. The permittee for the White Oak mine has not requested an exemption from the highwall requirements because of previous or continuous mining provision. Therefore, the Division will require that all highwalls will be eliminated.

If the Permittee want to get an exception to highwall elimination requirements then they would have to show the following: Since the existing portal face ups (highwalls) will be eliminated during surface mining the exemptions not eliminating highwalls do not apply to the surface mine

- All pre-SMCRA sites that have not been used for coal mining activities since August 3, 1977.
- All continuously used areas (areas originally disturbed before after August 3, 1977 but have been used for coal mining activities since that date.)

The highwalls created during surface mining are shown on cross –sections E-E' to J-J'. As part of the surface mining operations, the Permittee plans to mine through the existing highwalls (portal face up areas) and create new highwalls (open pit boundaries.) Therefore, under the surface mining plan the Permittee would not be able to get an exemption from achieving AOC because of continuously or previously mined areas.

Under R645-301-553.700 and R645-301-553.800, a permittee is not required to achieve AOC for surface mining because of problems caused by thin or thick overburden.

Thin overburden means insufficient spoil and other waste materials available from the entire permit area to restore the disturbed area to its approximate original contour. Insufficient spoil and other waste materials occur where the overburden thickness times the swell factor, plus the thickness of other available waste materials, is less than the combined thickness of the overburden and coal bed prior to removing the coal, so that after backfilling and grading the surface configuration of the reclaimed area would not:

- Closely resemble the surface configuration of the land before mining.

- Blend into and complement the drainage pattern of the surrounding terrain.

Thick overburden means more than sufficient spoil and other waste materials available from the entire permit area to restore the disturbed area to its approximate original contour. More than sufficient spoil and other waste materials occur where the overburden thickness times the swell factor exceeds the combined thickness of the overburden and coal bed prior to removing the coal, so that after backfilling and grading the surface configuration of the reclaimed area would not:

- Closely resemble the surface configuration of the land before mining.
- Blend into and complement the drainage pattern of the surrounding terrain.

The Permittee did not claim an exemption from the AOC requirements based on either insufficient or excess spoil or other waster materials being present on site.

The Division's technical memo Tech-002 give additional AOC guidelines. That guideline was also used to evaluate the White Oak mine site for AOC compliance is as follows:

> Except as specifically exempted all disturbed areas shall be returned to the approximate original contour. The final surface configuration shall closely resemble the general surface configuration of the land prior to mining. To evaluate compliance with this requirement, the term "Surface configuration" must be clarified. Surface configuration refers to the premining and postmining topography of the mine site and surrounding area.
>
> The term AOC does not mean that the land is restored to the original contours. Elevation of the premining and postmining site should only play a minor role if any in evaluating AOC.
>
> The main criteria should be, does the postmining topography, excluding elevation closely resemble the premining configuration? The Division evaluates premining and postmining topography on slope length and angle, and whether restoring the site to the original contours would violate other rules. In some cases the Permittee cannot restore the site to the premining contours without violating other regulations, such as slope stability and erosion.

The premining contours are shown on several maps. Map R645-301-521.160 shows the premining contours and the locations of the pre and post mining cross sections. Map R645-301-527 show the post mining contours. The pre mining contours differ from the post mining contours as follows:

- The flat areas used for coal storage and loading along with the surface facilities areas will be shaped into sloped areas that more closely resemble the surrounding areas.
- The sediment ponds will be removed.

- Whisky Creek will be restored.
- The roads will be removed, although a jeep trail will be established in part of the area.
- All highwalls will be eliminated.
- No spoil piles will exist after reclamation.

The pre and post mining topographic maps are at a scale of 1' = 100' and cross section are on 100 foot centers that show the entire mine site.

The AOC guidelines require that the restored drainages complement the surrounding natural drainages. The Division considers this requirement to be met if all the hydrologic regulations have been satisfied.

The AOC guidelines require that the reclaimed topography be compatible with the postmining land use, alternative postmining land use or a variance from the AOC requirements be granted. The Permittee did not ask for an AOC variance. The Division considers those requirements to be met if all postmining regulations have been satisfied.

Findings:

The information in the proposed significant revision is considered adequate to meet the approximate original contour requirements.

BACKFILLING AND GRADING

Regulatory Reference: 30 CFR Sections 785.15; 816.102; 817.102; 817.107. R645-301 Sections 234; 537; 552; 553; R645-302 Sections 230; 231; 232; 233.

Minimum Regulatory Requirements:

General

Disturbed areas shall be backfilled and graded to: achieve the approximate original contour; eliminate all highwalls, spoil piles, and depressions; achieve a postmining slope that does not exceed either the angle of repose or such lesser slope as is necessary to achieve a minimum long term static safety factor of 1.3 and to prevent slides; minimize erosion and water pollution both on and off the site; and, support the approved postmining land use.

The postmining slope may vary from the approximate original contour when approval is obtained from the Division for a variance from approximate original contour requirements, or when incomplete elimination of highwalls in previously mined areas is allowed under the regulatory requirements. Small depressions may be constructed if they are needed to retain moisture, minimize erosion, create and enhance wildlife habitat, or assist revegetation.

If it is determined by the Division that disturbance of the existing spoil or underground development waste would increase environmental harm or adversely affect the health and safety of the public, the Division may allow the existing spoil or underground development waste pile to remain in place. Accordingly, regrading of settled and revegetated fills to achieve approximate original contour at the conclusion of underground mining activities shall not be required if: the settled and revegetated fills are composed of

spoil or nonacid- or nontoxic-forming underground development waste; the spoil or underground development waste is not located so as to be detrimental to the environment, to the health and safety of the public, or to the approved postmining land use; stability of the spoil or underground development waste must be demonstrated through standard geotechnical analysis to be consistent with backfilling and grading requirements for material on the solid bench (1.3 static safety factor) or excess spoil requirements for material not placed on a solid bench (1.5 static safety factor); and, the surface of the spoil or underground development waste shall be vegetated in accordance with the revegetation standards for success, and surface runoff shall be controlled in accordance with the regulatory requirements for diversions.

Spoil shall be returned to the mined-out surface area. Spoil and waste materials shall be compacted where advisable to ensure stability or to prevent leaching of toxic materials. Spoil may be placed on the area outside the mined-out surface area in nonsteep slope areas to restore the approximate original contour by blending the spoil into the surrounding terrain if the following requirements are met: all vegetative and organic materials shall be removed from the area; the topsoil on the area shall be removed, segregated, stored, and redistributed in accordance with regulatory requirements; the spoil shall be backfilled and graded on the area in accordance with the general requirements for backfilling and grading.

Disposal of coal processing waste and underground development waste in the mined-out surface area shall be in accordance with the requirements for the disposal of spoil and waste materials except that a long-term static safety factor of 1.3 shall be achieved.

Exposed coal seams, acid- and toxic-forming materials, and combustible materials exposed, used, or produced during mining shall be adequately covered with nontoxic and noncombustible materials, or treated, to control the impact on surface and ground water, to prevent sustained combustion, and to minimize adverse effects on plant growth and the approved postmining land use.

Cut-and-fill terraces may be allowed by the Division where: needed to conserve soil moisture, ensure stability, and control erosion on final-graded slopes, if the terraces are compatible with the approved postmining land use; or, specialized grading, foundation conditions, or roads are required for the approved postmining land use, in which case the final grading may include a terrace of adequate width to ensure the safety, stability, and erosion control necessary to implement the postmining land-use plan.

Preparation of final-graded surfaces shall be conducted in a manner that minimizes erosion and provides a surface for replacement of topsoil that will minimize slippage.

Previously mined areas

Remining operations on previously mined areas that contain a preexisting highwall shall comply with all other reclamation requirements except as provided herein. The requirement that elimination of highwalls shall not apply to remining operations where the volume of all reasonably available spoil is demonstrated in writing to the Division to be insufficient to completely backfill the reaffected or enlarged highwall. The highwall shall be eliminated to the maximum extent technically practical in accordance with the following criteria:

1.) All spoil generated by the remining operation and any other reasonably available spoil shall be used to backfill the area. Reasonably available spoil in the immediate vicinity of the remining operation shall be included within the permit area.
2.) The backfill shall be graded to a slope which is compatible with the approved postmining land use and which provides adequate drainage and long-term stability.
3.) Any highwall remnant shall be stable and not pose a hazard to the public health and safety or to the environment. The operator shall demonstrate, to the satisfaction of the Division, that the highwall remnant is stable.
4.) Spoil placed on the outslope during previous mining operations shall not be disturbed if such

disturbances will cause instability of the remaining spoil or otherwise increase the hazard to the public health and safety or to the environment.

Backfilling and grading on steep slopes

Surface and Underground mining activities on steep slopes shall be conducted so as to meet other applicable regulatory requirements and the requirements of this section. The following materials shall not be placed on the downslope: spoil; waste materials of any type; debris, including that from clearing and grubbing; abandoned or disabled equipment; land above the highwall shall not be disturbed unless the Division finds that this disturbance will facilitate compliance with the environmental protection standards and the disturbance is limited to that necessary to facilitate compliance; and, woody materials shall not be buried in the backfilled area unless the Division determines that the proposed method for placing woody material within the backfill will not deteriorate the stable condition of the backfilled area.

Special provisions for steep slope mining

No permit shall be issued for any operations covered by steep slope mining, unless the Division finds, in writing, that in addition to meeting all other regulatory requirements, the operation will be conducted in accordance with the requirements for backfilling and grading on steep slopes. Any application for a permit for surface coal mining and reclamation operations covered by steep slope mining shall contain sufficient information to establish that the operations will be conducted in accordance with the requirements for backfilling and grading on steep slopes.

This section applies to any person who conducts or intends to conduct steep slope surface coal mining and reclamation operations, except: where an operator proposes to conduct surface coal mining and reclamation operations on flat or gently rolling terrain, leaving a plain or predominantly flat area, but on which an occasional steep slope is encountered as the mining operation proceeds; where a person obtains a permit under the provisions for mountaintop removal mining; or, to the extent that a person obtains a permit incorporating a variance from approximate original contour restoration requirements.

Analysis:

General

The backfilling and grading plan for the White Oak Mine can be divided into the following sections:

- Loadout Facility
- General Office Area
- Lower Haul Road
- Upper Haul Road
- Mine Complex

Surface mining and reclamation activities will not change the backfilling and grading plans for the loadout facility, and general office area. Therefore, the Division will not review those plans as part of the SR01A significant revision. Surface mining and reclamation activities will alter the backfilling and grading plans at the mine complex and haul road. Those plans will be discussed in detail in the TA.

The backfilling and grading plan for the surface mine calls for 3,076,624 bank cubic yards of spoil to be removed as part of the surface mining operations. See Plate 5-1C for details on spoil generated from surface mining. The Permittee assumes a swell factor of 15% so the total amount of spoil that will be used as backfill is 3,538,118 cubic yards.

In addition, 41,988 cubic yards of topsoil will be placed at the surface mine. During surface mining spoil from the first pits will be place in a temporary spoil location. Once the Permittee has room to work, spoil will be placed in mined out areas. The Permittee estimates that during the first 4 months of surface mining all spoil will be placed in the temporary spoil pile. Afterward spoil will be place in mined out areas. The final pits will be reclaimed with material from the temporary spoil pile. The maximum amount of spoil stored in the temporary spoil pile will be 305,049 loose cubic yards, see Appendix R3 page R3-1 and Chapter 9.

An addition 164,174 cubic yards of material will be moved from the coal stockpile pad, the truck loop and sediment pond 4A. In addition, 23,371 cubic yards of topsoil will be place in those areas.

The reclamation plan and timetable is as follows:

Prior to Surface Mining

- After underground mining has been completed, the Permittee will begin demolition and removal of all structures that are not needed for surface mining and transportation of coal.

During Surface Mining

- After 305,049 cubic yards of spoil are placed in the temporary spoil storage area final backfilling and grading will begin. The Permittee should have completed the temporary spoil storage area in the first 3 months. After 3 months all spoil will be sent to a mined out area for final reclamation.
- The Permittee is required to place backfill within 60 days after an area has been mined out or when mining has progressed 1,500 linear feet.
- All concrete rubble will be disposed in mined out areas. Rubble will be buried under 4 feet of material.
- During surface mining ditches and culverts not needed for surface mining will be removed as will filter pond 005A.
- Mine openings will be seal with backfill.
- Natural French drains will be established in areas of low flow (less than 5 gallons per minute.)
- Engineered French drains will be established in areas with high flow (5 gallons per minute or greater.)

Surface Mine Area After Mining

- The Permittee has no future plans to use the surface mine area so reclamation will proceed as soon as practical.
- Haul and place material from the temporary spoil storage areas into mined out areas.
- Complete the installation of upper Whisky Creek during periods of low flow (late summer or fall.)
- Place topsoil will be placed before fall seeding or at the end of the surface mining when seeding can follow immediately after placement.
- The site will be seeded.
- After vegetation has been established, remove pond Dugout D-1 and route Whisky Creek directly into culvert C-40-42.

Loadout Area After Mining

- The Permittee has plans to surface mine coal that is located to the southeast of the coal loadout facilities. Therefore, the reclamation of the loadout area will be considered a separate phase from reclaiming the surface mine.
- Reclamation will begin with the removal of coal loadout facilities.
- The restoration of the rest of Whisky Creek by removing the culvert and constructing a riprap channel.
- Removal of the fill pad, regarding and shaping of the remaining disturbed area with the exception of removing Sediment Pond No. 004A
- Topsoil will be placed
- The area will be vegetated.
- Sediment Pond No. 004A will be removed after vegetation has been established.
- Material used to construct Sediment Pond No. 004A will be used to reclaim the White Oak haul road.

The general backfilling and grading requirements and how they will be addressed are as follows:

Achieve the Approximate Original Contour

The Division has determined that the White Oak Mine Complex will achieve AOC see the AOC section of this TA for more details.

Eliminate All Highwalls

The location of the existing highwalls (portal face up areas) are shown on the mine maps, Plate 5-1 D Upper O' Connor Seam Mining and Underground Mine Map and Plate 5-1 E Lower

O' Connor Seam Mining and Underground Mine Map. The existing highwalls will be removed as part of the surface mining operations. New highwalls will be created see Map R645-301-521.160, White Oak Complex X-Sections of Surface Mining Area Sheet A for the location of cross sections and Sheet B through D for the cross sections. The cross sections show that all highwalls will be reclaimed.

Eliminate all Spoil Piles

On map R645-301-521.150, Belina Mine Site Surface Facilities as built one pre-surface mining spoil pile is shown. That spoil pile was from sediment clean out material that is defined by the Division as spoil. The spoil from that area will be used as backfill during reclamation.

On map R645-301-521.150, Whisky Creek Surface Mine Surface Facilities Sheet 4b of 4, the location of the temporary spoil storage area is shown. All that spoil will be used to as backfill. See the cut and fill calculations on Plate 5-1 C, White Oak Complex Projected Surface Mining Plan and Chapter 9 for more details of the temporary surface mine spoil pile area. The cross sections on Map R645-301-521.160, White Oak Complex X-Sections of Surface Mining Area Sheet A for the location of cross sections and Sheet B through D for the cross sections show that the spoil piles will be eliminated during final reclamation.

Eliminate Depressions

All depression with the exception of small pocks used for surface roughening will be removed during reclamation.

Slope Stability

The slope stability analysis and cross sections for the White Oak Mine Complex are found in Appendix R2, see Figure R-11 Sheet A and B. Five cross sections were used for slope stability, which are shown on Figure R-11 Sheet A, and B. The stability calculations for dry conditions are in Appendix R2. The results of the stability analysis are as follows:

- Cross-section A static safety factor 1.47
- Cross-section B static safety factor 1.34
- Cross section C static safety factor 1.38
- Cross section D static safety factor 1.33
- Cross section E static safety factor 1.54

On October 23, 2001, the Permittee faxed a copy of the stability calculations for saturated conditions. They are as follows:

- Cross-section A static safety factor 1.41
- Cross-section B static safety factor 1.31

- Cross section C static safety factor 1.34
- Cross section D static safety factor 1.30
- Cross section E static safety factor 1.50

The slope stability analysis were done with the following assumptions:

- The backfill material will be mostly rock
- Adequate compaction will be accomplished by placing the material in lift and running equipment over the lifts.
- The rock materials will be large enough to provide good drainage so that positive pore pressures will only occur in the lower 15 feet of the fill.

Should the properties of the backfill material differ from those used in the slope stability analysis the Permittee must conduct additional slope stability studies to demonstrate that the reclaimed slopes will meet the 1.3 safety factor requirement of 1.3 (R645-301-553.130)

The minimum static safety factor is 1.3. All of the stability analysis show that the reclaimed areas will exceed the minimum safety factor. Cross-section B and D has safety factors that are slightly higher than the minimum. The Division should inspect the site during the reclamation of those sites to insure proper construction.

All slopes will have a grade of 2 horizontal to 1 vertical, which exceeds the angle-of-repose. The permittee has shown that the reclaimed slopes will be stable.

Minimize Erosion and Water Pollution

The Division considers that the reclaimed site will minimize erosion and water pollution when all of the hydrology requirements have been met.

Support the Approved Postmining Land Use

The Division considers that the site will be suitable for the postmining land use when the vegetation requirements have been met.

Previously Mined Areas

The White Oak mine complex consist of pre-SMCRA and post-SMCRA sites. The significance of pre-SMCRA area is that they can be exempt from reclamation requirements such as total highwall elimination. Map R645-301-231-100, Topsoil Salvage Areas, show the location of pre and post-SMCRA site at the White Oak Mine Complex. The Permittee does not plan to use the pre-SMCRA status of any areas for exclusions from reclamation standards.

Findings:

The information in the proposed significant revision is considered adequate to meet the requirements of this section. The Division must stipulate that the saturated slope stability study be included in the MRP.

A stipulation for this permit is that if the properties of the backfill material are different than those used in the slope stability analysis then the Permittee will do additional studies to determine if the reclaimed slopes will meet the minimum safety factor of 1.3. If the reclaim slopes will not meet the 1.3 safety factor requirement the Permittee will then have to modify the reclamation plan so that the safety factor requirements in R645-301-553.130 are

MINE OPENINGS

Regulatory Reference: 30 CFR Sections 816.13; 816.14; 817.13; 817.14; 817.15. R645-301 Sections 513; 529; 551; 631; 748; 765; 748.

Minimum Regulatory Requirements:

Each exploration hole, other drillhole or borehole, shaft, well, or other exposed underground opening shall be cased, lined, or otherwise managed as approved by the Division to prevent acid or other toxic drainage from entering ground and surface waters, to minimize disturbance to the prevailing hydrologic balance and to ensure the safety of people, livestock, fish and wildlife, and machinery in the permit area and adjacent area. Each exploration hole, drill hole or borehole or well that is uncovered or exposed by mining activities within the permit area shall be permanently closed, unless approved for water monitoring or otherwise managed in a manner approved by the Division. Use of a drilled hole or monitoring well as a water well must meet the provisions required to protect the hydrologic balance. This section does not apply to holes drilled and used for blasting, in the area affected by surface operations.

Each mine entry which is temporarily inactive, but has a further projected useful service under the approved permit application, shall be protected by barricades or other covering devices, fenced, and posted with signs, to prevent access into the entry and to identify the hazardous nature of the opening. These devices shall be periodically inspected and maintained in good operating condition by the person who conducts the underground mining activities.

Each exploration hole, other drill hole or borehole, shaft, well, and other exposed underground opening which has been identified in the approved permit application for use to return underground development waste, coal processing waste or water to underground workings, or to be used to monitor ground water conditions, shall be temporarily sealed until actual use.

When no longer needed for monitoring or other use approved by the Division upon a finding of no adverse environmental or health and safety effects, or unless approved for transfer as a water well, each shaft, drift, adit, tunnel, exploratory hole, entry way or other opening to the surface from underground shall be capped, sealed, backfilled, or otherwise properly managed, as required by the Division and consistent with the requirements of 30 CFR Section 75.1711. Permanent closure measures shall be designed to prevent access to the mine workings by people, livestock, fish and wildlife, machinery and to keep acid or other toxic drainage from entering ground or surface waters.

Analysis:

In the reclamation section of the PAP (page R-9 of 35) the Permittee states the following:

All mine openings at the White Oak site will be sealed with 25 feet of spoil material and covered with spoil material generated by the surface mining of barrier coal. All portals at the Loadout Facility have caved tight near the 25-foot area, were considered dangerous, and were barricaded (backfilled) as per MSHA instruction. In addition to current backfilling, each opeing will be recontoured at the time of reclamation to the approximate original contour as shown on the reclamation design drawings.

Most portals are sealed with both stopping and backfill. However, 30 CFR 75.1711 only requires the Permittee to install stopping or backfill a minimum of 25 feet. Therefore, the Division will not require the Permittee to place seals.

Findings:

The information in the proposed significant revision is considered adequate to meet the requirements of this section.

ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES

Regulatory Reference: 30 CFR Sections 701.5; 784.24; 780.33; 780.35; 780.37; 816.151; 817.150; 817.151. R645-100-200. R645-301 Sections 513; 521; 527; 534; 537; 732.

Minimum Regulatory Requirements:

Reclamation

A road not to be retained under an approved postmining land use shall be reclaimed in accordance with the approved reclamation plan as soon as practicable after it is no longer needed for mining and reclamation operations. This reclamation shall include: closing the road to traffic; removing all bridges and culverts unless approved as part of the postmining land use; removing or otherwise disposing of road-surfacing materials that are incompatible with the postmining land use and revegetation requirements; reshaping cut and fill slopes as necessary to be compatible with the postmining land use and to complement the natural drainage pattern of the surrounding terrain; protecting the natural drainage patterns by installing dikes or cross drains as necessary to control surface runoff and erosion; and, scarifying or ripping the roadbed, replacing topsoil or substitute material and revegetating disturbed surfaces.

Retention

A road to be retained for an approved postmining land use shall be classified as a primary road and designed constructed and maintained in accordance with the requirements for primary roads and in consideration of the approved postmining land use.

Analysis:

Reclamation

The only roads associated with the White Oak Mine Complex are the haul roads that are

located within the pad area. New roads will be constructed as part of surface mining. The roads within the surface mine will be reclaimed as part of on going surface mining and reclamation.

The main haul road in the White Oak Mine Complex will remain after surface mining has been completed. That road is needed to access the site for reclamation. The truck loadout, coal storage area, sediment pond No. 004 and the reclamation of the lower section of Whisky Creek will be done after the surface mine has been reclaimed. The haul road in the White Oak Mine Complex will be reclaimed during the final phase of reclamation at the site.

Within the White Oak Mine Complex are some jeep trails that are used by the landowners. The landowners have requested that the Permittee restore the jeep trail within the White Oak Mine Complex that will be removed during surface mining. The Division does not consider the jeep trails to be roads because they are not engineered structures.

The Division will allow trails to remain after final reclamation if they are compatible with the postmining land use and will not result in erosion or water pollution. The jeep trails in the area are stable and do not cause environmental harm.

The Permittee referred to the trail as an ancillary road. The Division cannot allow an ancillary road to remain on site. R654-301-527.123 states that only a primary road can be retained as part of the postmining land use. The Permittee has two options the first is to submit engineering designs for the proposed road, the second is to refer to the road as a trail that will allow access to the site by high clearance offroad vehicles.

Retention

The Permittee does not plan to retain any engineered roads within the disturbed area boundaries. Within the White Oak mine complex the Permittee will backfill and grade the area such that the landowners will be able to drive a four-wheel drive high clearance vehicle on the site (a jeep trail will be left.) Access to the site will be available from wheel tracks and jeep trail from Boarding House Canyon. Since those access routes were in existence before the mine was established and only minimal up keep is needed the Division will not require the Permittee to reclaim those access routes. The Division does not consider those access routes to be roads that need to be designed.

Findings:

The information in the proposed significant revision is considered adequate to meet the requirements of this section.

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sections 780.21; 780.29; 784.14; 784.29; 816.41; 816.42; 816.43; 816.45; 816.49; 816.56; 816.57; 817.49; 817.42; 817.43; 817.45; 817.49; 817.56; 817.57. R645-301 Sections 512; 513; 514; 515; 532; 533; 542; 723; 724; 725; 726; 728; 729; 731; 733; 742; 743; 750; 751; 760; 761.

Minimum Regulatory Requirements:

Hydrologic reclamation plan

The application shall include a plan, with maps and descriptions, indicating how the relevant regulatory requirements will be met. The plan shall be specific to the local hydrologic conditions. It shall contain the steps to be taken during mining and reclamation through bond release to minimize disturbance to the hydrologic balance within the permit and adjacent areas; to prevent material damage outside the permit area; and to meet applicable Federal and State water quality laws and regulations. The plan shall include the measures to be taken to: avoid acid or toxic drainage; prevent, to the extent possible using the best technology currently available, additional contributions of suspended solids to streamflow; provide water treatment facilities when needed; and control drainage. The plan shall specifically address any potential adverse hydrologic consequences identified in the PHC determination and shall include preventive and remedial measures.

Each application shall contain descriptions, including maps and cross sections, of stream channel diversions and other diversions to be constructed within the proposed permit area to achieve compliance with the performance standards for those structures.

Postmining rehabilitation of sedimentation ponds, diversions, impoundments, and treatment facilities

Before abandoning a permit area or seeking bond release, the operator shall ensure that all temporary structures are removed and reclaimed, and that all permanent sedimentation ponds, diversions, impoundments, and treatment facilities meet the requirements of this Chapter for permanent structures, have been maintained properly and meet the requirements of the approved reclamation plan for permanent structures and impoundments. The operator shall renovate such structures if necessary to meet the requirements of this Chapter and to conform to the approved reclamation plan.

Analysis:

Gravity discharges

The Permittee does not propose to discharge any water from underground opens. However, some seeps and springs exist in the areas that will be surface mined. Surface mining will disturb the seeps and springs and they will be backfilled and graded during reclamation. The Permittee claims that the backfill material will consist of large rock fragments which will easily the water to flow from the seeps and springs to the toe of the reclaimed slopes. On Page O-16 of 15 the Permittee states that if water from any seep or spring exceeds 2 gallons per minute of flow that engineered French drains will be installed.

The Division does not have standards for when a French drain is needed and when one is not. Slope stability is the Division's main concern. The Division believes that small flows will not cause slope failure because pore pressure will not build up due to the large rock fragments in the backfill. Therefore, the Division will allow the Permittee to use natural drainage in the backfill for flows that are less than 2 gallons per minute.

Sedimentation ponds

Within the White Oak Mine Complex there are two sediment ponds, Dugout D-1 and Pond 004A. As part of surface mining the Permittee will disturb the upper section of Whisky Creek. During reclamation of the surface mine the Permittee will restore the upper section of Whisky Creek and the drainage area. Once vegetation has been established Dugout D-1 will no longer be needed and will be removed.

Pond 004A will remain as long as the coal storage, loadout facilities and truck turn around are needed. When those facilities are no longer needed the Permittee will reclaim the site including the restoration of Whisky Creek (main culvert removal and channel restored.) The pond will be removed when no longer needed for sediment control.

The Permittee may choose to apply for a permit to mine coal that is adjacent to the White Oak Mine Complex. If so they will need to retain the loadout facilities, including the pond. Once all mining activities in the area cease reclamation of the loadout facilities will begin.

Findings:

The information in the proposed significant revision is considered adequate to meet the Hydrologic Reclamation Plan Information requirements of the regulations

CESSATION OF OPERATIONS

Regulatory Reference: 30 CFR Sections 816.131; 816.132; 817.131; 817.132. R645-301 Sections 515; 541.

Minimum Regulatory Requirements:

Each person who conducts mining activities shall effectively support and maintain all surface access openings to underground operations, and secure surface facilities in areas in which there are no current operations, but operations are to be resumed under an approved permit. Temporary abandonment shall not relieve a person of his or her obligation to comply with any provisions of the approved permit.

Before temporary cessation of mining and reclamation operations for a period of 30 days or more, or as soon as it is known that a temporary cessation will extend beyond 30 days, each person who conducts underground mining activities shall submit to the Division a notice of intention to cease or abandon operations. This notice shall include a statement of the exact number of surface acres and the horizontal and vertical extent of subsurface strata which have been in the permit area prior to cessation or abandonment, the extent and kind of surface area reclamation which will have been accomplished, and identification of the backfilling, regrading, revegetation, environmental monitoring, underground opening closures, and water-treatment activities that will continue during the temporary cessation.

The person who conducts underground mining activities shall close or backfill or otherwise permanently reclaim all affected areas, in accordance with this Chapter and according to the permit approved by the Division.

All surface equipment, structures, or other facilities not required for continued underground mining activities and

monitoring, unless approved as suitable for the postmining land use or environmental monitoring, shall be removed and the affected lands reclaimed.

Analysis:

The Permittee committed in the MRP to meet the requirements of R645-301-515.300.

Findings:

The requirements of this section of the regulations are considered adequate in regard to the proposed permit changes for the addition of surface mining.

MAPS, PLANS, AND CROSS SECTIONS OF RECLAMATION OPERATIONS

Regulatory Reference: 30 CFR Sections 780.14 ; 784.23. R645-301 Sections 323; 512; 521; 542; 632; 731.

Minimum Regulatory Requirements:

Each application shall contain maps, plans, and cross sections which show the reclamation activities to be conducted, the lands to be affected throughout the operation, and any change in a facility or feature to be caused by the proposed operations, if the facility or feature was shown and described as an existing structure.

The permit application must include as part of the reclamation plan information, the following maps, plans and cross sections:

Affected area boundary maps

The boundaries of all areas proposed to be affected over the estimated total life of all mining activities and reclamation activities, with a description of size, sequence, and timing of phased reclamation activities and treatments. All maps and cross sections used for reclamation design purposes shall clearly show the affected and permit area boundaries in reference to the reclamation work being accomplished.

Bonded area map

The Permittee shall identify the initial and successive areas or increments for bonding on the permit application map and shall specify the bond amount to be provided for each area or increment. The bond or bonds shall cover the entire permit area, or an identified increment of land within the permit area upon which the operator will initiate and conduct surface coal mining and reclamation operations during the initial term of the permit. As surface coal mining and reclamation operations on succeeding increments are initiated and conducted within the permit area, the Permittee shall file with the Division an additional bond or bonds to cover such increments. Independent increments shall be of sufficient size and configuration to provide for efficient reclamation operations should reclamation by the Division become necessary.

Reclamation backfilling and grading maps

Contour maps and cross sections to adequately show detail and design for backfilling and grading operations during reclamation. Where possible, cross sections shall include profiles of the pre-mining, operations, and post-reclamation topography.

Contour maps shall be at a suitable scale and contour interval so as to adequately detail the final surface configuration. When used in the formulation of mass balance calculations, cross sections shall be at adequate scale and intervals to support the mass balance calculations. Mass balance calculations derived from contour information must demonstrate that map scale and contour accuracy are adequate to support the methods used in such earthwork calculations. Detailed cross sections shall be provided when required to accurately depict reclamation designs which include, but are not limited to: terracing and benching, retained roads, highwall remnants, slopes requiring geotechnical analysis, and embankments of permanent impoundments.

Reclamation facilities maps

Location of each facility that will remain on the proposed permit area as a permanent feature, after the completion of underground mining activities. Location and final disposition of each sedimentation pond, permanent water impoundment, coal processing waste bank, and coal processing water dam and embankment, disposal areas for underground development waste and excess spoil, and water treatment and air pollution control facilities within the proposed permit area to be used in conjunction with phased reclamation activities or to remain as part of reclamation.

Final surface configuration maps

Sufficient slope measurements to adequately delineate the final surface configuration of the area affected by surface operations and facilities, measured and recorded according to the following: each measurement shall consist of an angle of inclination along the prevailing slope extending 100 linear feet above and below or beyond the coal outcrop or the area disturbed or, where this is impractical, at locations specified by the Division; where the area has been previously mined, the measurements shall extend at least 100 feet beyond the limits of mining disturbances, or any other distance determined by the Division to be representative of the post-reclamation configuration of the land; and, slope measurements shall take into account variations in slope, to provide accurate representation of the range of slopes and reflect geomorphic differences of the area disturbed through reclamation activities.

Reclamation monitoring and sampling location maps

Elevations and locations of test borings and core samplings. Elevations and locations of monitoring stations used to gather data on water quality and quantity, subsidence, fish and wildlife, and air quality, if required, to demonstrate reclamation success.

Reclamation surface and subsurface manmade features maps

The location of all buildings in and within 1,000 feet of the proposed permit area, with identification of the current or proposed use of the buildings at the time of final reclamation. The location of surface and subsurface manmade features within, passing through, or passing over the proposed permit area, including, but not limited to, major electric transmission lines, pipelines, fences, and agricultural drainage tile fields. Each public road located in or within 100 feet of the proposed permit area and all roads within the permit area which are to be left as part of the post-mining land use. Buildings, utility corridors, and facilities to be used in conjunction with reclamation or to remain for final reclamation.

Reclamation treatments maps

The location and boundaries of any proposed areas for reclamation treatments including but not limited to: location, extent and depth of materials used for resoiling; location, extent and types of treatments for revegetation including soil preparation, soil amendments, mulching, seeding, variations in seed mixtures, and other revegetation treatments. Each water diversion, collection, conveyance, treatment, storage and discharge facility to be used during reclamation. Each facility to be used to protect and enhance fish and wildlife related environmental values. other treatments or applications which are specifically designed or required as part of phased or final reclamation activity.

Certification Requirements.

Cross sections, maps, and plans required to show the design, location, elevation, or horizontal or vertical extent of the land surface or of a structure or facility used to conduct mining and reclamation operations shall be prepared by, or under the direction of, and certified by a qualified, registered, professional engineer, a professional geologist, or in any State which authorizes land surveyors to prepare and certify such cross sections, maps, and plans, a qualified, registered, professional land surveyor, with assistance from experts in related fields such as landscape architecture.

Each detailed design plan for an impounding structure that meets or exceeds the size or other criteria of the Mine Safety and Health Administration, 30 CFR Section 77.216(a) shall: be prepared by, or under the direction of, and certified by a qualified registered professional engineer with assistance from experts in related fields such as geology, land surveying, and landscape architecture; include any geotechnical investigation, design, and construction requirements for the structure; describe the operation and maintenance requirements for each structure; and, describe the timetable and plans to remove each structure, if appropriate.

Each detailed design plan for an impounding structure that does not meet the size or other criteria of 30 CFR Section 77.216(a) shall: be prepared by, or under the direction of, and certified by a qualified, registered, professional engineer, or in any State which authorizes land surveyors to prepare and certify such plans, a qualified, registered, professional land surveyor, except that all coal processing waste dams and embankments shall be certified by a qualified, registered, professional engineer; include any design and construction requirements for the structure, including any required geotechnical information; describe the operation and maintenance requirements for each structure; and, describe the timetable and plans to remove each structure, if appropriate.

Analysis:

Affected area boundary maps

The Division usually considers that the permit boundaries to be the maximum extent of the affected areas. The affected areas within the permit area include underground workings and areas of surface disturbance. Drawing R645-301-100, Permit Area Base Map, shows the permit area.

Plate 5-1 A, White Oak Mine No. 2 and Plate 5-1 B, White Oak Mine No. 1 shows the location of the underground workings. The maps are dated as being updated on February 4, 2000 and were incorporated in the MRP on March 3, 2000.

The mine facilities and mine workings maps show the areas within the permit area that are affected by mining. R645-301-527 sheets 1-11 and show the disturbed area boundaries for the Valcam loadout, haul road and office complex.

Map R645-301-232-100, Post Reclamation, shows the disturbed area boundaries at the White Oak mine site. The Permittee does not propose to change the disturbed area boundaries as a result of surface mining or reclamation.

Bonded area map

The Division usually considers that the disturbed areas are the bonded areas. The

disturbed area boundary map is shown on several maps including Map R645-301-527 Sheet 13.

Reclamation backfilling and grading maps

Drawing R645-301-521.160 shows the location of the pre surface mining and post surface mining cross section. Map R645-301-527 Sheet 13 shows the postmining contours within the disturbed area boundaries.

Reclamation facilities maps

The Permittee does not propose to leave any facilities at the White Oak mine site with the exception of the French drains. French drains will only be left if the Permittee encounters seeps and springs that have flows greater than 5 gallons per minute. Since the location of such seeps and springs is unknown, the Permittee cannot show them on a map at this time.

Final surface configuration maps

Map R645-301-527 Sheet 13 shows the postmining contours within the disturbed area boundaries. However, the map does not show the contours 100 feet outside the disturbed area boundaries.

Reclamation surface and subsurface manmade features maps

The Permittee needs not propose to leave any surface or subsurface manmade features at the White Oak mine site with the exception of the French drains.

Findings:

The information in the proposed significant revision is not considered adequate to meet the requirements of this section. The existing maps have enough information for the Division to evaluate the reclamation plan. Wayne Western talked with Dave Miller on October 24, 2001 about the final surface configuration maps. An agreement was reached to require final contour maps with contours that extending 100 outside the disturbed area boundaries as a stipulation of the permit.

R645-301-542.300, The Permittee must provide the Division a contour map of the reclaimed White Oak mine site at a scale of 1" = 100' that show the contours within 100 feet of the disturbed area boundaries. Map R645-301-527 Sheet 13, White Oak Mine Site Final Reclamation Contours does not show the contour that are 100 linear feet out side the disturbed area boundaries.

BONDING AND INSURANCE REQUIREMENTS

Regulatory Reference: 30 CFR Sec. 800; R645-301-800, et seq.

Minimum Regulatory Requirements:

General

After a permit application has been approved, but before a permit is issued, the applicant shall file with the Division, on a form prescribed and furnished by the Division, a bond or bonds for performance made payable to the Division and conditioned upon the faithful performance of all the requirements of the Act, the regulatory program, the permit, and the reclamation plan.

The bond or bonds shall cover the entire permit area, or an identified increment of land within the permit area upon which the operator will initiate and conduct surface coal mining and reclamation operations during the initial term of the permit. As surface coal mining and reclamation operations on succeeding increments are initiated and conducted within the permit area, the Permittee shall file with the Division an additional bond or bonds to cover such increments.

The operator shall identify the initial and successive areas or increments for bonding on the permit application map and shall specify the bond amount to be provided for each area or increment. Independent increments shall be of sufficient size and configuration to provide for efficient reclamation operations should reclamation by the Division become necessary.

An operator shall not disturb any surface areas, succeeding increments, or extend any underground shafts, tunnels, or operations prior to acceptance by the Division of the required performance bond.

The applicant shall file, with the approval of the Division, a bond or bonds under one of the following schemes to cover the bond amounts for the permit area as determined: a performance bond or bonds for the entire permit area; a cumulative bond schedule and the performance bond required for full reclamation of the initial area to be disturbed; or, an incremental-bond schedule and the performance bond required for the first increment in the schedule.

Form of bond

The Division shall prescribe the form of the performance bond. The Division may allow for: a surety bond; a collateral bond; a self-bond; or a combination of any of these bonding methods.

Performance bond liability shall be for the duration of the surface coal mining and reclamation operation and for a period which is coincident with the operator's period of extended responsibility for successful revegetation or until achievement of the reclamation requirements of the Act, regulatory programs, and permit, whichever is later.

With the approval of the Division, a bond may be posted and approved to guarantee specific phases of reclamation within the permit area provided the sum of phase bonds posted equals or exceeds the total amount required. The scope of work to be guaranteed and the liability assumed under each phase bond shall be specified in detail.

Isolated and clearly defined portions of the permit area requiring extended liability may be separated from the original area and bonded separately with the approval of the Division. Such areas shall be limited in extent and not constitute a scattered, intermittent, or checkerboard pattern of failure. Access to the separated areas for remedial work may be included in the area under extended liability if deemed necessary by the Division.

The bond liability of the Permittee shall include only those actions which he or she is obligated to take under the permit, including completion of the reclamation plan, so that the land will be capable of supporting the postmining land use approved. Implementation of an alternative postmining land use which is beyond the control of the Permittee, need not be covered by the bond. Bond liability for prime farmland shall be specific to include productivity requirements.

Determination of bond amount

The amount of the bond required for each bonded area shall: be determined by the Division; depend upon the requirements of the approved permit and reclamation plan; reflect the probable difficulty of reclamation, giving consideration to such factors as topography, geology, hydrology, and revegetation potential; and, be based on, but not limited to, the estimated cost submitted by the permit applicant.

The amount of the bond shall be sufficient to assure the completion of the reclamation plan if the work has to be performed by the Division in the event of forfeiture, and in no case shall the total bond initially posted for the entire area under 1 permit be less than $10,000.

An operator's financial responsibility for repairing material damage resulting from subsidence may be satisfied by the liability insurance policy required in this section.

Terms and conditions for liability insurance

The Division shall require the applicant to submit as part of its permit application a certificate issued by an insurance company authorized to do business in the United States certifying that the applicant has a public liability insurance policy in force for the surface coal mining and reclamation operations for which the permit is sought. Such policy shall provide for personal injury and property damage protection in an amount adequate to compensate any persons injured or property damaged as a result of the surface coal mining and reclamation operations, including the use of explosives, and who are entitled to compensation under the applicable provisions of State law. Minimum insurance coverage for bodily injury and property damage shall be $300,000 for each occurrence and $500,000 aggregate.

The policy shall be maintained in full force during the life of the permit or any renewal thereof and the liability period necessary to complete all reclamation operations under this Chapter.

The policy shall include a rider requiring that the insurer notify the Division whenever substantive changes are made in the policy including any termination or failure to renew.

The Division may accept from the applicant, in lieu of a certificate for a public liability insurance policy, satisfactory evidence from the applicant that it satisfies applicable State self-insurance requirements approved as part of the regulatory program and the requirements of this section.

Analysis:

Determination of bond amount

The Division and the Permittee developed the reclamation cost estimate. They agreed that the reclamation bond for the White Oak Mine should be no less than $3,832,000.

Two assumptions that were used to make the reclamation cost estimates were as follows:

- The Permittee will not have more than 306,000 LCY of spoil that are either in the temporary spoil pile or in any pit or other location at the mine than has not been placed in the approximate location for final grading.
- The Permittee establish the approximate location of the upper portion of Whisky

Creek during rough backfilling and grading.

The Permittee has agreed to make those two assumption stipulations for the surface mining permit.

Terms and conditions for liability insurance

The White Oak mine has an existing liability insurance policy that the Division considers adequate. No additional insurance will be needed for the surface mining operations.

Findings:

The requirements of this section of the regulations are considered adequate in regard to the proposed permit changes for the addition of surface mining.

The Division needs to make the following stipulations to the mine permit:

- The Permittee will not have more than 306,000 LCY of spoil that are either in the temporary spoil pile or in any pit or other location at the mine than has not been placed in the approximate location for final grading.
- The Permittee establish the approximate location of the upper portion of Whisky Creek during rough backfilling and grading.

RECOMMENDATION:

The Division should approve the permit with the following stipulations:

- An agreement was reached to require final contour maps with contours that extending 100 outside the disturbed area boundaries as a stipulation of the permit.
- The saturated slope stability study be included in the MRP.
- **R645-301-542.300,** The Permittee must provide the Division a contour map of the reclaimed White Oak mine site at a scale of 1" = 100' that show the contours within 100 feet of the disturbed area boundaries. Map R645-301-527 Sheet 13, White Oak Mine Site Final Reclamation Contours does not show the contour that are 100 linear feet out side the disturbed area boundaries.
  - The Permittee will not have more than 306,000 LCY of spoil that are either in the temporary spoil pile or in any pit or other location at the mine than has not been placed in the approximate location for final grading.
  - The Permittee establish the approximate location of the upper portion of Whisky Creek during rough backfilling and grading.

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