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

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OK

October 17, 2001

David Miller, Resident Agent
Lodestar Energy, Inc.
HC 35 Box 370
Helper, Utah 84526

Re: Contour Mining of Barrier Coal – Second Submittal, Lodestar Energy, Inc., White Oak Mine, C/007/001-SR01A-1, Outgoing File

Dear Mr. Miller:

The Division has completed a second technical review of Lodestar Energy, Inc. application for contour mining of barrier coal. A copy of our Technical Analysis is attached for your files. You should already be familiar with the contents of this Technical Analysis as our staff has kept you informed of their progress via email, telephone and fax.

The Technical Analysis compares Lodestar Energy's application with the minimum information requirements required by Utah law for surface and underground mining regulations. Where information was found to be lacking, a deficiency statement has been written. For your convenience, a list of deficiencies (identified within your application) is included at the beginning of the document. Please respond to the deficiencies immediately, in order for the Division to complete the review process promptly.

Critical issues raised by the Technical Analysis were the considerations given to

- Reclamation techniques for steep slopes
- Reconstruction of the stream channel
- Saturated slope stability

If you have any questions, please call me at (801) 538-5325 or Priscilla Burton at (801) 538-5288.

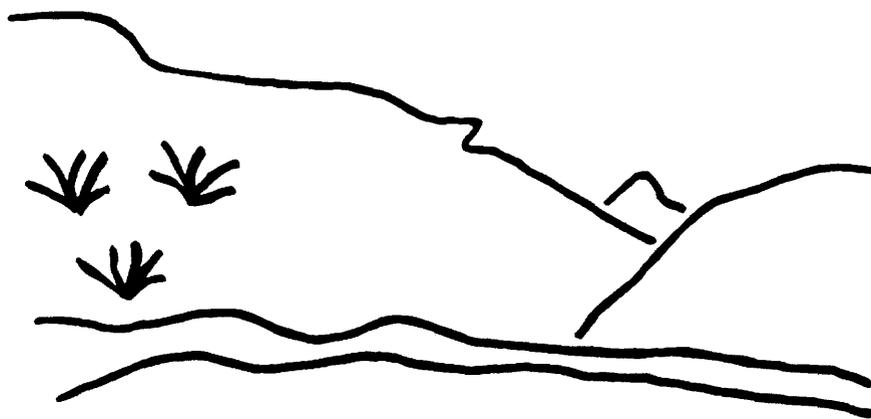
Sincerely,

A handwritten signature in cursive script that reads "Daron R. Haddock".

Daron R. Haddock
Permit Supervisor

pwb\sm
Enclosure
cc: Price Field Office
O:\007001.WODRAFT\DEFSR01A-1.DOC

State of Utah



Utah Oil Gas and Mining

Coal Regulatory Program

White Oak Mine
Mining of Barrier Coal
C/007/001-SR01A-1
Technical Analysis
October 15, 2001

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TERMS

The following terms are defined for the reader of this Technical Analysis:

Permittee... means Lodestar Energy Inc.

The Division... means the State of Utah, Department of Natural Resources, Division of Oil, Gas & Mining.

The Regulations... means the Utah R645 coal mining regulations.

White Oak Mine Complex... means the Belina No.1 and No. 2 mine site.

MRP... means Mining and Reclamation Plan.

INTRODUCTION

TECHNICAL ANALYSIS

INTRODUCTION

On February 2, 2001, the Division received an application from Lodestar Energy, Inc. to significantly revise the Mining and Reclamation Plan at the White Oak Mine's complex (Belina Mines No. 1 and No. 2) to include contour mining of barrier coal. Contour mining is planned for areas that have been disturbed by underground mining and will also extend into areas that are not now disturbed but that are in within the disturbed area boundary. The change in mining method is considered a significant revision to the permit. A total of 46.8 acres is to be contour mined within the disturbed area boundary of 69.2 acres at the White Oak mine complex. This submittal adds 8.28 acres to the disturbed area boundary.

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.

Two coal seams to be mined using contour mining methods are the Upper and Lower O'Conner seams which are each 20' thick on the average and which are separated by 80' of sandstones and shales. The first cut will create a bench that is 100 – 500' wide and a highwall of 80 feet. The second cut will create a bench width of 20-200' wide and a highwall of 115 feet. The length of the highwall will be about 1000 feet. The contour mining operation will be conducted on slopes greater than 20 degrees and by definition is steep slope mining.

Plate 5-1C illustrates the progression of coal recovery from the Lower O'Connor Seam and the Upper O'Connor seam 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. Contour mining should be completed within 14 months (Section 523, page 500-15).

Based upon the spot market prices for Utah as noted in the September 3, 2001 Coal Outlook¹ this coal is valued at \$23.00/Ton. At the current value, the total reserve of coal to be contour mined is worth \$17,779,000. (The range for the year was \$15.25/ton to \$23.00/ton based upon 11,800 Btu/lb and 0.8 lbs/mmBtu of sulfur dioxide.)

¹ "Coal Outlook." V. 25 No. 36. Monday September 3, 2001. (Financial Times Energy: Arlington, VA).

INTRODUCTION

Underground mining at the White Oak mine ceased as of the last week of September 2001. Removal of the facilities on site has begun. A Division representative is visiting the site on October 12, 2001 to check on the Permittee's progress.

This document compares Lodestar Energy's application with the minimum information requirements required by Utah law for surface and underground mining regulations. Where required information was found to be lacking, a deficiency statement was written. For the reader's convenience, a list of deficiencies is included at the beginning of this document.

SUMMARY OF DEFICIENCIES

SUMMARY OF DEFICIENCIES

The Technical Analysis of the proposed permit changes cannot be completed at this time. Additional information is requested of the permittee to address deficiencies in the proposal. A summary of deficiencies is provided below. Additional comments and concerns may also be found within the analysis and findings made in this Draft Technical Analysis. Upon finalization of this review, any deficiencies will be evaluated for compliance with the regulatory requirements. Such deficiencies may be conditioned to the requirements of the permit issued by the Division, result in denial of the proposed permit changes, or may result in other executive or enforcement action as deemed necessary by the Division at that time to achieve compliance with the Utah Coal Regulatory Program.

Accordingly, the permittee must address those deficiencies as found within this Draft Technical Analysis and provide the following, prior to approval, in accordance with the requirements of:

Regulations

- R645-301-112.500**, the correct address and current name for the Oman's must be provided in Table 112.500. 9
- R645-301-114, R645-301-521.132 and R645-301-521.190**, Plate 5-1C must show the federal coal boundary. The surface land must be surveyed and staked to clearly mark the boundary of federal coal. The application must commit to not mining the federal coal until leases are obtained..... 11
- R645-301-121.100**, 1) Plate R645-301-521.150 Sheet 4b of 4 is titled "Whisky Creek Surface Mine Surface Facilities". Is the contour mining of the barrier coal receiving a new name? The mine site is referred throughout the plan variously as the Belina Mine Site, the No. 1 and No. 2 Mines, the White Oak Complex and the Whisky Creek Mine No. 1. 2) Page O-15 states that the spoil storage area is shown on Figure 9 in Section 9 "Spoil Disposal Area". This should read Figure 9-3. 3) Table 232a erroneously places the PC-1 soil and TC soil in the grassland/shrub vegetation category. These soils are Typic and Pachic Cryoborolls and are presently supporting aspen vegetation. 15
- R645-301-122. Plate R645-301-521.150** (dated 1993) to determine islands of undisturbed ground within the Belina Mine site facilities area. The revised Plate R645-301-521.150 does not retain the complete information set. Would it be possible to retire the 1993 map to an appendix of the MRP to save the information for the next phase of operations? 15
- R645-301-131**, Please add Mr. Dan Larsen, Soil Scientist with Environmental Industrial Services of Helper Utah to the list of consultants provided under Reporting of Technical Data on pages 1-11 and 1-12 of the MRP. 15
- R645-301-231.300**, Describe in the text the procedures that will be used to remove the soil in a controlled manner (i.e. pedestals, pits, stakes) and commit to having a qualified soil scientist on-site during the soil removal process. 61

SUMMARY OF DEFICIENCIES

- R645-301-242**, 1) Since the performance standard is to operate according to the plans given under R645-301-240, please specifically reference where the zones referred to are outlined. 2) The plan should indicate that a qualified soil scientist will be on site during topsoil redistribution. 3) Please reconcile the information on topsoil thickness between Sections 231.100 and 242, better yet, just list the information in one place. 4) On page R22 of 35, under Soil Characteristics, the application describes soil sampling to be conducted after grading which includes sampling for a long list of parameters. Likewise, page R-23 of 35 in the Reclamation Plan, states that "After the earthwork has been completed the soils will be tested as described and fertilizers, nutrients, and conditioners will be applied as needed." If these portions of the application are outdated, then they should be removed from the plan. 5) Page R-23 of 35 indicates that the seeding for final reclamation will take place in the fall. Hence the topsoil replacement should also indicate that topsoil replacement will not occur until early fall. The replacement section should further state that if a soil crust develops prior to seeding, the slopes will be raked to create a seed bed. 6) The Division requests that in accordance with R645-301-242.200 information is provided in the plan which describes the treatments afforded to the steep slopes of 2h:1v to reduce potential slippage of the redistributed material and to promote root penetration..... 122
- R645-301-244**, Change the text to read all slopes will be roughened after topsoil placement instead of prior to topsoil placement..... 134
- R645-301-244**, Cross section maps or the text of the plan must show or discuss grading slopes to concave and complex shapes. 134
- R645-301-252**, Since the performance standard is to operate according to the plans given under R645-301-230, specifics are required in the plan. What specifically will be employed to prevent sheet, rill and gully erosion off the topsoil piles. (i.e. what is seed in temporary seed mix; use of slash, woody debris, strawbales, silt fences)..... 61
- R645-301-321**, cover analysis for the vegetation in Whisky Creek must include tree and shrub species in the total cover when they occur. Appendix 3-1 must be clarified to read that the Division did not require tree and shrub density sampling. 22
- R645-301-323**, The text that discusses the locations of the reference areas needs to be consistent with Drawing R645-301-323.100 which shows specific reference area locations..... 41
- R645-301-323**, the text that discusses the locations of the reference areas needs to be consistent with Drawing R645-301-323.100. The drawing shows specific reference area locations 41
- R645-301-333**, the plan must describe efforts made to minimize disturbances during mining. Interim seeding of rough graded spoil can minimize disturbance during surface mining operations..... 63
- R645-301-341.210**, The application needs to include shrub transplants for the upper Whisky Creek riparian area. 133

SUMMARY OF DEFICIENCIES

R645-301-341.250, The application must clarify the reference areas to be used in the revegetation success standards..... 133

R645-301-341.250, The application must provide specific revegetation success standard for the upper portion of Whisky Creek..... 133

R645-301-355, The plan must provide a commitment to roughen as described in the technique sheets in the Division's reclamation manual, The Practical Guide to Reclamation in Utah, found at:
ftp://dogm.nr.state.ut.us/PUB/MINES/Coal_Related/RecMan/Reclamation_Manual.PDF . 134

R645-301-412, the "White Oak Mine Site Final Reclamation Contours" map and the agreement with Milton A. Oman, Ltd., show a 1200-foot section of road across the reclaimed area. The operator must remove all reference to constructing the 1200-foot section of road since the Oman's desire to construct it themselves. 106

R645-301-412.200, comments about the postmining land use from the landowners or the surface land management agencies must be provided..... 106

R645-301-424, the fugitive dust control plan must be modified so pits and ramps will be watered when temperatures allow and not just during warm weather. 48

R645-301-521.160 and R645-301-521.165, The Permittee give the Division topographic maps and cross-sections that show the location, size and shape of the topsoil storage areas that will exist during the operational phase of surface mining. 101

R645-301-521.160, R645-301-521.165 and R645-301-521.190, The Permittee must address the in the PAP that the location of the explosive storage areas and show those storage areas on the surface facilities maps. If the location of the explosive storage areas not been determine then the Permittee must address that issue in the PAP and make a commitment to provide that information when available including updated maps. 101

R645-301-521.162 and R645-301- 521.190, The Permittee must show the correct permit boundaries on Drawing R645-301-100, Permit Area Base Map. If the Permittee has that map in an AutoCAD format, please provide the Division with a copy. Note: the Division will not require the Permittee to correct those errors as part to the surfacing mining amendment..... 41

R645-301-521.162 and R645-301- 521.190, The Permittee must show the correct permit boundaries on Drawing R645-301-100, Permit Area Base Map. If the Permittee has that map in an AutoCAD, please provide the Division a copy. **Note:** This is the second request for this information. The Division will require these corrections as stipulations of the permit..... 19

SUMMARY OF DEFICIENCIES

R645-301-524, The permit must include steps taken to achieve compliance with blaster certification program (R645-301-524.100); preblasting survey for all blasts (R645-301-524.300); schedule of blasts (R645-301-524.400 and 524.460). Anticipated blast designs will be submitted for all blasts as required by R645-301-524.212. The criteria outlined in R645-301-524.230 will be included in the blast design submittal. The blast design will be prepared and signed by a certified blaster (R645-301-524.240)..... 98

R645-301-524.230, Correct the Blasting Plan to indicate that the pounds per delay must be limited by the scaled distance factor (absent monitoring) and not what might be a safe level for the control structure. 99

R645-301-524.440, Provide the Division with a proposed blasting schedule..... 99

R645-301-524.630, Include in the Blasting Plan periodic monitoring of the air blast frequency at the location of the Questar Gas pipeline 99

R645-301-527.123, The Permittee must remove the plan to retain an ancillary road in the White Oak Mine Complex. If the Permittee plans to leave a road then the road must be a primary road. All primary roads require certified designs. 123

R645-301-528.332, The Permittee must amend the noncoal waste disposal plan to include a letter from the Utah Department of Environmental Quality, Division of Solid and Hazardous Waste stating that the Permittee qualifies for disposal of asphalt on-site (permit by Rule 315-318) and to show landowner consent (postmining land use requirements). 76

R645-301-541.400, Details of the reclamation sequence of the Belina Haul Road and the White Oak Complex coal pad and Sediment Pond 004A..... 104

R645-301-542.200 and R645-301-553.210, Please address the effect of saturation on slope stability..... 118

R645-301-542.300, The Permittee must provide the Division with 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. 139

R645-301-731.311, How will Lodestar Energy identify spoil materials which may be detrimental to water quality or vegetation or public health and safety during Operations and Reclamation? 89

R645-301-731.611, provide detailed information on the materials to be used in the reclamation of Whisky Creek, specifically: the use, volumes, and location of native stream channel sediments and clay. 126

SUMMARY OF DEFICIENCIES

R645-301-731.720, Provide the necessary changes to the Belina Sediment Control Facilities Map (R645-301-731.720d) as cited; illustrate spillway for Pond D-1, correctly identify Stream Sample VC-4..... 41

R645-301-731.760, provide a stream profile illustrating the undisturbed stream, the highwall, the amount of fill, and connection back to the undisturbed stream channel..... 126

R645-301-742.221, On Map 742-310B and respective tables, adjust the weighted curve number used in Zone 4 to reflect the current surface facilities area. 89

R645-301-742.221, Provide Figure 731.750h - Dugout Pond D-1 Stage-Capacity Curves as stated on page 700-70 of 107..... 89

R645-301-742.322, provide calculations demonstrating the designed capacity of the reclaimed stream channel will be at least equal to the capacity of the unmodified stream channel. 126

R645-302-130, The Division requests additional information to make the findings required by R645-302-323 and R645-302-324. (See also requests for information under R645-301-728.100..... 144

R645-302-233, Further information is required (as requested in this technical analysis) before the operation can be considered in compliance with the R645-301 regulations. 145

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October 15, 2001

SUMMARY OF DEFICIENCIES

GENERAL CONTENTS

GENERAL CONTENTS

Regulatory Reference: Pub. L 95-87 Sections 507; 30 CFR 777 and 30 CFR 778.

IDENTIFICATION OF INTERESTS

Regulatory Reference: 30 CFR 773.22; 30 CFR 778.13; R645-301-112

Minimum Regulatory Requirements:

The operator of the coal mine and all owners and controllers of the operation must be identified by name and address. The Division with the Applicant/Violator System must crosscheck the information provided and other sources such as DOGM inspection and enforcement records, State corporation commission or tax records. If the Division identifies any errors in the ownership or control information, the applicant must be contacted to resolve the matter immediately. If the Division discovers that none of the persons identified in the application has had any previous mining experience, the applicant will be contacted to verify this fact.

The Applicant/Violator System will be updated with new information received by the Division.

Analysis:

The applicant and operator are Lodestar Energy, Inc., and the application includes the applicant's address, telephone number, employer identification number, and resident agent. It also shows who will pay the abandoned mine reclamation fee and lists the applicant's officers. Appendix 1-1 shows when the officers assumed their positions as required in R645-301-112.330.

All of the Lodestar Energy stock is owned by Lodestar Holding, Inc., which is owned by IRACOAL, Inc. Appendix 1-1 includes the names, addresses, social security numbers, and starting dates of the officers and directors of these companies. It also shows appropriate identification information for affiliated coal mining and reclamation operations. Some of the ownership and control information is new, and it needs to be checked in the Applicant/Violator System.

Tables 112.500 and 112.600 and Maps 112.500 and 112.600 of the current MRP show land ownership information. The address of the Oman's identified in Table 112.500 and Appendix 1-2 is different. The correct address on Table 112.500 must be verified.

Findings:

Information provided in the application is not considered adequate to meet the minimum Identification of Interests requirement of the regulations. Prior to approval, the Permittee must provide the following in accordance with:

R645-301-112.500, the correct address and current name for the Oman's must be provided in Table 112.500.

VIOLATION INFORMATION

Regulatory Reference: 30 CFR 773.15(b); 30 CFR 773.23; 30 CFR 778.14; R645-300-132; R645-301-113

Minimum Regulatory Requirements:

The application must inform the Division of any of the following:

- (1) State or Federal permits suspension or revocation
- (2) Bond or other security forfeiture in the last five years;
- (3) Any State or Federal violations received in the last three years by the applicant or any subsidiary, affiliate, or persons controlled by or under common control with the applicant. All outstanding violations (regardless of date) must also be disclosed.

The Division will review all available information and will not issue a permit if any operation owned or controlled by the applicant or linked to the applicant is in violation of SMCRA or the State Program or any State or Federal environmental law.

The Division will notify the applicant of the violation, suspension or forfeiture hindering their current application for permit and give the applicant an opportunity to rebut the findings. The Division will keep the Applicant Violator System updated.

Analysis:

According to the application, neither the applicant nor any of its subsidiaries or affiliates has had a federal or state permit suspended or revoked in the last five years, nor have they forfeited a reclamation bond or similar security deposited in lieu of bond. Recent violations issued to the applicant are shown in Appendix 1-1.

Findings:

Information in the proposal is adequate to meet the minimum Violation Information requirements of the Regulations.

RIGHT OF ENTRY

Regulatory Reference: 30 CFR 778.15; R645-301-114

Minimum Regulatory Requirements:

An application will contain a description of the documents upon which the applicant bases their legal right to enter and begin coal mining and reclamation operations in the permit area and will state whether that right is the subject of pending litigation. The description will identify the documents by type and date of execution, identify the specific lands to which the document pertains, and explain the legal rights claimed by the applicant.

Where the private mineral estate to be mined has been severed from the private surface estate, an applicant will also submit a copy of the written consent of the surface owner for the extraction of coal by certain coal mining and reclamation operations; a copy of the conveyance that expressly grants or reserves the right to extract coal by certain coal mining and reclamation operations; or if the conveyance does not expressly grant the right to extract the coal by certain coal mining and reclamation operations, documentation that under applicable Utah law, the applicant has the legal authority to extract the coal by those operations.

GENERAL CONTENTS

Analysis:

The surface contour mining will increase the disturbed area by 8.2 acres. The mining will disturb an additional 17.3 acres already within the disturbed area boundary of 60.9 acres. Total surface disturbance within the permit area is 151.0 acres. The project is on surface land owned by the Omans and Madsens. Appendix 1-2 of the MRP contains detailed right of entry information. The lease agreements allow underground and surface mining, surface facilities and reclamation (Appendix 1-2).

The Oman's lease agreement, dated September 17, 1996 refers to the surface facilities area as the "40-acre parcel". The Division was concerned the additional surface mining disturbance might exceed the 40 acres allowed in the surface lease agreement. David Miller, Lodestar Mining, checked the acreages and reported that the surface disturbance on the Oman's land is a "generous" 36.2 acres. The Oman's lease agreement requires that all trees cut by the mine which exceed 5 inches diameter must be trimmed and stacked on the west side of the state highway.

The coal is owned by Carbon County. Dennis Dooley, Carbon County, will monitor the coal lease for the county. Federal coal underlies the Madsen property in Pit 12 and 13. Lodestar does not own the rights to mine the federal coal. Plate 5-1C must show the federal coal boundary. The surface land must be surveyed and staked to clearly mark the boundary of federal coal.

Findings:

Information provided in the application is not considered adequate to meet the minimum Right of Entry requirements of the regulations. Prior to approval, the Permittee must provide the following in accordance with:

R645-301-114, R645-301-521.132 and R645-301-521.190, Plate 5-1C must show the federal coal boundary. The surface land must be surveyed and staked to clearly mark the boundary of federal coal. The application must commit to not mining the federal coal until leases are obtained.

LEGAL DESCRIPTION AND STATUS OF UNSUITABILITY CLAIMS

Regulatory Reference: 30 CFR Sections 778.16; 779.12(a); 779.24(a)(b)(c).
R645-300 Sections 121.120; 112.800; 141.
R645-301-115.

Minimum Regulatory Requirements:

The application will describe and identify the lands (on a map) subject to coal mining over the life of the operation, including the size, sequence, and timing of the mining anticipated and permit boundaries. Coal mining and reclamation operations may only occur on the lands identified on the maps submitted and that are subject to the performance bond.

A public notice advertisement will contain a map or description of the precise location and boundaries of the proposed

permit area. So that local residents can identify the area, the map must have a north arrow and may include local landmarks.

Analysis:

According to the current mining and reclamation plan, the permit area is not in an area designated as unsuitable for coal mining and reclamation activities. There are no occupied buildings within 300 feet and no cemeteries within 100 feet of the operations. State Road 96 is within 100 feet of the loadout. None of these is near the currently-proposed surface mining operations.

The current mining and reclamation plan includes maps showing the permit area boundaries, and the application shows the limits of the proposed operation within the existing disturbed area boundaries.

Findings:

Information in the proposal is adequate to meet the minimum Legal Description and Status of Unsuitability requirements of the Regulations.

PERMIT TERM

Regulatory References: 30 CFR 778.17; R645-301-116.

Minimum Regulatory Requirements:

The application will describe and identify the lands (on a map) subject to coal mining over the life of the operation, including the size, sequence, and timing of the mining anticipated and permit boundaries. Coal mining and reclamation operations may only occur on the lands identified on the maps submitted and that are subject to the performance bond.

A public notice advertisement will contain a map or description of the precise location and boundaries of the proposed permit area. So that local residents can identify the area, the map must have a north arrow and may include local landmarks.

Analysis:

The permit term would not change under the current proposal. The permit is due to expire in August 2004.

Findings:

Information in the proposal is adequate to meet the minimum Permit Term requirements of the Regulations.

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PUBLIC NOTICE AND COMMENT

Regulatory References: 30 CFR Sections 778.21; 773.13.
R645-300-120. R645-301-117.200.

Minimum Regulatory Requirements:

After the application has been determined administratively complete, an advertisement must be placed in a local newspaper of general circulation in the locality of the proposed surface coal mining and reclamation operation at least once a week for four consecutive weeks. A copy of the advertisement as it will appear in the newspaper will be submitted to the regulatory authority.

At a minimum, the following will be included in the ad:

- (1) The name and business address of the applicant.
- (2) A map or description
- (3) The location where a copy of the application is available for public inspection.
- (4) The name and address of the Division where written comments, objections, or requests for informal conferences on the application may be submitted.
- (5) If an applicant seeks a permit to mine within 100 feet of the outside right-of-way of a public road or to relocate or close a public road, except where public notice and hearing have previously been provided for this particular part of the road; a concise statement describing the public road, the particular part to be relocated or closed, and the approximate timing and duration of the relocation or closing.
- (6) If the application includes a request for an experimental practice, a statement indicating that an experimental practice is requested and identifying the regulatory provisions for which a variance is requested.

The Division will notify in writing local governmental agencies and all Federal or State governmental agencies involved in or with an interest in the permit process.

Documentation of the public notice and comment period required for the Permit should be incorporated as part of the Permit.

Analysis:

Since the Division determined this to be a significant revision, the applicant advertised the proposal in the *Price Sun Advocate*. Proof of publication is in Appendix 1-3. The advertisement was first published March 27, 2001, and the last publication was April 17, 2001. The public comment period expired May 17, 2001, and the Division received no comments.

Findings:

Information in the proposal is adequate to meet the minimum Public Notice and Comment requirements of the Regulations.

FILING FEE

Regulatory Reference: 30 CFR 777.17; R645-301-118.

Minimum Regulatory Requirements:

Each permit application to conduct coal mining and reclamation operations pursuant to the State Program will be accompanied by a fee of \$5.00.

Analysis:

According to Division directive Adm-003, the filing fee is only collected for new mines, so the applicant is not required to submit the filing fee.

Findings:

Information in the proposal is adequate to meet the minimum Filing Fee requirements of the Regulations.

PERMIT APPLICATION FORMAT AND CONTENTS

Regulatory Reference: 30 CFR 777.11; R645-301-120.

Analysis:

Plate R645-301-521.150 Sheet 4b of 4 is titled "Whisky Creek Surface Mine Surface Facilities". Is the contour mining of the barrier coal receiving a new name? The mine site is referred throughout the plan variously as the Belina Mine Site, the No. 1 and No. 2 Mines, the White Oak Complex and the Whisky Creek Mine No. 1.

Page O-15 states that the spoil storage area is shown on Figure 9 in Section 9 "Spoil Disposal Area". This should read Figure 9-3.

Findings:

Information provided in the proposed amendment is not considered adequate to meet the minimum Permit Application Format and Contents of the Regulations. Prior to approval, the Permittee must provide the following in accordance with:

R645-301-121.100, 1) Plate R645-301-521.150 Sheet 4b of 4 is titled "Whisky Creek Surface Mine Surface Facilities". Is the contour mining of the barrier coal receiving a new name? The mine site is referred throughout the plan variously as the Belina Mine Site, the No. 1 and No. 2 Mines, the White Oak Complex and the Whisky Creek Mine No. 1. **2)** Page O-15 states that the spoil storage area is shown on Figure 9 in Section 9 "Spoil Disposal Area". This should read Figure

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9-3. 3) Table 232a erroneously places the PC-1 soil and TC soil in the grassland/shrub vegetation category. These soils are Typic and Pachic Cryoborolls and are presently supporting aspen vegetation.

R645-301-131, Please add Mr. Dan Larsen, Soil Scientist with Environmental Industrial Services of Helper Utah to the list of consultants provided under Reporting of Technical Data on pages 1-11 and 1-12 of the MRP.

R645-301-122. Plate R645-301-521.150 (dated 1993) to determine islands of undisturbed ground within the Belina Mine site facilities area. The revised Plate R645-301-521.150 does not retain the complete information set. Would it be possible to retire the 1993 map to an appendix of the MRP to save the information for the next phase of operations?

ENVIRONMENTAL RESOURCE INFORMATION

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

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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 Engelmann 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 provided by the Permittee to describe and identify 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 Area2.6 acres
- Lower Haul Road22.7 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 69.2 acre Mine Complex disturbed area boundary, underground mining has 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. The total area to be surface mined is 29.4 acres (Plate R645-301-231.100). The total area of disturbance within the Mine Complex disturbed area boundary is 46.8 acres. See Section 114 of the MRP for additional details.

Of the 29.4 acres to be disturbed by surface mining, 16.6 acres will have topsoil to be removed prior to disturbance.

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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 August 20, 1993 and incorporated April 16, 1993. Drawing R645-301-100 does not show the 160-acre lease addition that was incorporated into the permit area on March 3, 2000. The Permittee needs to update Drawing R645-301-100. If they Permittee has that map in an AutoCAD format they must send a copy to the Division. Although the Permittee does not propose to change the permit boundaries in connection with the surface mining, the permit map must be updated.

Total area to be reclaimed at the White Oak Mine Complex is 25.7 acres according to Figure R-11.

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

Findings:

The information in the proposed significant revision is not adequate to meet the minimum permit area requirements of the Regulations. As a stipulation to the permit, the Permittee must provide the following in accordance with:

R645-301-521.162 and R645-301- 521.190, The Permittee must show the correct permit boundaries on Drawing R645-301-100, Permit Area Base Map. If the Permittee has that map in an AutoCAD, please provide the Division a copy. **Note:** This is the second request for this information. The Division will require these corrections as stipulations of the permit.

HISTORIC AND ARCHEOLOGICAL RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sections 779.12; 783.12. R645-301-411.

Minimum Regulatory Requirements:

Describe and identify the nature of cultural historic and archeological resources listed or eligible for listing on the National Register of Historic Places and known archeological sites within the proposed permit and adjacent areas. The description shall be based on all available information, including, but not limited to, information from the State Historic Preservation Officer and local archeological, historical, and cultural preservation groups.

Identify and evaluate important historic and archeological resources that may be eligible for listing on the National Register of Historic Places, through the collection of additional information, conduct of field investigations, or other appropriate analyses.

Analysis:

The application includes no new historic or archaeological resource information. The current mining and reclamation plan contains a copy of a report detailing survey work done in 1980. The survey included the current disturbed area where no cultural resource sites were found.

Findings:

Information in the proposal is adequate to meet the minimum historic and archeological resource information requirements of the regulations.

CLIMATOLOGICAL RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sections 779.18; 783.18. R645-301-724.

Minimum Regulatory Requirements:

Provide a statement of the climatological factors that are representative of the proposed permit area, including: the average seasonal precipitation; the average direction and velocity of prevailing winds; and, seasonal temperature ranges. Additional data may be requested as deemed necessary to ensure compliance other regulatory requirements.

Analysis:

The application states that the average annual precipitation is near 26 inches annually (Section 357 and Page R-7 of 37). Appendix 7-1 provides data from 1984 to 2000 from the Skyline Mine in Eccles Canyon. Average monthly precipitation for all twelve months of the year and average annual precipitation is provided. On the average over the last sixteen years there has been 25.23 inches of precipitation annually at the Skyline Mine. The range was between 17.24 inches in 1989 and 32.47 inches in 1996. Seven years out of the sixteen were either at or above the required 26 inches. Weather information will be updated periodically for the purpose of applying for a shortened bond release period.

Section 724.411 refers to Jeppson et al. (1968) 1 as noting that the area has a mean annual precipitation of approximately 30 inches. The MRP states in section 724.411, "The national weather service recording precipitation gauge installed in Eccles Canyon recorded 29.8 inches of rain and snowfall during 1980." The Information provided in Table 724.411 from Coastal States weather station for the years 1985 through 1990 indicates that the average annual precipitation for the location is 22 inches.

The present information does not substantiate the claim of an excess of 26 inches of annual precipitation.

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Findings:

Based on the information provided the liability period before bond release will remain ten years. The information provided in the proposed amendment is considered adequate to meet the Climatological requirements of the Regulations.

VEGETATION RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sections 779.19; 783.19. R645-301-320.

Minimum Regulatory Requirements:

Provide a map that delineates existing vegetative types and a description of the plant communities within the area affected by surface operations and facilities and within any proposed reference area. The description shall include information adequate to predict the potential for reestablishing vegetation. The map or aerial photograph is required, sufficient adjacent areas shall be included to allow evaluation of vegetation as important habitat for fish and wildlife for those species of fish and wildlife as identified under the fish and wildlife resource information.

Analysis:

Much of the disturbed area was disturbed before vegetation measurements were taken. Drawing R645-301-323.100 shows vegetation communities in the area. Near the mine surface facilities are aspen, spruce/fir, and grass/forb/elderberry communities. Vegetation cover and productivity information for these communities is included in Appendix 321.

The upper Whisky Creek riparian area disturbed with the surface mining is less than one third acre in size. A quantitative study of the upper Whisky Creek area was conducted in August 2001, prior to disturbance. Three sub-types occurred within this zone:

Sub-type	Length (feet)	Width (feet)
Riparian	236	10
Spruce	204	*
Rock transition	844	*

* not determined

The three sub-types were intermixed throughout the length of Whisky Creek. Only the riparian subtype was considered to be different enough from the already described vegetation types to warrant separation and analysis. The riparian sub-type had 66 percent vegetative cover. Sixty-six percent cover seems low for this vegetation type. JBR2 states in response to this low cover value:

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“Aerial cover estimates for grasses, rushes, and sedges in particular are basically basal cover, and many times may be overestimated. The Daubenmire frame utilized in the Whisky Creek sampling is very useful for focusing on the specific quadrat to obtain an accurate estimate of cover.”

The report in Appendix 3-1 is unclear if shrubs and trees were included in the JBR sampling for vegetative cover as required. The comment that UDOGM (S. White) directed shrub and tree species to be not measured is incorrect and must be removed. The Division did state that sampling for tree and shrub density in this portion of Whisky Creek was not required.

Information in the plan about other vegetation communities is adequate.

Findings:

Information in the proposal is not adequate to meet the minimum Vegetation Resource Information requirements of the Regulations. Prior to final approval, the applicant must supply the following information in accordance with:

R645-301-321, cover analysis for the vegetation in Whisky Creek must include tree and shrub species in the total cover when they occur. Appendix 3-1 must be clarified to read that the Division did not require tree and shrub density sampling.

FISH AND WILDLIFE RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sections 780.16; 784.21; 816.97; 817.97. R645-301-322.

Minimum Regulatory Requirements:

The application shall include fish and wildlife resource information for the permit area and adjacent area. The scope and level of detail for such information shall be determined by the Division in consultation with State and Federal agencies with responsibilities for fish and wildlife and shall be sufficient to design the protection and enhancement plan required under the operation and reclamation plan.

Site-specific resource information necessary to address the respective species or habitats shall be required when the permit area or adjacent area is likely to include:

- (1) Listed or proposed endangered or threatened species of plants or animals or their critical habitats listed by the Secretary under the endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.), or those species or habitats protected by similar State statutes;
- (2) Habitats of unusually high value for fish and wildlife such as important streams, wetlands, riparian areas, cliffs supporting raptors, areas offering special shelter or protection, migration routes, or reproduction and wintering areas; or
- (3) Other species or habitats identified through agency consultation as requiring special protection under State or Federal law.

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Analysis:

Wildlife Information

Fish and wildlife information is in Appendix 321. The plan includes macro invertebrate data for the South Fork of Eccles Creek, Eccles Creek both above and below Whisky Creek, the mouth of Eccles Creek, Mud Creek above Eccles Creek, and Mud Creek below Eccles Creek. The information includes community tolerance quotients for the various sampling times for these sites, but there is enough variability between the different sampling times it is impossible to judge whether there are any differences between the streams. The study indicates there had been some significant impacts on the community between 1976 and 1979 and even in just one year between 1979 and 1980. It also says there were stresses evident that would probably lead to future changes in the macro invertebrate communities. It would be very interesting to make these same measurements now to see if there have been effects over the last twenty years, but the Division has no reason to require further macro invertebrate studies at this time.

A raptor survey was done from the ground in 1980, and helicopter surveys have been done in the 1990's and most recently on May 22, 2001. The 1980 survey found Cooper's hawk and goshawk nests, but neither of these was near the mine surface facilities. Two raptor nests have been found in the helicopter surveys, but these nests are in the southeast part of the permit area. No nests have been found near the disturbed area.

There are several other bird species that nest in the area although none of these species are classified as being of high federal interest. Nearly all bird species are protected, however.

The area contains critical summer range for elk and deer and summer range for moose, but the only winter range is for moose in the riparian areas. There is habitat for several other mammal species. It is unlikely elk and deer actually use the area near the current disturbed area as calving and fawning habitat because of the activity at the mine. Otherwise, however, the aspen-covered slopes near Whisky Creek would be good habitat.

Some areas adjacent to Whisky Creek appear to have small wetlands, but, according to representatives of the Division of Water Rights, the Army Corps of Engineers normally only asserts jurisdiction over areas like this when the wetlands are larger or the overriding concern for protection is the wetlands. In this case, the primary concern is for Whisky Creek and to restore it and its small floodplain.

Threatened and Endangered Species

There are no threatened or endangered species known to occur in the immediate area although bald eagles could potentially migrate through. There are several state sensitive species with some likelihood of being in the area, including the American marten, Townsend's big-eared bat, northern goshawk, Williamson's sapsucker, three-toed woodpecker, Sonoran mountain kingsnake, and the Utah milk snake. The current mining and reclamation plan discusses these species and the likelihood that they are in the mine area. A discussion about these species follows.

According to the Utah Conservation Data Center, the permit area contains limited value habitat for the American marten. They occur in the montane ecological association, but since they tend to live in remote areas, it is unlikely they would be near the mine or would be adversely affected by the proposed operation.

Townsend's big-eared bats roost and hibernate in caves, mines, and old buildings, so although the area contains the type of habitat in which they live, the proposed mining would probably not adversely affect them.

Northern goshawks often nest in aspens or conifers in or near riparian areas. The area contains this type of habitat, but no goshawk nests have been found during raptor surveys of the area. Because goshawks tend to stay away from human activity, it is unlikely they would nest near the mine.

Williamson's sapsuckers are found primarily in the mountainous areas of the eastern two-thirds of Utah where it is an uncommon breeder. On its breeding grounds, the habitats used by this species are middle- to high-elevation coniferous forests and mixed deciduous-coniferous forests containing aspens. The foods of this species include insects, especially ants, and the sap of conifers and aspens. Although the Division has not attempted to contact an expert to positively determine whether the area near the mine site contains habitat for this species, the habitat described is essentially what occurs near the mine. The plan says, however, that Williamson's sapsuckers have not been found in the area.

Although habitat for three-toed woodpeckers is in the general area, the area that would be disturbed does not contain habitat for this species. Three-toed woodpeckers prefer forests of Ponderosa pine and other conifers at lower elevations than the disturbed area. They commonly nest and forage in burned areas.

Both the Sonoran mountain kingsnake and the Utah milk snake occur in montane areas and could be in the permit area. According to the mining and reclamation plan, no snake dens have been found in the area, and the applicant commits to report them if they are found.

Findings:

Information in the proposal is adequate to meet the minimum Fish and Wildlife Resource information requirements of the Regulations.

SOILS RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sections 779.21; 783.21; 816.22; 817.22; 816.200(c); 817.200 (c); 823. R645-301 Sections 220; 411.

Minimum Regulatory Requirements:

Provide adequate soil survey information on those portions of the permit area to be affected by surface operations or facilities consisting of a map delineating different soils, soil identification, soil description, and present and potential productivity of

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existing soils.

Where selected overburden materials are proposed as a supplement or substitute for topsoil, provide results of the analysis, trials and tests required. Results of physical and chemical analyses of overburden and topsoil must be provided to demonstrate that the resulting soil medium is equal to or more suitable for sustaining revegetation than the available topsoil, provided that trials and tests are certified by an approved laboratory. These data may be obtained from any one or a combination of the following sources: U.S. Department of Agriculture Soil Conservation Service published data based on established soil series; U.S. Department of Agriculture Soil Conservation Service Technical Guides; State agricultural agency, university, Tennessee Valley Authority, Bureau of Land Management or U.S. Department of Agriculture Forest Service published data based on soil series properties and behavior; or, results of physical and chemical analyses, field site trials, or greenhouse tests of the topsoil and overburden materials (soil series) from the permit area. If the Permittee demonstrates through soil survey or other data that the topsoil and unconsolidated material are insufficient and substitute materials will be used, only the substitute materials must be analyzed.

Analysis:

Soils resource information can be found in Volume 1/1, Page R-24; Volume 1/3, Section 200; Volume 2/3, Appendix 221; and Soils Map 223.100,

Soils Map 223.100 and Plate 2-1 from 1980 survey entitled, "Report of Vegetation, Threatened and Endangered Plant Species, Soils, and Reclamation Plans for Valley Camp of Utah, Inc., and Lease Area, Carbon - Emery Counties, Utah." All sample sites were located in the vicinity of the ValCam loadout and along Eccles Creek.

Soils Map 223.100 provides Order III level of information for the Belina Mine Complex. The soils within the mine pad area are labeled disturbed. The Taxonomic Classification table on pages 200-4 and 200-5 provides the map unit names for soils surrounding the disturbed area:

In the presently approved plan, Plate R645-301-521.150 Belina Mine Site Surface Facilities As-Built (dated 1993) illustrates the islands of undisturbed ground within the disturbed area. The revision of this map submitted with the proposal also shows undisturbed ground, but does not outline the areas of interim reclamation. They are included within the disturbed area boundary.

Specific information for the proposed disturbance associated with contour mining is found in Appendix 2-1, "Soil Inventory and Assessment White Oak Mine Reclamation and Barrier Coal Mining Carbon County, Utah." This study is dated June 12, 2001 and was conducted by Mr. Daniel M. Larsen, Soil Scientist with Environmental Industrial Services, Helper, Utah. The soils inventory was conducted according to the standards of the National Cooperative Soil Survey.

Within Appendix 2-1 Section G contains the laboratory soil testing data; Section H of Appendix 2-1 contains soil profile descriptions; Section I contains site and soil photographs. Map J-1 is the Soil Inventory Map and Map J-2 is the Topsoil Thickness Map.

The 2001 soil survey consisted of four backhoe pits. Soil pedons in each pit were described and sampled. Laboratory analysis was conducted by Inter-Mountain Laboratories,

Farmington, New Mexico and followed the 1988 Division of Oil, Gas and Mining, "Guidelines for Management of Topsoil and Overburden." In addition to the backhoe pits, the survey included 77 auger and spade sampling locations each spaced approximately 100 feet apart.

The dominant soils on the southeast facing slopes are classified as Pachic Cryoborolls³. A consociation of this soil is shown on map J-1 Soil Inventory Map as Units PC-1 and PC-2. Unit PC 1 has topsoil from 16 - 30 inches in depth and Unit PC 2 has topsoil from 30 - 40 inches in thickness. Map Unit PC1 and PC2 soils support stands of aspen. An inclusion in this unit is the sparsely vegetated slump Zone (Map Unit S2) soils which lack a defined topsoil layer.

On the north facing slopes Cryoboralf⁴ (Map Unit CBF) soils were mapped. The topsoil depth in these soils is 10 - 15 inches. They support spruce-fir vegetation. An inclusion of wetland soils (Map Unit AV) supports sedge vegetation.

Other map units that were noted were Typic Cryoborolls⁵ (Map Unit TC) with a topsoil layer of 12 - 16 inches supporting the grass-forb vegetation type. An inclusion of disturbed soils (Map Unit DZ) is mapped within the Typic Cryoborolls.

Table D1 outlines the soil depth in each map unit and the topsoil thickness along with soil texture, vegetation, slope and aspect and the estimated K values. Table F1 in Appendix 2-1 estimates 59,824 cubic yards could be salvaged from 20 acres prior to surface mining. This estimate was made in June 2001 before the September 2001 proposal to add 8.28 acres to the surface mining boundary.

Regulation R645-301-222.400 requires a report of present and potential productivity of existing soils. This information is found in Appendix 321.

Findings:

Information provided in the submittal is adequate to meet the minimum Soil Resources Information requirements of the Regulations.

3 "Pachic" for thick SubGroup, "Cryo" for icy cold Great Group, "bor" for cool SubOrder, "oll" for Mollisol Order. Mollisol soils are deep soils formed under grassland.

4 "Cryo" for icy cold Great Group, "bor" for cool SubOrder, "alf" for Alfisol Order. Alfisol soils have ochric (thin, light colored and low in organic matter) and argillic (clay accumulations) horizons, moderate to high base saturations and have plant available water for at least three months of each year.

5 "Typic" for typical of the Cryoboroll Great Group.

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LAND-USE RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sections 780.23; 784.15; 816.133; 817.133. R645-301-411.

Minimum Regulatory Requirements:

Provide a statement of the condition; capability, and productivity of the land that will be affected by surface operations and facilities within the proposed permit area.

Provide a map and supporting narrative of the uses of the land existing at the time of the filing of the application. If the premining use of the land was changed within 5 years before the anticipated date of beginning the proposed operations, the historic use of the land shall also be described.

The narrative of land capability and productivity must include the capability of the land before any mining to support a variety of uses, giving consideration to soil and foundation characteristics, topography, vegetative cover, and the hydrology of the area proposed to be affected by surface operations or facilities.

Describe the productivity of the area proposed to be affected by surface operations and facilities before mining, expressed as average yield of food, fiber, forage, or wood products from such lands obtained under high levels of management. The productivity shall be determined by yield data or estimates for similar sites based on current data from the U.S. Department of Agriculture, State agricultural universities, or appropriate State natural resources or agricultural agencies.

The application must state whether the proposed permit area has been previously mined. If so, provide the following information, if available: the type of mining method used; the coal seams or other mineral strata mined; the extent of coal or other minerals removed; the approximate dates of past mining; and, the uses of the land preceding mining.

The application shall provide a description of the existing land uses and land-use classifications under local law, if any, of the proposed permit and adjacent areas.

Analysis:

Before any mining, the land use for the loadout and mine areas was rangeland. A sawmill was located in the office area. The plan includes information about productivity in relation to the grazing use.

All of the permit area in Carbon County is zoned for recreation, forestry, and mining except for one 160-acre area zoned as "Critical Environmental." The portion of the permit area in Emery County is all zoned for recreation, forestry, and mining.

The plan contains information about previous mining activity in the area. There have historically been several mines in the vicinity, including one near the loadout. There was no previous mining activity at the White Oak Mine site.

Findings:

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

ALLUVIAL VALLEY FLOORS

Regulatory Reference: 30 CFR Sections 785.19; 822; R645-302-320.

Minimum Regulatory Requirements:

This section applies to surface coal mining and reclamation operations on areas or adjacent to areas including alluvial valley floors in the arid and semiarid areas west of the 100th meridian.

Alluvial valley floor determination

Permit applicants who propose to conduct surface coal mining and reclamation operations within a valley holding a stream or in a location where the permit area or adjacent area includes any stream, in the arid and semiarid regions of the United States, as an initial step in the permit process, may request the Division to make an alluvial valley floor determination with respect to that valley floor. The applicant shall demonstrate and the Division shall determine, based on either available data or field studies submitted by the applicant, or a combination of available data and field studies, the presence or absence of an alluvial valley floor. Studies shall include sufficiently detailed geologic, hydrologic, land use, soils, and vegetation data and analysis to demonstrate the probable existence of an alluvial valley floor in the area. The Division may require additional data collection and analysis or other supporting documents, maps, and illustrations in order to make the determination.

The Division shall make a written determination as to the extent of any alluvial valley floors within the area. The Division shall determine that an alluvial valley floor exists if it finds that unconsolidated streamlaid deposits holding streams are present; and there is sufficient water available to support agricultural activities as evidenced by the existence of current flood irrigation in the area in question; the capability of an area to be flood irrigated, based on evaluations of streamflow, water quality, soils, and topography; or, subirrigation of the lands in question derived from the ground-water system of the valley floor.

If the Division determines in writing that an alluvial valley does not exist pursuant to the requirements of this section, no further consideration of this section is required.

Analysis:

Alluvial valley floor determination

The Division's March 1984 Technical Analysis provides a summation of the history of the alluvial valley floor determination. In 1984, the Division stated that Whisky Canyon and Pleasant Valley above the Utah No. 2 facilities were observed by the Office of Surface Mining in August of 1983 to be too narrow for flood irrigation or subirrigation agricultural activities. Also in 1984, it was noted that the pastures below the Utah No. 2 Mine (ValCam Loadout) are flood irrigated and the grasses on the valley bottom may be subirrigated. Map R645-301-411.100 Premining Land Use Map shows the land use down stream of the Belina Mine Complex. Shown on this map, are two pastures along Mud Creek in Pleasant valley below the Utah No. 2 Mine (ValCam Load Out).

Thus, in accordance with R645-302-321.300, the Division finds that Whisky creek does not lie within the Alluvial Valley Floor. Furthermore, the Division finds as per R645-302-232.100 that this surface mining operation will not interrupt farming in the alluvial valley downstream of the surface mining activity.

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Findings:

The Division's 1984 determination that an alluvial valley floor exists in Pleasant Valley below the mine site remains unchanged. In accordance with R645-302-321.300, the Division finds that Whisky creek does not lie within the Alluvial Valley Floor. Furthermore, the Division finds as per R645-302-232.100 that this surface mining operation will not interrupt farming in the alluvial valley downstream of the surface mining activity.

PRIME FARMLAND

Regulatory Reference: 30 CFR Sections 785.17; 823. R645-301-221. R645-302-270.

Minimum Regulatory Requirements:

The U.S. Soil Conservation Service within each State shall establish specifications for prime farmland soil removal, storage, replacement, and reconstruction. The Division shall use the soil-reconstruction specifications to carry out its responsibilities under this section.

The requirements of this part shall not apply to:

- (1) Coal preparation plants, support facilities, and roads of surface and underground mines that are actively used over extended periods of time and where such uses affect a minimal amount of land.
- (2) Disposal areas containing coal mine waste resulting from underground mines that is not technologically and economically feasible to store in underground mines or on non-prime farmland. The operator shall minimize the area of prime farmland used for such purposes.
- (3) Prime farmland that has been excluded in accordance with any valid existing rights as indicated below.

This section applies to any person who conducts or intends to conduct surface coal mining and reclamation operations on prime farmland historically used for cropland. This section does not apply to:

- (1) Lands on which surface coal mining and reclamation operations are conducted pursuant to any permit issued prior to August 3, 1977; or
- (2) Lands on which surface coal mining and reclamation operations are conducted pursuant to any renewal or revision of a permit issued prior to August 3, 1977; or
- (3) Lands included in any existing surface coal mining operations for which a permit was issued for all or any part thereof prior to August 3, 1977, provided that: such lands are part of a single continuous surface coal mining operation begun under a permit issued before August 3, 1977; and the Permittee had a legal right to mine the lands prior to August 3, 1977, through ownership, contract, or lease but not including an option to buy, lease, or contract; and the lands contain part of a continuous recoverable coal seam that was being mined in a single continuous mining pit (or multiple pits if the lands are proven to be part of a single continuous surface coal mining operation) begun under a permit issued prior to August 3, 1977.

For purposes of this section, renewal of a permit means a decision by the Division to extend the time by which the Permittee may complete mining within the boundaries of the original permit, and revision of the permit means a decision by the Division to allow changes in the method of mining operations within the original permit area, or the decision of the Division to allow incidental boundary changes to the original permit. A pit shall be deemed to be a single continuous mining pit even if portions of the

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pit are crossed by a road, pipeline, railroad, or powerline or similar crossing. A single continuous surface coal mining operation is presumed to consist only of a single continuous mining pit under a permit issued prior to August 3, 1977, but may include non-contiguous parcels if the operator can prove by clear and convincing evidence that, prior to August 3, 1977, the non-contiguous parcels were part of a single permitted operation. For the purposes of this paragraph, clear and convincing evidence includes, but is not limited to, contracts, leases, deeds or other properly executed legal documents (not including options) that specifically treat physically separate parcels as one surface coal mining operation.

All permit applications, whether or not prime farmland is present, shall include the results of a reconnaissance inspection of the proposed permit area to indicate whether prime farmland exists. The Division in consultation with the U.S. Soil Conservation Service shall determine the nature and extent of the required reconnaissance inspection.

If the reconnaissance inspection establishes that no land within the proposed permit area is prime farmland historically used for cropland, the applicant shall submit a statement that no prime farmland is present. The statement shall identify the basis upon which such a conclusion was reached.

Analysis:

Section 221 of the application indicates that there are no prime farmlands within the mine area and refers to documentation from Mr. George D. Macmillan, State Conservationist, USDA Soil Conservation Service (May 28, 1982) in Appendix 2-2. This 1982 letter from Mr. George McMillan (signed by Harold Brown, in Mr. McMillan's absence) does not reference the site location.

The Division concurs that there are no prime farmlands at the Belina Mine site, due to the Land use capability classification of Class VIII – wherein use for plant production is precluded due to steepness of slope. The use of the land is limited to recreation, wildlife, water supply or aesthetic purposes.

However, the Division recognizes that prime farmlands do exist immediately downstream of the Valcam Loadout.

Findings:

The Division concurs with the Natural Resources Conservation Service (formerly the Soil Conservation Service) that the land within the permit boundary is not prime farmland.

GEOLOGIC RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sections 780.22; 784.22.
R645-301 Sections 623; 724.

Minimum Regulatory Requirements:

Each application shall include geologic information in sufficient detail to assist in: determining the probable hydrologic consequences of the operation upon the quality and quantity of surface and ground water in the permit and adjacent areas, including the extent to which surface- and ground-water monitoring is necessary; determining all potentially acid- or toxic-forming strata down to and including the stratum immediately below the coal seam to be mined; determining whether reclamation can be accomplished and whether the proposed operation has been designed to prevent material damage to the hydrologic balance

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outside the permit area; and, preparing the subsidence control plan.

Geologic information shall include, at a minimum, a description of the geology of the proposed permit and adjacent areas down to and including the deeper of either the stratum immediately below the lowest coal seam to be mined or any aquifer below the lowest coal seam to be mined which may be adversely impacted by mining. This description shall include the areal and structural geology of the permit and adjacent areas, and other parameters which influence the required reclamation and it shall also show how the areal and structural geology may affect the occurrence, availability, movement, quantity, and quality of potentially impacted surface and ground water. It shall be based on maps and plans required as resource information for the plan, detailed site specific information as required below, and, geologic literature and practices.

For any portion of a permit area in which the strata down to the coal seam to be mined will be removed or are already exposed, samples shall be collected and analyzed from test borings; drill cores; or fresh, unweathered, uncontaminated samples from rock outcrops down to and including the deeper of either the stratum immediately below the lowest coal seam to be mined or any aquifer below the lowest coal seam to be mined which may be adversely impacted by mining. The analyses shall result in the following:

- (1) Logs showing the lithologic characteristics including physical properties and thickness of each stratum and location of ground water where occurring;
- (2) Chemical analyses identifying those strata that may contain acid- or toxic-forming, or alkalinity-producing materials and to determine their content, except that the Division may find that the analysis for alkalinity-producing material is unnecessary; and
- (3) Chemical analysis of the coal seam for acid- or toxic-forming materials, including the total sulfur and pyritic sulfur, except that the Division may find that the analysis of pyritic sulfur content is unnecessary.

For lands within the permit and adjacent areas where the strata above the coal seam to be mined will not be removed, samples shall be collected and analyzed from test borings or drill cores to provide the following data:

- (1) Logs of drill holes showing the lithologic characteristics, including physical properties and thickness of each stratum that may be impacted, and location of ground water where occurring;
- (2) Chemical analyses for acid- or toxic-forming or alkalinity-producing materials and their content in the strata immediately above and below the coal seam to be mined;
- (3) Chemical analyses of the coal seam for acid- or toxic-forming materials, including the total sulfur and pyritic sulfur, except that the Division may find that the analysis of pyrite sulfur content is unnecessary; and
- (4) For standard room-and-pillar mining operations, the thickness and engineering properties of clays or soft rock such as clay shale, if any, in the stratum immediately above and below each coal seam to be mined.

If determined to be necessary to protect the hydrologic balance, to minimize or prevent subsidence, or to meet the performance standards, the Division may require the collection, analysis, and description of additional geologic information.

An applicant may request the Division to waive in whole or in part the requirements of the borehole information or analysis required of this section. The waiver may be granted only if the Division finds in writing that the collection and analysis of such data are unnecessary because other information having equal value or effect is available to the Division in a satisfactory form.

Analysis:

As outlined in R645-301-622, the applicant will include cross sections, maps and plans showing the nature, depth, and thickness of coal seams to be mined, each stratum of the overburden, and the stratum immediately below the lowest coal seam to be mined.

Sections 624.200 through 624.320 have been revised to reflect surface mining activities. Appendix 6-1 (Summary of Results on Toxicity Tests for Barrier Coal Test Hole BCC-1)

provides sufficient chemical analysis to determine all potentially acid- or toxic-forming, or alkalinity producing strata down to and including the stratum immediately below the coal seam to be mined.

Findings:

Information in the application is adequate to meet the requirements of the Geologic Resource Information section of the regulations.

HYDROLOGIC RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sections. 701.5; 780.21; 784.14; 816.41; 817.41.
R645-100-200. R645-301-724.

Minimum Regulatory Requirements:

Sampling and Analysis.

All water-quality analyses performed to meet the requirements of this section shall be conducted according to the methodology in the 15th edition of "Standard Methods for the Examination of Water and Wastewater," which is incorporated by reference, or the methodology in 40 CFR Parts 136 and 434. Water-quality sampling shall be conducted according to either methodology listed above when feasible. This incorporation, by reference, was approved by the Director of the Federal Register on October 26, 1983. This document is incorporated as it exists on the date of the approval, and a notice of any change in it will be published in the Federal Register.

Baseline information.

The application shall include the following baseline hydrologic information, and any additional information required by the Division.

- (1) Ground-water information. Provide location and ownership information for existing wells, springs, and other ground-water resources, seasonal quality and quantity of ground water, and usage within the permit and adjacent areas. Water-quality descriptions shall include, at a minimum, total dissolved solids or specific conductance corrected to 25 C, pH, total iron, and total manganese. Ground-water quantity descriptions shall include, at a minimum, approximate rates of discharge or usage and depth to the water in the coal seam, and each water-bearing stratum above and potentially impacted stratum below the coal seam.
- (2) Surface-water information. The name, location, ownership, and description of all surface-water bodies such as streams, lakes, and impoundments, the location of any discharge into any surface-water body in the proposed permit and adjacent areas, and information on surface-water quality and quantity sufficient to demonstrate seasonal variation and water usage. Water-quality descriptions shall include, at a minimum, baseline information on total suspended solids, total dissolved solids or specific conductance corrected to 25 C, pH, total iron, and total manganese. Baseline acidity and alkalinity information shall be provided if there is a potential for acid drainage from the proposed mining operation. Water-quantity descriptions shall include, at a minimum, baseline information on seasonal flow rates.
- (3) Supplemental information. If the determination of the probable hydrologic consequences (PHC) indicates that adverse impacts on or off the proposed permit area may occur to the hydrologic balance, or that acid-forming or toxic-forming material is present that may result in the contamination of ground-water or surface-water supplies, then supplemental information shall be provided to evaluate such probable hydrologic consequences and to plan remedial and reclamation activities. Such supplemental information may be based upon drilling, aquifer tests, hydro-geologic analysis of the water-bearing strata, flood flows, or analysis of other water-quality or quantity characteristics.

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Baseline cumulative impact area information.

- (1) Hydrologic and geologic information for the cumulative impact area necessary to assess the probable cumulative hydrologic impacts of the proposed operation and all anticipated mining on surface- and ground-water systems shall be provided if available from appropriate Federal or State agencies.
- (2) If this information is not available from such agencies, then the applicant may gather and submit this information as part of the permit application.
- (3) The permit shall not be approved until the necessary hydrologic and geologic information is available.

Modeling.

The use of modeling techniques, interpolation, or statistical techniques may be included as part of the permit application, but actual surface- and ground-water information may be required for each site even when such techniques are used.

Probable hydrologic consequences determination.

- 1.) The application shall contain a determination of the probable hydrologic consequences (PHC) of the proposed operation based upon the quality and quantity of surface and ground water under seasonal flow conditions for the proposed permit and adjacent areas.
- 2.) The PHC determination shall be based on baseline hydrologic, geologic, and other information collected for the permit application and may include data statistically representative of the site.
- 3.) The PHC determination shall include findings on: whether adverse impacts may occur to the hydrologic balance; whether acid-forming or toxic-forming materials are present that could result in the contamination of surface or ground water supplies; and, what impact the proposed operation will have on sediment yield from the disturbed area; acidity, total suspended and dissolved solids, and other important water quality parameters of local impact; flooding or streamflow alteration; ground water and surface water availability; and other characteristics as required.
- 4.) An application for a permit revision shall be reviewed by the Division to determine whether a new or updated PHC shall be required.

Ground-water monitoring plan.

- 1.) The application shall include a ground-water monitoring plan based upon the PHC determination and the analysis of all baseline hydrologic, geologic, and other information in the permit application. The plan shall provide for the monitoring of parameters that relate to the suitability of the ground water for current and approved postmining land uses and to the objectives for protection of the hydrologic balance. It shall identify the quantity and quality parameters to be monitored, sampling frequency, and site locations. It shall describe how the data may be used to determine the impacts of the operation upon the hydrologic balance. At a minimum, total dissolved solids or specific conductance corrected to 25 C, pH, total iron, total manganese, and water levels shall be monitored and data submitted to the Division at least every 3 months for each monitoring location. The Division may require additional monitoring.
- 2.) If an applicant can demonstrate by the use of the PHC determination and other available information that a particular water-bearing stratum in the proposed permit and adjacent areas is not one which serves as an aquifer which significantly ensures the hydrologic balance within the cumulative impact area, then monitoring of that stratum may be waived by the Division.

Surface-water monitoring plan.

- 1.) The application shall include a surface-water monitoring plan based upon the PHC determination and the analysis of all baseline hydrologic, geologic, and other information in the permit application. The plan shall provide for the monitoring of parameters that relate to the suitability of the surface water for current and approved postmining land

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- uses and to the objectives for protection of the hydrologic balance, as well as the effluent limitations found at 40 CFR Part 434.
- 2.) The plan shall identify the surface-water quantity and quality parameters to be monitored, sampling frequency, and site locations. It shall describe how the data may be used to determine the impacts of the operation upon the hydrologic balance. At all monitoring locations in streams, lakes, and impoundments that are potentially impacted or into which water will be discharged and at upstream monitoring locations, the total dissolved solids or specific conductance corrected to 25 C, total suspended solids, pH, total iron, total manganese, and flow shall be monitored. For point-source discharges, monitoring shall be conducted in accordance with 40 CFR Parts 122, 123, and 434 and as required by the National Pollutant Discharge Elimination System permitting authority.
 - 3.) The monitoring reports shall be submitted to the Division every 3 months. The Division may require additional monitoring.

Analysis:

Sampling and Analysis

A modification of the Sampling and Analysis is not necessary

Baseline Information

The baseline currently available is sufficient for the proposed significant revision.

Ground-water Information

A modification of the Ground-water Information is not necessary.

Surface Water Information

No additional surface water information is necessary for the proposed significant revision since the majority of the activity is within the disturbed area boundary. Surface water sampling site VC-4, was moved due to the disturbance. This required adjustments to other sections of the MRP outlined below.

Alternative Water Source Information

The applicant anticipates that the proposed surface coal mining and reclamation activity will not result in contamination, diminution, or interruption of a surface water source.

Probable Hydrologic Consequences Determination

The applicant addressed the probable hydrologic consequences of the surface mining in the area and has determined there will be no detrimental impact to hydrologic regime. Minimal impact to water quality was supported through Appendix 6-1 (Summary of Results of Toxicity Tests) which determined the over-burden, inter-burden, and under-burden have a high net neutralizing potential, suggesting very little probability for acid or toxic mine drainage.

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The applicant anticipates minimal long-term affects to the water quantity delivery. It is anticipated surface mining operation will disrupt the water flow through the area during the mining and reclamation of the site. The water flows will report to sedimentation ponds before reporting to Whisky Creek. The springs and seeps in the area of the surface disturbance will also be disrupted for a period of time during the operation and reclamation. This water is anticipated to potentially surface at a lower elevation or at the toe of the reclaimed slope before entering Whisky Creek.

Findings:

Information in the application is adequate to meet the requirements of the Hydrologic Resource Information section 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

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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 known 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.

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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.

On September 10, 2001, the Division received Map R645-301-521.150 Sheet 4A of 4, Belina Mine Site Underground Surface Facilities Asbuilt. The map shows the proposed change in the disturbed area boundaries at the main mine facilities.

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 Maps 521.122 and 521.124 sheets 1 through 4.

Existing Surface Configuration Maps

Surface Facilities Associated with Underground Mining

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.

Surface Mining

There are several maps in the MRP that show the pre-surface mining contours. The maps are either at a scale of 1" = 200' or 1" = 100'. Map R645-301-521.150 was received on August 5, 1993 and incorporated into MRP. The map is at a scale of 1" = 200' and show the entire mine site. Figure R-11 in Appendix R2 shows the existing (pre-surface mining contours) and cross sections. The cross sections are on centers that range from 350' to 550'.

The surface contour maps should be at a scale of 1" = 100' and the cross sections are on 100' centers. The pre-mining, operational, and reclamation maps should be at the same scales and the cross sections on the same centerlines the Permittee.

The Permittee has maps that show the contours with the north arrow oriented at different directions relative to the paper. Map R645-301-527 shows the entire mine site while other maps only show part of the disturbed area. The Division needs to see the entire disturbed area; therefore the Permittee should orient the map so that the entire disturbed area is shown

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The Permittee must state on the map that the contours and cross sections represent the pre-surface mining topography and cross sections. The contour must extend a minimum of 100 feet from the disturbed area boundaries. The map must also have a coordinate system such as the state plane, which is used on other surface facilities maps. The pre-disturbed location of Whisky Creek must also be shown along with other pertinent features on the pre-surface mining topographic maps.

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

Since the permit area map (Drawing R645-301-100, Permit Area Base Map) does not show the correct permit area the Permittee must make the changes outlined in the permit area section of this TA.

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.

Monitoring Sampling Location Maps

Surface sample VC-4 will be eliminated or moved because it will be located within the proposed disturbed area, and no longer represent undisturbed flow within Whisky Creek. Sample site VC-4 was moved approximately 280-ft upstream which is not noticeable significant change on Map R645-301-722.100a (Ground and Surface Water Sampling Locations) due to the 1:24,000 scale. The change in site location for VC-4 is noted on Map R645-301-731.720d (Belina Sedimentation Control Facilities).

The Belina Sediment Control Facilities map (R645-301-731.720d) needs to illustrate a spillway/discharge point from Pond D-1. Also on the Belina Sediment Control Facilities map, Stream Sample VC-4 is mis-labeled as VC-1, which also needs to be corrected.

Archeological Site Maps

The archaeological report in Appendix 411.140 includes a map showing the locations of historic sites found during the survey. None of these would be affected by the proposed operation. The information is considered adequate to address the requirements of this section of the regulations.

Cultural Resource Maps

Drawing R645-301-411.100 is a pre-mining land use map and shows county zoning classifications and other land uses in the general area. According to this map, there are no public parks or lands within the boundaries of the National System of Trails or the Wild and Scenic Rivers System within the permit and adjacent areas. There are also no cemeteries within 100 feet of the permit area.

Vegetation Reference Area Maps

Drawing R645-301-323.100 is a map of the vegetation communities in the permit area, and it also shows two specific reference areas near the mine complex (in addition to a reference area near the loadout). While this would be acceptable, it is in conflict with the text of the plan that indicates a large area could be used as a reference area. According to page R-32 of 37 and Table R-2, revegetation success will be judged on the basis of comparison with reference areas. For the mine complex, the reference areas are those areas devoid of man's activities that have at least a 100-foot buffer zone from disturbed areas. Specific reference areas will be chosen using a statistically based method from a grid of areas in proximity to the disturbed area and with similar characteristics, such as elevation, slope and aspect. Either the text or the map needs to be modified to be consistent.

Findings:

The information in the proposed Significant Revision is not considered adequate to meet the requirements Maps, Plans, and Cross Sections Resource Information section of the regulations. Prior to approval, the Permittee must provide the following in accordance with:

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R645-301-521.162 and R645-301- 521.190, The Permittee must show the correct permit boundaries on Drawing R645-301-100, Permit Area Base Map. If the Permittee has that map in an AutoCAD format, please provide the Division with a copy. Note: the Division will not require the Permittee to correct those errors as part to the surfacing mining amendment.

R645-301-323, The text that discusses the locations of the reference areas needs to be consistent with Drawing R645-301-323.100 which shows specific reference area locations

R645-301-731.720, Provide the necessary changes to the Belina Sediment Control Facilities Map (R645-301-731.720d) as cited; illustrate spillway for Pond D-1, correctly identify Stream Sample VC-4

R645-301-323, the text that discusses the locations of the reference areas needs to be consistent with Drawing R645-301-323.100. The drawing shows specific reference area locations

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October 15, 2001

ENVIRONMENTAL RESOURCE INFORMATION

OPERATION PLAN

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

In section 523.200 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 report 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 has 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 been exhausted. The Permittee wants to recover some of the barrier coal by surface mining. That type of surface mining is called contour mining.

OPERATION PLAN

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 mine plan is shown on Plate 5-1C. The Federal Government owns a small portion of the coal scheduled to be mined. The Permittee will have to get Federal approval before mining Federal coal.

The Permittee has not identified the areas of Federal Coal on Plate 5-1C or any other map with sufficient accuracy for the Division to determine what areas within the surface mine are Federally owned. To avoid confusion the Permittee must identify Federally owned coal on Plate 5-1C and commit to stake the boundary before mining.

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-1 and the hydrologic section

Findings:

The information in the proposed significant revision is not considered adequate to meet the requirements of the mining operations and facilities section of the regulations. In accordance with R645-301-521.132 and R645-301-521.1901, the Permittee must show on Plate 5-1C the location of the boundary for all federally owned coal. The Permittee must also commit to stake the federally owned coal before mining. This Deficiency has been previously stated under R645-301-114.

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.

OPERATION PLAN

Findings:

The Permittee has met the minimum regulatory requirements of this section.

PROTECTION OF PUBLIC PARKS AND HISTORIC PLACES

Regulatory Reference: 30 CFR Sections 780.31; 784.17. R645-301-411.

Minimum Regulatory Requirements:

For any publicly owned parks or any places listed on the National Register of Historic Places that may be adversely affected by the proposed operation, each plan shall describe the measures to be used to prevent adverse impacts, or if valid existing rights exist or joint agency approval is to be obtained, to minimize impacts.

The Division may require the applicant to protect historic and archeological properties listed on or eligible for listing on the National Register of Historic Places through appropriate mitigation and treatment measures. Appropriate mitigation and treatment measures may be required to be taken after permit issuance provided that the required measures are completed before the properties are affected by any mining operation.

Analysis:

The proposed area to be mined does not contain any known cultural resources, so no protection plan is needed. A standard permit stipulation requires the applicant to stop all activities and notify the Division if any cultural resources are found.

Findings:

Information in the proposal is adequate to meet the minimum requirements of the protection of public parks and historic places section of the regulations.

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.

AIR POLLUTION CONTROL PLAN

Regulatory Reference: 30 CFR Sections 780.15; 816.95; 817.95.
R645-301 Sections 244; 420.

Minimum Regulatory Requirements:

For all surface operations associated with mining activities, the application shall contain an air pollution control plan which includes the following: an air quality monitoring program, if required by the Division, to provide sufficient data to evaluate the effectiveness of the fugitive dust control practices to comply with applicable Federal and State air quality standards; and, a plan for fugitive dust control practices such that all exposed surface areas shall be protected and stabilized to effectively control erosion and air pollution attendant to erosion.

Analysis:

Appendix 4-1 contains a copy of the cover letter submitting a Notice of Intent for an Air Quality Permit to the Division of Air Quality. The Notice of Intent should be replaced with the approved Air Quality Approval Order when available.

Section 420, Air Quality, is a fugitive dust control plan for the surface mining operations. The plan calls for:

- Watering of the pit and ramps out of the pit during warm weather.
- Controlling the size of blast according to MSHA.
- Rocking and grading of the pit access to reduce fine airborne particulates.

Watering of the pit and ramps during warm weather suggests watering will only occur in the summer. This statement must be modified so watering will occur at any time feasible.

Findings:

Information in the proposal is not adequate to meet the minimum Air Pollution Control Plan requirements of the Regulations. Prior to final approval, the applicant must supply the following information in accordance with:

R645-301-424, the fugitive dust control plan must be modified so pits and ramps will be watered when temperatures allow and not just during warm weather.

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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.

Underground mining at the WhiteOak No. 2 Mine was completed in September 2001. Access to the portals is blocked by chain link fencing. During surface mining, the debris from the demolition of structures will be pushed into the openings and then overburden will be pushed over to cover the debris, exposing the first two rows of pillars. Coal from these pillars will be recovered. Access to the underground portion of the mines will be restricted during surface mining. The final seals on the No. 2 mine will be constructed after surface mining is completed.

Coal will be loaded into tandem belly-dump coal trucks and transported to the Valcam Loadout Facility storage pad (Section 528).

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'Connor 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.

Based upon the spot market prices for Utah as noted in the September 3, 2001 Coal Outlook⁶ this coal is valued at \$23.00/Ton. The range for the year was between \$15.25/ton to \$23.00/ton based upon 11,800 Btu/lb and 0.8 lbs/mmBtu of sulfur dioxide. At the current value, the total reserve of coal to be contour mined is worth \$17,779,000.

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.

⁶ "Coal Outlook." V. 25 No. 36. Monday September 3, 2001. (Financial Times Energy: Arlington, VA).

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.

The logistics of snow removal and storage during coal recovery and the effects of snow saturation on the backfilling and compacting reclamation grading have been discussed on page 500-13.

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

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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.

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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.

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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.

FISH AND WILDLIFE INFORMATION

Regulatory Reference: 30 CFR Sections 780.16; 784.21, 784.21; 816.97; 817.97.
R645-301 Sections 322; 333; 342; 358.

Minimum Regulatory Requirements:

Protection and enhancement plan

Each application shall include a description of how, to the extent possible using the best technology currently available, the operator will minimize disturbances and adverse impacts on fish and wildlife and related environmental values, including compliance with the Endangered Species Act, during the surface coal mining and reclamation operations and how enhancement of these resources will be achieved where practicable. This description shall apply, at a minimum, to species and habitats identified. The description shall include: protective measures that will be used during the active mining phase of operation. Such measures may include the establishment of buffer zones, the selective location and special design of haul roads and powerlines, and the

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monitoring of surface water quality and quantity; and, enhancement measures that will be used during the reclamation and postmining phase of operation to develop aquatic and terrestrial habitat. Such measures may include restoration of streams and other wetlands, retention of ponds and impoundments, establishment of vegetation for wildlife food and cover, and the placement of perches and nest boxes. Where the plan does not include enhancement measures, a statement shall be given explaining why enhancement is not practicable.

Each operator shall, to the extent possible using the best technology currently available: ensure that electric powerlines and other transmission facilities used for, or incidental to, underground mining activities on the permit area are designed and constructed to minimize electrocution hazards to raptors, except where the Division determines that such requirements are unnecessary; locate and operate haul and access roads so as to avoid or minimize impacts on important fish and wildlife species or other species protected by State or Federal law; design fences, overland conveyors, and other potential barriers to permit passage for large mammals except where the Division determines that such requirements are unnecessary; and, fence, cover, or use other appropriate methods to exclude wildlife from ponds which contain hazardous concentrations of toxic-forming materials.

Endangered and threatened species

No underground mining activity shall be conducted which is likely to jeopardize the continued existence of endangered or threatened species listed by the Secretary or which is likely to result in the destruction or adverse modification of designated critical habitats of such species in violation of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.). The operator shall promptly report to the Division any State- or federally-listed endangered or threatened species within the permit area of which the operator becomes aware. Upon notification, the Division shall consult with appropriate State and Federal fish and wildlife agencies and, after consultation, shall identify whether, and under what conditions, the operator may proceed.

Bald and golden eagles

No underground mining activity shall be conducted in a manner which would result in the unlawful taking of a bald or golden eagle, its nest, or any of its eggs. The operator shall promptly report to the Division any golden or bald eagle nest within the permit area of which the operator becomes aware. Upon notification, the Division shall consult with the U.S. Fish and Wildlife Service and also, where appropriate, the State fish and wildlife agency and, after consultation, shall identify whether, and under what conditions, the operator may proceed.

Nothing in these regulatory requirements shall authorize the taking of an endangered or threatened species or a bald or golden eagle, its nest, or any of its eggs in violation of the Endangered Species Act of 1973, as amended, 16 U.S.C. 1531 et seq., or the Bald Eagle Protection Act, as amended, 16 U.S.C. 668 et seq.

Wetlands and habitats of unusually high value for fish and wildlife

The operator conducting underground mining activities shall avoid disturbances to, enhance where practicable, restore, or replace, wetlands and riparian vegetation along rivers and streams and bordering ponds and lakes. Underground mining activities shall avoid disturbances to, enhance where practicable, or restore habitats of unusually high value for fish and wildlife.

Analysis:

Protection and enhancement plan

The fish and wildlife protections plan has not been changed in this proposal. According to the current plan, the Division of Wildlife Resources takes macro invertebrate and habitat measurements and fish samples annually. The plan leaves open the possibility of future sampling in other creeks in the area but does not commit to it.

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According to a representative of Wildlife Resources, they have not taken samples in Eccles Creek in several years although he said it would be good to have this information to compare to data from previous samples. The plan needs to be modified to correctly indicate the current status of monitoring in Eccles Creek.

The plan contains several commitments about personnel training, reclamation habitat enhancement, and avoiding disturbances to streams and riparian areas. During surface mining and early reclamation all flow from upper Whisky Creek will pass through a sediment pond prior to entering the stream. This should control most downstream sediment.

Endangered and threatened species

Through water depletions, the mine has the potential of adversely affecting four threatened and endangered fish species of the upper Colorado River. The current mining and reclamation plan has some discussion about effects of underground mining on both water quality and the amount of water available. The surface mine is expected to use about 1.3 acre-feet of water annually from dust suppression. A mitigation fee is required when the annual depletion exceeds 100 acre-feet.

There is little or no likelihood of adversely affecting any other listed threatened or endangered species, but, as discussed in the environmental resource information section of this review, there is a chance Williamson's sapsuckers, a sensitive species, could be in the area. Nearly all birds are protected by either state or federal law, so "taking" them, through killing them directly, by destroying an active nest, or other means, is illegal. Probably the easiest way to avoid this problem is to do the mining outside the nesting season, but the application does not include a mining schedule. Because the applicant does not yet have approval for the mining operation, it may be difficult to establish a schedule, but it should be possible to commit to not beginning the operation or tree cutting associated with it between about April and July. If this is not possible, the Division will need to consider other protection and mitigation options that might be available.

Bald and golden eagles

Although bald eagles could occasionally fly through the area and some may winter in the Scofield area, the proposed operations are not expected to have effects on bald eagles. No golden eagle nests have been found in either helicopter or ground surveys in the immediate area although it is possible there are some nests nearby. Two raptor nests found in 1998 near Boardinghouse Canyon were classified as red-tailed hawk and unidentified buteo nests. Annual helicopter monitoring for cliff nesting raptors was conducted from 1993 through 2001. Helicopter surveys were suspended in 2001.

Wetlands and habitats of unusually high value for fish and wildlife

It appears there are small wetlands associated with Whisky Creek, but, as discussed in the resource information section of this technical analysis, they are not large enough to be regulated

by the Army Corps of Engineers. The applicant will need to reclaim them as far as possible in the reclamation process.

Other habitats of unusually high value will either not be damaged, would be protected by following commitments in the existing mining and reclamation plan, or will be protected by following commitments the Division is requiring.

Findings:

Information provided in the application meets the minimum Fish and Wildlife Information requirements of the regulations.

TOPSOIL AND SUBSOIL

Regulatory Reference: 30 CFR Sections 816.22; 817.22; R645-301-230.

Minimum Regulatory Requirements:

Topsoil removal and storage

All topsoil shall be removed as a separate layer from the area to be disturbed, and segregated. Where the topsoil is of insufficient quantity or of poor quality for sustaining vegetation, the selected overburden materials approved by the Division for use as a substitute or supplement to topsoil shall be removed as a separate layer from the area to be disturbed, and segregated. If topsoil is less than 6 inches thick, the operator may remove the topsoil and the unconsolidated materials immediately below the topsoil and treat the mixture as topsoil.

The Division may choose not to require the removal of topsoil for minor disturbances which occur at the site of small structures, such as power poles, signs, or fence lines; or, will not destroy the existing vegetation and will not cause erosion.

All materials shall be removed after the vegetative cover that would interfere with its salvage is cleared from the area to be disturbed, but before any drilling, blasting, mining, or other surface disturbance takes place.

Selected overburden materials may be substituted for, or used as a supplement to, topsoil if the operator demonstrates to the Division that the resulting soil medium is equal to, or more suitable for sustaining vegetation than, the existing topsoil, and the resulting soil medium is the best available in the permit area to support revegetation.

Materials removed shall be segregated and stockpiled when it is impractical to redistribute such materials promptly on regraded areas. Stockpiled materials shall: be selectively placed on a stable site within the permit area; be protected from contaminants and unnecessary compaction that would interfere with revegetation; be protected from wind and water erosion through prompt establishment and maintenance of an effective, quick growing vegetative cover or through other measures approved by the Division; and, not be moved until required for redistribution unless approved by the Division.

Where long-term surface disturbances will result from facilities such as support facilities and preparation plants and where stockpiling of materials would be detrimental to the quality or quantity of those materials, the Division may approve the temporary distribution of the soil materials so removed to an approved site within the permit area to enhance the current use of that site until needed for later reclamation, provided that: such action will not permanently diminish the capability of the topsoil of the host site; and, the material will be retained in a condition more suitable for redistribution than if stockpiled.

The Division may require that the B horizon, C horizon, or other underlying strata, or portions thereof, be removed and

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segregated, stockpiled, and redistributed as subsoil in accordance with the above requirements if it finds that such subsoil layers are necessary to comply with the revegetation.

Analysis:

Removal and Storage

The application indicates in Section 232, Topsoil and Subsoil Removal, that the entire depth of the topsoil horizon will be removed or if the topsoil is less than six inches in depth, then a layer that is six inches will be removed. The application further states that clearing and grubbing operations will precede the topsoil salvage.

The application indicates in Section 523, Mining Methods, that the topsoil salvage operation will be dependent upon the weather. Initial topsoil storage will start with the VSM material and a portion of the topsoil above the bathhouse. The remaining topsoil will be recovered in the spring and early summer for storage ahead of the mining process.

The Permittee is reminded that soil aggregate structure is impacted by several factors which include: handling, compaction and moisture. Care should be taken to limit the number of times that the soil is traversed during grubbing of vegetation. To avoid excessive compaction and loss of structure, soils should not be handled when they are too wet or too dry. Generally the following two rules apply:

- If the soil sticks to the equipment, wait until the soil has dried to a friable state (readily crumbled when crushed)
- If the soil is too dry and hard to handle, add water until the soil is wetted to a loose and friable condition.

What procedures will be used to remove the soil in a controlled manner: pedestals, pits, stakes? Will a qualified soil scientist be providing on-site supervision during the soil removal process? Please provide a description of the methods for removing and storing topsoil, subsoil and other materials as required by R645-301-231.100.

For previously undisturbed ground, topsoil removal will be conducted according to Map J-2 of Appendix 2-1, Topsoil Thickness, where the range and the average thickness of topsoil is outlined for each soil map unit.

Projected recovery volumes are reported in Table 232a. The total approximate volume to be recovered is 65,359 cubic yards. Table 232a erroneously places the PC-1 soil and TC soil in the grassland/shrub vegetation category. These soils are Typic and Pachic Cryoborolls and are presently supporting aspen vegetation.

In Section 523, Mining Methods, it is stated that the maximum topsoil to be stored at one time will not exceed 60,000 cubic yards. This statement does not agree with the projected yardage reported in Table 232a. Nor does it agree with the total capacity of 67,870 cubic yards that is described for the three topsoil storage locations discussed in Section 231.400.

The Permittee is reminded to salvage the entire depth of the topsoil horizon. If topsoil volumes in excess of 60,000 cubic yards or in excess of 67,870 cubic yards are salvaged, alternative locations for storage have been identified on Map R645-301-521.150, Whisky Creek Surface Mine Surface Facilities.

Storage

Topsoil storage areas are discussed in section 231.400, 232 and 234, and page R-9 of the Reclamation Plan and are designated on Map 521.150 Whisky Creek Surface Mine Surface Facilities (and in less detail on R645-301-231.100).

Section 232 indicates that topsoil will be divided into three storage piles based upon its origin. The three types are

1. aspen zones (PC-1, PC-2, TC and VSM)
2. conifer zones (CBF and AV)
3. Whisky Creek stream channel.

Section 231.400 of the application describes the dimensions of the three storage piles. All piles will have 2h:1v slopes.

- The roadway above the surface mine has a capacity for 13,370 cubic yards. The average dimension of this pile will be 80' wide X 815' long X 5.53' thick.
- Adjacent to sediment pond 004a, there is a capacity of 27,870 cubic yards. Average dimensions are 245' wide X 200' long X 15.36' thick.
- The truck look has the capacity for 26,630 cubic yards. The pile will lean against the spoil also stored on the site and extend to the first bench on the spoil. The average dimensions are 100' wide X 250' long X 28.76' thick.

In accordance with R645-301-234.200, all topsoil storage areas will be located to be stable and to protect the soil from contamination, compaction and erosion (as stated in Section 231.400 of the application).

Section 231.400 specifically outlines the protection that has been afforded topsoil storage site #1 (the 975 cubic yards of topsoil presently on site). By the way this topsoil pile is not designated as site #1 in any other location in the plan or on any map. Methods of protection are listed as straw bales and silt fencing. Perhaps the best protection has been the forest surrounding the stockpile.

No specifics are provided for the topsoil salvaged prior to surface mining except that topsoil will be seeded (Section 234) with an approved temporary seed mixture. Since the performance standard is to operate according to the plans given under R645-301-230, specifics are required in the plan. What is the temporary seed mix? A temporary seed mix is given on page O17 of 15, but it is not mentioned in the discussion of topsoil stabilization. What, specifically, will be employed to prevent sheet, rill and gully erosion off the topsoil piles.

Topsoil will be identified with signs and markers.

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Substitute Topsoil

A substitute topsoil storage pile of 975 cu yards is stored at the Belina Mine Complex. The material is intended for use at the Belina Mine Site (Vol 1/3, Section 231, page 200-21 and Vol 1/1, page R-4). The application states on page R15 of 37 that this soil will be used to reclaim the access road. This material must be moved prior to surface mining.

Section 231.300, Section 232 and Map 231.300, Suitability of Topsoil Substitutes (Sheet 4 of 4) and the Reclamation Plan (App R-1) discuss the use of soil from the slopes of the Belina Mine Complex that have been seeded and stabilized as substitute topsoil. As discussed on page R16 of 35, prior surface mining, approximately 4,300 cubic yards of this Vegetation Supporting Material (VSM) located above the No. 2 Mine portals will be salvaged (nine inches from 3.6 acres).

To support the use of spoil as substitute topsoil material, analysis of the soil is provided in Appendix 623.100. Drawing A5-0075 in Appendix 623.100 shows the location of holes #1, #2 and B5 adjacent to the truck turn-around on the pad above Pond 004A. Plans in the approved MRP are to salvage this material from the surface to a depth of eight feet in this location to generate 984,000 cu ft or 36,444 cubic yards of substitute topsoil (cross-section provided on Drawing A5-0075).

The soil was sampled down to a depth of 8 feet at sites number 1 and 2. At location B-5, the soil was sampled to a depth of 30 feet. A clay texture was encountered at several depths through the profile at location B-5. The clay layer was determined unsuitable for use as substitute topsoil.

Although this location will be covered by the spoil removed from the initial mining of pits 1, 2 and 3 shown on Figure 9-3, Temporary Spoil Storage, this source of substitute topsoil may yet be used during reclamation of the haul road.

Findings:

Information provided in the proposed amendment is not considered adequate to meet the Operations plan Topsoil and Subsoil requirements of the Regulations. Prior to approval, the Permittee must provide the following in accordance with:

R645-301-231.300, Describe in the text the procedures that will be used to remove the soil in a controlled manner (i.e. pedestals, pits, stakes) and commit to having a qualified soil scientist on-site during the soil removal process.

R645-301-252, Since the performance standard is to operate according to the plans given under R645-301-230, specifics are required in the plan. What specifically will be employed to prevent sheet, rill and gully erosion off the topsoil piles. (i.e. what is seed in temporary seed mix; use of slash, woody debris, strawbales, silt fences).

VEGETATION

Regulatory Reference: 30 CFR Sections 816.100; 817.100; 817.121(c).
R645-301 Sections 330; 331; 332.

Minimum Regulatory Requirements:

Reclamation efforts, including but not limited to backfilling, grading, topsoil replacement, and revegetation, on all land that is disturbed by surface mining or underground mining activities shall occur as contemporaneously as practicable with mining operations, except when such mining operations are conducted in accordance with a variance for concurrent surface and underground mining activities issued under Part 785 Requirements for Permits for Special Categories of Mining, Section 785.18, Variances for delay in contemporaneous reclamation requirement in combined surface and underground mining activities.

For UNDERGROUND COAL MINING AND RECLAMATION ACTIVITIES a description of the anticipated impacts of subsidence on renewable resource lands and how such impact will be mitigated needs to be presented.

A description of how, to the extent possible, using the best technology currently available, the operator will minimize disturbances and adverse impacts. This description will include protective measures that will be used during the active mining phase of operation. Such measures may include the establishment of buffer zones, the selective location and special design of haul roads and powerlines, the monitoring of surface water quality and quantity, and through prompt establishment and maintenance of vegetation for interim stabilization of disturbed areas to minimize surface erosion.

Analysis:

Spoil and topsoil may be stockpiled a maximum of twelve to fourteen months. The spoil pile will be seeded with an annual grain such as barley at the rate of 100 PLS per acre. Annual grains are selected for seeding in the opposite season from which they would normally be planted for crops. For example winter wheat is planted in the fall for an early summer seed crop. A seed crop is undesirable for interim seeding therefore; spring wheat should be planted in the fall to prevent seed production. It is important that the grain seed be tested and purchased from a seed dealer rather than from an individual farmer.

The Permittee must describe efforts made to minimize other disturbances and adverse impacts during mining. This could be done by committing to interim seeding all areas in which rough grading has been completed and will remain for longer than 3 months prior to topsoiling and final seeding.

The Division recommends an application of about one ton per acre of straw or hydromulch after seeding of the barley to further control erosion. The mulch should be certified as noxious weed free. Purchasing good quality seed and noxious weed free straw is far less expensive than trying to control weeds.

Findings:

Information provided in the application is not considered adequate to meet the minimum Vegetation requirement of the regulations. Prior to approval, the Permittee must provide the following in accordance with:

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R645-301-333, the plan must describe efforts made to minimize disturbances during mining. Interim seeding of rough graded spoil can minimize disturbance during surface mining operations.

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;

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- 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

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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 Sheet A illustrates current facilities and contours. The Spoils Backfill & Reclamation Details Sheet B illustrates the proposed contours, contours and remaining facilities upon the completion of the surface mining.

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 requirements for Road System and Other Transportation Facilities 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.

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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.

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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.

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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.

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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 of 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

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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

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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.

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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 state's 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 state's 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, or **disposed if in a location where it can be covered with a minimum of 4 feet of non toxic material and kept out of stream flow paths.**

The bold print represents the Permittee's new proposal. Before the Division can allow asphalt to be disposed of on site the Permittee must first get a permit from DEQ and second landowner approval. The Permittee must either meet those requirements or remove that statement from the PAP.

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.

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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 be 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.

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 that material stored in the spoil storage to be “excess spoil.”

The sequence of surface mining is shown in Plate 5-1C. Each subsequent pit will be drilled and blasted and spoil will be pushed into the preceding pit (Section 528). Appendix R2 summarizes that a total of 2,921,024 cubic yards of spoil will be moved during operations and 2,836,189 cubic yards of total backfill is required; therefore approximately 84,835 cubic yards of spoil will be used to fill the openings in the mine workings uncovered by the barrier coal removal. Mine workings in the area are shown on Map R645-301-521.141b.

Spoil storage is noted on Figure 9-3 and Map R645-301-521.150 Sheet 4a and is described in the Surface Mine Spoil Management Plan section of Operational Plans and Sections 526.300 and 528.

The spoil from the development of the first pit will be stockpiled on the coal stockpile pad. The projected volume of spoil to be stored in this location is 305,049 loose cubic yards (LCY). This spoil will remain until the final pit is reclaimed (Section 528.200).

The ‘life of mine’ spoil pile will be stabilized with an interim seeding of barley at the rate of 100 PLS/ac which will be hand broadcast on the slopes and inactive areas of the pile (see Surface Mine Spoil Management Plan). The ‘life of mine’ spoil pile will also be stabilized by a grade break at fifty feet. The lowest elevation of the pile will be 8,925 feet and the highest elevation of the spoil pile will be 9025 feet.

Findings:

The information in the proposed significant revision is not considered adequate to meet the requirements of this section. Prior to approval, the Permittee must provide the following in accordance with:

R645-301-528.332, The Permittee must amend the noncoal waste disposal plan to include a letter from the Utah Department of Environmental Quality, Division of Solid and Hazardous Waste stating that the Permittee qualifies for disposal of asphalt on-site (permit by Rule 315-318) and to show landowner consent (postmining land use requirements).

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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

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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

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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 and 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 stream-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.

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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

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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 event 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 in 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 of 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 or 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.

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- 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-year 6-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

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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

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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 or 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 or 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.

The Division is allowing the potential for discharges into the mine workings based on the following criteria: Personnel safety is not an issue because the underground workings are abandoned; water quality and effluent limitations are negated based on the lack of toxic or acid-forming materials in the geology; and water quantity is mitigated by the commitment from the Operator to construct a French drain for any encountered flow from the headwall greater than 2 gpm. No significant/measurable flows from seeps or springs are anticipated.

The Division is allowing the potential for discharges into the mine workings based on the following criteria: Personnel safety is not an issue because the underground workings are abandoned; water quality and effluent limitations are negated based on the lack of toxic or acid-

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forming materials in the geology; and water quantity is mitigated by the commitment from the Operator to construct a French drain for any encountered flow from the headwall greater than 2 gpm. No significant, measureable flows from seeps or springs are anticipated.

Gravity discharges

All mine portals are situated up gradient from all mine workings, and are not expected to discharge water. French drains are not being required installation at the Mine portals.

Surface-water monitoring

With the proposed alteration of Whisky Creek, Surface Sample VC-4 will no longer be a viable site since it will now be included in the disturbed area. The site will be moved approximately 280-ft upstream to accommodate moving of the undisturbed area boundary.

Acid and toxic-forming materials

Utah's chief coal producer is the Blackhawk formation, an interbedded formation of sandstones and shales (Section 621). Three types of shale occur in the Blackhawk formation: common clay shale, carbonaceous shale, and smoke-gray shale. A summary of the geologic mapping included within the permit is shown in Table 622a. Selected drill hole log information has been included with the permit as Appendix 622.100 (marked confidential). Well 75-30-3 is in close proximity to the area of proposed barrier coal removal.

Core BCC-1 was taken specifically for the purposes of surface mining as per R645-301-623.100. The results are in Appendix 6-1. The pH of all strata was between 6.8 and 7.4. For all samples, the EC was less than 2.2 mmhos/cm and the SAR was calculated at less than 0.7. Boron was reported at less than 1.1 mg/kg for all samples. Soluble selenium was less than 0.07 mg/kg in all but one sample interval (175.5 – 181 feet) where a value of 0.12 mg/kg was reported. During reclamation, this layer will not be placed in the root zone during final reclamation or in drainages or stream channels (Section 623.100).

The chemical make-up of overburden sampled during the face-up of the Belina Mines is presented in Table 623.100a. Sample locations are indicated in Appendix 623.100a. In early 1983, roof and floor boreholes BP-1 and BP-2 were analyzed and extreme concentrations of boron and copper levels were reported. Subsequent analysis of the same boreholes did not duplicate the elevated numbers (page 600-6, Section 623.100). Calcium and sodium were reported, but magnesium was not. It is impossible, therefore, to calculate the SAR value. Test holes drilled from the surface down to 30 feet did not report elevated boron and SAR values were within the Division's guidelines for suitable substitute topsoil material.

A sample of coal has been shipped from the Valcam Loadout Facility biannually for analysis of acid-toxic forming potential. The results of the 1993 analysis were inserted into the Appendix 623.100b. In 1993, the coal sampled was not an acid generator and did not contain elevated levels of boron, selenium or sodium.

The "Disturbed Area Spoil Management Plan" described on page O-14 of 14 indicates that if any acid or toxic forming materials are encountered, disposal will be in accordance with the Regulations. Over the course of surface mining and during reclamation, how will Lodestar Energy identify spoil materials which may be detrimental to water quality or vegetation or public health and safety?

Stream buffer zones

A complete alteration/disruption of the upper reaches of Whisky Creek will take place during the proposed Surface mining operation. Approximately 700-ft of Whisky Creek, not previously disturbed, will be rebuilt during the proposed revision. Flow encountered during surface mining will report directly into the pit and flow into Pond D-1 prior to being discharged into Whisky Creek. Detailed cross sections of Pond D-1 and maps of the drainage basin design were provided to demonstrate the proposed design will handle anticipated storm events. Portions of the stream proposed for alteration under the proposed plan incorporates 'the best technology currently available (BTCA)'. The BTCA recommends the use of bioengineering, drop structures, and natural stream channel design concepts which eliminates the use of riprap channels. The same channel design is suggested as an alternative to the currently accepted channel design.

Sediment control measures

Ditches diverting undisturbed drainage around the disturbed area do not exist in the area of the proposed surface mining. Undisturbed drainage is allowed to flow through the disturbed area and report to the Sedimentation Ponds prior to being discharged into Whisky Creek. Additional Pond storage has been designed to accommodate the additional flow.

Diversions

With the elimination of undisturbed area ditches diverting undisturbed drainage away from the disturbed area, ditches D-1001 through D-1004, and culverts C-1005 and C-1006 needed to be created or redesigned. Tables 742.310a, 742.310b and Appendix R645-301-742.310 (SEDCAD 4.0 calculations) adequately addresses the proposed changes. Undisturbed ditches that currently exist which will be eliminated as surface mining progresses were also addressed.

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 is incised. The pond is scheduled to be built before topsoil is removed for

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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.

Due to the elimination of undisturbed drainage ditches, the storage capacity of Pond 004A was re-evaluated and Pond D-1 was created. Table 742.221a reflects that these ponds were designed based on a 10-year, 24-hour storm event, compared with the previous ponds which were based on a 25-year, 24-hour storm event.

Map R645-301-742-310B illustrates the acreages and weighted curve numbers used to create Tables 742.221b, and 742.221c. Appendix R645-301-742.310(SED CAD 4.0 calculations) contains the data used to demonstrate the ponds have the necessary capacity for the designed flow event. The assigned weighted curve number for Area 4, as illustrated in Map R645-301-742-310B (and respective tables) appears too low (60) considering approximately 35 percent of zone is within the current surface facilities area (90).

Findings:

The information in the proposed significant revision is not adequate to meet the minimum hydrologic information requirements of the Regulations. Prior to approval, the Permittee must provide the following in accordance with:

R645-301-742.221, On Map 742-310B and respective tables, adjust the weighted curve number used in Zone 4 to reflect the current surface facilities area.

R645-301-742.221, Provide Figure 731.750h - Dugout Pond D-1 Stage-Capacity Curves as stated on page 700-70 of 107.

R645-301-731.311, How will Lodestar Energy identify spoil materials which may be detrimental to water quality or vegetation or public health and safety during Operations and Reclamation?

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,

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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 information provided is adequate with regards to the Operational Support Facilities requirements of the Regulations.

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 listed on mine identification signs. R645-301-521-241 (underground mine requirement) requires that **signs be posted at all access points 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 information provided meets the Operations Signs and Markers requirements of the Regulations.

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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

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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 submittal of a plan which has been approved by the Mine Safety and Health Administration (MSHA) would expedite approval of that same plan by the Division. Anticipated blast designs will be submitted for all blasts as required by R645-301-524.212. The criteria outlined in R645-301-524.230 will be included in the blast design submittal. The blast design will be prepared and signed by a certified blaster (R645-301-524.240).

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

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surface mining and underground coal mining. It is the Division's understanding that it is the Permittee's intent to bring in an employee from Lodestar's eastern operations who is quite familiar with contour stripping operations and the overburden removal process to direct this mining operation. Hence, this individual would more than likely be directly responsible for design of the shot, loading of the holes, etc. R645-301-524.240 requires that blast designs will be prepared and signed by a certified blaster. Although the Permittee's current plan states that a certified blaster will be used, the intent of 524.240 is that a surface blaster must be certified through the State of Utah in order to conduct any blast on the surface within the State boundaries. **Therefore the Permittee must clearly state that the certified blaster responsible for conducting any and all blasting operations at the White Oak surface contour strip mining operation must be a currently certified Utah surface blaster.** SR01A makes the commitment that "any blast design requiring more than five pounds of explosive will be submitted to the Division and to MSHA for approval" prior to the initiation of that shot.

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 preceded by audible signals as per R645-301-524.410. The Division must approve the blasting schedule before publication in a newspaper of general circulation and before distribution to local governments and public utilities (R645-301-524.440). All blasting must be conducted between sunrise and sunset (R645-301-524.420).

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), the Permittee must address the potential for a gravity discharge of water from the Belina Mines once the current operation is completed.

The nearest structure is the Questar Gas 16 inch pipeline which is 960' west from the blast area. On page two of the Blasting Plan Lodestar says under Maximum Pounds Per Delay "The maximum pounds per delay will not exceed the total amount of explosives as determined by the scaled distance factor to the nearest dwelling **and what would be a safe level for structures in**

the surrounding area”. (Emphasis added) This is a bit confusing and needs to be clarified.

The blasting plan also states that the scaled distance factor will be used rather than a seismograph to monitor all blasts. Because the closest structure is a gas pipeline located 960 feet from the closest point of the proposed blasting operation, determines that a scaled distance factor of 55 will be used (see chart provided under R645-301-524.642) to determine a maximum charge weight of 289 pounds per 8 millisecond delay. The plan states that the pounds per delay will be limited by what would be a safe level for the nearest control structure. This statement does not meet the intent of the R645 coal rules. The pounds per delay must be limited by the scaled distance factor (absent monitoring) and not what might be a safe level for the control structure.

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.

Section 524.600 indicates that Maximum airblast limits as given in R645-301-524.621 are expected to be exceeded in the location of the mine site, if approved by the Division. The Division may require air blast measurements as per R645-301-524.631. The Blasting Plan (Appendix 524) indicates that such monitoring will not occur unless directed by the Division. In section 524.600 it is stated that ground vibration must not exceed the values approved by the Division. Utah Regulation R645-301-524.690 specifies that maximum airblast and ground-vibration standards do not apply at structures owned by the Permittee and not leased to another person. The White Oak mine site facilities are owned by Lodestar. However there is within 1000' of several of the proposed pits (located on the West side of the Canyon) a gas pipeline, which is of concern, and which dictates airblast and ground vibration frequencies.

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 not considered adequate to meet the Operational Use of Explosives requirements of the Regulations. Prior to approval, the Permittee must provide the following in accordance with:

R645-301-524, The permit must include steps taken to achieve compliance with blaster certification program (R645-301-524.100); preblasting survey for all blasts (R645-301-524.300); schedule of blasts (R645-301-524.400 and 524.460). Anticipated blast designs will be submitted for all blasts as required by R645-301-524.212. The criteria outlined in R645-301-524.230 will be included in the blast design submittal. The blast design will be prepared and signed by a certified blaster (R645-301-524.240

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R645-301-524.230, Correct the Blasting Plan to indicate that the pounds per delay must be limited by the scaled distance factor (absent monitoring) and not what might be a safe level for the control structure.

R645-301-524.630, Include in the Blasting Plan periodic monitoring of the air blast frequency at the location of the Questar Gas pipeline

R645-301-524.440, Provide the Division with a proposed blasting schedule

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. Therefore, the Permittee must give the Division a detailed contour map that includes the topsoil storage areas. The Division has discussed cross

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sections for the topsoil stockpile areas. The operations cross-section will consist of cross sections of the topsoil storage areas.

The Permittee has not yet decided on the location of the explosive storage facilities. The storage area will be determined in conjunction with the explosive supplier. The Permittee needs to address the possible explosive storage locations in the PAP. When the location of the explosive storage areas has been determined then the Permittee must revised the surface facilities maps and text.

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 not considered adequate to meet the requirements of the Maps, Plans, and Cross Sections of Mining Operations section of the regulations. Prior to approval, the Permittee must provide the following in accordance with:

R645-301-521.160 and R645-301-521.165, The Permittee give the Division topographic maps and cross-sections that show the location, size and shape of the topsoil storage areas that will exist during the operational phase of surface mining.

R645-301-521.160, R645-301-521.165 and R645-301-521.190, The Permittee must address the in the PAP that the location of the explosive storage areas and show those storage areas on the surface facilities maps. If the location of the explosive storage areas not been determine then the Permittee must address that issue in the PAP and make a commitment to provide that information when available including updated maps.

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RECLAMATION PLAN

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.

Analysis:

The reclamation of white oak haul road will utilize the pad material underneath the loadout facility (Page R-3 of 37). Haul road reclamation will begin during year 2 of reclamation. Work will proceed from the bottom of the road up, because fill materials used will be generated from the mine site (page R35 of 37). There appear to be two conflicting statements on page R35 of 37: "During Year 1 of final reclamation, Sediment Pond 004A will be removed " and "During Year 2 initial phases of fill removal from the coal storage pad and sediment pond 004A and construction of runoff control channels."

Findings:

Information provided in the proposed amendment is not considered adequate to meet the General Reclamation Requirements of the regulations. As a stipulation to the permit, the Permittee must provide the following in accordance with:

R645-301-541.400, Details of the reclamation sequence of the Belina Haul Road and the White Oak Complex coal pad and Sediment Pond 004A

POSTMINING LAND USES

Regulatory Reference: 30 CFR Sections 780.23; 784.12; 784.200; 785.16; 816.133; 817.13.
R645-301 Sections 412; 413; 414.
R645-302 Sections 270; 271; 272; 273; 274; 275.

Minimum Regulatory Requirements:

In general, all disturbed areas shall be restored in a timely manner to conditions that are capable of supporting: the uses they were capable of supporting before any mining; or higher or better uses.

Provide a detailed description of the proposed use, following reclamation, of the land to be affected within the proposed permit area by surface operations or facilities, including a discussion of the utility and capacity of the reclaimed land to support a variety of alternative uses, and the relationship of the proposed use to existing land-use policies and plans. This description shall explain: how the proposed postmining land use is to be achieved and the necessary support activities which may be needed to achieve the proposed land use; where a land use different from the premining land use is proposed, all materials needed for approval of the alternative use; and, the consideration given to making all of the proposed underground mining activities consistent with surface owner plans and applicable State and local land-use plans and programs.

The description shall be accompanied by a copy of the comments concerning the proposed use from the legal or equitable owner of record of the surface areas to be affected by surface operations or facilities within the proposed permit area and the State and local government agencies which would have to initiate, implement, approve, or authorize the proposed use of the land following reclamation.

Determine premining uses of land. The premining uses of land to which the postmining land use is compared shall be those uses which the land previously supported, if the land has not been previously mined and has been properly managed. The postmining land use for land that has been previously mined and not reclaimed shall be judged on the basis of the land use that existed prior to any mining; Provided that, if the land cannot be reclaimed to the land use that existed prior to any mining because of the previously mined condition, the postmining land use shall be judged on the basis of the highest and best use that can be achieved which is compatible with surrounding areas and does not require the disturbance of areas previously unaffected by mining.

Criteria for alternative postmining land uses. Higher or better uses may be approved as alternative postmining land uses after consultation with the landowner or the land management agency having jurisdiction over the lands, if the proposed uses meet the following criteria: there is a reasonable likelihood for achievement of the use; the use does not present any actual or probable hazard to public health and safety, or threat of water diminution or pollution; and, the use will not be impractical or unreasonable, inconsistent with applicable land use policies or plans, involve unreasonable delay in implementation, or cause or contribute to violation of Federal, State, or local law.

Approval of an alternative postmining land use, may be met by requesting approval through the permit revision procedures rather than requesting such approval in the original permit application. The original permit application, however, must

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demonstrate that the land will be returned to its premining land use capability. An application for a permit revision of this type must be submitted in accordance with the requirements of filing for a Significant Permit Revision and shall constitute a significant alternation from the mining operations contemplated by the original permit, and shall be subject to the requirements for permits, permit processing, and administrative and judicial of decisions on permits under the regulatory program.

Surface coal mining operations may be conducted under a variance from the requirement to restore disturbed areas to their approximate original contour, if the following requirements are satisfied:

- 1.) The Division grants a variance from approximate original contour restoration requirements.
- 2.) Alternative post-mining land use requirements are met.
- 3.) All applicable requirements of the act and the regulatory program, other than the requirement to restore disturbed areas to their approximate original contour, are met.
- 4.) After consultation with the appropriate land use planning agencies, if any, the potential use is shown to constitute an equal or better economic or public use.
- 5.) The proposed use is designed and certified by a qualified registered professional engineer in conformance with professional standards established to assure the stability, drainage, and configuration necessary for the intended use of the site.
- 6.) After approval of the appropriate State environmental agencies (where required) the watershed of the permit and adjacent areas is shown to be improved.
- 7.) The highwall is completely backfilled with spoil material, in a manner which results in a static factor of safety of at least 1.3, using standard geo-technical analysis.
- 8.) Only the amount of spoil as is necessary to achieve the post-mining land use, ensure the stability of spoil retained on the bench, and all spoil not retained on the bench shall be placed in accordance with all other applicable regulatory requirements.
- 9.) The surface landowner of the permit area has knowingly requested, in writing, that a variance be granted, so as to render the land after reclamation, suitable for an industrial, commercial, residential, or public use (including recreational facilities.)
- 10.) Federal, State, and local government agencies with an interest in the proposed land use have an adequate period in which to review and comment on the proposed use.

Analysis:

The applicant is proposing no changes from the pre-mining land uses. The post-mining land uses are grazing and wildlife habitat. A grazing plan for the reclaimed area is detailed in section 412 of Chapter 4. The plan is base on a five year rest rotation cycle. This is similar to the Forest Service plan for the area.

Regulation R645-301-412.200 requires that the application include comments from the land owner and surface management agencies about the post-mining land use. The mining and reclamation plan has a comment that any information related to land owner or surface manager comments is available for review at the office of Valley Camp of Utah.

The modified agreement, dated February 16, 2001, between Milton A. Oman, Ltd., and the applicant says:

"Lessor [Milton A. Oman, Ltd.] will construct or reconstruct an access road as a connection between the Access Road (also known as the Whisky Canyon haulroad) and the gas pipeline access road, from South Fork Canyon to Whisky Creek Canyon, which will provide continued access to the Property for the Lessor. Lessor agrees to sign, at Lessee's [Lodestar's] request, any

and all documents required for Lessee to obtain the consent of all appropriate regulatory agencies for leaving such access road and the Whisky Creek Canyon haulroad as permanent roads not to be reclaimed as part of the final reclamation of the Property."

This agreement makes it clear the one landowner desires a road from above the mine coming on to the surface facilities area. The agreement states that the Oman's will construct the road. Justification for the road is property access (Chapter 4, section 412.200). The Permittee states (not the land owner) the property will be used for grazing, cabin sites and annual hunts. No long-term maintenance agreement for the gravel road was provided nor is it needed if the Oman's construct the road.

Milton A. Oman, Ltd., is also willing to allow the road up Whisky Creek Canyon, but the application does not justify the road below the mine being left. In other words, it does not indicate for what purpose the road would be used if it remained following reclamation, it does not show that the road is necessary considering that there is other access to the canyon, and it does not show the desires of other entities over whose land the haulroad crosses. Although the applications alludes to the possibility the main part of the haulroad might remain for the postmining land uses, it commits to reclamation. Lacking adequate information for retaining the road, the Division anticipates the haulroad will be reclaimed.

Findings:

Information provided in the application is not considered adequate to meet the minimum Post Mining Land Uses requirement of the regulations. Prior to approval, the Permittee must provide the following in accordance with:

R645-301-412.200, comments about the postmining land use from the landowners or the surface land management agencies must be provided.

R645-301-412, the "White Oak Mine Site Final Reclamation Contours" map and the agreement with Milton A. Oman, Ltd., show a 1200-foot section of road across the reclaimed area. The operator must remove all reference to constructing the 1200-foot section of road since the Oman's desire to construct it themselves.

PROTECTION OF FISH, WILDLIFE, AND RELATED ENVIRONMENTAL VALUES

Regulatory Reference: 30 CFR Sec. 816.97; R645-301 Sections 333; 342; 358.

Minimum Regulatory Requirements:

Where wetlands and habitats of unusually high value for fish and wildlife occur, the operator conducting underground mining activities shall provide a description of the measures taken to avoid disturbances to, enhance where practicable, restore, or replace, wetlands and riparian vegetation along rivers and streams and bordering ponds and lakes. Designs and plans for underground mining activities shall include measures to avoid disturbances to, enhance where practicable, or restore habitats of unusually high value for fish and wildlife.

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Where fish and wildlife habitat is to be a postmining land use, the plant species to be used on reclaimed areas shall be selected on the basis of the following criteria:

- 1.) Their proven nutritional value for fish or wildlife.
- 2.) Their use as cover for fish or wildlife.
- 3.) Their ability to support and enhance fish or wildlife habitat after the release of performance bonds.

The selected plants shall be grouped and distributed in a manner which optimizes edge effect, cover, and other benefits to fish and wildlife.

Where cropland is to be the postmining land use, and where appropriate for wildlife- and crop-management practices, the operator shall intersperse the fields with trees, hedges, or fence rows throughout the harvested area to break up large blocks of monoculture and to diversify habitat types for birds and other animals.

Where residential, public service, or industrial uses are to be the postmining land use and where consistent with the approved postmining land use, the operator shall intersperse reclaimed lands with greenbelts utilizing species of grass, shrubs, and trees useful as food and cover for wildlife.

Analysis:

The planned wildlife habitat enhancement measures are to spread around rocks and brush and other woody debris on the reclaimed area to provide habitat enhancement. The upper portion of Whisky Creek will be reclaimed. French drains will be installed so that springs and seeps should resurface, although perhaps not in their original location. The primary wildlife habitat needs are to provide adequate forage and cover and to maintain water supplies. If the applicant follows the revegetation plan, the number of conifers in the reclaimed area will be reduced compared to adjacent spruce/fir areas. This additional foraging area will benefit most wildlife species.

The plan for reclaiming Whisky Creek will create a channel with more steep and flat sections and reduce the amount of moderate slopes than existed previously. Only 18 percent of the premining channel contained what was considered riparian vegetation. Creating greater flat sections should increase the amount of riparian type of vegetation. The Permittee proposes to create a channel using similar material as the preexisting channel.

Findings:

Information in the proposal is adequate to meet the requirements of the Protection of Fish, Wildlife and Related Environmental Values section of the regulations.

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

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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)”

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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.

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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 provided is adequate to meet the approximate original contour requirements of the Regulations.

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,

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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

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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

Reclaimed slopes are designed as a generally 2:1 slope. The Operator does not propose the use of cut-and-fill terraces in conjunction with the Reclamation Plan. However, as part of reclamation, benches and grade breaks will be incorporated into surface contouring for the purpose of enhancing vegetation and wildlife habitat.

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 total bank cubic yards to be removed during operations is illustrated in Plate 5-1C and calculated in Appendix R2. An assumption is made in Appendix R2 that the density of the coal is 1.08 Tons/cu yd.

Reclamation areas A – F are identified on Figure R-11, Spoil Backfill & Reclamation Details, in Appendix R2. Figure R-11 designates areas A through F as opposed to operations pit numbers 1 - 13 shown on Plate 5-1C. The Division notes the approximate relationship between areas A through F and pits 1 - 13 in the table below. The figure of 29.2 acres is comparable with the figure of 29.4 acres given on Map R645-301-231.100.

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Operations Areas (Plate 5-1C)	Reclamation Areas (Figure R-11)		acres
	sq ft		
Pit #10	Area A	24,107	0.55
Pit #9, 10 & 11	Area B	206,175	4.73
Pit #4, 5, 6, 7, 8, & 9	Area C	312,879	7.18
Pit # 6 & 7	Area D	134,136	3.08
Pit # 4 (south portion)	Area E	56,254	1.29
Pit # 1, 2, 3, & 4	Area F	539,000	12.37
	TOTAL AREA	1,272,551	29.2

Backfilling and rough grading of each pit will occur contemporaneously with coal removal from adjacent pits (Section 532.100). However, in Section 553, Backfilling and Grading, the Permittee has requested a variance from R645-301-553 which is the requirement that rough backfilling and grading follows coal removal by not more than 60 days or 1500 linear feet. The reasons for this request are that the first three pits will be 90 days in the making and at the end of coal removal, probably the fourth month, overburden from the fourth pit will begin to fill the first three pits. (The mining sequence is shown on Plate 5-1C.) Grading of the fill will be done to create access to adjacent areas. Grading of the fill against the highwall will not meet the 60 day requirement.

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. Appendix R2 indicates that 3,416,498 *bank* cubic yards of backfill is required. The application states that 96.6% of the available material will be used for backfilling.

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 placed in a temporary spoil storage location. 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.

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 placed in mined out areas. The sequence of surface mining is shown in Plate 5-1C. Each subsequent pit will be drilled and blasted and spoil will be pushed into the preceding pit (Section 528). The final pits will be reclaimed with material from the temporary spoil pile.

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 placed in those areas.

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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.

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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 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

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.

Steep Slopes

- Preparation of final graded surfaces to minimize erosion and provide a surface for replacement of topsoil is discussed on page R12-37 of the reclamation section. Maximizing the roughness of the reclaimed surface will be paramount at most locations to achieve moisture retainage, enhance vegetative growth and reduce local erosion.
- The Permittee did show in Appendix R2 that the reclaimed slopes would have static safety factors of 1.3 or greater.
- Reclaimed slope are designed as a generally continuous 2:1 slope.

Special Provisions for Steep Slope Mining

The backfill operation will stabilize the material and regrading will prepare the final graded surface for replacement of the Vegetation-Supporting Material (Section 532.200).

In accordance with R645-301-242.200 and R645-301-553.230 and R645-301-553.240 information is provided in the reclamation plan which describes incorporation of straw with gouging to the steep slopes of 2h:1v to prepare them for seeding.

Prior to seeding, the Division recommends that consideration is given to the following treatments, based upon successful practices in the AMR, Coal and Minerals program:

- Concave slopes
- Contour breaks
- Ripping of subsoil prior to applying topsoil (even on 2h:1v slope)
- Apply straw to topsoil
- Gouge straw and mulch to create uneven pock marks and to incorporate straw.

R645-301-542.200 and R645-301-553.210, Please address the effect of saturation on reclaimed slope stability.

Findings:

The Permittee has requested a variance from R645-301-553 which is the requirement that rough backfilling and grading follows coal removal by not more than 60 days or 1500 linear feet.

The information provided is not considered adequate to meet the Backfilling and Grading requirements of the Regulations.

R645-301-542.200 and R645-301-553.210, Please address the effect of saturation on slope stability.

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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 opening 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 Reclamation Mine Openings requirements of the Regulations.

TOPSOIL AND SUBSOIL

Regulatory Reference: 30 CFR Sections 816.22; 817.22. R645-301-240.

Minimum Regulatory Requirements:

Redistribution

Topsoil materials shall be redistributed in a manner that: achieves an approximately uniform, stable thickness consistent with the approved post-mining land use, contours, and surface-water drainage systems; prevents excess compaction of the materials; and, protects the materials from wind and water erosion before and after seeding and planting.

Before redistribution of the material, the regarded land shall be treated if necessary to reduce potential slippage of the redistribution material and to promote root penetration. If no harm will be caused to the redistributed material and reestablished vegetation, such treatment may be conducted after such material is replaced.

The Division may choose not to require the redistribution of topsoil or topsoil substitutes on the approved postmining embankments of permanent impoundments or of roads if it determines that placement of topsoil or topsoil substitutes on such embankments is inconsistent with the requirement to use the best technology currently available to prevent sedimentation, and, such embankments will be otherwise stabilized.

Nutrients and soil amendments shall be applied to the initially redistributed material when necessary to establish the vegetative cover.

The Division may require that the B horizon, C horizon, or other underlying strata, or portions thereof, removed and segregated, stockpiled, be redistributed as subsoil in accordance with the requirements of the above if it finds that such subsoil layers are necessary to comply with the revegetation requirements.

Analysis:

Redistribution

The regraded surface will not contain more than 35% rock fragments in the top two feet of fill (Section 242 and Surface Mine Spoil Management Plan portion of the Operational Plan).

The Division requests that in accordance with R645-301-242.200 and R645-301-553.230 and R645-301-553.240 the steep slopes of 2h:1v will be gouged.

In Section 231.100 of the application it is explained that the thickness of topsoil replacement will vary according to the type of vegetation planned. Where pine trees and or shrub/grassland are (currently) prevalent, 6-12 inches of topsoil will be placed. On aspen dominated slopes, 14 – 22 inches of topsoil will be replaced.

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In section 242 of the application the variable thickness is explained somewhat differently, such that 6.75 – 11.25 inches of topsoil will be placed in areas “where pine trees are prevalent;” 12 – 20 inches of topsoil will be placed “in the aspen areas;” and six inches will be placed “in the shrub/grassland zones.”

It is not clear to the Division whether these zones topsoil replacement depth will follow the pre-disturbance vegetation zones outlined in the Soil Survey of Appendix 2-1 or will follow a scheme to be developed post-disturbance. Is there a post-mining outline of the vegetation zones which determine the depth of topsoil placement? Since the performance standard is to operate according to the plans given under R645-301-240, please specifically reference where the zones referred to are outlined.

The plan says that topsoil placement will either take place at the end of surface mining, when seeding can follow immediately or just prior to fall seeding. Page R-23 of 35 indicates that the seeding for final reclamation will take place in the fall. Hence the topsoil replacement should also indicate that topsoil replacement will not occur until early fall. The replacement section should further state that if a soil crust develops prior to seeding, the slopes will be raked to create a seed bed.

The plan should indicate that a qualified soil scientist will be on site during topsoil redistribution.

On page R22 of 35, under Soil Characteristics, the application describes soil sampling to be conducted after grading which includes sampling for a long list of parameters. Likewise, page R-23 of 35 in the Reclamation Plan, states that “After the earthwork has been completed the soils will be tested as described and fertilizers, nutrients, and conditioners will be applied as needed.” If these portions of the application are outdated, then they should be removed from the plan.

Page 23 of 35 of the reclamation plan indicates that if necessary fertilizer may be used, this suggests that some testing will be undertaken to determine whether fertilization is necessary.

Findings:

Information provided in the proposed amendment is not considered adequate to meet the Reclamation Topsoil requirements of the Regulations. Prior to approval, the Permittee must provide the following in accordance with:

- R645-301-242,** 1) Since the performance standard is to operate according to the plans given under R645-301-240, please specifically reference where the zones referred to are outlined. 2) The plan should indicate that a qualified soil scientist will be on site during topsoil redistribution. 3) Please reconcile the information on topsoil thickness between Sections 231.100 and 242, better yet, just list the information in one place. 4) On page R22 of 35, under Soil Characteristics, the application describes soil sampling to be conducted after grading which includes sampling for a long list of parameters. Likewise, page R-23 of 35 in the

Reclamation Plan, states that "After the earthwork has been completed the soils will be tested as described and fertilizers, nutrients, and conditioners will be applied as needed." If these portions of the application are outdated, then they should be removed from the plan. 5) Page R-23 of 35 indicates that the seeding for final reclamation will take place in the fall. Hence the topsoil replacement should also indicate that topsoil replacement will not occur until early fall. The replacement section should further state that if a soil crust develops prior to seeding, the slopes will be raked to create a seed bed. 6) The Division requests that in accordance with R645-301-242.200 information is provided in the plan which describes the treatments afforded to the steep slopes of 2h:1v to reduce potential slippage of the redistributed material and to promote root penetration.

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

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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 only road in the White Oak Mine Complex that the Permittee plans to retain is a jeep trail that is used by the landowners. The Permittee referred to the jeep trail as an ancillary road. However, ancillary roads cannot be retained. See the road reclamation section above for more details.

Findings:

The information in the proposed significant revision is not considered adequate to meet the requirements of this section. Prior to approval, the Permittee must provide the following in accordance with:

R645-301-527.123, The Permittee must remove the plan to retain an ancillary road in the White Oak Mine Complex. If the Permittee plans to leave a road then the road must be a primary road. All primary roads require certified designs.

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:

General

Within the current proposal a completely new Stream Alteration Plan has been submitted. The proposed Stream Restoration Plan incorporates 'BTCA' with the use of bioengineering, drop structures, and natural stream channel design concepts, and limits the use of riprap channels. The same channel design is suggested as an alternative to the currently accepted channel design.

The operator has committed a significant amount of time to characterize Whisky Creek as it currently exists in the area of the proposed surface mining. Generally, the current stream channel ranges in percent-grade from 9-27% with a majority of the stream averaging approximately 15% grade, and one 50-foot section at 37% grade. The proposed Stream Restoration Plan calls for slopes to range from 5-35% grade with a 175-foot section at 35% grade. Positive aspects of the plan include 175-foot and 150-foot sections at 5% and 14% grade, respectively, which promote riparian areas, and a 19% grade slope at the disturbed/undisturbed contact. The lessening of slope at the disturbed/undisturbed contact should minimize formation of a niche-point/erosional feature at the head of the re-built stream channel.

A major source of concern is the 175-foot, 35 percent-grade section (Section 2A). A slope that long and steep does not currently exist in the channel and was not sufficiently characterized. An ideal solution would be to extend the section over a longer distance and reduce the slope. Unfortunately, a loss of material due to mining of the coal does not make this feasible. On the proposed channel, Section 2A needs more detail on the design; specifically, the size of rock that is going to be used to armour/stabilize the streambed. The lengthening of the 35%-grade slope from 50-feet to 175-feet increases the velocity and erosional power of the stream significantly.

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Although the current stream has been characterized adequately, additional detail needs to be incorporated into the proposed redesigned channel. A stream profile that illustrates the undisturbed stream, the highwall, the amount of fill, and connection back to the undisturbed stream channel needs to be included.

There is an abundance of empirical data classifying the current stream, but no supportive theoretical data supporting the design. Supportive calculations, using standard engineering principles, needs to be included to demonstrate the proposed design (primarily in Section 2A) will handle the prescribed 10-year, 24-hour storm event.

Pages SRP-15 through SRP-16 describe in detail what is going to be installed in the reclamation of Whisky Creek, but it does not describe how it is going to take place. Provide information describing where the material to construct the channel is coming from; discuss the armoring/bedding of the channel and how it is going to be constructed; discuss how the banks of the channel are going to be stabilized; if diagrams from DWR Stream Alteration Permit are used, reference them. Provide a commitment in the narrative stating the use of native stream channel sediments and clays, and itemizing their respective volumes and salvage location and storage location.

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 not considered adequate to meet the Hydrologic Reclamation Plan Information requirements of the regulations. Prior to approval please submit the following information:

R645-301-731.760, provide a stream profile illustrating the undisturbed stream, the highwall, the amount of fill, and connection back to the undisturbed stream channel.

R645-301-742.322, provide calculations demonstrating the designed capacity of the reclaimed stream channel will be at least equal to the capacity of the unmodified stream channel.

R645-301-731.611, provide detailed information on the materials to be used in the reclamation of Whisky Creek, specifically: the use, volumes, and location of native stream channel sediments and clay.

CONTEMPORANEOUS RECLAMATION

Regulatory Reference: 30 CFR Sections 785.18; 816.100; 817.100.
R645-301 Sections 352; 553;
R645-302 Section 280; 281; 282; 283; 284.

Minimum Regulatory Requirements:

General

Reclamation efforts, including but not limited to backfilling, grading, topsoil replacement, and revegetation, on all areas affected by surface impacts incident to an underground coal mine shall occur as contemporaneously as practicable with mining operations, except when such mining operations are conducted in accordance with a variance for concurrent surface and underground mining activities issued under Section 785.18 of this Chapter. The Division may establish schedules that define contemporaneous reclamation.

Variations for delay in contemporaneous reclamation requirement in combined surface and underground mining activities

This section shall apply to any person or persons conducting or intending to conduct combined surface and underground mining activities where a variance is requested from the contemporaneous reclamation requirements. Any person desiring a variance under this section shall file with the Division, complete applications for both the surface mining activities and underground mining activities which are to be combined. The reclamation and operation plans for these permits shall contain appropriate narratives, maps, and plans, which: show why the proposed underground mining activities are necessary or desirable to assure

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maximum practical recovery of the coal; show how multiple future disturbances of surface lands or waters will be avoided; identify the specific surface areas for which a variance is sought and the Sections of the Act, this Chapter, and the regulatory program from which a variance is being sought; show how the activities will comply with the requirements for protection of underground mining and other applicable requirements of the regulatory program; show why the variance sought is necessary for the implementation of the proposed underground mining activities; provide an assessment of the adverse environmental consequences and damages, if any, that will result if the reclamation of surface mining activities is delayed; and, show how offsite storage of spoil will be conducted to comply with the requirements of the Act, and the regulatory program.

A permit incorporating a variance under this section may be issued by the Division if it first finds, in writing, upon the basis of a complete application filed in accordance with this section, that: the applicant has presented, as part of the permit application, specific, feasible plans for the proposed underground mining activities; the proposed underground mining activities are necessary or desirable to assure maximum practical recovery of the mineral resource and will avoid multiple future disturbances of surface land or waters; the applicant has satisfactorily demonstrated that the applications for the surface mining activities and underground mining activities conform to the requirements of the regulatory program and that all other permits necessary for the underground mining activities have been issued by the appropriate authority; the surface area of surface mining activities proposed for the variance has been shown by the applicant to be necessary for implementing the proposed underground mining activities; no substantial adverse environmental damage, either onsite or offsite, will result from the delay in completion of reclamation otherwise required; the operations will, insofar as a variance is authorized, be conducted in compliance with the requirements of the regulatory program; comply with the provisions for offsite storage of spoil; liability under the performance bond required will be for the duration of the underground mining activities and until all requirements have been complied with; and, the permit for the surface mining activities contains specific conditions delineating the particular surface areas for which a variance is authorized, identifying the applicable regulatory provisions, and, providing a detailed schedule for compliance with the provisions of this section. Variances granted by permits issued under this section shall be reviewed by the Division no later than 3 years from the dates of issuance of the permit and any permit renewals.

Analysis:

General

Per the State regulations concerning disposal of Excess Spoils and the installation of under-drains, the applicant has committed to install French drains for any seeps or springs encountered in the headwall in excess of 2 gpm. This is employed to ensure any significant water will flow away from the portals/headwall and drain towards the Whisky Creek drainage.

The surface mining operation is proposed to be completed in 14 to 20 months. Prior to this, all but a few loading and transportation surface facilities will be removed. Plate 5-1C shows the general sequence of mining operations on the site, and Table R-3 is a generalized reclamation timetable.

Surface mining of the barrier coal will create additional spoil. Spoil from the development of the first four months will be stockpiled on the coal stockpile pad as described in Sections 526.300 and 528 and shown on Figure 9-3, Temporary Spoil Storage in Chapter 9 of the application. This spoil will remain until the final pit is reclaimed (Section 528.200). The initial cell development will generate a "life of mine" temporary spoil storage pile of 305,049 cubic yards as indicated in Chapter 9. This spoil pile will not be utilized until final reclamation of the last pits and therefore must be vegetated and stabilized in the interim. The temporary spoil pile will be seeded with an annual grain at the rate of 100 PLS pounds per acre.

After the spoil is stockpiled from the first three pits any additional spoil removed will be directly placed in the previous pit and rough graded. Areas rough graded during the year will be topsoiled and seeded in the fall (page R-2 and R-35). Revegetation treatments will be applied on all lands as soon as possible after mining and in the first normal season for seeding and planting.

Findings:

Information provided in the application meets the minimum Contemporaneous Reclamation requirements of the regulations.

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Regulatory Reference: 30 CFR Sections 816.111, 816.113, 816.114, 816.116; 817.111; 817.113; 817.114; 817.116.
R645-301 Sections 244; 353; 354; 355; 356;
R645-302 Sections 280; 281; 282; 283; 284.

Minimum Regulatory Requirements:

Revegetation: General requirements

The Permittee shall establish on regraded areas and on all other disturbed areas except water areas and surface areas of roads that are approved as part of the postmining land use, a vegetative cover that is in accordance with the approved permit and reclamation plan and that is: diverse, effective, and permanent; comprised of species native to the area, or of introduced species where desirable and necessary to achieve the approved postmining land use and approved by the Division; at least equal in extent of cover to the natural vegetation of the area; and, capable of stabilizing the soil surface from erosion.

The reestablished plant species shall: be compatible with the approved postmining land use; have the same seasonal characteristics of growth as the original vegetation; be capable of self-regeneration and plant succession; be compatible with the plant and animal species of the area; and, meet the requirements of applicable State and Federal seed, poisonous and noxious plant, and introduced species laws or regulations.

The Division may grant exception to these requirements when the species are necessary to achieve a quick-growing, temporary, stabilizing cover, and measures to establish permanent vegetation are included in the approved permit and reclamation plan.

When the Division approves a cropland postmining land use, the Division may grant exceptions to the requirements related to the original and native species of the area. Areas identified as prime farmlands must also meet those specific requirements as specified under that section.

Revegetation: Timing

Disturbed areas shall be planted during the first normal period for favorable planting conditions after replacement of the plant-growth medium. The normal period for favorable planting is that planting time generally accepted locally for the type of plant materials selected.

Revegetation: Mulching and other soil stabilizing practices

Suitable mulch and other soil stabilizing practices shall be used on all areas that have been regraded and covered by topsoil or topsoil substitutes. The Division may waive this requirement if seasonal, soil, or slope factors result in a condition where mulch and other soil stabilizing practices are not necessary to control erosion and to promptly establish an effective vegetative

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cover.

Revegetation: Standards for success

Success of revegetation shall be judged on the effectiveness of the vegetation for the approved postmining land use, the extent of cover compared to the cover occurring in natural vegetation of the area, and the general requirements for Revegetation. Standards for success and statistically valid sampling techniques for measuring success shall be selected by the Division and included in an approved regulatory program.

Standards for success shall include criteria representative of unmined lands in the area being reclaimed to evaluate the appropriate vegetation parameters of ground cover, production, or stocking. Ground cover, production, or stocking shall be considered equal to the approved success standard when it is not less than 90 percent of the success standard. The sampling techniques for measuring success shall use a 90-percent statistical confidence interval (i.e., a one-sided test with a 0.10 alpha error).

Standards for success shall be applied in accordance with the approved postmining land use and, at a minimum, the following conditions:

- 1.) For areas developed for use as grazing land or pasture land, the ground cover and production of living plants on the revegetated area shall be at least equal to that of a reference area or such other success standards approved by the Division.
- 2.) For areas developed for use as cropland, crop production on the revegetated area shall be at least equal to that of a reference area or such other success standards approved by the Division.
- 3.) For areas to be developed for fish and wildlife habitat, recreation, shelter belts, or forest products, success of vegetation shall be determined on the basis of tree and shrub stocking and vegetative ground cover. Such parameters are described as follows: minimum stocking and planting arrangements shall be specified by the Division on the basis of local and regional conditions and after consultation with and approval by the State agencies responsible for the administration of forestry and wildlife programs. Consultation and approval may occur on either a programwide or a permit-specific basis; trees and shrubs that will be used in determining the success of stocking and the adequacy of the plant arrangement shall have utility for the approved postmining land use. Trees and shrubs counted in determining such success shall be healthy and have been in place for not less than two growing seasons. At the time of bond release, at least 80 percent of the trees and shrubs used to determine such success shall have been in place for 60 percent of the applicable minimum period of responsibility; and, vegetative ground cover shall not be less than that required to achieve the approved postmining land use.

For areas to be developed for industrial, commercial, or residential use less than 2 years after regrading is completed, the vegetative ground cover shall not be less than that required to control erosion.

For areas previously disturbed by mining that were not reclaimed to the requirements of the performance standards and that are remined or otherwise redisturbed by surface coal mining operations, as a minimum, the vegetative ground cover shall be not less than the ground cover existing before redisturbance and shall be adequate to control erosion.

The period of extended responsibility for successful revegetation shall begin after the last year of augmented seeding, fertilizing, irrigation, or other work, excluding husbandry practices that are approved by the Division.

In areas of more than 26.0 inches of annual average precipitation, the period of responsibility shall continue for a period of not less than five full years. Vegetation parameters identified for grazing land or pasture land and cropland shall equal or exceed the approved success standard during the growing seasons of any two years of the responsibility period, except the first year. Areas approved for the other uses shall equal or exceed the applicable success standard during the growing season of the last year

of the responsibility period.

In areas of 26.0 inches or less average annual precipitation, the period of responsibility shall continue for a period of not less than 10 full years. Vegetation parameters shall equal or exceed the approved success standard for at least the last 2 consecutive years of the responsibility period.

The Division may approve selective husbandry practices, excluding augmented seeding, fertilization, or irrigation, provided it obtains prior approval from the Director as a State Program Amendment that the practices are normal husbandry practices, without extending the period of responsibility for revegetation success and bond liability, if such practices can be expected to continue as part of the postmining land use or if discontinuance of the practices after the liability period expires will not reduce the probability of permanent revegetation success. Approved practices shall be normal husbandry practices within the region for unmined lands having land uses similar to the approved postmining land use of the disturbed area, including such practices as disease, pest, and vermin control; and any pruning, reseeding, and transplanting specifically necessitated by such actions.

Analysis:

Timing

Seeding will occur in the fall. Fall is the accepted seeding window for this area. The site is at 9000 feet elevation and that will limit late fall seeding. Transplants will be planted in the fall immediately after seeding. Cuttings will be planted as early in spring as possible. Transplants should be ordered now to insure availability in fall 2002.

Mulching, seeding, and other soil stabilizing practices.

Mulching

The soils surface preparation techniques are vital for both erosion control and for vegetation establishment.

The proposed surface mining operation will generate some slash and other woody debris that should be used on newly-graded areas. This material could be used in lieu of silt fences or berms around the base of stockpiles. Depending on the exact sequence of operations, the woody debris could either be stockpiled then spread later or it could be spread on graded areas as it is generated. Portions of the stream have a lot of woody debris, and some of this material could be used in reclaiming Whisky Creek. This is consistent with the current mining and reclamation plan in which the applicant commits to use brush, downed trees, rocks, etc., to place on the recontoured surface to achieve a more natural appearance and to enhance the habitat (page R-25).

This site has high precipitation, steep slopes, and long slopes so it is important for good mulching methods to be used to control erosion. In the experience of the Division and other mine operators, one of the best mulching methods is a combination of a noxious weed free straw and wood fiber mulch. The Permittee should incorporate one to two tons per acre noxious weed free straw or hay when roughening the topsoil. The Permittee commits to after seeding:

- Spreading straw at the rate of one to two tons per acre

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- Gluing straw to the soil surface with 500 pounds per acre of wood fiber mulch and tackifier (page R-24).

Seed mixtures

Seed mixtures and shrub and tree transplants are listed in Table R-1. The upland seed and planting mixes in the plan are acceptable. Frequently modifications are needed to the seed mixtures at the time of ordering because of unavailability. This should be done with the Division's concurrence. The riparian seeded mixture for upper Whisky Creek contains sedges, grasses and forbs found occurring on site. Many of these species maybe difficult to obtain commercially and every effort should be made to collect seed and/or plugs from adjacent areas. The state's Lone Peak Nursery will custom grow specific species provided enough lead time. Information can be obtained from:

http://www.nr.utah.gov/slf/Forestry%20Fire%20&%20State%20Lands_files/lonepeak/Home2.htm
Bitterroot Restoration at: http://www.revegetation.com/BRIWeb/plant_prop.html also contract grows plants.

The seed mixture was designed to combine the south-west and north facing aspect seed mixtures into one. The seed mixture contains enough diversity so that species adapted to the different aspects will dominate. Shrub planting will also occur on all aspects. Aspens will be planted on the south-west facing aspects and conifers planted on north-east aspects. Some aspens should also be planted on the north aspects. The shrub plantings were removed from Table R-1 for the riparian area of upper Whisky Creek. These plantings should remain for added long-term stream stability.

Planting methods

All seeds will be broadcast seeded. Broadcast seeding methods include hand broadcasting with a cyclone type spreader or hydroseeding. The seeding rates shown with the seed mixes are for broadcast seeding.

Shrubs and trees will be grouped to develop an edge effect for wildlife. The groupings will be located near the riparian area and where previous trees were clumped. They can be placed in fairly large clumps, and for aesthetic purposes, these clumps should be placed to hide any terraces or other areas that do not appear natural. On north through east aspects, mountain lover should be planted with clumps of conifers with the other species in more open areas.

Irrigation and pest control

Musk thistle is a state-designated noxious weed, and it is a serious problem in the mine area. The application says that, prior to any earth moving activity, all areas affected by noxious weeds will be sprayed. It is likely musk thistle will invade the newly revegetated area. There could also be some problems with whitetop, another noxious weed. The operator will spray after noxious weed emergence and prior to flowering in the spring and fall. 24D, Tordon, Escort or equivalent in direct application will be used. The County Weed Control will be consulted when needed (page R-25). It is crucial that the applicant be vigilant with the weed control program.

The Weed Web at: <http://extension.usu.edu/coop/ag/crops/weedweb/index.htm> provides current information for weed control programs.

Standards for success

According to page R-32 of 37 and Table R-2 of the current mining and reclamation plan, revegetation success will be judged on the basis of comparison with reference areas. For the mine complex, the reference areas are those areas devoid of man's activities that have at least a 100-foot buffer zone from disturbed areas. Specific reference areas will be chosen using a statistically based method from a grid of areas in proximity to the disturbed area and with similar characteristics, such as elevation, slope and aspect.

While this is an unusual approach for establishing reference areas, it is acceptable as long as the precise areas chosen can be rated by the Natural Resources Conservation Service as being in fair or better range condition at the time of making comparisons for final bond release.

The text and maps in the current plan show different areas that will be used as reference areas. The section of this review discussing maps, plans, and cross sections of environmental resource information addresses this issue and includes a deficiency intended to rectify the problem.

Baseline information was obtained on the upper Whisky Creek area in August 2001 (Appendix 3-1). No success standards for comparing the reclaimed Whisky Creek are provided. The success standards must be provided in the permit application.

To judge whether vegetation is adequate to control erosion, the applicant will place erosion pins on slopes at the time of reseeded (page R-28). These pins will be used as a guide to overall erosion characteristics of the reclaimed area. A discussion is not provided detailing numbers of pins or what quantitative information will be obtained from the pins. This reviewer questions the usefulness of these pins and any inferences made to amounts or rates of sediment loss. Any rills or gullies that disrupt the postmining land use or vegetation reestablishment, or that cause or contribute to a violation of water quality standards will be filled, regraded, revegetated, or otherwise stabilized.

Diversity will be judged by three different measures. These measures are the mean number of species encountered per sample, total number of species, and MacArthur's Index. Using three measures is acceptable to the Division. The reclaimed area does not need to meet or exceed all three measures but do need to show diversity similar to the undisturbed. Arguments will need to be made to support diversity in the revegetated community at the time of Phase III bond release. The plan does not discuss revegetation success standards for compatibility with the postmining land use. However, the seed mixtures proposed are commonly used for wildlife and grazing uses. The plan also does not mention seasonality, but since it does not appear there are any warm season species in the area, the standard can simply be that all reestablished species will be cool season species.

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Findings:

Information provided in the application is not considered adequate to meet the minimum Revegetation requirement of the regulations. Prior to approval, the Permittee must provide the following in accordance with:

R645-301-341.210, The application needs to include shrub transplants for the upper Whisky Creek riparian area.

R645-301-341.250, The application must provide specific revegetation success standard for the upper portion of Whisky Creek.

R645-301-341.250, The application must clarify the reference areas to be used in the revegetation success standards.

STABILIZATION OF SURFACE AREAS

Regulatory Reference: 30 CFR Sections 816.95; 817.95. R645-301-244.

Minimum Regulatory Requirements:

All exposed surface areas shall be protected and stabilized to effectively control erosion and air pollution attendant to erosion. Rills and gullies which form in areas that have been regraded and topsoiled and which either disrupt the approved postmining land use or the reestablishment of the vegetative cover, or, cause or contribute to a violation of water quality standards for receiving streams, shall be filled, regraded, or otherwise stabilized; topsoil shall be replaced; and the areas shall be reseeded or replanted.

Analysis:

The Division is very concerned about soil surface stabilization. Many of the reclaimed slopes will be graded to 2h:1v with 200 to 400 foot length slopes. Fill slopes will exceed 2h:1v at points of intersection with the existing hillsides (page R11 of 35). An erosion control plan incorporating best management practices is critical. Concave and complex slopes erode less than convex or uniform slopes. Map R645-301-521.160, sheet A and B and the text do not show or discuss the use of slope shaping as a surface stabilization method. The slopes are so extensive at this site that a requirement to grade slopes to concave and complex shapes is required

Straw bales will be utilized as well as other appropriate sediment control devices downstream of all construction (page R-9 and R-22 of 37). The Permittee should consider using vegetative material, slash and salvaged debris windowed as a sediment barrier during operations. This material can then be spread during topsoiling to provide for addition surface stabilization and habitat enhancement.

Revegetation will occur promptly (page R-9 and R-22 of 37). Extreme surface roughening will be used on all slopes prior to the distribution of topsoil (page R-12 and R-25).

The roughening process can occur during topsoil placement or while incorporating organic materials (i.e. hay). Proper roughening is so important that the commitment must be made to roughen as described in the technique sheets in the Division's reclamation manual, The Practical Guide to Reclamation in Utah, found at: ftp://dogm.nr.state.ut.us/PUB/MINES/Coal_Related/RecMan/Reclamation_Manual.PDF . The technique sheets are also useful to give to equipment operators to illustrate the degree of roughness required.

After seeding, straw will be spread at the rate of one to two tons per acre. The straw will then be glued to the soil surface with 500 pounds per acre of wood fiber mulch combined with a tackifier (page R-23). A surface bonding agent may be used to reduce slippage of the material (page R-12 of 37).

The Division recommends the following treatment:

- Application of one ton noxious weed free alfalfa hay incorporated during surface roughening.
- Application of one ton noxious weed free straw to cover seeded surface
- Application of 500 pounds hydromulch and 150 pound tackifier over straw to glue straw to surface.

Erosion pins on slopes (R31 of 37) used to monitor erosion. All slopes will be monitored. Rills or gullies that disrupt the postmining land use or the re-establishment of vegetative cover or degrade water quality (Page R31 of 37) will be corrected within 60 days. Erosion monitoring will follow the 1990 Office of Surface Mining publication entitled "Erosion Condition Classification System - Technical Note - Method for Evaluation of Erosion of Reclaimed Coal Lands in Western United States."

Findings:

Information provided in the proposed amendment is not considered adequate to meet the requirements of this section. Prior to approval, the Permittee must provide the following in accordance with:

R645-301-244, Change the text to read all slopes will be roughened after topsoil placement instead of prior to topsoil placement.

R645-301-244, Cross section maps or the text of the plan must show or discuss grading slopes to concave and complex shapes.

R645-301-355, The plan must provide a commitment to roughen as described in the technique sheets in the Division's reclamation manual, The Practical Guide to Reclamation in Utah, found at: ftp://dogm.nr.state.ut.us/PUB/MINES/Coal_Related/RecMan/Reclamation_Manual.PDF

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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

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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

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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. Prior to approval, the Permittee must provide the following in accordance with:

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R645-301-542.300, The Permittee must provide the Division with 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 outside 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

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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 is in the process of calculating the reclamation bond amount. The bond calculation is based on several assumptions that have been discussed with the Permittee, which are as follows:

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- 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.

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 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.



REQUIREMENTS FOR PERMITS FOR SPECIAL CATEGORIES OF MINING

Regulatory Reference: Pub L 95-87 Sec 515 (c), (d), (e), and (f).

INTRODUCTION

Regulatory Reference: 30 CFR Sec. 785; R645-302, et seq.

Minimum Regulatory Requirements:

This section establishes the minimum requirements for regulatory program provisions for permits for certain categories of surface coal mining and reclamation operations. These requirements are in addition to the general permit requirements. All of the general permanent program provisions apply to these operations, unless otherwise specifically provided in this Part.

The objective of this Part is to ensure that permits are issued for certain categories of surface coal mining and reclamation operations only after the Division receives information that shows that these operations will be conducted according to the applicable requirements of the regulatory program. All permits issued under any of these special categories of mining shall be clearly marked to identify that the special performance standard and other requirements of these sections apply.

Analysis:

All provisions of R645-301 apply to the designated special categories unless otherwise specifically provided under the R645-302 regulations. Two special categories apply to the barrier coal removal submittal: steep slope mining and alluvial valley floors. The latter category is a special category of mining that occurs external to an approved permit area and which requires a discrete permit application for review by the Division (R645-302-130).

As required by R645-302-323.120, the Division must find that the proposed operation will be conducted in accordance with all applicable requirements of the State Program and that the proposed operations will not damage the quantity or quality of water in surface and underground systems supplying alluvial valley floors which are downstream of and outside of the permit area. As part of the criteria to determine that there is no material damage to waters downstream (R645-302-323.300) the Division and the Department of Environmental Quality require monitoring of total dissolved solids released from the UPDES point at the mine site. The Division will enforce the performance standards of R645-302-324 which state that the essential hydrologic functions of the alluvial valley floor not within the permit area will be preserved: increases in the average depth to water saturated zones during the growing season (R645-302-323.322) and surface flows (R645-302-323.323) and changes in surface or groundwater systems (R645-302-323.324).

Presently, the Division has no basis upon which to make these findings.

Findings:

The information in the proposed significant revision is not considered adequate to meet the requirements of this section. Prior to approval, the Permittee must provide the following in accordance with:

R645-302-130, The Division requests additional information to make the findings required by R645-302-323 and R645-302-324. (See also requests for information under R645-301-728.100

STEEP SLOPE MINING

Regulatory Reference: 30 CFR Sections 785.15; 785.16.
R645-100-200 and R645- 302-230 et. seq.

Minimum Regulatory Requirements:

"Steep slope" means any slope of more than 20 degrees or such lesser slope as may be designated by the Division after consideration of soil, climate, and other characteristics of a region or Utah.

This section applies to any person who conducts or intends to conduct steep slope surface coal mining and reclamation operations, except:

- 1.) 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;
- 2.) Where a person obtains a permit under the provisions for mountaintop removal mining; or
- 3.) To the extent that a person obtains a permit incorporating a variance under the provisions for approximate original contour restoration requirements for steep slope mining.

Any application for a permit for surface coal mining and reclamation operations covered by this section shall contain sufficient information to establish that the operations will be conducted in accordance with the requirements for backfilling and grading on steep slopes.

No permit shall be issued for any operations covered by this section, unless the Division finds, in writing, that in addition to meeting all other requirements of this Subchapter, the operation will be conducted in accordance with the requirements for backfilling and grading on steep slopes.

Analysis:

Surface mining described in this application is being conducted on slopes of 3h:1v or greater and by R645-100 definition is Steep Slope Mining. The Division will not approve the operation until it is assured that mining is conducted in accordance with the requirements of R645-302-234 Backfilling and Grading.

For the purposes of this contour mining operation, "spoil piles are comprised of overburden that is disposed of in the pit area after the coal is removed. Such overburden is not

considered excess spoil and must be placed according to the provisions of 30 CFR 816.102 - 816.105...." (48FR23358 May 24, 1983).

Under 30 CFR 816.102(a)(3), the disturbed areas must be backfilled and graded to 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." (48FR23358 May 24, 1983).

Please address the effect of saturation on slope stability as previously requested under the discussion of Reclamation Plan Backfilling and Grading, R645-301-542.200 and R645-301-553.210.

Findings:

Information provided in the proposed amendment is not considered adequate to meet the requirements of this section. Prior to approval, the Permittee must provide the following in accordance with:

R645-302-233, Further information is required (as requested in this technical analysis) before the operation can be considered in compliance with the R645-301 regulations.